CITY OF ANGLETON
CITY COUNCIL AGENDA
120 S. CHENANGO STREET, ANGLETON, TEXAS 77515
TUESDAY, JULY 25, 2023 AT 6:00 PM

Mayor | John Wright
Mayor Pro-Tem | Travis Townsend
Council Members | Cecil Booth, Christiene Daniel, Mark Gongora, Terry Roberts
City Manager | Chris Whittaker
City Secretary | Michelle Perez

NOTICE IS HEREBY GIVEN PURSUANT TO V.T.C.A., GOVERNMENT CODE, CHAPTER 551, THAT THE CITY COUNCIL FOR THE CITY OF ANGLETON WILL CONDUCT A MEETING, OPEN TO THE PUBLIC, ON TUESDAY, JULY 25, 2023, AT 6:00 P.M., AT THE CITY OF ANGLETON COUNCIL CHAMBERS LOCATED AT 120 S. CHENANGO STREET ANGLETON, TEXAS 77515.

DECLARATION OF A QUORUM AND CALL TO ORDER

PLEDGE OF ALLEGIANCE

INVOCATION

CEREMONIAL PRESENTATIONS

1. Presentation of an Employee Service Award.
2. Presentation of the Parks and Recreation Month Proclamation.
3. Ceremonial Presentation of the July 2023 Keep Angleton Beautiful Yard of the Month and Business of the Month.

CITIZENS WISHING TO ADDRESS CITY COUNCIL

The Presiding Officer may establish time limits based upon the number of speaker requests, the length of the agenda, and to ensure meeting efficiency, and may include a cumulative time limit. Citizens may speak at the beginning or at the time the item comes before council in accordance with Texas Government Code Section 551.007. No Action May be Taken by the City Council During Public Comments.

WORKSHOP

4. Discussion on various Zoning District setback requirements and subdivision design principles within the City of Angleton, as compared to neighboring municipalities. No action is required.

REGULAR AGENDA

5. Discussion and possible action to accept the Fiscal Year 2021-2022 audit report by Belt Harris Pechacek.

6. Update, discussion and possible action on the progress of the Fire Department Station No. 3 Addition.

7. Discussion and possible action on approving a selection of streets to be included on the 2023-2024 overlay list of streets.

8. Discussion and possible action on the revised list of streets for the Street Bond Project - Package 3.

9. Discussion and possible action to approve funding from Angleton Better Living Corporation (ABLC) fund balance to approve the selection of contractor with the lowest bid in response to the City's request for Bid No. 2023-05 Hauling of Clay, Sand, Earthen cover Material & Stockpiling, from Freedom Park northern tract to BG Peck Soccer Complex and approve a contract with the selected contractor.

10. Discussion and possible action on approving Ordinance No. 20230725-010 amending Chapter 13, Miscellaneous Offenses, Article I. of the Code of Ordinances of the City of Angleton; providing noise and sound level regulations; repealing Section 13-9, use of amplifying devices, clause; repealing Section 13-12, silly string, stinkbombs, smokebombs, poppers or noisemakers, clause; providing for severability; providing for repeal; providing for a penalty, and providing an effective date.

11. Discussion and possible actions on Austin Colony Section 1A Final Plat and the First Amendment to the Development Agreement.

12. Discussion and possible action on a Preliminary Subdivision Plat for Windrose Green Section 4.

13. Discussion and possible action on a Preliminary Subdivision Plat for Windrose Green Section 5.

ADJOURNMENT

If, during the course of the meeting and discussion of any items covered by this notice, City Council determines that a Closed or Executive Session of the Council is required, then such closed meeting will be held as authorized by Texas Government Code, Chapter 551, Section 551.071 - consultation with attorney; Section 551.072 - deliberation regarding real property; Section 551.073 - deliberation regarding prospective gift; Section 551.074 - personnel matters regarding the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; Section 551.076 - deliberation regarding security devices or security audit; Section 551.087 - deliberation regarding economic development negotiations; Section 551.089 - deliberation regarding security devices or security audits, and/or other matters as authorized under the Texas Government Code. If a Closed or Executive Session is held in accordance with the Texas Government Code as set out above, the City Council will reconvene in Open Session in order to take action, if necessary, on the items addressed during Executive Session.

CERTIFICATION

I, Michelle Perez, City Secretary, do hereby certify that this Notice of a Meeting was posted on the City Hall bulletin board, a place convenient and readily accessible to the general public at all times and to the City's website, www.angleton.tx.us, in compliance with Chapter 551, Texas Government Code. The said Notice was posted on the following date and time: Thursday, July 20, 2023, by 6:00 p.m. and remained so posted continuously for at least 72 hours preceding the scheduled time of said meeting.

/S/ Michelle Perez
Michelle Perez, TRMC
City Secretary

Public participation is solicited without regard to race, color, religion, sex, age, national origin, disability, or family status. In accordance with the Americans with Disabilities Act, persons with disabilities needing special accommodation to participate in this proceeding, or those requiring language assistance (free of charge) should contact the City of Angleton ADA Coordinator, Colleen Martin, no later than seventy-two (72) hours prior to the meeting, at (979) 849-4364 ext. 2132, email: cmartin@angleton.tx.us.

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: 7/25/23

PREPARED BY: Colleen Martin, Director of Human Resources

AGENDA CONTENT: Presentation of an Employee Service Award

AGENDA ITEM SECTION: Ceremonial Presentation

BUDGETED AMOUNT: N/A **FUNDS REQUESTED:** N/A

FUND: N/A

EXECUTIVE SUMMARY:

Presentation of a five-year Service Award to Megan Mainer, Director of Parks and Recreation.

RECOMMENDATION:

Presentation of Service Award

Office of the MAYOR
City of Angleton, Texas
Proclamation

WHEREAS, parks and recreation is an integral part of communities throughout thiscountry, including Angleton, Texas; and

WHEREAS, parks and recreation promotes health and wellness, improving the physical and mental health of people who live near parks; and

WHEREAS, parks and recreation promotes time spent in nature, which positively impacts mental health by increasing cognitive performance and well-being, and alleviating illnesses such as depression, attention deficit disorders, and Alzheimers;and

WHEREAS, parks and recreation encourages physical activities by providing space for popular sports, hiking trails, swimming pools and many other activities designedto promote active lifestyles; and

WHEREAS, park and recreation programming and education activities, such as out-of-school time programming, youth sports and environmental education, are critical to childhood development; and

WHEREAS, parks and recreation increases a community's economic prosperity through increased property values, expansion of the local tax base, increased tourism, the attraction and retention of businesses, and crime reduction; and

WHEREAS, parks and recreation is fundamental to the environmental well-being of our community;

WHEREAS, parks and recreation is essential and adaptable infrastructure that makes our communities resilient in the face of natural disasters and climate change; and

WHEREAS, our parks and natural recreation areas ensure the ecological beauty ofour community and provide a place for children and adults to connect with nature and recreate outdoors; and

WHEREAS, the U.S. House of Representatives has designated July as Parks andRecreation Month; and

WHEREAS, Angleton, Texas recognizes the benefits derived from parks andrecreation resources.

NOW, THEREFORE, I, John Wright, Mayor of the City of Angleton, Texas, along with the City of Angleton City Council, do hereby proclaim that the month of July is recognized as:

Park and Recreation Month

PROCLAIMED this 25th day of July 2023.

CITY OF ANGLETON, TEXAS

_____
John Wright
Mayor

AGENDA ITEM SUMMARY FORM

MEETING DATE: 7/25/2023

PREPARED BY: Jason O'Mara, Assistant Director of Parks and Recreation

AGENDA CONTENT: Ceremonial Presentation of July 2023 Keep Angleton Beautiful Yard of the Month and Business of the Month.

AGENDA ITEM SECTION: Ceremonial Presentation

BUDGETED AMOUNT: NA **FUNDS REQUESTED:** NA

FUND: NA

EXECUTIVE SUMMARY:

Tracy Delesandri, Keep Angleton Beautiful Chairwoman, will present Yard of the Month to Louie and Debbie at 800 S Belle Drive and Business of the Month to Wakey Wakey's at 604 N Velasco Street.

RECOMMENDATION:

Staff recommends City Council acknowledge the YOM and BOM with a plaque, picture, and KAB gift for their beautification efforts.

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25, 2023

PREPARED BY: Otis T. Spriggs, AICP, Director of Development Services

AGENDA CONTENT: Discussion on various Zoning District setback requirements and subdivision design principles within the City of Angleton, as compared to neighboring municipalities. No action is required.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: $0 **FUNDS REQUESTED:** $0

FUND: N/A

EXECUTIVE SUMMARY:
Over the last couple of years, previous conversations have been made during regular sessions of the City Council on residential subdivisions, lot sizes requirements, and design configurations. Administrative staff was requested to provide zoning lot requirement information from our surrounding neighbors so that possible discussions and feed back can be derived to further refine the Zoning Code subdivision requirements.

Staff is providing the City Council with yard setback requirements of the various Zoning District categories and subdivision design principles within the City of Angleton, as compared to neighboring municipalities (See the attached table). No action is required on this item.

The cities included in this research includes the following:

City Names	
City of Angleton	City of Alvin
City of Stafford	City of Friendswood
City of Sugar Land	City of League City
City of Missouri City	City of Texas City
City of Pearland	City of Pasadena
City of Manvel	City of Lake Jackson

RECOMMENDATION:

Staff recommends that City Council holds the discussion on Zoning setbacks and lot size/types and provide feedback to administrative staff.

Table of Lot Requirements Surroundiing Cities- Attachment 1

City Name	Residential Districts (R1) Front	Residential (R-1) Side Yard	Residential Rear Yard	Estate Residential Front	Residential Attached (Duplex) Front	Multi-Family Residential Front	General Commercial Front	Industrial Front	Roadway Width Requirement	Website Link
Angleton	25	5	25	30	25	25	20	25	25	https://library.municode.com/tx/angleton/codes/code_of_ordinances?nodeId=PTIICOOR_CH28ZO_ARTIIIZODI
Stafford	25	5	10	N/A	25	25	25	25	28	https://library.municode.com/tx/stafford/codes/code_of_ordinances?nodeId=PTIICOOR_CH102ZO_ARTIVZODI_S102-76.3LODIRE
Sugar Land	25	20	15	50	25	25	25	25	27	https://library.municode.com/tx/sugar_land/codes/land_development_code?nodeId=CH2ZORE_ARTIIZODILAUS_PT2STREDI
Missouri City	25	5	25	35	25	15	30	25	28	of_ordinances?nodeId=PTIICOOR_APXAZO_S7USDI_S7.1.ARRUSIMIREDI
Pearland	25	7.5	N/A	40	20	25	25	35	28	rdinances?nodeId=COOR_CH7_1-2COOVDICO_S7_1-2_-3LOSEST
Manvel	25	5	10	25	25	25	25	25	28	https://library.municode.com/tx/manvel/codes/code_of_ordinances?nodeId=PAIICOOR_CH77ZO_ARTIIDIRE
Alvin	25	10	25	N/A	20	25	25	10	28	ances?nodeId=PTIICOOR_CH35COLAUSRE_ARTIILOST_S35-12LO
Friendswood	25	5	25	75	25	25	30	30	27	https://library.municode.com/tx/friendswood/codes/code_of_ordinances?nodeId=PTIICICO_APXCZO
League City	20	5	10	30	20	20	20	20	28	ances?nodeId=PAIICOOR_CH125UNDECO_ARTIIIZORE_S125-3.3RESIFADI
Texas City	25	5	20	25	30	25	25	30	30	https://codelibrary.amlegal.com/codes/texascity/latest/texascity_tx/0-0-0-10381#JD_160.024
Pasadena		5	25	25	25	25	25	25	28	https://library.municode.com/tx/pasadena/codes/code_of_ordinances?nodeId=COOR_CH9BUGEBURE_ARTIVSERE
Lake Jackson	30	10	15	40	25	25	25	25	26	https://library.municode.com/tx/lake_jackson/codes/code_of_ordinances?nodeId=PTIICOOR_CH110ZO_ARTIIIZORE_S110-68SIMIRE
Culdesac Lots reduce by 5 feet each side average										
Residential Estate is equvalent to Agriculture/Farming Districts is various cities.										
Unit of measurement is in "Feet"										

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: 6/27/2023

PREPARED BY: Phill Conner, Finance Director

AGENDA CONTENT: Discussion and possible action to accept the FY 21-22 audit report.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: N/A **FUNDS REQUESTED:** N/A

FUND: General Fund

EXECUTIVE SUMMARY:

A representative of the audit firm Belt Harris Pechacek will be in attendance to present the audit report for FY 21-22.

RECOMMENDATION:

Staff recommends that the Council accept the audit report.

ANNUAL FINANCIAL REPORT

of the

CITY OF ANGLETON, TEXAS

For the Year Ended
September 30, 2022

CITY OF ANGLETON, TEXAS

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CITY OF ANGLETON, TEXAS

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INTRODUCTORY SECTION

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CITY OF ANGLETON, TEXAS

PRINCIPAL OFFICIALS

September 30, 2022

GOVERNING BODY

Honorable Jason Perez, Mayor

John Wright, Mayor Pro-Tem

Christiene Daniel, Council Member

Travis Townsend, Council Member

Cecil Booth, Council Member

Mark Gongora, Council Member

OTHER PRINCIPAL OFFICIALS

Chris Whittaker, City Manager

Phillip Conner, Finance Director

Jeffrey Gilbert, Municipal Judge

Mark Jones, Alternate Judge

Judith El Masri-Randle Law, City Attorney

Michelle Perez, City Secretary

Colleen Martin, Human Resource and Risk Management Director

Martha Eighme, Communication and Marketing Director

Guadalupe Valdez, Police Chief

Jeff Sifford, Public Works Director

Megan Mainer, Parks and Recreation Director

Otis Spriggs, Development Services Director

Scott Myers, Volunteer Fire Department Fire Chief

Jason Crews, IT Director

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FINANCIAL SECTION

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INDEPENDENT AUDITORS' REPORT

To the Honorable Mayor and
City Council Members of the
City of Angleton, Texas:

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City of Angleton, Texas (the "City"), as of and for the year ended September 30, 2022, and the related notes to the financial statements, which collectively comprise the City's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, each major fund, and the aggregate remaining fund information of the City as of September 30, 2022, and the respective changes in financial position and, where applicable, cash flows thereof for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the City, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Change in Accounting Principle

As described in Note I.F.9 to the financial statements, the City adopted new accounting guidance, Governmental Accounting Standards Board Statement No. 87, *Leases*, in fiscal year 2022. Our opinion is not modified with respect to this matter.

Responsibility of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibility for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgement, there are conditions or events, considered in the aggregate, that raise substantial doubt about the City's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, budgetary comparison information, schedule of changes in net pension and total other postemployment benefits liability and related ratios, schedule of the City's proportionate share of the net pension liability, and schedules of contributions, identified as Required Supplementary Information on the table of contents, be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the Required Supplementary Information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the City's basic financial statements. The accompanying combining statements and schedules and consolidated sub-fund statements are presented for purposes of additional analysis and are not required parts of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining statements and schedules and consolidated sub-fund statements are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the introductory section but does not include the basic financial statements and our auditors' report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 8, 2023 on our consideration of the City's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the City's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the City's internal control over financial reporting and compliance.

Belt Harris Pechacek, LLLP
Certified Public Accountants
Houston, Texas
June 8, 2023

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MANAGEMENT'S DISCUSSION AND ANALYSIS

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CITY OF ANGLETON, TEXAS

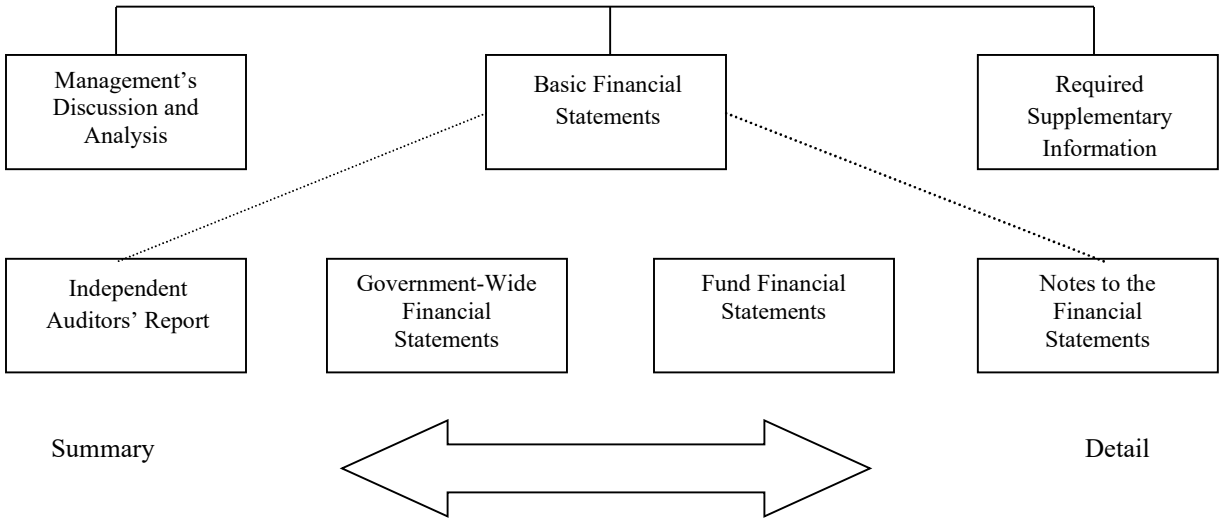
MANAGEMENT'S DISCUSSION AND ANALYSIS

For the Year Ended September 30, 2022

The purpose of the Management's Discussion and Analysis (MD&A) is to give the readers an objective and easily readable analysis of the financial activities of the City of Angleton, Texas (the "City") for the year ending September 30, 2022. The analysis is based on currently known facts, decisions, or economic conditions. It presents short and long-term analysis of the City's activities, compares current year results with those of the prior year, and discusses the positive and negative aspects of that comparison. Please read the MD&A in conjunction with City's financial statements, which follow this section.

THE STRUCTURE OF OUR ANNUAL REPORT

Components of the Financial Section



The City's basic financial statements include (1) government-wide financial statements, (2) individual fund financial statements, and (3) notes to the financial statements. This report also includes supplementary information intended to furnish additional detail to support the basic financial statements themselves.

Government-Wide Statements

The government-wide statements report information for the City as a whole. These statements include transactions and balances relating to all assets, including infrastructure capital assets. These statements are designed to provide information about cost of services, operating results, and financial position of the City as an economic entity. The Statement of Net Position and the Statement of Activities, which appear first in the City's financial statements, report information on the City's activities that enable the reader to understand the financial condition of the City. These statements are prepared using the *accrual basis of accounting*, which is similar to the accounting used by most private-sector companies. All of the current year's revenues and expenses are taken into account even if cash has not yet changed hands.

The Statement of Net Position presents information on all of the City's assets, liabilities, and deferred outflows/inflows of resources, with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the City is improving or deteriorating. Other nonfinancial factors, such as the City's property tax base and the condition of the City's infrastructure, need to be considered in order to assess the overall health of the City.

The Statement of Activities presents information showing how the City's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows using the accrual method rather than modified accrual that is used in the fund level statements.

The Statement of Net Position and the Statement of Activities divide the City's financials into two classes of activities:

1. *Governmental Activities* – Most of the City's basic services are reported here including general administration, financial administration, public safety (municipal court, police, animal control, fire, and code enforcement), community services (streets, parks and recreation, and sanitation) and economic development. Interest payments on the City's debt are also reported here. Sales tax, property tax, franchise fees, municipal court fines, and permit fees finance most of these activities.

2. *Business-Type Activities* – Services involving a fee for those services are reported here. These services include the City's water distribution and wastewater collection/treatment.

The government-wide financial statements can be found after the MD&A.

FUND FINANCIAL STATEMENTS

Funds may be considered as operating companies of the parent corporation, which is the City. They are usually segregated for specific activities or objectives. The City uses fund accounting to ensure and demonstrate compliance with finance related legal reporting requirements. The two categories of City funds are governmental and proprietary.

Governmental Funds

Governmental funds are used to account for essentially the same functions reported as governmental activities in the government-wide financial statements. However, unlike the government-wide financial statements, governmental fund financial statements focus on *near-term outflows and inflows of spendable resources,* as well as on *balances of spendable resources* available at the end of the year. Such information may be useful in evaluating the City's near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for *governmental funds* with similar information presented for *governmental activities* in the government-wide financial statements. By doing so, readers may better understand the long-term impact of the government's near-term financing decisions. Both the governmental fund balance sheet and the governmental fund statement of revenues, expenditures, and changes in fund balances provide a reconciliation to facilitate this comparison between *governmental funds* and *governmental activities*.

The City maintains 29 individual governmental funds. Information is presented separately in the governmental fund balance sheet and in the governmental fund statement of revenues, expenditures, and changes in fund balances for the general fund, debt service fund, C.O. Series 2018 fund, C.O. Series 2022 fund, grants fund, and the Angleton Better Living fund. These funds are considered to be major funds for reporting purposes with the exception of the debt service fund and the Angleton Better Living fund. The debt service fund and the Angleton Better Living fund did not meet the technical criteria for presentation as major funds but the City has elected to present them as major due to their significance.

The City adopts an annual appropriated budget for its general fund, debt service fund, and select special revenue funds. Budgetary comparison schedules have been provided for these funds to demonstrate compliance with these budgets.

Proprietary Funds

The City maintains two types of proprietary funds. Enterprise funds are used to report the same functions presented as business-type activities in the government-wide financial statements. The City uses an enterprise fund to account for its water distribution and wastewater collection/treatment. The basic proprietary fund financial statements can be found in the basic financial statements of this report.

The City also uses an internal service fund to account for unemployment costs. This internal service fund has been included within governmental activities in the government-wide financial statements.

Notes to Financial Statements

The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes are the last section of the basic financial statements.

Other Information

In addition to basic financial statements, MD&A, and accompanying notes, this report also presents certain Required Supplementary Information (RSI). The RSI includes budgetary comparison schedules for the general fund and Angleton Better Living fund, schedules of changes in net pension and total other postemployment benefits liability and related ratios, schedule of the City's proportionate share of the net pension liability, and schedules of contributions for the City's pension plans. RSI can be found after the notes to the basic financial statements.

GOVERNMENT-WIDE FINANCIAL ANALYSIS

As noted earlier, net position may serve over time as a useful indicator of the City's financial position. For the City, assets and deferred outflows of resources exceed liabilities and deferred inflows by $39,933,316 as of September 30, 2022. A portion of the City's net position (78%) reflects its investment in capital assets (e.g., land, building, equipment, improvements, construction in progress, and infrastructure), less any debt used to acquire those assets that is still outstanding. The City uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending. Although the City's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the assets themselves cannot be used to liquidate these liabilities.

Statement of Net Position

The following table reflects the condensed Statement of Net Position:

	Governmental Activities		Business-Type Activities		Total Primary Government	
	2022	**2021**	**2022**	**2021**	**2022**	**2021**
Current and other assets	$ 28,309,471	$ 21,816,947	$ 6,074,101	$ 6,265,748	$ 34,383,572	$ 28,082,695
Capital assets, net	29,581,215	25,050,777	25,291,175	24,402,917	54,872,390	49,453,694
Total Assets	57,890,686	46,867,724	31,365,276	30,668,665	89,255,962	77,536,389
Deferred outflows - pensions	715,413	720,703	127,651	128,673	843,064	849,376
Deferred outflows - OPEB	82,312	92,401	15,510	17,379	97,822	109,780
Deferred charge on refunding	19,405	28,226	29,159	42,169	48,564	70,395
Total Deferred Outflows of Resources	817,130	841,330	172,320	188,221	989,450	1,029,551
Long-term liabilities	25,044,596	17,984,384	16,586,749	16,026,302	41,631,345	34,010,686
Other liabilities	5,415,125	3,932,183	1,173,532	970,217	6,588,657	4,902,400
Total Liabilities	30,459,721	21,916,567	17,760,281	16,996,519	48,220,002	38,913,086
Deferred inflows - pensions	1,740,456	755,836	330,311	156,578	2,070,767	912,414
Deferred inflows - OPEB	18,278	15,150	3,049	2,459	21,327	17,609
Total Deferred Inflows of Resources	1,758,734	770,986	333,360	159,037	2,092,094	930,023
Net Position:						
Net investment in capital assets	19,582,340	18,202,275	11,523,759	11,354,144	31,106,099	29,556,419
Restricted	5,778,023	5,941,631	1,022,032	1,002,060	6,800,055	6,943,691
Unrestricted	1,128,998	877,595	898,164	1,345,126	2,027,162	2,222,721
Total Net Position	$ 26,489,361	$ 25,021,501	$ 13,443,955	$ 13,701,330	$ 39,933,316	$ 38,722,831

A portion of the primary government's net position, $6,800,055 or 17%, represents resources that are subject to external restriction on how they may be used. The remaining balance of unrestricted net position, $2,027,162 or 5%, may be used to meet the City's ongoing obligation to citizens and creditors.

Total assets are $89,255,962, an increase of $11,719,573 compared to prior year. Total assets increased compared to the prior year primarily due to a current year debt issuance and an increase in construction in progress. Total liabilities are $48,220,002, an increase of $9,306,916 compared to prior year. The increase is mostly due to the issuance of certificates of obligations, series 2021 and 2022 and an increase in accounts payable due to the various stages of projects and the timing of invoices. Total deferred outflows of resources are $989,450, a decrease of $40,101 compared to the prior year. The decrease in deferred outflows of resources is related to both the pension and other postemployment benefits plans. Total deferred inflows of resources are $2,092,094, an increase of $1,162,071 compared to the prior year. The increase in deferred inflows of resources is due mainly to an increase in the net difference between projected and actual investment earnings on pension plan assets.

Statement of Activities

The following table provides a summary of the City's changes in net position:

	Governmental Activities		Business-Type Activities		Total Primary Government	
	2022	2021	2022	2021	2022	2021
Revenues						
Program revenues:						
Charges for services	$ 4,081,331	$ 3,679,648	$ 8,301,178	$ 7,102,162	$ 12,382,509	$ 10,781,810
Operating grants and contributions	1,433,522	1,572,027	-	-	1,433,522	1,572,027
Capital grants and contributions	2,256,988	473,506	-	-	2,256,988	473,506
General revenues:						
Property taxes	7,682,906	7,571,262	-	-	7,682,906	7,571,262
Sales taxes	5,544,348	5,124,958	-	-	5,544,348	5,124,958
Franchise fees and local taxes	838,304	756,392	-	-	838,304	756,392
Investment revenue	110,193	21,753	58,427	10,027	168,620	31,780
Other revenues	542,526	318,360	-	-	542,526	318,360
Gain on sale of capital assets	101,165	-	25,400	-	126,565	-
Total Revenues	22,591,283	19,517,906	8,385,005	7,112,189	30,976,288	26,630,095
Expenses						
General administration	6,337,454	5,918,372	-	-	6,337,454	5,918,372
Financial administration	419,906	515,055	-	-	419,906	515,055
Public safety	8,696,282	8,649,434	-	-	8,696,282	8,649,434
Community services	4,768,777	3,938,278	-	-	4,768,777	3,938,278
Economic development	533,274	457,432	-	-	533,274	457,432
Interest and fiscal agent fees	794,568	575,163	435,092	379,795	1,229,660	954,958
Water	-	-	6,134,758	5,340,498	6,134,758	5,340,498
Sewer	-	-	1,645,692	1,214,203	1,645,692	1,214,203
Total Expenses	21,550,261	20,053,734	8,215,542	6,934,496	29,765,803	26,988,230
Increase (Decrease) in Net Position Before Transfers	1,041,022	(535,828)	169,463	177,693	1,210,485	(358,135)
Transfers in (out)	426,838	114,201	(426,838)	(114,201)	-	-
Change in Net Position	1,467,860	(421,627)	(257,375)	63,492	1,210,485	(358,135)
Beginning net position	25,021,501	25,443,128	13,701,330	13,637,838	38,722,831	39,080,966
Ending Net Position	$ 26,489,361	$ 25,021,501	$ 13,443,955	$ 13,701,330	$ 39,933,316	$ 38,722,831

For the year, net revenues from governmental activities increased by $3,073,377 or 16%. The increase is mainly due to increases in charges for services revenue primarily due to increases in licenses and permits revenue as a result of an increase in development within the City and an increase in solid waste rates and customers, capital grants and contributions from the Coronavirus State and Local Fiscal Recovery funds, property tax revenues from an increase in the assessed values of properties within the City, sales tax revenues from an increase in taxable sales within the City, other revenue mostly due to an reimbursements from Brazoria County for the Courthouse Expansion Project, and gain on sale of capital assets revenue from the auctioning of various City assets. Expenses from governmental activities increased by $1,496,527 or 7% mainly due to increases in community services related to road and wastewater infrastructure repairs, and hurricane debris removal using Coronavirus State and Local Fiscal Recovery funds, personnel costs, and maintenance costs.

Revenues from business-type activities increased by $1,272,816 mainly due to an increase in charges for services due to an increase in rates and customer consumption. Total expenses increased $1,281,046 mostly due to water expenses, personnel costs, and bond issuance costs.

FINANCIAL ANALYSIS OF THE CITY'S FUNDS

As noted earlier, fund accounting is used to demonstrate and ensure compliance with finance-related legal requirements.

Governmental Funds – The focus of the City's governmental funds is to provide information on near-term inflows, outflows, and balances of spendable resources. Such information is useful in assessing the City's financing requirements. In particular, unassigned fund balance may serve as a useful measure of the City's net resources available for spending at the end of the year.

The City's governmental funds reflect a combined fund balance of $22,941,020, a net increase of $5,143,381 from the prior year. Of this combined fund balance, $12,419 is nonspendable for inventory and prepaids, $430,160 is restricted for debt service, $466,414 is restricted for economic development, $180,491 is restricted for special projects, and $18,441,256 is restricted for capital projects. Unassigned fund balance totaled $3,410,280 as of September 30, 2022.

Total revenues increased by $3,441,083 or 18% mostly due to an increase in proceeds from Coronavirus State and Local Fiscal Recovery funds. Compared to the prior year, expenditures increased by $6,705,506 or 30% due mainly to the increases in expenditures for street repairs and maintenance, building repairs and maintenance, and equipment purchases.

The general fund is the chief operating fund of the City. At the end of the current year, the total fund balance was $3,486,608, a net decrease of $465,205 from the prior year. Expenditures increased by $970,257. Public safety saw a significant increase over the prior year, mainly due to an increase in personnel costs, purchases of equipment and supplies, and repair and maintenance expenditures. Compared to the prior year, revenues increased $1,393,555 due mainly to increases in property and sales tax revenues, building permits issued, intergovernmental revenues from an interlocal agreement related to a street drainage and sidewalks project, and miscellaneous revenues. As a measure of the general fund's liquidity, it may be useful to compare both unassigned fund balance and total fund balance to total fund expenditures. Unassigned fund balance and total fund balance represent 19.1% and 19.6%, respectively, of total general fund expenditures.

The debt service fund had a total fund balance of $430,160, all of which is restricted for the payment of principal and interest on the City's outstanding long-term debt. The net increase in fund balance was $32,001.

The C.O. series 2018 fund has a total fund balance of $3,538,726, a decrease of $1,434,963 due to various street improvements.

The C.O. series 2022 fund has a total fund balance of $10,043,153 from the current year bonds issuance.

The grants fund has a fund balance of $478. They City used $2,256,988 in grant revenue for various rehabilitation and repair projects.

The Angleton Better Living fund has a total fund balance of $312,084, a decrease of $467,139 from prior year as a result of transfers to other funds exceeding sales tax revenue.

Proprietary Funds – The City's proprietary funds provide the same type of information found in the government-wide financial statements, but in more detail.

GENERAL FUND BUDGETARY HIGHLIGHTS

The City's amended budget planned for a decrease in budgeted general fund balance of $57,465. The City's actual revenues were less than budgeted revenues by $462,640 primarily due to less solid waste, property and sales taxes, and fines and forfeiture revenues than expected. Actual expenditures were greater than budgeted expenditures by $387,486. This was mainly due to negative variances for public works, principal payment of debt, administration, and parks and recreation.

CAPITAL ASSETS

At year end, the City's governmental and business-type activities had invested $54,872,390, in a variety of capital assets and infrastructure (net of accumulated depreciation). This represents a net increase of $5,418,696 from the prior year.

More detailed information about the City's capital assets is presented in note III. C. to the financial statements.

LONG-TERM DEBT

At the end of the current year, the City's governmental activities had total bonds and certificates of obligation outstanding of $22,390,100. Business-type activities had total bonds and certificates of obligation outstanding of $15,654,900 at year end. Of this total, $2,070,000 was general obligation bonds and $35,975,000 accounted for certificates of obligation.

More detailed information about the City's long-term liabilities is presented in note III. D. to the financial statements.

ECONOMIC FACTORS AND NEXT YEAR'S BUDGET

City Council approved a $18,391,962 general fund budget for fiscal year 2022-2023, which is an increase of $1,163,883 compared to the fiscal year 2021-2022 budget.

City Council approved a $3,629,182 debt service fund budget for fiscal year 2022-2023, which is an increase of $542,303 or 18% compared to the fiscal year 2021-2022 budget.

City Council approved a $10,168,530 utility fund budget for fiscal year 2022-2023, which is an increase of $2,476,783 or 32% compared to the fiscal year 2021-2022 budget.

CONTACTING THE CITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide a general overview of the City's finances. Questions concerning this report or requests for additional financial information should be directed to Phillip Conner, Finance Director, City of Angleton, 121 S. Velasco, Angleton, TX, 77515; telephone 979.849.4364; or email at pconner@angleton.tx.us.

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BASIC FINANCIAL STATEMENTS

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CITY OF ANGLETON, TEXAS

STATEMENT OF NET POSITION

September 30, 2022

	Primary Government		
	Governmental Activities	Business-Type Activities	Total
Assets			
Cash and cash equivalents	$ 25,765,350	$ 297,564	$ 26,062,914
Investments	702,378	351,189	1,053,567
Receivables, net	1,753,184	1,257,578	3,010,762
Due from other governments	6,631	-	6,631
Inventory	7,106	60,232	67,338
Prepaids	5,313	-	5,313
Restricted assets:			
Cash and cash equivalents	69,509	4,107,538	4,177,047
Total Current Assets	28,309,471	6,074,101	34,383,572
Capital assets:			
Nondepreciable capital assets	7,107,092	4,511,252	11,618,344
Net depreciable capital assets	22,474,123	20,779,923	43,254,046
Total Noncurrent Assets	29,581,215	25,291,175	54,872,390
Total Assets	57,890,686	31,365,276	89,255,962
Deferred Outflows of Resources			
Deferred outflows - pensions (TMRS)	664,728	127,651	792,379
Deferred outflows - pensions (TESRS)	50,685	-	50,685
Deferred outflows - OPEB	82,312	15,510	97,822
Deferred charge on refunding	19,405	29,159	48,564
Total Deferred Outflows of Resources	817,130	172,320	989,450
Liabilities			
Accounts payable and accrued liabilities	2,180,722	756,953	2,937,675
Unearned revenue	3,057,048	-	3,057,048
Accrued interest payable	177,355	54,914	232,269
Customer deposits	-	361,665	361,665
Total Current Liabilities	5,415,125	1,173,532	6,588,657
Noncurrent liabilities:			
Long-term liabilities due within one year	1,512,443	1,069,760	2,582,203
Long-term liabilities due in more than one year	23,532,153	15,516,989	39,049,142
Total Noncurrent Liabilities	25,044,596	16,586,749	41,631,345
Total Liabilities	30,459,721	17,760,281	48,220,002
Deferred Inflows of Resources			
Deferred inflows - pensions (TMRS)	1,668,622	330,311	1,998,933
Deferred inflows - pensions (TESRS)	71,834	-	71,834
Deferred inflows - OPEB	18,278	3,049	21,327
Total Deferred Inflows of Resources	1,758,734	333,360	2,092,094
Net Position			
Net investment in capital assets	19,582,340	11,523,759	31,106,099
Restricted for:			
Capital projects	4,700,958	1,022,032	5,722,990
Debt service	430,160	-	430,160
Economic development	466,414	-	466,414
Special projects	180,491	-	180,491
Unrestricted	1,128,998	898,164	2,027,162
Total Net Position	$ 26,489,361	$ 13,443,955	$ 39,933,316

See Notes to Financial Statements.

CITY OF ANGLETON, TEXAS

STATEMENT OF ACTIVITIES

For the Year Ended September 30, 2022

Functions/Programs	Expenses	Program Revenues: Charges for Services	Program Revenues: Operating Grants and Contributions	Program Revenues: Capital Grants and Contributions
Primary Government				
Governmental Activities:				
General administration	$ 6,337,454	$ -	$ 568,406	$ -
Financial administration	419,906	-	-	-
Public safety	8,696,282	1,412,442	430,057	-
Community services	4,768,777	2,668,889	-	2,256,988
Economic development	533,274	-	435,059	-
Interest and fiscal agent fees	794,568	-	-	-
Total Governmental Activities	21,550,261	4,081,331	1,433,522	2,256,988
Business-Type Activities:				
Water	6,134,758	5,126,759	-	-
Sewer	1,645,692	3,174,419	-	-
Interest and fiscal agent fees	435,092	-	-	-
Total Business-Type Activities	8,215,542	8,301,178	-	-
Total Primary Government	$ 29,765,803	$ 12,382,509	$ 1,433,522	$ 2,256,988

General Revenues:

Property taxes

Sales taxes

Franchise fees and local taxes

Industrial district agreement

Investment revenue

Other revenues

Gain on sale of capital asset

Transfers

Total General Revenues and Transfers

Change in Net Position

Beginning net position

Ending Net Position

See Notes to Financial Statements.

Net Revenue (Expense) and Changes in Net Position		
Primary Government		
Governmental Activities	Business-Type Activities	Total
$ (5,769,048)	$ -	$ (5,769,048)
(419,906)	-	(419,906)
(6,853,783)	-	(6,853,783)
157,100	-	157,100
(98,215)	-	(98,215)
(794,568)	-	(794,568)
(13,778,420)	-	(13,778,420)
-	(1,007,999)	(1,007,999)
-	1,528,727	1,528,727
-	(435,092)	(435,092)
-	85,636	85,636
(13,778,420)	85,636	(13,692,784)
7,682,906	-	7,682,906
5,544,348	-	5,544,348
838,304	-	838,304
82,416	-	82,416
110,193	58,427	168,620
460,110	-	460,110
101,165	25,400	126,565
426,838	(426,838)	-
15,246,280	(343,011)	14,903,269
1,467,860	(257,375)	1,210,485
25,021,501	13,701,330	38,722,831
$ 26,489,361	$ 13,443,955	$ 39,933,316

CITY OF ANGLETON, TEXAS

BALANCE SHEET
GOVERNMENTAL FUNDS
September 30, 2022

	General	Debt Service	C. O. Series 2018	C.O. Series 2022
Assets				
Cash and cash equivalents	$ 3,165,912	$ 430,160	$ 3,900,041	$ 10,043,153
Investments	351,189	-	-	-
Receivables, net	1,294,353	12,248	-	-
Inventory	1,506	-	-	-
Prepaids	5,313	-	-	-
Restricted cash and cash equivalents	69,509	-	-	-
Due from other governments	3,850	-	-	-
Due from other funds	184,326	-	-	-
Total Assets	$ 5,075,958	$ 442,408	$ 3,900,041	$ 10,043,153
Liabilities				
Accounts payable and accrued liabilities	$ 987,688	$ -	$ 361,315	$ -
Unearned revenue	494,550	-	-	-
Due to other funds	-	-	-	-
Total Liabilities	1,482,238	-	361,315	-
Deferred Inflows of Resources				
Unavailable revenue - property taxes	107,112	12,248	-	-
Total Deferred Inflows of Resources	107,112	12,248	-	-
Fund Balances				
Nonspendable:				
Inventory and prepaids	6,819	-	-	-
Restricted for:				
Debt service	-	430,160	-	-
Economic development	-	-	-	-
Special projects	-	-	-	-
Capital projects	69,509	-	3,538,726	10,043,153
Unassigned	3,410,280	-	-	-
Total Fund Balances	3,486,608	430,160	3,538,726	10,043,153
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	$ 5,075,958	$ 442,408	$ 3,900,041	$ 10,043,153

See Notes to Financial Statements.

Grants	Angleton Better Living	Nonmajor Governmental	Total Governmental Funds
$ 2,729,856	$ 117,426	$ 5,367,481	$ 25,754,029
-	-	351,189	702,378
-	343,619	102,964	1,753,184
-	-	5,600	7,106
-	-	-	5,313
-	-	-	69,509
-	-	2,781	6,631
-	-	-	184,326
$ 2,729,856	$ 461,045	$ 5,830,015	$ 28,482,476
$ 166,880	$ 8,405	$ 656,434	$ 2,180,722
2,562,498	-	-	3,057,048
-	140,556	43,770	184,326
2,729,378	148,961	700,204	5,422,096
-	-	-	119,360
-	-	-	119,360
-	-	5,600	12,419
-	-	-	430,160
-	-	466,414	466,414
-	-	180,491	180,491
478	312,084	4,477,306	18,441,256
-	-	-	3,410,280
478	312,084	5,129,811	22,941,020
$ 2,729,856	$ 461,045	$ 5,830,015	$ 28,482,476

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CITY OF ANGLETON, TEXAS

RECONCILIATION OF THE GOVERNMENTAL FUNDS BALANCE SHEET TO THE STATEMENT OF NET POSITION

For the Year Ended September 30, 2022

Total fund balances - total governmental funds	$	22,941,020
Amounts reported for governmental activities in the Statement of Net Position are different because:		
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds.		
Capital assets, nondepreciable		7,107,092
Capital assets, net depreciable		22,474,123
Other long-term assets are not available to pay for current period expenditures and, therefore, are deferred in the funds.		119,360
An internal service fund is used by management to charge the costs of unemployment expenses to individual funds. The assets and liabilities of the internal service fund are included in the governmental activities in the Statement of Net Position.		11,321
Long-term liabilities are not due and payable in the current period and, therefore, are not reported in the funds.		
Accrued interest payable		(177,355)
Noncurrent liabilities due in one year		(1,512,443)
Noncurrent liabilities due in more than one year		(22,672,947)
Net pension liability (TMRS)		(357,702)
Net pension liability (TESRS)		(73,499)
Total OPEB liability		(428,005)
Deferred outflows - pensions (TMRS)		664,728
Deferred outflows - pensions (TESRS)		50,685
Deferred outflows - OPEB		82,312
Deferred inflows - pensions (TMRS)		(1,668,622)
Deferred inflows - pensions (TESRS)		(71,834)
Deferred inflows - OPEB		(18,278)
Deferred charge on refunding		19,405
Net Position of Governmental Activities	$	26,489,361

See Notes to Financial Statements.

CITY OF ANGLETON, TEXAS

STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES GOVERNMENTAL FUNDS

For the Year Ended September 30, 2022

	General	Debt Service	C. O. Series 2018	C. O. Series 2022
Revenues				
Property taxes	$ 6,800,964	$ 882,787	$ -	$ -
Franchise fees and local taxes	668,673	-	-	-
Sales taxes	3,696,232	-	-	-
Industrial district agreement	82,416	-	-	-
Permits, licenses, and fees	858,711	-	-	-
Fines and forfeitures	527,343	-	-	-
Charges for services	2,265,389	-	-	-
Intergovernmental	403,967	-	-	-
Investment revenue	23,504	1,148	-	52,309
Miscellaneous revenue	264,372	9,858	-	-
Total Revenues	15,591,571	893,793	-	52,309
Expenditures				
Current:				
General administration	4,077,152	-	-	-
Financial administration	472,509	-	-	-
Public safety	8,342,209	-	-	-
Community services	4,064,181	-	-	-
Economic development	230,225	-	-	-
Capital outlay	229,697	-	1,434,963	9,156
Debt service:				-
Principal	367,398	1,177,432	-	-
Interest and fiscal agent fees	26,982	404,590	-	-
Issuance costs	-	-	-	269,876
Total Expenditures	17,810,353	1,582,022	1,434,963	279,032
Excess (Deficiency) of Revenues Over (Under) Expenditures	(2,218,782)	(688,229)	(1,434,963)	(226,723)
Other Financing Sources (Uses)				
Transfers in	1,441,712	720,230	-	-
Transfers (out)	(18,997)	-	-	-
Bonds issued	-	-	-	9,995,000
Bonds premium	-	-	-	274,876
Sale of capital assets	101,165	-	-	-
Lease proceeds	229,697	-	-	-
Total Other Financing Sources (Uses)	1,753,577	720,230	-	10,269,876
Net Change in Fund Balances	(465,205)	32,001	(1,434,963)	10,043,153
Beginning fund balances	3,951,813	398,159	4,973,689	-
Ending Fund Balances	$ 3,486,608	$ 430,160	$ 3,538,726	$ 10,043,153

See Notes to Financial Statements.

Grants	Angleton Better Living	Nonmajor Governmental	Total Governmental Funds
$ -	$ -	$ -	$ 7,683,751
-	-	169,631	838,304
-	1,848,116	-	5,544,348
-	-	-	82,416
-	-	-	858,711
-	-	26,388	553,731
-	-	403,500	2,668,889
2,256,988	-	452,031	3,112,986
-	1,364	31,791	110,116
-	10,000	713,969	998,199
2,256,988	1,859,480	1,797,310	22,451,451
-	447,585	1,396,998	5,921,735
-	-	-	472,509
-	-	358,660	8,700,869
2,256,988	-	-	6,321,169
-	-	331,951	562,176
-	-	2,951,885	4,625,701
-	-	-	1,544,830
-	-	-	431,572
-	-	-	269,876
2,256,988	447,585	5,039,494	28,850,437
-	1,411,895	(3,242,184)	(6,398,986)
-	-	918,853	3,080,795
-	(1,879,034)	(241,135)	(2,139,166)
-	-	-	9,995,000
-	-	-	274,876
-	-	-	101,165
-	-	-	229,697
-	(1,879,034)	677,718	11,542,367
-	(467,139)	(2,564,466)	5,143,381
478	779,223	7,694,277	17,797,639
$ 478	$ 312,084	$ 5,129,811	$ 22,941,020

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CITY OF ANGLETON, TEXAS

RECONCILIATION OF THE STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS TO THE STATEMENT OF ACTIVITIES

For the Year Ended September 30, 2022

Amounts reported for governmental activities in the Statement of Activities are different because:

Net changes in fund balances - total governmental funds	$	5,143,381
Governmental funds report capital outlays as expenditures. However, in the Statement of Activities, the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense.		
Capital additions		6,100,984
Depreciation		(1,570,546)
Revenue in the Statement of Activities that does not provide current financial resources is not reported as revenue in the funds.		(845)
The issuance of long-term debt (e.g., bonds, certificates of obligation, etc.) provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction, however, has any effect on net position. Also, governmental funds report the effect of premiums, discounts, and similar items when debt is first issued; whereas, these amounts are deferred and amortized in the Statement of Activities.		
Principal payment on debt and capital leases		1,544,830
Bonds issued		(9,995,000)
Leases		(229,697)
Bond premium, net		(233,787)
Refunding loss		(8,821)
Accrued interest		(125,388)
Some expenses reported in the Statement of Activities do not require the use of current financial resources and, therefore, are not reported as expenditures in governmental funds.		
Compensated absences		78,863
Net pension liability (TESRS)		93,649
Net pension liability (TMRS)		1,708,773
Total OPEB liability		(27,843)
Deferred outflows - pensions (TMRS)		(21,973)
Deferred outflows - pensions (TESRS)		16,683
Deferred outflows - OPEB		(10,089)
Deferred inflows - pensions (TMRS)		(921,020)
Deferred inflows - pensions (TESRS)		(63,600)
Deferred inflows - OPEB		(3,128)
On behalf revenue (TESRS)		9,118
Pension expense (TESRS)		(9,118)
An internal service fund is used by management to charge the costs of unemployment costs to individual funds. The net revenue (expense) of the internal service fund is reported with governmental activities.		(7,566)
Change in Net Position of Governmental Activities	$	1,467,860

See Notes to Financial Statements.

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CITY OF ANGLETON, TEXAS

STATEMENT OF NET POSITION
PROPRIETARY FUNDS
September 30, 2022

	Business-Type Activities	Governmental Activities
	Utility	Internal Service
Assets		
Current assets:		
Cash and cash equivalents	$ 297,564	$ 11,321
Investments	351,189	-
Receivables, net	1,257,578	-
Inventory	60,232	-
Restricted cash and cash equivalents	4,107,538	-
Total Current Assets	6,074,101	11,321
Capital assets:		
Nondepreciable	4,511,252	-
Depreciable, net	20,779,923	-
Total Capital Assets (Net of Accumulated Depreciation)	25,291,175	-
Total Noncurrent Assets	25,291,175	-
Total Assets	31,365,276	11,321
Deferred Outflows of Resources		
Deferred outflows - pensions	127,651	-
Deferred outflows - OPEB	15,510	-
Deferred charge on refunding	29,159	-
Total Deferred Outflows of Resources	172,320	-
Liabilities		
Current liabilities:		
Accounts payable and accrued liabilities	756,953	-
Accrued interest payable	54,914	-
Customer deposits	361,665	-
Total Current Liabilities	1,173,532	-
Noncurrent liabilities:		
Long-term debt due within one year	1,069,760	-
Long-term debt due in more than one year	15,516,989	-
Total Noncurrent Liabilities	16,586,749	-
Total Liabilities	17,760,281	-
Deferred Inflows of Resources		
Deferred inflows - pensions	330,311	-
Deferred inflows - OPEB	3,049	-
Total Deferred Inflows of Resources	333,360	-
Net Position		
Net investment in capital assets	11,523,759	-
Restricted for capital projects	1,022,032	-
Unrestricted	898,164	11,321
Total Net Position	$ 13,443,955	$ 11,321

See Notes to Financial Statements.

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CITY OF ANGLETON, TEXAS

STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS

For the Year Ended September 30, 2022

	Business-Type Activities	Governmental Activities
	Utility	Internal Service
Operating Revenues		
Water sales	$ 4,870,530	$ -
Sanitary sewer services	3,015,766	-
Other service fees	414,882	30,317
Total Operating Revenues	8,301,178	30,317
Operating Expenses		
Water distribution	636,425	-
Water plant operations	1,072,903	-
Water purchases	2,207,590	-
Sewer	496,232	-
Collection administration	2,145,425	-
Personnel services	-	37,960
Depreciation	1,221,875	-
Total Operating Expenses	7,780,450	37,960
Operating Income (Loss)	520,728	(7,643)
Nonoperating Revenues (Expenses)		
Investment revenue	58,427	77
Interest expense	(435,092)	-
Gain on sale of capital assets	25,400	-
Total Nonoperating Revenues (Expenses)	(351,265)	77
Income (Loss) Before Transfers and Capital Contributions	169,463	(7,566)
Transfers		
Transfers (out)	(941,629)	-
Capital contributions	514,791	-
Total Transfers	(426,838)	-
Change in Net Position	(257,375)	(7,566)
Beginning net position	13,701,330	18,887
Ending Net Position	$ 13,443,955	$ 11,321

See Notes to Financial Statements.

CITY OF ANGLETON, TEXAS

STATEMENT OF CASH FLOWS

PROPRIETARY FUNDS (Page 1 of 2)

For the Year Ended September 30, 2022

	Business-Type Activities	Governmental Activities
	Utility	Internal Service
Cash Flows from Operating Activities		
Receipts from customers and users	$ 8,184,586	$ (7,643)
Payments to suppliers	(4,489,178)	-
Payments to employees	(1,855,033)	-
Net Cash Provided (Used) by Operating Activities	1,840,375	(7,643)
Cash Flows from Noncapital Financing Activities		
Transfers to other funds	(941,629)	-
Net Cash (Used) by Noncapital Financing Activities	(941,629)	-
Cash Flows from Capital and Related Financing Activities		
Acquisition and construction of capital assets	(1,595,342)	-
Proceeds on sale of capital assets	25,400	-
Proceeds from capital debt	2,275,000	
Principal paid on capital debt	(1,557,568)	-
Interest paid on capital debt	(435,092)	-
Net Cash (Used) by Capital and Related Financing Activities	(1,287,602)	-
Cash Flows from Investing Activities		
(Purchase) of investment	(1,447)	-
Interest received	58,427	77
Net Cash Provided by Investing Activities	56,980	77
Net (Decrease) in Cash and Cash Equivalents	(331,876)	(7,566)
Beginning cash and cash equivalents	4,736,978	18,887
Ending Cash and Cash Equivalents	$ 4,405,102	$ 11,321
Ending Cash and Cash Equivalents		
Unrestricted cash and cash equivalents	$ 297,564	$ 11,321
Restricted cash and cash equivalents	4,107,538	-
	$ 4,405,102	$ 11,321

CITY OF ANGLETON, TEXAS

STATEMENT OF CASH FLOWS

PROPRIETARY FUND (Page 2 of 2)

For the Year Ended September 30, 2022

	Business-Type Activities	Governmental Activities
	Utility	Internal Service
Reconciliation of Operating Income (Loss) to Net Cash Provided (Used) by Operating Activities		
Operating income (loss)	$ 520,728	$ (7,643)
Adjustments to reconcile operating income (loss) to net cash provided (used) by operating activities:		
Depreciation	1,221,875	-
Changes in Operating Assets and Liabilities:		
(Increase) Decrease in Current Assets:		
Accounts receivable	(138,782)	-
Deferred outflows - pensions	1,022	-
Deferred outflows - OPEB	1,869	-
Deferred charge on refunding	13,010	-
Increase (Decrease) in Current Liabilities:		
Accounts payable and accrued liabilities	181,125	-
Compensated absences	(15,131)	-
Deferred inflows - pensions	173,733	-
Deferred inflows - OPEB	593	-
Premium	175,219	-
Net pension liability	(322,328)	-
Total OPEB liability	5,252	-
Customer deposits	22,190	-
Net Cash Provided (Used) by Operating Activities	$ 1,840,375	$ (7,643)
Noncash, Capital and Related Financing Activities:		
Contributions of capital assets	$ 514,791	$ -

See Notes to Financial Statements.

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CITY OF ANGLETON, TEXAS

NOTES TO FINANCIAL STATEMENTS

For the Year Ended September 30, 2022

I. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. Reporting Entity

The City of Angleton, Texas (the "City") was incorporated in 1912. The City has operated under a "Home Rule Charter" which provides for a Mayor-Council-Administrator form of government.

The City Council is the principal legislative body of the City. The City Manager is appointed by the City Council and is responsible to the City Council for the administration of all the affairs of the City. The City Manager is responsible for the appointment and removal of department directors and employees, supervision and control of all City departments, and preparation of the annual budget.

The City provides the following services: general administration, financial administration, public safety (municipal court, police, animal control, fire, and code enforcement), community services (streets, parks and recreation, swimming pool, and sanitation), economic development, water distribution, and wastewater collection/treatment.

The City is an independent political subdivision of the State of Texas (the "State") governed by an elected council and a mayor and is considered a primary government. As required by generally accepted accounting principles, these basic financial statements have been prepared based on considerations regarding the potential for inclusion of other entities, organizations, or functions as part of the City's financial reporting entity. The component units listed below, although legally separate, are considered part of the reporting entity. No other entities have been included in the City's reporting entity. Additionally, as the City is considered a primary government for financial reporting purposes, its activities are not considered a part of any other governmental or other type of reporting entity.

Considerations regarding the potential for inclusion of other entities, organizations, or functions in the City's financial reporting entity are based on criteria prescribed by generally accepted accounting principles. These same criteria are evaluated in considering whether the City is a part of any other governmental or other type of reporting entity. The overriding elements associated with prescribed criteria considered in determining that the City's financial reporting entity status is that of a primary government are that it has a separately elected governing body, it is legally separate, and it is fiscally independent of other state and local governments. Additionally, prescribed criteria under generally accepted accounting principles include considerations pertaining to organizations for which the primary government is financially accountable and considerations pertaining to organizations for which the nature and significance of their relationship with the primary government are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete.

Blended Component Units

Angleton Better Living Corporation

Angleton Better Living Corporation, Inc. (the "Corporation") has been included in the reporting entity as a blended component unit. The Corporation is a governmental entity that promotes economic and community development in the City. The Corporation's Board of Directors is appointed by and serves at the discretion of City Council. The Corporation is primarily funded through a one-half cent sales tax approved by general election in 2001. City Council approval is required for the annual budget and the issuance of any debt. In the event of dissolution, any assets of the Corporation will be transferred to the City. Separate financial statements of the Corporation may be obtained from the Finance Department of the City.

Tax Increment Reinvestment Zone No. One

During fiscal year 2005, the City passed an ordinance creating a Tax Increment Reinvestment Zone No. One (TIRZ #1), in accordance with Section 311.005 of the Texas Tax Code, for the purpose of providing for the design and construction of water, wastewater, and roadway infrastructure improvements, in order to facilitate the development of new commercial properties. The TIRZ #1 includes participation by a developer and another governmental entity, the Angleton Drainage District. Under this arrangement, increases in property taxes will be utilized to pay for certain infrastructure costs. Such taxes are controlled by a board of directors managing the TIRZ #1 and accounted for as a special revenue fund with the City's financial oversight. The developer defaulted under the development agreement. During fiscal year 2022, the TIRZ #1 did not collect property taxes or make payments to the developer. The TIRZ #1 will terminate on December 31, 2035, unless the Angleton Drainage District approves an earlier termination date.

Tax Increment Reinvestment Zone No. Two

During fiscal year 2020, the City passed an ordinance creating Tax Increment Reinvestment Zone No. Two (TIRZ #2), also referred to as the Riverwood Ranch TIRZ, in accordance with Section 311.005 of the Texas Tax Code, for the purpose of promoting the redevelopment of the area. Increases in property taxes will be utilized for certain infrastructure costs. Such taxes are controlled by a board of directors who is responsible for the management and oversight of the TIRZ #2 in accordance with the project and financing plan. Tax deposits shall not commence until after January 1, 2021 and termination of the operation of TIRZ #2 shall occur on December 31, 2051, or at an earlier time designated by subsequent ordinance or when all project costs, other obligations, debt, and interest have been paid in full. There was no financial activity related to TIRZ #2 for fiscal year 2022.

B. Government-Wide Financial Statements

The government-wide financial statements (i.e., the Statement of Net Position and the Statement of Activities) report information on all of the activities of the primary government and its component units. *Governmental activities*, which normally are supported by taxes and intergovernmental revenues, are reported separately from *business-type activities*, which rely to a significant extent on fees and charges to external customers for support.

C. Basis of Presentation – Government-Wide Financial Statements

While separate government-wide and fund financial statements are presented, they are interrelated. The governmental activities column incorporates data from governmental funds and an internal service fund, while business-type activities incorporate data from the City's enterprise funds. Separate financial statements are provided for governmental funds and proprietary funds.

As a general rule, the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments in lieu of taxes where the amounts are reasonably equivalent in value to the interfund services provided and other charges between the City's water and wastewater functions and various other functions of the City. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

D. Basis of Presentation – Fund Financial Statements

The fund financial statements provide information about the City's funds, including its blended component units. Separate statements for each fund category – governmental and proprietary – are

presented. The emphasis of fund financial statements is on major governmental and enterprise funds, each displayed in a separate column. All remaining governmental and enterprise funds are aggregated and reported as nonmajor funds.

The City reports the following governmental funds:

The *general fund* is used to account for all financial transactions not properly includable in other funds. The principal sources of revenues include local property taxes, sales taxes, franchise fees, licenses and permits, fines and forfeitures, and charges for services. Expenditures include general administration, financial administration, public safety, community services, and economic development. The general fund is always considered a major fund for reporting purposes.

The *debt service fund* is used to account for the payment of interest and principal on all general obligation bonds and other long-term debt of the City. The primary source of revenue for debt service is local property taxes. The City has elected to present the debt service fund as a major fund for reporting purposes.

The *special revenue funds* are used to account for proceeds of specific revenue sources that are legally restricted to expenditures for specified purposes. The special revenue funds are considered nonmajor funds for reporting purposes except for the grants fund for pandemic assistant activity, which is considered a major fund for reporting purposes, and the Angleton Better Living fund for activity related to restricted sources for community capital projects, which the City has elected to present as a major fund for reporting purposes.

The *capital projects funds* are used to account for the expenditures of resources accumulated from sales tax revenues and the sale of bonds and related interest earnings for capital improvement projects. The capital projects funds are considered nonmajor funds for reporting purposes, except for the C.O. series 2018 fund and C.O. series 2022 fund, which are considered major funds for reporting purposes.

The City reports the following enterprise fund:

*The enterprise fund*s are used to account for the operations that provide water and wastewater collection and wastewater treatment operations. The services are financed and operated in a manner similar to private business enterprises where the intent of the governing body is that the costs (expenses including depreciation) of providing goods or services to the general public on a continuing basis will be financed or recovered primarily through user charges. The utility fund is considered a major fund for reporting purposes.

Additionally, the City reports the following fund type:

Internal service funds account for services provided to other departments of the City, or to other governments, on a cost reimbursement basis. The internal service fund is used to account for unemployment costs.

During the course of operations, the City has activity between funds for various purposes. Any residual balances outstanding at year end are reported as due from/to other funds and advances to/from other funds. While these balances are reported in fund financial statements, certain eliminations are made in the preparation of the government-wide financial statements. Balances between the funds included in governmental activities (i.e., the governmental and internal service funds) are eliminated so that only the net amount is included as internal balances in the governmental activities column. Similarly, balances between the funds included in business-type activities (i.e., the enterprise fund) are

eliminated so that only the net amount is included as internal balances in the business-type activities column.

Further, certain activity occurs during the year involving transfers of resources between funds. In fund financial statements, these amounts are reported at gross amounts as transfers in/out. While reported in fund financial statements, certain eliminations are made in the preparation of the government-wide financial statements. Transfers between the funds included in governmental activities are eliminated so that only the net amount is included as transfers in the governmental activities column. Similarly, balances between the funds included in business-type activities are eliminated so that only the net amount is included as internal balances in the business-type activities column.

E. Measurement Focus and Basis of Accounting

The accounting and financial reporting treatment is determined by the applicable measurement focus and basis of accounting. Measurement focus indicates the type of resources being measured such as *current financial resources* or *economic resources.* The basis of accounting indicates the timing of transactions or events for recognition in the financial statements.

The government-wide and proprietary fund financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. Property taxes are recognized as revenues in the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

The governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the City considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Issuance of long-term debt and acquisitions under capital leases are reported as other financing sources.

Property taxes, sales taxes, franchise fees, licenses, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. Entitlements are recorded as revenues when all eligibility requirements are met, including any time requirements, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year end). Expenditure-driven grants are recognized as revenue when the qualifying expenditures have been incurred and all other eligibility requirements have been met, and the amount is received during the period or within the availability period for this revenue source (within 60 days of year end). All other revenue items are considered to be measurable and available only when cash is received by the City.

F. Assets, Liabilities, Deferred Outflows/Inflows of Resources, and Net Position/Fund Balance

1. Cash and Cash Equivalents

The City's cash and cash equivalents are considered to be cash on hand, demand deposits, balances in statewide investment pools, and short-term investments with original maturities of three months or

less from the date of acquisition. For the purpose of the statement of cash flows, the proprietary fund types consider temporary investments with maturity of three months or less when purchased to be cash equivalents.

The City maintains a pooled cash account. Each fund whose monies are deposited in the pooled cash account has equity therein, and interest earned on the investment of these monies is allocated based upon relative equity at the previous month end. Amounts on deposit in interest-bearing accounts and other investments are displayed on the combined balance sheet as "cash and cash equivalents". For cash management purposes, the City has a sweep arrangement with the bank to transfer cash balances to a money market mutual fund account each day. Cash in excess of current requirements is invested in various interest-bearing securities and disclosed as part of the City's investments.

2. Investments

Investments, except for certain investment pools, commercial paper, money market funds, and investment contracts, are reported at fair value. The investment pools operate in accordance with appropriate state laws and regulations and are reported at amortized cost. Money market funds, which are short-term highly liquid debt instruments that may include U.S. Treasury and agency obligations and commercial paper that have a remaining maturity of one year or less upon acquisition, are reported at amortized cost. Investments in nonparticipating interest earning contracts, such as certificates of deposit, are reported at cost.

The City has adopted a written investment policy regarding the investment of its funds as defined in the Public Funds Investment Act, Chapter 2256, Texas Government Code. In summary, the City is authorized to invest in the following:

Direct obligations of the U.S. Government or U.S. Government agencies
Fully collateralized certificates of deposit
Money market mutual funds that meet certain criteria
Bankers' acceptances
Statewide investment pools

3. Inventories and Prepaid Items

The costs of governmental fund type inventories are recorded as expenditures when the related liability is incurred (i.e., the purchase method). Certain payments to vendors reflect costs applicable to future accounting periods (prepaid expenditures) are recognized as expenditures when utilized.

4. Restricted Assets

Restricted assets are either limited for use for specified purposes or are otherwise not available for payment of current operating expenses. The City's restricted assets consist of cash and investments resulting from the issuance of debt restricted to the purchase and/or construction of governmental and business-type activity capital assets.

5. Capital Assets

Capital assets, which include property, plant, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the applicable governmental or business-type activities columns in the government-wide financial statements. In accordance with GASB Statement No. 34, infrastructure has been capitalized retroactively. Capital assets are defined by the City as assets with an initial, individual cost of more than $5,000 and an estimated useful life in excess of five years. Such

assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets are recorded at acquisition value at the date of donation.

Major outlays for capital assets and improvements are capitalized as projects are constructed. The costs of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Property, plant, and equipment of the primary government are depreciated using the straight-line method over the following estimated useful years:

Asset Description	Estimated Useful Life
Buildings and improvements	10 to 40 years
Vehicles, equipment, and furnishings	5 to 15 years
Infrastructure	30 to 50 years
Water and sewer system	30 to 50 years

6. Deferred Outflows/Inflows of Resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of net position that applies to a future period(s) and so will *not* be recognized as an outflow of resources (expense/expenditure) until then. In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net position that applies to a future period(s) and so will *not* be recognized as an inflow of resources (revenue) until that time.

Deferred outflows/inflows of resources are amortized as follows:

- Deferred outflows/inflows from pension/other postemployment benefits (OPEB) activities are amortized over the average of the expected service lives of pension/OPEB plan members, except for the net differences between the projected and actual investment earnings on the pension/OPEB plan assets, which are amortized over a period of five years.
- For employer pension/OPEB plan contributions that were made subsequent to the measurement date through the end of the City's fiscal year, the amount is deferred and recognized as a reduction to the net pension/OPEB liability during the measurement period in which the contributions were made.
- A deferred charge on refunding results from the difference in the carrying value of refunded debt and its reacquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt.

At the fund level, the City has only one type of item, which arises only under a modified accrual basis of accounting, that qualifies for reporting in this category. Accordingly, the item, *unavailable revenue*, is reported only in the governmental funds balance sheet. The governmental funds report unavailable revenues from property taxes. This amount is deferred and recognized as an inflow of resources in the period that the amount becomes available.

7. Compensated Employee Absences

The City records a liability for the amount of paid time off or PTO, that has vested for each employee at year end. Employees may use PTO as needed for sick leave, vacation or other reasons. Upon

separation from the City, employees are eligible to be paid their accumulated PTO as long as they have have provided a two week notice and work the remaining two week.

8. Long-Term Obligations

In the government-wide financial statements and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type Statement of Net Position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the straight-line method. Bonds payable are reported net of applicable bond premiums or discounts.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

The property tax rate is allocated each year between the general and debt service funds. The full amount estimated to be required for debt service on general obligation debt is provided by the tax along with the interest earned in the debt service fund. Although a portion of the general obligation debt was directly related to the purchase of water and sewer infrastructure, the debt service expenditures are included in the governmental fund financial statements as they are expected to be paid from debt service tax revenues instead of water system revenues.

9. Leases

The City is a lessee for noncancellable leases of vehicles, copiers, and a building. The City recognizes a lease liability and an intangible, right-to-use asset (the “lease asset”) in the government-wide financial statements.

At the commencement of a lease, the City initially measures the lease liability at the present value of payments expected to be made during the lease term. Subsequently, the lease liability is reduced by the principal portion of lease payments made. The lease asset is initially measured as the initial amount of the lease liability, adjusted for lease payments made at or before the lease commencement date, plus certain initial direct costs. Subsequently, the lease asset is amortized on a straight-line basis either over the term of the lease or the useful life of the asset (if the City is reasonably certain a purchase option will be recognized).

Key estimates and judgements related to leases include how the City determines (1) the discount rate it uses to discount the expected lease payments to present value, (2) lease term, and (3) lease payments.

- The City uses the interest rate charged by the lessor as the discount rate. When the interest rate charged by the lessor is not provided, the City generally uses its estimated incremental borrowing rate as the discount rate for leases.
- The lease term includes the noncancelable period of the lease. Lease payments included in the measurement of the lease liability are composed of fixed payments and the purchase option price that the City is reasonably certain to exercise.

The City monitors changes in circumstances that would require a measurement of its lease and will remeasure the lease asset and liability if certain changes occur that are expected to significantly affect the amount of the lease liability.

Lease assets are reported with other capital assets and lease liabilities are reported with long-term debt on the Statement of Net Position.

10. Net Position Flow Assumption

Sometimes the City will fund outlays for a particular purpose from both restricted (e.g., restricted bond or grant proceeds) and unrestricted resources. In order to calculate the amounts to report as restricted net position and unrestricted net position in the government-wide and proprietary fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the City's policy to consider restricted net position to have been depleted before unrestricted net position is applied.

11. Fund Balance Flow Assumptions

Sometimes the City will fund outlays for a particular purpose from both restricted and unrestricted resources (the total of committed, assigned, and unassigned fund balance). In order to calculate the amounts to report as restricted, committed, assigned, and unassigned fund balance in the governmental fund financial statements, a flow assumption must be made about the order in which the resources are considered to be applied. It is the City's policy to consider restricted fund balance to have been depleted before using any of the components of unrestricted fund balance. Further, when the components of unrestricted fund balance can be used for the same purpose, committed fund balance is depleted first, followed by assigned fund balance. Unassigned fund balance is applied last.

12. Fund Balance Policies

Fund balances of governmental funds are reported in various categories based on the nature of any limitations requiring the use of resources for specific purposes. The City itself can establish limitations on the use of resources through either a commitment (committed fund balance) or an assignment (assigned fund balance).

Amounts that cannot be spent because they are either not in spendable form or legally or contractually required to be maintained intact are classified as nonspendable fund balance. Amounts that are externally imposed by creditors, grantors, contributors, or laws or regulations of other governments or imposed by law through constitutional provisions are classified as restricted.

The committed fund balance classification includes amounts that can be used only for the specific purposes determined by a formal action of the City's highest level of decision-making authority. The City Council is the highest level of decision-making authority for the City that can, by adoption of an ordinance prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the ordinance remains in place until a similar action is taken (the adoption of another ordinance) to remove or revise the limitation.

Amounts in the assigned fund balance classification are intended to be used by the City for specific purposes but do not meet the criteria to be classified as committed. The City Council may also assign fund balance as it does when appropriating fund balance to cover a gap between estimated revenue and appropriations in the subsequent year's appropriated budget. Unlike commitments, assignments generally only exist temporarily. In other words, an additional action does not normally have to be taken for the removal of an assignment. Conversely, as discussed above, an additional action is essential to either remove or revise a commitment.

13. Estimates

The preparation of financial statements, in conformity with generally accepted accounting principles, requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenditures/expenses during the reporting period. Actual results could differ from those estimates.

14. Pensions

For the purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Texas Municipal Retirement System (TMRS) and the Texas Emergency Services Retirement System (TESRS) and additions to/deductions from TMRS's and TESRS's fiduciary net position have been determined on the same basis as they are reported by TMRS and TESRS. For this purpose, plan contributions are recognized in the period that compensation is reported for the employee, which is when contributions are legally due. Benefit payments and refunds are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

15. Other Postemployment Benefits

The City participates in a single-employer, unfunded, defined benefit group-term life insurance plan operated by TMRS known as the Supplemental Death Benefits Fund (SDBF). The City elected, by ordinance, to provide group-term life insurance coverage to both current and retired employees. The funding policy for the SDBF program is to assure that adequate resources are available to meet all death benefit payments for the upcoming year. Benefit payments are treated as being equal to the employer's yearly contributions for retirees. Benefit payments and refunds are due and payable in accordance with the benefit terms. Information about the City's total OPEB liability, deferred outflows of resources, deferred inflows of resources, and OPEB expense is provided by TMRS from reports prepared by their consulting actuary.

G. Revenues and Expenditures/Expenses

1. Program Revenues

Amounts reported as *program revenues* include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions (including special assessments) that are restricted to meeting the operational or capital requirements of a particular function or segment. All taxes, including those dedicated for specific purposes, and other internally dedicated resources are reported as general revenues rather than as program revenues.

2. Property Taxes

Property taxes are levied during October of each year, are due upon receipt of the City's tax bill, and become delinquent if unpaid on February 1, with late fees assessed monthly. After June 30, any taxes still uncollected are subject to lawsuit for collection and additional charges to offset legal costs.

3. Proprietary Funds Operating and Nonoperating Revenues and Expenses

Proprietary funds distinguish operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from providing services and producing and delivering goods

in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the enterprise fund and internal service fund are charges to customers for sales and services. The enterprise fund also recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the system. Operating expenses for the enterprise fund and internal service fund include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

II. STEWARDSHIP, COMPLIANCE, AND ACCOUNTABILITY

Annual budgets are adopted for governmental funds on a basis consistent with generally accepted accounting principles except for the capital projects funds, which adopt project length budgets. The original budget is adopted by the City Council prior to the beginning of the year. The legal level of control as defined by the charter is the object and purpose stated in the approved budget. Appropriations lapse at the end of the year, excluding capital project budgets. Supplemental budget appropriations were made for the year ended September 30, 2022.

A. Expenditures in Excess of Appropriations

As of September 30, 2022, expenditures exceeded appropriations at the legal level of control as follows:

General Fund		
Buildings	$	32,100
Finance and Accounting	$	9,200
Code Enforcement	$	31,783
Parks and Recreation	$	66,769
Public Works	$	459,050
Capital Outlay	$	229,697
Debt Service - Principal	$	246,319
Debt Service - Interest and Fiscal Agent Fees	$	20,837
Angleton Better Living Fund		
Transfers Out	$	163,159
Hotel/Motel		
Economic Development	$	52,038
Child Safety		
Transfers Out	$	975
Municipal Court Building Security		
Transfers Out	$	2,500
Fire Department ESD		
Transfers Out	$	136,437

III. DETAILED NOTES ON ALL FUNDS

A. Deposits and Investments

As of September 30, 2022, the City had the following investments:

Investment Type	Fair Value	Weighted Average Maturity (Years)
Investment pools		
TexPool	$ 3,269,098	0.07
TexStar	14,983,532	0.04
Lone Star	6,490,117	0.04
Certificates of deposit	1,053,567	0.67
Total Fair Value	$ 25,796,314	
Portfolio weighted average maturity		0.07

Custodial credit risk – deposits. In the case of deposits, this is the risk that in the event of a bank failure, the City's deposits may not be returned to it. The City's investment policy requires funds on deposit at the depository bank to be collateralized by securities. As of year end, fair market values of pledged securities and FDIC coverage exceeded bank balances.

Credit risk. The City's investment policy limits investments in public fund investment pools rated as to investment quality not less than 'AAA' or 'AAA-m', or at an equivalent rating by at least one nationally recognized rating service. As of September 30, 2022, the City's investments in investment pools were rated 'AAAm' by Standard & Poor's.

TexPool

TexPool was established as a trust company with the Treasurer of the State as trustee, segregated from all other trustees, investments, and activities of the trust company. The State Comptroller of Public Accounts exercises oversight responsibility over TexPool. Oversight includes the ability to significantly influence operations, designation of management, and accountability for fiscal matters. Additionally, the State Comptroller has established an advisory board composed of both participants in TexPool and other persons who do not have a business relationship with TexPool. The advisory board members review the investment policy and management fee structure. Finally, Standard & Poor's rates TexPool 'AAAm'. As a requirement to maintain the rating, weekly portfolio information must be submitted to Standard & Poor's, as well as to the office of the Comptroller of Public Accounts for review.

TexPool is an external investment pool measured at amortized cost. In order to meet the criteria to be recorded at amortized cost, TexPool pool must transact at a stable net asset value per share and maintain certain maturity, quality, liquidity, and diversification requirements within TexPool. TexPool transacts at a net asset value of $1.00 per share, has weighted average maturities of 60 days or less, and weighted average lives of 120 days or less. Investments held are highly rated by nationally recognized statistical rating organizations, have no more than five percent of portfolio with one issuer (excluding U.S. government securities), and can meet reasonably foreseeable redemptions. TexPool has a redemption notice period of one day and may redeem daily. TexPool may only impose restrictions on redemptions in the event of a general suspension of trading on major securities markets, general banking moratorium, or national state of emergency that affects TexPool's liquidity.

TexSTAR

The Texas Short-Term Asset Reserve Fund (TexSTAR) is a local government investment pool organized under the authority of the Interlocal Cooperation Act, Chapter 791, Texas Government Code, and the Public Funds Investment Act, Chapter 2256, Texas Government Code. TexSTAR was created in April 2002 by contract among its participating governmental units and is governed by a board of directors. JPMorgan Fleming Asset Management (USA), Inc. and First Southwest Asset Management, Inc. act as co-administrators, providing investment management services, participant services, and marketing. JPMorgan Chase Bank and/or its subsidiary, J.P. Morgan Investor Services, Inc., provide custodial, transfer agency, fund accounting, and depository services.

TexSTAR is measured at amortized cost. TexSTAR's strategy is to seek preservation of principal, liquidity, and current income through investment in a diversified portfolio of short-term marketable securities. The City has no unfunded commitments related to TexSTAR. TexSTAR has a redemption notice period of one day and may redeem daily. TexSTAR may only impose restrictions on redemptions in the event of a general suspension of trading on major securities markets, general banking moratorium, or national or state emergency that affects TexSTAR's liquidity.

Lone Star

Lone Star is a public funds investment pool organized under the authority of the Interlocal Cooperation Act of the Texas Government Code, Chapter 791, and the Public Funds Investment Act, Texas Government Code, Chapter 2256. Lone Star is sponsored by the Texas Association of School Boards. The Lone Star Board (the "Board") acts as trustee and is comprised of 11 members representing school districts that have adopted the investment agreement, including school board members, school administrators, and school business officials. The Board has entered into an agreement with First Public, LLC to act as administrator for Lone Star. Responsibilities of First Public include daily servicing of participants' accounts, negotiating contracts with investment advisors and other service providers, and performing related administrative services. Finally, Standard & Poor's rates Lone Star "AAAm". As a requirement to maintain the rating, weekly portfolio information must be submitted to Standard & Poor's, as well as to the office of the Comptroller of Public Accounts for review.

B. Receivables

The following comprise receivable balances as of September 30, 2022:

	General	Debt Service	Angleton Better Living	Nonmajor Governmental	Utility	Total
Property taxes	$ 174,117	$ 25,625	$ -	$ -	$ -	$ 199,742
Other taxes	874,181	-	343,619	-	-	1,217,800
Intergovernmental	-	-	-	100,604	-	100,604
Accounts	449,842	-	-	2,360	1,767,924	2,220,126
Less allowance	(203,787)	(13,377)	-	-	(510,346)	(727,510)
Totals	$ 1,294,353	$ 12,248	$ 343,619	$ 102,964	$ 1,257,578	$ 3,010,762

C. Capital Assets

A summary of changes in capital assets for governmental activities for the fiscal year ended September 30, 2022 is as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Governmental Activities:				
Capital assets not being depreciated:				
Land	$ 1,495,840	$ 202,491	$ -	$ 1,698,331
Construction in progress	865,880	4,542,881	-	5,408,761
Total capital assets not being depreciated	2,361,720	4,745,372	-	7,107,092
Other capital assets:				
Buildings and improvements	12,395,860	281,492	-	12,677,352
Equipment	13,613,915	237,929	-	13,851,844
Infrastructure	27,824,039	606,494	-	28,430,533
Right-to-use assets	471,830	229,697	-	701,527
Total other capital assets	54,305,644	1,355,612	-	55,661,256
Less accumulated depreciation for:				
Buildings and improvements	(5,059,787)	(280,004)	-	(5,339,791)
Equipment	(9,744,541)	(638,393)	-	(10,382,934)
Infrastructure	(16,812,259)	(476,565)	-	(17,288,824)
Right-to-use assets	-	(175,584)	-	(175,584)
Total accumulated depreciation	(31,616,587)	(1,570,546)	-	(33,187,133)
Other capital assets, net	22,689,057	(214,934)	-	22,474,123
Governmental Activities Capital Assets, Net	$ 25,050,777	$ 4,530,438	$ -	29,581,215

Less associated debt	(23,758,578)
Plus unspent bond proceeds	13,740,298
Plus deferred charge on refunding	19,405
Net Investment in Capital Assets	$ 19,582,340

Depreciation was charged to governmental functions as follows:

General administration	$ 455,588
Public safety	638,393
Community services	476,565
Total Governmental Activities Depreciation Expense	$ 1,570,546

CITY OF ANGLETON, TEXAS

NOTES TO FINANCIAL STATEMENTS (Continued)

For the Year Ended September 30, 2022

The following is a summary of changes in capital assets for business-type activities for the fiscal year ended September 30, 2022:

	Beginning Balance*	Increases	Decreases	Ending Balance
Business-Type Activities:				
Capital assets not being depreciated:				
Construction in progress	$ 5,836,089	$ 1,863,830	$ (3,188,667)	$ 4,511,252
Total capital assets not being depreciated	5,836,089	1,863,830	(3,188,667)	4,511,252
Other capital assets:				
Buildings and other improvements	319,665	-	-	319,665
Equipment	3,144,430	-	-	3,144,430
Infrastructure	47,430,034	3,434,970	-	50,865,004
Total other capital assets	50,894,129	3,434,970	-	54,329,099
Less accumulated depreciation for:				
Buildings and other improvements	(272,510)	(4,025)	-	(276,535)
Equipment	(1,943,591)	(260,251)	-	(2,203,842)
Infrastructure	(30,111,200)	(957,599)	-	(31,068,799)
Total accumulated depreciation	(32,327,301)	(1,221,875)	-	(33,549,176)
Other capital assets, net	18,566,828	2,213,095	-	20,779,923
Business-Type Activities Capital Assets, Net	$ 24,402,917	$ 4,076,925	$ (3,188,667)	25,291,175

*Amounts reclassified from prior year.

Less associated debt	(16,335,756)
Plus unspent bond proceeds	2,539,181
Plus deferred charge on refunding	29,159
Net Investment in Capital Assets	$ 11,523,759

Depreciation was charged to business-type functions as follows:

Water	$ 313,655
Sewer	908,220
Total Business-Type Activities Depreciation Expense	$ 1,221,875

CITY OF ANGLETON, TEXAS

NOTES TO FINANCIAL STATEMENTS (Continued)

For the Year Ended September 30, 2022

D. Long-Term Debt

The City issues general obligation bonds and certificates of obligation for the acquisition of assets and construction of major capital facilities. These debt issues have been used for both governmental and business-type activities. Each debt issue is serviced by a specific City fund.

General obligation debt pledges the full faith and credit of the City. The bonds and certificates of obligation are further supported by specific annual tax levies, which are legally restricted to servicing these debt issues. The collection and remittance of such levies are controlled and reported in the debt service fund. Some issues are also secured by a pledge of the City's utility fund net revenues and, in previous years, the utility fund was making annual transfers into the debt service fund to pay for a portion of the debt service. Beginning in fiscal year 2003, all long-term debt originating for the purpose of constructing proprietary fund assets is carried within and directly serviced by the utility fund. The following is a summary of changes in the City's total governmental activities long-term liabilities for the fiscal year ended September 30, 2022. In general, the City uses the debt service fund and general fund to liquidate governmental activities long-term liabilities.

	Beginning Balance	Additions	Reductions	Ending Balance		Amounts Due Within One Year
Governmental Activities						
General obligation refunding bonds	$ 1,140,000	$ -	$ 170,000	$ 970,000	*	$ 185,000
Direct borrowings/private placement:						
Refunding bonds	339,952	-	339,952	-		-
Certificates of obligation	12,092,580	9,995,000	667,480	21,420,100	*	750,246
Notes payable	204,051	-	204,051	-		-
Leases payable	471,830	229,697	163,347	538,180	*	193,066
Plus deferred amounts:						
For premiums	596,511	274,876	41,089	830,298	*	-
	14,844,924	10,499,573	1,585,919	23,758,578		1,128,312
Other liabilities:						
Net pension liability - TMRS	2,066,475	-	1,708,773	357,702		-
Net pension liability - TESRS	167,148	-	93,649	73,499		-
Total OPEB liability	400,162	27,843	-	428,005		-
Compensated absences	505,675	544,890	623,753	426,812		384,131
	3,139,460	572,733	2,426,175	1,286,018		384,131
Total Governmental Activities	$ 17,984,384	$ 11,072,306	$ 4,012,094	$ 25,044,596		$ 1,512,443

Long-Term Debt Due In More Than One Year	$ 23,532,153
*** Debt Associated With Capital Assets**	$ 23,758,578

Long-term liabilities applicable to the City's governmental activities are not due and payable in the current period and, accordingly, are not reported as fund liabilities in the governmental funds. The governmental activities compensated absences are generally liquidated by the general fund. Interest on long-term debt is not accrued in governmental funds, but rather is recognized as an expenditure when due. The following is a summary of changes in the City's total business-type activities long-term liabilities for the fiscal year ended September 30, 2022.

	Beginning Balance	Additions	Reductions	Ending Balance		Amounts Due Within One Year
Business-Type Activities						
General obligation refunding bonds	$ 1,425,000	$ -	$ 325,000	$ 1,100,000	*	$ 390,000
Direct borrowings/private placement:						
Refunding bonds	455,048	-	455,048	-		-
Certificates of obligation	1,920,000	-	225,000	1,695,000	*	200,000
Certificates of obligation	11,137,420	2,275,000	552,520	12,859,900	*	384,754
Plus deferred amounts:						
For premiums	505,637	224,149	48,930	680,856	*	-
	15,443,105	2,499,149	1,606,498	16,335,756		974,754
Other liabilities:						
Net pension liability	389,802	-	322,328	67,474		-
Total OPEB liability	72,705	5,252	-	77,957		-
Compensated absences	120,690	140,526	155,654	105,562		95,006
	583,197	145,778	477,982	250,993		95,006
Total Business-Type Activities	$ 16,026,302	$ 2,644,927	$ 2,084,480	$ 16,586,749		$ 1,069,760

Long-Term Debt Due In More Than One Year	$ 15,516,989
*** Debt Associated With Capital Assets**	$ 16,335,756

In October 2021, the City issued Combination Tax and Revenue Certificates of Obligation, Series 2021 (the "Certificates") in the amount of $2,275,000. Proceeds from the sale of the Certificates will be used for all or any part of the costs associated with the construction, acquisition, renovation, and equipment of improvements to (i) the City's utility and water distribution system, including the Chenango Water Plant site, and (ii) the cost of professional services incurred in connection therewith. The Certificates will mature on August 15, 2041. The Certificates bear an interest rate ranging between 3% and 4%.

In May 2022, the City also issued Combination Tax and Revenue Certificates of Obligation, Series 2022 (the "Certificates") in the amount of $9,995,000. Proceeds from the sale of the Certificates will be used for the purposes of evidencing the indebtedness of the City for all or any part of the costs associated with the (i) acquisition, construction, and equipment of a facility for parks and recreation, public works, and information technology; (ii) acquisition, construction, and equipment of firefighting facilities; (iii) acquisition, of waterworks and sewer system equipment; (iv) acquisition, construction, and equipment of City streets and related infrastructure; and (v) costs of professional services related thereto. The Certificates will mature on August 15, 2052. The Certificates bear an interest rate ranging between 4% and 6%.

CITY OF ANGLETON, TEXAS

NOTES TO FINANCIAL STATEMENTS (Continued)

For the Year Ended September 30, 2022

Long-term debt at year end was comprised of the following debt issues:

Description	Interest Rates	Balance
Governmental Activities		
General Obligation Refunding Bonds		
Series 2016	2.00-4.00%	$ 970,000
		970,000
Certificates of Obligation		
Series 2018	3.00-4.00%	7,690,000
Series 2019	2.00-4.00%	1,090,100
Series 2020	2.00-3.00%	2,645,000
Series 2022	4.00-6.00%	9,995,000
		21,420,100
Total Governmental Activities Long-Term Debt		$ 22,390,100
Business-Type Activities		
General Obligation Refunding Bonds		
Series 2016	2.00-4.00%	$ 1,100,000
		1,100,000
Certificates of Obligation		
Water and sewer, series 2013	2.28%	1,695,000
Water and sewer, series 2015	3.00-4.00%	3,195,000
Series 2019	2.00-4.00%	7,489,900
Series 2021	3.00-4.00%	2,175,000
		14,554,900
Total Business-Type Activities Long-Term Debt		$ 15,654,900

The annual requirements to amortize debt issues outstanding at year end were as follows:

	Governmental Activities			
Fiscal Year Ending	General Obligation Refunding Bonds		Certificates of Obligation	
Sep 30	Principal	Interest	Principal	Interest
2023	$ 185,000	$ 31,675	$ 750,246	$ 849,844
2024	250,000	25,150	880,103	744,787
2025	220,000	17,000	855,185	711,524
2026	220,000	8,200	852,398	681,293
2027	45,000	2,900	896,067	649,437
2028-2032	50,000	1,000	4,643,142	2,773,526
2033-2037	-	-	4,890,580	2,023,289
2038-2042	-	-	2,802,379	1,241,903
2043-2047	-	-	2,180,000	827,181
2048-2052	-	-	2,670,000	339,694
Total	$ 970,000	$ 85,925	$ 21,420,100	$ 10,842,478

	Business-Type Activities			
Fiscal Year Ending	General Obligation Refunding Bonds		Certificates of Obligation	
Sep 30	Principal	Interest	Principal	Interest
2023	$ 390,000	$ 31,800	$ 384,754	$ 366,040
2024	245,000	22,275	604,897	349,477
2025	235,000	13,900	649,815	329,415
2026	230,000	4,600	537,602	311,401
2027	-	-	778,933	289,254
2028-2032	-	-	4,466,858	1,023,743
2033-2037	-	-	3,854,420	443,432
2038-2041	-	-	1,582,621	67,758
Total	$ 1,100,000	$ 72,575	$ 12,859,900	$ 3,180,520

	Business-Type Activities - Direct Borrowings/Private Placement	
Fiscal Year Ending	Certificates of Obligation	
Sep 30	Principal	Interest
2023	$ 200,000	$ 36,366
2024	315,000	30,495
2025	310,000	23,370
2026	305,000	16,359
2027	285,000	9,633
2028-2032	280,000	3,192
Total	$ 1,695,000	$ 119,415

Federal Arbitrage

The Tax Reform Act of 1986 instituted certain arbitrage restrictions consisting of complex regulations with respect to issuance of tax-exempt bonds after August 31, 1986. Arbitrage regulations deal with the investment of tax-exempt bond proceeds at an interest yield greater than the interest yield paid to bondholders. Generally, all interest paid to bondholders can be retroactively rendered taxable if applicable rebates are not reported and paid to the Internal Revenue Service (IRS) at least every five years for applicable bond issues. Accordingly, there is the risk that if such calculations are not performed, or are not performed correctly, it could result in a substantial liability to the City. The City engages an arbitrage consultant to perform the calculations in accordance with the rules and regulations of the IRS.

E. Lease Liability

The City was a lessee for the acquisition and use of vehicles, copiers, and a building. As of September 30, 2022, the value of the lease liability was $538,180. The City made principal and interest payments on the leases in fiscal year 2022 for $186,298. The City will continue to make principal and interest payments on leases through the fiscal year 2027. The estimated incremental borrowing rate is 4%. The leases are amortized based on the term of the lease agreements which ranges from 36 months to 60 months and had remaining terms ranging from 21 to 60 months as of the beginning of the fiscal year. The value of the right-to-use assets for fiscal year 2022 was $701,527 and had accumulated amortization of $175,584.

The future principal and interest lease payments as of September 30, 2022 were as follows:

Fiscal Year Ending Sept. 30	Principal	Interest	Total
2023	$ 193,066	$ 18,026	$ 211,092
2024	155,336	10,830	166,166
2025	130,770	5,053	135,823
2026	57,424	900	58,324
2027	1,584	24	1,608
	$ 538,180	$ 34,833	$ 573,013

F. Interfund Transactions

Transfers between the primary government funds during the year were as follows:

Transfer In	Transfer Out	Amounts
General	Nonmajor	$ 241,135
General	Utility	862,278
General	Angleton Better Living	338,299
Debt service	Angleton Better Living	720,230
Nonmajor	General	18,997
Nonmajor	Utility	79,351
Nonmajor	Angleton Better Living	820,505
		$ 3,080,795

Transfers to the general fund were subsidies for administrative expenditures and reimbursements for capital lease payments. Other amounts transferred to nonmajor governmental funds related to amounts

collected for various governmental expenditures. Transfers made to the debt service fund were to satisfy debt allocated to each of the corresponding funds.

The composition of interfund balances as of year end is as follows:

Due To	Due From	Amount
General	Angleton Better Living	$ 140,556
General	Nonmajor	43,770
		$ 184,326

The amounts recorded as due to/from are considered to be a temporary loan and will be repaid during the following year.

G. Fund Equity

Funds restricted by enabling legislation are $372,534 related to hotel/motel tax, child safety, and municipal court security and technology.

H. Restricted Assets

The balances of the restricted cash accounts in the general fund and enterprise fund recognized by the City were as follows:

General Fund		
Restricted for capital projects	$	69,509
Utility Fund		
Restricted for capital projects		3,745,873
Deposits payable		361,665
Total	$	4,177,047

I. Restatement

Beginning net position for the utility fund, business-type activities, and governmental activities were restated for a change in allocation of the net pension liability. Beginning assets and long-term liabilities for governmental activities were restated for the recognition of a lease liability and right-to-use assets related to implementation of GASB 87 which has no impact on net position.

	Governmental Activities	Utility Fund	Business-Type Activities
Prior year ending net position as reported	$ 25,473,993	$ 13,248,838	$ 13,248,838
Change in allocation of net pension liability	(452,492)	452,492	452,492
GASB 87 adjustment for righ-to-use assets	471,830	-	-
GASB 87 adjustment for lease liability	(471,830)	-	-
Restated beginning net position	$ 25,021,501	$ 13,701,330	$ 13,701,330

IV. OTHER INFORMATION

A. Risk Management

The City is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; and natural disasters for which the City participates along with 2,617 other entities in the Texas Municipal League's Intergovernmental Risk Pools (the "Pool"). The Pool

purchases commercial insurance at group rates for participants in the Pool. The City has no additional risk or responsibility to the Pool, outside of the payment of insurance premiums. The City has not significantly reduced insurance coverage or had settlements which exceeded coverage amounts for the past three years.

B. Contingent Liabilities

Amounts received or receivable from granting agencies are subject to audit and adjustment by grantor agencies, principally the federal government. Any disallowed claims, including amounts already collected, may constitute a liability of the applicable funds. The amounts of expenditures which may be disallowed by the grantor cannot be determined at this time although the City expects such amounts, if any, to be immaterial.

Liabilities are reported when it is probable that a loss has occurred and the amount of the loss can be reasonably estimated. Liabilities include an amount for claims that have been incurred but not reported. Claim liabilities are calculated considering the effects of inflation, recent claim settlement trends including frequency and amount of payouts, and other economic and social factors. No claim liabilities are reported at year end.

C. Pension Plans

1. Texas Municipal Retirement System

Plan Description

The City participates as one of 901 plans in the defined benefit cash-balance plan administered by TMRS. TMRS is a statewide public retirement plan created by the State and administered in accordance with the Texas Government Code, Title 8, Subtitle G (the "TMRS Act") as an agent multiple-employer retirement system for municipal employees of Texas participating cities. The TMRS Act places the general administration and management of TMRS with a six-member, Governor-appointed Board of Trustees (the "Board"); however, TMRS does not receive any funding from the State. TMRS issues a publicly available annual comprehensive financial report that can be obtained at www.tmrs.com.

All eligible employees of the City are required to participate in TMRS.

Benefits Provided

TMRS provides retirement, disability, and death benefits. Benefit provisions are adopted by the governing body of the City, within the options available in the state statutes governing TMRS.

At retirement, the member's benefit is calculated based on the sum of the member's contributions, with interest, and the City-financed monetary credits, with interest, and their age at retirement and other actuarial factors. The retiring member may select one of seven monthly payment options. Members may also choose to receive a portion of their benefit as a lump sum distribution in an amount equal to 12, 24, or 36 monthly payments, which cannot exceed 75% of the member contributions and interest.

The plan provisions are adopted by the governing body of the City, within the options available in the state statutes governing TMRS. Plan provisions for the City were as follows:

	2022	2021
Employee deposit rate	6.00%	6.00%
Matching ratio (City to employee)	2 to 1	2 to 1
Years required for vesting	5	5
Service requirement eligibility (expressed as age/yrs of service)	60/5, 0/20	60/5, 0/20
Updated service credit	100%	100%
Annuity increase (to retirees)	70% of CPI	70% of CPI

Employees Covered by Benefit Terms

At the December 31, 2021 valuation and measurement date, the following employees were covered by the benefit terms:

Inactive employees or beneficiaries currently receiving benefits	82
Inactive employees entitled to, but not yet receiving, benefits	107
Active employees	134
Total	323

Contributions

Member contribution rates in TMRS are either 5%, 6%, or 7% of the member's total compensation, and the City-matching ratios are either 1:1 (1 to 1), 1.5:1 (1½ to 1), or 2:1 (2 to 1), both as adopted by the governing body of the City. Under the state law governing TMRS, the contribution rate for each city is determined annually by the actuary using the Entry Age Normal actuarial cost method. The City's contribution rate is based on the liabilities created from the benefit plan options selected by the City and any changes in benefits or actual experience over time.

Employees for the City were required to contribute 6% of their annual gross earnings during the fiscal year. The contribution rates for the City were 12.05% and 11.66% in calendar years 2021 and 2022, respectively. The City's contributions to TMRS for the fiscal year ended September 30, 2022 were $963,669 and were equal to the required contributions.

Net Pension Liability

The City's Net Pension Liability (NPL) was measured as of December 31, 2021 and the Total Pension Liability (TPL) used to calculate the NPL was determined by an actuarial valuation as of that date.

Actuarial Assumptions

The TPL in the December 31, 2021 actuarial valuation was determined using the following actuarial assumptions:

Inflation	2.50% per year
Overall payroll growth	2.75% per year
Investment rate of return	6.75%, net of pension plan investment expense, including inflation

Salary increases are based on a service-related table. Mortality rates for active members are based on the PUB(10) mortality tables with the Public Safety table used for males and the General Employee table used for females. Mortality rates for healthy retirees and beneficiaries are based on the Gender-

Distinct 2019 Municipal Retirees of Texas mortality tables. The rates for active members, healthy retirees, and beneficiaries are projected on a fully generational basis by Scale UMP to account for future mortality improvements. For disabled annuitants, the same mortality tables for healthy retirees are used with a 4-year set-forward for males and a 3-year set-forward for females. In addition, a 3.5% and 3.0% minimum mortality rate is applied for males and females, respectively, to reflect the impairment for younger members who become disabled. The rates are projected on a fully generational basis by Scale UMP to account for future mortality improvements subject to the floor.

The actuarial assumptions were developed primarily from the actuarial investigation of the experience of TMRS over the four-year period from December 31, 2014 to December 31, 2018. They were adopted in 2019 and first used in the December 31, 2019 actuarial valuation. The post-retirement mortality assumption for the annuity purchase rates is based on the mortality experience investigation study covering 2009 through 2011 and dated December 31, 2013. Plan assets are managed on a total return basis with an emphasis on both capital appreciation, as well as the production of income, in order to satisfy the short-term and long-term funding needs of TMRS.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of real rates of return for each major asset class are summarized in the following table:

Assets Class	Target Allocation	Long-Term Expected Real Rate of Return (Arithmetic)
Global public equity	35.00%	7.55%
Core fixed income	6.00%	2.00%
Non-core fixed income	20.00%	5.68%
Other public and private markets	12.00%	7.22%
Real estate	12.00%	6.85%
Hedge funds	5.00%	5.35%
Private equity	10.00%	10.00%
Total	100.0%	

Discount Rate

The discount rate used to measure the TPL was 6.75%. The projection of cash flows used to determine the discount rate assumed that member and employer contributions will be made at the rates specified in statute. Based on that assumption, TMRS's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL.

Changes in the NPL

	Increase (Decrease)		
	Total Pension Liability (A)	**Plan Fiduciary Net Position (B)**	**Net Pension Liability (A) - (B)**
Changes for the year:			
Service cost	$ 1,123,767	$ -	$ 1,123,767
Interest	1,995,111	-	1,995,111
Change in current period benefits	-	-	-
Difference between expected and actual experience	(143,337)	-	(143,337)
Changes of assumptions	-	-	-
Contributions - employer	-	963,477	(963,477)
Contributions - employee	-	479,819	(479,819)
Net investment income	-	3,579,795	(3,579,795)
Benefit payments, including refunds of employee contributions	(1,838,738)	(1,838,738)	-
Administrative expense	-	(16,563)	16,563
Other changes	-	114	(114)
Net Changes	1,136,803	3,167,904	(2,031,101)
Balance at December 31, 2020	29,914,685	27,458,408	2,456,277
Balance at December 31, 2021	$ 31,051,488	$ 30,626,312	$ 425,176

Sensitivity of the NPL to Changes in the Discount Rate

The following presents the NPL of the City, calculated using the discount rate of 6.75%, as well as what the City's NPL would be if it were calculated using a discount rate that is one percentage point lower (5.75%) or one percentage point higher (7.75%) than the current rate:

	1% Decrease in Discount Rate (5.75%)	**Discount Rate (6.75%)**	**1% Increase in Discount Rate (7.75%)**
City's Net Pension Liability/(Asset)	$ 4,875,387	$ 425,176	$ (3,183,205)

Pension Plan Fiduciary Net Position

Detailed information about TMRS's fiduciary net position is available in the Schedule of Changes in Fiduciary Net Position, by Participating City. That report may be obtained at www.tmrs.com.

Pension Expense and Deferred Outflows/Deferred Inflows of Resources Related to Pensions

For the fiscal year ended September 30, 2022, the City recognized pension expense of $69,262.

At September 30, 2022, the City reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

		Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual economic experience		$ 16,464	$ 157,632
Changes in actuarial assumptions		35,354	-
Net difference between projected and actual investment earnings		-	1,841,301
Contributions subsequent to the measurement date		740,561	-
	Total	$ 792,379	$ 1,998,933

$740,561 reported as deferred outflows of resources related to pensions resulting from contributions subsequent to the measurement date will be recognized as a reduction of the NPL for the fiscal year ending September 30, 2023. Other amounts reported as deferred outflows and inflows of resources related to pensions will be recognized in pension expense as follows:

Fiscal Year Ended September 30	Pension Expense
2023	$ (364,848)
2024	(825,139)
2025	(411,861)
2026	(345,267)
Thereafter	-
Total	$ (1,947,115)

2. Texas Emergency Services Retirement System

Plan Description

The City participates in a cost-sharing multiple employer pension plan that has a special funding situation. The plan is administered by the TESRS and established and administered by the State to provide pension benefits for emergency services personnel who serve without significant monetary remuneration. At August 31, 2021, there were 239 contributing fire and/or emergency services department members participating in TESRS. Eligible participants include volunteer emergency services personnel who are members in good standing of a member department.

On August 31, 2021, the TESRS membership consisted of:

Retirees and Beneficiaries Currently Receiving Benefits	3,843
Terminated Members Entitled to Benefits but Not Yet Receiving Them	1,706
Active Participants (Vested and Nonvested)	3,571

Pension Plan Fiduciary Net Position

Detailed information about TESRS's fiduciary net position is available in a separately-issued Annual Comprehensive Financial Report that includes financial statements and Required Supplementary Information. TESRS issues a publicly available Annual Financial Report, which includes financial statements, notes, and Required Supplementary Information, and can be obtained at www.tesrs.org. The separately issued actuarial valuations that may be of interest are also available at the same link.

Benefits Provided

Senate Bill 411, 65th Legislature, Regular Session (1977), created TESRS and established the applicable benefit provisions. The 79th Legislature, Regular Session (2005), re-codified the provisions and gave the TESRS Board of Trustees (the "Board") authority to establish vesting requirements, contribution levels, benefit formulas, and eligibility requirements by Board rule. The benefit provisions include retirement benefits, as well as death and disability benefits. Members are 50% vested after the tenth year of service, with the vesting percentage increasing 10% for each of the next five years of service so that a member becomes 100% vested with 15 years of service.

Upon reaching age 55, each vested member may retire and receive a monthly pension equal to his vested percentage multiplied by six times the governing body's average monthly contribution over the member's years of qualified service. For years of service in excess of 15 years, this monthly benefit is increased at the rate of 6.2% compounded annually. There is no provision for automatic postretirement benefit increases.

On-and off-duty death benefits and on-duty disability benefits are dependent on whether or not the member was engaged in the performance of duties at the time of death or disability. Death benefits include a lump sum amount or continuing monthly payments to a member's surviving spouse and dependent children.

Funding Policy

Contributions are made by governing bodies for the participating departments. No contributions are required from the individuals who are members of TESRS, nor are they allowed. The governing bodies of each participating department are required to make contributions for each month a member performs emergency services for a department (this minimum contribution is $36 per member and the department may make a higher monthly contribution for its members). This is referred to as a Part One contribution, which is the legacy portion of the TESRS contribution that directly impacts future retiree annuities.

The State is required to contribute an amount necessary to make TESRS "actuarially sound" each year, which may not exceed one-third of the total of all contributions made by participating governing bodies in a particular year.

The Board rule defining contributions was amended effective July 27, 2014 to add the potential for actuarially determined Part Two contributions that would be required only if the expected future annual contributions from the State are not enough with the Part One contributions to provide an adequate contribution arrangement as determined by the most recent actuarial valuation. This Part Two portion, which is actuarially determined as a percentage of the Part One portion (not to exceed 15%), is to be actuarially adjusted near the end of each even-numbered calendar year based on the most recent actuarial valuation. Based on the August 31, 2020 actuarial valuation, the Part Two contributions are not required for an adequate contribution arrangement.

Additional contributions may be made by governing bodies within two years of joining TESRS to grant up to 15 years of credit for service per member. Prior service purchased must have occurred before the department began participation in TESRS.

A small subset of participating departments has a different contribution arrangement that is being phased out over time. In this arrangement, contributions made in addition to the monthly contributions for active members are made by local governing bodies on a pay-as-you-go basis for members who were pensioners when their respective departments merged into TESRS. There is no actuarial impact

associated with this arrangement as the pay-as-you-go contributions made by these governing bodies are always equal to benefit payments paid by TESRS.

Contributions

The contribution requirement per active emergency services personnel member per month is not actuarially determined. Rather, the minimum contribution provisions were set by Board rule, and there is no maximum contribution rate. For the fiscal year ending August 31, 2021, total contributions (dues, prior service, and interest on prior service financing) of $32,950 were paid by the City. The State appropriated $1,329,224 for the fiscal year ending August 31, 2021 to TESRS as a whole.

Actuarial Assumptions

The TPL in the August 31, 2021, actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Actuarial Valuation Date	August 31, 2021
Actuarial Cost Method	Entry age
Amortization Method	Level dollar, open
Amortization Period	30 years
Asset Valuation Method	Market value smoothed by a 5-year deferred recognition method with a 80%/120% corridor on market value
Actuarial Assumptions:	
Investment Rate of Return*	7.5%
Projected Salary Increases	N/A
*Includes Inflation at	3.0%
Cost-of-Living Adjustments	None

Mortality rates were based on the RP-2000 Combined Healthy Lives Mortality Tables for males and for females projected to 2024 by scale AA. The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future net real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These components are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage (currently 5.01%) and by adding expected inflation (3.0%). In addition, the final 7.5% assumption reflected a reduction of 0.26% for adverse deviation.

The target allocation and expected arithmetic real rates of return for each major asset class are summarized in the following table:

Assets Class	Target Allocation	Long -Term Expected Net Real Rate of Return
Equities		
Large cap domestic	20%	5.83%
Samll/mid cap domestic	10%	5.94%
Developed international	15%	6.15%
Emerging markets	5%	7.25%
Global infrastructure	5%	6.41%
Real estate	10%	4.48%
Multi asset income	5%	3.84%
Fixed income	30%	1.99%
Total	100%	
Weighted average		4.60%

Discount Rate

The discount rate used to measure the TPL was 7.5%. No projection of cash flows was used to determine the discount rate because the August 31, 2021 actuarial valuation showed that expected contributions would pay the normal cost and amortize the unfunded actuarial accrued liability in 30 years using the conservative level dollar amortization method. Because of the 30-year amortization period with the conservative amortization method and with a lower value of assets, the TESRS fiduciary net position is expected to be available to make all projected future benefit payments of current active and inactive members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the TPL.

Discount Rate Sensitivity Analysis

The following presents the NPL of the City, calculated using the discount rate of 7.5%, as well as what the City's NPL would be if it were calculated using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease in Discount Rate (6.50%)	Discount Rate (7.50%)	1% Increase in Discount Rate (8.50%)
City's proportionate share of the net pension liability/(asset)	$ 345,606	$ 73,499	$ (93,270)

Pension Liability, Pension Expense, and Deferred Outflows/Inflows of Resources Related to Pensions

At August 31, 2021, the City reported a liability of $73,499 for its proportionate share of TESRS's NPL. The amount recognized by the City as its proportionate share of the NPL, the related State support, and the total portion of the NPL that was associated with the City were as follows:

City's proportionate share of the collective net pension liability		$ 73,499
State's proportionate share that is associated with the City*		20,348
	Total	$ 93,847

**Calculated using the City's proportionate share of contributions multiplied by the State's share of the collective net pension liability.*

The TPL used to calculate the NPL was determined by an actuarial valuation as of August 31, 2021. GASB Statement No. 68, *Accounting and Financial Reporting for Pensions* (GASB 68), requires the NPL to be measured as of a date no earlier than the end of the employer's prior fiscal year. TESRS did not roll forward (nor did they provide the necessary information for the participants to roll forward) the NPL to be measured as of a date no earlier than the end of the City's prior fiscal year. While the City acknowledges that the measurement date does not fall within this 12-month period, the City elected to honor the conservatism principle and report an NPL measured as of August 31, 2021. The City used the assumption that any differences in the NPL measured as of August 31, 2021 versus September 30, 2021 would be immaterial. The employer's proportion of the NPL was based on the employer's contributions to TESRS relative to the contributions of all employers to TESRS for the period September 1, 2020 through August 31, 2021.

At August 31, 2021, the City's proportion of the collective NPL was 0.686%, which was an increase of 0.023% from its proportion measured as of August 31, 2020.

There were no changes in assumptions or other inputs that affected measurement of the TPL during the measurement period.

There were no changes of benefit terms that affected measurement of the TPL during the measurement period.

For the year ended September 30, 2022, the City recognized pension expense of $86. The City recognized on-behalf revenues of $9,118 calculated by taking the State's total contributions to TESRS multiplied by the City's proportionate share.

At September 30, 2022, the City reported its proportionate share of the TESRS's deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

		Deferred Outflows of Resources	**Deferred Inflows of Resources**
Difference between projected and actual investment earnings		$ -	$ 68,826
Changes in assumptions		-	100
Difference between expected and actual economic experience		-	2,908
Contributions paid to TESRS subsequent to the measurement date		50,685	-
	Total	$ 50,685	$ 71,834

The net amounts of the City's balances of deferred outflows of resources related to pensions will be recognized in pension expense as follows:

Fiscal Year Ended September 30	Pension Expense
2023	$ (19,414)
2024	(11,956)
2025	(22,560)
2026	(17,904)
Total	$ (71,834)

D. Other Postemployment Benefits

TMRS - Supplemental Death Benefits

Plan Description

The City participates in an OPEB plan administered by TMRS. TMRS administers the defined benefit group-term life insurance plan known as the SDBF. This is a voluntary program in which participating member cities may elect, by ordinance, to provide group-term life insurance coverage for their active members, including or not including retirees. Employers may terminate coverage under, and discontinue participation in, the SDBF by adopting an ordinance before November 1 of any year to be effective the following January 1.

The member city contributes to the SDBF at a contractually required rate (based on the covered payroll of employee members) as determined by an annual actuarial valuation. The rate is equal to the cost of providing one-year term life insurance. The funding policy for the SDBF program is to assure that adequate resources are available to meet all death benefit payments for the upcoming year. The intent is not to pre-fund retiree term life insurance during employees' entire careers. No assets are accumulated in a trust that meets the criteria in paragraph 4 of GASB Statement No. 75, [*Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*] (GASB 75). As such, the SDBF is considered to be a single-employer unfunded OPEB defined benefit plan with benefit payments treated as being equal to the employer's yearly contributions for retirees.

The contributions to the SDBF are pooled for investment purposes with those of the Pension Trust Fund (PTF). The SDBF's funding policy assures that adequate resources are available to meet all death benefit payments for the upcoming year. The SDBF is a pay-as-you-go fund, and any excess contributions are available for future SDBF benefits.

Benefits

The death benefit for active employees provides a lump-sum payment approximately equal to the employee's annual salary (calculated based on the employee's actual earnings, for the 12-month period preceding the month of death). The death benefit for retirees is considered an OPEB and is a fixed amount of $7,500. As the SDBF covers both active and retiree participants with no segregation of assets, the SDBF is considered to be an unfunded OPEB plan (i.e., no assets are accumulated).

Participation in the SDBF as of December 31, 2021 is summarized below:

Inactive employees or beneficiaries currently receiving benefits		55
Inactive employees entitled to, but not yet receiving, benefits		28
Active employees		134
	Total	217

Total OPEB Liability

The City's total OPEB liability of $505,962 was measured as of December 31, 2021 and was determined by an actuarial valuation as of that date.

Actuarial Assumptions and Other Inputs

The total OPEB liability in the December 31, 2021 actuarial valuation was determined using the following actuarial assumptions and other inputs, applied to all periods included in the measurement, unless otherwise specified:

Inflation	2.50%
Salary increases	3.50% to 11.50% including inflation
Discount rate*	1.84%
Administrative expenses	All administrative expenses are paid through the PTF and accounted for under reporting requirements under GASB 68.
Mortality - service retirees	2019 Municipal Retirees of Texas Mortality Tables. The rates are projected on a fully generational basis with scale UMP.
Mortality - disabled retirees	2019 Municipal Retirees of Texas Mortality Tables with a 4-year set-forward for males and a 3-year set-forward for females. In addition, a 3.5% and 3.0% minimum mortality rate will be applied to reflect the impairment for younger members who become disabled for males and females, respectively. The rates are projected on a fully generational basis by Scale UMP to account for future mortality improvements subject to the floor.

*The discount rate was based on the Fidelity Index's "20-Year Municipal GO AA Index" rate as of December 31, 2021.

The actuarial assumptions used in the December 31, 2021 valuation were based on the results of an actuarial experience study for the period December 31, 2014 to December 31, 2018. Due to the higher mortality rates associated with the global pandemic, the TMRS Board adopted changes to the assumptions and methodology used for calculating 2023 rates as determined in the December 31, 2021 actuarial valuation.

Changes in the Total OPEB Liability

	Total OPEB Liability
Changes for the year:	
Service cost	$ 28,975
Interest	9,645
Changes of benefit terms	-
Difference between expected and actual experience	(12,738)
Changes of assumptions	17,392
Benefit payments*	(10,180)
Net Changes	33,094
Balance at December 31, 2020	472,868
Balance at December 31, 2021	$ 505,962

* Benefit payments are treated as being equal to the employer's yearly contribution for retirees due to the SDBF being considered an unfunded OPEB plan under GASB 75.

The discount rate decreased from 2.00% as of December 31, 2020 to 1.84% as of December 31, 2021. There were no other changes of assumptions or other inputs that affected measurement of the total OPEB liability during the measurement period.

There were no changes of benefit terms that affected measurement of the total OPEB liability during the measurement period.

Sensitivity of the Total OPEB Liability to Changes in the Discount Rate

The following presents the total OPEB liability of the City, as well as what the City's total OPEB liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current discount rate:

	1% Decrease (0.84%)	Discount Rate (1.84%)	1% Increase (2.84%)
City's total OPEB liability	$ 635,852	$ 505,962	$ 410,387

OPEB Expense and Deferred Outflows/Inflows of Resources Related to OPEB

For the year ended September 30, 2022, the City recognized OPEB expense of $62,423. The City reported deferred outflows/inflows of resources related to OPEB from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual economic experience	$ 2,753	$ 15,193
Changes in actuarial assumptions	87,446	6,134
Contributions subsequent to the measurement date	7,623	-
Total	$ 97,822	$ 21,327

$7,623 reported as deferred outflows of resources related to OPEB resulting from contributions subsequent to the measurement date will be recognized as a reduction of the total OPEB liability for the fiscal year ending September 30, 2022.

Amounts reported as deferred outflows of resources related to OPEB will be recognized in OPEB expense as follows:

Fiscal Year Ended September 30	OPEB Expense
2023	$ 22,453
2024	21,725
2025	21,974
2026	2,720
Thereafter	-
Total	$ 68,872

E. Deferred Compensation Plan

The City offers its employees a deferred compensation plan (the "Plan") created in accordance with Internal Revenue Code Section 457. The Plan, available to all City employees, permits them to defer a portion of their salary until future years. The deferred compensation is not available to employees until termination, retirement, death, or unforeseeable emergency. The Plan's trust arrangements are established to protect deferred compensation amounts of employees under the Plan from any other use than intended under the Plan (eventual payment to employees deferring the compensation) in accordance with federal tax laws. Amounts of compensation deferred by employees under Plan provisions are disbursed monthly by the City to a third-party administrator. The third-party administrator handles all funds in the Plan and makes investment decisions and disburses funds to employees in accordance with Plan provisions.

F. Chapter 380 Economic Development Agreements/Tax Abatements

Chapter 380, *Miscellaneous Provisions Relating to Municipal Planning and Development*, of the Texas Local Government Code provides the authority to the governing body of a municipality to establish and provide for the administration of one or more programs, including programs to promote state or local economic development and to stimulate business and commercial activity in the municipality.

Dees Properties, LLC 380 Agreement

On October 8, 2019, City Council approved a community development program agreement (the "Agreement") with Dees Properties LLC (the "Business") for the restoration and preservation of the Bowman Building located at 116 North Velasco (the "Building"). The City agreed to the following:

- Provide a 5-year refund equal to 50% of the property and sales taxes or until the property and sales taxes rebate imposed and received by the City reaches a combined total of $300,000, whichever comes first.
- This Agreement shall remain in effect until the expiration of the 5-year period and may be extended for an additional period on terms mutually accepted by both parties.

- In the event this Agreement is terminated, or the Building is sold by the Business to another party other than City, before the fifth anniversary of the signing of this Agreement, the Business shall repay the total amount of the grant received up to the date of sale or termination.

The Business agreed to the following:

- Revitalize the Building.
- Add taxable improvements to the real property.
- Create employment opportunities.

$5,182 taxes were refunded during fiscal year 2022.

REQUIRED SUPPLEMENTARY INFORMATION

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL

GENERAL FUND (Page 1 of 2)

For the Year Ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)	
Revenues					
Property taxes	$ 6,993,479	$ 6,993,479	$ 6,800,964	$ (192,515)	
Franchise fees and local taxes	729,330	729,330	668,673	(60,657)	
Sales taxes	3,881,860	3,881,860	3,696,232	(185,628)	
Industrial district agreement	104,170	104,170	82,416	(21,754)	
Permits, licenses, and fees	947,000	947,000	858,711	(88,289)	
Fines and forfeitures	718,579	718,579	527,343	(191,236)	
Charges for services	2,500,873	2,500,873	2,265,389	(235,484)	
Intergovernmental	2,810	2,810	403,967	401,157	
Investment revenue	5,110	5,110	23,504	18,394	
Miscellaneous revenue	171,000	171,000	264,372	93,372	
Total Revenues	16,054,211	16,054,211	15,591,571	(462,640)	
Expenditures					
General administration					
Administrative	4,065,052	4,045,052	4,045,052	-	
Buildings	-	-	32,100	(32,100)	*
Total general administration	4,065,052	4,045,052	4,077,152	(32,100)	
Financial administration					
Tax collection	51,000	51,000	48,204	2,796	
Finance and accounting	415,105	415,105	424,305	(9,200)	*
Total financial administration	466,105	466,105	472,509	(6,404)	
Public safety					
Municipal court	601,488	601,488	514,617	86,871	
Police department	5,809,237	5,798,387	5,348,727	449,660	
Animal control	371,907	371,907	319,584	52,323	
Fire department	894,215	894,215	836,044	58,171	
Emergency management	147,136	147,136	141,396	5,740	
Code enforcement	1,124,308	1,150,058	1,181,841	(31,783)	*
Total public safety	8,948,291	8,963,191	8,342,209	620,982	
Community services					
Information technology	448,173	453,273	417,644	35,629	
Parks and recreation	1,605,326	1,605,326	1,672,095	(66,769)	*
Public works	1,515,392	1,515,392	1,974,442	(459,050)	*
Total community services	3,568,891	3,573,991	4,064,181	(490,190)	

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL

GENERAL FUND (Page 2 of 2)

For the Year Ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Expenditures (continued)				
Economic development	$ 247,304	$ 247,304	$ 230,225	$ 17,079
Capital outlay	-	-	229,697	(229,697) *
Debt service				
Principal	121,079	121,079	367,398	(246,319) *
Interest and fiscal agent fees	6,145	6,145	26,982	(20,837) *
Total debt service	127,224	127,224	394,380	(267,156)
Total Expenditures	17,422,867	17,422,867	17,810,353	(387,486)
(Deficiency) of Revenues (Under) Expenditures	(1,368,656)	(1,368,656)	(2,218,782)	(850,126)
Other Financing Sources (Uses)				
Transfers in	1,297,023	1,297,023	1,441,712	144,689
Transfers (out)	(65,832)	(65,832)	(18,997)	46,835
Sale of capital assets	80,000	80,000	101,165	21,165
Lease proceeds	-	-	229,697	229,697
Total Other Financing Sources	1,311,191	1,311,191	1,753,577	442,386
Net Change in Budgeted Fund Balance	$ (57,465)	$ (57,465)	(465,205)	$ (407,740)
Net Change in Fund Balance			(465,205)	
Beginning fund balance			3,951,813	
Ending Fund Balance			$ 3,486,608	

Notes to Required Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).
2. * Expenditures exceeded appropriations at the legal level of control.

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CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL

ANGLETON BETTER LIVING FUND

For the Year Ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)	
Revenues					
Sales taxes	$ 1,982,765	$ 1,982,765	$ 1,848,116	$ (134,649)	
Investment revenue	4,500	4,500	1,364	(3,136)	
Miscellaneous revenue	-	-	10,000	10,000	
Total Revenues	1,987,265	1,987,265	1,859,480	(127,785)	
Expenditures					
Current:					
General administration	671,390	671,390	447,585	223,805	
Total Expenditures	671,390	671,390	447,585	223,805	
Excess of Revenue Over Expenditures	1,315,875	1,315,875	1,411,895	96,020	
Other Financing Sources (Uses)					
Transfer in	400,000	400,000	-	(400,000)	
Transfer (out)	(1,715,875)	(1,715,875)	(1,879,034)	(163,159)	*
Total Other Financing (Uses)	(1,315,875)	(1,315,875)	(1,879,034)	(563,159)	
Net Change in Fund Balance	$ -	$ -	(467,139)	$ (467,139)	
Beginning fund balance			779,223		
Ending Fund Balance			$ 312,084		

Notes to Required Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).
2. * Expenditures exceeded appropriations at the legal level of control.

CITY OF ANGLETON, TEXAS

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
TEXAS MUNICIPAL RETIREMENT SYSTEM (TMRS)

For the Year Ended September 30, 2022

	Measurement Year*			
	2021	**2020**	**2019**	**2018**
Total Pension Liability				
Service cost	$ 1,123,767	$ 1,065,898	$ 967,612	$ 875,925
Interest (on the total pension liability)	1,995,111	1,913,148	1,810,253	1,741,013
Changes of benefit terms	-	-	-	-
Difference between expected and actual experience	(143,337)	(75,064)	56,625	(372,360)
Changes of assumptions	-	-	121,586	-
Benefit payments, including refunds of employee contributions	(1,838,738)	(1,598,568)	(1,363,110)	(1,166,182)
Net Change in Total Pension Liability	1,136,803	1,305,414	1,592,966	1,078,396
Beginning total pension liability	29,914,685	28,609,271	27,016,305	25,937,909
Ending Total Pension Liability	$ 31,051,488	$ 29,914,685	$ 28,609,271	$ 27,016,305
Plan Fiduciary Net Position				
Contributions - employer	$ 963,477	$ 904,937	$ 822,437	$ 754,235
Contributions - employee	479,819	445,051	399,564	361,455
Net investment income	3,579,795	1,955,933	3,472,078	(695,480)
Benefit payments, including refunds of employee contributions	(1,838,738)	(1,598,568)	(1,363,110)	(1,166,182)
Administrative expense	(16,563)	(12,655)	(19,614)	(13,439)
Other	114	(493)	(589)	(702)
Net Change in Plan Fiduciary Net Position	3,167,904	1,694,205	3,310,766	(760,113)
Beginning plan fiduciary net position	27,458,408	25,764,203	22,453,437	23,213,550
Ending Plan Fiduciary Net Position	$ 30,626,312	$ 27,458,408	$ 25,764,203	$ 22,453,437
Net Pension Liability	$ 425,176	$ 2,456,277	$ 2,845,068	$ 4,562,868
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	98.63%	91.79%	90.06%	83.11%
Covered Payroll	$ 7,831,130	$ 7,417,525	$ 6,659,408	$ 6,024,244
Net Pension Liability as a Percentage of Covered Payroll	5.43%	33.11%	42.72%	75.74%

*Only eight years of information is currently available. The City will build this schedule over the next two-year period.

Measurement Year*			
2017	**2016**	**2015**	**2014**
$ 842,374	$ 785,512	$ 791,844	$ 698,595
1,651,811	1,584,707	1,562,646	1,507,813
(42,824)	-	-	-
(85,751)	(252,182)	(165,121)	(436,428)
-	-	137,392	-
(1,041,573)	(1,177,455)	(1,163,080)	(903,465)
1,324,217	940,582	1,163,981	866,515
24,613,692	23,673,110	22,509,129	21,642,614
$ 25,937,909	$ 24,613,692	$ 23,673,110	$ 22,509,129
$ 729,850	$ 687,899	$ 730,615	$ 660,722
368,923	346,549	353,239	323,355
2,820,968	1,298,516	28,450	1,039,581
(1,041,573)	(1,177,455)	(1,163,080)	(903,465)
(14,617)	(14,663)	(17,328)	(10,853)
(742)	(790)	(856)	(892)
2,862,809	1,140,056	68,960	1,108,448
20,350,741	19,210,685	19,279,645	18,171,197
$ 23,213,550	$ 20,350,741	$ 19,210,685	$ 19,279,645
$ 2,724,359	$ 4,262,951	$ 4,462,425	$ 3,229,484
89.50%	82.68%	81.15%	85.65%
$ 6,148,715	$ 5,775,821	$ 5887320	$ 5,389,248
44.31%	73.81%	75.80%	59.92%

CITY OF ANGLETON, TEXAS

SCHEDULE OF THE CITY'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY TEXAS EMERGENCY SERVICES RETIREMENT SYSTEM (TESRS)

For the Year Ended September 30, 2022

	Measurement Year*			
	2021	**2020**	**2019**	**2018**
City's proportion of the net pension liability	0.69%	0.66%	0.39%	0.32%
City's proportionate share of the net pension liability	$ 73,499	$ 167,148	$ 109,697	$ 69,065
State's proportionate share of the net pension liability	20,348	47,649	32,539	19,168
Total	$ 93,848	$ 214,797	$ 142,236	$ 88,233
Number of Active Members**	26	28	27	37
City's net pension liability per active member	$ 2,827	$ 5,970	$ 4,063	$ 1,846
Plan fiduciary net position as a percentage of the total pension liability	93.10%	83.20%	80.20%	84.26%

*Only eight years of information is currently available. The City will build this schedule over the next two-year period.

**There is no compensation for active members. Number of active members is used instead.

Notes to Required Supplementary Information:

1. *Changes in benefit terms*

There were no changes of benefit terms that affected measurement of the total pension liability (TPL) during the measurement period.

2. *Changes in assumptions*

There were no changes of assumptions or other inputs that affected measurement of the TPL during the measurement period.

Measurement Year *			
2017	**2016**	**2015**	**2014**
0.35%	0.41%	0.43%	0.45%
$ 84,966	$ 120,165	$ 114,150	$ 82,146
27,824	41,542	39,568	27,613
$ 112,790	$ 161,707	$ 153,718	$ 109,759
40	32	34	34
$ 2,102	$ 3,815	$ 3,391	$ 2,416
81.40%	76.30%	76.90%	83.50%

CITY OF ANGLETON, TEXAS

SCHEDULE OF CONTRIBUTIONS
TEXAS MUNICIPAL RETIREMENT SYSTEM (TMRS)
For the Year Ended September 30, 2022

	Fiscal Year*			
	2022	**2021**	**2020**	**2019**
Actuarially determined contribution	$ 963,669	$ 975,404	$ 887,773	$ 808,099
Contributions in relation to the actuarially determined contribution	963,669	975,404	887,773	808,099
Contribution deficiency (excess)	$ -	$ -	$ -	$ -
Covered payroll	$ 8,203,999	$ 8,067,011	$ 7,249,082	$ 6,519,525
Contributions as a percentage of covered payroll	11.75%	12.09%	12.25%	12.40%

*Only nine years of information are currently available. The City will build this schedule over the next one-year period.

Notes to Required Supplementary Information:

1. Valuation Date:

   Actuarially determined contribution rates are calculated as of December 31 and become effective in January, 13 months later.

2. Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll, closed
Remaining amortization period	24 years
Asset valuation method	10 year smoothed market; 12.00% soft corridor
Inflation	2.50%
Salary increases	3.50% to 11.50% including inflation
Investment rate of return	6.75%
Retirement age	Experience-based table of rates that are specific to the City's plan of benefits. Last updated for the 2019 valuation pursuant to an experience study of the period December 31, 2014-December 31, 2018.
Mortality	Post-retirement 2019 Municipal Retirees of Texas Mortality Tables. The rates are projected on a fully generational basis with scale UMP. Pre-retirement: PUB(10) mortality tables, with the Public Safety table used for males and the General Employee table used for females. The rates are projected on a fully generational basis with scale UMP.

3. Other Information:

   There were no benefit changes during this year.

Fiscal Year *				
2018	**2017**	**2016**	**2015**	**2014**
$ 735,614	$ 727,148	$ 693,433	$ 687,403	$ 658,787
735,614	727,148	693,433	687,403	658,787
$ -	$ -	$ -	$ -	$ -
$ 5,961,986	$ 6,120,417	$ 5,754,427	$ 5,554,619	$ 5,389,248
12.34%	11.88%	12.05%	12.38%	12.22%

CITY OF ANGLETON, TEXAS

SCHEDULE OF CONTRIBUTIONS
TEXAS EMERGENCY SERVICES RETIREMENT SYSTEM (TESRS)
For the Year Ended September 30, 2022

	Fiscal Year*			
	2022	**2021**	**2020**	**2019**
Contractually required contribution	$ 50,685	$ 33,095	$ 31,318	$ 24,996
Contributions in relation to the contractually required	50,685	33,095	31,318	24,996
Contribution deficiency (excess)	$ -	$ -	$ -	$ -
Number of active members**	26	28	26	42
Contributions per active member	$ 1,949	$ 1,182	$ 1,205	$ 595

*Only nine years of information is currently available. The City will build this schedule over the next one-year period.

**There is no compensation for active members. Number of active members is used instead.

Fiscal Year *				
2018	**2017**	**2016**	**2015**	**2014**
$ 22,453	$ 24,255	$ 18,900	$ 20,200	$ 20,580
22,453	24,255	18,900	20,200	20,580
$ -	$ -	$ -	$ -	$ -
37	40	36	34	34
$ 607	$ 606	$ 525	$ 594	$ 605

CITY OF ANGLETON, TEXAS

SCHEDULE OF CHANGES IN THE CITY'S TOTAL OPEB LIABILITY AND RELATED RATIOS
TEXAS MUNICIPAL RETIREMENT SYSTEM (TMRS)

For the Year Ended September 30, 2022

	Measurement Year*			
	2021	**2020**	**2019**	**2018**
Total OPEB Liability				
Service cost	$ 28,975	$ 21,511	$ 15,983	$ 16,265
Interest (on the total OPEB liability)	9,645	10,495	10,873	10,069
Changes of benefit terms	-	-	-	-
Difference between expected and actual experience	(12,738)	4,511	(2,124)	(13,650)
Change of assumptions	17,392	66,967	63,878	(20,830)
Benefit payments**	(10,180)	(2,967)	(2,664)	(3,012)
Net Change in Total OPEB Liability	33,094	100,517	85,946	(11,158)
Beginning total OPEB liability	472,868	372,351	286,405	297,563
Ending Total OPEB Liability	505,962	472,868	372,351	$ 286,405
Covered Payroll	7,831,130	7,417,525	6,659,408	$ 6,024,244
Total OPEB Liability as a Percentage of Covered Payroll	6.46%	6.38%	5.59%	4.75%

* Only five years of information is currently available. The City will build this schedule over the next five-year period.

** Due to the SDBF being considered an unfunded OPEB plan under GASB 75, benefit payments are treated as being equal to the employer's yearly contributions for retirees.

Notes to Required Supplementary Information:

1. Valuation Date:

Actuarially determined contribution rates are calculated as of December 31 and become effective in January, 13 months later.

2. Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry age normal
Inflation	2.50%
Salary increases	3.50% to 11.50% including inflation
Discount rate	1.84%
Administrative expenses	All administrative expenses are paid through the PTF and accounted for under reporting requirements under GASB 68.
Mortality - service retirees	2019 Municipal Retirees of Texas Mortality Tables. The rates are projected on a fully generational basis with scale UMP.
Mortality - disabled retirees	2019 Municipal Retirees of Texas Mortality Tables with a 4-year set-forward for males and a 3-year set-forward for females. In addition, a 3.5% and 3.0% minimum mortality rate will be applied to reflect the impairment for younger members who become disabled for males and females, respectively. The rates are projected on a fully generational basis by Scale UMP to account for future mortality improvements subject to the floor.

3. Other Information:

The discount rate was based on the Fidelity Index's "20-Year Municipal GO AA Index" rate as of December 31, 2021.

There were no benefit changes during the year.

	Measurement Year* 2017
$	14,142
	9,793
	-
	-
	22,154
	(3,074)
	44,015
	253,548
$	297,563
$	6,148,715
	4.84%

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COMBINING STATEMENTS AND SCHEDULES

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NONMAJOR GOVERNMENTAL FUNDS

Special Revenue Funds

Hotel/Motel Fund - Hotel tax revenue from local hotels.
Child Safety Fund - Collection and disbursement of money used for child safety programs.
Municipal Court Technology Fund - Collection and disbursement of money used for court technology.
Municipal Court Building Security Fund - Collection and disbursement of money used for court security.
GLO Grant Fund - Revenue and expenses for General Land Office (GLO) grant.
Drug Confiscation Fund - Police seizure and buy account.
Keep Angleton Beautiful Fund - Donations to clean up and landscape across the City.
Angleton Act Center Fund - Revenues and expenditures for the recreation center.
TIRZ #1 Fund - Property tax funds that will be utilized for certain infrastructure costs.
OBJ Police Grant Fund - Office of Byrne Memorial Justice assistance program grant designated for body worn cameras.
Police Donation Fund - Money donated to the police department for special purposes.
Fire Department ESD Fund - Contract with the County fire department.
A/C Donations Fund - Donations for the animal control.
TxDOT Grant Fund - Revenue and expenses for Texas Department of Transportation (TxDOT) grant.
Traffic Enforcement Fund - Revenue and expenses for Selective Traffic Enforcement Program (STEP) grant.
Developer Deposit Fund - To account for the developers deposit and capital projects activities.
HGAC Grant - Revenue and expenses for Houston-Galveston Area Council (HGAC) grant.
Generator Grant Fund - Revenue and expenses for Texas Department of Emergency Management (TDEM) grar
911 Recorder Grant - Revenue and expenses for General Land Office (GLO) grant.

Capital Project Funds

Street Fund - Capital improvements for City streets.
C.O. Series 2020 - Capital improvements for Lakeside Park.
Local Park Grant Fund - Capital improvements for the City.
City-Wide Capital Projects Fund - Capital improvements for the City.

CITY OF ANGLETON, TEXAS

COMBINING BALANCE SHEET (Page 1 of 3)
NONMAJOR GOVERNMENTAL FUNDS
September 30, 2022

	Special Revenue Funds			
	Hotel/Motel	Child Safety	Municipal Court Technology	Municipal Court Building Security
Assets				
Current assets:				
Cash and cash equivalents	$ 298,044	$ 8,407	$ 11,252	$ 30,340
Investments	-	-	-	-
Receivables, net	45,091	-	-	-
Due from other government	-	-	-	-
Inventory	-	-	-	-
Total Assets	$ 343,135	$ 8,407	$ 11,252	$ 30,340
Liabilities and Fund Balances				
Liabilities:				
Accounts payable and accrued liabilities	$ 20,600	$ -	$ -	$ -
Due to other funds	-	-	-	-
Total Liabilities	20,600	-	-	-
Fund balances:				
Nonspendable:				
Inventory	-	-	-	-
Restricted for:				
Economic development	322,535	-	-	-
Special projects	-	8,407	11,252	30,340
Capital projects	-	-	-	-
Total Fund Balances	322,535	8,407	11,252	30,340
Total Liabilities and Fund Balances	$ 343,135	$ 8,407	$ 11,252	$ 30,340

Special Revenue Funds						
GLO Grant	**Drug Confiscation**	**Keep Angleton Beautiful**	**Angleton Act Center**	**TIRZ #1**	**OBJ Police Grant**
$ 4,165	$ 43,345	$ 40,018	$ 192,976	$ 7,939	$ 2,826
-	-	-	-	-	-
2,243	-	2,360	-	-	609
-	-	-	-	-	-
-	-	-	-	-	-
$ 6,408	$ 43,345	$ 42,378	$ 192,976	$ 7,939	$ 3,435
$ -	$ 6,925	$ -	$ 49,097	$ 6,530	$ 3,435
	-	-	-	-	-
-	6,925	-	49,097	6,530	3,435
-	-	-	-	-	-
-	-	-	143,879	-	-
-	36,420	42,378	-	1,409	-
6,408	-	-	-	-	-
6,408	36,420	42,378	143,879	1,409	-
$ 6,408	$ 43,345	$ 42,378	$ 192,976	$ 7,939	$ 3,435

CITY OF ANGLETON, TEXAS

COMBINING BALANCE SHEET (Page 2 of 3)
NONMAJOR GOVERNMENTAL FUNDS
September 30, 2022

	Special Revenue Funds			
	Police Donation	Fire Dept. ESD	A/C Donations	TxDOT Grant
Assets				
Current assets:				
Cash and cash equivalents	$ 16,232	$ 23,229	$ 31,208	$ 4,799
Investments	-	-	-	-
Receivables, net	-	11,672	-	-
Due from other government	-	-	-	-
Inventory	-	-	-	-
Total Assets	$ 16,232	$ 34,901	$ 31,208	$ 4,799
Liabilities and Fund Balances				
Liabilities:				
Accounts payable and accrued liabilities	$ 2,000	$ 34,855	$ -	$ -
Due to other funds	-	-	-	-
Total Liabilities	2,000	34,855	-	-
Fund balances:				
Nonspendable:				
Inventory	-	-	-	-
Restricted for:				
Economic development	-	-	-	-
Special projects	14,232	46	31,208	4,799
Capital projects	-	-	-	-
Total Fund Balances	14,232	46	31,208	4,799
Total Liabilities and Fund Balances	$ 16,232	$ 34,901	$ 31,208	$ 4,799

Special Revenue Funds					Capital Projects Funds
Traffic Enforcement	Developer Deposit	HGAC Grant	Generator Grant	911 Recorder Grant	Street
$ -	$ 1,354,327	$ -	$ 29,427	$ -	$ 1,891,227
-	-	-	-	-	351,189
-	-	40,989	-	-	-
2,781	-	-	-	-	-
-	-	-	-	-	5,600
$ 2,781	$ 1,354,327	$ 40,989	$ 29,427	$ -	$ 2,248,016
$ -	$ 15,400	$ -	$ -	$ -	$ 56,633
2,781	-	40,989			-
2,781	15,400	40,989	-	-	56,633
-	-				5,600
-	-	-	-	-	-
-	-	-	-	-	-
-	1,338,927	-	29,427	-	2,185,783
-	1,338,927	-	29,427	-	2,191,383
$ 2,781	$ 1,354,327	$ 40,989	$ 29,427	$ -	$ 2,248,016

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CITY OF ANGLETON, TEXAS

COMBINING BALANCE SHEET (Page 3 of 3)
NONMAJOR GOVERNMENTAL FUNDS
September 30, 2022

	Capital Projects Funds			
	C. O. Series 2020	Local Park Grant	City-Wide Capital Projects	Total Nonmajor Governmental Funds
Assets				
Current assets:				
Cash and cash equivalents	$ 825,973	$ 141,937	$ 409,810	$ 5,367,481
Investments	-	-	-	351,189
Receivables, net	-	-	-	102,964
Due from other government	-	-	-	2,781
Inventory	-	-	-	5,600
Total Assets	$ 825,973	$ 141,937	$ 409,810	$ 5,830,015
Liabilities and Fund Balances				
Liabilities:				
Accounts payable and accrued liabilities	$ 452,360	$ 8,599	$ -	$ 656,434
Due to other funds	-	-		43,770
Total Liabilities	452,360	8,599	-	700,204
Fund balances:				
Nonspendable:				
Inventory	-	-		5,600
Restricted for:				
Economic development	-	-	-	466,414
Special projects	-	-	-	180,491
Capital projects	373,613	133,338	409,810	4,477,306
Total Fund Balances	373,613	133,338	409,810	5,129,811
Total Liabilities and Fund Balances	$ 825,973	$ 141,937	$ 409,810	$ 5,830,015

CITY OF ANGLETON, TEXAS

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES (Page 1 of 3)

NONMAJOR GOVERNMENTAL FUNDS

For the Year Ended September 30, 2022

	Special Revenue Funds			
	Hotel/Motel	Child Safety	Municipal Court Technology	Municipal Court Building Security
Revenues				
Property taxes	$ -	$ -	$ -	$ -
Franchise fees and local taxes	169,631	-	-	-
Fines and forfeitures	-	6,518	9,099	10,771
Intergovernmental	-	-	-	-
Charges for services	-	-	-	-
Investment revenue	2,033	49	70	182
Miscellaneous revenue	-	-	-	-
Total Revenues	171,664	6,567	9,169	10,953
Expenditures				
Current:				
General administration	-	-	-	-
Public safety	-	-	6,205	-
Economic development	303,815	-	-	-
Capital outlay	-	-	-	-
Total Expenditures	303,815	-	6,205	-
Excess (Deficiency) of Revenues Over (Under) Expenditures	(132,151)	6,567	2,964	10,953
Other Financing Sources (Uses)				
Transfers in	-	-	-	-
Transfers (out)	(22,553)	(3,000)	-	(7,500)
Total Other Financing Sources (Uses)	(22,553)	(3,000)	-	(7,500)
Net Change in Fund Balances	(154,704)	3,567	2,964	3,453
Beginning fund balances	477,239	4,840	8,288	26,887
Ending Fund Balances	$ 322,535	$ 8,407	$ 11,252	$ 30,340

Special Revenue Funds

GLO Grant	Drug Confiscation	Keep Angleton Beautiful	Angleton Act Center	TIRZ #1	OBJ Police Grant
$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-
-	-	-	-	-	-
40,104	-	-	-	1,217	16,098
-	-	-	403,500	-	-
-	169	214	792	45	-
-	21,433	37,925	-	-	-
40,104	21,602	38,139	404,292	1,262	16,098
113,047	-	-	1,042,150	-	-
-	-	-	-	-	64,562
-	-	28,136	-	-	-
-	-	-	111,909	-	-
113,047	-	28,136	1,154,059	-	64,562
(72,943)	21,602	10,003	(749,767)	1,262	(48,464)
79,351	-	-	820,505	-	18,997
-	-	-	-	-	-
79,351	-	-	820,505	-	18,997
6,408	21,602	10,003	70,738	1,262	(29,467)
-	14,818	32,375	73,141	147	29,467
$ 6,408	$ 36,420	$ 42,378	$ 143,879	$ 1,409	$ -

CITY OF ANGLETON, TEXAS

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES (Page 2 of 3)

NONMAJOR GOVERNMENTAL FUNDS

For the Year Ended September 30, 2022

	Special Revenue Funds			
	Police Donation	**Fire Dept. ESD**	**A/C Donations**	**TxDOT Grant**
Revenues				
Property taxes	$ -	$ -	$ -	$ -
Franchise fees and local taxes	-	-	-	-
Fines and forfeitures	-	-	-	-
Intergovernmental	-	326,619	-	1,091
Charges for services	-	-	-	-
Investment revenue	85	-	49	-
Miscellaneous revenue	12,085	162	12,616	-
Total Revenues	12,170	326,781	12,665	1,091
Expenditures				
Current:				
General administration	-	-	-	-
Public safety	16,000	207,473	-	-
Economic development	-	-	-	-
Capital outlay	-	-	-	-
Total Expenditures	16,000	207,473	-	-
Excess (Deficiency of Revenues Over (Under) Expenditures	(3,830)	119,308	12,665	1,091
Other Financing Sources (Uses)				
Transfers in	-	-	-	-
Transfers (out)	-	(208,082)	-	-
Total Other Financing Sources (Uses)	-	(208,082)	-	-
Net Change in Fund Balances	(3,830)	(88,774)	12,665	1,091
Beginning fund balances	18,062	88,820	18,543	3,708
Ending Fund Balances	$ 14,232	$ 46	$ 31,208	$ 4,799

Special Revenue Funds					Capital Projects Funds
Traffic Enforcement	Developer Deposit	HGAC Grant	Generator Grant	911 Recorder Grant	Street
$ -	$ -	$ -	$ -	$ -	$ -
-	-	-	-	-	-
-	-	-	-	-	-
9,201	-	54,239	-	3,462	-
-	-	-	-	-	-
-	-	-	-	-	12,631
-	568,406	-	-	-	-
9,201	568,406	54,239	-	3,462	12,631
-	224,903	-	-	3,462	13,436
10,181	-	54,239	-	-	-
-	-	-	-	-	-
-	-	-	-	-	56,685
10,181	224,903	54,239	-	3,462	70,121
(980)	343,503	-	-	-	(57,490)
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
(980)	343,503	-	-	-	(57,490)
980	995,424	-	29,427	-	2,248,873
$ -	$ 1,338,927	$ -	$ 29,427	$ -	$ 2,191,383

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CITY OF ANGLETON, TEXAS

COMBINING STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES (Page 3 of 3)

NONMAJOR GOVERNMENTAL FUNDS

For the Year Ended September 30, 2022

	Capital Projects Funds			
	C. O. Series 2020	Local Park Grant	City-Wide Capital Projects	Total Nonmajor Governmental Funds
Revenues				
Property taxes	$ -	$ -	$ -	$ -
Franchise fees and local taxes	-	-	-	169,631
Fines and forfeitures	-	-	-	26,388
Intergovernmental	-	-	-	452,031
Charges for services	-	-	-	403,500
Investment revenue	13,425	-	2,047	31,791
Miscellaneous revenue	61,342	-	-	713,969
Total Revenues	74,767	-	2,047	1,797,310
Expenditures				
Current:				
General administration	-	-	-	1,396,998
Public safety	-	-	-	358,660
Economic development	-	-	-	331,951
Capital outlay	2,740,417	42,874	-	2,951,885
Total Expenditures	2,740,417	42,874	-	5,039,494
Excess (Deficiency of Revenues Over (Under) Expenditures	(2,665,650)	(42,874)	2,047	(3,242,184)
Other Financing Sources (Uses)				
Transfers in	-	-	-	918,853
Transfers (out)	-	-	-	(241,135)
Total Other Financing Sources (Uses)	-	-	-	677,718
Net Change in Fund Balances	(2,665,650)	(42,874)	2,047	(2,564,466)
Beginning fund balances	3,039,263	176,212	407,763	7,694,277
Ending Fund Balances	$ 373,613	$ 133,338	$ 409,810	$ 5,129,811

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CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS

For the Year Ended September 30, 2022

	Hotel / Motel			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Franchise fees and local taxes	$ 273,380	$ 273,380	$ 169,631	$ (103,749)
Investment revenue	950	950	2,033	1,083
Total Revenues	274,330	274,330	171,664	(102,666)
Expenditures				
Current:				
Economic development	251,777	251,777	303,815	(52,038) *
Total Expenditures	251,777	251,777	303,815	(52,038)
Excess (Deficiency) of Revenues Over (Under) Expenditures	22,553	22,553	(132,151)	(154,704)
Other Financing Sources (Uses)				
Transfers (out)	(22,553)	(22,553)	(22,553)	-
Total Other Financing (Uses)	(22,553)	(22,553)	(22,553)	-
Net Change in Fund Balance	$ -	$ -	(154,704)	$ (154,704)
Beginning fund balance			477,239	
Ending Fund Balance			$ 322,535	

	Child Safety			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Fines and forfeitures	$ 2,025	$ 2,025	$ 6,518	$ 4,493
Investment revenue	-	-	49	49
Total Revenues	2,025	2,025	6,567	4,542
Excess of Revenues Over Expenditures	2,025	2,025	6,567	4,542
Other Financing Sources (Uses)				
Transfers (out)	(2,025)	(2,025)	(3,000)	(975) *
Total Other Financing (Uses)	(2,025)	(2,025)	(3,000)	(975)
Net Change in Fund Balance	$ -	$ -	3,567	$ 3,567
Beginning fund balance			4,840	
Ending Fund Balance			$ 8,407	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).
2. * Expenditures exceeded appropriations at the legal level of control.

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	Municipal Court Technology			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Fines and forfeitures	$ 10,000	$ 10,000	$ 9,099	$ (901)
Investment revenue	-	-	70	70
Total Revenues	10,000	10,000	9,169	(831)
Expenditures				
Current:				
Public safety	10,000	10,000	6,205	3,795
Total Expenditures	10,000	10,000	6,205	3,795
Net Change in Fund Balance	$ -	$ -	2,964	$ 2,964
Beginning fund balance			8,288	
Ending Fund Balance			$ 11,252	

	Municipal Court Building Security			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Fines and forfeitures	$ 5,460	$ 5,460	$ 10,771	$ 5,311
Investment revenue	40	40	182	142
Total Revenues	5,500	5,500	10,953	5,453
Expenditures				
Current:				
Public safety	500	500	-	500
Total Expenditures	500	500	-	500
Excess of Revenues Over Expenditures	5,000	5,000	10,953	5,953
Other Financing Sources (Uses)				
Transfers (out)	(5,000)	(5,000)	(7,500)	(2,500) *
Total Other Financing (Uses)	(5,000)	(5,000)	(7,500)	(2,500)
Net Change in Fund Balance	$ -	$ -	3,453	$ 3,453
Beginning fund balance			26,887	
Ending Fund Balance			$ 30,340	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).
2. * Expenditures exceeded appropriations at the legal level of control.

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	GLO Grant			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 40,103	$ 40,103	$ 40,104	$ 1
Total Revenues	40,103	40,103	40,104	1
Expenditures				
Current:				
General administration	119,454	119,454	113,047	6,407
Total Expenditures	119,454	119,454	113,047	6,407
(Deficiency) of Revenues (Under) expenditures	(79,351)	(79,351)	(72,943)	6,408
Other Financing Sources (Uses)				
Transfers in	79,351	79,351	79,351	-
Total Other Financing (Uses)	79,351	79,351	79,351	-
Net Change in Fund Balance	$ -	$ -	6,408	$ 6,408
Beginning fund balance			-	
Ending Fund Balance			$ 6,408	

	Drug Confiscation			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Investment revenue	$ 50	$ 50	$ 169	$ 119
Miscellaneous revenue	-	-	21,433	21,433
Total Revenues	50	50	21,602	21,552
Expenditures				
Current:				
Public safety	1,000	1,000	-	1,000
Total Expenditures	1,000	1,000	-	1,000
Excess (Deficiency) of Revenues Over (Under) Expenditures	(950)	(950)	21,602	22,552
Other Financing Sources (Uses)				
Transfers in	950	950	-	(950)
Total Other Financing Sources	950	950	-	(950)
Net Change in Fund Balance	$ -	$ -	21,602	$ 21,602
Beginning fund balance			14,818	
Ending Fund Balance			$ 36,420	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	Keep Angleton Beautiful			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Investment revenue	$ 125	$ 125	$ 214	$ 89
Miscellaneous revenue	34,000	34,000	37,925	3,925
Total Revenues	34,125	34,125	38,139	4,014
Expenditures				
Current:				
Economic development	94,125	94,125	28,136	65,989
Total Expenditures	94,125	94,125	28,136	65,989
Excess (Deficiency) of Revenues Over (Under) Expenditures	(60,000)	(60,000)	10,003	(61,975)
Other Financing Sources (Uses)				
Transfers in	60,000	60,000	-	(60,000)
Total Other Financing Sources	60,000	60,000	-	(60,000)
Net Change in Fund Balance	$ -	$ -	10,003	$ 10,003
Beginning fund balance			32,375	
Ending Fund Balance			$ 42,378	

	Angleton Act Center			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Charges for services	$ 355,418	$ 355,418	$ 403,500	$ 48,082
Investment revenue	415	415	792	377
Total Revenues	355,833	355,833	404,292	48,459
Expenditures				
Current:				
General administration	1,164,781	1,164,781	1,042,150	122,631
Capital outlay	116,589	116,589	111,909	4,680
Total Expenditures	1,281,370	1,281,370	1,154,059	122,631
(Deficiency) of Revenues (Under) Expenditures	(925,537)	(925,537)	(749,767)	(171,090)
Other Financing Sources (Uses)				
Transfers in	925,537	925,537	820,505	(105,032)
Total Other Financing Sources	925,537	925,537	820,505	(105,032)
Net Change in Fund Balance	$ -	$ -	70,738	$ 70,738
Beginning fund balance			73,141	
Ending Fund Balance			$ 143,879	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	TIRZ #1			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 20,440	$ 20,440	$ 1,217	$ (19,223)
Investment revenue	25	25	45	20
Total Revenues	20,465	20,465	1,262	(19,203)
Expenditures				
Current:				
General administration	20,440	20,440	-	20,440
Total Expenditures	20,440	20,440	-	20,440
Excess of Revenues Over Expenditures	25	25	1,262	1,237
Other Financing Sources (Uses)				
Transfers (out)	(25)	(25)	-	25
Total Other Financing (Uses)	(25)	(25)	-	25
Net Change in Fund Balance	$ -	$ -	1,262	$ 1,262
Beginning fund balance			147	
Ending Fund Balance			$ 1,409	

	OBJ Police Grant			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 57,568	$ 57,568	$ 16,098	$ (41,470)
Total Revenues	57,568	57,568	16,098	(41,470)
Expenditures				
Current:				
Public safety	79,000	79,000	64,562	14,438
Total Expenditures	79,000	79,000	64,562	14,438
(Deficiency) of Revenues (Under) Expenditures	(21,432)	(21,432)	(48,464)	(27,032)
Other Financing Sources (Uses)				
Transfers in	21,432	21,432	18,997	(2,435)
Total Other Financing Sources	21,432	21,432	18,997	(2,435)
Net Change in Fund Balance	$ -	$ -	(29,467)	$ (29,467)
Beginning fund balance			29,467	
Ending Fund Balance			$ -	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	Police Donation			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Investment revenue	$ 25	$ 25	$ 85	$ 60
Miscellaneous revenue	5,000	5,000	12,085	7,085
Total Revenues	5,025	5,025	12,170	7,145
Expenditures				
Current:				
Public safety	16,300	16,300	16,000	300
Total Expenditures	16,300	16,300	16,000	300
(Deficiency) of Revenues (Under) expenditures	(11,275)	(11,275)	(3,830)	6,845
Other Financing Sources (Uses)				
Transfers in	11,275	11,275	-	(11,275)
Total Other Financing Sources	11,275	11,275	-	(11,275)
Net Change in Fund Balance	$ -	$ -	(3,830)	$ (3,830)
Beginning fund balance			18,062	
Ending Fund Balance			$ 14,232	

	Fire Department ESD			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 324,263	$ 324,263	$ 326,619	$ 2,356
Other revenue	277	277	162	(115)
Total Revenues	324,540	324,540	326,781	2,241
Expenditures				
Current:				
Public safety	252,022	252,022	207,473	44,549
Total Expenditures	252,022	252,022	207,473	44,549
Excess of Revenues Over Expenditures	72,518	72,518	119,308	46,790
Other Financing Sources (Uses)				
Transfers in	25,188	25,188	-	(25,188)
Transfers (out)	(71,645)	(71,645)	(208,082)	(136,437) *
Total Other Financing (Uses)	(46,457)	(46,457)	(208,082)	(161,625)
Net Change in Fund Balance	$ 26,061	$ 26,061	(88,774)	$ (114,835)
Beginning fund balance			88,820	
Ending Fund Balance			$ 46	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).
2. * Expenditures exceeded appropriations at the legal level of control.

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	A/C Donations			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Investment revenue	$ 7,000	$ 7,000	$ 49	$ (6,951)
Miscellaneous revenue	5,000	5,000	12,616	7,616
Total Revenues	12,000	12,000	12,665	665
Expenditures				
Current:				
General administration	12,000	12,000	-	12,000
Total Expenditures	12,000	12,000	-	12,000
Net Change in Fund Balance	$ -	$ -	12,665	$ 12,665
Beginning fund balance			18,543	
Ending Fund Balance			$ 31,208	

	TxDOT Grant			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 12,000	$ 12,000	$ 1,091	$ (10,909)
Total Revenues	12,000	12,000	1,091	(10,909)
Expenditures				
Current:				
Public safety	15,015	15,015	-	15,015
Total Expenditures	15,015	15,015	-	15,015
Excess (Deficiency) of Revenues Over (Under) Expenditures	(3,015)	(3,015)	1,091	(4,106)
Other Financing Sources (Uses)				
Transfers in	3,028	3,028	-	(3,028)
Total Other Financing Sources	3,028	3,028	-	(3,028)
Net Change in Fund Balance	$ 13	$ 13	1,091	$ 1,078
Beginning fund balance			3,708	
Ending Fund Balance			$ 4,799	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	Traffic Enforcement			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 12,000	$ 12,000	$ 9,201	$ (2,799)
Total Revenues	12,000	12,000	9,201	(2,799)
Expenditures				
Current:				
Public safety	15,015	15,015	10,181	4,834
Total Expenditures	15,015	15,015	10,181	4,834
(Deficiency) of Revenues (Under) Expenditures	(3,015)	(3,015)	(980)	(2,035)
Other Financing Sources (Uses)				
Transfers in	3,028	3,028	-	(3,028)
Total Other Financing Sources	3,028	3,028	-	(3,028)
Net Change in Fund Balance	$ 13	$ 13	(980)	$ (993)
Beginning fund balance			980	
Ending Fund Balance			$ -	

	Developer Deposit			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Miscellaneous revenue	$ 910,384	$ 910,384	$ 568,406	$ (341,978)
Total Revenues	910,384	910,384	568,406	(341,978)
Expenditures				
Current:				
General administration	910,384	910,384	224,903	685,481
Total Expenditures	910,384	910,384	224,903	685,481
Net Change in Fund Balance	$ -	$ -	343,503	$ 343,503
Beginning fund balance			995,424	
Ending Fund Balance			$ 1,338,927	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE – BUDGET AND ACTUAL NONMAJOR SPECIAL REVENUE FUNDS (Continued)

For the Year Ended September 30, 2022

	HGAC Grant			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 54,239	$ 54,239	$ 54,239	$ -
Total Revenues	54,239	54,239	54,239	-
Expenditures				
Current:				
Public safety	54,239	54,239	54,239	-
Total Expenditures	54,239	54,239	54,239	-
Net Change in Fund Balance	$ -	$ -	-	$ -
Beginning fund balance			-	
Ending Fund Balance			$ -	

	911 Recorder Grant			
	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Intergovernmental	$ 3,462	$ 3,462	$ 3,462	$ -
Total Revenues	3,462	3,462	3,462	-
Expenditures				
Current:				
General administration	3,462	3,462	3,462	-
Total Expenditures	3,462	3,462	3,462	-
Net Change in Fund Balance	$ -	$ -	-	$ -
Beginning fund balance			-	
Ending Fund Balance			$ -	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

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CITY OF ANGLETON, TEXAS

SCHEDULE OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCE - BUDGET AND ACTUAL

DEBT SERVICE FUND

For the Year Ended September 30, 2022

	Original Budget Amounts	Final Budget Amounts	Actual Amounts	Variance with Final Budget Positive (Negative)
Revenues				
Property taxes	$ 926,732	$ 926,732	$ 882,787	$ (43,945)
Investment revenue	500	500	1,148	648
Other revenue	-	-	9,858	9,858
Total Revenues	927,232	927,232	893,793	(33,439)
Expenditures				
Debt service:				
Principal	2,260,000	2,260,000	1,177,432	1,082,568
Interest and fiscal agent fees	826,879	826,879	404,590	422,289
Total Expenditures	3,086,879	3,086,879	1,582,022	1,504,857
(Deficiency) of Revenues (Under) Expenditures	(2,159,647)	(2,159,647)	(688,229)	1,471,418
Other Financing Sources (Uses)				
Transfers in	2,159,647	2,159,647	720,230	(1,439,417)
Transfers (out)	13,845	13,845	-	13,845
Total Other Financing Sources	2,173,492	2,173,492	720,230	(1,425,572)
Net Change in Fund Balance	$ 13,845	$ 13,845	32,001	$ 18,156
Beginning fund balance			398,159	
Ending Fund Balance			$ 430,160	

Notes to Supplementary Information:

1. Annual budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP).

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CONSOLIDATED SUB-FUND STATEMENTS

CITY OF ANGLETON, TEXAS

CONSOLIDATED BALANCE SHEET
GENERAL FUND - SUB-FUNDS
September 30, 2022

	General	Community Events	Capital Lease Purchase	Downtown Revitalization
Assets				
Cash and cash equivalents	$ 3,086,833	$ 1,157	$ 64,081	$ 6,383
Investments	351,189	-	-	-
Receivables, net	1,294,353	-	-	-
Inventory	1,506	-	-	-
Prepaids	5,313	-	-	-
Restricted cash and cash equivalents	-	-	-	-
Due from other governments	3,850	-	-	-
Due from other funds	184,326	-	-	-
Total Assets	$ 4,927,370	$ 1,157	$ 64,081	$ 6,383
Liabilities				
Accounts payable and accrued liabilities	$ 987,627	$ 61	$ -	$ -
Unearned revenue	392,700	101,850	-	-
Total Liabilities	1,380,327	101,911	-	-
Deferred Inflows of Resources				
Unavailable revenue - property taxes	107,112	-	-	-
Unearned revenue - developer reimbursements	-	-	-	-
Total Deferred Inflows of Resources	107,112	-	-	-
Fund Balances				
Nonspendable:				
Inventory and prepaids	6,819	-	-	-
Restricted for:				
Capital projects	-	-	-	-
Unassigned	3,433,112	(100,754)	64,081	6,383
Total Fund Balances	3,439,931	(100,754)	64,081	6,383
Total Liabilities, Deferred Inflows of Resources, and Fund Balances	$ 4,927,370	$ 1,157	$ 64,081	$ 6,383

Citywide Repairs	2019 C.O. Bonds	City Employee	Total General Fund
$ 877	$ -	$ 6,581	$ 3,165,912
-	-	-	351,189
-	-	-	1,294,353
-	-	-	1,506
-	-	-	5,313
-	69,509	-	69,509
-	-	-	3,850
-	-	-	184,326
$ 877	$ 69,509	$ 6,581	$ 5,075,958
$ -	$ -	$ -	$ 987,688
-	-	-	494,550
-	-	-	1,482,238
-	-	-	107,112
-	-	-	-
-	-	-	107,112
-	-	-	6,819
-	69,509	-	69,509
877	-	6,581	3,410,280
877	69,509	6,581	3,486,608
$ 877	$ 69,509	$ 6,581	$ 5,075,958

CITY OF ANGLETON, TEXAS

CONSOLIDATED STATEMENT OF REVENUES, EXPENDITURES, AND CHANGES IN FUND BALANCES
GENERAL FUND - SUB-FUNDS
For the Year Ended September 30, 2022

	General	Community Events	Capital Lease Purchase	Downtown Revitalization
Revenues				
Property taxes	$ 6,800,964	$ -	$ -	$ -
Franchise fees and local taxes	668,673	-	-	-
Sales taxes	3,696,232	-	-	-
Industrial district agreement	82,416	-	-	-
Permits, licenses, and fees	858,711	-	-	-
Fines and forfeitures	527,343	-	-	-
Charges for services	2,265,389	-	-	-
Intergovernmental	403,967	-	-	-
Investment revenue	23,339	85	-	40
Miscellaneous revenue	239,052	25,320	-	-
Total Revenues	15,566,086	25,405	-	40
Expenditures				
Current:				
General administration	4,077,152	-	-	-
Financial administration	472,509	-	-	-
Public safety	8,342,209	-	-	-
Community services	4,064,181	-	-	-
Economic development	97,937	126,721	-	5,567
Capital outlay	229,697	-	-	-
Debt service:				
Principal	163,347	-	204,051	-
Interest and fiscal agent fees	22,951	-	4,031	-
Total Expenditures	17,469,983	126,721	208,082	5,567
Excess (Deficiency) of Revenues Over (Under) Expenditures	(1,903,897)	(101,316)	(208,082)	(5,527)
Other Financing Sources (Uses)				
Transfers in	1,173,630	-	268,082	-
Transfers (out)	(18,997)	-	-	-
Sale of capital assets	101,165	-	-	-
Lease proceeds	229,697	-	-	-
Total Other Financing Sources	1,485,495	-	268,082	-
Net Change in Fund Balances	(418,402)	(101,316)	60,000	(5,527)
Beginning fund balances	3,858,333	562	4,081	11,910
Ending Fund Balances	$ 3,439,931	$ (100,754)	$ 64,081	$ 6,383

Citywide Repairs	2019 C.O. Bonds	City Employee	Total General Fund
$ -	$ -	$ -	$ 6,800,964
-	-	-	668,673
-	-	-	3,696,232
-	-	-	82,416
-	-	-	858,711
-	-	-	527,343
-	-	-	2,265,389
-	-	-	403,967
1	-	39	23,504
-	-	-	264,372
1	-	39	15,591,571
-	-	-	4,077,152
-	-	-	472,509
-	-	-	8,342,209
-	-	-	4,064,181
-		-	230,225
-	-	-	229,697
-	-	-	367,398
-	-	-	26,982
-	-	-	17,810,353
1	-	39	(2,218,782)
-	-	-	1,441,712
-	-	-	(18,997)
-	-	-	101,165
-			229,697
-	-	-	1,753,577
1	-	39	(465,205)
876	69,509	6,542	3,951,813
$ 877	$ 69,509	$ 6,581	$ 3,486,608

CITY OF ANGLETON, TEXAS

CONSOLIDATED STATEMENT OF NET POSITION

UTILITY FUND - SUB-FUNDS

September 30, 2022

	Water	Capital Lease Purchase	Infrastructure	2013 C.O. Bonds
Assets				
Current assets:				
Cash and cash equivalents	$ 274,948	$ 22,616	$ -	$ -
Investments	351,189	-	-	-
Receivables, net	1,257,578	-	-	-
Inventory	60,232	-	-	-
Restricted cash and cash equivalents	361,665	-	927,483	36,688
Total Current Assets	2,305,612	22,616	927,483	36,688
Capital assets:				
Nondepreciable	353,586	-	108,827	71,618
Depreciable, net	17,151,127	-	-	440,129
Total Capital Assets (Net of Accumulated Depreciation)	17,504,713	-	108,827	511,747
Total Noncurrent Assets	17,504,713	-	108,827	511,747
Total Assets	19,810,325	22,616	1,036,310	548,435
Deferred Outflows of Resources				
Deferred outflows - pensions	127,651	-	-	-
Deferred outflows - OPEB	15,510	-	-	-
Deferred charge on refunding	29,159	-	-	-
Total Deferred Outflows of Resources	172,320	-	-	-
Liabilities				
Current liabilities:				
Accounts payable and accrued liabilities	463,466	-	14,278	123
Customer deposits	361,665	-	-	-
Accrued interest payable	54,914	-	-	-
Total Current Liabilities	880,045	-	14,278	123
Noncurrent liabilities:				
Long-term debt due within one year	712,240	-	-	-
Long-term debt due in more than one year	5,702,925	-	-	-
Total Noncurrent Liabilities	6,415,165	-	-	-
Total Liabilities	7,295,210	-	14,278	123
Deferred Inflows of Resources:				
Deferred inflows - pensions	330,311	-	-	-
Deferred inflows - OPEB	3,049	-	-	-
Total Deferred inflows of Resources	333,360	-	-	-
Net Position				
Net investment in capital assets	11,406,265	-	108,827	511,747
Restricted for capital projects	72,262	-	913,205	36,565
Unrestricted	875,548	22,616	-	-
Total Net Position	$ 12,354,075	$ 22,616	$ 1,022,032	$ 548,312

2019 C.O. Bonds	2021 C.O. Bonds	Total Utility Fund
$ -	$ -	$ 297,564
-	-	351,189
-	-	1,257,578
-	-	60,232
673,548	2,108,154	4,107,538
673,548	2,108,154	6,074,101
3,819,242	157,979	4,511,252
3,188,667	-	20,779,923
7,007,909	157,979	25,291,175
7,007,909	157,979	25,291,175
7,681,457	2,266,133	31,365,276
-	-	127,651
-	-	15,510
-	-	29,159
-	-	172,320
272,598	6,488	756,953
-	-	361,665
-	-	54,914
272,598	6,488	1,173,532
257,520	100,000	1,069,760
7,526,122	2,287,942	15,516,989
7,783,642	2,387,942	16,586,749
8,056,240	2,394,430	17,760,281
-	-	330,311
-	-	3,049
-	-	333,360
(374,783)	(128,297)	11,523,759
-	-	1,022,032
-	-	898,164
$ (374,783)	$ (128,297)	$ 13,443,955

CITY OF ANGLETON, TEXAS

CONSOLIDATED STATEMENT OF REVENUES, EXPENSES, AND CHANGES IN FUND NET POSITION
UTILITY FUND - SUB-FUNDS

For the Year Ended September 30, 2022

	Water	Capital Lease Purchase	Infrastructure	2013 C.O. Bonds
Operating Revenues				
Water sales	$ 4,704,787	$ -	$ 165,743	$ -
Sanitary sewer services	2,857,249	-	158,517	-
Other service fees	414,882	-	-	-
Total Operating Revenues	7,976,918	-	324,260	-
Operating Expenses				
Water distribution	636,425	-	-	-
Water plant operations	953,755	-	-	-
Water purchases	2,207,590	-	-	-
Sewer	427,118	-	-	69,114
Collection administration	2,046,276	-	-	-
Depreciation	1,221,875	-	-	-
Total Operating Expenses	7,493,039	-	-	69,114
Operating Income (Loss)	483,879	-	324,260	(69,114)
Nonoperating Revenues (Expenses)				
Investment revenue	5,119	-	-	31,911
Interest expense	(208,263)	-	-	-
Gain (loss) on sale of capital assets	25,400	-	-	-
Total Nonoperating Revenues (Expenses)	(177,744)	-	-	31,911
Income (Loss) Before Transfers and Capital Contributions	306,135	-	324,260	(37,203)
Transfers and Capital Contributions				
Transfers in/ (out)	(580,590)	22,600	(304,288)	-
Capital contribution	514,791	-	-	-
Total Transfers	(65,799)	22,600	(304,288)	-
Change in Net Position	240,336	22,600	19,972	(37,203)
Beginning net position	12,113,739	16	1,002,060	585,515
Ending Net Position	$ 12,354,075	$ 22,616	$ 1,022,032	$ 548,312

2019 C.O. Bonds	2021 C.O. Bonds	Total Utility Fund
$ -	$ -	$ 4,870,530
-	-	3,015,766
-	-	414,882
-	-	8,301,178
-	-	636,425
119,148	-	1,072,903
-	-	2,207,590
-	-	496,232
-	99,149	2,145,425
-	-	1,221,875
119,148	99,149	7,780,450
(119,148)	(99,149)	520,728
6,659	14,738	58,427
(182,943)	(43,886)	(435,092)
-	-	25,400
(176,284)	(29,148)	(351,265)
(295,432)	(128,297)	169,463
(79,351)	-	(941,629)
-	-	514,791
(79,351)	-	(426,838)
(374,783)	(128,297)	(257,375)
-	-	13,701,330
$ (374,783)	$ (128,297)	$ 13,443,955

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AGENDA ITEM SUMMARY FORM

MEETING DATE: 07/25/23

PREPARED BY: Scott Myers

AGENDA CONTENT: Progress update for Fire Department Station 3 Addition

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT:

FUNDS REQUESTED:

FUND:

EXECUTIVE SUMMARY:

Review prepared documents concerning Station 3 Addition. Documents include preliminary drawings, foot plan, and bid proposal packets. RFQ's have not yet been sent out. Our goal is to have these out by the end of July or early August. Once bid proposals are in, a committee will be formed to review these proposals and the council will see an agenda item to move forward.

Brent Bowles and Chief Myers will be at the Council Meeting for any questions you may have.

RECOMMENDATION:

For update purposes only.

1 SITE PLAN
1" = 20'-0"

PLAN NORTH

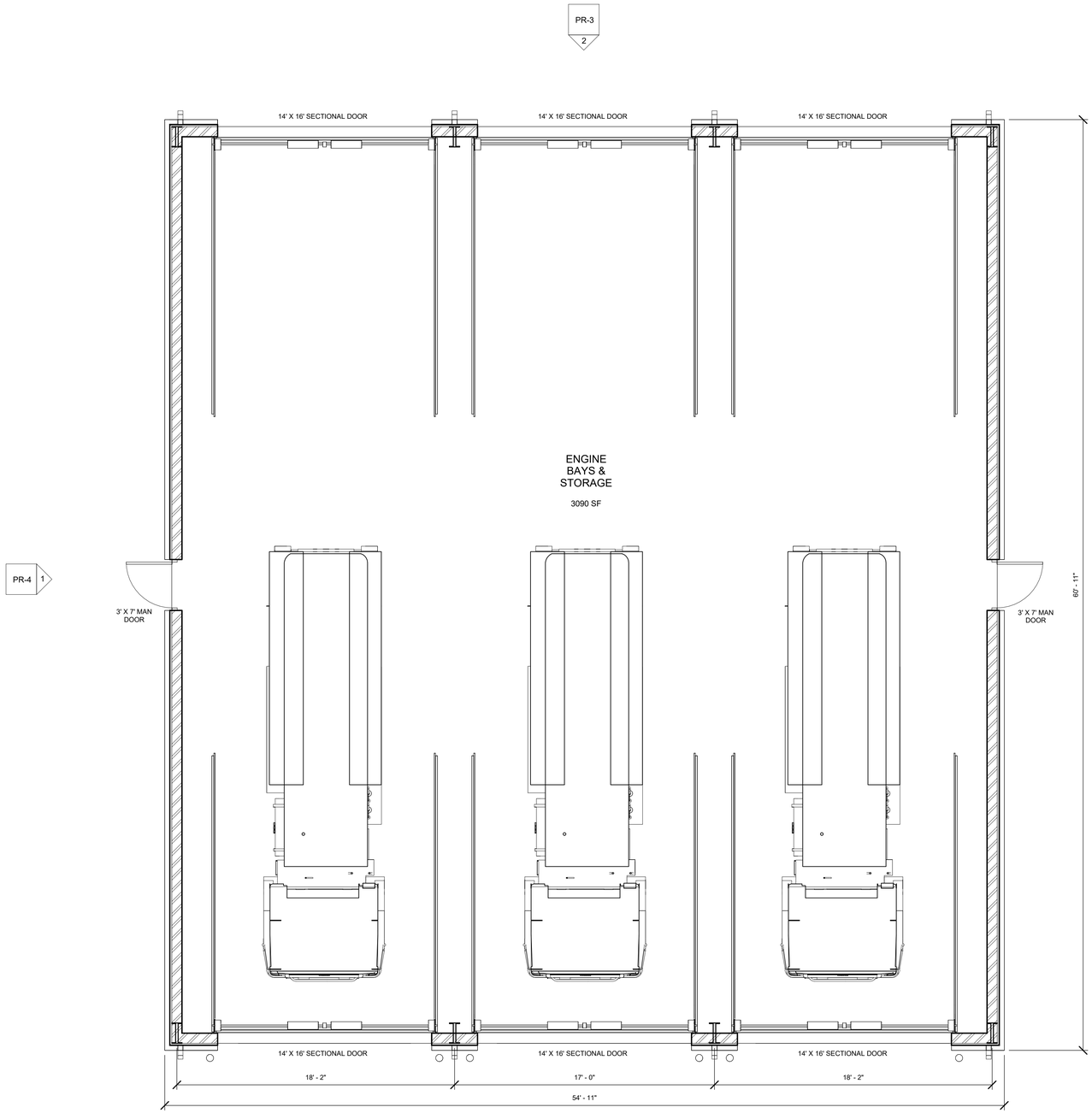
Angleton Fire Department - Station #3 Addition

iAD ARCHITECTS

SITE PLAN

05/03/2023

5/3/2023 9:01:32 AM



1 FLOOR PLAN

1/4" = 1'-0"

PLAN
NORTH

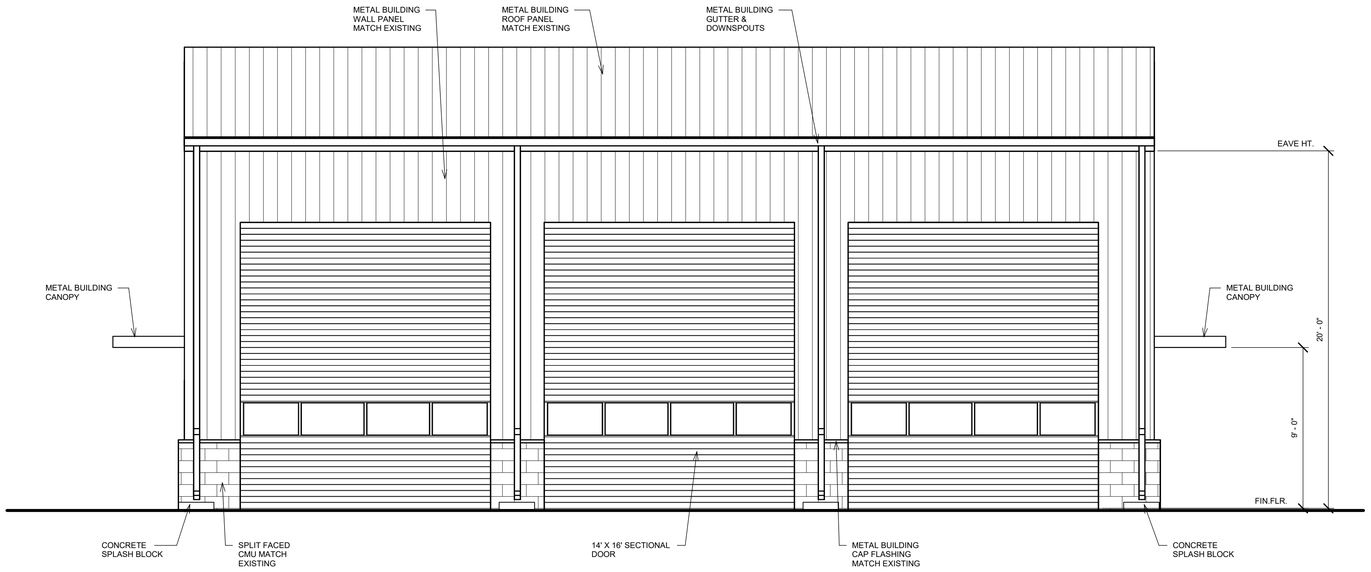
1
PR-3

Angleton Fire Department - Station #3 Addition

FLOOR PLAN

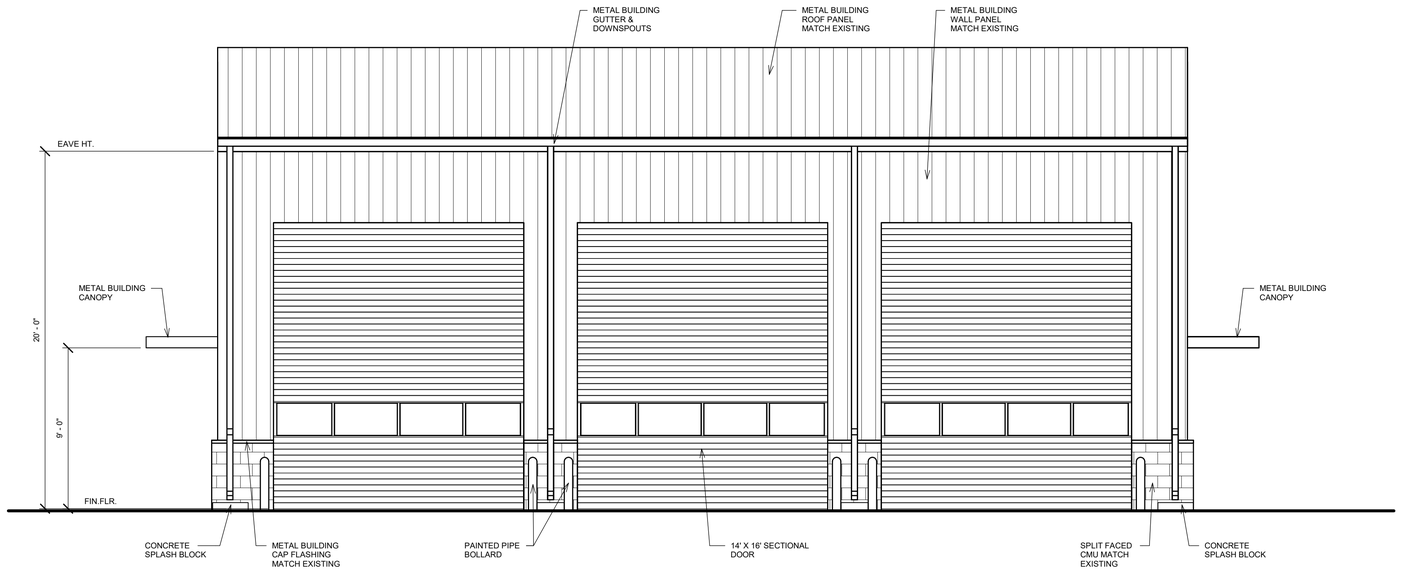
05/03/2023

5/3/2023 9:01:33 AM



2 NORTH ELEVATION

1/4" = 1'-0"



1 SOUTH ELEVATION

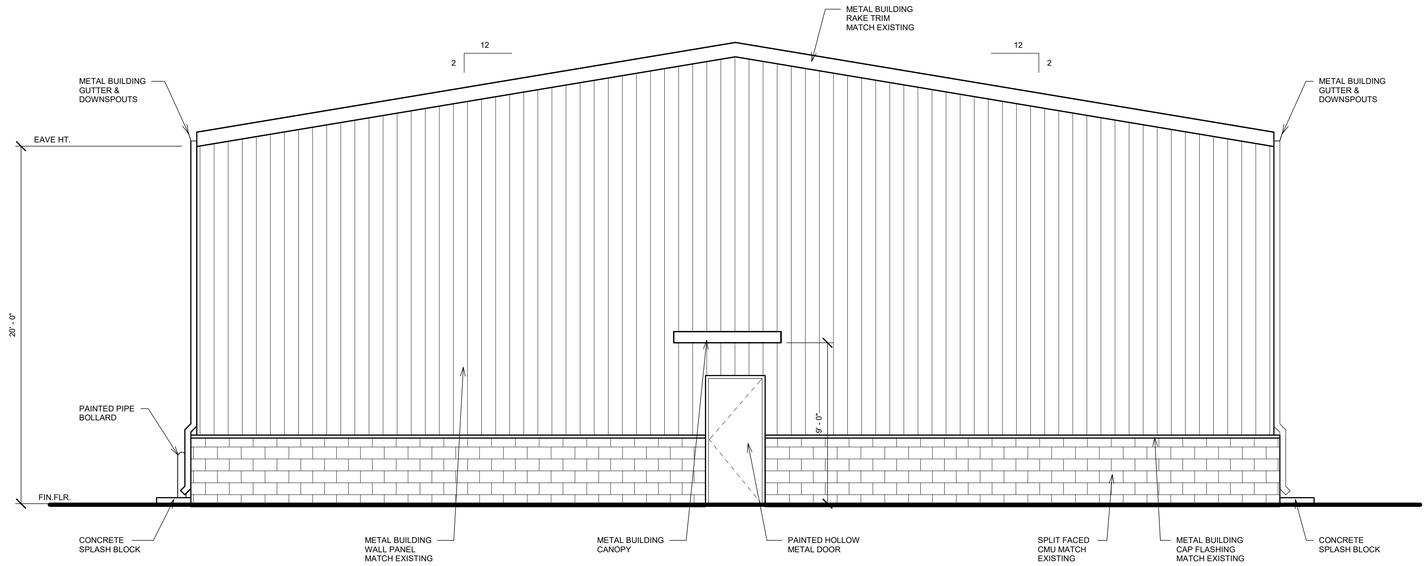
1/4" = 1'-0"

Angleton Fire Department - Station #3 Addition

ELEVATIONS

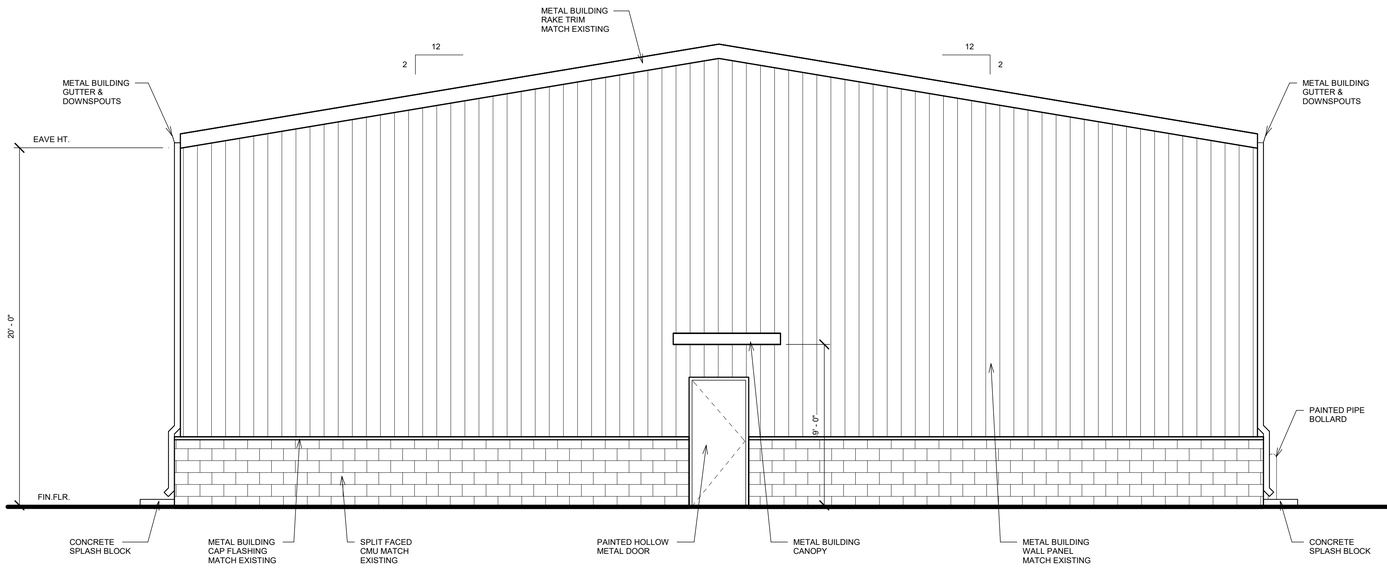
05/03/2023

5/3/2023 9:01:34 AM



2 EAST ELEVATION

1/4" = 1'-0"



1 WEST ELEVATION

1/4" = 1'-0"

Angleton Fire Department - Station #3 Addition

AD ARCHITECTS

ELEVATIONS

05/03/2023

5/3/2023 9:01:36 AM

PROJECT MANUAL

Angleton Fire Station #3 Addition

2743 N. Velasco St.
Angleton, TX 77515

Architect
Integrated Architecture & Design, LLC
107 West Way, Suite 16
Lake Jackson, TX 77566
979.297.1411 p.

Civil
Baker & Lawson,Inc.
4005 Technology Dr., Suite 1530
Angleton, TX 77515
979.849.6681 p.

Structural
CJG Engineers
3200 Wilcrest Dr., Suite 305
Houston, TX 77042
713.780.3345 p.

Mechanical,Electrical, & Plumbing
DVO an Urban-Gro Company
825 Town and Country Lane, Suite 1150
Houston, TX 77024
281.293.7500 p.

95% OWNER REVIEW

TITLE PAGE

PROJECT TITLE: **ANGLETON FIRE STATION #3 ADDITION**

PROJECT ADDRESS: **2743 N. VELASCO**
ANGLETON, TEXAS 77515

NAME AND ADDRESS OF THE ARCHITECT AND ENGINEERS:

ARCHITECT: **INTEGRATED ARCHITECTURE & DESIGN, LLC**
107 WEST WAY, SUITE 16
LAKE JACKSON, TEXAS 77566
979.297.1411 P.

STRUCTURAL ENGINEER: **CJG ENGINEERS**
3200 WILCREST DR., SUITE 305
HOUSTON, TEXAS 77042
713.780.3345 P.

MEP ENGINEER: **DVO an urban-gro Company**
825 TOWN & COUNTRY LN, SUITE 1150
HOUSTON, TEXAS 77024
281.293.7500 P.

CIVIL ENGINEER: **BAKER & LAWSON, INC.**
4005 TECHNOLOGY DRIVE, SUITE 1530
ANGLETON, TEXAS 77515
979.849.6681 P.

TITLE OF DOCUMENTS BOUND HEREWITH:

PART ONE: GENERAL REQUIREMENTS
PART TWO: MATERIAL SPECIFICATIONS

SEAL:
PROJECT NO: 23017
DATE: JUNE 2, 2023

SPECIFICATIONS INDEX

DOCUMENT 001113 - ADVERTISEMENT FOR BIDS

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders may submit bids for project as described in this Document. Submit bids according to the Instructions to Bidders.

B. Project Identification: Angleton Fire Station #3 Addition.

1. Project Location: 2743 N. Velasco, Angleton, TX 77515.

C. Owner: City of Angleton.

1. Owner's Representative: Scott Myers, Fire Chief; p. 979.549.0599.

D. Architect: iAD Architects, Brent Bowles, AIA, p. 979.297.1411.

E. Project Description: New pre-engineered metal building of approximately 3,240 SF with three (3) engine bays and storage areas.

F. Construction Contract: Bids will be received for the following Work:

1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed lump sum bids until the bid time and date at the location given below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. Bid Date: <**Insert date**>.
2. Bid Time: [**2:00 p.m.**] <**Insert time**>, local time.
3. Location: <**Insert bid receipt's location and room name**>, <**Insert street address**>, <**Insert city, state, and zip code**>.

1.3 BID SECURITY

A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID MEETING

A. Prebid Meeting: See Document 002513 "Prebid Meetings."

B. Prebid Meeting: A Prebid meeting for all bidders will be held at <**Insert location**> on <**Insert date**> at [**10:00 a.m.**] <**Insert time**>, local time. Prospective prime bidders are [**requested**] [**required**] to attend.

1. Bidders' Questions: Architect will provide responses to bidders' questions received, in an Addendum issued after the Prebid conference.

1.5 DOCUMENTS

A. Online Procurement and Contracting Documents: Obtain access after <**Insert date**>, by contacting iAD Architects at 979.297.1411 or email to: info@iadarchitects.com. Online access will be provided to prime bidders only.

B. Viewing Procurement and Contracting Documents: Examine after <Insert date>, at the locations below:

1. <**Insert locations, such as Owner's and Architect's offices and plan rooms**>.

1.6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Successful bidder shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time. Work is subject to liquidated damages.

1.7 BIDDER'S QUALIFICATIONS

A. Bidders must be prequalified by Owner.

B. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

1.8 NOTIFICATION

A. This Advertisement for Bids document is issued by City of Angleton.

END OF DOCUMENT 001113

DOCUMENT 001115 - ADVERTISEMENT FOR PREQUALIFICATION OF BIDDERS

1.1 NOTIFICATION

A. Notice to Prospective Bidders: Owner will receive sealed Submittal of Qualifications from contractors interested in submitting construction bids on Project(s) described in this Advertisement, until the time and date given below.

B. Owner: City of Angleton.

1. Owner's Representative: Scott Myers, Fire Chief, p. 979.549.0599.

1.2 PROJECT INFORMATION

A. See Document 001113 "Advertisement for Bids" for Project information.

B. Project Identification: Angleton Fire Station #3 Addition.

1. Project Location: 2743 N. Velasco, Angleton, TX 77515.

A. Project Description: New pre-engineered metal building of approximately 3,240 SF with three (3) engine bays and storage areas.

B. Construction Contract: Prospective Bidders will prequalify for the following Work:

1. General Contract (all trades).

1.3 SUBMITTAL OF PROSPECTIVE BIDDERS' QUALIFICATIONS

A. Owner will receive sealed Submittal of Qualifications until the time and date at the location given below. Owner will consider submittals prepared in compliance with the Request for Qualifications issued by Owner, and delivered as follows:

1. Date: <**Insert date**>.
2. Time: [**2:00 p.m.**] <**Insert time**>, local time.
3. Location: <**Insert location and room name**>, <**Insert street address**>, <**Insert city, state, and zip code**>.

B. Submittals of Qualifications will thereafter be evaluated by Owner and the names of the prequalified bidders will thereafter be published. Prospective Bidders' qualification information shall be considered privileged and confidential.

1.4 DOCUMENTS

A. Online Prequalification Documents: Submittal will be in the form of printed AIA Document A305, "Contractor's Qualification Statement," with supplemental attachments described in the documents.

1.5 QUALIFICATIONS OF PROSPECTIVE BIDDERS

A. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

B. The completed Prequalification Submittal for each Prospective Bidder will be evaluated by Owner according to the following criteria, described in greater detail in the documents:

1. Proper license under the laws governing their respective trade(s).
2. Capacity to provide adequate Performance Bond, Labor and Material Payment Bond, and Insurance in a form acceptable to Owner.
3. Adequate financial resources, work-in-hand capacity, adequate organization, and acceptable past performance.
4. Applicable experience of firm, including experience of Project and field management staff to be assigned to the Work.

1.6 NOTIFICATION

A. This Advertisement for Prequalification of Bidders document is issued by the City of Angleton.

END OF DOCUMENT 001115

DOCUMENT 001116 - INVITATION TO BID

1.1 PROJECT INFORMATION

A. Notice to Bidders: Qualified bidders are invited to submit bids for Project as described in this Document according to the Instructions to Bidders.

B. Project Identification: Angleton Fire Station #3 Addition.

1. Project Location: 2743 N. Velasco, Angleton, TX 77515.

C. Owner: City of Angleton.

1. Owner's Representative: Scott Myers, Fire Chief.

D. Architect: iAD Architects; Brent Bowles, AIA.

E. Project Description: Project consists of a new pre-engineered metal building of approximately 3,240 SF with three(3) engine bays and storage areas.

F. Construction Contract: Bids will be received for the following Work:

1. General Contract (all trades).

1.2 BID SUBMITTAL AND OPENING

A. Owner will receive sealed bids until the bid time and date at the location indicated below. Owner will consider bids prepared in compliance with the Instructions to Bidders issued by Owner, and delivered as follows:

1. Bid Date: <**Insert date**>.
2. Bid Time: [**2:00 p.m.**] <**Insert time**>, local time.
3. Location: <**Insert bid receipt's location and room name**>, <**Insert street address**>, <**Insert city, state, and zip code**>.

B. Bids will be publicly opened and read aloud.

1.3 BID SECURITY

A. Bid security shall be submitted with each bid in the amount of 5 percent of the bid amount. No bids may be withdrawn for a period of 60 days after opening of bids. Owner reserves the right to reject any and all bids and to waive informalities and irregularities.

1.4 PREBID CONFERENCE

A. A prebid conference for all bidders will be held at <**Insert location**> on <**Insert date**> at [**10:00 a.m.**] <**Insert time**>, local time. Prospective bidders are [**requested**] [**required**] to attend.

1.5 DOCUMENTS

A. Online Procurement and Contracting Documents: Obtain access after <**Insert date**> by contacting iAD Architects at 979.297.1411 or email: info@iadarchitects.com.

1.6 TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Bidders shall begin the Work on receipt of the Notice to Proceed and shall complete the Work within the Contract Time. Work is subject to liquidated damages.

1.7 BIDDER'S QUALIFICATIONS

A. Bidders must be prequalified by Owner.

B. Bidders must be properly licensed under the laws governing their respective trades and be able to obtain insurance and bonds required for the Work. A Performance Bond, a separate Labor and Material Payment Bond, and Insurance in a form acceptable to Owner will be required of the successful Bidder.

END OF DOCUMENT 001116

DOCUMENT 001153 - REQUEST FOR QUALIFICATIONS

1.1 PURPOSE, LAWS, AND REGULATIONS

A. The purpose of the Prequalification Procedure described in this Document is to provide Owner with a mechanism to evaluate and determine whether Prospective Bidders are qualified to participate in the construction of Project. Evaluation will be limited to that office of the Prospective Bidder that is proposed to perform the Work.

B. Prospective Bidders are required to comply with these Requirements for Prequalification. Only those Prospective Bidders who have complied with the Requirements for Prequalification and have been determined to be qualified will be eligible to submit construction bids on Project.

1.2 DEFINITIONS

A. Financial Statement: The requirement for submitting a financial statement as an attachment to AIA Document A305, "Contractor's Qualification Statement" shall be understood to mean a certified annual audit, prepared according to generally acceptable accounting practices and signed by an independent certified public accountant. A Reviewed Statement of Assets and Liabilities, prepared and signed by an independent certified public accountant, is also acceptable. A self-prepared annual compiled financial statement or balance sheet is unacceptable.

B. Prospective Bidder: A Prospective Bidder is a person or entity who submits a Submittal of Qualifications to Owner.

C. Project: Generally described in the Advertisement for Bids.

1.3 PREQUALIFICATION DOCUMENTS

A. Prequalification Documents: Consist of the Advertisement for Prequalification of Bidders; this Request for Qualifications document; AIA Document A305, "Contractor's Qualification Statement"; and additional documents issued by Owner.

B. Interpretation or Correction of Prequalification Documents: If the Prospective Bidder is in doubt as to the interpretation of any part of the Prequalification Documents, or finds discrepancies in or omissions from any part of the Prequalification Documents, it must submit a written Request for Interpretation thereof no later than three days prior to acceptance of Submittals of Qualifications. Address all communications to Owner.

1.4 PREQUALIFICATION PROCEDURES

A. Form of Prequalification Submittal:

1. Submittals of Prequalification must be submitted in duplicate on AIA Document A305, "Contractor's Qualification Statement," properly executed and with all items filled out in ink or typed, and all additional data, attachments, and forms provided. Do not change or

add words to the Qualification Statement or forms. All signatures must be original (and sealed if a corporation) and must be notarized and sealed by a Notary Public.

B. Submission of Prequalification Documents:

1. Each Submittal of Prequalification shall be delivered to the location indicated in the Advertisement for Prequalification on or before the day and hour set for receipt of Submittals. Each Submittal of Prequalification shall be submitted in an opaque, sealed envelope marked in the lower left-hand corner as follows:

   a. Bidder's Prequalification Statement for Angleton Fire Station #3 Addition.
   b. **Prospective Bidder's Name**.
   c. **Prospective Bidder's Address**.
   d. Date and Time for Submittal.

2. If not delivered in person, this envelope shall be enclosed in a second envelope for posting to the location indicated for receipt of bids. This envelope shall be addressed as follows:

   a. Bidder's Prequalification Statement for Angleton Fire Station #3 Addition.
   b. Date and Time for Submittal.
   c. City of Angleton.
   d. 2743 N. Velasco .
   e. Angleton, TX 77515.

3. It is the sole responsibility of the Prospective Bidder to ensure that its submittal is received by the submittal date and time. No faxed or e-mail submittal or modification of a submittal will be considered. No submittal submitted after the time fixed for receiving submittals will be considered; late submittals will be returned to the Prospective Bidder unopened.
4. Owner reserves the right to waive any informality and to request additional information from Prospective Bidders, at Owner's discretion.

C. Attachments:

1. Prospective Bidders shall complete all required forms and attachments described in the Prequalification Documents, entering "Not Applicable" where information does not apply. Absence of any of the forms included in the Prequalification Documents will be reason for possible disqualification.

D. Status of Prospective Bidders:

1. Proprietors submitting bids shall indicate their status as proprietors.
2. Prospective Bidders submitting qualifications for partnerships shall indicate their status as partners and shall submit a certified copy of the power of attorney authorizing the executor of the submittal to bind the partnership.
3. Prospective Bidders submitting qualifications for corporations shall indicate their status as corporations and shall submit a certified copy of the board of directors' authorization for the Prospective Bidder to bind the corporation and shall affix the corporate seal on the submittal.
4. Prospective Bidders shall provide the following:

a. Names and addresses of proprietors, of all members of a partnership, or of the corporation's officers.
b. Name of jurisdiction where the partnership is registered or where the corporation is incorporated. Corporations must be licensed to do business in Project state at the time of executing the Contract.

1.5 WITHDRAWAL

A. A Qualification Statement may be withdrawn on personal request received from the Prospective Bidder.

1.6 PREQUALIFICATION CRITERIA

A. Prospective Bidders must demonstrate the following to the satisfaction of Owner:

1. Proper license under the laws and regulations governing their respective trade(s).
2. Capacity to provide Performance Bond, Labor and Material Payment Bond, and Insurance in a form acceptable to Owner in amounts adequate to bond the Work based on the scope indicated in the Advertisement for Prequalifications.
3. Applicable experience of firm as described in the Contractor's Qualification Statement, including the following:

a. Experience of Firm: The firm in its current organization shall have successfully completed minimum of five projects of similar type, quality, and scope, including a minimum of two within the last five years. The firm shall have a record of project completion, credit record, record of judgment claims, arbitration proceedings, and suits pending or outstanding acceptable to Owner.
b. Experience of Firm Officers: The firm officers shall have personal record of project completion acceptable to Owner.
c. Experience of Project and Field Management Staff to Be Committed by the Prospective Bidder to Carry Out the Work: The assigned project manager and field superintendent must have successfully completed minimum of three projects of similar type, quality, and scope.
d. For purposes of this submittal, reference to "key individuals" as described in the Contractor's Qualification Statement shall be understood to mean the principal in charge, the project manager(s), and the project field superintendent(s) committed by the Prospective Bidder to carry out the Work of this Project. Prospective Bidder by submitting qualifications of key individuals agrees that Owner reserves the right to approve or reject subsequent reassignment of key individuals.
e. For purposes of this submittal, "successful completion" shall be understood to mean completion of project within project schedule and budget. Provide additional information indicating reasons why any referenced project did not meet project schedule or project budget.
f. For purposes of this Qualification, "similar project" shall be understood to include the following project elements:

1) Pre-engineered metal buildings with large open space.

4. Adequate financial resources, including ability to secure materials and labor necessary for completion of the Work and other work in hand, within the anticipated contract times, and reflecting the anticipated retainage from progress payments.
5. Work-in-hand capacity, such that the Prospective Bidder demonstrates adequate work under contract to continue its business operations at least at their current level, at the same time indicating the capability to carry out Owner's proposed work.
6. Adequate organization to complete work of the scope anticipated, including firm management, project management, field superintendence, and field engineering and quality control.
7. Acceptable past performance as indicated by firm's references, including ability to meet contract time and to monitor, manage, and communicate interim scheduling requirements, to carry out required quality-control activities, to properly prepare interim and final payment requests, and to successfully complete project closeout requirements.

B. Consideration of qualifications may be withheld if the Qualification Statement shows any unexplained erasures, omissions, alterations of form, additions not called for, added restrictions or qualifying conditions, or other irregularities of any kind.

C. Owner may make such investigations as it deems necessary to determine the ability of the Prospective Bidder to perform the Work, and the Prospective Bidder shall furnish to Owner all such information for this purpose as Owner may request. Owner reserves the right to withhold qualification if the evidence submitted by or investigation of such Prospective Bidder fails to satisfy Owner that such Prospective Bidder is properly qualified to carry out the obligations of the proposed Project. The determination of which bidders are prequalified is not protestable, except as allowed by law.

D. Prequalification Submittal and data contained therein is considered privileged and confidential and will not be disclosed to any outside party except as required by law.

1.7 BONDS AND INSURANCE

A. The Prospective Bidder shall provide as part of the Submittal of Qualifications evidence of its ability to furnish below:

1. Performance Bond, a Payment Bond, and a Labor and Material Bond, each in the amount of 100 percent of the Contract Sum, with a corporate surety authorized to transact business in Project's jurisdiction.
2. Satisfactory certificates of insurance in the amount and types required by statute, but not less than the following:

    a. As enumerated in Section 010200 “Supplementary Conditions”.

1.8 ACCEPTANCE OF QUALIFICATIONS

A. Prospective bidders will be notified of Owner's determination before receipt of bids.

B. Evaluations will be confidential. Notifications will be publicly available information.

C. Owner may deny prequalification if it finds one or more of the following:

1. The Prospective Bidder does not have sufficient financial capacity to perform the Work.
2. The Prospective Bidder does not have the appropriate experience to perform the Work, including, but not limited to, having met the experience criteria set forth herein.
3. The Prospective Bidder or any officer, director, or owner thereof has had judgments entered against him within the past five years for the breach of contracts for governmental or nongovernmental construction work including, but not limited to, design-build or construction management contracts.
4. The Prospective Bidder has been in substantial noncompliance with the terms and conditions of prior construction with Owner, or in documented substantial noncompliance with the terms and conditions of prior construction with another public body without good cause.
5. The Prospective Bidder or any officer, director, owner, or chief financial official thereof has been convicted within the past 10 years of a crime related to governmental or nongovernmental construction or contracting.
6. The Prospective Bidder or any officer, director, or owner thereof is currently debarred pursuant to an established debarment procedure from bidding or contracting by any public body, agency of another state, or agency of the Federal Government.
7. The Prospective Bidder failed to provide to the public body in a timely manner any information required by the public body relevant to the six preceding subparagraphs.
8. The Prospective Bidder provides false, nonresponsive, misleading, or incomplete information for items required herein.

D. The acceptance of a Prospective Bidder's qualifications will be a Notice of Prequalification, signed by a duly authorized representative of Owner; no other act by Owner or its agents shall constitute the acceptance of qualifications. The acceptance of a Prospective Bidder's qualifications by Owner does not constitute a contract or promise to award a contract to the Prospective Bidder.

END OF DOCUMENT 001153

DOCUMENT 002113 - INSTRUCTIONS TO BIDDERS

1.1 INSTRUCTIONS TO BIDDERS

A. AIA Document A701, "Instructions to Bidders," is hereby incorporated into the Procurement and Contracting Requirements by reference.

1. A copy of AIA Document A701, "Instructions to Bidders," is bound in this Project Manual.

END OF DOCUMENT 002113

DRAFT

AIA® Document A701® – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Angleton Fire Station #3 Addition
2743 N. Velasco
Angleton, TX 77515
New pre-engineered metal building of approximately 3,240 SF with three engine bays and storage areas.

THE OWNER:
(Name, legal status, address, and other information)

City of Angleton
121 S. Velasco
Angleton, TX 77515

THE ARCHITECT:
(Name, legal status, address, and other information)

Integrated Architecture & Design, LLC
107 West Way, Suite 16
Lake Jackson, TX 77566
Telephone Number: 979.297.1411
Fax Number: 979.297-1418

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

« »

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper

documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

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§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

« »

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

5% Bid Bond

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall

affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning« »days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

« »

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

« »

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- **.1** a designation of the Work to be performed with the Bidder's own forces;
- **.2** names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- **.3** names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

« »

§ 7.2 Time of Delivery and Form of Bonds
§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS
§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

« »

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

« »

.3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

« »

.4 Drawings

Number	Title	Date

.5 Specifications

Section	Title	Date	Pages

.6 Addenda:

Number	Date	Pages

.7 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.8 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

« »

SECTION 002213 – SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

PART 1 - GENERAL

1.1 BID

A. Bidders shall be aware that it is the intent of the Bidding Documents to require the successful bidder to furnish the following before execution of the Contract:

1. List of proposed subcontractors / suppliers.
2. Proposed Schedule of Values.
3. Bid breakdown of materials and labor.

1.2 EXAMINATION OF DRAWINGS, SPECIFICATIONS, AND SITE

A. Bidders shall contact the Owner, to schedule site visits to examine existing conditions.

B. Each Contractor or Subcontractor shall verify all measurements and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences, which may be found. Discrepancies shall be submitted to the Architect for interpretation and correction before proceeding with the work.

1.3 STATE SALES TAX EXEMPTION

A. Bidders are advised that the Owner qualifies for exemption from State and Local Sales and Use Taxes pursuant to the provisions of Article 20.04 of the Texas Limited Sales, Excise and Use Tax Act. The Contractor may claim exemption from payment of applicable state taxes by complying with such procedures as may be prescribed by the State Comptroller of Public Accounts.

B. The Contractor shall furnish in his bid a breakdown of the costs of materials and labor and their total for each Bid Item within 72 hours after submitting his Proposal. If he fails to furnish this breakdown, he may be held responsible to pay these taxes.

C. Materials Incorporated Into Realty Under Separated Contracts for New Construction or Residential Jobs:

1. A Contractor is considered the seller of the materials incorporated into the customer's property if the contract between the Contractor and the customer separates the charges for labor and materials. The separated contractor may issue resale certificates to purchase the materials tax free. If the materials are incorporated into realty in an exempt job for an organization exempted from tax under Sec. 151.309 or Sec. 151.310, the separated contractor may accept a properly completed exemption certification from the customer in lieu of tax.

D. Equipment Used in Performing Nonresidential Real Property Repair and Remodeling Services:

1. A real property repairman or remodeler may issue resale certificates to purchase materials tax free that will be incorporated into the real property. If the materials are incorporated into realty in an exempt job for an organization exempted for tax under Sec. 151.309 or Sec. 151.310, the repairman./remodeler may accept a properly completed exemption certificate from the customer in lieu of tax.

1.4 LAWS AND REGULATIONS

A. The bidder's attention is directed to the fact that all applicable Federal and State Laws, municipal ordinances, building codes, Texas Department of Insurance related to windstorm requirements, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they shall be included in the contract the same as though herein written out in full.

B. Bidder's attention is specifically directed to the fact that all requirements of the Texas Department of Licensing and Regulation (TDLR) as related to architectural barriers and the American with Disabilities Act (ADA) shall apply to the contract throughout, and they shall be included in the contract the same as though herein written out in full.

1.5 REGULATIONS PERTAINING TO LABOR

A. All current Federal and State of Texas wage laws shall be complied with, including Article 5159a. Vernon's Civil Statutes.

B. Remuneration for work performed in-excess-of forty (40) hours per week shall be at the rate of time and one-half.

C. Remuneration for work performed on official holidays shall be at a rate of time and one-half. Official holidays are: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas Day.

1.6 CONTRACT

A. Date of Commencement shall be as established in Owner's written Notice to Proceed.

END OF SECTION 001500

DOCUMENT 002513 - PREBID MEETINGS

1.1 PREBID MEETING

A. Architect will conduct a Prebid meeting as indicated below:

1. Meeting Date: <**Insert date**>.
2. Meeting Time: [**2:00 p.m.**] <**Insert time**>, local time.
3. Location: <**Insert meeting location and room name**>, <**Insert street address**>, <**Insert city, state, and zip code**>.

B. Attendance:

1. Prime Bidders: Attendance at Prebid meeting is recommended.
2. Subcontractors: Attendance at Prebid meeting is recommended.
3. Notice: Bids will only be accepted from prime bidders represented on Prebid Meeting sign-in sheet.

C. Bidder Questions: Submit written questions to be addressed at Prebid meeting minimum of two business days prior to meeting.

D. Agenda: Prebid meeting agenda will include review of topics that may affect proper preparation and submittal of bids, including the following:

1. Procurement and Contracting Requirements:

a. Advertisement for Bids.
b. Instructions to Bidders.
c. Bidder Qualifications.
d. Bonding.
e. Insurance.
f. Bid Security.
g. Bid Form and Attachments.
h. Bid Submittal Requirements.
i. Bid Submittal Checklist.
j. Notice of Award.

2. Communication during Bidding Period:

a. Obtaining documents.
b. Bidder's Requests for Information.
c. Bidder's Substitution Request/Prior Approval Request.
d. Addenda.

3. Contracting Requirements:

a. Agreement.
b. The General Conditions.
c. The Supplementary Conditions.

d. Other Owner requirements.

4. Construction Documents:

a. Scopes of Work.
b. Temporary Facilities.
c. Use of Site.
d. Work Restrictions.
e. Allowances.
f. Substitutions following award.

5. Schedule:

a. Project Schedule.
b. Contract Time.
c. Liquidated Damages.
d. Other Bidder Questions.

6. Site/facility visit or walkthrough.
7. Post-Meeting Addendum.

E. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes to attendees and others known by the issuing office to have received a complete set of Procurement and Contracting Documents. Minutes of meeting are issued as Available Information and do not constitute a modification to the Procurement and Contracting Documents. Modifications to the Procurement and Contracting Documents are issued by written Addendum only.

1. Sign-in Sheet: Minutes will include list of meeting attendees.
2. List of Planholders: Minutes will include list of planholders.

END OF DOCUMENT 002513

DOCUMENT 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Angleton Fire Station #3 Addition.

C. Project Location: 2743 N. Velasco, Angleton, TX 77515.

D. Owner: City of Angleton

E. Architect: iAD Architects, Brent Bowles, AIA.

F. Architect Project Number: 23017.

1.2 CERTIFICATIONS AND BASE BID

A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by iAD Architects and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. _____ Dollars ($_____).
(Amount Written in Words. This Governs.) (Amount in Figures)

1.3 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 60 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. _____ Dollars ($_____).
(Amount Written in Words. This Governs.) (Amount in Figures)

B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.4 TIME OF COMPLETION

A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within _____ calendar days.

1.5 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.
4. Addendum No. 4, dated _____.

1.6 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

1. Bid Form Supplement - Allowances.
2. Bid Form Supplement - Bid Bond Form (AIA Document A310-2010).

1.7 SUBMISSION OF BID

A. Respectfully submitted this ____ day of _____, 2023.

B. Submitted By:_____(Name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

F. Witnessed By:_____(Handwritten signature).

G. Attest:_____(Handwritten signature).

H. By:_____(Type or print name).

I. Title:_____(Corporate Secretary or Assistant Secretary).

J. Street Address:_____.

K. City, State, Zip:_____.

L. Phone:_____.

M. Federal ID No.:_____(Affix Corporate Seal Here).

END OF DOCUMENT 004113

DOCUMENT 004313 - BID SECURITY FORMS

1.1 BID FORM SUPPLEMENT

A. A completed bid bond form is required to be attached to the Bid Form.

1.2 BID BOND FORM

A. AIA Document A310-2010 "Bid Bond" is the recommended form for a bid bond. A bid bond acceptable to Owner, or other bid security as described in the Instructions to Bidders, is required to be attached to the Bid Form as a supplement.

B. Copies of AIA standard forms may be obtained from The American Institute of Architects; https://www.aiacontracts.org/; email: docspurchases@aia.org; (800) 942-7732.

END OF DOCUMENT 004313

DRAFT

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
City of Angleton
121 S. Velasco
Angleton, TX 77515

BOND AMOUNT: $ « »

PROJECT:
(Name, location or address, and Project number, if any)
Angleton Fire Station #3 Addition
2743 N. Velasco
Angleton, TX 77515

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this « » day of « » , « »

	« »
	(Contractor as Principal) *(Seal)*
	« »
(Witness)	*(Title)*
	« »
	(Surety) *(Seal)*
	« »
(Witness)	*(Title)*

DOCUMENT 004321 - ALLOWANCE FORM

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Angleton Fire Station #3 Addition.

C. Project Location: 2743 N. Velasco, Angleton, TX 77515.

D. Owner: City of Angleton .

E. Architect: iAD Architects, Brent Bowles, AIA.

F. Architect Project Number: 23017.

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder certifies that Base Bid submission to which this Bid Supplement is attached includes those allowances described in the Contract Documents and scheduled in Section 012100 "Allowances."

1.3 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, 2023.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004321

DOCUMENT 004373 - PROPOSED SCHEDULE OF VALUES FORM

1.1 BID FORM SUPPLEMENT

A. A completed Proposed Schedule of Values form is required to be attached to the Bid Form.

1.2 PROPOSED SCHEDULE OF VALUES FORM

A. Proposed Schedule of Values Form: Provide a breakdown of the bid amount, including alternates, in enough detail to facilitate continued evaluation of bid. Coordinate with the Project Manual table of contents. Provide multiple line items for principal material and subcontract amounts in excess of five percent of the Contract Sum.

B. Arrange schedule of values using AIA Document G703-1992

1. Copies of AIA standard forms may be obtained from the American Institute of Architects; https://www.aiacontracts.org/ library; (800) 942-7732.

END OF DOCUMENT 004373

DOCUMENT 004393 - BID SUBMITTAL CHECKLIST

1.1 BID INFORMATION

A. Bidder: _____.

B. Prime Contract: _____.

C. Project Name: Angleton Fire Station #3 Addition.

D. Project Location: 2743 N. Velasco, Angleton, TX 77515.

E. Owner: City of Angleton.

F. Architect: iAD Architects, Brent Bowles, AIA.

G. Architect Project Number: 23017.

1.2 BIDDER'S CHECKLIST

A. In an effort to assist the Bidder in properly completing all documentation required, the following checklist is provided for the Bidder's convenience. The Bidder is solely responsible for verifying compliance with bid submittal requirements.

B. Attach this completed checklist to the outside of the Submittal envelope.

1. Used the Bid Form provided in the Project Manual.
2. Prepared the Bid Form as required by the Instructions to Bidders.
3. Indicated on the Bid Form the Addenda received.
4. Attached to the Bid Form: Bid Supplement Form - Allowances.
5. Attached to the Bid Form: Proposed Schedule of Values Form.
6. Attached to the Bid Form: Bid Bond OR a certified check for the amount required.
7. Bid envelope shows name and address of the Bidder.
8. Bid envelope shows name of Project being bid.
9. Bid envelope shows time and day of Bid Opening.
10. Verified that the Bidder can provide executed Performance Bond and Labor and Material Bond.
11. Verified that the Bidder can provide Certificates of Insurance in the amounts indicated.

END OF DOCUMENT 004393

SECTION 006000 - PROJECT FORMS

1.1 FORM OF AGREEMENT AND GENERAL CONDITIONS

A. The following form of Owner/Contractor Agreement and form of the General Conditions shall be used for Project:

1. AIA Document A101-2017 "Standard Form of Agreement between Owner and Contractor Where the Basis of Payment is a Stipulated Sum."

a. The General Conditions for Project are AIA Document A201-2017 "General Conditions of the Contract for Construction."

2. The General Conditions are included in the Project Manual.
3. The Supplementary Conditions for Project are separately prepared and included in the Project Manual.
4. Owner's document(s) bound following this Document.

1.2 ADMINISTRATIVE FORMS

A. Administrative Forms: Additional administrative forms are specified in Division 01 General Requirements.

B. Copies of AIA standard forms may be obtained from the American Institute of Architects; www.aiacontractdocsaiacontracts.org; (800) 942-7732.

C. Preconstruction Forms:

1. Form of Performance Bond and Labor and Material Bond: AIA Document A312-2010 "Performance Bond and Payment Bond."

D. Information and Modification Forms:

1. Form for Requests for Information (RFIs): AIA Document G716-2004 "Request for Information (RFI)."
2. Form of Request for Proposal: AIA Document G709-2018 "Proposal Request."
3. Change Order Form: AIA Document G701-2017 "Change Order."
4. Form of Architect's Memorandum for Minor Changes in the Work: AIA Document G710-2017 "Architect's Supplemental Instructions."
5. Form of Change Directive: AIA Document G714-2017 "Construction Change Directive."

E. Payment Forms:

1. Schedule of Values Form: AIA Document G703-1992 "Continuation Sheet."
2. Payment Application: AIA Document G702-1992/703-1992 "Application and Certificate for Payment and Continuation Sheet."
3. Form of Contractor's Affidavit: AIA Document G706-1994 "Contractor's Affidavit of Payment of Debts and Claims."

4. Form of Affidavit of Release of Liens: AIA Document G706A-1994 "Contractor's Affidavit of Payment of Release of Liens."
5. Form of Consent of Surety: AIA Document G707-1994 "Consent of Surety to Final Payment."

END OF SECTION 006000

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Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
City of Angleton
121 S. Velasco
Angleton, TX 77515

CONSTRUCTION CONTRACT
Date: « »
Amount: $ ««»
Description:
(Name and location)
Angleton Fire Station #3 Addition
2743 N. Velasco
Angleton, TX 77515

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: « » None « » See Section 16

CONTRACTOR AS PRINCIPAL	**SURETY**
Company: *(Corporate Seal)*	Company: *(Corporate Seal)*
Signature:	Signature:
Name and Title:	Name and Title:

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to

the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

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Payment Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
City of Angleton
121 S. Velasco
Angleton, TX 77515

CONSTRUCTION CONTRACT
Date: « »
Amount: $ «0.00»
Description:
(Name and location)
Angleton Fire Station #3 Addition
2743 N. Velasco, Angleton, TX 77515

BOND
Date:
(Not earlier than Construction Contract Date)
« »
Amount: $ « »
Modifications to this Bond: « » None « » See Section 18

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

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Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- **.1** have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- **.2** have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- **.1** the name of the Claimant;
- **.2** the name of the person for whom the labor was done, or materials or equipment furnished;
- **.3** a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- **.4** a brief description of the labor, materials or equipment furnished;
- **.5** the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- **.6** the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- **.7** the total amount of previous payments received by the Claimant; and
- **.8** the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

« »

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

DRAFT

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

Angleton Fire Station #3 Addition
2743 N. Velasco, Angleton, TX 77515

THE OWNER:
(Name, legal status and address)

City of Angleton
121 S. Velasco
Angleton, TX 77515

THE ARCHITECT:
(Name, legal status and address)

Integrated Architecture & Design, LLC
107 West Way, Suite 16
Lake Jackson, TX 77566

TABLE OF ARTICLES

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

INDEX
(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or

relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as

the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and

similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in

number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- **.1** assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- **.2** assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- **.1** Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- **.1** liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- **.2** failure of the Work to comply with the requirements of the Contract Documents;
- **.3** terms of special warranties required by the Contract Documents; or
- **.4** audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the

procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect

timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- **.1** Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- **.2** An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- **.3** Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- **.4** The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- **.1** that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- **.2** that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- **.1** cease operations as directed by the Owner in the notice;
- **.2** take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- **.3** except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work

properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

.1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

.2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party

provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 010200 – SUPPLEMENTARY CONDITIONS

The following supplements modify the General Conditions of the Contract for Construction, AIA Document A201 – 2017. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

ARTICLE 1 – GENERAL PROVISIONS

To Section 1.1.3, THE WORK, add the following:

1.1.3.1 "Work" (the) shall be understood to include everything shown, mentioned or reasonably inferred as being necessary to produce the intended results. The only things not included are specifically marked "Not in Contract", "By Others", "Furnished by Others", "Future" or "Existing".

To Section 1.2.1 of Section 1.2, CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS, add the following:

1.2.1.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

1. The Agreement.
2. Addenda, with those of later date having precedence over those of earlier date.
3. The Supplementary Conditions.
4. The General Conditions of the Contract for Construction.
5. Division 1 of the Specifications.
6. Drawings and Divisions 2 – 33 of the Specifications.

In the case of conflicts or discrepancies between Drawings and Division 2 – 33 of the Specifications or within either Document not clarified by Addendum, the Architect will determine which takes precedence in accordance with Section 4.2.11. Bids shall be based on the most expensive combination of quality and quantity of work indicated.

a. Figures take precedence over scaled measurements.
b. Large scale details take precedence over small scale details.
c. Architectural Drawings take precedence in regard to dimensions, when in conflict with Mechanical and Structural Drawings, except for the size of the structural members.
d. Specifically titled Drawings and Sections of the Specifications take precedence over indication of the item in a collateral way.
e. Existing conditions take precedence over Drawings and Specifications for dimensions.

To Section 1.2.3, ad the following:

1.2.3.1 Definition of specific terms used in the Contract Documents:

A. MANUFACTURER'S INSTRUCTIONS (or) DIRECTIONS: All manufactured articles, material and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned as directed by the manufacturers, unless herein specified to the contrary. Notify the Architect if Contract Documents are in conflict with manufacturer's instructions or directions or if code requirements are more stringent. Do not proceed in such cases until an answer is given by the Architect.

B. DAY: A calendar day beginning and ending at 12:00 midnight.

C. WORK DAYS: Any day except Saturdays, Sundays and legal holidays where the Work is located.

D. SHOP DRAWINGS: The term "Shop Drawings" includes fabrication drawings, manufacturing drawings, erection drawings, cutting and setting drawings, masonry coursing, ceiling layouts and other erection layouts.

E. PRODUCT DATA are brochures and printed literature describing materials and equipment, photographs, operational data, illustrations, standard schedules, performance charts, instructions, diagrams and other information furnished by the Contractor to illustrate a material, product or system for some portion of the Work.

F. SAMPLES are physical examples, which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

G. SUBMITTALS shall be understood to mean data submitted by the Contractor to the Architect (or Owner if so directed) and includes but is not limited to shop drawings, product data, samples and substitution data.

H. ALTERNATE: A variation to Base Bid to cover a variation in Contract requirements. If Alternate is accepted by Owner, variation is then part of Contract and amount quoted to be added or deducted from Base Bid is taken into account in determining Contract Sum.

I. BASE BID: A bid, before any Alternates are considered.

J. GENERAL CONTRACTOR, PRIME CONTRACTOR: Same as Contractor.

ARTICLE 2 – OWNER

To Section 2.3, INFORMATION AND SERVICES REQUIRED OF THE OWNER;

Add Section 2.3.7 to Section 2.3:

2.3.7 The Owner will procure and bear costs of Construction Material Testing structural tests and special inspections as required by the applicable building code. Contractor shall identify such tests and provide proposal to Owner or Owner's agent for review and consideration.

Add the following Sections:

2.6 The Owner shall reserve the right to observe the work at any time.

2.7 The presence of the Owner or Architect, or their representatives at the project site does not imply concurrence with or approval of the Work.

ARTICLE 3 – CONTRACTOR

To Section 3.2, REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR, add the following:

3.2.5 The Owner shall be entitled to deduct from the Construction Contract Sum, any amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's requests for information, where such information was available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

To Section 3.3, SUPERVISION AND CONSTRUCTION PROCEDURES, add the following:

3.3.4 Prior to start of work, Contractor shall locate all general reference points, lay out his own work, and be responsible for verifying measurements of building, utilities and work included in Contract.

3.3.5 Provide acceptable access to the work for inspections by the Owner, Architect and all local, State and Federal authorities having jurisdiction. Access shall be made safe and reasonably convenient.

To Section 3.4, LABOR AND MATERIALS, delete Section 3.4.2 and substitute the following:

3.4.2 After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 1 of the Specifications). By making requests for substitutions, the Contractor:

.1 represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified.;

.2 represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;

.3 certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and

.4 will coordinate the installation of the accepted substitute, making such changes as may be required for the work to be complete in all respects.

Add the following Sections to Section 3.4:

3.4.4 The Owner shall be entitled to deduct from the Construction Contract Sum, any amounts paid to the Architect to evaluate the Contractor's proposed substitutions and to make agreed-upon changes in the Drawings and Specifications made necessary by the Owner's acceptance of such substitutions.

3.4.5 Not later than thirty (30) days from the Contract Date, the Contractor shall provide a list showing the names of the manufacturer proposed to be used for each of the products identified in the Contract Drawings and Specifications and, where applicable, the name of the installing Subcontractor.

3.4.6 The Architect will promptly reply in writing to the Contractor stating whether the Owner or the Architect, after due investigation, has reasonable objection to any such proposal. If adequate data on any proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides further data. Failure of the Owner or Architect to reply promptly shall not constitute notice of no reasonable objection. Failure to object to a manufacturer shall not constitute a waiver of any of the requirements of the Contract Documents, and all products furnished by the listed manufacturer must conform to such requirements.

3.4.7 WORKMANSHIP: Compliance with the Drawings and Specifications with regard to materials and methods of assembly will, not in itself, assure acceptance of the construction. Of equal importance is good workmanship, the lack of which will be sufficient cause to refuse acceptance of the construction.

To Section 3.5 WARRANTY, add the following:

3.5.1.1 Contractor warrants to Owner that construction will be free from leakage of water or seepage of dampness from outside to inside or from outside to members normally expected to stay dry. Warranty extends for **TWO YEARS** after date of Substantial Completion. Contractor shall, at his own expense, upon due notification by Owner, take remedial measures to correct conditions of leakage of water infiltration that may have developed within warranty period. Extended warranty requirements are described in Specification Sections.

3.5.3 Contractor shall be responsible for damages to building contents during warranty if such damages result from his negligent use of materials or workmanship.

ARTICLE 4 – ARCHITECT

Section 4.2, ARCHITECT'S ADMINISTRATION OF THE CONTRACT, add the following Sections to Section 4.2.2:

4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

4.2.2.2 To facilitate Architect's observation, Contractor shall not bury or conceal pipe or conduit in any way until it has been examined.

ARTICLE 7 – CHANGES IN THE WORK

Section 7.1, GENERAL, add the following Section 7.1.4 to Section 7.1:

7.1.4 The combined overhead and profit included in the total cost to the Owner of a change in the Work shall be based on the following schedule:

.1 For the Contractor, for Work performed by the Contractor's own forces, 10% of the cost.

.2 For the Contractor, for Work performed by the Contractor's Subcontractors, 8% of the amount due the Subcontractors.

.3 In order to facilitate checking of quotations for extras or credits, all proposals shall be accompanied by a complete itemization of costs including labor, materials, equipment.

.4 For any changes paid for out of Contingency Allowances, no mark-up shall be allowed by General Contractor.

ARTICLE 8 – TIME

To Section 8.1, DEFINITIONS, add the following:

8.1.1.1 Contractor shall state in his proposal the number of calendar days in which he proposes to complete the Work. Upon award of Contract by Owner, Contractor shall be obligated to complete the Work within number of calendar days proposed.

To Section 8.3, DELAYS AND EXTENSIONS OF TIME, add the following Sections:

8.3.1.1 Contractor shall make claim to the Architect for extension of time by telephone on day on which delay first occurs and confirm in writing within 24 hours. Written confirmation to include condition that caused the delay and the critical path of work affected.

Contractor shall submit a summary of delays with back-up data for delays occurring during the current billing period, along with each Application for Payment for review by the Architect.

8.3.1.2 Approved extensions of time shall add an equal number of working days to Contract Time.

8.3.1.3 If at least 5 hours of work time are available out of the working day no extension of time will be allowed.

8.3.1.4 No extension of time will be allowed for Saturdays, Sundays, or Holidays unless the Contract required and stipulates overtime work and it has been approved in writing by the Architect.

8.3.1.5 Time extensions will not be allowed for drying of materials when it is possible for the Contractor to enclose area and/or materials or use an acceptable drying process.

8.3.2.1 Claims for extension of time shall be stated in whole working days and shall be granted in working days, notwithstanding the fact that completion time has been stated in calendar days. An extension of time shall be granted only because of condition occurring on a working day and preventing work items of a critical path.

ARTICLE 9 – PAYMENTS AND COMPLETION

To Section 9.2, SCHEDULE OF VALUES, add the following Section 9.2.1:

9.2.1 A Schedule of Value shall be prepared so that each major item of Work and each subcontracted item of Work are shown as a single line item on AIA Document G703 Application and Certificate for Payment, Continuation Sheet. A breakdown of HVAC, Plumbing and Electrical

line items, indicating value of major labor and material portions of the Work will also be required.

Section 9.3, APPLICATIONS FOR PAYMENT, add the following sentence to Section 9.3.1:

The form of Application for Payment, duly notarized, shall be a current authorized edition of AIA Document G702 – 1992, Application and Certificate for Payment, supported by a current authorized edition of AIA Document G703 – 1992, Continuation Sheet.

To Section 9.4, CERTIFICATES FOR PAYMENT, add the following Section:

9.4.3 The Contractor shall submit applications for payment in triplicate. The Architect will review the application according to this article and, upon determination that a payment is properly due, will certify the application in the designated place on AIA Document G702.

From Section 9.6, PROGRESS PAYMENTS, delete Section 9.6.1 and add the following:

9.6.1 Monthly progress payments will be made to the value of the completed work and the value of materials suitably stored at the site, less the specified retainage. Payments by the Owner will be made Net 30 days from the date the Contractor's application is approved by the Architect in the amount recommended by the Architect.

9.6.1.1 A retainage of 10% of the amount due the Contractor, shall be held by the Owner, until 30 days after Substantial Completion of the Work.

To Section 9.10, FINAL COMPLETION AND FINAL PAYMENT, add the following subparagraphs and clauses:

9.10.6 To receive Final Payment the Contractor must provide the following:

1. Guarantees, certificates of inspection, bonds and all other warranties shall be prepared in duplicate and submitted to the Architect for review and delivery to the Owner.

2. Instruction manuals shall be prepared in accordance with Section 013300, Submittal Procedures. Deliver all copies to the Architect for review and delivery to the Owner. Provide manuals on operating, servicing, maintenance, cleaning instructions for all Work and parts list, special tools, etc. for all mechanical and electrical work.

3. As-built drawings shall be prepared on each sheet of the Drawings on reproducible prints indicating all changes made during construction. Unchanged sheets shall be noted as such. Deliver to the Architect along with 2 compact disks containing record drawings in pdf format.

4. AIA Document G706, Contractors Affidavit of Payment of Debts and Claims.

5. AIA Document G706A, Contractors Affidavit for Release of Liens.

6. AIA Document G707, Consent of Surety.

7. Support data for G706, G707 and G706A as required by the Owner. Forms shall cover all work under Contract, including all subcontractors, vendors, labor, materials and services, and be executed by an authorized officer and duly notarized.

8. Signed statement that to the best of Contractor's knowledge, no asbestos-containing building material was used as a building material in this Project.

9. Itemized inventory list of attic stock provided to the Owner.

Add the following Section 9.11 to Article 9:

9.11 The Contractor and the Contractor's surety, if any, shall be liable for and shall pay the Owner the sums hereinafter stipulated as liquidated damages for each calendar day of delay after the date established for Substantial Completion in the Contract Documents until the Work is substantially complete:

Five Hundred Dollars ($500.00) per day

It is understood that said sum shall be considered as liquidated damages and shall in no sense be considered as a penalty against the Contractor.

ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

To Section 10.2.3 add the following Sections:

10.2.3.1 In any emergency affecting the safety of persons or property, the Contractor shall act, at his discretion, to prevent threatened damage, injury or loss. Any additional compensation or extension of time claimed by the Contractor resulting from emergency work shall be considered in accordance with Article VI for Contract changes.

Add the following Section:

10.2.9 PROJECT WEATHER PROTECTION

1. Contractor shall at all times provide protection against weather, so as to maintain all work, materials, existing work to remain, apparatus, and fixtures free from injury and damages. At the end of the day's work, all work likely to be damaged shall be covered or otherwise protected.

2. Wet work shall not be performed when temperature is below 40°F or is likely to go below 40°F within the ensuing 48 hours, except when sufficient protective heat is provided and the Architect's approval in writing is obtained.

3. Contractor shall construct and maintain all necessary temporary drainage and do all pumping necessary to keep excavations, floors, pits and trenches free of water.

ARTICLE 11 – INSURANCE AND BONDS

To Section 11.1.1 add the following clauses:

11.1.1.1 The insurance required by subparagraph 11.1.1 shall be purchased and maintained in force in a company or companies to which the Owner has no reasonable objection and which is (or are) licensed to do business in the State of Texas.

11.1.1.2 The insurance required by subparagraph 11.1.1 shall be written for not less than the following or greater if required by law:

1. Worker's Compensation:

(a)	Texas:	Statutory
(b)	Employer's Liability	$100,000.00

2. Comprehensive General Liability (including Premises-Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):

(a) Bodily Injury:

$1,000,000.00	Each Person
$1,000,000.00	Each Occurrence

(b) Property Damage:

$1,000,000.00	Each Occurrence
$1,000,000.00	Annual Aggregate

(c) Products and completed operations to be maintained for at least one year after final payment and Contractor shall continue to provide evidence of such coverage to Owner during this period.

3. Contractual Liability: as applicable to the Contractor's obligations under Article 3.

(a) Bodily Injury:

$1,000,000.00	Each Occurrence

(b) Property Damage:

$1,000,000.00	Each Occurrence
$1,000,000.00	Annual Aggregate

4. Comprehensive Automobile Liability:

(a) Bodily Injury:

$1,000,000.00	Each Person
$1,000,000.00	Each Accident

(b) Property Damage:

$1,000,000.00	Each Occurrence

5. Personal Injury with Employment Exclusion deleted:

(a)	$1,000,000.00	Aggregate

6. Umbrella Excess Liability:

(a) $1,000,000.00 Over Primary Insurance

11.1.1.3 The Contractor shall either: (1) require each of his subcontractors to produce and to maintain during the life of his subcontract, subcontractor's Comprehensive General Liability, Automobile Liability, and Property Damage Liability Insurance of the type and in the same amounts as specified in this subparagraph; or (2) insure the activity of his subcontractors in his own policy.

Add the following Section 11.1.5:

11.1.5 The Contractor shall notify the Owner of possible damage claims immediately upon knowledge of possible claims that might cause a reduction below the aggregate limits of any policy.

Delete Section 11.2, OWNER'S INSURANCE in its entirety, and substitute the following subparagraph:

11.2 INSURANCE REQUIREMENTS

11.2.1 Insurance shall be written by agent or agents and approved by Owner. Acceptance of Certificate of Insurance by Owner shall not relieve or decrease liability of Contractor.

11.2.2 If Owner is damaged by failure of Contractor to maintain such insurance, he may recover from Contractor.

11.2.3 The Contractor shall purchase and maintain, in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus value of subsequent Contract modifications and cost of materials supplied or installed by others, comprising total value for the entire Project at the site on a replacement cost basis without optional deductibles. Builder's Risk insurance must include windstorm coverage, even if necessary to write as an additional or separate component. Such property insurance shall be maintained, unless otherwise provided in the Contract Document or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.4 to be covered, whichever is later. This insurance shall include interests of the Owner, the Contractor, Subcontractors and Sub-subcontractor in the Project. If the Owner is damaged by the failure of the Contractor to purchase and maintain such insurance without so notifying the Owner in writing, then the Contractor shall bear all reasonable costs attributable thereto.

ARTICLE 12 – UNCOVERING AND CORRECTION OF WORK

To Section 12.2, CORRECTION OF WORK, add the following Section 12.2.2.4 to Section 12.2.2:

12.2.2.4 Upon request by the Owner and prior to the expiration of one year from the date of Substantial Completion, the Architect will conduct, and the Contractor shall attend a meeting with the Owner to review the facility operations and performance.

ARTICLE 15 – CLAIMS AND DISPUTES

To Section 15.1.6 CLAIMS FOR ADDITIONAL TIME, add the following:

15.1.6.3 Claims for increase in the Contract Time shall set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

15.1.6.4 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

15.1.6.5 Weather related days per month shall be documented by Contractor and submitted to Architect as defined in Section 8.3 Delays and Extension of Time.

Contractor shall account for the following normal weather-related days as part of the Contract Time included on his Bid Form, or other means of documenting proposed Contract Time to the Owner:

Jan	3 days	May	3 days	Sept	6 days
Feb	2 days	Jun	3 days	Oct	3 days
Mar	2 days	Jul	3 days	Nov	3 days
Apr	2 days	Aug	3 days	Dec	2 days

END OF SECTION 010200

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Contractor’s use of site and premises.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

B. Related Requirements:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Angleton Fire Station #3 Addition

1. Project Location: 2743 N. Velasco, Angleton, TX 77515

B. Owner: City of Angleton

C. Architect: iAD Architects, 107 West Way, Suite 16, Lake Jackson, TX 77566; p. 979.297.1411

D. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

1. Structural Engineer: CJG Engineers; 3200 Wilcrest Dr, Suite 305, Houston, TX 77042

a. Representative: Hunter Kornegay, P.E.; p. 713.780.3345

2. Mechanical/Electrical/Plumbing Engineer: DVO and urban-gro Company; 825 Town and Country Lane, Suite 1150, Houston, TX 77024

a. Representative: Jason Feit; p. 281.293.7500

3. Civil Engineer: Baker & Lawson, Inc.; 4005 Technology Dr, Suite 1530, Angleton, TX 77515

    a. Representative: Doug Roesler, P.E.; p. 979.849.6681

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. New pre-engineered metal building of approximately 3,240 SF with 3 engine bays and storage areas.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.5 CONTRACTOR'S USE OF SITE AND PREMISES

A. Limits on Use of Site: Limit use of Project site to Work in areas indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

A. Owner will occupy Project site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
2. Notify Owner not less than 72 hours in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours and Work Days: As specified by Owner.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging for temporary utility services according to requirements indicated:

1. Notify Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's permission before proceeding with utility interruptions.

D. Noise, Vibration, Dust, and Odors: Coordinate operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's permission before proceeding with disruptive operations.

E. Smoking and Controlled Substance Restrictions: Use of tobacco products, alcoholic beverages, and other controlled substances on Owner's property is not permitted.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011100 – STRUCTURAL WIND LOAD CRITERIA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Structural Wind Loads as required for installation of all exterior building components.

1.3 STRUCTURAL WIND LOADS

1. Wind Loads: As indicated on Structural Drawings.

    a. Vult Wind Speed: ASCE 7-10 (Ultimate) (154 mph at 3 second gust).
    b. Basic Wind Speed: ASCE 7-16 (154 mph at 3 second gust).
    c. Risk Category: III
    d. Exposure Category: C
    e. Compliant with Texas Department of Insurance requirements for Inland I Construction.

END OF SECTION 011100

SECTION 012100 - ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

B. Types of allowances include the following:

1. Contingency allowances.

C. Related Requirements:

1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.

1.3 DEFINITIONS

A. Allowance: A quantity of work or dollar amount included in the Contract, established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.4 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by Architect from the designated supplier.

1.5 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

C. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

D. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.6 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.7 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, required maintenance materials, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs due to a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1 (Contingency): Include the net sum of Ten Thousand Dollars ($10,000.00) to be used as directed by the Architect for making incidental change orders for the betterment of the project, and miscellaneous provisions to improve or provide for the design intent, or for unforeseen conditions. All change orders using monies from this allowance will be coordinated and approved by the Owner prior to work being done.

1. This allowance includes material cost, receiving, handling, installation, and Contractor overhead and profit.

END OF SECTION 012100

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Requirements:

1. Section 012100 “Allowances” for products selected under an allowance.
2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents.

1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 SUBMITTALS

A. Substitution Requests: Submit documentation identifying product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use form acceptable to Architect.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
e. Samples, where applicable or requested.
f. Certificates and qualification data, where applicable or requested.
g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
i. Research reports evidencing compliance with building code in effect for Project.
j. Detailed comparison of Contractor's construction schedule using proposed substitutions with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
k. Cost information, including a proposal of change, if any, in the Contract Sum.
l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.

a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

1.7 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
b. Substitution request is fully documented and properly submitted.
c. Requested substitution will not adversely affect Contractor's construction schedule.
d. Requested substitution has received necessary approvals of authorities having jurisdiction.
e. Requested substitution is compatible with other portions of the Work.
f. Requested substitution has been coordinated with other portions of the Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.

1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.

f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

B. Related Requirements:

1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.

1.3 MINOR CHANGES IN THE WORK

A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time on AIA Document G710.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Work Change Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
2. Within 10 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
7. Do not proceed without prior approval from Architect and Owner.

1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

1.6 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Work Changes Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on AIA Document G701.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: Architect may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Section 012100 “Allowances” for procedural requirements governing the handling and processing of allowances.
2. Section 012600 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Section 013200 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Coordinate line items in the schedule of values with items required to be indicated as separate activities in Contractor’s construction schedule.
2. Submit the schedule of values to Architect at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.
b. Owner’s name.

c. Name of Architect.
d. Architect's project number.
e. Contractor's name and address.
f. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.
6. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
7. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.
8. Overhead Costs, Proportional Distribution: Include total cost and proportionate share of general overhead and profit for each line item.
9. Temporary Facilities: Show cost of temporary facilities and other major cost items that are not direct cost of actual work-in-place as separate line items.
10. Schedule of Values Revisions: Revise the schedule of values when Change Orders or Construction Change Directives result in a change in the Contract Sum. Include at least one separate line item for each Change Order and Construction Change Directive.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

   1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

   1. Submit draft copy of Application for Payment 5 days prior to due date for review by Architect.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

F. Transmittal: Electronically submit one signed and notarized copy of each Application for Payment to Architect. Include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. Owner reserves the right to designate which entities involved in the Work must submit waivers.
3. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

H. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Schedule of unit prices.
5. Submittal schedule (preliminary if not final).
6. List of Contractor's staff assignments.
7. List of Contractor's principal consultants.
8. Copies of building permits.
9. Certificates of insurance and insurance policies.
10. Performance and payment bonds.

I. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Certification of completion of final punch list items.
3. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
4. Updated final statement, accounting for final changes to the Contract Sum.
5. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
7. AIA Document G707, "Consent of Surety to Final Payment."
8. Evidence that claims have been settled.
9. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
10. Final liquidated damages settlement statement.
11. Waivers and releases.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Digital project management procedures.
5. Project meetings.

B. Related Requirements:

1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Section 017300 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project

site. Identify individuals and their duties and responsibilities; list addresses, cellular telephone numbers, and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in Project meeting room, in temporary field office,and in prominent location in each built facility. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

1.6 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return without response RFIs submitted to Architect by other entities controlled by Contractor.
2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.

2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow 7 working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following Contractor-generated RFIs will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.
    f. Requests for interpretation of Architect's actions on submittals.
    g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 7 days of receipt of the RFI response.

D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log at the progress meetings. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were returned without action or withdrawn.

5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

1.7 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times a minimum of 5 days prior to meeting.
2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Architect will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 7 days after execution of the Agreement.

1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Discuss items of significance that could affect progress, including the following:

a. Responsibilities and personnel assignments.
b. Tentative construction schedule.
c. Phasing.
d. Critical work sequencing and long-lead items.
e. Designation of key personnel and their duties.
f. Lines of communications.
g. Procedures for processing field decisions and Change Orders.
h. Procedures for RFIs.
i. Procedures for testing and inspecting.
j. Procedures for processing Applications for Payment.
k. Distribution of the Contact Documents.
l. Submittal procedures.
m. Preparation of Record Documents.
n. Use of the premises, and existing building.
o. Work restrictions.
p. Working hours.

q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.
s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. First aid.
z. Security.
aa. Progress cleaning.

3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Progress Meetings: Conduct progress meetings at biweekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

1) Review schedule for next period.

b. Review present and future needs of each entity present, including the following:

1) Sequence of operations.
2) Status of submittals.
3) Deliveries.
4) Off-site fabrication.
5) Access.
6) Site utilization.
7) Temporary facilities and controls.
8) Progress cleaning.
9) Quality and work standards.
10) Status of correction of deficient items.
11) Field observations.
12) Status of RFIs.
13) Status of proposal requests.
14) Pending changes.
15) Status of Change Orders.
16) Pending claims and disputes.
17) Documentation of information for payment requests.

3. Minutes: Contractor will record and distribute the meeting minutes to each party present and to parties requiring information.

    a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:

1. Startup construction schedule.
2. Contractor's construction schedule.
3. Construction schedule updating reports.
4. Daily construction reports.
5. Material location reports.
6. Site condition reports.
7. Unusual event reports.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting schedules and reports.
2. Section 014000 "Quality Requirements" for schedule of tests and inspections.

1.3 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.

1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
2. Predecessor Activity: An activity that precedes another activity in the network.
3. Successor Activity: An activity that follows another activity in the network.

B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine the critical path of Project and when activities can be performed.

C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

D. Event: The starting or ending point of an activity.

1.4 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. PDF electronic file.
2. 3 paper copies.

B. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

C. Construction Schedule Updating Reports: Submit with Applications for Payment.

D. Special Reports: Submit at time of unusual event.

1.5 COORDINATION

A. Coordinate Contractor's construction schedule with the schedule of values, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

1.6 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

B. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

C. Activities: Treat each floor or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Architect.
2. Temporary Facilities: Indicate start and completion dates.
3. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
4. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
5. Startup and Testing Time: Include no fewer than 5 days for startup and testing.

6. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
7. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Work Restrictions: Show the effect of the following items on the schedule:

a. Coordination with existing construction.
b. Limitations of continued occupancies.
c. Uninterruptible services.
d. Partial occupancy before Substantial Completion.
e. Use-of-premises restrictions.
f. Provisions for future construction.
g. Seasonal variations.
h. Environmental control.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

F. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule 3 days before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Final Completion percentage for each activity.

G. Distribution: Distribute copies of approved schedule to Architect Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

1.7 CONTRACTOR'S CONSTRUCTION SCHEDULE (GANTT CHART)

A. Gantt-Chart Schedule: Submit a comprehensive, fully developed, horizontal, Gantt-chart-type, Contractor's construction schedule within 5 days of date established for the Notice of Award. Base schedule on the startup construction schedule and additional information received since the start of Project.

B. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line.

1. For construction activities that require three months or longer to complete, indicate an estimated completion percentage in 10 percent increments within time bar.

1.8 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. Approximate count of personnel at Project site.
3. Equipment at Project site.
4. Material deliveries.
5. High and low temperatures and general weather conditions, including presence of rain or snow.
6. Accidents.
7. Meetings and significant decisions.
8. Unusual events (see special reports).
9. Stoppages, delays, shortages, and losses.
10. Meter readings and similar recordings.
11. Emergency procedures.
12. Orders and requests of authorities having jurisdiction.
13. Change Orders received and implemented.
14. Construction Change Directives received and implemented.
15. Services connected and disconnected.
16. Equipment or system tests and startups.
17. Partial completions and occupancies.
18. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

1.9 SPECIAL REPORTS

A. General: Submit special reports directly to Architect within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report.

List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Section 014000 "Quality Requirements" for submitting test and inspection reports, and schedule of tests and inspections.
4. Section 017700 "Closeout Procedures" for submitting closeout submittals and maintenance material submittals.
5. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
6. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
7. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.

1.3 DEFINITIONS

A. Submittals: Written and graphic information and physical samples that require Architect's responsive action. Submittals may be rejected for not complying with requirements.

1.4 SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.

2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action; informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled date of fabrication.
    h. Scheduled dates for purchasing.
    i. Scheduled dates for installation.
    j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

    a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Resubmittal Review: Allow 15 days for review of each resubmittal.
4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.
5. Consultant Review: Allow 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

C. Paper Submittals: Place a permanent label or title block on each submittal item for identification.

1. Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 5” x 5” on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information for processing and recording action taken:

    a. Project name.
    b. Date.
    c. Name of Architect.
    d. Name of Contractor.
    e. Name of subcontractor.
    f. Name of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.

        1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).

    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

4. Transmittal for Paper Submittals: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return without review submittals received from sources other than Contractor.

    a. Transmittal Form for Paper Submittals: Provide locations on form for the following information:

        1) Project name.
        2) Date.
        3) Destination (To:).
        4) Source (From:).
        5) Name and address of Architect.
        6) Name of Contractor.
        7) Name of firm or entity that prepared submittal.
        8) Names of subcontractor, manufacturer, and supplier.
        9) Category and type of submittal.

10) Submittal purpose and description.
11) Specification Section number and title.
12) Specification paragraph number or drawing designation and generic name for each of multiple items.
13) Drawing number and detail references, as appropriate.
14) Indication of full or partial submittal.
15) Transmittal number.
16) Submittal and transmittal distribution record.
17) Remarks.
18) Signature of transmitter.

D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.

    a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:

    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name of Contractor.
    e. Name of firm or entity that prepared submittal.
    f. Names of subcontractor, manufacturer, and supplier.
    g. Category and type of submittal.
    h. Submittal purpose and description.
    i. Specification Section number and title.
    j. Specification paragraph number or drawing designation and generic name for each of multiple items.
    k. Drawing number and detail references, as appropriate.
    l. Location(s) where product is to be installed, as appropriate.
    m. Related physical samples submitted directly.
    n. Indication of full or partial submittal.
    o. Transmittal number.
    p. Submittal and transmittal distribution record.
    q. Other necessary identification.
    r. Remarks.

E. Options: Identify options requiring selection by Architect.

F. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

G. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

H. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

I. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as PDF electronic files.

a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Submittals: Submit four paper copies of each submittal unless otherwise indicated. Architect will return two copies.
3. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

    a. Wiring diagrams showing factory-installed wiring.
    b. Printed performance curves.
    c. Operational range diagrams.
    d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:

    a. PDF electronic file, or
    b. Four paper copies of Product Data unless otherwise indicated. Architect will return two copies.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

    a. Identification of products.
    b. Schedules.
    c. Compliance with specified standards.
    d. Notation of coordination requirements.
    e. Notation of dimensions established by field measurement.
    f. Relationship and attachment to adjoining construction clearly indicated.
    g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:

    a. PDF electronic file, or
    b. Four opaque copies of each submittal. Architect will retain one copy; remainder will be returned.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:

    a. Generic description of Sample.
    b. Product name and name of manufacturer.
    c. Sample source.
    d. Number and title of applicable Specification Section.
    e. Specification paragraph number and generic name of each item.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.

    a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

    a. Number of Samples: Submit 2 sets of Samples. Architect will retain 1 Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

        1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
        2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

a. PDF electronic file, or
b. Three paper copies of product schedule or list unless otherwise indicated. Architect will return two copies.

F. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."

G. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."

H. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012900 "Payment Procedures."

I. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."

J. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."

K. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."

L. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

M. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.

N. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

O. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

P. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

Q. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

R. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

S. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on

evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

T. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

U. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

V. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

W. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

X. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. APPROVED.
2. APPROVED AS NOTED.
3. REVISE & RESUBMIT.
4. REJECTED.

B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.

E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Requirements:

1. Divisions 02 through 33 Sections for specific test and inspection requirements.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified

installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

1. Laboratory Mockups: Full-size physical assemblies constructed at testing facility to verify performance characteristics.
2. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as

appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.

1. Indicate manufacturer and model number of individual components.
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

A. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.7 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.

5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement rather conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement rather conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

D. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

    a. Provide test specimens representative of proposed products and construction.
    b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
    d. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    e. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
2. Notify Architect 5 days in advance of dates and times when mockups will be constructed.
3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

    a. Allow 7 days for initial review and each re-review of each mockup.

6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed unless otherwise indicated.

K. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

L. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Specification Sections in Divisions 02 through 33.

1.9 QUALITY CONTROL

A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
7. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

C. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.

C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. AABC - Associated Air Balance Council; www.aabc.comwww.aabc.com.
2. AAMA - American Architectural Manufacturers Association; www.aamanet.org.
3. AAPFCO - Association of American Plant Food Control Officials; www.aapfco.org.
4. AASHTO - American Association of State Highway and Transportation Officials; www.transportation.org.
5. AATCC - American Association of Textile Chemists and Colorists; www.aatcc.org.
6. ABMA - American Bearing Manufacturers Association; www.americanbearings.org.
7. ABMA - American Boiler Manufacturers Association; www.abma.com.
8. ACI - American Concrete Institute; (Formerly: ACI International); www.abma.com.
9. ACPA - American Concrete Pipe Association; www.concrete-pipe.org.
10. AEIC - Association of Edison Illuminating Companies, Inc. (The); www.aeic.org.
11. AF&PA - American Forest & Paper Association; www.afandpa.org.
12. AGA - American Gas Association; www.aga.org.
13. AHAM - Association of Home Appliance Manufacturers; www.aham.org.
14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); www.ahrinet.org.
15. AI - Asphalt Institute; www.asphaltinstitute.org.
16. AIA - American Institute of Architects (The); www.aia.org.
17. AISC - American Institute of Steel Construction; www.aisc.org.
18. AISI - American Iron and Steel Institute; www.steel.org.
19. AITC - American Institute of Timber Construction; www.aitc-glulam.org.
20. AMCA - Air Movement and Control Association International, Inc.; www.amca.org.
21. ANSI - American National Standards Institute; www.ansi.org.
22. AOSA - Association of Official Seed Analysts, Inc.; www.aosaseed.com.
23. APA - APA - The Engineered Wood Association; www.apawood.org.
24. APA - Architectural Precast Association; www.archprecast.org.
25. API - American Petroleum Institute; www.api.org.
26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
27. ARI - American Refrigeration Institute; (See AHRI).

28. ARMA - Asphalt Roofing Manufacturers Association; www.asphaltroofing.org.
29. ASCE - American Society of Civil Engineers; www.asce.org.
30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; www.ashrae.org.
32. ASME - ASME International; (American Society of Mechanical Engineers); www.asme.org.
33. ASSE - American Society of Safety Engineers (The); www.asse.org.
34. ASSE - American Society of Sanitary Engineering; www.asse-plumbing.org.
35. ASTM - ASTM International; www.astm.org.
36. ATIS - Alliance for Telecommunications Industry Solutions; www.atis.org.
37. AWEA - American Wind Energy Association; www.awea.org.
38. AWI - Architectural Woodwork Institute; www.awinet.org.
39. AWMAC - Architectural Woodwork Manufacturers Association of Canada; www.awmac.com.
40. AWPA - American Wood Protection Association; www.awpa.com.
41. AWS - American Welding Society; www.aws.org.
42. AWWA - American Water Works Association; www.awwa.org.
43. BHMA - Builders Hardware Manufacturers Association; www.buildershardware.com.
44. BIA - Brick Industry Association (The); www.gobrick.com.
45. BICSI - BICSI, Inc.; www.bicsi.org.
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); www.bifma.org.
47. BISSC - Baking Industry Sanitation Standards Committee; www.bissc.org.
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); www.bissc.org.
49. CDA - Copper Development Association; www.copper.org.
50. CEA - Canadian Electricity Association; www.electricity.ca.
51. CEA - Consumer Electronics Association; www.ce.org.
52. CFFA - Chemical Fabrics and Film Association, Inc.; www.chemicalfabricsandfilm.com.
53. CFSEI - Cold-Formed Steel Engineers Institute; www.cfsei.org.
54. CGA - Compressed Gas Association; www.cganet.com.
55. CIMA - Cellulose Insulation Manufacturers Association; www.cellulose.org.
56. CISCA - Ceilings & Interior Systems Construction Association; www.cisca.org.
57. CISPI - Cast Iron Soil Pipe Institute; www.cispi.org.
58. CLFMI - Chain Link Fence Manufacturers Institute; www.chainlinkinfo.org.
59. CPA - Composite Panel Association; www.pbmdf.com.
60. CRI - Carpet and Rug Institute (The); www.carpet-rug.org.
61. CRRC - Cool Roof Rating Council; www.coolroofs.org.
62. CRSI - Concrete Reinforcing Steel Institute; www.crsi.org.
63. CSA - Canadian Standards Association; www.csa.ca.
64. CSA - CSA International; (Formerly: IAS - International Approval Services); www.csa-international.org.
65. CSI - Construction Specifications Institute (The); www.csinet.org.
66. CSSB - Cedar Shake & Shingle Bureau; www.cedarbureau.org.
67. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); www.cti.org.
68. CWC - Composite Wood Council; (See CPA).
69. DASMA - Door and Access Systems Manufacturers Association; www.dasma.com.
70. DHI - Door and Hardware Institute; www.dhi.org.
71. ECA - Electronic Components Association; (See ECIA).

72. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).
73. ECIA - Electronic Components Industry Association; www.eciaonline.org.
74. EIA - Electronic Industries Alliance; (See TIA).
75. EIMA - EIFS Industry Members Association; www.eima.com.
76. EJMA - Expansion Joint Manufacturers Association, Inc.; www.ejma.org.
77. ESD - ESD Association; (Electrostatic Discharge Association); www.esda.org.
78. ESTA - Entertainment Services and Technology Association; (See PLASA).
79. EVO - Efficiency Valuation Organization; www.evo-world.org.
80. FCI - Fluid Controls Institute; www.fluidcontrolsinstitute.org.
81. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); www.fiba.com.
82. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); www.fivb.org.
83. FM Approvals - FM Approvals LLC; www.fmglobal.com.
84. FM Global - FM Global; (Formerly: FMG - FM Global); www.fmglobal.com.
85. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; www.floridaroof.com.
86. FSA - Fluid Sealing Association; www.fluidsealing.com.
87. FSC - Forest Stewardship Council U.S.; www.fscus.org.
88. GA - Gypsum Association; www.gypsum.org.
89. GANA - Glass Association of North America; www.glasswebsite.com.
90. GS - Green Seal; www.greenseal.org.
91. HI - Hydraulic Institute; www.pumps.org.
92. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
93. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
94. HPVA - Hardwood Plywood & Veneer Association; www.hpva.org.
95. HPW - H. P. White Laboratory, Inc.; www.hpwhite.com.
96. IAPSC - International Association of Professional Security Consultants; www.iapsc.org.
97. IAS - International Accreditation Service; www.iasonline.org.
98. IAS - International Approval Services; (See CSA).
99. ICBO - International Conference of Building Officials; (See ICC).
100. ICC - International Code Council; www.iccsafe.org.
101. ICEA - Insulated Cable Engineers Association, Inc.; www.icea.net.
102. ICPA - International Cast Polymer Alliance; www.icpa-hq.org.
103. ICRI - International Concrete Repair Institute, Inc.; www.icri.org.
104. IEC - International Electrotechnical Commission; www.iec.ch.
105. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); www.ieee.org.
106. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); www.ies.org.
107. IESNA - Illuminating Engineering Society of North America; (See IES).
108. IEST - Institute of Environmental Sciences and Technology; www.iest.org.
109. IGMA - Insulating Glass Manufacturers Alliance; www.igmaonline.org.
110. IGSHPA - International Ground Source Heat Pump Association; www.igshpa.okstate.edu.
111. ILI - Indiana Limestone Institute of America, Inc.; www.iliai.com.
112. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); www.intertek.com.
113. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); www.isa.org.
114. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).

115. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); www.isfanow.org.
116. ISO - International Organization for Standardization; www.iso.org.
117. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
118. ITU - International Telecommunication Union; www.itu.int/home.
119. KCMA - Kitchen Cabinet Manufacturers Association; www.kcma.org.
120. LMA - Laminating Materials Association; (See CPA).
121. LPI - Lightning Protection Institute; www.lightning.org.
122. MBMA - Metal Building Manufacturers Association; www.mbma.com.
123. MCA - Metal Construction Association; www.metalconstruction.org.
124. MFMA - Maple Flooring Manufacturers Association, Inc.; www.maplefloor.org.
125. MFMA - Metal Framing Manufacturers Association, Inc.; www.metalframingmfg.org.
126. MHIA - Material Handling Industry of America; www.mhia.org.
127. MIA - Marble Institute of America; www.marble-institute.com.
128. MMPA - Moulding & Millwork Producers Association; www.wmmpa.com.
129. MPI - Master Painters Institute; www.paintinfo.com.
130. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; www.mss-hq.org.
131. NAAMM - National Association of Architectural Metal Manufacturers; www.naamm.org.
132. NACE - NACE International; (National Association of Corrosion Engineers International); www.nace.org.
133. NADCA - National Air Duct Cleaners Association; www.nadca.com.
134. NAIMA - North American Insulation Manufacturers Association; www.naima.org.
135. NBGQA - National Building Granite Quarries Association, Inc.; www.nbgqa.com.
136. NBI - New Buildings Institute; www.newbuildings.org.
137. NCAA - National Collegiate Athletic Association (The); www.ncaa.org.
138. NCMA - National Concrete Masonry Association; www.ncma.org.
139. NEBB - National Environmental Balancing Bureau; www.nebb.org.
140. NECA - National Electrical Contractors Association; www.necanet.org.
141. NeLMA - Northeastern Lumber Manufacturers Association; www.nelma.org.
142. NEMA - National Electrical Manufacturers Association; www.nema.org.
143. NETA - InterNational Electrical Testing Association; www.netaworld.org.
144. NFHS - National Federation of State High School Associations; www.nfhs.org.
145. NFPA - National Fire Protection Association; www.nfpa.org.
146. NFPA - NFPA International; (See NFPA).
147. NFRC - National Fenestration Rating Council; www.nfrc.org.
148. NHLA - National Hardwood Lumber Association; .www.nhla.com.
149. NLGA - National Lumber Grades Authority; www.nlga.org.
150. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
151. NOMMA - National Ornamental & Miscellaneous Metals Association; www.nomma.org.
152. NRCA - National Roofing Contractors Association; www.nrca.net.
153. NRMCA - National Ready Mixed Concrete Association; www.nrmca.org.
154. NSF - NSF International; www.nsf.org.
155. NSPE - National Society of Professional Engineers; www.nspe.org.
156. NSSGA - National Stone, Sand & Gravel Association; www.nssga.org.
157. NTMA - National Terrazzo & Mosaic Association, Inc. (The); www.ntma.com.
158. NWFA - National Wood Flooring Association; www.nwfa.org.
159. PCI - Precast/Prestressed Concrete Institute; www.pci.org.
160. PDI - Plumbing & Drainage Institute; www.pdionline.org.

161. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); www.plasa.org.
162. RCSC - Research Council on Structural Connections; www.boltcouncil.org.
163. RFCI - Resilient Floor Covering Institute; www.rfci.com.
164. RIS - Redwood Inspection Service; www.redwoodinspection.com.
165. SAE - SAE International; www.sae.org.
166. SCTE - Society of Cable Telecommunications Engineers; www.scte.org.
167. SDI - Steel Deck Institute; www.sdi.org.
168. SDI - Steel Door Institute; www.steeldoor.org.
169. SEFA - Scientific Equipment and Furniture Association (The); www.sefalabs.com.
170. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
171. SIA - Security Industry Association; www.siaonline.org.
172. SJI - Steel Joist Institute; www.steeljoist.org.
173. SMA - Screen Manufacturers Association; www.smainfo.org.
174. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; www.smacna.org.
175. SMPTE - Society of Motion Picture and Television Engineers; www.smpte.org.
176. SPFA - Spray Polyurethane Foam Alliance; www.sprayfoam.org.
177. SPIB - Southern Pine Inspection Bureau; www.spib.org.
178. SPRI - Single Ply Roofing Industry; www.spri.org.
179. SRCC - Solar Rating & Certification Corporation; www.solar-rating.org.
180. SSINA - Specialty Steel Industry of North America; www.ssina.com.
181. SSPC - SSPC: The Society for Protective Coatings; www.sspc.org.
182. STI - Steel Tank Institute; www.steeltank.com.
183. SWI - Steel Window Institute; www.steelwindows.com.
184. SWPA - Submersible Wastewater Pump Association; www.swpa.org.
185. TCA - Tilt-Up Concrete Association; www.tilt-up.org.
186. TCNA - Tile Council of North America, Inc.; www.tileusa.com.
187. TEMA - Tubular Exchanger Manufacturers Association, Inc.; www.tema.org.
188. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); www.tiaonline.org.
189. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
190. TMS - The Masonry Society; www.masonrysociety.org.
191. TPI - Truss Plate Institute; www.tpinst.org.
192. TPI - Turfgrass Producers International; www.turfgrasssod.org.
193. TRI - Tile Roofing Institute; www.tileroofing.org.
194. UL - Underwriters Laboratories Inc.; www.ul.com.
195. UNI - Uni-Bell PVC Pipe Association; www.uni-bell.org.
196. USAV - USA Volleyball; www.usavolleyball.org.
197. USGBC - U.S. Green Building Council; www.usgbc.org.
198. USITT - United States Institute for Theatre Technology, Inc.; www.usitt.org.
199. WASTEC - Waste Equipment Technology Association; www.wastec.org.
200. WCLIB - West Coast Lumber Inspection Bureau; www.wclib.org.
201. WCMA - Window Covering Manufacturers Association; www.wcmanet.org.
202. WDMA - Window & Door Manufacturers Association; www.wdma.com.
203. WI - Woodwork Institute; www.wicnet.org.
204. WSRCA - Western States Roofing Contractors Association; www.wsrca.com.
205. WWPA - Western Wood Products Association; www.wwpa.org.

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.

1. DIN - Deutsches Institut fur Normung e.V.; www.din.de.
2. IAPMO - International Association of Plumbing and Mechanical Officials; www.iapmo.org.
3. ICC - International Code Council; www.iccsafe.org.
4. ICC-ES - ICC Evaluation Service, LLC; www.icc-es.org.

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.

1. COE - Army Corps of Engineers; www.usace.army.mil.
2. CPSC - Consumer Product Safety Commission; www.cpsc.gov.
3. DOC - Department of Commerce; National Institute of Standards and Technology; www.nist.gov.
4. DOD - Department of Defense; www.quicksearch.dla.mil.
5. DOE - Department of Energy; www.energy.gov.
6. EPA - Environmental Protection Agency; www.epa.gov.
7. FAA - Federal Aviation Administration; www.faa.gov.
8. FG - Federal Government Publications; www.gpo.gov/fdsys.
9. GSA - General Services Administration; www.gsa.gov.
10. HUD - Department of Housing and Urban Development; www.hud.gov.
11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; www.eetd.lbl.gov.
12. OSHA - Occupational Safety & Health Administration; www.osha.gov.
13. SD - Department of State; www.state.gov.
14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; www.trb.org.
15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; www.ars.usda.gov.
16. USDA - Department of Agriculture; Rural Utilities Service; www.usda.gov.
17. USDJ - Department of Justice; Office of Justice Programs; National Institute of Justice; www.ojp.usdoj.gov.
18. USP - U.S. Pharmacopeial Convention; www.usp.org.
19. USPS - United States Postal Service; www.usps.com.

E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CFR - Code of Federal Regulations; Available from Government Printing Office; www.gpo.gov/fdsys.
2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; www.quicksearch.dla.mil.
3. DSCC - Defense Supply Center Columbus; (See FS).
4. FED-STD - Federal Standard; (See FS).

5. FS - Federal Specification; Available from DLA Document Services; www.quicksearch.dla.mil.

    a. Available from Defense Standardization Program; www.dsp.dla.mil.
    b. Available from General Services Administration; www.gsa.gov.
    c. Available from National Institute of Building Sciences/Whole Building Design Guide; www.wbdg.org/ccb.

6. MILSPEC - Military Specification and Standards; (See DOD).
7. USAB - United States Access Board; www.access-board.gov.
8. USATBCB - U.S. Architectural & Transportation Barriers Compliance Board; (See USAB).

F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.

1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; www.bearhfti.ca.gov.
2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; www.calregs.com.
3. CDHS; California Department of Health Services; (See CDPH).
4. CDPH; California Department of Public Health; Indoor Air Quality Program; www.cal-iaq.org.
5. CPUC; California Public Utilities Commission; www.cpuc.ca.gov.
6. SCAQMD; South Coast Air Quality Management District; www.aqmd.gov.
7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; www.txforestservice.tamu.edu.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:

1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES

A. Installation, removal, and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.

B. Project Identification and Temporary Signs: Show fabrication and installation details, including plans, elevations, details, layouts, typestyles, graphic elements, and message content.

C. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold. Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.

1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and requirements for replacing water-damaged Work.
2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
3. Indicate methods to be used to avoid trapping water in finished work.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the United States Access Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 TEMPORARY FACILITIES

A. Field Offices: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.2 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.3 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, safety shower and eyewash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1. Use of Permanent Toilets: Use of Owner's existing or new toilet facilities is not permitted.

E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed

construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.

F. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

H. Telephone Service: Use of cell phones is acceptable.

1. Post a list of important telephone numbers.

a. Police and fire departments.
b. Ambulance service.
c. Contractor's home office.
d. Contractor's emergency after-hours telephone number.
e. Architect's office.
f. Engineers' offices.
g. Owner's office.
h. Principal subcontractors' field and home offices.

3.4 SUPPORT FACILITIES INSTALLATION

A. Comply with the following:

1. Provide construction for temporary field offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible in accordance with ASTM E136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain, including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

D. Storage and Staging: Use designated areas of Project site for storage and staging needs.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.

a. Provide temporary, directional signs for construction personnel and visitors.

G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.

F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

G. Temporary Egress: Provide temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction. Provide signage directing occupants to temporary egress.

H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

I. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.

1. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
2. Insulate partitions to control noise transmission to occupied areas.
3. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
4. Protect air-handling equipment.
5. Provide walk-off mats at each entrance through temporary partition.

J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking in construction areas. Comply with additional limits on smoking specified in other Sections.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition in accordance with requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign, stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.6 MOISTURE AND MOLD CONTROL

A. Moisture and Mold Protection: Protect stored materials and installed Work in accordance with Moisture and Mold Protection Plan.

B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Protect stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Remove standing water from decks.
5. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard and replace stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.7 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been

delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Division 01 Section "Substitution Procedures" for requests for substitutions.
2. Division 01 Section "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.

a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.

2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:

    a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.

4. Manufacturers:

    a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered unless otherwise indicated.
    b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Progress cleaning.
6. Protection of installed construction.
7. Correction of the Work.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.
3. Section 017700 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 SUBMITTALS

A. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.

    a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 QUALITY ASSURANCE

A. Professional Engineer Qualifications: Refer to Section 014000 "Quality Requirements."

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, or when encountering the need for cutting and patching of elements whose structural function is not known, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

    a. Primary operational systems and equipment.
    b. Fire separation assemblies.
    c. Air or smoke barriers.
    d. Fire-suppression systems.
    e. Plumbing piping systems.
    f. Mechanical systems piping and ducts.
    g. Control systems.
    h. Communication systems.
    i. Fire-detection and -alarm systems.
    j. Conveying systems.
    k. Electrical wiring systems.
    l. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Sprayed fire-resistive material.
d. Equipment supports.
e. Piping, ductwork, vessels, and equipment.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect in accordance to requirements in Section 013100 "Project Management and Coordination."

3.3 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. Engage a land surveyor or professional engineer experienced in laying out the Work, using the following accepted surveying practices:

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.

7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 FIELD ENGINEERING

A. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

B. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

3.5 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure satisfactory results as judged by Architect. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy of type expected for Project.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Select tools or equipment that minimize production of excessive noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other portions of the work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions with manufacturer.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect, as judged by Architect. Fit exposed connections together to form hairline joints.

J. Repair or remove and replace damaged, defective, or nonconforming Work.

1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

F. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable, as judged by Architect. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.

    a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

    a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final

paint coat over entire unbroken surface containing the patch, corner to corner of wall and edge to edge of ceiling. Provide additional coats until patch blends with adjacent surfaces.

4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

G. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces

3.7 PROGRESS CLEANING

A. Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

    a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls" and Section 017419 "Construction Waste Management and Disposal."

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

B. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION AND REPAIR OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Repair Work previously completed and subsequently damaged during construction period. Repair to like-new condition.

C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Disposing of nonhazardous demolition and construction waste.

1.3 DEFINITIONS

A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.5 WASTE MANAGEMENT PLAN

A. Waste Identification: Indicate anticipated types and quantities of demolition site-clearing and construction waste generated by the Work.

1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
2. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with operation, termination, and removal requirements in Section 015000 "Temporary Facilities and Controls."

B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, reused, and disposed.
2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until installation.
4. Protect items from damage during transport and storage.
5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site.
5. Protect items from damage during transport and storage.

3.3 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Requirements:

1. Section 012900 “Payment Procedures” for requirements for Applications for Payment for Substantial Completion and Final Completion.
2. Section 017823 “Operation and Maintenance Data” for additional operation and maintenance manual requirements.
3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. List of Incomplete Items: Contractor-prepared list of items to be completed or corrected, prepared for the Architect's use prior to Architect's inspection, to determine if the Work is substantially complete.

1.4 SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.5 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.7 SUBSTANTIAL COMPLETION PROCEDURES

A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's Punch List), indicating the value of each item on the list and reasons why the Work is incomplete.

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
5. Submit testing, adjusting, and balancing records.
6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 7 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements.
6. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 7 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.8 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
4. Submit pest-control final inspection report.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.9 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, starting with exterior areas first, listed by room or space number.
2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.
3. Include the following information at the top of each page:

    a. Project name.

b. Date.
c. Name of Architect.
d. Name of Contractor.
e. Page number.

4. Submit list of incomplete items in the following format:

a. PDF electronic file.

1.10 SUBMITTAL OF PROJECT WARRANTIES

A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

B. Partial Occupancy: Submit properly executed warranties within 10 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.

C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.

D. Warranty Electronic File: Provide warranties and bonds in PDF format. Assemble complete warranty and bond submittal package into a single electronic PDF file with bookmarks enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

1. Submit on digital media acceptable to Architect.

E. Warranties in Paper Form:

1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

F. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

a. Clean Project site of rubbish, waste material, litter, and other foreign substances.
b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
g. Clean flooring, removing debris, dirt, and staining; clean according to manufacturer's recommendations.
h. Vacuum and mop concrete.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
p. Clean luminaires, lamps, globes, and reflectors to function with full efficiency.
q. Clean strainers.
r. Leave Project clean and ready for occupancy.

C. Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Construction Waste Management and Disposal."

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations required by Section 017300 “Execution” before requesting inspection for determination of Substantial Completion.

END OF SECTION 017700

SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory manuals.
2. Emergency manuals.
3. Systems and equipment operation manuals.
4. Systems and equipment maintenance manuals.
5. Product maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 CLOSEOUT SUBMITTALS

A. Submit operation and maintenance manuals indicated. Provide content for each manual as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operation and maintenance submittals is acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operation and maintenance manuals in the following format:

1. Submit on digital media acceptable to Architect. Enable reviewer comments on draft submittals.
2. Submit 2 paper copies.

C. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

D. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

1.4 FORMAT OF OPERATION AND MAINTENANCE MANUALS

A. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
2. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.

B. Manuals, Paper Copy: Submit manuals in the form of hard-copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

    a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
    b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment. Enclose title pages and directories in clear plastic sleeves.
4. Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.

    a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

1.5 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization of Manuals: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Architect.
7. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
8. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1.6 EMERGENCY MANUALS

A. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

B. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.

3. Emergency procedures.

C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

E. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

1.7 SYSTEMS AND EQUIPMENT OPERATION MANUALS

A. Systems and Equipment Operation Manual: Assemble a complete set of data indicating operation of each system, subsystem, and piece of equipment not part of a system. Include information required for daily operation and management, operating standards, and routine and special operating procedures.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.

9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

C. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

D. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

E. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

F. Piped Systems: Diagram piping as installed, and identify color coding where required for identification.

1.8 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Systems and Equipment Maintenance Manuals: Assemble a complete set of data indicating maintenance of each system, subsystem, and piece of equipment not part of a system. Include manufacturers' maintenance documentation, preventive maintenance procedures and frequency, repair procedures, wiring and systems diagrams, lists of spare parts, and warranty information.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

B. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranties and bonds as described below.

C. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Manufacturers' Maintenance Documentation: Include the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins; include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

    a. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

E. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

H. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

I. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

J. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.

1. Do not use original project record documents as part of maintenance manuals.

1.9 PRODUCT MAINTENANCE MANUALS

A. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

B. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

C. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

D. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

E. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

F. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

G. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017823

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for Project Record Documents, including the following:

1. Record Drawings.
2. Record specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017700 "Closeout Procedures" for general closeout procedures.
2. Section 017823 “Operation and Maintenance Data” for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Submit copies of Record Drawings as follows:

a. Final Submittal:

1) Submit one paper-copy full size set(s) of marked-up record prints.
2) Print each drawing, whether or not changes and additional information were recorded.
3) Submit PDF electronic files of scanned Record Prints.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and Contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

1.4 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation, where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.

a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
b. Accurately record information in an acceptable drawing technique.
c. Record data as soon as possible after obtaining it.
d. Record and check the markup before enclosing concealed installations.
e. Cross-reference record prints to corresponding photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:

a. Dimensional changes to Drawings.
b. Revisions to details shown on Drawings.
c. Depths of foundations.
d. Locations and depths of underground utilities.
e. Revisions to routing of piping and conduits.
f. Revisions to electrical circuitry.
g. Actual equipment locations.
h. Duct size and routing.
i. Locations of concealed internal utilities.
j. Changes made by Change Order or Construction Change Directive.
k. Changes made following Architect's written orders.
l. Details not on the original Contract Drawings.
m. Field records for variable and concealed conditions.
n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record prints with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
7. Drawings shall be signed and dated by the subcontractors for mechanical, electrical and plumbing work. Signing of drawings shall indicate that they have been checked and that they represent a true and accurate record of the work installed. The General Contractor shall be responsible for indicating changes in work on all other sheets and should sign and date each sheet.

B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Record Digital Data Files: Annotated PDF electronic file of complete set of Record Prints.
3. Identification: As follows:

    a. Project name.
    b. Date.
    c. Designation "PROJECT RECORD DRAWINGS."
    d. Name of Architect.
    e. Name of Contractor.

1.5 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation, where installation varies from that indicated in Specifications, addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

B. Format: Submit record specifications as annotated PDF electronic file.

1.6 RECORD PRODUCT DATA

A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and revisions to Project Record Documents as they occur; do not wait until end of Project.

B. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

C. Format: Submit Record Product Data as annotated PDF electronic file.

1. Include Record Product Data directory organized by Specification Section number and title, electronically linked to each item of Record Product Data.

1.7 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

1.8 MAINTENANCE OF RECORD DOCUMENTS

A. Maintenance of Record Documents: Store Record Documents in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 017839

SECTION 017900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Demonstration of operation of systems, subsystems, and equipment.
2. Training in operation and maintenance of systems, subsystems, and equipment.

B. Related Sections include the following:

1. Section 013100 "Project Management and Coordination" for requirements for pre-instruction conferences.
2. Divisions 02 through 33 Sections for specific requirements for demonstration and training for products in those Sections.

1.3 SUBMITTALS

A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.

1. At completion of training, submit two (2) complete training manual(s) for Owner's use.

B. Qualification Data: For instructor.

C. Attendance Record: For each training module, submit list of participants and length of instruction time.

D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 QUALITY ASSURANCE

A. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 01 Section "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections, and as follows:

1. Fire-protection systems, including fire alarm fire pumps and fire-extinguishing systems.
2. Intrusion detection systems.
3. Medical equipment, including medical gas equipment and piping.
4. Laboratory equipment, including laboratory air and vacuum equipment and piping.
5. Heat generation.
6. Refrigeration systems.
7. HVAC systems.
8. HVAC instrumentation and controls.
9. Electrical service and distribution.
10. Packaged engine generators, including transfer switches.
11. Lighting equipment and controls.
12. Communication systems.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

a. System, subsystem, and equipment descriptions.
b. Performance and design criteria if Contractor is delegated design responsibility.
c. Operating standards.
d. Regulatory requirements.
e. Equipment function.
f. Operating characteristics.
g. Limiting conditions.
h. Performance curves.

2. Documentation: Review the following items in detail:

a. Emergency manuals.
b. Operations manuals.
c. Maintenance manuals.
d. Project Record Documents.
e. Identification systems.
f. Warranties and bonds.
g. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

a. Instructions on meaning of warnings, trouble indications, and error messages.
b. Instructions on stopping.
c. Shutdown instructions for each type of emergency.
d. Operating instructions for conditions outside of normal operating limits.
e. Sequences for electric or electronic systems.
f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

a. Startup procedures.
b. Equipment or system break-in procedures.
c. Routine and normal operating instructions.
d. Regulation and control procedures.
e. Control sequences.
f. Safety procedures.
g. Instructions on stopping.
h. Normal shutdown instructions.
i. Operating procedures for emergencies.
j. Operating procedures for system, subsystem, or equipment failure.
k. Seasonal and weekend operating instructions.
l. Required sequences for electric or electronic systems.
m. Special operating instructions and procedures.

5. Adjustments: Include the following:

a. Alignments.
b. Checking adjustments.
c. Noise and vibration adjustments.
d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

a. Diagnostic instructions.
b. Test and inspection procedures.

7. Maintenance: Include the following:

a. Inspection procedures.
b. Types of cleaning agents to be used and methods of cleaning.
c. List of cleaning agents and methods of cleaning detrimental to product.
d. Procedures for routine cleaning

e. Procedures for preventive maintenance.
f. Procedures for routine maintenance.
g. Instruction on use of special tools.

8. Repairs: Include the following:

a. Diagnosis instructions.
b. Repair instructions.
c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
d. Instructions for identifying parts and components.
e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

B. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner, through Architect, with at least 10 days' advance notice.

C. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral a written or a demonstration performance-based test.

D. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 017900

SECTION 020100 – GEOTECHNICAL ENGINEERING SERVICES REPORT

1.1 GEOTECHNICAL DATA

A. This Document with its referenced attachments provides Owner's information for Bidders' convenience and is intended to supplement rather than serve in lieu of Bidders' own investigations. This report is made available for Bidders' convenience and information but is not a warranty of existing conditions.

B. A geotechnical investigation report for this Project, including results of field exploration, laboratory testing, and geotechnical recommendations for foundation design, prepared by Arm Soil Testing LLC, dated May 22, 2023, is available for viewing as appended to this Document.

END OF DOCUMENT 020100

GEOTECHNICAL STUDY
FOR THE
PROPOSED NEW BUILDING FOR CITY OF ANGLETON FIRE STATION #3 EXPANSION PROJECT AT
2743 NORTH VELASCO
ANGLETON, TEXAS

PREPARED FOR

MS. TERRI JORDAN
IAD ARCHITECTS
LAKE JACKSON, TEXAS

PREPARED BY

ARM SOIL TESTING LLC
CYPRESS, TEXAS

PROJECT NO: G23-313

May 22, 2023

ARM SOIL TESTING LLC
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Web: ***www.ArmSoilTesting.com***

May 22, 2023
Project Number: G23-313

Ms. Terri Jordan
iAD Architects
107 West Way, Suite 16
Lake Jackson, Texas 77566

Reference: GEOTECHNICAL INVESTIGATIONS FOR THE PROPOSED NEW BUILDING FOR CITY OF ANGLETON FIRE STATION #3 EXPANSION PROJECT AT NORTH VELASCO IN ANGLETON, TEXAS

Dear Ms. Jordan:

ARM Soil Testing LLC is pleased to submit the results of the geotechnical exploration study for the above-referenced project. This report briefly presents the findings of the study along with our conclusions and recommendations for the design of the foundation for the proposed new building for City of Angleton Fire Station #3 Expansion project at North Velasco in Angleton, Texas.

We appreciate the opportunity to serve you and look forward to working with you in other future projects.

Should you have any questions regarding this report, please do not hesitate to email us at info@armsoiltesting.com or call us at (832) 593-7510 at any time.

Respectfully submitted,

ARM SOIL TESTING LLC

Sam Mohammad
Graduate Engineer

Texas Registered Engineering
Firm F-10790

Mohammad Tamoozi, P.E.
Chief Engineer

STATE OF TEXAS
MOHAMMAD TAMOOZI
62399
REGISTERED
PROFESSIONAL ENGINEER

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INTRODUCTION

Planning is underway for construction of Angleton Fire Station #3 Expansion at 2743 North Velasco in Angleton, Texas. Information on this project was supplied by the client. The project consists of a new Fire Station Expansion Building. Structural details such as column and wall loads are not known at this time but are not expected to exceed 50 kips and 2.0 kips per foot.

PURPOSE AND SCOPE

A geotechnical study was performed for the purposes of (1) exploring the subsurface conditions of the site (2) evaluating the pertinent engineering properties of the subsurface materials (3) providing recommendations concerning suitable types of foundation systems for support of the planned structure and (4) providing geotechnical construction guidelines.

Analyses of slope stability, bulkhead or any other features at the site is not within the scope of this investigation and, therefore, ARM is not responsible for any problems caused by these features. The settlement analysis was not within the scope of this study.

Narrative descriptions of our findings and recommendations are contained in the body of the report. A Boring Location Plan and the boring logs are included in Plates 1 through 5 of the report.

SUBSURFACE EXPLORATION

Conditions at this site were explored with three (3) borings located approximately as shown on the Location of Borings plan found in the Plate 1 of this report. The borings were drilled to the depths of 20 and 5 feet each below existing site grades on May 16, 2023. After the soil samples were obtained and the borings completed, final groundwater levels were measured in the boreholes and they were backfilled with soil cuttings prior to leaving the site.

Undisturbed and disturbed sampling procedures were performed at selected depths during the field exploration phase to obtain samples for laboratory testing and stratigraphy identification. Three-inch diameter thin-wall tube samplers for cohesive materials and two-inch diameter split samplers for cohensionless soils were utilized to obtain undisturbed samples. Thin-wall tube samples were mechanically extruded in the field, visually classified, labeled according to boring number and depth, then packaged in protective boxes for transport back to the laboratory.

LABORATORY TESTING

Upon completion of drilling operations, the soil samples were transported to the laboratory for testing and further study. The laboratory testing was performed in order to evaluate the strengths, classifications and volume change characteristics of the major soil strata. Atterberg limits tests and minus 200 sieve analyses were performed using selected soil samples to determine the index properties of the subsurface materials. Results of laboratory classification tests, in-situ moisture contents and strength tests are presented on the boring log included in the Appendix of the report.

SITE CONDITIONS

Site Description

The project site is relatively flat. An existing building was located at the project site. Evaluations of the existing building are beyond the scope of this investigation. The site has few medium size trees. All trees and root system within the building and pavement area should be removed and the soils compacted as specified in the report.

Soil Stratigraphy

The subsurface conditions present at the boring location are presented on the Log of Borings. A summary of the various strata and their approximate depths and thicknesses which were encountered in the borings are presented on the following TABLE 1. SUMMARY OF SUBSURFACE CONDITIONS. Note that depths on the log and in the following table are referenced from the ground surface, which existed at the time of the field exploration.

TABLE 1
SUMMARY OF SUBSURFACE CONDITIONS

	Description	First Encountered (ft)	Bottom of Stratum (ft)
CLAY (CH)	Firm to hard gray to gray and tan to light gray and tan clays	Ground Surface	8
SILTY SAND (SM)	Medium dense reddish brown silty sand	8	13
SAND (SP)	Medium dense tan sands	13	20

The clays of stratum I are considered fat clays. The clays are highly plastic with plasticity indices of 33 to 42. **These soils are considered expansive** and have very high potential for shrink and swell movements that are usually associated with changes in soil moisture content. The clays are firm to hard in consistency.

The silty sand of stratum II are medium dense. The Standard Penetration Test (SPT) counts is 12 to 18 blows per foot.

The sand of stratum III are medium dense. The Standard Penetration Test (SPT) counts is 14 to 21 blows per foot.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and materials characteristics. The boring logs included in Plates 2 through 5 should be reviewed for specific information at the boring locations. These records include soil /rock descriptions, stratifications, penetration resistances, and locations of the samples and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring location.

Groundwater Conditions

The borings were monitored at the time of drilling for evidence of groundwater. At the time of drilling, groundwater was encountered at 13 feet and final reading at 10 to 11 feet. Excavations for footings may encounter water at some locations. For best results, any standing water should be pumped out and footings poured immediately after the excavation has been made.

Water traveling through the soil (subsurface water) is often unpredictable and may be present at other locations and depths at the site. Due to the seasonal changes in groundwater and the unpredictable nature of groundwater paths, groundwater levels will also fluctuate. Therefore, it is necessary during construction to be aware of groundwater in excavations in order to determine if any changes are necessary in the construction procedures due to the presence of the water.

ANALYSIS AND RECOMMENDATIONS

Suitable Building Foundation

The foundation for the proposed structure must satisfy two independent criteria. First, the maximum design pressure exerted at the foundation level should not exceed the allowable bearing pressure based on an adequate factor of safety with respect to soil shear strength. Secondly, the magnitude of slab-on-grade and foundation movement due to soil volume changes or settlement must be such that structural movement is within tolerable limits. Considering the subsurface conditions encountered at the boring locations, the proposed structure may be supported on drilled and underreamed piers foundation.

Drilled and Underreamed Piers

The structural loads for the proposed new structure may be supported on drilled and underreamed piers. Groundwater was encountered during drilling operations. Excavations for footings may encounter some water at some locations. For best results, any standing water should be pumped out and footings poured immediately after the excavation has been made. Foundation recommendations are presented as follows:

Foundation Type	Depth, below existing grade (feet)	Allowable Bearing Capacity (psf) Dead Plus Sustained Live Load Factor of Safety = 3	Allowable Bearing Capacity (psf) Total Load Factor of Safety = 2
Drilled and Underreamed Piers	8	2,500	3,750

The drilled piers should not be placed closer than 2.5 diameters of the bell, center to center and the bell/shaft ratio for the piers can be 3:1.

The ultimate capacity of under reamed footings to resist uplift loads can be determined from the following equation provided the ratio of footing depth to bell diameter is greater than 1.5:

$$Q_u = 5.8\ c\ (D^2 - d^2)$$

where: Q_u= ultimate uplift capacity, pounds
c= Average shear strength above the footing grade, pounds per square foot. (use c = 800 PSF)
D= underream diameter, feet.
d= shaft diameter, feet.

A minimum factor of safety of 2.0 is recommended for final design.

The settlement analysis was not within the scope of this study.

Floor Slabs

The surficial soils within the proposed building lines consist of highly expansive clays. Based on existing soil conditions, the estimated potential vertical rise (PVR) using TEX-124E method is approximately 3.8 inches. Any grade-supported floor slab for this project constructed over expansive clays will incur some level of risk associated with expansion or shrinkage of the moisture-sensitive soils.

A structurally supported floor slab with a six-inch void space would be most suitable floor system for the proposed construction. However, a grade-supported floor system may also used using either of the two options to reduce the PVR to one-inch- (1):

- Undercut upper 4 feet of existing high plasticity expansive clays and replace with compacted low plasticity structural fill or top the existing soils with 4 feet of compacted low plasticity structural fill.

- Excavate the upper 4 feet of existing high plasticity clays and thoroughly mix the clays with 8% of lime (dry weight) under proper moisture control. Then place the lime-stabilized clays in 8-inch loose lifts and compact each lift to at least 95% of the maximum dry density as specified by ASTM D-698.

Grade Beams

Grade beams used in conjunction with drilled piers should be placed beneath all load bearing walls. Grade beams should be founded at a depth of 24 inches below the final grades and should be designed to support the imposed loads.

Stiffened Slab on-Grade

The stiffened slab on-grade may consist of either post-tensioned slab or conventional slab on-grade. Post-tensioned slab design parameters were obtained from the third edition of the Post-Tensioning Institute Design Manual. The conventional slab on-grade design parameters were based on BRAB design manual entitled “Criteria for Selection and Design of Residential Slabs on Ground”.

A minimum of 24 inches of compacted select fill material pad should be used with post-tensioned slab system. All soft area must be excavated and replaced with compacted select fill.

The criteria for the slab-on-grade, in accordance with Post Tensioning Institute (P.T.I.) is given:

Allowable soil bearing capacity	1000 PSF
Weighted average plasticity index (P.I.)	35
Atterberg Limits:	LL = 55 PL = 20 PI = 35
Clay Percent:	60 % (assumed)*
Depth to Constant Suction:	7 ft.
Thornwaite Moisture Index:	Im = 20
Cation Exchange Activity:	CEAc = 0.55
Clay Activity Ratio:	Ac = 0.58
Principal Clay Mineral:	Montmorillonite
Constant Suction Value:	PF = 3.4
Estimated Velocity of Moisture Flow:	c = 0.7 inch/month
Edge Moisture Variation:	em = 9.0 ft. (Center lift) em = 4.9 ft. (Edge lift)
Estimated Differential Swell:	Ym = 1.4 inch (Center lift) Ym = 1.2 inch (Edge lift)

* Clay percent is approximate and assumed based on past experience.

Maintenance Considerations

The site should be graded in such a manner to shed all rainwater away from the structure. Water should not be allowed to pond around the structure. Positive site drainage will reduce the exposure of the on-site clays to a moisture source thus eliminating swelling of the on-site clays.

Due to the presence of clay soils, it is imperative to install a watertight plumbing system. Water leakage due to poor plumbing will have detrimental effects on the performance of the structure.

Roof gutters should be utilized to direct roof runoff away from the structure. Downspouts should not be allowed to discharge near the structure. Downspout extensions should be used to facilitate rapid rainwater drainage away from the structure.

Trees should be planted at a distance equaling the anticipated height of the mature tree. If trees are planted in close proximity to the structure, the roots will extend below the slab area causing distress to the slab. Root barriers should be constructed around the perimeter of the building in the event that trees are located less than the maximum anticipated height of the mature tree. Root barrier should extend at least four feet below grade.

The floor slabs should be provided with a moisture barrier to prevent migration of the capillary moisture through the slab. Six-mill Visqueen can be used. In addition, a two-inch layer of sand can be used for leveling purposes.

Pavement Recommendations

General

We were not provided with traffic type nor with traffic frequency for the drives and parking areas associated with this facility. As a result, we have provided general guidelines for pavement thicknesses.

Flexible asphaltic concrete pavement or rigid Portland cement pavement can be used at this site for automobile traffic use. Pavement subject to light truck traffic can also be rigid or flexible pavement. However, pavement design recommendations presented herein are not applicable for streets or major thoroughfares.

Pavement Sections

The following pavement sections are recommended for the project site. In parking lots and drives servicing only automobile traffic, 5 inches of asphalt concrete should provide adequate service. It is recommended that this be increased to a minimum of 6 inches in main drives and any areas subject to occasional light truck traffic. The section should consist of a 2-inch surface course meeting the requirements of THD Type D with a base course meeting the requirements of THD Type A or B. The coarse aggregate in the surface layer should be crushed limestone rather than gravel.

Portland Cement concrete pavements are recommended in areas subject to any heavy truck traffic such as garbage pickup and/or dumpster trucks and any heavy delivery trucks. We recommend the use of 5 inches of Portland Cement Concrete for general area pavements, which are not subject to truck traffic. A minimum 6-inch thick section is recommended in areas subject to truck traffic. The required thickness will depend on the number of truck passes per day. A minimum 7-inch thick Portland cement pavement thickness is recommended in areas subject to loading of dumpster type garbage trucks. We recommend that the Portland cement concrete in light duty pavement areas should have a minimum 28-day compressive strength of 3,500 pounds per square inch and in heavy duty pavement areas, a 28 day compressive strength of 4,000 psi.

Subgrade Stabilization

Based on the results of laboratory testing, the subgrade performance of the on-site soils can be improved by stabilization with hydrated lime. Stabilization is recommended below both pavement systems. It is estimated that the near surface expansive clayey soils below the future pavements will require 7 percent hydrated lime by dry unit weight. This assumes soil properties of the subgrade soils will be similar to the soils existing in the areas where the borings were drilled. The stabilized clays should be compacted to a minimum of ninety-five (95) percent of the maximum density in a moisture content range of -1% to +4% of the soil/lime mixture's optimum moisture content as determined by ASTM D-698.

A minimum stabilized subgrade depth of 6 inches is recommended below the bottom of the proposed pavement. We recommend that the depth of stabilized subgrade be increased to 8-inch for heavy traffic areas. It is to be noted that the actual amount of lime required be determined after stripping of the subgrade.

The prepared subgrade should be protected and moist cured or sealed with a bituminous material until the pavement materials are placed. Finished pavement subgrade areas should be graded at all times to prevent ponding and infiltration of excessive moisture on or adjacent to the pavement subgrade surface.

It is recommended to extend the pavement stabilization five feet beyond the perimeter of the pavement in order to preclude edge failure. It is also highly recommended to maintain positive drainage away from the pavement throughout the life of the pavement.

Hot Mixed Asphaltic Concrete (HMAC)

All hot mix asphaltic concrete used on this project for new construction shall comply in all respects to Item 340 of the current edition of the Texas Department of Highways and Public Transportation's Standard Specifications (TSDHPT) except as modified for this project. The paving mixture for the wearing surface for new pavement for this project is recommended to be a Fine Graded Surface Course (Type D). The paving mixture for the HMAC base course for this project should be a coarse graded or fine graded Base Course (Type A or Type B). The coarse aggregate in the surface layer should be a crushed limestone rather than gravel.

Portland Cement (Rigid) Concrete

The Portland cement concrete (PCC) used on this project should comply in all respects with Item 360 of the current edition of the TSDHPT Standard Specifications except as may be modified for this project. Type I cement is recommended for use in the concrete pavement.

The concrete in light duty pavement areas should have a minimum 28 day compressive strength of 3,500 pounds per square inch and in heavy duty pavement areas, a 28 day compressive strength of 4,000 psi is recommended. Assuming a nominal maximum aggregate size of 1 to 1 1/2 inches, it is recommended that the concrete have entrained air of 5 percent (±1%) with a maximum water cement ratio of 0.50.

Portland cement concrete pavement types for standard or heavy duty traffic pavements in this area are generally jointed reinforced concrete pavements (JRCP). Due to construction over swelling clays, unreinforced pavement is not recommended. Reinforcing steel and joint systems for the pavement should be properly designed.

CONSTRUCTION GUIDELINES

Site Preparation

Soft soils should be removed until firm soil is reached. The soft soils can be aerated and placed back in eight-inch loose lifts and compacted to 95% as specified by ASTM D-698. Tree stumps, tree roots, old slabs, old foundations and existing pavements should be removed from the structure area. If the tree stumps and roots are left in place, settlement and termite infestation may occur. Once a root system is removed, a void is created in the subsoil. It is recommended to fill these voids with structural fill or cement-stabilized sand and compact to 95% as specified by ASTM D-698.

Any low-lying areas including ravines, ditches, swamps, etc. should be filled with structural fill and placed in eight-inch lifts. Each lift should be compacted to 95% of the maximum dry density as specified by ASTM D-698.

The exposed subgrade should be scarified to a minimum depth of six (6) inches in the driveway and slab areas. The subgrade should then be compacted to 95% of the maximum density as determined by the Standard Moisture Density Relationship (ASTM D-698). In the event that the upper six (6) inches cannot be compacted due to excessive moisture, we recommend that these soils be excavated and removed or chemically stabilized to provide a firm base for fill placement. Proof rolling should be performed using a heavy tired loaded truck or pneumatic rubber-tired weighting about 15 to 20 tons equipment.

The fill soils should extend at least five feet beyond the perimeter of the structure. In addition, the floor slab should be placed as soon as possible after the building pad is prepared. If the building pad is left exposed to rainfall, perched groundwater conditions may develop which will undermine the integrity of the floor slab. All trenches (water, cable, electrical) should be properly backfilled and compacted to 95% of the maximum dry densities. Sand or permeable materials should not be used as backfill. Improperly backfilled and improperly compacted trench, if left exposed will also be another source for perched groundwater conditions. In general perched water tends to be trapped within the fill. The trapped groundwater tends to soften the subgrade. Positive drainage should be maintained across the entire building pad.

A qualified soil technician should monitor all earthwork operations. Field density tests should be conducted on each lift using a nuclear density gauge. The gauge should be calibrated every day. Prior to field density tests, a 50-pound sample from the subgrade soils should be obtained. A similar sample should be obtained from the fill soils. A Standard Moisture Density Relationship (ASTM D-698) should be performed on each sample in order to obtain an optimum moisture content and a maximum dry density. The field density tests should be compared to these results every time the soils are tested in the field.

The above recommendations are applicable to slabs, driveways, pavements and any structures that are supported directly on-grade.

Vegetation Control

Existing Trees

Existing tree roots absorb moisture from their surrounding soils. This results in formation of pockets of isolated dry soils around the tree roots with a moisture content significantly lower than the soil moisture contents away from these roots. When the trees are cut, the roots die and stop absorbing moisture from their surrounding soils. With time and seasonal rainfall as well as by capillary action, these dry pockets of soils will undergo increases in moisture content and as a result heave. If the tree is cut and a building or paving is immediately constructed on it, then these isolated areas of dry soils will have more than the soils at other areas of the building/paving or site. This will result in differential heaving under the structure of pavement. Where large trees are cut and building built over it, the slab should be stiffened to resist the higher differential heave. Alternatively, a safer option would be to structurally support the building slab on deeper footings with a void space larger than the anticipated maximum heave of the drier soils. Positive drainage should be developed and maintained all around the building at all times.

New Trees

New trees should be avoided near the building slab especially larger trees. No tree should be planted closer than 20 feet or half the canopy diameter of fully matured trees. Alternatively, root barriers may be used to prevent the migration of tree roots underneath the buildings. Use of large shrubs should be avoided immediately adjacent to the building slab.

Low Swell Potential Structural Fill

Low swell potential select fill should consist of cohesive soils free of organics or other deleterious materials and should have a plasticity index not less than 10 or more than 20. Sandy clays are recommended for use.

The low swell potential select fill should be cleaned and free of organic matter or other deleterious material. The fill should be placed in maximum 8-inch loose lifts and compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D 698 (Standard Proctor). The moisture content at the time of compaction should be +/-2% of the optimum value as defined by ASTM D 698. The referenced moisture content and density should be maintained until construction is complete.

Drainage

Roof drainage should be collected by a system of gutters and down spouts and transmitted to a paved surface where water can drain rapidly away from the structure. Sidewalks, parking areas, building access drives, and the general ground surface should be sloped so that water will drain away from the structure. Water should not be allowed to pond near the building foundations.

Footing Construction

Concrete should be placed in underreamed piers immediately following drilling and inspection. Significant seepage into excavations from groundwater is anticipated if excavations remain too long. If water collects in excess of 1-inch depth at the bottom of the footing excavations, it should be pumped out prior to concrete placement or the concrete should be tremied in place. We recommend that footing installations be monitored by the testing laboratory.

Groundwater Control

In general, the highest groundwater level during construction should be at least three (3) feet below the bottom of the excavation to ensure excavation stability. Presence of groundwater above the excavation depths may require de-watering. However, it is the contractor's responsibility to select the proper de-watering systems for the proposed constructions.

LIMITATIONS

The conclusions reached in this report are based on the conditions at the boring location. In any subsurface exploration, it is necessary to assume that the subsoil conditions between exploratory borings do not change significantly. Therefore, careful observations must be made during excavation to detect significant deviations from conditions encountered in the test borings. If such deviations are detected, this office should be contacted immediately.

In the event that any changes in the nature, design or location of the structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report are modified and verified in writing.

We have conducted this geotechnical study using the standard of care and diligence normally practiced by recognized engineering firms now performing services of a similar nature under similar circumstances. Unless specifically stated otherwise, any environmental or contaminant assessment efforts are beyond the scope of work for this report. We intend for this report, including all illustrations, to be used in its entirety. If this report is made available to potential contractors, it should be for information only and not as a warranty of subsurface conditions.

This report has been prepared for the specific application to Angleton Fire Station #3 Expansion at 2743 North Velasco in Angleton, Texas.

SITE PLAN

A.R.M. SOIL TESTING
17240 HUFFMEISTER ROAD, SUITE 102
CYPRESS, TEXAS

ANGLETON FIRE STATION #3 EXPANSION
2743 NORTH VELASCO
ANGLETON, TEXAS

SCALE: N.T.S.	DRAWN BY: OA
PROJECT NO.: G23-313	PLATE NO. 1

LOG OF BORING B- 1

NAME: PROPOSED ANGLETON FIRE STATION #3 EXPANSION | **PROJECT NUMBER: G23-313**

LOCATION: 2743 NORTH VELASCO IN ANGLETON, TEXAS | **DATE DRILLED: 5/16/2023**

Type of Boring: Auger

Boring Location: See Plan of Borings

Surface Elevation: Existing

DEPTH, FT.	SAMPLE TYPE	STANDARD PENETRATION TEST	LEGEND	POCKET PENETROMETER (tsf)	UNCONFINED COMP. (tsf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT (%)	PLASTIC LIMIT	PLASTICITY INDEX	#200 SIEVE (%)	MATERIAL DESCRIPTION	GROUP SYMBOL
				1.00		22						Firm gray **CLAY** with sand and roots	**CH**
2.0													
				4.00	2.50	20	110	52	19	33		.. very stiff gray and tan with ferrous nodules below 2 feet	
4.0													
				4.5+		24						.. hard light gray and tan with ferrous nodules below 4 feet	
6.0													
				4.00	2.60	26	104	63	21	42		.. very stiff with ferrous nodules below 6 feet	
8.0													
		12				12						Medium dense reddish brown **SILTY SAND**	**SM**
10.0													
		17				14					12		
12.0													
		14				18						Medium dense tan moist **SAND**	**SP**
15.0													
		19				25					6	.. saturated below 18 feet	
20.0													
												Boring Was Terminated at 20 feet	

Water Level Measurements:

Initial Reading: 13'

Final Reading: 11' (Caved in 12.5')

Drilled by: Soil Tech

Logged by: Jordon

LOG OF BORING B- 2

NAME: PROPOSED ANGLETON FIRE STATION #3 EXPANSION | **PROJECT NUMBER: G23-313**

LOCATION: 2743 NORTH VELASCO IN ANGLETON, TEXAS | **DATE DRILLED: 5/16/2023**

Type of Boring: Auger

Boring Location: See Plan of Borings

Surface Elevation: Existing

DEPTH, FT.	SAMPLE TYPE	STANDARD PENETRATION TEST	LEGEND	POCKET PENETROMETER (tsf)	UNCONFINED COMP. (tsf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT (%)	PLASTIC LIMIT	PLASTICITY INDEX	#200 SIEVE (%)	MATERIAL DESCRIPTION	GROUP SYMBOL
				1.50		20						Firm gray and tan **CLAY**	**CH**
2.0				4.5+	4.40	22	108	55	20	35		.. hard below 2 feet	
4.0				4.00		26						.. very stiff light gray and tan with ferrous nodules below 4 feet	
6.0				4.50	4.10	24	106	60	20	40			
8.0													
		13				10					15	Medium dense reddish brown **SILTY SAND**	**SM**
10.0													
		18				13							
12.0													
		17				16					5	Medium dense tan **SAND** moist	**SP**
15.0													
		21				22					6	.. saturated below 18 feet	
20.0													
												Boring Was Terminated at 20 feet	

Water Level Measurements:

Initial Reading: 13'

Final Reading: 10' (Caved in 12')

Drilled by: Soil Tech

Logged by: Jordon

LOG OF BORING B- 3

NAME: PROPOSED ANGLETON FIRE STATION #3 EXPANSION | **PROJECT NUMBER: G23-313**

LOCATION: 2743 NORTH VELASCO IN ANGLETON, TEXAS | **DATE DRILLED: 5/16/2023**

Type of Boring: Auger

Boring Location: See Plan of Borings

Surface Elevation: Existing

DEPTH, FT.	SAMPLE TYPE	STANDARD PENETRATION TEST	LEGEND	POCKET PENETROMETER (tsf)	UNCONFINED COMP. (tsf)	MOISTURE CONTENT (%)	DRY DENSITY (pcf)	LIQUID LIMIT (%)	PLASTIC LIMIT	PLASTICITY INDEX	#200 SIEVE (%)	MATERIAL DESCRIPTION	GROUP SYMBOL
				2.00		19						Stiff gray **CLAY** with sand	CH
2.0				4.5+	4.50	20	109	54	19	35		.. hard gray and tan with roots below 2 feet	
4.0				4.00		22						.. very stiff light gray and tan below 4 feet	
5.0												Boring Was Terminated at 5 feet	
6.0													
8.0													
10.0													
12.0													
15.0													
20.0													

Water Level Measurements:

Initial Reading: Dry

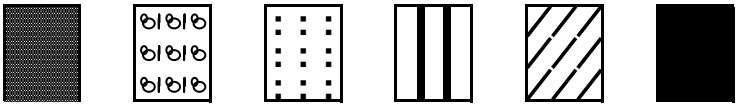
Final Reading: Dry

Drilled by: Soil Tech

Logged by: Jordon

KEY TO LOG TERMS AND SYMBOLS

SOIL TYPE

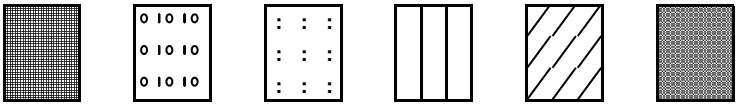


ROCK | GRAVEL | SAND | SILT | CLAY | PEAT

SAMPLER TYPE

NO SAMPLE | AUGER SAMPLE | SHELBY TUBE | SPLIT SPOON

MODIFIERS



STONE | GRAVELY | SANDY | SILTY | CLAYEY | FILL

NO RECOVERY | ROCK CORE | 2" SHELBY TUBE | TXDOT CONE

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D 2487

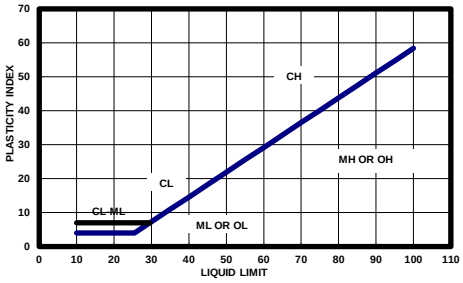
MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	GRAVEL & GRAVELY SOILS LESS THAN 50% PASSING NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		W/ APPRECIATE-BLE FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS,GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN 50% PASSING NO. 4 SIEVE	CLEAN SANDS LITTLE FINES	SW	WELL GRADED SAND, GRAVELY SAND (LITTLE FINES)
			SP	POORLY GRADED SANDS, GRAVELY SAND (L.FINES)
		SANDS WITH APPREA. FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS,SAND-CLAY MIXTURES
FINE GRAINED SOILS LESS THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS & VERY FINE SANDS,ROCK FLOUR SILTY OR CLAYEY FINE SANDS OR CLAYEY SILT W/PI
			CL	INORGANIC CLAY OF LOW TO MEDIUM PI LEAN CLAY GRAVELY CLAYS, SANDY CLAYS, SILTY CLAYS
			OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PI
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY FAT CLAYS
			OH	ORGANIC CLAYS OF MED TO HIGH PI, ORGANIC SILT
HIGHLY ORGANIC SOIL			PT	PEAT AND OTHER HIGHLY ORGANIC SOILS
UNCLASSIFIED FILL MATERIALS				ARTIFICIALLY DEPOSITED AND OTHER UNCLASSIFIED SOILS FILL MATERIALS

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	UNCONIFINED COMP. STRENGTH IN TSF
VERY SOFT	0 TO 0.25
SOFT	0.25 TO 0.5
FIRM	0.5 TO 1.5
STIFF	1.75 TO 2.75
VERY STIFF	3.0 TO 4.5
HARD	4.5+

RELATIVE DENSITY - GRANULAR SOILS

CONSISTENCY	N-VALUE (BLOWS PER FT)
VERY LOOSE	0-4
LOOSE	4-9
MEDIUM DENSE	10-29
DENSE	30-49
VERY DENSE	> 50 OR 50+



CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)

6"	3"	3/4"	4	10	40	200	
BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY / CLAY
		COARSE	FINE	COARSE	MEDIUM	FINE	
152	76.2	19.1	4.76	2.0	0.42	0.074	0.002

GRAIN SIZE IN MM

Plate No. 5

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Cast-in-place concrete, including concrete materials, mixture design, placement procedures, and finishes.

B. Related Requirements:

1. Section 020100 “Geotechnical Data” for soil conditions.
2. Section 133419 “Metal Building System” for anchoring rigid frames.
3. Section 312000 "Earth Moving" for drainage fill under slabs-on-ground.
4. Section 321313 "Concrete Paving" for concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Water/Cement Ratio (w/cm): The ratio by weight of water to cementitious materials.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Independent testing agency responsible for concrete design mixtures.
c. Concrete Subcontractor.

2. Review the following:

a. Special inspection and testing and inspecting agency procedures for field quality control.

b. Construction joints, control joints, isolation joints, and joint-filler strips.
c. Semirigid joint fillers.
d. Vapor-retarder installation.
e. Anchor rod and anchorage device installation tolerances.
f. Cold and hot weather concreting procedures.
g. Concrete finishes and finishing.
h. Curing procedures.
i. Forms and form-removal limitations.
j. Shoring and reshoring procedures.
k. Methods for achieving specified floor and slab flatness and levelness.
l. Floor and slab flatness and levelness measurements.
m. Concrete repair procedures.
n. Concrete protection.
o. Initial curing and field curing of field test cylinders (ASTM C31/C31M.)
p. Protection of field cured field test cylinders.

1.5 SUBMITTALS

A. Product Data: For each of the following.

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement
7. Aggregates.
8. Admixtures:

    a. Include limitations of use, including restrictions on cementitious materials, supplementary cementitious materials, air entrainment, aggregates, temperature at time of concrete placement, relative humidity at time of concrete placement, curing conditions, and use of other admixtures.

9. Color pigments.
10. Fiber reinforcement.
11. Vapor retarders.
12. Floor and slab treatments.
13. Liquid floor treatments.
14. Curing materials.
15. Joint fillers.
16. Repair materials.

B. Design Mixtures: For each concrete mixture, include the following:

1. Mixture identification.
2. Minimum 28-day compressive strength.
3. Durability exposure class.
4. Maximum w/cm.
5. Calculated equilibrium unit weight, for lightweight concrete.

6. Slump limit.
7. Air content.
8. Nominal maximum aggregate size.
9. Steel-fiber reinforcement content.
10. Synthetic micro-fiber content.
11. Indicate amounts of mixing water to be withheld for later addition at Project site if permitted.
12. Include manufacturer's certification that permeability-reducing admixture is compatible with mix design.
13. Include certification that dosage rate for permeability-reducing admixture matches dosage rate used in performance compliance test.
14. Intended placement method.
15. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Shop Drawings:

1. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

    a. Location of construction joints is subject to approval of the Architect.

D. Samples: For manufacturer's standard colors for color pigment vapor retarder.

E. Concrete Schedule: For each location of each Class of concrete indicated in "Concrete Mixtures" Article, including the following:

1. Concrete Class designation.
2. Location within Project.
3. Exposure Class designation.
4. Formed Surface Finish designation and final finish.
5. Final finish for floors.
6. Curing process.
7. Floor treatment if any.

F. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.
2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

G. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Fiber reinforcement.
4. Curing compounds.
5. Floor and slab treatments.
6. Bonding agents.
7. Adhesives.
8. Vapor retarders.

9. Semirigid joint filler.
10. Joint-filler strips.
11. Repair materials.

H. Material Test Reports: For the following, from a qualified testing agency:

1. Portland cement.
2. Fly ash.
3. Slag cement.
4. Blended hydraulic cement.
5. Silica fume.
6. Performance-based hydraulic cement.
7. Aggregates.
8. Admixtures:

a. Permeability-Reducing Admixture: Include independent test reports, indicating compliance with specified requirements, including dosage rate used in test.

I. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances.

J. Research Reports:

1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.

K. Preconstruction Test Reports: For each mix design.

L. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs Project personnel qualified as an ACI-certified Flatwork Technician and Finisher and a supervisor who is a certified ACI Flatwork Concrete Finisher/Technician or an ACI Concrete Flatwork Technician with experience installing and finishing concrete, incorporating permeability-reducing admixtures.

B. Ready-Mixed Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified in accordance with NRMCA's "Certification of Ready Mixed Concrete Production Facilities."

C. Laboratory Testing Agency Qualifications: A testing agency qualified in accordance with ASTM C1077 and ASTM E329 for testing indicated and employing an ACI-certified Concrete Quality Control Technical Manager.

1. Personnel performing laboratory tests shall be an ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency

laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on each concrete mixture.

1. Include the following information in each test report:

a. Admixture dosage rates.
b. Slump.
c. Air content.
d. Seven-day compressive strength.
e. 28-day compressive strength.
f. Permeability.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Comply with ASTM C94/C94M and ACI 301.

1.9 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow.
4. Do not place concrete in contact with surfaces less than 35 deg F, other than reinforcing steel.
5. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature at time of discharge to not exceed 95 deg F.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301unless modified by requirements in the Contract Documents.

2.2 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150/C150M, Type I.

C. Normal-Weight Aggregates: ASTM C33/C33M, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.

D. Air-Entraining Admixture: ASTM C260/C260M.

E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C494/C494M, Type A.
2. Retarding Admixture: ASTM C494/C494M, Type B.

F. Water and Water Used to Make Ice: ASTM C94/C94M, potable

2.3 VAPOR RETARDERS

A. Sheet Vapor Retarder, Class A: ASTM E1745, Class A except with maximum water-vapor permeance of 0.01; and not less than 15 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Barrier-Bac; Inteplast Group.

b. Fortifiber Building Systems Group.
c. ISI Building Products.
d. Raven Industries, Inc.
e. Reef Industries, Inc.
f. Stego Industries, LLC.
g. Tex-Trude.
h. W.R. Meadows, Inc.

2. Warranty: Not less than 5 years.

2.4 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C171, polyethylene film burlap-polyethylene sheet.

1. Color:

a. Ambient Temperature Below 50 deg F: Black.
b. Ambient Temperature between 50 deg F and 85 deg F: Any color.
c. Ambient Temperature Above 85 deg F: White.

B. Water: Potable or complying with ASTM C1602/C1602M.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D1751, asphalt-saturated cellulosic fiber.

B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 in accordance with ASTM D2240.

C. Bonding Agent: ASTM C1059/C1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

2.6 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand, as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 4100 psi at 28 days when tested in accordance with ASTM C109/C109M.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150/C150M portland cement or hydraulic or blended hydraulic cement, as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested in accordance with ASTM C109/C109M.

2.7 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, in accordance with ACI 301.

1. Use a qualified testing agency for preparing and reporting proposed mixture designs, based on laboratory trial mixtures.

B. Admixtures: Use admixtures in accordance with manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.
2. Use water-reducing and -retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs concrete for parking structure slabs, and concrete with a w/cm below 0.50.

2.8 CONCRETE MIXTURES

A. Class A: Normal-weight concrete used for footings, grade beams, and tie beams.

1. Minimum Compressive Strength: As indicated on Structural Drawings at 28 days.
2. Maximum w/cm: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.
4. Air Content:

a. Exposure Class F1: 4.5 percent, plus or minus 1.5 percent at point of delivery for concrete containing 1-inch nominal maximum aggregate size.

B. Class C: Normal-weight concrete used for interior slabs-on-ground.

1. Minimum Compressive Strength: As indicated on Structural Drawings at 28 days.
2. Maximum w/cm: 0.45.
3. Minimum Cementitious Materials Content: 520 lb/cu. yd..
4. Slump Limit: 4 inches, plus or minus 1 inch.
5. Air Content:

a. Do not use an air-entraining admixture or allow total air content to exceed 3 percent for concrete used in trowel-finished floors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.
2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide reasonable auxiliary services to accommodate field testing and inspections, acceptable to testing agency, including the following:

1. Daily access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Secure space for storage, initial curing, and field curing of test samples, including source of water and continuous electrical power at Project site during site curing period for test samples.
4. Security and protection for test samples and for testing and inspection equipment at Project site.

3.3 INSTALLATION OF EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining Work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of ANSI/AISC 303.
3. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf angles, and other conditions.

3.4 INSTALLATION OF VAPOR RETARDER

A. Sheet Vapor Retarders: Place, protect, and repair sheet vapor retarder in accordance with ASTM E1643 and manufacturer's written instructions.

1. Install vapor retarder with longest dimension parallel with direction of concrete pour.
2. Face laps away from exposed direction of concrete pour.

3. Lap vapor retarder over footings and grade beams not less than 6 inches, sealing vapor retarder to concrete.
4. Lap joints 6 inches and seal with manufacturer's recommended tape.
5. Terminate vapor retarder at the top of floor slabs, grade beams, and pile caps, sealing entire perimeter to floor slabs, grade beams, foundation walls, or pile caps.
6. Seal penetrations in accordance with vapor retarder manufacturer's instructions.
7. Protect vapor retarder during placement of reinforcement and concrete.

    a. Repair damaged areas by patching with vapor retarder material, overlapping damages area by 6 inches on all sides, and sealing to vapor retarder.

3.5 JOINTS

A. Construct joints true to line, with faces perpendicular to surface plane of concrete.

B. Construction Joints: Coordinate with floor slab pattern and concrete placement sequence.

1. Install so strength and appearance of concrete are not impaired, at locations indicated on Drawings or as approved by Architect.
2. Place joints perpendicular to main reinforcement.

    a. Continue reinforcement across construction joints unless otherwise indicated.
    b. Do not continue reinforcement through sides of strip placements of floors and slabs.

3. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
4. Locate joints for beams, slabs, joists, and girders at third points of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
7. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Control Joints in Slabs-on-Ground: Form weakened-plane control joints, sectioning concrete into areas as indicated. Construct control joints for a depth equal to at least one-fourth of concrete thickness as follows:

1. Sawed Joints: Form control joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random cracks.

D. Isolation Joints in Slabs-on-Ground: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
2. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

E. Doweled Joints:

1. Install dowel bars and support assemblies at joints where indicated on Drawings.
2. Lubricate or asphalt coat one-half of dowel bar length to prevent concrete bonding to one side of joint.

3.6 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, embedded items, and vapor retarder is complete and that required inspections are completed.

1. Immediately prior to concrete placement, inspect vapor retarder for damage and deficient installation, and repair defective areas.
2. Provide continuous inspection of vapor retarder during concrete placement and make necessary repairs to damaged areas as Work progresses.

B. Notify Architect and testing and inspection agencies 24 hours prior to commencement of concrete placement.

C. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect in writing, but not to exceed the amount indicated on the concrete delivery ticket.

D. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301, but not to exceed the amount indicated on the concrete delivery ticket.

E. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated.
2. Deposit concrete to avoid segregation.
3. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
4. Consolidate placed concrete with mechanical vibrating equipment in accordance with ACI 301.

    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete, and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

F. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Do not place concrete floors and slabs in a checkerboard sequence.
2. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
3. Maintain reinforcement in position on chairs during concrete placement.
4. Screed slab surfaces with a straightedge and strike off to correct elevations.
5. Level concrete, cut high areas, and fill low areas.
6. Slope surfaces uniformly to drains where required.
7. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
8. Do not further disturb slab surfaces before starting finishing operations.

3.7 FINISHING FORMED SURFACES

A. As-Cast Surface Finishes:

1. ACI 301 Surface Finish SF-1.0: As-cast concrete texture imparted by form-facing material.

a. Patch voids larger than 1-1/2 inches wide or 1/2 inch deep.
b. Remove projections larger than 1 inch.
c. Tie holes do not require patching.
d. Surface Tolerance: ACI 117 Class D.
e. Apply to concrete surfaces not exposed to public view.

2. ACI 301Surface Finish SF-2.0: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams.

a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
b. Remove projections larger than 1/4 inch.
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class B.
e. Locations: Apply to concrete surfaces exposed to public view,.

3. ACI 301 Surface Finish SF-3.0:

a. Patch voids larger than 3/4 inch wide or 1/2 inch deep.
b. Remove projections larger than 1/8 inch.
c. Patch tie holes.
d. Surface Tolerance: ACI 117 Class A.
e. Locations: Apply to concrete surfaces exposed to public view,.

B. Rubbed Finish: Apply the following to as cast surface finishes where indicated on Drawings:

1. Smooth-Rubbed Finish:

a. Perform no later than one day after form removal.

b. Moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture.
c. If sufficient cement paste cannot be drawn from the concrete by the rubbing process, use a grout made from the same cementitious materials used in the in-place concrete.
d. Maintain required patterns or variances as shown on Drawings or to match design reference sample.

3.8 FINISHING FLOORS AND SLABS

A. Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
4. Do not add water to concrete surface.
5. Do not apply hard-troweled finish to concrete, which has a total air content greater than 3 percent.
6. Apply a trowel finish to surfaces exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
7. Finish surfaces to the following tolerances, in accordance with ASTM E1155, for a randomly trafficked floor surface:

a. Slabs on Ground:

1) Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.- long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.

C. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces where ceramic or quarry tile is to be installed by either thickset or thinset method. While concrete is still plastic, slightly scarify surface with a fine broom perpendicular to main traffic route.

1. Coordinate required final finish with Architect before application.
2. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated on Drawings.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route.
2. Coordinate required final finish with Architect before application.

3.9 INSTALLATION OF MISCELLANEOUS CONCRETE ITEMS

A. Filling In:

1. Fill in holes and openings left in concrete structures after Work of other trades is in place unless otherwise indicated.
2. Mix, place, and cure concrete, as specified, to blend with in-place construction.
3. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Coordinate sizes and locations of concrete bases with actual equipment provided.
2. Construct concrete bases 6 inches high unless otherwise indicated on Drawings, and extend base not less than 6 inches in each direction beyond the maximum dimensions of supported equipment unless otherwise indicated on Drawings, or unless required for seismic anchor support.
3. Minimum Compressive Strength: As indicated on Structural Drawings at 28 days.
4. Install dowel rods to connect concrete base to concrete floor. Unless otherwise indicated, install dowel rods on 18-inch centers around the full perimeter of concrete base.
5. For supported equipment, install epoxy-coated anchor bolts that extend through concrete base and anchor into structural concrete substrate.
6. Prior to pouring concrete, place and secure anchorage devices.

    a. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    b. Cast anchor-bolt insert into bases.
    c. Install anchor bolts to elevations required for proper attachment to supported equipment.

3.10 CONCRETE CURING

A. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

1. Comply with ACI 301 and ACI 306.1 for cold weather protection during curing.
2. Comply with ACI 301 and ACI 305.1 for hot-weather protection during curing.
3. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Curing Formed Surfaces: Comply with ACI 308.1 as follows:

1. Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces.
2. Cure concrete containing color pigments in accordance with color pigment manufacturer's instructions.
3. If forms remain during curing period, moist cure after loosening forms.

4. If removing forms before end of curing period, continue curing for remainder of curing period, as follows:

    a. Continuous Fogging: Maintain standing water on concrete surface until final setting of concrete.
    b. Continuous Sprinkling: Maintain concrete surface continuously wet.
    c. Absorptive Cover: Pre-dampen absorptive material before application; apply additional water to absorptive material to maintain concrete surface continuously wet.
    d. Water-Retention Sheeting Materials: Cover exposed concrete surfaces with sheeting material, taping, or lapping seams.
    e. Membrane-Forming Curing Compound: Apply uniformly in continuous operation by power spray or roller in accordance with manufacturer's written instructions.

        1) Recoat areas subject to heavy rainfall within three hours after initial application.
        2) Maintain continuity of coating and repair damage during curing period.

C. Curing Unformed Surfaces: Comply with ACI 308.1 as follows:

1. Begin curing immediately after finishing concrete.
2. Interior Concrete Floors:

    a. Floors to Receive Floor Coverings Specified in Other Sections: Contractor has option of the following:

        1) Absorptive Cover: As soon as concrete has sufficient set to permit application without marring concrete surface, install prewetted absorptive cover over entire area of floor.

            a) Lap edges and ends of absorptive cover not less than 12-inches.
            b) Maintain absorptive cover water saturated, and in place, for duration of curing period, but not less than seven days.

        2) Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive.

            a) Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
            b) Cure for not less than seven days.

        3) Ponding or Continuous Sprinkling of Water: Maintain concrete surfaces continuously wet for not less than seven days, utilizing one, or a combination of, the following:

            a) Water.
            b) Continuous water-fog spray.

3.11 TOLERANCES

A. Conform to ACI 117.

3.12 JOINT FILLING

A. Prepare, clean, and install joint filler in accordance with manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints.

D. Overfill joint, and trim joint filler flush with top of joint after hardening.

3.13 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by Architect.
2. Remove and replace concrete that cannot be repaired and patched to Architect's approval.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete.

a. Limit cut depth to 3/4 inch.
b. Make edges of cuts perpendicular to concrete surface.
c. Clean, dampen with water, and brush-coat holes and voids with bonding agent.
d. Fill and compact with patching mortar before bonding agent has dried.
e. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement, so that, when dry, patching mortar matches surrounding color.

a. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching.
b. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that will affect concrete's durability and structural performance as determined by Architect.

D. Repairing Unformed Surfaces:

1. Test unformed surfaces, such as floors and slabs, for finish, and verify surface tolerances specified for each surface.

    a. Correct low and high areas.
    b. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

2. Repair finished surfaces containing surface defects, including spalls, popouts, honeycombs, rock pockets, crazing, and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
3. After concrete has cured at least 14 days, correct high areas by grinding.
4. Correct localized low areas during, or immediately after, completing surface-finishing operations by cutting out low areas and replacing with patching mortar.

    a. Finish repaired areas to blend into adjacent concrete.

5. Correct other low areas scheduled to receive floor coverings with a repair underlayment.

    a. Prepare, mix, and apply repair underlayment and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
    b. Feather edges to match adjacent floor elevations.

6. Correct other low areas scheduled to remain exposed with repair topping.

    a. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations.
    b. Prepare, mix, and apply repair topping and primer in accordance with manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.

7. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete.

    a. Remove defective areas with clean, square cuts, and expose steel reinforcement with at least a 3/4-inch clearance all around.
    b. Dampen concrete surfaces in contact with patching concrete and apply bonding agent.
    c. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate.
    d. Place, compact, and finish to blend with adjacent finished concrete.
    e. Cure in same manner as adjacent concrete.

8. Repair random cracks and single holes 1 inch or less in diameter with patching mortar.

    a. Groove top of cracks and cut out holes to sound concrete, and clean off dust, dirt, and loose particles.
    b. Dampen cleaned concrete surfaces and apply bonding agent.
    c. Place patching mortar before bonding agent has dried.
    d. Compact patching mortar and finish to match adjacent concrete.
    e. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.14 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector to perform field tests and inspections and prepare testing and inspection reports.

B. Testing Agency: Contractor will engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports. General Contractor shall coordinate testing.

1. Testing agency shall be responsible for providing curing container for composite samples on Site and verifying that field-cured composite samples are cured in accordance with ASTM C31/C31M.
2. Testing agency shall immediately report to Architect, Contractor, and concrete manufacturer any failure of Work to comply with Contract Documents.
3. Testing agency shall report results of tests and inspections, in writing, to Owner, Architect, Contractor, and concrete manufacturer within 48 hours of inspections and tests.

C. Batch Tickets: For each load delivered, submit three copies of batch delivery ticket to testing agency, indicating quantity, mix identification, admixtures, design strength, aggregate size, design air content, design slump at time of batching, and amount of water that can be added at Project site.

D. Inspections:

1. Headed bolts and studs.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing.
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms from beams and slabs.
6. Batch Plant Inspections: On a random basis, as determined by Architect.

E. Concrete Tests: Testing of composite samples of fresh concrete obtained in accordance with ASTM C 172/C 172M shall be performed in accordance with the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M:

    a. One test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.
    b. Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C231/C231M pressure method, for normal-weight concrete; ASTM C173/C173M volumetric method, for structural lightweight concrete.

    a. One test for each composite sample, but not less than one test for each day's pour of each concrete mixture.

4. Concrete Temperature: ASTM C1064/C1064M:

    a. One test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.

5. Compression Test Specimens: ASTM C31/C31M:

    a. Cast and laboratory cure two sets of two 6-inch by 12-inch or 4-inch by 8-inch cylinder specimens for each composite sample.
    b. Cast, initial cure, and field cure two sets of two standard cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C39/C39M.

    a. Test one set of two laboratory-cured specimens at seven days and one set of two specimens at 28 days.
    b. Test one set of two field-cured specimens at seven days and one set of two specimens at 28 days.
    c. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength, and no compressive-strength test value falls below specified compressive strength by more than 500 psi if specified compressive strength is 5000 psi, or no compressive strength test value is less than 10 percent of specified compressive strength if specified compressive strength is greater than 5000 psi.

9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

10. Additional Tests:

    a. Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
    b. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42/C42M or by other methods as directed by Architect.

        1) Acceptance criteria for concrete strength shall be in accordance with ACI 301 section 1.6.6.3.

11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

3.15 PROTECTION

A. Protect concrete surfaces as follows:

1. Protect from petroleum stains.
2. Diaper hydraulic equipment used over concrete surfaces.
3. Prohibit vehicles from interior concrete slabs.
4. Prohibit use of pipe-cutting machinery over concrete surfaces.
5. Prohibit placement of steel items on concrete surfaces.
6. Prohibit use of acids or acidic detergents over concrete surfaces.
7. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.
8. Protect concrete surfaces scheduled to receive surface hardener or polished concrete finish using Floor Slab Protective Covering.

END OF SECTION 033000

SECTION 042200 - CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Decorative concrete masonry units.
2. Mortar and grout.
3. Masonry-joint reinforcement.
4. Miscellaneous masonry accessories.

B. Related Requirements:

1. Section 033000 "Cast-In-Place Concrete" for brick ledge.
2. Section 061600 “Sheathing” for plywood wall attachment.
3. Section 076200 "Sheet Metal Flashing and Trim" for exposed sheet metal flashing.
4. Section 133419 “Metal Building System” for metal building.

1.2 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.

C. Samples for Initial Selection:

1. Decorative CMUs, in the form of small-scale units.
2. Colored mortar.
3. Weep holes/vents.

D. Samples for Verification: For each type and color of the following:

1. Decorative CMUs.

2. Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.

E. Qualification Data: For testing agency.

F. Material Certificates: For each type and size of the following:

1. Masonry units.

a. Include data on material properties and material test reports substantiating compliance with requirements.

2. Integral water repellant used in CMUs.
3. Cementitious materials. Include name of manufacturer, brand name, and type.
4. Mortar admixtures.
5. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
6. Grout mixes. Include description of type and proportions of ingredients.
7. Anchors, ties, and metal accessories.

G. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test in accordance with ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
2. Include test reports, in accordance with ASTM C1019, for grout mixes required to comply with compressive strength requirement.

H. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined in accordance with TMS 602/ACI 530.1/ASCE 6.

I. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified in accordance with ASTM C1093 for testing indicated.

B. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.

1. Build sample panels for each type of exposed unit masonry construction, typical exterior wall in sizes approximately 48 inches long by 36 inches high by full thickness.
2. Build sample panels facing south.
3. Protect approved sample panels from the elements with weather-resistant membrane.

4. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.

    a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless Architect specifically approves such deviations in writing.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.7 FIELD CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.

4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6 except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work and will be within 20 feet vertically and horizontally of a walking surface.

C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.

1. Where fire-resistance-rated construction is indicated, units are listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction.

D. Decorative CMUs: ASTM C90.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Upchurch Kimbrough.
b. York Building Products.

2. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2150 psi.
3. Density Classification: Normal weight.
4. Size (Width): 16” W x 8” H x 4” D.

5. Pattern and Texture:
   a. Standard pattern, split-face finish.

6. Colors: Match existing CMU on adjacent building.

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content is not more than 0.1 percent when tested in accordance with ASTM C114.

B. Hydrated Lime: ASTM C207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Masonry Cement: ASTM C91/C91M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Cemex S.A.B. de C.V.
   b. Holcim (US) Inc.
   c. Lafarge North America Inc.
   d. Lehigh Hanson; HeidelbergCement Group.

E. Mortar Cement: ASTM C1329/C1329M.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

   a. Lafarge North America Inc.

F. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Davis Colors.
    b. Euclid Chemical Company (The); a subsidiary of RPM International, Inc.
    c. Lanxess Corporation.
    d. Solomon Colors Inc.

G. Colored Cement Products: Packaged blend made from portland cement and hydrated lime, masonry cement, or mortar cement and mortar pigments, all complying with specified requirements, and containing no other ingredients.

1. Colored Portland Cement-Lime Mix:

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Holcim (US) Inc.
        2) Lafarge North America Inc.
        3) Lehigh Hanson; HeidelbergCement Group.

2. Colored Masonry Cement:

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

        1) Cemex S.A.B. de C.V.
        2) Essroc.
        3) Holcim (US) Inc.
        4) Lafarge North America Inc.
        5) Lehigh Hanson; HeidelbergCement Group.

3. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
4. Pigments does not exceed 10 percent of portland cement by weight.
5. Pigments does not exceed 5 percent of masonry cement or mortar cement by weight.

H. Aggregate for Mortar: ASTM C144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
3. White-Mortar Aggregates: Natural white sand or crushed white stone.
4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

I. Aggregate for Grout: ASTM C404.

J. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C494/C494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Euclid Chemical Company (The); a subsidiary of RPM International, Inc.
b. GCP Applied Technologies Inc.

K. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. ACM Chemistries.
b. Euclid Chemical Company (The); a subsidiary of RPM International, Inc.
c. GCP Applied Technologies Inc.
d. Master Builders Solutions; brand of MBCC Group.

L. Water: Potable.

2.4 TIES AND ANCHORS

A. General: Ties and anchors extend at least 1-1/2 inches into masonry but with at least a 5/8-inch cover on outside face.

B. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated:

1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A82/A82M, with ASTM A153/A153M, Class B-2 coating.
2. Steel Sheet, Galvanized after Fabrication: ASTM A1008/A1008M, Commercial Steel, with ASTM A153/A153M, Class B coating.
3. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Adjustable Anchors for Connecting to Structural Steel Framing: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.

1. Anchor Section for Welding to Steel Frame: Crimped 1/4-inch-diameter, hot-dip galvanized steel wire.
2. Tie Section: Triangular-shaped wire tie made from 0.187-inch- or 0.25-inch- diameter, hot-dip galvanized steel wire.

2.5 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene, urethane, or PVC.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D2000, Designation M2AA-805 or PVC, complying with ASTM D2287, Type PVC-65406 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Bond-Breaker Strips: Asphalt-saturated felt complying with ASTM D226/D226M, Type I (No. 15 asphalt felt).

2.6 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime, masonry cement, or mortar cement mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C270, Proportion or Property Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

1. For exterior, above-grade, load-bearing and nonload-bearing walls and parapet walls; for interior load-bearing walls; for interior nonload-bearing partitions; and for other applications where another type is not indicated, use Type N.

D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.

1. Pigments does not exceed 10 percent of portland cement by weight.
2. Pigments does not exceed 5 percent of masonry cement or mortar cement by weight.
3. Application: Use pigmented mortar for exposed mortar joints with the following units:

    a. Decorative CMUs.

E. Grout for Unit Masonry: Comply with ASTM C476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured in accordance with ASTM C143/C143M.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.
4. Verify that substrates are free of substances that would impair mortar bond.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Build chases and recesses to accommodate items specified in this and other Sections.

B. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.

C. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in bond pattern indicated on Drawings; do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

C. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.

B. Lay solid CMUs with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

D. Cut joints flush where indicated to receive waterproofing unless otherwise indicated.

3.6 ANCHORING MASONRY TO STRUCTURAL STEEL

A. Anchor masonry to structural steel, where masonry abuts or faces structural steel, to comply with the following:

1. Provide an open space not less than 1 inch wide between masonry and structural steel unless otherwise indicated. Keep open space free of mortar and other rigid materials.
2. Anchor masonry with anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.7 CONTROL AND EXPANSION JOINTS

A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry as follows:

1. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

3.8 FLASHING

A. Install flashing as follows unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.

2. At lintels, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
3. Interlock end joints of ribbed sheet metal flashing by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer, and seal lap with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
4. Install metal drip edges and sealant stops with ribbed sheet metal flashing by interlocking hemmed edges to form hooked seam. Seal seam with elastomeric sealant complying with requirements in Section 079200 "Joint Sealants" for application indicated.
5. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall, and adhere flexible flashing to top of metal drip edge.
6. Install metal flashing termination beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall, and adhere flexible flashing to top of metal flashing termination.
7. Cut flexible flashing off flush with face of wall after masonry wall construction is completed.

B. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

3.9 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements is done at Contractor's expense.

B. Inspections: Special inspections in accordance with Level B in TMS 402/ACI 530/ASCE 5.

1. Begin masonry construction only after inspectors have verified proportions of site-prepared mortar.
2. Place grout only after inspectors have verified compliance of grout spaces and of grades, sizes, and locations of reinforcement.
3. Place grout only after inspectors have verified proportions of site-prepared grout.

C. Testing Prior to Construction: One set of tests.

D. Testing Frequency: One set of tests for each 5000 sq. ft. of wall area or portion thereof.

E. Concrete Masonry Unit Test: For each type of unit provided, in accordance with ASTM C140 for compressive strength.

F. Mortar Aggregate Ratio Test (Proportion Specification): For each mix provided, in accordance with ASTM C780.

3.10 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

3.11 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Masonry Waste Recycling: Return broken CMUs not used as fill to manufacturer for recycling.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042200

SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Metal bollards.

B. Related Requirements:

   1. Section 033000 “Cast-In-Place Concrete” for pipe bollards in slab.
   2. Section 321313 “Concrete Paving” for pipe bollards in paving.

1.2 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

1.3 SUBMITTALS

A. Product Data:

   1. Fasteners.
   2. Shop primers.
   3. Shrinkage-resisting grout.
   4. Metal bollards.

B. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:

   1. Metal bollards.

C. Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.

D. Welding certificates.

E. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

F. Delegated design engineer qualifications.

1.4 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.5 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

2.2 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

B. Steel Plates, Shapes, and Bars: ASTM A36/A36M.

C. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.

D. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.

E. Slotted Channel Framing: Cold-formed metal box channels (struts) complying with MFMA-4.

1. Size of Channels: 2 by 2 inches.
2. Cold-Rolled Steel: ASTM A1008/A1008M, commercial steel, Type B; minimum thickness; coated with rust-inhibitive.

2.3 FASTENERS

A. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.

B. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.

C. Anchors, General: Capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing in accordance with ASTM E488/E488M, conducted by a qualified independent testing agency.

2.4 MISCELLANEOUS MATERIALS

A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer that contains pigments that make it easily distinguishable from zinc-rich primer.

B. Shrinkage-Resistant Grout: Factory-packaged, nonmetallic, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

C. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi.

2.5 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously to comply with the following:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.

4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.

2.6 METAL BOLLARDS

A. Fabricate metal bollards from Schedule 80 steel pipe.

B. Prime steel bollards with zinc-rich primer.

2.7 STEEL WELD PLATES AND ANGLES

A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

2.8 GENERAL FINISH REQUIREMENTS

A. Finish metal fabrications after assembly.

B. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

2.9 STEEL AND IRON FINISHES

A. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.

1. Shop prime with universal shop primer unless zinc-rich primer is indicated.

B. Preparation for Shop Priming: Prepare surfaces to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

1. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."

C. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.

3.2 INSTALLATION OF METAL BOLLARDS

A. Fill metal-capped bollards solidly with concrete and allow concrete to cure seven days before installing.

B. Fill bollards solidly with concrete, and provide pre-cast concrete cap anchored into concrete by “White Cap”.

3.3 REPAIRS

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

    a. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

END OF SECTION 055000

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Wood blocking, cants, and nailers.

B. Related Requirements:

1. Section 081113 “Hollow Metal Doors and Frames” for blocking.
2. Section 313116 "Termite Control" for site application of borate treatment to wood framing.

1.3 DEFINITIONS

A. Boards or Strips: Lumber of less than 2 inches nominal size in least dimension.

B. Dimension Lumber: Lumber of 2 inches nominal size or greater but less than 5 inches nominal size in least dimension.

C. Exposed Framing: Framing not concealed by other construction.

D. OSB: Oriented strand board.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.

3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5664.
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses.

1. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
2. For preservative-treated wood products. Indicate type of preservative used and net amount of preservative retained.

1.5 QUALITY ASSURANCE

A. Install rough carpentry components as per Structural Wind Load Requirements shown in Section 011100 Structural Wind Load Criteria.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack wood products flat with spacers beneath and between each bundle to provide air circulation. Protect wood products from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Comply with DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Grade lumber by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Dress lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content:

1. Boards: 15 percent.
2. Dimension Lumber: 15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.
2. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by inspection agency.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, materials shall comply with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Treatment shall not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to

accelerated weathering according to ASTM D2898. Use for exterior locations and where indicated.

3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D3201/D3201M at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to maximum moisture content of 19 percent. Kiln-dry plywood after treatment to maximum moisture content of 15 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece or omit marking and provide certificates of treatment compliance issued by testing agency.

E. For exposed items indicated to receive a stained or natural finish, chemical formulations shall not bleed through, contain colorants, or otherwise adversely affect finishes.

F. Application: Treat items indicated on Drawings, and the following:

1. Framing for raised platforms.
2. Framing for stages.
3. Concealed blocking.
4. Framing for non-load-bearing partitions.
5. Framing for non-load-bearing exterior walls.
6. Wood cants, nailers, curbs, equipment support bases, blocking, and similar members in connection with roofing.
7. Plywood backing panels.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.

B. Dimension Lumber Items: Construction or No. 2 grade lumber of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine or southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Western woods; WCLIB or WWPA.
7. Northern species; NLGA.
8. Eastern softwoods; NeLMA.

C. Concealed Boards: 15 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine or southern pine; No. 2 grade; SPIB.
2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.

D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.5 FASTENERS

A. General: Fasteners shall be of size and type indicated and shall comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A153/A153M.

B. Nails, Brads, and Staples: ASTM F1667.

C. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

D. Post-Installed Anchors: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC01 or ICC-ES AC193 as appropriate for the substrate.

2.6 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Cleveland Steel Specialty Co.
2. Phoenix Metal Products, Inc.
3. Simpson Strong-Tie Co., Inc.

B. Allowable design loads, as published by manufacturer, shall meet or exceed those of products of manufacturers listed. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency. Framing anchors shall be punched for fasteners adequate to withstand same loads as framing anchors.

C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A653/A653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1. Use for wood-preservative-treated lumber and where indicated.

E. Joist Hangers: U-shaped joist hangers with 2-inch-long seat and 1-1/4-inch-wide nailing flanges at least 85 percent of joist depth.

1. Thickness: 0.050 inch.

F. Top Flange Hangers: U-shaped joist hangers, full depth of joist, formed from metal strap with tabs bent to extend over and be fastened to supporting member.

1. Strap Width: 1-1/2 inches.
2. Thickness: 0.050 inch.

G. Bridging: Rigid, V-section, nailless type, 0.050 inch thick, length to suit joist size and spacing.

H. Post Bases: Adjustable-socket type for bolting in place with standoff plate to raise post 1 inch above base and with 2-inch-minimum side cover, socket 0.062 inch thick, and standoff and adjustment plates 0.108 inch thick.

I. Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.

1. Width: 3/4 inch.
2. Thickness: 0.050 inch.
3. Length: 16 inches.

J. Floor-to-Floor Ties: Flat straps, with holes for fasteners, for tying upper floor wall studs to band joists and lower floor studs, 1-1/4 inches wide by 0.050 inch thick by 36 inches long.

K. Hold-Downs: Brackets for bolting to wall studs and securing to foundation walls with anchor bolts or to other hold-downs with threaded rods and designed with first of two bolts placed seven bolt diameters from reinforced base.

1. Bolt Diameter: 5/8 inch.
2. Width: 2-1/2 inches.
3. Body Thickness: 0.108 inch.
4. Base Reinforcement Thickness: 0.108 inch.

L. Wall Bracing: T-shaped bracing made for letting into studs in saw kerf, 1-1/8 inches wide by 9/16 inch deep by 0.034 inch thick with hemmed edges.

M. Wall Bracing: Angle bracing made for letting into studs in saw kerf, 15/16 by 15/16 by 0.040 inch thick with hemmed edges.

2.7 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

B. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.

C. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D3498 that is approved for use indicated by adhesive manufacturer.

D. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

C. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

D. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

G. Provide fire blocking in furred spaces, stud spaces, and other concealed cavities as indicated and as follows:

1. Fire block furred spaces of walls, at each floor level, at ceiling, and at not more than 96 inches o.c. with solid wood blocking or noncombustible materials accurately fitted to close furred spaces.
2. Fire block concealed spaces of wood-framed walls and partitions at each floor level, at ceiling line of top story, and at not more than 96 inches o.c. Where fire blocking is not inherent in framing system used, provide closely fitted solid wood blocks of same width as framing members and 2-inch nominal thickness.
3. Fire block concealed spaces between floor sleepers with same material as sleepers to limit concealed spaces to not more than 100 sq. ft. and to solidly fill space below partitions.

4. Fire block concealed spaces behind combustible cornices and exterior trim at not more than 20 feet o.c.

H. Sort and select lumber so that natural characteristics do not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

I. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

J. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

K. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).
2. ICC-ES evaluation report for fastener.

L. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

M. For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly spaced, and with adjacent rows staggered.

1. Comply with approved fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.
2. Use common nails unless otherwise indicated. Drive nails snug but do not countersink nail heads.

3.2 INSTALLATION OF WOOD BLOCKING

A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach wood blocking to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

END OF SECTION 061000

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Wall sheathing.
2. Sheathing joint and penetration treatment.

B. Related Requirements:

1. Section 011100 “Structural Wind Load Criteria” for installation of sheathing and components.
2. Section 061000 "Rough Carpentry" for plywood backing panels.
3. Section 072500 “Weather Barriers” for waterproofing sheathing.

1.3 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D5516.
4. For products receiving waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
5. For air-barrier and water-resistant glass-mat gypsum sheathing, include manufacturer's technical data and tested physical and performance properties of products.

B. Shop Drawings: For air-barrier and water-resistant glass-mat gypsum sheathing assemblies.

1. Show locations and extent of sheathing, accessories, and assemblies specific to Project conditions.

2. Include details for sheathing joints and cracks, counterflashing strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
3. Include details of interfaces with other materials that form part of air barrier.

C. Product Certificates: From air-barrier and water-resistant glass-mat gypsum sheathing manufacturer, certifying compatibility of sheathing accessory materials with Project materials that connect to or that come in contact with the sheathing.

D. Product Test Reports: For each air-barrier and water-resistant glass-mat gypsum sheathing assembly, indicating compliance with specified requirements, for tests performed by a qualified testing agency.

E. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated plywood.
2. Fire-retardant-treated plywood.

F. Field quality-control reports.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer of air-barrier and water-resistant glass-mat gypsum sheathing.

1. Installer shall be licensed by ABAA according to ABAA's Quality Assurance Program and shall employ ABAA-certified installers and supervisors on Project.

B. Testing Agency Qualifications:

1. For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.
2. For testing and inspecting agency providing tests and inspections related to air-barrier and water-resistant glass-mat gypsum sheathing: an independent agency, qualified according to ASTM E329 for testing indicated, and certified by Air Barrier Association of America, Inc.

1.5 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Owner will engage a qualified testing agency to perform preconstruction testing on field mockups.

B. Mockup Testing: Air-barrier and water-resistant glass-mat gypsum sheathing assemblies shall comply with performance requirements indicated, as evidenced by reports based on mockup testing by a qualified testing agency.

1. Air-Leakage-Location Testing: Mockups will be tested for evidence of air leakage according to ASTM E1186, chamber pressurization or depressurization with smoke tracers and ASTM E1186, chamber depressurization with detection liquids.

2. Air-Leakage-Volume Testing: Mockups will be tested for air-leakage rate according to ASTM E783 or ASTM E2357.
3. Notify Architect seven days in advance of the dates and times when mockups will be tested.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: As tested according to ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

B. Install sheathing and components as per Structural Wind Load Requirements shown in Section 011100 Structural Wind Load Criteria.

2.2 WOOD PANEL PRODUCTS

A. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.

B. Factory mark panels to indicate compliance with applicable standard.

2.3 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with ground, Use Category UC3b for exterior construction not in contact with ground, and Use Category UC4a for items in contact with ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

C. Application: Treat items indicated on Drawings.

2.4 WALL SHEATHING

A. Plywood Sheathing: Either DOC PS 1 or DOC PS 2, sheathing.

1. Span Rating: Not less than 16/0.
2. Nominal Thickness: Not less than 1/2 inch.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For wall sheathing, provide fasteners with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B117.

B. Power-Driven Fasteners: Fastener systems with an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC70.

C. Screws for Fastening Sheathing to Wood Framing: ASTM C1002.

D. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

C. Securely attach to substrate by fastening as indicated, complying with the following:

1. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.
2. ICC-ES evaluation report for fastener.

D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

E. Coordinate wall sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 WOOD STRUCTURAL PANEL INSTALLATION

A. General: Comply with applicable recommendations in APA Form No. E30, "Engineered Wood Construction Guide," for types of structural-use panels and applications indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Wall:

a. Nail to wood framing. Apply a continuous bead of glue to framing members at edges of wall sheathing panels.
b. Screw to cold-formed metal framing.
c. Space panels 1/8 inch apart at edges and ends.

3.3 FIELD QUALITY CONTROL

A. Testing and Inspecting Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Tests: As determined by testing agency from among the following tests:

1. Air-Leakage-Location Testing: Air-barrier sheathing assemblies will be tested for evidence of air leakage according to ASTM E1186, chamber pressurization or depressurization with smoke tracers.
2. Air-Leakage-Volume Testing: Air-barrier assemblies will be tested for air-leakage rate according to ASTM E783 or ASTM E2357.

C. Air barriers will be considered defective if they do not pass tests and inspections.

D. Repair damage to air barriers caused by testing; follow manufacturer's written instructions.

E. Prepare test and inspection reports.

END OF SECTION 061600

SECTION 071326 - SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Modified bituminous sheet waterproofing.

B. Related Requirements:

1. Section 033000 “Cast-in-Place Concrete” for concrete brick ledge.
2. Section 042200 “Concrete Unit Masonry” for flashing brick ledges.
3. Section 081113 “Hollow Metal Doors and Frames” for exterior hollow metal doors waterproofing.
4. Section 083613 “Sectional Doors” for waterproofing around perimeter of doors.
5. Section 133419 “Metal Building Systems” for waterproofing metal building.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.

B. Shop Drawings: Show locations and extent of waterproofing and details of substrate joints and cracks, expansion joints, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.

C. Samples: For each exposed product and for each color and texture specified, including the following products:

1. 8-by-8-inch square of waterproofing and flashing sheet.

D. Qualification Data: For Installer.

E. Research Reports: For modified bituminous sheet waterproofing/termite barrier, showing compliance with ICC AC380.

F. Sample Warranties: For special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

1.5 FIELD CONDITIONS

A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended in writing by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.

1. Do not apply waterproofing in snow, rain, fog, or mist.

B. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.6 WARRANTY

A. Manufacturer's Warranty:

1. Waterproofing Warranty: Manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

a. Warranty Period: Five years from date of Substantial Completion.

2. Termite Barrier Warranty: Manufacturer agrees to furnish replacement waterproofing termite barrier material and accessories for waterproofing termite barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.

a. Warranty Period: Ten years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Waterproofing System: Obtain waterproofing materials, protection course, from single source from single manufacturer.

2.2 SHEET WATERPROOFING

A. Modified Bituminous Sheet Waterproofing: Minimum 60-mil nominal thickness, self-adhering sheet consisting of 56 mils of rubberized asphalt laminated on one side to a 4-mil-thick, polyethylene-film reinforcement, and with release liner on adhesive side; formulated for

application with primer or surface conditioner that complies with VOC limits of authorities having jurisdiction.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

    a. Carlisle Coatings & Waterproofing Inc.
    b. GCP Applied Technologies Inc.
    c. Henry Company.
    d. Polyguard Products, Inc.
    e. Protecto Wrap Company.
    f. Tamko Building Products, Inc.
    g. W.R. Meadows, Inc.

2. Physical Properties:

    a. Tensile Strength, Membrane: 250 psi minimum; ASTM D412, Die C, modified.
    b. Ultimate Elongation: 300 percent minimum; ASTM D412, Die C, modified.
    c. Low-Temperature Flexibility: Pass at minus 20 deg F; ASTM D1970/D1970M.
    d. Crack Cycling: Unaffected after 100 cycles of 1/8-inch movement; ASTM C836/C836M.
    e. Puncture Resistance: 40 lbf minimum; ASTM E154/E154M.
    f. Water Absorption: 0.2 percent weight-gain maximum after 48-hour immersion at 70 deg F; ASTM D570.
    g. Water Vapor Permeance: 0.05 perm maximum; ASTM E96/E96M, Water Method.
    h. Hydrostatic-Head Resistance: 200 feet minimum; ASTM D5385.

3. Sheet Strips: Self-adhering, rubberized-asphalt strips of same material and thickness as sheet waterproofing.

2.3 ACCESSORIES

A. Furnish accessory materials recommended by waterproofing manufacturer for intended use and compatible with sheet waterproofing.

    1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.

B. Primer: Liquid waterborne primer recommended for substrate by sheet waterproofing material manufacturer.

C. Surface Conditioner: Liquid, waterborne surface conditioner recommended for substrate by sheet waterproofing material manufacturer.

D. Liquid Membrane: Elastomeric, two-component liquid, cold fluid applied, of trowel grade or low viscosity.

E. Substrate Patching Membrane: Low-viscosity, two-component, modified asphalt coating.

F. Metal Termination Bars: Aluminum bars, approximately 1 by 1/8 inch, predrilled at 9-inch centers.

G. Protection Course, Asphaltic: ASTM D6506, semirigid sheets of fiberglass or mineral-reinforced-asphaltic core, pressure laminated between two asphalt-saturated fibrous liners and as follows:

1. Thickness: Nominal 1/8 inch.
2. Adhesive: Rubber-based solvent type recommended by waterproofing manufacturer for protection course type.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of waterproofing.

1. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer.
2. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D4263.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.

B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.

C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, and other penetrating contaminants or film-forming coatings from concrete.

D. Remove fins, ridges, mortar, and other projections.

E. Fill form tie holes, honeycomb, aggregate pockets, holes, and other voids.

F. Prepare, fill, prime, and treat joints and cracks in substrates. Remove dust and dirt from joints and cracks according to ASTM D4258.

G. Corners: Prepare, prime, and treat inside and outside corners in accordance with manufacturer's instructions.

1. Install membrane strips centered over vertical inside corners. Install 3/4-inch fillets of liquid membrane on horizontal inside corners and as follows:

a. At footing-to-wall intersections, extend liquid membrane in each direction from corner or install membrane strip centered over corner.

H. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations through waterproofing and at drains and protrusions.

3.3 INSTALLATION OF SHEET WATERPROOFING

A. Install modified bituminous sheets according to waterproofing manufacturer's written instructions.

B. Apply primer to substrates at required rate and allow it to dry. Limit priming to areas that will be covered by sheet waterproofing in same day. Reprime areas exposed for more than 24 hours.

C. Apply and firmly adhere sheets over area to receive waterproofing. Accurately align sheets and maintain uniform 2-1/2-inch-minimum lap widths and end laps. Overlap and seal seams, and stagger end laps to ensure watertight installation.

D. Apply continuous sheets over already-installed sheet strips, bridging substrate cracks, construction, and contraction joints.

E. Seal edges of sheet waterproofing terminations with mastic.

F. Install sheet waterproofing and auxiliary materials to tie into adjacent waterproofing 12” up wall.

G. Repair tears, voids, and lapped seams in waterproofing not complying with requirements. Slit and flatten fishmouths and blisters. Patch with sheet waterproofing extending 6 inches beyond repaired areas in all directions.

H. Immediately install protection course with butted joints over waterproofing membrane.

3.4 PROTECTION, REPAIR, AND CLEANING

A. Protect waterproofing from damage and wear during remainder of construction period.

B. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

C. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended in writing by manufacturer of affected construction.

END OF SECTION 071326

SECTION 072500 - WEATHER BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Building wrap.
2. Installation of building wrap on interior walls for a vapor barrier between conditioned and non-conditioned spaces.

B. Related Requirements:

1. Section 011100 “Structural Wind Load Criteria” for installation of weather barriers.
2. Section 061600 “Sheathing” for substrate to attach weather barrier.

1.3 SUBMITTALS

A. Product Data: For each type of product.

1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.

B. Shop Drawings: Show details of building wrap at terminations, openings, and penetrations. Show details of flexible flashing applications.

C. Evaluation Reports: For water-resistive barrier, from ICC-ES.

1.4 QUALITY ASSURANCE

A. Install weather barriers and accessories as per Structural Wind Load Requirements shown in Section 011100 Structural Wind Load Criteria.

PART 2 - PRODUCTS

2.1 WATER-RESISTIVE BARRIER

A. Building Wrap: ASTM E 1677, Type I air barrier; with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Manufacturer: Tyvek Commercial Wrap.
2. Water-Vapor Permeance: Not less than 75 perms per ASTM E 96/E 96M, Desiccant Method (Procedure A).
3. Air Permeance: Not more than 0.004 cfm/sq. ft. at 0.3-inch wg when tested according to ASTM E 2178.
4. Allowable UV Exposure Time: Not less than three months.
5. Flame Propagation Test: Materials and construction shall be as tested according to NFPA 285.

B. Building-Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

PART 3 - EXECUTION

3.1 WATER-RESISTIVE BARRIER INSTALLATION

A. Cover exposed exterior surface of sheathing behind stone tiling with water-resistive barrier securely fastened to framing immediately after sheathing is installed.

B. Cover sheathing with water-resistive barrier as follows:

1. Cut back barrier 1/2 inch on each side of the break in supporting members at expansion- or control-joint locations.
2. Apply barrier to cover vertical flashing with a minimum 4-inch overlap unless otherwise indicated.

C. Building Wrap: Comply with manufacturer's written instructions and warranty requirements.

1. Seal seams, edges, fasteners, and penetrations with tape.
2. Extend into jambs of openings and seal corners with tape.

END OF SECTION 072500

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

1.3 SUBMITTALS

A. Product Data: For each joint-sealant product.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

E. Qualification Data: For qualified testing agency.

F. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.

G. Preconstruction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:

1. Joint-sealant location and designation.
2. Manufacturer and product name.
3. Type of substrate material.
4. Proposed test.
5. Number of samples required.

H. Sample Warranties: For special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

B. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.

1.5 FIELD CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.6 WARRANTY

A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

A. Silicone, S, NS, 100/50, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. GE Construction Sealants; Momentive Performance Materials Inc.

B. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Adfast.
b. GE Construction Sealants; Momentive Performance Materials Inc.
c. May National Associates, Inc.; a subsidiary of Sika Corporation.
d. Pecora Corporation.
e. Sika Corporation; Joint Sealants.
f. The Dow Chemical Company.

C. Silicone, S, NS, 100/50, T: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, traffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use T.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. May National Associates, Inc.; a subsidiary of Sika Corporation.
b. Pecora Corporation.
c. Sika Corporation; Joint Sealants.
d. The Dow Chemical Company.

2.3 LATEX JOINT SEALANTS

A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Everkem Diversified Products, Inc.
b. Franklin International.

c. May National Associates, Inc.; a subsidiary of Sika Corporation.
d. Pecora Corporation.
e. Sherwin-Williams Company (The).
f. Tremco Incorporated.

2.4 JOINT-SEALANT BACKING

A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Adfast.
b. Alcot Plastics Ltd.
c. BASF Corporation.
d. Construction Foam Products; a division of Nomaco, Inc.

B. Cylindrical Sealant Backings: ASTM C1330, or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Stucco.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

SECTION 081113 - HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Exterior standard steel doors and frames.

B. Related Requirements:

1. Section 011100 “Structural Wind Load Criteria” for installing steel doors and frames.
2. Section 087100 "Door Hardware" for door hardware for hollow-metal doors.
3. Section 133419 “Metal Building Systems” for exterior openings.

1.3 DEFINITIONS

A. Minimum Thickness: Minimum thickness of base metal without coatings according to NAAMM-HMMA 803 or ANSI/SDI A250.8.

1.4 COORDINATION

A. Coordinate anchorage installation for hollow-metal frames. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors. Deliver such items to Project site in time for installation.

B. Coordinate requirements for installation of door hardware, electrified door hardware, and access control and security systems.

1.5 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, core descriptions, fire-resistance ratings, temperature-rise ratings, and finishes.

B. Shop Drawings: Include the following:

1. Elevations of each door type.

2. Details of doors, including vertical- and horizontal-edge details and metal thicknesses.
3. Frame details for each frame type, including dimensioned profiles and metal thicknesses.
4. Locations of reinforcement and preparations for hardware.
5. Details of each different wall opening condition.
6. Details of electrical raceway and preparation for electrified hardware, access control systems, and security systems.
7. Details of anchorages, joints, field splices, and connections.
8. Details of accessories.
9. Details of moldings, removable stops, and glazing.

C. Samples for Initial Selection: For hollow-metal doors and frames with factory-applied color finishes.

D. Samples for Verification:

1. Finishes: For each type of exposed finish required, prepared on Samples of not less than 3 by 5 inches.
2. Fabrication: Prepare Samples approximately 12 by 12 inches to demonstrate compliance with requirements for quality of materials and construction:

a. Doors: Show vertical-edge, top, and bottom construction; core construction; and hinge and other applied hardware reinforcement. Include separate section showing glazing if applicable.
b. Frames: Show profile, corner joint, floor and wall anchors, and silencers. Include separate section showing fixed hollow-metal panels and glazing if applicable.

E. Product Schedule: For hollow-metal doors and frames, prepared by or under the supervision of supplier, using same reference numbers for details and openings as those on Drawings. Coordinate with final door hardware schedule.

F. Qualification Data: For door inspector.

G. Product Test Reports: For each type of windborne-debris impact resistance door and thermally rated door assemblies for tests performed by a qualified testing agency indicating compliance with performance requirements.

H. Field quality control reports.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow-metal doors and frames palletized, packaged, or crated to provide protection during transit and Project-site storage. Do not use nonvented plastic.

1. Provide additional protection to prevent damage to factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Store hollow-metal doors and frames vertically under cover at Project site with head up. Place on minimum 4-inch-high wood blocking. Provide minimum 1/4-inch space between each stacked door to permit air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

1. Ceco Door; ASSA ABLOY.
2. Curries Company; ASSA ABLOY.
3. Hollow Metal Inc.
4. North American Door Corp.
5. Republic Doors and Frames.
6. Steelcraft; an Allegion brand.

2.2 PERFORMANCE REQUIREMENTS

A. Windborne-Debris Impact Resistance: Passes ASTM E1886 missile-impact and cyclic-pressure tests in accordance with ASTM E1996 for Wind Zone 2 for basic protection.

1. Large-Missile Test: For glazed openings located within 30 feet of grade.

B. Install hollow metal doors and frames as per Structural Wind Load Requirements shown in Section 011100 Structural Wind Load Criteria.

C. Thermally Rated Door Assemblies: Provide door assemblies with U-factor of not more than 0.40 deg Btu/F x h x sq. ft. when tested in accordance with ASTM C518.

2.3 EXTERIOR STANDARD STEEL DOORS AND FRAMES

A. Construct hollow-metal doors and frames to comply with standards indicated for materials, fabrication, hardware locations, hardware reinforcement, tolerances, and clearances, and as specified.

B. Heavy-Duty Doors and Frames: ANSI/SDI A250.8, Level 2; ANSI/SDI A250.4, Level B. At locations indicated in the Door and Frame Schedule.

1. Doors:

a. Type: As indicated in the Door and Frame Schedule.
b. Thickness: 1-3/4 inches.
c. Face: Metallic-coated steel sheet, minimum thickness of 0.042 inch, with minimum A60 coating.
d. Edge Construction: Model 1, Full Flush.
e. Edge Bevel: Provide manufacturer's standard beveled or square edges.

f. Top Edge Closures: Close top edges of doors with flush closures of same material as face sheets. Seal joints against water penetration.
g. Bottom Edges: Close bottom edges of doors where required for attachment of weather stripping with end closures or channels of same material as face sheets. Provide weep-hole openings in bottoms of exterior doors to permit moisture to escape. Provide 3/8" door undercut max.
h. Core: Manufacturer's standard Vertical steel stiffener.
i. Fire-Rated Core: Manufacturer's standard laminated mineral board core for fire-rated doors.

2. Frames:

a. Materials: Metallic-coated steel sheet, minimum thickness of 0.053 inch, with minimum A60 coating.
b. Construction: Full profile welded.

3. Exposed Finish: Prime.

2.4 FRAME ANCHORS

A. Jamb Anchors:

1. Type: Anchors of minimum size and type required by applicable door and frame standard, and suitable for performance level indicated.
2. Quantity: Minimum of three anchors per jamb, with one additional anchor for frames with no floor anchor. Provide one additional anchor for each 24 inches of frame height above 7 feet.
3. Postinstalled Expansion Anchor: Minimum 3/8-inch-diameter bolts with expansion shields or inserts, with manufacturer's standard pipe spacer.

B. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor.

C. Floor Anchors for Concrete Slabs with Underlayment: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at top of underlayment.

D. Material: ASTM A879/A879M, Commercial Steel (CS), 04Z coating designation; mill phosphatized.

1. For anchors built into exterior walls, steel sheet complying with ASTM A1008/A1008M or ASTM A1011/A1011M; hot-dip galvanized according to ASTM A153/A153M, Class B.

2.5 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A1008/A1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A1011/A1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Metallic-Coated Steel Sheet: ASTM A653/A653M, Commercial Steel (CS), Type B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A153/A153M.

E. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow-metal frames of type indicated.

F. Mineral-Fiber Insulation: ASTM C665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E136 for combustion characteristics.

2.6 FABRICATION

A. Door Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted or as required to comply with published listing of qualified testing agency.

B. Hollow-Metal Frames: Fabricate in one piece except where handling and shipping limitations require multiple sections. Where frames are fabricated in sections, provide alignment plates or angles at each joint, fabricated of metal of same or greater thickness as frames.

1. Transom Bar Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by welding, or by rigid mechanical anchors.
2. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
3. Door Silencers: Except on weather-stripped frames, drill stops to receive door silencers as follows. Keep holes clear during construction.

    a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
    b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

C. Hardware Preparation: Factory prepare hollow-metal doors and frames to receive templated mortised hardware, and electrical wiring; include cutouts, reinforcement, mortising, drilling, and tapping according to ANSI/SDI A250.6, the Door Hardware Schedule, and templates.

1. Reinforce doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.
2. Comply with BHMA A156.115 for preparing hollow-metal doors and frames for hardware.

2.7 STEEL FINISHES

A. Prime Finish: Clean, pretreat, and apply manufacturer's standard primer.

1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces. Touch up factory-applied finishes where spreaders are removed.

B. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.2 INSTALLATION

A. Install hollow-metal doors and frames plumb, rigid, properly aligned, and securely fastened in place. Comply with approved Shop Drawings and with manufacturer's written instructions.

B. Hollow-Metal Frames: Comply with ANSI/SDI A250.11.

1. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces without damage to completed Work.

a. Where frames are fabricated in sections, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces. Touch-up finishes.
b. Install frames with removable stops located on secure side of opening.

2. Floor Anchors: Secure with postinstalled expansion anchors.

a. Floor anchors may be set with power-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Installation Tolerances: Adjust hollow-metal frames to the following tolerances:

a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow-Metal Doors: Fit and adjust hollow-metal doors accurately in frames, within clearances specified below.

1. Non-Fire-Rated Steel Doors: Comply with ANSI/SDI A250.8.
2. Fire-Rated Doors: Install doors with clearances in accordance with NFPA 80.

3.3 FIELD QUALITY CONTROL

A. Inspection Agency: Owner will engage a qualified inspector to perform inspections and to furnish reports to Architect.

B. Inspections:

1. Egress Door Inspections: Inspect each door equipped with panic hardware, each door equipped with fire exit hardware, each door located in an exit enclosure, each electrically controlled egress door, and each door equipped with special locking arrangements according to NFPA 101, Section 7.2.1.15.

C. Repair or remove and replace installations where inspections indicate that they do not comply with specified requirements.

D. Reinspect repaired or replaced installations to determine if replaced or repaired door assembly installations comply with specified requirements.

3.4 REPAIR

A. Prime-Coat Touchup: Immediately after erection, sand smooth rusted or damaged areas of prime coat and apply touchup of compatible air-drying, rust-inhibitive primer.

B. Touchup Painting: Cleaning and touchup painting of abraded areas of paint are specified in painting Sections.

END OF SECTION 081113

SECTION 083613 - SECTIONAL DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Sectional-door assemblies.

B. Related Requirements:

1. Section 011000 “Structural Wind Load Criteria” for windstorm compliance.
2. Section 033000 “Cast-in-Place Concrete” for concrete slab.
3. Section 055000 "Metal Fabrications" for miscellaneous steel supports.
4. Section 133419 “Metal Building Systems” for opening to install doors.

1.3 SUBMITTALS

A. Product Data: For each type and size of sectional door and accessory.

1. Include construction details, material descriptions, dimensions of individual components, profile door sections, and finishes.
2. For power-operated doors, include rated capacities, operating characteristics, electrical characteristics, and furnished accessories.

B. Shop Drawings: For each installation and for components not dimensioned or detailed in manufacturer's product data.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies. Indicate dimensions, required clearances, method of field assembly, components, and location and size of each field connection.
3. Include points of attachment and their corresponding static and dynamic loads imposed on structure.
4. Include diagrams for power, signal, and control wiring.

C. Samples: For each exposed product and for each color and texture specified, in manufacturer's standard size.

D. Samples for Initial Selection: For units with factory-applied finishes.

1. Include Samples of accessories involving color selection.

E. Qualification Data: For Installer.

F. Sample Warranties: For manufacturer's warranty and finish warranty.

1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sectional doors to include in maintenance manuals.

B. Manufacturer's warranty.

C. Finish warranty.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer for both installation and maintenance of units required for this Project.

B. Regulatory Requirements: Comply with provisions in the U.S. Department of Justice's "2010 ADA Standards for Accessible Design", the United States Access Board's "Architectural Barriers Act (ABA) Standards", 41 CFR, Appendix A to Subpart 101-19.6, "Uniform Federal Accessibility Standards", and ICC A117.1 applicable to sectional doors.

1.6 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of sectional doors that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Structural failures including, but not limited to, excessive deflection.
b. Failure of components or operators before reaching required number of operation cycles.
c. Faulty operation of hardware.
d. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use; rust through.
e. Delamination of exterior or interior facing materials.

2. Warranty Period: Five years from date of Substantial Completion.

B. Finish Warranty: Manufacturer agrees to repair or replace components that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS, GENERAL

A. Source Limitations: Obtain sectional doors from single source from single manufacturer.

1. Obtain operators and controls from sectional door manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Provide sectional doors that comply with performance requirements specified without failure from defective manufacture, fabrication, installation, or other defects in construction and without requiring temporary installation of reinforcing components.

B. Structural Performance, Exterior Doors: Capable of withstanding the design wind loads.

1. Design Wind Load: As indicated on Drawings.
2. Testing: In accordance with ASTM E330/E330M.
3. Deflection Limits: Design sectional doors to withstand design wind loads without evidencing permanent deformation or disengagement of door components.

a. Deflection of door sections in horizontal position (open) shall not exceed 1/120 of door width.
b. Deflection of horizontal track assembly shall not exceed 1/240 of door height.

4. Operability under Wind Load: Design sectional doors to remain operable under design wind load, acting inward and outward. Refer to Drawings.

C. Windborne-Debris Impact Resistance: Provide sectional doors complying with the following requirements:

1. Glazed Openings: Pass ASTM E1886 Large Missile Test and cyclic-pressure tests in accordance with ASTM E1996 for basic protection and Wind Zone applicable to basic design wind speed indicated on Drawings.

2.3 SECTIONAL-DOOR ASSEMBLY

A. Aluminum Sectional Door: Provide sectional door formed with hinged sections and fabricated so that finished door assembly is rigid and aligned with tight hairline joints; free of warp, twist, and deformation; and complies with requirements in DASMA 102.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Arm-R-Lite Manufacturing Co., Inc.
b. C.H.I. Overhead Doors, Inc.
c. Clopay Building Products.
d. Haas Door; a Nofziger Company.

e. Martin Door Manufacturing.
f. Overhead Door Corporation.
g. Raynor Garage Doors.

B. Operation Cycles: Door components and operators capable of operating for not less than 25,000 operation cycles. One operation cycle is complete when door is opened from closed position to the open position and returned to closed position.

C. Air Infiltration: Maximum rate of 0.4 cfm/sq. ft. when tested in accordance with ASTM E283 or DASMA 105.

D. Aluminum Sections: ASTM B221 extruded-aluminum stile and rail members of alloy and temper standard with manufacturer for type of use and finish indicated; in minimum thickness required to comply with requirements; with rail and stile dimensions and profiles indicated on Drawings; and with overlapped or interlocked weather- and pinch-resistant seal at meeting rails.

1. Door-Section Thickness: 2 inches.
2. Section Reinforcing: Continuous horizontal and diagonal reinforcement as required to stiffen door and for wind loading. Ensure that reinforcement does not obstruct vision lites.

a. Hardware Locations: Provide reinforcement for hardware attachment.

3. Glazed Panels: Manufacturer's standard, aluminum-framed section with glazing sealed with glazing tape and aluminum glazing bead. Glazing as follows:

a. Tempered Glass: 3 mm thick and complying with ASTM C1048, Kind FT (fully tempered), Condition A (uncoated), Type I, Class 1 (clear), Quality-Q3.

4. Solid Aluminum Panels: ASTM B209, alloy and temper standard with manufacturer for use and finish indicated.

a. Description: 0.050 inch thick.
b. Attachment to Frame: Sealed with glazing tape and aluminum glazing bead.
c. Aluminum Surface: Smooth.

E. Track: Manufacturer's standard, galvanized-steel, standard-lift track system. Provide complete system including brackets, bracing, and reinforcement to ensure rigid support of ball-bearing roller guides.

1. Material: Galvanized steel, ASTM A653/A653M, minimum G60 zinc coating.
2. Size: As recommended in writing by manufacturer for door size, weight, track configuration and door clearances indicated on Drawings.
3. Track Reinforcement and Supports: Provide galvanized-steel members to support track without sag, sway, and vibration during opening and closing of doors. Slot vertical sections of track spaced 2 inches apart for door-drop safety device.

a. Vertical Track: Incline vertical track to ensure weathertight closure at jambs. Provide continuous angle attached to track and wall.

b. Horizontal Track: Provide continuous reinforcing angle from curve in track to end of track, attached to track and supported at points by laterally braced attachments to overhead structural members.

F. Weatherseals: Replaceable, adjustable, continuous, compressible weather-stripping gaskets of flexible vinyl, rubber, or neoprene fitted to bottom top and jambs of door. Provide combination bottom weatherseal and sensor edge for bottom seal.

G. Windows: Manufacturer's standard window units of shape and size and in locations indicated on Drawings. Set glazing in vinyl, rubber, or neoprene glazing channel. Provide removable stops of same material as door-section frames. Provide the following glazing:

1. Clear Float Glass: 3 mm thick and complying with ASTM C1036, Type I, Class 1, Quality-Q3.

H. Hardware: Heavy-duty, corrosion-resistant hardware, with hot-dip galvanized, stainless steel, or other corrosion-resistant fasteners, to suit door type.

1. Hinges: Heavy-duty, galvanized-steel hinges of not less than 0.079-inch nominal coated thickness at each end stile and at each intermediate stile, in accordance with manufacturer's written recommendations for door size.

a. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners where access to nuts is impossible.
b. Provide double-end hinges where required for doors more than 16 ft. wide unless otherwise recommended by door manufacturer in writing.

2. Rollers: Heavy-duty rollers with steel ball bearings in case-hardened steel races, mounted to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Match roller-tire diameter to track width.

3. Push/Pull Handles: Equip each door with galvanized-steel lifting handles on each side of door, finished to match door.

I. Locking Device:

1. Slide Bolt: Fabricate with side-locking bolts to engage through slots in tracks for locking by padlock, located on single-jamb side, operable from inside only.
2. Locking Device Assembly: Fabricate with cylinder lock, spring-loaded deadbolt, operating handle, cam plate, and adjustable locking bars to engage through slots in tracks.

a. Lock Cylinders: Cylinders standard with manufacturer.
b. Keying: Keyed to building keying system.
c. Keys: Three for each cylinder.

3. Chain Lock Keeper: Suitable for padlock.
4. Safety Interlock Switch: Equip power-operated doors with safety interlock switch to disengage power supply when door is locked.

J. Counterbalance Mechanism:

1. Torsion Spring: Adjustable-tension torsion springs complying with requirements of DASMA 102 for number of operation cycles indicated, mounted on torsion shaft.
2. Cable Drums and Shaft for Doors: Cast-aluminum cable drums mounted on torsion shaft and grooved to receive door-lifting cables as door is raised.

    a. Mount counterbalance mechanism with manufacturer's standard ball-bearing brackets at each end of torsion shaft.
    b. Provide one additional midpoint bracket for shafts up to 16 ft. long and two additional brackets at one-third points to support shafts more than 16 ft. long unless closer spacing is recommended in writing by door manufacturer.

3. Cables: Galvanized-steel, multistrand, lifting cables with cable safety factor of at least 5 to 1.
4. Cable Safety Device: Include a spring-loaded steel or bronze cam mounted to bottom door roller assembly on each side and designed to automatically stop door if lifting cable breaks.
5. Bracket: Provide anchor support bracket as required to connect stationary end of spring to the wall and to level the shaft and prevent sag.
6. Bumper: Provide spring bumper at each horizontal track to cushion door at end of opening operation.

K. Electric Door Operator: Electric door operator assembly of size and capacity recommended by door manufacturer for door and operation cycles specified, with electric motor and factory-prewired motor controls, starter, gear-reduction unit, solenoid-operated brake, clutch, control stations, control devices, integral gearing for locking door, and accessories required for proper operation.

1. Comply with NFPA 70.
2. Control equipment complying with NEMA ICS 1, NEMA ICS 2, and NEMA ICS 6; with NFPA 70, Class 2 control circuit, maximum 24 V ac or dc.
3. Safety: Listed in accordance with UL 325 by a qualified testing agency for commercial or industrial use; moving parts of operator enclosed or guarded if exposed and mounted at 8 ft. or lower.
4. Usage Classification: Medium duty, up to 12 cycles per hour and up to 50 cycles per day.
5. Operator Type: Manufacturer's standard for door requirements.
6. Motor: Reversible-type with controller (disconnect switch) for interior, clean, and dry motor exposure. Use adjustable motor-mounting bases for belt-driven operators.

    a. Motor Size: As required to start, accelerate, and operate door in either direction from any position, at a speed not less than 8 in./sec. and not more than 12 in./sec., without exceeding nameplate ratings or service factor.
    b. Electrical Characteristics:

        1) Phase: Single phase.
        2) Volts: Refer to Electrical Drawings.

7. Limit Switches: Equip motorized door with adjustable switches interlocked with motor controls and set to automatically stop door at fully opened and fully closed positions.

8. Obstruction Detection: Automatic external entrapment protection consisting of automatic safety sensor capable of protecting full width of door opening. Activation of device immediately stops and reverses downward door travel.

    a. Monitored Entrapment Protection: Electric sensor edge on bottom section designed to interface with door-operator control circuit to detect damage to or disconnection of sensor and complying with requirements in UL 325.
    b. Unmonitored Entrapment Protection: Pneumatic sensor edge, black, located within weatherseal mounted to bottom bar.

9. Control Station: Flush mounted, three-position (open, close, and stop) control.

    a. Operation: Push button.
    b. Interior-Mounted Unit: Full-guarded, surface-mounted, heavy-duty type, with general-purpose NEMA ICS 6, Type 1 enclosure.
    c. Features: Provide the following:

        1) Vehicle detection operation.
        2) Radio-control operation.
        3) Audible and visual signals that comply with regulatory requirements for accessibility.

10. Emergency Manual Operation: Push-up and Chain type designed so required force for door operation does not exceed 25 lbf.
11. Emergency Operation Disconnect Device: Hand-operated disconnect mechanism for automatically engaging manual operator and releasing brake for emergency manual operation while disconnecting motor without affecting timing of limit switch. Mount mechanism so it is accessible from floor level. Include interlock device to automatically prevent motor from operating when emergency operator is engaged.
12. Motor Removal: Design operator so motor can be removed without disturbing limit-switch adjustment and without affecting emergency manual operation.

L. Metal Finish: Comply with NAAMM/NOMMA's "Metal Finishes Manual for Architectural and Metal Products (AMP 500-06)" for recommendations for applying and designating finishes.

1. Powder-Coat Finish: Manufacturer's standard baked-on finish consisting of prime coat and thermosetting topcoat. Comply with coating manufacturer's written instructions for cleaning, pretreatment, application, and minimum dry film thickness.

    a. Aluminum Finish: Comply with AAMA 2603/AAMA 2604 requirements for pigmented organic coatings applied to aluminum extrusions and panels.
    b. Color and Gloss: Match adjacent building doors.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for substrate construction and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install sectional doors and operating equipment complete with necessary hardware, anchors, inserts, hangers, and equipment supports; in accordance with manufacturer's written instructions.

B. Tracks:

1. Fasten vertical track assembly to opening jambs and framing with fasteners spaced not more than 24 inches apart.
2. Hang horizontal track assembly from structural overhead framing with angles or channel hangers attached to framing by welding or bolting, or both. Provide sway bracing, diagonal bracing, and reinforcement as required for rigid installation of track and door-operating equipment.

C. Accessibility: Install sectional doors, switches, and controls along accessible routes in compliance with regulatory requirements for accessibility.

D. Power-Operated Doors: Install automatic garage doors openers in accordance with UL 325.

3.3 STARTUP SERVICES

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks in accordance with manufacturer's written instructions.
2. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.

3.4 ADJUSTING

A. Adjust hardware and moving parts to function smoothly so that doors operate easily, free of warp, twist, or distortion.

B. Lubricate bearings and sliding parts as recommended by manufacturer.

C. Adjust doors and seals to provide weather-resistant fit around entire perimeter.

D. Touchup Painting Galvanized Material: Immediately after welding galvanized materials, clean welds and abraded galvanized surfaces and repair galvanizing to comply with ASTM A780/A780M.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain sectional doors.

END OF SECTION 083613

SECTION 087100 – DOOR HARDWARE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Mechanical and electrified door hardware for:

a. Swinging doors.
b. Sliding doors.
c. Gates.

2. Electronic access control system components, including:

a. Biometric access control reader.
b. Electronic access control devices.

3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
4. Lead-lining door hardware items required for radiation protection at door openings.

B. Exclusions: Unless specifically listed in hardware sets, hardware is not specified in this section for:

1. Windows
2. Cabinets (casework), including locks in cabinets
3. Signage
4. Toilet accessories
5. Overhead doors

C. Related Sections:

1. Section 061000 “Rough Carpentry”.
2. Section 079200 “Joint Sealants” for sealant requirements applicable to threshold installation specified in this section.
3. Section 081113 “Hollow Metal Doors and Frames”.
4. Section 083613 “Sectional Doors”.
5. Section 099110 “Painting” for touchup finishing or refinishing of existing openings modified by this section.
6. Division 26 sections for connections to electrical power system and for low-voltage wiring.

7. Division 28 sections for coordination with other components of electronic access control system.

1.3 REFERENCES

A. UL - Underwriters Laboratories

1. UL 10B - Fire Test of Door Assemblies
2. UL 10C - Positive Pressure Test of Fire Door Assemblies
3. UL 1784 - Air Leakage Tests of Door Assemblies
4. UL 305 - Panic Hardware

B. DHI - Door and Hardware Institute

1. Sequence and Format for the Hardware Schedule
2. Recommended Locations for Builders Hardware
3. Key Systems and Nomenclature

C. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties

1.4 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 requirements.
2. Highlight, encircle, or otherwise specifically identify on submittals deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
3. Prior to forwarding submittal, comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, “EXAMINATION” article, herein.

B. Submittals:

1. Product Data: Product data including manufacturers’ technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:

a. Wiring Diagrams: For power, signal, and control wiring and including:
1) Details of interface of electrified door hardware and building safety and security systems.
2) Schematic diagram of systems that interface with electrified door hardware.
3) Point-to-point wiring.
4) Risers.

3. Samples for Verification: If requested by Architect, submit production sample or sample installations of each type of exposed hardware unit in finish indicated, and tagged with full description for coordination with schedule.

    a. Samples will be returned to supplier in like-new condition. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.

4. Door Hardware Schedule: Submit schedule with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule as published by the Door and Hardware Institute. Indicate complete designations of each item required for each door or opening, include:

    a. Door Index; include door number, heading number, and Architects hardware set number.
    b. Opening Lock Function Spreadsheet: List locking device and function for each opening.
    c. Type, style, function, size, and finish of each hardware item.
    d. Name and manufacturer of each item.
    e. Fastenings and other pertinent information.
    f. Location of each hardware set cross-referenced to indications on Drawings.
    g. Explanation of all abbreviations, symbols, and codes contained in schedule.
    h. Mounting locations for hardware.
    i. Door and frame sizes and materials.
    j. Name and phone number for local manufacturer's representative for each product.
    k. Operational Description of openings with any electrified hardware (locks, exits, electromagnetic locks, electric strikes, automatic operators, door position switches, magnetic holders or closer/holder units, and access control components). Operational description should include how door will operate on egress, ingress, and fire and smoke alarm connection.
        1) Submittal Sequence: Submit door hardware schedule concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work that is critical in Project construction schedule.

5. Key Schedule:

    a. After Keying Conference, provide keying schedule listing levels of keying as well as explanation of key system's function, key symbols used, and door numbers controlled.
    b. Use ANSI/BHMA A156.28 “Recommended Practices for Keying Systems” as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion.
        1) Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.

f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory prepared for door hardware installation.

C. Informational Submittals:

1. Qualification Data: For Supplier, Installer and Architectural Hardware Consultant.
2. Product Certificates for electrified door hardware, signed by manufacturer:

a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.

3. Certificates of Compliance:

a. Certificates of compliance for fire-rated hardware and installation instructions if requested by Architect or Authority Having Jurisdiction.
b. Installer Training Meeting Certification: Letter of compliance, signed by Contractor, attesting to completion of installer training meeting specified in "QUALITY ASSURANCE" article, herein.
c. Electrified Hardware Coordination Conference Certification: Letter of compliance, signed by Contractor, attesting to completion of electrified hardware coordination conference, specified in "QUALITY ASSURANCE" article, herein.

4. Product Test Reports: For compliance with accessibility requirements, based on evaluation of comprehensive tests performed by manufacturer and witnessed by qualified testing agency, for door hardware on doors located in accessible routes.
5. Warranty: Special warranty specified in this Section.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:

a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.
e. Final approved hardware schedule, edited to reflect conditions as-installed.
f. Final keying schedule
g. Copies of floor plans with keying nomenclature
h. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

1.5 QUALITY ASSURANCE

A. Product Substitutions: Comply with product requirements stated in Division 01 and as specified herein.

1. Where specific manufacturer's product is named and accompanied by "No Substitute," including make or model number or other designation, provide product specified. (Note: Certain products have been selected for their unique characteristics and particular project suitability.)

    a. Where no additional products or manufacturers are listed in product category, requirements for "No Substitute" govern product selection.

2. Where products indicate "acceptable manufacturers" or "acceptable manufacturers and products", provide product from specified manufacturers, subject to compliance with specified requirements and "Single Source Responsibility" requirements stated herein.

B. Supplier Qualifications and Responsibilities: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.

1. Warehousing Facilities: In Project's vicinity.
2. Scheduling Responsibility: Preparation of door hardware and keying schedules.
3. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies like those indicated for this Project.
4. Coordination Responsibility: Coordinate installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.

    a. Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.

C. Installer Qualifications: Qualified tradesmen, skilled in application of commercial grade hardware with record of successful in-service performance for installing door hardware similar in quantity, type, and quality to that indicated for this Project.

D. Architectural Hardware Consultant Qualifications: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:

1. For door hardware, DHI-certified, Architectural Hardware Consultant (AHC).
2. Can provide installation and technical data to Architect and other related subcontractors.
3. Can inspect and verify components are in working order upon completion of installation.
4. Capable of producing wiring diagrams.
5. Capable of coordinating installation of electrified hardware with Architect and electrical engineers.

E. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

1. Provide electrified door hardware from same manufacturer as mechanical door hardware, unless otherwise indicated.
2. Manufacturers that perform electrical modifications and that are listed by testing and inspecting agency acceptable to authorities having jurisdiction are acceptable.

F. Fire-Rated Door Openings: Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction. Provide only items of door hardware that are listed and are identical to products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.

G. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.

1. Air Leakage Rate: Maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.

H. Electrified Door Hardware: Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.

I. Means of Egress Doors: Latches do not require more than 15 lbf (67 N) to release latch. Locks do not require use of key, tool, or special knowledge for operation.

J. Accessibility Requirements: For door hardware on doors in an accessible route, comply with governing accessibility regulations cited in “REFERENCES” article, herein.

1. Provide operating devices that do not require tight grasping, pinching, or twisting of wrist and that operate with force of not more than 5 lbf (22.2 N).
2. Maximum opening-force requirements:

a. Interior, Non-Fire-Rated Hinged Doors: 5 lbf (22.2 N) applied perpendicular to door.
b. Sliding or Folding Doors: 5 lbf (22.2 N) applied parallel to door at latch.
c. Fire Doors: Minimum opening force allowable by authorities having jurisdiction.

3. Bevel raised thresholds with slope of not more than 1:2. Provide thresholds not more than 1/2 inch (13 mm) high.
4. Adjust door closer sweep periods so that, from open position of 70 degrees, door will take at least 3 seconds to move to 3 inches (75 mm) from latch, measured to leading edge of door.

K. Keying Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Attendees: Owner, Contractor, Architect, Installer, Owner's security consultant, and Supplier’s Architectural Hardware Consultant.
2. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:

a. Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
b. Preliminary key system schematic diagram.
c. Requirements for key control system.
d. Requirements for access control.
e. Address for delivery of keys.

L. Pre-installation Conference: Conduct conference at Project site.

1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
2. Inspect and discuss preparatory work performed by other trades.
3. Inspect and discuss electrical roughing-in for electrified door hardware.
4. Review sequence of operation for each type of electrified door hardware.
5. Review required testing, inspecting, and certifying procedures.

M. Coordination Conferences:

1. Installation Coordination Conference: Prior to hardware installation, schedule and hold meeting to review questions or concerns related to proper installation and adjustment of door hardware.

a. Attendees: Door hardware supplier, door hardware installer, Contractor.
b. After meeting, provide letter of compliance to Architect, indicating when meeting was held and who was in attendance.

2. Electrified Hardware Coordination Conference: Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

a. Attendees: electrified door hardware supplier, doors and frames supplier, electrified door hardware installer, electrical subcontractor, Owner**,** Owner’s security consultant**,** Architect and Contractor.
b. After meeting, provide letter of compliance to Architect, indicating when coordination conference was held and who was in attendance.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site.

B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package.

1. Deliver each article of hardware in manufacturer’s original packaging.

C. Project Conditions:

1. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
2. Provide secure lock-up for door hardware delivered to Project, but not yet installed. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.

D. Protection and Damage:

1. Promptly replace products damaged during shipping.

2. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work.
3. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.

E. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

F. Deliver keys to Owner by registered mail or overnight package service.

1.7 COORDINATION

A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete. Concrete, reinforcement, and formwork requirements are specified in Division 03.

B. Installation Templates: Distribute for doors, frames, and other work specified to be factory prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.

C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.

E. Existing Openings: Where hardware components are scheduled for application to existing construction or where modifications to existing door hardware are required, field verify existing conditions and coordinate installation of door hardware to suit opening conditions and to provide proper door operation.

F. Direct shipments not permitted, unless approved by Contractor.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Years from date of Substantial Completion, for durations indicated.

a. Closers:
   1) Mechanical: 30 years.

b. Automatic Operators: 2 year.
c. Exit Devices:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

d. Locksets:
   1) Mechanical: 3 years.
   2) Electrified: 1 year.

e. Key Blanks: Lifetime

2. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

1.9 MAINTENANCE

A. Maintenance Tools:

1. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. The Owner requires use of certain products for their unique characteristics and particular project suitability to insure continuity of existing and future performance and maintenance standards. After investigating available product offerings, the Awarding Authority has elected to prepare proprietary specifications. These products are specified with the notation: “No Substitute.”

1. Where “No Substitute” is noted, submittals and substitution requests for other products will not be considered.

B. Approval of manufacturers and/or products other than those listed as ”Scheduled Manufacturer ” or “Acceptable Manufacturers” in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.

C. Approval of products from manufacturers indicated in “Acceptable Manufacturers” is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer’s product.

D. Hand of Door: Drawings show direction of slide, swing, or hand of each door leaf. Furnish each item of hardware for proper installation and operation of door movement as shown.

E. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.2 MATERIALS

A. Fasteners

1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work,

to match finish of this other work including prepared for paint surfaces to receive painted finish.

3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and advise Architect if thru-bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.

B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.

1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.3 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Ives 5BB series
2. Acceptable Manufacturers and Products: Hager BB series, McKinney TA series

B. Requirements:

1. Provide five-knuckle, ball bearing hinges conforming to ANSI/BHMA A156.1.
2. 1-3/4 inches thick doors, up to and including 36 inches wide:

a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches high
b. Interior: Standard weight, steel, 4-1/2 inches high

3. 1-3/4 inches thick doors over 36 inches wide:

a. Exterior: Heavy weight, bronze/stainless steel, 5 inches high
b. Interior: Heavy weight, steel, 5 inches high

4. 2 inches or thicker doors:

a. Exterior: Heavy weight, bronze, or stainless steel, 5 inches high
b. Interior: Heavy weight, steel, 5 inches high

5. Provide three hinges per door leaf for doors 90 inches or less in height, and one additional hinge for each 30 inches of additional door height.
6. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
7. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:

a. Steel Hinges: Steel pins
b. Non-Ferrous Hinges: Stainless steel pins
c. Out-Swinging Exterior Doors: Non-removable pins
d. Out-Swinging Interior Lockable Doors: Non-removable pins
e. Interior Non-lockable Doors: Non-rising pins

8. Width of hinges: 4-1/2 inches at 1-3/4 inches thick doors, and 5 inches at 2 inches or thicker doors. Adjust hinge width as required for door, frame, and wall conditions to allow proper degree of opening.
9. Doors 36 inches wide or less furnish hinges 4-1/2 inches high; doors greater than 36 inches wide furnish hinges 5 inches high, heavy weight or standard weight as specified.
10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with sufficient number and wire gage to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component.
11. Provide mortar guard for each electrified hinge specified.
12. Provide spring hinges where specified. Provide two spring hinges and one bearing hinge per door leaf for doors 90 inches or less in height. Provide one additional bearing hinge for each 30 inches of additional door height.

2.4 CYLINDRICAL LOCKS – GRADE 2

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon “W” Series
2. Acceptable Manufacturers and Products: Schlage “AL” & PDQ “SD”

B. Requirements:

1. Provide cylindrical locks conforming to the following standards and requirements:

   a. ANSI/BHMA A156.2 Series 4000, Grade 2.
   b. UL 10C for 4’-0” x 10’-0” 3-hour fire door.

2. Cylinders: Refer to “KEYING” article, herein.
3. Provide cylindrical locksets exceeding the ANSI/BHMA A156.2 Grade 2 performance standards for strength, security, and durability.
4. Provide locks with standard 2-3/4 inches backset, unless noted otherwise, with ½-inch latch throw. Provide proper latch throw for UL listing at pairs.
5. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
6. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
7. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
8. Provide electrified options as scheduled in the hardware sets.
9. Lever Trim: Solid cast levers without plastic inserts, and wrought roses on both sides.

   a. Lever Design: Dane.
   b. Knurled finishes at openings serving rooms considered to be hazardous.

2.5 EXIT DEVICES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon 25/24 Series.
2. Acceptable Manufacturers: Von Duprin 33/99 series & PDQ 6300/6400 series

B. The maximum exit device projection shall be a maximum of 3-1/16" when activated. The exit device bar shall have an average minimum thickness of .201". The push pad surface shall be constructed of stainless steel; push pads with plastic or Lexan coatings shall not be acceptable. Nylon bearings and stainless steel springs shall be used for long life and durability. Only torsion or compression springs are acceptable. Extension type springs are not acceptable. All device covers shall be of cast brass, deep drawn steel or stainless steel. Latch bolts shall be of stainless steel and shall have a deadlocking latch for extra security, except at full-glass or two-light glass doors requiring narrow stile device. Mounting screws shall be concealed to deter tampering. All ferrous parts shall be zinc coated to prevent rusting.

C. Single point, one quarter turn hex dogging shall be standard on panic listed devices. Optional key cylinder dogging shall be available, and furnished if so indicated in the hardware sets, on panic listed devices. Devices with hex key dogging shall be easily field converted to cylinder dogging.

D. All devices shall be listed by Underwriters Laboratories for safety as panic hardware. Fire rated devices shall be UL listed for A label and lesser class doors, 4' x 8' single and 8 x 8' pair. The model number shall be located on the end cap; devices having the model number located other than on the end cap shall not be acceptable.

E. All exit devices shall have a unitized installation feature and may be cut in the field to size. Devices shall be closed on all sides with no pinch points. The push pad shall be designed to prevent pinching of the fingers when depressed.

F. Exit Device trim to be through bolted. Lever trim to be heavy duty forged escutcheon with freewheeling levers.

G. All exit devices shall conform to Federal Specification FF-H-1820, and be certified as meeting ANSI A156.3, Grade 1 requirements.

2.6 KEYING

A. Provide a factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Provide cylinders/cores keyed into Owner's existing factory registered keying system, complying with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

C. Requirements:

1. Provide permanent cylinders keyed by the manufacturer according to the following key system.

    a. Master Keying system as directed by the Owner.

2. Provide keys with the following features:

    a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    b. Patent Protection: Keys and blanks protected by one or more utility patent(s).

3. Identification:

    a. Mark permanent cylinders and keys with applicable blind code per DHI publication "Keying Systems and Nomenclature" for identification. Blind code marks shall not include actual key cuts.
    b. Identification stamping provisions must be approved by the Architect and Owner.
    c. Stamp keys "DO NOT DUPLICATE".
    d. Failure to comply with stamping requirements shall be cause for replacement of keys involved at no additional cost to Owner.

4. Quantity: Furnish in the following quantities.

    a. Change (Day) Keys: 3 per cylinder/core.
    b. Master Keys: 6.

2.7 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product: Falcon 61/81 Series
2. Acceptable Manufacturers: LCN 1450, PDQ 5300 & Sargent 1430

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory.
2. Provide door closers with fully hydraulic, full rack and pinion action aluminum cylinder.
3. Closer Body: 1-1/4-inch diameter, with 5/8 inch (16 mm) diameter heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Pressure Relief Valve (PRV) Technology: not permitted.
8. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.8 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide push plates 8 inches wide by 16 inches high and beveled 4 edges. Where width of door stile prevents use of 4 inches wide plate, adjust width to fit.

2. Provide push bars of solid bar stock, diameter and length as scheduled. Provide push bars of sufficient length to span from center to center of each stile. Where required, mount back to back with pull.
3. Provide offset pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
4. Provide flush pulls as scheduled. Where required, provide back-to-back mounted model.
5. Provide pulls of solid bar stock, diameter and length as scheduled. Where required, mount back to back with push bar.
6. Provide pull plates 3.5 inches wide by 15 inches high, beveled 4 edges, and prepped for pull. Where width of door stile prevents use of 4 inches (wide plate, adjust width to fit.
7. Provide wire pulls of solid bar stock, diameter and length as scheduled.
8. Provide decorative pulls as scheduled. Where required, mount back to back with pull.

2.9 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide kick plates, mop plates, and armor plates beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes of plates:

   a. Kick Plates: 10 inches high by 2 inches less width of door on single doors.
   b. Mop Plates: 4 inches high by 2 inches less width of door on single doors.
   c. Armor Plates: 36 inches high by 2 inches less width of door on single doors.

2.10 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers: Glynn-Johnson
2. Acceptable Manufacturers: Rixson, Sargent

B. Requirements:

1. Provide heavy duty concealed mounted overhead stop or holder as specified for exterior and interior vestibule single acting doors.
2. Provide heavy duty concealed mounted overhead stop or holder as specified for double acting doors.
3. Provide heavy or medium duty and concealed or surface mounted overhead stop or holder for interior doors as specified. Provide medium duty surface mounted overhead stop for interior doors and at any door that swings more than 140 degrees before striking wall, open against equipment, casework, sidelights, and where conditions do not allow wall stop or floor stop presents tripping hazard.
4. Where overhead holders are specified provide friction type at doors without closer and positive type at doors with closer.

2.11 DOOR STOPS AND HOLDERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Provide door stops at each door leaf:

1. Provide wall stops wherever possible. Provide convex type where mortise type locks are used and concave type where cylindrical type locks are used.
2. Where a wall stop cannot be used, provide universal floor stops for low or high rise options.
3. Where wall or floor stop cannot be used, provide medium duty surface mounted overhead stop.

2.12 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING

A. Manufacturers:

1. Scheduled Manufacturer: Zero International
2. Acceptable Manufacturers: National Guard, Reese

B. Requirements:

1. Provide thresholds, weather-stripping (including door sweeps, seals, and astragals) and gasketing systems (including smoke, sound, and light) as specified and per architectural details. Match finish of other items.
2. Size of thresholds:

    a. Saddle Thresholds: 1/2 inch high by jamb width by door width complete with “V3” fill body strength fill & 226 stainless steel sleeve anchors
    b. Bumper Seal Thresholds: 1/2 inch high by 5 inches wide by door width complete with “V3” fill body strength fill & 226 stainless steel sleeve anchors

3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.

2.13 SILENCERS

A. Manufacturers:

1. Scheduled Manufacturer: Ives
2. Acceptable Manufacturers: Burns, Rockwood

B. Requirements:

1. Provide "push-in" type silencers for hollow metal or wood frames.
2. Provide one silencer per 30 inches of height on each single frame, and two for each pair frame.
3. Omit where gasketing is specified.

2.14 FINISHES

A. Finish: BHMA 626/652 (US26D); except:

1. Hinges at Exterior Doors: BHMA 630 (US32D)
2. Continuous Hinges: BHMA 630 (US32D)
3. Continuous Hinges: BHMA 628 (US28)
4. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
5. Protection Plates: BHMA 630 (US32D)
6. Overhead Stops and Holders: BHMA 630 (US32D)
7. Door Closers: Powder Coat to Match
8. Wall Stops: BHMA 630 (US32D)
9. Latch Protectors: BHMA 630 (US32D)
10. Weatherstripping: Clear Anodized Aluminum
11. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.

B. Existing Door and Frame Compatibility: Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.

C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Where on-site modification of doors and frames is required:

1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
2. Field modify and prepare existing door and frame for new hardware being installed.
3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:

a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."

c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

3.3 INSTALLATION

A. Mounting Heights: Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.

1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
2. Custom Steel Doors and Frames: HMMA 831.
3. Wood Doors: DHI WDHS.3, "Recommended Locations for Architectural Hardware for Wood Flush Doors."

B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.

C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.

D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.

E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.

F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.

G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated or one hinge for every 24 inches of door height, whichever is more stringent, unless other equivalent means of support for door, such as spring hinges or pivots, are provided.

H. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Closers shall not be visible in corridors, lobbies and other public spaces unless approved by Architect.

I. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.

J. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

1. Configuration: Provide least number of power supplies required to adequately serve doors with electrified door hardware.

K. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."

L. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.

M. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.

N. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.

O. Door Bottoms: Apply to bottom of door, forming seal with threshold when door is closed.

3.4 FIELD QUALITY CONTROL

A. Architectural Hardware Consultant: Engage qualified independent Architectural Hardware Consultant to perform inspections and to prepare inspection reports.

1. Architectural Hardware Consultant will inspect door hardware and state in each report whether installed work complies with or deviates from requirements, including whether door hardware is properly installed and adjusted.

3.5 ADJUSTING

A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.

1. Spring Hinges: Adjust to achieve positive latching when door is allowed to close freely from an open position of 30 degrees.
2. Electric Strikes: Adjust horizontal and vertical alignment of keeper to properly engage lock bolt.
3. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.

B. Occupancy Adjustment: Approximately three months after date of Substantial Completion, Installer's Architectural Hardware Consultant shall examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors, door hardware, and electrified door hardware.

3.6 CLEANING AND PROTECTION

A. Clean adjacent surfaces soiled by door hardware installation.

B. Clean operating items as necessary to restore proper function and finish.

C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

3.7 DEMONSTRATION

A. Provide training for Owner's maintenance personnel to adjust, operate, and maintain door hardware and door hardware finishes. Refer to Division 01 Section "Demonstration and Training."

3.8 DOOR HARDWARE SCHEDULE

A. Locksets, exit devices, and other hardware items are referenced in the following hardware sets for series, type and function. Refer to the above-specifications for special features, options, cylinders/keying, and other requirements.

B. Hardware Sets:

END OF SECTION 087100

SECTION 099100 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Specifications, apply to this Section.

1.2 SUMMARY

1. Painting and decorating required for this work, includes but is not specifically limited to finishes for interior and exterior walls, ceilings, doors and equipment indicated or scheduled.

B. Related Sections:

1. Shop priming and factory prefinishing are required on some, but not all, of the items described in some other sections of these Specifications.
2. Special coatings.

1.3 SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Include preparation requirements and application instructions.
2. Indicate VOC content.

B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

1.4 QUALITY ASSURANCE

A. Use only qualified journeyman painters for the mixing and application of paint on exposed surfaces; in the acceptance or rejection of installed painting, no allowance will be made for lack of skill on the part of painters.

B. The term “paint”, as used herein, includes enamels, paints, sealers, fillers, emulsions, and other coatings whether used as prime, intermediate, or finish coats.

C. “Exposed” shall mean “exposed to view in the work at any area” at time of final inspection as determined by Architect. This shall include mechanical rooms, closets, storage rooms and like areas unless specifically indicated to be left unpainted.

1.5 PRODUCT HANDLING

A. Deliver all materials to the job site in their original unopened containers with all labels intact and legible at time of use.

B. Store only the approved materials at the job site, and store only in the area designated for the storage of paint materials and related equipment.

C. Use all means necessary to ensure the safe storage and use of paint materials and the prompt and safe dispose of waste and containers.

D. Use all means necessary to protect materials before, during and after application and to protect the installed work and material of all other trades.

E. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 PAINT

A. All paint materials selected for coating systems for each type of surface shall be the product of a single manufacturer and shall as a system have flame spread, fuel contribution, and smoke density test results less than 25.

B. Paint materials listed herein, unless otherwise designated in the “Painting Schedule”, are the product of Sherwin-Williams Co. and require no further approval as to manufacturer or catalog number.

C. Equivalent products of other major paint manufacturers may be used subject to approval by the Architect.

2.2 PAINT SCHEDULE

A. EXTERIOR STEEL: Unless otherwise noted to be unfinished, all exterior steel shall be primed with one coat of Sherwin-Williams Pro-Cryl Universal Primer B6CW310, plus two coats Sher-Cryl HPA Acrylic at 2 mil dry thickness, followed by one coat of Sher-Clear at 1 mil dry thickness.

B. EXTERIOR WOOD, PAINTED: Exterior wood to be painted, including any painted accent colors, shall be given one coat of Sherwin-Williams A-100 Latex Primer, B42 plus two coats of Sherwin-Williams Super Paint Satin. 1.5 mil dry film thickness.

C. EXTERIOR WOOD, STAINED: Exterior wood to be stained, shall be stained with stain approved by Architect and applied within manufacturer’s standards.

D. EXTERIOR CONCRETE TILT-UP: One coat Loxon Block Surfacer and one coat Ultracrete Latex Textured Masonry Topcoat (Fine Texture). One coat Sherwin-Williams Super Paint may be needed for dark colors.

E. CAULKING, EXTERIOR: All caulking which is exposed in the finished work shall be given the following coats of paint, in colors as selected by the Architect, to match adjacent materials; one coat Sherwin-Williams A-100 Alkyd Primer, Y24W20, and two coats of Sherwin-Williams Super Paint Satin.

F. INTERIOR WOOD, PAINTED: Interior wood, including trim in toilets to be painted shall be given one coat of Sherwin-Williams 200 Enamel Undercoat, 49W8200, and two coats of Sherwin-William's Pro Classic Waterborne Latex Semi-Gloss B31 Series. 2.0 mil dry film thickness.

G. INTERIOR STEEL: After primer, all interior steel which is exposed, unless shop finished, shall be given one coat of Sherwin-Williams Kem Kromik Universal Metal Primer. Over undercoating shall be applied two coats of Sherwin-Williams Pro Industrial Water Based Alkyd Urethane, Semi-Gloss, B54. 1.5 mil dry film thickness.

H. INTERIOR GYPSUM BOARD: (Except where scheduled to be glazed or special coated) Gypsum board, textured under other section, shall be painted one coat of Sherwin-Williams ProMar 200 Latex Wall Primer, B28W8200, and two coats of ProMar 200 Zero VOC Semi-Gloss, B20 Series. Gypsum board walls and ceilings at wet areas shall be painted one prime coat ProMar 200 Latex Wall Primer, B28W2600, and two coats Zero VOC Water Based Epoxy Semi-Gloss B73W360 Series.

I. INTERIOR WOOD – NATURAL FINISH: All interior exposed wood including doors, cabinet work, trim, shelves, etc., which are not specifically called for to be painted, shall be given a coat of Sherwin-Williams Sherwood Filler, D70T1 and Wood Classics Oil Stain, then one coat of Sherwin-Williams Oil Base Gloss, A66V91 followed by one coat of Oil Base Satin, A66F90. Fill-sealer may be applied as soon as wood is in place, as a protection. Staining and final finish shall be subject to approval of samples submitted. Interior unexposed wood in cabinet work, shelves, drawers, etc., shall be given one coat of Sherwin-Williams Sherwood Filler, D70T1.

J. MASONRY: Unless otherwise noted or scheduled to be glaze or special coating, CMU shall be primed with Loxon Block Surfacer. Exterior CMU shall be finished with 1 coat Loxon XP Waterproofing System. Interior CMU shall have one coat of Loxon Block Surfacer and 2 coats of Zero VOC Water Based Epoxy Gloss B73W300 Series.

K. INTERIOR CONCRETE FLOOR SEALER: Apply 2 coats of H&C Concrete Sealer, Clear Gloss Oil Based sealer to scheduled concrete.

L. EXTERIOR HANDICAP RAMPS: Two coats Sherwin-Williams H & C Concrete Stain. Color selected by Architect.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Prior to all work of this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. Verify that all finishes may be applied in strict accordance with all pertinent codes and regulation and the requirements of these specifications and those of the manufacturer.

C. In the event of discrepancies, immediately notify the Architect. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

D. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

3.2 PREPARATION OF SURFACES (GENERAL)

A. Prior to all surface preparation and painting operations, completely mask, remove, or otherwise adequately protect all hardware, accessories, machine surfaces, plates, lighting fixtures, and similar items in contact with painted surfaces but not scheduled to receive paint.

B. Spot prime all exposed nails and other metals which are to be painted with emulsion paints, using a primer recommended by the manufacturer of the coating system.

C. Before applying paint or other surface treatment, thoroughly clean all surfaces involved. Solvent clean metallic surfaces to be coated.

D. Schedule all cleaning and painting so that dust and other contaminant from the cleaning process will not fall on wet, newly painted surfaces.

3.3 PREPARATION OF WOOD SURFACES

A. Clean all wood surfaces of dirt, oil, and all other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer, before application of priming coat. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood-filler. Sandpaper smooth when dried.

B. Prime, stain, or seal wood required to be job-painted immediately upon delivery to job.

C. Backprime trim and paneling on interior partitions only where masonry, plaster, or other wet wall construction occurs on backside.

D. Seal tops, bottoms, and cut-outs of unprimed wood doors with heavy coat of varnish or equivalent sealer immediately upon delivery to job. Prime edges, ends, faces, undersides, and backsides of job finished wood items including cabinets, counters, cases and paneling.

3.4 PREPARATION OF METAL SURFACES

A. Clean ferrous metal surfaces that are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning. Touch up shop-

applied prime coats wherever damaged or bare, where required by other sections of these specifications. Clean and touch-up with same type shop primer.

B. Clean galvanized surfaces free of oil and surface contaminates with non-petroleum based solvent.

3.5 PREPARATION OF CEMENTITIOUS MATERIALS

A. Prepare cementitious surfaces of concrete, concrete block and cement plaster to be painted by removing effloresces, chalk, dust, dirt, grease, oils, and by roughening as required to remove any glaze.

B. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in paint manufacturer's printed directions.

3.6 PAINT APPLICATION

A. Paint all surfaces except glass, masonry, flat concrete, and similar items not prefinished and not called out as unfinished.

B. Paint all grilles and other prefinished items where the factory prefinish is not in accordance with the Painting Schedule and color selections.

C. Allow sufficient drying time between coats.

D. Modify the period as recommended by the material manufacturer to suit adverse weather conditions.

E. Oil base and oleo-resinous solvent-type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

F. Do not apply paint in areas where dust is being generated.

G. Use a moisturemeter approved by the Architect to test surfaces if required.

H. Do not apply the initial coating until moisturemeter reading is within limits recommended by the paint materials manufacturer.

I. Sand and dust between coats to remove all defects visible to the unaided eye from a distance of five feet.

J. Slightly vary the color of undercoats of succeeding coats.

3.7 INSPECTION

A. Do not apply additional coats until previous coat has been inspected and approved by the Architect.

B. Only inspected and approved coats of paint will be considered in determining the number of coats applied.

C. The painting subcontractor will punch out the units at completion of the project and leave 5 gallons of each color of paint for management.

3.8 PAINT COVERAGE

A. Apply two coatings of all finishes if the material is the exposed finish unless indicated otherwise in these specifications. If finish does not cover completely or is not of consistent hue throughout in the opinion of the Architect, apply additional coats at no cost to the Owner. The completed work will be required to comply as specified herein. Manufacturers dry film thickness recommendation will be the standard to be met if application above is unsatisfactory.

3.9 REINSTALLATION OF REMOVED ITEMS

A. Following completion of painting in each space, promptly reinstall all items removed for painting, using only workmen skilled in the particular trade.

3.10 REFINISHING EXISTING NATURAL FINISHED WOODWORK – TRANSPARENT FINISH

A. Protect adjacent surfaces from refinishing procedures.

B. Remove existing hardware as required to facilitate refinishing.

C. Remove existing finishes by scraping, sanding or chemically stripping as appropriate for existing finish encountered.

D. Reattach loose pieces of trim, setting nails and countersinking screws 1/8”. Reset any existing fasteners which have loosened or backed-out.

E. Fill all holes, scratches and gouges with putty, colored to match surrounding wood.

F. Fill countersinks with matching wood plugs.

G. Sand all surfaces smooth.

H. Stain existing patches and new cut edges to match adjacent surfaces.

I. Refinish cabinet exteriors and wood trim to comply with Architectural Woodwork Institute Finish System #3 Conversion Varnish, custom grade.

J. Unless noted otherwise, refinish cabinet interiors with one coat of sealer.

3.11 CLEAN UP

A. During progress of the work, do not allow the accumulation of empty containers or other excess items except in areas specifically set aside for that purpose.

B. Prevent accidental spilling of paint materials and, in the event of such spill, immediately remove all spilled material and the waste or other equipment used to clean up the spill, and wash the surfaces to their original undamaged conditions, all at no additional cost to the Owner.

C. Upon completion of this portion of the work, visually inspect all surfaces and remove all paint and traces of paint from surfaces not scheduled to be painted.

D. Prior to final acceptance, provide one gallon of each color and type of finish coat material for Owner's use as touch-up after final acceptance of the work.

3.12 STOCK MATERIALS

A. Provide to Owner one (1) 5 gallon new and unopened container of each type and color of field paint and one (1) gallon of each type and color of accent paint used on the project.

END OF SECTION 099100

SECTION 104416 - FIRE EXTINGUISHERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes portable, hand-carried fire extinguishers and mounting brackets for fire extinguishers.

1.3 SUBMITTALS

A. Product Data: For each type of product. Include rating and classification, material descriptions, dimensions of individual components and profiles, and finishes for fire extinguisher and mounting brackets.

B. Product Schedule: For fire extinguishers. Coordinate final fire-extinguisher schedule with fire-protection cabinet schedule to ensure proper fit and function. Use same designations indicated on Drawings.

C. Warranty: Sample of special warranty.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For fire extinguishers to include in maintenance manuals.

1.5 COORDINATION

A. Coordinate type and capacity of fire extinguishers with fire-protection cabinets to ensure fit and function.

1.6 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace fire extinguishers that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure of hydrostatic test according to NFPA 10 when testing interval required by NFPA 10 is within the warranty period.
b. Faulty operation of valves or release levers.

2. Warranty Period: Six years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. NFPA Compliance: Fabricate and label fire extinguishers to comply with NFPA 10, "Portable Fire Extinguishers."

B. Fire Extinguishers: Listed and labeled for type, rating, and classification by an independent testing agency acceptable to authorities having jurisdiction.

1. Provide fire extinguishers approved, listed, and labeled by FM Global.

2.2 PORTABLE, HAND-CARRIED FIRE EXTINGUISHERS

A. Fire Extinguishers: Type, size, and capacity for each fire-protection cabinet and mounting bracket indicated.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Activar Construction Products Group, Inc. - JL Industries.
b. Ansul by Johnson Controls Company.
c. Badger Fire Protection.
d. Buckeye Fire Equipment Company.
e. Fire End & Croker Corporation.
f. Guardian Fire Equipment, Inc.
g. Larsens Manufacturing Company.
h. Potter Roemer LLC; a Division of Morris Group International.
i. Pyro-Chem; Tyco Fire Suppression & Building Products.

2. Source Limitations: Obtain fire extinguishers, fire-protection cabinets, and accessories, from single source from single manufacturer.
3. Valves: Manufacturer's standard.
4. Handles and Levers: Manufacturer's standard.
5. Instruction Labels: Include pictorial marking system complying with NFPA 10, Appendix B, and bar coding for documenting fire-extinguisher location, inspections, maintenance, and recharging.

B. Multipurpose Dry-Chemical Type in Steel Container: UL-rated 3-A:40-B:C, 6-lb nominal capacity, with monoammonium phosphate-based dry chemical in enameled-steel container. Quantity as indicated on Drawings, Life Safety Plan.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine fire extinguishers for proper charging and tagging.

1. Remove and replace damaged, defective, or undercharged fire extinguishers.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Install fire extinguishers and mounting brackets in locations indicated and in compliance with requirements of authorities having jurisdiction.

1. Mounting Brackets: Top of fire extinguisher to be at 42 inches above finished floor.

B. Mounting Brackets: Fasten mounting brackets to surfaces, square and plumb, at locations indicated.

END OF SECTION 104416

SECTION 133419 - METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Structural-steel framing.
2. Metal roof panels.
3. Metal wall panels.
4. Soffit panels.
5. Gutters and downspouts.
6. Thermal insulation.
7. Accessories.

B. Related Sections:

1. Section 011100 “Structural Wind Load Criteria” for design criteria.
2. Section 033000 "Cast-in-Place Concrete" for concrete slab.
3. Section 042200 “Concrete Unit Masonry” for CMU.
4. Section 081113 “Hollow Metal Doors and Frames” for doors and frames.
5. Section 083613 “Sectional Doors” for sectional doors in metal building systems.

1.3 DEFINITIONS

A. Terminology Standard: See MBMA's "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in referenced standards.

1.4 SUBMITTALS

A. Product Data: For each type of metal building system component. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:

1. Structural-steel-framing system.
2. Metal roof panels.
3. Metal wall panels.
4. Metal soffit panels.
5. Insulation and vapor retarder facings.

6. Flashing and trim.
7. Accessories.

B. Shop Drawings: For the following metal building system components. Include plans, elevations, sections, details, and attachments to other work.

1. Anchor-Bolt Plans: Submit anchor-bolt plans and templates before foundation work begins. Include location, diameter, and projection of anchor bolts required to attach metal building to foundation. Indicate column reactions at each location.
2. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.

    a. Show provisions for attaching platforms.
    b. Show provisions for attaching canopies.

3. Metal Roof and Wall Panel Layout Drawings: Show layouts of metal panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
4. Accessory Drawings: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:

    a. Flashing and trim.
    b. Gutters.
    c. Downspouts.

C. Samples for Initial Selection: For units with factory-applied color finish.

D. Samples for Verification: For each type of exposed finish required, prepared on Samples of sizes indicated below:

1. Metal Panels: Nominal 12 inches long by actual panel width. Include fasteners, closures, and other exposed panel accessories.
2. Flashing and Trim: Nominal 12 inches long. Include fasteners and other exposed accessories.
3. Vapor-Retarder Facings: Nominal 6-inch- square Samples.
4. Accessories: Nominal 12-inch- long Samples for each type of accessory.

E. Delegated-Design Submittal: For metal building systems indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

F. Qualification Data: For qualified erector, manufacturer, and licensed professional engineer.

G. Welding certificates.

H. Metal Building System Certificates: For each type of metal building system, from manufacturer.

1. Letter of Design Certification: Signed and sealed by a qualified licensed professional engineer. Include the following:

    a. Name and location of Project.
    b. Order number.
    c. Name of manufacturer.
    d. Name of Contractor.
    e. Building dimensions including width, length, height, and roof slope.
    f. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
    g. Governing building code and year of edition.
    h. Design Loads: Include dead load, roof live load, collateral loads, roof snow load, deflection, wind loads/speeds and exposure, seismic design category or effective peak velocity-related acceleration/peak acceleration, and auxiliary loads (cranes).
    i. Load Combinations: Indicate that loads were applied acting simultaneously with concentrated loads, according to governing building code.
    j. Building-Use Category: Indicate category of building use and its effect on load importance factors.
    k. AISC Certification for Category MB: Include statement that metal building system and components were designed and produced in an AISC-Certified Facility by an AISC-Certified Manufacturer.

I. Erector Certificates: For each product, from manufacturer.

J. Manufacturer Certificates: For each product, from manufacturer.

K. Material Test Reports: For each of the following products:

1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Tension-control, high-strength, bolt-nut-washer assemblies.
4. Shop primers.
5. Nonshrink grout.

L. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for insulation and vapor-retarder facings. Include reports for thermal resistance, fire-test-response characteristics, water-vapor transmission, and water absorption.

M. Source quality-control reports.

N. Field quality-control reports.

O. Warranties: Sample of special warranties.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: For metal panel finishes to include in maintenance manuals.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer and member of MBMA.

1. AISC Certification for Category MB: An AISC-Certified Manufacturer that designs and produces metal building systems and components in an AISC-Certified Facility.
2. Engineering Responsibility: Preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.

B. Erector Qualifications: An experienced erector who specializes in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.

C. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

D. Source Limitations: Obtain metal building system components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

E. Welding Qualifications: Qualify procedures and personnel according to the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.3, "Structural Welding Code - Sheet Steel."

F. Structural Steel: Comply with AISC 360, "Specification for Structural Steel Buildings," for design requirements and allowable stresses.

G. Cold-Formed Steel: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" for design requirements and allowable stresses.

H. Fire-Resistance Ratings: Where indicated, provide metal panel assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.
2. Combustion Characteristics: ASTM E 136.

I. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of typical wall area as shown on Drawings.
2. Build mockups for typical wall metal panel including accessories.

a. Size: 48 inches long by 48 inches.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

J. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to metal building systems including, but not limited to, the following:

    a. Condition of foundations and other preparatory work performed by other trades.
    b. Structural load limitations.
    c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
    d. Required tests, inspections, and certifications.
    e. Unfavorable weather and forecasted weather conditions.

2. Review methods and procedures related to metal roof panel assemblies including, but not limited to, the following:

    a. Compliance with requirements for purlin and rafter conditions, including flatness and attachment to structural members.
    b. Structural limitations of purlins and rafters during and after roofing.
    c. Flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
    d. Temporary protection requirements for metal roof panel assembly during and after installation.
    e. Roof observation and repair after metal roof panel installation.

3. Review methods and procedures related to metal wall panel assemblies including, but not limited to, the following:

    a. Compliance with requirements for support conditions, including alignment between and attachment to structural members.
    b. Structural limitations of girts and columns during and after wall panel installation.
    c. Flashings, special siding details, wall penetrations, openings, and condition of other construction that will affect metal wall panels.
    d. Temporary protection requirements for metal wall panel assembly during and after installation.
    e. Wall observation and repair after metal wall panel installation.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.

B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack metal panels horizontally on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness, with positive slope for drainage of water. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when weather conditions permit metal panels to be installed according to manufacturers' written instructions and warranty requirements.

B. Field Measurements:

1. Established Dimensions for Foundations: Comply with established dimensions on approved anchor-bolt plans, establishing foundation dimensions and proceeding with fabricating structural framing without field measurements. Coordinate anchor-bolt installation to ensure that actual anchorage dimensions correspond to established dimensions.
2. Established Dimensions for Metal Panels: Where field measurements cannot be made without delaying the Work, either establish framing and opening dimensions and proceed with fabricating metal panels without field measurements, or allow for field trimming metal panels. Coordinate construction to ensure that actual building dimensions, locations of structural members, and openings correspond to established dimensions.

1.9 COORDINATION

A. Coordinate sizes and locations of concrete foundations and casting of anchor-bolt inserts into foundation walls and footings. Concrete, reinforcement, and formwork requirements are specified in Division 03 Section "Cast-in-Place Concrete."

B. Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

C. Coordinate all applied finishes that will be attached to metal building and provide adequate attachment to meet all local, state, and federal codes and requirements.

1.10 WARRANTY

A. Special Warranty on Metal Panel Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 30 years from date of Substantial Completion.

B. Special Weathertightness Warranty for Standing-Seam Metal Roof Panels: Manufacturer's standard form in which manufacturer agrees to repair or replace standing-seam metal roof panel assemblies that leak or otherwise fail to remain weathertight within specified warranty period.

1. Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide the following, or approved equal:

1. Alliance Steel Building Systems
2. Mueller, Inc.
3. Red Dot Buildings
4. Whirlwind Steel Buildlings

B. Source Limitations: Obtain metal building system components, including primary and secondary framing and metal panel assemblies, from single source from single manufacturer.

2.2 METAL BUILDING SYSTEMS

A. Description: Provide a complete, integrated set of metal building system manufacturer's standard mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior.

1. Provide metal building system of size and with bay spacings, roof slopes, and spans indicated.

B. Primary-Frame Type:

1. Rigid Clear Span: Solid-member, structural-framing system with straight leg columns.

C. End-Wall Framing: Engineer end walls to be expandable. Provide primary frame, capable of supporting full-bay design loads, and end-wall columns.

D. Secondary-Frame Type: Manufacturer's standard purlins and joists and flush-framed girts.

E. Eave Height: As indicated by nominal height on Drawings.

F. Bay Spacing: As indicated on Drawings.

G. Roof Slope: As indicated on the Drawings.

H. Roof System: Manufacturer's standard tapered-rib, exposed-fastener metal roof panels with field-installed insulation.

I. Exterior Wall System: Manufacturer's standard R-Panel, exposed-fastener metal wall panels with field-installed insulation.

J. Soffit Panel System: Manufacturer’s standard R-Panel , exposed-fastener metal soffit panels with field-installed insulation.

2.3 METAL BUILDING SYSTEM PERFORMANCE

A. Delegated Design: Design metal building system, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.

B. Structural Performance: Metal building systems shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated according to procedures in MBMA's "Metal Building Systems Manual."

1. Design Loads: As specified in Section 011100 “Structural Wind Load Criteria”.

C. Thermal Movements: Allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

D. Air Infiltration for Metal Roof Panels: Air leakage through assembly of not more than 0.06 cfm/sq. ft. of roof area when tested according to ASTM E 1680 at negative test-pressure difference of 1.57 lbf/sq. ft..

E. Air Infiltration for Metal Wall Panels: Air leakage through assembly of not more than 0.06 cfm/sq. ft. of wall area when tested according to ASTM E 283 at static-air-pressure difference of 1.57 lbf/sq. ft..

F. Water Penetration for Metal Roof Panels: No water penetration when tested according to ASTM E 1646 at test-pressure difference of 2.86 lbf/sq. ft..

G. Water Penetration for Metal Wall Panels: No water penetration when tested according to ASTM E 331 at a wind-load design pressure of not less than 2.86 lbf/sq. ft..

H. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with Section 011100 “Structural Wind Load Criteria”.

2.4 STRUCTURAL-STEEL FRAMING

A. Primary Framing: Manufacturer's standard primary-framing system, designed to withstand required loads and specified requirements. Primary framing includes transverse and lean-to frames; rafter, rake, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing.

1. General: Provide frames with attachment plates, bearing plates, and splice members. Factory drill for field-bolted assembly. Provide frame span and spacing indicated.

a. Slight variations in span and spacing may be acceptable if necessary to comply with manufacturer's standard, as approved by Architect.

2. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.
3. Frame Configuration: Gable as indicated on Drawings.
4. Exterior Column Type: Straight.
5. Rafter Type: Tapered.

B. End-Wall Framing: Manufacturer's standard primary end-wall framing with expandability, fabricated for field-bolted assembly to comply with the following:

1. End-Wall and Corner Columns: I-shaped sections fabricated from structural-steel shapes; shop-welded, built-up steel plates; or C-shaped, cold-formed, structural-steel sheet.

C. Secondary Framing: Manufacturer's standard secondary framing, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Unless otherwise indicated, fabricate framing from either cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet, prepainted with coil coating, to comply with the following:

1. Purlins: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; minimum 2-1/2-inch- wide flanges.

   a. Depth: As needed to comply with system performance requirements.

2. Girts: C- or Z-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees from flange, with minimum 2-1/2-inch- wide flanges.

   a. Depth: As required to comply with system performance requirements.

3. Eave Struts: Unequal-flange, C-shaped sections; fabricated from built-up steel plates, steel sheet, or structural-steel shapes; to provide adequate backup for metal panels.
4. Flange Bracing: Minimum 2-by-2-by-1/8-inch structural-steel angles or 1-inch-) diameter, cold-formed structural tubing to stiffen primary-frame flanges.
5. Sag Bracing: Minimum 1-by-1-by-1/8-inch structural-steel angles.
6. Base or Sill Angles: Minimum 3-by-2-inch zinc-coated (galvanized) steel sheet.
7. Purlin and Girt Clips: Manufacturer's standard clips fabricated from steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
8. Secondary End-Wall Framing: Manufacturer's standard sections fabricated from structural-steel sheet.
9. Framing for Openings: Channel shapes; fabricated from cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings and head, jamb, and sill of other openings.
10. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.

D. Bracing: Provide adjustable wind bracing as follows:

1. Bracing: Provide wind bracing using rods or braced frames at manufacturer's option. Cable bracing is not allowed.

E. Bolts: Provide plain-finish bolts for structural-framing components that are primed or finish painted. Provide hot-dip galvanized bolts for structural-framing components that are galvanized.

F. Materials:

1. W-Shapes: ASTM A 992/A 992M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
2. Channels, Angles, M-Shapes, and S-Shapes: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
3. Plate and Bar: ASTM A 36/A 36M; ASTM A 572/A 572M, Grade 50 or 55; or ASTM A 529/A 529M, Grade 50 or 55.
4. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
5. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B or C, structural tubing.
6. Structural-Steel Sheet: Hot-rolled, ASTM A 1011/A 1011M, Structural Steel (SS), Grades 30 through 55, or High-Strength Low-Alloy Steel (HSLAS), Grades 45 through 70; or cold-rolled, ASTM A 1008/A 1008M, Structural Steel (SS), Grades 25 through 80, or High-Strength Low-Alloy Steel (HSLAS), Grades 45 through 70.
7. Metallic-Coated Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grades 33 through 80, or High-Strength Low-Alloy Steel (HSLAS), Grades 50 through 80; with G60 coating designation; mill phosphatized.
8. Metallic-Coated Steel Sheet Prepainted with Coil Coating: Steel sheet, metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

    a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grades 33 through 80 or High-Strength Low-Alloy Steel (HSLAS), Grades 50 through 80; with G90 coating designation.
    b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Structural Steel (SS), Grade 50 or 80; with Class AZ50 coating.

9. Non-High-Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A, carbon-steel, hex-head bolts; ASTM A 563 carbon-steel hex nuts; and ASTM F 844 plain (flat) steel washers.

    a. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

10. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563 heavy-hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

    a. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

11. High-Strength Bolts, Nuts, and Washers: ASTM A 490, Type 1, heavy-hex steel structural bolts or tension-control, bolt-nut-washer assemblies with spline ends; ASTM A 563 heavy-hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain.
12. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, heavy-hex-head steel structural bolts with spline ends.

    a. Finish: Mechanically deposited zinc coating, ASTM B 695, Class 50.

13. Headed Anchor Rods: ASTM F 1554, Grade 36 or ASTM A 307, Grade A.

    a. Configuration: Straight.
    b. Nuts: ASTM A 563 heavy-hex carbon steel.
    c. Plate Washers: ASTM A 36/A 36M carbon steel.
    d. Washers: ASTM F 436 hardened carbon steel.
    e. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

14. Threaded Rods: ASTM A 193/A 193M, ASTM A 572/A 572M, Grade 50, ASTM A 36/A 36M, or ASTM A 307, Grade A.

    a. Nuts: ASTM A 563 heavy-hex carbon steel.
    b. Washers: ASTM F 436 hardened or ASTM A 36/A 36M carbon steel.
    c. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

G. Finish: Factory primed. Apply specified primer immediately after cleaning and pretreating.

1. Apply primer to primary and secondary framing to a minimum dry film thickness of 1 mil.

    a. Prime secondary framing formed from uncoated steel sheet to a minimum dry film thickness of 0.5 mil on each side.

2. Prime galvanized members with specified primer after phosphoric acid pretreatment.
3. Primer: SSPC-Paint 15, Type I, red oxide.

2.5 METAL ROOF PANELS

A. R-Panel, Exposed-Fastener Metal Wall Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.

1. Material: Aluminum-zinc alloy-coated steel sheet, 26 gauge.

    a. Exterior Finish: Fluoropolymer, 2-coat Kynar 500.
    b. Color: Match adjacent building.

2. Major-Rib Spacing: 12 inches o.c.
3. Panel Coverage: 36 inches R Panel.
4. Panel Height: 1-1/4 inches.

B. Finishes:

1. Exposed Coil-Coated Finish:

    a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

2.6 METAL WALL PANELS

A. R-Panel, Exposed-Fastener Metal Wall Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.

1. Material: Aluminum-zinc alloy-coated steel sheet, 26 gauge.

a. Exterior Finish: Fluoropolymer, 2-coat Kynar 500.
b. Color: Match adjacent building.

2. Major-Rib Spacing: 12 inches o.c.
3. Panel Coverage: 36 inches R Panel.
4. Panel Height: 1-1/4 inches.

B. Finishes:

1. Exposed Coil-Coated Finish:

a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

2.7 SOFFIT PANELS

A. R-Panel, Exposed-Fastener Metal Soffit Panels: Formed with raised, trapezoidal major ribs and intermediate stiffening ribs symmetrically spaced between major ribs; designed to be installed by lapping side edges of adjacent panels and mechanically attaching panels to supports using exposed fasteners in side laps.

1. Material: Aluminum-zinc alloy-coated steel sheet, 26 gauge.

a. Exterior Finish: Fluoropolymer, 2-coat Kynar 500.
b. Color: Match adjacent building.
c. Major Rib Spacing: 12” o.c.

2. Panel Coverage: 36 inches, R Panel.
3. Panel Height: 1-1/4 inch.

B. Finishes:

1. Exposed Coil-Coated Finish:

    a. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

2. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

2.8 THERMAL INSULATION

A. Provide 2” vinyl encapsulated on roof and walls (R-5) with thermal blocks in all unconditioned areas.

1. Colors:

    a. White.

B. Metal Building Insulation: ASTM C 991, Type I, or NAIMA 202, glass-fiber-blanket insulation; 0.5-lb/cu. ft. density; 3-inch- wide, continuous, vapor-tight edge tabs; with a flame-spread index of 25 or less.

1. Vapor-Retarder Facing: ASTM C 1136, with permeance not greater than 0.02 perm when tested according to ASTM E 96/E 96M, Desiccant Method.

    a. Composition: White vinyl film facing in all areas, and fiberglass scrim reinforcement, and metallized-polyester film backing.

C. Retainer Strips: 0.025-inch nominal-thickness, formed, metallic-coated steel or PVC retainer clips colored to match insulation facing.

D. Vapor-Retarder Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

2.9 DOORS AND FRAMES

A. Swinging Personnel Doors and Frames: As specified in Division 08 Section "Hollow Metal Doors and Frames”.

2.10 ACCESSORIES

A. General: Provide accessories as standard with metal building system manufacturer and as specified. Fabricate and finish accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes. Comply with indicated profiles and with dimensional and structural requirements.

1. Form exposed sheet metal accessories that are without excessive oil-canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

B. Roof Panel Accessories: Provide components required for a complete metal roof panel assembly including copings, fascia, corner units, ridge closures, clips, sealants, gaskets, fillers, closure strips, and similar items. Finish shall match adjacent building.

1. Closures: Provide closures at eaves and ridges, fabricated of same material as metal roof panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
4. Thermal Spacer Blocks: Where metal panels attach directly to purlins, provide thermal spacer blocks of thickness required to provide 1-inch standoff; fabricated from extruded polystyrene.

C. Wall Panel Accessories: Provide components required for a complete metal wall panel assembly including copings, fascia, mullions, sills, corner units, clips, sealants, gaskets, fillers, closure strips, and similar items. Finish shall match adjacent wall panel.

1. Closures: Provide closures at eaves and rakes, fabricated of same material as metal wall panels.
2. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
3. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- thick, flexible closure strips; cut or premolded to match metal wall panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

D. Flashing and Trim: Formed from 0.022-inch nominal-thickness, metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finish to match adjacent wall panel.

1. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers.
2. Opening Trim: Formed from 0.022-inch nominal-thickness, metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating. Trim head and jamb of door openings, and head, jamb, and sill of other openings.

E. Gutters: Formed from 0.022-inch nominal-thickness, metallic-coated steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finish to match adjacent building fascia and rake trim. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch- long sections, sized according to SMACNA's "Architectural Sheet Metal Manual" and code for rainfall at site location.

1. Gutter Supports: Fabricated from same material and finish as gutters.

2. Strainers: Bronze, copper, or aluminum wire ball type at outlets.

F. Downspouts: Formed from 0.022-inch nominal-thickness, zinc-coated (galvanized) steel sheet or aluminum-zinc alloy-coated steel sheet prepainted with coil coating; finish to match adjacent building. Fabricate in minimum 10-foot- long sections, complete with formed elbows and offsets. Sized accordingly to code for rainfall at site location.

1. Mounting Straps: Fabricated from same material and finish as downspouts.

G. Materials:

1. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide fasteners with heads matching color of materials being fastened by means of plastic caps or factory-applied coating.

a. Fasteners for Metal Roof Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with a stainless-steel cap or zinc-aluminum-alloy head and EPDM sealing washer.
b. Fasteners for Metal Wall Panels: Self-drilling or self-tapping, zinc-plated, hex-head carbon-steel screws, with EPDM sealing washers bearing on weather side of metal panels.
c. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws with hex washer head.
d. Blind Fasteners: High-strength aluminum or stainless-steel rivets.

2. Corrosion-Resistant Coating: Cold-applied asphalt mastic, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
3. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.
4. Metal Panel Sealants:

a. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene-compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape of manufacturer's standard size.
b. Joint Sealant: ASTM C 920; one-part elastomeric polyurethane or polysulfide; of type, grade, class, and use classifications required to seal joints in metal panels and remain weathertight; and as recommended by metal building system manufacturer.

2.11 SOURCE QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to evaluate product.

B. Special Inspector: Owner will engage a qualified special inspector to perform the following tests and inspections and to submit reports. Special inspector will verify that manufacturer maintains detailed fabrication and quality-control procedures and will review the completeness and adequacy of those procedures to perform the Work.

1. Special inspections will not be required if fabrication is performed by manufacturer registered and approved by authorities having jurisdiction to perform such Work without special inspection.

    a. After fabrication, submit copy of certificate of compliance to authorities having jurisdiction, certifying that Work was performed according to Contract requirements.

C. Testing: Test and inspect shop connections for metal buildings according to the following:

1. Bolted Connections: Shop-bolted connections shall be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
2. Welded Connections: In addition to visual inspection, shop-welded connections shall be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at inspector's option.

D. Product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

2.12 FABRICATION

A. General: Design components and field connections required for erection to permit easy assembly.

1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
2. Fabricate structural framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Members shall be free of cracks, tears, and ruptures.

B. Tolerances: Comply with MBMA's "Metal Building Systems Manual" for fabrication and erection tolerances.

C. Primary Framing: Shop fabricate framing components to indicated size and section, with baseplates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly.

1. Make shop connections by welding or by using high-strength bolts.
2. Join flanges to webs of built-up members by a continuous, submerged arc-welding process.
3. Brace compression flange of primary framing with steel angles or cold-formed structural tubing between frame web and purlin web or girt web, so flange compressive strength is within allowable limits for any combination of loadings.
4. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary framing with specified primer after fabrication.

D. Secondary Framing: Shop fabricate framing components to indicated size and section by roll-forming or break-forming, with baseplates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.

1. Make shop connections by welding or by using non-high-strength bolts.
2. Shop Priming: Prepare uncoated surfaces for shop priming according to SSPC-SP 2. Shop prime uncoated secondary framing with specified primer after fabrication.

E. Metal Panels: Fabricate and finish metal panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

1. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of metal panel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Before erection proceeds, survey elevations and locations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments to receive structural framing, with erector present, for compliance with requirements and metal building system manufacturer's tolerances.

C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition.

B. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 ERECTION OF STRUCTURAL FRAMING

A. Erect metal building system according to manufacturer's written erection instructions and erection drawings.

B. Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer.

C. Set structural framing accurately in locations and to elevations indicated, according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.

D. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.
2. Tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

E. Align and adjust structural framing before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with framing. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure.

F. Primary Framing and End Walls: Erect framing level, plumb, rigid, secure, and true to line. Level baseplates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation. Moist-cure grout for not less than seven days after placement.

1. Make field connections using high-strength bolts installed according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for bolt type and joint type specified.

a. Joint Type: Snug tightened or pretensioned.

G. Secondary Framing: Erect framing level, plumb, rigid, secure, and true to line. Field bolt secondary framing to clips attached to primary framing.

1. Provide rake or gable purlins with tight-fitting closure channels and fasciae.
2. Locate and space wall girts to suit openings such as doors and windows.
3. Locate canopy framing as indicated.
4. Provide supplemental framing at entire perimeter of openings, including doors, windows, louvers, ventilators, and other penetrations of roof and walls.

H. Bracing: Install bracing in roof and sidewalls where indicated on erection drawings.

1. Tighten rod bracing to avoid sag.
2. Locate interior end-bay bracing only where indicated.

I. Framing for Openings: Provide shapes of proper design and size to reinforce openings and to carry loads and vibrations imposed, including equipment furnished under mechanical and electrical work. Securely attach to structural framing.

J. Erection Tolerances: Maintain erection tolerances of structural framing within AISC 303.

3.4 METAL PANEL INSTALLATION, GENERAL

A. Examination: Examine primary and secondary framing to verify that structural-panel support members and anchorages have been installed within alignment tolerances required by manufacturer.

1. Examine roughing-in for components and systems penetrating metal panels, to verify actual locations of penetrations relative to seams before metal panel installation.

B. General: Anchor metal panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Field cut metal panels as required for doors, windows, and other openings. Cut openings as small as possible, neatly to size required, and without damage to adjacent metal panel finishes.

a. Field cutting of metal panels by torch is not permitted unless approved in writing by manufacturer.

2. Install metal panels perpendicular to structural supports unless otherwise indicated.
3. Flash and seal metal panels with weather closures at perimeter of openings and similar elements. Fasten with self-tapping screws.
4. Locate and space fastenings in uniform vertical and horizontal alignment.
5. Locate metal panel splices over, but not attached to, structural supports with end laps in alignment.
6. Lap metal flashing over metal panels to allow moisture to run over and off the material.

C. Lap-Seam Metal Panels: Install screw fasteners using power tools with controlled torque adjusted to compress EPDM washers tightly without damage to washers, screw threads, or metal panels. Install screws in predrilled holes.

1. Arrange and nest side-lap joints so prevailing winds blow over, not into, lapped joints. Lap ribbed or fluted sheets one full rib corrugation. Apply metal panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.

D. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.

E. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated; or, if not indicated, provide types recommended by metal panel manufacturer.

1. Seal metal panel end laps with double beads of tape or sealant the full width of panel. Seal side joints where recommended by metal panel manufacturer.

3.5 METAL ROOF PANEL INSTALLATION

A. General: Provide metal roof panels of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.

1. Install ridge and hip caps as metal roof panel work proceeds.
2. Flash and seal metal roof panels with weather closures at eaves and rakes. Fasten with self-tapping screws.

B. Lap-Seam Metal Roof Panels: Fasten metal roof panels to supports with exposed fasteners at each lapped joint, at location and spacing recommended by manufacturer.

1. Provide metal-backed sealing washers under heads of exposed fasteners bearing on weather side of metal roof panels.
2. Provide sealant tape at lapped joints of metal roof panels and between panels and protruding equipment, vents, and accessories.
3. Apply a continuous ribbon of sealant tape to weather-side surface of fastenings on end laps and on side laps of nesting-type metal panels, on side laps of ribbed or fluted metal panels, and elsewhere as needed to make metal panels weatherproof to driving rains.
4. At metal panel splices, nest panels with minimum 6-inch end lap, sealed with butyl-rubber sealant and fastened together by interlocking clamping plates.

C. Metal Fascia Panels: Align bottom of metal panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws. Flash and seal metal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

D. Metal Roof Panel Installation Tolerances: Shim and align metal roof panels within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.6 METAL WALL PANEL INSTALLATION

A. General: Install metal wall panels in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to girts, extending full height of building, unless otherwise indicated. Anchor metal wall panels and other components of the Work securely in place, with provisions for thermal and structural movement.

1. Unless otherwise indicated, begin metal panel installation at corners with center of rib lined up with line of framing.
2. Shim or otherwise plumb substrates receiving metal wall panels.
3. When two rows of metal panels are required, lap panels 4 inches minimum.
4. When building height requires two rows of metal panels at gable ends, align lap of gable panels over metal wall panels at eave height.
5. Rigidly fasten base end of metal wall panels and allow eave end free movement due to thermal expansion and contraction. Predrill panels.
6. Flash and seal metal wall panels with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-tapping screws.
7. Install screw fasteners in predrilled holes.
8. Install flashing and trim as metal wall panel work proceeds.

9. Apply elastomeric sealant continuously between metal base channel (sill angle) and concrete, and elsewhere as indicated; or, if not indicated, as necessary for waterproofing.
10. Align bottom of metal wall panels and fasten with blind rivets, bolts, or self-drilling or self-tapping screws.
11. Provide weatherproof escutcheons for pipe and conduit penetrating exterior walls.

B. Metal Wall Panels: Install metal wall panels on exterior side of girts. Attach metal wall panels to supports with fasteners as recommended by manufacturer.

C. Installation Tolerances: Shim and align metal wall panels within installed tolerance of 1/4 inch in 20 feet, nonaccumulative, on level, plumb, and on location lines as indicated, and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.7 THERMAL INSULATION INSTALLATION

A. General: Install insulation concurrently with metal panel installation, in thickness indicated to cover entire surface, according to manufacturer's written instructions.

1. Set vapor-retarder-faced units with vapor retarder toward warm side of construction unless otherwise indicated. Do not obstruct ventilation spaces except for firestopping.
2. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to the surrounding construction to ensure airtight installation.
3. Install factory-laminated, vapor-retarder-faced blankets straight and true in one-piece lengths, with both sets of facing tabs sealed, to provide a complete vapor retarder.

B. Blanket Roof Insulation: Comply with the following installation method:

1. Over-Framing Installation: Extend insulation over and perpendicular to top flange of secondary framing. Hold in place by metal roof panels fastened to secondary framing.
2. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

C. Blanket Wall Insulation: Extend insulation and vapor retarder over and perpendicular to top flange of secondary framing. Hold in place by metal wall panels fastened to secondary framing.

1. Retainer Strips: Install retainer strips at each longitudinal insulation joint, straight and taut, nesting with secondary framing to hold insulation in place.

3.8 ACCESSORY INSTALLATION

A. General: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

1. Install components required for a complete metal roof panel assembly, including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
2. Install components for a complete metal wall panel assembly, including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.

3. Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with corrosion-resistant coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by manufacturer.

B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil-canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

C. Gutters: Join sections with riveted-and-soldered or lapped-and-sealed joints. Attach gutters to eave with gutter hangers spaced as required for gutter size, but not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.

D. Downspouts: Join sections with 1-1/2-inch telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.

1. Provide elbows at base of downspouts to direct water away from building.

3.9 FIELD QUALITY CONTROL

A. Special Inspections: Engage a qualified special inspector to perform the following special inspections:

1. Inspection of fabricators.
2. Steel construction.

B. Testing Agency: Engage a qualified testing agency to perform tests and inspections.

C. Tests and Inspections:

1. High-Strength, Field-Bolted Connections: Connections shall be tested and inspected during installation according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
2. Welded Connections: In addition to visual inspection, field-welded connections shall be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at inspector's option.

D. Product will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

3.10 CLEANING AND PROTECTION

A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 painting Sections.

D. Metal Panels: Remove temporary protective coverings and strippable films, if any, as metal panels are installed. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.

1. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 133419

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 00 – Bidding Requirements and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and abandoning site utilities in place.
7. Temporary erosion- and sedimentation-control measures.

B. Related Sections:

1. Section 312000 “Earth Moving” for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS

A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

D. Plant-Protection Zone: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and indicated on Drawings.

E. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle concentric with each tree with a radius 1.5 times the diameter of the drip line unless otherwise indicated.

F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or videotape.
2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.

3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

H. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Division 31 Section "Earth Moving."

1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Locate and clearly identify trees, shrubs, and other vegetation to remain. Flag each tree trunk at 54 inches above the ground.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. General: Protect trees and plants remaining on-site according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Architect.

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

C. Excavate for and remove underground utilities indicated to be removed.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.
3. Use only hand methods for grubbing within protection zones.
4. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including clay lumps, gravel, and other objects more than 2 inches in diameter; trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to 72 inches.
2. Do not stockpile topsoil within protection zones.
3. Dispose of surplus topsoil. Surplus topsoil is that which exceeds quantity indicated to be stockpiled or reused.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Remove surplus soil material and unsuitable topsoil to a location designated by Owner on Owner’s property.

END OF SECTION 311000

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Excavating and filling for rough grading the Site.
2. Preparing subgrades for slabs-on-grade, walks, pavements, turf and grasses.
3. Excavating and backfilling for buildings and structures.
4. Subbase course for concrete walks and pavements.
5. Subbase course and base course for asphalt paving.
6. Subsurface drainage backfill for walls and trenches.
7. Excavating and backfilling trenches for utilities and pits for buried utility structures.
8. Excavating well hole to accommodate elevator-cylinder assembly.

B. Related Requirements:

1. Section 311000 "Site Clearing" for site stripping, grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
2. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for unit prices.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.

F. Fill: Soil materials used to raise existing grades.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

H. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

I. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.

J. Utilities: On-site underground pipes, conduits, ducts, and cables as well as underground services within buildings.

1.4 SUBMITTALS

A. Product Data: For each type of the following manufactured products required:

1. Controlled low-strength material, including design mixture.
2. Warning tapes.

B. Samples for Verification: For the following products, in sizes indicated below:

1. Warning Tape: 12 inches long; of each color.

C. Qualification Data: For qualified testing agency.

D. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:

1. Classification according to ASTM D2487.
2. Laboratory compaction curve according to ASTM D698 and ASTM D1557.

E. Pre-excavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.5 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E329 and ASTM D3740 for testing indicated.

1.6 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.

C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 015000 "Temporary Facilities and Controls" and Section 311000 "Site Clearing" are in place.

D. Do not commence earth-moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.

E. The following practices are prohibited within protection zones:

1. Storage of construction materials, debris, or excavated material.
2. Parking vehicles or equipment.
3. Foot traffic.
4. Erection of sheds or structures.
5. Impoundment of water.
6. Excavation or other digging unless otherwise indicated.
7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

F. Do not direct vehicle or equipment exhaust towards protection zones.

G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

1. Liquid Limit: 95% plus or minus 2%.
2. Plasticity Index: 7 to 18.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.

F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.

G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D2940/D2940M; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.

H. Sand: ASTM C33/C33M; fine aggregate.

2.2 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

1. Red: Electric.
2. Yellow: Gas, oil, steam, and dangerous materials.
3. Orange: Telephone and other communications.
4. Blue: Water systems.
5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth-moving operations.

B. Protect and maintain erosion and sedimentation controls during earth-moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.
2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:

a. 24 inches outside of concrete forms other than at footings.
b. 12 inches outside of concrete forms at footings.
c. 6 inches outside of minimum required dimensions of concrete cast against grade.
d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
e. 6 inches beneath bottom of concrete slabs-on-grade.
f. 6 inches beneath pipe in trenches and the greater of 24 inches wider than pipe or 42 inches wide.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand or with an air spade to indicated lines, cross sections, elevations, and subgrades. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.4 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.5 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms:

1. Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

a. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
b. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
c. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
d. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

2. Excavate trenches 4 inches deeper than bottom of pipe and conduit elevations to allow for bedding course. Hand-excavate deeper for bells of pipe.

    a. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.6 SUBGRADE INSPECTION

A. Notify Architect when excavations have reached required subgrade.

B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Proof-roll subgrade below the building slabs and pavements with a pneumatic-tired and loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.7 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Architect.

3.8 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.9 BACKFILL (REFER TO SOILS REPORT)

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for Record Documents.
3. Testing and inspecting underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring, bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Trenches under Footings: Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

D. Trenches under Roadways: Provide 4-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase course. Concrete is specified in Section 033000 "Cast-in-Place Concrete."

E. Backfill voids with satisfactory soil while removing shoring and bracing.

F. Initial Backfill:

1. Soil Backfill: Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.

a. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

G. Final Backfill:

1. Soil Backfill: Place and compact final backfill of satisfactory soil to final subgrade elevation.

H. Warning Tape: Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.11 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Under footings and foundations, use engineered fill.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS (REFER TO SOILS REPORT)

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment and not more than 4 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations and uniformly along the full length of each structure.

C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D698 and ASTM D1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.

2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.14 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus 1 inch.
2. Walks: Plus or minus 1 inch.
3. Pavements: Plus or minus 1/2 inch.

C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.15 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.

B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:

1. Place base course material over subbase course under hot-mix asphalt pavement.
2. Shape subbase course and base course to required crown elevations and cross-slope grades.
3. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
4. Place subbase course and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
5. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D698 and ASTM D1557.

C. Pavement Shoulders: Place shoulders along edges of subbase course and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and

compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D698 and ASTM D1557.

3.16 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
2. Determine that fill material classification and maximum lift thickness comply with requirements.
3. Determine, during placement and compaction, that in-place density of compacted fill complies with requirements.

B. Testing Agency: Owner will engage a qualified geotechnical engineering testing agency to perform tests and inspections. Testing and inspections shall be coordinated by the General Contractor.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.

E. Testing agency will test compaction of soils in place according to ASTM D1556, ASTM D2167, ASTM D2937, and ASTM D6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved area or building slab but in no case fewer than three tests.
2. Foundation Wall Backfill: At each compacted backfill layer, at least one test for every 100 feet or less of wall length but no fewer than two tests.
3. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.

F. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 312000

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 00 – Bidding Requirements and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Soil treatment with termiticide.

B. Related Sections:

1. Section 033000 "Cast-in Place Concrete" for concrete slab.
2. Section 061000 "Rough Carpentry" for wood preservative treatment by pressure process.

1.3 SUBMITTALS

A. Product Data: For each type of termite control product.

1. Include the EPA-Registered Label for termiticide products.

B. Qualification Data: For qualified Installer.

C. Product Certificates: For termite control products, from manufacturer.

D. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's records and include the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Termiticide brand name and manufacturer.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes used, and rates of application.
6. Areas of application.
7. Water source for application.

E. Warranties: Sample of special warranties.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located, and who employs workers trained and approved by manufacturer to install manufacturer's products.

B. Regulatory Requirements: Formulate and apply termiticides and termiticide devices according to the EPA-Registered Label.

C. Source Limitations: Obtain termite control products from single source.

D. Preinstallation Conference: Conduct conference at Project site.

1.5 PROJECT CONDITIONS

A. Environmental Limitations: To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with requirements of the EPA-Registered Label and requirements of authorities having jurisdiction.

B. Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground-supported slabs before construction.

C. Install polymer barrier fittings with termiticide around utility penetrations prior to pouring concrete and after installation and inspection of plumbing and electrical pipes and conduits, slab vapor barrier, and concrete slab reinforcement.

1.6 WARRANTY

A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Five years from date of Substantial Completion.

B. Polymer Barrier Fittings with Termiticide Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work, consisting of installation of polymer barrier fittings with termiticide, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat and repair or replace damage caused by termite infestation.

1. Warranty Period: Five years from date of Substantial Completion.

1.7 MAINTENANCE SERVICE

A. Continuing Service: Beginning at Substantial Completion, provide 12 months' continuing service including monitoring, inspection, and re-treatment for occurrences of termite activity. Provide a standard continuing service agreement. State services, obligations, conditions, terms for agreement period, and terms for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: Provide an EPA-Registered termiticide, complying with requirements of authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to product's EPA-Registered Label.

1. Products: Subject to compliance with requirements, provide one of the following:

a. BASF Corporation, Agricultural Products; Termidor.
b. Bayer Environmental Science; Premise 75.
c. Ensystex, Inc..
d. Syngenta; Demon TC.

2. Service Life of Treatment: Soil treatment termiticide that is effective for not less than five years against infestation of subterranean termites.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of soil per termiticide label requirements, interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting performance of termite control.

B. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparation before beginning application of termite control treatment. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.

1. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil, including soil along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Crawlspaces: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platform and porches are on fill or ground.
4. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

B. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.

C. Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground-supported slabs are installed. Use waterproof barrier according to EPA-Registered Label instructions.

D. Post warning signs in areas of application.

E. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 313116

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Division 00 – Bidding Requirements and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:

1. Driveways.
2. Roadways.
3. Parking lots.
4. Curbs and gutters.
5. Walks.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.

B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.4 SUBMITTALS

A. Product Data: For each type of manufactured material and product indicated.

B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

C. Qualification Data: For manufacturer.

D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials.

E. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:

1. Cementitious materials.
2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Bonding agent or epoxy adhesive.
6. Joint fillers.

F. Field quality-control test reports.

1.5 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94/C94M requirements for production facilities and equipment.

1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

B. Testing Agency Qualifications: Qualified according to ASTM C1077 and ASTM E329 for testing indicated.

1. Personnel conducting field tests must be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

1.6 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.7 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.2 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curves with a radius 100 feet or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.

B. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.

C. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.

D. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete.

2.4 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:

1. Portland Cement: ASTM C 150, Type I, gray.

a. Fly Ash: ASTM C 618, can make up 20-25% by volume of the specified cement.

B. Normal-Weight Aggregates: ASTM C 33, Class 4M coarse aggregate, uniformly graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar pavement applications and service conditions using similar aggregates and cementitious materials.

1. Maximum Coarse-Aggregate Size: 1 inch nominal.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

C. Water: Potable and complying with ASTM C 94/C 94M.

D. Air-Entraining Admixture: ASTM C 260.

E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.

1. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

2.5 CURING MATERIALS

A. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

B. Water: Potable.

2.6 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.

2.7 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.

1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.

B. Proportion mixtures to provide normal-weight concrete with the following properties:

1. Compressive Strength (28 Days): 3000 psi.
2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.50.
3. Slump Limit: 4 inches, plus or minus 1 inch.

C. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.

D. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.

1. Fly Ash or Pozzolan: 25 percent.

2.8 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.

B. Proof-roll prepared subbase surface below concrete pavements with proof roller to identify soft pockets and areas of excess yielding.

1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
2. Proof-roll with a 15 ton proof roller.
3. Subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch require correction according to requirements in Section 312000 "Earth Moving."

C. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.

B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

3.5 JOINTS

A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.

1. Continue steel reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.
2. Provide tie bars at sides of pavement strips where indicated.
3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
4. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 30 feet, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness.

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.

D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.

E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.

F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.

G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.

H. Screed pavement surfaces with a straightedge and strike off.

I. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

J. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements.

Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.

K. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.

3.7 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3.9 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.

2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.

B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain at least 1 composite sample for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.

    a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.
4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.

    a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.

C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.

D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days,

concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.

F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.

G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.

H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

I. Prepare test and inspection reports.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.

B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Hydroseeding.
2. Sodding.

B. Related Requirements:

1. Section 312000 “Earth Moving” for final grading.

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the National Association of Landscape Professionals or AmericanHort.
2. Experience: Three years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
4. Personnel Certifications: Installer's personnel assigned to the Work shall have certification in one of the following categories from the National Association of Landscape Professionals:

    a. Landscape Industry Certified Technician - Exterior.
    b. Landscape Industry Certified Lawn Care Manager.
    c. Landscape Industry Certified Lawn Care Technician.

5. Pesticide Applicator: State licensed, commercial.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" sections in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod within 24 hours of harvesting and in time for planting promptly. Protect sod from breakage and drying.

C. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.

2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.8 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:

1. Quality, State Certified: State-certified seed of grass species as listed below for solar exposure.
2. Full Sun, Warm-Season Grass: Bermudagrass (Cynodon dactylon) for hydroseeding.

2.2 TURFGRASS SOD

A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted.

B. Turfgrass Species, Warm-Season Grass: St. Augustinegrass (Stenotaphrum secundatum).

C. Provide turfgrass sod to extend a minimum of 20’ from building and concrete paving, or as indicated on the Drawings. (Refer to Drawings for final layout.)

2.3 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition:

    a. 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
    b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition:

    a. 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
    b. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.4 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. Placing Planting Soil: Place and mix planting soil in place over exposed subgrade.

1. Reduce elevation of planting soil to allow for soil thickness of sod.

B. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

C. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 HYDROSEEDING

A. Hydroseeding: Mix specified seed, commercial fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
2. Spray-apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
3. Hydroseeding shall extend to all disturbed areas of soil beyond the limitation of sodding.

3.5 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.

1. Lay sod across slopes exceeding 1:3.

2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.6 TURF RENOVATION

A. Renovate existing turf where indicated.

B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
2. Install new planting soil as required.

C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.

D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

E. Mow, dethatch, core aerate, and rake existing turf.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

I. Apply soil amendments and initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.

J. Apply sod as required for new turf.

K. Water newly planted areas and keep moist until new turf is established.

3.7 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
2. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

1. Mow St. Augustinegrass to a height of 2 to 3 inches.

D. Turf Postfertilization: Apply commercial fertilizer or slow-release fertilizer after initial mowing and when grass is dry.

1. Use fertilizer that provides actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

3.9 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

D. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 329200

Angleton Fire Station #3 Addition

2743 N. Velasco St.
Angleton, TX 77515

Architect
Integrated Architecture & Design, LLC
107 West Way, Suite 16
Lake Jackson, TX 77566
979.297.1411 p. / 979.297.1418 f.

SCHEMATIC DESIGN	05/02/23
95% CD OWNER REVIEW SET	06/02/23

Civil
Baker & Lawson, Inc.
4005 Technology Dr.
Angleton, TX 77515
979.849.6681 p.

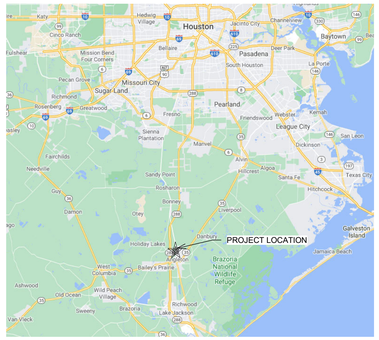
Structural
CJG Engineers
3200 Wilcrest Dr., Suite 305
Houston, TX 77042
713.780.3345 p.

Mechanical,Electrical, & Plumbing
DVO an Urban-Gro Company
825 Town and Country Lane, Suite 1150
Houston, TX 77024
281.293.7500 p.

AC	AIR CONDITION(ING)
ACT	ACOUSTICAL CEILING TILE
ACOUST	ACOUSTICAL
ADJ	ADJUSTABLE
AES	ABOVE EXISTING SLAB
AFF	ABOVE FINISH FLOOR
ALUM	ALUMINUM
A/V	AUDIO/VISUAL
BD	BOARD
BLK	BLACK
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
CAB	CABINET
CF/CI	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED
CG	CORNER GUARD
CJ	CONTROL JOINT
CL	CENTER LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
DBL	DOUBLE
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ELECT	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSED
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FIN	FINISH
FIXT	FIXTURE
FLR	FLOOR
FLUOR	FLUORESCENT
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GD	GRADE
GL	GLASS
GMS	GALVANIZED METAL STUD
GWB	GYPSUM WALLBOARD
GYP BD	GYPSUM BOARD
INT.	INTERIOR
HC	HANDICAPPED
HM	HOLLOW METAL
HD	HAND
HORIZ	HORIZONTAL
HT	HEIGHT
HR	HOUR
HWARE	HARDWARE
INSUL	INSULATION
JT	JOINT
LAM	LAMINATE
LAV	LAVATORY
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LT	LIGHT
MANUF/MFR	MANUFACTURER
MAT	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MILL WK	MILLWORK
MIN	MINIMUM
M.O.	MASONRY OPENING
MTD	MOUNTED
MTL	METAL
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
N.T.S.	NOT TO SCALE
OC	ON CENTER
OF/CI	OWNER FURNISHED/ CONTRACTOR INSTALLED
OF/OI	OWNER FURNISHED/ OWNER INSTALLED
OH	OPPOSITE HAND
OPP	OPPOSITE
PCT	PORCELAIN CERAMIC TILE
PCS	PIECES
PLAM	PLASTIC LAMINATE
PLAS	PLASTIC
PLYWD	PLYWOOD
POL	POLISH(ED)
PT	PRESSURE TREATED
PTD	PAINTED
IL	PLATE
QT	QUARRY TILE
R/RAD	RADIUS(ED)
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF/RE:	REFER TO
REINF	REINFORCING/REINFORCED
REQ'D.	REQUIRED
RET	RETARDANT
RM	ROOM
R.O.	ROUGH OPENING
S.B.O.	SUPPLIED BY OWNER
SHT	SHEET
SIM	SIMILAR
SJ	SCORED JOINT
SLT	SEALANT
SPEC'D.	SPECIFIED
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
TB	TACKBOARD
TEMP	TEMPORARY/TEMPERED
THR	THRESHOLD
TS	TUBE STEEL COLUMN
TYP	TYPICAL
UNEQ	UNEQUAL
UNO	UNLESS NOTED OTHERWISE
V.I.F.	VERIFY IN FIELD
VAR	VARIES
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VTR	VENT THRU ROOF
W	WIDE
W/	WITH
WC	WATER CLOSET
WD	WOOD
WDW	WINDOW
WMB	WHITE MARKER BOARD
WP	WEATHER PROOFING
WT	WEIGHT
WWF	WELDED WIRE FABRIC

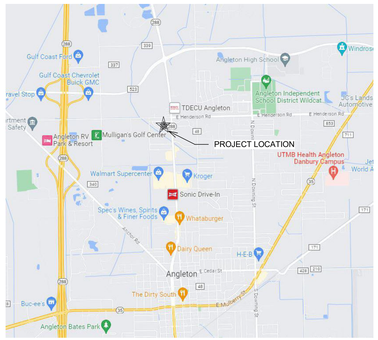
6 ABBREVIATIONS

N.T.S.



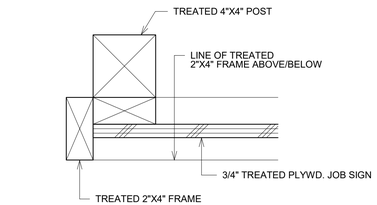
3 REGIONAL MAP

BRAZORIA COUNTY, TEXAS



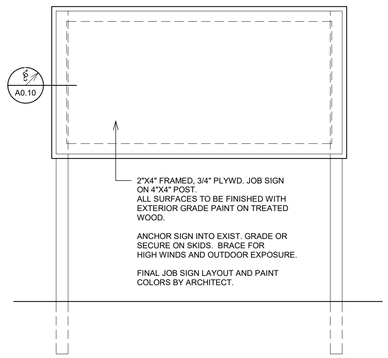
2 PROJECT LOCATION

ANGLETON, TEXAS



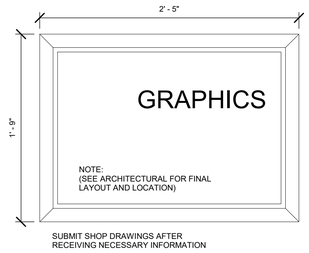
5 JOB SIGN DETAIL

3" = 1'-0"



4 JOB SIGN

1/2" = 1'-0"



1 ID PLAQUE

1 1/2" = 1'-0"

PROJECT ADDRESS

2743 N. VELASCO ST
ANGLETON, TEXAS 77515

BUILDING CODE

2018 INTERNATIONAL BUILDING CODE - TEXAS AMENDMENTS
2018 MECHANICAL CODE
2017 NATIONAL ELECTRICAL CODE
2018 FIRE CODE
2018 PLUMBING CODE
2018 LIFE SAFETY CODE
2015 ENERGY CONSERVATION CODE
ALL COUNTY ADOPTED ORDINANCES AND CODES
AMERICAN WITH DISABILITIES ACT
2012 TEXAS ACCESSIBILITY STANDARDS

OCCUPANCY USE

STORAGE GROUP S1

CONSTRUCTION TYPE

TYPE II - B (NON-SPRINKLED)

ZONING USE

N/A

PROJECT SCOPE

ENGINE BAYS 3,240 TOTAL SQUARE FEET

SUMMARY OF WORK

NEW PRE-ENGINEERED METAL BUILDING 3 ENGINE BAYS AND STORAGE.

CODE INFORMATION

N.T.S.

	COVER SHEET
A0.10	GENERAL INFORMATION
A0.11	ADA STANDARDS
A0.12	LIFE SAFETY PLAN
	CIVIL
C0.00	TITLE SHEET
C1.00	EXISTING CONDITIONS AND DEMOLITION
C2.00	LOT GRADING PLAN
C3.00	DRAINAGE AREA MAP
C4.00	UTILITY LAYOUT
C5.00	LANDSCAPE AND SITE PLAN
C6.00	DIMENSION CONTROL PLAN
C7.00	SWPPP LAYOUT
C7.01	SWPPP NARRATIVE
C8.00	HYDROLOGIC CALCULATIONS
C9.00	CONSTRUCTION DETAILS: PAVEMENT (1 OF 2)
C9.01	CONSTRUCTION DETAILS: SANITARY SEWER & WATERLINE
C9.02	CONSTRUCTION DETAILS: STORM SEWER
	ARCHITECTURAL
A1.00	SITE PLAN
A2.00	GROUND FLOOR PLAN
A2.20	GROUND FLOOR REFLECTED CEILING PLAN
A2.30	ROOF PLAN
A3.00	ELEVATIONS
A3.01	ELEVATIONS
A4.00	BUILDING SECTIONS
A5.00	WALL SECTIONS
A6.00	FINISH & DOOR SCHEDULES, FINISH LEGEND, DOOR & FRAME TYPES
	STRUCTURAL
S0.00	GENERAL NOTES
S0.01	GENERAL NOTES
S0.02	GENERAL NOTES
S1.01	FOUNDATION PLAN
S2.01	FOUNDATION DETAILS
S2.02	FOUNDATION DETAILS
	MECHANICAL, ELECTRICAL & PLUMBING
M0.00	MECHANICAL SYMBOLS AND ABBREVIATIONS
M0.01	MECHANICAL SPECIFICATIONS
M2.00	MECHANICAL FLOOR PLAN
M7.00	MECHANICAL SCHEDULES
E0.00	ELECTRICAL SYMBOLS AND ABBREVIATIONS
E0.01	ELECTRICAL SPECIFICATIONS
E1.00	ELECTRICAL SITE PLAN
E2.00	POWER FLOOR PLAN
E2.20	LIGHTING CEILING PLAN
E6.00	ELECTRICAL ONE-LINE AND DETAILS
E7.00	ELECTRICAL SCHEDULES
P0.00	PLUMBING SYMBOLS AND ABBREVIATIONS
P0.01	PLUMBING SPECIFICATIONS
P2.00	PLUMBING UNDERFLOOR PLAN
P2.01	PLUMBING FLOOR PLAN
P6.00	PLUMBING DETAILS AND ISOMETRICS
P7.00	PLUMBING SCHEDULES

INDEX OF DRAWINGS

N.T.S.

ANGLETON
Where the Heart is

Angleton Fire Station #3 Addition

2743 N. Velasco St.
Angleton, Texas 77515

iAD ARCHITECTS

Integrated Architecture & Design, LLC
107 West Way, Suite 16
Lake Jackson, Texas 77566
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www.iadarchitects.com

PROJECT CONSULTANTS

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Structural
CJG Engineers
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Houston, TX 77042
713.780.3345 p.
Mechanical,Electrical, & Plumbing
DVO an Urban-Gro Company
825 Town & Country Lane, Suite 1150
Houston, TX 77024
281.293.7500 p.

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

	06/02/23	95 % OWNER REVIEW SET

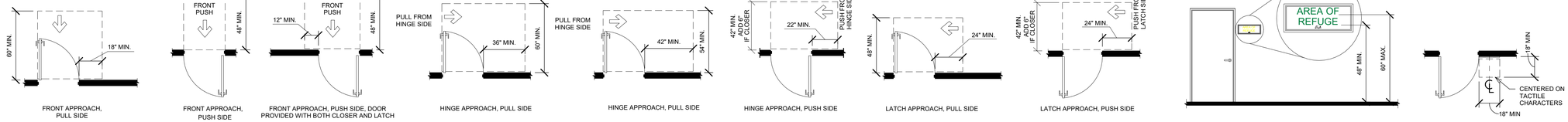
REVISION LOG

GENERAL INFORMATION

A0.10

SCALE: AS NOTED

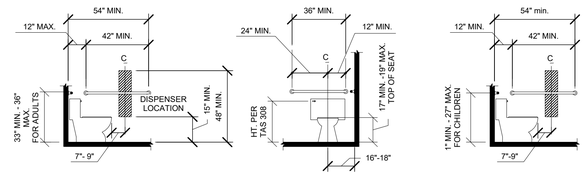
9/5/2023 8:40:44 AM



6 2012 T.A.S. 404

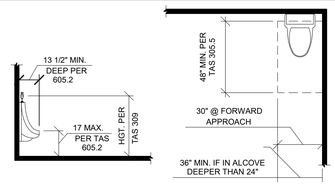
1/4" = 1'-0"

NOTE:
REFER TO THE TEXAS ACCESSIBILITY STANDARDS, SECTION 404 FOR ADDITIONAL INFORMATION ON DOORS, DOORWAYS AND GATES



4 2012 T.A.S. 604

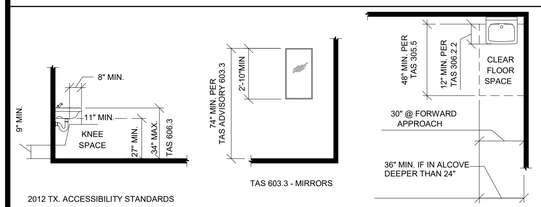
1/4" = 1'-0"



212 TX. ACCESSIBILITY STANDARDS (TAS): 605-URINALS

5 2012 T.A.S. 605

1/4" = 1'-0"



3 2012 T.A.S. 606

1/4" = 1'-0"

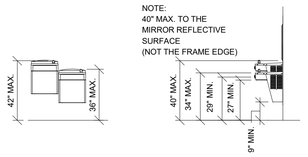
ACCESSIBILITY GENERAL NOTES:

1. THE FOLLOWING ILLUSTRATIONS DEPICT SEVERAL OF THE MOST COMMON ELEMENTS OF THE 2012 TEXAS ACCESSIBILITY STANDARDS, AND ARE PROVIDED FOR QUICK REFERENCE ONLY. EACH ILLUSTRATION MAY NOT CONTAIN ALL THE NECESSARY INFORMATION FOR EACH SECTION DEPICTED OR MAY REFERENCE SPECIFIC SUBSECTION FOR FURTHER EXPLANATION.

2. IT IS RECOMMENDED THAT THE GENERAL CONTRACTOR KEEP A COPY OF THE 2012 TEXAS ACCESSIBILITY STANDARDS AT THE JOB SITE (OR IN A READILY ACCESSIBLE LOCATION) FOR THE USE BY ALL PARTIES INVOLVED IN THE CONSTRUCTION PROCESS.

3. A COPY OF THE T.A.S. CAN BE PURCHASED , OR DOWNLOADED EITHER BY INDIVIDUAL SECTION OR IN IT'S ENTIRETY IN A FORMAT FROM THE WEBSITE ADDRESS BELOW.

4. SHOULD QUESTIONS ARISE.
http://www.license.state.tx.us/ab/abtas/htm



2 TAS DRINK FOUNTAIN CLEARANCES

1/4' = 1'-0"

GENERAL NOTES

1. MINIMUM CLEAR WIDTH OF ACCESSIBLE ROUTE TO BE 36".
2. RUNNING SLOPE SHALL NOT EXCEED 1:20. (CROSS SLOPE SHALL NOT EXCEED 1:48).
3. 1/4" TO 1/2" CHANGES IN LEVEL REQUIRE EDGE TO BE BEVELED WITH A SLOPE NO GREATER THAN 1:2.
4. THE HIGHEST OPERABLE PART OF CONTROLS, DISPENSERS, RECEPTACLES AND OTHER OPERABLE EQUIPMENT SHALL BE PLACED NO HIGHER THAN 48" AND NO LOWER THAN 15" ABOVE FINISHED FLOOR. THESE REQUIREMENTS SHALL APPLY TO CONTROLS AND OPERATING MECHANISMS WHICH ARE EXPECTED TO BE OPERATED BY OCCUPANTS, VISITORS, OR OTHER USERS OF A BUILDING OF FACILITY AND MAY INCLUDE, BUT ARE NOT LIMITED TO, THERMOSTATS, LIGHT SWITCHES, ALARM ACTIVATING DEVICES, VENTILATORS AND ELECTRICAL OUTLETS.
5. PROVIDE SOLID BLOCKING AT ALL WALL MOUNTED ACCESSORIES AND/OR EQUIPMENT.

RAMPS

1. MAXIMUM SLOPE SHALL BE 1:12.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
3. MAXIMUM SLOPE OF ADJACENT SURFACES SHALL BE 1:20.
4. MINIMUM CLEAR WIDTH SHALL BE 36"
5. HANDRAILS ARE REQUIRED IF RISE IS GREATER THAN 6" OR RUN EXCEEDS 72".
6. WHEN REQUIRED, HANDRAILS SHALL BE PROVIDED ON BOTH SIDES OF RAMPS.
7. INSIDE RAIL ON SWITCH BACK OR DOGLEG RAMPS SHALL BE CONTINUOUS.
8. WHERE HANDRAILS ARE NOT CONTINUOUS, RAILS SHALL EXTEND AT LEAST 12" BEYOND THE TOP AND BOTTOM EDGES OF RAMP AND EXTEND PARALLEL TO THE GROUND SURFACE.
9. HEIGHT OF HANDRAILS SHALL BE BETWEEN 34"-38". (TYP. AT 35" A.F.F.)
10. CLEAR FLOOR SPACE BETWEEN RAILS AND ANY WALL SHALL BE 1-1/2".
11. GRIPPING SURFACES SHALL BE UNINTERRUPTED BY NEWEL POST, OTHER CONSTRUCTION ELEMENTS OR OBSTRUCTIONS FOR 20% OF LENGTH.
12. HANDRAIL ENDS SHALL BE ROUNDED, OR RETURNED SMOOTHLY TO FLOOR, WALL OR POST.
13. HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.
14. DIAMETER OR WIDTH OF GRIPPING SURFACES SHALL BE 1-1/4" TO 2" FOR CIRCULAR CROSS SECTION, OR SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE TO ROUTE OF TRAVEL. NON-CIRCULAR CROSS SECTIONS SHALL HAVE A PERIMETER OF 4"MINIMUM AND 6-1/4" MAXIMUM, AND A MAXIMUM CROSS SECTION DIMENSION OF 2-1/4".
15. ALL REQUIRED CURB RAMPS SHALL BE PAINTED A CONTRASTING COLOR TO ANY ADJACENT FINISH.
16. SIDES OF REQUIRED CURB RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1:10.

STAIRS

1. ALL STEPS ON ALL FLIGHTS OF STAIRS SHALL HAVE UNIFORM RISER HEIGHTS AND TREAD DEPTHS. MINIMUM TREAD DEPTH SHALL BE 11" MEASURED FROM RISER TO RISER.
2. UNDERSIDE OF NOSINGS SHALL NOT BE ABRUPT. RADIUS OF CURVATURE AT LEADING TREAD EDGE SHALL NOT EXCEED 1/2". RISERS SHALL BE PERMITTED TO SLOPE UNDER THE TREAD AT AN ANGLE OF 30 DEGREES MAXIMUM FROM VERTICAL.
3. HANDRAILS ARE REQUIRED AT BOTH SIDES OF ALL STAIRS.
4. INSIDE RAIL ON SWITCH BACK OR DOGLEG STAIRS SHALL BE CONTINUOUS.
5. WHERE NOT CONTINUOUS, HANDRAIL EXTENSIONS SHALL BE PROVIDED AS FOLLOWS: TOP OF STAIR FLIGHTS - PARALLEL TO FLOOR 12" MINIMUM BEYOND THE TOP RISER NOSING. BOTTOM OF STAIR FLIGHT - CONTINUE SLOPING FOR ONE TREAD WIDTH BEYOND BOTTOM RISER, PARALLEL TO FLOOR.
6. HANDRAIL HEIGHT SHALL BE BETWEEN 34"-38". (TYP. AT 35") MEASURED FROM STAIR NOISING.
7. CLEAR FLOOR SPACE BETWEEN RAIL AND ANY WALL SHALL BE 1-1/2".
8. GRIPPING SURFACES SHALL BE UNINTERRUPTED BY NEWEL POST, OTHER CONSTRUCTION ELEMENTS OR OBSTRUCTIONS FOR MORE THAN 20% OF LENGTH.
9. HANDRAIL ENDS SHALL BE ROUNDED, OR RETURNED SMOOTHLY TO FLOOR, WALL OR POST.
10. HANDRAILS SHALL NOT ROTATE IN THEIR FITTINGS.
11. DIAMETER OR WIDTH OF GRIPPING SURFACES SHALL BE 1-1/4" TO 2", OR SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE TO ROUTE OF TRAVEL.
12. RISERS SHALL BE A MINIMUM OF 4" AND A MAXIMUM 7" HIGH.

DOORS - REFER TO DIAGRAMS THIS SHEET

1. DOORWAYS SHALL PROVIDE A CLEAR OPENING OF 32" MINIMUM WITH THE DOOR OPENED AT 90 DEGREES.
2. OPENINGS MORE THAN 24" IN DEPTH SHALL PROVIDE A CLEAR OPENING OF 36" MINIMUM.
3. MAXIMUM THRESHOLD HEIGHT SHALL BE 1/2".
4. DOOR HARDWARE - HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERATING DEVICES SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, TIGHT PINCHING OR TWISTING OF THE WRIST TO OPERATE.
5. LEVER-OPERATED MECHANISMS, PUSH-TYPE MECHANISMS, AND U-SHAPED HANDLES ARE ACCEPTABLE DESIGNS.
6. HARDWARE REQUIRED FOR PASSAGE SHALL BE MOUNTED NO HIGHER THAN 48" ABOVE FINISHED FLOOR.
7. DOOR CLOSER - IF A DOOR HAS A CLOSER, THEN THE SWEEP PERIOD OF THE CLOSER SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES. THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12 DEGREES FROM LATCH IS 5 SECONDS MINIMUM.
8. DOOR OPENING FORCE - THE MAXIMUM FORCE FOR PUSHING OR PULLING OPEN A DOOR SHALL BE AS FOLLOWS: A.) EXTERIOR HINGED DOORS: 8 LBS. B.) INTERIOR HINGED DOORS: 5 LBS. C.) SLIDING OR FOLDING DOORS: 5 LBS.
9. AUTOMATIC DOORS AND POWER ASSISTED DOORS - IF AN AUTOMATIC DOOR IS USED, THEN IT SHALL COMPLY WITH ANSI/BHMAA 156.10-1985. SLOWLY OPENING, LOW POWERED, AUTOMATIC DOORS SHALL COMPLY WITH ANSI 156.19.1884. SUCH DOORS SHALL NOT OPEN BACK FASTER THAN 3 SECONDS AND SHALL REQUIRE NOT MORE THAN 15 LBS TO STOP DOOR MOVEMENT. IF A POWER ASSISTED DOOR IS USED, ITS DOOR OPENING FORCE SHALL COMPLY WITH FORCES LISTED ABOVE AND ITS CLOSING FORCE SHALL COMPLY WITH ANSI 156.19.1884.

WATER CLOSETS

1. WATER CLOSETS SHALL BE LOCATED 16" TO 18" TO THE CENTER LINE FROM A SIDE WALL OR PARTITION.
2. THE HEIGHT TO THE TOP OF THE TOILET SEAT SHALL BE 15" TO 19".
3. FOR WATER CLOSETS NOT LOCATED IN TOILET STALLS, THE FOLLOWING GRAB BARS SHALL BE PROVIDED AT A HEIGHT OF 33" TO 36" A.F.F. 1.) SIDE WALL: 42" LONG MINIMUM, 12" FROM BACK WALL. 2.) BACK WALL: 36" LONG MINIMUM, 12" MINIMUM AT EACH SIDE OF WATER CLOSET CENTER LINE.
4. FLUSH CONTROLS SHALL BE 36" MAXIMUM A.F.F. CONTROLS FOR FLUSH VALVES SHALL BE MOUNTED ON THE OPEN AREA SIDE OF THE COMPARTMENT.
5. TOILET PAPER DISPENSERS SHALL BE INSTALLED ON THE SIDE WALL, BELOW THE GRAB BAR, 7" TO 9" ON CENTER BEYOND THE FRONT LEADING EDGE OF WATER CLOSET.

URINALS

1. URINALS SHALL BE WALL HUNG WITH AN ELONGATED RIM 17" MAXIMUM A.F.F.
2. FLUSH CONTROLS SHALL BE A MAXIMUM OF 36" A.F.F.

LAVATORIES AND MIRRORS

1. LAVATORIES SHALL EXTEND A MINIMUM OF 17" FROM THE WALL.
2. CLEARANCE OF 29" MINIMUM AND 36" MAXIMUM SHALL BE PROVIDED FROM FINISH FLOOR TO BOTTOM OF APRON.
3. KNEE CLEARANCE OF 27" MINIMUM SHALL EXTEND 8" MINIMUM UNDER THE EDGE OF THE LAVATORY.
4. TOE CLEARANCE OF 9" MINIMUM SHALL BE PROVIDED FOR THE FULL DEPTH OF THE LAVATORY.
5. HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT.
6. MIRRORS SHALL BE MOUNTED WITH THE BOTTOM EDGE OF THE REFLECTING SURFACE A MAXIMUM OF 40" A.F.F. AND THE TOP EDGE AT A MAXIMUM OF 74" A.F.F.
7. MEDICINE CABINETS, WHEN SPECIFIED, SHALL BE INSTALLED WITH AT LEAST ONE USEABLE SHELF MOUNTED NO HIGHER THAN 48" A.F.F.

GRAB BARS

1. DIAMETER OR WITH OF GRIPPING SURFACE SHALL BE 1-1/4" TO 2" MAXIMUM OR THE SHAPE SHALL PROVIDE AN EQUIVALENT GRIPPING SURFACE.
2. THE SPACE BETWEEN GRAB BARS AND ADJACENT WALLS SHALL BE 1-1/2".
3. GRAB BARS SHALL NOT ROTATE WITHIN THEIR FITTINGS.
4. GRAB BARS AND ADJACENT WALL SURFACES SHALL BE FREE OF SHARP OR ABRASIVE SURFACES.
5. EDGES SHALL HAVE A RADIUS OF 1/8" MINIMUM.
6. GRAB BARS SHALL BE DESIGNED TO RESIST A SINGLE CONCENTRATED LOAD OF 250 LBS. APPLIED ON ANY DIRECTION.

SINKS

1. KNEE CLEARANCE OF 27" HIGH MINIMUM, 30" WIDE MINIMUM AND 11" DEEP MINIMUM SHALL BE PROVIDED UNDER SINKS.
2. HOT WATER AND DRAIN PIPES UNDER SINKS SHALL BE INSULATED OR OTHERWISE CONFIGURED TO PROTECT AGAINST CONTACT.

SIGNAGE

1. SIGNS WHICH DESIGNATE PERMANENT ROOMS AND SPACES SHALL COMPLY WITH THE REQUIREMENTS LISTED BELOW. MOUNTING LOCATIONS AND HEIGHT WHERE PERMANENT IDENTIFICATION IS PROVIDED FOR ROOMS AND SPACES, SIGNS SHALL BE INSTALLED ON THE WALL ADJACENT TO THE LATCH SIDE OF THE DOOR. WHERE NO WALL SPACE IS AVAILABLE ON THE LATCH SIDE, INCLUDING DOUBLE LEAF DOORS, SIGNS SHALL BE PLACED ON THE NEAREST ADJACENT WALL. MOUNTING HEIGHT SHALL BE 48" TO 60" A.F.F. TO THE CENTER LINE OF THE SIGN.
2. EXTERIOR TRAFFIC CROSSING FROM ADA SPACES TO BUILDING ENTRANCE SHALL RECEIVE YELLOW SURFACE MARKINGS 8'-0" WIDE, MINIMUM AND ADA CROSSING WARNING SIGNS FOR AUTO TRAFFIC.

CHARACTER PROPORTIONS

1. WIDTH OF THE UPPERCASE "O" IS 55% MINIMUM AND 110% MAXIMUM OF THE HEIGHT OF THE UPPERCASE "I".

ALARMS

1. VISUAL ALARM SIGNAL APPLIANCES SHALL BE PLACED 80" A.F.F. WITHIN THE SPACE OR 6" BELOW THE CEILING, WHICHEVER IS LOWER.
2. ALARM SYSTEMS SHALL MEET ADA/TAS REQUIREMENTS INCLUDING FLASHING LIGHTS AT 100' MAXIMUM SPACING IN CORRIDORS AND EVENTUALLY LEASED AREAS DURING TENANT FINISH.

CHARACTER HEIGHT

1. CHARACTERS AND NUMBERS ON SIGNS SHALL BE SIZED ACCORDING TO THE VIEWING DISTANCE FROM WHICH THEY ARE TO BE READ. CHARACTER HEIGHT, MEASURED VERTICALLY FROM BASELINE OF THE CHARACTER, SHALL BE 5/8" TO 2", BASED ON THE HEIGHT OF THE UPPER-CASE LETTER "I". LOWER CASE CHARACTER ARE PERMITTED. OVERHEAD SIGNS SHALL HAVE A MINIMUM CLEARANCE OF 80" A.F.F. UNDER LOWEST POINT OF THE SIGN. MINIMUM CHARACTER HEIGHT SHALL BE 3"

RAISED AND BROILED CHARACTERS

1. LETTERS AND NUMBERS SHALL BE RAISED A MINIMUM OF 1/32" UPPER CASE "SAN SERIF" OR "SIMPLE SERIF" TYPE AND SHALL BE ACCOMPANIED WITH GRADE 2 BRAILLE. RAISED CHARACTERS SHALL BE AT LEAST 5/8" HIGH, BUT NO HIGHER THAN 2". PICTOGRAMS SHALL BE ACCOMPANIED BY THE EQUIVALENT VERBAL DESCRIPTION PLACED DIRECTLY BELOW PICTOGRAMS. THE BORDER DIMENSION OF THE PICTOGRAM SHALL BE 6" MINIMUM IN HEIGHT.

FINISH AND CONTRAST

1. THE CHARACTERS AND BACKGROUND OF THE SIGNS SHALL BE NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND. I.E. LIGHT CHARACTERS ON DARK BACKGROUNDS.

MOUNTING LOCATIONS AND HEIGHTS

1. SIGNS SHALL BE INSTALLED ON THE WALL AND ADJACENT TO THE LATCH SIDE OF THE DOOR. IF NO SPACE IS AVAILABLE ON THE LATCH SIDE OF THE DOOR, SUCH AS WITH DOUBLE LEAF DOORS, THE SIGN SHALL BE PLACED ON THE NEAREST ADJACENT WALL. MOUNTING HEIGHT SHALL BE 60" A.F.F. TO THE CENTER LINE OF THE SIGN. MOUNTING LOCATION SHALL BE SUCH THAT A PERSON MAY APPROACH WITHIN 3" OF THE SIGN WITHOUT ENCOUNTERING A PROTRUDING OBJECT OR STANDING WITHIN THE SWING OF THE DOOR.

T.A.S. 308 REACH RANGES AND 309 OPERABLE PARTS

	AGES 11 THRU 14 OR 15 GRADES 6 THRU 8 OR 9	ADULT
REACH RANGES		
FRONTAL APPROACH	44" MAX.	44" MAX. 15" MIN.)
SIDE APPROACH	44" MAX.	54" MAX. (9" MIN.)
MOUNTING HEIGHTS		
RAMPS AND STAIRS		
TOP OF HANDRAIL GRIPPING SURFACES	34" - 38"	34" - 38"
ELEVATORS		
CAR CONTROL FLOOR BUTTONS		
FRONTAL APPROACH	44" MAX.	48" MAX. (35" MIN.)
SIDE APPROACH	44" MAX.	54" MAX. (35" MIN.)
EMERGENCY/COMMUNICATION		
HIGHEST OPERABLE PART	44" MAX.	48" MAX.
PLATFORM LIFTS		
CONTROLS/OPERATING MECHANISMS	28" TO 44"	28" TO 48"
DRINKING FOUNTAINS AND WATER COOLERS		
FRONTAL APPROACH		
SPOUT HEIGHT (TO OUTLET)	34" MAX.	36" MAX.
KNEE CLEARANCES	27" MAX.	27" MIN.
SIDE APPROACH		
SPOUT HEIGHT (TO OUTLET)	34" MAX.	34" MAX.
WATER CLOSETS		
TOP OF SEAT	15" TO 17"	17" TO 19"
GRAB BARS	25" TO 27"	33" TO 36"
FLUSH CONTROLS	44" MAX.	44" MAX.
TOILET PAPER DISPENSER	19" TO CENTER OF ROLL	19" TO CENTER OF ROLL
URINALS		
RIM OF BASIN	17" MAX.	17" MAX.
FLUSH CONTROLS	44" MAX.	44" MAX.
LAVATORIES AND SINKS		
RIM OF COUNTER SURFACE	32" MAX.	34" MAX.
KNEE CLEARANCE	27" MAX	27" MIN.
TO FAUCET FROM FRONT EDGE	20" MAX.	22" MAX.
MIRRORS		
TO BOTTOM OF REFLECTIVE SURFACE	37" MAX.	40" MAX.
BATHTUBS		
TOP OF SEAT	15" TO 17"	17" TO 19"
GRAB BARS	33" TO 36"	33" TO 36"
HAND SHOWER HEAD MOUNTING	44" MAX.	48" MAX.
SHOWER STALLS		
TOP OF SEAT	17 TO 19"	17 TO 19"
GRAB BARS	25" TO 27"	33" TO 36"
HAND SHOWER HEAD MOUNTING		
FRONTAL APPROACH	44" MAX.	48" MAX.
SIDE APPROACH	44" MAX.	48" MAX.
STORAGE		
FRONTAL APPROACH	45" MAX.	48 MAX.
SIDE APPROACH		
DISTANCE FROM WHEELCHAIR		
0" TO 10"	44" MAX.	48" MAX.
10" TO 21"	44" MAX.	48" MAX.
CONTROLS AND OPERATING MECHANISMS		
HIGHEST OPERABLE PART		
FRONTAL APPROACH	44" MAX.	48" MAX.
SIDE APPROACH	44" MAX.	48" MAX.
TELEPHONES		
HIGHEST OPERABLE PART		
FRONTAL APPROACH	44" MAX.	48" MAX.
SIDE APPROACH	44" MAX.	48" MAX.
FIXED OR BUILT-IN SEATING AND TABLES		
HEIGHT OF TABLES OR COUNTERS	28" TO 32"	28" TO 34"
KNEE CLEARANCES	27" MIN.	27" MIN.
DRESSING AND FITTING ROOMS		
TOP OF BENCH (24"X48")	15" TO 17"	17" TO 19"
FOOD SERVICE LINE		
TOP OF TRAY SLIDE	34" MAX.	34" MAX.
MARKER BOARDS/TACK BOARDS		
HEIGHT OF BOTTOM UNIT	36" MAX.	36" MAX.

1 T.A.S. REACH RANGES AND MOUNTING HEIGHTS

Angleton Fire Station #3 Addition
2743 N. Velasco St.
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281.293.7500 p.

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

	06/02/23	95 % OWNER REVIEW SET

REVISION LOG

ADA STANDARDS

A0.11

SCALE: AS NOTED

6/2/2023 8:45:45 AM

BUILDING AREA AND CONSTRUCTION TYPE - IBC - 2018

PROJECT: BC PARKS HQ & MAINTENANCE SHOP

I. BUILDING CLASS

1. PRIMARY OCCUPANCY	USE GROUP CLASS: "S-1", (STORAGE - REPAIR GARAGE)
2. SECONDARY OCCUPANCY	N/A
3. TYPE OF CONSTRUCTION	TYPE II-B; NON SPRINKLED
4. AUTOMATIC FIRE SUPPRESSION	A NFPA 13 Sprinkler System will NOT be installed throughout the facility.
5. ACTUAL BUILDING AREA (SF) - "S-1", (STORAGE - REPAIR GARAGE)	3,090 SQ. FT.
6. BUILDING AREA AND HEIGHT LIMITATIONS: (TABLE 504.3, 504.4, & 506.2)	17,500 SF / 55' HT / 2-STORIES
GROUP "S-1", TYPE II-B OCCUPANCY	
MAXIMUM ALLOWABLE AREA INCREASE	NONE TAKEN

II. FIRE PROTECTION: (TABLE 601)

STRUCTURAL FRAME: (TABLE 601)	0 HOUR
INT/EXT BEARING WALLS: (TABLE 601)	0 HOUR
FLOOR/CEILING: (TABLE 601)	0 HOUR
ROOF/CEILING: (TABLE 601)	0 HOUR
EXT WALLS: (TABLE 602) - LESS THAN 5'	1 HOUR TYPE OF FIRE DOORS ALLOWABLE: 3/4 HOUR
- 5' OR MORE, LESS THAN 10'	1 HOUR TYPE OF FIRE DOORS ALLOWABLE: 3/4 HOUR
- 10' OR MORE, LESS THAN 30'	0 HOUR TYPE OF FIRE DOORS ALLOWABLE: 3/4 HOUR
- 30' OR MORE	0 HOUR
SHAFTS: (SECTION 713)	1 HOUR TYPE OF FIRE DOORS ALLOWABLE: 1 HOUR
FIRE WALLS: (TABLE 706.4; SEC. 714.2)	1 HOUR TYPE OF FIRE DOORS ALLOWABLE: 1/3 HOUR
CORRIDORS: (TABLE 1020.1)	0 HOUR TYPE OF FIRE DOORS ALLOWABLE: 0 HOUR
FIRE DAMPERS: (TABLE 717.3.2.1)	1.5 HOUR (* NOT LESS THAN FLOOR PENETRATION)

III. MEANS OF EGRESS:

A. OCCUPANCY LOADS (TABLE 1004.5)	
STORAGE AREAS	300 GROSS SF PER OCCUPANT - 6
B. EGRESS REQUIREMENTS	
MINIMUM CORRIDOR WIDTH: (SECTION 1020.2)	44"
W/50 OR LESS OCCUPANTS: (SECTION 1020.4, #2)	36"
EGRESS WIDTH PER OCCUPANT: (SECTION 1005.1)	0.3"/OCC. STAIRS AND 0.2"/OCC. OTHER - 2.2" EGRESS WIDTH REQUIRED 72" EGRESS WIDTH PROVIDED
NUMBER OF EXITS REQUIRED: (TABLE 1006.3.2)	2 (1-500 OCCUPANTS), 3 (501-1,000 OCCUPANTS), 4 (1,001 OR MORE OCCUPANTS)
MAX TRAVEL DISTANCE TO EXIT: (TABLE 1017.2)	200' (NON-SPRINKLED BUILDING) "S-1"
MAX LENGTH OF DEAD END CORRIDORS: (1020.4)	GROUP B, E, F, I-1, M, R-1, R-2, R-4, S, & U OCCUPANCIES: 50' ALL OTHERS: 20' UNLIMITED WHEN LESS THAN 2.5 TIMES LEAST WIDTH OF CORRIDOR
EXITS THROUGH ADJOINING ROOMS: (SECTION 1016.2)	PERMITTED THRU ACCESSORY NON-HIGH-HAZARDOUS ROOMS NOT PERMITTED THRU KITCHEN, STORAGE, OR SIMILAR ROOMS
COMMON PATH OF TRAVEL: (TABLE 1006.2.1)	75' TO CHOICE OF 2 EXIT PATHS

IV. OCCUPANCY SEPARATION

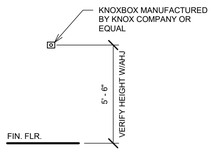
OCCUPANCY SEPARATION REQUIREMENTS: (TABLE 508.4)
NO SEPARATION REQUIRED

V. MISCELLANEOUS DETAILED REQUIREMENTS:

CEILING HEIGHT FOR OCCIPITAL SPACES AND CORRIDORS	(SECTION 1003.2) -	MIN. 7'-6"
CEILING HEIGHT FOR MEANS OF EGRESS	(SECTION 1003.3.1) -	MIN. 6'-8"

VI. PLUMBING FIXTURE REQUIREMENTS:

Min Fixture	Required (S-1) - 6 OCCUPANTS	Provided
Water Closets	1 Men, 1 Women	Facilities provided at adjacent fire station building
Lavatories	1 Men, 1 Women	
Service Sinks	1	



3 KNOX BOX
1/4" = 1'-0"

EXIT ACCESS TRAVEL DISTANCE (S-1) 200' MAX.

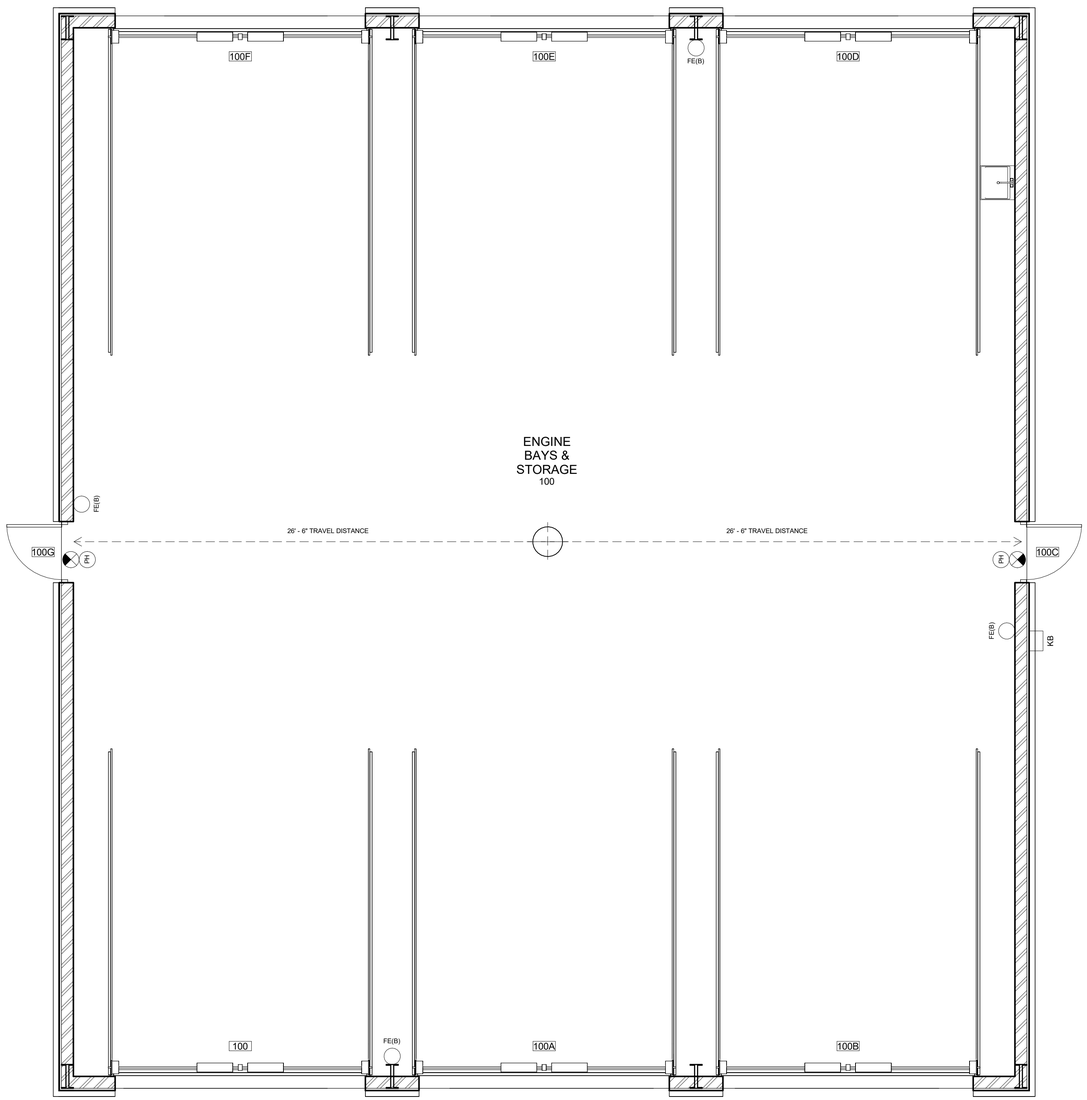
PH — PANIC HARDWARE

EXIT SIGNS

FE(B) — FIRE EXTINGUISHER ON BRACKET

KB — KNOX BOX (VERIFY LOCATION WITH FIRE MARSHAL)

2 LIFE SAFETY LEGEND
1/8" = 1'-0"



1 LIFE SAFETY PLAN
1/4" = 1'-0"
PLAN NORTH

Angleton Fire Station #3 Addition
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06/02/23	95 % OWNER REVIEW SET

REVISION LOG

LIFE SAFETY PLAN

A0.12

SCALE: AS NOTED

6/2/2023 8:49:45 AM

PLANS FOR CONSTRUCTION OF
ANGLETON FIRE STATION #3
FOR THE
ANGLETON DRAINAGE DISTRICT AND
CITY OF ANGLETON
BRAZORIA COUNTY
B&L JOB No. 15627

CITY OF ANGLETON

CITY COUNCIL

MAYOR
JASON PEREZ

CITY MANAGER
CHRIS WHITTAKER

MIKEY SVOBODA
CECIL BOOTH
JOHN WRIGHT
TRAVIS TOWNSEND
MARK GONGORA

ANGLETON DRAINAGE DISTRICT

CHAIRMAN
DAVID SPOOR

BOARD MEMBER
WELDON ZGARBA

BOARD MEMBER
RONNIE SLATE

VICINITY MAP

INDEX OF SHEETS

Angleton Fire Station #3 Addition

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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
LICENSED PROFESSIONAL ENGINEER

iAD PROJECT # 23017

ISSUE DATE:

REVISION LOG

TITLE SHEET

C0.00

SCALE: AS NOTED

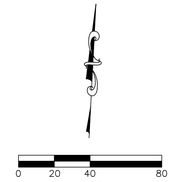
5/23/2023 4:26:40 PM

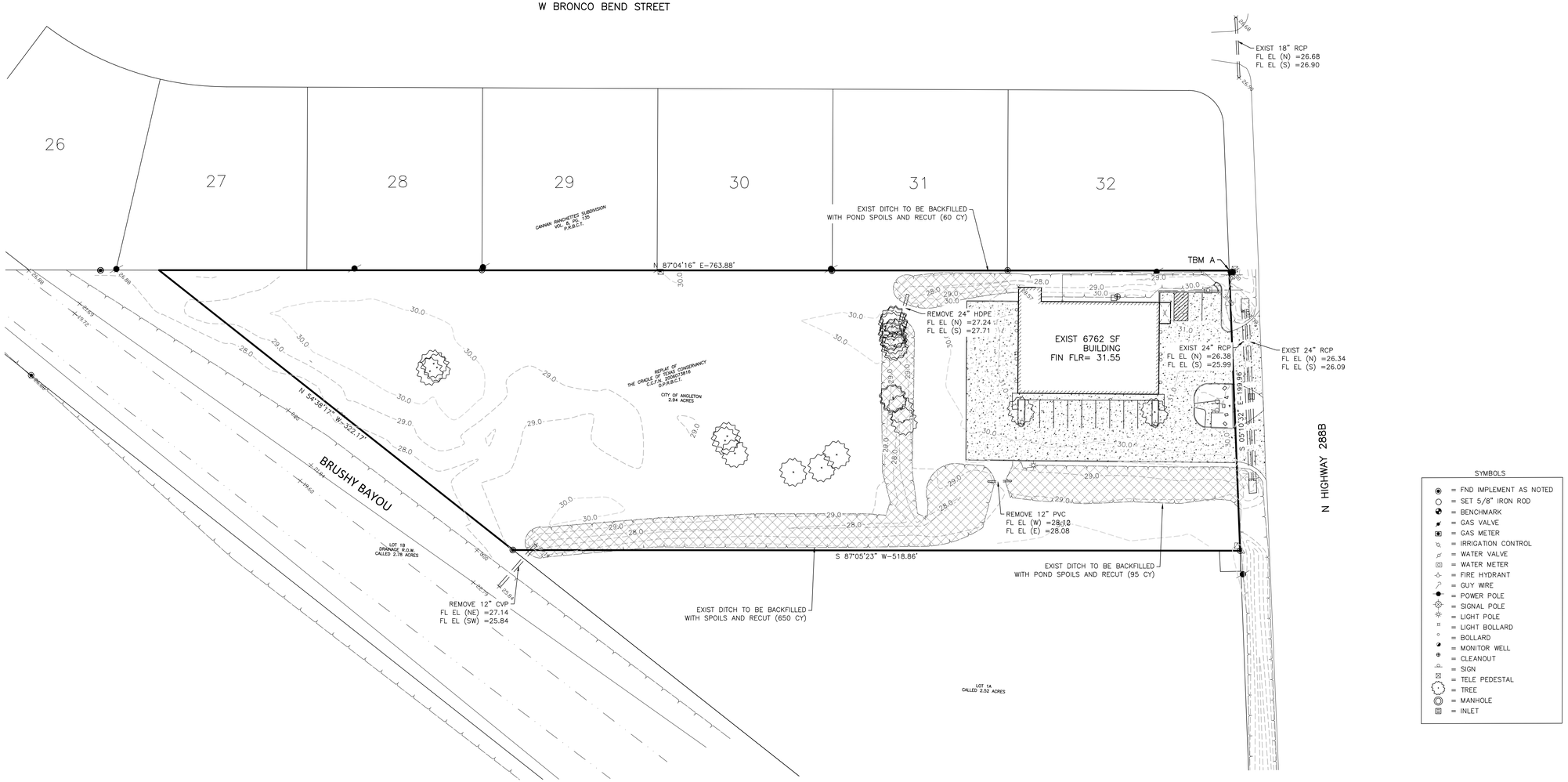
BENCHMARK:
ELEVATIONS BASED ON NAVD88

REFERENCE BENCHMARK: NGS MONUMENT: TXAG REF MON 1 (PID: DR8248), PUBLISHED ELEVATION: 32.0 FEET.

TEMPORARY BENCHMARK A: SET 60D NAIL IN POWER POLE AT NORTHEAST CORNER OF FIRE STATION #3 PROPERTY. ELEVATION: 31.10 FEET

FLOOD ZONE STATEMENT
ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, MAP NUMBER 48039 C 0435K, WITH EFFECTIVE DATE OF DECEMBER 30, 2020, THE PROPERTY LIES FULLY WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 500–YEAR FLOODPLAIN. (1988 DATUM).





SYMBOLS

- = FND IMPLEMENT AS NOTED
- = SET 5/8" IRON ROD
- = BENCHMARK
- = GAS VALVE
- = GAS METER
- = IRRIGATION CONTROL
- = WATER VALVE
- = WATER METER
- = FIRE HYDRANT
- = GUY WIRE
- = POWER POLE
- = SIGNAL POLE
- = LIGHT POLE
- = LIGHT BOLLARD
- = BOLLARD
- = MONITOR WELL
- = CLEANOUT
- = SIGN
- = TELE PEDESTAL
- = TREE
- = MANHOLE
- = INLET

P:\2023\23017\CAD\ARCHITECTURE\23017-Angleton Fire Station #3-CENTRAL.RVT

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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
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ISSUE DATE:

REVISION LOG

EXISTING CONDITION AND DEMOLITION

C1.00

SCALE: AS NOTED

2/21/2023 2:26:40 PM

PROP DITCH D1

PROP 3345 SF
BUILDING
FIN FLR= 31.55

EXIST 6762 SF
BUILDING
FIN FLR= 31.55

PROP 113 LF
CONC-CONC PAVEMENT HEADER
MATCH TO EXIST

PROP SWALE S1

PROP DITCH D2

GRADE TO DRAIN

N HIGHWAY 288B

0 5 10 20
SCALE : 1" = 10'

SYMBOLS

- = FND IMPLEMENT AS NOTED
- = SET 5/8" IRON ROD
- = BENCHMARK
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ISSUE DATE:

REVISION LOG

SITE GRADING PLAN

C2.00

SCALE: AS NOTED

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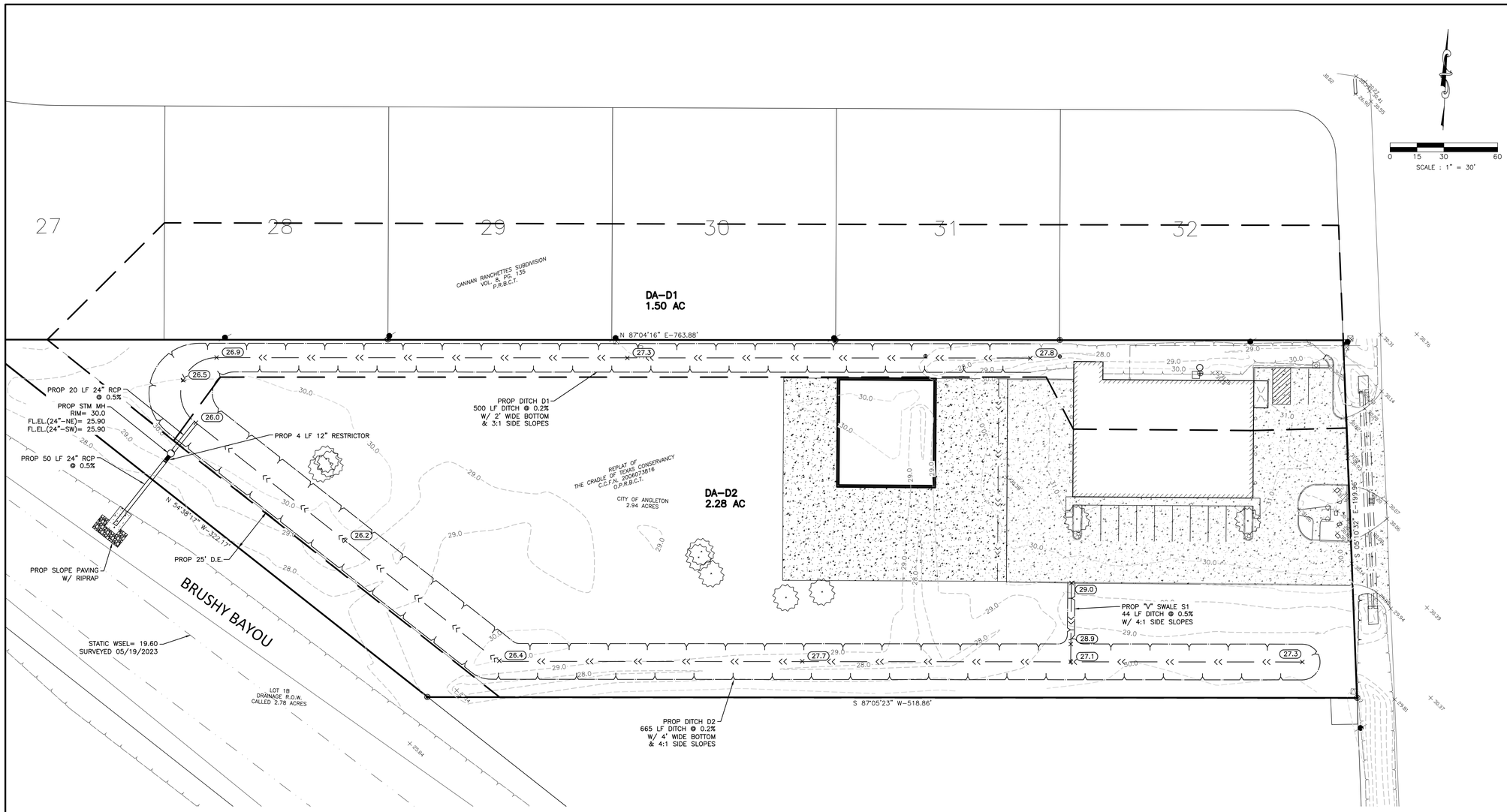

DRAINAGE HYDRAULIC CALCULATIONS FOR THE 100-YEAR STORM EVENT

D.A. NO.	RUN	AREA (AC)	C	Ditch Length	Tc (MIN)	I 100-YR (in/hr)	Q 100-YR (CFS)
DA-D1	DITCH D1	1.5	0.4	500	18.33	11.762	7.1
DA-D2	DITCH D2	2.28	0.4	665	19.43	11.429	10.4

ID	TOTAL DEPTH (FT)	FREEBOARD (FT)	WATER DEPTH (FT)	DITCH BOTTOM WIDTH	CROSS SECTIONAL AREA	SIDE SLOPE (X:1)	WET PERIMETER (FT)	HYDRAULIC RADIUS (R)'	ROUGHNESS COEFFICIENT (N)	AVERAGE SLOPE (S) FT/FT	VELOCITY (V) FPS	CAPACITY (Q) CFS	REQUIRED CAPACITY (Q) CFS
DITCH 1	2.1	0.5	1.6	2	10.88	3	12.1	0.90	0.04	0.0020	1.55	16.9	7.1
DITCH 2	2.4	0.5	1.9	4	22.04	4	19.7	1.12	0.04	0.0020	1.80	39.6	10.4

DETENTION PROVIDED

DITCH D1
AVERAGE AREA= 10.88 SF
LENGTH= 500 FT
VOLUME= 0.124 AC–FT

DITCH D2
AVERAGE AREA= 22.04 SF
LENGTH= 665 FT
VOLUME= 0.337 AC–FT

DETENTION PROVIDED= 0.461 AC–FT

RESTRICTOR CALCULATIONS

HEAD = 28.5 – 26.0 = 2.5

ORIFICE EQUATION	
Q = Cd*A*(2*G*H)^0.5	
Where:	
Cd =	0.8
G =	32.2
H =	2.5
Q =	7.949
A =	0.78
USE 12" Dia.= 0.78 SF FOR RESTRICTOR	

Angleton Fire Station #3 Addition

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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
LICENSED
PROFESSIONAL ENGINEER

iAD PROJECT # 23017

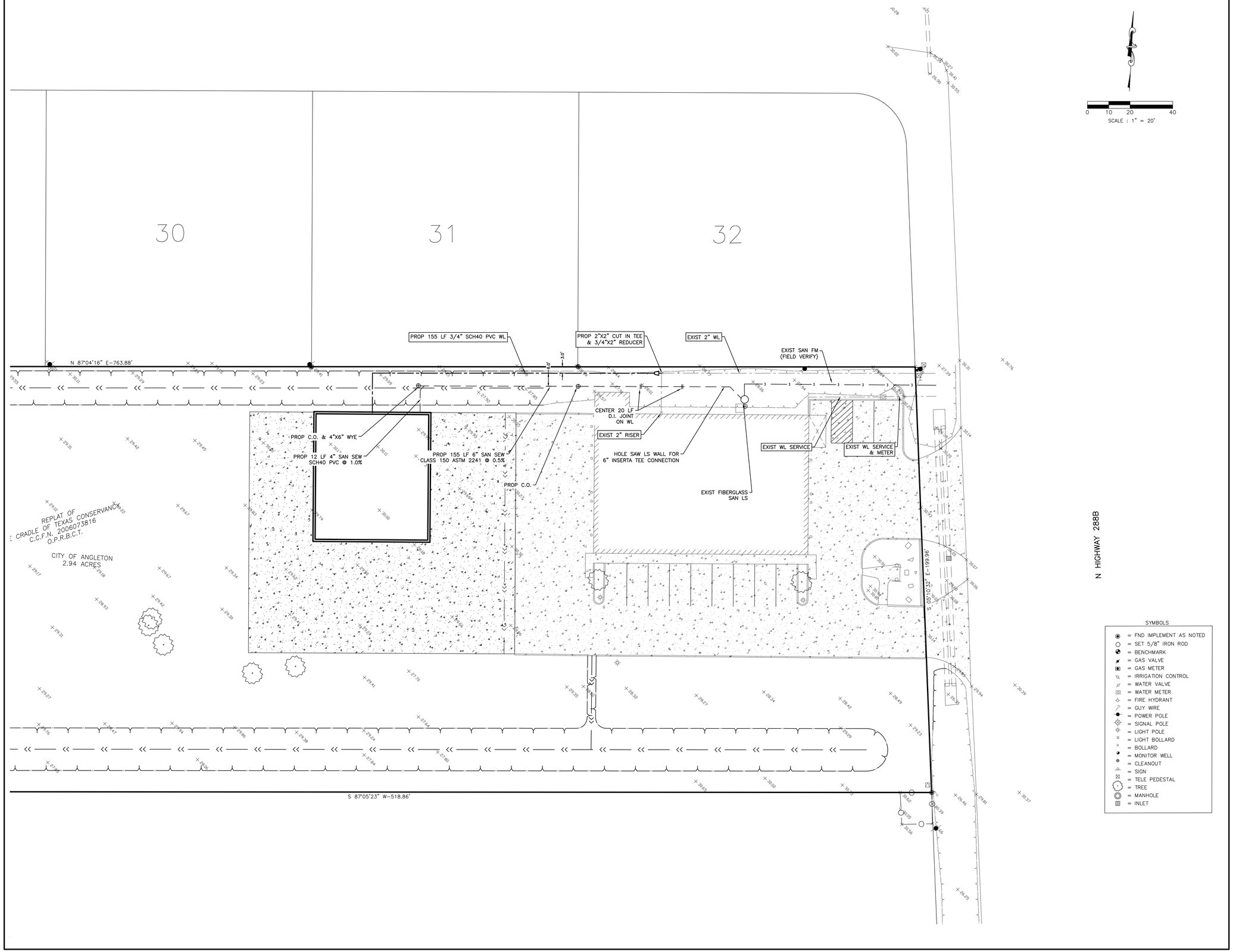
ISSUE DATE:

REVISION LOG

DRAINAGE AREA MAP

C3.00

SCALE: AS NOTED



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UTILITY LAYOUT

C4.00

SCALE: AS NOTED

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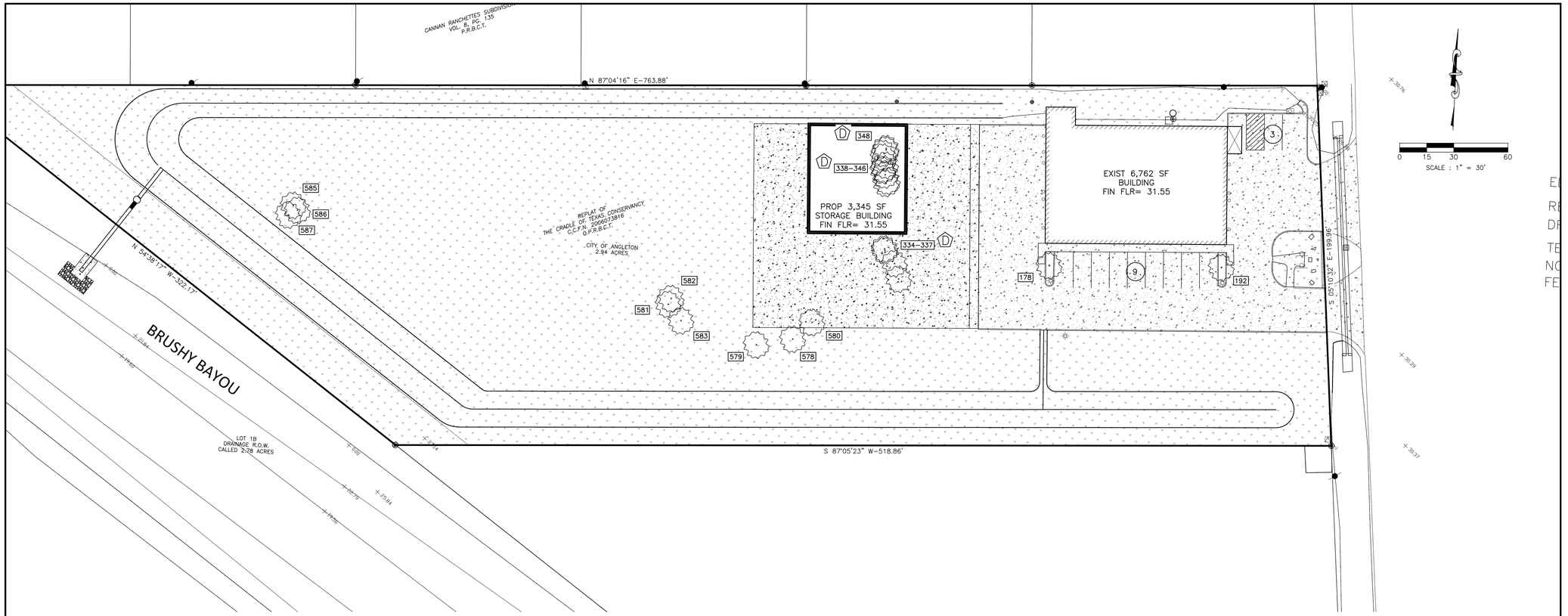

PARKING REQUIREMENTS:

OFF-STREET PARKING (STORAGE OR WAREHOUSING)

FLOOR AREA = 10,107 SF
REQUIRED (1 SPACE PER 1,000 SF) = 10.1 = 10 SPACES

PROVIDED= 11 REGULAR AND 1 HANDICAP = 12 SPACES

HERITAGE TREE PLAN

TREE REPLACEMENT CALCULATIONS:

TOTAL NUMBER OF HERITAGE TREES (OAKS & ELMS): 7
TOTAL CALIPER OF HERITAGE TREES: 152 INCHES

HERITAGE TREES TO REMOVE: 1
CALIPER OF REMOVED HERITAGE TREES: 15 INCHES

HERITAGE & SIGNIFICANT TREES TO PRESERVE: 6
CALIPER OF HERITAGE/SIGNFICANT TREES TO BE PRESERVED: 137 INCHES

REQUIRED REPLACEMENT CALIPER = (15 – 137) X 3 = 0 INCH
= 0 REPLACEMENT TREES

TOTAL REPLACEMENT TREES REQUIRED = 0 TREES

Tree ID	Type	Diameter	Status
178	Crepe Myrtle	6	Preserve
192	Crepe Myrtle	6	Preserve
334	Pine	18	Remove
335	Pine	5	Remove
336	Pine	18	Remove
337	Pine	18	Remove
338	Pine	18	Remove
339	Pine	9	Remove
340	Pine	10	Remove
341	Pine	5	Remove
342	Pine	18	Remove
343	Pine	10	Remove
344	Pine	18	Remove
345	Pine	8	Remove
346	Pine	9	Remove
348	Oak	15	Remove
578	Live Oak	20	Preserve
579	Live Oak	12	Preserve
580	Live Oak	15	Preserve
581	Live Oak	36	Preserve
582	Live Oak	30	Preserve
583	Live Oak	24	Preserve
585	Tallow	24	Preserve
586	Tallow	12	Preserve
587	Tallow	12	Preserve

LEGEND

CONCRETE PAVEMENT TO BE 6" THICK REINFORCED W/ #4 BARS @ 24" O.C. EACH WAY ON 6" LIME STABILIZED SUBGRADE (7% BY WT)

9 DENOTES PARKING COUNT

LANDSCAPED AREAS
(92,643 SF, 72%)

D DENOTES TREE TO BE REMOVED

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LANDSCAPE AND SITE PLAN

C5.00

SCALE: AS NOTED

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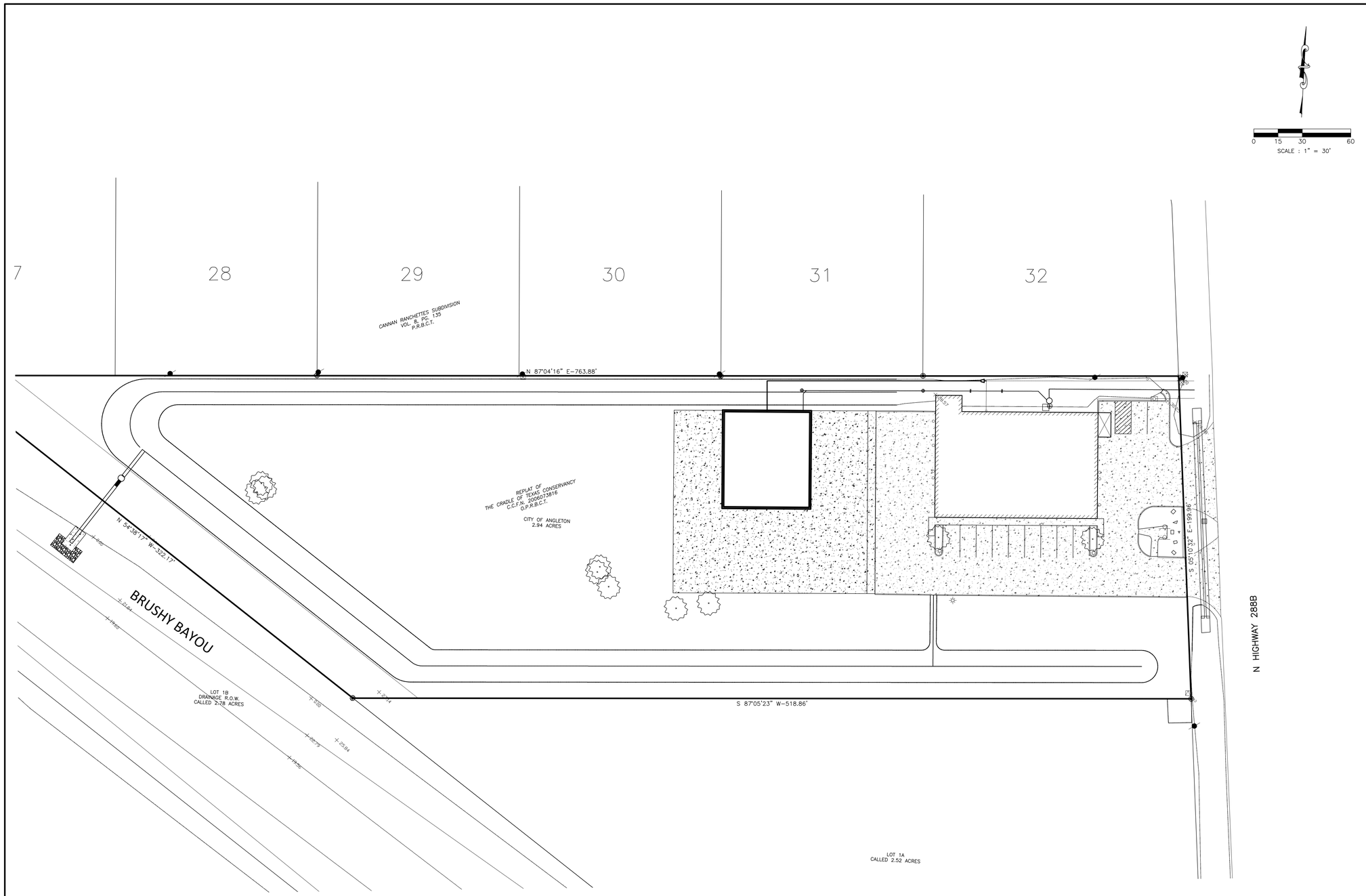

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ISSUE DATE:

REVISION LOG

DIMENSION CONTROL PLAN

C6.00

SCALE: AS NOTED

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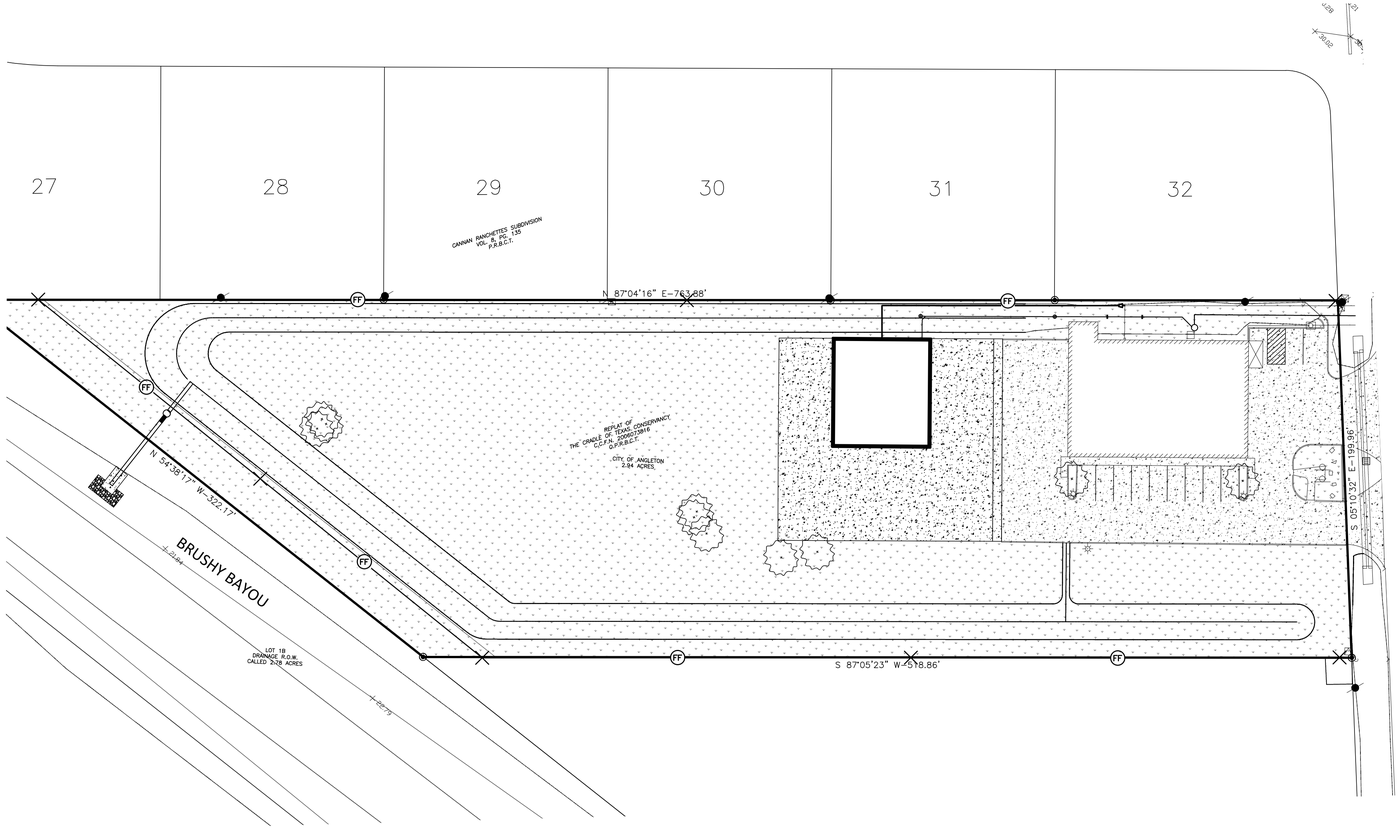
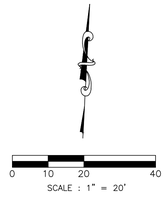
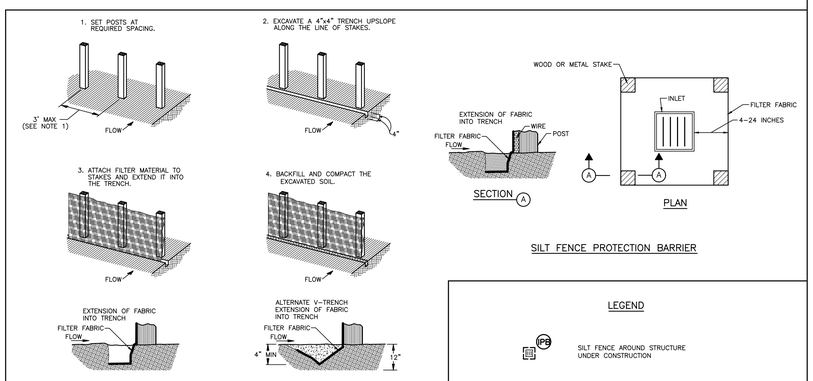




GENERAL LOCATION MAP

VICINITY MAP
N.T.S.



SILT FENCE PROTECTION BARRIER

CONSTRUCTION NOTES:

1. 1 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

FILTER FABRIC FENCE

LEGEND

- SILT FENCE AROUND STRUCTURE UNDER CONSTRUCTION
- SILT FENCE ACROSS EXISTING DITCH REINFORCED FILTER BARRIER
- HYDROMULCH SEED

PROJECT/SITE INFORMATION

PROJECT NAME: ANGLETON FIRE STATION #3

PROJECT ADDRESS/LOCATION: 2743 N. VELASCO ST.

CITY: ANGELTON STATE: TX. ZIP CODE: 77515

LATITUDE: 29°11'30" LONGITUDE: 95°20'04" COUNTY: BRAZORIA

NAME OF RECEIVING WATERS: GULF OF MEXICO

07/01/2023 — MONTH/DAY/YEAR — ESTIMATED CONSTRUCTION START DATE

07/01/2024 — MONTH/DAY/YEAR — ESTIMATED COMPLETION DATE

ESTIMATE OF AREA TO BE DISTURBED: 2.94 ACRES

ESTIMATE OF LIKELYHOOD OF DISCHARGE:

☐ UNLIKELY ☐ ONCE PER WEEK ☐ CONTINUAL
☒ ONCE PER MONTH ☐ ONCE PER DAY

ARE THERE ANY LISTED ENDANGERED OR THREATENED SPECIES, OR DESIGNATED CRITICAL HABITAT IN THE PROJECT AREA?

☐ YES ☒ NO

ELIGIBILITY WITH REGARD TO PROTECTION OF ENDANGERED SPECIES HAS BEEN SATISFIED THROUGH THE INDICATED SECTION OF PART 1.B.3.e.(2) OF THE PERMIT.

(a) ☒ (b) ☐ (c) ☐ (d) ☐

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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
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iAD PROJECT # 23017

ISSUE DATE:

REVISION LOG

SWPPP LAYOUT

C7.00

SCALE: AS NOTED

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1. SITE DESCRIPTION

A. NATURE OF THE CONSTRUCTION ACTIVITY:
THE PROJECT CONSISTS OF THE CONSTRUCTION OF ONE 3,345 SF BUILDINGS IN ANGLETON, BRAZORIA COUNTY, TEXAS. THE SITE IS BOUND BY COMMERCIAL PROPERTY TO THE SOUTH, SH288B TO THE EAST, BRUSHY BAYOU TO THE WEST, AND RESIDENTIAL SUBDIVISION TO THE NORTH. CONSTRUCTION SHALL CONSIST OF THE ONE BUILDING, 10,807 SF DRIVEWAY AREA, AND LINEAR DETENTION DITCHES.

B. INTENDED SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
THE WORK AREA WILL BE CLEARED OF ALL VEGETATIVE MATTER. THEN SUBGRADE WILL BE PREPARED FOR BUILDING PADS AND DRIVE AREAS. STORM WATER FROM THE SITE WILL BE DIRECTED TO THE PROPOSED DITCHES. TRUCKS WILL BE USED TO HAUL WASTE FROM CONSTRUCTION AND DELIVER BASE MATERIAL AND CONSTRUCTION MATERIAL TO THE SITE. THESE TRUCKS WILL BE ROUTED ALONG SH288B FOR INGRESS AND EGRESS. RUTTING ON SITE DURING WET WEATHER WILL PROVIDE POTENTIAL FOR TRACKING MUD ALONG SH288B. CONTRACTOR WILL CLEAN SH288B AS REQUIRED BY TXDOT.

C. TOTAL PROJECT AREA: 2.94 ACRES

D. TOTAL AREA TO BE DISTURBED: 0.82 ACRES

WEIGHTED RUNOFF COEFFICIENT
(BEFORE CONSTRUCTION): 0.31 (AFTER CONSTRUCTION): 0.39

E. REFER TO GENERAL LOCATION MAP AND SITE MAP FOR DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES; AREAS OF SOIL DISTURBANCE; AREAS WHICH WILL NOT BE DISTURBED; LOCTIONS OF MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS; LOCATIONS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR; LOCATION OF OFF-SITE MATERIAL, WASTE, BORROW OR EQUIPMENT STORAGE AREAS; SURFACE WATERS (INCLUDING WETLANDS); AND LOCATIONS WHERE STORM WATER DISCHARGES TO A SURFACE WATER.

F. LOCATION AND DESCRIPTION OF ANY DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION:

G. NAME OF RECEIVING WATERS:
DRAINAGE WILL BE COLLECTED IN THE PROPOSED DITCHES WHICH WILL DRAIN TO BRUSHY BAYOU. BRUSHY BAYOU IS MAINTAINED BY THE ANGELTON DRAINAGE DISTRICT. BRUSHY BAYOU OUTFALLS TO BASTROP BAYOU WHICH THEN OUTFALLS INTO THE GULF OF MEXICO.

AREAL EXTENT AND DESCRIPTION OF WETLAND OR SPECIAL AQUATIC SITE AT OR NEAR THE SITE WHICH WILL BE DISTURBED OR WHICH WILL RECEIVE DISCHARGES FROM DISTURBED AREAS OFTHE PROJECT.

NONE

H. REFER TO FEDERAL REGISTER, VOLUME 63, NO.128, MONDAY JULY 6, 1998, PAGES 36497 TO 36515 FOR REQUIREMENTS OF NPDES GENERAL PERMITS FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES IN REGION 6.

I. LISTED ENDANGERED OR THREATENED SPECIES OR CRITICAL HABITAT FOUND IN PROXIMITY TO THE CONSTRUCTION ACTIVITY:

NONE

J. PROPERTY LISTED OR ELIGIBLE FOR LISTING ON THE NATIONAL REGISTER OF HISTORIC PLACES:

NONE

2. CONTROLS

NARRATIVE - SEQUENCE OF CONSTRUCTION ACTIVITIES AND APPROPRIATE CONTROL MEASURES DURING CONSTRUCTION

THE ORDER OF CONSTRUCTION WILL BEGIN WITH STRIPPING OF ALL VEGETATION FROM THE WORK AREA.

1. CONSTRUCT SILT FENCE ALONG THE PERIMETER OF THE WORK AREA.

2. AFTER STRIPPING IS COMPLETED, THE DETENTION DITCHES CAN BE EXCAVATED AND EXCAVATED MATERIAL SPREAD AND COMPACTED ON SITE.

3. FOUNDATIONS FOR THE BUILDING CAN THEN BE PLACED. CONSTRUCTION OF THESE FACILITIES WILL FOLLOW AFTER FOUNDATION PLACEMENT.

4. EXCAVATION OF SUBGRADE AND PROOF ROLLING WILL TAKE PLACE BEFORE PLACEMENT OF THE LIME FOR STABILIZATION OF DRIVE AREAS. CONCRETE DRIVES CAN THEN BE CONSTRUCTED AFTER COMPLETION OF SUBGRADE.

5. AFTER WORK IS COMPLETE, SEEDING AND FERTILIZER WILL BE PLACED ON ALL DISTURBED AREAS. ALL SEEDED AREAS ARE TO IRRIGATED TO ENSURE GROWTH. IRRIGATION SHALL BE CONTINUED UNTIL GROWTH IS ESTABLISHED.

A. EROSION AND SEDIMENT CONTROLS: EROSION AND SEDIMENT CONTROLS SHALL RETAIN SEDIMENT ON SITE TO THE EXTENT PRACTICABLE. CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS (WHERE APPLICABLE) AND GOOD ENGINEERING PRACTICES. OFFSITE SEDIMENT ACCUMULATIONS MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS WHEN CAPACITY HAS BEEN REDUCED BY 50%. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WALL SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES.

SOIL STABILIZATION PRACTICES:	OWNER/ DEVELOPER	GENERAL CNTRTR.	BUILDER	OTHER
TEMPORARY SEEDING				
PERMANENT PLANTING, SODDING, OR SEEDING		X		
MULCHING- WHERE INDICATED		X		
SOIL RETENTION BLANKET				
VEGETATIVE BUFFER STRIPS				
PRESERVATION OF NATURAL RESOURCES				
OTHER:				

THE FOLLOWING RECORDS SHALL BE MAINTAINED AND ATTACHED TO THIS SWPPP:
DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, DATES WHEN STABILIZATION MEASURES ARE INITIATED.

STRUCTURAL PRACTICES:	OWNER/ DEVELOPER	GENERAL CNTRTR.	BUILDER	OTHER
SILT FENCES		X		
HAY BALES				
ROCK BERMS				
DIVERSION, INTERCEPTOR, OR PERIMETER DIKES				
DIVERSION, INTERCEPTOR, OR PERIMETER SWALES				
DIVERSION DIKE AND SWALE COMBINATIONS				
PIPE SLOPE DRAINS				
ROCK BEDDING AT CONSTRUCTION EXIT				
TIMBER MATTING AT CONSTRUCTION EXIT				
SEDIMENT TRAPS				
SEDIMENT BASINS				
STORM INLET PROTECTION				
STONE OUTLET STRUCTURES				
OTHER:				

B. STORM WATER MANAGEMENT MEASURES INSTALLED DURING CONSTRUCTION TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION:
DITCHES

C. OTHER CONTROLS

NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED TO WATERS OF THE UNITED STATES, EXCEPT AS AUTHORIZED BY A PERMIT ISSUED UNDER SECTION 404 OF THE CLEAN WATER ACT.

WASTE MATERIALS: ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL CONTAINER. THE CONTAINER SHALL MEET ALL STATE AND CITY SOLID WASTE MANAGEMENT REGULATIONS. THE CONTAINER SHALL BE EMPTIED AS NECESSARY AND THE TRASH HAULED TO AN APPROPRIATE DUMP SITE. NO CONSTRUCTION MATERIALS WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINT, CLEANING SOLVENTS, ASPHALT PRODUCTS, PETROLEUM PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, AND CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE SPILL COORDINATOR SHOULD BE CONTACTED IMMEDIATELY.

SANITARY WASTE: PORTABLE SANITARY FACILITIES WILL BE PROVIDED BY THE CONTRACTOR. ALL SANITARY WASTES WILL BE COLLECTED FROM PORTABLE UNITS AND SERVICED BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

OFFSITE VEHICLE TRACKING SHALL BE MINIMIZED BY:
___ HAUL ROADS DAMPENED FOR DUST CONTROL LOADED
X HAUL TRUCKS TO BE COVERED WITH TARPAULIN
X EXCESS DIRT ON ROAD REMOVED DAILY STABILIZED
___ CONSTRUCTION ENTRANCE

OTHER: TRUCKS HAULING VEGETATION AND DEBRIS WILL BE MONITORED AND SHALL BE COVERED WITH TARPAULINS IF REQUIRED TO PREVENT DUST OR OTHER PARTICLES FROM BLOWING OR FALLING FROM TRUCK.

REMARKS: ALL OPERATIONS WILL BE CONDUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNTS OF SEDIMENT THAT MAY ENTER THE RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY, OR STREAMBED. CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.

3. MAINTENANCE

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION. IF A REPAIR IS NECESSARY IT SHALL BE DONE AT THE EARLIEST TIME POSSIBLE, BUT NO LATER THAN SEVEN CALENDAR DAYS AFTER THE GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO DRAINAGE WAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS. MAINTENANCE SHALL BE PERFORMED BEFORE THE NEXT ANTICIPATED STORM EVENT OR AS SOON AS PRACTICABLE.

4. INSPECTION

AN INSPECTION WILL BE PERFORMED BY THE PERMITEE EVERY FOURTEEN DAYS AS WELL AS AFTER EVERY ONE-HALF INCH OR GREATER RAINFALL EVENT. AN INSPECTION AND RAINFALL REPORT WILL BE MADE AFTER EACH INSPECTION. ANY DEFICIENCIES WILL BE NOTED AND APPROPRIATE CHANGES SHALL BE MADE TO THE SYSTEM TO COMPLY WITH REQUIREMENTS.

5. NON-STORMWATER DISCHARGES

___ FIRE HYDRANT FLUSHING
X BUILDING WASHDOWN WITHOUT DETERGENTS
X PAVEMENT WASHDOWN WITHOUT DETERGENTS
X CONDENSATE
___ UNCONTAMINATED GROUNDWATER
___ UNCONTAMINATED FOUNDATION DRAINS

[redacted]

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STATE OF TEXAS
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iAD PROJECT # 23017
ISSUE DATE:

REVISION LOG

SWPPP NARRATIVE

C7.01

SCALE: AS NOTED

2/2/2023 2:45:40 PM

Hydrological and Hydraulic Impacts
Fire Station #3- Angleton, Texas
Job # 15627

Brazoria County, Texas

A = 2.94 Acre Development :

Pre Development:

C = 2.44 ac lawn @ 0.20
+ 0.50 ac Conc/Bldg @ 0.85
= 0.31
TC = 15 min + 550 LF grass @ 0.5 fps
= 33.3 Minutes
I = 6.978 in/hr
Q = 100 Year Storm = 7.949 cfs

Post Development

C = 2.12 ac lawn @ 0.20
+ 0.82 ac Conc/Bldg @ 0.85
= 0.39
T/C = 10 min + 225 LF pave @ 1.5 fps
+ 660 KF ditch @ 2.5 fps
= 16.9 Minutes
I = 9.792 in/hr
Q = 100 Year Storm = 14.035 cfs

Required Detention:

0.55 acre - feet

Miguel Sauceda, P.E. June 2, 2023

Drainage Analysis (Brazoria County: Region 1)

Job # 15627 - Fire Station #3, Angleton TX

Rainfall intensity calculations for Brazoria County (Region 1)

I = intensity (in/hr)
b = coefficient
t = time of concentration
d = coefficient
e = coefficient

subscript
i =1 = 2year storm
i =2 = 5 year storm
i =3 = 10 year strom
i =4 = 25 year storm
i =5 = 50 year storm
i =6 = 100 year storm

$i := 1..6$

$b_i :=$	$S_6 :=$	$d_i :=$
57.440	0.754	11.511
58.019	0.712	9.236
57.515	0.676	7.777
52.780	0.618	5.022
49.157	0.574	3.081
46.316	0.533	1.555

$T_0 := 33.3$ ENTER PREDEVELOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 6.978$ in/hr Predevelopment Intensity of interest

$C := 0.31$ ENTER PREDEVELOPMENT C VALUE

$A := 2.94$ ENTER AREA (acres)

$C_f := 1.25$

$Q := C \cdot C_f \cdot I_6 \cdot A$ Must Insert correct subscript for I to obtain the relevant Q

$Q = 7.949$ cfs

$P := 17$ in Enter Atlas 14 Rainfall Depth: Region 1

$V := (C) \cdot A \cdot 43560 \cdot \frac{P}{12}$ For these calculations, total volume storage is assumed to equal (C)*A with A converted to square feet multiplied by rainfall depth (P)

$V = 5.624 \times 10^4$

DEVELOPMENT OF RUNOFF HYDROGRAPH
MALCOM'S METHOD AS DESCRIBED IN THE BRAZORIA COUNTY DRAINAGE CRITERIA MANUAL

$T := \frac{V}{1.39 \cdot Q}$ $T = 5.09 \times 10^3$ T = Time to peak, presented as a function of volume and peak flow and therefore indirectly related to time of concentration

$t := 0, 1000 .. 84000$

$f(t) := \left(\frac{Q}{2}\right) \cdot \left(1 - \cos\left(\frac{t \cdot \pi}{T}\right)\right)$ f(t) describes rising limb of hydrograph

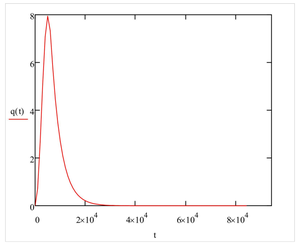
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$ g(t) describes descending limb of hydrograph

$q(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

$Volume_{pre} := \int_0^{86400} q(t)\, dt$

$Volume_{pre} = 5.644 \times 10^4$

Predevelopment hydrograph



$T_0 := 16.9$ min ENTER POST DEVLOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 9.792$ in/hr Post development I of interest

$C := 0.39$ ENTER POST DEVELOPMENT C FACTOR
REVISE Cf AND AREA IF NECESSARY

$C_f := 1.25$ Note. Product of C x Cf =1.00 (maximum)

$Q := C \cdot I_6 \cdot A \cdot C_f$

$Q = 14.035$ cfs

$V := (C) \cdot A \cdot 43560 \cdot \frac{P}{12}$

$V = 7.076 \times 10^4$ cf

$T := \frac{V}{1.39 \cdot Q}$ $T = 3.627 \times 10^3$

$t := 0, 1000 .. 25000$

$f(t) := \left(\frac{Q}{2}\right) \cdot \left(1 - \cos\left(\frac{t \cdot \pi}{T}\right)\right)$

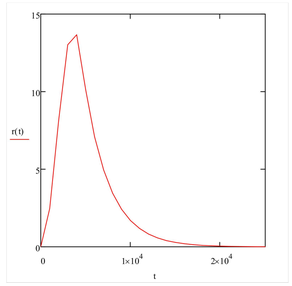
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$

$r(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

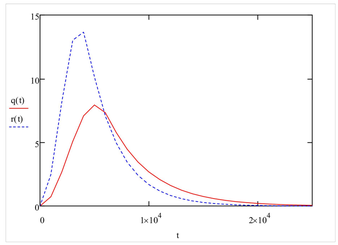
$Volume_{post} := \int_0^{86400} r(t)\, dt$

$Volume_{post} = 7.101 \times 10^4$

Post development hydrograph



Combined pre and post development hydrographs



$f(t) := ((r(t) - q(t))) \cdot 1$

$v(t) := if(f(t) > 0, f(t), 0)$

THE REQUIRED STORAGE COMPUTED AS THAT PART OF THE POST DEVELOPMENT HYDROGRAPH THAT FALLS ABOVE THE PREDEVELOPMENT HYDROGRAPH

ACRE -FEET

$\frac{\int_0^{86400} v(t)\, dt}{43560} = 0.55$ ac − ft

Angleton Fire Station #3 Addition

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STATE OF TEXAS
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iAD PROJECT # 23017

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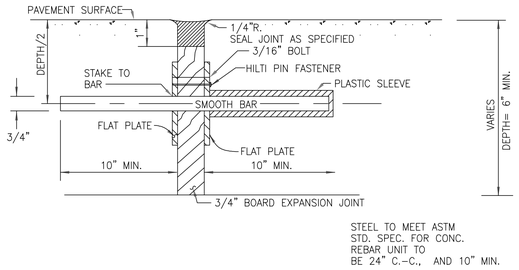
HYDROLOGIC CALCULATIONS

C8.00

SCALE: AS NOTED

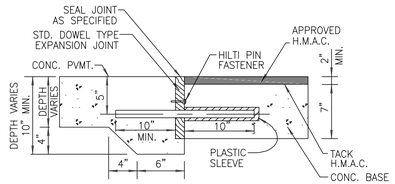
2/21/2023 2:25:40 PM



STEEL TO MEET ASTM STD. SPEC. FOR CONC. REBAR UNIT TO BE 24" C.-C., AND 10" MIN.

DOWEL TYPE EXPANSION JOINT

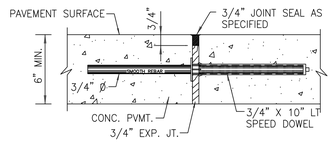
N.T.S.



DOWEL TYPE EXPANSION JOINT

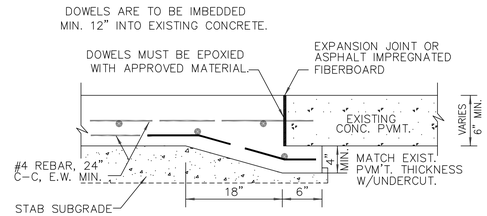
N.T.S.

(CONC. PAVING TO CONC. BASE)



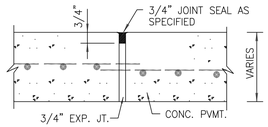
SPEED DOWEL EXPANSION JOINT

N.T.S.



UNDERCUT DETAIL WITH HEADER

N.T.S.



CONSTRUCTION JOINT SEAL

N.T.S.

CONSTRUCTION NOTES:

6 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, E.W. IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR LOCAL STREETS

TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED WITH SEALANT CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.

TRANSVERSE CONTROL JOINTS ARE REQUIRED AT MAXIMUM SPACING OF 20'-0" C-C, AND VERTICAL CURB JOINTS TO BE SEALED WITH SPECIAL JOINT SEALANT ASTM-D-1190-74 OR AASHTO-M173-60 FOR PAVEMENT 8" THICK AND GREATER. (ELASTONETRIC TYPE HOT POURED)

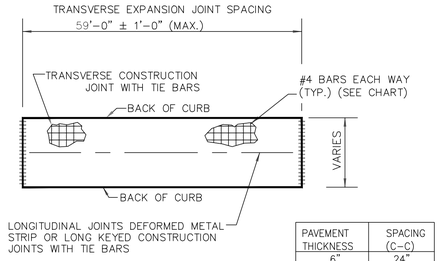
PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND REQUIRED ON ALL CONCRETE.

UNSTABLE SUBGRADE SHALL BE EXCAVATED AND REPLACED WITH CEMENT STABILIZED SAND.

USE 1"x2" REDWOOD STAKES FOR HEADERS.

EDGE ALL SIDES WITH EDGING TOOL.

DOWEL SHALL BE 3/4" DIAMETER, WITH MINIMUM 8" PENETRATION (BOTH SIDES).



PAVEMENT THICKNESS	SPACING (C-C)
6"	24"
7"	18"
8"	18"

PAVING PANEL

N.T.S.

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CONSTRUCTION DETAILS: PAVEMENT (1 OF 2)

C9.00

SCALE: AS NOTED

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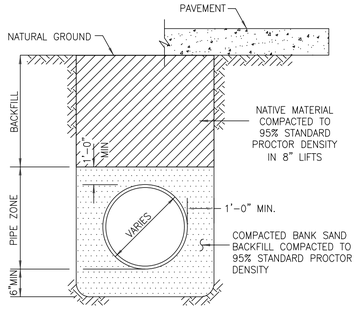
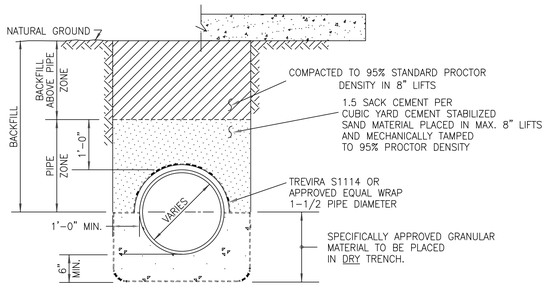


P.V.C. PIPE BEDDING & BACKFILL

N.T.S.

*SEE CONSTPUCTION NOTES -



MODIFIED "A"

N.T.S.

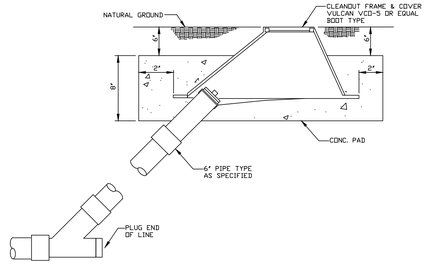
NOTE: C.S.S. SHALL BE INSTALLED A MIN. 1' ABOVE TOP OF PIPE.

SANITARY FORCE MAIN & WATER LINE BEDDING AND BACKFILL

SANITARY SEWER BEDDING AND BACKFILL

NOTES:

1. CONTRACTOR SHALL CONTACT CITY OF SUGAR LAND ENGINEERING DEPARTMENT AT (281) 275-2780 IF WET SAND OR OTHER UNSTABLE SOIL CONDITIONS, HIGH WATER TABLE AND/OR UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED.
2. SHOULD A CONFLICT ARISE BETWEEN INFORMATION DEPICTED ON APPROVED CONSTRUCTION DRAWINGS AND INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SHALL GOVERN.
3. SANITARY SEWER MANHOLES SHALL BE CONSTRUCTED A MINIMUM OF FOUR FOOT FROM BACK OF CURB ON CURB AND GUTTER ROADWAYS AND THREE FEET FROM EDGE OF TRAVELLED ROADWAY ON THOSE THOROUGHFARES HAVING NO CURBING, MEASURED FROM OUTSIDE DIAMETER OF MANHOLE. SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED BENEATH STREET PAVING EXCEPT WHERE SPECIFICALLY AUTHORIZED BY CITY ENGINEER AND SO DESIGNATED ON APPROVED CONSTRUCTION DRAWINGS.
4. ALL SUCH MANHOLE COVERS SHALL HAVE THE CITY OF SUGAR LAND EMBLEM AND THE WORDS "SUGAR LAND" AND "SANITARY SEWER" CAST IN RAISED RELIEF AS DEPICTED IN CITY OF SUGAR LAND STANDARD CONSTRUCTION DETAILS SHEETS. ALL SANITARY SEWER MANHOLES SHALL INCORPORATE INFLOW PROTECTORS.
5. MANHOLE RIM ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY. CONTRACTORS SHALL ADJUST RIM ELEVATIONS TO 0.4 FEET ABOVE FINISHED GRADE WITHIN RIGHTS-OF-WAY AND EASEMENTS AT EACH MANHOLE LOCATION AFTER FINAL GRADING. ADJUSTMENTS TO MANHOLE RIM ELEVATIONS SHALL BE ACCOMPLISHED BY THE USE OF THROAT RINGS ONLY (MAX. OF 24 INCHES PERMITTED). THE AREA ADJACENT TO SANITARY SEWER MANHOLE LOCATIONS SHALL BE GRADED AWAY FROM SUCH MANHOLES SO AS PREVENT ENTRY OF STORM WATER RUNOFF TO THE SANITARY SEWER SYSTEM.
6. DROP CONNECTIONS ARE REQUIRED WHEN INVERT ELEVATION OF SEWER LINE TO BE CONNECTED EXCEEDS 36 INCHES DISTANCE ABOVE INVERT ELEVATION OF MANHOLE BASE. ALL DROP CONNECTIONS SHALL BE CONSTRUCTED OF SAME MATERIALS AS SEWER AND SHALL BE CONSTRUCTED EXTERIOR TO MANHOLE. PIPE CONNECTIONS TO MANHOLES SHALL BE SO CONSTRUCTED AS TO BE WATERTIGHT AND TO ALIGN UPPER INSIDE PIPE WALL ELEVATIONS OF ALL PIPING CONNECTED TO BASE OF MANHOLE UNIFORMLY, REGARDLESS OF PIPE DIAMETERS. DROP ASSEMBLIES SHALL BE BEDDED IN CEMENT STABILIZED SAND. CEMENT STABILIZED SAND SHALL EXTEND A MINIMUM OF SIX INCHES PAST PIPING LATERALLY FROM BASE OF MANHOLE UPWARD TO A POINT SIX INCHES (MINIMUM) ABOVE THE HORIZONTAL SEWER PIPING WHERE CONNECTED TO THE MANHOLE ABOVE THE VERTICAL DROP.
7. CONNECTIONS TO EXISTING AND/OR NEW SANITARY SEWER MANHOLES CONSTRUCTED OF PRECAST CONCRETE NOT HAVING PRECORED HOLES OF CORRECT DIAMETER, LOCATION AND FIELD CORING ONLY SHALL ACCOMPLISH INVERT ELEVATION. IN NO INSTANCE WILL EITHER MANUAL OR PNEUMATIC CHISELS AND/OR HAMMER DRILLS BE UTILIZED TO BREAK HOLES IN PRECAST CONCRETE MANHOLES, PIPE SEGMENTS OR OTHER PRECAST STRUCTURES SUCH AS LIFT STATIONS.
8. BEDDING AND BACKFILL OF SANITARY SEWER PIPING AND MANHOLES SHALL BE ACCOMPLISHED IN ACCORDANCE WITH CITY OF SUGAR LAND DESIGN STANDARDS. A 1.5 SACK MIX IS REQUIRED FOR ALL CEMENT STABILIZED SAND BEDDING AND SUCH BEDDING SHALL BE INSTALLED IN LIFTS OF EIGHT INCHES MAXIMUM.
9. SOLVENT WELDED JOINTS ARE NOT AN ACCEPTABLE JOINING METHOD FOR SANITARY SEWERS CONSTRUCTED OF PVC PIPING MATERIALS AND LOCATED WITHIN RIGHTS-OF-WAY OR EASEMENTS. RUBBER GASKETED BELL AND SPIGOT SANITARY SEWER JOINTS ARE MANDATORY. BELL (FEMALE) ENDS OF PIPE SHALL BE INSTALLED ON UPSTREAM SIDE WITH SPIGOT (MALE) ENDS ORIENTED DOWNSTREAM.
10. SANITARY SEWER SERVICE LEADS SHALL BE EXTENDED TO RIGHTS-OF-WAY AND/OR EASEMENT LINES AS APPLICABLE AND CAPPED/PLUGGED FOR FUTURE CONNECTIONS. SERVICE LEADS ARE TO BE INSTALLED SO AS TO PASS UNDER POTABLE WATER PIPING AT CROSSINGS WHERE POSSIBLE.
11. EACH SANITARY SEWER SERVICE LEAD STUB, PLUGGED WYE BRANCH OUTLET AND STACK SHALL BE MARKED WITH A PRESSURE TREATED 4 X 4 TIMBER AT THE TIME OF CONSTRUCTION, BEGINNING AT THE INVERT ELEVATION OF THE STUB OR WYE AND AT AN ELEVATION TWO FEET BELOW THE CAPPED TERMINATION POINT OF THE STACK AND EXTENDING TWO FEET ABOVE FINISHED GRADE. EACH TIMBER MARKER SHALL BE PAINTED RED AND LABELED "SANITARY SEWER STUB", "SANITARY SEWER WYE" OR "SANITARY SEWER STACK" AS APPROPRIATE WITH STUB, WYE BRANCH OUTLET OR STACK SIZE NOTED.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION. DURING THE COURSE OF ANY AND ALL CLEARING, GRUBBING, FILL, GRADING, EXCAVATION OR OTHER CONSTRUCTION, CONTRACTOR SHALL ENSURE THAT STORM DRAINAGE PATHWAYS ARE MAINTAINED AND REMAIN OPEN TO ENSURE POSITIVE DRAINAGE AND THAT SUCH CONVEYANCES ARE NOT IMPEDED OR BLOCKED IN ANY WAY. STORM SEWER INLETS SHALL BE PROTECTED FROM ENTRY OF SILT, TRASH, DEBRIS AND ANY SUBSTANCES DELETERIOUS TO THE STORM SEWER SYSTEM AND/OR WATERWAYS RECEIVING STORM WATER RUNOFF. CONTRACTOR SHALL AT COMPLETION OF WORK, FILL LOW SPOTS AND GRADE ALL RIGHTS-OF-WAY AND UTILITY EASEMENTS AND REGRADE/RESTORE DITCHES AS NECESSARY TO MAINTAIN AND/OR ESTABLISH POSITIVE DRAINAGE.
13. ALL SANITARY SEWER PIPING AND BEDDING SHALL BE INSPECTED BY CITY CONSTRUCTION INSPECTOR FOR CONFORMANCE WITH CITY INFRASTRUCTURE STANDARDS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY NOTIFY THE CITY OF ALL CONSTRUCTION ACTIVITIES AND TO CONFORM TO CITY OF SUGAR LAND PUBLIC WORKS DEPARTMENT INSPECTION POLICY.
14. C.S.S. 1' ABOVE PIPE AND 6" BELOW PIPE MINIMUM.
15. SEE GENERAL NOTES AND C.S.S. NOTES.



SANITARY SEWER CLEANOUT DETAIL

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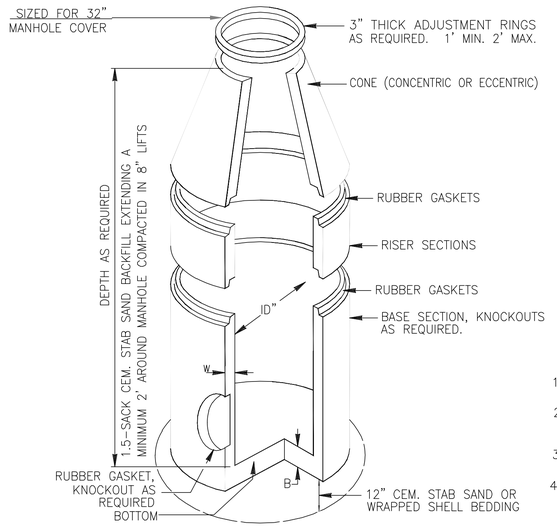
REVISION LOG

CONSTRUCTION DETAILS: SANITARY SEWER & WATERLINE

C9.01

SCALE: AS NOTED

2/2/2023 2:35:43 PM



DIMENSIONS AND WEIGHTS			
I.D. SIZE (in)	W (in)	B (in)	RISER WT/LF (lb)
48	5	6	868
60	6	8	1300
72	7	8	1811
96	9	8	3090

NOTES

1. LIFTING INSERTS AS REQUIRED.
2. ALL JOINTS SHALL BE SEALED WITH APPROVED RUBBER GASKET
3. STRUCTURE TO BE PLACED ON 12" STABILIZED BASE.
4. C.S.S. SHALL BE BROUGHT TO WITHIN 2-FT OF TOP OF MANHOLE.

SPECIFICATIONS:

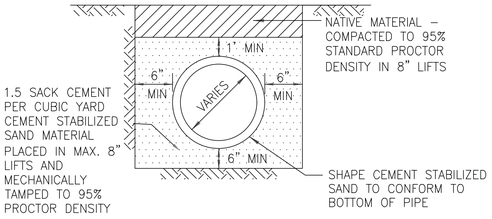
CONCRETE: CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATES FOR H-20 LOADING.

REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.

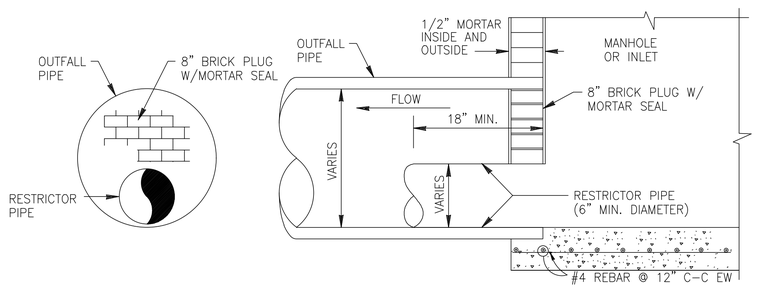
C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 35.

PRECAST CONCRETE MANHOLE

N.T.S.



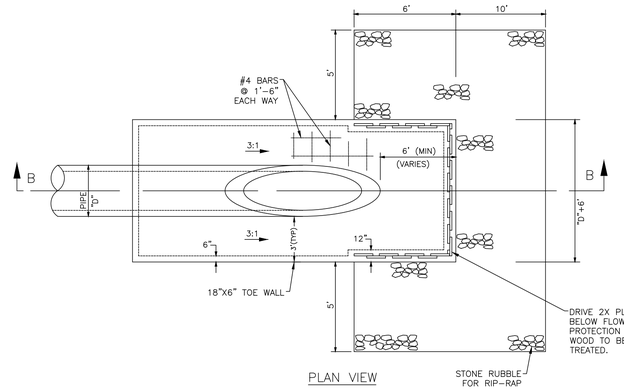
BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
36" DIAMETER & SMALLER



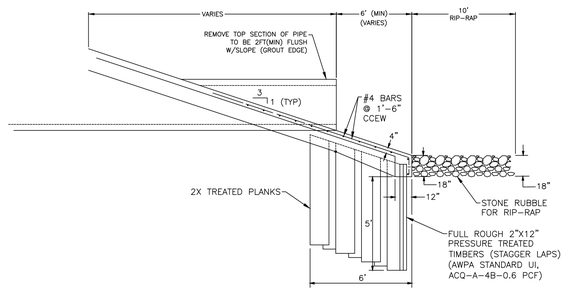
CHOKE OUTFALL RESTRICTOR DETAIL

STORM SEWER CHOKE RESTRICTOR

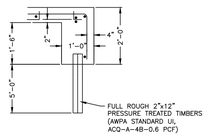
N.T.S.



PLAN VIEW



SECTION B-B



INSET

NOTES:
1. RIP-RAP SHALL BE BROKEN CONCRETE OR NATURAL STONE:
SPEC. GRAVITY - 2.4
SIZE - 0.25 TO 1.25 CF (40-190#)
DIMENSION - >3 IN.
WIDTH - <2.5 X THICKNESS
LENGTH - <3 X THICKNESS

2. ALL PLANKING FOR CUT-OFF WALLS AND RUBBLE RIP-RAP TO BE INCIDENTAL TO THE ITEM-CONCRETE FOR STRUCTURES, CLASS "B" RIP-RAP.

SLOPE PAVING OUTFALL DETAIL
STORM SEWER OUTFALL INTO DISTRICT DITCH
NTS

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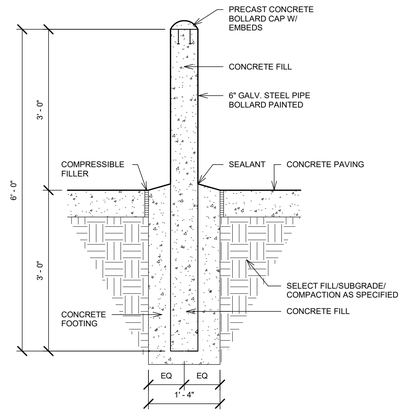
CONSTRUCTION DETAILS: STORM SEWER

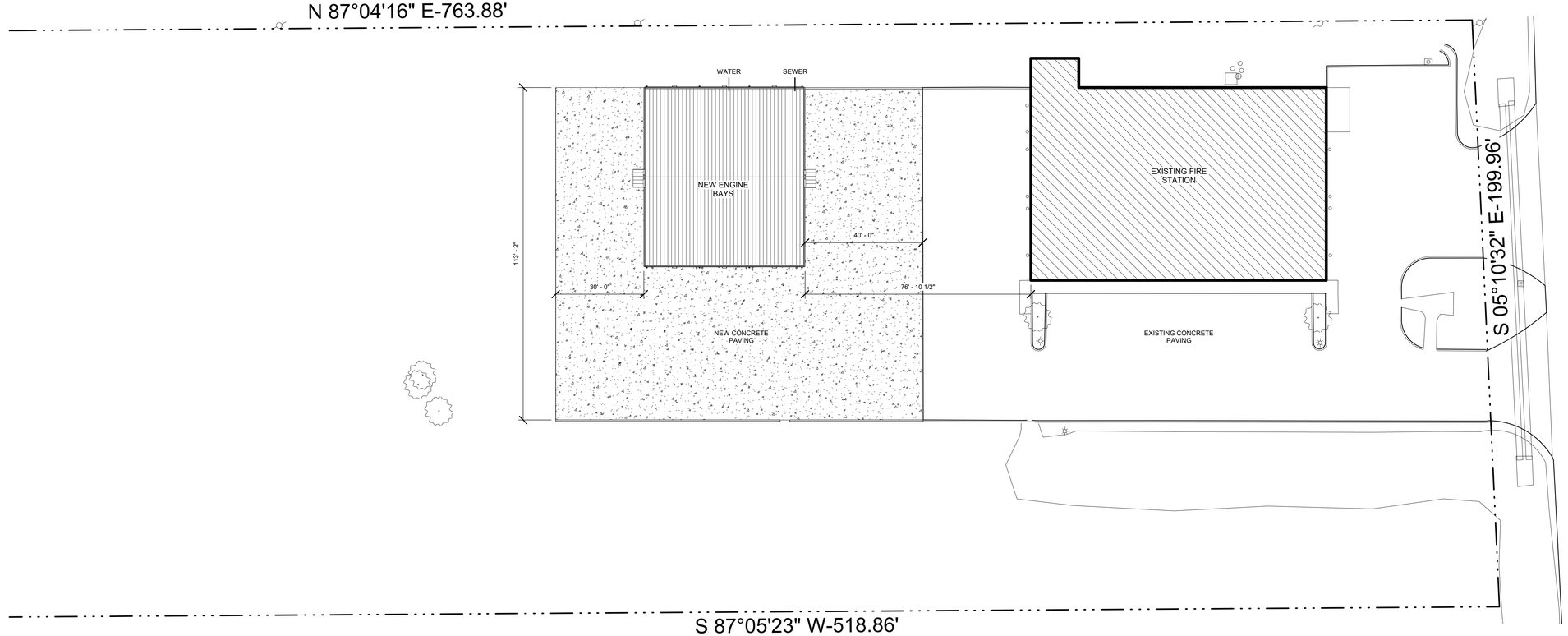
C9.02

SCALE: AS NOTED

2/2/2023 2:55:40 PM



2 PIPE BOLARD
3/4" = 1'-0"



1 SITE PLAN
1" = 20'-0"
PLAN NORTH

ANGLETON
Where the Heart is

Angleton Fire Station #3 Addition

2743 N. Velasco St.
Angleton, Texas 77515

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CJG Engineers
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SITE PLAN

A1.00

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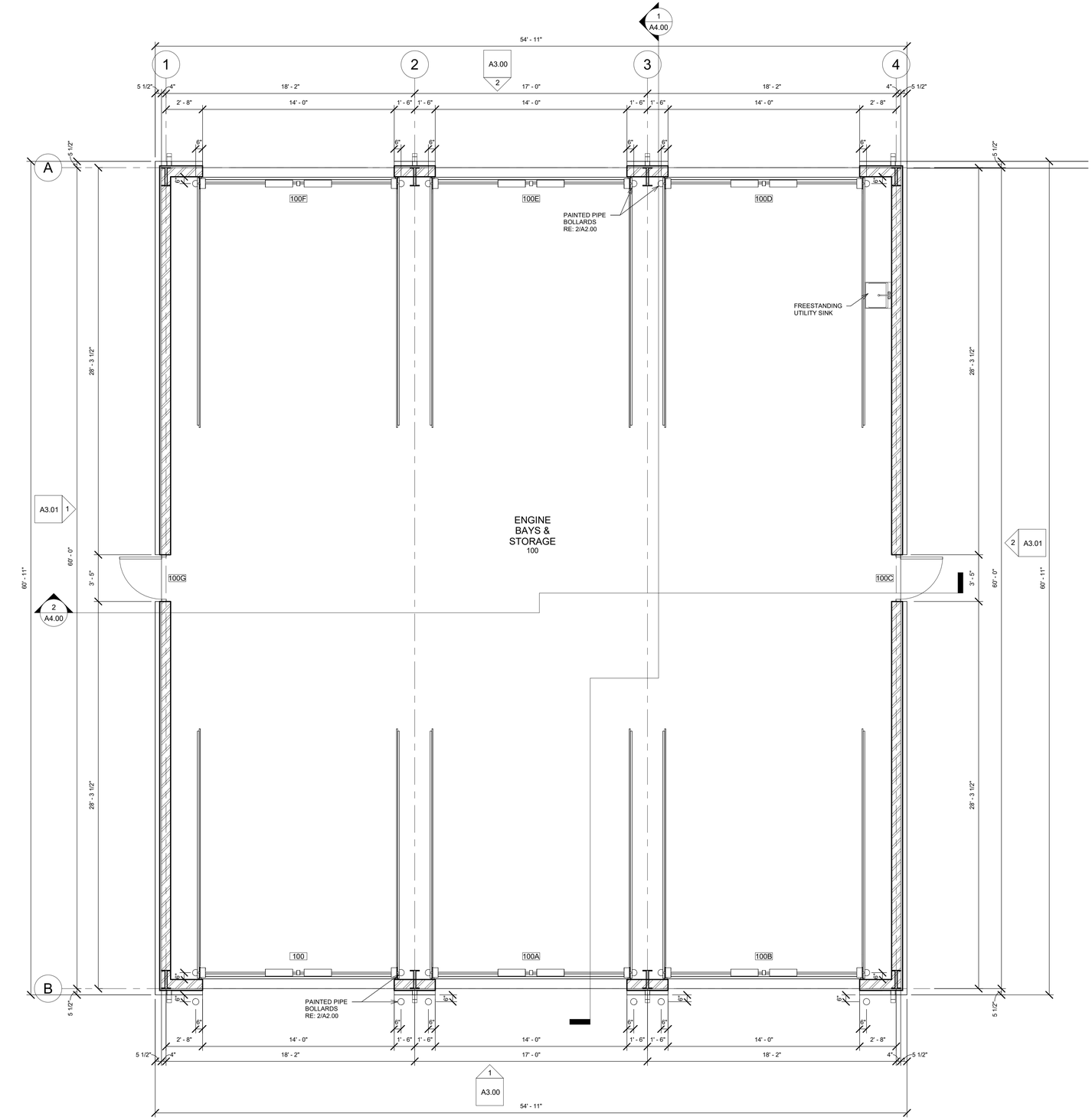
6/2/2023 8:40:47 AM



1 GROUND FLOOR PLAN
1/4" = 1'-0"
PLAN NORTH

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Where the Heart is

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GROUND FLOOR PLAN

A2.00

SCALE: AS NOTED

6/2/2023 8:49:49 AM

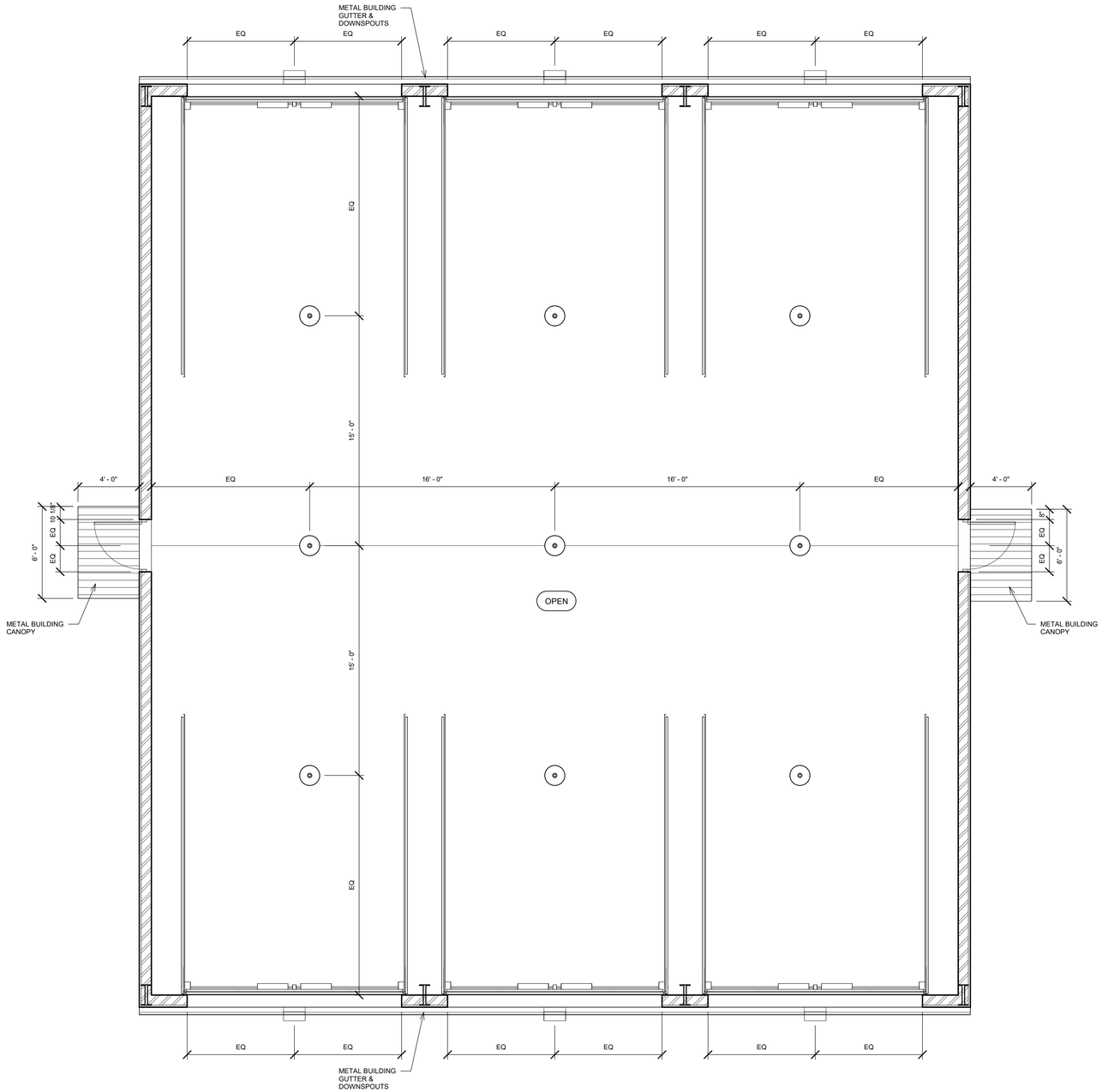
SUSPENDED HIGH BAY LED LIGHT FIXTURE

SURFACE MOUNTED WALL PACK LIGHT FIXTURE

OPEN B.O. CEILING FINISH ELEVATION A.F.F.

2 RCP LEGEND

1/8" = 1'-0"



1 GROUND FLOOR REFLECTED CEILING PLAN

1/4" = 1'-0"

PLAN NORTH

ANGLETON Where the Heart is

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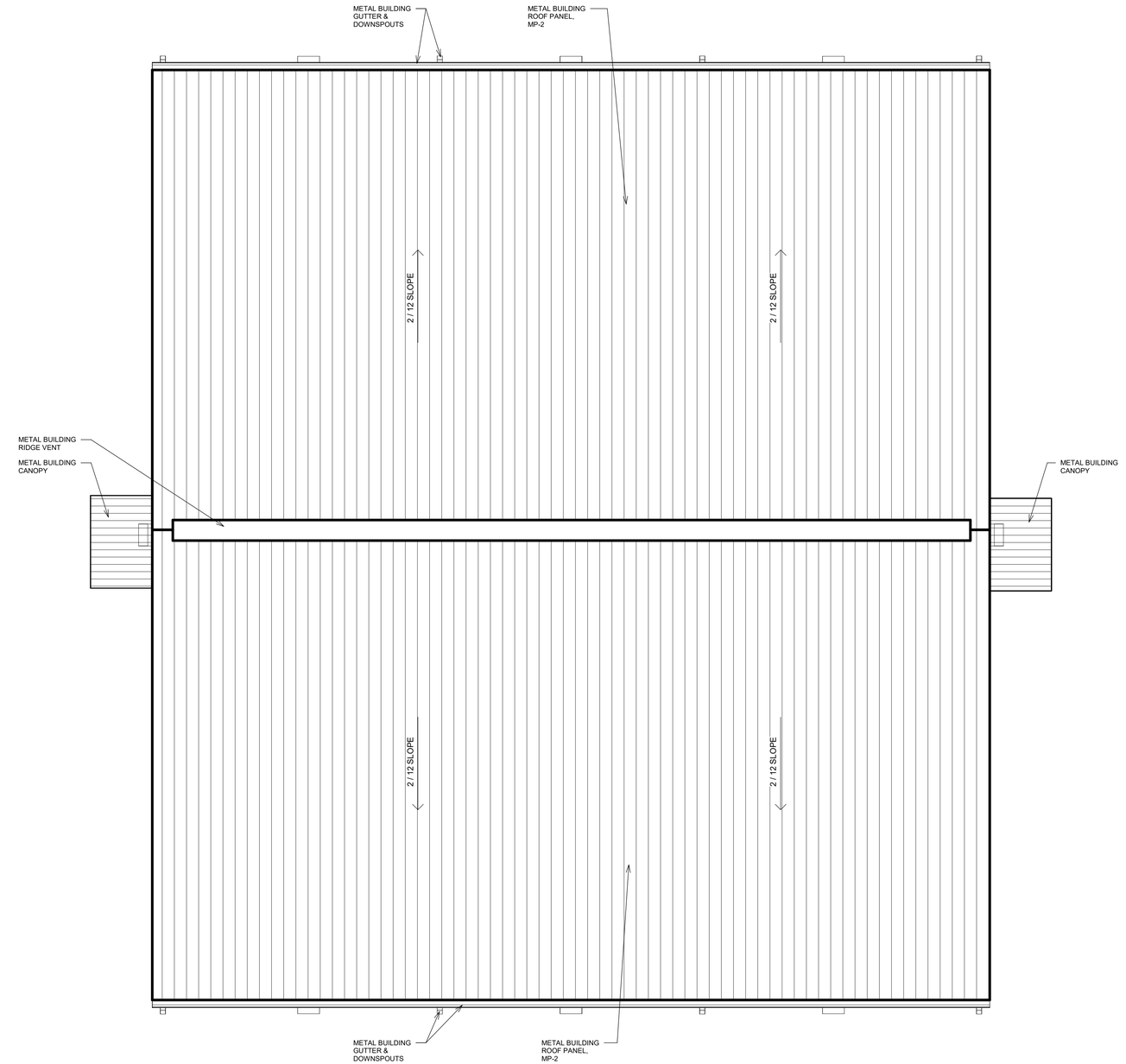
GROUND FLOOR REFLECTED CEILING PLAN

A2.20

SCALE: AS NOTED

6/2/2023 8:40:6 AM



PLAN NORTH

1 ROOF PLAN

1/4" = 1'-0"

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Where the Heart is

Angleton Fire Station #3 Addition

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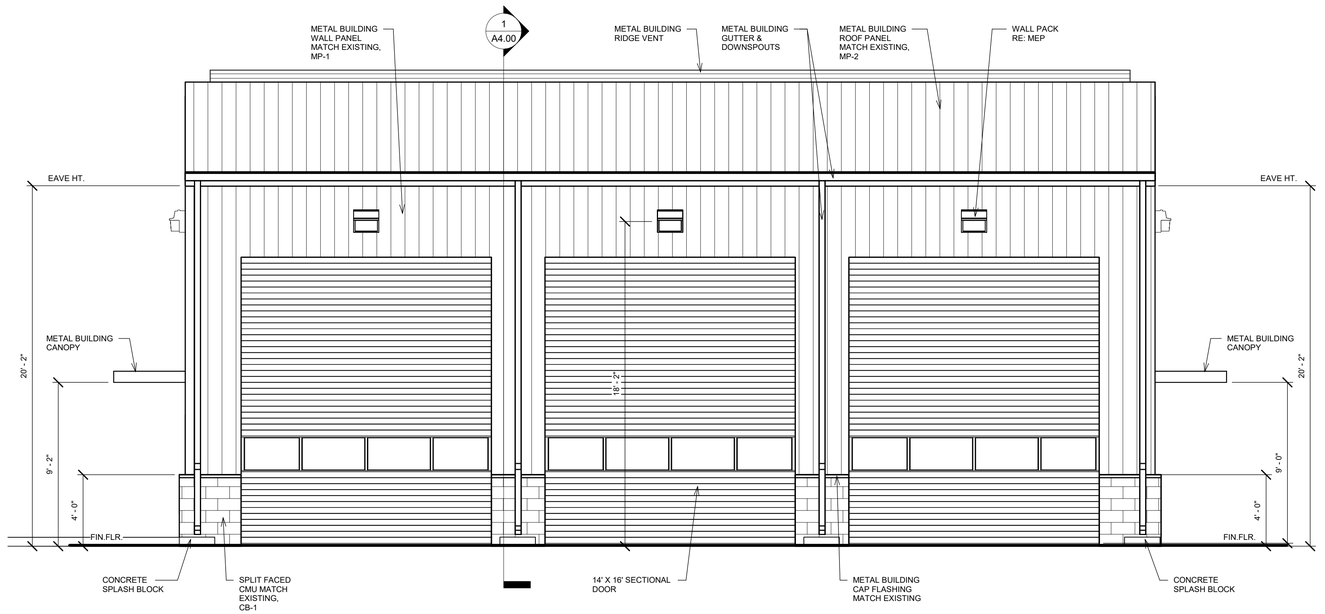
REVISION LOG

ROOF PLAN

A2.30

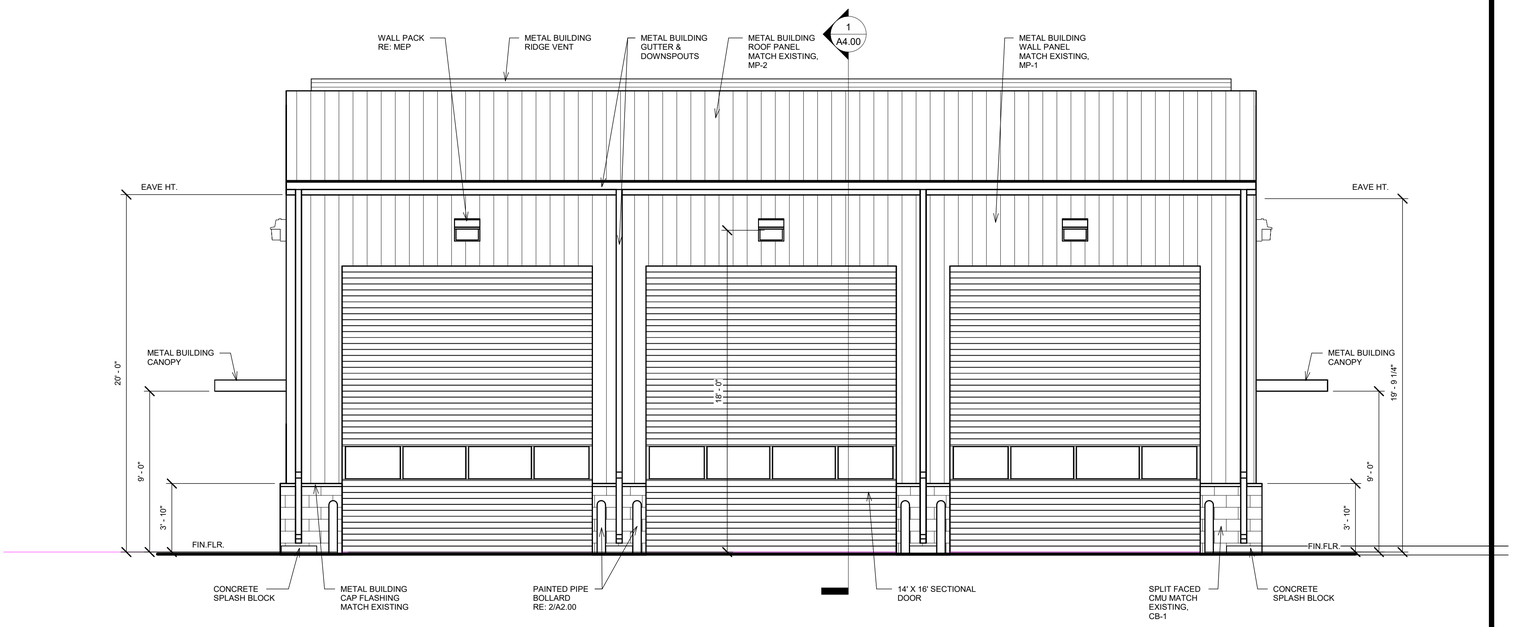
SCALE: AS NOTED

6/5/2023 8:49:50 AM



2 NORTH ELEVATION

1/4" = 1'-0"



1 SOUTH ELEVATION

1/4" = 1'-0"

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REVISION LOG

ELEVATIONS

A3.00

SCALE: AS NOTED

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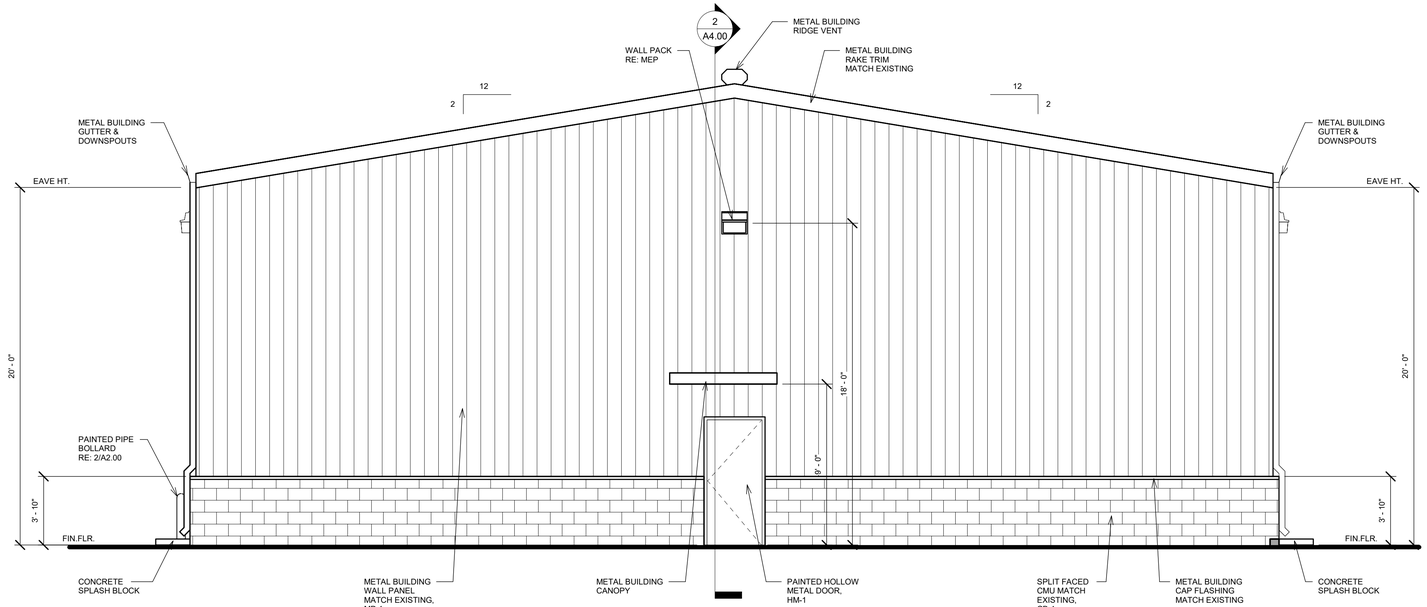
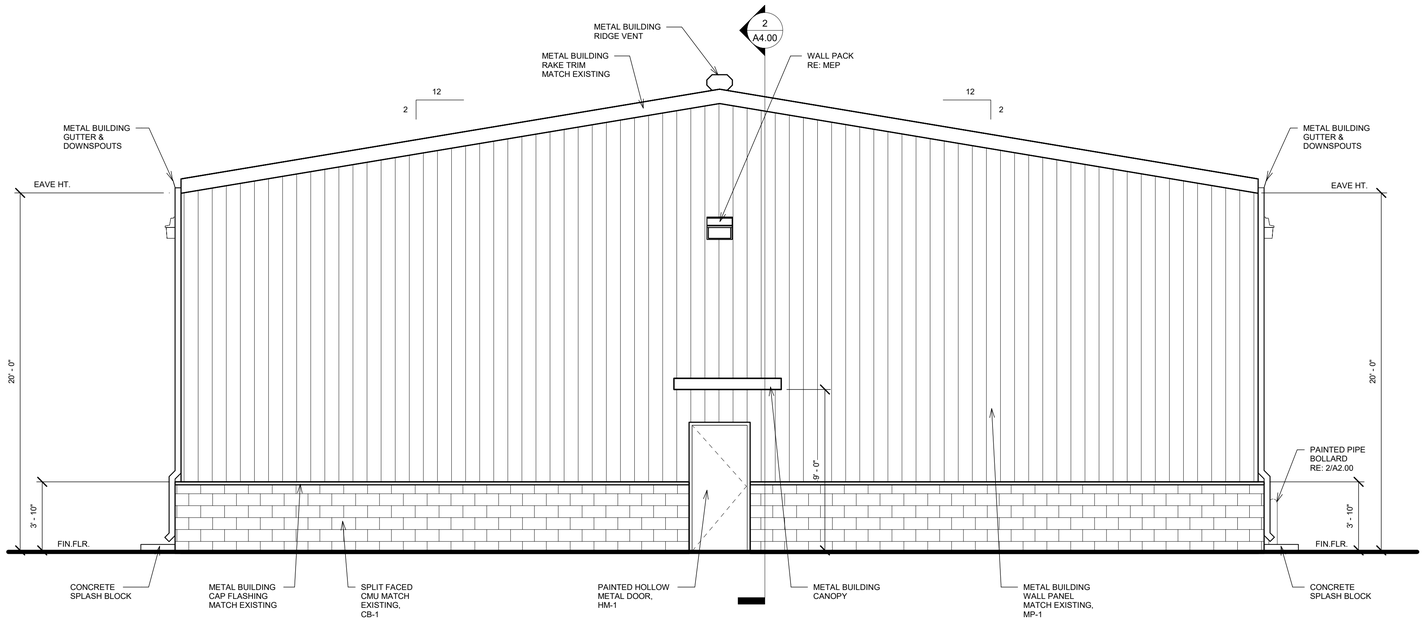


2 EAST ELEVATION

1/4" = 1'-0"



1 WEST ELEVATION

1/4" = 1'-0"

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ISSUE DATE:	06/02/23

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REVISION LOG

ELEVATIONS

A3.01

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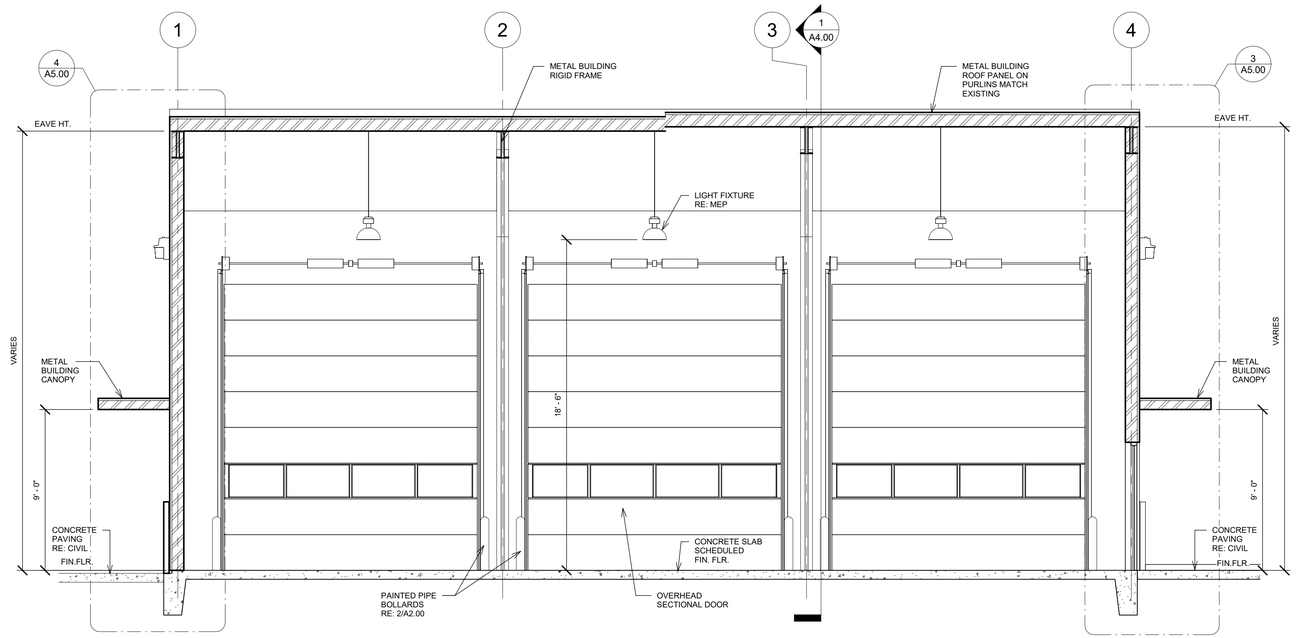
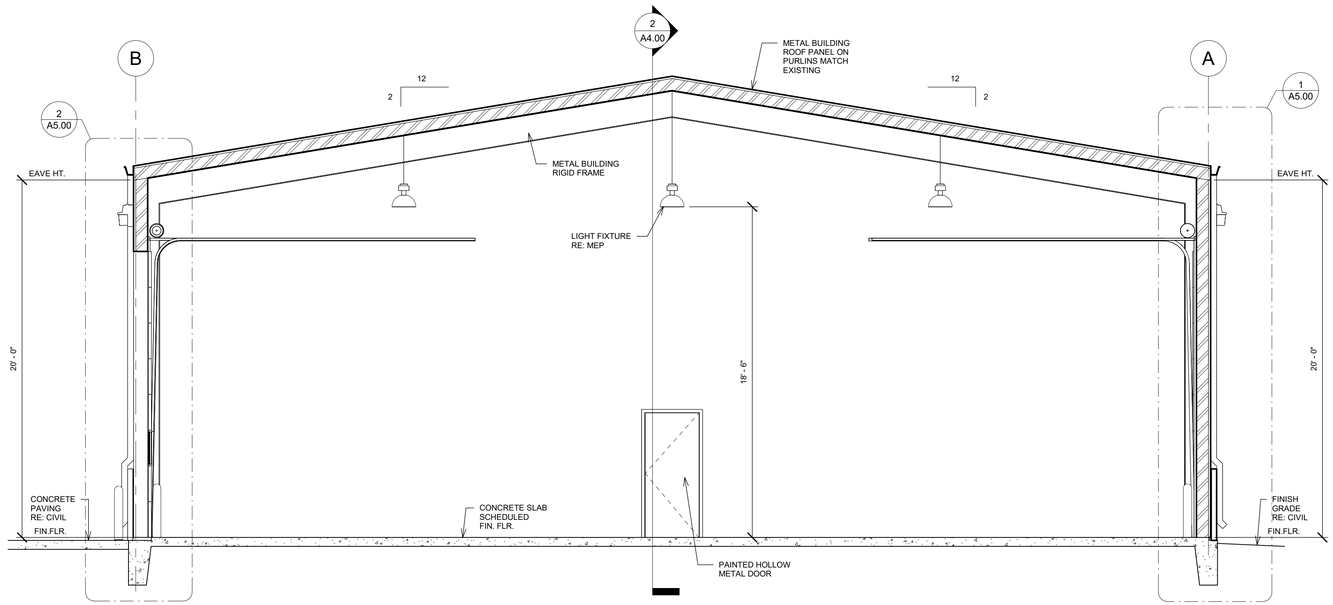


2 LONGITUDINAL SECTION

1/4" = 1'-0"



1 CROSS SECTION

1/4" = 1'-0"

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REVISION LOG

BUILDING SECTIONS

A4.00

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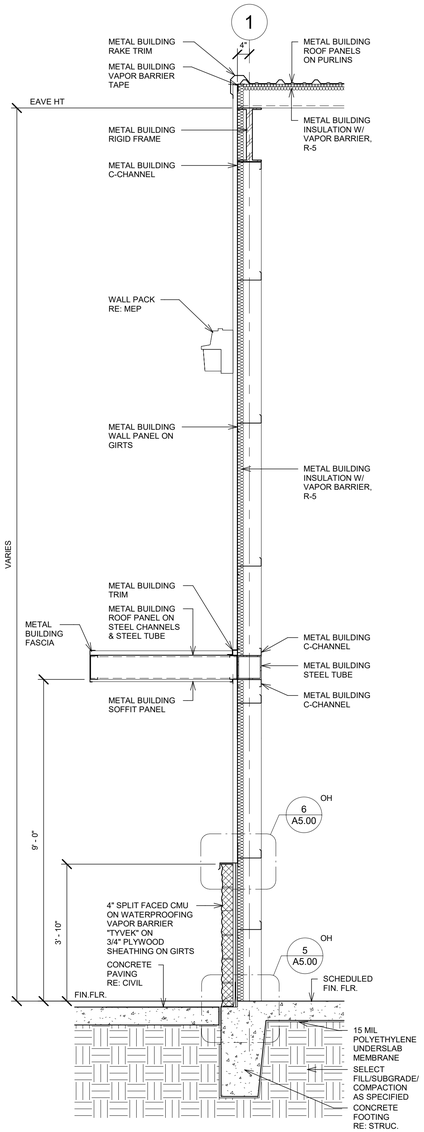
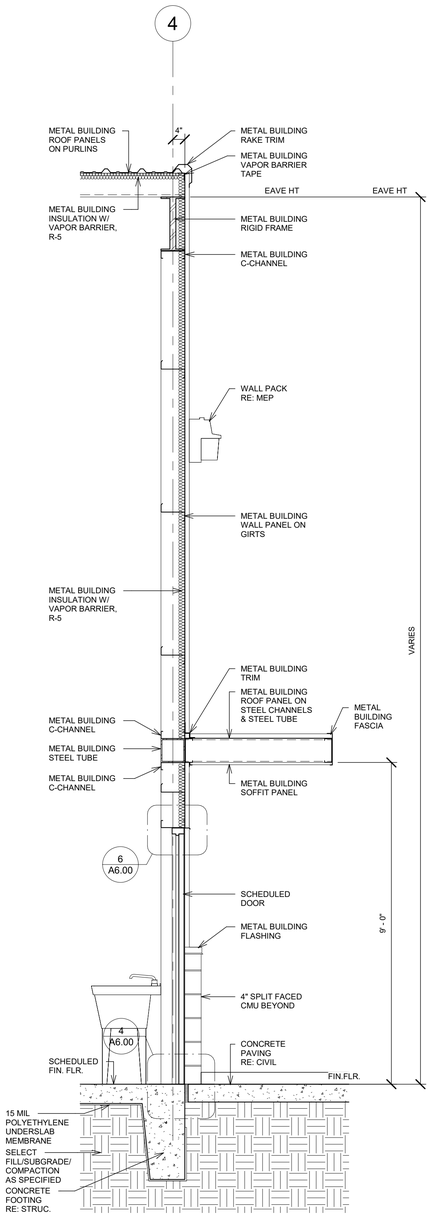
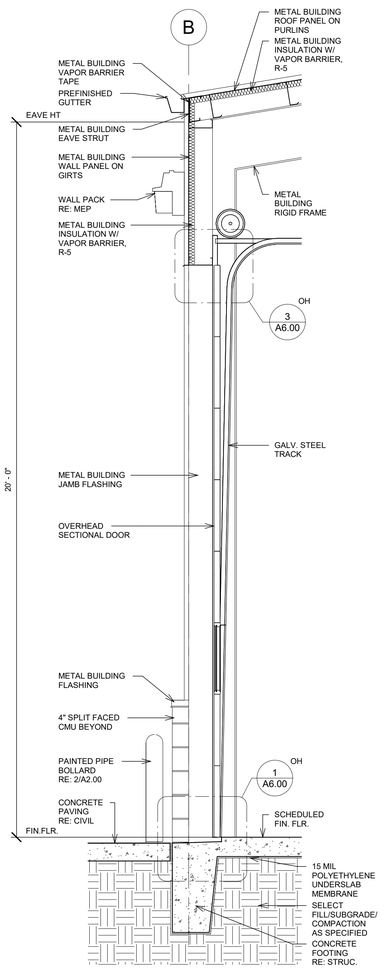


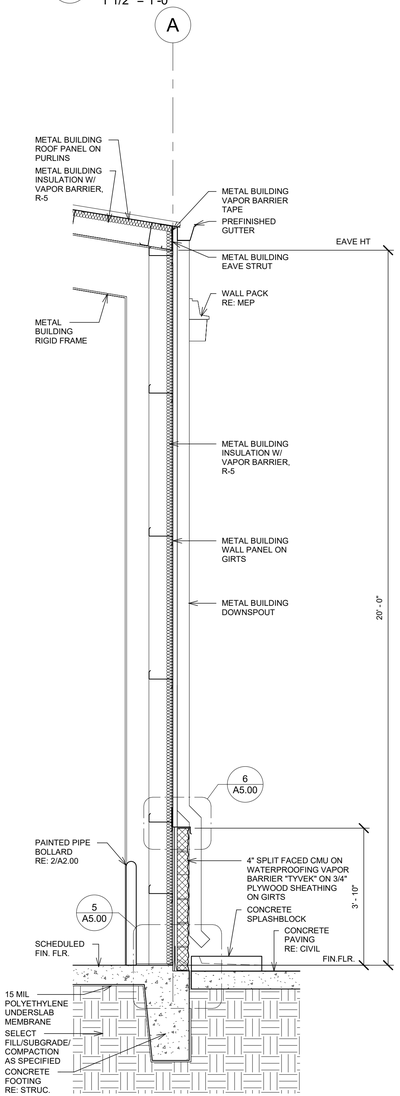
4 WALL SECTION 4
1/2" = 1'-0"



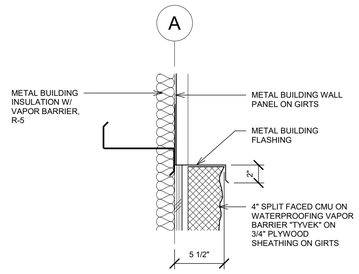
3 WALL SECTION 3
1/2" = 1'-0"



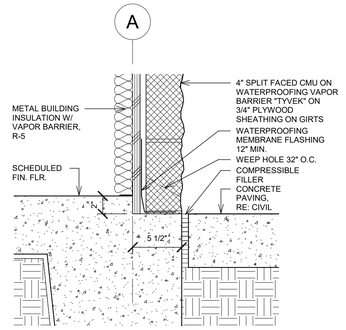
2 WALL SECTION 2
1/2" = 1'-0"



1 WALL SECTION 1
1/2" = 1'-0"



6 CMU WAINSCOT DET.
1 1/2" = 1'-0"



5 CMU LEDGE DET.
1 1/2" = 1'-0"

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REVISION LOG

WALL SECTIONS

A5.00

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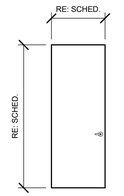
5/5/2023 8:45:05 AM

FLOOR FINISH SCHEDULE

Room	Name	Floor Finish	Base Finish	Wall Finish				Ceiling Finish	Ceiling Height	Notes
				North	South	East	West			
100	ENGINE BAYS & STORAGE	SC-1	-	-	-	-	-	OPEN	OPEN	

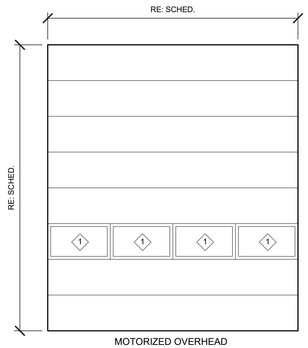
FLOOR DOOR SCHEDULE

Door#	Door Size	Finish	Door Type	Door Material	Frame Type	Frame Material	Hardware Set	Details				Notes
								Head	Jamb	Jamb	Sill	
100	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100A	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100B	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100C	3'-0" X 7'-0"	PAINT	1	HM	A	HM		6/A6.00	5/A6.00	5/A6.00	4/A6.00	
100D	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100E	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100F	14'-0" X 16'-0"	PAINT	2	STEEL	BY MANF.	BY MANF.		3/A6.00	2/A6.00	2/A6.00	1/A6.00	MOTORIZED
100G	3'-0" X 7'-0"	PAINT	1	HM	B	HM		6/A6.00	5/A6.00	5/A6.00	4/A6.00	



HOLLOW METAL DOOR EXTERIOR

1



MOTORIZED OVERHEAD SECTIONAL DOOR EXTERIOR

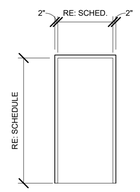
2

8 DOOR TYPES

1/4" = 1'-0"

GLAZING TYPES:

1 BY MANUF. TDI IMPACT RESISTANT GLASS

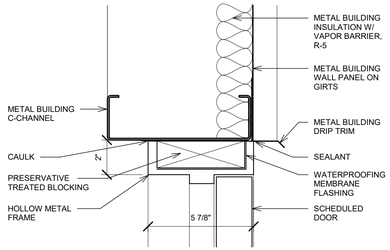


A

HOLLOW METAL EXTERIOR

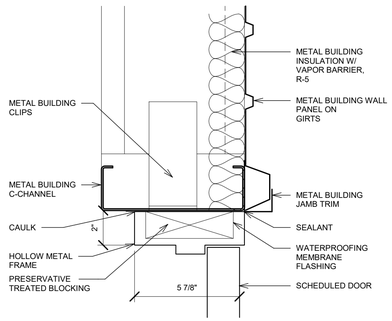
7 DOOR FRAME TYPES

1/4" = 1'-0"



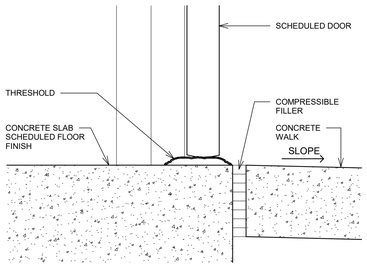
6 HM DOOR HEAD

3" = 1'-0"



5 HM DOOR JAMB

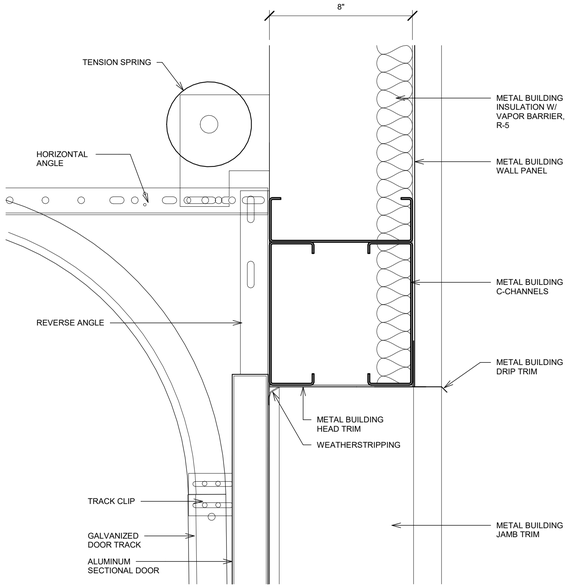
3" = 1'-0"



4 HM DOOR SILL

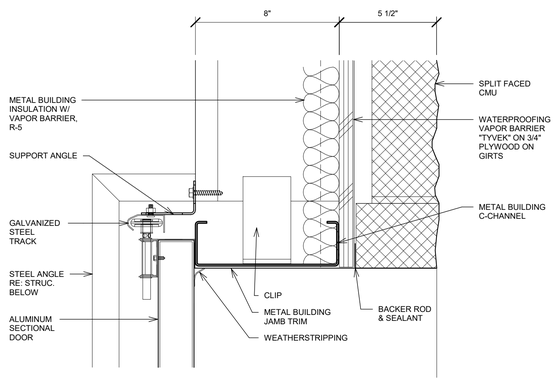
3" = 1'-0"

FINISH	TAG	MATERIAL NOTES	
FLOORING			
SEALED CONCRETE	SC-1	MANUF:	H & C SEALER
		SERIES:	-
		COLOR:	CLEAR
		NOTES:	-
EXTERIOR			
METAL PANELS	MP-1	MANUF:	WHIRLWIND, ALLIANCE, RED DOT, ETC
		SERIES:	R-PANEL
		COLOR:	MATCH EXISTING
		NOTE:	WALLS - SEE ELEVATIONS
	MP-2	MANUF:	WHIRLWIND, ALLIANCE, RED DOT, ETC
		SERIES:	R-PANEL
		COLOR:	MATCH EXISTING
		NOTE:	ROOF - SEE ELEVATIONS
CMU BLOCK	CB-1	MANUF:	UPCHURCH KIMBROUGH
		SERIES:	SPLIT FACE
		COLOR:	MATCH EXISTING
		NOTE:	WAINSCOT AROUND BUILDING - SEE ELEV.
HOLLOW METAL DOORS/FRAMES	HM-1	MANUF:	SHERWIN WILLIAMS
		COLOR:	MATCH EXISTING
		FINISH:	AS SPECIFIED
		NOTE:	



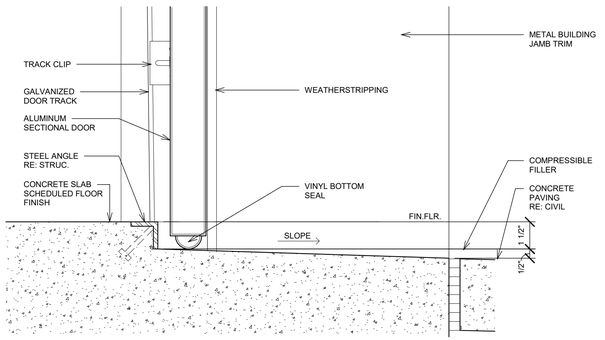
3 SECTIONAL DOOR HD

3" = 1'-0"



2 SECTIONAL DOOR JMB

3" = 1'-0"



1 SECTIONAL DOOR SILL

3" = 1'-0"

ANGLETON Where the Heart is

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06/02/23	95 % OWNER REVIEW SET

REVISION LOG

FINISH & DOOR SCHEDULES, FINISH LEGEND, DOOR & FRAME TYPES,

A6.00

SCALE: AS NOTED

6/2/2023 8:49:56 AM

GENERAL NOTES

A. THE NOTES AND SPECIFICATIONS PROVIDED ON THE STRUCTURAL DRAWINGS ARE EXCERPTS FROM THE RELATING PROJECT SPECIFICATIONS. THEY ARE NEITHER COMPLETE NOR DO THEY REPLACE THE CONTRACT SPECIFICATIONS.

B. MEANS AND METHODS: THE STRUCTURAL DRAWINGS DEPICT THE STRUCTURE IN ITS FINAL CONSTRUCTED CONFIGURATION UNLESS SO STATED OR NOTED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DESIGN AND PROVIDE ALL TEMPORARY SUPPORTS REQUIRED FOR THE EXECUTION OF THE CONTRACT INCLUDING BUT NOT LIMITED TO: GUYS, BRACES, SHORES, RE-SHORES, FALSEWORK, ANY TEMPORARY SUPPORTS OR TEMPORARY ANCHORS. NEITHER CONSTRUCTION MEANS AND METHODS NOR CONSTRUCTION SAFETY ARE PART OF THE STRUCTURAL ENGINEER'S EXPERTISE OR SCOPE OF WORK. THE GENERAL CONTRACTOR AND HIS SUBCONTRACTORS ARE FULLY RESPONSIBLE FOR THE MEANS AND METHODS USED TO CONSTRUCT THE STRUCTURE AND FOR FULL COMPLIANCE WITH ALL JOB SAFETY RELATED REGULATIONS AND CONDITIONS AT THE SITE. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS RELATING TO THE SPECIFIC STRUCTURAL ERECTION ITEMS ADDRESSED IN THE LATEST OSHA REGULATIONS.

C. LIMITED SITE VISITS IF ANY BY THE STRUCTURAL ENGINEER OF RECORD (SER) ARE SOLELY TO OBSERVE COMPLETED PARTS OF THE STRUCTURE. THE STRUCTURAL ENGINEER OF RECORD (SER) IS NEITHER QUALIFIED TO OBSERVE NOR COMMENT ON CONSTRUCTION MEANS AND METHODS AND JOB SITE SAFETY.

D. PRINCIPAL OPENINGS ARE SHOWN ON THE DRAWINGS. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR OPENINGS, SLEEVES, CURBS, INSERTS, DEPRESSIONS, ETC., NOT SHOWN.

E. TYPICAL DETAILS: GENERAL DETAILS AND NOTES ON THESE SHEETS SHALL APPLY UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS. ALL WORK OR CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE BUILDING CODES, REGULATION AND SAFETY REQUIREMENTS. ALL DETAILS ARE TYPICAL UNLESS NOTED OTHERWISE. DETAILS SHALL APPLY TO ALL SIMILAR AND LIKE CONDITIONS.

F. DISCREPANCIES: THE CONTRACTOR SHALL INFORM THE ENGINEER IN WRITING OF ANY DISCREPANCIES OR OMISSIONS NOTED ON THE DRAWINGS OR IN THE SPECIFICATIONS. UPON RECEIPT OF SUCH INFORMATION, THE ENGINEER WILL SEND WRITTEN INSTRUCTIONS TO ALL CONCERNED. ANY SUCH DISCREPANCY, OMISSION, OR VARIATION NOT REPORTED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND WORK SHALL BE PERFORMED IN A MANNER AS DIRECTED BY THE ENGINEER AT NO COST TO THE PROJECT.

G. EXCAVATION: THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH THE LOCAL BUILDING DEPARTMENT

H. COORDINATION AND OTHER TRADES: IT IS NOT THE INTENT THAT THE STRUCTURAL DRAWINGS BE VIEWED AS STAND ALONE DRAWINGS WITH RESPECT TO PROJECT DIMENSIONS OR ANY OTHER COMPONENT OF THE CONSTRUCTION THAT CAN AND MAY BE IDENTIFIED IN OTHER PARTS OF THE CONTRACT DOCUMENTS. IT REQUIRES THE ENTIRE SET OF CONTRACT DOCUMENTS TO PROPERLY CONSTRUCT THE STRUCTURE AS WELL AS OTHER COMPONENTS OF THE BUILDING. ANCHORS REQUIRED FOR ANCHORING MEP EQUIPMENT AND / OR PIPING ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL DETERMINE AND COORDINATE REQUIREMENTS FROM OTHER DISCIPLINES AND SHALL PROVIDE APPROPRIATE ALLOWANCES INTO THE BID. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSEMBLE AND COORDINATE THE REQUIREMENTS OF ALL COMPONENTS OF THE CONTRACT DOCUMENTS IN ORDER TO PROPERLY IMPLEMENT THE REQUIREMENTS OF THE CONTRACT. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF PIPES, VENTS, CHASES, DUCTS AND OTHER OPENINGS AND DETAILS NOT SHOWN ON THESE STRUCTURAL DRAWINGS. ALL DIMENSIONS ARE TO BE CHECKED AND VERIFIED WITH THE ARCHITECTURAL DRAWINGS.

I. SEE ARCHITECTURAL DRAWINGS FOR ELEVATIONS NOT SHOWN. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL SECTIONS WITH THE ARCHITECTURAL SECTIONS AND REPORT ANY DISCREPANCY TO THE ARCHITECT PRIOR TO FABRICATING OR INSTALLING STRUCTURAL MEMBERS.

J. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE GRADES WITH THE CIVIL ENGINEER'S GRADING PLAN AND THE LANDSCAPE ARCHITECT'S PLAN.

K. THE DRAWINGS IN THE STRUCTURAL DOCUMENTS ARE NOT TO BE SCALED FOR ANY PURPOSE, INCLUDING THE DETERMINATION OF QUANTITIES AND THE FIT UP OF MATERIALS.

L. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL CONTRACT DOCUMENTS AND LATEST ADDENDA AND TO PROVIDE SUCH DOCUMENTS TO ALL SUBCONTRACTORS AND MATERIAL SUPPLIERS PRIOR TO THE SUBMITTAL OF SHOP DRAWINGS, FABRICATION OF ANY STRUCTURAL MEMBERS AND ERECTION IN THE FIELD.

M. PRECONSTRUCTION MEETINGS: THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING PRECONSTRUCTION MEETINGS FOR THE FOUNDATION AND SUPERSTRUCTURE ELEMENTS OF THE PRIMARY FRAME WITH A MINIMUM OF TWO WEEKS OF NOTICE PRIOR TO START OF THE RELEVANT WORK. ATTENDEES SHALL INCLUDE THE CONTRACTORS, APPROPRIATE SUBCONTRACTORS, FABRICATORS, INSPECTORS, ARCHITECT/ENGINEERS. THE MEETING AGENDA SHALL INCLUDE THE FOLLOWING ITEMS: REVIEW OF WORK SCOPE, PROJECT SCHEDULE FOR THE ELEMENTS BEING DISCUSSED, CONTACT INFORMATION OF RESPONSIBLE PARTIES, INSPECTION POINTS FOR BOTH SER AND SPECIAL INSPECTOR, REVIEW OF MATERIALS AND ANY SPECIAL DESIGN ISSUES, CLARIFICATIONS, TESTING AND ACCEPTANCE, AND ANY OTHER TOPIC DEEMED APPROPRIATE BY THE CONTRACTOR, ARCHITECT OR STRUCTURAL ENGINEER.

N. SHOP DRAWINGS SHALL BE NEW DRAWINGS PRODUCED BY THE CONTRACTOR. ILLEGIBLE REPRODUCTIONS OF THE DESIGN DRAWINGS WILL BE REJECTED. THE USE OF REPRODUCTIONS OR ELECTRONIC FILES OF THE STRUCTURAL DRAWINGS FOR THE PREPARATION OF SHOP DRAWINGS IS NOT ACCEPTABLE WITHOUT PRIOR WRITTEN AUTHORIZATION OF THE ENGINEER OF RECORD. IF SUCH AUTHORIZATION IS OBTAINED, DO NOT SUBMIT SHOP DRAWINGS WITH THE CONTRACT DOCUMENT TITLE BLOCK AND/OR THE SEAL OF THE REGISTERED ENGINEER OF RECORD AFFIXED. ALTERATION OF A SEALED DOCUMENTS WITHOUT PROPER NOTIFICATION OF THE RESPONSIBLE ENGINEER IS AN OFFENSE OF THE ENGINEERING PRACTICE ACT. THE USE OF REPRODUCTIONS OR ELECTRONIC FILES OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS OR OMISSIONS THAT MAY OCCUR HEREON. DRAWINGS REQUIRING A SPECIALTY STRUCTURAL ENGINEER (SSR) SHALL HAVE CALCULATIONS AND DRAWINGS SEALED BY A LICENSED ENGINEER IN THE STATE OF THE PROJECT.

O. SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT, AND ARE SUPERSEDED BY THE STRUCTURAL DRAWINGS. IT IS NOT THE INTENT THAT THE STRUCTURAL DRAWINGS BE VIEWED AS DETAILED SHOP OR ERECTION DRAWINGS. VARIOUS DIMENSIONS REQUIRED FOR PROPER FIT-UP OF THE COMPONENTS OF THE STRUCTURE MUST BE DETERMINED FROM THE INFORMATION THAT IS PROVIDED ELSEWHERE IN THE CONTRACT DOCUMENTS. IT IS THE CONTRACTOR'S AND THEIR DETAILER'S OR SUBCONTRACTOR'S RESPONSIBILITY TO ESTABLISH AND TO CALCULATE AND VERIFY THESE DIMENSIONS AS REQUIRED TO ACHIEVE PROPER FIT-UP OF MATERIALS AND TO ACHIEVE COMPLIANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION IS IN FULL AGREEMENT WITH THE LATEST STRUCTURAL DRAWINGS.

P. OMISSION FROM THE SHOP DRAWINGS OF ANY REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF COMPLYING WITH THE OMITTED REQUIREMENTS, EVEN IF THE SHOP DRAWINGS HAVE BEEN REVIEWED, APPROVED AND RETURNED.

Q. SHOP DRAWING REVIEW PROCESS - ALL SHOP DRAWINGS WILL BE REVIEWED AND RETURNED IN THE ORDER RECEIVED UNLESS OTHER SPECIFIC INSTRUCTIONS ARE RECEIVED. FOR PROJECTS WITH MULTIPLE WORK AREAS, THE SHOP DRAWINGS MUST BE DIVIDE INTO THE SAME OR SIMILAR AREAS WITH EACH AREA SUBMITTED INDIVIDUALLY UNDER A SEPARATE TRANSMITTAL. IF THE SHOP DRAWINGS ARE NOT DIVIDED INTO AREAS PER THE CONTRACT DOCUMENTS, THAT SUBMITTAL WILL BE REJECTED. EACH SUBMITTAL WILL BE REVIEWED INDIVIDUALLY AND REQUIRE AN INDIVIDUAL TIME FRAME OF TEN (10) WORKING DAYS PER SUBMITTAL. IF MULTIPLE SUBMITTALS ARE RECEIVED WITHIN THE REVIEW TIME FRAME OF A PRIOR SUBMITTAL, THEY WILL BE REVIEWED CONSECUTIVELY EACH WITH ITS OWN INDIVIDUAL REVIEW TIME FRAME THAT BEGINS ONCE THE PRIOR SUBMITTAL IS RETURNED. THIS GIVES EACH SUBMITTAL A TEN (10) WORKING DAY REVIEW WINDOW.

R. RETURNED SHOP DRAWINGS STAMPED "NOTE MARKINGS" OR "APPROVED AS NOTED" ARE ASSUMED TO BE APPROVED ONCE ALL THE COMMENTS HAVE BEEN INCORPORATED. THE SER WILL ONLY REVIEW SUBMITTALS ONE ADDITIONAL TIME AND ONLY IF THEY ARE MARKED "REVISE AND RESUBMIT" OR "REJECTED". ANY FURTHER REVIEWS OF THE SAME OR SIMILAR SUBMITTALS WILL BE AT THE GENERAL CONTRACTORS EXPENSE WITH PAYMENT FOR SERVICES RENDERED PRIOR TO THE RETURN OF THE APPROVAL DRAWINGS.

S. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DELAYS CAUSED BY REJECTION OF INADEQUATE, INCOMPLETE OR INCORRECT SHOP DRAWINGS.

T. SHOP DRAWINGS THAT ARE NOT SPECIFICALLY REQUIRED BY THE GENERAL NOTES OR SPECIFICATIONS WILL NOT BE REVIEWED OR RETURNED.

U. MINIMUM SHOP DRAWING SUBMITTAL REQUIREMENTS INCLUDE:

- CONCRETE MIX DESIGNS FOR EACH CLASS OF CONCRETE WITH TEST DATA
- CONCRETE ACCESSORIES (VAPOR RETARDER, REINFORCING SUPPORT CHAIRS, VOID FORMS, ETC.)
- CONCRETE REINFORCING SHOP DRAWINGS
- PRE-ENGINEERED METAL BUILDING SHOP DRAWINGS (SEALED BY A LICENSED ENGINEER)
- GLAZED ALUMINUM FRAMING SYSTEMS SHOP DRAWINGS AND CALCULATIONS (SEALED BY LICENSED ENGINEER)
- PRE-FABRICATED CANOPY FRAMING SYSTEMS SHOP DRAWINGS AND CALCULATIONS (SEALED BY A LICENSED ENGINEER)

V. CRANES, CONCRETE TRUCKS AND ALL OTHER HEAVILY LOADED VEHICLES ARE NOT TO BE DRIVEN ACROSS GRADE BEAMS OR BUILDING SLABS.

W. ALL SHORING REQUIRED TO TEMPORARILY SUPPORT CONSTRUCTION LOADS DURING THE CONSTRUCTION OF THE PROJECT SHALL BE DESIGNED AND SEALED BY A LICENSED ENGINEER. ALL EXISTING STRUCTURES AND NEW STRUCTURES SUPPORTING SHORING LOADS SHALL ALSO BE ANALYZED TO DETERMINE IF THEY ARE CAPABLE OF SUPPORTING THE REQUIRED LOADS AND SHALL BE REVIEWED BY A LICENSED ENGINEER. SHOP DRAWINGS AND CALCULATIONS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL.

X. ERECTION OF STRUCTURAL STEEL MAY NOT BEGIN UNTIL CONCRETE FOUNDATION HAS CURED FOR A MINIMUM OF THREE DAYS. STRUCTURAL STEEL OR OTHER HEAVY LOADS SHALL NOT BE STOCKPILED ON ANY SLAB UNTIL IT HAS CURED FOR A MINIMUM OF THREE DAYS.

Y. NON-CONFORMING WORK, REMEDIAL REPAIRS, AND FIELD MODIFICATIONS — ALL NON-CONFORMING WORK AND ASSOCIATED REMEDIAL REPAIRS OR FIELD MODIFICATIONS, INCLUDING ENGINEERING, QUALITY REVIEW AND DRAFTING OF ANY NEW DETAILS OR DOCUMENT REVISIONS, SUBMITTED AS A REQUEST FOR INFORMATION (RFI) AND DEEMED TO REQUIRE ADDITIONAL ENGINEERING OR DRAFTING SERVICES MAY BE BILLED AS AN ADDITIONAL SERVICE AT THE CONTRACTORS EXPENSE AT THE SOLE DISCRETION OF THE SER. THE SER MAY WITHHOLD FUTURE SERVICES UNTIL PAYMENT IS RECEIVED.

Z. NOTE THAT THE GROUND FLOOR SLAB IS A GROUND SUPPORTED SLAB AT GRADE AS PER THE DESIGN RECOMMENDED IN THE GEOTECHNICAL REPORT. IT IS NOT A STRUCTURAL SLAB AND AS SUCH IT IS NOT DESIGNED FOR ANY EXTERNAL UPWARD OR DOWNWARD LOADS, IT IS INTENDED TO BE ENTIRELY SUPPORTED BY THE PREPARED GROUND UNDER THE SLAB. THE CONTRACTOR SHOULD NOTE THAT THE PERFORMANCE OF THE SLAB AS DESIGNED AND INTENDED BY THE GEOTECHNICAL ENGINEER IS HIGHLY DEPENDENT ON HOW WELL THE CONTRACTOR FOLLOWS THE SITE PREPARATION INSTRUCTIONS IN THE GEOTECHNICAL REPORT. THE ARCHITECT SHALL ADVISE THE OWNER THAT THE PERFORMANCE OF THE SLAB INVOLVES SOME RISK, AND THAT SLAB ON GRADE MAY EXPERIENCE VERTICAL MOVEMENTS OF 1-1/2 INCHES OR MORE DEPENDING ON CLIMATIC FACTORS AND IS DEPENDENT ON ENVIRONMENTAL CONDITIONS OVER WHICH THE OWNER HAS CONTROL OF AFTER OCCUPANCY OF THE BUILDING. FURTHERMORE, A SLAB ON GRADE CAN EXPERIENCE VERTICAL MOVEMENT BASED ON CHANGES IN THE MOISTURE CONTENT OF THE UNDERLYING SOILS AND THAT STRUCTURAL SLABS WOULD LIMIT THIS RISK AT A GREATER UP-FRONT COST TO THE PROJECT. THE ARCHITECT, CONTRACTOR AND THE OWNER SHOULD CONSULT WITH THE GEOTECHNICAL ENGINEER IF THERE ARE ANY QUESTIONS CONCERNING CONSTRUCTION, PERFORMANCE AND RISKS INVOLVED WITH GROUND SUPPORTED SLAB AT GRADE CONSTRUCTION.

DESIGN CRITERIA:

BUILDING CODE: INTERNATIONAL BUILDING CODE, 2018 EDITION, ASCE 7-16
TEXAS DEPARTMENT OF INSURANCE (TDI) DESIGNATED CATASTROPHE AREA —INLAND II

LIVE LOAD:

ROOF:	20 PSF
ARCHITECTURAL BARRIER ACT	
GRAB BAR	250 LBS. ANY DIRECTION
TUB OR SHOWER SEAT	250 LBS. ANY DIRECTION
FASTENERS & MOUNTING DEVICES	250 LBS. ANY DIRECTION

WIND LOAD:

VELOCITY (V_{ult})	154 MPH	THREE SECOND GUST (ULTIMATE) ASCE 7-10
VELOCITY (BASIC)	154 MPH	THREE SECOND GUST ASCE 7-16
EXPOSURE	C	
RISK CATEGORY	III	
INTERNAL PRESSURE COEFFICIENT, G_{cpi}	+/- 0.18	

WINDBORNE DEBRIS REGION — IMPACT RESISTANT GLAZING REQUIRED

MAIN WIND FORCE RESISTING SYSTEM (MWFRS):	
MAXIMUM HORIZONTAL INTERIOR PRESSURE	38 PSF
MAXIMUM HORIZONTAL EXTERIOR PRESSURE	57 PSF
MAXIMUM GROSS UPLIFT INTERIOR ZONE	43 PSF
MAXIMUM GROSS UPLIFT EXTERIOR ZONE	61 PSF
CORNER ZONE WIDTH	11'- 0" FROM EACH CORNER

COMPONENTS AND CLADDING — GROSS ROOF UPLIFT IN PSF		
ZONE	EFFECTIVE WIND AREA (SQUARE FEET)	
	50	200
INTERIOR ZONE/ZONE 1	65 PSF	33 PSF
EXTERIOR ZONE/ZONE 2e	65 PSF	33 PSF
EXTERIOR ZONE/ZONE 2n	106 PSF	65 PSF
EXTERIOR ZONE/ZONE 2r	106 PSF	65 PSF
CORNERS AND OVERHANGS/ZONE 3e	106 PSF	65 PSF
CORNERS AND OVERHANGS/ZONE 3r	124 PSF	96 PSF
CORNER ZONE WIDTH	6 '- 0" FROM EACH CORNER	

COMPONENTS AND CLADDING — WALLS IN PSF		
ZONE	EFFECTIVE WIND AREA (SQUARE FEET)	
	50	200
INTERIOR ZONE/ZONE 4	52 PSF	47 PSF
EXTERIOR (CORNER) ZONE/ZONE 5	60 PSF	50 PSF
CORNER ZONE WIDTH	6 '- 0" FROM EACH CORNER	

ALLOWABLE SOIL BEARING CAPACITY:
(AT 8'—0" BELOW EXISTING GRADE)

TOTAL LOAD	3750 PSF
DEAD LOAD	2500 PSF

METAL BUILDING NOTES

1. THE METAL BUILDING FRAME AND COMPONENTS SHALL BE DESIGNED BY A METAL BUILDING MANUFACTURER EXPERIENCED IN METAL BUILDING SYSTEM DESIGN. THE DESIGN SHALL BE IN ACCORDANCE WITH THE "RECOMMENDED DESIGN PRACTICE MANUAL" OF THE METAL BUILDING MANUFACTURER'S ASSOCIATION, THE AISI "SPECIFICATIONS FOR THE DESIGN OF COLD-FORMED STRUCTURAL MEMBERS", AND THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. METAL BUILDING FRAMES AND COMPONENTS SHALL BE DESIGNED TO COMPLY WITH THE CITY OF ANGLETON BUILDING CODE AND ANY OTHER GOVERNING CODES.
3. AT A MINIMUM OF THREE WEEKS BEFORE SCHEDULED FOUNDATION CONSTRUCTION, THE METAL BUILDING MANUFACTURER SHALL SUBMIT ANCHOR BOLT LAYOUT AND METAL BUILDING FOUNDATION REACTIONS FOR VERIFICATION OF FOUNDATION DESIGN. THE METAL BUILDING MANUFACTURER SHALL CAREFULLY EXAMINE THE FOUNDATION DRAWINGS TO VERIFY THAT SUFFICIENT CONCRETE EXISTS IN ALL CASES TO EMBED HIS ANCHOR BOLTS.
4. THE METAL BUILDING MANUFACTURER SHALL SUBMIT FOR REVIEW AND PERMIT APPLICATION, THE STRUCTURAL DESIGN CALCULATIONS AND DRAWINGS STAMPED BY A LICENSED ENGINEER IN THE DISCIPLINE OF STRUCTURAL ENGINEERING, LICENSED IN THE STATE OF TEXAS. THIS ENGINEER SHALL BE THE ENGINEER OF RECORD FOR THE METAL BUILDING SYSTEM
5. ITEMS TO BE DESIGNED, DETAILED AND SUPPLIED BY THE METAL BUILDING MANUFACTURER INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
   A. WIND FRAMES - TO BE RIGID FRAMES DESIGNED WITH PINNED COLUMN BASES
   B. ROOF PURLINS AND WALL GIRTS
   C. ROOF AND WALL PANELS
   D. OTHER ESSENTIAL STRUCTURAL ITEMS SUCH AS ROOF X-BRACING, FLANGE BRACES, ANCHOR BOLTS, ALL CONNECTIONS, ETC.
   E. HORIZONTAL WIND MEMBERS TO SUPPORT THE TOP OF TILT WALL PANELS OR MASONRY WALLS AS DETAILED
   F. ROOF OPENING FRAMING FOR MECHANICAL UNITS AND ROOF PENETRATIONS
   G. THE METAL BUILDING MANUFACTURER SHALL REVIEW THE ARCHITECTURAL AND MECHANICAL DRAWINGS AND DESIGN HIS STRUCTURE TO SUPPORT ALL HANGING LOADS FROM THE STRUCTURE INCLUDING BUT NOT LIMITED TO, MECHANICAL UNITS, FOLDING PARTITIONS AND BASKETBALL GOALS.
6. ANY SIZE SHOWN ON THE DRAWINGS IS A MINIMUM SIZE. THE METAL BUILDING SUPPLIER MAY INCREASE SIZE, IF REQUIRED, FOR THE METAL BUILDING DESIGN.
7. X-BRACING SHALL BE ROD BRACING WITH TURNBUCKLES ----- NOT CABLE.
8. SEE PLAN FOR REACTIONS IN KIPS FOR OTHER ITEMS CONNECTING TO THE METAL BUILDING COMPONENTS FOR WHICH THE METAL BUILDING STRUCTURE IS TO BE DESIGNED TO SUPPORT. THE METAL BUILDING MANUFACTURER IS TO MAKE PROVISIONS FOR THIS CONNECTION AND COORDINATE AS REQUIRED.
9. THE METAL BUILDING MANUFACTURER IS TO PROVIDE THE DESIGN AND DETAILING FOR OTHER MATERIALS WHICH CONNECT THE METAL BUILDING COMPONENTS AND COORDINATE AS REQUIRED.
10. THE MAXIMUM ALLOWED HORIZONTAL MOVEMENT PARALLEL OR PERPENDICULAR TO THE RIGID FRAME AT THE FRAME EAVE UNDER MAXIMUM WIND LOADS SHALL BE THE EAVE HEIGHT DIVIDED BY 180.
11. THE MAXIMUM ALLOWED VERTICAL MOVEMENT AT THE CENTER OF THE RIGID FRAME UNDER FULL LIVE LOAD SHALL BE THE SPAN OF THE FRAME DIVIDED BY 180. IF THE ROOF SUPPORTS PLASTER OR SHEETROCK CEILINGS, LIMIT THE LIVE LOAD DEFLECTION TO THE SPAN OF THE FRAME DIVIDED BY 360.
12. THE BUILDING SHALL BE DESIGNED FOR A MINIMUM COLLATERAL LOAD OF 3 PSF. THE BUILDING SHALL BE DESIGNED FOR A MINIMUM 10 PSF COLLATERAL LOAD FOR CEILINGS AND MECHANICAL AND ELECTRICAL SYSTEMS WHEN THE BUILDING HAS CONDITIONED SPACE WITH CEILINGS AND LIGHTING.
13. THE METAL BUILDING ENGINEER IS TO PROVIDE TO THE OWNER, A STATE BOARD OF INSURANCE FORM WPI-2.
14. THE METAL BUILDING ENGINEER IS TO PROVIDE SPECIAL INSPECTION WORK AND THE FINAL LETTER OF COMPLIANCE FOR THEIR PORTION OF THE WORK IN COMPLIANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE SECTION 1705.2.
15. THE CONTRACT OR PURCHASE ORDER BETWEEN THE METAL BUILDING SUPPLIER AND THE CONTRACTOR OR OWNER SHALL BE REVIEWED BY OUR OFFICE PRIOR TO SIGNING, TO ASSURE THAT ALL ITEMS REQUIRED IN THE NOTES AND ON THE DRAWINGS, ARE PROVIDED BY THE METAL BUILDING MANUFACTURER. IF OUR OFFICE DOES NOT REVIEW THE PURCHASE ORDER PRIOR TO SIGNING, WE WILL NOT BE RESPONSIBLE FOR ITEMS REQUIRED IN THE NOTES AND ON THE DRAWINGS THAT ARE EXCLUDED BY THE METAL BUILDING SUPPLIER.

MASONRY WALL NOTES

1. MASONRY CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH PART 3 OF ACI 531 "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY CONSTRUCTION".
2. ALL CONCRETE MASONRY UNITS SHALL BE HOLLOW LOAD BEARING UNITS CONFORMING TO THE REQUIREMENTS OF ASTM C90, TYPE I AND THE QUALITY CONTROL STANDARDS OF THE CONCRETE MASONRY ASSOCIATION.
3. NORMAL WEIGHT CONCRETE MASONRY UNITS (CMU) SHALL CONFORM TO ASTM C90, TYPE II, WITH A MINIMUM DESIGN COMPRESSIVE STRENGTH OF 3,750 PSI. CONCRETE MASONRY UNITS USED BELOW GRADE SHALL BE COMPOSED OF NORMAL WEIGHT AGGREGATE. LIGHT WEIGHT CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C331 WITH A MINIMUM DESIGN COMPRESSIVE STRENGTH OF 3,750 PSI. CONCRETE MASONRY UNITS USED ABOVE GRADE SHALL BE COMPOSED OF LIGHTWEIGHT AGGREGATE.
4. MASONRY UNITS SHALL HAVE CURED FOR NOT LESS THAN 28 DAYS WHEN PLACED IN THE STRUCTURE.
5. ALL MASONRY UNITS SHALL HAVE A MAXIMUM LINEAR SHRINKAGE OF .065 OF 1% FROM THE SATURATED TO THE OVEN DRY CONDITION, WHEN TESTED IN ACCORDANCE WITH THE METHODS SET FORTH IN THE QUALITY CONTROL STANDARDS OF THE CONCRETE MASONRY ASSOCIATION.
6. BRICK MORTAR SHALL BE FRESHLY PREPARED, UNIFORMLY MIXED, AND-SHALL CONFORM TO ASTM C270, TYPE 'N' WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS.
7. HORIZONTAL JOINT REINFORCEMENT SPACED AT 16 INCHES ON CENTER MAX. VERTICALLY SHALL CONFORM TO ASTM A951 WITH A MINIMUM YIELD STRENGTH OF 70,000 PSI AND A MINIMUM SIZE OF 9 GAGE FOR SIDE RODS AND 9 GAGE FOR TRUSS RODS.
8. ALL MASONRY TIES TO BACKUP STRUCTURE SHALL BE HOT DIP GALVANIZED. PROVIDE A HECKMANN NO. 315 ANCHOR WITH NO. 316 TRIANGULAR TIE-ON COLUMNS AT 16 INCHES (15 INCHES AT KING SIZE BRICK) ON CENTER VERTICALLY AND A HECKMANN NO. 191 OR 192 ANCHORS ON EACH SIDE OF ALL BEAMS AT 16 INCHES ON CENTER HORIZONTALLY UNLESS NOTED OTHERWISE ON THE DRAWINGS. MASONRY TIES TO WALL STUDS SHALL BE A HECKMANN NO. 316 TRIANGULAR TIE WITH A HECKMANN NO. 315-C SCREW ON ANCHOR STRAP OR HECKMANN #77 WING NUT POS-I-TIE ANCHOR SPACED 16 INCHES (15 INCHES AT KING SIZE BRICK) ON CENTER HORIZONTALLY AND 16 INCHES ON CENTER VERTICALLY. AT TOP OF WALLS AND AT WALL CORNERS AND INTERSECTIONS PROVIDE TWO VERTICAL ROWS OF ANCHORS SPACED 16 INCHES APART AND 16 INCHES ON CENTER VERTICALLY. TRIANGULAR TIES SHALL EXTEND 3/4 INCH FROM FACE OF MASONRY. ANCHOR STRAPS SHALL BE ATTACHED TO METAL STUDS WITH TWO (2) #10-16x 1-1/2 INCHES CADMIUM PLATED HEX HEAD SHEET METAL SCREWS WITH NEOPRENE WASHER.

ANGLETON
Where the Heart is

Angleton Fire Station #3 Addition
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ISSUED FOR REVIEW & PRICING NOT FOR CONSTRUCTION

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LICENSE NUMBER: 91030

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iAD PROJECT #	23017
ISSUE DATE:	06/02/23

06/02/23	95% OWNER REVIEW SET

REVISION LOG

GENERAL NOTES

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SCALE: AS NOTED

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EARTHWORK

1. SITE PREPARATION FOR THE BUILDING PAD SHALL CONSIST OF THE REMOVAL OF EXISTING PAVEMENT, VEGETATION, ORGANIC MATTER AND ANY ADDITIONAL MATERIAL AS NECESSARY TO PROVIDE THE REQUIRED AMOUNT OF FILL UNDER THE BUILDING.
2. THE SUBGRADE SHALL BE PROOFROLLED WITH A HEAVY, RUBBER-TIRED VEHICLE (STATIC WEIGHT OF AT LEAST 20 TONS AND WITH TIRE PRESSURES OF AT LEAST 90 PSI). THE CONTRACTOR SHALL MAKE AT LEAST TWO COMPLETE PASSES OVER THE AREA WITH THE SECOND PASS PERPENDICULAR TO THE FIRST PASS. AREAS OF THE SUBGRADE THAT ARE OBSERVED TO BE SOFT OR WEAK SHALL BE OVEREXCAVATED AND REPLACED WITH PROPERLY COMPACTED SELECT FILL.
3. SUBGRADE SHALL THEN BE SCARIFIED AND MOISTURE CONDITIONED TO MATCH THE BUILDING PAD PERIMETER TO A [SIX (6)] INCH DEPTH AND THEN RECOMPACTED TO BETWEEN 95 AND 100 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN [OPTIMUM AND +3] PERCENT OF THE OPTIMUM MOISTURE CONTENT. PROVIDE A MINIMUM OF FOUR (4) FIELD DENSITY TESTS ON THE SUBGRADE OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER.
4. SELECT FILL MATERIAL FOR THE BUILDING PAD SHALL BE AN INORGANIC SANDY CLAY WITH A LIQUID LIMIT BETWEEN 26 AND 40 AND PLASTICITY INDEX BETWEEN 10 AND 20. STRUCTURAL SELECT FILL PAD MATERIAL SHALL BE TESTED FOR ACCEPTABILITY AND A MOISTURE DENSITY CURVE SHALL BE ESTABLISHED.
5. SELECT FILL SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS AND COMPACTED TO BETWEEN [95 AND 100] PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN [OPTIMUM AND +3] PERCENT OF THE OPTIMUM MOISTURE CONTENT FOR SELECT FILL. SELECT FILL MATERIAL SHALL EXTEND TO 5'-0" BEYOND THE BUILDING PERIMETER. PROVIDE A MINIMUM OF FOUR (4) FIELD DENSITY TESTS ON EACH LIFT OF SELECT FILL OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER.
6. SELECT FILL MATERIAL SHALL BE TESTED DURING PLACEMENT OF EACH LIFT FOR THE ATTERBERG LIMITS IN ACCORDANCE WITH ASTM D4318-98 METHOD B "STANDARD TEST METHOD FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS" TO VERIFY THAT THE SELECT FILL MATERIAL IS IN ACCORDANCE WITH THE ORIGINALLY APPROVED SELECT FILL MATERIAL. PROVIDE A MINIMUM OF ONE (1) TEST PER LIFT OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER WITH A MAXIMUM OF TEN (10) PER LIFT.
7. CONTRACTOR SHALL MAINTAIN A CLEAN EXCAVATION THAT IS FREE OF WATER 100% OF THE TIME. CONTRACTOR SHALL PROVIDE PUMPS AS REQUIRED TO REMOVE ANY WATER AT ALL TIMES.
8. THE SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM THE BUILDING PAD DURING BUILDING PAD INSTALLATION AND WHEN THE BUILDING PAD AND BUILDING ARE COMPLETED.
9. PLUMBING AND UTILITY TRENCHES WITHIN THE BUILDING PAD SHALL HAVE PIPING BEDDED ON 6" MINIMUM OF CEMENT STABILIZED SAND WITH 4" MINIMUM ALL AROUND. BACKFILL IN UTILITY TRENCHES SHALL CONSIST OF COMPACTED SELECT FILL. PROVIDE A 1'-0" WIDE BENTONITE CLAY PLUG OR FAT CLAY (PI>50) FOR THE FULL DEPTH AND WIDTH OF THE UTILITY TRENCH TO A MINIMUM OF 1'-0" ABOVE THE BOTTOM OF THE FOUNDATION AT THE EXTERIOR FACE OF BUILDING FOUNDATIONS WHERE UTILITY TRENCHES ENTER THE BUILDING.
10. PROVIDE A MINIMUM [TWELVE (12)] INCH FAT CLAY CAP (PI>50) FOR A MINIMUM OF 5'-0" AROUND THE PERIMETER OF THE BUILDING. THE CAP SHALL EXTEND AS REQUIRED TO COVER THE LIMITS OF THE BUILDING PAD EXCAVATION AND SELECT FILL BUILDING PAD MATERIALS.

SITE DRAINAGE

1. GRADE THE SITE TO PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND SLABS. WATER SHALL NOT BE ALLOWED TO POND ADJACENT TO THE BUILDING FOUNDATIONS OR SLABS.
2. AS A MINIMUM REQUIREMENT, ALL DOWNSPOUTS FROM ROOF DRAINS AND GUTTERS SHALL BE COLLECTED AND PIPED AWAY FROM THE BUILDING. WHEN WATER IS NOT PIPED AWAY FROM THE BUILDING, DOWNSPOUTS SHALL DUMP ONTO A CAST IN PLACE 4" THICK X 3'-0" WIDE CONCRETE SWALE REINFORCED WITH #4 AT 12" ON CENTER EACH WAY AND EXTENDING 10'-0" OUT FROM THE BUILDING. REFER TO ARCHITECTURAL AND CIVIL FOR PAVING AND DRAINGAGE.
3. TREES AND VEGETATION SHALL NOT BE ALLOWED WITHIN A DISTANCE EQUAL TO THREE QUARTERS THEIR ULTIMATE HEIGHT AWAY FROM THE BUILDING.
4. IRRIGATE VEGETATION AND SOILS ADJACENT TO BUILDING (NO MORE THAN 15 MINUTES THREE TIMES A WEEK) ON AN AS NEEDED BASIS TO MAINTAIN UNIFORM SOIL MOISTURE CONDITIONS AROUND THE PERIMETER OF THE BUILDING FOLLOWING CONSTRUCTION.

FOUNDATIONS

1. PREPARED GRADE AREA UNDER ALL BUILDING SLABS AND GRADE BEAMS SHALL BE COVERED WITH A 15 MIL WATER VAPOR RETARDER MEETING THE REQUIREMENTS OF ASTM E 1745 (LATEST EDITION), CLASS A OR BETTER WITH MAXIMUM WATER PERMEANCE OF 0.01 PERMS WHEN TESTED IN ACCORDANCE WITH ASTM E96. THE WATER VAPOR RETARDER SHALL BE INSTALLED, LAPPED AND TAPED WITH MANUFACTURER'S APPROVED PRODUCT IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM E 1643 (LATEST EDITION). PENETRATIONS SHALL SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.
2. FOUNDATION DETAILING SHOWN ON THE DRAWINGS IS BASED ON A FOUNDATION DESIGN SPECIFIED IN THE SOIL REPORT BY ARM SOIL TESTING LLC, REPORT NO. G23-313, DATED MAY 22, 2023. THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT SHALL NOT SUPERSEDE THE REQUIREMENTS SHOWN ON THE DESIGN DRAWINGS OR IN THE SPECIFICATIONS WHEN THE REQUIREMENTS SHOWN ON THE DRAWINGS ARE GREATER THAN THOSE SHOWN IN THE GEOTECHNICAL REPORT. THE CONTRACTOR IS REQUIRED TO SECURE A COPY OF THE GEOTECHNICAL REPORT FROM THE OWNER AND TO HAVE A COPY ON THE JOB SITE AT ALL TIMES FOR HIS USE AND REFERENCE.
3. A GEOTECHNICAL REPORT WAS NOT AVAILABLE NOR PRODUCED BY THE OWNER FOR OUR USE ON THIS PROJECT. AS A RESULT, FOR THE FOUNDATION PORTIONS OF THIS PROJECT, WE PERFORMED OUR ANALYSIS UTILIZING THE PRESUMPTIVE LOAD-BEARING VALUES OF SOILS SECTION OF THE IBC FOR DETERMINATION OF THE ALLOWABLE VERTICAL AND LATERAL LOADING. SEE IBC 2015 SECTION 1806 AND ASSOCIATED TABLE 1806.2 CLASS 5 SOILS HAVE BEEN ASSUMED FOR USE IN DESIGN ON THE PROJECT.
4. FOUNDATION DETAILING SHOWN ON THE DRAWINGS IS BASED ON A MINIMUM OF FOUR (4) FEET OF SELECT FILL MATERIAL BENEATH THE FLOOR SLAB AND SHALL EXTEND TO 5'-0" BEYOND THE BUILDING PERIMETER.
5. ALL BACKFILL FOR BURIED PIPES AND CONDUIT WITHIN THE BUILDING PAD AND EXTENDING OUT MINIMUM 5'-0" BEYOND THE BUILDING SHALL BE BACKFILLED WITH SELECT FILL BACKFILL. DO NOT USE SAND BACKFILL. A 2'-0" WIDE BENTONITE PLUG SHALL BE PROVIDED IN ALL UTILITY TRENCHES AT THE FACE OF THE BUILDING FOUNDATION. SEE TYPICAL DETAIL FOR PIPES ENTERING THE BUILDING.
6. CONDUITS SHALL NOT BE PLACED IN THE CONCRETE SLAB. CONDUITS SHALL BE PLACED IN THE SELECT FILL MATERIAL BENEATH THE VAPOR RETARDER. ALL PENETRATIONS OF THE VAPOR RETARDER SHALL BE SEALED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS. CONDUIT TRENCHES WITHIN THE BUILDING PAD SHALL BE LIMITED TO A MAXIMUM WIDTH OF TWO FEET AND BE SPACED NO CLOSER THAN FOUR FEET CENTER TO CENTER. CONDUITS STACKED WITHIN A SINGLE TRENCH SHALL BE SEPARATED VERTICALLY BY TWO TIMES THE DIAMETER OF THE LARGEST CONDUIT OR 12 INCHES MINIMUM. COMPACTED SELECT FILL OR OTHER APPROPRIATE COMPACTED FILL MATERIAL SHALL BE USED BETWEEN STACKED CONDUITS.
7. THE FLOOR SLAB SUBGRADE SHALL BE PROPERLY COMPACTED, PROOF ROLLED AND SHALL BE FREE OF STANDING WATER, MUD AND FROZEN SOILS.
8. SLABS ON GROUND SHALL HAVE CONSTRUCTION JOINTS OR CRACK CONTROL JOINTS (REFER TO TYPICAL DETAILS) AT EACH COLUMN LINE AND IN EACH DIRECTION. ADDITIONAL CRACK CONTROL JOINTS SHALL BE PROVIDED SUCH THAT NO AREA BOUNDED BY CONSTRUCTION AND/OR CRACK CONTROL JOINTS CONTAINS MORE THAN 250 SQUARE FEET AND THE RESULTING ASPECT RATIO OF LONG SIDE TO SHORT SIDE DIMENSIONS OF THE BOUNDED SLAB AREA DOES NOT EXCEED 1.5 TO 1. CRACK CONTROL JOINTS SHALL BE MADE USING A "SOFT-CUT" CONCRETE SAW AS SOON AS THE SLAB WILL SUPPORT THE WEIGHT OF THE SAW AND OPERATOR WITHOUT DISTURBING THE FINAL FINISH. THIS SHOULD BE WITHIN THE FIRST SIX HOURS AFTER PLACEMENT. THE CRACK CONTROL JOINTS SHALL BE CUT A MAXIMUM WIDTH OF 1/8 INCH AND A MINIMUM DEPTH OF 1/3 THE SLAB THICKNESS. REFER TO THE TYPICAL DETAILS AND DRAWINGS FOR INFORMATION ON CONTROL JOINTS, CONSTRUCTION JOINTS, REINFORCING DETAILS, JOINT SEALANT, AND TYPICAL JOINT LAYOUT.
9. WHERE SLABS ARE TO RECEIVE SENSITIVE ARCHITECTURAL FLOOR FINISHES, ALL JOINTS IN THE SLAB CONSTRUCTION SHALL BE PLACED TO ALIGN WITH JOINTS IN THE FLOOR FINISHES.
10. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING OF WALLS WHICH ARE ULTIMATELY SUPPORTED TOP AND BOTTOM. SUCH SHORING SHALL NOT BE REMOVED UNTIL ALL SUPPORTING ELEMENTS ARE IN PLACE, THE COMPACTION OF ALL BACKFILL AGAINST THE WALL HAS BEEN COMPLETED, AND THE CONCRETE IN THE WALLS AND SUPPORTING ELEMENTS HAS ATTAINED THE SPECIFIED 28 DAY COMPRESSIVE STRENGTH ($f'c$),
11. EXCAVATIONS FOR SPREAD FOOTING, COMBINED FOOTING, CONTINUOUS FOOTINGS AND/OR MAT FOUNDATIONS SHALL BE CLEANED AND HAND TAMPED TO A UNIFORM SURFACE. FOOTING EXCAVATIONS SHALL HAVE THE SIDE AND BOTTOM TEMPORARILY LINED WITH 6 MIL VAPOR BARRIER IF CONCRETE PLACEMENT DOES NOT OCCUR WITHIN 24 HOURS OF FOOTING EXCAVATION. SEAL SLABS MAY BE REQUIRED BASED ON GROUND WATER CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, AND COST ASSOCIATED WITH ALL SEAL SLABS. REFER TO THE GEOTECHNICAL REPORT FOR GROUND WATER OR POTENTIAL PERCHED WATER CONDITIONS.
12. REINFORCEMENT PLACEMENT SEQUENCE FOR FOOTINGS AND MATS IS NOTED FOR MAJOR REINFORCEMENT BAR LAYERS ONLY. IN SPREAD FOOTINGS OR MATS, THE CONTRACTOR SHALL COORDINATE AND SEQUENCE ALL OTHER BAR PLACEMENTS AS REQUIRED TO CONFORM TO THE CONTRACT DOCUMENTS.
13. FOUNDATION CONDITIONS THAT DIFFER FROM THOSE NOTED IN THE CONTRACT DOCUMENTS OR AS DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT, GEOTECHNICAL ENGINEER AND SER BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
14. CONTRACTOR SHALL NOTIFY THE ARCHITECT AND SER AT LEAST 48 HOURS PRIOR TO PLACEMENT OF CONCRETE IN FOOTINGS.
15. ALL FOOTINGS SHALL BE CONSOLIDATED WITH A CONCRETE VIBRATOR AS PER THE REQUIREMENTS OF ACI 318 AND ACI 308R, LATEST EDITION.
16. DRILLED FOOTINGS SHALL BE POURED IMMEDIATELY UPON COMPLETION OF EXCAVATION AND CLEANING OF FOOTING BEARING SURFACE. UNDER NO CIRCUMSTANCES SHOULD DRILLED FOOTINGS/PIERS SHOULD NOT REMAIN OPEN OVER NIGHT. ALL SPOILS FROM THE DRILLED FOOTING EXCAVATIONS SHALL BE REMOVED FROM THE BUILDING PAD.
17. IF DRILLED AND UNDERREAMED FOOTINGS CANNOT BE FORMED DUE TO CAVING SOILS, THE ARCHITECT, GEOTECHNICAL ENGINEER AND SER SHALL BE NOTIFIED IMMEDIATELY BEFORE FURTHER CONSTRUCTION IS ATTEMPTED.
18. WHERE A DRILLED FOOTING IS SHOWN ON THE PLAN CLOSER THAN 6'-0 FROM ANOTHER FOOTING, DRILL ONE FOOTING, FILL WITH CONCRETE AND LET CURE 24 HOURS PRIOR TO DRILLING THE ADJACENT FOOTING. (6'-0" DIMENSION IS MEASURED BETWEEN EDGE OF BELL FOOTING NOT CENTER TO CENTER.)
19. TOPS OF DRILLED FOOTINGS SHALL NOT HAVE "MUSHROOMED" OR FLARED TOPS. CONTRACTOR SHALL USE SONOTUBE, SURETOP OR APPROVED EQUAL TO FORM TOP OF PIERS TERMINATED AT GRADE LEVEL. CONCRETE OF FLARED TOP FOOTINGS SHALL BE REMOVED PRIOR TO FORMING AND PLACING OF THE CONCRETE IN PIER CAPS OR GRADE BEAMS. TOPS OF ALL PIERS SHALL BE CLEANED PRIOR TO THE PLACEMENT OF CONCRETE.
20. PROVIDE A TREMIE TO PLACE CONCRETE IN DRILLED FOOTINGS SO THAT CONCRETE DOES NOT FREE FALL OVER 10'-0".
21. PROVIDE PIER SLEDS TO MAINTAIN 3" MINIMUM CLEAR COVER ON FOOTING SHAFT REINFORCING, PIERS SLEDS SHALL BE STAGGERED ALONG THE VERTICAL REINFORCING. DO NOT PLACE SLEDS AT THE SAME LOCATION.

CONCRETE

1. ALL CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT WHERE NOTED. NO. 10 THROUGH NO. 18 BARS SHALL CONFORM TO ASTM A615, GRADE 75. DEFORMED BAR ANCHORS SHALL CONFORM TO ASTM A496, GR 70. ALL BARS SHALL BE NEW OR RECYCLED DOMESTIC BILLET STEEL OF A DOMESTIC MANUFACTURER.
2. CONCRETE IN THE FOLLOWING AREAS SHALL HAVE SAND AND CRUSHED CARBONATE AGGREGATE CONFORMING TO ASTM C33 FOR NORMAL WEIGHT CONCRETE AND LIGHT WEIGHT AGGREGATES CONFORMING TO ASTM C330, TYPE I PORTLAND CEMENT CONFORMING TO ASTM C150, AND THE FOLLOWING DESIGNATED COMPRESSIVE STRENGTH ($f'c$) IN 28 DAYS:

CONCRETE USE OR CLASS	MINIMUM 28 DAY COMPRESSIVE STRENGTH ($f'c$)	MAXIMUM WATER CEMENT RATIO	SLUMP (INCHES)
FOOTINGS	3000 PSI	0.50	5 TO 8
SLABS ON GROUND	3000 PSI	0.45	3 TO 5
ALL OTHER CONCRETE	3000 PSI	0.50	3 TO 5
SLUMP SHALL BE MEASURED FROM SAMPLES TAKEN AT THE POINT OF DISCHARGE UNLESS AGREED TO IN WRITING PRIOR TO CONCRETE PLACEMENT			

NOTE: CONCRETE SUPPLIER SHALL BE AWARE OF CEMENTS THAT CAN CAUSE LATE ETTRINGITE FORMATION IN THE CEMENT PASTE AND BE PREPARED TO SHOW THAT THE CEMENTS USED WILL NOT CAUSE THIS PROBLEM.

3. FLY ASH MAY BE USED AS A POZZOLAN TO REPLACE A PORTION OF THE PORTLAND CEMENT IN A CONCRETE MIXTURE, SUBJECT TO THE APPROVAL OF THE ARCHITECT AND SER. FLY ASH, WHEN USED, SHALL CONFORM TO ASTM C618 TYPE 'C'. CONCRETE MIXTURES CONTAINING FLY ASH SHALL BE PROPORTIONED TO ACCOUNT FOR THE PROPERTIES OF THE SPECIFIC FLY ASH AND TO ACCOUNT FOR THE SPECIFIC PROPERTIES OF THE FLY ASH CONCRETE THUS RESULTING, INCLUDING BUT NOT LIMITED TO WATER CEMENT RATION AND MINIMUM 28 DAY COMPRESSIVE STRENGTH. THE RATIO OF THE AMOUNT BY VOLUME OF FLY ASH TO THE TOTAL AMOUNT BY VOLUME OF CEMENTITIOUS MATERIAL (INCLUDING THE FLY ASH) SHALL NOT EXCEED 25 PERCENT.
4. FLY ASH IS NOT PERMITTED IN SLABS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND SER.
5. AIR ENTRAINMENT IS REQUIRED ONLY IN HARD ROCK CONCRETE PERMANENTLY EXPOSED TO WEATHER CONDITIONS. WHERE LIGHTWEIGHT CONCRETE IS SPECIFIED, AIR ENTRAINMENT IS REQUIRED FOR ALL EXPOSURE CONDITIONS. PERCENT AIR ENTRAINMENT LISTED IS PLUS/MINUS 1.5%. DO NOT AIR-ENTRAIN INTERIOR FLOOR SLABS THAT RECEIVE HARD TROWEL FINISH.
6. ALL WELDED WIRE FABRIC SHALL BE SMOOTH ROUND WIRE IN FLAT SHEETS AND SHALL CONFORM TO ASTM A185.
7. CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS; SEE SEC. 7.7 ACI 318, LATEST EDITION FOR CONDITIONS NOT NOTED. PROVIDE CHAIR SUPPORTS (AZTEC CASTLE CHAIR, WHC SERIES 'E' OR EQUAL) TO ADEQUATELY SUPPORT BARS FOR PROPER CLEARANCE AS RECOMMENDED BY THE AMERICAN CONCRETE INSTITUTE AND THE CONCRETE REINFORCING STEEL INSTITUTE. SLAB ON GRADE REINFORCEMENT SHALL BE SUPPORTED AT 45-INCH MAXIMUM INTERVALS OR EVERY THIRD BAR. UTILITY OR CONCRETE BRICKS ARE NOT ALLOWED AS REINFORCING SUPPORTS.

MINIMUM CONCRETE COVER REQUIREMENTS	
LOCATION	MINIMUM COVER
FOOTINGS	3 INCHES
GRADE BEAMS	3 INCHES BOTTOM 2 INCHES SIDES — FORMED SURFACE 3 INCHES SIDES — EARTH FORMED 1 — 1/2 INCHES TOP
SLAB ON GROUND	1 INCH TOP

8. NO HORIZONTAL JOINTS WILL BE PERMITTED IN CONCRETE EXCEPT WHERE THEY NORMALLY OCCUR OR WHERE NOTED. NO JOINTS BETWEEN PILASTERS AND GRADE BEAM THAT ARE MEANT TO BE MONOLITHIC. VERTICAL JOINTS SHALL OCCUR AT CENTER SPANS OR AT LOCATIONS APPROVED BY THE STRUCTURAL ENGINEER.
9. CONSTRUCTION JOINTS BETWEEN PIERS AND PIER CAPS OR GRADE BEAMS, FOOTINGS AND WALLS OR COLUMNS, OR WALLS, COLUMNS, BEAMS AND THE FLOOR SYSTEM THEY SHALL SUPPORT SHALL BE PREPARED BY ROUGHENING THE SURFACE CONTACT SURFACE TO A FULL AMPLITUDE ON 1/4" LEAVING THE CONTACT SURFACE CLEAN AND FREE OF ALL LAITANCE.
10. DETAILING OF CONCRETE REINFORCEMENT AND ACCESSORIES SHALL BE IN ACCORDANCE WITH ACI PUBLICATION 315, LATEST EDITION "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT" AND ACI SP -66 "DETAILING MANUAL". PLACING OF REINFORCING BARS SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 315R "MANUAL OF ENGINEERING AND PLACING DRAWINGS FOR REINFORCED CONCRETE STRUCTURES" AND CRSI "MANUAL OF STANDARD PRACTICE". ALL HOOKED BARS SHOWN IN THE DETAILS SHALL HAVE STANDARD HOOKS UNLESS NOTED OTHERWISE.
11. REINFORCING BARS SHALL NOT BE WELDED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. REINFORCING STEEL THAT REQUIRES WELDING SHALL CONFORM TO ASTM A706, WITH GRADES AS SHOWN ABOVE.
12. UNLESS BARS ARE SPECIFICALLY SHOWN IN THE BAR BENDING DIAGRAMS ON THE SCHEDULES, PROVIDE BARS AS FOLLOWS:
    - A) PROVIDE STANDARD 90 DEGREE HOOK ON TOP BARS AT CANTILEVER ENDS.
    - B) SPLICE BOTTOM BARS DIRECTLY OVER MEMBER SUPPORTS, UNLESS NOTED OTHERWISE.
    - C) SPLICE TOP AND INTERMEDIATE BARS AT THE CENTER LINE BETWEEN MEMBER SUPPORTS, UNLESS NOTED OTHERWISE.
    - D) SPLICE VERTICAL BARS IN WALLS ONLY AT FLOOR LINES, UNLESS NOTED OTHERWISE. HORIZONTAL BARS SHALL BE SPLICED AS SPECIFIED FOR TOP, BOTTOM, AND INTERMEDIATE BARS OF BEAMS.
    - E) CENTER BARS NOTED AS "AT SUPT'S." OVER MEMBER SUPPORTS, AND CENTER BARS NOTES AS "BTWN. SUPT'S," BETWEEN SUPPORTS.
    - F) PLACE BARS NOTED AS "2ND LAYER" BELOW THE PRIMARY TOP BARS (OR ABOVE THE PRIMARY BOTTOM BARS) AND PROVIDE #11 SPACER BARS PLACED AT INTERVALS OF 4'-0" BETWEEN THE TWO LAYERS OF BARS.
    - G) SPLICE VERTICAL BARS IN COLUMNS ONLY AT FLOOR LINES, UNLESS NOTED OTHERWISE. COLUMN BAR SPLICES SHALL BE AS SHOWN IN THE COLUMN SCHEDULE.
    - H) PROVIDE CORNER BARS FOR EACH HORIZONTAL BAR AT THE INSIDE AND OUTSIDE FACES OF INTERSECTING BEAMS OR WALLS. REFER TO CORNER BAR DETAILS IN THE TYPICAL DETAILS.
    - I) REFER TO THE COLUMN REINFORCING DIAGRAMS FOR ADDITIONAL TIES ABOVE AND BELOW THE FLOOR FRAMING MEMBERS.
13. BARS SHOWN IN THE SCHEDULE TO HOOK AT DISCONTINUOUS ENDS SHALL HAVE THE HOOK PLACED HORIZONTALLY AT EXTERIOR CORNERS.
14. PROVIDE NO. 3 DOWELS X 2'-0" AT 1'-6" ON CENTER, WITH A 90 DEGREE HOOK AT ALL EDGES OF CONCRETE SLABS, UNLESS DETAILED OTHERWISE.
15. PROVIDE FOUNDATION DOWELS TO MATCH MASONRY WALL REINFORCEMENT. DOWELS SHALL EXTEND INTO THE CONCRETE AND CMU PER THE LAP SCHEDULES.
16. ALL CONTINUOUS REINFORCEMENT SHALL LAP 40 BAR DIAMETERS AT SPLICES. PROVIDE (1) NO. 6 x 6'-0" TOP AND BOTTOM (TWO 36" LEGS WITH 90 DEGREE BEND) AT EACH FACE OF GRADE BEAMS AT CORNERS AND INTERSECTIONS, AND AT 18" ON CENTER VERTICALLY AT WALLS.
17. PROVIDE (1) NO. 4 BAR x 4'-0" FOR ELEVATED SLABS AND (2) NO. 5 BARS x 4'-0" FOR SLAB ON GROUND AT ALL RE-ENTRANT CORNERS. PROVIDE (1) NO. 4 BAR x 4'-0" AROUND ALL RECTANGULAR OPENINGS OR COLUMN BLOCK OUTS UNLESS NOTED OTHERWISE. FOR ELEVATED SLABS, PLACE THE DIAGONAL BARS WITH 1 INCH OF CLEARANCE FROM TOP AND THE SIDES OF THE SLAB AT THE CORNERS. FOR SLAB ON GRADE, PLACE THE BARS AT MID DEPTH OR BELOW THE REINFORCING MAT AND 3 INCHES CLEAR FROM THE CORNER.
18. CONDUITS ARE NOT ALLOWED IN SLABS, BEAMS, WALLS OR COLUMNS. ALL CONDUITS SHALL BE SUSPENDED FROM OR ATTACHED TO THE CONCRETE STRUCTURE.
19. PROVIDE SLEEVES, MECHANICAL OPENINGS, CONDUITS, PIPES, RECESSES, DEPRESSIONS, CURBS AND ALL EMBEDDED ITEMS AS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS OR AS REQUIRED BY EQUIPMENT MANUFACTURERS. MINIMUM CONCRETE BETWEEN SLEEVES SHALL BE 6". SHOP DRAWINGS SHALL CLEARLY INDICATE THE INSTALLATION OF THESE ITEMS. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED TO 3/4"x3/4" MINIMUM UNLESS NOTED OTHERWISE. DO NOT PROVIDE CHAMFERS AT INSIDE FACE OF OVERHEAD DOORS OR AT STOREFRONT OPENINGS.
20. BESIDES FOLLOWING ARTICLE 6.3 OF ACI 318 FOR EMBEDDED ITEMS FOLLOWING REQUIREMENTS SHALL BE MET:
    - A) THE MINIMUM CLEAR DISTANCE BETWEEN CONDUITS AND PIPES SHALL BE 6".
    - B) NONE PERMITTED IN COLUMNS WITHOUT PRIOR APPROVAL
21. ALL CONSTRUCTION JOINTS IN BEAMS AND WALLS SHALL BE PROVIDED WITH SHEAR KEYS AS SHOWN IN THE DETAILS.
22. SLEEVES PASSING HORIZONTALLY THROUGH GRADE BEAMS:
    - A) LOCATE AT MIDDLE THIRD OF BEAM SPAN - MINIMUM 6" AWAY FROM AN INTERIOR MEMBER.
    - B) LOCATE AT MIDDLE THIRD OF BEAM DEPTH.
    - C) MAXIMUM DIAMETER OF SLEEVE TO BE ONE THIRD OF BEAM DEPTH OR 8" (WHICHEVER IS LESS).
    - D) SPACING TO BE AT LEAST THREE SLEEVE DIAMETERS OR 6" (WHICHEVER IS GREATER).
    - E) ADD ONE ADDITIONAL SCHEDULED STIRRUP ON EITHER SIDE OF THE SLEEVE. ADD (2) #5 x 5'-0" TOP AND BOTTOM CENTERED AT SLEEVE.
    - F) NO SLEEVES LONGITUDINALLY IN BEAMS. PASS SLEEVES ONLY AT RIGHT ANGLES TO BEAMS.
23. ALL MIXING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AMERICAN CONCRETE INSTITUTE, ACI 301, LATEST EDITION.
24. ALL CONCRETE SHALL BE CONSOLIDATED WITH A CONCRETE VIBRATOR AS PER THE REQUIREMENTS OF ACI 318 AND ACI 308R, LATEST EDITION.
25. HOT WEATHER CONCRETING SHALL CONFORM TO ACI305 AND COLD WEATHER CONCRETING SHALL CONFORM TO ACI 306.
26. ALL BASE PLATES AND ANCHOR RODS SHALL BE PROTECTED WITH 3" (MIN.) OF CONCRETE. ANCHOR RODS SHALL BE FABRICATED FROM FULL BODIED STEEL RODS CONFORMING TO ASTM F1554 [SPECIFY GRADE IF GREATER THAN GR 36 IS REQUIRED], WASHERS CONFORMING TO ASTM F884 AND NUTS CONFORMING TO ASTM A194 OR A563 AND HAVING THE SAME DIAMETER AS THE BOLT DIAMETER. BOLTS SHALL BE SET USING RIGID TEMPLATES.
27. HIGH DENSITY STYROFOAM SHALL BE PANELIZED POLYSTYRENE RIGID FORM INSULATION WITH MINIMUM COMPRESSIVE STRENGTH OF 40 PSI (EPS19) PER ASTM D6817. THICKNESS SHALL BE AS INDICATED IN DETAILS AND DRAWINGS. AVAILABLE MANUFACTURERS INCLUDE: U.C. INDUSTRIES, INC, DOW CHEMICAL COMPANY, AND AMOCO PRODUCTS COMPANY.

ANGLETON
Where the Heart is

Angleton Fire Station #3 Addition

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ISSUED FOR REVIEW & PRICING NOT FOR CONSTRUCTION

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iAD PROJECT #	23017
ISSUE DATE:	06/02/23

06/02/23	95% OWNER REVIEW SET

REVISION LOG

GENERAL NOTES

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SCALE: AS NOTED

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STRUCTURAL TESTING AND INSPECTIONS

EARTHWORK TESTING

1. DURING EARTHWORK OPERATIONS KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT. SERVICES PROVIDED SHALL INCLUDE:
   - A) OBSERVE STRIPPING OPERATIONS AND EVALUATE THE REQUIRED STRIPPING DEPTH DURING THESE OPERATIONS.
   - B) OBSERVE PROOFROLLING OPERATIONS AFTER SITE STRIPPING. DETERMINE IF ANY SOFT SPOTS NEED TO BE UNDERCUT TO FIRM SOILS, REPLACED WITH SELECT FILL AND RECOMPACTED.
   - C) VERIFY THAT THE SUBGRADE SHALL THEN BE SCARIFIED AND MOISTURE CONDITIONED TO A SIX (6) INCH DEPTH AND THEN RECOMPACTED TO BETWEEN [95 AND 100] PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN [OPTIMUM AND +3] PERCENT OF THE OPTIMUM MOISTURE CONTENT. PROVIDE A MINIMUM OF FOUR (4) FIELD DENSITY TESTS ON THE SUBGRADE OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER.
   - D) STRUCTURAL SELECT FILL PAD MATERIAL SHALL BE TESTED FOR ACCEPTABILITY AND A MOISTURE DENSITY CURVE SHALL BE ESTABLISHED. SELECT FILL MATERIAL SHALL BE AN INORGANIC SANDY CLAY WITH LIQUID LIMIT BETWEEN 26 AND 40 AND PLASTICITY INDEX BETWEEN 10 AND 20.
   - E) SELECT FILL SHALL BE PLACED IN EIGHT INCH LOOSE LIFTS AND COMPACTED TO BETWEEN 95 AND 100 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR DENSITY TEST (ASTM D698). THE MOISTURE CONTENT SHALL BE BETWEEN OPTIMUM AND +3 PERCENT OF THE OPTIMUM MOISTURE CONTENT FOR SELECT FILL.
   - F) SELECT FILL MATERIAL SHALL BE TESTED DURING PLACEMENT OF EACH LIFT FOR THE ATTERBERG LIMITS IN ACCORDANCE WITH ASTM D4318-98 METHOD B "STANDARD TEST METHOD FOR LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS" TO VERIFY THAT THE SELECT FILL MATERIAL IS IN ACCORDANCE WITH THE ORIGINALLY APPROVED SELECT FILL MATERIAL. PROVIDE A MINIMUM OF ONE (1) TEST PER LIFT OR ONE (1) FOR EVERY 2,500 SQUARE FEET WHICHEVER IS GREATER WITH A MAXIMUM OF TEN (10) PER LIFT.
   - G) OBSERVE THE EXCAVATION DAILY AND ENSURE THAT THE CONTRACTOR MAINTAINS A CLEAN EXCAVATION THAT IS FREE OF WATER 100% OF THE TIME. CONTRACTOR SHALL PROVIDE PUMPS AS REQUIRED TO REMOVE ANY WATER AT ALL TIMES.
   - H) OBSERVE GRADING OPERATIONS TO ENSURE THAT PROPER DRAINAGE AWAY FROM THE BUILDING PAD IS PROVIDED.

DRILLED FOOTINGS TESTING

1. DURING DRILLED FOOTING OPERATIONS KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT. SERVICES PROVIDED SHALL INCLUDE:
   - A) OBSERVING THE BOTTOM OF SHAFT FOR CLEANLINESS.
   - B) CHECKING SHAFT FOR CONFORMANCE TO REQUIRED TOLERANCES. FOOTINGS SHALL BE WITHIN 3" OF THEIR REQUIRED LOCATIONS AND SHAFTS SHALL NOT BE OUT OF PLUMB BY MORE THAN 2 PERCENT OF THE SHAFT LENGTH.
   - C) CHECKING SHAFT BOTTOM FOR PROPER BEARING MATERIAL.
   - D) NOTING DEPTH AND DIAMETER OF ALL FOOTINGS.
   - E) VERIFY QUANTITY, SIZE AND LOCATION OF REINFORCEMENT.
   - F) CHECK FOR CAVING OF SHAFT OR BELL WALLS.
   - G) CHECKING THAT THE BELL IS CONCENTRIC WITH THE SHAFT.
2. ENSURE THAT THE SPOILS FROM THE DRILLED FOOTING EXCAVATIONS ARE REMOVED FROM THE BUILDING PAD AND THAT THE PAD IS MOISTURE CONDITIONED AND RECOMPACTED AS SPECIFIED.

CONCRETE TESTING

1. CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW INDICATING CONFORMANCE WITH ACI 318, LATEST EDITION, CHAPTER 5, SECTION 5.3.
2. SLUMP TESTS, CONFORMING TO ASTM C143, SHALL BE TAKEN AT THE POINT OF DISCHARGE AT THE SAME RATE AS NOTED BELOW IN NOTE NUMBER 5.
3. AIR CONTENT TESTS CONFORMING TO ASTM C173, VOLUMETRIC METHOD FOR LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE; ASTM C231 PRESSURE METHOD FOR NORMAL WEIGHT CONCRETE; SHALL BE TAKEN FOR EACH DAY'S POUR OF EACH TYPE OF AIR-ENTRAINED CONCRETE.
4. CONCRETE TEMPERATURE SHALL BE TESTED HOURLY WHEN AIR TEMPERATURE IS 40 DEG F (4 DEG C) AND BELOW, WHEN 80 DEG F (27 DEG C) AND ABOVE, AND EACH TIME A SET OF COMPRESSION TEST SPECIMENS IS MADE.
5. ONE SET OF FOUR COMPRESSION TEST SPECIMENS CONFORMING TO ASTM C31 SHALL BE MOLDED AND STORED FOR LABORATORY-CURED SPECIMENS. COMPRESSIVE STRENGTH TESTS SHALL CONFORM TO ASTM C39 AND SHALL CONSIST OF ONE SET FOR EACH DAY'S POUR EXCEEDING 5 CU. YDS. PLUS ADDITIONAL SETS FOR EACH 50 CU. YDS. MORE THAN THE FIRST 25 CU. YDS OF EACH CONCRETE CLASS PLACED IN ANY ONE DAY. ONE SPECIMEN SHALL BE TESTED AT 7 DAYS, TWO SPECIMENS SHALL BE TESTED AT 28 DAYS, AND ONE SPECIMEN SHALL BE RETAINED FOR LATER TESTING AS REQUIRED.
6. VERIFY CONCRETE IS BEING CONSOLIDATED IN ACCORDANCE WITH THE RECOMMENDATIONS OF ACI 318 AND ACI 308R, LATEST EDITION.
7. VERIFY THAT POST INSTALLED ANCHORS ARE AS SPECIFIED AND THAT THE ANCHORS ARE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND REQUIREMENTS.

REINFORCING STEEL INSTALLATION

1. DURING CAST-IN-PLACE CONCRETE STRUCTURAL MEMBER REINFORCING PLACEMENT OPERATIONS KEEP A COMPETENT TRAINED TECHNICIAN ASSIGNED TO THE PROJECT. INSPECT REINFORCING UTILIZING ACI 311.4R "GUIDE FOR CONCRETE INSPECTION" AS A GUIDE. SERVICES PROVIDED SHALL INCLUDE:
   - A) VERIFY TYPE AND GRADE OF ALL REINFORCING STEEL.
   - B) VERIFY REBAR IS FREE OF OIL, DIRT, EXCESSIVE RUST AND FROM DAMAGE IN SHIPMENT TO SITE.
   - C) VERIFY REINFORCING IS ADEQUATELY TIED, CHAIRED AND SUPPORTED TO PREVENT DISPLACEMENT DURING CONCRETE PLACEMENT.
   - D) VERIFY MINIMUM AND MAXIMUM CLEAR DISTANCES BETWEEN BARS AND MINIMUM STRUCTURAL DISTANCE TO OUTSIDE OF CONCRETE.
   - E) VERIFY QUANTITY, SIZE AND LOCATION OF REINFORCEMENT.
   - F) VERIFY MINIMUM CONCRETE COVER IS MAINTAINED BETWEEN REBAR AND SURFACE OF CONCRETE.
   - G) VERIFY SIZE AND PLACEMENT OF REBAR. VERIFY LAP LENGTHS, LOCATIONS AND STAGGERS AND VERIFY BENDS FOR MINIMUM DIAMETER, SLOPE AND LENGTH. VERIFY HOOKED BAR LENGTHS AND LOCATIONS.

STRUCTURAL STEEL TESTING

1. CERTIFY WELDERS FOR THE WELD TYPES IN THE PROJECT AND CONDUCT INSPECTIONS AND TESTS AS REQUIRED, AS A MINIMUM, WELDERS SHALL BE AISC CERTIFIED. RECORD TYPES AND LOCATIONS OF DEFECTS FOUND IN WORK. RECORD WORK REQUIRED AND PERFORMED TO CORRECT DEFICIENCIES.
2. VISUALLY INSPECT 100% OF ALL FILLET WELDS.
3. VISUALLY INSPECT 100% OF ALL FULL PENETRATION WELDS. TEST 20% OF ALL FULL PENETRATION WELDS BY ONE OF THE FOLLOWING METHODS: LIQUID PENETRANT INSPECTION (ASTM E165), MAGNETIC PARTICLE INSPECTION (ASTM E709; PERFORMED ON THE ROOT PASS AND ON THE FINISHED WELD; CRACKS AND ZONES OF INCOMPLETE FUSION OR PENETRATION IS NOT ACCEPTABLE), RADIOGRAPHIC INSPECTION (ASTM E94 AND ASTM E142; MINIMUM QUALITY LEVEL OF "2-2T"), OR ULTRASONIC INSPECTION (ASTM E164). IF FAILURE RATE IS 20% OR GREATER, TEST 100% OF WELDS AT CONTRACTOR'S EXPENSE UNTIL FAILURE RATE FALLS BELOW 20%.
4. ALL WELDS THAT FAIL SHALL BE REWELDED AND RETESTED UNTIL THEY PASS THE TEST. TEST TWO ADDITIONAL WELDS AT THE CONTRACTOR'S EXPENSE FOR EVERY WELD FAILURE.
5. VISUALLY INSPECT WELDS ON 100% OF ALL STUDS AND TEST 10% BY THE METHOD DESCRIBED BELOW IN COMPLIANCE WITH AWS D1.1. HEADED STUD SHALL BE TESTED BY ALTERNATELY BENDING 30 DEG. IN OPPOSITE DIRECTIONS FROM ITS ORIGINAL AXIS BY EITHER STRIKING THE STUDS WITH A HAMMER ON THE UNWELDED END OR PLACING A PIPE OR OTHER SUITABLE HOLLOW DEVICE OVER THE STUD AND MANUALLY OR MECHANICALLY BENDING THE STUD. IF FAILURE RATE IS 10% OR GREATER, TEST 100% OF STUDS AT CONTRACTOR'S EXPENSE UNTIL FAILURE RATE FALLS BELOW 10%. IF A VISUAL INSPECTION REVEALS ANY STUD THAT DOES NOT SHOW A FULL 360 DEG. FLASH (AS DEFINED IN AWS D1.1) OR ANY STUD THAT HAS BEEN REPAIRED BY WELDING, SUCH STUD SHALL BE BENT TO AN ANGLE OF APPROXIMATELY 15 DEGREES FROM ITS ORIGINAL AXIS. THE DIRECTION OF BENDING FOR STUDS WITH LESS THAN 360 DEGREES FLASH SHALL BE OPPOSITE TO THE MISSING PORTION OF FLASH.
6. BOLTS SHALL BE VISUALLY INSPECTED WHEN TWIST-OFF SPLINES ARE USED, OTHERWISE BOLTS SHALL BE SNUG TIGHT.
7. ALL FULL PENETRATION WELDS AT MOMENT CONNECTIONS REQUIRING TESTING SHALL BE TESTED AND CERTIFIED BY AN INDEPENDENT TESTING LABORATORY USING NON-DESTRUCTIVE TESTING METHODS. FOR SHOP WELDS, CERTIFICATION SHALL BE SUBMITTED PRIOR TO SHIPPING TO THE JOB SITE. FOR FIELD WELDS, CERTIFICATION SHALL BE SUBMITTED PRIOR FLOOR DECK INSTALLATION AND CONCRETE PLACEMENT AND PRIOR TO COVERING CONNECTIONS WITH FIREPROOFING OR ARCHITECTURAL FINISHES.

SPECIAL INSPECTIONS AND STRUCTURAL TESTING

SPECIAL INSPECTION WORK AND THE FINAL LETTER OF COMPLIANCE HAVE NOT BEEN INCLUDED IN THE STRUCTURAL ENGINEER OF RECORD'S SCOPE OF SERVICES. THE OWNER IS RESPONSIBLE FOR OBTAINING THE SERVICES OF THE SPECIAL INSPECTOR AND THE TESTING LABORATORY. SPECIAL INSPECTIONS CAN BE PROVIDED BY AN INDEPENDENT SPECIAL INSPECTOR APPROVED BY THE BUILDING AUTHORITY. THE SPECIAL INSPECTION WORK DOES NOT INCLUDE THE TESTING LABORATORY SERVICES AS CALLED FOR ON THE DRAWINGS. ARRANGEMENTS FOR SPECIAL INSPECTIONS SHOULD BE MADE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE TESTING LABORATORY AND SPECIAL INSPECTOR IN A TIMELY MANNER PRIOR TO PROCEEDING WITH CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK REQUIRING INSPECTIONS WITHOUT THE TESTING LABORATORY'S OR SPECIAL INSPECTOR'S PRESENCE.

STRUCTURAL STATEMENT OF SPECIAL INSPECTIONS

THE STRUCTURAL SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL STRUCTURAL INSPECTIONS AND SHALL FURNISH INSPECTION REPORTS TO THE OWNER AND THE STRUCTURAL REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE (SRDP). DISCOVERED DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF SUCH DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND THE SRDP. THE SPECIAL INSPECTION PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITIES.

A FINAL REPORT OF SPECIAL INSPECTION DOCUMENTING COMPLETION OF ALL SPECIAL INSPECTIONS, TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE OWNER AND THE SRDP PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY AND USE.

STRUCTURAL SCHEDULE OF SPECIAL INSPECTIONS

QUALIFICATIONS OF INSPECTORS AND TESTING TECHNICIANS

THE QUALIFICATIONS OF ALL PERSONNEL PERFORMING SPECIAL INSPECTION AND TESTING ACTIVITIES ARE SUBJECT TO THE APPROVAL OF THE OWNER. THE CREDENTIALS OF ALL INSPECTORS AND TESTING TECHNICIANS SHALL BE PROVIDED TO THE SPECIAL INSPECTOR FOR THEIR RECORDS.

KEY FOR MINIMUM QUALIFICATION OF INSPECTION AGENTS

WHEN THE REGISTERED DESIGN PROFESSION IN RESPONSIBLE CHARGE OR SPECIAL INSPECTOR OF RECORD DEEMS APPROPRIATE THAT THE INDIVIDUAL PERFORMING THE STIPULATED TEST OR INSPECTION HAVE A SPECIFIC CERTIFICATION, LICENSE OR EXPERIENCE AS INDICATED BELOW. SUCH REQUIREMENT SHALL BE LISTED BELOW AND SHALL BE CLEARLY IDENTIFIED WITHIN THE SCHEDULE UNDER THE AGENT QUALIFICATION DESIGNATION.

PE/SE STRUCTURAL ENGINEER
A LICENSED SE OR PE SPECIALIZING IN THE DESIGN OF BUILDING STRUCTURES

PE/GE GEOTECHNCIAL ENGINEER
A LICENSED PE SPECIALIZING IN SOIL MECHANICS AND FOUNDATIONS

EIT OR ENGINEER IN TRAINING
A GRADUATE ENGINEER WHO HAS PASSED THE FUNDAMENTALS OF ENGINEERING EXAM

EXPERIENCED TESTING TECHNICIAN

ETT OR EXPERIENCED TESTING TECHNICIAN
AN EXPERIENCED TESTING TECHNICIAN WITH A MINIMUM OF 5 YEARS EXPERIENCE WITH THE STIPULATED TEST OR INSPECTION

AMERICAN CONCRETE INSTITUTE (ACI) CERTIFICATION
ACI-CFTT CONCRETE FIELD-TESTING TECHNICIAN - GRADE I
ACI-CCI CONCRETE CONSTRUCTION INSPECTOR
ACI-LTT LABORATORY TESTING TECHNICIAN - GRADE II&2
ACI-STT STRENGTH TESTING TECHNICIAN

AMERICAN WELDING SOCIETY (AWS) CERTIFICATION
AWS-CWI CERTIFIED WELDING INSPECTOR
AWS/AISC-SSI CERTIFIED STRUCTURAL STEEL INSPECTOR

CHAPTER 17 OF THE [2015] INTERNATIONAL BUILDING CODE IS INTERPRETED TO REQUIRE SPECIAL INSPECTION FOR THE FOLLOWING ITEMS IN THE FOLLOWING TABLES:

SCHEDULE OF SPECIAL INSPECTIONS

VERIFICATION/INSPECTION	SOIL/FOUNDATION INSPECTION		
IBC SECTION 1705.6, TABLE 1705.6	EXTENT CONTINUOUS, PERIODIC	COMMENTS	AGENT PE/GE, EIT OR ETT
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	PERIODIC		ETT
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	PERIODIC		ETT
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	PERIODIC		ETT
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	CONTINUOUS		ETT
5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	PERIODIC		ETT

SCHEDULE OF SPECIAL INSPECTIONS

VERIFICATION/INSPECTION	CONCRETE INSPECTION		
IBC SECTION 1705.3, TABLE 1705.3	EXTENT CONTINUOUS, PERIODIC	COMMENTS	AGENT PE/GE, EIT OR ETT
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	PERIODIC	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4	ETT
2. REINFORCING BAR WELDING:			
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	PERIODIC	AWS D1.4 ACI 318: 26.6.4	AWS-CWI
B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	PERIODIC		
C. INSPECT ALL OTHER WELDS	CONTINUOUS		
3. INSPECT ANCHORS CAST IN CONCRETE	PERIODIC	ACI 318: 17.8.2	ETT
4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS			
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	CONTINUOUS	ACI 318: 17.8.2.4	ETT
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A	PERIODIC	ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED MIX DESIGN	PERIODIC	ACI 318: Ch. 19, 26.4.3, 26.4.4 IBC 1904.1, 1904.2, 1908.2, 1908.3	ETT
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	CONTINUOUS	ASTM C 172 ASTM C 31 ACI 318: 26.4, 26.12 IBC 1908.8	ACI-CFTT OR ACI-STT
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONTINUOUS	ACI 318: 26.5 IBC 1908.6, 1908.7, 1908.8	ETT
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	PERIODIC	ACI 318: 26.5.3-26.5.5 IBC 1908.9	ETT
9. INSPECT PRESTRESSED CONCRETE FOR:			
A. APPLICATION OF PRESTRESSING FORCES	CONTINUOUS	ACI 318: 26.10	ETT
B. GROUTING OF BONDED PRESTRESSING TENDONS	CONTINUOUS		
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	PERIODIC	ACI 318: Ch. 26.8	ETT
11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	PERIODIC	ACI 318: 26.11.2	ETT
12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	PERIODIC	ACI 318: 26.11.1.2(b)	ETT

SCHEDULE OF SPECIAL INSPECTIONS

VERIFICATION/INSPECTION	STEEL OTHER THAN STRUCTURAL STEEL INSPECTION		
IBC SECTION 1705.2 IBC SECTION 1705.3.1	EXTENT CONTINUOUS, PERIODIC	COMMENTS	AGENT PE/GE, EIT OR ETT
1. MATERIAL VERIFICATION OF STEEL DECK:			
A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	PERIODIC	APPLICABLE ASTM MATERIAL STANDARDS	
B. MANUFACTURER'S CERTIFIED TEST REPORTS	PERIODIC		
2. INSPECTION OF WELDING			
A. COLD-FORMED STEEL DECK			
1) FLOOR AND ROOF DECK WELDS	PERIODIC	SDI QA/QC AWS D1.3 IBC 1705.2.2	
B. REINFORCING STEEL			
1. VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A707	NA	AWS D1.4 ACI 318: SECTION 26.6.4 IBC 1705.3.1	AWS-CWI
2. REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	NA		
3. SHEAR REINFORCEMENT	NA		
4. OTHER REINFORCING STEEL	NA		

ANGLETON Where the Heart is

Angleton Fire Station #3 Addition
2743 N. Velasco St.
Angleton, Texas 77515

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ENGINEER: HUNTER KORNEGAY
LICENSE NUMBER: 91030

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ISSUE DATE:	06/02/23

	06/02/23	95% OWNER REVIEW SET

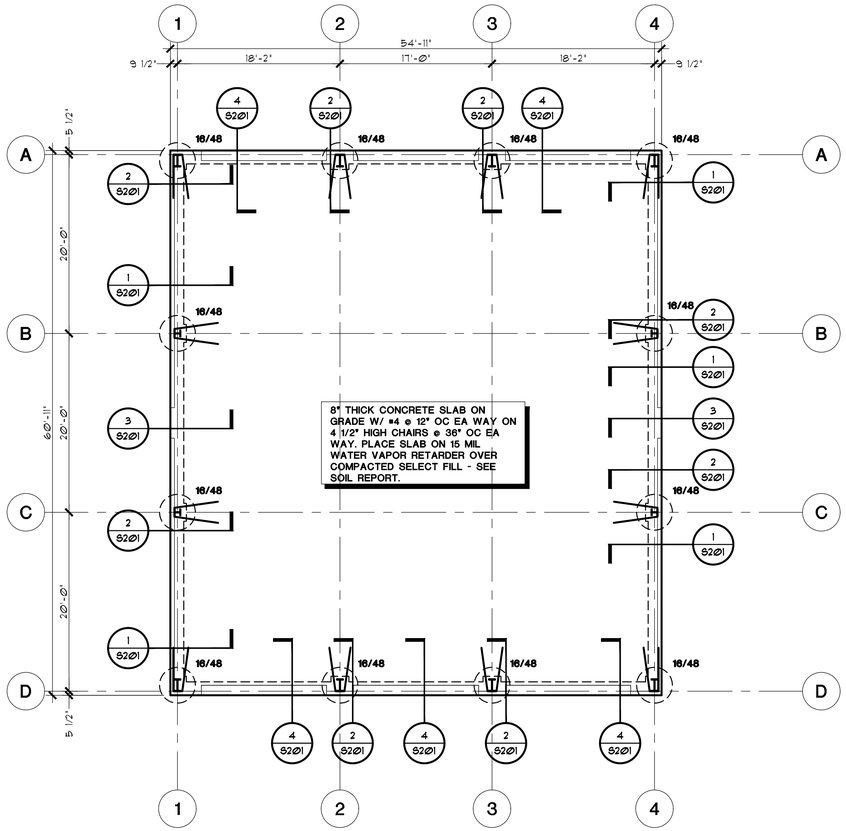
REVISION LOG

GENERAL NOTES

S0.02

SCALE: AS NOTED

6/9/2023 4:10:47 PM



NORTH

FOUNDATION PLAN

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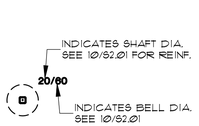

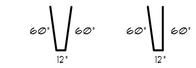

5 HAIR PIN AT EXTERIOR COLUMNS (TYP)

INDICATES INTERIOR GRADE BEAM SEE 6/S2.01

LEGEND

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FOUNDATION PLAN

S101

SCALE: AS NOTED

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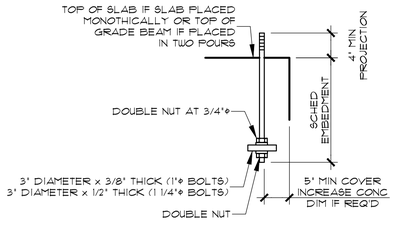
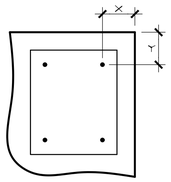
PEMB ANCHOR BOLT SCHEDULE								
BOLT DIAMETER (IN)	ALLOWABLE BOLT SPACING (IN)	REQUIRED EMBED (IN)	MINIMUM NUMBERS OF BOLTS	ALLOWABLE SHEAR ONLY LOAD (KIP)	ALLOWABLE SHEAR ONLY LOAD (KIP)		ALLOWABLE TENSION ONLY LOAD (KIP)	TENSION CONTROLLING EDGE DISTANCE	
					X (IN)	Y (IN)		X (IN)	Y (IN)
1/2"	4"	18"	4	12.5	12	12	22	12	3.5
				4	12	3.5	22	12	3.5
5/8"	4"	18"	4	20	13	13	35	12	4.5
				4.75	12	3.5	34	12	3.5
3/4"	4"	18"	4	30	17	17	51	14	14
				5	12	3.5	34	12	3.5
7/8"	4"	24"	4	41	21	21	68	15	15
				5	12	3.5	46	12	3.5
1"	4"	24"	4	54	25	25	90	21	21
				5	12	3.5	46	12	3.5
1 1/4"	5"	30"	4	87	42	42	140	32	32
				5.25	12	3.5	48	12	3.5
INTERACTION EQUATION FOR SHEAR AND TENSION COMBINED LOADS: B (SHEAR)^N + B (TENSION)^N =1.0 WHERE^N =(5/3) AND B IS THE UTILIZATION RATIO									



TYPICAL DETAIL

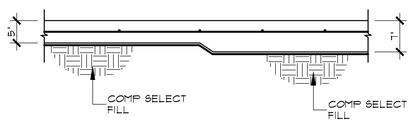


PLAN VIEW

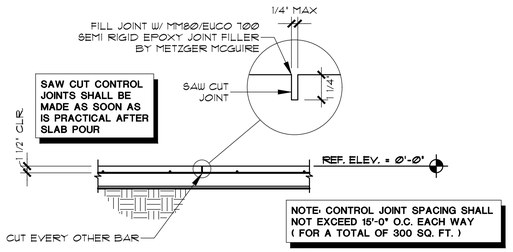
LOADS ARE LRFD:

F' C-3.5 KSI
CRACKED CONCRETE
NO GROUT RQ'D
CAST IN PLACE HEX HEAD F1554 GRADE 36
MIN 3.5 EDGE DISTANCE IN 'Y' DIRECTION AND 12" IN 'X' DIRECTION PER ACI 318.
PLATE WASHER AT BOTTOM OF BOLT 3" DIAMETER x 3/8" THICK FOR BOLTS TO 1" DIAMETER. PLATE WASHER FOR 1.25" BOLT IS 3" DIAMETER x 1/2" THICK.

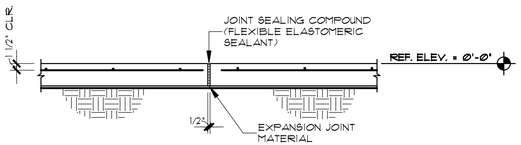
11 METAL BUILDING ANCHOR BOLT SCHEDULE
SCALE:NTS



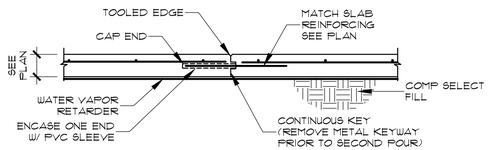
9 DETAIL AT SLAB TRANSITION
SCALE:3/4" = 1'-0"



CONTROL JOINT



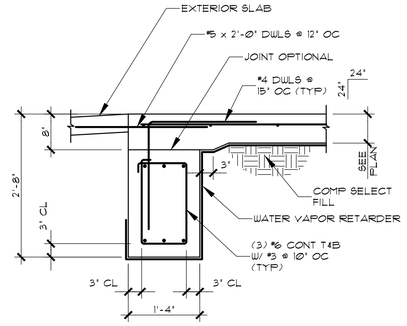
ISOLATION JOINT AS SHOWN ON ARCHITECTURAL OR MECHANICAL



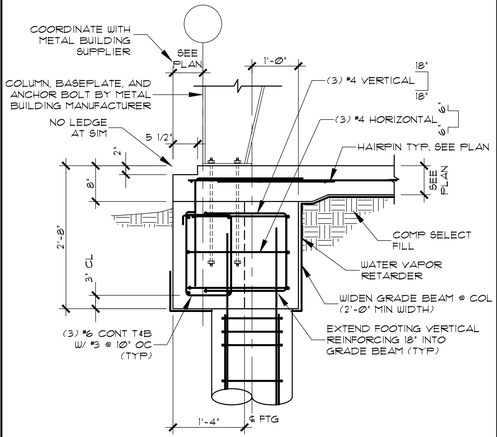
SLAB CONSTRUCTION JOINT

8 SLAB JOINTS
SCALE:NTS

6 DETAIL
SCALE:3/4" = 1'-0"

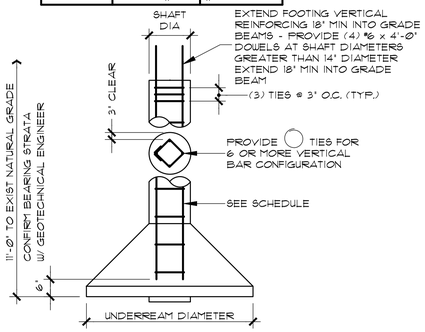


3 GRADE BEAM AT EXTERIOR SLAB
SCALE:3/4" = 1'-0"



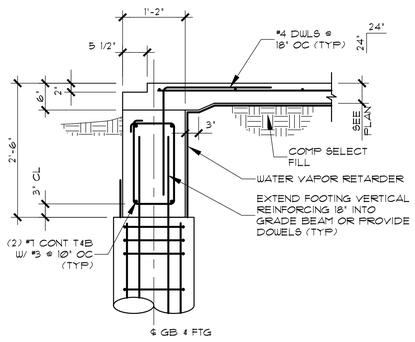
1 METAL BUILDING COLUMN - RECESSED
SCALE:3/4" = 1'-0"

FOOTING SCHEDULE		
SHAFT DIA.	VERT. BARS	TIES
12"	4 - #5	#3 @ 10"
18"	4 - #6	#3 @ 12"
20"	6 - #6	#3 @ 14"
24"	6 - #6	#3 @ 14"

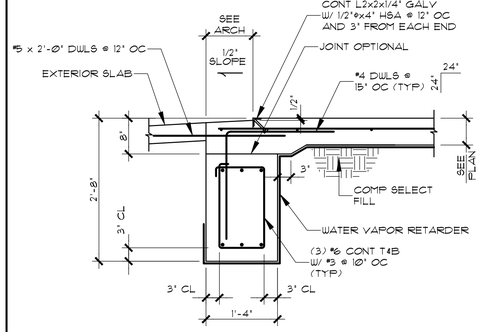


10 DRILLED FOOTING DETAIL
SCALE:NTS

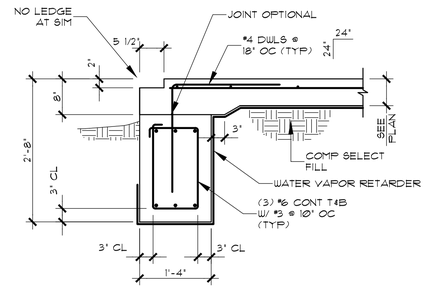
NOTE: WHEN NOT DIMENSIONED ON PLAN, PLACE INTERMEDIATE FOOTING @ EQUAL SPACES BETWEEN COLUMN FOOTINGS.



7 INTERMEDIATE FOOTING DETAIL
SCALE:3/4" = 1'-0"



4 GRADE BEAM AT OVERHEAD DOOR
SCALE:3/4" = 1'-0"



2 EXTERIOR GRADE BEAM AT BRICK LEDGE
SCALE:3/4" = 1'-0"

ANGLETON Where the Heart is

Angleton Fire Station #3 Addition
2743 N. Velasco St.
Angleton, Texas 77515

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ISSUED FOR REVIEW & PRICING NOT FOR CONSTRUCTION

ENGINEER: HUNTER KORNEGAY
LICENSE NUMBER: 91030

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FOUNDATION DETAILS

S201

SCALE: AS NOTED

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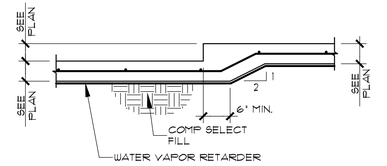
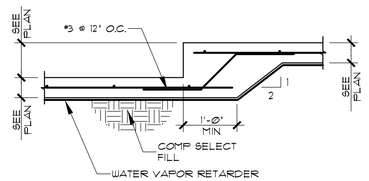
12 DETAIL
SCALE: 3/4" = 1'-0"

9 DETAIL
SCALE: 3/4" = 1'-0"

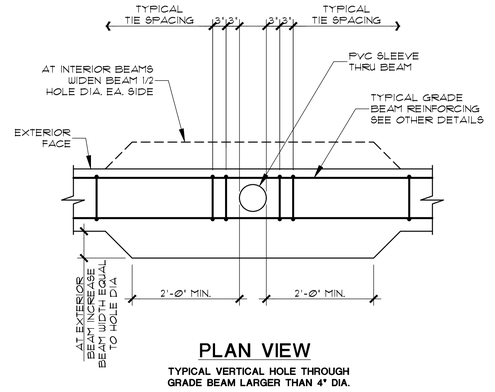


SLAB RECESS LESS THAN 3" DEEP



SLAB RECESS 3" TO 10" DEEP

6 SLAB RECESS
SCALE: 3/4" = 1'-0"

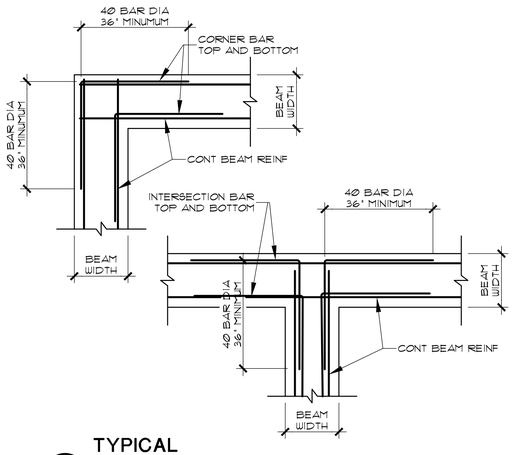


PLAN VIEW
TYPICAL VERTICAL HOLE THROUGH GRADE BEAM LARGER THAN 4" DIA.

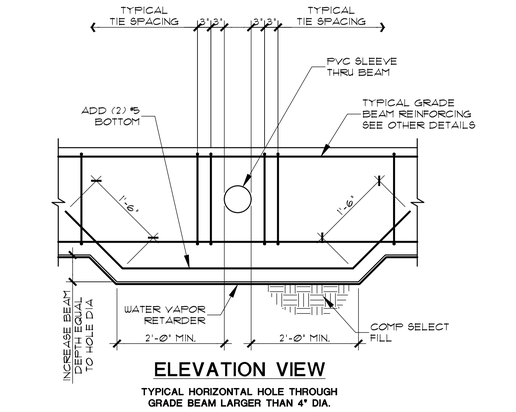
3 GRADE BEAM PENETRATION DETAIL
SCALE: 3/4" = 1'-0"

11 DETAIL
SCALE: 3/4" = 1'-0"

8 DETAIL
SCALE: 3/4" = 1'-0"

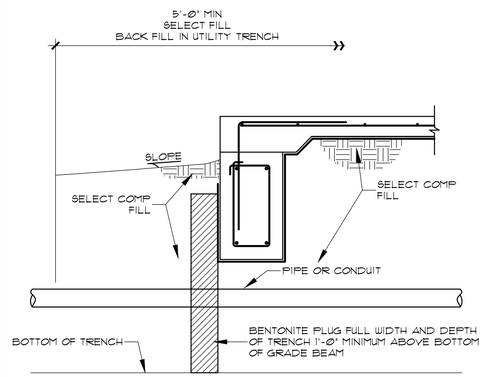


5 TYPICAL CORNER BAR DETAIL
SCALE: 3/4" = 1'-0"

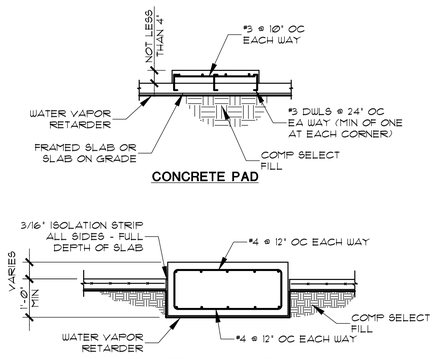


ELEVATION VIEW
TYPICAL HORIZONTAL HOLE THROUGH GRADE BEAM LARGER THAN 4" DIA.

2 GRADE BEAM PENETRATION DETAIL
SCALE: 3/4" = 1'-0"

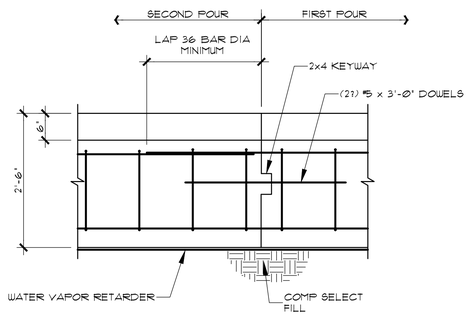


10 PIPE ENTRY DETAIL
SCALE: 3/4" = 1'-0"



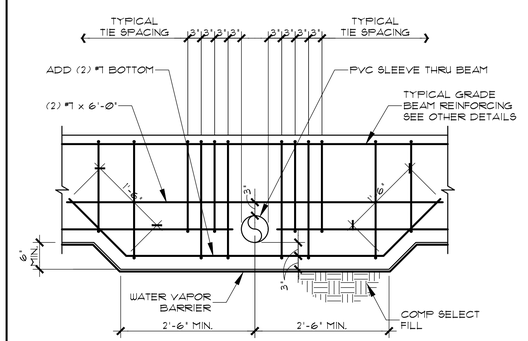
NOTE: VERIFY ALL PAD AND BASE LOCATIONS, DIMENSIONS, AND ADEQUACY WITH THE MECHANICAL ENGINEER AND THE INDIVIDUAL EQUIPMENT REQUIREMENTS. MECHANICAL ENGINEER TO SPECIFY ISOLATION DATA. PROVIDE ADDITIONAL LAYER OF REINFORCING FOR PAD THICKNESS GREATER THAN 18".

7 PAD AND BASE DETAIL
SCALE: NTS



ELEVATION VIEW
LOCATE JOINTS IN MIDDLE THIRD OF BEAM SPAN BETWEEN SUPPORTS

4 GRADE BEAM CONSTRUCTION JOINT
SCALE: 3/4" = 1'-0"



ELEVATION VIEW
TYPICAL HORIZONTAL HOLE THROUGH GRADE BEAM LARGER THAN 4" DIA.

1 GRADE BEAM PENETRATION (MAIN REINF INTERRUPTED)
SCALE: 3/4" = 1'-0"

ANGLETON
Where the Heart is

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S202

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MECHANICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE USED IN THE DRAWINGS AND MAY NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE DRAWINGS.

MECHANICAL ABBREVIATIONS

AD	ACCESS DOOR	MAX	MAXIMUM
ADJ	ADJUSTABLE	MBH	THOUSANDS OF BTU PER HOUR
AFF	ABOVE FINISHED FLOOR	MC	MECHANICAL CONTRACTOR
AL	ALUMINUM	MCA	MINIMUM CIRCUIT AMPACITY
ALT	ALTERNATE	MCC	MOTOR CONTROL CENTER
AP	ACCESS PANEL	MEP	MECHANICAL, ELECTRICAL AND PLUMBING
APD	AIR PRESSURE DROP	MER	MECHANICAL EQUIPMENT ROOM
APPROX	APPROXIMATE	MEZZ	MEZZANINE
ARCH	ARCHITECTURAL	MFR	MANUFACTURER
AVG	AVERAGE	MIN.	MINIMUM
		MISC	MISCELLANEOUS
BAS	BUILDING AUTOMATION SYSTEM	NA	NOT APPLICABLE
BOB	BOTTOM OF BEAM	NC	NORMALLY CLOSED
BOD	BOTTOM OF DUCT	NIC	NOT IN CONTRACT
BOP	BOTTOM OF PIPE	NO	NORMALLY OPEN
BTU	BRITISH THERMAL UNITS	NPS	NOMINAL PIPE SIZE
BTUH	BRITISH THERMAL UNITS PER HOUR	NPSH	NET POSITIVE SUCTION HEAD
		NPT	NATIONAL PIPE THREAD
CAV	CONSTANT AIR VOLUME	NR	NEAR
CFH	CUBIC FEET PER HOUR	NTS	NOT TO SCALE
CFM	CUBIC FEET PER MINUTE		
CL	CENTERLINE	OA	OUTSIDE AIR
CLG	CEILING	OC	ON CENTER
COND	CONDENSATE	OED	OPEN END DUCT
CONTR	CONTRACTOR	OLP	OVERLOAD PROTECTION
COP	COEFFICIENT OF PERFORMANCE	OV	OUTLET VELOCITY
CU	COPPER		
		PC	PLUMBING CONTRACTOR
DAP	DUCT ACCESS PANEL	PCF	POUNDS PER CUBIC FOOT
DB	DRY BULB	PD	PRESSURE DROP
DDC	DIRECT DIGITAL CONTROL	PH	PHASE
DEG	DEGREES	PLBG	PLUMBING
DIA	DIAMETER	POC	POINT OF CONNECTION
DIM	DIMENSION	PPH	POUNDS PER HOUR
DN	DOWN	PRV	PRESSURE RELIEF VALVE
DWG	DRAWING	PSF	POUNDS PER SQUARE FOOT
DX	DIRECT EXPANSION	PSI	POUNDS PER SQUARE INCH
		PSIA	POUNDS PER SQUARE INCH ABSOLUTE
EA	EXHAUST AIR	PSIG	POUNDS PER SQUARE INCH GAUGE
EAT	ENTERING AIR TEMPERATURE	PVC	POLYVINYL CHLORIDE
EC	ELECTRICAL CONTRACTOR		
EDR	EQUIVALENT DIRECT RADIATION	RA	RETURN AIR
EFF	EFFICIENCY	REQD	REQUIRED
ELEC	ELECTRICAL	RF	ROOF
ELEV	ELEVATION	RH	RELATIVE HUMIDITY
EM	EMERGENCY	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE		
ETR	EXISTING TO REMAIN	SA	SUPPLY AIR
EWT	ENTERING WATER TEMPERATURE	SCH	SCHEDULE
EXH	EXHAUST	SHT	SHEET
EXP	EXPANSION	SP	STATIC PRESSURE
EXIST	EXISTING	SPEC	SPECIFICATION
		SQ	SQUARE
F	FAHRENHEIT	S/S	STAINLESS STEEL
FC	FORWARD CURVED	STD	STANDARD
FLA	FULL LOAD AMPS	STRUCT	STRUCTURAL
FLR	FLOOR	T&P	TEMPERATURE AND PRESSURE
FM	FACTORY MUTUAL	TA	TRANSFER AIR
FPD	FLUID PRESSURE DROP	TBR	TO BE REMOVED
FPI	FINS PER INCH	TC	TEMPERATURE CONTROL
FPM	FEET PER MINUTE	TEMP	TEMPERATURE
FPS	FEET PER SECOND	TOB	TOP OF BEAM
F&T	FLOAT AND THERMOSTATIC	TOD	TOP OF DUCT
FT	FEET	TOP	TOP OF PIPE
FTG	FOOTING	TOS	TOP OF SLAB
		TSP	TOTAL STATIC PRESSURE
GA	GAUGE	T STAT	THERMOSTAT
GAL	GALLON	TYP	TYPICAL
GALV	GALVANIZED		
GBD	GRAVITY BACKDRAFT DAMPER	UC	UNDERCUT DOOR 1" (BY GENERAL CONTRACTOR)
GC	GENERAL CONTRACTOR	UNO	UNLESS OTHERWISE NOTED
GPM	GALLONS PER MINUTE		
GPH	GALLONS PER HOUR	V	VOLTS
		VA	VALVE
HP	HORSEPOWER	VAV	VARIABLE AIR VOLUME
		VEL	VELOCITY
ID	INSIDE DIAMETER	VP	VELOCITY PRESSURE
IE	INVERT ELEVATION	VTR	VENT THRU ROOF
IN	INCHES		
		W/	WITH
LAT	LEAVING AIR TEMPERATURE	W/O	WITHOUT
LB/HR	POUNDS PER HOUR	WB	WET BULB
LF	LINEAR FEET	WC	WATER COLUMN
LTG	LIGHTING	WG	WATER GAUGE
LWT	LEAVING WATER TEMPERATURE		
		X	EXISTING

MECHANICAL EQUIPMENT ABBREVIATIONS

AC	AIR CONDITIONING UNIT/AIR COMPRESSOR	GF	GAS FURNACE
		GV	GRAVITY VENTILATOR
ACC	AIR COOLED CONDENSER	H	HUMIDIFIER
ACCU	AIR COOLED CONDENSING UNIT	HC	HEATING COIL
ACU	AIR CONDITIONING UNIT	HP	HEAT PUMP
AHU	AIR HANDLING UNIT	HRC	HEAT RECOVERY COIL
AMD	AIR MIXING DEVICE	HRD	HEAT RECLAIM DEVICE
ARU	AIR ROTATION UNIT	HX	HEAT EXCHANGER
AS	AIR SEPARATOR		
AT	AIR TERMINAL DEVICE	IAH	INTAKE AIR HOOD
		IF	INLINE FAN
B	BOILER	IFH	INFRARED HEATER
BBS	BOILER BLOWDOWN SEPARATOR		
BC	BOOSTER COIL	LP	LOUVERED PENTHOUSE
BFS	BOILER FEEDWATER SYSTEM		
		MAU	MAKE-UP AIR UNIT
C	CONVECTOR	MCC	MOTOR CONTROL CENTER
CC	COOLING COIL		
CH	CHILLER	P	PUMP
CP	CONDENSATE PUMP		
CRU	CONDENSATE RETURN UNIT	RAHU	ROOFTOP AIR HANDLING UNIT
CT	COOLING TOWER	RCP	RADIANT CEILING PANEL
CUH	CABINET UNIT HEATER	REF	ROOF EXHAUST FAN
		RF	RETURN FAN
DC	DUST COLLECTOR	RH	RELIEF HOOD
DH	DEHUMIDIFIER	RTU	ROOFTOP UNIT
		RV	ROOF VENTILATOR
EBB	ELECTRIC BASEBOARD		
EF	EXHAUST FAN	SA	SOUND ATTENUATOR
EH	EXHAUST HOOD	SF	SUPPLY FAN
EJ	EXPANSION JOINT		
ET	EXPANSION TANK	T	TANK
EUH	ELECTRIC UNIT HEATER	TXV	THERMAL EXPANSION VALVE
F	FILTER	UH	UNIT HEATER
FCU	FAN COIL UNIT	UST	UNDERGROUND STORAGE TANK
FD	FLOOR DRAIN	UV	UNIT VENTILATOR
FOP	FUEL OIL PUMP		
FOT	FUEL OIL TANK	V	VALVE
FTR	FIN TUBE RADIATION	VFD	VARIABLE FREQUENCY DRIVE
		VP	VACUUM PUMP

GENERAL

- NEW OR RELOCATED
- EXISTING TO REMAIN
- EXISTING TO BE REMOVED
- (#) MECHANICAL NOTE TAG

PIPING SYSTEMS AND FITTINGS

BBD	BOILER BLOW DOWN
BF	BOILER FEED
BA	BREATHABLE AIR
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
A	COMPRESSED AIR
CDS	CONDENSER WATER SUPPLY
CDR	CONDENSER WATER RETURN
D	DRAIN LINE
FOF	FUEL OIL FILL
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
GCWS	GLYCOL CHILLED WATER SUPPLY
GCWR	GLYCOL CHILLED WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
H	HUMIDIFICATION
LP	LIQUEFIED PETROLEUM GAS
LPS	LOW PRESSURE STEAM (10 PSIG)
LPC	LOW PRESSURE CONDENSATE
MU	MAKE-UP WATER
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
G	NATURAL GAS
N2	NITROGEN
H2	HYDROGEN
O2	OXYGEN
V	VENT LINE
PC	PUMPED CONDENSATE
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RS	REFRIGERANT SUCTION
RV	REFRIGERANT VENT
VAC	VACUUM (AIR)

NOTE:
(E) PRIOR TO SYSTEM TYPE
DENOTES EXISTING PIPING
(i.e. (E) HWS - EXISTING HOT WATER SUPPLY)

(# PSIG) = SYSTEM PRESSURE IN PSIG
(i.e. (5 PSIG)G)

	FLANGE
	UNION
	ANCHOR
	PIPE GUIDE
	ECCENTRIC REDUCER
	CONCENTRIC REDUCER
	LINE CONTINUATION BREAK
	PIPELINE STRAINER
	ELBOW DOWN
	ELBOW UP
	TEE DOWN
	TEE UP
	PIPE CAP
	VALVE IN VERTICAL

PIPE VALVES AND SPECIALTIES

	ANGLE VALVE
C.S.	BALANCING VALVE (CIRCUIT SETTER)
	BALL VALVE
	BUTTERFLY VALVE
	BUTTERFLY VALVE WITH ACTUATOR
	CHECK VALVE (ARROW INDICATES FLOW DIRECTION)
	DIAPHRAGM VALVE
	DRAIN VALVE WITH CAPPED OUTLET
	FLOAT OPERATED VALVE
	GATE VALVE
	GLOBE VALVE
	PLUG VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	SHUTOFF VALVE (SEE SPECIFICATION FOR TYPE)
S	SOLENOID VALVE
	THERMAL EXPANSION VALVE
	TRIPLE DUTY VALVE
	2-WAY CONTROL VALVE
	3-WAY CONTROL VALVE

AV	AUTOMATIC AIR VENT
MV	MANUAL AIR VENT
	BALL JOINT
EJ	EXPANSION JOINT
	FLEXIBLE CONNECTION
FS	FLOW SWITCH
FM	FLOW METER
	PETE'S PLUG
	PRESSURE GAUGE
PS	PRESSURE SWITCH
XX	STEAM TRAP (INDICATE TYPE: T - THERMOSTATIC TRAP; F&T - FLOAT AND THERMOSTATIC TRAP; IB - INVERTED BUCKET TRAP)
	THERMOMETER
	DIRECTION OF FLOW
R	DIRECTION OF PITCH RISE (R) OR DROP (D)

DUCTWORK FITTINGS

SINGLE LINE DUCTWORK / DOUBLE LINE DUCTWORK

- RECTANGULAR/ROUND BRANCH TAKE OFF (SA, RA, AND EA)
- 1/4 D BUT NOT NOT LESS 6"
- 1/4 W BUT NOT NOT LESS 6"
- TEE (FOR LOW PRESSURE SUPPLY AIR DUCTWORK ONLY)
- 15° MAX. FOR DIVERGING TRANSITION, 25° MAX. FOR CONVERGING TRANSITION - ECCENTRIC
- 15° MAX. FOR DIVERGING TRANSITION, 25° MAX. FOR CONVERGING TRANSITION - CONCENTRIC
- DUCT WITH FLOW DIRECTION ARROW
- LINE CONTINUATION BREAK (RECTANGULAR, ROUND)
- SUPPLY AIR (SA) OR OUTDOOR AIR (OA) DUCT UP
- SUPPLY AIR (SA) OR OUTDOOR AIR (OA) DUCT DOWN
- RETURN AIR (RA), RELIEF AIR OR TRANSFER AIR (TA) DUCT UP
- RETURN AIR (RA), RELIEF AIR OR TRANSFER AIR (TA) DUCT DOWN
- EXHAUST AIR (EA) DUCT UP
- EXHAUST AIR (EA) DUCT DOWN
- DUCT RISE/DROP W/ 90° ELBOWS (SUPPLY RECTANGULAR DUCT SHOWN)
- EITHER RADIUS OR SQUARE ELBOW (REFER TO SPECIFICATION FOR ADDITIONAL REQUIREMENTS)
- SQUARE ELBOW WITH TURNING VANES
- DUCT RISE (R) OR DROP (D) W/ 30° ELBOWS (RECTANGULAR DUCTS)
- DUCT CROSS OVER

THIS DUCT RUNS UNDERNEATH

DIFFUSER, GRILLE, AND REGISTER NOTATION

DUCT SIZE IN INCHES (NET INSIDE DIMENSIONS)
FIRST FIGURE: SIDE SHOWN
SECOND FIGURE: SIDE NOT SHOWN

12x12

A1 — DIFFUSER/GRILLE MARK
000 — CFM
10" — NECK SIZE
(TYP.2) — TYPICAL OF QUANTITY

12"Ø INDICATES ROUND DUCTWORK
12X12⊕ INDICATES OVAL ROUND DUCTWORK

- SQUARE/RECTANGULAR SUPPLY DIFFUSER, GRILLE OR REGISTER
- SUPPLY REGISTER OR GRILLE (VERTICAL MOUNT)
- ROUND DIFFUSER
- EXHAUST OR RETURN REGISTER OR GRILLE (VERTICAL MOUNT)
- RETURN REGISTER OR GRILLE (HORIZONTAL MOUNT)
- EXHAUST REGISTER OR GRILLE (HORIZONTAL MOUNT)
- SIDEWALL REGISTER OR GRILLE WITH DAMPER (DUCT MOUNT)

DAMPERS AND CONTROLS

- MANUAL VOLUME DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- COMBINATION FIRE/ SMOKE DAMPER
- BACKDRAFT DAMPER
- MOTORIZED DAMPER
- SPACE THERMOSTAT
- SPACE HUMIDISTAT
- NIGHT CYCLE CONTROL THERMOSTAT
- TEMPERATURE SENSOR
- HUMIDITY SENSOR
- PRESSURE SENSOR
- DUCT SMOKE DETECTOR
- STARTER
- SWITCH
- CONTROL WIRING

DUCTWORK SPECIALTIES

- DUCT REHEAT COIL
- TEST HOLE
- ACCESS DOOR
- NEW TO EXISTING DUCT CONNECTION
- REMOVE EXISTING DUCTWORK
- FLEXIBLE DUCT
- POINT OF CHANGE IN DUCT CONSTRUCTION BY PRESSURE CLASS
- LINED DUCTWORK

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER AND AND SHALL COMPLY WITH ALL ADOPTED LOCAL, STATE, AND NATIONAL CODES.
2. DO NOT SCALE THE DRAWINGS.
3. DRAWINGS ARE DIAGRAMMATIC. CONTRACTOR TO INSTALL PIPE AND DUCTWORK IN A MANNER ACCORDING TO GOOD PRACTICE. ANY MAJOR DEVIATIONS REQUIRED FROM THE DESIGN DRAWINGS SHALL BE VERIFIED WITH THE ENGINEER/ARCHITECT.
4. FINAL ELECTRICAL CONNECTIONS AT OR ABOVE 120V SHALL BE MADE BY THE ELECTRICAL CONTRACTOR.
5. INSTALL BALANCING DAMPERS AND SPLITTER DAMPERS AS SHOWN AND AS REQUIRED FOR PROPER BALANCING OF THE MECHANICAL SYSTEM. PROVIDE TO THE ENGINEER/OWNER A BALANCING REPORT SHOWING RESULTS OF BALANCE TESTING. ALL BALANCE TESTING SHALL MEET THE CURRENT NEBB STANDARDS.
6. DO NOT LOCATE FCU'S, VAV'S, OR FPT'S ABOVE LIGHTS OR CONFERENCE ROOMS.
7. REFER TO STRUCTURAL DRAWINGS AND OTHER DISCIPLINES FOR COORDINATING DUCT ROUTING IN CEILING PLENUM SPACE.
8. PROVIDE A SET OF RECORD DRAWINGS OF THE ACTUAL INSTALLATION. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM, THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT & PIPE DISTRIBUTION SYSTEM INCLUDING SIZES AND THE TERMINAL AIR DESIGN FLOW RATES.
9. AVOID ROUTING OF PIPING OR DUCTWORK ABOVE IT, ELECTRICAL OR FIRE EQUIPMENT ROOMS.
10. PROVIDE APPROPRIATELY RATED FIRE STOPPING FOR PENETRATIONS THROUGH FIRE-RATED WALLS. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE RATED STRUCTURES.
11. COORDINATE THERMOSTAT, SENSOR AND SWITCH LOCATIONS WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
12. PROVIDE DUCT TRANSITIONS FROM EQUIPMENT CONNECTIONS TO DUCT SIZES SHOWN.
13. FLEXIBLE DUCT SHALL BE INSULATED AND SHALL BE THE SAME SIZE OF THE NECK OF THE AIR DEVICE. FLEXIBLE DUCTWORK SHALL NOT EXCEED 8'-0" IN LENGTH, PROVIDE WRAPPED RIGID ROUND DUCTWORK FOR TAKE-OFFS IN EXCESS OF 8'-0".
14. MAINTAIN A MINIMUM 10'-0" SEPARATION FROM OUTSIDE AIR INTAKES TO EXHAUST TERMINATIONS AND VENTS.
15. MAINTAIN A MINIMUM 5'-0" SEPARATION FROM EXHAUST TERMINATIONS TO OPERABLE WINDOWS.
16. ALL UNLINED DUCTWORK VISIBLE THOUGH THE AIR DEVICE SHALL BE PAINTED FLAT BLACK.
17. CEILING TILES USED TO ACCESS FAN COIL UNITS TO BE LABELED.

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iAD PROJECT #	23017
ISSUE DATE:	06/02/23

06/02/23	95 % OWNER REVIEW SET

REVISION LOG

MECHANICAL SYMBOLS AND ABBREVIATIONS

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SCALE: AS NOTED

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MECHANICAL:
THE CONTRACTOR SHALL PROVIDE THE FOLLOWING ENERGY CODE REQUIREMENTS:
THE FOLLOWING REQUIREMENTS ARE MANDATORY PROVISIONS AND ARE NECESSARY FOR COMPLIANCE WITH THE CODE.

DRAWINGS: CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE, RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWINGS SHALL INCLUDE AS A MINIMUM: THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.

MANUALS: CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND A MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS (SEE APPENDIX E) AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
(A) SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
(B) OPERATION MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
(C) NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
(D) HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
(E) A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS.

2015 IECC SECTION C402.5.5 - OUTDOOR AIR INTAKE AND EXHAUST OPENINGS AND STAIRWAY AND SHAFT VENTS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS. THE DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 4 CFM / FT2 OF DAMPER SURFACE AREA AT 1.0 INCH WATER GAUGE AND SHALL BE LABELED BY AN APPROVED AGENCY WHEN TESTED IN ACCORDANCE WITH AMCA 500D FOR SUCH PURPOSE.

OUTDOOR AIR INTAKE AND EXHAUST DAMPERS SHALL BE INSTALLED WITH AUTOMATIC CONTROLS CONFIGURED TO CLOSE WHEN THE SYSTEMS OR SPACES SERVED ARE NOT IN USE OR DURING UNOCCUPIED PERIOD WARM-UP AND SETBACK OPERATION, UNLESS THE SYSTEMS SERVED REQUIRE OUTDOOR OR EXHAUST AIR IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE OR THE DAMPERS ARE OPENED TO PROVIDE INTENTIONAL ECONOMIZER COOLING.

EXCEPTIONS: GRAVITY (NONMOTORIZED) DAMPERS SHALL BE PERMITTED TO BE USED AS FOLLOWS:
(A) IN BUILDINGS LESS THAN 3 STORIES IN HEIGHT ABOVE GRADE PLANE.
(B) IN BUILDINGS OF ANY HEIGHT LOCATED IN CLIMATE ZONES 1, 2, OR 3.
(C) WHERE THE DESIGN EXHAUST CAPACITY IS NOT GREATER THAN 300 CFM.

GRAVITY (NONMOTORIZED) DAMPERS SHALL HAVE AN AIR LEAKAGE RATE NOT GREATER THAN 20 CFM / FT2 WHERE NOT LESS THAN 24 INCHES IN EITHER DIMENSION AND 40 CFM / FT2 WHERE LESS THAN 24 INCHES IN EITHER DIMENSION. THE RATE OF AIR LEAKAGE SHALL BE DETERMINED AT 1.0 INCH W.G. WHEN TESTED IN ACCORDANCE WITH AMCA 500D FOR SUCH PURPOSE. THE DAMPERS SHALL BE LABELED BY AN APPROVED AGENCY.

CONTROLS: THERMOSTATIC SETBACK CONTROLS SHALL HAVE THE CAPABILITY TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F OR UP TO 85°F IN ACCORDANCE WITH 2015 IECC SECTION C403.4.2.1.

IN ACCORDANCE WITH 2015 IECC SECTION C403.4.2.2, AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR AT LEAST 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS; A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS; OR AN OCCUPANCY SENSOR.

(B) AN OCCUPANT SENSOR THAT IS CAPABLE OF SHUTTING THE SYSTEM OFF WHEN NO OCCUPANT IS SENSED FOR A PERIOD OF UP TO 30 MINUTES.
(C) A MANUALLY OPERATED TIMER CAPABLE OF BEING ADJUSTED TO OPERATE THE SYSTEM FOR UP TO TWO HOURS.

CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT ALL HVAC SYSTEMS BE BALANCED IN ACCORDANCE WITH GENERALLY ACCEPTED ENGINEERING STANDARDS (SECTION C408.2.2 OF 2015 IECC). CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT A WRITTEN BALANCE REPORT BE PROVIDED TO THE OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER FOR THE HVAC SYSTEMS SERVING ZONES WITH A TOTAL CONDITIONED AREA EXCEEDING 5000 SF.
AIR SYSTEMS SHALL BE BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES. THEN, FOR FANS WITH FAN SYSTEM POWER GREATER THAN 1 HP, FAN SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. EACH SUPPLY OUTLET AND ZONE TERMINAL DEVICE SHALL BE EQUIPPED WITH MEANS FOR AIR BALANCING.
INDIVIDUAL HYDRONIC HEATING AND COOLING COILS SHALL BE EQUIPPED WITH MEANS FOR BALANCING AND MEASURING FLOW. HYDRONIC SYSTEMS SHALL BE PROPORTIONATELY BALANCED IN A MANNER TO FIRST MINIMIZE THROTTLING LOSSES, THEN THE PUMP IMPELLER SHALL BE TRIMMED OR PUMP SPEED SHALL BE ADJUSTED TO MEET DESIGN FLOW CONDITIONS. EACH HYDRONIC SYSTEM SHALL HAVE EITHER THE CAPABILITY TO MEASURE ACROSS THE PUMP, OR TEST PORTS AT EACH SIDE OF EACH PUMP.
EXCEPTIONS: THE FOLLOWING EQUIPMENT IS NOT REQUIRED TO BE EQUIPPED WITH A MEANS FOR BALANCING OR MEASURING FLOW:
1. PUMPS WITH PUMP MOTORS OF 5 HP OR LESS.
2. WHERE THROTTLING RESULTS IN NO GREATER THAN 5 PERCENT OF THE NAMEPLATE HORSEPOWER DRAW ABOVE THAT REQUIRED IF THE IMPELLER WERE TRIMMED.

ALL MECHANICAL/PLUMBING SUPPLY AND RETURN PIPING SHALL BE INSULATED PER THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE - TABLE C403.11.3 - MINIMUM PIPE INSULATION.

MINIMUM PIPE INSULATION THICKNESS

FLUID OPERATING TEMPERATURE RANGE AND USAGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTU·IN. / (H·FT2·°F)	MEAN RATING TEMPERATURE, °F	< 1	1 TO < 1 1/2	1 1/2 TO < 4	4 TO < 8	≤ 8
> 350	0.32 - 0.34	250	4.5	5.0	5.0	5.0	5.0
251 - 350	0.29 - 0.32	200	3.0	4.0	4.5	4.5	4.5
201 - 250	0.27 - 0.30	150	2.5	2.5	2.5	3.0	3.0
141 - 200	0.25 - 0.29	125	1.5	1.5	2.0	2.0	2.0
105 - 140	0.21 - 0.28	100	1.0	1.0	1.5	1.5	1.5
40 - 60	0.21 - 0.27	75	0.5	0.5	1.0	1.0	1.0
< 40	0.20 - 0.26	50	0.5	1.0	1.0	1.0	1.5

ALL THERMOSTATS TO BE NEW AND PROGRAMMABLE PER THE 2015 INTERNATIONAL ENERGY CONSERVATION CODE - SECTION C403.4.

ALL SUPPLY AND RETURN AIR DUCTS LOCATED IN UNCONDITIONED ATTICS, UNCONDITIONED SPACES INCLUDING MECHANICAL ROOMS, UNCONDITIONED PLENUMS, OUTSIDE OF THE ENVELOPE OR OUTSIDE THE BUILDING SHALL BE INSULATED USING R-8 INSULATION FOR PROJECTS LOCATED IN CLIMATE ZONES 1-4 AND R-12 FOR PROJECTS LOCATED IN CLIMATE ZONES 5-8 AS WELL AS COMPLY WITH THE 2018 INTERNATIONAL ENERGY CONSERVATION CODE. ALL SUPPLY AND RETURN DUCTS LOCATED IN A CONDITIONED SPACE OR CONDITION PLENUM SHALL BE INSULATED USING R-8 INSULATION. EXTERNALLY INSULATED DUCT SHALL BE R-8 PER 2018 INTERNATIONAL ENERGY CONSERVATION CODE. INSULATION SHALL BE CONTINUOUS THROUGH ALL WALLS/CEILINGS INCLUDING RATED WALLS. NO INSULATION / VAPOR BARRIER BREAKS WILL BE ALLOWED. ALL SUPPLY AIR DIFFUSER BACKS TO BE INSULATED PER SPECIFICATIONS ABOVE AND PER LOCATION INSTALLED.

ALL DUCTWORK TO BE SHEET METAL AS SPECIFIED WITH EXTERNAL INSULATION AS SPECIFIED.
ACOUSTICAL LINER IS NOT APPROVED.

ANCHOR AND SUPPORTS MUST MEET VERTICAL AND HORIZONTAL LOADS WITHIN THE STRESS LIMITATIONS SPECIFIED IN THE INTERNATIONAL BUILDING CODE FOR THE MINIMUM BASIC WIND SPEED. ANCHOR AND SUPPORTS TO COMPLY WITH SECTION 1604 - 2015 IBC.

DUCTWORK AND PLENUMS SHALL BE SEALED IN ACCORDANCE WITH SECTION 603.9 OF THE 2015 INTERNATIONAL MECHANICAL CODE AND SECTION C403.11.2 OF THE 2015 INTERNATIONAL COMMERCIAL ENERGY CONSERVATION CODE.

ALL DUCTWORK MATERIALS SHALL BE GALVANIZED STEEL, GAUGES, BRACING, AND SUPPORTS SHALL BE PER SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE MANUAL, 3RD EDITION. PLENUMS SHALL BE 18-GAUGE. PROVIDE AIRFOIL TYPE TURNING VANES AT ALL CHANGES IN DIRECTION. EXTRACTORS SHALL HAVE OPERATORS. CROSS-BREAK ALL DUCTS 12 INCHES AND WIDER. DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. SUPPORT DUCTS A MAXIMUM OF 6 FEET ON CENTERS WITH 1" X 26 GAUGE HANGERS. SECURE SUPPORTS WITH A SHEETMETAL SCREW ON BOTTOM, AND 12" CENTERS ON SIDES. DAMPERS SHALL HAVE FELT EDGES AND BE 16 GAUGE. PROVIDE LOCKING QUADRANTS FOR DAMPERS. PROVIDE CONCEALED REGULATORS FOR EXTRACTORS ON BRANCH DUCTS, ON TAKEOFFS TO THE CEILING DIFFUSES. U.L. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR REQUIRED BY CODE. INSTALL DAMPERS AND ACCESS DOORS PER U.L. REQUIREMENTS.

1.1 15010 MECHANICAL GENERAL

A. REFERENCE: ALL PORTIONS OF GENERAL CONDITIONS APPLY TO MECHANICAL AND PLUMBING WORK.

B. GUARANTEES: PROVIDE WRITTEN ONE YEAR GUARANTEE FOR ALL SYSTEMS AND EQUIPMENT. COMPRESSORS SHALL BE GUARANTEED FOR FIVE YEARS.

C. CODES: COMPLY WITH NATIONAL, STATE AND CITY CODES AND OTHER APPLICABLE STANDARDS. ALL PORTIONS OF THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC) AND CURRENT LOCAL AHJ COMMERCIAL ENERGY CONSERVATION CODES MUST BE COMPLIED WITH.

D. SUPERVISION: PROVIDE SUPERVISOR IN FIELD FOR EACH PHASE OF WORK.

E. COORDINATION: COORDINATE ALL WORK WITH OTHER TRADES. PROVIDE MECHANICAL AND PLUMBING EQUIPMENT WITH ELECTRICAL CHARACTERISTICS COMPATIBLE WITH THAT SHOWN ON THE ELECTRICAL DRAWINGS AND DESCRIBED IN THE ELECTRICAL DIVISION OF THE SPECIFICATIONS. THE ENGINEER RESERVES THE RIGHT TO MOVE SERVICES AS REQUIRED TO COORDINATE THE WORK, AT NO COST TO THE OWNER.

F. THE DRAWINGS ARE SCHEMATIC IN NATURE, AND SHOULD NOT BE SCALED, BUT SHOW THE VARIOUS COMPONENTS OF THE SYSTEMS APPROXIMATELY TO SCALE AND ATTEMPT TO INDICATE HOW THEY ARE TO BE INTEGRATED WITH OTHER PARTS OF THE BUILDING. DETERMINE EXACT LOCATIONS BY JOB MEASUREMENTS, BY CHECKING THE REQUIREMENTS OF OTHER TRADES, AND BY REVIEWING ALL CONTRACT DOCUMENTS. THE DRAWINGS INDICATE GENERAL ROUTING OF THE VARIOUS PARTS OF THE SYSTEMS, BUT DO NOT INDICATE ALL FITTINGS, OFFSETS, AND RUN OUTS WHICH ARE REQUIRED. THE CONTRACT SHALL INCLUDE ALL FITTINGS, OFFSETS, AND RUN OUTS REQUIRED TO FIT THE SYSTEM INTO SPACES ALLOTTED TO THEM.

G. SHOP DRAWINGS AND SUBMITTAL DATA: PAPERLESS SUBMITTAL ONLY TO ENGINEER. ALL SHOP DRAWINGS AND SUBMITTAL DATA SHALL BE AN ELECTRONIC FILE FORMAT ONLY. PDF FORMAT IS ACCEPTABLE. ALL EQUIPMENT AND MATERIALS SHALL BE SUBMITTED, INCLUDING DUCTWORK AND EQUIPMENT CHANGES, AS REQUIRED. SUBMITTED ITEMS THAT DEVIATE FROM THE DRAWINGS AND SPECIFICATIONS SHALL BE HIGHLIGHTED IN YELLOW FOR EASY DISTINCTION. MARK ALL ITEMS AND SHOW THAT THEY COMPLY WITH THE IECC. THE ENGINEER SHALL ISSUE A LETTER STATING THE ACTION TAKEN ON THE SUBMITTAL. THE LETTER SHALL BE COPIED AND ATTACHED TO THE SUBMITTAL, BY THE CONTRACTOR, AND DISTRIBUTED AS REQUIRED.

H. RECORD DATA: OBTAIN, AT CONTRACTOR'S EXPENSE, A SET OF PRINTS AND KEEP THESE ON THE JOB SITE DURING CONSTRUCTION. DURING CONSTRUCTION, MARK ON THESE PRINTS ANY CHANGES THAT ARE MADE, NOTING PARTICULARLY LOCATIONS OF THOSE ITEMS THAT WILL NEED TO BE FOR SERVICING. CONVERT RECORD DATA TO AN ELECTRONIC FORMAT (PDF) AND SUBMIT TO THE ARCHITECT. FURNISH ONE SET OF SHOP DRAWINGS AND MAINTENANCE MANUALS IN BROCHURE FORM. RECORD BROCHURES SHALL BE GIVEN TO THE OWNER AT COMPLETION OF THE WORK.

I. PERMITS, FEES: SECURE AND PAY FOR ALL FEES AND CHARGES FOR THE WORK. FURNISH CERTIFICATES OF ACCEPTANCE AT COMPLETION OF THE JOB FROM CITY.

J. SUBSTITUTIONS: NO SUBSTITUTIONS SHALL BE MADE WITHOUT PRIOR APPROVAL FROM THE ARCHITECT AND ENGINEER.

K. CUTTING AND PATCHING: CUTTING TO BE BY THIS SECTION, WITH PATCHING AND FURRING BY GENERAL CONTRACTOR. PATCHING REQUIRED AFTER COMPLETION OF WORK SHALL BE PAID FOR BY CONTRACTOR.

L. CLEAN UP: CLEAN AND TOUCH-UP PAINT ALL EQUIPMENT AT COMPLETION OF WORK. PROTECT ALL EQUIPMENT FROM DAMAGE DURING CONSTRUCTION. PROVIDE NAME PLATES ON ALL EQUIPMENT.

M. TESTS: TESTS ALL PIPING SYSTEMS PER LOCAL CODE. STERILIZE ALL NEW WATER PIPING PER HEALTH DEPARTMENT REQUIREMENTS.

N. TEST ALL EQUIPMENT AND PROVE PERFORMANCE RESULTS TO ARCHITECT. MODIFY ALL DRIVES, BALANCE ALL AIR AS SHOWN ON THE DRAWINGS. AFTER OWNER HAS OCCUPIED AND IS USING THE BUILDING, MAKE ADDITIONAL INSPECTIONS OF THE SYSTEM. CORRECT ANY OWNER'S OBSERVED TEMPERATURE IMBALANCES. CHECK CORRECT OPERATION OF EQUIPMENT AND VERIFY BY LETTER TO THE ARCHITECT, ON EACH TRIP. LIST IN THE LETTER CORRECTIONS MADE. AT THE OPPOSITE SEASON OF THE STARTUP INSPECT AND VERIFY CORRECT OPERATION OF ALL SYSTEMS. TESTS ALL CONTROL SYSTEMS. TEST REFRIGERANT PIPING PER MANUFACTURE'S RECOMMENDATIONS. FURNISH COMPLETE COPY OF ALL TEST DATA TO ARCHITECT. INSTRUCT OWNER FOR ONE DAY IN OPERATION OF ALL SYSTEMS. FILTERS SHALL BE CLEAN WHEN SYSTEMS ARE ACCEPTED BY THE OWNER. TESTING REGULATIONS MUST MEET LOCAL CITY REQUIREMENTS.

O. EXCAVATING AND BACKFILLING: EXCAVATE TO PROVIDE MINIMUM 2 FEET COVER OVER ALL PIPING AND CONDUIT. BACK FILL TO ORIGINAL COMPACTION. SAW-CUT EXISTING FINISHES AND PATCH TO MATCHING ORIGINAL CONDITIONS.

P. NOISE AND VIBRATION: ALL EQUIPMENT SHALL OPERATE WITH MINIMUM OF NOISE AND VIBRATION. CONTRACTORS SHALL RECTIFY ANY OBJECTIONABLE CONDITIONS.

Q. TEMPORARY SERVICES: FURNISH TEMPORARY UTILITY AS REQUIRED FOR NEW CONSTRUCTION.

R. EQUIPMENT CONNECTIONS: PROVIDE ALL MARTIAL AND LABOR FOR CONNECTING OF ALL EQUIPMENT FURNISHED IN OTHER SECTIONS OR BY OWNER. FIELD VERIFY ALL EQUIPMENT FOR DIMENSIONS AND ROUGHING-IN. FURNISH ALL VALVES, DRAIN PIPING, TRAPS, ETC., AS REQUIRED TO INSTALL THE EQUIPMENT.

S. FLOOR DRAINS: FINAL LOCATION WILL BE DETERMINED BY EQUIPMENT LAYOUT AND LOCATION MUST BE FIELD APPROVED. PROVIDE TRAP PRIMERS TO ALL FLOOR DRAINS.

T. EXAMINATION OF SITE: THE CONTRACTOR IS RESPONSIBLE FOR VISITING THE JOB SITE AND CONFIRMING THE LOCATION OF EXISTING CONDITIONS BEFORE BIDDING. IF EXISTING CONDITIONS REQUIRE MODIFICATION DUE TO ELEVATION, OBSTRUCTION, SIZE, ETC., THE CONTRACTOR WILL ADVISE IN WRITING BEFORE BEGINNING CONSTRUCTION.

END OF SECTION 15010

1.1 15020 MECHANICAL SPECIFICATIONS

A. PROVIDE ALL LABOR AND MATERIALS FOR COMPLETE MECHANICAL SYSTEMS. SYSTEMS MUST COMPLY WITH IECC.

B. PLATES: PROVIDE CHROME PLATED PLATES OVER ALL PIPES THROUGH WALLS, FLOORS, AND CEILINGS. PROVIDE GALVANIZED PIPE SLEEVES FOR ALL LINES THROUGH WALLS, FLOORS, AND ROOFS. SLEEVES IN OUTSIDE WALLS AND ROOF SHALL BE WATER TIGHT. SLEEVES THROUGH WALLS ABOVE CEILINGS SHALL BE AIR TIGHT.

C. DUCT INSULATION:
1. EXTERNAL: ALL DUCTWORK SHALL BE INSULATED AND VAPOR SEALED WITH R-8. EXTERNAL INSULATION SHALL COMPLY WITH IECC, AND BE A MINIMUM OF 3" THICK, WITH A VAPOR BARRIER APPLIED OVER JOINTS. INSULATE OUTER CORES OF DIFFUSES (EXTERNALLY). INSULATION SHALL BE APPLIED PER MANUFACTURE'S RECOMMENDATIONS.
2. INTERNAL: INTERNAL DUCT INSULATION SHALL BE A MINIMUM OF 2" THICK WITH R-8, AND COMPLY WITH IECC. INSULATION SHALL BE APPLIED PER MANUFACTURE'S RECOMMENDATIONS, WITH INSULATING PINS SPEED WASHERS 12" ON CENTERS ON TOPS AND SIDES OF THE DUCT.
3. DUCTWORK SIZES SHOWN ON DRAWINGS ARE INSIDE DIMENSION.
4. ALL SUPPLY DIFFUSER BACKPANS TO BE INSULATED WITH R-8 INSULATION.

D. DUCTWORK: ALL DUCTWORK MATERIALS SHALL BE GALVANIZED STEEL, GAUGES, BRACING, AND SUPPORTS SHALL BE PER SMACNA MANUAL PLENUMS SHALL BE 18-GAUGE. PROVIDE AIRFOIL TYPE TURNING VANES AT ALL CHANGES IN DIRECTION. EXTRACTORS SHALL HAVE OPERATORS. PAINT FLAT BLACK BEHIND GRILLES. CROSS-BREAK ALL DUCTS 12 INCHES AND WIDER. DUCT DIMENSIONS SHOWN ON DRAWINGS ARE CLEAR INSIDE DIMENSIONS. SUBMIT SHOP DRAWINGS AND CHANGES TO PLAN LAYOUTS AND TO PROVIDE ADEQUATE CLEARANCES. FLEXIBLE DUCTWORK CONNECTIONS SHALL BE PROVIDED FOR ALL FAN UNIT CONNECTIONS. VENTGLAS FABRIC SHALL BE 4" WIDE. SUPPORT DUCTS A MAXIMUM OF 6 FEET ON CENTERS WITH 1" X 26 GAUGE HANGERS. SECURE SUPPORTS WITH A SHEETMETAL SCREW ON BOTTOM, AND 12" CENTERS ON SIDES. DAMPERS SHALL HAVE FELT EDGES AND BE 16 GAUGE. PROVIDE LOCKING QUADRANTS FOR DAMPERS. PROVIDE CONCEALED REGULATORS FOR EXTRACTORS ON BRANCH DUCTS, ON TAKEOFFS TO THE CEILING DIFFUSES. FLEXIBLE DUCTS SHALL BE PRE INSULATED TYPE, AND A MAXIMUM OF 8 FEET LONG. U.L. FIRE DAMPERS WITH ACCESS DOORS SHALL BE PROVIDED AS SHOWN ON THE PLANS OR REQUIRED BY CODE. INSTALL DAMPERS AND ACCESS DOORS PER U.L. REQUIREMENTS. UNITS ABOVE CEILINGS SHALL HAVE AUXILIARY DRAIN PANS. AUXILIARY DRAIN PANS SHALL BE A MINIMUM 4" HIGH AND MADE OUT OF SHEETMETAL. PANS SHALL HAVE AUXILIARY DRAIN AND A FAN FLOAT SWITCH.

E. OUTSIDE AIR INTAKE: THROUGH OUTSIDE WALL OR ROOF LOUVERS WITH MOTORIZED ALUMINUM OBD DAMPERS.

F. FANS: ROOF MOUNTED, CEILING MOUNTED, WALL MOUNTED, VENT SETS OR INLINE TYPE AS SHOWN ON THE DRAWINGS. PROVIDE FACTORY CURBSFOR ALL ROOF MOUNTED FANS OR HOODS. PROVIDE ALUMINUM DISCHARGE GRILLES AS REQUIRED. FANS SHALL BE GREENHECK, LOREN COOK, PENN, OR ACME.

G. UNIT HEATERS: ELECTRIC UNIT HEATERS: HEATERS SHALL BE U.L. LISTED, SUSPENDED FROM STRCUTURE ABOVE AND WITH ALL NECESSARY PARTS FOR A COMPLETE SYSTEM. SYSTEM SHALL HAVE A THERMOSTAT, SAFETY CONTROLS, RELAYS, DISCONNECTS, CONTACTORS, ETC. AND BE SUITABLE FOR SPECIFIED VOLTAGE. LOCATE THERMOSTAT AS DIRECTED BY ARCHITECT. UNITS SHALL BE MANUFACTURED BY MODINE OR APPROVED EQUAL.

END OF SECTION 15020

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REVISION LOG

MECHANICAL SPECIFICATIONS

M0.01

SCALE: AS NOTED

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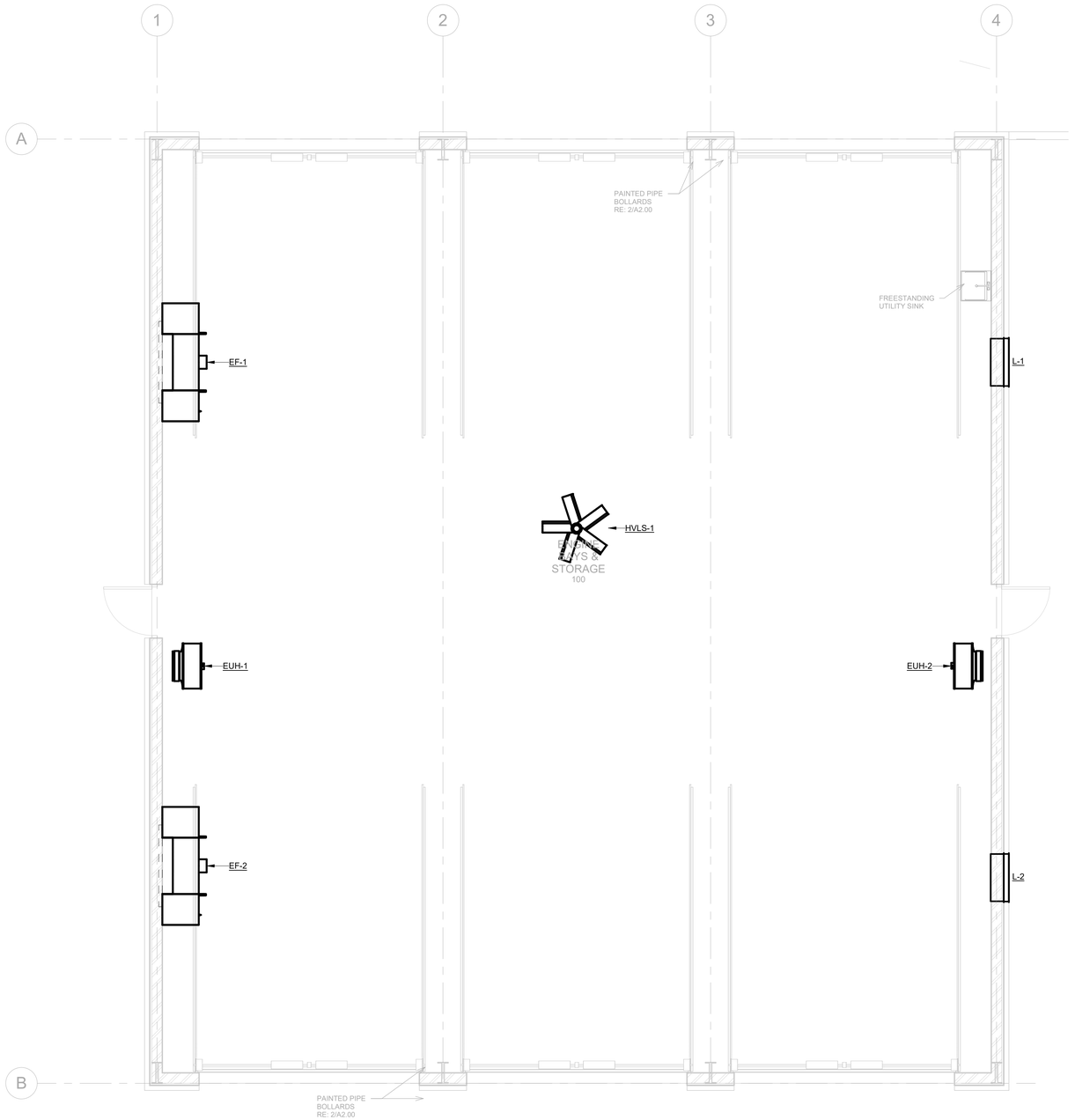

GENERAL MECHANICAL NOTES

A. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.

B. COORDINATE LOCATIONS FOR ALL HVAC EQUIPMENT WITH ARCHITECT.

KEYED NOTES

1 PLAN NORTH

MECHANICAL - GROUND FLOOR PLAN

1/4" = 1'-0"

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Angleton Fire Station #3 Addition

2743 N. Velasco St.
Angleton, Texas 77515

iAD ARCHITECTS

Integrated Architecture & Design, LLC
107 West Way, Suite 16
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979.297.1411 p. 979.297.1418 f.
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PROJECT CONSULTANTS

Civil
Baker & Lawson, Inc.
4005 Technology Dr.
Angleton, TX 77515
979.849.6681 p.
Structural
CJG Engineers
3200 Wilcrest Dr., Suite 305
Houston, TX 77042
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Mechanical,Electrical, & Plumbing
DVO an Urban-Gro Company
825 Town & Country Lane, Suite 1150
Houston, TX 77024
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INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE:
Not intended for permit or construction.
06/02/23

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

	06/02/23	95 % OWNER REVIEW SET

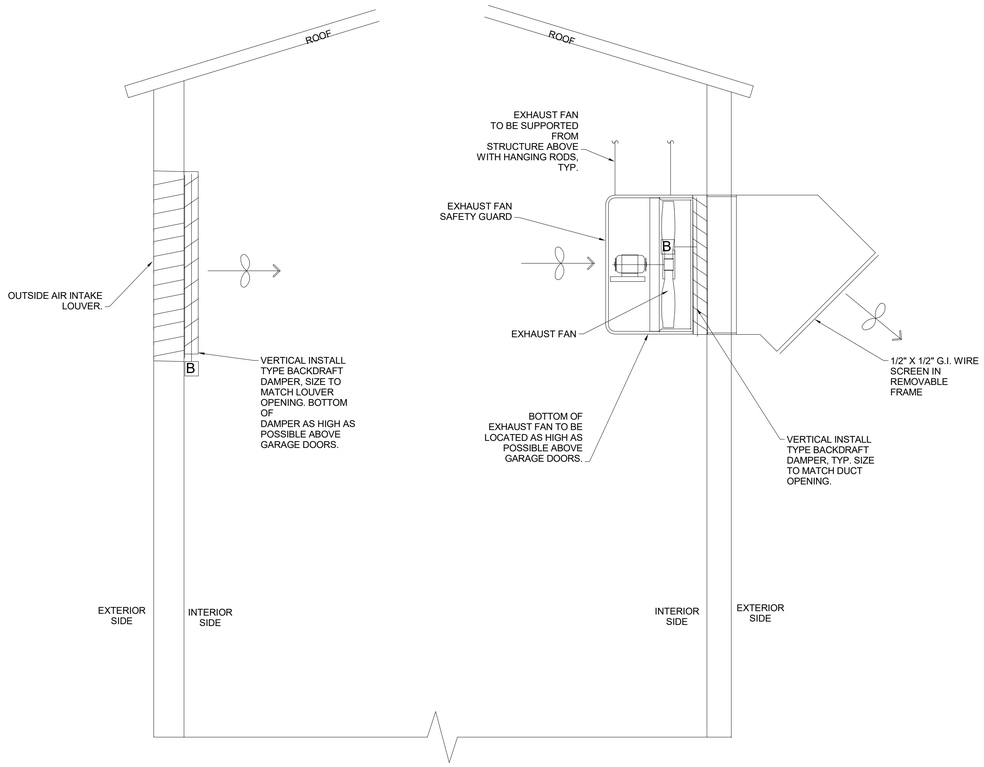
REVISION LOG

MECHANICAL FLOOR PLAN

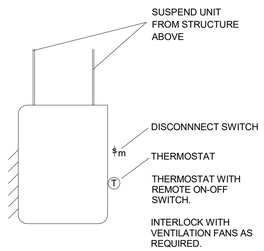
M2.00

SCALE: AS NOTED

6/2/2023 10:15:18 PM



01 EXHAUST FAN DETAIL
SCALE: NTS



1. UNITS MUST MEET ALL IECC REQUIREMENTS.

02 UNIT HEATER DETAIL
SCALE: NTS

EXHAUST FAN SCHEDULE

MARK	SERVICE	CFM	STATIC PRESS	FAN RPM	DRIVE TYPE	VOLT PHASE	POWER (W) OR (HP)	WEIGHT (LBS)	MANUFACTURER - MODEL
EF-1	TRUCK STORAGE	1,600	0.50	949	BELT	120 / 1	1/2 HP	73	GREENHECK - SBE-1H24
EF-2	TRUCK STORAGE	1,600	0.50	949	BELT	120 / 1	1/2 HP	73	GREENHECK - SBE-1H24

1. ALL FANS TO HAVE DISCONNECT SWITCHES.
2. PROVIDE EF-1 AND EF-2 WITH EXHAUST HOOD / BIRDSCREEN & BACKDRAFT DAMPER. PROVIDE A TIMER SWITCH FOR FANS TO OPERATE CONTINUOUSLY DURING ALL OCCUPIED HOURS.

LOUVER SCHEDULE

MARK	SERVICE	CFM	WIDTH (INCHES)	HEIGHT (INCHES)	VELOCITY (FPM)	FREE AREA (SF)	MANUFACTURER	NOTES
L-1	OUTSIDE AIR	1,600	36	36	328	4.88	RUSKIN - ELF6375DX	1, 2, 3, 4, 5
L-2	OUTSIDE AIR	1,600	36	36	328	4.88	RUSKIN - ELF6375DX	1, 2, 3, 4, 5

1. VERIFY FINAL COLOR / FINISH WITH ARCHITECT FOR ALL LOUVERS.
2. LOUVER TO BE STATIONARY TYPE.
3. LOUVER TO BE OF ALUMINUM MATERIAL.
4. PROVIDE DAMPER AS INDICATED ON DRAWINGS.
5. PROVIDE LOUVER WITH BIRD SCREEN AND INSECT SCREEN.

ELECTRIC UNIT HEATERS

MARK	QTY	TYPE	CFM	BTUH	KW	HP	VOLT PHASE	MANUFACTURER - MODEL
EUH-1	1	HORIZONTAL	380	17,100	5.00	1 / 40	240 / 1	MODINE HER 50
EUH-2	1	HORIZONTAL	380	17,100	5.00	1 / 40	240 / 1	MODINE HER 50

1. PROVIDE TOTALLY ENCLOSED MOTOR
2. ALL FANS TO HAVE DISCONNECT SWITCHES.
3. PROVIDE FACTORY THERMOSTAT.
4. INCLUDE FACTORY SUPPLIED LOCKABLE THERMOSTAT COVER.

HIGH VOLUME LOW SPEED FAN SCHEDULE

MARK	BLADES	SIZE	HP	MAX RPM	VOLT PHASE	AMPS	MOCP	WEIGHT	MANUFACTURER	NOTES
HVLS-1	5	7'	0.25	97	230 / 1	5.0	20	93	GREENHECK DC-5-7-NL	ALL

1. FAN SUPPLIED WITH CONTROL BOX WITH VARIABLE FREQUENCY DRIVE INCLUDING LINE FILTER.
2. CONTRACTOR TO COORDINATE WITH OWNER FOR EXACT FAN LOCATION.
3. CONTRACTOR TO COORDINATE WITH OWNER FOR SWITCH CONTROL LOCATION.
4. PROVIDE WITH 2' EXTENSION TUBE. CONTRACTOR TO VERIFY EXTENSION TUBE LENGTH AND MOUNTING BRACKET WITH MANUFACTURER PRIOR TO ORDERING.
5. BOTTOM OF FAN SHALL BE AT LEAST 19'-6" A.F.F.
6. FANS SHALL BE AT LEAST 2' AWAY, IN ALL DIRECTIONS, FROM POSSIBLE OBSTRUCTIONS.
7. FANS SHALL NOT BE MOUNTED WITHIN 2 TIMES THE FAN DIAMETER OF EXHAUST OR RETURN AIR INTAKES, AND SHALL NOT BE IN DIRECT LINE OF DISCHARGE OF HVAC EQUIPMENT.

DVO urban-gro
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ELECTRICAL SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE NECESSARILY USED IN THE DRAWINGS AND MAY NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED WITHIN THE DRAWINGS.

ELECTRICAL ABBREVIATIONS

A	AMPERE
AC	ABOVE COUNTER
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPS INTERRUPTING CAPACITY
AL	ALUMINUM
AS	AMP SWITCH
AT	AMP TRIP
ARCH	ARCHITECT
ATS	AUTOMATIC TRANSFER SWITCH
A/V	AUDIO VISUAL
B	PEDESTAL MOUNTED ON BENCH TOP
BF	BELOW FLOOR
BFG	BELOW FINISHED GRADE
BLDG	BUILDING
C	CONDUIT
CAT	CATALOG
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING MOUNTED
CR	CORROSION RESISTANT
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
CL	CENTERLINE
D	DEDICATED DEVICE
DC	DIRECT CURRENT
DISC	DISCONNECT
DWG	DRAWING
EC	ELECTRICAL CONTRACTOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EWC	ELECTRIC WATER COOLER
EX	EXISTING
FLA	FULL LOAD AMPS
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION EQUIPMENT
GND	GROUND
GRC	GALVANIZED RIGID CONDUIT
HH	HANDHOLE
HOA	HAND/OFF/AUTOMATIC
HP	HORSEPOWER
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
Hz	HERTZ (cycle) PER SECOND
IG	ISOLATED GROUND
JB	JUNCTION BOX
KVA	KILOVOLT AMPERE
KVAR	KILOVOLT AMPERE REACTIVE
KW	KILOWATT LS LIMIT SWITCH
LTG	LIGHTING
LV	LOW VOLTAGE
MCA	MINIMUM CIRCUIT AMPS
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCCB	MOLDED CASE CIRCUIT BREAKER
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	OVER CURRENT
OL	OVERLOAD
P	POLE
PB	PULL BOX
PH	PHASE
PNL	PANELBOARD
PR	PAIR
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE CONDUIT
R	RELAY
REC	RECESSED
SC	SHORT CIRCUIT
SN	SOLID NEUTRAL
SP	SPARE
SPD	SURGE PROTECTIVE DEVICE
SS	STAINLESS STEEL
SSRV	SOLID STATE REDUCED VOLTAGE
ST	SHUNT TRIP
STP	SHIELDED TWISTED PAIR
SUSP	SUSPENDED
SW	SWITCH
SWBD	SWITCHBOARD
TC	TELEPHONE CABINET
TCI	TELECOMMUNICATIONS CABLING INSTALLER
TEL/DATA	TELEPHONE/DATA
TEL	TELEPHONE
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
UTP	UNSHIELDED TWISTED PAIR
UNO	UNLESS NOTED OTHERWISE
V	VOLT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WG	WIRE GUARD
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF
Y	WYE

LIGHTING AND CONTROLS

LIGHTING FIXTURES

- SURFACE MOUNTED
- SURFACE MOUNTED DOWNLIGHT
- SURFACE MOUNTED WALL WASHER
- RECESS MOUNTED
- RECESS MOUNTED DOWNLIGHT
- RECESS MOUNTED WALL WASHER
- VOLUMETRIC RECESS MOUNTED
- STRIP
- SCONCE
- EXTERIOR SCONCE
- LOW BAY
- HIGH BAY
- LINEAR WALL MOUNT
- BOLLARD
- POLE MOUNTED (UP TO FOUR HEADS)
- SUSPENDED, PENDENT, OR CABLE HUNG
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN
- CEILING MOUNTED EMERGENCY LIGHTING UNIT
- WALL MOUNTED EMERGENCY LIGHTING UNIT

SHADING INDICATES EMERGENCY LIGHT
XX = TYPE REFERENCE FIXTURE SCHEDULE
x = SWITCH LEG

LIGHTING CONTROLS

$X WALL MOUNTED SWITCH
SUBSCRIPTS:
2 = DOUBLE POLE
3 = 3-WAY
4 = 4-WAY
D = DIMMER
K = KEY-OPERATED
P = PILOT LIGHT
T = THERMAL OVERLOAD
V = VACANCY SENSOR
LV = LOW VOLTAGE
O = OCCUPANCY SENSOR

- D DAYLIGHT/OCCUPANCY SENSOR
- 1 EXTENDED RANGE SENSOR
- 2 STANDARD RANGE SENSOR
- 3 LINE VOLTAGE OCCUPANCY SENSOR
- O OCCUPANCY SENSOR
- PE PHOTOCELL

TELECOMMUNICATIONS

- WALL MOUNTED DATA
- WALL MOUNTED TELEPHONE
- WALL MOUNTED TELEPHONE/DATA
- CEILING MOUNTED DATA
- CEILING MOUNTED TELEPHONE
- CEILING MOUNTED TELEPHONE/DATA
- TV RECESSED TV BOX

2015 COMMERCIAL ENERGY COMPLIANCE COMMISSIONING REQUIREMENTS:

CONTRACTOR SHALL HIRE A THIRD PARTY CERTIFIED COMMISSIONING AGENT TO PERFORM THE COMMISSIONING AND PROVIDE THE PRELIMINARY REPORT OF COMMISSIONING TO THE LOCAL CITY.

A. THE CERTIFICATIONS ACCEPTABLE INCLUDE:
- CBCP - CERTIFIED BUILDING COMMISSIONING PROFESSIONAL- ASSOCIATION OF ENERGY ENGINEERS
- CCP - CERTIFIED COMMISSIONING PROFESSIONAL - BUILDING COMMISSIONING ASSOCIATION
- CPMP - CERTIFIED PROCESS MANAGEMENT PROFESSIONAL - ASHRAE
- CXA - CERTIFIED COMMISSIONING AUTHORITY - AABC COMMISSIONING GROUP
- BSC - BUILDING SYSTEM COMMISSIONING CERTIFICATION - NATIONAL ENVIRONMENTAL BALANCING BUREAU

B. FUNCTIONAL TESTING FOR AUTOMATIC LIGHTING CONTROLS IS REQUIRED PER C408.3. THE CONSTRUCTION DOCUMENTS MUST SPECIFY THAT THE BUILDING OWNER WILL BE GIVEN, WITHIN 90 DAYS FROM THE DATE OF RECEIPT OF CERTIFICATE OF OCCUPANCY, WRITTEN CERTIFICATION THAT THE LIGHTING CONTROLS MEET DOCUMENTED PERFORMANCE CRITERIA.

C. OCCUPANCY SENSORS: FOR PROJECTS WHERE FEWER THAN EIGHT OCCUPANCY SENSORS ARE INSTALLED, EACH MUST BE TESTED. IF MORE THAN SEVEN ARE INSTALLED, AT LEAST 10% (AND AT LEAST ONE) WILL BE TESTED FOR EACH UNIQUE COMBINATION OF SENSOR TYPE AND SPACE GEOMETRY. IF 30% OR MORE FAIL THE ACCEPTANCE CRITERIA, ALL REMAINING IDENTICAL COMBINATIONS MUST BE TESTED. VERIFY:
- PROPER LOCATION AND AIMING.
- CORRECTION OPERATION WHERE THE SENSORS INCLUDE STATUS INDICATORS.
- THE LIGHTS TURN ON TO THE PERMITTED LEVEL WHEN THE SPACE BECOMES OCCUPIED (IF AUTO-ON)
- THE LIGHTS TURN ON ONLY WHEN MANUALLY ACTIVATED (IF MANUAL-ON).
- FALSE-ON TRIGGERING DOES NOT OCCUR BY MOVEMENT IN ADJACENT AREAS OR FROM HVAC OPERATION.

D. TIME-SWITCH CONTROLS VERIFY:
- THE TIME-SWITCH CONTROL IS PROGRAMMED WITH ACCURATE WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES.
- THE TIME SWITCH INCLUDES THE CORRECT TIME AND DATE.
- ANY BATTERY BACKUP IS INSTALLED AND ENERGIZED.
- THE OVERRIDE IS SET TO NO LONGER THAN TWO HOURS.
- SIMULATING AN OCCUPIED CONDITION, THAT ALL LIGHTS CAN BE TURNED ON/OFF BY THEIR LOCAL MANUAL SWITCH, AND THAT THE SWITCH ONLY OPERATES THE LOCAL LIGHTING.
- SIMULATING AN UNOCCUPIED CONDITION, THAT THE CONTROLLED LIGHTING TURNS OFF, AND THAT THE MANUAL OVERRIDE ALLOWS ONLY LOCAL LIGHTING TO TURN ON AND REMAIN ON UNTIL THE NEXT TIME SWEEP OCCURS WITHIN TWO HOURS.

ADDITIONAL TESTING MAY BE REQUIRED BY THE AHJ. THE OWNER MUST BE GIVEN DOCUMENTATION INDICATING THE PROGRAMMING (INCLUDING WEEKDAY, WEEKEND AND HOLIDAY SCHEDULES) AND ALL OTHER SETTINGS.

POWER AND COMMUNICATIONS

RECEPTACLES

DUPLEX	SIMPLEX
STANDARD	STANDARD
AC ABOVE COUNTER	AC ABOVE COUNTER
EMERGENCY	EMERGENCY
GFI	GFI
WP WEATHERPROOF GFI	WP GFI WEATHERPROOF
AC GFI AC	AC GFI ABOVE COUNTER
RECESSED	RECESSED
TAMPER RESISTANT	TAMPER RESISTANT

QUADRUPLEX	MISCELLANIOUS
STANDARD	SPECIAL
AC ABOVE COUNTER	ISOLATED GROUND
EMERGENCY RECEPTACLE	HALF SWITCHED
GFI	USB
WP WEATHERPROOF GFI	HOSPITAL GRADE
AC GFI ABOVE COUNTER	TR HOSPITAL GRADE
RECESSED	DUPLEX CEILING
TAMPER RESISTANT	QUADRUPLEX CEILING

COMBINATION FLOOR BOX DUPLEX	
TELEPHONE/DATA	DUPLEX FLOOR
DATA	QUADRUPLEX FLOOR
TELEPHONE	PEDESTAL RECEPTACLE
	C CLOCK RECEPTACLE

COMBINATION FLOOR BOX QUADRUPLEX
TELEPHONE/DATA
DATA
TELEPHONE

OTHER	SENSORS AND SWITCHES
J JUNCTION BOX	FS FLOW
J WALL MOUNTED JUNCTION BOX	HOA HAND OFF AUTO SELECTION
T THERMOSTAT	LS FLOAT OR LEVEL
POKE THROUGH	ZS LIMIT OR POSITION
DAMPER CONNECTION	PS PRESSURE
M MOTOR CONNECTION	SV SOLENOID VALVE
M ST MOTOR RATED SWITCH	TS TEMPERATURE
CONDUIT UP	
CONDUIT DOWN	
CONDUIT STUBOUT	
SEAL OFF	
POWER POLE	

EQUIPMENT

T TRANSFORMER	F DISCONNECT SWITCH FUSED
PANEL	N DISCONNECT SWITCH NONFUSED
M METER	MOTOR STARTER
G GENERATOR	MOTOR STARTER INTEGRAL DISCONNECT
CIRCUIT BREAKER	MS MULTI-SPEED MOTOR STARTER
ST SHUNT TRIP CIRCUIT BREAKER	SSRV SSRV MOTOR STARTER
HH PRIMARY DISTRIBUTION	VF VARIABLE FREQUENCY DRIVE STARTER
HH SECONDARY DISTRIBUTION	MOTOR CONTROL CENTER
HH COMMUNICATIONS	F STARTER FUSED DISCONNECT
PB PULLBOX	N STARTER NONFUSED DISCONNECT
MGB MAIN GROUNDING BRIDGE	X MECHANICAL EQIPMENT
GROUNDING BRIDGE	

GENERAL NOTES

1. THE ELECTRICAL CONTRACTOR SHALL REPLACE AND/OR REPAIR TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER, ANY ITEMS THAT ARE DAMAGED OR REMOVED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
2. THESE DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE OFF OF THE ELECTRICAL DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONS.
3. REFER TO THE ARCHITECTURAL PLANS, ELEVATIONS, AND DIAGRAMS FOR LOCATIONS OF FLOOR AND WALL ELECTRICAL DEVICES. ELECTRICAL DEVICES SHALL BE MOUNTED LONG AXIS VERTICAL AT THE FOLLOWING HEIGHTS AFF TO CENTER OF DEVICE: SWITCHES +48", RECEPTACLES +18", VOICE/DATA JACKS +18", UNLESS NOTED OTHERWISE WITHIN THE DRAWINGS.
4. ON NEW FLOOR PLANS: ALL ITEMS SHOWN IN LIGHT LINE WEIGHT ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE. ALL ITEMS SHOWN IN HEAVY LINE WEIGHT ARE NEW OR RELOCATED AS NOTED.
5. ALL 120V BRANCH CIRCUITS SHALL BE 3-WIRE (PHASE, NEUTRAL, GROUND). PHASE, NEUTRAL, AND GROUND CONDUCTORS SHALL BE NO. 12 AWG UNLESS NOTED OTHERWISE. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE EQUIPMENT GROUNDING CONDUCTORS INSTALLED IN THE RACEWAY. USE OF THE CONDUIT BODY AS A GROUNDING METHOD IS PROHIBITED.
6. ALL MOUNTING OF ELECTRICAL DEVICES (LUMINAIRES, TRANSFORMERS, PANELS, OUTLETS, CONDUIT RUNS, ETC.) SHALL COMPLY WITH STATE AND LOCAL SEISMIC REQUIREMENTS. ALL LUMINAIRES SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SUPPORT HANGERS IN COMPLIANCE WITH IBC AND NEC REQUIREMENTS.
7. ADA COMPLIANCE: ELECTRICAL DEVICES PROJECTING FROM THE WALLS WITH THEIR LEADING EDGES BETWEEN 27" AND 80" AFF SHALL PROTRUDE NO MORE THAN 4" INTO WALKWAYS OR CORRIDORS.
8. BACK TO BACK MOUNTING OF RECEPTACLES OR COMMUNICATION OUTLETS IS NOT PERMITTED. THE MINIMUM SEPARATION BETWEEN DEVICES SHALL BE 6" O.C. IN COMMON WALLS AND 24" O.C. IN SOUND-RATED WALLS.
9. GFCI DEVICES SHALL BE PROVIDED AS NOTED AND SHALL COMPLY WITH NEC AND LOCAL REQUIREMENTS. NO FEED-THRU GFCI PROTECTION SHALL BE PERMITTED FOR DOWNSTREAM DEVICES. GFCI DUPLEX RECEPTACLES SHALL BE UL 943 2006 "LOCK-OUT" ACTION OR "NOTIFICATION" COMPLIANT.
10. ALL RECEPTACLES IN BREAK ROOMS SHALL BE GFCI PROTECTED. PROVIDE REMOTE BLANK FACE GFCI DEVICE IN AN ACCESSIBLE LOCATION AS REQUIRED FOR INACCESSIBLE RECEPTACLES. VERIFY REMOTE BLANK FACE GFCI DEVICE LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
11. ALL ELECTRICAL CABINETS, PANELS, DISCONNECTS, TRANSFORMERS, CONTROLS, RECEPTACLES, J-BOXES, ETC., SHALL BE MARKED, TAGGED AND IDENTIFIED. PROVIDE ADHESIVE FILM LABEL, MACHINE PRINTED, IN BLACK, BY THERMAL TRANSFER OR EQUIVALENT PROCESS, WITH MINIMUM LETTER HEIGHT OF 3/8". THE LABEL SHALL IDENTIFY THE ORIGINATING PANEL AND CIRCUIT NUMBER IN THE FOLLOWING FORMAT: PANEL-CKT. NOTE FEEDER SOURCE WHERE APPLICABLE. REFERENCE SPECIFICATIONS FOR ADDITIONAL LABELING REQUIREMENTS. WHERE THE PROJECT SPECIFICATIONS INDICATE MORE STRINGENT LABELING REQUIREMENTS, THOSE REQUIREMENTS SHALL TAKE PRECEDENCE.
12. THE CONTRACTOR SHALL PROVIDE TYPED, UPDATED PANEL DIRECTORIES FOR ALL PANELS AFFECTED BY THIS SCOPE OF WORK.
13. UPON COMPLETION OF THE PROJECT, ALL CHANGES SHALL BE DOCUMENTED, AND REDLINED. AS-BUILT DRAWINGS SHALL BE TURNED OVER TO THE OWNER BY THE CONTRACTOR.
14. TRANSFORMERS INDICATED TO BE SUSPENDED FROM THE STRUCTURE SHALL BE SUPPORTED BY A UNISTRUT FRAME THAT IS ATTACHED TO THE STRUCTURE.
15. 4" CONCRETE HOUSEKEEPING PADS SHALL BE FURNISHED FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT.
16. COORDINATE THE LOCATIONS AND CONTROLS OF ALL APPLICABLE FIRE/SMOKE DAMPERS WITH THE MECHANICAL CONTRACTOR, PRIOR TO CONSTRUCTION.
17. PROVIDE (1) 3/4"C WITH BUSHING AND PULL STRING FROM EACH TELEPHONE, DATA, COMMUNICATION, AND THERMOSTAT OUTLET TO ABOVE THE ACCESSIBLE CEILING, UNLESS NOTED OTHERWISE.
18. COORDINATE THE INSTALLATION OF COMMUNICATIONS CABLING, ROUTING, MOUNTING BOXES, AND TERMINATIONS WITH THE OWNER OR IT MANAGER, PRIOR TO CONSTRUCTION.
19. ALL LOW VOLTAGE AND SYSTEMS CABLING LOCATED ABOVE THE ACCESSIBLE CEILING SHALL BE PROPERLY RATED FOR THE APPLICATION. WITHOUT EXCEPTION, ALL CABLING SHALL BE HUNG FROM BRIDLE-TYPE RINGS OR PLACED IN CABLE TRAYS BY THE ELECTRICAL CONTRACTOR. IN EXPOSED CEILING AREAS, ALL CABLING SHALL BE RUN IN CONDUIT TO THE NEAREST ACCESSIBLE CEILING LOCATION.
20. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO VERIFY EXISTING CONDITIONS. BY SUBMITTING A BID THE CONTRACTOR ACKNOWLEDGES THAT HE HAS VISITED THE SITE AND THE BID IS ADEQUATE TO PERFORM ALL OF THE WORK NECESSARY TO MAKE THE SYSTEMS COMPLETE AND OPERATIONAL. IF THE CONDITIONS AT THE SITE ARE NOT SUCH THAT THE WORK CAN BE INSTALLED AS SHOWN, CONTRACTOR'S BID SHALL INCLUDE COST TO COVER NECESSARY ADJUSTMENTS AND ADDITIONS, BASED UPON SITE CONDITIONS, TO MAKE THE SYSTEMS COMPLETE AND OPERATIONAL. CONTRACTOR SHALL CONTACT ARCHITECT/ENGINEER WITH ANY FIELD DISCREPANCIES.
21. ON DEMOLITION PLANS: ALL ITEMS SHOWN IN LIGHT LINE WEIGHT ARE EXISTING TO REMAIN, UNLESS NOTED OTHERWISE. ALL ITEMS SHOWN IN HEAVY LINE WEIGHT SHALL BE REMOVED, UNLESS NOTED OTHERWISE.
22. IN REMODEL AREAS WHERE OCCUPANCY SENSING DEVICES ARE SPECIFIED AND ARE REPLACING EXISTING MANUAL SNAP SWITCH CONTROL OF THE LIGHTING, PROVIDE A NEUTRAL CONDUCTOR FROM THE LIGHTING CIRCUIT BEING CONTROLLED TO THE OCCUPANCY SENSING DEVICE (OR SWITCH/POWER PACK, WHERE LOW VOLTAGE SENSORS ARE SPECIFIED). FOR BIDDING PURPOSES, ASSUME THAT THE EXISTING SNAP SWITCHES ARE WIRED WITHOUT A NEUTRAL CONDUCTOR, AND A NEW NEUTRAL CONDUCTOR WILL BE REQUIRED.
23. THE NEW WIRING REQUIRED IN REMODELED AREAS SHALL BE FISHED THROUGH EXISTING WALLS OR CONCEALED IN NEW WALLS OR ABOVE CEILINGS. SURFACE MOUNTED CONDUIT SHALL NOT BE USED IN ANY FINISHED AREAS. CONTRACTOR SHALL NOT ROUTE ANY CONDUIT WITHIN STRUCTURAL OR TOPPING SLABS OF FLOORS UNLESS NOTED TO DO SO.
24. ITEMS THAT ARE SHOWN TO BE REMOVED SHALL BE REMOVED IN THEIR ENTIRETY INCLUDING ALL ASSOCIATED CONDUIT, WIRE, AND HANGERS BACK TO THE POINT OF ORIGIN OR THE NEAREST EXISTING ITEM THAT IS REMAINING, UNLESS NOTED OTHERWISE. WHERE EXISTING DEVICES, SWITCHES, MOTOR CONNECTIONS, ETC. ARE TO BE REMOVED FROM WALLS WHICH ARE REMAINING, WALLS SHALL BE PATCHED TO MATCH ORIGINAL FINISH AFTER CONDUCTORS HAVE BEEN REMOVED. BLANK COVERPLATES OVER EXISTING BOXES ARE NOT ACCEPTABLE. IF EXISTING CONDUITS ARE ROUTED IN CONCRETE FLOOR SLABS, WALLS OR [illegible] BACK TO WITHIN CONCRETE AND FILLED WITH GROUT EVEN FINISH FLUSH WITH CONCRETE SURFACE AFTER REMOVED.
25. MAINTAIN CIRCUIT CONTINUITY FOR EXISTING ITEMS T[illegible] RELOCATED.

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ANGLETON
Where the Heart is

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DIVISION 16 - ELECTRICAL SPECIFICATIONS

Section 16051 - Common Work Results for Electrical

1. Provide all labor, materials, equipment and incidentals for completion of all electrical systems described herein. All electrical equipment and material shall be installed in accordance with requirements, governing authorities, and in a neat and workman like manner by skilled and competent electricians in conformance with the standard practices of the electrical industry. All electrical systems shall be complete and operational to the benefit of the owner.

   A. Good workmanship and appearance are considered equal to proper operation.

   B. The contractor shall provide all foreseeable electrical equipment and accessories necessary, whether specifically stated or not, to make the required electrical systems complete and operational.

2. The electrical contractor shall comply with the requirements of the general conditions, supplemental general conditions of the project specifications, any base building specifications and building criteria, and all contract specifications and documents.

3. Definitions and standards:

   A. "Provide" means contractor is responsible for the furnishing and installation of.

   B. "Exposed" means where it can be seen after the building is completed such as in equipment rooms, unfinished areas, accessible tunnels, etc. where conduit/equipment is accessible.

   C. "Concealed" means where it cannot be seen after the building is completed such as in spaces as chases, trenches, above ceilings, in walls and buried where conduit/wire is inaccessible when building is completed.

   D. Standards for materials: all materials shall be new except as otherwise stated, and shall conform with the current applicable industry standards, NEMA standards and Underwriters Laboratories standards.

4. Coordinate and order the progress of electrical work to conform to the owner's schedule and the progress of the work of the other trades.

5. Apply for and pay for all permits, fees, licenses and inspections for this division of work.

6. Provide temporary lighting and power as required.

7. Visit the project site before submitting a bid as no extras will be allowed for lack of knowledge of obvious existing conditions.

8. Drawings are diagrammatic in nature. Take all dimensions from architectural drawings, certified equipment drawings and from the structure itself before fabricating any work.

9. Comply with the latest federal, state and local codes requirements, and ordinances, with the National Electrical Code of the National Fire Protection Association, and with requirements of the power and telephone companies furnishing services to the project. The following is a brief list of applicable codes:

   A. NFPA No. 70 - National Electrical Code, latest edition

   B. NFPA No. 72 - Fire Alarm, latest edition

   C. NFPA No. 101 - Life Safety Code, latest edition

   D. IBC & UBC, latest edition

   E. Local building codes, latest edition

10. All equipment and materials shall be new unless noted otherwise and acceptable for installation only if labeled or listed as defined in NFPA 70, Article 100, by UL or by a recognized testing laboratory where standards have been established and acceptable to the authority having jurisdiction. Labeled or Listed equipment shall be installed in accordance with any instructions or labeling provided with the equipment.

11. Provide all core drilling, channeling, cutting, patching, sleeves, etc. as required for installation of electrical equipment. Seal holes, providing fireproof sealant where necessary, and refinish all repair work to original condition where damaged by electrical work.

   A. Coordinate core drill locations with structural prior to starting work.

   B. Coordinate underground site utilities with appropriate utility company prior to starting work.

12. Make provisions for safe delivery and secure storage of all materials.

13. Warranties: Provide a written warranty to the owner covering the entire electrical work excluding incandescent and fluorescent lamps, to be free from defective materials, equipment and workmanship for a period of one year after date of acceptance. All equipment or materials that fail during the warranty period shall be replaced or repaired by the electrical contractor in a timely fashion at no cost to the owner.

14. Manufacturers: Subject to compliance with requirements, provide products by the manufacturer(s) specified on the drawings or provide products from manufacturers with similar construction and performance characteristics.

15. Product Alterations and Substitutions: Should the contractor wish to have products considered other than those specified, contractor must submit those items as required in Division 1. Contractor will be required to submit the total savings (anticipated savings) to the owner.

16. Shop Drawings: Submit shop drawings as required in Division 1 for all materials and equipment. If the shop drawings deviate from the contract documents, advise the engineer of the deviations via written format, accompanying the shop drawings. Include the reason for the deviation(s). Coordinate all required changes with the other trades affected. If the changes are occasioned by the contractor, the contractor shall pay any costs involved.
    Shop drawings shall include but are not limited to the following:

    A. Product data for lighting.
    B. Product data for lighting control devices.
    C. Product data for panelboards.
    D. Product data, calculations and drawings for fire alarm system.

16. Project Record Drawings: At completion of work, deliver completed project record documents to architect/engineer. Project record documents shall be in CAD and shall include
    any special systems (fire alarm, etc.) and "project record" shop drawings.

17. Operation and Maintenance Manuals: Submit number as required by Division 1, typed and hard bound to architect for approval prior to scheduling any system demonstration for the owner and fifteen (15) days prior to final observation. Books shall be arranged in sequence to match the specification sections.

Seismic

1. All seismic requirements and design shall be through delegated design. Contractor shall be required to provide all necessary equipment seismic calculations, anchors, supports, etc. as required by A.H.J. for compliance with seismic requirements.

Section 16060 - Grounding and Bonding

1. Conduit systems, supports, cabinets, equipment, transformers, fixtures, the grounded circuit conductor, etc. shall be properly grounded in accordance with the current issue of the National Electrical Code. Provide all bonding jumpers and wire, grounding bushings, clamps, etc. as required for complete grounding.

   A. Connections shall be either bolted-pressure-type, compression type or exothermic-welded type.

2. Provide a separate equipment grounding conductor in all feeder and branch circuits and all flexible and nonmetallic raceways.

3. Grounding Conductor Material: Copper.

Section 16070 - Hangers and Supports

1. Provide hangers and supports for equipment, raceways and cables, including weight of wire in raceways. All systems cabling shall be supported by bridal rings or similar means.

2. Use hot-dipped galvanized material or nonmetallic, U-channel systems for all damp and outdoor locations.

3. Steel material shall be used for dry locations.

Section 16075 - Electrical Identification

1. Provide labeling for raceways, cables and devices.

2. Color Coding of Phase Conductors:

   A. Conductors No. 8 AWG and smaller shall be factory color coded. Wire No. 6 AWG and larger may be color coded by field painting or color taping a 6-inch length of exposed end.

   B. Wiring for control systems shall be color-coded in accordance with the wiring diagrams furnished with the equipment.

277/480 volts	120/208 volts	
Phase a:	brown	black
Phase b:	orange	red
Phase c:	yellow	blue
Neutral:	gray	white
Ground	green	green
Travelers:	purple	pink

Section 16080 - Electrical Testing

1. Provide testing of all electrical systems and components as required by all applicable building codes and ordinances, UL, NEMA, ANSI, ICEA, NECA, etc., and as recommended by the electrical equipment manufacturers.

Section 16095 - Demolition for Remodeling

1. Field check all existing conditions prior to bidding and include an allowance for the removal and relocation of existing conduits, wires, devices, fixtures, or other equipment as indicated or as required to coordinate and adapt new and existing electrical systems to all other work required on this project. No extras will be allowed for alterations of a foreseeable nature required to achieve the end result as indicated on the drawings.

2. Where the reuse of existing conduits, outlets, junction boxes, etc., is permissible, make certain that the wiring for them is continuous from outlet to outlet and that all splices and insulations are in good condition. Provide modifications to assure that circuits, or system shall not pass through outlets or junction boxes which may be rendered inaccessible by changes to be made to the project. Existing conduits, wire, devices, etc., which shall be removed shall become the property of the owner unless otherwise noted.

3. Connect new work to existing in a manner that will assure proper raceway grounding throughout in conformance with the National Electrical Code.

4. Remodel Work, Cutting and Patching: Electrical contractor shall perform all cutting, channeling, chasing, drilling, etc., as required to install or remove electrical equipment in areas of remodeling. This work shall be performed so as to minimize damage to portions of wall finishes, surfaces, plastering, or the structures which are to be reused, resurfaced, plastered, or painted under other divisions of these specifications.

5. Carefully coordinate with the required remodeling work, cutting and patching etc., performed by other trades. Remove or relocate existing electrical conduits, wires, devices, fixtures and other equipment as necessary.

6. All outages on portions of existing electrical systems shall be minimized and shall be at a time and of a duration as accepted by the owner.

Section 16120 - Conductors and Cables 600-V and Less

1. Minimum size No. 12 AWG except for control or signal circuits, which may be No. 14 AWG or smaller. Increase conductor size as necessary to limit branch circuit voltage drop to 3 percent and service/feeder voltage drop to 2 percent.

2. All wiring shall be as follows:

   A. Branch circuits concealed in ceilings, walls, and partitions, and concealed in concrete or below slabs-on-grade: Type THHN-THWN, single conductors in raceway.

   B. Fire alarm circuits: Type THHN-THWN, in raceway or power-limited, fire-protective, signaling circuit cable, Type NPLFP or PLFP.

   C. Class 1 control circuits: Type THHN-THWN, in raceway.

   D. Class 2 control circuits: Type THHN-THWN, in raceway or power-limited cable, concealed in building finishes.

3. All conductors shall be copper; solid conductor for No.12 AWG and smaller, stranded for No. 10 AWG and larger.

4. Splices for No. 6 AWG and smaller shall be made with twist-on wire connectors.

5. Splices for No. 4 AWG and larger shall be made with solderless or compression type CU/ALR lugs.

6. Wiring for control systems shall be installed in conjunction with mechanical and miscellaneous equipment.

7. Install conductor at each outlet, with at least 6 inches of slack to allow for connection to device.

8. Testing: Perform the following field quality-control testing:

   A. Torque test conductor connections and terminations to manufacturer's recommended values.

   B. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

   C. Insulation Test: Measure the insulation of feeder conductors. Measurements shall be taken between conductors, and conductors and ground. Resistance shall be 1,000,000 Ohms or more when tested at 500 Volts by megger without circuit loads.

Section 16130 - Raceways

1. All conductors shall be enclosed by conduit sized in accordance with Chapter 9, Table 4 of the National Electrical Code. Minimum size 1/2 inch. All conduits shall be concealed in finished areas.

2. Galvanized Rigid Metal Conduit (RMC) and Intermediate Metal Conduit (IMC) shall be utilized for above and below grade applications in accordance with Articles 344 and 342 of the National Electrical Code. All couplings shall be threaded.

3. Electrical Metallic Tubing (EMT) shall be utilized for all dry, above grade or above floor feeders and branch circuit homerun applications in accordance with Article 358 of the National Electrical Code. Couplings shall be steel set screw type.

4. Metal-Clad Cable (MC) with separate ground conductor shall be permitted for all concealed, above grade or above floor branch circuit applications excluding homeruns in accordance with Article 330 of the National Electrical Code. Connectors shall be listed for application of service indicated.

5. Flexible Metal Conduit (FMC) shall be utilized for all connections to vibrating equipment such as motors (minimum of 2'-0", maximum of 6'-0"), connections to lay-in type light fixtures or in remodel areas specifically noted for "fishing" in existing walls or non-accessible ceilings.

6. Surface metallic raceways shall be limited to only areas specifically noted and of size and type specified on the drawings.

7. All exposed conduits shall be installed parallel with or perpendicular to building lines.

8. Provide expansion type fittings for all conduits that cross expansion joints.

9. Conduits and/or circuits that penetrate fire-rated construction shall be sealed fire and smoke tight at the penetration in a manner that maintains the fire-resistance rating.

Section 16137 - Boxes, Enclosures and Cabinets

1. Outlet boxes:

   A. Four inch square or octagonal, zinc-coated sheet steel type.

   B. Outlet boxes shall be located so that transmission of sound through common walls will not occur.

   C. Enclosures exposed to weather or damp locations shall be weatherproof type.

2. Provide covers set to be flush with finished walls.

3. Pull Boxes and Junction Boxes: Junction boxes and pull boxes shall be provided as required. Size of boxes shall be in accordance with the current National Electrical Code requirements.

   A. Enclosures shall be NEMA type suitable for the surrounding area and conditions.

4. Floor Boxes: Floor boxes shall be cast metal, fully adjustable, or as specified on the drawings.

Section 16140 - Wiring Devices

1. Receptacles shall be 20 Amp Hubbell HBL5352 series specification grade, or acceptable. GFCI and exterior receptacles shall be Hubbell GF5352 series, or acceptable and if required provide weatherproof in-use metal type cover, or acceptable. Provide device color as directed by the architect, or to match base building standards, whichever is applicable.

2. Quiet operating type switches shall be 120/277-V, 20 Amp Hubbell 1221 series, or acceptable.

3. Provide special purpose outlets as required for equipment provided by others.

4. Device plates shall be high abuse nylon, color as directed by the architect, or to match base building standards, whichever is applicable.

5. Mount devices in accordance with the following schedule except where otherwise noted on the drawings or in areas with counters, baseboard heaters or in areas of block or brick construction:

   Convenience receptacles: long axis vertical at 1'-6" AFF to center *
   Light switches: latch side of door at 4'-0" AFF to center
   Telephone outlets: long axis vertical at 1'-6" AFF to center *

   * Except in areas with counters, baseboard heaters, or in areas of block or brick construction.

Section 16145 - Lighting Control Devices

2. Occupancy Sensors: As specified on the drawings.

3. Multiple Contactors and Relays: Electrically operated and mechanically held, complying with UL 508 and NEMA ICS 2, with current rating for switching as required and control coil voltage to match control power source.

4. Testing: Set and operate devices to demonstrate their functions and capabilities in a methodical sequence that cues and reproduces actual operating functions.

Section 16180 - Equipment Wiring Systems

1. Provide branch circuits to equipment provided by others and to mechanical equipment and make all connections. Temperature control equipment wiring and connections shall be provided by the mechanical contractor.

2. Provide safety switches and/or thermal overload switches as required.

3. Heater units in all motor starters shall be sized for approximately one hundred fifteen percent (115%) of full load motor current. Check and coordinate all thermal protective devices with the equipment they protect.

4. Provide for each motor, one-half (1/2) horsepower and below, a horsepower rated disconnect switch and thermal overload protection unless internally provided with the motor. Thermal overload switches for single phase motors shall be Allen-Bradley Bulletin 600 or acceptable.

5. Carefully coordinate all electrical work with all other applicable divisions.

Section 16442 - Panelboards

1. Provide dead-front, circuit breaker type panels, size, voltage, amperage and number of branches as indicated on the drawings. Breakers shall be thermal magnetic type (bolted) employing quick-make and quick-break mechanism for manual operation as well as automatic operation. Automatic tripping shall be indicated by the breaker handle assuming a distinctive position from the manual "on" and "off" multi-pole breakers shall have a common trip. Tie handles will not be permitted.

2. All spaces shall be fully bussed.

3. Panelboards shall have a grounding bus for the equipment grounding system.

4. Circuit breakers shall have a minimum interrupting capacity as follows, unless otherwise noted:

   120/208 Volts: 10,000 amperes
   277/480 Volts: 14,000 amperes

5. Panelboards shall be a minimum twenty inches (20") wide.

6. All bussing shall be tin-plated, high strength, electrical grade aluminum alloy and extend entire length of the panelboard.

7. Distribution panelboards shall be provided with a hinged lockable door.

8. Lighting and appliance panelboards shall be provided with front cover screwed to the box.

9. Each panelboard shall be provided with a typed directory card installed in a transparent protective cover on inside of door panel.

10. Enclosure: NEMA type suitable for the surrounding area and conditions.

11. Install floor-mounted panelboards on 4 inch high concrete base extending a minimum of 2 inches beyond enclosure.

12. Testing: Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit. test continuity of each circuit, after installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

13. Upon completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots, dirt and debris. Vacuum dirt and debris; do not use compressed air to assist cleaning. Touch up scratched and marred finishes to match original finish.

14. Panelboards shall be as manufactured by Eaton Corp.; Cutler Hammer, General Electric Co., Siemens Energy and Automation, Inc., or Square D Co.

Section 16460 - Transformers (Low Voltage)

1. Transformers rated 15kVA and larger

   A. Comply with 10 CFR 431 (DOE 2016) efficiency levels.
   B. Marked as compliant with DOE 2016 efficiency levels by an NRTL.

2. Cores: Electrical grade, non-aging silicon steel with high permeability and low hysteresis losses.

   A. One leg per phase.

   B. Core volume shall allow efficient transformer operation at 10 percent above the nominal tap voltage.

   C. Grounded to enclosure.

3. Coils: Continuous windings without splices except for taps.

   A. Coil material: Aluminum or Copper.

   B. Internal coil connections: Brazed or pressure type.

   C. Terminal connections: welded or bolted.

4. Encapsulation: Transformers smaller than 30kVA shall have core and coils completely resin encapsulated.

5. Enclosure: Ventilated.

   A. NEMA 250, Type 2: Core and coil shall be encapsulated within resin compound to seal out moisture and air.

   B. KVA Ratings: Based on convection cooling only and not relying on auxiliary fans.

   C. Wiring Compartment: Sized for conduit entry and wiring installation.

   D. Finish: Comply with NEMA 250, gray weather-resistant enamel.

6. Insulation Class, Smaller Than 30kVA: 180 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.

7. Insulation Class, 30kVA and Larger: 220 deg C, UL-component-recognized insulation system with a maximum of 115 deg C rise above 40 deg C ambient temperature.

8. Grounding: Provide ground-bar kit or a ground bar installed on the inside of the transformer enclosure.

9. Electrostatic Shielding: Each winding shall have an independent, single, full-width copper electrostatic shield arranged to minimize interwinding capacitance.

   A. Arrange coil leads and terminal strips to minimize capacitive coupling between input and output terminals.

   B. Include special terminal for grounding the shield.

10. Transformers shall be as manufactured by Eaton Corp.; Cutler Hammer, General Electric Co., Siemens Energy and Automation, Inc., or Square D Co.

Section 16511 - Interior Lighting

1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified on the drawings or provide products from manufacturers with similar construction and photometric characteristics.

2. Fluorescent ballasts shall be electronic programmed rapid start type with less than 10 percent of total harmonic distortion, with input power factor above 97 percent, and provided with internal protection in case operating temperatures exceed a safe level of operation. Fluorescent ballasts shall be as manufactured by Advance, Universal, General Electric or Osram/Sylvania.

3. Exit lights shall conform to local code requirements.

4. Interior emergency fluorescent power supply units shall be self-contained, modular, battery-inverter unit, factory mounted within luminaire body, and shall comply with UL 924.

5. Lamps shall be as manufactured by Osram/Sylvania, Phillips, or General Electric.

6. Color temperature for fluorescent lamps shall be as specified in the drawings.

9. Set luminaires level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each luminaire. Do not support luminaries to the work of other trades unless otherwise specified or noted. All luminaires shall be independently supported from structure. Provide all necessary additional supports and hangers to securely fasten and support all luminaires to structure.

10. Inspect each installed luminaire for damage. Replace damaged luminaires and components. Verify normal operation of each luminaire after installation. Interrupt the electrical supply to verify proper operation of the emergency lighting. If luminaires are malfunctioning, then repair or replace components and retest until luminaire operates properly.

11. Clean luminaires internally and externally after installation per manufacturer's Recommendations.

12. Replace any failed lamps in existing fixtures with matching lamp type and CCT.

Section 16714 - Communication Raceway Systems

1. Provide empty conduit systems with No. 14 AWG pull wire and back boxes. Back boxes shall be 4 inch square galvanized pressed steel with single gang plaster ring. Provide 3/4 inch conduit with pull wire from each back box to 6 inches above nearest accessible ceiling.

2. All equipment, wiring/cable, devices and coverplates shall be provided and installed by the owner.

Section 16720 - Fire Alarm System, Non-coded Addressable

1. Fire alarm device layouts and if applicable one-line diagram are for information only to indicate possible system configuration. The information shown is intended to be used as a guide by the contractor to complete their design and does not include all the necessary items for installation. The contractor shall be responsible for the design and installation of the fire alarm system in compliance with these specifications, NFPA 72, and local codes. The contractor shall prepare fire alarm system drawings sealed by a fire protection engineer for submittal to the authority having jurisdiction and to be used for construction as part of their scope of work.

   A. Relocate existing fire alarm devices and provide new devices as shown.

   B. Provide all necessary conduit and wiring to extend existing base building fire alarm system as necessary.

2. The fire alarm system installation shall comply with NFPA 72, all other code requirements and local authority requirements.

3. Manual pull stations: double-action with station reset to match existing. An integral addressable module shall be provided to communicate with the FACP and if applicable a remote annunciator.

   A. Install such that handle is 48 inches above finished floor.

4. Smoke detectors: photoelectric type with integral led light to match existing .

5. Duct smoke detectors: photoelectric type with air sampling tubes extending the full length of the duct to match existing. Detectors shall be provided with an interface to the air handling unit control for shut down of the unit when smoke is detected.

6. Combination devices: factory-integrated audible and visual devices in a single-mounting assembly to match existing.

   A. Horns to match existing. Horns shall produce the ANSI temporal pattern at a sound-pressure level of 85 db, measured 10 feet from the horn per UL 464. Temporal pattern shall be synchronized.

   B. Visual alarm devices to match existing shall be listed under UL 1971 with clear polycarbonate lens. The word "fire" shall be engraved in minimum 1 inch high letters on faceplate. Strobes shall comply with NFPA 72 requirements for flash frequency and shall be synchronized. Provide candela level as required to suite the space in which it is installed.

   C. Visual devices shall be mounted not less than 80 inches above the finished floor or 6 inches below ceiling, whichever is lower.

7. LED indicating lights with integral test switch shall be provided for detectors that may not be readily visible. Light shall be connected to turn on steady when the associated device is in an alarm or trouble mode. Device shall mount in a single gang stainless steel plate. A red, laminated, phenolic-resin identification plate at the indicating light shall identify, in engraved white letters, device initiating the signal and room where the device is located.

8. The fire alarm control panel (FACP) and annunciator panel (FAAP): existing to remain.

   A. Upgrade and reprogram existing FACP software to reflect remodel conditions as required through a subcontractor to a factory authorized installer.

   B. Revise FAAP configuration and information to reflect remodel changes.

9. Emergency power supply system existing to remain.

   A. Provide new battery calculations as part of the shop drawing submittal as required by the authority having jurisdiction.

10. Provide control and/or monitor modules for devices such as fire/smoke dampers, etc. as required. Addressable modules shall be located within 3'-0" of the monitored switch or circuit.

11. Digital alarm communicator transmitter existing to remain.

12. Functional description of system.

   A. Control of system: by the FACP.

   B. System supervision: automatically detect and report open circuits, shorts, and grounds of wiring for initiating devices, signaling line, and notification appliance circuits.

   C. Transmission to remote alarm receiving station.

   D. Performance of initiating device circuits: NFPA 72, Style B circuits. Circuits shall be installed in conduit.

   E. Performance of notification appliance circuits: NFPA 72, Style Y. Circuits shall be installed in conduit.

   F. Performance of device monitoring signaling line circuits: NFPA 72, Style 4. circuits shall be installed in conduits.

13. Basic alarm performance requirements: unless otherwise indicated, operation of a manual station, automatic alarm operation of a heat detector, operation of a sprinkler flow device, or verified automatic alarm operation of a smoke detector shall initiate the following:

   A. Notification appliance operation.

   B. Identification at the FACP of the device address originating the alarm.

   C. Provide mechanical unit shut down and control of dampers, etc. as required.

   D. Provide control of door hold-opens or other doors as required.

   E. Released doors locked by security system.

14. Testing: test the system according to procedures outline in NFPA 72.

15. Provide certificate of operation at completion of testing and after any malfunctions have been corrected.

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ANGLETON
Where the Heart is

Angleton Fire Station #3 Addition

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INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE:
Not intended for permit or construction.
06/02/23

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

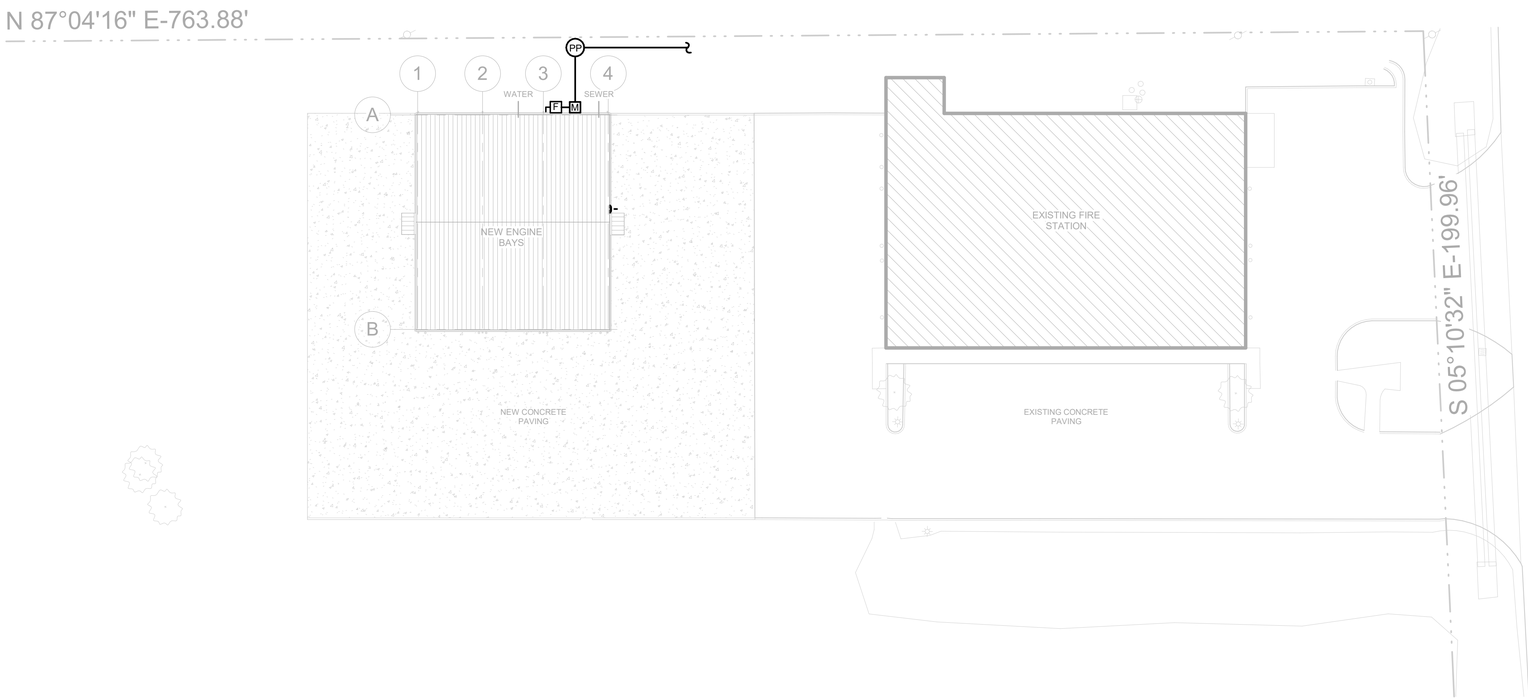
	06/02/23	95 % OWNER REVIEW SET

REVISION LOG

ELECTRICAL SPECIFICATIONS

E0.01

SCALE: AS NOTED



1 ELECTRICAL SITE PLAN

1" = 20'-0"

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REVISION LOG

ELECTRICAL SITE PLAN

E1.00

SCALE: AS NOTED

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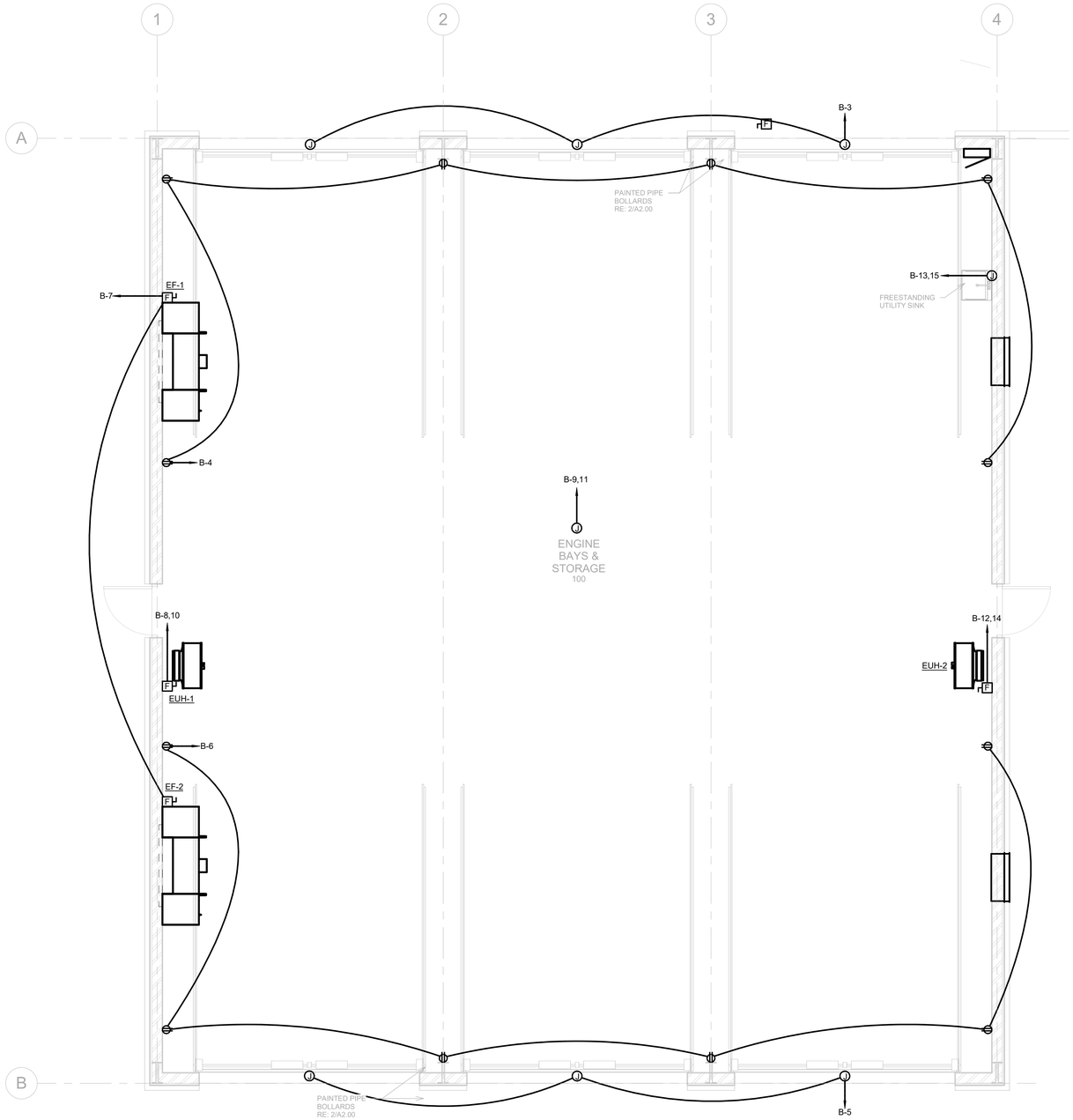

1 POWER - GROUND FLOOR PLAN

PLAN NORTH

1/4" = 1'-0"

GENERAL POWER NOTES

A EXISTING POWER AND TELECOMMUNICATIONS OUTLETS LABELED "(E)" ARE TO REMAIN WHERE SHOWN ON PLAN, UNLESS NOTED OTHERWISE (U.N.O.).

B RETAIN CIRCUIT CONTINUITY FOR ALL DEVICES AFFECTED BY REMODEL WORK THAT ARE TO REMAIN. WHERE EXISTING RECEPTACLES IN EXTERIOR PERIMETER WALL CONFLICT WITH NEW WALL PARTITIONS, REMOVE DEVICE AND REWORK/REWIRE CIRCUIT FOR CONTINUITY AS REQUIRED.

C ELECTRICAL CONTRACTOR SHALL VERIFY THAT ALL EXISTING AND RELOCATED OUTLETS IN PROJECT SCOPE ARE FUNCTIONING. REPLACE DEVICE WITH NEW IF NECESSARY.

D NEW WALL MOUNTED RECEPTACLES AND TELECOMMUNICATIONS OUTLETS SHALL BE MOUNTED AT 18" TO CENTERLINE OF BOX ABOVE FINISHED FLOOR (A.F.F.) U.N.O. TO COMPLY WITH ADA REQUIREMENTS.

E CONTRACTOR SHALL COORDINATE EXACT DEVICE AND EQUIPMENT LOCATIONS WITH OWNER/CLIENT/ARCHITECT OR EQUIPMENT SUBCONTRACTOR.

F RECEPTACLE OUTLETS AND SWITCHES SHALL BE LABELED WITH DESIGNATED PANEL AND CIRCUIT NUMBER ON THE COVER PLATE. JUNCTION BOXES IN CEILING SPACE SHALL HAVE PANEL DESIGNATIONS AND CIRCUIT NUMBERS MARKED ON THE COVER.

G PER 2020 NEC IN OTHER THAN DWELLING UNITS ALL SINGLE PHASE, 150-VOLTS TO GROUND AND 50 AMPS OR LESS, RECEPTACLES INSTALLED IN RESTROOMS, KITCHEN/FOOD PREP AREAS, ROOFTOPS, OUTDOORS, CRAWLSPACES WITHIN SIX FEET OF THE TOP INSIDE EDGE OF A SINK, INDOOR WET LOCATIONS, LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES OR IN GARAGES, SERVICE BAYS, AND SIMILAR AREAS WHERE ELECTRICAL HAND TOOLS OR PORTABLE LIGHTING EQUIPMENT ARE TO BE USED SHALL HAVE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FO RPERSONNEL PER NATIONAL ELECTRICAL CODE (NED) ARTICLE 210.8. GFCI DEVICE SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION.

H MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A SIMULTANEOUS DISCONNECTING MEANS TO DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT OF ORIGIN. DISCONNECTION CAN BE ACCOMPLISHED THROUGH LISTED HANDLE TIES USED WITH SINGLE-POLE CIRCUIT BREAKERS OR MULTI-POLE DEVICES.

I GROUNDED AND UNGROUNDED CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE GROUPED WITH WIRE TIES OR SIMILAR MEANS AT A MINIMUM OF ONE LOCATION WITHIN THE PANELBOARD OR OTHER POINT OF ORIGIN.

J MULTIWIRE BRANCH CIRCUITS SUPPLYING POWER TO PERMANENTLY CONNECTED FREESTANDING PARTITIONS SHALL BE PROVIDED WITH A MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE PANELBOARD WHERE BRANCH CIRCUITS ORIGINATE.

K SCOPE OF WORK INCLUDES FLEX CONNECTION FROM WALL MOUNTED JUNCTION BOX, POWER POLE OR FLOOR MOUNTED POKE-THRU FITTING TO MODULAR FURNITURE. FURNITURE SYSTEM IS A xx-CIRCUIT, xx-WIRE SYSTEM. COORDINATE CONNECTION LOCATIONS AND ADDITIONAL INSTALLATION REQUIREMENTS WITH FURNITURE SUBCONTRACTOR, TELECOMMUNICATIONS CONTRACTOR AND MANUFACTURER'S SPECIFICATIONS PRIOR TO ROUGH-IN. ELECTRICAL CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTIONS TO FURNITURE SYSTEMS.

L WHEN INSTALLED ON THE EDGES OF METAL STUDS OUTLET BOXES ARE REQUIRED TO BE SECURED IN PLACE BY BOX-BACK SUPPORTS PER NEC ARTICLE 314.23.

M PROVIDE SUITABLE FLEXIBLE CORD AND CABLE ASSEMBLY APPROVED FOR EXTRA-HARD USAGE FOR SUSPENDED OUTLET(S). INSTALL STRAIN RELIEF CABLE GRIPS AT THE SUPPLY END AND AT DEVICE PER NEC REQUIREMENTS.

N ELECTRICAL CONTRACTOR SHALL X-RAY CONCRETE FLOORS AND WALLS PRIOR TO ANY REQUIRED SAW CUTTING OR CORE-DRILLING. COORDINATE SCHEDULING WITH GENERAL CONTRACTOR.

O TELECOMMUNICATIONS CABLING SHALL BE INSTALLED BY CLIENT'S VENDOR. ELECTRICAL CONTRACTOR SHALL COORDINATE REQUIRED JUNCTION BOXES AND RACEWAY ROUGH-INS WITH APPROPRIATE VENDOR.

P PROVIDE AND INSTALL 3/4" CONDUIT FOR EACH SINGLE TELECOMMUNICATIONS OUTLET CONTAINING (1) TELECOMMUNICATIONS CABLE. PROVIDE AND INSTALL 1" CONDUIT FOR EACH TELECOMMUNICATIONS OUTLET CONTAINING MULTIPLE TELECOMMUNICATIONS CABLES. CONDUITS TO BE STUBBED A MINIMUM 3" INTO ACCESSIBLE CEILING SPACE. BUSHED. INSTALL INSULATION BUSHING AND PULL STRING. COORDINATE ADDITIONAL INSTALLATION REQUIREMENTS WITH TELECOMMUNICATIONS CONTRACTOR.

Q BACK-TO-BACK OUTLETS IN THE SAME WALL AND THRU-WALL TYPE BOXES ARE NOT PERMITTED. PROVIDE CHASE NIPPLE FOR ALL OUTLETS SHOWN ON OPPOSITE SIDES OF A COMMON WALL TO MINIMIZE SOUND TRANSMISSION.

R ELECTRICAL CONTRACTOR SHALL MAINTAIN DEDICATED ELECTRICAL SPACE IN FRONT AND ABOVE ALL ELECTRICAL EQUIPMENT REQUIRING SERVICING WHILE ENERGIZED. THIS INCLUDES CONTROL PANELS AND ELECTRICAL DISCONNECTS FOR HVAC EQUIPMENT ON LOCATED ON ROOFTOPS AND ABOVE OR BELOW CEILING. PENETRATIONS SUCH AS ROOF JACKS FOR ELECTRICAL POWER, LOW VOLTAGE CONTROL POWER, REFRIGERANT LINES, VENT PIPES, ETC., AND INCLUDING GAS LINES, DUCTWORK, ROOF DRAINS, SCREENING WALLS AND OTHER EQUIPMENT OF ANY TYPE, ARE NOT TO INTRUDE INTO DEDICATED ELECTRICAL SPACE. MINIMUM SPACE IN FRONT OF ELECTRIC EQUIPMENT SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 INCHES, WHICHEVER IS GREATER, 36 INCHES OUT FROM ENCLOSURE FRONT AT THE HEIGHT OF 6.5 FEET.

S HEATING, AIR-CONDITIONING, AND REFRIGERATION EQUIPMENT SHALL BE PROVIDED A 125-VOLT, 15- OR 20-AMPERE RATED RECEPTACLE OUTLET, INSTALLED AT AN ACCESSIBLE LOCATION FOR THE SERVICING OF HEATING, AIR-CONDITIONING, AND REFRIGERATION EQUIPMENT. THE RECEPTACLE SHALL BE LOCATED WITHIN 25 FEET OF THE EQUIPMENT ON THE SAME LEVEL AND SHALL NOT BE CONNECTED TO THE LOAD SIDE OF THE EQUIPMENT DISCONNECTING MEANS. THE RECEPTACLE OUTLET SHALL BE WEATHERPROOF AND GFCI PROTECTED IF INSTALLED OUTDOORS OR IN A WET LOCATION.

T AN INDIVIDUAL DISCONNECTING MEANS SHALL BE PROVIDED LOCATED IN SIGHT FROM EACH MOTOR OR DRIVEN MACHINERY IN ACCORDANCE WITH NEC ARTICLE 430.

U MECHANICAL CONTRACTOR SHALL FURNISH STARTERS FOR ALL THREE-PHASE MECHANICAL EQUIPMENT. STARTERS SHALL BE NEMA RATED AND HAVE OVERLOAD PROTECTION WITH MANUAL RESET. ELECTRICAL CONTRACTOR SHALL INSTALL STARTERS EXCEPT WHERE SUPPLIED AS INTEGRAL PART OF MECHANICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL PROVIDE SAFETY DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT NOT SPECIFICALLY INDICATED TO HAVE MECHANICAL CONTRACTOR PROVIDED DISCONNECTS.

V PROVIDE 120V CONNECTION FOR SMOKE DAMPER AND COORDINATE ADDITIONAL PROVISIONS TO CLOSE DAMPER UPON FIRE ALARM ACTIVATION. CONNECT TO EXISTING CIRCUIT FOR EXISTING SMOKE DAMPER(S) IN THE AREA. REFER TO MECHANICAL DRAWINGS FOR EXACT EQUIPMENT LOCATION.

W ROOM CONTAINING INFORMATION TECHNOLOGY EQUIPMENT IS PRESENT IN THE FLOOR AREA SHOWN ON PLAN. ELECTRICAL INSTALLATION SHALL BE PROVIDED PER NEC CHAPTERS 1 THROUGH 4 NOT USING PERMISSIONS AND RULES REGULATED BY NEC ARTICLE 645. NOT ALL CONDITIONS ARE MET AS SPECIFIED IN ARTICLE 645.4 "SPECIAL REQUIREMENTS FOR INFORMATION TECHNOLOGY EQUIPMENT ROOM" AND THEREFORE ROOM DOES NOT MEET THE DEFINITION OF THE "INFORMATION TECHNOLOGY EQUIPMENT ROOM" AS COVERED IN NEC ARTICLE 645.2 "DEFINITIONS" AND NFPA 75 "STANDARD FOR THE PROTECTION OF INFORMATION TECHNOLOGY EQUIPMENT" PARAGRAPH 3.3.9.

X IF RACEWAYS ARE INSTALLED ON ROOFTOPS OR EXPOSED TO DIRECT SUNLIGHT CORRECTIONS NEED TO BE PROVIDED FOR CONDUCTOR AMPACITY AND OR SIZING BASED ON AMBIENT TEMPERATURE CORRECTION FACTORS. TEMPERATURE CORRECTION FACTORS SHOWN IN NEC TABLE 310.15(B)(3)(C) SHALL BE ADDED TO THE OUTDOOR TEMPERATURE TO DETERMINE THE APPLICABLE AMBIENT TEMPERATURE FOR APPLICATION OF THE CORRECTION FACTORS IN TABLE 310.15(B)(2)(A) OR TABLE 310.15(B)(2)(B).

Y WIRE SIZE REFLECTED ON ONE-LINE, PANEL SCHEDULE AND ANY OTHER CONTRACTURAL DOCUMENTS ARE FOR REFERENCE ONLY. BASED ON THE FIELD CONDITIONS AND RUN LENGTH THE ELECTRICAL CONTRACTOR SHALL UPSIZE WIRE AS REQUIRED TO MAINTAIN LESS THAN 3% VOLTAGE DROP FROM PANEL TO LOAD.

KEYED NOTES

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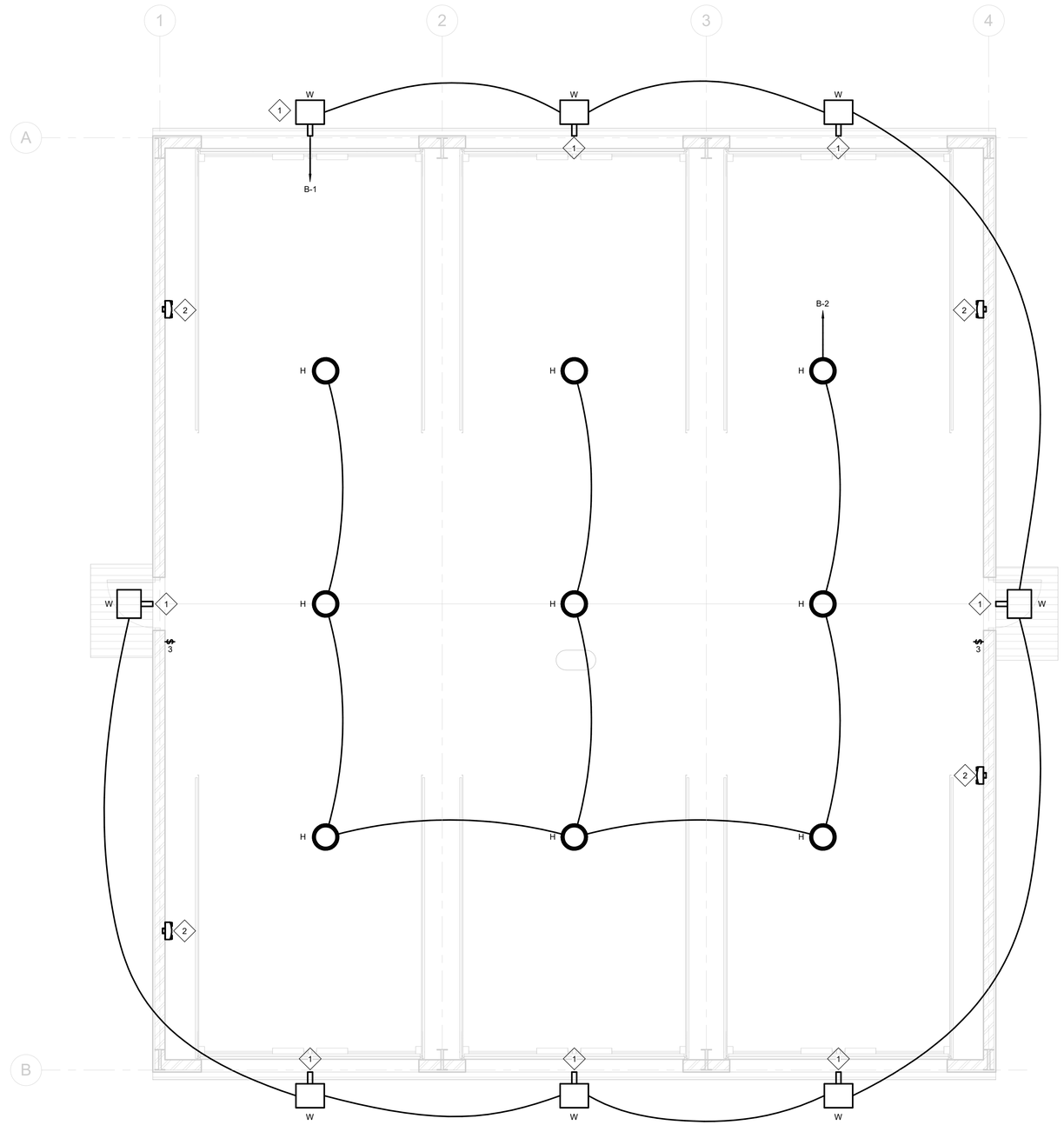
REVISION LOG

POWER FLOOR PLAN

E2.00

SCALE: AS NOTED

6/2/2023 10:46:46 AM



1 LIGHTING FLOOR PLAN
PLAN NORTH
1/4" = 1'-0"

GENERAL LIGHTING NOTES

A LUMINAIRES AND SWITCHES LABELED "(E)" ARE EXISTING TO REMAIN WHERE SHOWN UNLESS OTHERWISE NOTED. MAINTAIN CIRCUIT CONTINUITY FOR THESE DEVICES AS REQUIRED.

B REMOVED LUMINAIRES AND EXIT SIGNS NOT BEING REUSED SHALL BE RETURNED TO BUILDING OWNER FOR FUTURE USE.

C ELECTRICAL CONTRACTOR SHALL INSPECT EXISTING AND RELOCATED FIXTURES IN WORK AREA. REPLACE ALL NECESSARY COMPONENTS, RELAMP AND CLEAN AS REQUIRED TO MAINTAIN LIKE-NEW LIGHT FIXTURE APPEARANCE. ENSURE THAT ALL LAMPS HAVE THE SAME COLOR RENDERING INDEX (CRI) AND COLOR TEMPERATURE (KELVIN), AND ARE OF CLIENT APPROVED MANUFACTURER THROUGHOUT THE AREA OF WORK. VERIFY LIGHT FIXTURE AND LAMP REQUIREMENTS WITH CLIENT PRIOR TO BEGINNING ANY WORK.

D LUMINAIRES SHALL BE FURNISHED AND INSTALLED WITH LAMPS, BALLAST(S), AND MOUNTING HARDWARE. ELECTRICAL CONTRACTOR SHALL SUBMIT FIXTURE CUT SHEETS TO CLIENT AND ARCHITECT FOR THEIR FINAL APPROVAL PRIOR TO ORDERING OF THE LUMINAIRES.

E ELECTRICAL CONTRACTOR SHALL COORDINATE LIGHTING FIXTURE QUANTITIES, MOUNTING REQUIREMENTS, FINISHES, FIXTURE AVAILABILITY AND LEAD TIME FOR DELIVERY TO SITE.

F FLUORESCENT AND LED LUMINAIRES THAT CONTAIN BALLAST(S) AND/OR LED DRIVERS THAT CAN BE SERVICED IN PLACE SHALL HAVE A DISCONNECTING MEANS PER NEC ARTICLE 410.130(G) REQUIREMENTS. DISCONNECTING MEANS IS NOT REQUIRED FOR EMERGENCY ILLUMINATION REQUIRED IN 700.16.

G COORDINATE LAYOUT AND INSTALLATION OF LUMINAIRES AND MOUNTING MEANS WITH OTHER CONSTRUCTION THAT IS SUPPORTED OR THAT PENETRATES CEILINGS, INCLUDING BUT NOT LIMITED TO HVAC EQUIPMENT, FIRE-SUPPRESSION SYSTEM, AND PARTITION ASSEMBLIES PRIOR TO BEGINNING ANY WORK. NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN HVAC EQUIPMENT AND LOCATION OF LUMINAIRES. VERIFY CLEARANCES REQUIRED.

H ALL LUMINAIRES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM BY MECHANICAL MEANS. LISTED SUPPORT CLIPS, LISTED FOR USE WITH THE TYPE OF CEILING GRID MEMBER AND LUMINAIRE, ARE PERMITTED AT EACH FIXTURE CORNER. FIXTURES WEIGHING LESS THAN 50 POUNDS SHALL ALSO HAVE A MINIMUM OF TWO NO. 9 GAUGE WIRES CONNECTED FROM THE OPPOSITE CORNERS OF THE FIXTURE HOUSING TO STRUCTURE. FIXTURES ABOVE 50 POUNDS SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE. FIXTURES OF SIZES LESS THAN CEILING GRID SHALL BE SUPPORTED INDEPENDENTLY WITH AT LEAST TWO 3/4-INCH LISTED METAL CHANNELS SPANNING AND SECURED TO CEILING TEES AND SUPPORTED WITH WIRES OR ROD TO BUILDING STRUCTURE.

I ALL LUMINAIRES AND FLEXIBLE WIRING WHIPS SHALL BE SUPPORTED INDEPENDENTLY OF THE GRID SUPPORT SYSTEM.

J ELECTRICAL CONTRACTOR SHALL PURCHASE ANY ADDITIONAL LUMINAIRES REQUIRED, DUE TO DAMAGE OR CLIENT REQUEST. MATCH EXISTING LUMINAIRES IN THE AREA.

K MOUNT MULTIPLE LIGHT SWITCHES IN A MULTIPLE GANG BOX WITH SINGLE COVER PLATE.

L MULTIWIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH A SIMULTANEOUS DISCONNECTING MEANS TO DISCONNECT ALL UNGROUNDED CONDUCTORS AT THE POINT OF ORIGIN. DISCONNECTION CAN BE ACCOMPLISHED THROUGH LISTED HANDLE TIES USED WITH SINGLE-POLE CIRCUIT BREAKERS OR MULTI-POLE DEVICES. BRANCH CIRCUIT(S) SERVING EMERGENCY LIGHTING SHALL NOT BE PART OF A MULTI-WIRE BRANCH CIRCUIT.

M GROUNDED AND UNGROUNDED CONDUCTORS OF EACH MULTI-WIRE BRANCH CIRCUIT SHALL BE GROUPED WITH WIRE TIES OR SIMILAR MEANS AT A MINIMUM OF ONE LOCATION WITHIN THE PANELBOARD OR OTHER POINT OF ORIGIN.

N SWITCHES CONTROLLING LIGHTING LOADS: WHERE SWITCHES CONTROL LIGHTING LOADS SUPPLIED BY A GROUNDED GENERAL PURPOSE BRANCH CIRCUIT, THE GROUNDED CIRCUIT CONDUCTOR (NEUTRAL WIRE) FOR THE CONTROLLED LIGHTING CIRCUIT SHALL BE PROVIDED AT THE SWITCH LOCATION. EXISTING SWITCHES IN REMODELED SPACES SHALL NOT BE EXEMPT FROM THIS REQUIREMENT.

O WHERE DIMMING CONTROL IS SPECIFIED AS A PORTION OF A CIRCUIT THAT ALSO HAS SWITCHED LIGHTING IN ADJACENT SPACES, PROVIDE A SEPARATE, DEDICATED NEUTRAL WIRE FROM THE DIMMING DEVICE BACK TO THE ORIGINATING PANEL.

P IN REMODEL AREAS WHERE OCCUPANCY SENSING DEVICES ARE SPECIFIED AND ARE REPLACING EXISTING MANUAL SNAP SWITCH CONTROL OF THE LIGHTING, PROVIDE A NEUTRAL CONDUCTOR FROM THE LIGHTING CIRCUIT BEING CONTROLLED TO THE OCCUPANCY SENSING DEVICE (OR SWITCH/POWER PACK, WHERE LOW VOLTAGE SENSORS ARE SPECIFIED). FOR BIDDING PURPOSES, ASSUME THAT THE EXISTING SNAP SWITCHES ARE WIRED WITHOUT A NEUTRAL CONDUCTOR, AND A NEW NEUTRAL CONDUCTOR WILL BE REQUIRED.

Q ALL SWITCHES SHALL BE LABELED WITH DESIGNATED PANEL AND CIRCUIT NUMBER(S) ON THE COVER PLATE.

R PROVIDE AN UNSWITCHED HOT AT EACH EMERGENCY LIGHT FIXTURE AND EMERGENCY LIGHTING UNIT. EMERGENCY LIGHTING SHALL BE SUPPLIED WITH A BATTERY TO SUPPLY AND MAINTAIN EMERGENCY LIGHTING LEVELS FOR A MINIMUM PERIOD OF 90 MINUTES.

S SHADED LUMINAIRES, EMERGENCY LIGHTING UNITS, AND EXIT SIGNS SHALL BE CONNECTED TO THE NORMAL LIGHTING CIRCUIT IN THE AREA AND CONNECTED AHEAD OF ANY CONTROLS.

T EMERGENCY LUMINAIRES SHALL WITH SWITCH LEG SUBSCRIPT LETTER SHOWN SHALL BE CONTROLLED ALONG WITH OTHER LUMINAIRES SHARING SWITCH LEG SUBSCRIPT LETTER. ELECTRICAL CONTRACTOR SHALL CONNECT EMERGENCY LIGHT FIXTURE PER MANUFACTURER'S WIRING DIAGRAMS. SWITCHED EMERGENCY BALLAST WIRING CONFIGURATION REQUIRES CONNECTION TO SWITCHED AND UNSWITCHED CONDUCTORS OF SAME LIGHTING CIRCUIT.

U ALL EXIT SIGNS ARE NEW, UNLESS NOTED OTHERWISE. MATCH NEW EXIT SIGNS WITH EXISTING. LOCATIONS OF EXIT SIGNS SHALL BE COORDINATED WITH LIFE SAFETY DRAWINGS AND LOCAL AUTHORITIES. PROVIDE SIGNS IN ADDITIONAL LOCATIONS, IF REQUIRED, BY LOCAL AUTHORITIES.

V MOUNT NEW WALL SWITCHES AT 46" TO BOX CENTERLINE ABOVE FINISHED FLOOR (A.F.F.) TO COMPLY WITH ADA STANDARDS.

W ELECTRICAL CONTRACTOR SHALL TEST BATTERIES IN ALL REUSED OR EXISTING EXIT SIGNS, EMERGENCY LIGHT UNITS, AND EMERGENCY FLUORESCENT LUMINAIRES. REPLACE BATTERIES, UNITS, OR BALLASTS IF REQUIRED.

KEYED NOTES

1 ALL EXTERIOR LIGHTS ARE TO BE EQUIPPED WITH A PHOTOCELL AND OPERATED WITH A TIME CLOCK.

2 ALL EMERGENCY EXIT LIGHTS ARE TO BE CONNECTED TO THE NEAREST LIGHTING CIRCUIT.

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LIGHTING CEILING PLAN

E2.20

SCALE: AS NOTED

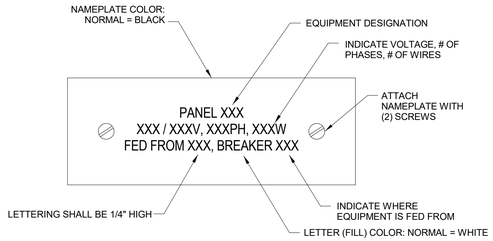
LUMINAIRE SCHEDULE

MARK	MANUFACTURER AND MODEL	VOLTAGE	LAMPS	INPUT WATTAGE	MOUNTING	DESCRIPTION
H	TBD	120	4000 K	150	PENDANT	LED HIGH BAY LIGHTS WITH AUTOMATIC MOTION SENSOR
W	TBD	120	4000 K	82	WALL	LED EXTERIOR WALL PACK
EM	TBD	120	LED	5	WALL	DUAL HEAD EMERGENCY EXIT LIGHT

FEEDER SCHEDULE

TAG	WIRE AND CONDUIT SIZE - X□, XW
200.3N	(3 #3/0 AWG IN 1 1/2" C RMC)
200.3	(3 #3/0 AWG & 1 # 6 GND IN 2" C RMC)

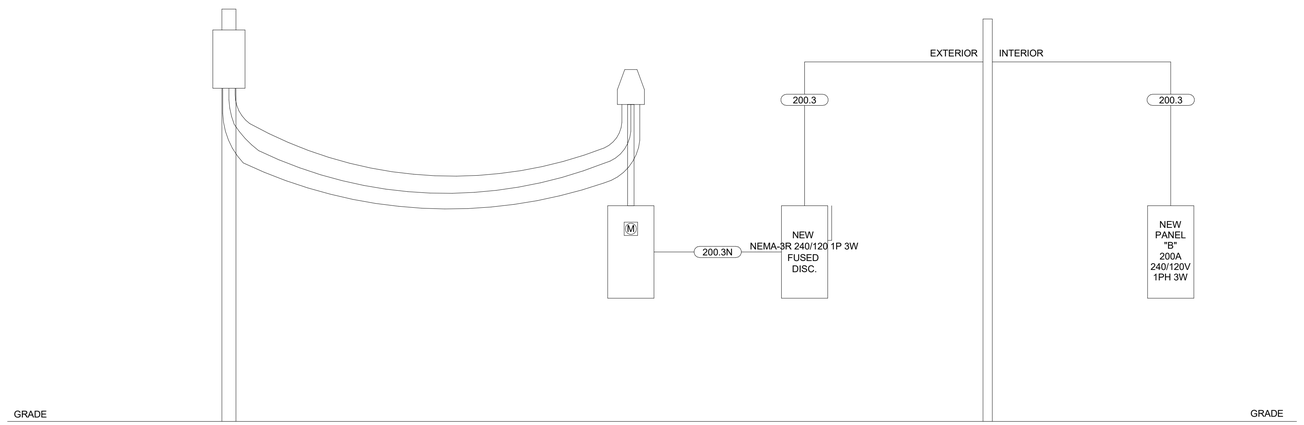
ALL CONDUCTORS TO BE COPPER UNLESS OTHERWISE NOTED. FOR AMPACITIES GREATER THAN 100A ALUMINUM CONDUCTORS MAY BE SUBSTITUTED FOR COPPER CONDUCTORS. ELECTRICAL CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR RE-SIZING CONDUCTORS AND CONDUIT PER APPLICABLE NATIONAL ELECTRIC CODE ARTICLES.



02 PANEL NAME PLATE DETAIL
SCALE: NTS

ONE-LINE DIAGRAM GENERAL NOTES:

A. A PERMANENTLY AFFIXED LABEL SHALL BE APPLIED WITH THE AVAILABLE FAULT CURRENT AT THE TIME OF THE CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF CALCULATION PER NEC ELECTRICAL CODE 504.1.1.
B. AVAILABLE UTILITY AIC NOT AVAILABLE AT TIME OF THIS SUBMITTAL, STARTING UTILITY AIC ASSUMES WORST CASE IMPEDANCE OF % ON ___KVA ____ MOUNTED XFMR OF _____ AIC.
C. SHORT CIRCUIT RATING CALCULATED USING POINT TO POINT METHOD
D. CONDUIT TO BUILDINGS SHALL BE DIRECT BURIED 48" BELOW GRADE WITH WARNING TAPE. USE SCH 40 PVC BELOW GRADE AND RIGID GALVANIZED STEEL CONDUIT ABOVE GRADE, UNLESS NOTED OTHERWISE.
E. ALL OUTDOOR ELECTRICAL EQUIPMENT TO BE MOUNTED IN GALVANIZED, WEATHERPROOF, NEMA 3R ENCLOSURES.
F. SQUARE TAGS REFER TO FAULT CURRENT VALUES LOCATED ON THIS PAGE.
G. CIRCULAR TAGS REFER TO ONE-LINE GROUNDING NOTES.



01 ELECTRICAL ONE-LINE DIAGRAM
SCALE: NTS

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ELECTRICAL ONE-LINE AND DETAILS

E6.00

SCALE: AS NOTED

6/2/2023 10:46:49 AM

PANEL: B

Location: ENGINE BAYS & STORAGE 100
Supply From:
Mounting: Surface
Enclosure: Type 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating:
Mains Type:
Mains Rating: 200 A
MCB Rating: 200 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	Exterior Wall Packs	20 A	1	656	1350			1	20 A	Interior High Bay Lights	2
3	Bay Doors - Plan North	20 A	1			1800	1080	1	20 A	Building Receptacles - Plan North	4
5	Bay Doors - Plan South	20 A	1	1800	1080			1	20 A	Building Receptacles - Plan South	6
7	Warehouse Wall Exhaust Fans	20 A	1			960	2500	2	30 A	Unit Heater - 1	8
9	HVLS Fan	20 A	2	600	2500			--	--	--	10
11	--	--	--			600	2500	2	30 A	Unit Heater - 2	12
13	Instant Water Heater	40 A	2	3250	2500			--	--	--	14
15	--	--	--			3250					16
17											18
19											20
21											22
23											24
25											26
27											28
29											30
31											32
33											34
35											36
37											38
39											40
41											42
		Total Load:		13736		12690					
		Total Amps:		114 A		106 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Equipment	11300	100.00%	11300		
Lighting	2006	125.00%	2508	**Total Conn. Load:**	26426
Other	10960	100.00%	10960	**Total Est. Demand:**	26928
Receptacle	2160	100.00%	2160	**Total Conn.:**	110 A
				Total Est. Demand:	112 A
				Spare:	88 A

Notes:

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ELECTRICAL SCHEDULES

E7.00

SCALE: AS NOTED

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PLUMBING SYMBOLS AND ABBREVIATIONS

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS INDICATED HERE ARE USED IN THE DRAWINGS AND MAY NOT APPLY TO THIS PROJECT. ADDITIONAL SYMBOLS MAY BE INDICATED IN THE DRAWINGS.

PLUMBING ABBREVIATIONS

AB	ABOVE
ACC	ACCESS
ADJ.	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALT	ALTERNATE
AP	ACCESS PANEL
APPROX.	APPROXIMATELY
ARCH	ARCHITECTURAL
ASSY	ASSEMBLY
AVG	AVERAGE
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BOT	BOTTOM
BOP	BOTTOM OF PIPE
BT	BATHTUB
BTU	BRITISH THERMAL UNITS
BTUH	BRITISH THERMAL UNITS PER HOUR
BTW	BETWEEN
CAP	CEILING ACCESS PANEL
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED
CFH	CUBIC FEET PER MINUTE
CFM	CUBIC FEET PER HOUR
CL	CENTERLINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COND	CONDUCTOR
CONT	CONTRACTOR
COP	COEFFICIENT OF PERFORMANCE
CTR	CENTER
CU	COPPER
CW	COLD WATER
CWFU	COLD WATER FIXTURE UNITS
DD	DRAIN DECK
DEG	DEGREES
DET	DETAIL
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOWNSPOUT
DT	DRAIN TILE
DWG	DRAWING
E	EXISTING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EEW	EMERGENCY EYEWASH
EFF	EFFICIENCY
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
EQUIP	EQUIPMENT
ES	EMERGENCY SHOWER
ET	EXPANSION TANK
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPANSION
EXST	EXISTING
EXT	EXTERIOR
F	FUTURE
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FLA	FULL LOAD AMPS
FLR	FLOOR
FM	FACTORY MUTUAL
FP	FIREPROOF
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
F&T	FLOAT AND THERMOSTATIC
FT	FEET
FTG	FOOTING
FU	FIXTURE UNITS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
HB	HOSE BIBB
HD	HUB DRAIN
HP	HORSE POWER
H.P.	HIGH POINT
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HW	HOT WATER
HWFU	HOT WATER FIXTURE UNITS
HWR	HOT WATER RETURN
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
KO	KNOCK-OUT
L	LAVATORY
LB	POUNDS
LB/HR	POUNDS PER HOUR
L.F.	LINEAR FEET
LP	LOW POINT
LTG	LIGHTING
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MB	MOP BASIN
MBH	THOUSANDS OF BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MEP	MECHANICAL, ELECTRICAL AND PIPING
MER	MECHANICAL EQUIPMENT ROOM
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN.	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
MTG	MOUNTING
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NPS	NOMINAL PIPE SIZE
NPSH	NET POSITIVE SUCTION HEAD
NPT	NATIONAL PIPE THREAD
NR	NEAR
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED, OWNER INSTALLED
OLP	OVERLOAD PROTECTION
OV	OUTLET VELOCITY
P	PUMP
PC	PLUMBING CONTRACTOR
PCF	POUNDS PER CUBIC FOOT
PD	PRESSURE DROP
PH	PHASE
PIV	POST INDICATOR VALVE
PLBG	PLUMBING
POC	POINT OF CONNECTION
PP	POLYPROPYLENE
PPH	POUNDS PER HOUR
PRV	PRESSURE RELIEF VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE
RAD	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REC	RECESSED
RECPT	RECEPTACLE
REQD	REQUIRED
RF	ROOF
RI	ROUGH-IN
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE VALVE
RV	RELIEF VALVE
S	SLOPE
SCH	SCHEDULE
SDR	STANDARD DIMENSION RATIO
SH	SHOWER
SHT	SHEET
SOG	SLAB ON GRADE
SPEC	SPECIFICATION
SQ	SQUARE
SS	SERVICE SINK
S/S	STAINLESS STEEL
STD	STANDARD
STRU	STRUCTURAL
T&P	TEMPERATURE AND PRESSURE
TBR	TO BE REMOVED
TD	TRENCH DRAIN
TDFU	TOTAL DRAIN FIXTURE UNITS
TEMP	TEMPERATURE
TOB	TOP OF BEAM
TOD	TOP OF DUCT/DECK
TOJ	TOP OF JOIST
TOP	TOP OF PIPE
TOS	TOP OF SLAB
T STAT	THERMOSTAT
TWFU	TOTAL WATER FIXTURE UNITS
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
V	VENT
VEL	VELOCITY
VIB	VALVE IN BOX
VOL	VOLUME
W	WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN
WSFU	WATER SUPPLY FIXTURE UNITS
WG	WATER GAUGE

PIPING SYSTEMS LABELS

WATER PIPING SYSTEMS:

SCW	COLD SOFT WATER
HW	COLD WATER
F	FIRE PROTECTION
HW	HOT WATER
HWR	HOT WATER RETURN
NPW	NON-POTABLE WATER
TW	TEMPERED WATER
RO	REVERSE OSMOSIS WATER

GAS AND AIR PIPING SYSTEMS:

A	COMPRESSED AIR
H2	HYDROGEN
G	NATURAL GAS
N2	NITROGEN
VAC	VACUUM (AIR)

WASTE AND VENT SYSTEMS:

CD	CONDENSATE DRAIN
CWV	CLEARWATER VENT
CWW	CLEARWATER WASTE
FM	FORCE MAIN
IW	INDIRECT WASTE
OD	OVERFLOW DRAIN LINE
ST	STORM
SSD	SUBSOIL DRAIN LINE
	UNDERFLOOR FOR WASTE OR SOIL, SUBSOIL, STORM & FORCE MAIN
V	VENT
SAN	WASTE OR SOIL LINE

SITE PIPING SYSTEMS:

F	FIRE MAIN
FM	FORCE MAIN
SAN	SANITARY SEWER
ST	STORM SEWER
W	WATER LINE

NOTE:
(E) PRIOR TO SYSTEM TYPE DENOTES EXISTING PIPING
(F) PRIOR TO SYSTEM TYPE DENOTES FUTURE PIPING

PIPE FITTINGS

FLANGE	ELBOW DOWN
UNION	ELBOW UP
ANCHOR	TEE DOWN
PIPE GUIDE	TEE UP
ECCENTRIC REDUCER	PIPE CAP
CONCENTRIC REDUCER	VALVE IN VERTICAL
TEE BRANCH	DOUBLE WYE
LINE CONTINUATION BREAK	WYE
PLUMBING FIXTURE STOPS	WYE WITH VENT UP
PIPELINE STRAINER	

DRAINS AND CLEANOUTS

FLOOR DRAIN	FIXTURE WASTE TRAP
FLOOR SINK	CLEANOUT
HUB DRAIN	FLOOR CLEANOUT
FLOOR SINK	GROUND CLEANOUT
	DOUBLE CLEANOUT

PIPING VALVES AND SPECIALTIES

ANGLE VALVE	AIR VENT, AUTOMATIC
BALANCING VALVE	AIR VENT, MANUAL
BALL VALVE	BACKFLOW PREVENTER
BUTTERFLY VALVE	CONSTANT FLOW REGULATOR
CHECK VALVE	DEMOLITION OF PIPING, DEVICE, ETC.
DIAPHRAGM VALVE	DIRECTION OF FLOW
DRAIN VALVE	DIRECTION OF PITCH RISE (R) OR DROP (D)
FLOAT OPERATED VALVE	DRAIN PLUG
GAS SHUTOFF VALVE	EXPANSION JOINT
GATE VALVE	FLEXIBLE CONNECTION
GLOBE VALVE	FLOW SWITCH
PLUG VALVE	FLOW SENSING DEVICE
POST INDICATOR VALVE	GAS REGULATOR
PRESSURE REDUCING VALVE	GAS OUTLET
PRESSURE RELIEF VALVE	HOSE BIBB
QUICK OPENING VALVE	PETE'S PLUG
SHUTOFF VALVE	PRESSURE GAUGE
SOLENOID VALVE	PRESSURE SWITCH
TRIPLE DUTY VALVE	STEAM TRAP
2-WAY CONTROL VALVE (VALVE BODY AS SPECIFIED)	THERMOMETER
3-WAY MIXING VALVE	WALL HYDRANT
4-WAY VALVE WITH ARROW INDICATING FAIL POSITION	WATER HAMMER ARRESTOR
VALVE IN BOX	

GENERAL NOTES

A. REFER TO SYMBOLS AND ABBREVIATIONS SHEET FOR ADDITIONAL PLUMBING GENERAL NOTES.

B. CONTRACTOR TO VERIFY EXISTING WATER PRESSURE PRIOR TO CONSTRUCTION, AND NOTIFY ENGINEER IF WATER PRESSURE IS DIFFERENT THAN AS STATED IN THE DRAWINGS. CONTRACTOR MAY NEED TO PROVIDE DOMESTIC WATER BOOSTER PUMP IF WATER PRESSURE IS LOW OR A WATER PRESSURE REGULATOR IF PRESSURE IS TO HIGH.

C. VERIFY ALL DIMENSIONS AT JOBSITE.

D. CONTRACTOR SHALL REMOVE ALL NECESSARY EXISTING SERVICES SUCH AS WATER, WASTE, VENT AND GAS PIPING SERVING FIXTURES TO BE REMOVED AND/OR CONNECTIONS TO EQUIPMENT TO BE REMOVED. REMOVE ANY AND ALL UNUSED SERVICE LINES ABOVE CEILINGS, IN WALLS OR BELOW FLOORS.

E. CONTRACTOR SHALL PATCH AND FILL ALL UNUSED EXISTING FLOOR PENETRATIONS.

F. PLUMBING CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CODES AND AUTHORITIES HAVING JURISDICTION, AND MAKE FINAL CONNECTIONS TO FIXTURES AND EQUIPMENT. ALL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER

G. INSULATE ALL DOMESTIC WATER PIPING SUBJECTED TO FREEZING TEMPERATURE.

H. INSULATE HOT WATER LINES WITH 1" MOLDED FIBERGLASS INSULATION.

I. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DOCUMENTS FOR EXACT LOCATION OF FIXTURES, EQUIPMENT.

J. ALL WALL HUNG PLUMBING FIXTURES ARE TO BE SUPPORTED BY MEANS OF A CARRIER AS MANUFACTURED BY J.R. SMITH, JOSAM, OR ZURN.

K. PLUMBING CONTRACTOR SHALL COORDINATE ALL PIPING AND EQUIPMENT WITH OTHER TRADES PRIOR TO INSTALLATION OF ANY PIPING OR EQUIPMENT.

L. PLUMBING CONTRACTOR SHALL VERIFY THE EXACT SIZE, LOCATION, DEPTH AND PRESSURE OF ALL EXISTING UTILITY LINES BEFORE COMMENCING WORK.

M. CONTRACTOR SHALL INSPECT SITE THOROUGHLY TO FAMILIARIZE THEMSELVES WITH THE AREA OF WORK. ANY DISCREPANCIES BETWEEN THESE DOCUMENTS AND ACTUAL CONDITIONS SHALL BE REPORTED TO THE ARCHICTECT/ENGINEER FOR RESOLUTIONS PRIOR TO BID PRICING. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF EXISTING OR NEW CONDITIONS.

N. VENT PIPING TO BE 2" UNLESS OTHERWISE NOTED.

O. PROVIDE BALL VALVES ON ALL BRANCH LINES FOR BUILDING ISOLATION WHETHER SHOWN OR NOT.

P. MAINTAIN A MINIMUM CLEARANCE OF 10 FEET BETWEEN ALL VENT PENETRATIONS AND AIR INTAKES.

Q. OFFSET ALL PIPING AS REQUIRED TO AVOID STRUCTURAL MEMBERS, CANTS, FLASHING, MECHANICAL OR ELECTRICAL EQUIPMENT.

R. VENT PENETRATIONS THROUGH ROOF TO HAVE CLEARANCE OF 10 FEET, MINIMUM, FROM ANY INTAKE FOR FRESH AIR.

S. COORDINATE ALL WORK WITH OWNER OR REPRESENTATIVES.

T. ALL PIPING SHALL BE RUN CONCEALED UNLESS OTHERWISE NOTED.

U. PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL GAS PIPING AND MAKE ALL FINAL CONNECTIONS. GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE AND BANDED MALLEABLE IRON FITTINGS. VERIFY GAS PRESSURE PRIOR TO CONSTRUCTION, AND NOTIFY ENGINEER IF GAS PRESSURE IS DIFFERENT THAN AS STATED IN THE DRAWINGS.

V. ALL UNDERGROUND WATER LINES SHALL BE TYPE "K" COPPER TUBING WITH 1/2" ARMAFLEX INSULATION.

W. PROVIDE BACKFLOW PREVENTER AT THE LOCATIONS REQUIRED BY CODE, AND ALL GOVERNING AUTHORITIES.

X. SANITARY AND WATER SERVICE MAY VARY; SEE SITE PLAN.

Y. REFERENCE ARCHITECTURAL DRAWINGS FOR DIMENSIONS AFFECTING THIS WORK.

Z. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT.

PRE-CONSTRUCTION CHECK

A. THE PLUMBING CONTRACTOR SHALL PERFORM THE FOLLOWING PRE-CONSTRUCTION CHECK, AFTER THE AWARD OF CONTRACT, AND BEFORE BEGINNING CONSTRUCTION:

B. TEST ALL EXISTING FIXTURES, EQUIPMENT, AND WATER HEATERS TO VERIFY ALL ITEMS ARE FULLY OPERATONAL AND REQUIRE NO REPAIRS.

C. THE CONTRACTOR SHALL NOTIFY THE BUILDING OWNER IN WRITING OF ANY DEFICIENCIES FOUND AND SHALL OBTAIN WRITTEN INSTRUCTIONS FROM THE BUILDING OWNER PRIOR TO BEGINNING CONSTRUCTION REGARDING ANY ACTION TO BE TAKEN. ITEMS NOT ADDRESSED IN THE PRE-CONSTRUCTION CHECK SHALL BE CORRECTED BY THE CONTRACTOR PRIOR TO COMPLETION OF CONSTRUCTION AT NO ADDITIONAL COST TO OWNER.

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INTERIM REVIEW ONLY
DOCUMENT INCOMPLETE:
Not intended for permit or construction.
06/02/23

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

	06/02/23	95 % OWNER REVIEW SET

REVISION LOG

PLUMBING SYMBOLS AND ABBREVIATIONS

P0.00

SCALE: AS NOTED

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1.1 15010 PLUMBING GENERAL

A. Reference: All portions of General Conditions apply to Plumbing work.

B. Guarantees: Provide written one year guarantee for all systems and equipment. Compressors shall be guaranteed for five years.

C. Codes: Comply with National, State and City codes and other applicable standards. All portions of the International Energy Conservation Code (IECC) and Current Local AHJ Commercial Energy Conservation Codes must be complied with.

D. Supervision: Provide supervisor in field for each phase of work.

E. Coordination: Coordinate all work with other trades. Provide mechanical and plumbing equipment with electrical characteristics compatible with that shown on the Electrical Drawings and described in the Electrical Division of the specifications. The engineer reserves the right to move services as required to coordinate the work, at no cost to the owner.

F. The drawings are schematic in nature, and should not be scaled, but show the various components of the systems approximately to scale and attempt to indicate how they are to be integrated with other parts of the building. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all Contract Documents. The drawings indicate general routing of the various parts of the systems, but do not indicate all fittings, offsets, and run outs which are required. The Contract shall include all fittings, offsets, and run outs required to fit the system into spaces allotted to them.

G. Shop Drawings and Submittal Data: PAPERLESS SUBMITTAL ONLY TO ENGINEER. All Shop Drawings and Submittal Data shall be an electronic file format only. PDF format is acceptable. All equipment and materials shall be submitted, including piping and equipment changes, as required. Submitted items that deviate from the drawings and specifications shall be highlighted in yellow for easy distinction. Requests for substitutions shall be submitted for review and approval a minimum of 15 business days prior to final bids. Mark all items and show that they comply with the IECC. The Engineer shall issue a letter stating the action taken on the submittal. The letter shall be copied and attached to the submittal, by the contractor, and distributed as required.

H. Record Data: Obtain, at Contractor's expense, a set of prints and keep these on the job site during construction. During construction, mark on these prints any changes that are made, noting particularly locations of those items that will need to be for servicing. Convert record data to an Electronic Format (PDF) and submit to the Architect. Furnish one set of shop drawings and maintenance manuals in brochure form. Record Brochures shall be given to the owner at completion of the work.

I. Permits, Fees: Secure and pay for all fees and charges for the work. Furnish certificates of acceptance at completion of the job from City.

J. Substitutions: No substitutions shall be made without prior approval from the Architect and Engineer.

K. Cutting and Patching: Cutting to be by this section, with patching and furring by General Contractor. Patching required after completion of work shall be paid for by Contractor.

L. Clean Up: Clean and touch-up paint all equipment at completion of work. Protect all equipment from damage during construction. Provide name plates on all equipment.

M. Tests: Tests all piping systems per local code. Sterilize all new water piping per Health Department requirements.

N. Test all equipment and prove performance results to Architect. Modify all drives, balance all systems as shown on the drawings. After Owner has occupied and is using the building, make additional inspections of the system. Correct any Owner's observed temperature imbalances. Check correct operation of equipment and verify by letter to the Architect, on each trip. List in the letter corrections made. At the opposite season of the startup inspect and verify correct operation of all systems. Tests all control systems. Furnish complete copy of all test data to Architect. Instruct owner for one day in operation of all systems. Filters and strainers shall be clean when systems are accepted by the owner. Testing Regulations must meet local City Requirements.

O. Excavating and Backfilling: Excavate to provide minimum 2 feet cover over all piping and conduit. Back fill to original compaction. Saw-cut existing finishes and patch to matching original conditions.

P. Noise and Vibration: All equipment shall operate with minimum of noise and vibration. Contractors shall rectify any objectionable conditions.

Q. Temporary Services: Furnish temporary utility as required for new construction.

R. Equipment Connections: Provide all martial and labor for connecting of all equipment furnished in other sections or by owner. Field verify all equipment for dimensions and roughing-in. Furnish all valves, drain piping, traps, etc., as required to install the equipment.

S. Floor Drains: Final location will be determined by equipment layout and location must be field approved. Provide trap primers to all floor drains.

T. Examination of Site: The contractor is responsible for visiting the job site and confirming the location of existing conditions before bidding. If existing conditions require modification due to elevation, obstruction, size, etc., the contractor will advise in writing before beginning construction.

END OF SECTION 15010

1.2 15030 PLUMBING SPECIFICATIONS

A. Provide all materials and labor for complete plumbing system.

B. Cleanouts "CO":

1. Unfinished Areas and Chases "CO": Smith #4400.
2. Finished Walls "WCO": Smith#4430, With 7" x 7" nickel-bronze plate.
3. Finished Floors "FCO": Smith#4020 with nickel-bronze plate.
4. Outside Areas "GCO": Smith#4240 in concrete pad 24"x 24"x6".
5. Equal Cleanouts: Wade, Mifab, Watts, Zurn, or Josam. Install at changes in direction, maximum of 90' spacing, and base on risers and local code.

C. Valves: Valves to be Nibco or equal by Milwaukee: Ball - #T-FP-600A-LF, Globe - #T-211-B Check - #T-413-Y-LF.

D. Underground valves to be installed in cast iron boxes, with cast iron cover marked "WATER".

E. Pipe Hangers: Securely suspend pipes from building structure.

1. Individual hangers - B-Line #B3100, Standard clevis hanger, pre-galvanized. MSS SP-58 and SP-69, Type 1.
2. Multiple pipes - B-Line #B22SH, 1-5/8" x 1-5/8" pre-galvanized 12 gauge slotted strut trapeze hanger, MSS SP-58 and MSS SP-69 Type 59. Secure with B-Line #B2400 series standard pipe clamps, MSS SP-58 and MSS SP-69 Type 26. Provide B-Line #B199 VibraCushion isolation on copper piping.
3. Wall supports - B-Line #B22SH, 1-5/8" x 1-5/8" pre-galvanized 12 gauge slotted strut anchored to the wall. Secure pipes to strut with B-Line #B2400 series standard pipe clamps. Provide B-Line #B1999 VibraCushion isolation on copper piping.
4. Horizontal Steel Piping shall be supported in accordance with MSS SP-69 Tables 3 and 4.
5. Provide pipe shields in accordance with insulation manufacturers published recommendations per MSS SP-58.
6. Vertical piping floor supports: B-Line #3373, Standard pre-galvanized riser clamps.
7. All materials used in supporting pipe to be pre-galvanized.
8. Provide chrome plated wall, ceiling and floor escutcheons where pipes pass through walls or ceilings in exposed areas.
9. Provide pre-galvanized steel pipe sleeves for pipes through walls, floors, and roofs.

F. Insulation:

1. Insulate hot water piping with MicroLok, fire retardant, white jacketed insulation. All insulation must comply with IECC. Seal all joints with self sealing tape. Fittings shall be pre molded type, sealed as required. Insulate all cold water piping in outside wall chases, or ceilings same as hot water pipe. Exterior piping shall be insulated with water proof-covered insulation and covered with aluminum covers. Provide 18 gauge galvanized saddles at support points as required.
2. Insulate storm drainage piping with minimum 1/2 inch thick MicroLok, fire retardant, white jacketed insulation. Seal all joints with self sealing tape. Fittings shall be pre molded type, sealed as required. Insulate roof drain bodies, vertical pipe to elbow, elbows at roof drains, horizontal runs of storm drainage piping, and first elbow turning down.

G. Sanitary System (Waste and Vent):

1. Below grade: Schedule 40 solid wall PVC pipe conforming to ASTM D2665 and ASTM D1785 and PVC drainage pattern fittings conforming to ASTM D3311 and ASTM D2665 as manufactured by Charlotte Pipe. Install per manufacturer's recommended installation procedures. Buried PVC pipe shall be installed per ASTM D2321. Cellular (Foam) Core piping conforming to ASTM F891 is NOT acceptable.
2. Below grade: Service weight cast iron bell and spigot pipe and fittings conforming to ASTM A-74 as manufactured by Charlotte Pipe, Tyler Pipe, or equal. Make joints with compression gaskets conforming ASTM C564.
3. Above grade: Schedule 40 solid wall PVC pipe conforming to ASTM D2665 and ASTM D1785 and PVC drainage pattern fittings conforming to ASTM D3311 and ASTM D2665 as manufactured by Charlotte Pipe. Install per manufacturer's recommended installation procedures.
4. Above grade: Service weight cast iron bell and spigot pipe and fittings conforming to ASTM A-74 as manufactured by Charlotte Pipe, Tyler Pipe, or equal. Hubless cast iron soil pipe and fittings conforming CISPI 301. All cast iron soil pipe and fittings shall be marked with the Collective Trademark of the Cast Iron Soil Pipe Institute and be listed by NSF International. Install all cast iron soil pipe systems per the Cast Iron Soil Pipe Institute Handbook.

I. Water Systems:

1. Water piping inside the building shall be type "K or L" copper with copper fittings. Underground service lines shall be ductile iron water pipe and fittings or type "K" copper with brazed copper joints. Provide dielectric fittings at points of connection of dissimilar metals.
2. FlowGuard Gold CTS CPVC pipe and fittings shall conform to ASTM D 2846. Pipe and fittings shall be manufactured as a system and be the product of one manufacturer. All pipe and fittings shall be manufactured in the United States. Pipe and fittings shall conform to National Sanitation Foundation (NSF) Standards 14 and 61.

J. Pipe Installation: Install water piping level. Provide drains at low points of system. Sewers and condensate shall be sloped at not less than 1/8 inch per foot. Provide deep seal traps for all floor drains. Pipe shall run parallel to building lines. Full provision shall be made for expansion and contraction of piping. Provide air chambers at each fixture, full line size 12" high. Vent pipes shall be flashed at the roof with approved roof flashing, extending not less than 12" in all directions in all directions. Turn flashing down in to vent 1 inch. Provide a stop valve at every fixture or equipment. All connection to equipment shall be made with unions. Piping shall not contact an electrical conduit at any point. Access doors or panels shall be furnished by this contractor.

K. Piping Joints:

1. Cast Iron Bell and Spigot - Compression gaskets conforming ASTM C564.
2. Cast Iron No-Hub - Standard Duty hubless couplings conforming to CISPI 310, certified by NSF International, and made in the United States.
3. Cast Iron No-Hub - Heavy Duty hubless couplings conforming to ASTM C1540 and manufactured in the United States.
4. Copper pipe - Press type copper fittings with automatic leak detection as manufactured by Viega or equal by Nibco or solder type copper fittings with Lead free solder.
5. Screw Joints - American standard with Teflon tape.
6. Mechanical joints - ASA S 21.11-53
7. Unions - At each item of equipment. Where copper and steel pipes are connected, make connections with insulated type fittings.

P. Plumbing Fixtures:

1. All plumbing fixtures shall meet the requirements for water conservation as required by ANSI and local code.
2. Fixtures and installation must meet all ADA requirements.
3. Reference drawings for Plumbing Fixture Schedules.
4. Acceptable Manufacturers:
   a. Water Closets (Vitreous China): American Standard, Toto, Sloan.
   b. Water Closets (Stainless Steel): Acorn, Bradley, Willoughby.
   c. Lavatories (Vitreous China): American Standard, Toto, Sloan.
   d. Lavatories (Stainless Steel): Advance Tabco, Acorn, Bradley, Willoughby, Elkay, Just.
   e. Lavatories (Decks with integral bowls): Bradley, Sloan, Willoughby.
   f. Urinals (Vitreous China): American Standard, Toto, Sloan.
   g. Urinals (Stainless Steel): Acorn, Bradley, Willoughby.
   h. Mop Sinks/Sevice Sinks: Stern Williams, Fiat.
   i. Drinking Fountains/Electric Water Coolers: Elkay, Halsey Taylor, Haws, Murdock, Oasis.
   j. Drains and Carriers: Jay R. Smith, Wade, Watts, Mifab, Zurn, Josam.
   k. Sinks (Stainless Steel): Elkay, Just.
   l. Faucets (Manual): Delta Teck, Chicago, T&S Brass, Symmons, American Standard, Toto.
   m. Faucets (Sensor): Toto, Sloan, Delta Teck, Chicago, Symmons, Bradley.
   n. Shower Trim: Symmons, Bradley, Chicago, Delta Teck, American Standard, Powers, Leonard.
   o. Emergency Fixtures: Bradley, Guardian, Haws, Encon, Acorn.
   p. Stops, Supplies, P-Traps, Tailpieces: Mcguire.
   q. ADA Covers: Plumberex, Truebro.
   r. Flush Valves: Sloan, Toto, American Standard, Delaney, Zurn.

Q. Plumbing Accessories:

1. Water Hammer Arrestors shall be installed at all fixtures. Minimum size shall be 3/4". Mechanical devices designs shall be used as allowed by code. Provide access doors for maintenance as required by manufacturer.
2. Trap Primer "TP": Traps shall have P.P.P Inc. Oregon #1 trap primers. Provide trap primer distribution unit for one through four drains. Extend 3/8" copper pipe to all fixtures as required by code or showed on the drawings. Inline Floor Drain Trap Sealer "Trap Guard" may be installed if allowed by code.

R. Water Heater:

1. Electric Water Heater shall be heavy gauge steel tanks with glass lining and magnesium anodes. Fiberglass insulated tanks with bonderized steel jackets, baked enamel finish. Provide ASME T&P relief valves. Dual electric heating elements, brass hose bibb for draining tanks. Units placed above ceilings shall have auxiliary drain pans with drains line. All drain and relief lines to be minimum 1" copper. Units shall have three year commercial warranty. Systems must comply with IECC.

S. Electrical: Contractors shall coordinate electrical characteristics with Electrical Contractor. Before ordering any equipment, submit a list of maximum overload circuits for all equipment to the Electrical Contractor and Engineer. This Contractor shall furnish all disconnects, control instruments and wiring diagrams showing terminal identification numbers. Electrical Contractor will do all the electrical wiring for power supply and control.

V. Demolition: Provide materials and labor required for the removal of all plumbing devices as noted on the drawings. Remove all devices related to the demolition of partitions and ceilings of the existing building.

END OF SECTION 15030

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ANGLETON
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Structural
CJG Engineers
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713.780.3345 p.
Mechanical,Electrical, & Plumbing
DVO an Urban-Gro Company
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06/02/23

iAD PROJECT #	23017
ISSUE DATE:	06/02/23

	06/02/23	95 % OWNER REVIEW SET

REVISION LOG

PLUMBING SPECIFICATIONS

P0.01

SCALE: AS NOTED

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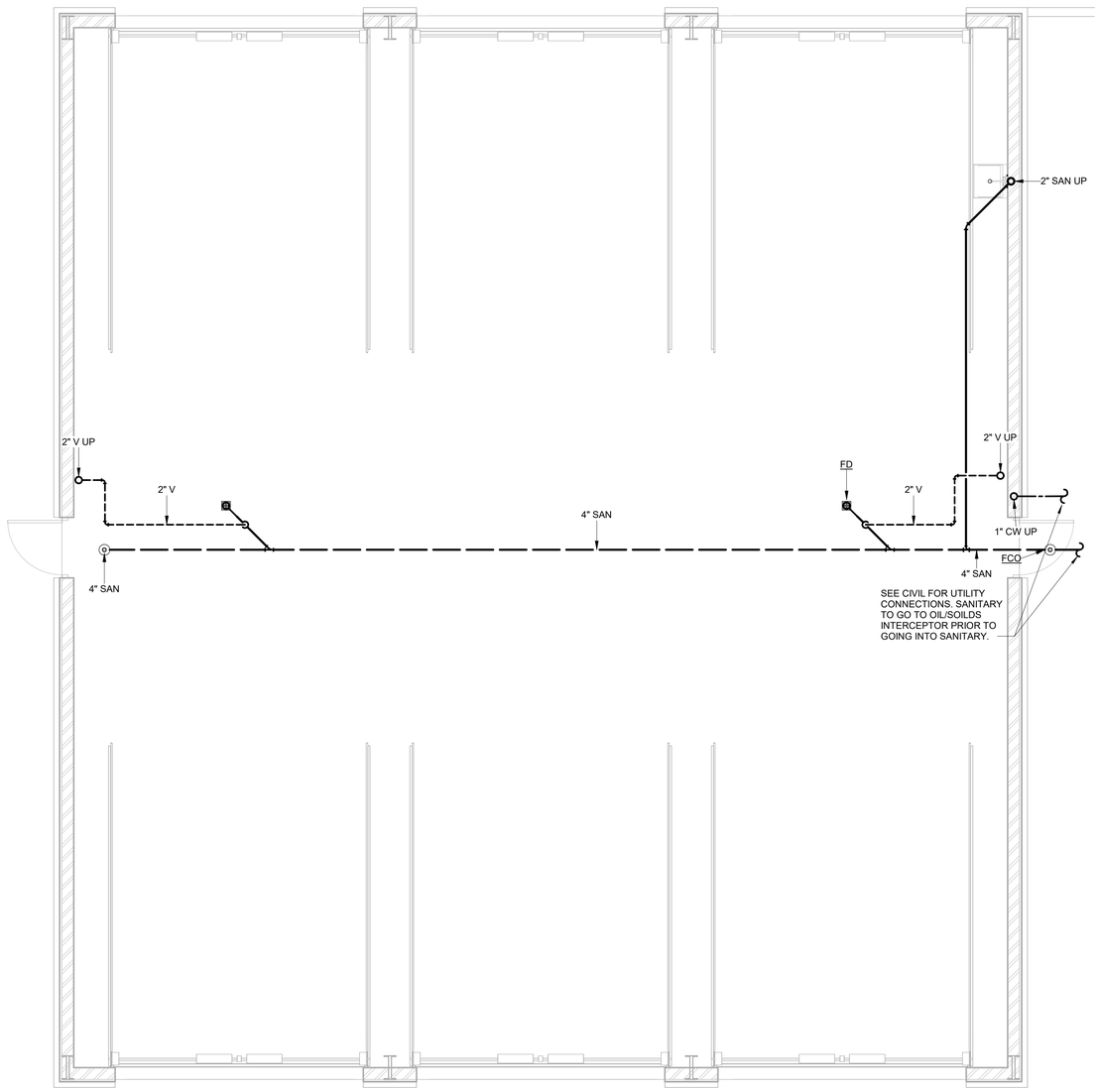

1 PLAN NORTH

PLUMBING - UNDERGROUND FLOOR PLAN

1/4" = 1'-0"

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ANGLETON Where the Heart is

Angleton Fire Station #3 Addition

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REVISION LOG

PLUMBING UNDERFLOOR PLAN

P2.00

SCALE: AS NOTED

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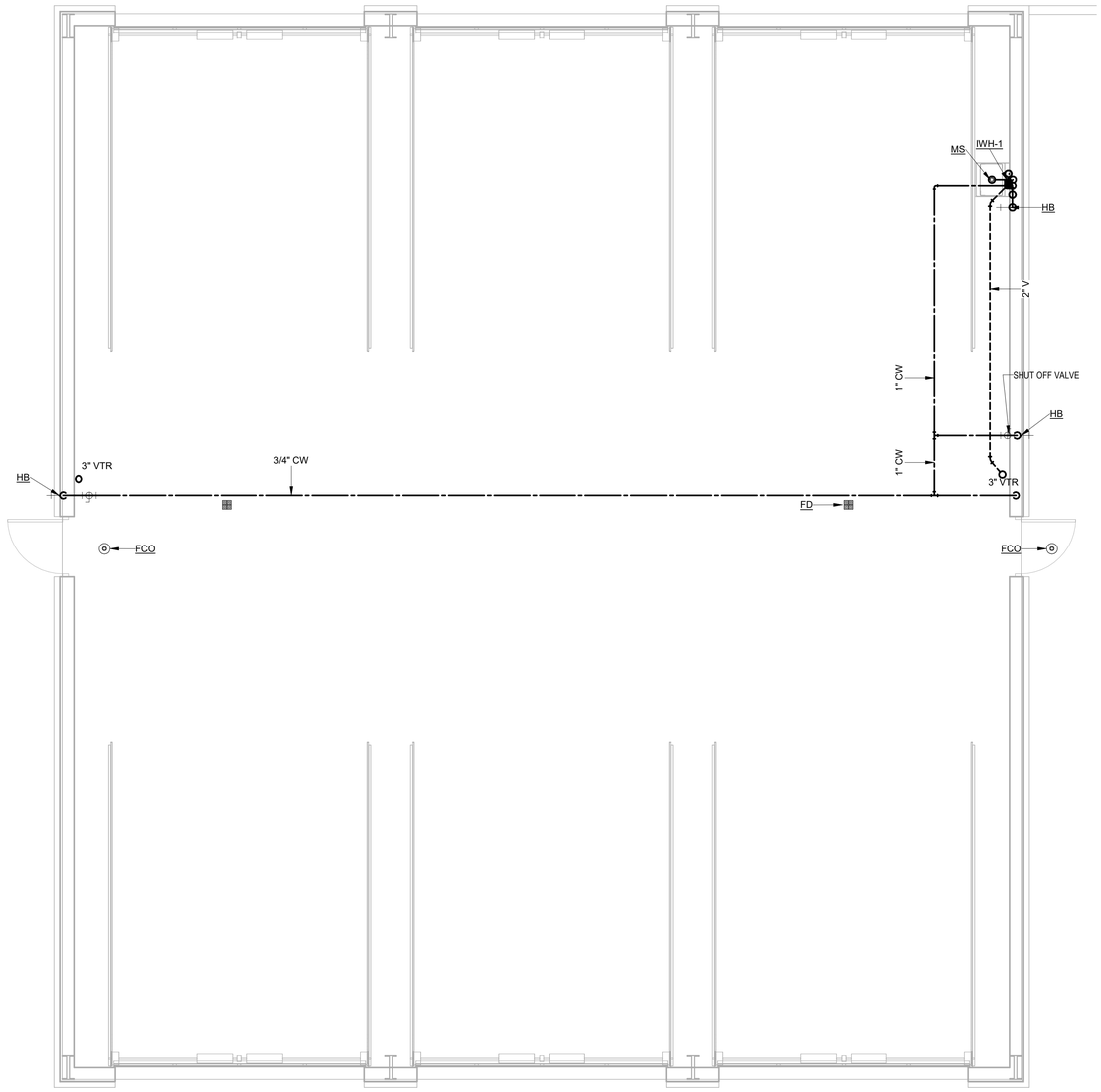

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PLUMBING - UNDERFLOOR PLAN

1/4" = 1'-0"

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PLUMBING FLOOR PLAN

P2.01

SCALE: AS NOTED

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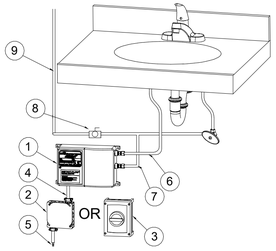
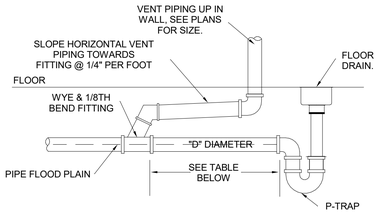


1. Instant-Flow Micro Heater
2. Electrical Junction Supply Box
3. 3095-1 Disconnect Switch
4. Electrical Supply Conduit
5. Electrical Supply Wire
6. 1/2" Hot Water Out
7. 1/2" Cold Water In
8. 1/2" BALL ISOLATION VALVE UNDER COUNTER
9. 1/2" CW PIPING IN WALL

Notes:

1. Heater to be installed below the level of all hot water outlets serviced by the Heater.

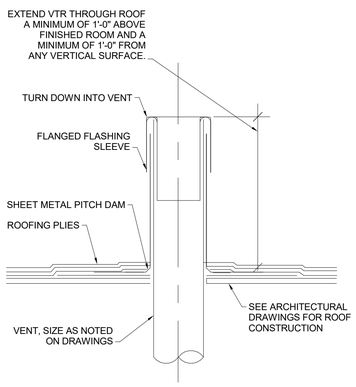
06 INSTA HOT WATER HEATER DETAIL
SCALE: NTS



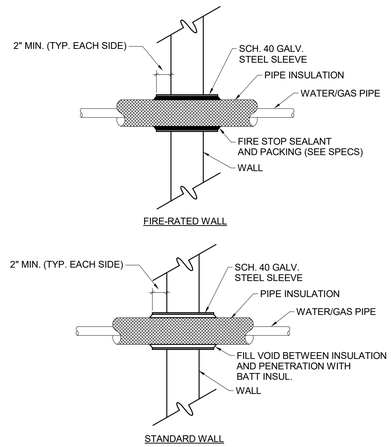
MAXIMUM LENGTHS (REFER TO APPLICABLE CODE)

TRAP ARM PIPE DIAMETER "D" (IN)	DISTANCE TRAP TO VENT MIN (IN)	LENGTH MAX (IN)
1-1/4"	2-1/2"	30
1-1/2"	3	42
2"	4	60
3"	6	72
4"	8	120
EXCEEDING 4	2 x DIAMETER	120

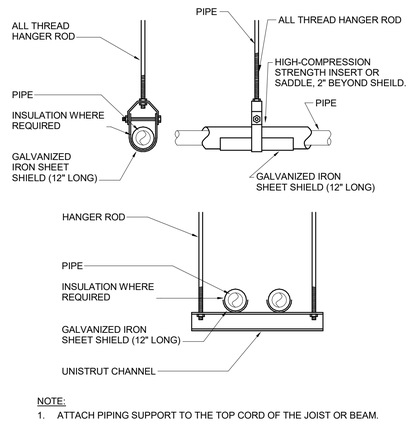
02 FLOOR DRAIN/SINK PIPING DIAGRAM
SCALE: NTS



05 VENT THRU ROOF DETAIL
SCALE: NTS



03 TYPICAL PIPING PENETRATION DETAIL
SCALE: NTS



NOTE:

1. ATTACH PIPING SUPPORT TO THE TOP CORD OF THE JOIST OR BEAM.

01 PIPING SUPPORT DETAIL
SCALE: NTS

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PLUMBING DETAILS AND ISOMETRICS

P6.00

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PLUMBING FIXTURE SCHEDULE

MARK	MANUFACTURER & MODEL	DESCRIPTION	WASTE IN	VENT IN	COLD WATER IN	HOT WATER IN
MS	FIAT TAT1 LAUNDRY TUB - HEAVY DUTY	SINGLE BOWL LAUNDRY TUB WITH LEGS, HEAVY DUTY POLYETHYLENE MATERIAL. 02883906000 HARDWARE KIT - ONE POLISHED CHROME FAUCET WITH SPOUT, ONE P-TRAP AND TWO SUPPLY LINES 02883900100 HARDWARE KIT - ONE SCREW BAG, ONE TAIL NUT , ONE STOPPER AND FOUR LEGS	2"	2"	1/2"	1/2"
FD	ZURN #Z-610 HEAVY DUTY AREA DRAIN	SQUARE TOP DRAIN, DURA-COATED CAST IRON BODY WITH BOTTOM OUTLET, SEEPAGE PAN AND COMBINATION MEMBRANE FLASHING CLAMP AND FRAME FOR HEAVY-DUTY LOOSE, SLOTTED, DURESIST GRATE, WITH SUSPENDED POLYPROPYLENE SEDIMENT BUCKET. RATED FOR VEHICLE TRAFFIC FOR THE GRATE. PROVIDE PRO SET TRAP GUARD INSERT. INSTALL PER MFR'S WRITTEN INSTRUCTIONS.	3"	2"	-	-
TMV	WATTS #LFMMVM1-US	MIXING VALVE: , THERMOSTATIC MIXING VALVE, LISTED UNDER ASSE 1017, ASSE 1069, & ASSE 1070.	-	-	1/2"	1/2"
HB	WOODFORD MODEL #67	FIXTURE: WALL HYDRANT - NON FREEZE , FREEZELESS WALL HYDRANT WITH PATENTED MODEL #50 DOUBLE BACKFLOW PREVENTER. CONFORMS TO ASSE 1052. EXTERIOR FINISH TO BE CHROME PLATED.	-	-	3/4"	-

1. REFERENCE ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURES REQUIRED TO MEET ADA.
2. REFERENCE ARCHITECTURAL DRAWINGS FOR ALL PLUMBING FIXTURE SINK / LAVATORY / TUBS / WATER CLOSET SIZES AND MOUNTING TYPES.

PIPING MATERIAL SCHEDULE

SERVICE	PIPING	JOINING	INSULATION
SANITARY SEWER AND VENT BELOW GRADE NO FOAM OR CELLUAR CORE PIPING PERMITTED	PVC SCHEDULE 40	SOLVENT WELDED ASTM D2564	N/A
SANITARY SEWER AND VENT ABOVE GRADE NO FOAM OR CELLUAR CORE PIPING PERMITTED	CAST IRON CISPI 301, HUBLESS, SERVICE WEIGHT	NEOPRENE GASKETS AND SS CLAMP AND SHIELD ASSEMBLIES (NO-HUB)	N/A
WATER PIPING BELOW GRADE	ASTM B88, TYPE L HARD OR SOFT DRAWN	ANSI/ASTM B32, "LEAD-FREE" SOLDER	N/A
WATER PIPING ABOVE GRADE	ASTM B88, TYPE L HARD DRAWN	ANSI/ASTM B32, "LEAD-FREE" SOLDER	3/4" OR LESS USE 1/2" THICK FIBERGLASS
			1" OR GREATER USE 1" THICK FIBERGLASS
CONDENSATE DRAINAGE	CPVC SCHEDULE 40	SOLVENT WELDED ASTM D2846, ASTM F 493	N/A

REFER TO SPECIFICATIONS FOR OTHER DETAILS.

1. SEE SPECIFICATION FOR INSULATION JACKETS.
2. UNDER NO CIRCUMSTANCES SHALL PVC PIPING BE USED IN RETURN AIR SPACES.
3. USED MATERIAL ONLY AS APPROVED BY AUTHORITIES HAVING JURISDICTION.
4. ALL MATERIALS USED SHALL HAVE A FLAME SPREAD OF NOT MORE THAN 25 WITHOUT EVIDENCE OF CONTINOUS PROGRSSIVE COMBUSTION AND WITH A SMOKE DEVELOPED RATING OF NOT HIGHER THAN 50. SHOP DRAWINGS SUBMITTAL SHALL SHOW THIS INFORMATION.
5. INSULATION VALUES MUST MEET MIN. REQUIRMENT OF ENERGY CODE ADOPTED BY THE AUTHORITIES HAVING JURISDICTION, OR AS LISTED HERE IN WHICH EVER IS GREATER.

HANGER SPACING TABLE

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)
ABS PIPE	4	10
CAST-IRON PIPE	5a	15
COPPER OR COPPER-ALLOY PIPE	12	10
COPPER OR COPPER-ALLOY TUBING, 1 1/4-INCH DIAMETER AND SMALLER	6	10
COPPER OR COPPER-ALLOY TUBING, 1 1/2-INCH DIAMETER AND LARGER	10	10
CROSS-LINKED POLYETHLENE (PEX) PIPE	2.67 (32 INCHES)	10
CROSS-LINKED POLYETHYLENE/ ALUMINUM/CROSS-LINKED POLYETHYLENE (PEX-AL-PEX) PIPE	2.67 (32 INCHES)	4
CPVC PIPE OR TUBING, 1 INCH AND SMALLER	3	10
CPVC PIPE OR TUBING, 1 1/4 INCHES AND LARGER	4	10
STEEL PIPE	12	15
PVC PIPE	4	10

SHOCK ARRESTOR SCHEDULE

PIPE SIZE	FIXTURE UNITS
1 / 2"	1-11
3 / 4"	12-32
1"	33-60
1-1 / 4"	61-113
1-1 / 2"	114-154
2"	155-330

1. ACCEPTABLE MANUFACTURERS INCLUDE PRECISION PLUMBING PRODUCTS, SIOUX CHIEF, WADE AND MIFAB.

INSTANTANEOUS WATER HEATER SCHEDULE

MARK	GALLONS PER MINUTE	VOLTAGE/PHASE	KW	OUTPUT TEMPERATURE	RECOVERY RATE (GPH)	AMPS	WIRE SIZE	MANUFACTURER MODEL NO.
IWH-1	1G/MIN	240/1	6.5	110°	1	27A	10AWG	EEMAX #SPEX65T

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REVISION LOG

PLUMBING SCHEDULES

P7.00

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AGENDA ITEM SUMMARY FORM

MEETING DATE: 07/25/2023

PREPARED BY: Jeff Sifford

AGENDA CONTENT: Overlays

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT:

FUNDS REQUESTED:

FUND:

EXECUTIVE SUMMARY:

The City of Angleton has an interlocal agreement with Brazoria County to do overlays. The attached spreadsheet contains the list of streets requiring an overlay. This list must remain at two miles, or under. Staff is looking for guidance on which streets to exclude to be under the threshold.

RECOMMENDATION:

City of Angleton
FY 23/24 Preliminary Overlays

Street/Location	From	To	Length (ft)	Width (ft)	Work Description	For Office Use Only
WAYNE	CITY OWNED	BW SERVICES	1100	20	1.5" Mill/Overlay	
TAYLOR ST	DOWNING	E MULBERRY	989	20	1.5" Mill/Overlay	
TAY WAL LOOP	TAY WAL LOOP	TAYLOR ST	346	20	1.5" Mill/Overlay	
RAYBURN RIDGE	E HOSPITAL	END OF CUL DE SAC	816	20	1.5" Mill/Overlay	
RICHLAND CIRCLE	RAYBURN RIDGE	END OF CUL DE SAC	480	20	1.5" Mill/Overlay	
E BRONCO BEND	N VELASCO	VALDERAS	1326	20	1.5" Mill/Overlay	
GIFFORD LN	GIFFORD RD	S DOWNING	2494	20	1.5" Mill/Overlay	
KAYLIN LN	GIFFORD LN	END OF STREET	236	20	1.5" Mill/Overlay	
N TINSLEY	WILKINS	MILLER	630	20	1.5" Mill/Overlay	
MCBRIDE	CEDAR	MILLER	600	20	1.5" Mill/Overlay	
HIGGINS	MILLER	WILKINS	600	20	1.5" Mill/Overlay	
S WALKER	BRYAN	CITY LIMIT SIGN	3370	20	1.5" Mill/Overlay	MAYBE COUNTY COLLAB.
W WILKINS	274	WARREN/ANCHOR	1465	20	1.5" Mill/Overlay	
WARREN/ANCHOR	W WILKINS	W MILLER	1105	20	1.5" Mill/Overlay	
ROCK ISLAND	TINSLEY	MILLER	1125	20	1.5" Mill/Overlay	
W CEDAR	N COLUMBIA	N WALKER	750	20	1.5" Mill/Overlay	
SHADY	WILKINS	MILLER	610	20	1.5" Mill/Overlay	

TOTAL	**18042**	**3.42**

$0.00

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25th , 2023

PREPARED BY: Hector Renteria

AGENDA CONTENT: Street Bond Project #3

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: N/A **FUNDS REQUESTED:** N/A

FUND: N/A

EXECUTIVE SUMMARY: This is a re-discussion of the street bond package #3. It has been expressed that there is a greater need for a different project. There is also concern of constructing new roads that are not of concrete, curb, and gutter style.

Staff has requested that HDR provide cost for different section of street that require repairs and can be included in the Street Bond Project - Package 3. The streets that the City have identified are as follows:

City Wide Maintenance Project

City staff have received complaints from residents on small sections of pavement disrepair throughout the City. These areas are small and do not require complete street replacement. This investment will allow the City to repair sections of roadway that are in poor condition and extend the life of the existing roadway. Also, there are stripping needs (sidewalk crossings, stop bars, school zones, etc.) through the City that require maintenance. Staff has recommended that the City fund $300,000 for City wide small point repairs and $50,000 for stripping throughout the City.

Parrish Street – Live Oak to SH 35 (Approximately 1,600 Linear Feet)

The street will be constructed to the City standard 28’ wide 7” thick but will be an elevated concrete roadway due to existing site conditions and downstream outfall elevation. Storm sewer will be installed to close in the open ditches on the east and west side of Parrish Street. Sidewalk will be installed on the east side (only) on Parrish Street to increase the connectivity of the community, safety, and access to existing bus stops in the area. The existing water line has already been replaced and the sanitary sewer is PVC. Total Project cost for this segment is $2,000,000.

Parrish Street – Live Oak to Miller (Approximately 975 Linear Feet)

The City had previously rehabbed Miller Street and placed sidewalks along it to connect to the first bus stop on Parrish. Staff recommends continuing the rehabilitation to connect to Miller Street Improvements to the proposed Parrish Street Improvements beginning at Live Oak to State Highway 35. The street will be constructed to the City standard 28' wide 7" thick but will be an elevated concrete roadway due to existing site conditions and downstream outfall elevation. Storm sewer will be installed to close in the open ditches on the east and west side of Parrish Street. Sidewalk will be installed on the east side (only) on Parrish Street to increase the connectivity of the community, safety, and access to existing bus stops in the area. The existing water line is also included to be replaced with an 8" water line. Total Project cost for this segment is $1,700,000

Locust – TJ Wright to Loop 274 (Approximately 825 Linear Feet)

This will connect to the new improvements made at the intersection of Locust and Loop 274 which is a signalized crossing. The street will be constructed to the City standard 28' wide 7" thick but will be an elevated concrete roadway due to existing site conditions and downstream outfall elevation. Storm sewer will be installed in the open ditches on the north and south side. Sidewalk will be installed on the south side (only) on Parrish Street to increase the connectivity of the community, safety, and access to a signalized intersection at Loop 274. The existing water line is undersized and is old. It will be replaced with a new 8" water line. No sanitary sewers are along the roadway. Total Project cost for this segment is $1,100,000.

Western Avenue – Entire roadway (Approximately 3,600 Linear Feet)

This project will replace the entire asphalt roadway with 7" thick concrete pavement. Due to existing field conditions and available outfall depth the roadway cross section must remain elevated with open ditches. Driveway aprons will remain asphalt due to outfall elevations and culvert elevations. Culverts will be removed and replaced with correctly sized storm sewer. No sidewalks are included in this price. The project cost for this section is approximately $3,323,700.00

Silver Saddle – East side 205 to Bronco Bend (Approximately 750 Linear Feet)

This project will widen to match the east side of the roadway (18') and replace the existing roadway on the west side of Silver Saddle with an elevated asphalt pavement section. Also included will be minor drainage improvements to increase the life expectance of the roadway. Temporary paving will be required to be installed due to the small width of the existing roadway to allow for residents to have access to their property and also to provide access for emergency services. There is no sidewalks included in this cost. The project cost for this section is approximately $371,600.00

RECOMMENDATION: Council to review and provide direction to staff.

AGENDA ITEM SUMMARY FORM

MEETING DATE: 7/25/2023

PREPARED BY: Megan Mainer, Director of Parks & Recreation

AGENDA CONTENT: Discussion and possible action to approve funding from Angleton Better Living Corporation (ABLC) fund balance to approve the selection of contractor with the lowest bid in response to the City's request for Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling, from Freedom Park northern tract to BG Peck Soccer Complex and approve a contract with the selected contractor.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: $0.00

FUNDS REQUESTED: $94,786.96

FUND: 40-506-520 (Annual account deficit to hit ABLC fund balance)

EXECUTIVE SUMMARY:

On January 17, 2023, pursuant to the Texas Local Government Code, Secs. 505.159, the Angleton Better Living Corporation held a public hearing open to public comment to designate projects for fiscal year 2022-2023 including land, buildings, equipment, facilities, and improvements to enhance the City of Angleton's public park facilities, suitable for amateur sports, entertainment, tourist, and public park purposes and events, including parks and park facilities, open space improvements, and related parking facilities, roads, water and sewer facilities, and other related improvements that enhance any of those items.

Staff and the city engineer, HDR, have been working on field drainage solutions for BG Peck Soccer Complex since 2021. The existing conditions of the fields impact recreational use during the fall and summer season when there is inclement weather. HDR's recommended solution includes recutting the ditches followed by hauling in fill, sloping, and regrading the fields for improved drainage. This project will require irrigation adjustments, hydromulching/sod, etc. These improvements are necessary to increase park use and improve the level of recreational service to the community.

Concourse development, Rancho Isabella Municipal Utility District development off 523 near Angleton High School, is excavating the pond on the northern tract of Freedom Park for offsite detention per their agreement with the City of Angleton. Dirt excavated was designed to raise the elevation of homesites above the 100-year floodplain. Concourse reached out to city staff

because they will have excess dirt that could be utilized for BG Peck Soccer Complex improvements.

On June 13, 2023, City Council discussed funding options to haul dirt from Freedom Park to satellite city owned property locations. City Council recommended staff pursue ABLC for funds needed to pursue this project.

On June 20, 2023, Angleton Better Living Corporation approved staff to go out for bid to haul dirt from Freedom Park northern tract to BG Peck Soccer Complex and to revisit the item in July for funding from Angleton Better Living Corporation to fund the project. The motion passed on a 5-0 vote. Director Jackson and Director Moreno were absent.

Staff developed a request for bids seeking a qualified and properly equipped contractor to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. The bid specified that clay, sand, and earthen cover materials would be loaded by others. The bid was published July 1 and 2 and again on July 8 and 9. The bid opening was scheduled for Monday, July 17, 2023 at 2pm.
Enclosed are the bid documents, addendums, and bid opening tabulation.

On Monday, July 24, 2023, staff presented the bids to ABLC for discussion and possible action to approve funding from ABLC fund balance to haul dirt from Freedom Park northern tract to BG Peck Soccer Complex.

RECOMMENDATION:

Staff recommends City Council approve funding from Angleton Better Living Corporation (ABLC) fund balance to approve the selection of contractor with the lowest bid in response to the City's request for Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling, from Freedom Park northern tract to BG Peck Soccer Complex and approve a contract with the selected contractor.

SUGGESTED MOTION:

I move we approve to approve funding from Angleton Better Living Corporation (ABLC) fund balance to approve the selection of contractor with the lowest bid in response to the City's request for Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling, from Freedom Park northern tract to BG Peck Soccer Complex and approve a contract with the selected contractor.

REQUEST FOR BID

CITY OF ANGLETON HAULING OF CLAY, SAND, EARTHEN COVER MATERIALS & STOCKPILING

BID NO. 2023-05

THE HEART OF BRAZORIA COUNTY ANGLETON

REQUEST FOR BID

The City of Angleton is seeking a qualified and properly equipped contractor to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. Clay, sand, and earthen cover materials are to be loaded by others. The City of Angleton will accept sealed bids until 2:00 p.m. on Monday, July 17, 2023, at the following address:

Attention: Michelle Perez
City Secretary's Office
121 South Velasco Street
Angleton, TX 77515

SUBMISSION

All sealed REQUEST FOR BID should include all documents as required. The bid shall be submitted in hard copy, placed in a sealed envelope, signed by a person having the authority to bind the bidder in a contract, and marked clearly on the outside as outlined below. Submit one copy and one electronic version (thumb drive preferred).

FACSIMILIE OR EMAIL TRANSMITTALS **WILL NOT** BE ACCEPTED.

Submission of bid:

Bid packet may be viewed electronically via https://angleton.tx.us/343/Public-Notices
Mail/hand deliver to: Office of the City Secretary
121 S Velasco
Angleton, Texas 77515
Bid No. 2023-05
Closing: 2:00 P.M., Monday, July 17, 2023 (CST)

Label Envelope: **"Bid No. 2023-05: City of Angleton Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling"**

CLOSING

ALL RESPONSES MUST BE RECEIVED IN THE CITY OF ANGLETON CITY SECRETARY'S OFFICE BEFORE SUBMITTAL CLOSING DATE AND TIME – NO EXCEPTIONS.

LATE SUBMISSIONS

Bids received in the City Secretary's Office after submission deadline will be unopened, will not be returned, and will be considered void and unacceptable. The City of Angleton is not responsible for lateness of mail, carrier, etc. and time/date stamp clock in City Secretary's Office shall be the official time of receipt. The City of Angleton reserves the right to reject any and all bids and to waive any informality in the bids received.

QUESTIONS

Any questions, Technical and/or Non-Technical pertaining to this bid must be submitted to Megan Mainer, mmainer@angleton.tx.us. The deadline to ask questions is Monday, July 10, 2023, at 12:00 noon (CST). Please reference bid name and page number. Non-compliance with this provision may result in rejection of the bid. Responses to questions will be posted on https://angleton.tx.us/343/Public-Notices as an addendum prior to the

submission deadline. Any material information given to one proposer concerning a bid will be furnished addendum to all proposers who have been issued the Request for Bid.

BACKGROUND

This is a contract with the City of Angleton to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. Clay, sand, and earthen cover materials are to be loaded by others.

Currently, Concourse Development LLC is excavating the pond on the northern tract of Freedom Park, accessed from North Valderas, for offsite retention/detention for the Windrose Green residential subdivision. Developers may have excess clay, sand, earthen cover materials that could be utilized to raise the elevation of sports fields at BG Peck Soccer Complex owned by the City of Angleton located at 709 Kelly Boulevard, Angleton, TX, 77515. Dirt needed to raise the elevation of sports fields is estimated to be 14,500 cubic yards and the hauling and dumping is anticipated to include at least 14,500 cubic yards of dirt.

The contractor bid must include the cost for hauling, dumping, and stockpiling dirt at BG Peck Soccer Complex located at 709 Kelly Boulevard, Angleton, TX, 77515. The contractor will be hauling from a residential area to city property. The contractor must have reliable equipment to complete the work specified. The contractor will travel a varied route as approved and communicated by the City. The successful contractor should be able to move as much as 2,500 cubic yards daily during the contract term. The contractor may be required to procure permit licenses, which are to be issued by the City; however, permit fee expenses will be waived.

This contract shall commence upon approval by the City Council. The City will have the right to seek the services of alternate vendors under the conditions that the contractor is not able to perform the work specified.

SCOPE OF WORK

A qualified and properly equipped contractor, with proven history of hauling materials efficiently and safely, will be selected to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. Clay, sand, and earthen cover materials are to be loaded by others.

1) **HAUL EXCAVATED MATERIAL:**
    a. Concourse Development LLC will be responsible for loading the trucks of the selected company to haul clay, sand, or earthen material to city property.
    b. The selected contractor is responsible for ensuring material hauled daily is clean earthen material. It may not have any vegetative, root, or other contamination. It may not contain rocks and may not be recycled from another use. It must have some clay type properties which will not allow the material to blow away in the wind.
    c. The contractor shall move as much as 2,500 cubic yards daily.
    d. The contractor shall report daily the number of cubic yards delivered daily to the designated city appointed Project Manager.
    e. The contractor shall complete the project within two weeks; unless both parties agree to an extension.
    f. The contractor shall provide all required equipment to haul clay, sand, or earthen material from the norther tract of Freedom Park to BG Peck Soccer Complex.
    g. Compacted in place volume must measure 14,500 cubic yards.
    h. Attachments F - BG Peck Soccer Complex Route & Distance and G - Stockpiling Location are provided to assist with hauling bid calculation.

2) **STOCKPILING**

a. The contractor shall stockpile clay, sand, or earthen material at BG Peck Soccer Comple designated area provided by the city appointed Project Manager.
b. Stockpiled clay, sand, or earthen material shall be located out of the public use areas at the close of business each day.
c. The contractor is responsible for providing all required equipment (e.g. bulldozer) to stockpile clay, sand, or earthen material at BG Peck Soccer Complex. The contractor is permitted to secure a subcontractor if needed.
d. The contractor is responsible for ensuring subcontractors hired meet the same requirements as the contractor outlined in the General Specifications and Acknowledgement section of this document.

3) PROTECTION

a. The contractor will be responsible for securing the area where work is taking place on city property at both pickup and drop off locations as well as coordination of all work so as not to create any undue interruptions of the normal operation of the area.
b. The contractor is responsible for coordinating with the city appointed Project Manager.

4) EQUIPMENT

a. Equipment should be in good operating condition, so as they do not leak or drip liquids of any kind. Any spills must be communicated to the City of Angleton, Department of Parks & Recreation.
b. Equipment shall be properly equipped with flashing lights and other appropriate safety equipment, in working condition, as required by law.
c. Equipment shall have up-to-date Texas State inspection stickers and appropriate registration.

5) SITE RESTORATION

a. The contractor will be responsible for the repairs or other damages that might be caused during the execution of this contract.
b. Site cleanup shall take place at the end of each day and at the completion of the project with all materials and debris generated during the job, be removed from the work areas. This includes the parking lots, sidewalks, driveways and any other areas affected by the work. No track-out or dirt or mud will be left on city or private streets.

BID REQUIREMENTS

City of Angleton reserves the right to reject any or all Bids, including without limitation the rights to reject any or all nonconforming, non-responsive, unbalanced or conditional bids and to reject the bid of any bidder if the owner believes that it would not be in the best interest of the project to make an award to that bidder, whether because the bid is not responsive or the bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by Angleton.

Owner also reserves the right to waive all informalities and defects in the bids and the bidding process not involving price, time of submittal or changes in the work and to negotiate contract terms with the successful bidder. Discrepancies between the multiplication of units of work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words. In case of ambiguity or lack of clarity in stating the prices in the bid, Angleton reserves the right to consider the most advantageous bid thereof or to reject the bid.

Please be advised that in accordance with State of Texas Local Government Code Chapter 176, Bidder must submit Form CIQ (example attached) with the bid submission.

Addenda to the specifications shall be considered part of the contract documents. The bidder shall acknowledge receipt of addenda on the Bid Proposal Form. Oral and other interpretations or clarifications will be without legal effect.

In compliance with State of Texas Government Code, Section 2252.908, the successful business entity awarded a contract by the City of Angleton must complete Form 1295 – "Certificate of Interested Parties" – and must provide a signed and notarized printed copy of the form and a separate certification of filing. The form can be found at www.ethics.state.tx.us.

By bidding, the bidder acknowledges and will adhere to all bid specifications as stated within this bid packet.

The bidder is required to submit three (3) references of previous projects of similar or like nature.

Bid prices shall be firm 90 days from bid opening.

Evaluation of bids considers the following: price, quality, timeline, product quality and vendor's experience, historically underutilized business (HUB) status, and location in proximity to City of Angleton.

Bidders should carefully examine the bid documents, specifications, and other documents, visit the sites of the work, field verify quantities and fully inform themselves as to all conditions and matters which can in any way affect the work or the cost thereof. Should a bidder find discrepancies in or omissions from specifications, or other documents, or be in doubt as to their meaning, he should at once notify Angleton and obtain clarification prior to submitting a bid.

All Bid pricing must be made on the Bid Tabulation Form. All blank spaces for bid prices must be filled in with ink or typewritten, and the bid form must be fully completed and executed when submitted. Bidder shall **complete every space** in the bidder's initials column with either the bidder's initials to acknowledge and indicate the item is being bid exactly as specified or a notation and/or description, which can be attached, to indicate any deviation of item being bid from the specifications. Failure to submit a bid price for any subsection of a given project may result in rejection of the bid as unqualified or incomplete.

A conditional Bid may be cause for rejection.

Late submittals will be rejected without consideration.

THIS IS A TAX-EXEMPT CONTRACT. A TAX EXEMPTION CERTIFICATE WILL BE SUPPLIED TO THE CONTRACTOR WHO MAY THEN ISSUE A RESALE CERTIFICATE TO SUPPLIERS AND SUBCONTRACTORS.

ANY ALTERATIONS, ADDITIONS OR DELETIONS, TO EITHER THE INSTRUCTIONS TO BIDDERS, OR THE PROPOSAL FORM SHALL CONSTITUTE THE BID(S) AS UNACCEPTABLE.

A Bid Bond is required for this project. All bids shall be accompanied by a cashier's check, or certified check drawn upon a National or State bank, in the amount of 10% of the total bid amount of the contract (inclusive of all Bid Alternates), payable to Angleton, or a bid bond in the same amount, from a reliable surety company, as a guarantee that the bidder will enter into a contract.

The contractor is required to provide the City of Angleton a payment bond in the full amount of the contract prior to the commencement of work, with premiums fully paid in advance by the contractor. The bonds will be on forms and drawn on sureties acceptable to the City of Angleton and are to be included in the total project cost(s).

Any questions about the meaning, the intent or the specifications must be inquired by the bidder in writ 12:00 p.m. Monday, July 10, 2023. E-mail all questions to Megan Mainer, mmainer@angleton.tx.us. Any questions will be responded to in the form of written addenda. All addenda that you receive shall become a part of the contract documents and shall be acknowledged and dated on the bottom of the Bid Tab Page.

Completed Bids, references and acknowledgement of the general specifications must be received by Office of the City Secretary, Attention: Michelle Perez, City Secretary's Office, 121 South Velasco Street, Angleton, TX 77515, no later than 2:00 p.m. Monday, **July 17, 2023**. Please mark outside of sealed bid packaging: "City of Angleton 2023-05 Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling".

All companies bidding on this project must include the information outlined in the **BID SUBMISSION CHECKLIST, Addenda G**, such as bid bond, statement of qualifications, list of subcontractors, references, list of proposed equipment, licenses, insurance requirements, and other items requested in this bid document.

All email correspondence should be referenced "City of Angleton Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling" in the subject line for proper tracking and to ensure inclusion in addenda.

BID ASSESSMENT PRIORITIES

The City and Parks & Recreation Department seek to find the lowest qualified contractor at the lowest price for the Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling. Bids will be gauged based on the following in order of priority: Overall cost, best guarantee of workmanship and product, bidder qualifications and history of similar work performed, timeline, historically underutilized business status, and locality.

OVERALL COST	35%
GUARANTEE WORKMANSHIP & PRODUCT	25%
BIDDER QUALIFICATIONS & SIMILAR WORK HISTORY	13%
TIMELINE	12%
HUB STATUS	10%
LOCALITY	5%
TOTAL	**100%**

All bids will be evaluated by a panel consisting of City Staff.

Bids that rate high enough may be invited to participate in a finalist interview to clarify their applications and answer additional questions raised by the panel.

The selected bidder will be recommended to the Angleton Better Living Corporation and City Council for approval and award of a contract.

All vendors are required to register with the City of Angleton.

The City of Angleton will submit payment to the contractor within 30 days of receiving the contractor's invoice. The invoice shall include the period of service, itemize services provided and determined monthly amount.

PROJECT SCHEDULE

The Contractor will provide its services as expeditiously as practicable and work with the City to develop a mutually agreeable schedule.

Request for Bid is released	Sunda, July 2, 2023
Deadline for Questions	Monday, July 10, 2023
Submissions due by 2:00 PM	Monday, July 17, 2023
Present Contract to Angleton Better Living Corporation	Monday, July 24, 2023
Present Contract to City Council	Tuesday, July 25, 2023
Estimated Start Date	August 2023

REQUIRED COMPLETION OF APPLICABLE ATTACHMENTS

- General Specifications and Acknowledgement
- Bid Tabulation Form
- Attachment A - Site Visitation Form
- Attachment B - Conflict of Interest Questionnaire
- Attachment C - References
- Attachment D - Insurance Requirements
- Attachment E - Bond

ACKNOWLEDGEMENT OF REQUIRED ATTACHMENT COMPLETION

Please acknowledge by signing and dating that you have seen the addenda posted with the bid on https://angleton.tx.us/343/Public-Notices

General Specifications and Acknowledgement_____Date Received_____/_____/ 2023
MM DD

Bid Tabulation_____Date Received_____/_____/ 2023
MM DD

Addenda _____Date Received_____/_____/ 2023
MM DD

GENERAL SPECIFICATIONS AND ACKNOWLEDGMENT

***Bidder shall complete* every space** in the bidder proposal column with either a check mark to indicate the item being bid is exactly as specified or a description to indicate any deviation of item being bid from the specifications.

Item #	Description of Requirements	Bidder's Initials
1	The Contractor will furnish all necessary labor, materials, equipment, services, transportation, insurance, and daily expenses to meet the requirements of this scope of work and specifications. Prices shall be inclusive of all costs. No equipment, material or personnel shall be provided by City of Angleton to Contractor.	
2	A walk-through is required, and the site visitation form shall be submitted with this bid. (Attached)	
	Working in Angleton	
3	Contractors shall understand that one of the main emphases of this community is the preservation of the natural existing environment-that is the trees, bushes, wildflowers, and wildlife, and to enhance it by additional landscaping and the development of the lakes and open space. No one can replace what nature has created, and to preserve this beauty City of Angleton expects contractor cooperation. No trees should be unnecessarily removed or damaged. No trash, lumber, etc. can be dumped onsite. No vehicles, etc. can be parked except in designated areas assigned by the Project Manager.	
	Standard of Conduct	
4	Each employee will be identified by a company uniform (shirt, pants, and cap) and vehicles will be clean and all marked with company name.	
5	Safety of residents and visitors is of the utmost importance. It will be the contractor's responsibility to secure areas where the work is taking place.	
6	Contractor shall behave and operate in an environmentally sound and professional way, as to not create damage or cause exposure by virtue of negligence or omission.	
7	Contractor is responsible for repairing any damage to facilities, grounds or landscape that occurred because of the work.	
8	Equipment must be well maintained and in good condition.	
	Contractor's Responsibility	
9	Prior to start of work, successful bidder will obtain all necessary permits, certificates and/or licenses as required by law to fulfill contractual obligations to the City. The City of Angleton permit fees will be waived.	
10	Contractor is responsible for repairing any damage to facilities, fixtures, grounds, landscape, or any vehicles parked at the facilities that occurred because of the contractor performed work.	
11	Contractor is responsible for maintaining perimeter safety in and around the work area while work is being performed.	
12	Contractor should carefully examine the bid documents, specifications, and other documents, visit the site of the work, and fully inform themselves as to all conditions and matters which can in any way affect the work or the cost thereof. Should a bidder find discrepancies in or omissions from specifications, or other documents, or be in doubt as to their meaning, the bidder should at once notify Angleton and obtain clarification prior to submitting a bid.	

13	The Contractor shall coordinate use of premises under direction of Angleton's representative. The Contractor shall assume full responsibility for the protection, and safekeeping of products for this project and shall not store any materials on job site.	
14	All construction management and administration shall be included.	
15	Contractor must ensure user's safety when performing services in and around location. The contractor shall be responsible to secure area where work is taking place and for coordination of all work so as not to create any undue interruptions of the normal operation of the area.	
	Insurance and Taxes	
16	No taxes shall be included in the bid price since City of Angleton is exempt from all sales tax. City of Angleton will provide selected vendor applicable proof of sales tax exemption.	
17	Contractor's performing work on City property on behalf of the City of Angleton shall provide a certificate of insurance in accordance with the coverage provisions identified herein. Contractors shall provide the City evidence that all subcontractors performing work on the project have the same types and amounts of coverages as required herein or that the subcontractors are included under the contractor's policy. It is required that the required insurance be maintained at all times during the performance of the contract.	
18	All insurance companies must be authorized by the Texas Department of Insurance to transact business in the State of Texas and must be acceptable to the City of Angleton.	
19	Signing this solicitation indicates that you have the required insurance and if selected to perform the work, will provide the certificates of insurance naming the City as additionally insured. A PURCHASE ORDER WILL NOT BE ISSUED WITHOUT EVIDENCE OF INSURANCE.	
20	The types and amounts of insurances required are found in Addenda B. The City reserves the right to amend or require additional types and amounts of coverages or provisions depending on the nature of the work.	
	Communication	
21	Contractor shall be capable of receiving communication and orders by web, e-mail, and via phone call/message. Contractor(s) are expected to be in contact (email and phone) and weekly meetings with the appointed Project Manager for City of Angleton. Additional meetings may be required between contractors selected regarding project related issues.	

	Bonds	
22	A Bid Bond is required for this project. All bids shall be accompanied by a cashier's check, or certified check drawn upon a National or State bank, in the amount of 10% of the total bid amount of the contract (inclusive of all Bid Alternates), payable to Angleton, or a bid bond in the same amount, from a reliable surety company, as a guarantee that the bidder will enter into a contract.	
23	Contractor is required to provide City of Angleton a payment bond in the full amount of the contract prior to the commencement of work, with premiums fully paid in advance by the contractor. The bonds will be on forms and drawn on sureties acceptable to City of Angleton and are included in the total project cost(s).	
	Sub-contractors	
24	All construction shall be performed by the approved contractor or sub-contractor. A list of sub-contractors shall be submitted with the bid. If no sub-contractors are outlined in the proposal, no substitutions of sub-contractors will be permitted.	
	Certificate of Interested Parties & Conflict of Interest Questionnaire	
25	Please be advised in compliance with State of Texas Government Code, Section 2252.908, the successful business entity awarded a contract by the City of Angleton must complete Form 1295 – "Certificate of Interested Parties" – and must provide a signed and notarized printed copy of the form and a separate certification of filing. The form can be found at www.ethics.state.tx.us	
26	Please be advised that in accordance with State of Texas Local Government Code Chapter 176, Bidder must submit Form CIQ (attached) with the bid submission.	
	Compliance with Laws	
27	At Contractor's own cost and expense, Contractor shall comply with all laws, ordinances, rules, and regulations of the federal, state, local, Americans with Disabilities Act, Federal Transportation Administration including Section 9 below, and OSHA authorities and departments relating to or affecting the work hereunder, and shall secure and obtain all permits, licenses, certifications and consents as may be necessary in connection therewith.	
28	Contractor shall furnish to Angleton copies of said licenses, permits and insurance certificates prior to the commencement of any work hereunder.	
29	All work, repairs, preventative maintenance, and installations shall be made in compliance with the appropriate Certifications, Laws, and Codes as adopted by the State of Texas.	
30	Traffic control, where and when needed, must meet the requirements of all state and local laws and regulations shall be included as part of the unit cost.	
	Payment	
31	Payment will be paid by City of Angleton within thirty (30) calendar days after the invoice is received based on the Accounts Payable calendar which will be provided to the successful contractor.	
	Qualifications	
32	Contractor shall provide at least three (3) references that received similar services. City of Angleton reserves the right to contact any of the organizations or individuals listed. Information provided shall include: Client name Project description	

	Project start and end dates Client project manager name, telephone number and e-mail address	
33	Quality Assurance: Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.	
34	All work shall be performed by the approved contractor or sub-contractors who have a minimum of 5 years' experience in like projects. A list of sub-contractors shall be submitted with the Bid. The successful bidder shall not employ any subcontractor to fulfill any of the duties herein specified without express, prior written approval of City of Angleton.	
35	The contractor shall furnish all labor, materials, equipment, services, transportation, fuel, insurance, and daily expenses to meet the requirements of this scope of work and specifications. Bid prices shall be inclusive of any and all charges/costs. No equipment, material or personnel shall be provided by City of Angleton to Contractor.	
	Approvals	
36	An award of contract is subject to City of Angleton City Council approval.	
	Project Scope	
37	All project management and administration shall be included.	
38	Contractor is solely responsible for the storage of materials and equipment for the project. In the event that an area is made available near or at the job site, City assumes no responsibility or liability for Contractors' materials, equipment or other items stored. City does not guarantee security of the site. Please note, citizens and City employees may be present in or in close proximity to the work area during regular business/work hours.	
39	Contractor is responsible for maintaining a clean and safe construction area with suitable barriers to keep the public out of the area during work.	
40	Contractor is responsible for daily clean-up and general housekeeping of the worksite to the satisfaction of a City of Angleton representative. Proper disposal of all materials is the sole responsibility of the contractor. No refuse containers will be provided by the City.	
41	Contractor is solely responsible for furnishing all materials, equipment, labor, insurance, and supervision.	

CITY OF ANGLETON HAULING OF CLAY, SAND, EARTHEN COVER MATERIAL & STOCKPILING

Bid Tabulation Form

**Proposal is required to disclose itemized costs*

PROJECT	UNIT	# UNITS	COST
HAULING OF CLAY, SAND, EARTHEN COVER MATERIAL	CY	14,500	$
# OF VEHICLES DEDICATED TO PROJECT	DUMP TRUCK(S)		NA
ESTIMATED TIME FOR COMPLETION	DAYS		NA
STOCKPILING OF CLAY, SANDCOVER MATERIAL	LUMP SUM	1	$
BID BOND	LUMP SUM	1	
PAYMENT BOND	LUMP SUM	1	
TOTAL			$

City of Angleton Bidder Acknowledgement

I,_____, certify that this bid is made without prior understanding, agreement or connection with any corporation, firm, or person submitting a bid for the same materials, supplies or equipment and is in all respects fair and without collusion of fraud. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder.

Date _____

Signature _____ **Name (please print)** _____

Title _____ **Company Name** _____

Address _____ **Phone Number** _____

E-mail address _____ **Cell Phone Number** _____

ATTACHMENT A - CITY OF ANGLETON HAULING OF CLAY, SAND, EARTHEN COVER MATERIAL & STOCKPILING

Visit to Freedom Park northern tract and BG Peck Soccer Complex where hauling of clay, sand, earthen material and stockpiling will take place as required as a condition of this bid. Each contractor is required to submit the Site Visitation Form as part of the bid submittal. Failure to submit the form will result in the bid being deemed unresponsive.

I,_____, certify that I inspected the site regarding the **City of Angleton Hauling of Clay, Sand, Earthen Cover Materials & Stockpiling.**

_____
Date of Visit

_____am/pm_____ Time of Visit

_____
Signature

_____
Name (please print)

_____
Company

ATTACHMENT B - CONFLICT OF INTEREST QUESTIONNAIRE

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

Form provided by Texas Ethics Commission www.ethics.state.tx.us Revised 11/30/2015

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

Form provided by Texas Ethics Commission www.ethics.state.tx.us Revised 11/30/2015

ATTACHMENT C - REFERENCES

Please provide information from three (3) references

1. Agency/Company:_____

Contact Name:_____

Contact Phone:_____

Project description:_____

Project start and end dates:_____

2. Agency/Company:_____

Contact Name:_____

Contact Phone:_____

Project description:_____

Project start and end dates:_____

3. Agency/Company:_____

Contact Name:_____

Contact Phone:_____

Project description:_____

Project start and end dates:_____

ATTACHMENT D - INSURANCE REQUIREMENTS

Contractor agrees to procure and maintain at all times, at Contractor's sole cost and expense, during the performance of the Work and for so long as this Contract remains in effect, policies of insurance with carriers reasonably acceptable to the Owner in the minimum amounts outlined below:

A. Worker's compensation and employer's liability coverage complying with the applicable laws of the State of Texas, covering all employees, agents and representatives of Contractor and all subcontractors engaged in any manner in performance of the Work. Employer's liability coverage shall have a minimum limit of $100,000 for liability arising out of any accident related to the Work.
B. Comprehensive general liability insurance, including Contractor's protective liability, in Contractor's name, with combined bodily injury and property damage of not less than $1,000,000 per occurrence, and will include, without limitation, the following coverages:
    a. XCU Coverage,
    b. Contractual Liability Coverage,
    c. Completed Operations and/or Products Liability Coverage, commencing with issuance of Final Certificate for Payment, and extending for at least two (2) years from that date, and
    d. (X), (C) and (U) exclusions shall be removed.
C. Comprehensive Automobile Liability Insurance, with combined single limit bodily injury and property damage of not less than $1,000,000 per occurrence. Such coverage shall include owned, hired, and non-owned vehicles of Contractor or Contractor's employees, agents, representatives, or subcontractors.
D. Contractor shall require all of its subcontractors to provide the foregoing coverages, as well as any other coverage that Contractor considers necessary. Contractor will require that all subcontractors maintain a comprehensive commercial general liability policy with a minimum limit of at least $500,000 per occurrence. Any exclusion shall first be approved by Owner. It is the responsibility of the Contractor to assure compliance with this provision. City of Angleton accepts no responsibility arising from the conduct, or lack of conduct, of the Subcontractor.
E. All insurance policies required by this Section 7 shall contain a clause waiving any right of subrogation against City of Angleton. Insurance policies under (b), and (c), shall include City of Angleton as an additional insured.
F. With reference to the foregoing insurance requirement, Contractor shall specifically endorse applicable insurance policies as follows:
    a. City of Angleton shall be named as an additional insured with respect to General Liability and Automobile Liability.
    b. All liability policies shall contain no cross-liability exclusions or insured versus insured restrictions.
    c. A waiver of subrogation in favor of City of Angleton shall be contained in the Workers Compensation and all liability policies.
    d. All insurance policies shall be endorsed to require the insurer to immediately notify City of Angleton of any material change in the insurance coverage.
    e. All insurance policies shall be endorsed to the effect that City of Angleton will receive at least sixty- (60) days' notice prior to cancellation or non-renewal of the insurance.
    f. All insurance policies, which name City of Angleton as an additional insured, must be endorsed to read as primary coverage regardless of the application of other insurance.
    g. Required limits may be satisfied by any combination of primary and umbrella liability insurances.
    h. Contractor may maintain reasonable and customary deductibles, subject to approval by City of Angleton.
    i. Insurance must be purchased from insurers that are financially acceptable to City of Angleton.

G. All insurance must be written on forms filed with and approved by the Texas Department of Insurance. Certificates of Insurance shall be prepared and executed by the insurance company or its authorized agent

and shall contain provisions representing and warranting the following:

a. Sets forth all endorsements and insurance coverages according to requirements and instructions contained herein.
b. Shall specifically set forth the notice-of-cancellation or termination provisions to City of Angleton.
c. All contractors and subcontractors must be meeting minimum OSHA safety requirements as applicable to their operations.

Contractor shall, before the Contract is signed, and at any time following execution thereof at the request of the Owner, furnish Owner with a certificate and proof of such additional endorsements or other documentary evidence that the aforementioned insurance policies have been procured with such additional endorsements, that premiums have been paid and that such policies remain in place. Such certificate or other evidence shall bear an agreement that Owner will be given thirty (30) days prior written notice by the Insurance Company furnishing the certificate before the insurance is cancelled or changed in any manner or for any reason during the period of coverage as stated on the certificate.

ATTACHMENT E - BID BOND SAMPLE

BID BOND – Sample - (Bid Bond Required with Bid Submittal)

KNOW ALL MEN BY THESE PRESENTS: That we, the undersigned,_____as Principal and _____, a_____duly organized under the laws of the State of_____as Surety, are hereby held and firmly bound unto City of Angleton as Oblige in 10% of Principal's Bid Amount for the payment of which sum will and truly to be made, the Principal and Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.

WHEREAS the above-named Principal submitted a bid for_____.

NOW, THEREFORE, (1) if the Oblige shall accept the Bid of the Principal and the Principal and Oblige shall execute Angleton-Contractor Agreement which is part of these Contract Documents and the Principal shall provide all Bonds, as required by the Contract Documents, and the Principal shall, in all other respects, perform any obligations due the Oblige as a result of the submission of its Bid, or (2) the Oblige shall reject the Principal's Bid, or fail to execute Angleton-Contractor Agreement within 7 days of receipt from the CONTRACTOR, then this obligation shall be null and void, but otherwise it shall remain in full force and effect.

ATTEST:

_____

PRINCIPAL

_____

By:_____ (Principal) Secretary

(SEAL)

_____

(Address)

_____

_____

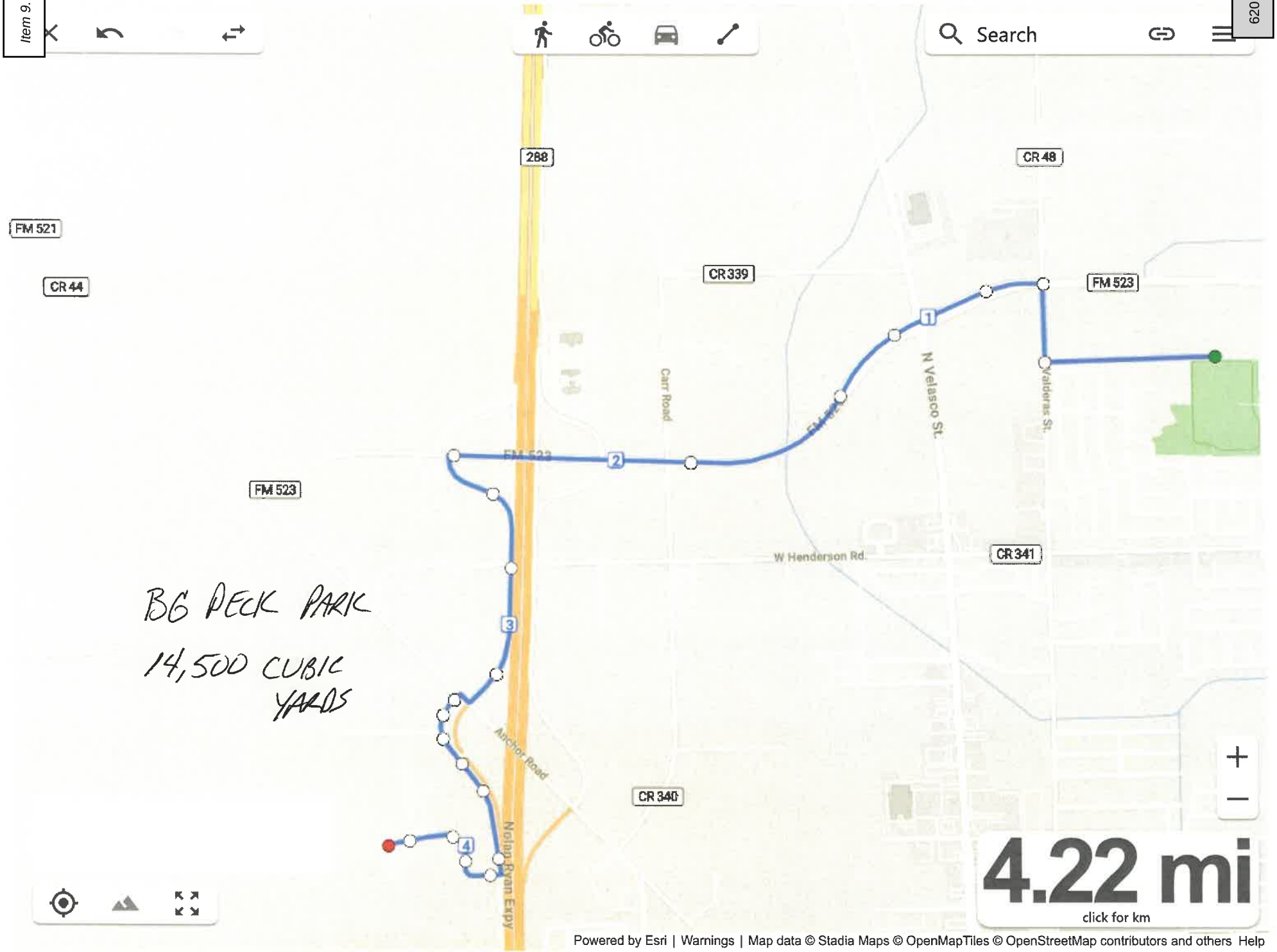
(Witness as to Principal)

_____

(Address)

Item 9.

620



Attachment F - BG Peck Soccer Complex Route & Distance

Google Earth Pro

Attachment G - Stockpiling Location

File Edit View Tools Add Help

Item 9.

▼ Search

Soccer Complex, Kelly Boulevard, Angleton, TX | Search

ex: Museums in New York, NY

Get Directions History

A B.G. Peck Soccer Complex
709 Kelly Blvd, Angleton, TX 77515
(979) 549-0410 · angleton.tx.us

▼ Places

- My Places
  - Sightseeing Tour
    - Make sure 3D Buildings layer is checked
    - Start tour here
    - The Eiffel Tower
      - Located in Paris, France
    - Christ the Redeemer
      - Located in Rio, Brazil
    - The Grand Canyon

▼ Layers

- Primary Database
  - Announcements
  - Borders and Labels
  - Places
  - Photos
  - Roads
  - 3D Buildings
  - Weather
  - Gallery
  - More
  - Terrain

B.G. Peck Soccer Complex

Kelly Blvd

Anchor Rd

Firefighter Rd

288

STOCKPILING LOCATION

N

Google Earth

621

1944

29°11'07.22" N 95°27'35.12" W elev 32 ft eye alt 3392 ft

ADDENDUM NO. 1

July 7, 2023

City of Angleton – Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Materials and Stockpiling

Angleton, TX 77515

TO: ALL INTERESTED VENDORS OF RECORD

This addendum is a revision to the Request for Bid requirements for the solicitation referenced above with a termination date of July 17, 2023. This addendum revises the following requirements:

1. The successful contractor should be able to move as much as 500 cubic yards daily during the contract term.
2. Concourse Development LLC is responsible for ensuring material hauled daily is clean earthen material.
3. The contractor shall complete the project within 30 working days; unless both parties agree to an extension.

You may contact the Director of Parks & Recreation with any questions you may have with the contact information below.

Megan Mainer
901 S. Velasco
Angleton, TX 77515
979.849.4364, EXT 4101
mmainer@angleton.tx.us

THE HEART OF BRAZORIA COUNTY
ANGLETON

ADDENDUM NO. 2

July 10, 2023

City of Angleton – Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Materials and Stockpiling

Angleton, TX 77515

TO: ALL INTERESTED VENDORS OF RECORD

This addendum clarifies the Request for Bid requirements for the solicitation referenced above with a termination date of July 17, 2023. This addendum clarifies the following general question regarding Item 5) SITE RESTORATION a. The contractor will be responsible for the repairs or other damages that might be caused during the execution of this contract.

1) Does this include repairs to roads entering and leaving BG Peck Complex?
ANSWER: The selected contractor will not be responsible for repairs to roads entering and leaving BG Peck Soccer Complex.

You may contact the Director of Parks & Recreation with any questions you may have with the contact information below.

Megan Mainer
901 S. Velasco
Angleton, TX 77515
979.849.4364, EXT 4101
mmainer@angleton.tx.us

THE HEART OF BRAZORIA COUNTY ANGLETON

BID OPENING

DATE: 7/17/2023 **TIME:** 2:00 PM

BID TITLE: Bid No. 2023-05 Hauling of Clay, Sand, Earthen Cover Material and Stockpiling

	COMPANY/ADDRESS	BID BOND	BID RECEIVED	BID AMOUNT
1.	Matula $ Matula Construction, Inc 122 West Way, Suite 325 Lake Jackson, TX 77566	Y	7/17/2023 10:26 AM	$213,015.70
2.	Newby Enterprise 1212 FM 1459 Sweeny, TX 77480	Y	7/17/2023 11:44 AM	$94,786.96
3.	TLC Construction Contract Services, Inc. 11714 Charles Rd. Houston, Texas 77041	Y	7/17/2023 1:19 PM	$347.582.00

CSO & Departmental Representatives:
Michelle Perez, City Secretary's Office

THIS BID TABULATION RECEIVED BY THE CITY OF ANGLETON IS FOR INFORMATIONAL PURPOSES ONLY. STAFF WILL REVIEW AND ANALYZE THE BIDS FOR ACCURACY, CHECK REFERENCES AS APPROPRIATE, AND MAKE A RECOMMENDATION FOR COUNCIL DECISION.

AGREEMENT FOR HAULING OF CLAY, SAND EARTHEN COVER MATERIALS & STOCKPILING OF MATERIALS

This Agreement (Agreement), dated effective July 26, 2023 (Effective Date), is entered in into by and between the City of Angleton, Texas ("City"), a municipal corporation, and Chad Newby d/b/a Newby Enterprise (Contractor). City and Contractor agree as follows:

1. **SERVICES**. Contractor will perform the scope of services (Services) as described in Exhibit A to the satisfaction of the City and pursuant to the Request for Bids for the hauling of clay, sand, earthen cover materials & stockpiling.

2. **TERM**. The term (Term) of this Agreement will begin on July 26, 2023, and will expire within (30) thirty days, unless both parties agree to an extension or sooner terminated.

3. **FEES; PAYMENT**. The City is exempt from Texas Sales & Use Tax on goods and services in accordance with §151.309, Tax Code, and Title 34 Texas Administrative Code §3.322, and is not required to provide a tax exemption certificate to establish its tax exempt status. Subject to and in accordance with Chapter 2251, Government Code, all fees will be paid within thirty days of receiving the Contractor's invoice. The invoice shall include the period of service, itemize services provided, and determined amount. City shall pay Contractor the amount of ninety four thousand seven hundred eighty six and 96/100 dollars ($94,786.96).

4. **RELATIONSHIP OF THE PARTIES**. Contractor is an independent contractor and is not an employee, partner, joint venturer, or agent of the City. Contractor will not bind nor attempt to bind the City of Angleton to any agreement.

5. **WARRANTIES AND REPRESENTATIONS**.

   5.1. Compliance with Laws and Policy. Contractor will comply with (a) all applicable federal, and state laws and City of Angleton ordinances (Applicable Laws. Neither Contractor, nor anyone acting for a firm, corporation or institution represented by Contractor, has (1) violated the antitrust laws of the State of Texas (ref. Chapter 15, Business and Commerce Code), or federal antitrust laws, or (2) communicated directly or indirectly the content of Contractor's response to any City procurement solicitation to any competitor or other person engaged in a similar line of business during the procurement process for this Agreement.

   5.2. Performance. Contractor warrants that it will perform the Services in a good and workmanlike manner and in accordance with commercially reasonable standards of Contractor's profession or business.

   5.3. Legal Name. Contractor represents and agrees that this Agreement reflects Contractor's full and correct legal name.

5.4. Ethics Matters; No Financial Interest. Contractor and its officers, employees, agents, representatives and permitted subcontractors (Contractor Parties) have read and understand the City's Conflicts of Interest policy. Contractor represents and warrants that no city employee or city public official has a direct or indirect financial interest in the transaction that is the subject of this Agreement.

6. **WORK MATERIAL**. All drawings, specifications, plans, computations, data, photographs, records, models, statements, reports, and other deliverables or materials prepared or produced by Contractor Parties in connection with the Services (Work Material), whether or not accepted or rejected by the City, are the property of the City and for the City's exclusive use and re-use at any time without further compensation and without any restriction.

   Contractor grants and assigns to the City of Angleton all rights in and claims to the Work Material and will cooperate with the City in obtaining or enforcing the City's rights and claims. Contractor will not use the Work Material except as expressly authorized by this Agreement. Contractor will not apply for any copyright, patent or other property right related to the Work Material.

7. **PUBLIC INFORMATION**. The City adheres to Applicable Laws (including opinions of the Texas Attorney General) related to disclosure of public information under Texas Public Information Act (TPIA). In accordance with §552.002 of TPIA and §2252.907, Government Code, at no additional charge to the City, Contractor will make any information created or exchanged with the City pursuant to this Agreement (and not otherwise exempt from disclosure under TPIA) available in a format reasonably requested by the City that is accessible by the public.

8. **TRANSFER PROHIBITED**. Contractor's interest in this Agreement may not be subcontracted, assigned, delegated, or otherwise transferred to a third party, in whole or in part, without the express written consent of the City of Angleton.

9. **INSURANCE**. CONTRACTOR ACKNOWLEDGES AND UNDERSTANDS THAT CITY DOES NOT MAINTAIN AND WILL NOT OBTAIN INSURANCE OF ANY TYPE TO PROTECT CONTRACTOR AGAINST ANY LOSS, DAMAGE OR INJURY THAT MAY IN ANY WAY RESULT FROM CONTRACTOR'S PERFORMANCE OF THE SERVICES. CONTRACTOR HEREBY RELEASES CITY FROM ANY AND ALL LIABILITY FOR ANY LOSS, DAMAGE, INJURY OR COSTS RELATING TO THE PERFORMANCE OF THE SERVICES, CITY'S USE OF THE WORK MATERIAL, THE CITY'S RELIANCE ON THE SERVICES. CONTRACTOR AGREES IT SHALL PROVIDE TO THE CITY ALL CERTIFICATES OF INSURANCE REQUIRED NAMING THE CITY AS AN ADDITIONAL INSURED; INCLUDING COMPREHENSIVE GENERAL LIABILITY COVERAGE, WORKER'S COMPENSATION ACCORDING TO STATUTORY LIMITS OR EMPLOYER'S LIABILITY, AUTO COVERAGE AND ANY OTHER INSURANCE REQUIRED BY CITY.

10. **INDEMNITY**. CONTRACTOR WILL INDEMNIFY, HOLD HARMLESS AND DEFEND THE CITY, ITS OFFICERS, EMPLOYEES, DIRECTORS, REPRESENTATIVES AND AGENTS, FROM AND AGAINST ALL LIABILITIES, DAMAGES, CLAIMS, DEMANDS, ACTIONS (LEGAL OR EQUITABLE), AND COSTS AND EXPENSES (INCLUDING ATTORNEYS' FEES INCURRED IN INVESTIGATING, DEFENDING OR SETTLING ANY OF THE FOREGOING CLAIMS), OF ANY KIND OR NATURE, ARISING FROM CONTRACTOR'S PERFORMANCE OF THE SERVICES THAT ARE CAUSED IN WHOLE OR IN PARTY BY ANY NEGLIGENT ACT OR OMISSION, OR WILLFUL MISCONDUCT, OF CONTRACTOR OR ANY CONTRACTOR PARTIES FOR WHOSE ACTS CONTRACTOR MAY BE LIABLE. THE PROVISIONS OF THIS SECTION WILL NOT BE CONSTRUED TO ELIMINATE OR REDUCE ANY OTHER INDEMNIFICATION OR RIGHT WHICH ANY INDEMNITEE HAS BY LAW OR EQUITY.

11. **FORCE MAJEURE**. Neither party will be liable or responsible to the other for any loss or damage or for any delays or failure to perform due to causes beyond its reasonable control.

12. **TERMINATION**. City may terminate this Agreement with or without cause upon five (5) days prior written notice to Contractor. City will pay Contractor for Services satisfactorily performed through the date of termination. Notwithstanding any provision to the contrary, the City will not pay Contractor Fees or reimburse Travel Expenses incurred after the date Contractor is given notice that Contractor could have avoided or mitigated.

13. **NOTICES**. Any notices, consents, approvals or other communications required under this Agreement will be in writing, and sent via certified mail, hand delivery, overnight courier, fax or email. Notice will be deemed given (i) if delivered by certified mail, when deposited, postage prepaid, in the United States mail, or (ii) if delivered by hand, overnight courier, fax or email, when received:

City: City of Angleton, Texas
121 S. Velasco
Angleton, Texas 77515
City Manager, Chris Whittaker
Telephone: 979-849-4364 ext. 2112
Email: cwhittaker@angleton.tx.us

Contractor: Chad Newby
Newby Enterprise
P.O. Box 171
Brazoria, Texas 77422
Telephone: (979)482-3400
Email: newbyenterprise@yahoo.com

or other person or address given in writing by either party in accordance with this Section.

14. **ENTIRE AGREEMENT; EXTERNAL TERMS; AMENDMENT**. This Agreement (including exhibits and schedules which are attached and incorporated for all purposes) states the entire agreement and understanding between the parties, supersedes all prior agreements, written or oral, between the parties with respect to the subject matter of this Agreement, and prevails over and replaces all other agreements including any other terms displayed in any format that the City and the Parties may have exchanged or discussed, concerning Contractor's performance of the Services (External Terms). Prior agreements and External Terms are null and void and will have no effect, regardless of whether the Parties agreed to the prior agreements or External Terms. This Agreement is binding on the parties, their successors and assigns, and may not be amended except by writing signed by authorized representatives of both parties.

15. **ADDITIONAL PROVISIONS**

15.1. **Venue; Governing Law**. Brazoria County, Texas, will be the proper place of venue for suit on or in respect of this Agreement. This Agreement, all of its terms and conditions, all rights and obligations of the parties, and all claims arising out of or relating to this Agreement, will be construed, interpreted and applied in accordance with, governed by and enforced under, the laws of the State of Texas.

15.2. **Dispute Resolution**. To the extent applicable by law, any controversy or claim arising out of or relating to this Agreement or the Agreement documents or any breach thereof shall be settled by mediation as agreed to by the parties in Brazoria County, Texas.

16. **CHANGES IN THE WORK**

City may request changes in Work consisting of additions, deletions or modifications, whereby, the Contract Price, Contract Time or Performance Guarantee shall be adjusted accordingly. Such changes in the Work shall be authorized by written Change Order that shall be mutually agreed to and signed by City and Contractor.

17. **PAYMENTS AND COMPLETION**

17.1. Payments shall be made as provided in Article 3 of the Contract.

17.2. Payments may be withheld on account of (1) Defective Work not remedied or (2) repeated failure to carry out the Work in accordance with the Contract Documents.

17.3. Upon Substantial Completion of the Work or any portion of the Work, Contractor will issue City a Substantial Completion Letter for the applicable Work. For the purposes of this Agreement, Substantial Completion means the

stage where the progress of the Work or designated portion is completed following the Scope of Work such that the City can utilize the Work for its intended purpose.

18. **PROTECTION OF PERSONS AND PROPERTY**

Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to (1) employees on the Work and other persons who may be affected thereby, (2) the Work and materials and equipment to be incorporated therein, and (3) other property at the site or adjacent thereto. Contractor agrees to perform the work and travel on city streets as directed in the manner directed by City and in compliance with all State laws and City Ordinances. Contractor shall give notices and comply with applicable laws, ordinances, rules, regulations and lawful orders of public authorities bearing on safety of persons and property and their protection from damage, injury or loss.

19. **SEVERABILITY.** Any provision of this Agreement, which is invalid or unenforceable in any jurisdiction, shall be ineffective to the extent of such invalidity or unenforceability without invalidating or rendering unenforceable the remaining provisions hereof, and any such invalidity or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provisions in any other jurisdiction.

Chad Newby, Newby Enterprise	Date
City of Angleton City Manager	Date

EXHIBIT “A”

SCOPE OF SERVICES

BACKGROUND

This is a contract with the City of Angleton to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. Clay, sand, and earthen cover materials are to be loaded by others.

Currently, Concourse Development LLC is excavating the pond on the northern tract of Freedom Park, accessed from North Valderas, for offsite retention/detention for the Windrose Green residential subdivision. Developers may have excess clay, sand, earthen cover materials that could be utilized to raise the elevation of sports fields at BG Peck Soccer Complex owned by the City of Angleton located at 709 Kelly Boulevard, Angleton, TX, 77515. Dirt needed to raise the elevation of sports fields is estimated to be 14,500 cubic yards and the hauling and dumping is anticipated to include at least 14,500 cubic yards of dirt.

The contractor bid must include the cost for hauling, dumping, and stockpiling dirt at BG Peck Soccer Complex located at 709 Kelly Boulevard, Angleton, TX, 77515. The contractor will be hauling from a residential area to city property. The contractor must have reliable equipment to complete the work specified. The contractor will travel a varied route as approved and communicated by the City. The successful contractor should be able to move as much as 500 cubic yards daily during the contract term. The contractor may be required to procure permit licenses, which are to be issued by the City; however, permit fee expenses will be waived.

This contract shall commence upon approval by the City Council. The City will have the right to seek the services of alternate vendors under the conditions that the contractor is not able to perform the work specified.

SCOPE OF WORK

A qualified and properly equipped contractor, with proven history of hauling materials efficiently and safely, will be selected to haul clay, sand, earthen cover materials from Freedom Park to BG Peck Soccer Complex and stockpile it in a designated area to be determined by city officials. Clay, sand, and earthen cover materials are to be loaded by others.

1) HAUL EXCAVATED MATERIAL:

a. Concourse Development LLC will be responsible for loading the trucks of the selected company to haul clay, sand, or earthen material to city property.

b. Concourse Development LLC is responsible for ensuring material hauled daily is clean earthen material. It may not have any vegetative, root, or other contamination. It may not contain rocks and may not be recycled from another use. It must have some clay type properties which will not allow the material to blow away in the wind.
c. The contractor shall move as much as 500 cubic yards daily.
d. The contractor shall report daily the number of cubic yards delivered daily to the designated city appointed Project Manager.
e. The contractor shall complete the project within two weeks; unless both parties agree to an extension.
f. The contractor shall provide all required equipment to haul clay, sand, or earthen material from the norther tract of Freedom Park to BG Peck Soccer Complex.
g. Compacted in place volume must measure 14,500 cubic yards.
h. **Attachments F - BG Peck Soccer Complex Route & Distance and G - Stockpiling Location are provided to assist with hauling bid calculation**.

2) STOCKPILING

a. The contractor shall stockpile clay, sand, or earthen material at BG Peck Soccer Complex in a designated area provided by the city appointed Project Manager.
b. Stockpiled clay, sand, or earthen material shall be located out of the public use areas at the close of business each day.
c. The contractor is responsible for providing all required equipment (e.g. bulldozer) to stockpile clay, sand, or earthen material at BG Peck Soccer Complex. The contractor is permitted to secure a subcontractor if needed.
d. The contractor is responsible for ensuring subcontractors hired meet the same requirements as the contractor outlined in the General Specifications and Acknowledgement section of this document.

3) PROTECTION

a. The contractor will be responsible for securing the area where work is taking place on city property at both pickup and drop off locations as well as coordination of all work so as not to create any undue interruptions of the normal operation of the area.
b. The contractor is responsible for coordinating with the city appointed Project Manager.

4) EQUIPMENT

a. Equipment should be in good operating condition, so that it does not leak or drip liquids of any kind. Any spills must be communicated to the City of Angleton, Department of Parks & Recreation.
b. Equipment shall be properly equipped with flashing lights and other appropriate safety equipment, in working condition, as required by law.
c. Equipment shall have up-to-date Texas State inspection stickers and appropriate registration.

5) SITE RESTORATION

a. The contractor will be responsible for the repairs or other damages that might be caused during the execution of this contract. The contractor will not be responsible for repairs to roads entering and leaving BG Peck Soccer Complex.
b. Site cleanup shall take place at the end of each day and at the completion of the project with all materials and debris generated during the job, be removed from the work areas. This includes the parking lots, sidewalks, driveways and any other areas affected by the work. No track-out or dirt or mud will be left on city or private streets.

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25, 2023

PREPARED BY: Lupe Valdez

AGENDA CONTENT: Noise Ordinance

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: 0

FUNDS REQUESTED: 0

FUND: N/A

EXECUTIVE SUMMARY:

Review proposed noise ordinance.

RECOMMENDATION:

Recommending Approval

ORDINANCE NO. 20230725-010

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, AMENDING CHAPTER 13, MISCELLANEOUS OFFENSES, ARTICLE I. OF THE CODE OF ORDINANCES OF THE CITY OF ANGLETON; PROVIDING NOISE AND SOUND LEVEL REGULATIONS; REPEALING SEC. 13-9, USE OF AMPLIFYING DEVICES, CLAUSE; REPEALING SEC. 13-12, SILLY STRING, STINKBOMBS, SMOKEBOMBS, POPPERS OR NOISEMAKERS, CLAUSE; PROVIDING FOR SEVERABILITY; PROVIDING FOR REPEAL; PROVIDING FOR A PENALTY, AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, pursuant to Texas Local Government Code Chapter 51, the City Council of the City of Angleton, Texas, ("City") has the general authority to adopt and publish an ordinance or police regulation that is for the good government, peace or order of the municipality and is necessary or proper for the carrying out a power granted by law to the municipality; and

WHEREAS, pursuant to Texas Local Government Code Chapter 217, the City Council has the general authority to identify, prevent and abate public nuisances; and

WHEREAS, Chapter 13 Miscellaneous Offenses of Angleton's Code of Ordinances contains rules and regulations concerning certain miscellaneous offenses, including but not limited to such offenses concerning public nuisances relating to noise and sound levels;

WHEREAS, the City Council finds that such rules and regulations should be amended and revised and certain sections repealed to add an Article regarding noise and sound level regulations; and

WHEREAS, the City Council finds that such rules and regulations should be amended and revised to repeal Chapter 13 Miscellaneous Offenses, Article I In General, Sec. 13-9 – Use of Amplifying Devices; and

WHEREAS, the City Council finds that such rules and regulations should be amended and revised to repeal Chapter 13 Miscellaneous Offenses, Article I In General, Sec. 13-12 - Silly string, stinkbombs, smokebombs, poppers or noisemakers; and

WHEREAS, the City Council finds that such rules and regulations should be amended and revised to update the reference in Article VII – Mass Gatherings, Sec. 13-171 – Noise.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:

SECTION 1. The facts recited in the preamble in this Ordinance are hereby found by the City Council of the City of Angleton, Texas to be true and correct and are incorporated by reference herein and expressly made a part thereof, as if copied herein verbatim.

SECTION 2. Chapter 13 – Miscellaneous Offenses be amended, revised and a new Article - "Noise and Sound Level Regulations" be added to provide as follows:

ARTICLE VIII – NOISE AND SOUND LEVEL REGULATIONS

Sec. 13-201. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Daytime hours means the hours between 7:00 a.m. on one day and 10:00 p.m. the same day.

dB(A) means the intensity of a sound expressed in decibels read from a calibrated sound level meter utilizing the A-level weighting scale and the slow meter response, as specified by the American National Standards Institute.

Emergency means any occurrence or set of circumstances involving actual or imminent physical trauma or property damage or loss which demands immediate action.

Emergency work means any work performed for the purpose of preventing or alleviating the physical trauma or property damage threatened or caused by an emergency, or which is otherwise necessary to restore property to a safe condition following a fire, accident or natural disaster, or which is required to protect persons or property from exposure to danger, or which is required to restore public utilities.

Nighttime hours means the hours between 10:00 p.m. on one day and 7:00 a.m. the following day.

Nonresidential property means any real property within the limits of the city which is not included in the definition of "residential property" as defined in this section.

Property line means the line along the ground surface, and its vertical extension, which separates the real property owned, leased or occupied by one person from that owned, leased or occupied by another person and the imaginary line which represents the legal limits of property of any person who owns, leases or otherwise occupies an apartment, condominium, hotel or motel room, office or any other type of occupancy.

Public right-of-way means any street, avenue, boulevard, highway, road, thoroughfare, sidewalk, alley or any other property which is owned or controlled by a governmental entity.

Residential property means any real property developed and used for human habitation and which contains living facilities, including provisions for sleeping, eating, cooking and sanitation, unless such premises are actually occupied and used primarily for purposes other than human habitation.

Sound nuisance means any sound which either exceeds the maximum permitted sound levels specified in section 13-203 or, for the purposes of sections 13-205, 13-206, and 13-207, otherwise unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city.

Sec. 13-202. Loud noise prohibited.

It shall be unlawful for any person within the city to make, permit or continue, or cause to be made, permitted or continued, any loud, unnecessary or unusual noise or any noises reasonably

calculated to annoy, disturb, injure or endanger the comfort, repose, health, peace or safety of others within the limits of the city.

Sec. 13-203. Maximum permissible sound levels.

No person shall conduct, permit or allow any activity or sound source to produce a sound that is discernible beyond the property lines of the property on which the sound is being received that when measured, as provided in section 13-209, exceeds the applicable dB(A) level listed below for the property on which the sound is received:

(1) *Residential property.*

a. During either daytime or nighttime hours, 85 dB(A).

(2) *Nonresidential property.*

a. During either daytime or nighttime hours, 85 dB(A).

b. The dB(A) levels set forth in this section apply to the property where the sound is being received. Any sound that when measured at the property where the sound is being received exceeds the dB(A) levels set forth in this section is a violation of this chapter. Evidence that an activity or sound source produces a sound that exceeds the dB(A) levels specified in this section, when measured at the site where the sound is being produced, if available, shall be prima facie evidence of a sound nuisance which unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city in violation of this chapter.

Sec. 13-204. General prohibition.

(a) It shall be unlawful for any person to make, assist in making, permit or continue, cause to be made or continued, or permit the continuance of any sound which either exceeds the maximum permitted sound levels specified in section 13-203 or, for the purposes of sections 13-205, 13-206, 13-207, otherwise unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of others within the limits of the city.

(b) The acts enumerated in the following sections of this article, among others, are declared to be sound nuisances which are unreasonably loud, irritating, disturbing, or excessive sounds in violation of this article, but such enumeration shall not be deemed to be exclusive.

Sec. 13-205. Noisy vehicles generally.

The use of any automobile, motorcycle, or other vehicle so out of repair, so loaded, or in such a manner so as to create loud and unreasonable grating, grinding, rattling or any other loud and unreasonable sound is hereby prohibited and declared to be unlawful.

Sec. 13-206. Amplified sound from motor vehicle.

The production or reproduction of sound from amplification equipment contained in or mounted on a motor vehicle which unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of ordinary, reasonable persons of normal sensibilities and ordinary tastes is hereby prohibited and declared to be unlawful as a sound nuisance in violation of this article, regardless of whether the sound so created is within the permissible levels specified in section 13-203 when measured at or near 15 feet from the nearest external point on the vehicle, except as permitted by section 13-210.

Sec. 13-207. Noisy animals and birds.

The keeping of any animal or bird which causes or makes frequent or long and continued sound which unreasonably disturbs, injures or endangers the comfort, repose, health, peace or safety of ordinary, reasonable persons of normal sensibilities and ordinary tastes, habits and modes of living who reside in the vicinity thereof is hereby prohibited and declared to be unlawful as a sound nuisance in violation of this article, regardless of whether the sound so created by said animal or bird is within the permissible levels specified in section 13-203.

Sec. 13-208. Defenses.

The following defenses shall apply to any offense established in this article:

(1) The emission of any sound was for the purpose of alerting persons to the existence of an emergency, danger or attempted crime.

(2) The sound was produced by an authorized emergency vehicle.

(3) The sound was produced by emergency work necessary to restore public utilities, or to restore property to a safe condition, or to protect persons or property from imminent danger, following a fire, accident or natural disaster.

(4) The sound was generated:

   a. At a lawfully scheduled stadium event;

   b. By a parade and spectators and participants on the parade route during a permitted parade;

   c. By spectators and participants at a lawfully scheduled amphitheater event;

   d. By a pyrotechnic display that was inspected and approved by the fire marshal;

   e. By spectators and participants of any outdoor event, fun run, race, festival, fiesta, or concert which was sponsored, cosponsored, or permitted by the city; or

   f. Any other lawful activity which constitutes protected expression pursuant to the First Amendment of the United States Constitution.

(5) The sound was produced by the erection, excavation, construction, demolition, alteration, or repair work, or the permitting or causing thereof, of any building or other structure, or the operation or the permitting or causing the operation of any tools or equipment used in any such activity conducted between the hours of 7:00 a.m. and 8:00

p.m. and which activity did not produce a sound exceeding 85 dB(A) when measured from the nearest residential property where the sound is being received.

(6) The sound was produced by aircraft in flight or in operation at an airport, or railroad equipment in operation on railroad rights-of-way.

(7) The sound was produced by operating or permitting the operation of any mechanically powered saw, drill, sander, router, grinder, lawn or garden tool, lawnmower, or any other similar device used between the hours of 7:00 a.m. and 8:00 p.m. and which device did not produce a sound exceeding 85 dB(A) when measured from the nearest residential property where the sound is being received and was used for the maintenance or upkeep of the property on which it was used.

(8) The sound was generated as authorized under the terms of a permit issued under section 13-210.

(9) The sound was produced by the operation of any air conditioning unit which did not produce a sound exceeding 85 dB(A) on residential property or nonresidential property, when measured at or near 15 feet from the air conditioning unit producing the sound being measured.

(10) The sound was produced by church bells or church chimes when used as part of a religious observance or service during daytime hours and which did not exceed five continuous minutes in duration in any one-hour period.

Sec. 13-209. Method of sound measurement.

Whenever portions of this article prohibit sound over a certain decibel limit, measurement of such sound shall be made with a type 1 or type 2 calibrated sound level meter utilizing the A-weighting scale and the slow meter response as specified by the American National Standards Institute (ANSI S1.4-1984/85A). Noise levels shall be measured in decibels and A-weighted. The unit of measurement shall be designated as dB(A). Meters shall be maintained in calibration and good working order. Except as provided in sections 13-206 and 13-208(9), measurements shall be taken at or near the nearest property line of the property where the sound is being received.

Sec. 13-210. Permit required for use of outdoor sound amplification equipment.

(a) No person shall use or cause to be used any loudspeaker, loudspeaker system, sound amplifier or any other machine or device which produces, reproduces, or amplifies sound outside of buildings or other enclosed structures in a manner which exceeds the levels specified in section 13-203, when measured from the property where the sound is being received, without first obtaining a permit to do so. Such permit:

(1) May be obtained by making an application to the director of the city department so designated by the mayor.

(2) Requires payment of a fee as currently established or as hereafter adopted by resolution of the city council from time to time for the administrative costs of issuing the permit.

(3) Is valid for one 14-hour period between the hours of 8:00 a.m. and 10:00 p.m.

(4) Shall not be issued for the same location more than twice during any 30-day period.

(5) Shall not authorize, allow, or otherwise permit the production, reproduction, or amplification of sound which exceeds 85 dB(A) when measured from the nearest receiving property.

(b) The use of any loudspeaker, loudspeaker system, sound amplifier or any other similar machine or device which is permitted pursuant to this section is subject to the following regulations:

(1) The only sound permitted shall be either music or human speech, or both.

(2) The volume of the sound amplified pursuant to this section shall not exceed 85 dB(A) when measured from the nearest receiving property.

(3) No equipment permitted pursuant to this section shall be operated during the hours between 10:00 p.m. and 8:00 a.m.

(c) The application for the permit required to be filed pursuant to this section shall contain the following information:

(1) The date of the application and the date and hours for which the permit is requested.

(2) The name and address of the applicant.

(3) The name and address of the person who will have charge of the sound amplifying equipment.

(4) The purpose for which the sound equipment will be used.

(5) The address and a description of the location where the sound equipment will be used.

(6) A description of the type of sound amplifying equipment to be used.

Sec. 13-211. Penalties.

Any violation of any provision of this chapter or the codes herein adopted shall be an offense punishable pursuant to section 1-14. Each day or portion of a day during which an offense continues shall be a separate offense.

SECTION 3. Chapter 13 – Miscellaneous Offenses be amended to repeal the following provisions:

Sec. 13-9. - Use of amplifying devices.

(a) It shall be unlawful for any person to use or operate, or cause to be used or operated, any mechanical or electrical device, machine, apparatus or instrument to intensify or to amplify or to reproduce the human voice, or any other sound, on any public street within the corporate limits of the city.

(b) It shall be unlawful for any person to use or operate, or cause to be used or operated, any mechanical or electrical device, machine, apparatus or instrument to intensify or to amplify or to reproduce the human voice, or to produce, reproduce, intensify or amplify any other sound, in any building or on any premises in the city, whereby the sound therefrom is cast directly upon the public streets or places or

where such device is maintained and operated for advertising purposes or for the purpose of attracting the attention of the passing public, or which is so placed or operated that the sounds coming therefrom can be heard to the annoyance or inconvenience of travelers upon any street or public place, or of persons on neighboring premises.

(c) The purpose of any section is to prevent any noise in, near or on any public street which is reasonably calculated to disturb the peace and good order of the neighborhood or of persons owning, using or occupying property adjacent to such public streets.

(d) The city and/or an agent, agency or representative of the city shall be exempt from subsections (a) and (b) above when pursuing and/or sponsoring city and community wide functions and activities, including but not limited to, festivals, carnivals, pep rallies and whistle stops.

(e) That the city council may issue a variance to this provision if any person is conducting an outdoor event using amplifying devices.

Sec. 13-12. - Silly string, stinkbombs, smokebombs, poppers or noisemakers.

(a) It shall be unlawful for any person to offer for sale, sell or otherwise dispose of, distribute, discharge, fire or use any silly string, stink bombs, smoke bombs, poppers, other noisemakers or toy pressurized water guns at or during parades within the city limits of Angleton, Texas.

(b) It shall be unlawful for any person observing a parade or participating in a parade to throw any object or item while standing, walking, or riding in a float, vehicle or any other mode of transportation.

(c) Any person, firm, corporation, association, or other entity that violates this section shall be subject to a fine of not more than $500.00 for each violation, and each day that the violation continues will be considered a separate violation.

SECTION 4. Chapter 13 – Miscellaneous Offenses, Article VII – Mass Gatherings, Sec. 13-171. – Noise shall be amended and revised as follows:

"Sec. 13-171. - Noise.

All other regulations in chapter 13 of the City Code of Ordinances regarding noise and sound level regulations and use of amplifying devices and V.T.C.A., Penal Code § 42.01, regarding unreasonable noise in a public place, and 25 Texas Administrative Code § 265.3 shall apply to mass gatherings."

SECTION 5. Severability Clause**.** That if any provision, word, sentence, paragraph, clause, phrase or section of this Ordinance or its application to any person or circumstances is adjudged

or held invalid, void or unconstitutional, the invalid, void or unconstitutional portion shall not affect the validity of the remaining portions of this ordinance which shall remain in full force and effect.

SECTION 6. Repeal.

All ordinances or parts of ordinances inconsistent with the terms of this ordinance are hereby repeals; provided, however, that such repeal shall be only to the extent of such inconsistency and in all other respects this ordinance shall be cumulative of other ordinances regulating and governing the subject matter covered by this ordinance.

SECTION 7. Effective Date**.** This Ordinance shall be effective on the first day after the date of passage.

SECTION 8. It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551.

SECTION 9. All other Ordinances or parts of Ordinances inconsistent or in conflict herewith are, to the extent of such inconsistency or conflict, hereby repealed.

PASSED AND APPROVED THIS THE 25TH DAY OF JULY, 2023.

CITY OF ANGLETON, TEXAS

_____
John Wright
Mayor

ATTEST:

_____
Michelle Perez, TRMC
City Secretary

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25, 2023

PREPARED BY: Otis T. Spriggs, AICP, Development Services Director

AGENDA CONTENT: Discussion and possible actions on Austin Colony Section 1A Final Plat and the First Amendment to the Development Agreement.

AGENDA ITEM SECTION: Regular Agenda Item.

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This is a request from the owner/developer of the Austin Colony Development, PD No. 3, for Section 1A Final Plat. PD No. 3 was amended and adopted by City Council on January 10, 2023 under Ordinance No. 20230110-009. Due to a reconfiguration and reclassification of Austin Colony Blvd., the various sections were readjusted as result. Austin Colony Drive will serve access to the proposed 50 lots in Section 1A, with a tie in to CR 44, Anchor Road. The developer will upon approval of Section 1A, will be prepared to receive bids from contractors for the first fifty lots.

The developer was approved a quantity of 100 lots at the minimum 50 ft width, which equates to approximately 17.67% of the total of 562 lots approved in the PD. In Section 1A, 50- 50' lots are being proposed, with 4 blocks, and 5 reserves.

Development Agreement:

This First Amendment to Development Agreement between the City of Angleton, Texas and Tejas-Angleton Development, LLC, the developer, is attached and ready for final consideration of City Council, subject to any final additions or textual corrections.

City Staff, Legal, our bond counsel Bracewell, LLP, and the City Engineer have been in review and have coordinated necessary updates and modifications to refine the document as attached for Council consideration.

Key bullet points of areas amended and refined include:

- Project Amenities (Premium Fencing Plan (Exhibit D & J) and Park Land Fees-in-Lieu
- Land Plan (Exhibit B) Modifications and Lot Mix and Maximums & Summary per Subdivision Section as approved by Ordinance No. 20230110-009.
- Sewer and Water C.A.F. adjustments
- PID Bonds/Public Improvement Reimbursements as included in the SAP.

- Any adjustments to the Public Improvement of Tigner Street.

CITY OF ANGLETON PLANNING AND ZONING COMMISSION

Record of Proceedings

THURSDAY, JULY 06, 2023 AT 12:00 PM

DS Director Otis Spriggs presented Austin Colony Section 1A. Specifically, you're being asked this afternoon to consider this plat. We have forwarded Austin Colony to the city engineer, who has had an opportunity to review Section 1A, there were some conditions and comments that were initially given to us in which we've had an opportunity to bring those before the developer.

Most of the comments have now been cleared by the city engineer in which you've been copied on all of those, pending final approval of the construction drawings subject to satisfaction of ADD requirements for drainage and right of way connection approval by Brazoria County for CR44 tie-in.

DS Director Otis Spriggs added that this Plat would meet the requirements of the Planned District approval, which was recently approved by Council of the developer's request to make minor modifications to the traffic flow in terms of the designation of Austin Colony Blvd. as a local subdivision street. As a result, some of the lots had to be reconfigured or relocated.

Section 1A will comply with the lot mix approval with both 60 feet, and a few 50 feet lots, but it meets the thresholds that were originally approved by council as part of the documents mentioned.

So as part of this, we're recommending that the Planning Commission approve this, send it on the Council for final action with those stipulated conditions of the city engineer and also subject to the DA, which has to be approved by City Council.

Commission Member Townsend: So, if I am hearing you correctly, the development agreement has not been changed to reflect the changes that need to be made for?

DS Director Otis Spriggs stated that l egal and staff have the document draft under review of the PID, and requirements of Parkland, and we're coordinating to make sure it meets the threshold of the original DA. The DA draft is out, we're about to forward it back to the applicant and we hope to have it negotiated through Council soon.

Commission Action:

Commission Member Townsend made a motion that we recommend approval of the final plat for Section 1A of Austin Colony and forward to City Council for final consideration and action. Motion was seconded by Commission Member Shawn Hogan.

Roll Call Vote: Chair William Garwood- Aye, Commission Member Deborah Spoor- Aye, Commission Member Michelle Townsend- Aye, and Commission Member Shawn Hogan- Aye.

Action: (4-0 Vote): Windrose Green Section Austin Colony Section 1A Final Plat, was approved with conditions.

PLANNING STAFF & ENGINEERING REVIEW:

The City Engineer has reviewed the submitted plat and offers the following comments:

Sheet 1 of 2

1. Verify including temporary drainage easements wide enough to encompass location of temporary conditions which includes an outfall channel.
2. Show/label easement for area outside of Drainage Reserve "D".
3. Leave contour information on plat.
4. Need to verify other options for proposed routing of sanitary sewer main. The proposed main would be routed under future detention pond area.

Sheet 2 of 2

1. Verify this statement in Plat Note 3 with the recordation found in Document 2021067765. There appears to be other easements and interests that may be applicable to the proposed subdivision.

RECOMMENDATION:

1. The Planning and Zoning Commission and Staff recommends approval of the final plat for Section 1A of Austin Colony, PD#3, subject any outstanding comments being cleared and satisfied by the applicants.
2. Staff and Legal recommend approval of the First Amendment to Development Agreement between the City of Angleton, Texas and Tejas-Angleton Development, LLC, the developer.

BRAZORIA COUNTY, TEXAS
J.DE. J. VALDERAS SURVEY, A-380

RESERVE TABLE			
SYMBOL	DESCRIPTION	RESERVE USE	AREA
(A)	RESTRICTED RESERVE "A"	RESTRICTED LANDSCAPE USE	1.400 AC.
(B)	RESTRICTED RESERVE "B"	RESTRICTED TO UTILITY & DRAINAGE USE	7.037 AC.
(C)	RESTRICTED RESERVE "C"	RESTRICTED TO RESIDENTIAL USE	21.208 AC.
(D)	RESTRICTED RESERVE "D"	RESTRICTED TO UTILITY & DRAINAGE USE	0.055 AC.
(E)	RESTRICTED RESERVE "E"	RESTRICTED TO UTILITY & DRAINAGE USE	10.808 AC.

0' 40' 80' 160'
SCALE 1" = 80'

Line Table		
Line No.	Length	Direction
L1	99.66'	N42°49'04"E
L2	119.08'	N47°10'56"W
L3	207.81'	N42°49'04"E
L4	95.00'	N87°07'48"E
L5	60.00'	N02°52'12"W
L6	118.95'	S08°29'14"E

Line Table		
Line No.	Length	Direction
L7	60.00'	S02°52'12"E
L8	38.47'	N87°07'53"E
L9	67.56'	N48°52'03"E
L10	42.28'	S02°52'12"E
L11	50.00'	S02°52'12"E
L12	60.00'	S87°07'48"W
L13	7.28'	N02°52'12"W

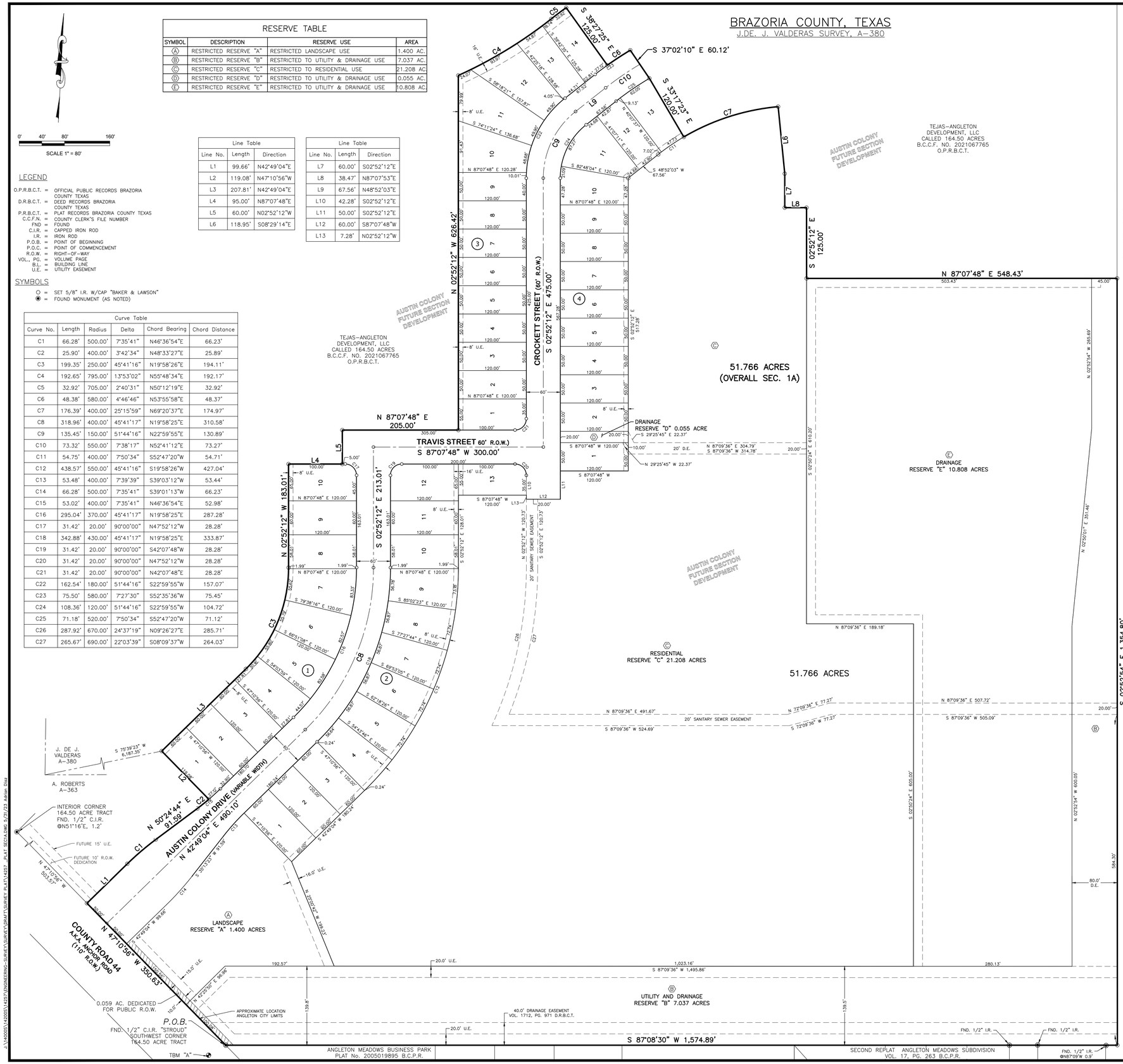
LEGEND

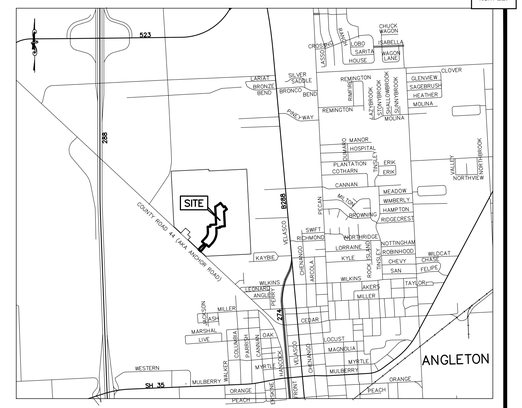
O.P.R.B.C.T. = OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY TEXAS
D.R.B.C.T. = DEED RECORDS BRAZORIA COUNTY TEXAS
P.R.B.C.T. = PLAT RECORDS BRAZORIA COUNTY TEXAS
C.C.F.N. = COUNTY CLERK'S FILE NUMBER
FND = FOUND
C.I.R. = CAPPED IRON ROD
I.R. = IRON ROD
P.O.B. = POINT OF BEGINNING
P.O.C. = POINT OF COMMENCEMENT
R.O.W. = RIGHT-OF-WAY
VOL., PG. = VOLUME PAGE
B.L. = BUILDING LINE
U.E. = UTILITY EASEMENT

SYMBOLS

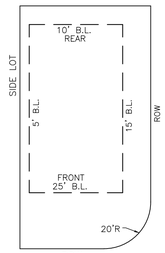
○ = SET 5/8" I.R. W/CAP "BAKER & LAWSON"
◉ = FOUND MONUMENT (AS NOTED)

Curve Table					
Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	66.28'	500.00'	7°35'41"	N46°36'54"E	66.23'
C2	25.90'	400.00'	3°42'34"	N48°33'27"E	25.89'
C3	199.35'	250.00'	45°41'16"	N19°58'26"E	194.11'
C4	192.65'	795.00'	13°53'02"	N55°48'34"E	192.17'
C5	32.92'	705.00'	2°40'31"	N50°12'19"E	32.92'
C6	48.38'	580.00'	4°46'46"	N53°55'58"E	48.37'
C7	176.39'	400.00'	25°15'59"	N69°20'37"E	174.97'
C8	318.96'	400.00'	45°41'17"	N19°58'25"E	310.58'
C9	135.45'	150.00'	51°44'16"	N22°59'55"E	130.89'
C10	73.32'	550.00'	7°38'17"	N52°41'12"E	73.27'
C11	54.75'	400.00'	7°50'34"	S52°47'20"W	54.71'
C12	438.57'	550.00'	45°41'16"	S19°58'26"W	427.04'
C13	53.48'	400.00'	7°39'39"	S39°03'12"W	53.44'
C14	66.28'	500.00'	7°35'41"	S39°01'13"W	66.23'
C15	53.02'	400.00'	7°35'41"	N46°36'54"E	52.98'
C16	295.04'	370.00'	45°41'17"	N19°58'25"E	287.28'
C17	31.42'	20.00'	90°00'00"	N47°52'12"W	28.28'
C18	342.88'	430.00'	45°41'17"	N19°58'25"E	333.87'
C19	31.42'	20.00'	90°00'00"	S42°07'48"W	28.28'
C20	31.42'	20.00'	90°00'00"	N47°52'12"W	28.28'
C21	31.42'	20.00'	90°00'00"	N42°07'48"E	28.28'
C22	162.54'	180.00'	51°44'16"	S22°59'55"W	157.07'
C23	75.50'	580.00'	7°27'30"	S52°35'36"W	75.45'
C24	108.36'	120.00'	51°44'16"	S22°59'55"W	104.72'
C25	71.18'	520.00'	7°50'34"	S52°47'20"W	71.12'
C26	287.92'	670.00'	24°37'19"	N09°26'27"E	285.71'
C27	265.67'	690.00'	22°03'39"	S08°09'37"W	264.03'

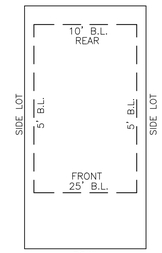




VICINITY MAP



TYPICAL SIDE LOT



TYPICAL INTERIOR LOT

BLOCK 1 SECTION 1A	
PARCEL TABLE	
LOT NO.	AREA S.F.
1	7,192
2	7,200
3	7,200
4	7,821
5	8,302
6	8,302
7	8,337
8	7,200
9	7,200
10	7,714

BLOCK 2 SECTION 1A	
PARCEL TABLE	
LOT NO.	AREA S.F.
1	7,200
2	7,200
3	7,200
4	7,774
5	7,776
6	7,776
7	7,776
8	7,776
9	7,797
10	7,200
11	7,200
12	7,714
13	6,514

BLOCK 3 SECTION 1A	
PARCEL TABLE	
LOT NO.	AREA S.F.
1	6,514
2	6,000
3	6,000
4	6,000
5	6,000
6	6,000
7	6,000
8	6,000
9	6,001
10	8,732
11	11,020
12	9,689
13	6,550
14	6,414

BLOCK 4 SECTION 1A	
PARCEL TABLE	
LOT NO.	AREA S.F.
1	6,000
2	6,000
3	6,000
4	6,000
5	6,000
6	6,000
7	6,000
8	6,000
9	6,000
10	6,939
11	8,197
12	6,115
13	6,587

OWNER:
WAYNE L. "SANDY" REA, II
TEJAS VIEJO LAND COMPANY
5454 NEWCASTLE DRIVE
UNIT 1101
HOUSTON, TX 77081

SHEET 1 OF 2

FINAL PLAT
AUSTIN COLONY SECTION 1A
A 51.766 ACRES
50 LOTS 4 BLOCKS 5 RESERVES SUBDIVISION

BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN C.C.F.N. 2021067765 OF THE O.P.R.B.C.T.

LOCATED IN THE J. DE J. VALDERAS SURVEY ABSTRACT NO. 380 CITY OF ANGLETON BRAZORIA COUNTY, TEXAS

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
4005 TECHNOLOGY DR., SUITE 1530
ANGLETON, TEXAS 77515
OFFICE: (979) 849-6681
TBPELS No. 10052500 REG. NO. F-825

PROJECT NO: 14257	SCALE: 1" = 80'	DRAWN BY: AD
DRAWING NO: 14257 _PLAT SEC1A	DATE: 3/13/2023	CHECKED BY: DH

PLANNING AND ZONING COMMISSION AND CITY COUNCIL:

APPROVED THIS _____ DAY OF _____, 20___, BY THE PLANNING AND ZONING COMMISSION, CITY OF ANGLETON, TEXAS.

_____
BILL GARWOOD, CHAIRMAN, PLANNING AND ZONING COMMISSION

_____
CITY SECRETARY

APPROVED THIS _____ DAY OF _____, 20___, BY THE CITY COUNCIL, CITY OF ANGLETON, TEXAS.

_____
JASON PEREZ, MAYOR

_____
CITY SECRETARY

STATE OF TEXAS §
COUNTY OF BRAZORIA §

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THE _____ DAY OF _____, 20___, BY CITY SECRETARY, CITY OF ANGLETON, ON BEHALF OF THE CITY.

_____
NOTARY PUBLIC STATE OF TEXAS

_____
MY COMMISSION EXPIRES

DRAINAGE AND DETENTION EASEMENT

THIS PLAT IS HEREBY ADOPTED BY THE OWNERS AND APPROVED BY THE CITY OF ANGLETON (CALLED "CITY") SUBJECT TO THE FOLLOWING CONDITIONS WHICH SHALL BE BINDING UPON THE OWNERS, THEIR HEIRS, GRANTEES AND SUCCESSORS: THE PORTION SHOWN ON THE PLAT IS CALLED "DRAINAGE AND DETENTION EASEMENT." THE DRAINAGE AND DETENTION EASEMENT WITHIN THE LIMITS OF THIS ADDITION, WILL REMAIN OPEN AT ALL TIMES AND WILL BE MAINTAINED IN A SAFE AND SANITARY CONDITION BY THE OWNERS OF THE LOT OR LOTS THAT ARE TRAVERSED BY OR ADJACENT TO THE DRAINAGE AND DETENTION EASEMENT. THE CITY WILL NOT BE RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF SAID EASEMENT OR FOR ANY DAMAGE TO PRIVATE PROPERTY OR PERSON THAT RESULTS FROM CONDITIONS IN THE EASEMENT, OR FOR THE CONTROL OF EROSION. NO OBSTRUCTION TO THE NATURAL FLOW OF STORMWATER RUN-OFF SHALL BE PERMITTED BY CONSTRUCTION OF ANY TYPE OF BUILDING, FENCE, OR ANY OTHER STRUCTURE WITHIN THE DRAINAGE AND DETENTION EASEMENT AS HEREINABOVE DEFINED, UNLESS APPROVED BY THE CITY ENGINEER. PROVIDED, HOWEVER, IT IS UNDERSTOOD THAT IN THE EVENT IT BECOMES NECESSARY FOR THE CITY TO ERECT OR CONSIDER ERECTING ANY TYPE OF DRAINAGE STRUCTURE IN ORDER TO IMPROVE THE STORM DRAINAGE THAT MAY BE OCCASIONED BY THE CITY SHALL HAVE THE RIGHT TO ENTER UPON THE DRAINAGE AND DETENTION EASEMENT AT ANY POINT, OR POINTS, TO INVESTIGATE, SURVEY OR TO ERECT, CONSTRUCT AND MAINTAIN ANY DRAINAGE FACILITY DEEMED NECESSARY FOR DRAINAGE PURPOSES. EACH PROPERTY OWNER SHALL KEEP THE DRAINAGE AND DETENTION EASEMENT CLEAN AND FREE OF DEBRIS, SILT, AND ANY SUBSTANCE WHICH WOULD RESULT IN UNSANITARY CONDITIONS OR OBSTRUCT THE FLOW OF WATER, AND THE CITY SHALL HAVE THE RIGHT OF INGRESS AND EGRESS FOR THE PURPOSE OF INSPECTION AND SUPERVISION OF MAINTENANCE WORK BY THE PROPERTY OWNER TO ALLEVIATE ANY UNDESIRABLE CONDITIONS WHICH MAY OCCUR. THE NATURAL DRAINAGE THROUGH THE DRAINAGE AND DETENTION EASEMENT IS SUBJECT TO STORM WATER OVERFLOW AND NATURAL BANK EROSION TO AN EXTENT WHICH CANNOT BE DEFINITELY DEFINED. THE CITY SHALL NOT BE HELD LIABLE FOR ANY DAMAGES OF ANY NATURE RESULTING FROM THE OCCURRENCE OF THESE NATURAL PHENOMENA, OR RESULTING FROM THE FAILURE OF ANY STRUCTURE, OR STRUCTURES, WITHIN THE EASEMENT.

ANGLETON DRAINAGE DISTRICT

ACCEPTED THIS THE _____ DAY OF _____, 20___, BY THE ANGLETON DRAINAGE DISTRICT.

THE BOARD OF SUPERVISORS OF THE ANGLETON DRAINAGE DISTRICT DOES NOT WARRANT, REPRESENT OR GUARANTEE:

1. THAT DRAINAGE FACILITIES OUTSIDE THE BOUNDARIES OF THE SUBDIVISION PLAT ARE AVAILABLE TO RECEIVE RUNOFF FROM THE FACILITIES DESCRIBED IN THIS PLAT.

2. THAT DRAINAGE FACILITIES DESCRIBED IN THIS PLAT ARE ADEQUATE FOR RAINFALL IN EXCESS OF ANGLETON DRAINAGE DISTRICT MINIMUM REQUIREMENTS.

3. THAT BUILDING ELEVATION REQUIREMENTS HAVE BEEN DETERMINED BY THE ANGLETON DRAINAGE DISTRICT.

4. THAT THE DISTRICT ASSUMES ANY RESPONSIBILITY FOR CONSTRUCTION, OPERATION OR MAINTENANCE OF SUBDIVISION DRAINAGE FACILITIES.

THE DISTRICT'S REVIEW IS BASED SOLELY ON THE DOCUMENTATION SUBMITTED FOR REVIEW, AND ON THE RELIANCE ON THE REPORT SUBMITTED BY THE TEXAS REGISTERED PROFESSIONAL ENGINEER.

THE DISTRICT'S REVIEW IS NOT INTENDED NOR WILL SERVE AS A SUBSTITUTION OF THE OVERALL RESPONSIBILITY AND/OR DECISION MAKING POWER OF THE PARTY SUBMITTING THE PLAT OR PLAN HEREIN, THEIR OR ITS PRINCIPALS OR AGENTS.

_____ _____
CHAIRMAN, BOARD OF SUPERVISORS BOARD MEMBER

_____
BOARD MEMBER

OWNER'S ACKNOWLEDGEMENT:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: THAT WAYNE L. REA II, OF TEJAS VIEJO LAND COMPANY, ACTING HEREIN BY AND THROUGH ITS DULY AUTHORIZED OFFICERS, DOES HEREBY ADOPT THIS PLAT DESIGNATING THE HEREINABOVE DESCRIBED PROPERTY AS AUSTIN COLONY SECTION 1A, A SUBDIVISION IN THE JURISDICTION OF THE CITY OF ANGLETON, TEXAS, AND DOES HEREBY DEDICATE, IN FEE SIMPLE, TO THE PUBLIC USE FOREVER, THE STREETS, ALLEYS AND PUBLIC PARKLAND SHOWN THEREON. THE STREETS, ALLEYS AND PARKLAND ARE DEDICATED FOR STREET PURPOSES. THE EASEMENTS AND PUBLIC USE AREAS, AS SHOWN, ARE DEDICATED FOR THE PUBLIC USE FOREVER, FOR THE PURPOSES INDICATED ON THIS PLAT. NO BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS OR GROWTHS SHALL BE CONSTRUCTED OR PLACED UPON, OVER, OR ACROSS THE EASEMENTS AS SHOWN, EXCEPT THAT LANDSCAPE IMPROVEMENTS MAY BE PLACED IN LANDSCAPE EASEMENTS, IF APPROVED BY THE CITY OF ANGLETON. IN ADDITION, UTILITY EASEMENTS MAY ALSO BE USED FOR THE MUTUAL USE AND ACCOMMODATION OF ALL PUBLIC UTILITIES DESIRING TO USE OR USING THE SAME UNLESS THE EASEMENT LIMITS THE USE TO PARTICULAR UTILITIES, SAID USE BY PUBLIC UTILITIES BEING SUBORDINATE TO THE PUBLIC'S AND CITY OF ANGLETON'S USE THEREOF. THE CITY OF ANGLETON AND PUBLIC UTILITY ENTITIES SHALL HAVE THE RIGHT TO REMOVE AND KEEP REMOVED ALL OR PARTS OF ANY BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS OR GROWTHS WHICH MAY IN ANY WAY ENDANGER OR INTERFERE WITH THE CONSTRUCTION, MAINTENANCE, OR EFFICIENCY OF THEIR RESPECTIVE SYSTEMS IN SAID EASEMENTS. THE CITY OF ANGLETON AND PUBLIC UTILITY ENTITIES SHALL AT ALL TIMES HAVE THE FULL RIGHT OF INGRESS AND EGRESS TO OR FROM THEIR RESPECTIVE EASEMENTS FOR THE PURPOSE OF CONSTRUCTING, RECONSTRUCTING, INSPECTING, PATROLLING, MAINTAINING, READING METERS, AND ADDING TO OR REMOVING ALL OR PARTS OF THEIR RESPECTIVE SYSTEMS WITHOUT THE NECESSITY AT ANY TIME OF PROCURING PERMISSION FROM ANYONE.

OWNER'S ACKNOWLEDGEMENT:

STATE OF TEXAS §
COUNTY OF BRAZORIA §

THE OWNER OF LAND SHOWN ON THIS PLAT, IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, DEDICATES TO THE USE OF THE PUBLIC FOREVER ALL STREETS, ALLEYS, PARKS, WATERCOURSES, DRAINS, EASEMENTS AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED.

_____
WAYNE L. REA II
TEJAS VIEJO LAND COMPANY

STATE OF TEXAS §
COUNTY OF BRAZORIA §

BEFORE ME THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED WAYNE L. REA II, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT THE SAME WAS THE ACTING OWNER FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE _____ DAY OF _____, 20___.

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

_____
MY COMMISSION EXPIRES

FIELD NOTES FOR 51.766 ACRE

DESCRIPTION OF A 51.766 ACRE TRACT OF LAND, LOCATED WITHIN THE J. DE J. VALDERAS SURVEY, ABSTRACT NO. 380 BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN COUNTY CLERK'S FILE NO. (C.C.F.N.) 2021067765 OF THE OFFICIAL PUBLIC RECORDS OF BRAZORIA COUNTY TEXAS (O.P.R.B.C.T.), REFERRED TO HEREINAFTER AT THE ABOVE REFERENCED TRACT OF LAND, SAID 51.766 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, (NAD83) SOUTH CENTRAL ZONE, PER GPS OBSERVATIONS):

BEGINNING AT A 1/2-INCH CAPPED IRON ROD, STAMPED "STROUD", FOUND FOR THE SOUTHWEST CORNER OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING LOCATED ON THE NORTHEAST RIGHT-OF-WAY (R.O.W.) LINE OF COUNTY ROAD 44 (ALSO KNOWN AS ANCHOR ROAD, 110' WIDE);

THENCE NORTH 47°10'56" WEST, ALONG THE SOUTHWEST LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE NORTHEAST LINE OF SAID COUNTY ROAD 44 R.O.W., A DISTANCE OF 350.63 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR THE SOUTHWEST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE IN A GENERAL NORTHEASTERLY DIRECTION ALONG THE NORTHWEST LINE OF THE AUSTIN COLONY SECTION 1A, THE FOLLOWING COURSES AND DISTANCES:

NORTH 42°49'04" EAST, A DISTANCE OF 99.66 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE RIGHT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 66.28 FEET, SAID CURVE HAVING A RADIUS OF 500.00 FEET, A CENTRAL ANGLE OF 07°35'41", A CHORD WHICH BEARS NORTH 46°36'54" EAST, A DISTANCE OF 66.23 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 50°24'44" EAST, A DISTANCE OF 91.59 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 25.90 FEET, SAID CURVE HAVING A RADIUS OF 400.00, A CENTRAL ANGLE OF 03°42'34", A CHORD WHICH BEARS NORTH 48°33'27" EAST, A DISTANCE OF 25.89 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 47°10'56" WEST, A DISTANCE OF 119.08 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 42°49'04" EAST, A DISTANCE OF 207.81 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 199.35 FEET, SAID CURVE HAVING A RADIUS OF 250.00 FEET, A CENTRAL ANGLE OF 45°41'16", A CHORD WHICH BEARS NORTH 19°58'26" EAST, A DISTANCE OF 194.11 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 183.01 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 95.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 60.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 205.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 626.42 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 192.65 FEET, SAID CURVE HAVING A RADIUS OF 795.00 FEET, A CENTRAL ANGLE OF 13°53'02", A CHORD WHICH BEARS NORTH 55°48'34" EAST, A DISTANCE OF 192.17 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE OF REVERSE CURVATURE TO THE TO THE RIGHT, HAVING A RADIUS OF 705.00 FEET;

THENCE NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 32.92 FEET, SAID CURVE HAVING A RADIUS OF 705.00 FEET, A CENTRAL ANGLE OF 02°40'31", A CHORD WHICH BEARS NORTH 50°12'19" EAST, A DISTANCE OF 32.92 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR THE MOST NORTHERLY CORNER OF AUSTIN COLONY SECTION 1A;

THENCE IN A GENERAL SOUTHEASTERLY DIRECTION ALONG THE NORTHEAST LINE OF THE AUSTIN COLONY SECTION 1A, THE FOLLOWING COURSES AND DISTANCES:

SOUTH 38°27'25" EAST, A DISTANCE OF 125.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 580.00 FEET;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 48.38, SAID CURVE HAVING A RADIUS OF 580.00 FEET, A CENTRAL ANGLE OF 04°46'46", A CHORD WHICH BEARS NORTH 53°55'58" EAST, A DISTANCE OF 48.37 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

SOUTH 37°02'10" EAST, A DISTANCE OF 60.12 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 33°17'23" EAST, A DISTANCE OF 120.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR AN INTERIOR NORTHEAST CORNER OF SAID AUSTIN COLONY SECTION 1A, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 176.39 FEET, SAID CURVE HAVING A RADIUS OF 400.00 FEET, A CENTRAL ANGLE OF 25°15'59", A CHORD WHICH BEARS NORTH 69°20'37" EAST, A DISTANCE OF 174.97 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

SOUTH 08°29'14" EAST, A DISTANCE OF 118.95 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 02°52'12" EAST, A DISTANCE OF 60.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'53" EAST, A DISTANCE OF 38.47 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 02°52'12" EAST, A DISTANCE OF 125.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

THENCE NORTH 87°07'48" EAST, CONTINUING ALONG THE NORTHEAST LINE OF SAID AUSTIN COLONY SEC 1A, A DISTANCE OF 548.43 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET IN THE WEST LINE R.O.W. LINE OF KARANKAWA ROAD (60' WIDE UNIMPROVED ROAD) FOR THE NORTHEAST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE SOUTH 02°52'54" EAST, ALONG THE EAST LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE WEST R.O.W. LINE OF SAID KARANKAWA ROAD AND THE EAST LINE OF SAID AUSTIN COLONY SEC 1A, A DISTANCE OF 1,354.80 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR THE SOUTHEAST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE SOUTH 87°08'30" WEST, CONTINUING ALONG THE SOUTH LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE SOUTH LINE OF SAID AUSTIN COLONY SECTION 1A, A DISTANCE OF 1,547.89 FEET TO THE POINT OF BEGINNING OF THE ABOVE REFERENCED TRACT OF LAND, CONTAINING 51.766 ACRE OF LAND, MORE OR LESS.

NOTES:

1. THE PURPOSE OF THIS PLAT IS TO PLAT THE 51.766 ACRE TRACT INTO A 50 LOT 4 BLOCK 5 RESERVE SUBDIVISION.

2. ALL BEARINGS AND DISTANCES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD-83, U.S. SURVEY FEET.

3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE, WITH REGARD TO ANY RECORDED EASEMENTS, RIGHTS-OF-WAY OR SETBACKS AFFECTING THE SURVEYED PROPERTY. NO ADDITIONAL RESEARCH REGARDING THE EXISTENCE OF EASEMENTS, RESTRICTIONS, OR OTHER MATTERS OF RECORD HAS BEEN PERFORMED BY THE SURVEYOR.

4. FLOOD ZONE STATEMENT: THE SURVEYOR NAMED HEREON HAS EXAMINED THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY; MAP NUMBER 48039C0440K, WITH EFFECTIVE DATE OF DECEMBER 30, 2020, AND THAT MAP INDICATES THAT THE PROPERTY SURVEYED IS WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD-PLAIN. WARNING: THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR STRUCTURES WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, AND WILL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

5. SITE BENCHMARK:
TBM "A" 5/8-INCH IRON ROD SET ±40' FROM THE SOUTHWEST CORNER OF THE SUBJECT TRACT, ON THE SOUTHWEST HIGH BANK OF THE DITCH.
ELEVATION= 26.90' NAVD1988 (BASED ON GPS OBSERVATION, GEOID 18)

6. THE POSSIBLE EXISTENCE OF UNDERGROUND FACILITIES OR SUBSURFACE CONDITIONS OTHER THAN THOSE SHOWN MAY AFFECT THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHOWN HEREON.

7. NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.

8. NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.

9. NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.

10. NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.

11. NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.

12. IT SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION FOR THE MAINTENANCE OF THE RESERVES LOCATED ON THIS PLAT.

13. THE PLATTED PROPERTY LIES WITHIN A TRACT OF LAND (164.5 ACRE TRACT) ANNEXED BY THE CITY OF ANGLETON ON MARCH 9, 2021, CITY ORDINANCE NO. 20210309016

STATE OF TEXAS §
COUNTY OF BRAZORIA §

KNOWN ALL MEN BY THESE PRESENTS:

THAT I, DARREL HEIDRICH, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY SUPERVISION.

PRELIMINARY
NOT TO BE RECORDED FOR ANY PURPOSE
DATE: 02/28/23

_____
DARREL HEIDRICH
REGISTERED PROFESSIONAL LAND SURVEYOR
LAND SURVEYOR NO. 5378

STATE OF TEXAS §
COUNTY OF BRAZORIA §

KNOW ALL MEN BY THESE PRESENTS:
THAT I, DOUGLAS B. ROESLER, DO HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN PROVIDED IN THIS PLAT, TO THE BEST OF MY KNOWLEDGE, THIS PLAT CONFORMS TO ALL REQUIREMENTS OF THE ANGLETON LDC, EXCEPT FOR ANY VARIANCES THAT WERE EXPRESSLY GRANTED BY THE CITY COUNCIL.

PRELIMINARY
NOT TO BE RECORDED FOR ANY PURPOSE
DATE: 02/28/23

SIGNED: _____
DOUGLAS B. ROESLER DATE
PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 56739

SHEET 2 OF 2

FINAL PLAT
AUSTIN COLONY SECTION 1A
A 51.766 ACRE
50 LOTS 4 BLOCKS 5 RESERVES SUBDIVISION

BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN C.C.F.N. 2021067765 OF THE O.P.R.B.C.T.

LOCATED IN THE J. DE J. VALDERAS SURVEY ABSTRACT NO. 380 CITY OF ANGLETON BRAZORIA COUNTY, TEXAS

OWNER:
WAYNE L. "SANDY" REA, II
TEJAS VIEJO LAND COMPANY
5454 NEWCASTLE DRIVE
UNIT 1101
HOUSTON, TX 77081

B&L BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
4005 TECHNOLOGY DR., SUITE 1530
ANGLETON, TEXAS 77515
OFFICE: (979) 849-6681
TBPELS No. 10052500 REG. NO. F-825

PROJECT NO: 14257	SCALE: 1" = 80'	DRAWN BY: AD
DRAWING NO: 14257 _PLAT SEC1A	DATE: 3/13/2023	CHECKED BY: DH

July 20, 2023

Mr. Otis Spriggs
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Austin Colony Section 1a Final Plat – 2nd Submittal Review
Angleton, Texas
HDR Job No. 10361761

Dear Mr. Spriggs:

HDR Engineering, Inc. (HDR) has reviewed the final plat for the above referenced subdivision and offers the following comments:

General

1. Any outstanding comments in the subdivision improvement plans and associated documents shall be resolved prior to construction.

HDR takes no objection to the proposed Austin Colony Section 1a Final Plat with the exceptions noted. Please note, this does not necessarily mean that the entire drawings, including all supporting data and calculations, has been completely checked and verified; however, the drawings and supporting data are signed, dated, and sealed by a Registered Professional Land Surveyor licensed to practice in the State of Texas, which therefore conveys the surveyor's responsibility and accountability.

If you have any questions, please feel free to contact us at our office (713)-622-9264.

Sincerely,

HDR Engineering, Inc.

Javier Vasquez, P.E., CFM
Civil Engineer

cc: Files (10361761)

Attachments

hdrinc.com 4828 Loop Central Drive, Suite 800, Houston, TX 77081-2220
T (713) 622-9264 F (713) 622-9265
Texas Registered Engineering Firm F-754

BRAZORIA COUNTY, TEXAS

J. DE. J. VALDERAS SURVEY, A-380

RESERVE TABLE			
SYMBOL	DESCRIPTION	RESERVE USE	AREA
A	RESTRICTED RESERVE "A"	RESTRICTED LANDSCAPE USE	1.365 AC.
B	RESTRICTED RESERVE "B"	RESTRICTED TO UTILITY & DRAINAGE USE	7.037 AC.
C	RESTRICTED RESERVE "C"	RESTRICTED TO RESIDENTIAL USE	21.208 AC.
D	RESTRICTED RESERVE "D"	RESTRICTED TO UTILITY & DRAINAGE USE	0.083 AC.
E	RESTRICTED RESERVE "E"	RESTRICTED TO UTILITY & DRAINAGE USE	10.808 AC.

0' 40' 80' 160'

SCALE 1" = 80'

Line Table

Line No.	Length	Direction
L1	99.66'	N42°49'04"E
L2	119.08'	N47°10'56"W
L3	207.81'	N42°49'04"E
L4	95.00'	N87°07'48"E
L5	60.00'	N02°52'12"W
L6	118.95'	S08°29'14"E

Line Table

Line No.	Length	Direction
L7	60.00'	S03°02'49"E
L8	38.35'	N87°07'48"E
L9	67.56'	N48°52'03"E
L10	42.28'	S02°52'12"E
L11	50.00'	S02°52'12"E
L12	60.00'	S87°07'48"W
L13	7.28'	N02°52'12"W

LEGEND

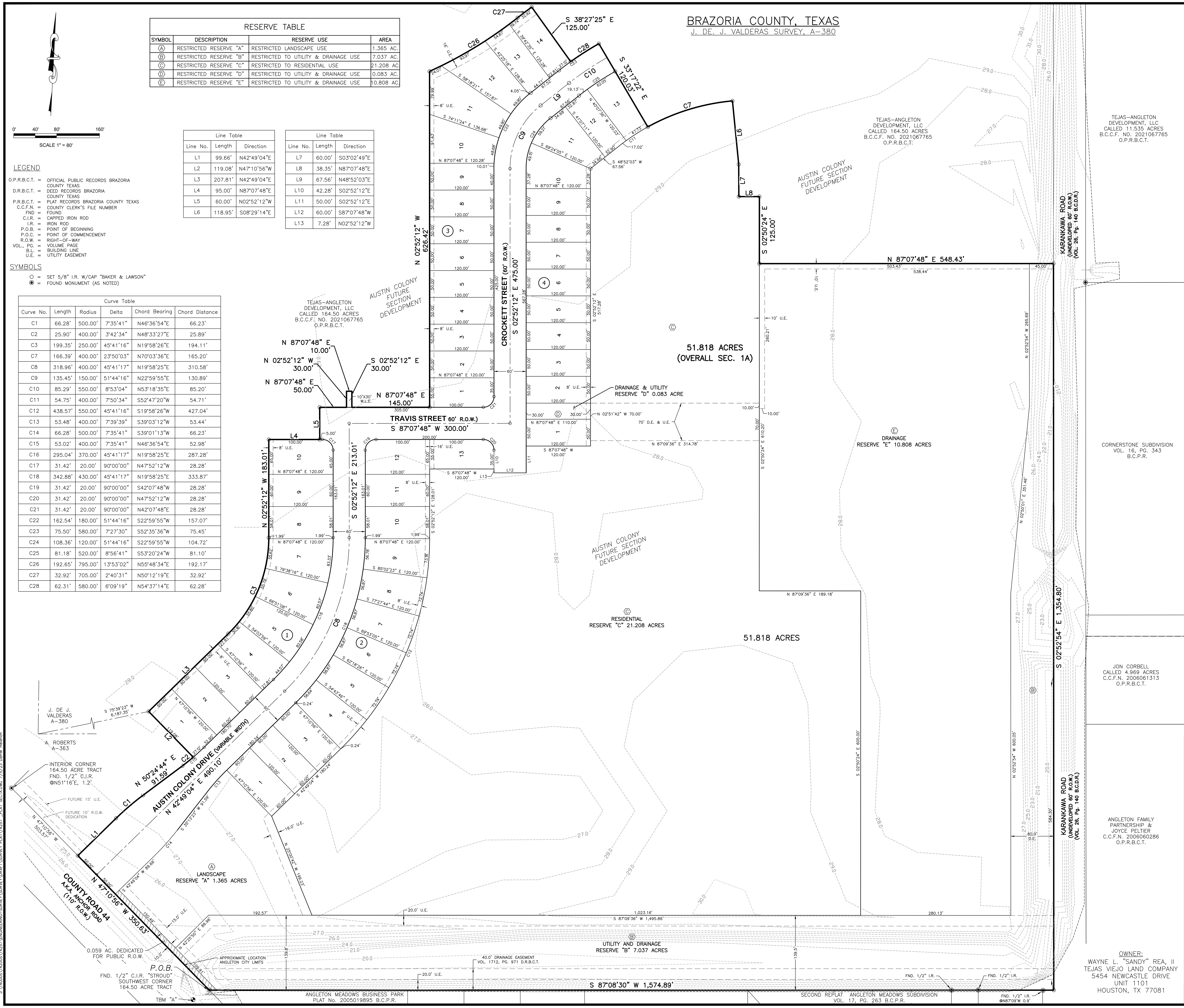
O.P.R.B.C.T. = OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY TEXAS
D.R.B.C.T. = DEED RECORDS BRAZORIA COUNTY TEXAS
P.R.B.C.T. = PLAT RECORDS BRAZORIA COUNTY TEXAS
C.C.F.N. = COUNTY CLERK'S FILE NUMBER
FND = FOUND
C.I.R. = CAPPED IRON ROD
I.R. = IRON ROD
P.O.B. = POINT OF BEGINNING
P.O.C. = POINT OF COMMENCEMENT
R.O.W. = RIGHT-OF-WAY
VOL., PG. = VOLUME PAGE
B.L. = BUILDING LINE
U.E. = UTILITY EASEMENT

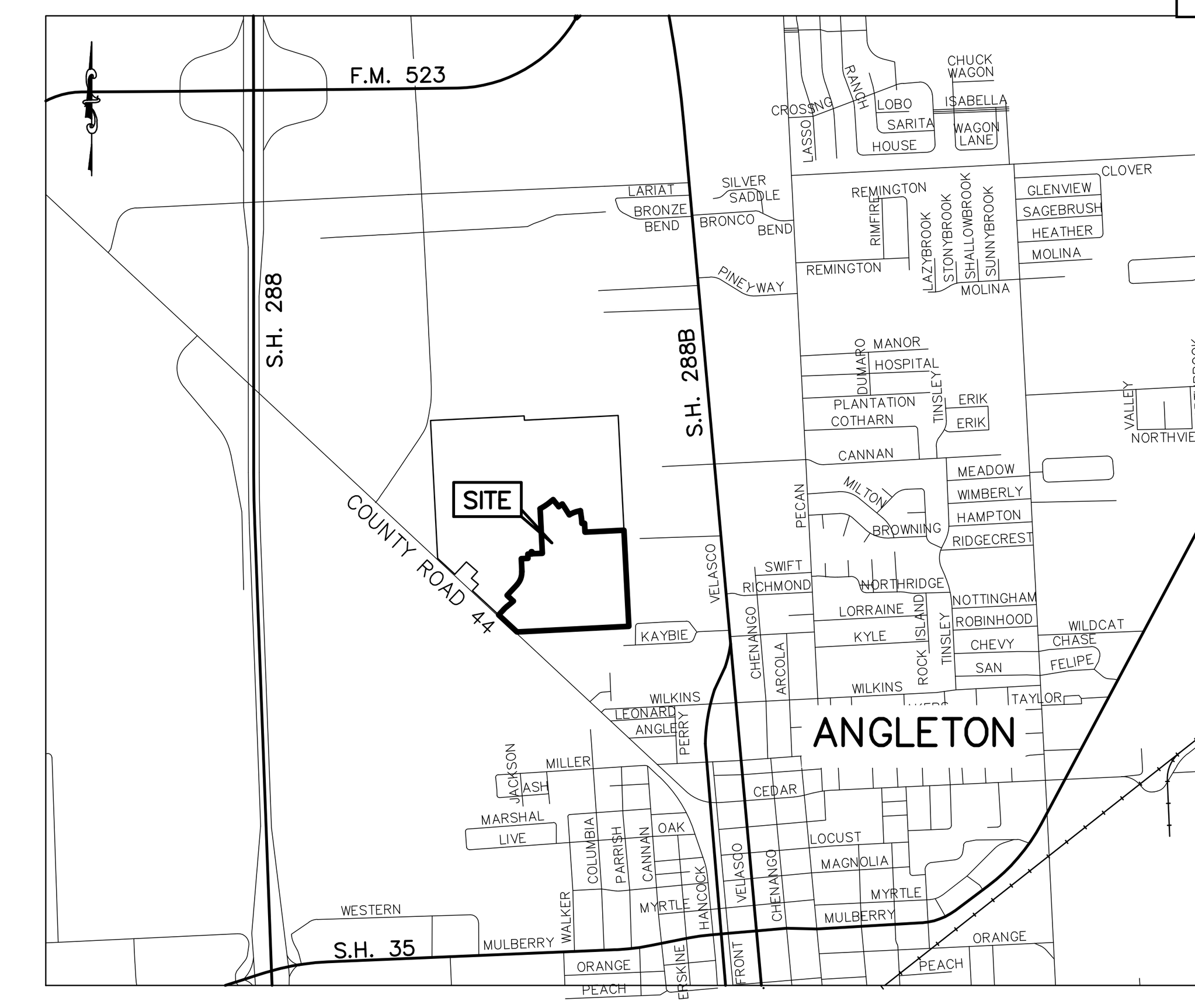
SYMBOLS

○ = SET 5/8" I.R. W/CAP "BAKER & LAWSON"
◉ = FOUND MONUMENT (AS NOTED)

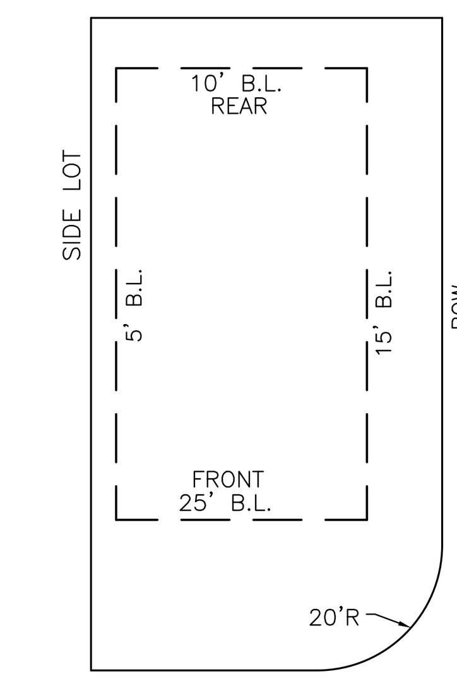
Curve Table

Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	66.28'	500.00'	7°35'41"	N46°36'54"E	66.23'
C2	25.90'	400.00'	3°42'34"	N48°33'27"E	25.89'
C3	199.35'	250.00'	45°41'16"	N19°58'26"E	194.11'
C7	166.39'	400.00'	23°50'03"	N70°03'36"E	165.20'
C8	318.96'	400.00'	45°41'17"	N19°58'25"E	310.58'
C9	135.45'	150.00'	51°44'16"	N22°59'55"E	130.89'
C10	85.29'	550.00'	8°53'04"	N53°18'35"E	85.20'
C11	54.75'	400.00'	7°50'34"	S52°47'20"W	54.71'
C12	438.57'	550.00'	45°41'16"	S19°58'26"W	427.04'
C13	53.48'	400.00'	7°39'39"	S39°03'12"W	53.44'
C14	66.28'	500.00'	7°35'41"	S39°01'13"W	66.23'
C15	53.02'	400.00'	7°35'41"	N46°36'54"E	52.98'
C16	295.04'	370.00'	45°41'17"	N19°58'25"E	287.28'
C17	31.42'	20.00'	90°00'00"	N47°52'12"W	28.28'
C18	342.88'	430.00'	45°41'17"	N19°58'25"E	333.87'
C19	31.42'	20.00'	90°00'00"	S42°07'48"W	28.28'
C20	31.42'	20.00'	90°00'00"	N47°52'12"W	28.28'
C21	31.42'	20.00'	90°00'00"	N42°07'48"E	28.28'
C22	162.54'	180.00'	51°44'16"	S22°59'55"W	157.07'
C23	75.50'	580.00'	7°27'30"	S52°35'36"W	75.45'
C24	108.36'	120.00'	51°44'16"	S22°59'55"W	104.72'
C25	81.18'	520.00'	8°56'41"	S53°20'24"W	81.10'
C26	192.65'	795.00'	13°53'02"	N55°48'34"E	192.17'
C27	32.92'	705.00'	2°40'31"	N50°12'19"E	32.92'
C28	62.31'	580.00'	6°09'19"	N54°37'14"E	62.28'

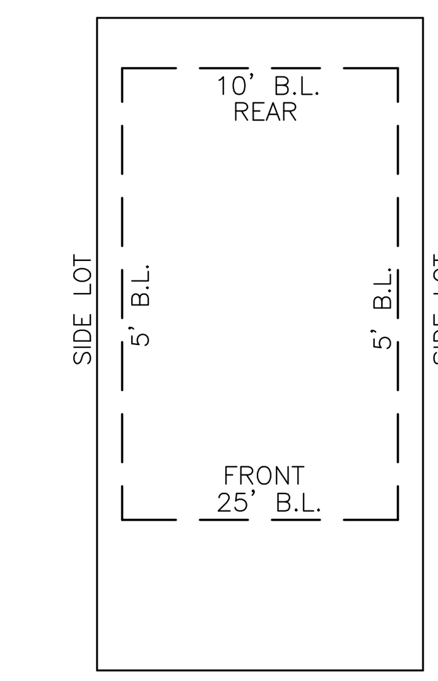




VICINITY MAP



TYPICAL SIDE LOT



TYPICAL INTERIOR LOT

BLOCK 1 SECTION 1A

PARCEL TABLE	
LOT NO.	AREA S.F.
1	7,192
2	7,200
3	7,200
4	7,821
5	8,302
6	8,302
7	8,337
8	7,200
9	7,200
10	7,714

BLOCK 2 SECTION 1A

PARCEL TABLE	
LOT NO.	AREA S.F.
1	7,200
2	7,200
3	7,200
4	7,774
5	7,776
6	7,776
7	7,776
8	7,776
9	7,797
10	7,200
11	7,200
12	7,714
13	6,514

BLOCK 3 SECTION 1A

PARCEL TABLE	
LOT NO.	AREA S.F.
1	6,514
2	6,000
3	6,000
4	6,000
5	6,000
6	6,000
7	6,000
8	6,000
9	6,001
10	8,732
11	11,020
12	9,689
13	6,550
14	6,414

BLOCK 4 SECTION 1A

PARCEL TABLE	
LOT NO.	AREA S.F.
1	6,000
2	6,000
3	6,000
4	6,000
5	6,000
6	6,000
7	6,000
8	6,000
10	7,422
11	7713
12	6,115
13	6,587

SHEET 1 OF 2

FINAL PLAT
AUSTIN COLONY SECTION 1A

A 51.818 ACRES
50 LOTS 4 BLOCKS 5 RESERVES SUBDIVISION

BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN C.C.F.N. 2021067765 OF THE O.P.R.B.C.T.

LOCATED IN THE
J. DE J. VALDERAS SURVEY
ABSTRACT NO. 380
CITY OF ANGLETON
BRAZORIA COUNTY, TEXAS

OWNER:
WAYNE L. "SANDY" REA, II
TEJAS VIEJO LAND COMPANY
5454 NEWCASTLE DRIVE
UNIT 1101
HOUSTON, TX 77081

B&L BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
4005 TECHNOLOGY DR., SUITE 1530
ANGLETON, TEXAS 77515
OFFICE: (979) 849-6681
TBPELS No. 10052500 REG. NO. F-825

PROJECT NO: 14257	SCALE: 1" = 80'	DRAWN BY: AD
DRAWING NO: 14257 _PLAT SEC1A	DATE: 7/5/2023	CHECKED BY: DH

J:\14000S\14200S\14257\ENGINEERING-SURVEY\SURVEY\DRAFT\SURVEY PLAT\14257 _PLAT SEC1A.DWG 7/5/23 Darrel Heidrich

PLANNING AND ZONING COMMISSION AND CITY COUNCIL:

APPROVED THIS _____ DAY OF _____, 20___, BY THE PLANNING AND ZONING COMMISSION, CITY OF ANGLETON, TEXAS.

_____
BILL GARWOOD, CHAIRMAN, PLANNING AND ZONING COMMISSION

_____
CITY SECRETARY

APPROVED THIS _____ DAY OF _____, 20____, BY THE CITY COUNCIL, CITY OF ANGLETON, TEXAS.

_____
JASON PEREZ, MAYOR

_____
CITY SECRETARY

STATE OF TEXAS §
COUNTY OF BRAZORIA §

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THE _____ DAY OF _____, 20____, BY CITY SECRETARY, CITY OF ANGLETON, ON BEHALF OF THE CITY.

_____
NOTARY PUBLIC STATE OF TEXAS

_____
MY COMMISSION EXPIRES

DRAINAGE AND DETENTION EASEMENT

THIS PLAT IS HEREBY ADOPTED BY THE OWNERS AND APPROVED BY THE CITY OF ANGLETON (CALLED "CITY") SUBJECT TO THE FOLLOWING CONDITIONS WHICH SHALL BE BINDING UPON THE OWNERS, THEIR HEIRS, GRANTEES AND SUCCESSORS: THE PORTION SHOWN ON THE PLAT IS CALLED "DRAINAGE AND DETENTION EASEMENT." THE DRAINAGE AND DETENTION EASEMENT WITHIN THE LIMITS OF THIS ADDITION, WILL REMAIN OPEN AT ALL TIMES AND WILL BE MAINTAINED IN A SAFE AND SANITARY CONDITION BY THE OWNERS OF THE LOT OR LOTS THAT ARE TRAVERSED BY OR ADJACENT TO THE DRAINAGE AND DETENTION EASEMENT. THE CITY WILL NOT BE RESPONSIBLE FOR THE MAINTENANCE AND OPERATION OF SAID EASEMENT OR FOR ANY DAMAGE TO PRIVATE PROPERTY OR PERSON THAT RESULTS FROM CONDITIONS IN THE EASEMENT, OR FOR THE CONTROL OF EROSION. NO OBSTRUCTION TO THE NATURAL FLOW OF STORMWATER RUN-OFF SHALL BE PERMITTED BY CONSTRUCTION OF ANY TYPE OF BUILDING, FENCE, OR ANY OTHER STRUCTURE WITHIN THE DRAINAGE AND DETENTION EASEMENT AS HEREINABOVE DEFINED, UNLESS APPROVED BY THE CITY ENGINEER. PROVIDED, HOWEVER, IT IS UNDERSTOOD THAT IN THE EVENT IT BECOMES NECESSARY FOR THE CITY TO ERECT OR CONSIDER ERECTING ANY TYPE OF DRAINAGE STRUCTURE IN ORDER TO IMPROVE THE STORM DRAINAGE THAT MAY BE OCCASIONED BY THE CITY SHALL HAVE THE RIGHT TO ENTER UPON THE DRAINAGE AND DETENTION EASEMENT AT ANY POINT, OR POINTS, TO INVESTIGATE, SURVEY OR TO ERECT, CONSTRUCT AND MAINTAIN ANY DRAINAGE FACILITY DEEMED NECESSARY FOR DRAINAGE PURPOSES. EACH PROPERTY OWNER SHALL KEEP THE DRAINAGE AND DETENTION EASEMENT CLEAN AND FREE OF DEBRIS, SILT, AND ANY SUBSTANCE WHICH WOULD RESULT IN UNSANITARY CONDITIONS OR OBSTRUCT THE FLOW OF WATER, AND THE CITY SHALL HAVE THE RIGHT OF INGRESS AND EGRESS FOR THE PURPOSE OF INSPECTION AND SUPERVISION OF MAINTENANCE WORK BY THE PROPERTY OWNER TO ALLEVIATE ANY UNDESIRABLE CONDITIONS WHICH MAY OCCUR. THE NATURAL DRAINAGE THROUGH THE DRAINAGE AND DETENTION EASEMENT IS SUBJECT TO STORM WATER OVERFLOW AND NATURAL BANK EROSION TO AN EXTENT WHICH CANNOT BE DEFINITELY DEFINED. THE CITY SHALL NOT BE HELD LIABLE FOR ANY DAMAGES OF ANY NATURE RESULTING FROM THE OCCURRENCE OF THESE NATURAL PHENOMENA, OR RESULTING FROM THE FAILURE OF ANY STRUCTURE, OR STRUCTURES, WITHIN THE EASEMENT.

ANGLETON DRAINAGE DISTRICT

ACCEPTED THIS THE _____ DAY OF _____, 20___, BY THE ANGLETON DRAINAGE DISTRICT.

THE BOARD OF SUPERVISORS OF THE ANGLETON DRAINAGE DISTRICT DOES NOT WARRANT, REPRESENT OR GUARANTEE:

1. THAT DRAINAGE FACILITIES OUTSIDE THE BOUNDARIES OF THE SUBDIVISION PLAT ARE AVAILABLE TO RECEIVE RUNOFF FROM THE FACILITIES DESCRIBED IN THIS PLAT.

2. THAT DRAINAGE FACILITIES DESCRIBED IN THIS PLAT ARE ADEQUATE FOR RAINFALL IN EXCESS OF ANGLETON DRAINAGE DISTRICT MINIMUM REQUIREMENTS.

3. THAT BUILDING ELEVATION REQUIREMENTS HAVE BEEN DETERMINED BY THE ANGLETON DRAINAGE DISTRICT.

4. THAT THE DISTRICT ASSUMES ANY RESPONSIBILITY FOR CONSTRUCTION, OPERATION OR MAINTENANCE OF SUBDIVISION DRAINAGE FACILITIES.

THE DISTRICT'S REVIEW IS BASED SOLELY ON THE DOCUMENTATION SUBMITTED FOR REVIEW, AND ON THE RELIANCE ON THE REPORT SUBMITTED BY THE TEXAS REGISTERED PROFESSIONAL ENGINEER.

THE DISTRICT'S REVIEW IS NOT INTENDED NOR WILL SERVE AS A SUBSTITUTION OF THE OVERALL RESPONSIBILITY AND/OR DECISION MAKING POWER OF THE PARTY SUBMITTING THE PLAT OR PLAN HEREIN, THEIR OR ITS PRINCIPALS OR AGENTS.

_____ _____
CHAIRMAN, BOARD OF SUPERVISORS BOARD MEMBER

_____
BOARD MEMBER

OWNER'S ACKNOWLEDGEMENT:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: THAT WAYNE L. REA II, OF TEJAS VIEJO LAND COMPANY, ACTING HEREIN BY AND THROUGH ITS DULY AUTHORIZED OFFICERS, DOES HEREBY ADOPT THIS PLAT DESIGNATING THE HEREINABOVE DESCRIBED PROPERTY AS AUSTIN COLONY SECTION 1A, A SUBDIVISION IN THE JURISDICTION OF THE CITY OF ANGLETON, TEXAS, AND DOES HEREBY DEDICATE, IN FEE SIMPLE, TO THE PUBLIC USE FOREVER, THE STREETS, ALLEYS AND PUBLIC PARKLAND SHOWN THEREON. THE STREETS, ALLEYS AND PARKLAND ARE DEDICATED FOR STREET PURPOSES. THE EASEMENTS AND PUBLIC USE AREAS, AS SHOWN, ARE DEDICATED FOR THE PUBLIC USE FOREVER, FOR THE PURPOSES INDICATED ON THIS PLAT. NO BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS OR GROWTHS SHALL BE CONSTRUCTED OR PLACED UPON, OVER, OR ACROSS THE EASEMENTS AS SHOWN, EXCEPT THAT LANDSCAPE IMPROVEMENTS MAY BE PLACED IN LANDSCAPE EASEMENTS, IF APPROVED BY THE CITY OF ANGLETON. IN ADDITION, UTILITY EASEMENTS MAY ALSO BE USED FOR THE MUTUAL USE AND ACCOMMODATION OF ALL PUBLIC UTILITIES DESIRING TO USE OR USING THE SAME UNLESS THE EASEMENT LIMITS THE USE TO PARTICULAR UTILITIES, SAID USE BY PUBLIC UTILITIES BEING SUBORDINATE TO THE PUBLIC'S AND CITY OF ANGLETON'S USE THEREOF. THE CITY OF ANGLETON AND PUBLIC UTILITY ENTITIES SHALL HAVE THE RIGHT TO REMOVE AND KEEP REMOVED ALL OR PARTS OF ANY BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS OR GROWTHS WHICH MAY IN ANY WAY ENDANGER OR INTERFERE WITH THE CONSTRUCTION, MAINTENANCE, OR EFFICIENCY OF THEIR RESPECTIVE SYSTEMS IN SAID EASEMENTS. THE CITY OF ANGLETON AND PUBLIC UTILITY ENTITIES SHALL AT ALL TIMES HAVE THE FULL RIGHT OF INGRESS AND EGRESS TO OR FROM THEIR RESPECTIVE EASEMENTS FOR THE PURPOSE OF CONSTRUCTING, RECONSTRUCTING, INSPECTING, PATROLLING, MAINTAINING, READING METERS, AND ADDING TO OR REMOVING ALL OR PARTS OF THEIR RESPECTIVE SYSTEMS WITHOUT THE NECESSITY AT ANY TIME OF PROCURING PERMISSION FROM ANYONE.

OWNER'S ACKNOWLEDGEMENT:

STATE OF TEXAS §
COUNTY OF BRAZORIA §

THE OWNER OF LAND SHOWN ON THIS PLAT, IN PERSON OR THROUGH A DULY AUTHORIZED AGENT, DEDICATES TO THE USE OF THE PUBLIC FOREVER ALL STREETS, ALLEYS, PARKS, WATERCOURSES, DRAINS, EASEMENTS AND PUBLIC PLACES THEREON SHOWN FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED.

_____
WAYNE L. REA II
TEJAS VIEJO LAND COMPANY

STATE OF TEXAS §
COUNTY OF BRAZORIA §

BEFORE ME THE UNDERSIGNED AUTHORITY ON THIS DAY PERSONALLY APPEARED WAYNE L. REA II, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT THE SAME WAS THE ACTING OWNER FOR THE PURPOSES AND CONSIDERATION THEREIN EXPRESSED AND IN THE CAPACITY THEREIN STATED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS THE _____ DAY OF _____, 20___.

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

_____
MY COMMISSION EXPIRES

FIELD NOTES FOR 51.818 ACRE

DESCRIPTION OF A 51.818 ACRE TRACT OF LAND, LOCATED WITHIN THE J. DE J. VALDERAS SURVEY, ABSTRACT NO. 380 BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN COUNTY CLERK'S FILE NO. (C.C.F.N.) 2021067765 OF THE OFFICIAL PUBLIC RECORDS OF BRAZORIA COUNTY TEXAS (O.P.R.B.C.T.), REFERRED TO HEREINAFTER AT THE ABOVE REFERENCED TRACT OF LAND, SAID 51.818 ACRE TRACT BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS (BEARINGS ARE BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, (NAD83) SOUTH CENTRAL ZONE, PER GPS OBSERVATIONS):

BEGINNING AT A 1/2-INCH CAPPED IRON ROD, STAMPED "STROUD", FOUND FOR THE SOUTHWEST CORNER OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING LOCATED ON THE NORTHEAST RIGHT-OF-WAY (R.O.W.) LINE OF COUNTY ROAD 44 (ALSO KNOWN AS ANCHOR ROAD, 110' WIDE);

THENCE NORTH 47°10'56" WEST, ALONG THE SOUTHWEST LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE NORTHEAST LINE OF SAID COUNTY ROAD 44 R.O.W., A DISTANCE OF 350.63 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR THE SOUTHWEST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE IN A GENERAL NORTHEASTERLY DIRECTION ALONG THE NORTHWEST LINE OF THE AUSTIN COLONY SECTION 1A, THE FOLLOWING COURSES AND DISTANCES:

NORTH 42°49'04" EAST, A DISTANCE OF 99.66 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE RIGHT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 66.28 FEET, SAID CURVE HAVING A RADIUS OF 500.00 FEET, A CENTRAL ANGLE OF 07°35'41", A CHORD WHICH BEARS NORTH 46°36'54" EAST, A DISTANCE OF 66.23 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 50°24'44" EAST, A DISTANCE OF 91.59 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 25.90 FEET, SAID CURVE HAVING A RADIUS OF 400.00, A CENTRAL ANGLE OF 03°42'34", A CHORD WHICH BEARS NORTH 48°33'27" EAST, A DISTANCE OF 25.89 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 47°10'56" WEST, A DISTANCE OF 119.08 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 42°49'04" EAST, A DISTANCE OF 207.81 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 199.35 FEET, SAID CURVE HAVING A RADIUS OF 250.00 FEET, A CENTRAL ANGLE OF 45°41'16", A CHORD WHICH BEARS NORTH 19°58'26" EAST, A DISTANCE OF 194.11 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 183.01 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 95.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 60.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 50.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 30.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 10.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 02°52'12" EAST, A DISTANCE OF 30.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'48" EAST, A DISTANCE OF 145.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 02°52'12" WEST, A DISTANCE OF 626.42 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE LEFT, AN ARC DISTANCE OF 192.65 FEET, SAID CURVE HAVING A RADIUS OF 795.00 FEET, A CENTRAL ANGLE OF 13°53'02", A CHORD WHICH BEARS NORTH 55°48'34" EAST, A DISTANCE OF 192.17 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE OF REVERSE CURVATURE TO THE TO THE RIGHT, HAVING A RADIUS OF 705.00 FEET;

THENCE NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 32.92 FEET, SAID CURVE HAVING A RADIUS OF 705.00 FEET, A CENTRAL ANGLE OF 02°40'31", A CHORD WHICH BEARS NORTH 50°12'19" EAST, A DISTANCE OF 32.92 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR THE MOST NORTHERLY CORNER OF AUSTIN COLONY SECTION 1A;

THENCE IN A GENERAL SOUTHEASTERLY DIRECTION ALONG THE NORTHEAST LINE OF THE AUSTIN COLONY SECTION 1A, THE FOLLOWING COURSES AND DISTANCES:

SOUTH 38°27'25" EAST, A DISTANCE OF 125.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER, SAID POINT BEING IN THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 580.00 FEET;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 48.38, SAID CURVE HAVING A RADIUS OF 580.00 FEET, A CENTRAL ANGLE OF 04°46'46", A CHORD WHICH BEARS NORTH 53°55'58" EAST, A DISTANCE OF 48.37 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

SOUTH 37°02'10" EAST, A DISTANCE OF 60.12 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 33°17'23" EAST, A DISTANCE OF 120.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR AN INTERIOR NORTHEAST CORNER OF SAID AUSTIN COLONY SECTION 1A, SAID POINT BEING IN THE ARC OF A CURVE TO THE LEFT;

NORTHEASTERLY, ALONG THE ARC OF SAID CURVE TO THE RIGHT, AN ARC DISTANCE OF 176.39 FEET, SAID CURVE HAVING A RADIUS OF 400.00 FEET, A CENTRAL ANGLE OF 25°15'59", A CHORD WHICH BEARS NORTH 69°20'37" EAST, A DISTANCE OF 174.97 FEET, TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON" SET FOR CORNER;

SOUTH 08°29'14" EAST, A DISTANCE OF 118.95 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 02°52'12" EAST, A DISTANCE OF 60.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

NORTH 87°07'53" EAST, A DISTANCE OF 38.47 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

SOUTH 02°52'12" EAST, A DISTANCE OF 125.00 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR CORNER;

THENCE NORTH 87°07'48" EAST, CONTINUING ALONG THE NORTHEAST LINE OF SAID AUSTIN COLONY SEC 1A, A DISTANCE OF 548.43 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET IN THE WEST LINE R.O.W. LINE OF KARANKAWA ROAD (60' WIDE UNIMPROVED ROAD) FOR THE NORTHEAST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE SOUTH 02°52'54" EAST, ALONG THE EAST LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE WEST R.O.W. LINE OF SAID KARANKAWA ROAD AND THE EAST LINE OF SAID AUSTIN COLONY SEC 1A, A DISTANCE OF 1,354.80 FEET TO A 5/8-INCH CAPPED IRON ROD, STAMPED "BAKER & LAWSON", SET FOR THE SOUTHEAST CORNER OF AUSTIN COLONY SECTION 1A;

THENCE SOUTH 87°08'30" WEST, CONTINUING ALONG THE SOUTH LINE OF THE ABOVE REFERENCED TRACT OF LAND, SAME BEING THE SOUTH LINE OF SAID AUSTIN COLONY SECTION 1A, A DISTANCE OF 1,547.89 FEET TO THE POINT OF BEGINNING OF THE ABOVE REFERENCED TRACT OF LAND, CONTAINING 51.818 ACRE OF LAND, MORE OR LESS.

NOTES:

1. THE PURPOSE OF THIS PLAT IS TO PLAT THE 51.818 ACRE TRACT INTO A 50 LOT 4 BLOCK 5 RESERVE SUBDIVISION.

2. ALL BEARINGS AND DISTANCES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD-83, U.S. SURVEY FEET.

3. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A COMMITMENT FOR TITLE INSURANCE, WITH REGARD TO ANY RECORDED EASEMENTS, RIGHTS-OF-WAY OR SETBACKS AFFECTING THE SURVEYED PROPERTY. NO ADDITIONAL RESEARCH REGARDING THE EXISTENCE OF EASEMENTS, RESTRICTIONS, OR OTHER MATTERS OF RECORD HAS BEEN PERFORMED BY THE SURVEYOR.

4. FLOOD ZONE STATEMENT: THE SURVEYOR NAMED HEREON HAS EXAMINED THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY; MAP NUMBER 48039C0440K, WITH EFFECTIVE DATE OF DECEMBER 30, 2020, AND THAT MAP INDICATES THAT THE PROPERTY SURVEYED IS WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD-PLAIN. WARNING: THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY AND/OR STRUCTURES WILL BE FREE FROM FLOODING OR FLOOD DAMAGE, AND WILL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

5. SITE BENCHMARK:
TBM "A" 5/8-INCH IRON ROD SET ±40' FROM THE SOUTHWEST CORNER OF THE SUBJECT TRACT, ON THE SOUTHWEST HIGH BANK OF THE DITCH.
ELEVATION= 26.90' NAVD1988 (BASED ON GPS OBSERVATION, GEOID 18)

6. THE POSSIBLE EXISTENCE OF UNDERGROUND FACILITIES OR SUBSURFACE CONDITIONS OTHER THAN THOSE SHOWN MAY AFFECT THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHOWN HEREON.

7. NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.

8. NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.

9. NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.

10. NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.

11. NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.

12. IT SHALL BE THE RESPONSIBILITY OF THE HOMEOWNERS ASSOCIATION FOR THE MAINTENANCE OF THE RESERVES LOCATED ON THIS PLAT.

13. THE PLATTED PROPERTY LIES WITHIN A TRACT OF LAND (164.5 ACRE TRACT) ANNEXED BY THE CITY OF ANGLETON ON MARCH 9, 2021, CITY ORDINANCE NO. 20210309016

STATE OF TEXAS §
COUNTY OF BRAZORIA §

KNOWN ALL MEN BY THESE PRESENTS:

THAT I, DARREL HEIDRICH, DO HEREBY CERTIFY THAT I PREPARED THIS PLAT FROM AN ACTUAL AND ACCURATE SURVEY OF THE LAND AND THAT THE CORNER MONUMENTS SHOWN THEREON WERE PROPERLY PLACED UNDER MY SUPERVISION.

PRELIMINARY
NOT TO BE RECORDED FOR ANY PURPOSE
DATE: 02/28/23

_____
DARREL HEIDRICH
REGISTERED PROFESSIONAL LAND SURVEYOR
LAND SURVEYOR NO. 5378

STATE OF TEXAS §
COUNTY OF BRAZORIA §

KNOW ALL MEN BY THESE PRESENTS:
THAT I, DOUGLAS B. ROESLER, DO HEREBY CERTIFY THAT PROPER ENGINEERING CONSIDERATION HAS BEEN PROVIDED IN THIS PLAT, TO THE BEST OF MY KNOWLEDGE, THIS PLAT CONFORMS TO ALL REQUIREMENTS OF THE ANGLETON LDC, EXCEPT FOR ANY VARIANCES THAT WERE EXPRESSLY GRANTED BY THE CITY COUNCIL.

PRELIMINARY
NOT TO BE RECORDED FOR ANY PURPOSE
DATE: 02/28/23

SIGNED: _____
DOUGLAS B. ROESLER DATE
PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 56739

FINAL PLAT
AUSTIN COLONY SECTION 1A
A 51.818 ACRE
50 LOTS 4 BLOCKS 5 RESERVES SUBDIVISION

BEING A PORTION OF A CALLED 164.50 ACRE TRACT AS RECORDED IN C.C.F.N. 2021067765 OF THE O.P.R.B.C.T.

LOCATED IN THE J. DE J. VALDERAS SURVEY ABSTRACT NO. 380 CITY OF ANGLETON BRAZORIA COUNTY, TEXAS

OWNER:
WAYNE L. "SANDY" REA, II
TEJAS VIEJO LAND COMPANY
5454 NEWCASTLE DRIVE
UNIT 1101
HOUSTON, TX 77081

B&L BAKER & LAWSON, INC. ENGINEERS • PLANNERS • SURVEYORS
4005 TECHNOLOGY DR., SUITE 1530
ANGLETON, TEXAS 77515
OFFICE: (979) 849-6681
TBPELS No. 10052500 REG. NO. F-825

PROJECT NO: 14257	SCALE: 1" = 80'	DRAWN BY: AD
DRAWING NO: 14257 _PLAT SEC1A	DATE: 7/5/2023	CHECKED BY: DH

FIRST AMENDMENT TO DEVELOPMENT AGREEMENT BETWEEN CITY OF ANGLETON, TEXAS AND TEJAS-ANGLETON DEVELOPMENT, LLC

This First Amendment to Development Agreement ("First Amendment") is made and entered into by the City of Angleton, Texas (the "City") and Tejas-Angleton Development, LLC ("Developer"), is dated effective July _____, 2023 ("Effective Date") and amends the Development Agreement between City of Angleton, Texas and Tejas-Angleton Development, LLC ("Development Agreement") executed and adopted on June 14, 2022.

RECITALS

WHEREAS, Developer is the owner of approximately 164.5 acres of land located within the corporate limits of the City, and more particularly described on Exhibit "A": (the "Property") to Ordinance 20230110-009 attached and incorporated herein as Exhibit "AA", and

WHEREAS, the City Council approved the Development Agreement, dated June 14, 2022 concerning the development of 164.5 acres located in the City on the north side of Anchor Road (CR 44) approximately 2,000 feet northwest of W. Wilkins Street; and

WHEREAS, Developer plans a mixed-use development with single-family homes and a commercial/retail development to be known as Austin Colony (the "Project") as depicted on the Land Plan of Austin Colony attached hereto as Exhibit "B" to Ordinance 20230110-009 (Exhibit "BB") and incorporated herein by reference (the "Land Plan"); and

WHEREAS, the said Property presently has a zoning classification of Planned Development (PD) District No. 3 pursuant to Ordinance Number 20210810-008 and Ordinance 20220222-016 portions of which were revised and repealed by the City Council adoption of Ordinance 20230110-009 on January 24, 2023; and

WHEREAS, the City and Developer desire to modify and amend the Development Agreement as set forth in this First Amendment to include provisions that include revisions to the Land Plan authorized and adopted pursuant to Ordinance No. 20230110-009 more particularly described on Exhibit "BB" attached to this First Amendment.

WHEREAS, upon the satisfaction of the conditions and in accordance with the terms set forth in this agreement, the City intends to levy Assessments on all benefitted Property located within the PID and issue PID Bonds up to a maximum aggregate principal amount of $30,000,000.00 for payment or reimbursement of the Public Improvements included in the SAP; and

NOW THEREFORE for and in consideration of the mutual agreements, covenants, and conditions contained herein, and other good and valuable consideration the City and the Developer hereby agree as follows:

1. Incorporation of Recitals. The recitals set forth above are incorporated herein and made a part of this First Amendment to the same extent as if set forth herein.

2. The sections and provisions of the Development Agreement set forth below in this First Amendment serve to amend and revise the Development Agreement.
3. The Parties agree the Land Plan shall be the Land Plan that is described in Exhibit "B" to Ordinance No. 20230110-009 and is attached as Exhibit BB to this First Amendment. And such Land Plan replaces Exhibit B to the original Development Agreement.

4. **The following definitions are hereby deleted and replaced in their entirety with the following:**

"Improvement Area A" consists of Sections 1A, 1B, 2A, 2B.

"Improvement Area B" consists of Sections 3, 4, 5.

"Improvement Area C" consists of Sections 6, 7, 8 and 9, if Section 9 is developed into single-family residential lots.

"Improvement Area A Public Improvement Financing Date" means the date the City either (i) approves a Bond Purchase Agreement and sells the first of a series of PID Bonds for Sections 1A, 1B, 2A, and 2B of the Property, or (ii) levies and assessments on Sections 1A, 1B, 2A, 2B of the Property and enters into a Reimbursement Agreement; such date to be no later than January 1, 20225, which date may be extended by written agreement of the Developer and the City.

"Improvement Area B Public Improvement Financing Date" means the date the City either (i) approves a Bond Purchase Agreement and sells the first of a series of PID Bonds for Sections 3, 4, and 5 of the Property, or (ii) levies and assessments on Sections 3, 4 and 5 of the Property and enters into a Reimbursement Agreement, such date to be no later than January 1, 2025, which date may be extended by written agreement of the Developer and the City.

"Improvement Area C Public Improvement Financing Date" means the date the City either (i) approves a Bond Purchase Agreement and sells the first of a series of PID Bonds for Sections 6, 7, 8 and 9 (if 9 is developed into single-family residential lots) of the Property, or (ii) levies and assessments on Sections 6, 7, 8 and 9 (if 9 is developed into single-family residential lots) of the Property and enters into a Reimbursement Agreement, such date to be no later than January 1, 2025, which date may be extended by written agreement of the Developer and the City.

"Section" means a section of development of the Property. The Development will consist of nine (9) Sections.

"Phasing Plan" means that plan for the development of Property in Sections as set forth in the Land Plan.

"Section 1A" means the first Section of development in Improvement Area A of the PID consisting of 50 single family lots, as depicted on the Land Plan.

"Section 1B" means the second Section of development in Improvement Area A of the PID consisting of 50 single family lots, as depicted on the Land Plan.

"Section 2A" means the third Section of development in Improvement Area of the PID consisting of 53 single family lots, as depicted on the Land Plan.

"Section 2B" means the fourth Section of development in Improvement Area A of the PID consisting of 42 single family lots, as depicted on the Land Plan.

"Section 3" means the first Section of development in Improvement Area B of the PID consisting of 56 single family lots, as depicted on the Land Plan.

"Section 4" means the second Section of development in Improvement Area B of the PID consisting of 61 single family lots, as depicted on the Land Plan.

"Section 5" means the third Section of development in Improvement Area B of the PID consisting of 62 single family lots, as depicted on the Land Plan.

"Section 6" means the fourth Section of development in Improvement Area C of the PID consisting of 41 single family lots, as depicted on the Land Plan.

"Section 7" means the first Section of development in Improvement Area C of the PID consisting of 50 single family lots, as depicted on the Land Plan.

"Section 8" means the second Section of development in Improvement Area C of the PID consisting of 43 single family lots, as depicted on the Land Plan.

"Section 9", means the third Section of development in Improvement Area C of the PID consisting of 54 single family lots, as depicted on the Land Plan, if Section 9 is developed into single-family residential lots.

5. Section 2.02(a) <u>Project Overview – The Development</u> is hereby deleted and replaced in its entirety with the following:

(a) The Developer will undertake or cause the undertaking of the design, development, construction, maintenance, management, use and operation of the Development, and will undertake the design, development and construction of the Public Improvements. The Development will consist of the following elements:
   (i) No more than 562 single family homes;
   (ii) Commercial development as allowed by City Regulations;

(iii) Amenities attached as Exhibit J as may be amended or modified if approved by the City.

6. Section 2.05 Lot Dimensions and Development is hereby deleted and replaced in its entirety with the following:

2.05 Lot Dimensions and Development. The lots shall be the size depicted on the Land Plan, approximately 120 feet in length, with the front width of each lot as set forth below:

SECTIONS AND LOTS SUMMARY				
SECTION	**LOT WIDTH 50 FEET**	**LOT WIDTH 55 FEET**	**LOT WIDTH 60 FEET**	**SECTION LOT TOTAL**
1A	28		22	50
1B	50			50
2A	22	27	4	53
2B		42		42
3		47	9	56
4		61		61
5		38	24	62
6			41	41
7			50	50
8			43	43
9			54	54
LOT SIZE TOTAL	100	215	247	562
SIZE %	17.79%	38.26%	43.95%	100%

7. Section 2.09 Construction of Tigner Street. is hereby deleted and replaced in its entirety with the following:

Section 2.09 Construction of Tigner Street. Tigner Street shall be constructed a minimum of 24 feet wide in each direction with a 6-foot wide median, concrete pavement with curb, gutter and sidewalk on both sides of the street, and turn lanes, from the existing end of pavement of Tigner Street behind Walmart to the western property line of property. Construction of Tigner Street shall be completed as part of Sections 1B, 3, 4 and 6. Plans for the construction of Tigner Street shall be submitted and approved as part of the subdivision process for Sections 1B, 3, 4 and 6.

8. Section 2.10 Construction of Austin Colony Boulevard is hereby deleted and replaced in its entirety with the following:

Section 2.10 Construction of Austin Colony Boulevard. Austin Colony Boulevard shall be constructed a minimum of 50 feet wide, concrete pavement with curb, gutter and sidewalk

from CR 44 to the entry of Section 1A and Section 3. A divided entry shall be constructed as part of Section 1A.

9. Section 2.20 Fees-in-Lieu is hereby deleted and replaced in its entirety with the following:

Section 2.20 Fees-in-Lieu. The Developer agrees to pay a City fee in lieu of dedication of park acres in the amount of Five Hundred and Seventy-Five Dollars ($575.00) per lot. The fee for each Section shall be paid to the City prior to recording any final plat of the Project, as set forth in Sec. 23-20 of the Angleton Code of Ordinances. The fee for each Section shall be paid to the City at the filing of the Final Plat for the lots included in the Final Plat for each section.

Sections	Number of Lots	Park Fee-in-Lieu
1A	50	$28,750
1B	50	$28,750
2A	53	$30,475
2B	42	$24,150
3	56	$32,200
4	61	$35,075
5	62	$35,650
6	41	$23,575
7	50	$28,750
8	43	$24,725
9	54	$31,050
TOTAL	**562**	**$323,150**

10. Section 2.21 Sewer CAF is hereby deleted and replaced in its entirety with the following:

Section 2.21. Sewer CAF. Developer agrees to pay a Sewer CAF. The Sewer CAF is Eight Hundred Fifty and 55/100 dollars ($850.55) per lot, which is the amount set forth in the Capacity Acquisition Fee Memo attached hereto as **Exhibit "C".** The fee for each Section shall be paid to the City at the filing of the Final Plat for the lots included in the Final Plat for each Section.

Sections	Number of Lots	Sewer CAF
1A	50	$42,527.50
1B	50	$42,527.50
2A	53	$45,079.15
2B	42	$35,723.10
3	56	$47,630.80
4	61	$51,883.55
5	62	$52,734.10
6	41	$34,872.55

7	50	$42,527.50
8	43	$36,573.65
9	54	$45,929.70
Total	**562**	**$478,009.10**

11. Section 2.22 Water CAF is hereby deleted and replaced in its entirety with the following:

Section 2.22. Water CAF. Developer agrees to pay a Water CAF. The Water CAF is five hundred thirty-six and 70/100 ($536.70) per lot. The Water CAF for each Section shall be paid to the City at the filing of the Final Plat for the lots included in the Final Plat for each Section. The City agrees to provide Water Service for the full build-out of the Project.

Sections	Number of Lots	Water CAF
1A	50	$26,835.00
1B	50	$26,835.00
2A	53	$28,445.10
2B	42	$22,541.40
3	56	$30,055.20
4	61	$32,738.70
5	62	$33,275.40
6	41	$22,004.70
7	50	$26,835.00
8	43	$23,078.10
9	54	$28,981.80
TOTAL	**562**	**$301,625.40**

12. Section 2.23 Fencing is hereby deleted and replaced in its entirety with the following:

Section 2.23. Fencing. Developer agrees to install premium perimeter fencing, stained and crowned, (a) along the back property lines of all lots along Tigner Street, (b) a portion of the fence in Section 1A, 2B and 3, and (c) along the C.R. 44 frontage in areas shown on Exhibit D, Fencing Plan attached. All perimeter fencing shall be maintained by the HOA. Perimeter fencing shall not be installed within any street intersection sight triangles. All fencing for each proposed development Section shall be installed prior to the occupancy of each residence in that Section.

13. Section 12.01 the name and address for notice to the Developer is hereby deleted and replaced in its entirety with the following:

Section 12.01. Notices.

To the Developer: Tejas Angleton Development, LLC
Attn: Wayne L. Rea, II
5454 Newcastle Drive, Unit 1101
Houston, Texas 77081
Telephone: (713) 993-6453
Email: waynerea@swbell.net

14. **Ratification.** The Parties acknowledge and agree that, except as amended herein, the Agreement is in full force and effect and is hereby ratified and confirmed. Notwithstanding the foregoing, in the event there is any conflict between the terms and provisions of the Agreement and this Amendment, the terms and provisions of this Amendment shall control.

15. **Severability.** In case any one or more of the provisions contained in this Amendment shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereof, and this Amendment shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

16. **Counterparts.** This Amendment may be executed in any number of counterparts, each of which will be deemed to be an original, and all of which will together constitute the same instrument.

17. **Amendments.** This Amendment may only be amended by a written agreement executed by both Parties.

18. **Entire Agreement.** This Amendment contains the entire agreement between the Parties relating to the rights herein granted and the obligations herein assumed. Any or all representations or modifications concerning this instrument shall be of no force and effect except for a subsequent modification in writing signed by the Parties hereto.

[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK. EXECUTION PAGES FOLLOW.]

IN WITNESS WHEREOF, this instrument is executed and effective on the ____ day of July, 2023.

DEVELOPER
TEJAS-ANGLETON DEVELOPMENT, LLC
A Texas Limited Liability Company

_____
Wayne L. Rea, II
Title: Manager
Date:_____

THE STATE OF TEXAS §
§
COUNTY OF HARRIS §

This instrument was acknowledged before me, the undersigned authority, this ___ day of July, 2023, by Wayne L. Rea, II, of TEJAS-ANGLETON DEVELOPMENT, LLC, a Texas Limited Liability Company, on behalf of said entity.

_____
Notary Public, State of Texas

IN WITNESS WHEREOF, this instrument is executed and effective on the ____ day of July, 2023.

CITY OF ANGLETON, TEXAS

John Wright
Title: Mayor
Date:_____

THE STATE OF TEXAS §
§
COUNTY OF BRAZORIA §

This instrument was acknowledged before me, the undersigned authority, this ___ day of July, 2023, by John Wright of the City of Angleton, Texas.

_____
Notary Public, State of Texas

EXHIBIT AA
REVISED LAND PLAN

EXHIBIT D
FENCING PLAN

0 75' 150' 300'
SCALE : 1" = 150'

PREMIUM CEDAR FENCE W/CROWN

WROUGHT IRON FENCE W/BRICK COLUMNS FOR VISUAL TO DETENTION POND

SECTION 5
SECTION 8
SECTION 7
SECTION 6
SECTION 4
SECTION 3
SECTION 5
SECTION 1A
SECTION 2B
SECTION 2A
SECTION 3
SECTION 1B
SECTION 9 OR COMMERCIAL
DETENTION POND
DETENTION POND
CAREY DR.
THOMAS DR.
TIGER ST.

Austin Colony Subdivision

164.50 ACRES OF LAND

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
REG. NO. F-825, TBPLS NO. 10052500
DATE: 12/09/22
FILENAME 1437 OVERALL EXHIBIT 5.DWG

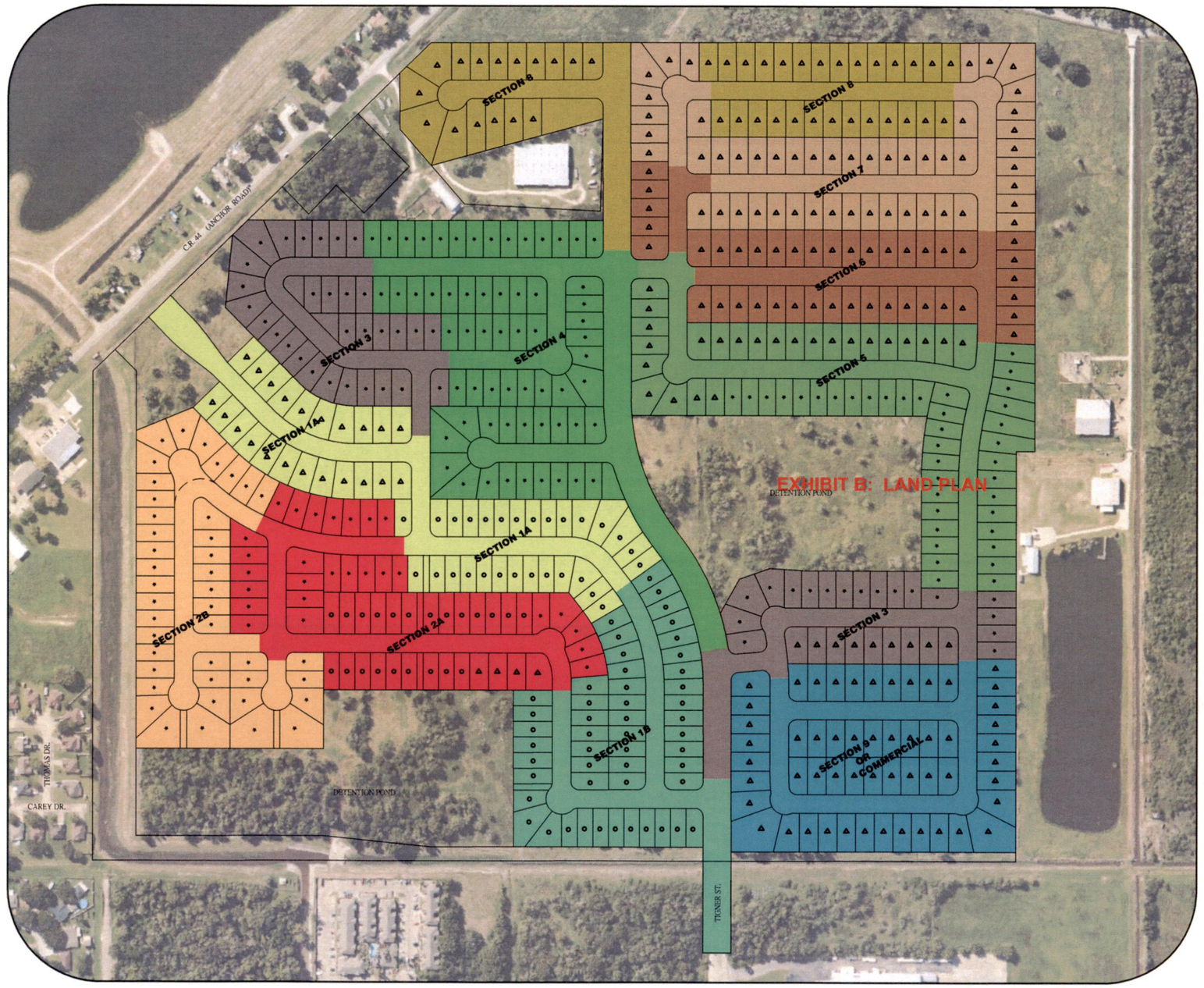


EXHIBIT B: LAND PLAN

0 75' 150' 300'
SCALE : 1" = 150'

LOT SUMMARY

- SECTION 1A — 50 LOTS — 28-50', 22-60'
- SECTION 1B — 50 LOTS — 50-50'
- SECTION 2A — 53 LOTS — 22-50', 27-55', 4-60'
- SECTION 2B — 42 LOTS — 42-55'
- SECTION 3 — 56 LOTS — 47-55', 9-60'
- SECTION 4 — 61 LOTS — 61-55'
- SECTION 5 — 62 LOTS — 38-55', 24-60'
- SECTION 6 — 41 LOTS — 41-60'
- SECTION 7 — 50 LOTS — 50-60'
- SECTION 8 — 43 LOTS — 43-60'
- SECTION 9 — COMMERCIAL RESERVE OR 54-60' LOTS

○ 50' LOTS
✱ 55' LOTS
△ 60' LOTS

TOTAL LOTS
562

100 - 50' LOTS
215 - 55' LOTS
247 - 60' LOTS

Austin Colony Subdivision

164.50 ACRES OF LAND

BAKER & LAWSON, INC
ENGINEERS • PLANNERS • SURVEYORS
REG. NO. F-825 TBPLS NO. 10052500
DATE: 01/17/23
FILE NAME 14237 OVERALL EXHIBIT 6.DWG

THE HEART OF BRAZORIA COUNTY
ANGLETON

APPLICATION FOR PLAT REVIEW/APPROVAL

Date: 3/1/2023

TYPE OF PLAT APPLICATION

ADMINISTRATIVE		PRELIMINARY		FINAL	
MINOR	☐	RESIDENTIAL	☐	RESIDENTIAL	☑
AMENDING/REPLAT	☐	COMMERCIAL	☐	COMMERCIAL	☐

Address of property: Northeast Side of County Road 44 (Anchor Road) and 1,000' Southeast of CR 340 (Carr Road)

Name of Applicant: Douglas B. Roesler, P.E./Robin Crouch Phone: 979-849-6681

Name of Company: Baker & Lawson, Inc. Phone:

E-mail: droesler@bakerlawson.com

Name of Owner of Property: Tejas Angleton Development, LLC

Address: 5454 Newcastle Drive, Unit #1101, Houston, Texas 77081

Phone: 713-993-64543 E-mail: waynerea@swbell.net

I HEREBY REQUEST approval of the preliminary and final plat of the subject property according to the plans which are submitted as a part of this application. I HEREBY AUTHORIZE the staff of the City of Angleton to inspect the premises of the subject property. I HEREBY SWEAR AND AFFIRM that all statements contained herein and attached hereto are true and correct to the best of my knowledge and belief.

Signature of Owner or Agent for Owner (Applicant) Robin Crouch

NOTARIAL STATEMENT FOR APPLICANT:

Sworn to and subscribed before me this 27 day of February, 2023.

(SEAL)

NOTARY PUBLIC STATE OF TEXAS
ANGELA HAMMOND
Notary Public
STATE OF TEXAS
NOTARY ID # 13104489-5
My Comm. Expires 03-15-2025

Angela Hammond

Notary Public for the State of Texas
Commission Expires: 03-15-2025

EXHIBIT J

AMENITIES

- Entry monument is to be completed with Section 1A; playground with equipment, planted, aerated to be completed with Section 1B.

- Premium perimeter wood fencing, stained and crowned, shall be installed along the back property lines of all lots along Tigner Street and along the C.R. 44 frontage in areas shown on Exhibit D, Fencing Plan. All fencing for each proposed development Section shall be installed prior to the occupancy of each residence in that Section.

- A reflective pond is to be provided on the north side of Tigner Street.

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25, 2023

PREPARED BY: Otis T. Spriggs, AICP, Director of Development Services

AGENDA CONTENT: Discussion and possible action on a Preliminary Subdivision Plat for Windrose Green Section 4.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: N/A **FUNDS REQUESTED:** N/A

FUND: N/A

EXECUTIVE SUMMARY:

This is a request for approval of a Preliminary Plat for Windrose Green Section 4 Subdivision. The subject property consists of 13.54 acres, 65 lots and two reserves within 3 blocks, is in the City of Angleton ETJ and is located on the south side of FM 523 approximately 2,500 feet west of the FM 523/SH 35 intersection.

PLANNING STAFF AND ENGINEERING COMMENTS:

HDR Engineering, Inc. (HDR) has reviewed the plat for the above referenced subdivision and offers the following comments:

Sheet 1 of 2

1. Verify if there additional easements required by private utility companies such as Texas New Mexico Power required for this subdivision.
2. Update NFIP statement with latest mapping/FIRM panel information.
3. Provide a note to reference detention provided for this section has been dedicated within the applicable sections (i.e. section 1,2, etc.)

Sheet 2 of 2

1. Show ownership information for adjacent tract shown (future development, Windrose Green).
2. Provide a lot and block table for the proposed subdivision showing the square footage of each lot within each block.
3. Show Topographic contours at one-foot intervals.

4. Verify and update plat to label lines running parallel with the right-of-way and offset approximately 5-feet.
5. Verify and update the point of beginning shown on the plat. The metes and bounds shows this location near proposed Lot 27, Block 2 as the point of beginning.
6. Information shall match metes and bounds information.
7. Bearing or distance noted does not match the plat drawing or tables.
8. Verify arc distance for curve C2. The value shown does not match the plat.
9. All distances shown on the curve table shall include all decimals as presented in the metes and bounds field notes.
10. All distances shown on the line table shall include all decimals as presented in the metes and bounds field notes.
11. Verify arc distance for line L13. The value shown does not match the plat.
12. Bearing or distance noted for line L1 does not match the plat drawing or metes and bounds notes.

The above comments have all now been cleared by the City Engineer and Staff.

Recommendation:

The Planning and Zoning Commission and Staff recommend that City Council approve the Preliminary Plat for Windrose Green Section 4.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT EMPTOR ANGLETON, LLC acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as Windrose Green Section 4, a subdivision in the jurisdiction of the City of Angleton, Texas, and does hereby dedicate, in fee simple, to the public use forever, the streets, alleys and public parkland shown thereon. The streets, alleys and parkland are dedicated for street purposes. The easements and public use areas, as shown, are dedicated for the public use forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs, or other improvements or growths shall be constructed or placed upon, over, or across the easements as shown, except that landscape improvements may be placed in landscape easements, if approved by the City of Angleton. In addition, utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the public's and City of Angleton's use thereof. The City of Angleton and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems in said easements. The City of Angleton and public utility entities shall at all times have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems without the necessity at any time of procuring permission from anyone.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

This plat is hereby adopted by the owners (called "Owners") and approved by the City of Angleton, ("City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees, successors, and assigns:

"Drainage Easements" shown on the plat are reserved for drainage purposes forever, and the maintenance of the drainage easements shall be provided by all of the owners of lots in the subdivision. All Owner documents shall specify, confirm and bind the Owner(s) to continuously maintain all Drainage Easements and shall relieve the City of Angleton of the responsibility to maintain any Drainage Easement. The fee simple title to the Drainage and Floodway Easement shall always remain in the Owner(s).

The City and Angleton Drainage District will not be responsible for the maintenance and operation of easement or for any damage or injury to private property or person that results from the flow of water along said easement or for the control of erosion. but reserves the right to use enforcement powers to ensure that drainage easements are properly functioning in the manner in which they were designed and approved.

The Owners shall keep all Drainage Easements clean and free of debris, silt, and any substance which would result in unsanitary conditions or obstruct the flow of water, and the City of Angleton or Angleton Drainage District shall have the right of ingress and egress for the purpose of inspection and supervision of maintenance work by the Owners to alleviate any public health or safety issues.

The Association hereby agrees to indemnify and hold harmless the City from any such damages and injuries.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

The owner of land shown on this plat, in person or through a duly authorized agent, dedicates to the use of the public forever all streets, alleys, parks, watercourses, drains, easements and public places thereon shown for the purpose and consideration therein expressed.

_____
Owner

_____
Duly Authorized Agent

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and considerations therein expressed and, in the capacity, therein stated. Given under my hand and seal of office this ___ day of _____, ____.

_____
Notary Public
State of Texas

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, Mark D. Armstrong, do hereby certify that I prepared this plat from an actual survey of the land and that the corner monuments shown thereon were properly placed under my supervicion.

I, Mark D. Armstrong, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that META Planning + Design LLC has prepared this preliminary plat based on information furnished by Costello, Inc.

_____
Mark D. Armstrong
Registered Professional Land Surveyor
No. 5363

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, A. Khoshakhlagh, do hereby certify that proper engineering consideration has been provided in this plat. To the best of my knowledge, this plat conforms to all requirements of the Angleton LDC, except for any variances that were expressly granted by the City Council.

_____
A. Khoshakhlagh, P.E.
Professional Engineer
No. 101133

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER

APPROVED this _____ day of _____, 20____, by the Planning and Zoning Commission, City of Angleton, Texas.

_____
Chairman, Planning and Zoning Commission

_____
City Secretary

APPROVED this _____ day of _____, 20____, by the City Council, City of Angleton, Texas.

_____
Mayor

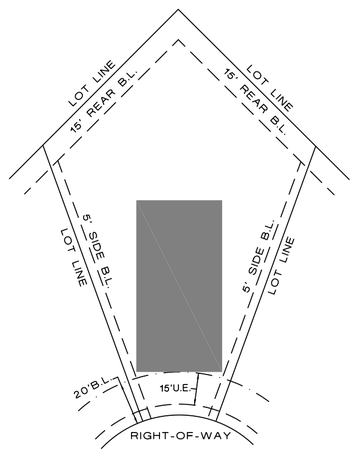
_____
City Secretary

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the _____ day of _____, 20____, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

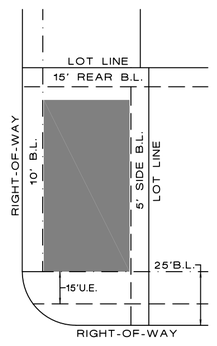
GENERAL NOTE:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "1' RES." INDICATES ONE FOOT RESERVE.
dedicated to the public in fee as a buffer separation between the side or end of streets where such streets abut adjacent acreage tracts, the condition of such dedication being that when the adjacent property is subdivided in a recorded plat, the one foot reserve shall thereupon become vested in the public for street right-of-way purposes and the fee title thereto shall revert to and revest in the dedicator, his heirs assigns, or successors.
4.) ALL PROPERTY LINE DIMENSIONS ARE APPROXIMATE.
5.) ALL LOT WIDTH AND DEPTH DIMENSIONS ARE APPROXIMATE, AND LOT WIDTHS ARE MEASURED AT THE FRONT BUILDING LINE, AND OR THE REAR BUILDING PAD LINE.
6.) NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.
7.) NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.
8.) NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.
9.) NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
10.) NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.
11.) ALL RESERVES SHALL BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION OR MUD.
12.) HORIZONTAL DATUM:
ALL BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83), SOUTH CENTRAL ZONE.

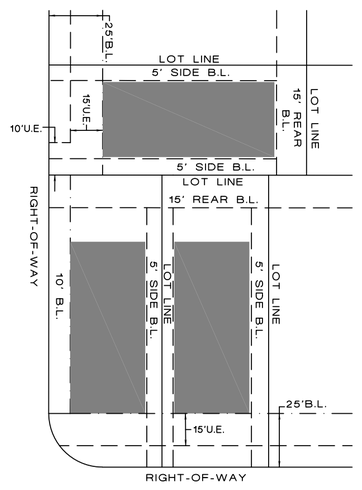
VERTICAL DATUM:
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12B, BASED ON ALLTERRA'S RTK NETWORK, STATIONS HAGS_1012 AND HCOG_14012.
13.) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, TEXAS, MAP NUMBER 48039C0435K, DATED DECEMBER 30, 2020 THIS PROPERTY LIES IN UNSHADED ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
14.) THIS PRELIMINARY PLAT HAS BEEN PREPARED BY META PLANNING + DESIGN LLC. WITH THE AID OF INFORMATION PROVIDED BY COSTELLO, INC.
15.) COSTELLO, INC., TBPE FIRM REGISTRATION No. 280, TBPLS FIRM REGISTRATION No. 100486.,. IS A SUBCONSULTANT ONLY AND HAS NOT PREPARED THIS PRELIMINARY PLAT.
16.) ○ PROPOSED MONUMENTS TO BE SET BY COSTELLO, INC., UPON RECORDATION OF A FINAL PLAT.
17.) DETENTION PROVIDED FOR WINDROSE GREEN SECTION 4 HAS BEEN DEDICATED WITHIN WINDROSE GREEN SECTION 1.



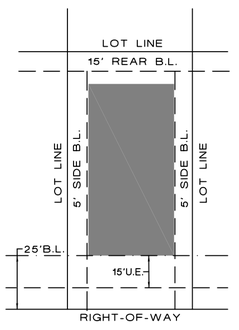
TYPICAL CUL-DE-SAC LOT DETAIL (NOT TO SCALE)



TYPICAL CORNER LOT DETAIL (NOT TO SCALE)



TYPICAL KEY LOT DETAIL (NOT TO SCALE)



TYPICAL INTERIOR LOT DETAIL (NOT TO SCALE)

LEGEND:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "AC." INDICATES ACREAGE.
4.) "R.O.W." INDICATES RIGHT-OF-WAY.
5.) "P.O.B." INDICATES POINT OF BEGINNING.
6.) "FND" INDICATES FOUND.
7.) "IP" INDICATES IRON PIPE.
8.) "IR" INDICATES IRON ROD.
9.) "VOL." INDICATES VOLUME.
10.) "PG." INDICATES PAGE.
11.) "D.R.B.C." INDICATES DEED RECORDS BRAZORIA COUNTY.
12.) "NO." INDICATES NUMBER.
13.) "CT." INDICATES COURT.
14.) "DR." INDICATES DRIVE.
15.) "O.P.R.B.C." INDICATES OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY.
16.) " " INDICATES STREET NAME CHANGE.
17.) " 1 " INDICATES BLOCK NUMBER.
18.) " A " INDICATES RESERVE NUMBER.
19.) " 50R " INDICATES 50' CUL-D-SAC RADIUS.

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FOUR

BEING 13.54± ACRES OF LAND
CONTAINING 65 LOTS (50' X 120' TYP.) AND TWO RESERVES IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

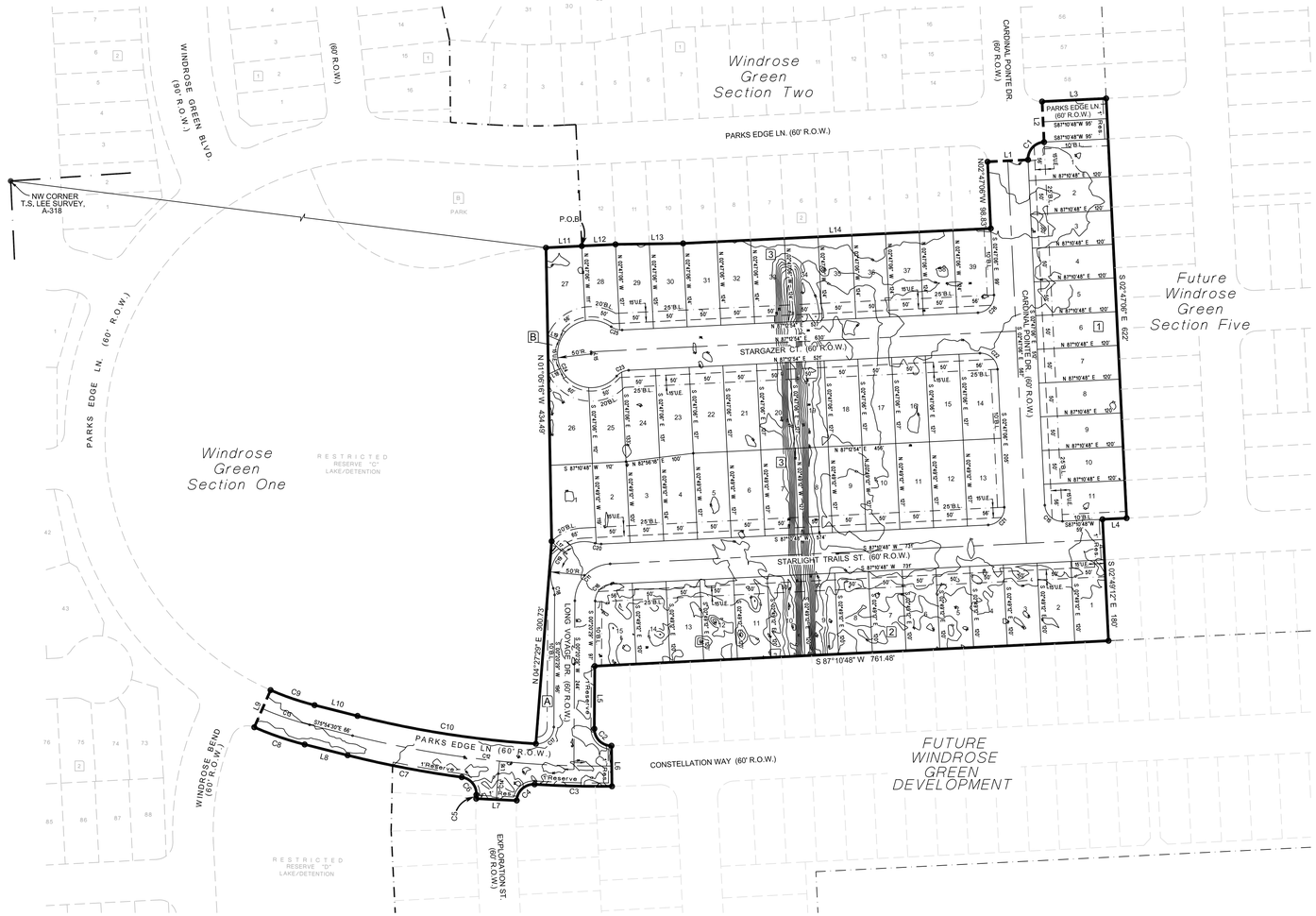
ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

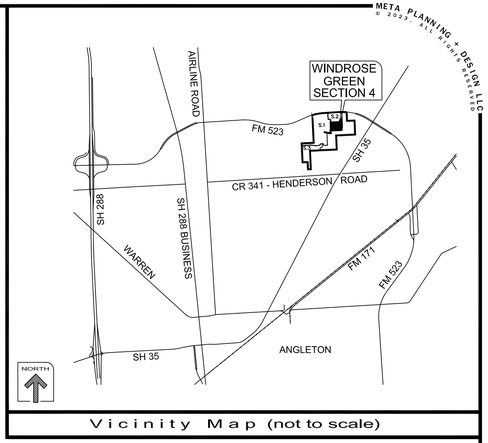
SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JULY 05, 2023

MTA-56002





Vicinity Map (not to scale)

NORTH

METES AND BOUNDS DESCRIPTION
13.54 ACRES

Being a 13.54-acre tract of land located in the T.S. Lee Survey, Abstract No. 318 in Brazoria County, Texas; said 13.54-acre tract being a part of a called 154.6-acre tract of land recorded in the name of Emptor Angleton, LLC. in File No. 2020013621 of the Official Public Records of Brazoria County (O.P.R.B.C.); said 13.54-acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System, North American Datum 1983, South Central Zone):

Beginning at a 5/8-inch iron rod with cap stamped "COSTELLO INC" found at the southeast corner of Reserve "B" of Windrose Green Section One, a subdivision recorded in Plat number 20210624B0 of the Brazoria County Plat Records;

Thence, through aforesaid 154.6-acre tract, the following twenty-one (21) courses:

1. North 87 degrees 10 minutes 48 seconds East, a distance of 50.00 feet;
2. North 89 degrees 13 minutes 19 seconds East, a distance of 100.06 feet;
3. North 87 degrees 12 minutes 54 seconds East, a distance of 456.00 feet;
4. North 02 degrees 47 minutes 06 seconds West, a distance of 98.83 feet;
5. North 87 degrees 12 minutes 54 seconds East, a distance of 60.00 feet;
6. 39.39 feet along the arc of a curve to the right, said curve having a central angle of 90 degrees 16 minutes 22 seconds, a radius of 25.00 feet and a chord that bears North 42 degrees 11 minutes 51 seconds East, a distance of 35.44 feet;
7. North 02 degrees 49 minutes 12 seconds West, a distance of 60.00 feet;
8. North 87 degrees 10 minutes 48 seconds East, a distance of 94.98 feet;
9. South 02 degrees 47 minutes 06 seconds East, a distance of 622.00 feet;
10. South 87 degrees 10 minutes 48 seconds West, a distance of 35.68 feet;
11. South 02 degrees 49 minutes 12 seconds East, a distance of 180.00 feet;
12. South 87 degrees 10 minutes 48 seconds West, a distance of 761.48 feet;
13. South 00 degrees 20 minutes 29 seconds West, a distance of 92.78 feet;
14. 39.73 feet along the arc of a curve to the left, said curve having a central angle of 91 degrees 02 minutes 37 seconds, a radius of 25.00 feet and a chord that bears South 45 degrees 10 minutes 49 seconds East, a distance of 35.68 feet;
15. South 00 degrees 42 minutes 08 seconds East, a distance of 60.00 feet;
16. 114.52 feet along the arc of a curve to the right, said curve having a central angle of 04 degrees 17 minutes 19 seconds, a radius of 1,530.00 feet and a chord that bears North 88 degrees 33 minutes 28 seconds West, a distance of 114.50 feet;
17. 39.75 feet along the arc of a curve to the left, said curve having a central angle of 91 degrees 05 minutes 28 seconds, a radius of 25.00 feet and a chord that bears South 48 degrees 02 minutes 27 seconds West, a distance of 35.69 feet;
18. North 87 degrees 30 minutes 17 seconds West, a distance of 60.00 feet;
19. 5.80 feet along the arc of a curve to the right, said curve having a central angle of 00 degrees 27 minutes 18 seconds, a radius of 730.00 feet and a chord that bears North 02 degrees 43 minutes 22 seconds East, a distance of 5.80 feet;
20. 37.22 feet along the arc of a curve to the left, said curve having a central angle of 85 degrees 18 minutes 17 seconds, a radius of 25.00 feet and a chord that bears North 39 degrees 42 minutes 08 seconds West, a distance of 33.88 feet;
21. 102.89 feet along the arc of a curve to the right passing the northeast corner of Reserve "D" of aforesaid Windrose Green Section One, in all, a total distance of 172.13 feet along the arc of said curve to the right, said curve having a central angle of 06 degrees 26 minutes 46 seconds, a radius of 1,530.00 feet and a chord that bears North 79 degrees 07 minutes 53 seconds West, a distance of 172.04 feet;
22. Thence, with the north line of said Reserve "D", North 75 degrees 54 minutes 30 seconds West, a distance of 65.58 feet;
23. Thence, continuing with the north line of said Reserve "D", 78.89 feet along the arc of a curve to the right, said curve having a central angle of 09 degrees 37 minutes 04 seconds, a radius of 470.00 feet and a chord that bears North 71 degrees 05 minutes 58 seconds West, a distance of 78.80 feet to the southerly end of the easterly terminus line of Parks Edge Lane (60.00 feet wide);
24. Thence, with said terminus line of Parks Edge Lane, North 23 degrees 42 minutes 33 seconds East, a distance of 60.00 feet to the northerly end of said terminus line, same being the south line of Reserve "C" of said Windrose Green Section One;

Thence, with the southerly and easterly lines of said Reserve "C", the following five (5) courses:

25. 68.82 feet along the arc of a curve to the left, said curve having a central angle of 09 degrees 37 minutes 04 seconds, a radius of 410.00 feet and a chord that bears South 71 degrees 05 minutes 58 seconds East, a distance of 68.74 feet;
26. South 75 degrees 54 minutes 30 seconds East, a distance of 65.58 feet;
27. 267.60 feet along the arc of a curve to the left, said curve having a central angle of 10 degrees 25 minutes 49 seconds, a radius of 1,470.00 feet and a chord that bears South 81 degrees 07 minutes 25 seconds East, a distance of 267.23 feet;
28. North 04 degrees 27 minutes 29 seconds East, a distance of 300.73 feet;
29. North 01 degrees 06 minutes 16 seconds West, at a distance of 431.30 feet passing the northeast corner of said Reserve "C" and an interior corner of aforesaid Reserve "B", in all, a total distance of distance of 434.49 feet to an interior corner of aforesaid Reserve "B";
30. Thence, with the southerly line of said Reserve "B", North 87 degrees 10 minutes 48 seconds East, a distance of 53.01 feet to the **Point of Beginning** and containing 13.54 acres of land.

LAND USE TABLE		
RESERVE	ACREAGE	LAND USE
A	0.10	LANDSCAPE/ OPEN SPACE
B	0.02	LANDSCAPE/ OPEN SPACE

LINE TABLE

LINE	DISTANCE	BEARING
L1	60.00'	N 87°12'54" E
L2	60.00'	N 02°49'12" W
L3	94.98'	N 87°10'48" E
L4	35.68'	N 87°10'48" E
L5	92.78'	N 00°20'29" E
L6	60.00'	S 00°42'08" E
L7	60.00'	N 87°30'17" W
L8	65.58'	N 75°54'30" W
L9	60.00'	N 23°42'33" E
L10	65.58'	S 75°54'30" E
L11	53.01'	S 87°10'48" W
L12	50.00'	S 87°10'48" W
L13	100.06'	N 89°13'19" E
L14	456.00'	S 87°12'54" W
L15	3.12'	S 02°47'06" E
L16	18.50'	S 05°38'58" W
L17	20.00'	N 43°58'44" W
L18	20.00'	S 64°39'42" W
L19	20.00'	N 66°52'15" W

CURVE TABLE

CURVE	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	25.00'	90°16'22"	39.39'	N 42°11'51" E	35.44'
C2	25.00'	91°02'37"	39.73'	N 45°10'49" W	35.68'
C3	1530.00'	04°17'19"	114.52'	S 88°33'28" E	114.50'
C4	25.00'	91°05'28"	39.75'	S 48°02'27" W	35.69'
C5	730.00'	00°27'18"	5.80'	N 02°43'22" E	5.80'
C6	25.00'	85°18'17"	37.22'	N 39°42'08" W	33.88'
C7	1530.00'	06°26'46"	172.13'	N 79°07'53" W	172.04'
C8	470.00'	09°37'04"	78.89'	N 71°05'58" W	78.80'
C9	410.00'	09°37'04"	68.82'	N 71°05'58" W	68.74'
C10	1470.00'	10°25'49"	267.60'	S 81°07'25" E	267.23'
C11	55.00'	86°50'19"	83.36'	S 43°45'39" W	75.61'
C12	1500.00'	14°47'38"	387.30'	N 83°18'19" W	386.23'
C13	440.00'	09°37'04"	73.86'	S 71°05'58" E	73.77'
C14	700.00'	03°09'15"	38.54'	S 04°04'20" W	38.53'
C15	25.00'	90°02'06"	39.29'	S 47°48'09" E	35.37'
C16	25.00'	86°50'19"	37.89'	S 43°45'39" W	34.37'
C17	25.00'	93°19'11"	40.72'	S 47°00'05" W	36.36'
C18	25.00'	22°58'48"	10.03'	S 11°08'55" E	9.96'
C19	50.00'	130°51'29"	114.20'	N 42°47'26" E	90.94'
C20	25.00'	21°02'22"	9.18'	N 82°18'01" W	9.13'
C21	25.00'	89°57'54"	39.25'	N 42°11'51" E	35.34'
C22	25.00'	90°00'00"	39.27'	S 47°47'06" E	35.36'
C23	25.00'	46°13'40"	20.17'	S 64°06'04" W	19.63'
C24	50.00'	265°26'03"	231.64'	N 06°17'45" W	73.47'
C25	25.00'	39°12'23"	17.11'	S 73°10'54" E	16.78'
C26	25.00'	90°00'00"	39.27'	N 42°12'54" E	35.36'

LOT NO.	LOT AREA SQ. FT.
BLOCK 1	
LOT 1	6,586
LOT 2	6,000
LOT 3	6,000
LOT 4	6,000
LOT 5	6,000
LOT 6	6,000
LOT 7	6,000
LOT 8	6,000
LOT 9	6,000
LOT 10	6,000
LOT 11	6,585

LOT NO.	LOT AREA SQ. FT.
BLOCK 2	
LOT 1	6,000
LOT 2	6,000
LOT 3	6,000
LOT 4	6,000
LOT 5	6,000
LOT 6	6,000
LOT 7	6,000
LOT 8	6,000
LOT 9	6,000
LOT 10	6,000
LOT 11	6,000
LOT 12	6,000
LOT 13	6,000
LOT 14	6,000
LOT 15	6,862

LOT NO.	LOT AREA SQ. FT.
BLOCK 3	
LOT 1	7,591
LOT 2	5,997
LOT 3	6,092
LOT 4	6,278
LOT 5	6,370
LOT 6	6,368
LOT 7	6,367
LOT 8	6,365
LOT 9	6,364
LOT 10	6,362
LOT 11	6,361
LOT 12	6,359
LOT 13	6,990
LOT 14	6,999
LOT 15	6,365
LOT 16	6,365
LOT 17	6,365
LOT 18	6,365
LOT 19	6,365
LOT 20	6,365
LOT 21	6,369
LOT 22	6,369
LOT 23	6,462
LOT 24	6,642
LOT 25	5,905
LOT 26	7,699
LOT 27	6,800
LOT 28	5,803
LOT 29	6,312
LOT 30	6,225
LOT 31	6,181
LOT 32	6,181
LOT 33	6,181
LOT 34	6,181
LOT 35	6,181
LOT 36	6,181
LOT 37	6,181
LOT 38	6,181
LOT 39	6,788

DISCLAIMER AND LIMITED WARRANTY

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A PRELIMINARY PLAT OF

WINDROSE GREEN SECTION FOUR

BEING 13.54± ACRES OF LAND

CONTAINING 65 LOTS (50' X 120' TYP.) AND TWO RESERVES IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JULY 05, 2023

PAGE: 2 OF 2

MTA-56002

June 20 2023

Mr. Otis Spriggs
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Windrose Green Section 4 Preliminary Plat – 1st Submittal Review
Angleton, Texas
HDR Job No. 10361761

Dear Mr. Spriggs:

HDR Engineering, Inc. (HDR) has reviewed the plat for the above referenced subdivision and offers the following comments:

Sheet 1 of 2

1. Verify if there additional easements required by private utility companies such as Texas New Mexico Power required for this subdivision.
2. Update NFIP statement with latest mapping/FIRM panel information.
3. Provide a note to reference detention provided for this section has been dedicated within the applicable sections (i.e. section 1,2, etc.)

Sheet 2 of 2

1. Show ownership information for adjacent tract shown (future development, Windrose Green).
2. Provide a lot and block table for the proposed subdivision showing the square footage of each lot within each block.
3. Show Topographic contours at one-foot intervals.
4. Verify and update plat to label lines running parallel with the right-of-way and offset approximately 5-feet.
5. Verify and update the point of beginning shown on the plat. The metes and bounds shows this location near proposed Lot 27, Block 2 as the point of beginning.
6. Information shall match metes and bounds information.
7. Bearing or distance noted does not match the plat drawing or tables.
8. Verify arc distance for curve C2. The value shown does not match the plat.
9. All distances shown on the curve table shall include all decimals as presented in the metes and bounds field notes.
10. All distances shown on the line table shall include all decimals as presented in the metes and bounds field notes.
11. Verify arc distance for line L13. The value shown does not match the plat.
12. Bearing or distance noted for line L1 does not match the plat drawing or metes and bounds notes.

hdrinc.com 4828 Loop Central Drive, Suite 800, Houston, TX 77081-2220
T (713) 622-9264 F (713) 622-9265
Texas Registered Engineering Firm F-754(713) 622-9264

The proposed plat is incomplete. We are unable to complete the review until the recommended corrections/changes are made and the additional information requested is submitted. HDR recommends that the Windrose Green Section 4 Preliminary Plat be Revised and Resubmitted.

If you have any questions, please feel free to contact us at our office (713)-622-9264.

Sincerely,

HDR Engineering, Inc.

Javier Vasquez, P.E., CFM
Project Engineer

cc: Files (10336228)

Attachments

STATE OF TEXAS §
COUNTY OF BRAZORIA §

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT EMPTOR ANGLETON, LLC acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as Windrose Green Section 4, a subdivision in the jurisdiction of the City of Angleton, Texas, and does hereby dedicate, in fee simple, to the public use forever, the streets, alleys and public parkland shown thereon. The streets, alleys and parkland are dedicated for street purposes. The easements and public use areas, as shown, are dedicated for the public use forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs, or other improvements or growths shall be constructed or placed upon, over, or across the easements as shown, except that landscape improvements may be placed in landscape easements, if approved by the City of Angleton. In addition, utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the public's and City of Angleton's use thereof. The City of Angleton and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems in said easements. The City of Angleton and public utility entities shall at all times have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems without the necessity at any time of procuring permission from anyone.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

This plat is hereby adopted by the owners (called "Owners") and approved by the City of Angleton, ("City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees, successors, and assigns:

"Drainage Easements" shown on the plat are reserved for drainage purposes forever, and the maintenance of the drainage easements shall be provided by all of the owners of lots in the subdivision. All Owner documents shall specify, confirm and bind the Owner(s) to continuously maintain all Drainage Easements and shall relieve the City of Angleton of the responsibility to maintain any Drainage Easement. The fee simple title to the Drainage and Floodway Easement shall always remain in the Owner(s).

The City and Angleton Drainage District will not be responsible for the maintenance and operation of easement or for any damage or injury to private property or person that results from the flow of water along said easement or for the control of erosion. but reserves the right to use enforcement powers to ensure that drainage easements are properly functioning in the manner in which they were designed and approved.

The Owners shall keep all Drainage Easements clean and free of debris, silt, and any substance which would result in unsanitary conditions or obstruct the flow of water, and the City of Angleton or Angleton Drainage District shall have the right of ingress and egress for the purpose of inspection and supervision of maintenance work by the Owners to alleviate any public health or safety issues.

The Association hereby agrees to indemnify and hold harmless the City from any such damages and injuries.

Update NFIP statement with latest mapping/FIRM panel information

STATE OF TEXAS §
COUNTY OF BRAZORIA §

The owner of land shown on this plat, in person or through a duly authorized agent, dedicates to the use of the public forever all streets, alleys, parks, watercourses, drains, easements and public places thereon shown for the purpose and consideration therein expressed.

_____
Owner

_____
Duly Authorized Agent

Provide a note to reference detention provided for this section has been dedicated within the applicable sections (i.e. section 1,2, etc.)

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and considerations therein expressed and, in the capacity, therein stated. Given under my hand and seal of office this ___ day of _____, ____.

_____
Notary Public
State of Texas

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, Mark D. Armstrong, do hereby certify that I prepared this plat from an actual survey of the land and that the corner monuments shown thereon were properly placed under my supervicion.

I, Mark D. Armstrong, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that META Planning + Design LLC has prepared this preliminary plat based on information furnished by Costello, Inc.

_____
Mark D. Armstrong
Registered Professional Land Surveyor
No. 5363

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, A. Khoshakhlagh, do hereby certify that proper engineering consideration has been provided in this plat. To the best of my knowledge, this plat conforms to all requirements of the Angleton LDC, except for any variances that were expressly granted by the City Council.

_____
A. Khoshakhlagh, P.E.
Professional Engineer
No. 101133

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER

APPROVED this _____ day of _____, 20____, by the Planning and Zoning Commission, City of Angleton, Texas.

_____
Chairman, Planning and Zoning Commission

_____
City Secretary

APPROVED this _____ day of _____, 20___, by the City Council, City of Angleton, Texas.

_____
Mayor

_____
City Secretary

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the ____ day of _____, 20___, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

DISCLAIMER AND LIMITED WARRANTY

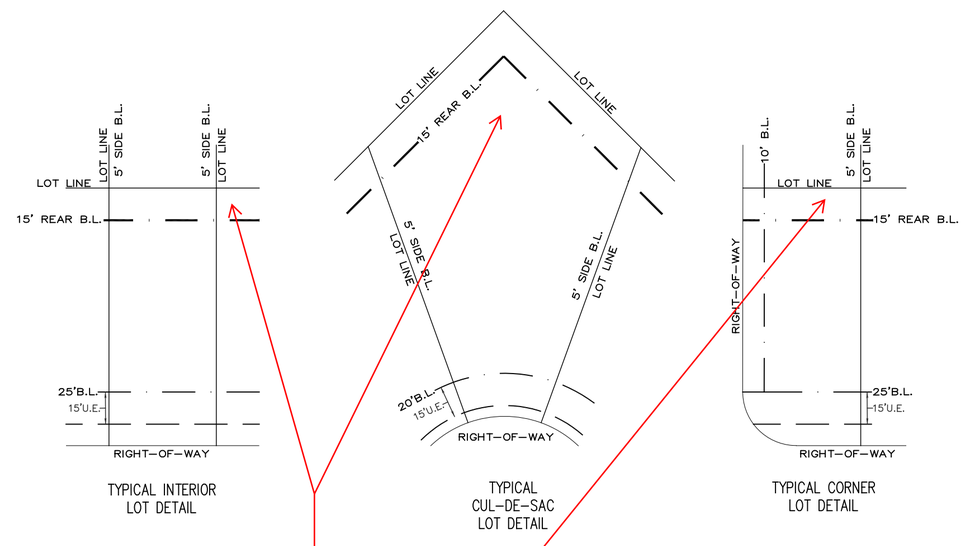
THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

GENERAL NOTE:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "1' RES." INDICATES ONE FOOT RESERVE.
dedicated to the public in fee as a buffer separation between the side or end of streets where such streets abut adjacent acreage tracts, the condition of such dedication being that when the adjacent property is subdivided in a recorded plat, the one foot reserve shall thereupon become vested in the public for street right-of-way purposes and the fee title thereto shall revert to and revest in the dedicator, his heirs assigns, or successors.
4.) ALL PROPERTY LINE DIMENSIONS ARE APPROXIMATE.
5.) ALL LOT WIDTH AND DEPTH DIMENSIONS ARE APPROXIMATE, AND LOT WIDTHS ARE MEASURED AT THE FRONT BUILDING LINE, AND OR THE REAR BUILDING PAD LINE.
6.) NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.
7.) NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.
8.) NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.
9.) NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
10.) NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.
11.) ALL RESERVES SHALL BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION OR MUD.
12.) HORIZONTAL DATUM:
ALL BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83), SOUTH CENTRAL ZONE.

VERTICAL DATUM:
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12B, BASED ON ALLTERRA'S RTK NETWORK, STATIONS HAGS_1012 AND HCOG_14012.

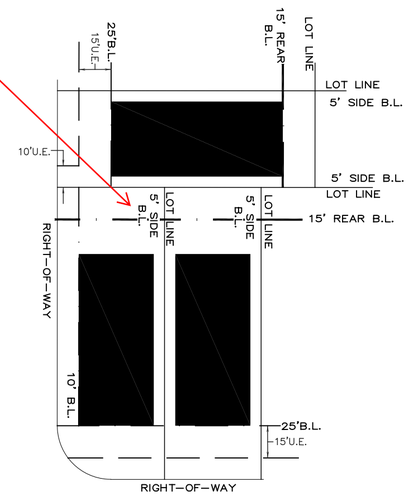
13.) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, TEXAS, MAP NUMBER 48039C0435 H, DATED JUNE 5, 1989 THIS PROPERTY LIES IN UNSHADED ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
14.) THIS PRELIMINARY PLAT HAS BEEN PREPARED BY META PLANNING + DESIGN LLC. WITH THE AID OF INFORMATION PROVIDED BY COSTELLO, INC.
15.) COSTELLO, INC., TBPE FIRM REGISTRATION No. 280, TBPLS FIRM REGISTRATION No. 100486.,. IS A SUBCONSULTANT ONLY AND HAS NOT PREPARED THIS PRELIMINARY PLAT.
16.) ○ PROPOSED MONUMENTS TO BE SET BY COSTELLO, INC., UPON RECORDATION OF A FINAL PLAT.



Verify if there additional easements required by private utility companies such as Texas New Mexico Power required for this subdivision

LEGEND:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "AC." INDICATES ACREAGE.
4.) "R.O.W." INDICATES RIGHT-OF-WAY.
5.) "P.O.B." INDICATES POINT OF BEGINNING.
6.) "FND" INDICATES FOUND.
7.) "IP" INDICATES IRON PIPE.
8.) "IR" INDICATES IRON ROD.
9.) "VOL." INDICATES VOLUME.
10.) "PG." INDICATES PAGE.
11.) "D.R.B.C." INDICATES DEED RECORDS BRAZORIA COUNTY.
12.) "NO." INDICATES NUMBER.
13.) "CT." INDICATES COURT.
14.) "DR." INDICATES DRIVE.
15.) "O.P.R.B.C." INDICATES OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY.
16.) " " INDICATES STREET NAME CHANGE.
17.) " 1 " INDICATES BLOCK NUMBER.
18.) " A " INDICATES RESERVE NUMBER.
19.) " 50'R " INDICATES 50' CUL-D-SAC RADIUS.



TYPICAL KEY LOT DETAIL

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FOUR

BEING 13.54± ACRES OF LAND
CONTAINING 65 LOTS (50' X 120' TYP.) AND TWO RESERVES IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

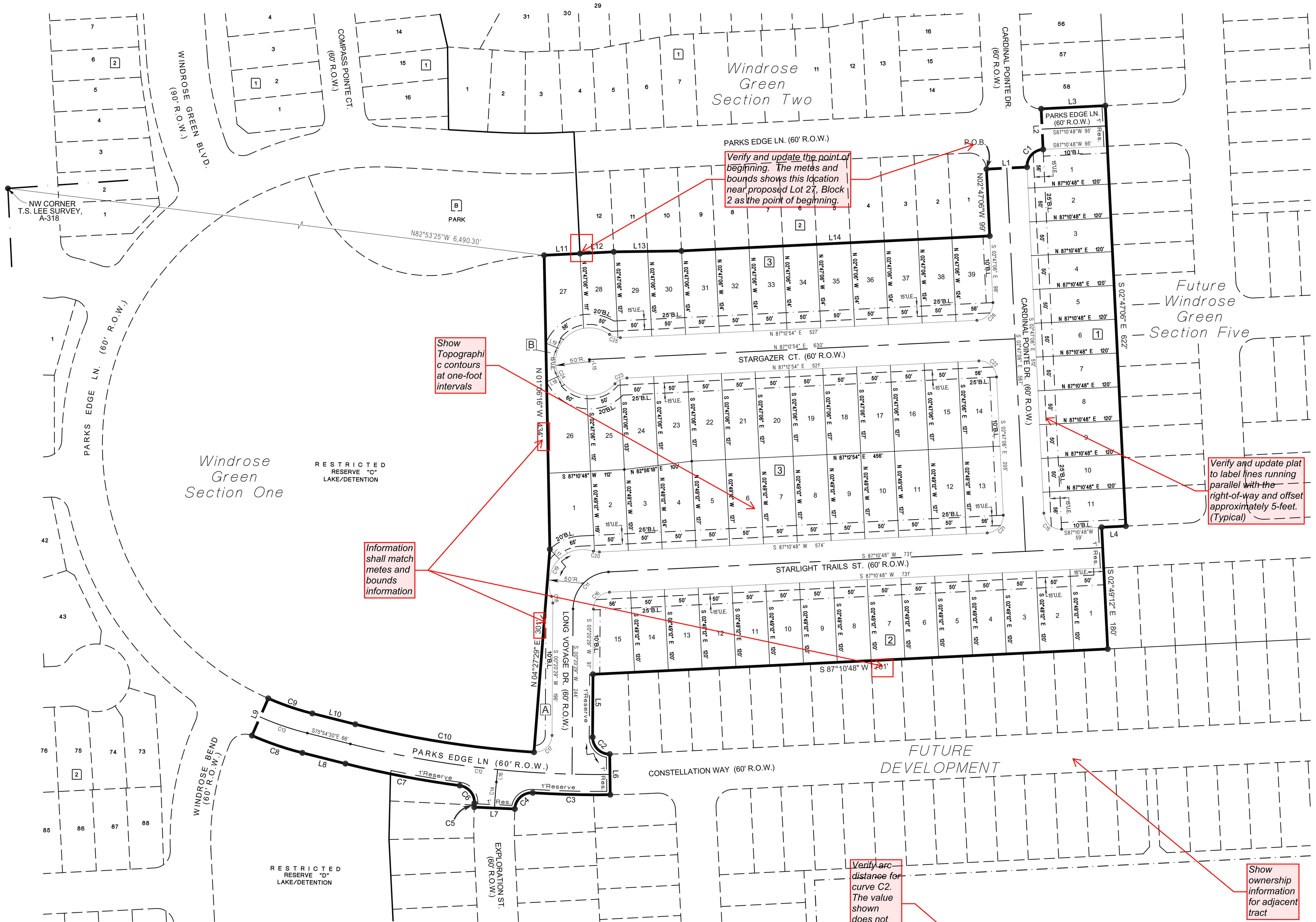
ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

MAY 31, 2023

MTA-56002



METES AND BOUNDS DESCRIPTION
13.54 ACRES

Being a 13.54-acre tract of land located in the T.S. Lee Survey, Abstract No. 318 in Brazoria County, Texas; said 13.54-acre tract being a part of a called 154.6-acre tract of land recorded in the name of Emptor Angleton, LLC. in File No. 2020013621 of the Official Public Records of Brazoria County (O.P.R.B.C.); said 13.54-acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System, North American Datum 1983, South Central Zone):

Beginning at a 5/8-inch iron rod with cap stamped "COSTELLO INC" found at the southeast corner of Reserve "B" of Windrose Green Section One, a subdivision recorded in Plat number 2021062480 of the Brazoria County Plat Records;

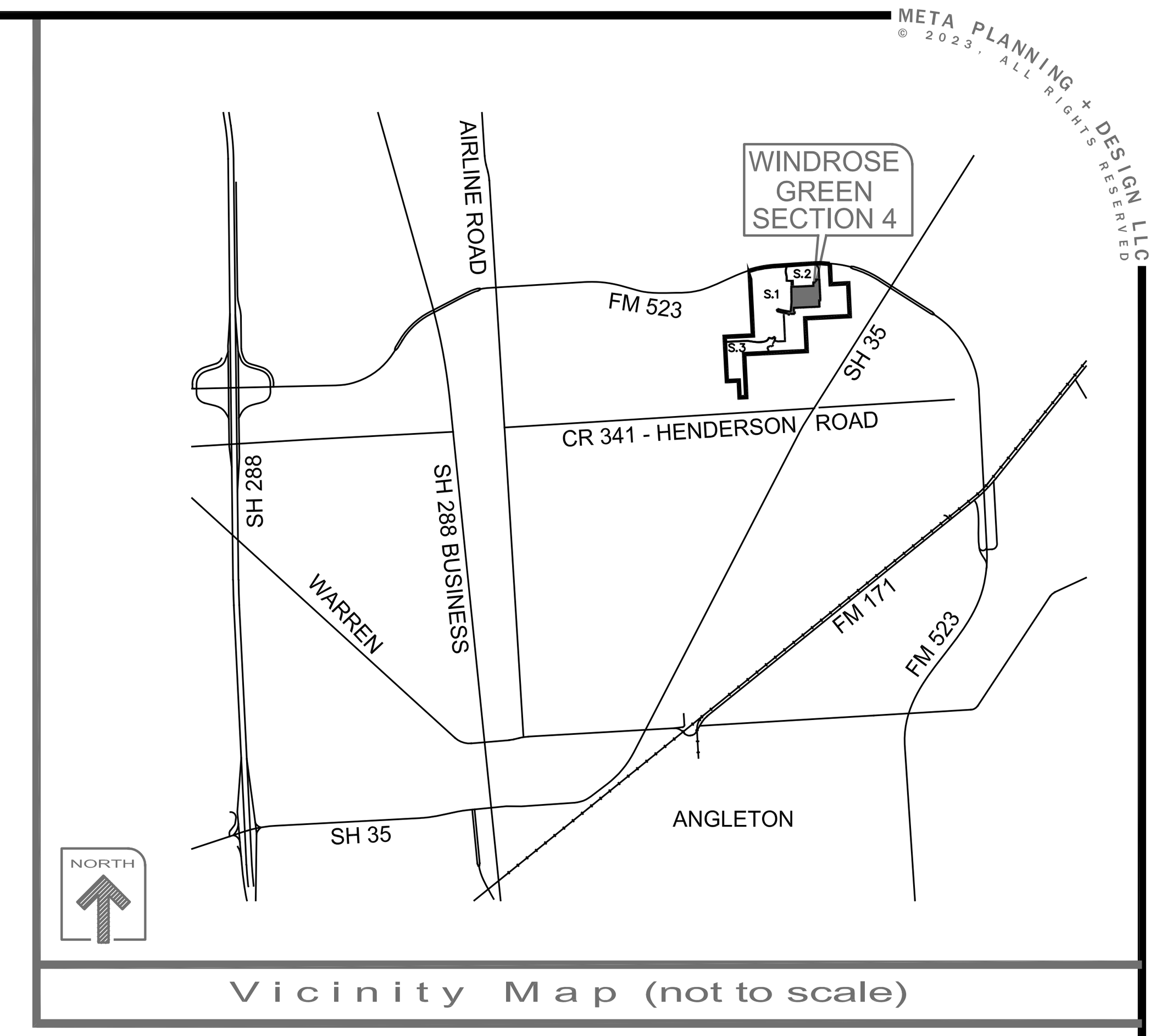
Thence, through aforesaid 154.6-acre tract, the following twenty-one (21) courses:

1. North 87 degrees 10 minutes 48 seconds East, a distance of 50.00 feet;
2. North 89 degrees 13 minutes 19 seconds East, a distance of 100.06 feet;
3. North 87 degrees 12 minutes 54 seconds East, a distance of 456.00 feet;
4. North 02 degrees 47 minutes 06 seconds West, a distance of 98.83 feet;
5. North 87 degrees 12 minutes 54 seconds East, a distance of 60.00 feet;
6. 39.39 feet along the arc of a curve to the right, said curve having a central angle of 90 degrees 16 minutes 22 seconds, a radius of 25.00 feet and a chord that bears North 42 degrees 11 minutes 51 seconds East, a distance of 35.44 feet;
7. North 02 degrees 49 minutes 12 seconds West, a distance of 60.00 feet;
8. North 87 degrees 10 minutes 48 seconds East, a distance of 94.98 feet;
9. South 02 degrees 47 minutes 06 seconds East, a distance of 622.00 feet;
10. South 87 degrees 10 minutes 48 seconds West, a distance of 35.68 feet;
11. South 02 degrees 49 minutes 12 seconds East, a distance of 180.00 feet;
12. South 87 degrees 10 minutes 48 seconds West, a distance of 761.48 feet;
13. South 00 degrees 20 minutes 29 seconds West, a distance of 92.78 feet;
14. 39.73 feet along the arc of a curve to the left, said curve having a central angle of 91 degrees 02 minutes 37 seconds, a radius of 25.00 feet and a chord that bears South 45 degrees 10 minutes 49 seconds East, a distance of 35.68 feet;
15. South 00 degrees 42 minutes 08 seconds East, a distance of 60.00 feet;
16. 114.52 feet along the arc of a curve to the right, said curve having a central angle of 04 degrees 17 minutes 19 seconds, a radius of 1,530.00 feet and a chord that bears North 88 degrees 33 minutes 28 seconds West, a distance of 114.50 feet;
17. 39.75 feet along the arc of a curve to the left, said curve having a central angle of 91 degrees 05 minutes 28 seconds, a radius of 25.00 feet and a chord that bears South 48 degrees 02 minutes 27 seconds West, a distance of 35.69 feet;
18. North 87 degrees 30 minutes 17 seconds West, a distance of 60.00 feet;
19. 5.80 feet along the arc of a curve to the right, said curve having a central angle of 00 degrees 27 minutes 18 seconds, a radius of 730.00 feet and a chord that bears North 02 degrees 43 minutes 22 seconds East, a distance of 5.80 feet;
20. 37.22 feet along the arc of a curve to the left, said curve having a central angle of 85 degrees 18 minutes 17 seconds, a radius of 25.00 feet and a chord that bears North 39 degrees 42 minutes 08 seconds West, a distance of 33.88 feet;
21. 102.89 feet along the arc of a curve to the right passing the northeast corner of Reserve "D" of aforesaid Windrose Green Section One, in all, a total distance of 172.13 feet along the arc of said curve to the right, said curve having a central angle of 06 degrees 26 minutes 46 seconds, a radius of 1,530.00 feet and a chord that bears North 79 degrees 07 minutes 53 seconds West, a distance of 172.04 feet;
22. Thence, with the north line of said Reserve "D", North 75 degrees 54 minutes 30 seconds West, a distance of 65.58 feet;
23. Thence, continuing with the north line of said Reserve "D", 78.89 feet along the arc of a curve to the right, said curve having a central angle of 09 degrees 37 minutes 04 seconds, a radius of 470.00 feet and a chord that bears North 71 degrees 05 minutes 58 seconds West, a distance of 78.80 feet to the southerly end of the easterly terminus line of Parks Edge Lane (60.00 feet wide);
24. Thence, with said terminus line of Parks Edge Lane North 23 degrees 42 minutes 33 seconds East, a distance of 60.00 feet to the northerly end of said terminus line, same being the south line of Reserve "C" of said Windrose Green Section One;

Thence, with the southerly and easterly lines of said Reserve "C", the following five (5) courses:

25. 68.82 feet along the arc of a curve to the left, said curve having a central angle of 09 degrees 37 minutes 04 seconds, a radius of 410.00 feet and a chord that bears South 71 degrees 05 minutes 58 seconds East, a distance of 68.74 feet;
26. South 75 degrees 54 minutes 30 seconds East, a distance of 65.58 feet;
27. 267.60 feet along the arc of a curve to the left, said curve having a central angle of 10 degrees 25 minutes 49 seconds, a radius of 1,470.00 feet and a chord that bears South 81 degrees 07 minutes 25 seconds East, a distance of 267.23 feet;
28. North 04 degrees 27 minutes 29 seconds East, a distance of 300.73 feet;
29. North 01 degrees 06 minutes 16 seconds West, at a distance of 431.30 feet passing the northeast corner of said Reserve "C" and an interior corner of aforesaid Reserve "B", in all, a total distance of distance of 434.49 feet to an interior corner of aforesaid Reserve "B";
30. Thence, with the southerly line of said Reserve "B", North 87 degrees 10 minutes 48 seconds East, a distance of 53.01 feet to the **Point of Beginning** and containing 13.54 acres of land.

Bearing or distance noted does not match the plat drawing or tables



Vicinity Map (not to scale)

NORTH

LAND USE TABLE		
RESERVE	ACREAGE	LAND USE
A	0.10	LANDSCAPE/ OPEN SPACE
B	0.02	LANDSCAPE/ OPEN SPACE

Bearing or distance noted for line L1 does not match the plat drawing or metes and bounds notes.

All distances shown on the line table shall include all decimals as presented in the metes and bounds field notes

Verify arc distance for line L13. The value shown does not match the plat.

LINE	DISTANCE	BEARING
L1	60'	S 87°09'04" W
L2	60'	N 02°45'21" W
L3	95'	N 87°10'48" E
L4	36'	S 87°10'48" W
L5	93'	N 00°20'29" E
L6	60'	S 00°42'08" E
L7	60'	N 87°30'17" W
L8	66'	N 75°54'30" W
L9	60'	S 23°42'33" W
L10	66'	S 75°54'30" E
L11	53'	N 87°10'48" E
L12	50'	N 87°10'48" E
L13	100'	N 89°13'19" E
L14	456'	N 87°12'54" E
L15	3'	S 02°47'06" E
L16	19'	N 05°38'58" E
L17	20'	N 43°58'44" W
L18	20'	N 64°39'42" E
L19	20'	S 66°52'15" E

Verify arc distance for curve C2. The value shown does not match the plat.

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	25'	89°57'54"	39'	S 42°11'51" W	35'
C2	25'	91°02'37"	40'	S 45°10'49" E	36'
C3	1530'	04°17'19"	115'	S 88°33'28" E	114'
C4	25'	91°05'28"	40'	S 48°02'27" W	36'
C5	730'	00°27'18"	6'	N 02°43'22" E	6'
C6	25'	85°18'17"	37'	S 39°42'08" E	34'
C7	1530'	06°26'46"	172'	N 79°07'53" W	172'
C8	470'	09°37'04"	79'	N 71°05'58" W	79'
C9	410'	09°37'04"	69'	N 71°05'58" W	69'
C10	1470'	10°25'49"	268'	S 81°07'25" E	267'
C11	55'	86°50'19"	83'	S 43°45'39" W	76'
C12	1500'	14°47'38"	387'	N 83°18'19" W	386'
C13	440'	09°37'04"	74'	N 71°05'58" W	74'
C14	700'	03°09'15"	39'	S 04°04'20" W	39'
C15	25'	90°02'06"	39'	S 47°48'09" E	35'
C16	25'	86°50'19"	38'	S 43°45'39" W	34'
C17	25'	93°19'11"	41'	S 47°00'05" W	36'
C18	25'	22°58'48"	10'	N 11°08'55" W	10'
C19	50'	13°051'29"	114'	S 42°47'26" W	91'
C20	25'	21°02'22"	9'	S 82°18'01" E	9'
C21	25'	89°57'54"	39'	N 42°11'51" E	35'
C22	25'	90°00'00"	39'	N 47°47'06" W	35'
C23	25'	46°13'40"	20'	S 64°06'04" W	20'
C24	50'	265°26'03"	232'	N 06°17'45" W	73'
C25	25'	39°12'23"	17'	S 73°10'54" E	17'
C26	25'	90°00'00"	39'	N 42°12'54" E	35'

All distances shown on the curve table shall include all decimals as presented in the metes and bounds field notes

Provide a lot and block table for the proposed subdivision showing the square footage of each lot within eac hblock

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FOUR

BEING 13.54± ACRES OF LAND
CONTAINING 65 LOTS (50' X 120' TYP.) AND TWO RESERVES IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

SCALE: 1" = 100'
0 100 200

MAY 31, 2023 PAGE: 2 OF 2 MTA-56002

THE HEART OF BRAZORIA COUNTY ANGLETON

APPLICATION FOR PLAT REVIEW/APPROVAL

Date: 05/31/2023

TYPE OF PLAT APPLICATION

ADMINISTRATIVE		PRELIMINARY		FINAL	
MINOR	☐	RESIDENTIAL	☒	RESIDENTIAL	☐
AMENDING/REPLAT	☐	COMMERCIAL	☐	COMMERCIAL	☐

Address of property: _____

Name of Applicant: Caitlin King Phone: 281-810-7228

Name of Company: META Planning + Design Phone: 281-810-1422

E-mail: cking@meta-pd.com

Name of Owner of Property: Emptor Angleton, LLC

Address: 9950 Westpark Drive #285, Houston, Texas, 77063

Phone: 281-810-7228 E-mail: cking@meta-pd.com

I HEREBY REQUEST approval of the preliminary and final plat of the subject property according to the plans which are submitted as a part of this application. I HEREBY AUTHORIZE the staff of the City of Angleton to inspect the premises of the subject property. I HEREBY SWEAR AND AFFIRM that all statements contained herein and attached hereto are true and correct to the best of my knowledge and belief.

Signature of Owner or Agent for Owner (Applicant) _____

NOTARIAL STATEMENT FOR APPLICANT:

Sworn to and subscribed before me this 31 day of May, 2023.

(SEAL)

NOTARY PUBLIC STATE OF TEXAS
Jayci Freeman
My Commission Expires
01/18/2025
ID No 132874736

Jfreeman

Notary Public for the State of Texas
Commission Expires: 01/18/2025

THE HEART OF BRAZORIA COUNTY ANGLETON

AGENDA ITEM SUMMARY FORM

MEETING DATE: July 25, 2023

PREPARED BY: Otis T. Spriggs, AICP, Director of Development Services

AGENDA CONTENT: Discussion and possible action on a Preliminary Subdivision Plat for Windrose Green Section 5.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: N/A **FUNDS REQUESTED:** N/A

FUND: N/A

EXECUTIVE SUMMARY:

This is a request for approval of the Preliminary Plat for Windrose Green Section 5 Subdivision. The subject property consists of 13.41 acres, The purpose of the requested plat is to create 67 lots and one reserve, within 3 blocks, is in the City of Angleton ETJ and is located on the south side of FM 523 approximately 2,500 feet west of the FM 523/SH 35 intersection.

This development is subject to the terms of the Development Agreement with Concourse Development, LLC.

Except as otherwise noted in the City Engineer's memo, which has textual and general note corrections, the proposed final plat meets all City of Angleton requirements.

PLANNING STAFF AND ENGINEERING COMMENTS:

HDR Engineering, Inc. (HDR) has reviewed the plat for the above referenced subdivision and offers the following comments:

Sheet 1 of 2

1. Verify if there are additional easements required by private utility companies such as Texas New Mexico Power required for this subdivision.
2. Update NFIP statement with latest mapping/FIRM panel information.
3. Provide a note to reference detention provided for this section has been dedicated within the applicable sections (i.e. section 1,2, etc.)

4. Verify and include restrictions in plat notes (e.g. no structures, no trees, shall not reduce grade, etc.) found within the existing 60-ft pipeline easement as noted in the document file no. 200800450 in the O.P.R.B.C.

Sheet 2 of 2

1. Verify if a utility easement is provided within the reserve "A" for future extension of the City of Angleton water line that runs along the south right of way of FM 523. Label accordingly on the plat.
2. Show phase line of Proposed Section 4 and future development.
3. Show ownership information for adjacent Windrose Green tract/future phase.
4. Verify and update plat to label lines running parallel with the right-of-way and offset approximately 5-feet. (Typical)
5. Since Section 4 is only proposed and not platted, the lot numbers should be removed from the plat.
6. Dimension existing 60-ft pipeline easement shown.
7. Verify and update plat to include and label this potential easement shown adjacent to the 60-ft pipeline easement.
8. Verify if line type shown is a utility easement. It is noted that a portion of the line traverses through proposed lots 10 and 11.
9. **Verify and update file number to be 2008000450 for the 60-ft pipeline easement.**
10. Verify and include if drainage is to be a use within the Reserve A area.
11. Update spelling of "length" in the Curve Table.
12. Show survey commencement on the plat drawing.
13. Bearings and distances noted for lines L4,5,7,8,9, and 12 do not match the line table information.
14. All distances shown on the line table shall include all decimals as presented in the metes and bounds field notes.
15. All distances shown on the curve table shall include all decimals as presented in the metes and bounds field notes.

The above comments have all now been cleared by the City Engineer and Staff.

Recommendation:

The Planning and Zoning Commission and Staff recommend that City Council approve the Preliminary Plat for Windrose Green Section 5.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT EMPTOR ANGLETON, LLC acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as Windrose Green Section 5, a subdivision in the jurisdiction of the City of Angleton, Texas, and does hereby dedicate, in fee simple, to the public use forever, the streets, alleys and public parkland shown thereon. The streets, alleys and parkland are dedicated for street purposes. The easements and public use areas, as shown, are dedicated for the public use forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs, or other improvements or growths shall be constructed or placed upon, over, or across the easements as shown, except that landscape improvements may be placed in landscape easements, if approved by the City of Angleton. In addition, utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the public's and City of Angleton's use thereof. The City of Angleton and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems in said easements. The City of Angleton and public utility entities shall at all times have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems without the necessity at any time of procuring permission from anyone.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

This plat is hereby adopted by the owners (called "Owners") and approved by the City of Angleton, ("City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees, successors, and assigns:

"Drainage Easements" shown on the plat are reserved for drainage purposes forever, and the maintenance of the drainage easements shall be provided by all of the owners of lots in the subdivision. All Owner documents shall specify, confirm and bind the Owner(s) to continuously maintain all Drainage Easements and shall relieve the City of Angleton of the responsibility to maintain any Drainage Easement. The fee simple title to the Drainage and Floodway Easement shall always remain in the Owner(s).

The City and Angleton Drainage District will not be responsible for the maintenance and operation of easement or for any damage or injury to private property or person that results from the flow of water along said easement or for the control of erosion. but reserves the right to use enforcement powers to ensure that drainage easements are properly functioning in the manner in which they were designed and approved.

The Owners shall keep all Drainage Easements clean and free of debris, silt, and any substance which would result in unsanitary conditions or obstruct the flow of water, and the City of Angleton or Angleton Drainage District shall have the right of ingress and egress for the purpose of inspection and supervision of maintenance work by the Owners to alleviate any public health or safety issues.

The Association hereby agrees to indemnify and hold harmless the City from any such damages and injuries.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

The owner of land shown on this plat, in person or through a duly authorized agent, dedicates to the use of the public forever all streets, alleys, parks, watercourses, drains, easements and public places thereon shown for the purpose and consideration therein expressed.

_____
Owner

_____
Duly Authorized Agent

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and considerations therein expressed and, in the capacity, therein stated. Given under my hand and seal of office this ___ day of _____, ____.

_____
Notary Public
State of Texas

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, Mark D. Armstrong, do hereby certify that I prepared this plat from an actual survey of the land and that the corner monuments shown thereon were properly placed under my supervicion.

I, Mark D. Armstrong, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that META Planning + Design LLC has prepared this preliminary plat based on information furnished by Costello, Inc.

_____
Mark D. Armstrong
Registered Professional Land Surveyor
No. 5363

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, A. Khoshakhlagh, do hereby certify that proper engineering consideration has been provided in this plat. To the best of my knowledge, this plat conforms to all requirements of the Angleton LDC, except for any variances that were expressly granted by the City Council.

_____
A. Khoshakhlagh, P.E.
Professional Engineer
No. 101133

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER

APPROVED this _____ day of _____, 20____, by the Planning and Zoning Commission, City of Angleton, Texas.

_____
Chairman, Planning and Zoning Commission

_____
City Secretary

APPROVED this _____ day of _____, 20___, by the City Council, City of Angleton, Texas.

_____
Mayor

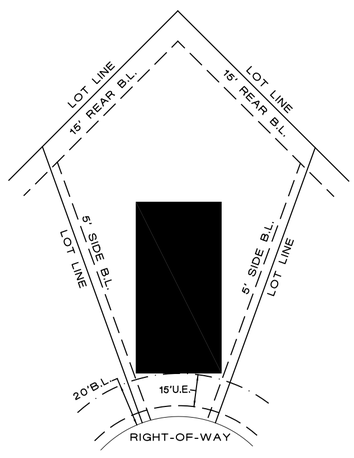
_____
City Secretary

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the ____ day of _____, 20___, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

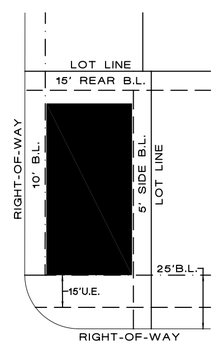
GENERAL NOTE:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "1' RES." INDICATES ONE FOOT RESERVE.
dedicated to the public in fee as a buffer separation between the side or end of streets where such streets abut adjacent acreage tracts, the condition of such dedication being that when the adjacent property is subdivided in a recorded plat, the one foot reserve shall thereupon become vested in the public for street right-of-way purposes and the fee title thereto shall revert to and revest in the dedicator, his heirs assigns, or successors.
4.) ALL PROPERTY LINE DIMENSIONS ARE APPROXIMATE.
5.) ALL LOT WIDTH AND DEPTH DIMENSIONS ARE APPROXIMATE, AND LOT WIDTHS ARE MEASURED AT THE FRONT BUILDING LINE, AND OR THE REAR BUILDING PAD LINE.
6.) NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.
7.) NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.
8.) NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.
9.) NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
10.) NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.
11.) ALL RESERVES SHALL BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION OR MUD.
12.) HORIZONTAL DATUM:
ALL BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83), SOUTH CENTRAL ZONE.

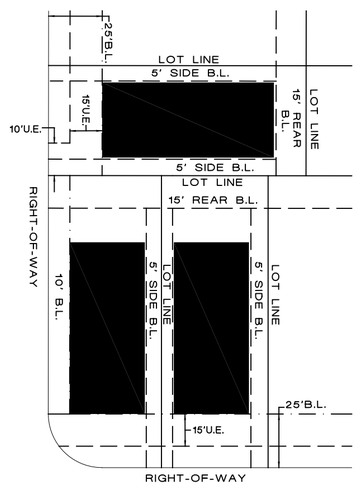
VERTICAL DATUM:
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12B, BASED ON ALLTERRA'S RTK NETWORK, STATIONS HAGS_1012 AND HCOG_14012.
13.) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, TEXAS, MAP NUMBER 48039C0435K, DATED DECEMBER 30, 2020 THIS PROPERTY LIES IN UNSHADED ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
14.) DRIVEWAY ACCESS TO FM 523 FROM LOT 10 & 11, BLOCK 1 IS DENIED.
15.) THIS PRELIMINARY PLAT HAS BEEN PREPARED BY META PLANNING + DESIGN LLC. WITH THE AID OF INFORMATION PROVIDED BY COSTELLO, INC.
16.) COSTELLO, INC., TBPE FIRM REGISTRATION No. 280, TBPLS FIRM REGISTRATION No. 100486.,. IS A SUBCONSULTANT ONLY AND HAS NOT PREPARED THIS PRELIMINARY PLAT.
17.) ○ PROPOSED MONUMENTS TO BE SET BY COSTELLO, INC., UPON RECORDATION OF A FINAL PLAT.
18.) DETENTION PROVIDED FOR WINDROSE GREEN SECTION 4 HAS BEEN DEDICATED WITHIN WINDROSE GREEN SECTION 1.
19.) SUBJECT TO THE TERMS, CONDITIONS, AND STIPULATIONS AS SENT FORTH IN DOCUMENT NO. 2008000450 OF THE OFFICIAL PUBLIC RECORDS OF BRAZORIA COUNTY, TEXAS.



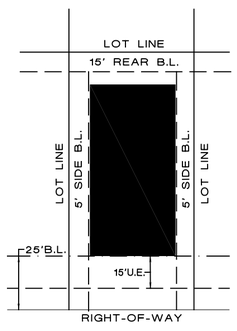
TYPICAL CUL-DE-SAC LOT DETAIL (NOT TO SCALE)



TYPICAL CORNER LOT DETAIL (NOT TO SCALE)



TYPICAL KEY LOT DETAIL (NOT TO SCALE)



TYPICAL INTERIOR LOT DETAIL (NOT TO SCALE)

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the ____ day of _____, 20___, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

LEGEND:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "AC." INDICATES ACREAGE.
4.) "R.O.W." INDICATES RIGHT-OF-WAY.
5.) "P.O.B." INDICATES POINT OF BEGINNING.
6.) "FND" INDICATES FOUND.
7.) "IP" INDICATES IRON PIPE.
8.) "IR" INDICATES IRON ROD.
9.) "VOL." INDICATES VOLUME.
10.) "PG." INDICATES PAGE.
11.) "D.R.B.C." INDICATES DEED RECORDS BRAZORIA COUNTY.
12.) "NO." INDICATES NUMBER.
13.) "CT." INDICATES COURT.
14.) "DR." INDICATES DRIVE.
15.) "O.P.R.B.C." INDICATES OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY.
16.) " " INDICATES STREET NAME CHANGE.
17.) " 1 " INDICATES BLOCK NUMBER.
18.) " A " INDICATES RESERVE NUMBER.
19.) " 50R " INDICATES 50' CUL-D-SAC RADIUS.

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FIVE

BEING 13.41± ACRES OF LAND
CONTAINING 67 LOTS (45'/50' X 120' TYP.) AND ONE RESERVE IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

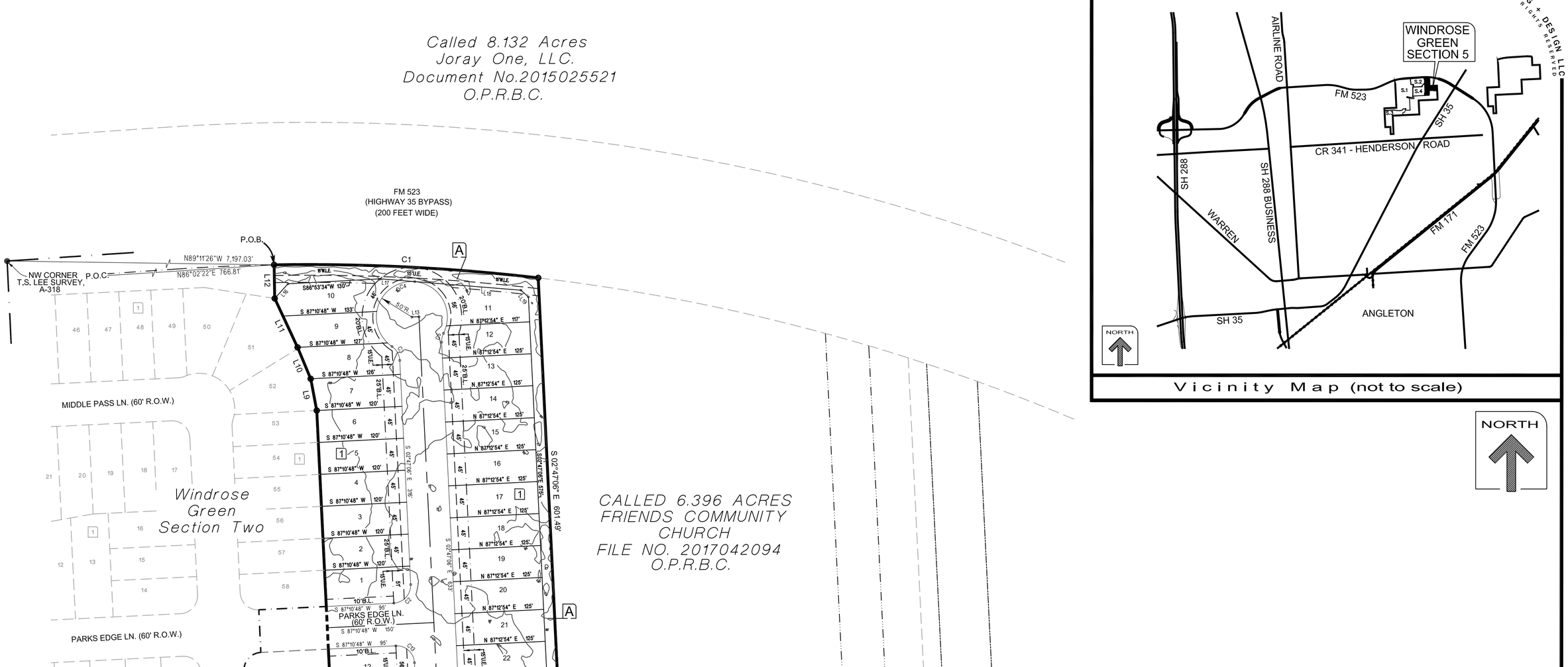
ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JUNE 26, 2023

MTA-56002



Vicinity Map (not to scale)

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 87°09'42" E	129.46'
L2	N 88°19'15" W	89.99'
L3	N 75°34'46" W	72.67'
L4	S 87°08'01" W	103.62'
L5	S 88°09'40" W	121.40'
L6	S 87°10'48" W	21.18'
L7	S 87°10'48" W	10.68'
L8	N 87°10'48" E	35.68'
L9	N 10°45'55" W	45.44'
L10	N 22°39'47" W	47.84'
L11	N 25°02'33" W	75.99'
L12	N 01°01'30" W	47.26'
L13	N 87°12'54" E	10.00'
L14	S 02°51'59" E	12.00'
L15	N 87°10'48" E	95.02'
L16	S 42°10'48" W	27.80'
L17	S 85°22'22" E	48.99'
L18	S 85°22'22" E	149.80'
L19	S 47°47'06" E	14.14'
L20	S 63°57'41" W	26.02'
L21	N 69°38'17" W	26.01'

CURVE TABLE

CURVE	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	2764.93'	07°42'29"	371.97'	S 87°10'16" E	371.69'
C2	25.00'	89°57'54"	39.25'	S 42°11'51" W	35.34'
C3	25.00'	53°07'48"	23.18'	N 29°21'00" W	22.36'
C4	50.00'	263°03'24"	229.56'	N 75°36'47" E	74.86'
C5	25.00'	29°55'35"	13.06'	S 12°10'42" W	12.91'
C6	25.00'	90°04'53"	39.31'	N 47°49'33" W	35.38'
C7	25.00'	26°41'32"	11.65'	N 73°47'15" E	11.54'
C8	50.00'	261°42'58"	228.39'	S 11°17'58" W	75.63'
C9	25.00'	55°01'26"	24.01'	N 65°21'16" W	23.10'
C10	25.00'	89°55'07"	39.23'	S 42°10'27" W	35.33'
C11	25.00'	90°02'06"	39.29'	S 47°48'09" E	35.37'
C12	25.00'	89°57'54"	39.25'	N 42°11'51" E	35.34'
C13	25.00'	90°02'06"	39.29'	N 47°48'09" W	35.37'

METES AND BOUNDS DESCRIPTION
13.41 ACRES

Being a 13.41-acre tract of land located in the T.S. Lee Survey, Abstract No. 318 in Brazoria County, Texas; said 13.41-acre tract being a part of a called 154.6-acre tract of land recorded in the name of Emptor Angleton, LLC, in File No. 2020013621 of the Official Public Records of Brazoria County (O.P.R.B.C.); said 13.41-acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System, North American Datum 1983, South Central Zone):

Commencing at a 5/8-inch iron rod with cap stamped "COSTELLO INC" found at the northeast corner of Reserve "P" of Windrose Green Section One, a subdivision recorded in File No. 2021062480 of the Brazoria County Plat Records and being on the southerly right-of-way (R.O.W.) line of FM 523 (Highway 35 Bypass, 200 feet wide);

Thence, with said southerly R.O.W. line, North 86 degrees 02 minutes 22 seconds East, a distance of 766.81 feet;

Thence, continuing with said southerly R.O.W. line, 141.66 feet along the arc of a curve to the right, said curve having a central angle of 02 degrees 56 minutes 08 seconds, a radius of 2,764.93 feet and a chord that bears North 87 degrees 30 minutes 26 seconds East, a distance of 141.65 feet to the **Point of Beginning** the herein described tract;

1. Thence, continuing with said southerly R.O.W. line, 371.97 feet along the arc of a curve to the right, said curve having a central angle of 07 degrees 42 minutes 29 seconds, a radius of 2,764.93 feet and a chord that bears South 87 degrees 10 minutes 16 seconds East, a distance of 371.69 feet to the northeast corner of aforesaid 154.6 acre tract and the northwest corner of a called 6.396 acre tract of land recorded in File No. 2017042094 of the O.P.R.B.C.;

2. Thence, with the common line of said 154.6 acre tract and said 6.396 acre tract, South 02 degrees 47 minutes 06 seconds East, a distance of 601.49 feet to the southwest corner of said 6.396 acre tract;

3. Thence, continuing with said common line, North 87 degrees 08 minutes 01 seconds East, a distance of 514.45 feet to the southeast corner of said 6.396 acre tract and an easterly corner of said 154.6 acre tract, same being the west line of a called 271.431 acre tract of land recorded in File No. 921057 919 of the O.P.R.B.C.;

4. Thence, with the common line of said 154.6 acre tract and said 271.431 acre tract, South 02 degrees 50 minutes 18 seconds East, a distance of 354.47 feet;

Thence, through said 154.6-acre tract, the following seventeen (17) courses:

5. South 87 degrees 09 minutes 42 seconds West, a distance of 129.46 feet;
6. North 88 degrees 19 minutes 15 seconds West, a distance of 89.99 feet;
7. North 75 degrees 34 minutes 46 seconds West, a distance of 72.67 feet;
8. South 87 degrees 08 minutes 01 seconds West, a distance of 103.62 feet;
9. South 88 degrees 09 minutes 40 seconds West, a distance of 121.40 feet;
10. South 87 degrees 10 minutes 48 seconds West, a distance of 21.18 feet;
11. South 02 degrees 47 minutes 06 seconds East, a distance of 144.00 feet;
12. South 87 degrees 10 minutes 48 seconds West, a distance of 10.68 feet;
13. South 02 degrees 49 minutes 12 seconds East, a distance of 180.00 feet;
14. South 87 degrees 10 minutes 48 seconds West, a distance of 325.00 feet;
15. North 02 degrees 49 minutes 12 seconds West, a distance of 180.00 feet;
16. North 87 degrees 10 minutes 48 seconds East, a distance of 35.68 feet;
17. North 02 degrees 47 minutes 06 seconds West, a distance of 898.00 feet;
18. North 10 degrees 45 minutes 55 seconds West, a distance of 45.44 feet;
19. North 22 degrees 39 minutes 47 seconds West, a distance of 47.84 feet;
20. North 25 degrees 02 minutes 33 seconds West, a distance of 75.99 feet;
21. North 01 degrees 01 minutes 30 seconds West, a distance of 47.26 feet to the **Point of Beginning** and containing 13.41 acres of land.

LOT NO.	LOT AREA SQ. FT.
BLOCK 1	
LOT 1	5,986
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	5,400
LOT 7	5,541
LOT 8	5,920
LOT 9	5,636
LOT 10	6,786
LOT 11	6,247
LOT 12	5,552
LOT 13	5,625
LOT 14	5,625
LOT 15	5,625
LOT 16	5,625
LOT 17	5,625
LOT 18	5,625
LOT 19	5,625
LOT 20	5,625
LOT 21	5,625
LOT 22	5,625
LOT 23	5,684
LOT 24	6,232
LOT 25	5,625
LOT 26	5,625
LOT 27	5,625
LOT 28	5,625
LOT 29	5,625
LOT 30	5,625
LOT 31	6,250
LOT 32	6,250
LOT 33	5,986
LOT 34	7,308
LOT 35	7,483
LOT 36	5,941
LOT 37	6,587
LOT 38	6,287
LOT 39	5,653
LOT 40	5,645
LOT 41	5,612
LOT 42	5,575
LOT 43	5,556
LOT 44	5,555
LOT 45	6,171
LOT 46	5,760
LOT 47	5,400
LOT 48	5,985

LOT NO.	LOT AREA SQ. FT.
BLOCK 2	
LOT 1	5,400
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	6,000
LOT 7	6,000

LOT NO.	LOT AREA SQ. FT.
BLOCK 3	
LOT 1	6,588
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	5,400
LOT 7	5,400
LOT 8	5,400
LOT 9	5,400
LOT 10	5,400
LOT 11	5,400
LOT 12	6,582

LAND USE TABLE		
RESERVE	ACREAGE	LAND USE
A	1.65	LANDSCAPE/ OPEN SPACE

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FIVE

BEING 13.41± ACRES OF LAND
CONTAINING 67 LOTS (45'/50' X 120' TYP.) AND ONE RESERVE IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JUNE 26, 2023

MTA-56002

STATE OF TEXAS §
COUNTY OF BRAZORIA §

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT EMPTOR ANGLETON, LLC acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as Windrose Green Section 5, a subdivision in the jurisdiction of the City of Angleton, Texas, and does hereby dedicate, in fee simple, to the public use forever, the streets, alleys and public parkland shown thereon. The streets, alleys and parkland are dedicated for street purposes. The easements and public use areas, as shown, are dedicated for the public use forever, for the purposes indicated on this plat. No buildings, fences, trees, shrubs, or other improvements or growths shall be constructed or placed upon, over, or across the easements as shown, except that landscape improvements may be placed in landscape easements, if approved by the City of Angleton. In addition, utility easements may also be used for the mutual use and accommodation of all public utilities desiring to use or using the same unless the easement limits the use to particular utilities, said use by public utilities being subordinate to the public's and City of Angleton's use thereof. The City of Angleton and public utility entities shall have the right to remove and keep removed all or parts of any buildings, fences, trees, shrubs, or other improvements or growths which may in any way endanger or interfere with the construction, maintenance, or efficiency of their respective systems in said easements. The City of Angleton and public utility entities shall at all times have the full right of ingress and egress to or from their respective easements for the purpose of constructing, reconstructing, inspecting, patrolling, maintaining, reading meters, and adding to or removing all or parts of their respective systems without the necessity at any time of procuring permission from anyone.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

This plat is hereby adopted by the owners (called "Owners") and approved by the City of Angleton, ("City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees, successors, and assigns:

"Drainage Easements" shown on the plat are reserved for drainage purposes forever, and the maintenance of the drainage easements shall be provided by all of the owners of lots in the subdivision. All Owner documents shall specify, confirm and bind the Owner(s) to continuously maintain all Drainage Easements and shall relieve the City of Angleton of the responsibility to maintain any Drainage Easement. The fee simple title to the Drainage and Floodway Easement shall always remain in the Owner(s).

The City and Angleton Drainage District will not be responsible for the maintenance and operation of easement or for any damage or injury to private property or person that results from the flow of water along said easement or for the control of erosion. but reserves the right to use enforcement powers to ensure that drainage easements are properly functioning in the manner in which they were designed and approved.

The Owners shall keep all Drainage Easements clean and free of debris, silt, and any substance which would result in unsanitary conditions or obstruct the flow of water, and the City of Angleton or Angleton Drainage District shall have the right of ingress and egress for the purpose of inspection and supervision of maintenance work by the Owners to alleviate any public health or safety issues.

The Association hereby agrees to indemnify and hold harmless the City from any such damages and injuries.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

The owner of land shown on this plat, in person or through a duly authorized agent, dedicates to the use of the public forever all streets, alleys, parks, watercourses, drains, easements and public places thereon shown for the purpose and consideration therein expressed.

_____
Owner

_____
Duly Authorized Agent

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared _____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the same for the purposes and considerations therein expressed and, in the capacity, therein stated. Given under my hand and seal of office this ___ day of _____, ____.

_____
Notary Public
State of Texas

Unaddressed Comment: Verify and include restrictions in plat notes (e.g. no structures, trees, shall not reduce grade,etc.) found within the existing 60-ft pipeline easement as noted in the document file no. 200800450 in the O.P.R.B.C.

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, Mark D. Armstrong, do hereby certify that I prepared this plat from an actual survey of the land and that the corner monuments shown thereon were properly placed under my supervicion.

I, Mark D. Armstrong, a Registered Professional Land Surveyor in the State of Texas, do hereby certify that META Planning + Design LLC has prepared this preliminary plat based on information furnished by Costello, Inc.

_____
Mark D. Armstrong
Registered Professional Land Surveyor
No. 5363

STATE OF TEXAS §
COUNTY OF BRAZORIA §
KNOW ALL MEN BY THESE PRESENTS:

That I, A. Khoshakhlagh, do hereby certify that proper engineering consideration has been provided in this plat. To the best of my knowledge, this plat conforms to all requirements of the Angleton LDC, except for any variances that were expressly granted by the City Council.

_____
A. Khoshakhlagh, P.E.
Professional Engineer
No. 101133

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER

APPROVED this _____ day of _____, 20____, by the Planning and Zoning Commission, City of Angleton, Texas.

_____
Chairman, Planning and Zoning Commission

_____
City Secretary

APPROVED this _____ day of _____, 20___, by the City Council, City of Angleton, Texas.

_____
Mayor

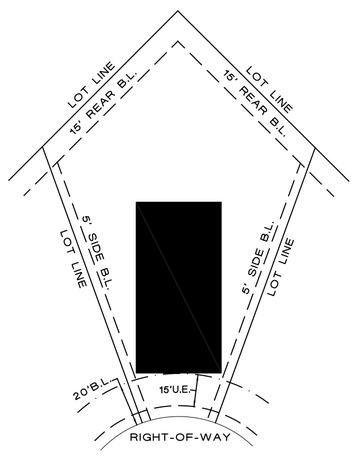
_____
City Secretary

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the ____ day of _____, 20___, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

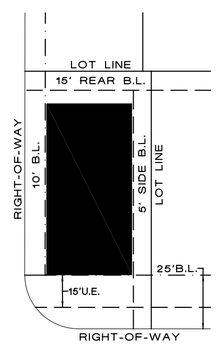
GENERAL NOTE:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "1' RES." INDICATES ONE FOOT RESERVE.
dedicated to the public in fee as a buffer separation between the side or end of streets where such streets abut adjacent acreage tracts, the condition of such dedication being that when the adjacent property is subdivided in a recorded plat, the one foot reserve shall thereupon become vested in the public for street right-of-way purposes and the fee title thereto shall revert to and revest in the dedicator, his heirs assigns, or successors.
4.) ALL PROPERTY LINE DIMENSIONS ARE APPROXIMATE.
5.) ALL LOT WIDTH AND DEPTH DIMENSIONS ARE APPROXIMATE, AND LOT WIDTHS ARE MEASURED AT THE FRONT BUILDING LINE, AND OR THE REAR BUILDING PAD LINE.
6.) NOTICE: SELLING A PORTION OF THIS ADDITION BY METES AND BOUNDS IS A VIOLATION OF THE UNIFIED DEVELOPMENT CODE OF THE CITY OF ANGLETON AND STATE PLATTING STATUTES AND IS SUBJECT TO FINES AND WITHHOLDING OF UTILITIES AND BUILDING PERMITS.
7.) NOTICE: PLAT APPROVAL SHALL NOT BE DEEMED TO OR PRESUMED TO GIVE AUTHORITY TO VIOLATE, NULLIFY, VOID, OR CANCEL ANY PROVISIONS OF LOCAL, STATE, OR FEDERAL LAWS, ORDINANCES, OR CODES.
8.) NOTICE: THE APPLICANT IS RESPONSIBLE FOR SECURING ANY FEDERAL PERMITS THAT MAY BE NECESSARY AS THE RESULT OF PROPOSED DEVELOPMENT ACTIVITY. THE CITY OF ANGLETON IS NOT RESPONSIBLE FOR DETERMINING THE NEED FOR, OR ENSURING COMPLIANCE WITH ANY FEDERAL PERMIT.
9.) NOTICE: APPROVAL OF THIS PLAT DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD OR REGISTERED PUBLIC LAND SURVEYOR IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY AND ADEQUACY OF HIS/HER SUBMITTAL WHETHER OR NOT THE APPLICATION IS REVIEWED FOR CODE COMPLIANCE BY THE CITY ENGINEER.
10.) NOTICE: ALL RESPONSIBILITY FOR THE ADEQUACY OF THIS PLAT REMAINS WITH THE ENGINEER OR SURVEYOR WHO PREPARED THEM. IN APPROVING THESE PLANS, THE CITY OF ANGLETON MUST RELY ON THE ADEQUACY OF THE WORK OF THE ENGINEER AND/OR SURVEYOR OF RECORD.
11.) ALL RESERVES SHALL BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION OR MUD.
12.) HORIZONTAL DATUM:
ALL BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD83), SOUTH CENTRAL ZONE.

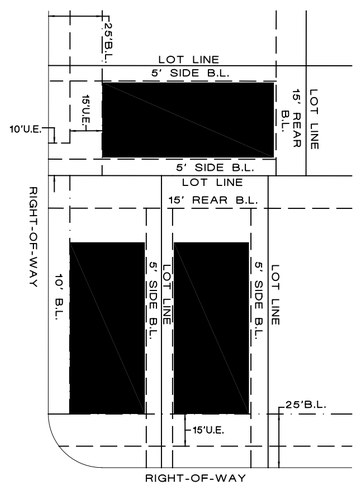
VERTICAL DATUM:
ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), GEOID 12B, BASED ON ALLTERRA'S RTK NETWORK, STATIONS HAGS_1012 AND HCOG_14012.
13.) ACCORDING TO THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, TEXAS, MAP NUMBER 48039C0435K, DATED DECEMBER 30, 2020 THIS PROPERTY LIES IN UNSHADED ZONE "X", WHICH IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
14.) DRIVEWAY ACCESS TO FM 523 FROM LOT 10 & 11, BLOCK 1 IS DENIED.
15.) THIS PRELIMINARY PLAT HAS BEEN PREPARED BY META PLANNING + DESIGN LLC. WITH THE AID OF INFORMATION PROVIDED BY COSTELLO, INC.
16.) COSTELLO, INC., TBPE FIRM REGISTRATION No. 280, TBPLS FIRM REGISTRATION No. 100486.,. IS A SUBCONSULTANT ONLY AND HAS NOT PREPARED THIS PRELIMINARY PLAT.
17.) ○ PROPOSED MONUMENTS TO BE SET BY COSTELLO, INC., UPON RECORDATION OF A FINAL PLAT.
18.) DETENTION PROVIDED FOR WINDROSE GREEN SECTION 4 HAS BEEN DEDICATED WITHIN WINDROSE GREEN SECTION 1.



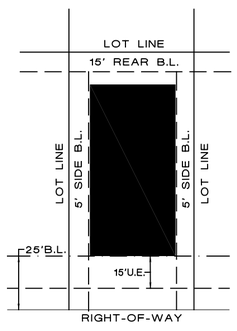
TYPICAL CUL-DE-SAC LOT DETAIL (NOT TO SCALE)



TYPICAL CORNER LOT DETAIL (NOT TO SCALE)



TYPICAL KEY LOT DETAIL (NOT TO SCALE)



TYPICAL INTERIOR LOT DETAIL (NOT TO SCALE)

STATE OF TEXAS §
COUNTY OF BRAZORIA §
This instrument was acknowledged before me on the ____ day of _____, 20___, by _____, City Secretary, City of Angleton, on behalf of the City.
Notary Public
State of Texas

LEGEND:

1.) "B.L." INDICATES BUILDING LINE.
2.) "U.E." INDICATES UTILITY EASEMENT.
3.) "AC." INDICATES ACREAGE.
4.) "R.O.W." INDICATES RIGHT-OF-WAY.
5.) "P.O.B." INDICATES POINT OF BEGINNING.
6.) "FND" INDICATES FOUND.
7.) "IP" INDICATES IRON PIPE.
8.) "IR" INDICATES IRON ROD.
9.) "VOL." INDICATES VOLUME.
10.) "PG." INDICATES PAGE.
11.) "D.R.B.C." INDICATES DEED RECORDS BRAZORIA COUNTY.
12.) "NO." INDICATES NUMBER.
13.) "CT." INDICATES COURT.
14.) "DR." INDICATES DRIVE.
15.) "O.P.R.B.C." INDICATES OFFICIAL PUBLIC RECORDS BRAZORIA COUNTY.
16.) " " INDICATES STREET NAME CHANGE.
17.) " 1 " INDICATES BLOCK NUMBER.
18.) " A " INDICATES RESERVE NUMBER.
19.) " 50'R " INDICATES 50' CUL-D-SAC RADIUS.

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FIVE

BEING 13.41± ACRES OF LAND
CONTAINING 67 LOTS (45'/50' X 120' TYP.) AND ONE RESERVE IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

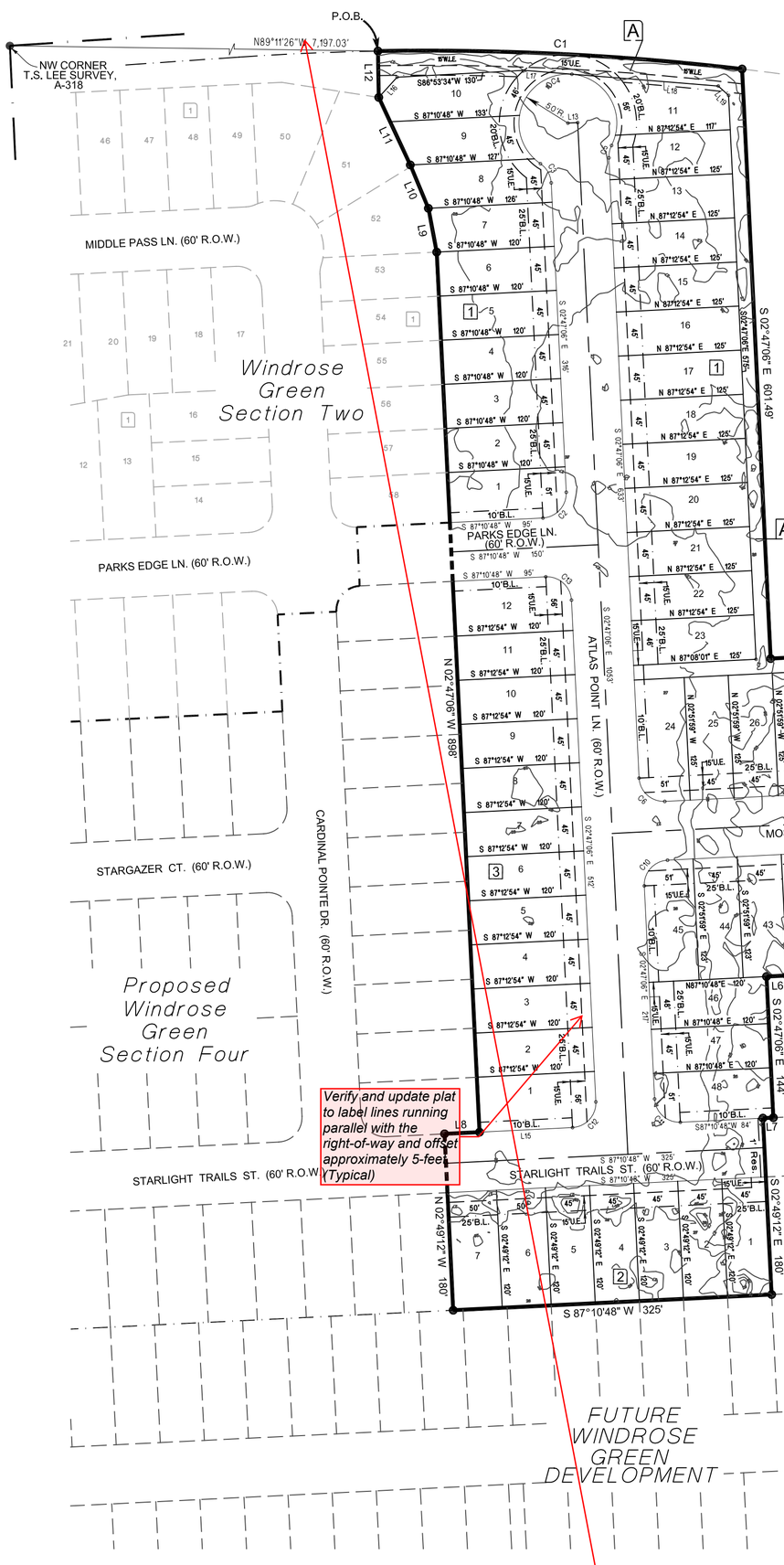
SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JUNE 26, 2023 PAGE: 1 OF 2 MTA-56002

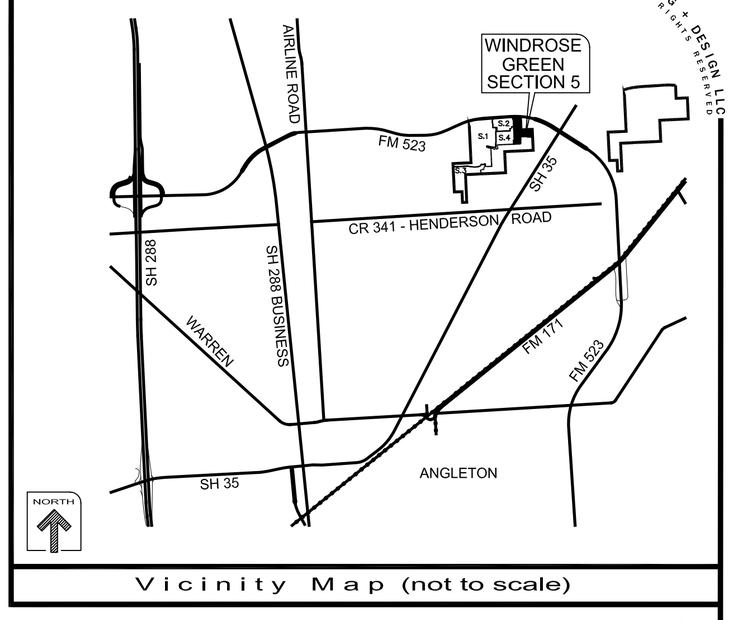
Called 8.132 Acres
Joray One, LLC.
Document No.2015025521
O.P.R.B.C.

FM 523
(HIGHWAY 35 BYPASS)
(200 FEET WIDE)



CALLED 6.396 ACRES
FRIENDS COMMUNITY CHURCH
FILE NO. 2017042094
O.P.R.B.C.

REMAINDER OF CALLED 271.431 ACRES (TRACT III)
PAUL O'FARRELL, TRUSTEE
FILE NO. 921057 919 O.R.B.C.



Vicinity Map (not to scale)

NORTH

Unaddressed Comment: Verify and update file number to be 2008000450 for the 60-ft pipeline easement

Unaddressed Comment: Bearings noted for lines L7,8,9,and 12 do not match the line table information.

Unaddressed Comment: Verify and update plat to include and label this potential easement shown adjacent to the 60-ft pipeline easement

Verify and update plat to label lines running parallel with the right-of-way and offset approximately 5-feet (Typical)

Unaddressed Comment: Show survey commencement on the plat drawing

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 87°09'42" E	129.46'
L2	N 88°19'15" W	89.99'
L3	N 75°34'46" W	72.67'
L4	S 87°08'01" W	103.62'
L5	S 88°09'40" W	121.40'
L6	S 87°10'48" W	21.18'
L7	N 87°10'48" E	10.68'
L8	S 87°10'48" W	35.68'
L9	S 10°45'55" E	45.44'
L10	N 22°39'47" W	47.84'
L11	N 25°02'33" W	75.99'
L12	S 01°01'30" E	47.26'
L13	N 87°12'54" E	10.00'
L14	S 02°51'59" E	12.00'
L15	N 87°10'48" E	95.02'
L16	S 42°10'48" W	27.80'
L17	S 85°22'22" E	48.99'
L18	S 85°22'22" E	149.80'
L19	S 47°47'06" E	14.14'
L20	S 63°57'41" W	26.02'
L21	N 69°38'17" W	26.01'

CURVE TABLE

CURVE	RADIUS	CENTRAL ANGLE	ARC LENGTH	CHORD BEARING	CHORD LENGTH
C1	2764.93'	07°42'29"	371.97'	S 87°10'16" E	371.69'
C2	25.00'	89°57'54"	39.25'	S 42°11'51" W	35.34'
C3	25.00'	53°07'48"	23.18'	N 29°21'00" W	22.36'
C4	50.00'	263°03'24"	229.56'	N 75°36'47" E	74.86'
C5	25.00'	29°55'35"	13.06'	S 12°10'42" W	12.91'
C6	25.00'	90°04'53"	39.31'	N 47°49'33" W	35.38'
C7	25.00'	26°41'32"	11.65'	N 73°47'15" E	11.54'
C8	50.00'	261°42'58"	228.39'	S 11°17'58" W	75.63'
C9	25.00'	55°01'26"	24.01'	N 65°21'16" W	23.10'
C10	25.00'	89°55'07"	39.23'	S 42°10'27" W	35.33'
C11	25.00'	90°02'06"	39.29'	S 47°48'09" E	35.37'
C12	25.00'	89°57'54"	39.25'	N 42°11'51" E	35.34'
C13	25.00'	90°02'06"	39.29'	N 47°48'09" W	35.37'

METES AND BOUNDS DESCRIPTION
13.41 ACRES

Being a 13.41-acre tract of land located in the T.S. Lee Survey, Abstract No. 318 in Brazoria County, Texas; said 13.41-acre tract being a part of a called 154.6-acre tract of land recorded in the name of Emptor Angleton, LLC, in File No. 2020013621 of the Official Public Records of Brazoria County (O.P.R.B.C.); said 13.41-acre tract being more particularly described by metes and bounds as follows (all bearings are referenced to the Texas Coordinate System, North American Datum 1983, South Central Zone):

Commencing at a 5/8-inch iron rod with cap stamped "COSTELLO INC" found at the northeast corner of Reserve "P" of Windrose Green Section One, a subdivision recorded in File No. 2021062480 of the Brazoria County Plat Records and being on the southerly right-of-way (R.O.W.) line of FM 523 (Highway 35 Bypass, 200 feet wide);

Thence, with said southerly R.O.W. line, North 86 degrees 02 minutes 22 seconds East, a distance of 766.81 feet;

Thence, continuing with said southerly R.O.W. line, 141.66 feet along the arc of a curve to the right, said curve having a central angle of 02 degrees 56 minutes 08 seconds, a radius of 2,764.93 feet and a chord that bears North 87 degrees 30 minutes 26 seconds East, a distance of 141.65 feet to the **Point of Beginning** the herein described tract;

1. Thence, continuing with said southerly R.O.W. line, 371.97 feet along the arc of a curve to the right, said curve having a central angle of 07 degrees 42 minutes 29 seconds, a radius of 2,764.93 feet and a chord that bears South 87 degrees 10 minutes 16 seconds East, a distance of 371.69 feet to the northeast corner of aforesaid 154.6 acre tract and the northwest corner of a called 6.396 acre tract of land recorded in File No. 2017042094 of the O.P.R.B.C.;

2. Thence, with the common line of said 154.6 acre tract and said 6.396 acre tract, South 02 degrees 47 minutes 06 seconds East, a distance of 601.49 feet to the southwest corner of said 6.396 acre tract;

3. Thence, continuing with said common line, North 87 degrees 08 minutes 01 seconds East, a distance of 514.45 feet to the southeast corner of said 6.396 acre tract and an easterly corner of said 154.6 acre tract, same being the west line of a called 271.431 acre tract of land recorded in File No. 921057 919 of the O.P.R.B.C.;

4. Thence, with the common line of said 154.6 acre tract and said 271.431 acre tract, South 02 degrees 50 minutes 18 seconds East, a distance of 354.47 feet;

Thence, through said 154.6-acre tract, the following seventeen (17) courses:

5. South 87 degrees 09 minutes 42 seconds West, a distance of 129.46 feet;
6. North 88 degrees 19 minutes 15 seconds West, a distance of 89.99 feet;
7. North 75 degrees 34 minutes 46 seconds West, a distance of 72.67 feet;
8. South 87 degrees 08 minutes 01 seconds West, a distance of 103.62 feet;
9. South 88 degrees 09 minutes 40 seconds West, a distance of 121.40 feet;
10. South 87 degrees 10 minutes 48 seconds West, a distance of 21.18 feet;
11. South 02 degrees 47 minutes 06 seconds East, a distance of 144.00 feet;
12. South 87 degrees 10 minutes 48 seconds West, a distance of 10.68 feet; L7
13. South 02 degrees 49 minutes 12 seconds East, a distance of 180.00 feet;
14. South 87 degrees 10 minutes 48 seconds West, a distance of 325.00 feet;
15. North 02 degrees 49 minutes 12 seconds West, a distance of 180.00 feet;
16. North 87 degrees 10 minutes 48 seconds East, a distance of 35.68 feet; L8
17. North 02 degrees 47 minutes 06 seconds West, a distance of 898.00 feet;
18. North 10 degrees 45 minutes 55 seconds West, a distance of 45.44 feet; L9
19. North 22 degrees 39 minutes 47 seconds West, a distance of 47.84 feet;
20. North 25 degrees 02 minutes 33 seconds West, a distance of 75.99 feet;
21. North 01 degrees 01 minutes 30 seconds West, a distance of 47.26 feet to the **Point of Beginning** and containing 13.41 acres of land. L12

LOT NO.	LOT AREA SQ. FT.
BLOCK 1	
LOT 1	5,986
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	5,400
LOT 7	5,541
LOT 8	5,920
LOT 9	5,636
LOT 10	6,786
LOT 11	6,247
LOT 12	5,552
LOT 13	5,625
LOT 14	5,625
LOT 15	5,625
LOT 16	5,625
LOT 17	5,625
LOT 18	5,625
LOT 19	5,625
LOT 20	5,625
LOT 21	5,625
LOT 22	5,625
LOT 23	5,684
LOT 24	6,232
LOT 25	5,625
LOT 26	5,625
LOT 27	5,625
LOT 28	5,625
LOT 29	5,625
LOT 30	5,625
LOT 31	6,250
LOT 32	6,250
LOT 33	5,986
LOT 34	7,308
LOT 35	7,483
LOT 36	5,941
LOT 37	6,587
LOT 38	6,287
LOT 39	5,653
LOT 40	5,645
LOT 41	5,612
LOT 42	5,575
LOT 43	5,556
LOT 44	5,555
LOT 45	6,171
LOT 46	5,760
LOT 47	5,400
LOT 48	5,985

LOT NO.	LOT AREA SQ. FT.
BLOCK 2	
LOT 1	5,400
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	6,000
LOT 7	6,000

LOT NO.	LOT AREA SQ. FT.
BLOCK 3	
LOT 1	6,588
LOT 2	5,400
LOT 3	5,400
LOT 4	5,400
LOT 5	5,400
LOT 6	5,400
LOT 7	5,400
LOT 8	5,400
LOT 9	5,400
LOT 10	5,400
LOT 11	5,400
LOT 12	6,582

LAND USE TABLE		
RESERVE	ACREAGE	LAND USE
A	1.65	LANDSCAPE/ OPEN SPACE

DISCLAIMER AND LIMITED WARRANTY

THIS PRELIMINARY SUBDIVISION PLAT HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF THE CITY OF ANGLETON SUBDIVISION REGULATIONS IN EFFECT AT THE TIME THIS PLAT WAS PREPARED ALONG WITH ANY VARIANCE OR VARIANCES TO THE PROVISIONS OF THE AFOREMENTIONED ORDINANCE WHICH ARE SUBSEQUENTLY GRANTED BY THE CITY OF ANGLETON PLANNING AND ZONING COMMISSION. THIS PRELIMINARY PLAT WAS PREPARED FOR THE LIMITED PURPOSE OF GUIDANCE IN THE PREPARATION OF ACTUAL ENGINEERING AND DEVELOPMENT PLANS. THIS LIMITED WARRANTY IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, AND NEITHER META PLANNING + DESIGN LLC NOR ANY OF ITS OFFICERS, OR DIRECTORS, OR EMPLOYEES MAKE ANY OTHER WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED CONCERNING THE DESIGN, LOCATION, QUALITY, CHARACTER OF ACTUAL UTILITIES OR OTHER FACILITIES IN, ON, OVER, OR UNDER THE PREMISES INDICATED IN THE PRELIMINARY SUBDIVISION PLAT.

A PRELIMINARY PLAT OF

WINDROSE GREEN
SECTION FIVE

BEING 13.41± ACRES OF LAND
CONTAINING 67 LOTS (45'/50' X 120' TYP.) AND ONE RESERVE IN THREE BLOCKS.

OUT of THE
T.S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

OWNER:
EMPTOR ANGLETON, LLC
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:
COSTELLO, INC.
2107 CITYWEST BLVD., 3RD FLOOR
HOUSTON, TEXAS 77042
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

SCALE: 1" = 100'
0 100 200

PLANNER:
META PLANNING + DESIGN
META PLANNING + DESIGN LLC
24285 KATY FREEWAY, SUITE 525
KATY, TEXAS 77494 | TEL: 281-810-1422

JUNE 26, 2023 PAGE: 2 OF 2 MTA-56002

THE HEART OF BRAZORIA COUNTY ANGLETON

APPLICATION FOR PLAT REVIEW/APPROVAL

Date: 05/31/2023

TYPE OF PLAT APPLICATION

ADMINISTRATIVE		PRELIMINARY		FINAL	
MINOR	☐	RESIDENTIAL	☒	RESIDENTIAL	☐
AMENDING/REPLAT	☐	COMMERCIAL	☐	COMMERCIAL	☐

Address of property: _____

Name of Applicant: Caitlin King Phone: 281-810-7228

Name of Company: META Planning + Design Phone: 281-810-1422

E-mail: cking@meta-pd.com

Name of Owner of Property: Emptor Angleton, LLC

Address: 9950 Westpark Drive #285, Houston, Texas, 77063

Phone: 281-810-7228 E-mail: cking@meta-pd.com

I HEREBY REQUEST approval of the preliminary and final plat of the subject property according to the plans which are submitted as a part of this application. I HEREBY AUTHORIZE the staff of the City of Angleton to inspect the premises of the subject property. I HEREBY SWEAR AND AFFIRM that all statements contained herein and attached hereto are true and correct to the best of my knowledge and belief.

Signature of Owner or Agent for Owner (Applicant) _____

NOTARIAL STATEMENT FOR APPLICANT:

Sworn to and subscribed before me this 31 day of May, 2023.

(SEAL)

NOTARY PUBLIC STATE OF TEXAS
Jayci Freeman
My Commission Expires
01/18/2025
ID No 132874736

Jfreeman

Notary Public for the State of Texas
Commission Expires: 01/18/2025