CITY OF ANGLETON
PLANNING AND ZONING COMMISSION

120 S. CHENANGO STREET, ANGLETON, TEXAS 77515
THURSDAY, FEBRUARY 04, 2021 AT 12:00 PM

AGENDA

NOTICE IS HEREBY GIVEN PURSUANT TO V.T.C.A., GOVERNMENT CODE, CHAPTER 551, THAT THE PLANNING AND ZONING COMMISSION OF ANGLETON WILL CONDUCT A MEETING, OPEN TO THE PUBLIC, ON THURSDAY, FEBRUARY 4, 2021, AT 12:00 P.M., AT THE CITY OF ANGLETON COUNCIL CHAMBERS LOCATED AT 120 S. CHENANGO STREET ANGLETON, TEXAS 77515.

In accordance with an Order of the Office of the Governor issued March 16, 2020, this meeting scheduled is in person and open to the public at The City of Angleton Council Chambers located at 120 S. Chenango Street Angleton, Texas 77515. In order to advance the public health goal of limiting face-to-face meetings (also called "social distancing") to slow the spread of the Coronavirus (COVID-19), seating will be limited to 50% Fire Code capacity or 24 people to allow for 6 feet of separation.

Citizens who wish to attend the Meeting in person must abide by the following requirements:

- Do not enter the building if you are having symptoms. Go home.
- Maintain a minimum distance of 6 feet from other citizens.
- Families or persons traveling together may sit together but maintain social distancing from others.

The City will be using a telephone/video conferencing tool called ZOOM to make the meeting available to the public. You have several options to participate:

1. Click the link to join the webinar: https://us02web.zoom.us/j/870256631 Passcode: 4364

2. Phone in at (346) 248-7799 or (669) 900-9128 or (253) 215-8782 or (312) 626-6799 or (646) 558-8656 or (301) 715-8592 or (888) 475-4499 and enter Meeting ID: 870-256-631

3. Download the ZOOM app to your phone and enter Meeting ID: 870-256-631

This meeting will also be live-streamed on Facebook Live at https://www.facebook.com/cityofangleton/.

The public will be permitted to offer public comments on each agenda item by emailing the City Secretary at citysecretary@angleton.tx.us by Wednesday, February 3, 2021 at 5:00 p.m., prior to the meeting. The request must include the meeting title, speaker's name, address, and the agenda item number.

DECLARATION OF A QUORUM AND CALL TO ORDER

PUBLIC HEARINGS AND ACTION ITEMS

1. Conduct a public hearing, discussion and possible action on the Final Replat of the King Subdivision being Lots 3-7 and part of Lot 8 of Block 1, D.B. Jamison Addition. The proposed final replat consists of eight (8) lots on an approximate 0.887 acres, is in a Planned Development Overlay District, and is located on the north side of W. Live Oak Street west of N. Erskine Street.EnterTextHere

2. Conduct a public hearing, discussion and possible action on the Preliminary Replat of the Style Subdivision with a variance to the sidewalk requirement of Chapter 23, Section 23-14.A Sidewalks of the Code of Ordinances of the City of Angleton. The subject property consists of an approximate 0.50 acres of land in the Single-Family Residential 5 (SF-5) District and is located on the north side of W. Miller Street approximately 250 feet west of Warren Street.

3. Conduct a public hearing, discussion and possible action on an ordinance to rezone an approximate 7.22 acres of land situated in the East 1/2East Waller League Survey, Abstract No. 134, Brazoria County, Texas from the Manufactured Home (MH) District to the Light Industrial (LI) District. The subject property is located on the south side of Phillips Road approximately 450 feet east of Shanks Road and is more commonly known as 238 E. Phillips Road.

REGULAR AGENDA

4. Discuss and consider possible action on a request to recommend approval of the Preliminary Replat of Kiber Reserve Phase 1. The subject property consists of 19.84-acre tract of land located North of E. Kiber and South of E. Orange Street bordered on the East by S. Dowling Street and on the West by Evans Street. The Kiber Reserve development is proposed to have 93 lots residential lots. Phase 1 will consist of 11.88 acres, 48 residential lots and 1 reserve lot. The property is currently in a Planned Development Overlay District.

5. Discuss and consider possible action on a request to recommend approval of the Final Plat of Windrose Green Section Two. The subject property consists of 13.24 acres in the T.S. Lee Survey, Abstract #318, 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.

EXECUTIVE SESSION

CONSIDER AND TAKE ACTION RESULTING FROM EXECUTIVE SESSION

FUTURE AGENDA ITEMS

REVIEW MEETING CALENDAR

ADJOURNMENT

CERTIFICATION

I, Walter Reeves, Development Services Director, 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: Monday, February 1, 2021 at 12:00 p.m. and remained so posted continuously for at least 72 hours proceeding the scheduled time of said meeting.

/S/ Walter Reeves
Walter Reeves
Development Services Director

In compliance with the Americans with Disabilities Act, the City of Angleton will provide reasonable accommodations for persons attending City meetings. The facility is wheelchair accessible and accessible parking spaces are available. Please contact the City Secretary at 979-849-4364, extension 2115 or email faguilar@angleton.tx.us.

AGENDA ITEM SUMMARY FORM

MEETING DATE: February 4, 2021

PREPARED BY: Walter E. Reeves Jr., AICP Development Services Director

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on the Final Replat of the King Subdivision being Lots 3-7 and part of Lot 8 of Block 1, D.B. Jamison Addition. The proposed final replat consists of eight (8) lots on an approximate 0.887 acres, is in a Planned Development Overlay District, and is located on the north side of W. Live Oak Street west of N. Erskine Street.EnterTextHere

AGENDA ITEM SECTION: Public Hearing

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This is a request for approval of the Final Replat the King Subdivision. The propose final replat consists of eight (8) lots on 0.887 acres in a Planned Development (PD) zoning district. The subject property is located on the north side of W. Live Oak Street west of N. Erskine Street The proposed final plat meets all requirements of the Code of Ordinances of the City of Angleton except as otherwise noted by the City Engineer.

RECOMMENDATION:

Staff recommends approval of the proposed Final Replat of the King Subdivision.

SUGGESTED MOTION:

I move we recommend approval of the proposed Final Replat of the King Subdivision

January 28, 2021

Mr. Walter Reeves
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Plat Review of King Subdivision Final Replat – 3rd Submittal Review
Angleton, Texas
HDR Job No. 20-007

Dear Mr. Reeves:

HDR Engineering, Inc. (HDR) has reviewed the plat for the above referenced subdivision and offers the following comments:

1. The Angleton Drainage District provided a letter of plat approval and waiver of drainage and detention plan, from the regular public meeting on December 8, 2020, with stipulations noted and is provided as an attachment in this review. No additional action is required.

HDR takes no objection to the King Subdivision Final Replat with the exceptions noted. It is noted that this does not necessarily mean that the entire plat submittal set, including all supporting data and calculations, has been completely checked and verified; however, the drawings and supporting data were prepared and signed and sealed by a Registered Professional Land Surveyor licensed to practice in the State of Texas, which therefore conveys the planner's and 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
Project Engineer

cc: Files (20-007)

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(713) 622-9264

ANGLETON DRAINAGE DISTRICT

A Political Subdivision of the State of Texas
P.O. Box 2469, Angleton, Texas 77516-2469
Phone: (979) 849-2414 Fax: (979) 848-8160

KB4 Venture Holdings, LLC
Attn: Derron Brown
17827 Shiloh Ridge
Rosharon, Texas 77583

Re: Plat Approval
Waiver of Drainage and Detention Plan
King Subdivision, West Live Oak Street, Angleton

Dear Mr. Brown,

During the regular public meeting of the Angleton Drainage District held on December 8, 2020, the Board of Supervisors unanimously approved the plat and a waiver of a drainage and detention plan for King Subdivision located at West Live Oak Street, Angleton, Texas as presented.

As presented the existing property will be divided into (8) eight lots each measuring approximately 34.5- feet by 140-feet. Housing, garages, porches and driveways will be constructed on each lot and will have a total impervious coverage of approximately 1,759 sq. ft. Detention will not be required for this subdivision as housing and other structures previously existed on the property. The property drains to the West Live Oak roadside ditch.

If any additional structures are added to this site in the future, a subsequent review by the Angleton Drainage District will be required to ensure there are no adverse impacts to adjacent landowners.

Approval of this plat and waiver of a drainage and detention plan in no way represents that KB4 Venture Holdings, LLC, Angleton, Texas has complied with any federal, state, county or other law, statute, procedure or requirement of any type beyond the approval of the plat and waiver of a drainage and detention plan approved, with the stipulations listed in this letter, if any, by the District.

Should you have any questions concerning this matter, please contact the Angleton Drainage District at 979.849.2414 Monday through Thursday, 7:00 a.m. to 5:30 p.m.

Sincerely,

David B. Spoor

David B. Spoor, Chairman
Angleton Drainage District Board of Supervisors

NOW. THEREFORE. KNOW ALL MEN BY THESE PRESENTS:

THAT DAVID KING. AS ACTING MANAGER OF KB4 VENTURE HOLDINGS. LLC. HEREIN BY AND THROUGH ITS DULY AUTHORIZED OFFICERS. DOES HEREBY ADOPT THIS PLAT DESIGNATING THE HEREINABOVE AS KING SUBDIVISION. 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 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 UTLITY ENTITIES SHALL AT ALL TIMES HAVE THE 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

DULY AUTHORIZED AGENT

STATE OF TEXAS

COUNTY OF BRAZORIA

BEFORE ME. THE UNDERSIGNED PERSONALLY APPEARED DAVID KING. KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT. AND ACKNOWLEDGED TO ME THAT HE 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 THE ____ DAY OF _____. 2021.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

MY COMMISSION EXPIRES _____. 20 ___

ANGLETON DRAINAGE DISTRICT

APPROVED THIS _____ DAY OF _____. 2021. 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 THIS SUBDIVISION ARE AVAILABLE TO RECEIVE RUNOFF FROM THE FACILITIES DESCRIBED ON THIS PLAT.

2) THAT DRAINAGE FACILITIES DESCRIBED IN THIS PLOT 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 RESPONSIBILITY FOR CONSTRUCTION. OPERATION OR MAINTENANCE OF SUBDIVISION DRAINAGE FACILITIES.

THE DISTRICT REVIEW IS SOLELY BASED 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 MAKING THE PLAT OR PLAN HEREIN. THEIR OR ITS PRINCIPALS OR AGENTS.

CHAIRMAN. DAVID SPOOR

ASSISTANT CHAIRMAN. WELDON ZGARBA

SECRETARY. RONALD E. SLATE

STATE OF TEXAS

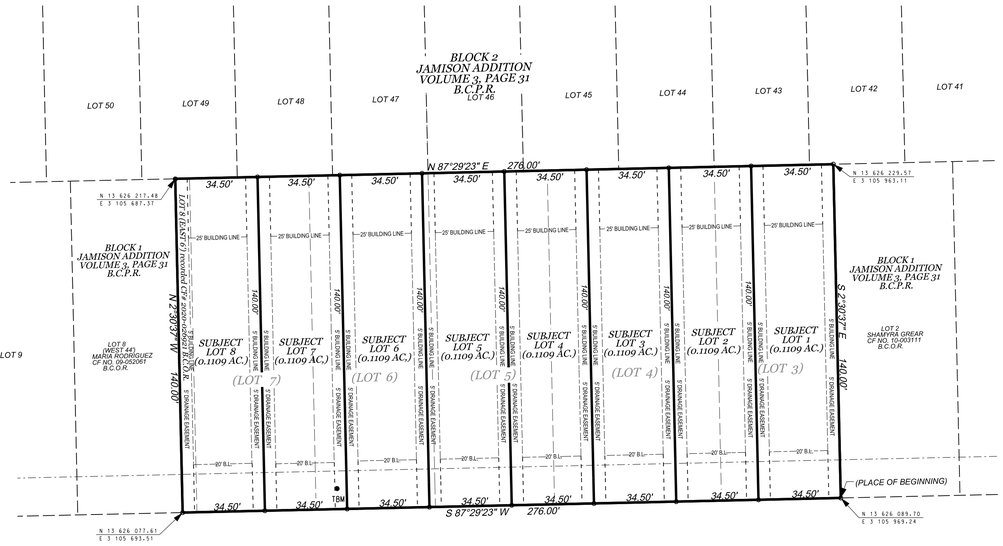
COUNTY OF BRAZORIA

THAT I. TERRY SINGLETARY. 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.

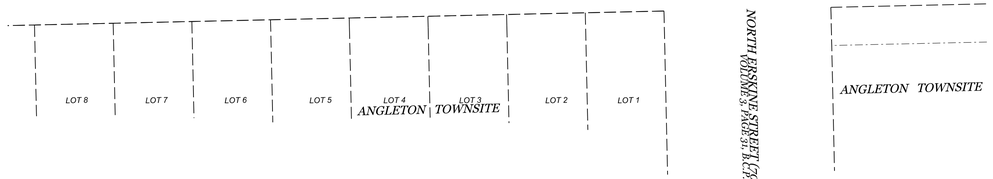
STATE OF TEXAS · TERRY SINGLETARY · 4808 · REGISTERED PROFESSIONAL LAND SURVEYOR

TERRY SINGLETARY
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4808

STATE OF TEXAS
COUNTY OF BRAZORIA
This plat is hereby adopted by the owners of King Subdivision and approved by the City of Angleton. 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.



WEST LIVE OAK STREET (38' R.O.W. per plat)



VICINITY MAP (N.T.S.)

APPROVED THIS____DAY OF_____. 21__. BY THE PLANNING AND ZONING COMMISSION. CITY OF ANGLETON. TEXAS.

CHAIRMAN. PLANNING AND ZONING COMMISSION

CITY SECRETARY

APPROVED THIS____DAY OF_____. 21__. BY THE CITY COUNCIL. CITY OF ANGLETON. TEXAS.

MAYOR

CITY SECRETARY

STATE OF TEXAS
COUNTY OF BRAZORIA

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME ON THIS____DAY OF_____. 20__. BY _____. CITY SECRETARY. CITY OF ANGLETON. ON BEHALF OF THE CITY.

NOTARY PUBLIC
STATE OF TEXAS

MY COMMISSION EXPIRES _____. 20 ___.

NOTES:

NOTICE: ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PANE COORDINATE SYSTEM. SOUTH CENTRAL ZONE (NAD 83).

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.

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.

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.

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.

NOTICE: THE PURPOSE OF THIS PLAT IS TO DIVIDE THE PROPERTY INTO EIGHT LOTS.

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.

NOTICE: BUILDING LINES ARE PER THE CITY OF ANGLETON PLANNED DEVELOPMENT.

NOTICE: THE PROPERTY OWNERS ARE RESPONSIBLE FOR THE MAINTENANCE OF 5' DRAINAGE EASEMENTS ALONG INTERIOR PROPERTY LINES.

NOTICE: THIS PROPERTY LIES WITHIN THE LIMITS OF ZONE "X", PER FEMA FLOOD INSURANCE RATE MAP NO. 48039C0445K. DATED DECEMBER 30. 2020.

LEGAL DESCRIPTION:

KING SUBDIVISION
STATE OF TEXAS
COUNTY OF BRAZORIA

ALL THAT CERTAIN 0.887 ACRES BEING LOTS 3. 4. 5. 6. 7 AND THE EAST SIX (6) FEET OF LOT 8. BLOCK 1 OF THE D. B. JAMISON ADDITION RECORDED IN VOLUME 3. PAGE 31 OF THE BRAZORIA COUNTY. TEXAS PLAT RECORDS AND BEING LOCATED IN THE J. DE J. VALDERAS SURVEY. ABSTRACT 380. CITY OF ANGLETON. BRAZORIA COUNTY. TEXAS TO WHICH REFERENCE IS HEREBY MADE FOR ALL PURPOSES AND MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS USING SURVEY TERMINOLOGY TO WHICH ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM. SOUTH CENTRAL ZONE (NAD83) AS FOLLOWS:
BEGINNING AT A SET 5/8" IRON ROD LOCATED IN THE PRESENT NORTH RIGHT-OF-WAY LINE OF WEST LIVE OAK STREET (38' R.O.W. PER PLAT). ALSO BEING LOCATED AT THE COMMON CORNER OF THE SOUTHWEST CORNER OF LOT 2. BLOCK 1 OF SAID D. B. JAMISON ADDITION WITH THE SOUTHEAST ORIGINAL CORNER OF LOT 3 OF SAID D. B. JAMISON ADDITION AND BEING THE PLACE OF BEGINNING OF HEREIN DESCRIBED 0.887 ACRE TRACT:
THENCE SOUTH 87°29'23" WEST. COINCIDENT WITH THE PRESENT NORTH RIGHT-OF-WAY LINE OF SAID LIVE OAK STREET. A DISTANCE OF 276.00 FEET TO A SET 5/8" IRON ROD FOR THE SOUTHWEST CORNER OF HEREIN DESCRIBED 0.887 ACRE TRACT AND BEING LOCATED SOUTH 87° 29'23" WEST. 6.00 FEET FROM THE ORIGINAL COMMON CORNER OF LOT 7 AND LOT 8 OF SAID D. B. JAMISON ADDITION:
THENCE NORTH 2°30'37" WEST. COINCIDENT WITH THE EASTERLY 6.0' OF LOT 8 AND THE WESTERLY 44' OF SAID LOT 8 CONVEYED TO MARIA RODRIGUEZ AS DESCRIBED IN AN AFFIDAVIT OF HEIRSHIP RECORDED IN CLERK'S FILE NO. 2009-052061 OF THE OFFICIAL RECORDS OF BRAZORIA COUNTY. TEXAS. A DISTANCE OF 140.00 FEET TO A FOUND 1/2" IRON ROD FOR THE NORTHWEST CORNER OF HEREIN DESCRIBED TRACT:
THENCE NORTH 87°29'23" EAST. COINCIDENT WITH LOTS 42 THRU 49. BLOCK 2 OF SAID D. B. JAMISON ADDITION. A DISTACE OF 276.00 FEET TO A SET 5/8" IRON ROD FOR THE ORIGINAL NORTHEAST CORNER OF 3. SAME BEING THE NORTHWEST CORNER OF LOT 2. BLOCK 1 OF SAID D. B. JAMISON ADDITION AND BEING THE NORTHEAST CORNER OF HEREIN DESCRIBED TRACT:
THENCE SOUTH 2°30' 37" EAST. COINCIDENT WITH SAID LOT 2 CONVEYED TO SHAMYRA GREAR AS DESCRIBED IN CLERK'S FILE NO. 2010-003111. OF THE OFFICIAL RECORDS OF BRAZORIA COUNTY. TEXAS. AND LOT 3. A DISTANCE OF 140.00 FEET TO THE PLACE OF BEGINNING AND COINTAINING 0.887 ACRE MORE OR LESS.

LEGEND
- FOUND IRON PIPE/ROD
- SET 5/8" IRON ROD
- TBM (TEMPORARY BENCHMARK)
- BUILDING LINE
- LOT LINE
- PROPERTY LINE

TBM

SPIKE SET IN POWER POLE

ON LOT NO. 7

ELEVATION = 32.8'

OWNER:
KB4 VENTURE HOLDINGS. LLC
DAVID KING (ACTING MANAGER)
7835 LAKEBROOK DRIVE
MISSOURI CITY. TEXAS 77459

FINAL REPLAT

OF

KING SUBDIVISION

CONSISTING OF 0.887 ACRES

BEING

LOTS 3, 4, 5, 6, 7 & THE EAST SIX (6) FEET OF LOT 8, BLOCK 1

OF

D.B. JAMISON ADDITION

RECORDED IN

VOLUME 3, PAGE 31

OF THE

BRAZORIA COUNTY PLAT RECORDS

IN THE

J. DE J. VALDERAS SURVEY
ABSTRACT 380

CITY OF ANGLETON

BRAZORIA COUNTY, TEXAS

JANUARY 2021

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FIRM: 10024500 FAX: 979.265.9940

USER: Untitled Workspace
DATE/TIME: 12/17/2021 7:36:11 PM
C:\DGN\Boundary\Angleton\Jamison's Addition\Lots3,4,5,6,7,& east 6'of 8'\Replat Rev.3 .dgn

AGENDA ITEM SUMMARY FORM

MEETING DATE: February 4, 2021

PREPARED BY: Walter E. Reeves Jr., AICP Development Services Director

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on the Preliminary Replat of the Style Subdivision with a variance to the sidewalk requirement of Chapter 23, Section 23-14.A Sidewalks of the Code of Ordinances of the City of Angleton. The subject property consists of an approximate 0.50 acres of land in the Single-Family Residential 5 (SF-5) District and is located on the north side of W. Miller Street approximately 250 feet west of Warren Street.

AGENDA ITEM SECTION: Public Hearing

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This is a request for approval of the preliminary replat of the Style Subdivision with a variance to the sidewalk requirement of Chapter 23, Section 23-14.A. Sidewalks. The subject property consists of an approximate 0.50 acres of land in the Single-Family Residential 5 (SF-5) District and is located on the north side of W. Miller Street approximately 250 feet west of Warren Street. Accompanying this agenda item summary is the City Engineer's review and determination, which contains a list of items that will need to be addressed with any final plat application. Also accompanying this summary is the applicant's variance request.

Pursuant to Section 23-102 B.*Variance approval standards.* Variances may be granted when:

1. There are circumstances specific to the property that create an undue hardship that generally do not apply to surrounding properties; such as, but not limited to, its shape, or topography;

There are no circumstances specific to the property that create an undue hardship.

2. Special consideration is necessary to allow an applicant the same right of use enjoyed under the LDC by surrounding properties;

The applicant identifies that there are no sidewalks installed on any street in the area.

3. Consideration is unique to the subject property and would not generally set an adverse precedent for other applications;

Infill redevelopment is sometimes difficult as public improvement requirements are applied to infill redevelopment projects as a “retrofit” to bring the property up to current public improvement standards. The subject property was previously developed and development in area is spread out. To install sidewalk along W. Miller Street along the subject property will not only involve the installation of the sidewalk, but would also have to address street front drainage and possibly reconstruction of part of the street. An infill redevelopment project could be considered as unique to the property and would not generally set an adverse precedent.

4. The hardship was not created by the applicant; and

The hardship is not created by the applicant.

5. A variance would not be detrimental to any adjacent properties or to public health and safety.

It is hard to imagine how a variance would be detrimental to any adjacent properties or to public health and safety as there are no sidewalks in this area of W. Miller Street.

RECOMMENDATION:

Staff recommends approval of the proposed preliminary replat of the Style Subdivision and the variance to Section 23-14.A Sidewalks subject to the condition that the City Engineer’s commends be cleared with any final replat.

SUGGESTED MOTION:

I move we recommend approval of the proposed preliminary replat of the Style Subdivision and the variance to Section 23-14.A Sidewalks subject to the condition that the City Engineer’s commends be cleared with any final replat.

January 28, 2021

Mr. Walter Reeves
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Plat Review of Styles Subdivision Preliminary Replat – 1st Submittal Review
Angleton, Texas
HDR Job No. 20-007

Dear Mr. Reeves:

HDR Engineering, Inc. (HDR) has reviewed the plat for the above referenced property and offers the following comments:

1. Update the plat title according to include the plat application type (i.e. Preliminary Replat).
2. Use the plat certificates for Owner's Acknowledgement and Dedication Statement found in Angleton LDC Sec. 23-115.
3. Use the surveyor plat certificate found in Angleton LDC Sec. 23-114.
4. Provide right of way information for Miller Street (i.e. right of way width, record information).
5. Include plat notes found in Angleton LDC Sec. 23-115 Standard notes for all plats.
6. Include note on the plat that sidewalks will be required.
7. Provide topographic contour information on the plat.

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 Style Subdivision Preliminary Replat 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 (20-007)

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(713) 622-9264

STATE OF TEXAS - COUNTY OF BRAZORIA

I, ROGELIO RODRIGUEZ, OWNER OF THE PROPERTY SUBDIVIDED IN THE ATTACHED RE-PLAT OF 0.50 ACRES, AS RECORDED IN COUNTY CLERK'S FILE NO. 2020-033011 OF THE OFFICIAL RECORDS OF BRAZORIA COUNTY, TEXAS, DO HEREBY MAKE SUBDIVISION OF SAID PROPERTY ACCORDING TO THE LINES, LOTS, BUILDING LINES, STREETS, EASEMENTS, AND RIGHT-OF-WAY SHOWN HEREON, AND DESIGNATE SAID SUBDIVISION, AND ALL BEING OUT OF THE J. DE J. VALDERAS SURVEY, ABSTRACT 380, BRAZORIA COUNTY, TEXAS, AND DO HEREBY DEDICATE TO THE PUBLIC USE ALL STREETS, EASEMENTS AND RIGHT-OF-WAY SHOWN HEREON, FOR THEIR USE FOREVER; AND DO HEREBY WAIVE ANY CLAIMS FOR DAMAGES OCCASIONED BY THE ESTABLISHING OF GRADES AS APPROVED FOR THE STREETS OR ALLEYS, OR OCCASIONED BY THE ALTERATION OF THE SURFACE OF ANY PORTION OF STREETS OR ALLEYS TO CONFORM TO SUCH GRADES, AND DO HEREBY BIND MY SELF, MY HEIRS, SUCCESSORS AND ASSIGNS, TO WARRANT AND DEFEND THE TITLE OF THE LAND SO DEDICATED.

_____
ROGELIO RODRIGUEZ

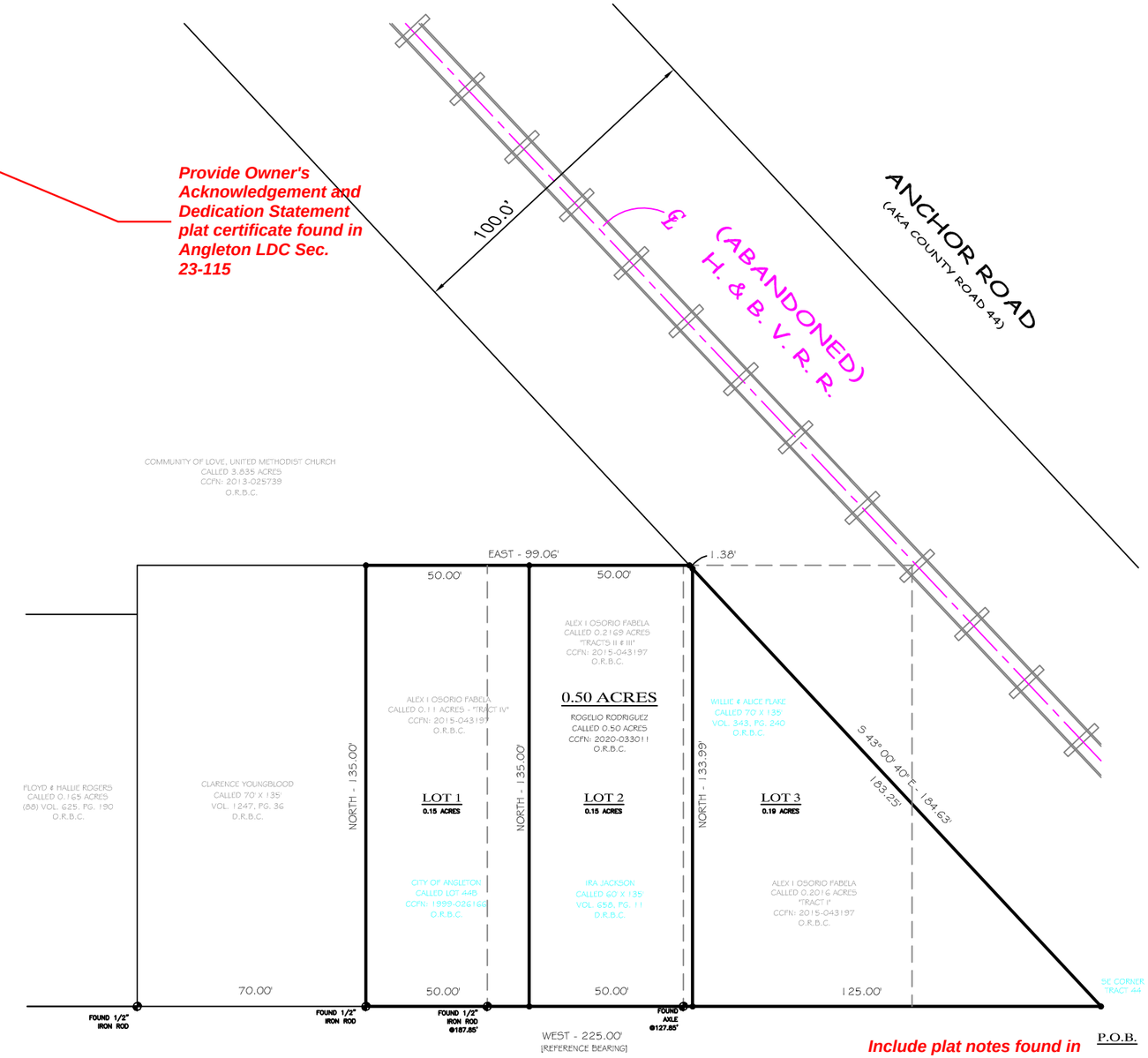
STATE OF TEXAS - COUNTY OF BRAZORIA

BEFORE ME, THE UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED, ROGELIO RODRIGUEZ, KNOWN TO ME TO BE THE OWNER WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED TO ME THAT HE EXECUTED THE SAME FOR THE PURPOSE AND CONSIDERATION THEREIN EXPRESSED.

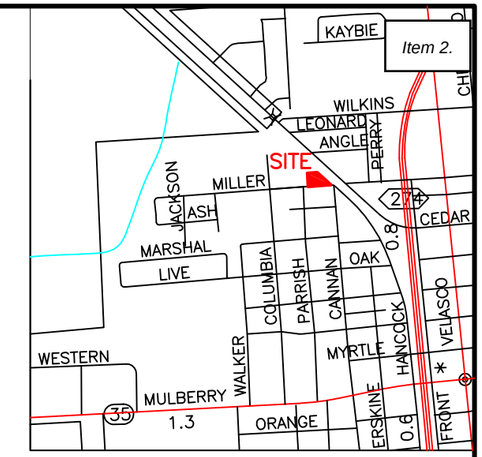
GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS _____ DAY OF _____ 2020.

_____
NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS.
MY COMMISSION EXPIRES _____.

Provide Owner's Acknowledgement and Dedication Statement plat certificate found in Angleton LDC Sec. 23-115



MILLER STREET
(A.K.A. WEST MILLER STREET)



VICINITY MAP
NOT TO SCALE

SUBDIVISION APPROVALS

CITY MANAGER

I HEREBY CERTIFY THAT THE ABOVE AND FOREGOING STYLE S/D AND BEING A PLAT OF A CALLED 0.50 ACRES, SITUATED IN THE J. DE J. VALDERAS SURVEY, ABSTRACT NO. 380, IN THE CITY OF ANGLETON, TEXAS WAS APPROVED THIS THE __ DAY OF _____, 2020

_____
CITY MANAGER

SAID ADDITION SHALL BE SUBJECT TO ALL THE REQUIREMENTS OF THE CODE OF ORDINANCES OF THE CITY OF ANGLETON, TEXAS.

WITNESS MY HAND THIS THE _____ DAY OF _____, 2020.

_____
CITY SECRETARY

ANGLETON DRAINAGE DISTRICT

ACCEPTED, THIS THE _____ DAY OF _____, 2020.
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 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 RESPONSIBILITIES AND/OR DECISION MAKING POWER OF THE PARTY SUBMITTING THE PLAT OR PLAN HEREIN, THEIR OR ITS PRINCIPALS OR AGENTS.

_____ CHAIRMAN
_____ MEMBER
_____ MEMBER

NOTES:

1) ALL DRAINAGE EASEMENTS AND RIGHT-OF-WAYS SHALL BE KEPT CLEAR OF FENCES, BUILDINGS, FOUNDATIONS, PLANTINGS AND OTHER OBSTRUCTIONS TO THE OPERATION AND MAINTENANCE OF THE DRAINAGE FACILITY.

2) THIS PROPERTY IS LOCATED WITHIN ZONE "X" UNSHADED AND IS NOT WITHIN THE 100 YEAR FLOOD PLAIN, ACCORDING TO THE FLOOD HAZARD MAP OF BRAZORIA COUNTY, TEXAS, COMMUNITY NO. 480458, PANEL NO. 0430, SUFFIX "H", DATED: JUNE 5, 1989.

3) ALL CORNERS ARE 1/2" IRON RODS 18" IN DEPTH MARKED WITH A PLASTIC CAP LABELED "PINPOINT RPLS 6086" UNLESS OTHERWISE LABELED AS FOUND.

4) THE PURPOSE OF THIS PLAT IS TO MAKE A S/D OF 3 LOTS FROM A CALLED 0.50 ACRE TRACT.

PROPERTY DESCRIPTION

Being a 0.50 acre tract of land out of Tract No. 44 of the New York and Texas Land Company Subdivision and all being situated in the J. de J. Valderas Survey, Abstract No. 380, Brazoria County, Texas and being all of the same tracts of land labeled "Tracts I, II, III & IV" conveyed to Alex I. Osorio Fabela recorded in County Clerk's File No. 2015-043197 of the Official Records of Brazoria County, Texas and being all previously recorded as a called 70 foot by 135 foot tract conveyed to Willie and Alice Flake recorded in Volume 343, Page 240 of the Deed Records of Brazoria County, Texas, a called 60 foot by 135 foot tract conveyed to Ira Jackson recorded in Volume 658, Page 11 of the Deed Records of Brazoria County, Texas and a tract labeled "Lot 44B" conveyed to the City of Angleton recorded in County Clerk's File No. 1999-026166 of the Official Records of Brazoria County, Texas and being more fully described by metes and bounds as follows: (All bearings based on the South line of Tract 44 being - West)

BEGINNING at a ½" iron rod set marked with a plastic cap labeled "PINPOINT RPLS 6086" for the intersection of the Southwest right-of-way of an abandoned H. & B.V. R.R. [being offset 100 feet and parallel to Anchor Road, (AKA County Road 44),] and the North R.O.W. of Miller Street for the Southeast corner of Tract 44, the Southeast corner of said Flake tract and being Southeast corner and **TRUE PLACE OF BEGINNING** of the herein described tract

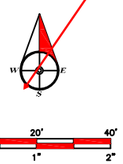
THENCE West [Reference Bearing], along the North R.O.W. of Miller Street, the South line of Tract 44 and the South line of Flake tract, at 127.85 feet pass an axle found for the Southwest corner of said Flake tract and the Southeast corner of said Jackson tract, continuing along the North R.O.W. of Miller Street, the South line of Tract 44 and the South line of said Jackson tract, at 187.85 feet pass a ½" iron rod found for the Southwest corner of said Jackson tract and the Southeast corner of said City of Angleton tract and continuing along the North R.O.W. of Miller Street, the South line of Tract 44 and the South line of said City of Angleton tract for a total distance of 225.00 feet to a ½" iron rod found for the Southwest corner of said City of Angleton tract, the Southeast corner of a called 70 foot by 135 foot tract conveyed to Clarence Youngblood recorded in Volume 1247, Page 36 of the Deed Records of Brazoria County, Texas and being the Southwest corner of the herein described tract, said iron rod bears East - 70.00 feet from a ½" iron rod found for the Southwest corner of said Youngblood tract and the Southeast corner of a called 0.165 acre tract conveyed to Floyd and Hallie Rogers recorded in (88) Volume 625, Page 190 of the Official Records of Brazoria County, Texas;

THENCE North - 135.00 feet along the common line of the Youngblood and City of Angleton tract to a ½" iron rod set marked with a plastic cap labeled "PINPOINT RPLS 6086" in the South line of a called 3.835 acre tract conveyed to Community of Love, United Methodist Church recorded in County Clerk's File No. 2013-025739 of the Official Records of Brazoria County, Texas for the Northwest corner of the City of Angleton tract, the Northeast corner of the Youngblood tract and being the Northwest corner of the herein described tract;

THENCE East - 99.06 feet along the South line of called 3.835 acre tract, North line of the City of Angleton tract, the North line of the Jackson tract and the North line of the Flake tract to a ½" iron rod set marked with a plastic cap labeled "PINPOINT RPLS 6086" in the Southwest R.O.W. of said abandoned H. & B.V. R.R. and the Northeast line of Tract 44 for the Northeast corner of the herein described tract;

THENCE South 43° 00' 40" East - 184.63 feet along the Southwest R.O.W. of said abandoned H. & B.V. R.R. and the Northeast line of Tract 44 to the **PLACE OF BEGINNING** and containing 0.50 acres of land, more or less. *This description is based on an actual survey made on the ground and is accompanied by a plat prepared under the direct supervision of George K. Lane, RPLS No. 6086 on May 27th, 2020.*

PIN POINT Surveying & Mapping, LLC
PO Box 3344, Lake Jackson, Texas
Phone (979) 299-3373
October 30th, 2020



Submit plat to full size sheet (i.e. 18"x24", 22"x34")

STATE OF TEXAS - COUNTY OF BRAZORIA

I, GEORGE K. LANE, A REGISTERED PROFESSIONAL LAND SURVEYOR OF THE STATE OF TEXAS, DO HEREBY CERTIFY THAT THE ATTACHED PLAT OF A CALLED 0.50 ACRES, ALL BEING OUT OF THE J. DE J. VALDERAS SURVEY, ABSTRACT NO. 380, BRAZORIA COUNTY, TEXAS AND WAS PREPARED FROM A BOUNDARY SURVEY MADE ON THE GROUND UNDER MY SUPERVISION, AND THAT THIS PLAT CORRECTLY REPRESENTS THAT SURVEY.

I FURTHER CERTIFY THAT THE ABOVE FACTS ARE CORRECT, AND DO FURTHER CERTIFY THAT THE LOCATION AND CONFIGURATION OF SAID SUBDIVISION ARE AS SHOWN AND ARE IN ACCORDANCE WITH THE CODE OF REGULATIONS OF THE CITY OF ANGLETON, TEXAS.

_____
GEORGE K. LANE, RPLS
REGISTERED PROFESSIONAL LAND SURVEYOR
LICENSE NO. 6086

Use plat certificate found in Angleton LDC Sec. 23-114

Provide right of way information for Miller Street. Right of way dedication may be required pending existing right of way width.

Include plat notes found in Angleton LDC Sec. 23-115 Standard notes for all plats

STYLE SUBDIVISION

Being a Plat of a called 0.50 acre tract of land in the J. De J. Valderas Survey, Abstract 380, Brazoria County, Texas.

Include note that sidewalks will be required

Include plat type in the heading

To whom this may concern

I am writing letter to obtain a variance for the property on West Miller I Know and under stand the new rules and regulations of building a New home in the city of Angleton. Due to that this is an older neighborhood and houses where built in the 1960 there are no sidewalks in any nearby home. The grant of this variance would not change style of the subdivision or any of its functionality. The other reason for this variance is that these lots have a small ditch in front of the property next to the road adding the sidewalk to the houses will further reduce the size of the property.

AGENDA ITEM SUMMARY FORM

MEETING DATE: February 4, 2021

PREPARED BY: Walter E. Reeves Jr., AICP Development Services Director

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on an ordinance to rezone an approximate 7.22 acres of land situated in the East 1/2East Waller League Survey, Abstract No. 134, Brazoria County, Texas from the Manufactured Home (MH) District to the Light Industrial (LI) District. The subject property is located on the south side of Phillips Road approximately 450 feet east of Shanks Road and is more commonly known as 238 E. Phillips Road.

AGENDA ITEM SECTION: Public Hearing

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This is a request from Mr.Manuel Gonzalez to rezone an approximate 7.22 acres of land from the Manufactured Home (MH) District to the Light Industrial (LI) District. The subject property is located on the south side of Phillips Road approximately 450 feet east of Shanks Road and is more commonly known as 238 E. Phillips Road.

The Future Land Use Plan from the Angleton Comprehensive Plan Update designates the subject property as being appropriate for single family residential use. The proposed rezoning does not appear to be supported by any goals of the Comprehensive Plan. The proposed rezoning is inconsistent with the following policies identified in Chapter 3 Land Use Plan:

1. Industrial development should have good access to truck routes, hazardous material routes and railroads.
2. Industrial uses should be targeted in selected industrial development areas.
3. Industrial development should have good access to primary streets and major highways.
4. Industrial development should be separated from other uses by buffers.
5. Industrial development should not be directly adjacent to residential areas.

Existing Land Use and Zoning

North: Single-family residential use in the SF 7.2 District.

East: Single-family residential use and undeveloped land in the MH District.

South: Some single-family residential use and undeveloped land in the SF 7.2 District and a Planned Development District.

West: Single-family residential use and undeveloped land in the SF 7.2 District and the MFR-29 District.

The nearest industrially zoned land is approximately 600 feet to the west of the subject property across Shanks Road. The nearest industrially used land is along S. Velasco and is approximately 900 feet to the west of the subject property.

Phillips Road is designated as a Major Collector on the Mobility Plan in this area. Pursuant to Table 23-12 Major Collector's have 70' to 80' of right-of-way, 36' of pavement and 2-3 twelve (12) foot lanes. Currently, Phillips Road does not meet this standard and does not provide easy access to SH 288 or SH 35.

Accompanying this report is a comparison use chart of the MH and LI districts, keeping in mind that while the applicant may have a particular use in mind for the property, all other uses are allowed as permitted by the district as well.

The proposed rezoning is consistent with the Future Land Use Plan and is not supported by other policies of the Comprehensive Plan. Nor is it consistent with current surrounding land uses and zonings and Phillips Road is currently not developed to a standard that would provide adequate access for industrial uses.

RECOMMENDATION:

Staff recommends denial of the proposed rezoning of an approximate 7.22 acres from the Manufactured Home (MH) District to the Light Industrial (LI) District.

SUGGESTED MOTION:

I move we recommend denial of the proposed rezoning of an approximate 7.22 acres from the Manufactured Home (MH) District to the Light Industrial (LI) District.

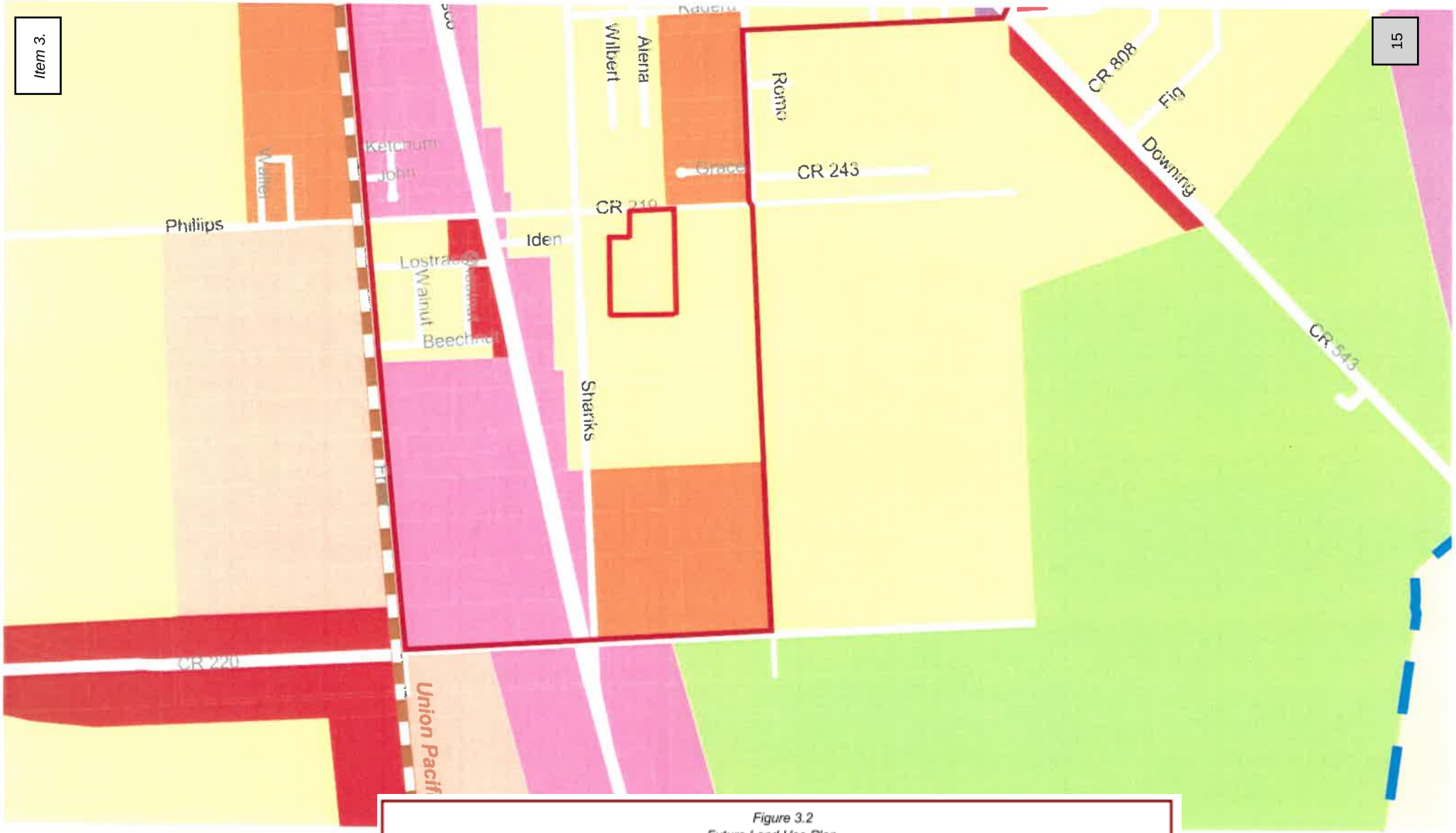
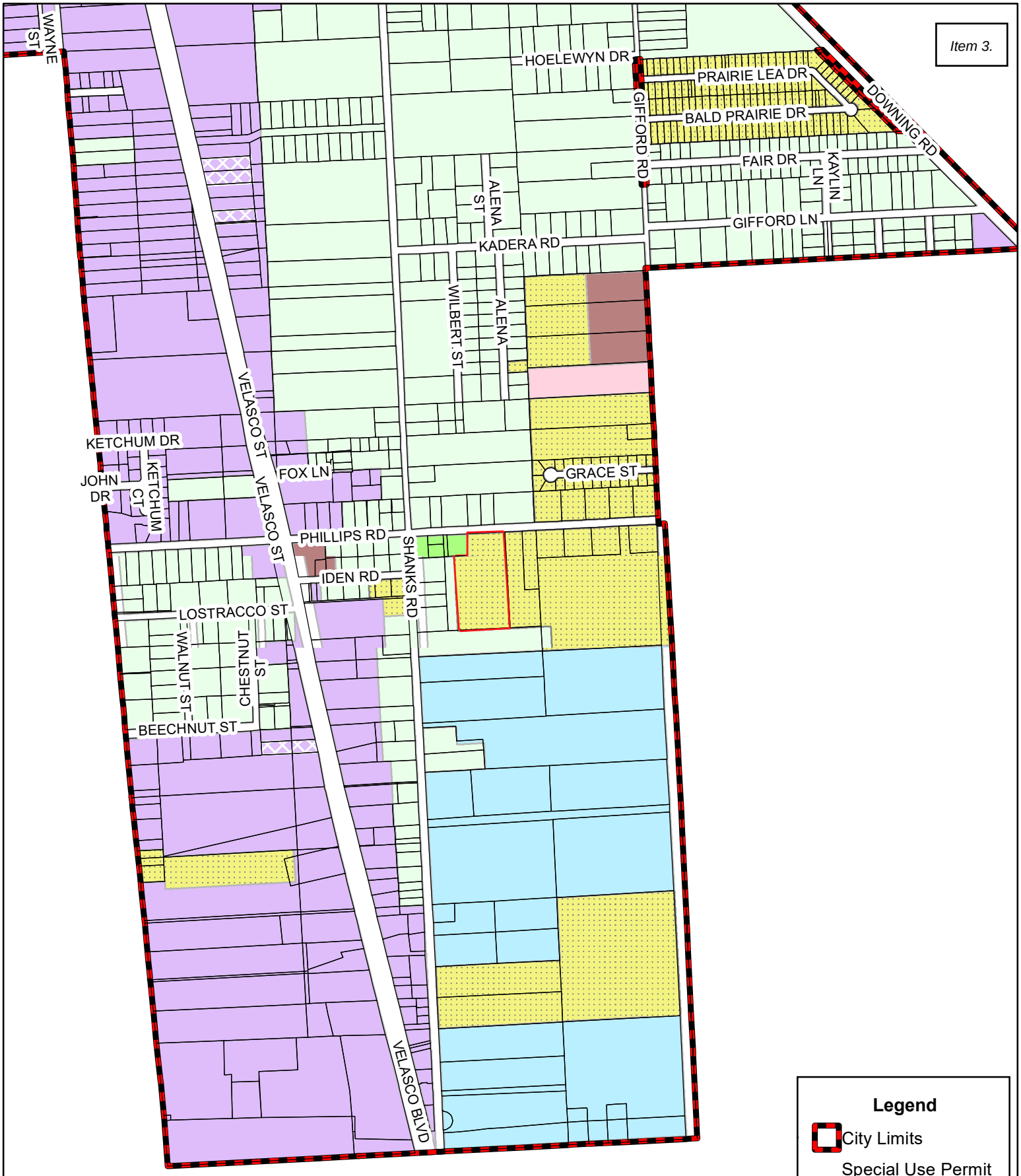


Figure 3.2
Future Land Use Plan

Land Use Categories

- Agricultural
- Single Family Residential
- Multi-Family Residential
- Manufactured Housing
- Office/Retail/Multi-Family Residential
- Office/Retail
- Commercial
- Industrial/Commercial
- Industrial
- Downtown
- Right Of Way
- Angleton Study Area
- Angleton City Limits

NOTE: A comprehensive plan shall not constitute zoning regulations or establish zoning district boundaries.



Disclaimer: This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. Gov. C. §2501.102. The user is encouraged to independently verify all information contained in this product. The City of Angleton makes no representation or warranty as to the accuracy of this product or to its fitness for a particular purpose. The user: (1) accepts the product AS IS, WITH ALL FAULTS; (2) assumes all responsibility for the use thereof; and (3) releases the City of Angleton from any damage, loss, or liability arising from such use.

City of Angleton

Operated by:
City of Angleton
121 S. Velasco St.
Angleton, TX 77515
979-849-4364

City of Angleton GIS Mapping

1 " = 956 '

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Agricultural				
Bulk Grain/Feed Storage				x
Farms, General (Crops)				x
Farms, General (livestock/ranch)				x
Greenhouse (non retail/hobby)		X		x
Hay, Grain, Feed Sales				x
Livestock Sales				x
Orchard/Crop Propagation				x
Plant Nursery				x
Stables (as a business)			x	
Stables (private/accessory use)			x	
Stables (private/principal use)			x	
Residential				
Accessory building/structure (residential)		x		
Accessory building/structure (non residential)				x
Caretaker's Guard Residence		x		x
Community Home		x		
Family Home Adult Care		x		
Loft Residence (2nd floor only)		x		
Residential dwelling, existing		x		x
Office				
Armed Services recruiting center				x
Check cashing service				x
Credit agency				x
Insurance agency				x
Medical lab				x
Officer (Brokerage services)				x
Offices (legal)				x
Offices (Health services)				x
Offices (medical Clinic or office)				x
Offices (professional)				x
Real Estate offices				x
Telemarketing				x
Bank/Credit Union				x
Savings and Loan				x
Security Monitoring Compant (no outside storage)				x
Personal & Business Services				
Appliance repair				x
Artist studio				x
Amulance service (private)				x

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Automobile driving school				x
ATM's				x
Barer/Beauty shop/college				x
Barber/beauty shop (non college)				x
Communication Equipment Sales/service				x
Computer sales				x
Creit union				x
Dance/drama/music schools				x
Extended stay motels/hotels				x
Exterminator service (no outdoor storage)				x
Financial services				x
Funeral home				x
Hotel/motel				x
Marial Arts school/dance studio				x
Laundromat (self-service washateria				x
Laundy/dry cleaning (dropp off/pick up)				x
Locksmith				x
Massage establishment				x
Mini-warehouse/self-storage				x
Paint shop				x
Photo studio				x
Photocoying				x
Shoe repair				x
Studio for radio or TV				x
Tailor shop				x
Tool rental (indoor storage only)				x
Tool rental (outdoor storage)				x
Travel agency				x
Retail Uses				
All-terrain vehicle dealer				X
Antique shop (no outside storage)				X
Antique shop (outside storage)			X	
Art Dealter/Gallery				X
Auto Dealer (new auto, used accessories)				X
Auto dealer - Used auto sales				X
Auto supply store for new and rebuilt parts				X
Bkery (retail)				X
Bakery (wholesale)				X
Bike sales and/or repair				X

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Book store				X
Building Materials Sales				X
Cabinet shop (manufacturing)				X
Cafeteria				X
Confectionery Store (retail)				X
Consignment shop				X
Convenience store (without gas sales)				X
Dept. Store				X
Drapery shop				X
Florist				X
Food or Grocery				X
Furniture sales (indoor)				X
Garden shop (no outside storage)				X
Graveston sales				X
Handicraft shop				X
Harware store				X
Home Improvement Center				X
Itinerant Vendor/Vending			X	
Lawnmower sales, repair				X
Major appliance sales/rental (indoor)				X
Market (community, farmers)			X	
Market (public, flea)			X	
Motorcycle dealer (new/repair)				X
Personal watercraft sales (new/repair)				X
Needlework shop				X
Pet shop/supplies/grooming				X
Pharmacy				X
Plant Nursery (retail sales/outside storage)				X
Produce stand				X
Recycling kiosk				X
Restaurant				X
Restaurant (drive-in)				X
Retail story (general)				X
Security systems installation co				X
Studio tattoo or body piercing			X	
Temp outsdie retail sales/comercial promotion				X
Upholstery shop (non-auto)				X
Used merchandise/furniture store				X

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Vacuuum cleaner sales, repair				X
Veterinarian (indoor kennels)				X
Woodworking shop (ornamental)				X
Transportation & Automotive Uses				
Auto accessories				X
Auto body repair				X
Auto leasing and rental				X
Auto glass repair/tinting				X
Auto interior shop/upholstery				X
Auto muffler shop				X
Auto paint shop				X
Auto parts sales (indoor only no repair bays)				X
Auto repair (major)				X
Auto repair (minor)				X
Auto storage or audction				X
Auto tire repair/sales (indoor)				X
Auto wrecker service				X
Car wash (self-serve, automated)				X
Full-service car wash (detail shop)				X
Gasoline sevice station				X
Limo/taxi service				X
Public parking garage				X
Quick lube/oil change minor inspec.				X
Tire sales (outdoor)				X
Truck rental				X
Amusement & Recreation Uses				
Amusement devices/Arcase (4+ devices, indoor only)			X	
Amusement commercial (indoor)				X
Amusement, comercial (outdoors)				X
Billiard/pool facility (3+ tables)			X	
Bingo hall			X	
Bowling center				X
Broadast station with tower			X	
Country club (private)	X			X
Dance hall/dancing facility				X
Day camp				X
Dinner theatre				X
Driving range				X
Exhibition hall				X
Fair ground			X	
Golf course (mini)				X
Golf course (private)	X			

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Golf course (public)				X
Health Club (indoor)				X
Motion picture theatre (indoor)				X
Motion picture studio, commercial				X
Museum (indoor)				X
Park/playground (private)	X			
Park/playground (public, municipal)		X		X
Rodeo grounds			X	
Skating rink				X
Swimming pool (private)	X			
Swimming pool (public)		X		X
Tennis court (private/lighted)		X		X
Theatre, drive-in (outdoor)				X
Travel trailers/RVs (long term stay)	X		X	
Travel trailers/RVs (short term stay)	X		X	
Video rental/sales				X
Institutional/Governmental Uses				
Airport/landing field			X	
Antenna (noncommercial)			X	
Cemetery/Mausoleum			X	
Child daycare (business)			X	
Church/place of worship				X
Civic club				X
Clinic (medical)				X
Communicy center (municipal)				X
Electrical generating plant				X
Electric substation	X			X
Electrical transmission line	X			X
Emergency care clinic				X
Fire station		X		X
Franchised private utility		X		X
Fraternal organization				X
Gas transmission line (regulating sta)	X		X	
Governmental building or use	X			
Group daycare home		X	X	
Heliport			X	
Helistop				X
Hospice			X	
Hospital (acute & chronic care)				X
Household care facility		X		
Institution for alcoholic, narcotic, pyschiatric patients			X	
Library (public)		X		X

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Mailing service (private)				X
Maternity homes			X	
Municipal facility or Use		X		X
Nonprofit activities by Church		X		X
Nursing/convalescent home	X		X	
Philanthropic org			X	
Phone exchange/switching			X	
police station		X		X
post office (govt)		X		X
Public health center				X
Rectory/parsonage		X		X
Rehabilitation care (halfway house)	X		X	
Rehabilitation care institution			X	
Retirement home	X		X	
Sanitarium			X	
School K-12 (private)	X		X	
School K-12 (public)		X		X
School, vocational (business/trade)				X
Sewage pumping station		X		X
Surgical out-patient facility				X
Utility distribution line		X		X
Water supply facility (private)		X		X
Water supply facility (public includes elevated)		X		X
Water/wastewater treatment plant		X		X
Commercial & Wholesale Trade Uses				
Book binding				X
Cleaning plant (commercial/wholesale)				X
Feed and grain store/farm supply				X
Furniture manyfacture				X
Heating and A/C sales/services				X
Heavy machinery sales and storage				X
Kennel (indoor pens)				X
Kennel (outdoor pens)				X
Livestock - wholesale			X	
Manufactured home sales (new)			X	
Manufactured home sales (used)			X	
Motor freight company				X
Petro dist storage/wholesale facility				X
Portable building sales			X	
Propane sales (retail)				X
Taxidermist				X

	MANUFACTURED HOME DIST (MH)		LIGHT INDUSTRIAL DIST (LI)	
TYPE OF LAND USE	**Specific Use**	**Permitted Use**	**Specific Use**	**Permitted Use**
Transfer station (refuse)				X
Veterinarian (outdoor kennels/pens)				X
Warehouse/office				X
Welding shop				X
Light Industrial/Manufacturing Use				
Batch plant - asphalt/concrete (permanent)			X	
Batch plant - asphalt/concrete (temp)			X	
Contractor's office/sales, no outside storage				X
Contractor's office/sales, with outside storage				X
Contractor's temp office - onsite construction		X		X
Electronic assembly				X
Engine repair/morot manufac				X
Food processing				X
Laboratory equipment manufac				X
Machine shop				X
Maintenance & repair service for buildings				X
Manufac, General				X
Micro winery			X	
Outside storage				X
Paper manufac				X
Plumbing shop (no outside storage)				X
Research lab (non hazardous)				X
Sand/gravel stone extraction			X	
Sand/gravel stone sales (storage)			X	
Sign manufac				X
Sign shop (storefront)				X
Stone/clay/glass manufac				X

ORDINANCE NO. XXXXXXXXXXXXXXXX

AN ORDINANCE OF THE CITY OF ANGLETON, TEXAS REZONING AN APPROXIMATE 7.22 ACRES FROM CHAPTER 28 ZONING SECTION 54 MANUFACTURED HOME (MH) DISTRICT TO THE CHAPTER 28 SECTION 60 LIGHT INDUSTRIAL (LI) DISTRICT OF THE ANGLETON CODE OF ORDINANCES; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY; AND PROVIDING FOR REPEAL AND AN EFFECTIVE DATE.

Whereas, the City is authorized by Chapter 211 of the Texas Local Government Code to promulgate rules and regulations governing regulation of land use, structures, businesses and related activities; and

Whereas, the City Council further finds that the rules and regulations governing land use, structures and related activities within the territorial limits of the City promote the safe, orderly and healthful development of the City; and

Whereas, on February 4, 2021 the Angleton Planning and Zoning Commission conducted a public hearing regarding a request by Mr. Manuel Gonzalez to rezone an approximate 7.22 acres from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District of the Angleton Code of Ordinances following lawful publication of the notice of said public hearing; and

Whereas, on February 4, 2021 after considering the public testimony received at such hearing, if any, the Planning and Zoning Commission has recommended that the request by Mr. Manuel Gonzalez to rezone an approximate 7.22 acres from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District be approved; and

Whereas, on February 9, 2021 the City Council of the City of Angleton conducted a public hearing regarding a request by Mr. Manuel Gonzalez to rezone an approximate 7.22 acres from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District of the Angleton Code of Ordinances; and

Whereas, on February 9, 2021 the City Council of the City of Angleton, Texas approved the request by Mr. Manuel Gonzalez to rezone an approximate 7.22 acres from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District of the Angleton Code of Ordinances; and

Whereas, each and every applicable requirement set forth in Chapter 211, Subchapter A, Texas Local Government Code and the Code of Ordinance of the City of Angleton, Texas, concerning public notices, hearings and other procedural matters have been fully met; and

Whereas, the City Council desires to rezone an approximate 7.22 acres from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District of the Angleton Code of Ordinances;

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS;

Section 1. That all of the facts recited in the preamble to this Ordinance are hereby found by the City Council to be true and correct and are incorporated herein by this reference and expressly made a part hereof as if copied herein verbatim.

DRAFT

Section 2. That the request by Mr. Manuel Gonzalez to rezone an approximate 7.22 acres, as described and depicted in Exhibit "A," from Chapter 28 Zoning Section 54 Manufactured Home (MH) District to the Chapter 28 Section 60 Light Industrial (LI) District of the Angleton Code of Ordinances be approved.

Section 3. Penalty. Any person who violates or causes, allows, or permits another to violate any provision of this Ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof, shall be punished by a fine of not more than Two Thousand and No/100 Dollars ($2,000.00). Each occurrence of any such violation of this Ordinance shall constitute a separate offense. Each day on which any such violation of the Ordinance occurs shall constitute a separate offense.

Section 4. Repeal. All ordinances or parts of ordinances inconsistent with the terms of this ordinance are hereby repealed; 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 5. Severablity. In the event any clause, phrase provision, sentence or part of this Ordinance or the application of the same to any person or circumstances shall for any reason be adjudged invalid or held unconstitutional by a court of competent jurisdiction, it shall not affect, impair or invalidate this Ordinance as a whole or any part or provision hereof other than the part declared to be invalid or unconstitutional; and the City Council of the City of Angleton, Texas declares that it would have passed each and every part of the same notwithstanding the omission of any part thus declared to be invalid or unconstitutional, or whether there be on or more parts.

Section 6. Effective date. That this ordinance shall be effective and in full force immediately upon its adoption.

Section 7. Proper Notice and Meeting

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. Notice was also provided as required by Chapter 52 of the Texas Local Government Code

PASSED, APPROVED and ADOPTED this, the _____day of _____.

ATTEST: Jason Perez, Mayor

Frances Aguilar, City Secretary

DRAFT

BRAZORIA COUNTY TEXAS

EAST 1/2 EAST WALLER LEAGUE ABSTRACT 134

GIFFORD ROAD (CURRENT 40' R.O.W.)

306.0109
N87°0'9"E

N 87°00'09" E 272.09'

FND. 1/2" I.P.

FND. 1/2" I.P.

CITY OF ANGLETON ESM'T. (5' x 5')
VOL. 1595, PG. 325 B.C.D.R.
(FIRE HYDRANT)

FND. 1/2" I.P.
(P.O.B.)
(TRACT 1)

FND. 1/2" I.R.

TRACTS 1H
CALLED 0.50 ACRE
ABELARDO & ANA
MENDEZ

TRACTS 1I1
CALLED 0.249 ACRE
222 E PHILLIPS, LLC
C.F. #19-056890
B.C.O.R.

TRACTS 1I
CALLED 0.709 ACRE
MICHAEL K. EASTERLING
C.F. #13-018471
B.C.O.R.

N 1°13'33" E 187.16'

127.6'

72.6'

35.2'

34.5'
BLDG.

LIGHT POLE

N 87°19'48" E 174.53'

FND. 1/2" I.R.

FND. 1/2" I.R.

COMMUNITY PUBLIC SERVICE ESM'T.
VOL. 1331, PG. 907 B.C.D.R.

TRACTS 1E
CALLED 1.00 ACRE
CYNTHIA PRICE
C.F. #00-032016
B.C.O.R.

SUBJECT
TRACT 1
7.12 ACRES
ROBERT LYCKA
VOL. 1274, PG. 789
B.C.D.R.

66.3'
BUILDING

35.0'

30.4'

SUBJECT
LOT 1
(TRACT 2)
LYCKA SUBDIVISION
VOLUME 21, PAGE 283
B.C.P.R.

N 2°49'31" W 559.71'

TRACTS 1D
CALLED 0.50 ACRE
ROGER & TAMRA STONE
C.F. #07-023163
B.C.O.R.

TRACTS 1D1
CALLED 0.50 ACRE
COLTON HENRY EDWARDS
C.F. #03-053998
B.C.O.R.

TRACTS 1C
CALLED 1.00 ACRE
MICHAEL W. VANHORN
& CHEREE R. SCHOLL
C.F. #18-015818
B.C.O.R.

421.45'

S 2°56'43" E 745.82'

N 2°57'57" W 746.23'

GUSTAVO A. & ANA V.
VASQUEZ
CALLED 2.90ACRES
C.F. #02-010346
B.C.O.R.

FND. 1/2" I.R.

S 87°04'40" W 461.29'

FND. 1/2" I.R.

TRACTS 1C-2B
CALLED 7.00 ACRES
MICHAEL W. VANHORN &
CHERRE RENEE SCHOLL
C.F. #18-015818
B.C.O.R.

N

0 50 100

1" = 100'

LEGEND

○	SET 5/8" IRON ROD W/ SURVEY CAP "TRS 4808"
●	FOUND IRON PIPE/ROD
◇	HOG WIRE FENCE
×	BARBED WIRE FENCE
⊕	FIRE HYDRANT
●	POWER POLE
⬡	LIGHT POLE
———	GUY ANCHOR
—— OH ——	OVERHEAD WIRE
— — — —	EASEMENT LINE
— — — —	BUILDING LINE
— — — —	LOT LINE
———	PROPERTY LINE
B.C.D.R.	BRAZORIA COUNTY DEED RECORD
B.C.P.R.	BRAZORIA COUNTY PLAT RECORD
B.C.O.R.	BRAZORIA COUNTY OFFICIAL RECORD

NOTES:

1. ALL COORDINATES AND BEARINGS ARE RELATIVE TO THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE (NAD 83).
2. ALL DISTANCES ARE HORIZONTAL SURFACE LEVEL LENGTHS (SF = 0.99987201865).
3. THIS SURVEY RELIES ON TITLE COMMITMENT FROM STEWART TITLE, FILE No. 832110, DATED JULY 21, 2020, FOR ALL ITEMS OF RECORD.
4. THIS PLAT IS PART OF A SURVEY REPORT INCLUDING A METES AND BOUNDS DESCRIPTION ON FILE IN THE OFFICES OF DOYLE & WACHTSTETTER, INC.

I, TERRY SINGLETARY, REGISTERED PROFESSIONAL LAND SURVEYOR DO HEREBY CERTIFY THAT THE ABOVE PLAT IS A TRUE REPRESENTATION OF A SURVEY MADE UNDER MY SUPERVISION, ON THE GROUND, AND THAT THERE ARE NO EXCESSES NOR INTRUSIONS ON THIS PROPERTY, EXCEPT AS SHOWN.
DATE SURVEYED: JULY 30, 2020.

STATE OF TEXAS
REGISTERED
TERRY SINGLETARY
4808
PROFESSIONAL
LAND SURVEYOR

Terry Singletary

TERRY SINGLETARY
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NUMBER 4808

SURVEY PLAT OF

LOT 1 OF THE LYCKA S/D AS
RECORDED IN VOL. 21, PG. 283
BRAZORIA COUNTY, PLAT RECORDS
AND
A 7.12 ACRE TRACT BEING THE SAME
TRACT AS RECORDED IN
VOL. 1274, PG. 789
BRAZORIA COUNTY, DEED RECORDS

IN THE
EAST½ EAST WALLER LEAGUE, A-134
BRAZORIA COUNTY, TEXAS.
FOR
PREMIER CENTRAL VACUUMS
OF BRAZORIA COUNTY, LLC.

238 EAST PHILLIPS ROAD

SHEET 1 OF 1

Doyle & Wachtstetter, Inc.
Surveying and Mapping GPS/GIS
131 COMMERCE STREET, CLUTE, TEXAS 77531
OFFICE: 979.265.3622 FAX. 979.265.9940 FIRM NO.:1002

SURVEYED:	7-30-20	BOOK:	28	PROJECT NO.	11600-1
DRAWN BY:	TRS/8-03-20	CHECKED:	TRS/8-03-20	REVISED:	

USER: Untitled Workspace
DATE: 8/3/2020 TIME: 5:02:18 PM
D:\TRS\Boundary\Angleton\East Phillips 238 East Phillips Lycka 7.22ac\Worksketch.dgn

AGENDA ITEM SUMMARY FORM

MEETING DATE: February 4, 2021

PREPARED BY: Walter E. Reeves Jr., AICP Development Services Director

AGENDA CONTENT: Discuss and consider possible action on a request to recommend approval of the Preliminary Replat of Kiber Reserve Phase 1. The subject property consists of 19.84-acre tract of land located North of E. Kiber and South of E. Orange Street bordered on the East by S. Dowling Street and on the West by Evans Street. The Kiber Reserve development is proposed to have 93 lots residential lots. Phase 1 will consist of 11.88 acres, 48 residential lots and 1 reserve lot. The property is currently in a Planned Development Overlay District.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This a request for a recommendation of approval of the Preliminary Replat of Kiber Reserve Phase 1. The subject property consists of a total of 19.84-acres located North of E. Kiber and South of E. Orange Street bordered on the East by S. Dowling Street and on the West by Evans Street. The Kiber Reserve development is proposed to have 93 residential lots. Phase 1 will consist of 11.88 acres, 48 residential lots and 1 reserve lot. The property is currently in a Planned Development Overlay District. Except as otherwise noted in the City Engineer's memo, the proposed final plat meets all City of Angleton requirements.

RECOMMENDATION:

Staff recommends approval of the proposed preliminary replat of Kiber Reserve Phase 1 subject to the condition that the City Engineer's comments are cleared with any final plat application.

SUGGESTED MOTION

I move we recommend approval of the proposed preliminary replat of Kiber Reserve Phase 1 subject to the condition that the City Engineer's comments are cleared with any final plat application.

January 28, 2021

Mr. Walter Reeves
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Review of Kiber Reserve Subdivision Phase 1 Plans and Preliminary Plat – 2nd Submittal Review
Angleton, Texas
HDR Job No. 20-007

Dear Mr. Reeves:

HDR takes no objection to the proposed Kiber Reserve Subdivision Preliminary Plat and Construction Plans as provided in this second submittal with the following exceptions noted:

1. Pending Planning and Zoning and City Council approval of the Preliminary Plat, a Final Plat shall be prepared and submitted in accordance to the Angleton Land Development Code (LDC) and processes.
2. Sidewalks will be required on all perimeter streets. If construction of sidewalks is not feasible, a variance request shall be submitted accordingly per the Angleton Land Development Code (LDC).

It is noted that this does not necessarily mean that the entire plat submittal set, including all supporting data and calculations, has been completely checked and verified; however, the drawings and supporting data were prepared and signed and sealed by a Registered Professional Land Surveyor and Registered Professional Engineer licensed to practice in the State of Texas, which therefore conveys the surveyor's and engineer's responsibility and accountability.

If you have any questions, please feel free to contact us at our office at (713)-622-9264.

Sincerely,
HDR Engineering, Inc.

Javier Vasquez, P.E., CFM
Project Engineer

cc: Files (20-007)

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

DEDICATION STATEMENT:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: THAT CHARLES VON SCHMIDT, President And Managing Director of the WATERSTONE DEVELOPMENT GROUP, LLC, acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as KIBER RESERVE, 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.

Drainage Easements Maintained by a Homeowners' Association.
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, successor, 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 by and through a lawfully created homeowners association to be created by the Owners. The Owners covenant and agree that such a homeowners' association (called "Association") shall be created prior to the final acceptance of the City. All Association documents shall be subject to the approval of the City and shall specifically contain covenants binding the Association to continuously maintain all Drainage Easements. Such covenants shall not relieve the individual lot owners of the responsibility to maintain the Drainage Easements should the Association default in the performance of its maintenance responsibility. The Association documents shall also contain provisions that they may not be amended with regard to the Drainage Easement maintenance responsibilities without the approval of the City. The fee simple title to all Drainage Easements shall always remain in the Association.

The City and Angleton Drainage District are not responsible for the maintenance and operation of said easements 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 City and Angleton Drainage District reserves the right, but not the obligation, to enter upon any Drainage Easement at any point, or points, with all rights of ingress and egress, to investigate, survey, erect, construct, or maintain any drainage facility deemed necessary by the City for drainage and safety purposes.

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.

DRAINAGE AND DETENTION EASEMENT.

STATE OF TEXAS §
COUNTY OF BRAZORIA §

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 of Block 1, as 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.

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.

_____
PRESIDENT AND MANAGING DIRECTOR

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared CHARLES VON SCHMIDT 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

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

_____
FRANCES AGUILAR, City Secretary

APPROVED this _____ day of _____, 20____, by the City Council, City of Angleton, Texas.

_____
JASON PEREZ, Mayor

_____
FRANCES AGUILAR, City Secretary

STATE OF TEXAS §
COUNTY OF BRAZORIA §

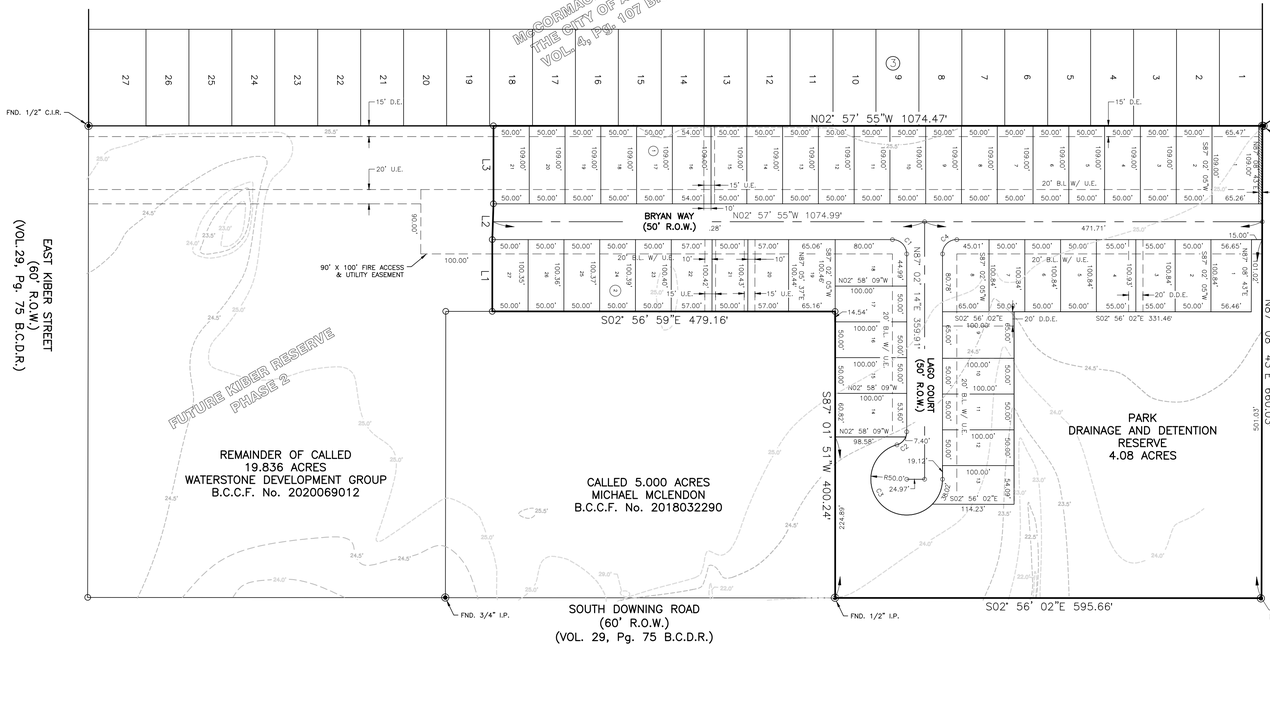
This instrument was acknowledged before me on the _____ day of _____, 20____, by

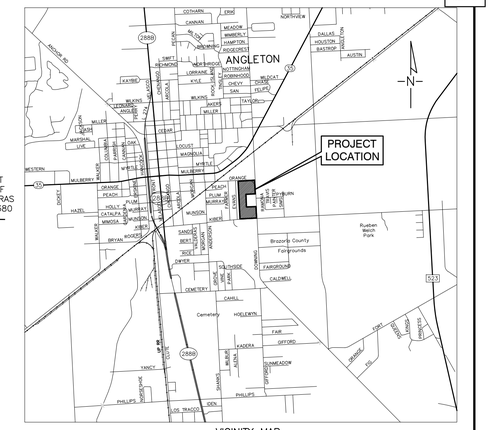
FRANCES AGUILAR, City Secretary, City of Angleton, on behalf of the City.

_____
Notary Public
State of Texas

KNOW ALL MEN BY THESE PRESENTS:
That I, Miguelangel A. Sauceda, 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.

SIGNED: _____
Miguelangel A. Sauceda DATE
PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 121992





VICINITY MAP

LEGEND

B.C.C.F. =	BRAZORIA COUNTY CLERK'S FILE
B.C.D.R. =	BRAZORIA COUNTY DEED RECORDS
B.C.P.R. =	BRAZORIA COUNTY PLAT RECORDS
B.L. =	BUILDING LINE
U.E. =	UTILITY EASEMENT
D.E. =	DRAINAGE EASEMENT
BM =	BENCHMARK
D.D.E. =	DRAINAGE AND DETENTION EASEMENT
G.B.L. =	GARAGE BUILDING LINE
FND =	FOUND
I.R. =	IRON ROD
I.P. =	IRON PIPE
P.O.B. =	POINT OF BEGINNING
R.O.W. =	RIGHT-OF-WAY
STM.S.E. =	STORM SEWER EASEMENT
VOL., Pg. =	VOLUME, PAGE

SYMBOLS

- O = SET 5/8" I.R. W/CAP "BAKER & LAWSON"
- ◉ = FOUND MONUMENT (AS NOTED)
- ✣ = (TBM) TEMPORARY BENCHMARK

Curve Table					
Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	31.42'	20.00'	90°00'08"	S42°02'09"W	28.28'
C2	24.54'	19.00'	74°01'00"	N55°57'38"W	22.87'
C3	221.69'	50.00'	254°02'30"	N34°01'37"E	79.84'
C4	31.42'	20.00'	90°00'14"	S47°58'02"E	28.29'

Line Table		
Line No.	Length	Direction
L1	100.33'	S87°05'37"W
L2	50.02'	S88°48'26"W
L3	109.00'	S87°02'05"W

ANGLETON DRAINAGE DISTRICT

ANGLETON DRAINAGE DISTRICT ACCEPTED, THIS THE _____ DAY OF _____, 20____. 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

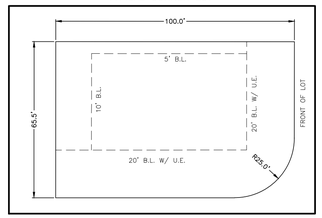
_____
BOARD MEMBER

_____
BOARD MEMBER

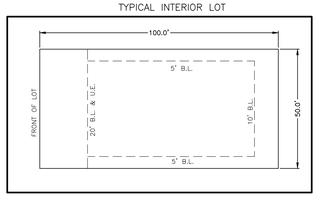
KNOW ALL MEN BY THESE PRESENTS:
That I, Devin R. Royal, do hereby certify that I prepared this plat from an actual and accurate survey of the land and that the corner monuments shown thereon were properly placed under my supervision.

SIGNED: _____
DEVIN R. ROYAL DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6667

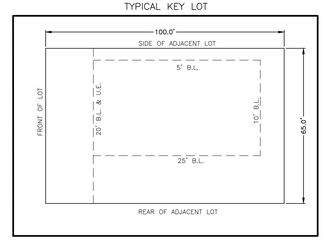
TYPICAL CORNER LOT



TYPICAL INTERIOR LOT



TYPICAL KEY LOT



NOTES:

1. ALL BEARINGS AND DISTANCES ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD-83, U.S. SURVEY FEET.
2. FLOOD ZONE STATEMENT: ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, MAP NUMBER 48039C0445H, WITH EFFECTIVE DATE OF JUNE 05, 1989, THE PROPERTY SURVEYED LIES FULLY 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.
3. REFERENCE BENCHMARK:
   TXDOT L200203
   A 5/8" I.R. WITH ALUMINUM CAP SET IN CONCRETE AT THE SOUTHEAST CORNER OF THE INTERSECTION OF S.H. 35 AND SOUTH DOWNING ROAD AND 121' EAST OF THE CENTERLINE OF SOUTH DOWNING ROAD.
   ELEVATION = 25.74 FEET NGVD29
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. SIDEWALKS SHALL BE REQUIRED PER ANGLETON LDC SEC. 23.14 – SIDEWALKS AND ACCESSIBILITY.
11. A MINIMUM OF TWO PARKING SPACES ON THE SAME LOT AS THE MAIN STRUCTURE AND ON A PAVED DRIVEWAY HAVING A MINIMUM LENGTH OF 20 FEET AS MEASURED FROM THE STREET RIGHT-OF-WAY LINE.
12. NOTICE: PRIVACY FENCING CROSSING PERPENDICULAR TO THE 15' DRAINAGE EASEMENT SHALL PROVIDE ADEQUATE OPENING (1 S.F. MINIMUM) FOR FLOW THROUGH FENCE OPENING.
13. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR PROPERTY OWNER ASSOCIATION TO MAINTAIN THE PARK, DETENTION, DRAINAGE, AND UTILITY RESERVE TRACT PER ANGLETON LDC REQUIREMENTS; SEC. 23-19 RESERVATIONS.
14. ALL REAR BUILDING LINES SHALL BE 10 FEET FROM PROPERTY LINE. SIDE BUILDING LINES SHALL BE 5 FEET FOR INTERIOR SIDE LOTS, 20 FEET FOR CORNER LOTS ON THE STREET, AND 25 FEET FOR KEY CORNER LOTS. THE FRONT BUILDING LINE SHALL BE 20 FEET.

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP, LLC

FIELD NOTES FOR 11.88 ACRE

Being a tract of land containing 11.88 acres (517,552 square feet), located within I.T. Tinsley Survey, Abstract Number (No.) 375, in Brazoria County, Texas; Said 11.88 acre being a portion of Lots 12 and 69 of the Bryan and Kiber Subdivision of the I.T. Tinsley Survey as recorded in Volume (Vol.) 29, Page 75 of the Brazoria County Deed Records (B.C.D.R.), being a portion of a called 19.836 acre tract recorded in the name of the Waterstone Development Group, LLC Under Brazoria County Clerk's File (B.C.C.F.) No. 2020069012; Said 11.88 acres 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 5/8-inch iron rod found in the southwest corner of the intersection of East Orange Street (sixty feet wide per Vol. 29, Page 75 B.C.D.R.) and South Downing Road (sixty feet wide per Vol. 29, Page 75 B.C.D.R.), for the northeast corner of the herein described tract;

THENCE, with the west R.O.W. line of said South Downing Road, South 02 degrees 56 minutes 02 seconds East, a distance of 595.66 feet to a 1/2-inch iron pipe found at the northeast corner of a called 5.000 acre tract recorded in the name of Michael McLendon under B.C.C.F. No. 2018032290, for an angle point;

THENCE, with the north line of said 5.000 acre tract, South 87 degrees 01 minutes 51 seconds West, a distance of 400.24 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set at the northwest corner of said 5.000 acre tract, for an interior corner of the herein described tract;

THENCE, with the west line of said 5.000 acre tract, South 02 degrees 56 minutes 59 seconds East, a distance of 479.16 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the southeast corner of the herein described tract;

THENCE, through and across said 19.836 acre tract, the following three (3) courses:

1. South 87 degrees 05 minutes 37 seconds West, a distance of 100.33 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point;
2. South 88 degrees 48 minutes 26 seconds West, a distance of 50.02 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point;
3. South 87 degrees 02 minutes 05 seconds West, a distance of 109.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the east line of Block 3 of the McCormack Addition to the City of Angleton, a subdivision recorded under Vol. 4, Pg. 107 of the Brazoria County Plat Records (B.C.P.R.), for the southwest corner of the herein described tract;

THENCE, with the east line of said McCormack Addition, North 02 degrees 57 minutes 55 seconds West, a distance of 1074.47 feet to a 1/2-inch iron rod found on the south R.O.W. line of said East Orange Street at the northeast corner of Lot 1 of said Block 3, for the northwest corner of the herein described tract, from which a 1-inch iron pipe bears North 03 degrees 16 minutes East, a distance of 1.8 feet;

THENCE, with the south R.O.W. line of said East Orange Street, North 87 degrees 08 minutes 43 seconds East, a distance of 660.03 feet to the POINT OF BEGINNING and containing 11.88 acres of land.

REVISED:

PRELIMINARY REPLAT
KIBER RESERVE
A 11.88 ACRE, 48-LOT, 1 RESERVE, 2 BLOCK SUBDIVISION

PORTION OF LOTS 12 AND 69, OF THE BRYAN AND KIBER SUBDIVISION, VOL. 29, Pg. 75 B.C.D.R.
LOCATED IN THE I. T. TINSLEY SURVEY, ABSTRACT No. 375
BRAZORIA COUNTY, TEXAS

B&L BAKER & LAWSON, INC. ENGINEERS • PLANNERS • SURVEYORS
300 EAST CEDAR ST.
ANGLETON, TEXAS 77515
OFFICE: (979) 849-6681
TBPLS No. 10052500
REG. NO. F-825

PROJECT NO.: 13499	SCALE: 1" = 100'	DRAWN BY: BWB
DRAWING NO.: 13499 PLAT	DATE: 03/12/2020	CHECKED BY: DRR

J:\13000's Jobs\13499 (Waterstone - Kiber)\Drawings\13499 PLAT.dwg, 11/25/2020 10:44:46 AM, Adobe PDF

PLANS FOR CONSTRUCTION OF

PAVING, DRAINAGE AND UTILITIES ON

KIBER RESERVE (PHASE I)

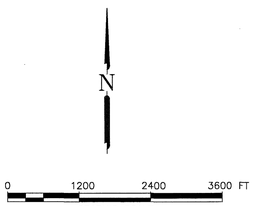
A 11.88 AC, 48-LOT SUBDIVISION

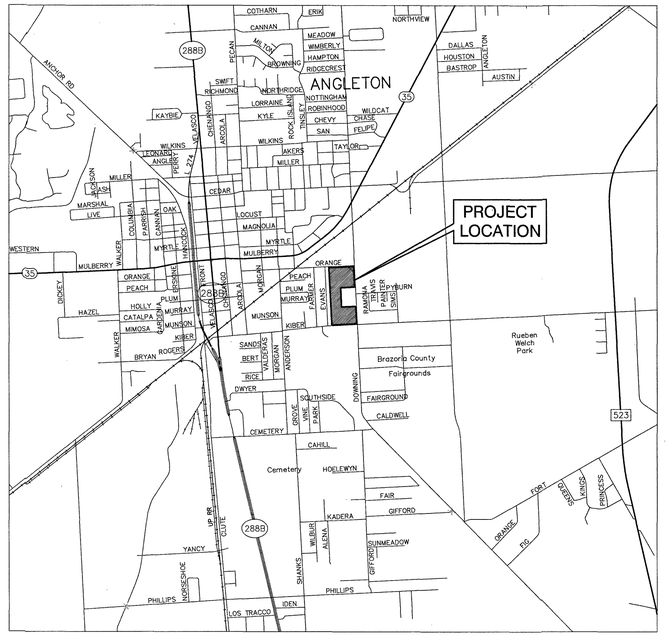
FOR THE

CITY OF ANGLETON

BRAZORIA COUNTY

B&L JOB No. 13499





VICINITY MAP

CITY OF ANGLETON

MAYOR	CITY COUNCIL
JASON PEREZ	MIKEY SVOBODA
	CECIL BOOTH
CITY MANAGER	JOHN WRIGHT
CHRIS WHITTAKER	TRAVIS TOWNSEND
	MARK GONGORA

"Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of their submittal, whether or not the application is reviewed for Code compliance by the City Engineer."

"All responsibility for the adequacy of these plans remains with the Engineer who prepared them. In approving these plans, the City of Angleton must rely on the adequacy of the work of the Design Engineer."

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NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS

DRAWN BT/BB

CHECKED

DATE

B&L

BAKER & LAWSON, INC.

ENGINEERS • PLANNERS • SURVEYORS

300 E. CEDAR ST., ANGLETON, TEXAS 77515

PHONE: (979) 849-6681 FAX: (979) 849-4689

REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:

CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:

PROFILE:

HORIZONTAL:

VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

TITLE SHEET

PROJECT NO. 13499

SHEET SET.dwg

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL NOTIFY THE "UNDERGROUND UTILITY COORDINATING COMMITTEE" (TELEPHONE NO. (979) 849-4364 AND THE CITY OF ANGLETON (TELEPHONE NO. (979) 849-4364) 48 HOURS BEFORE STARTING WORK IN STREET RIGHT-OF-WAYS OR EASEMENTS.
2. ALL EXISTING UNDERGROUND UTILITIES ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM INFORMATION AVAILABLE, CONTRACTOR HAS SOLE RESPONSIBILITY FOR FIELD VERIFICATION OF ALL EXISTING FACILITIES SHOWN ON DRAWINGS. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE GOVERNING AGENCY. NO SEPARATE PAY.
3. CONTRACTOR SHALL PROVIDE A TRENCH SAFETY SYSTEM TO MEET, AS A MINIMUM, THE REQUIREMENTS OF OSHA SAFETY AND HEALTH REGULATION, PART 1926, SUBPART P AS PUBLISHED IN THE FEDERAL REGISTER, VOLUME 54, NO. 209, DATED OCTOBER 31, 1989.
4. CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD MOST RECENT EDITION AS REVISED) DURING CONSTRUCTION.
5. CONTRACTOR SHALL COVER OPEN EXCAVATIONS IN PUBLIC STREETS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS.
6. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION, AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS.
7. EXISTING PAVEMENTS, CURBS, SIDEWALKS, CULVERTS AND DRIVEWAYS (ADJACENT TO THE WORK) DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO EQUAL OR BETTER THAN THEIR ORIGINAL CONDITION AT CONTRACTOR EXPENSE.
8. CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF JOB, SHALL BE AS GOOD AS OR BETTER THAN THE CONDITION PRIOR TO STARTING WORK. CONTRACTOR SHALL TAKE NECESSARY ACTIONS TO PROTECT THE EXISTING SURFACES OUTSIDE THE WORK AREA FROM THE EQUIPMENT USED. ALL TRACKED MACHINERY (STREET PADS INCLUDED) SHALL NOT BE OPERATED DIRECTLY ATOP THE PAVEMENT WITHOUT APPROPRIATE PADDING AND PROTECTION OF THE SURFACES. ANY MARRED OR DISTRESSED AREAS SHALL BE REMOVED AND RESTORED WITH NEW MATERIALS TO THE SATISFACTION OF THE ENGINEER. ANY EXISTING DISTRESSED AREAS SHALL BE MADE KNOWN TO THE ENGINEER PRIOR TO OPERATIONS IN THE WORK AREA.
9. ALIGNMENT, CENTERLINE CURVE DATA AND STATIONING TO BE VERIFIED BY ON-THE-GROUND SURVEY FROM APPROVED SUBDIVISION PLAT (OR APPROVED PLOT FOR OFF SITE EASEMENTS), AND ELEVATIONS OF ALL CONNECTIONS TO EXISTING FACILITIES TO BE CONFIRMED PRIOR TO WORK START. CONTRACTOR TO NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
10. CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
11. CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK.
12. ALL UTILITY TRENCHES TO BE BACK FILLED TO 90 PERCENT (90%) STANDARD PROCTOR DENSITY UNLESS OTHERWISE NOTED.
13. ALL SURVEY, LAYOUT, MEASUREMENT, AND GRADE STAKE WORK SHALL BE PERFORMED BY BAKER & LAWSON, INC. AS PART OF THE WORK UNDER THIS CONTACT.
14. BAKER & LAWSON, INC. WILL PROVIDE EXPERIENCED INSTRUMENT MEN, COMPETENT ASSISTANTS, AND SUCH INSTRUMENTS, TOOLS, STAKES, AND OTHER MATERIALS REQUIRED TO COMPLETE THE SURVEY, LAYOUT AND MEASUREMENT WORK.
15. CONSTRUCTION DEBRIS AND OTHER UNCLASSIFIED UNSUITABLE EXCESS MATERIAL SHALL BE HAULED TO A STATE APPROVED DISPOSAL SITE OR AS DIRECTED BY THE ENGINEER. AN EXISTING LANDFILL APPROXIMATELY 10 MILES FROM THE PROJECT SITE IS THE NEAREST STATE APPROVED FEE FACILITY. ALL REFUSE MATERIALS (BROKEN CONCRETE, TREES, ASPHALT, ETC.) SHALL BE DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE.
16. PLAN QUANTITIES WILL BE USED FOR FINAL PAYMENT UNLESS DESIGN CHANGES ARE MADE DURING CONSTRUCTION.

CONSTRUCTION NOTES FOR PAVING & DRAINAGE

1. GUIDELINES SET FORTH IN THE MANUAL ON UNIFORM CONTROL DEVICES SHALL BE OBSERVED.
2. FILL SHALL BE PLACED IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% OF OPTIMUM DENSITY AS DETERMINED USING TESTING METHOD ASTM D698.
3. CONTRACTOR RESPONSIBLE FOR MAINTAINING BARRICADES TO PREVENT TRAFFIC FROM USING NEW PAVEMENT UNTIL PROJECT IS COMPLETED AND ACCEPTED BY PROPER AUTHORITY OR AS AUTHORIZED BY ENGINEER.
4. B-B INDICATES ROAD WIDTH TO BACK OF CURB. CURB RADII ARE TO FACE OF CURB. T.C. INDICATES TOP OF CURB ELEVATIONS (BASED ON 4" CURB UNLESS OTHERWISE NOTED) T.P. INDICATES TOP OF PAVEMENT ELEVATION.
5. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT MAXIMUM SPACING OF 40-FOOT INTERVALS (SAWCUTS @ 20'(2 1/2"DEEP), LONGITUDINAL JOINTS SHALL BE AT MAXIMUM OF 14-FOOT SPACING. WOOD JOINT SHALL BE SOUND HEART REDWOOD.
6. 6-INCH CONCRETE PAVEMENT TO BE 5.5 SACK MIX MIN. (3,500 PSI) REINFORCING STEEL TO CONFORM TO ASTM A-615, GRADE 60. PROVIDE MINIMUM 18-INCH LAPS. (36 BAR DIA)
7. SAW CUT TO EXPOSE EXISTING LONGITUDINAL STEEL REQUIRED TO CREATE A MINIMUM TWELVE-INCH (12") OVERLAP OF PROPOSED AND EXISTING LONGITUDINAL REINFORCING STEEL WHEN MAKING A CONNECTION TO EXISTING CONCRETE PAVEMENT. WHERE SPACING OF EXISTING LONGITUDINAL STEEL DIFFERS FROM PROPOSED STEEL SPACING, NOTIFY THE ENGINEER.
8. USE PLASTIC CHAIRS TO SUPPORT REINFORCEMENT AT 24-INCH SPACING EACH WAY.
9. SUBGRADE TO BE STABILIZED 1-FOOT BACK OF PROPOSED CURB OR EDGE OF PAVEMENT. EXCESS LIME STABILIZED SOIL SHALL BE UTILIZED IN THE PREPARATION OF SUBGRADE FOR DRIVEWAYS. THERE WILL BE NO PAYMENT FOR PREPARING SUBGRADE FOR DRIVEWAYS AND SIDEWALKS. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE ASSOCIATED CONCRETE PAY ITEMS. SUBGRADE PREPARATION FOR DRIVEWAYS AND PAVING SHALL INCLUDE PROOF ROLLING. SOFT AREAS TO BE EXCAVATED AND RECOMPACTED TO ADJACENT SOIL DENSITY.
10. USE CONTINUOUS LONGITUDINAL REINFORCING BAR IN CURB.
11. BACK FILL AND BEDDING FOR HEADWALL STRUCTURES, TYPE "C" INLETS, R.C.P. LEADS AND STORM SEWERS SHALL BE WITH 1.5 SACK CEMENT. STABILIZED SAND SHALL BE COMPACTED TO A DENSITY OF AT LEAST 90% OF DENSITY DETERMINED BY STANDARD MOISTURE-DENSITY RELATION (ASTM D-698) AT OPTIMUM MOISTURE AND SHALL BE PLACED AND FINISHED WITHIN 3 HRS. OF MIXING. TEMPORARY TRAVEL WAY SURFACE SHALL BE WITH CEMENT STABILIZED LIMESTONE. PAYMENT FOR THESE ITEMS SHALL BE SUBSIDIARY TO THE VARIOUS STRUCTURAL BID ITEMS. VERIFICATION OF CEMENT STABILIZED SAND MIXTURE SHALL BE FURNISHED UPON REQUEST OF ENGINEER.
12. THE SUBGRADE SHALL BE BROUGHT TO THE REQUIRED GRADE BY THE USE OF GRADE STAKES (BLUE TOPS) AND APPROVED BY THE ENGINEER BEFORE LIME IS APPLIED.
13. RATE OF APPLICATION FOR LIME SHALL BE SEVEN PERCENT (7%) OF THE DRY WEIGHT OF SOIL (QUALITY BASE ON 100 #/ C.F.) OR THIRTY ONE AND ONE HALF (31.5) POUNDS PER SQUARE YARD FOR SIX (6) INCH STABILIZED SUBGRADE. LIME STABILIZED SUBGRADE SHALL NOT BE MIXED MORE THAN ONE INCH IN EXCESS OF THE REQUIRED DEPTH. LIME STABILIZED SUBGRADE SHALL BE BROUGHT TO THE OPTIMUM MOISTURE CONTENT DURING THE FIRST MIXING OPERATIONS THEN LEFT TO CURE FOR TWO CURING DAYS BEFORE FINAL MIXING CAN BEGIN. AFTER FINAL MIXING IS COMPLETED AND BEFORE SOIL DENSITY TESTS ARE TAKEN. LIME STABILIZED SUBGRADE SHALL BE BROUGHT TO THE REQUIRED GRADE BY THE USE OF GRADE STAKES (BLUE TOPS) AND APPROVED BY THE ENGINEER. DENSITY SHALL BE NINETY-FIVE PERCENT (95%) OF THE STANDARD PROCTOR DENSITY AT OPTIMUM MOISTURE. TESTED AND COMPLETED SECTIONS SHALL BE KEPT MOIST CURED ON A DAILY BASIS WITH WATER TRUCKS OR SUBSTANTIAL SUPPLY HOSES FOR THE ENTIRE PERIOD THE SURFACE REMAINS UNCOVERED WITH ADDITIONAL COURSES. AFTER FINAL TESTING AND APPROVAL IS COMPLETE, TRACK EQUIPMENT, SCRAPERS AND OTHER HEAVY EQUIPMENT WILL NOT BE PERMITTED ON THE COMPLETED LIME STABILIZED AREA. LIGHT MOTOR GRADERS, RUBBER TIRED TRACTORS, WATER TRUCKS AND ROLLERS USED IN THE FINISHING OPERATIONS WILL BE PERMITTED WITH THE APPROVAL OF THE ENGINEER. CONCRETE AND LOADED HAUL TRUCKS ARE STRICTLY PROHIBITED ON COMPLETED AREAS UNLESS THE TRAVELED AREA REGARDLESS OF CONDITION IS REMIXED COMPACTED AND TESTED FOR APPROVAL A SECOND TIME.
14. FORMS SHALL BE EITHER WOOD OR STEEL, OF GOOD QUALITY, FREE OF WARP AND SUFFICIENTLY STAKED TO AVOID SHIFTING WHEN LOAD IS APPLIED. ALL REDWOOD EXPANSION BOARDS SHALL BE STAKED WITH 1X2 REDWOOD STAKES AND ALLOWED TO REMAIN WITHIN THE POUR. METAL STAKES ARE APPROVED FOR USE TO STAKE METAL KEYWAYS.
15. REINFORCING SHALL BE SECURELY TIED AT ALL INTERSECTIONS AND SPLICES. ALL DOWELS SHALL BE SECURELY TIED. REINFORCEMENT SHALL BE CLEAN AND FREE OF RUST AT TIME OF USE. PLASTIC CHAIR OF THE CORRECT HEIGHT SHALL BE USED. SPACING SHALL BE SUFFICIENT TO SUPPORT REINFORCEMENT.
16. PRIOR TO CONCRETE PLACEMENT, CONTRACTOR SHALL PRESENT A CERTIFIED COPY OF TOP OF FORM GRADES TO THE ENGINEER FOR REVIEW AND APPROVAL. ELEVATIONS OF FORMS SHALL BE RECORDED AT 10' INTERVALS. ADJUSTMENTS TO FORMS SHALL BE COMPLETE 4 HRS. PRIOR TO CONCRETE PLACEMENT.
17. CONCRETE FOR STREET PAVEMENTS SHALL BE "CLASS A" CONCRETE, SHALL NOT HAVE LESS THAN FIVE AND ONE HALF (5 1/2) SACKS OF CEMENT PER CUBIC YARD, AND SHALL NOT HAVE MORE THAN SIX AND ONE HALF (6 1/2) GALLONS OF WATER PER SACK OF CEMENT. SLUMP SHALL NOT EXCEED FIVE (5) INCHES AND SHALL DEVELOP A MODULUS OF RUPTURE STRENGTH OF THREE THOUSAND FIVE HUNDRED (3500) P.S.I. AT TWENTY EIGHT (28) DAYS. CONCRETE SHALL BE PLACED IN SUCH A MANNER AS TO REQUIRE AS LITTLE HANDLING POSSIBLE. USE OF AN APPROVED VIBRATING SCREED WILL BE REQUIRED. AT INTERSECTIONS AND SMALL AREAS WHERE A VIBRATORY SCREED CAN NOT BE USED, A HAND VIBRATOR OR "JITTERBUG" SHALL BE USED. USE OF A TEN FOOT (10') CONCRETE PAVEMENT STRAIGHT EDGE WILL ALSO BE REQUIRED. ALL EXPOSED JOINTS SHALL BE EDGED AS NOTED ON DETAILS. SURFACE SHALL BE TYPICALLY A BELT FINISH OR BROOM FINISH (COARSE, MEDIUM OR LIGHT) AS REQUIRED BY THE APPLICATION AND DIRECTED BY THE ENGINEER.
18. FLY ASH SHALL MAKE UP FROM 20-25% BY VOLUME OF THE SPECIFIED CEMENT VOLUME AND SHALL CONFORM TO ASTM C 618, CLASS F.
19. CURING COMPOUND SHALL BE TYPE II WITH WHITE PIGMENT. APPLIED AT THE UNDILUTED RATE OF ONE GALLON PER TWO HUNDRED (200) SQUARE FEET.
20. EXPANSION JOINTS SHALL BE CLEANED, WIRE BRUSHED, BLOWN OR FLAME DRIED SEALED WITH AN APPROVED LIST RUBBERIZED HOT LAID ASPHALT JOINT AND CRACK SEALANT OR A TWO (2) COMPONENT POLYMERIC SELF LEVELING COLD APPLIED SEALANT.
21. CONTRACTOR WILL NOT PERMIT TRAFFIC ON NEW CONCRETE PAVEMENT UNTIL BOTH A MINIMUM OF SEVEN (7) CURING DAYS AND MODULUS OF RUPTURE STRENGTH OF THIRTY THOUSAND FIVE HUNDRED (3500) P.S.I. TAKES PLACE OR AS APPROVED BY THE ENGINEER/PUBLIC WORKS DEPARTMENT.
22. CONCRETE FOR CURB SHALL BE A 3000 P.S.I. PERFORMANCE STRENGTH CONCRETE WITH A MINIMUM FIVE (5) SACK CEMENT PER CUBIC YARD CONTENT. CURB CONCRETE MIX MAY BE A SMALL AGGREGATE BATCH DESIGN.
23. A CONCRETE MIX DESIGN OF CONCRETE PLUS FLY ASH MAY BE SUBSTITUTED IN LIEU OF THE STANDARD CONCRETE BATCH DESIGN. THE FLY ASH SHALL CONFORM TO THE REQUIREMENTS OF TXDOT MATERIAL SPECIFICATION D-9-8900, AND SHALL NOT EXCEED 25% BY ABSOLUTE VOLUME OF THE SPECIFIED CEMENT CONTENT. THE MODULUS OF RUPTURE STRENGTHS MINIMUMS AND DEVELOPMENT PERIOD OF THE STANDARD CONCRETE MIX DESIGN SHALL REMAIN IN EFFECT AND SHALL BE VERIFIED BY A CONCRETE BATCH MIX DESIGN PREPARED AND TESTED BY A GEOTECHNICAL LAB AND SUBMITTED FOR REVIEW AND APPROVAL BY THE CITY ENGINEERING/PUBLIC WORKS DEPARTMENT PRIOR TO PAVING OPERATIONS.
24. ALL PAVEMENT SAW CUT REQUIRED IN THE PLANS SHALL BE CONSIDERED SUBSIDIARY TO THE PAVING REMOVAL PAY ITEM REQUIRING IT.
25. REINFORCED FILTER FABRIC OR BLOCK SOD SHALL BE PLACED 16" (ONE BLOCK WIDTH) WIDE ALONG THE EDGE OF ALL NEWLY CONSTRUCTED CURBS AND TO DRIVEWAY REPLACEMENT LIMITS.
26. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANALYZING WEATHER CONDITIONS AND TO SUSPEND OPERATIONS DURING PERIODS WHEN ADVERSE WEATHER CONDITIONS APPEAR LIKELY. NO CONCRETE SHALL BE PLACED WHEN THE TEMPERATURE IS 35°F AND RISING. HOWEVER, NO CONCRETE SHALL BE PLACED WHEN THE CONCRETE TEMPERATURE IS ABOVE 100°F. THE CONTRACTOR SHALL KEEP SUFFICIENT LENGTH OF COVERING MATERIAL ON THE JOB SITE TO PLACE OVER AND PROTECT THE SURFACE OF "FRESH" CONCRETE DURING PERIODS OF UNPREDICTED RAINS.
27. CUL-DE-SACS TO BE PAVED COMPLETELY WITH NO ISLANDS

WASTEWATER CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE RECORD OF LOCATION OF ALL STACKS, STUBS, LEADS, ETC. TO CITY OF ANGLETON.
2. SEPARATION DISTANCES FOR ALL SANITARY SEWER AND WATER MAIN CONSTRUCTION SHALL BE GOVERNED BY THE "TEXAS NATURAL RESOURCE CONSERVATION COMMISSION RULES AND REGULATIONS FOR DESIGN CONSERVATION COMMISSION RULES AND REGULATIONS FOR DESIGN CRITERIA FOR SEWAGE SYSTEMS "SECTION 317.20," LATEST PRINTING.
3. MAINTAIN 12-INCH MINIMUM VERTICAL CLEARANCE AT CROSSINGS BETWEEN SANITARY SEWERS AND CULVERTS, UNLESS OTHERWISE NOTED.
4. WHERE SANITARY SEWER LINE CROSSES A WATER LINE WITH LESS THAN 9-FEET BUT MORE THAN 6-INCHES VERTICAL SEPARATION, PROVIDE ONE MINIMUM 18-FOOT JOINT OF PRESSURE RATED P.V.C. SANITARY SEWER (ASTM D2241, CLASS 150, SDR 26) CENTERED ON WATER LINE. INCLUDE COST OF WATER LINE CROSSING IN UNIT PRICE BID PER LINEAR FOOT FOR SANITARY SEWER IN APPROPRIATE SIZES.
5. CONTRACTOR TO NOTIFY OWNER'S REPRESENTATIVE UPON ENCOUNTERING ANY UNSUITABLE TRENCH CONDITIONS.
6. SANITARY SEWER LEADS UNDER OR WITHIN 1' OF EXISTING OR FUTURE PAVEMENT SHALL BE BACK FILLED WITH CEMENT STABILIZED SAND UP TO WITHIN 1' OF TOP OF PAVING SUBGRADE. CEMENT STABILIZED SAND BACK FILL FOR LEADS SHALL BE INCLUDED IN THE BID UNIT PRICE FOR LEADS.
7. LOW PRESSURE AIR TEST SHALL BE CONDUCTED PER TNRCC TAC 317.2. HOLDING TIMES SHALL BE AS ESTABLISHED BY TNRCC. CONTRACTOR TO PROVIDE TEST PLUGS AND RISERS. NO SEPARATE PAY.
8. CONTRACTOR TO OPEN CUT ALL SANITARY SEWER CONSTRUCTION UNLESS NOTE OTHER WISE, SEWER SERVICES TO BE INSTALLED FULL WIDTH OF ROADWAY.-NO HALF STREET INSTALLATIONS.
9. CONTRACTOR SHALL AT ALL TIMES PROVIDE MAXIMUM UNINTERRUPTED SERVICE AND SHALL AVAIL OF ANY ROUTING METHOD AND EQUIPMENT TO ACCOMPLISH THIS.
10. ALL SINGLE AND DOUBLE SERVICE LEAD SHALL BE A MINIMUM SIX INCH (6") UNLESS OTHERWISE DIRECTED BY THE ENGINEER/PUBLIC WORKS AND/OR FIELD ADJUSTED BY THE UTILITY DEPARTMENT IN THE FUTURE.

WATER CONSTRUCTION NOTES

1. CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING TO WITHSTAND TEST PRESSURE AS SPECIFIED IN CONTRACT DOCUMENTS. THRUST BLOCKING SHALL BE CLASS "B" CONCRETE 2500 P.S.I. AND SHALL BE SUBSIDIARY TO THE BID ITEM PERTINENT TO ITS USE. ALL CEMENT STABILIZED SAND BACKFILL SHALL BE 1.5 SK/CY CEMENT CONTENT. ALL M.J. D.I. FITTINGS WILL HAVE M.J. RESTRAINTS (STARGRIP OR EQUAL) WRAP FITTINGS & RESTRAINTS WITH 10 MIL POLY.
2. SEPARATION DISTANCES OF ALL WATER MAIN AND SANITARY SEWER MAIN CONSTRUCTION SHALL BE GOVERNED BY THE "TEXAS NATURAL RESOURCE CONSERVATION COMMISSION RULES AND REGULATIONS FOR DESIGN CRITERIA FOR SEWAGE SYSTEMS," SECTION 317.20, LATEST PRINTING.
3. ALL 4" THROUGH 12" WATER MAINS TO BE P.V.C. PIPE, AWWA C-900, CLASS 150, SDR 18, MEETING THE REQUIREMENTS OF ANSI/NSF 61 UNLESS OTHERWISE NOTED.
4. WATER LINES UNDER OR WITHIN 1 FEET OF NEW OR EXISTING PAVEMENTS (STREETS AND DRIVEWAYS) SHALL BE BACK FILLED WITH CEMENT STABILIZED SAND AS SPECIFIED IN THE CONSTRUCTION DETAIL.
5. PROVIDE A MINIMUM SIX-INCHES (6") OF CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
6. 4-INCH THROUGH 12-INCH LINES TO HAVE A MINIMUM OF 4'-0" COVER BELOW TOP OF CURB. UNLESS OTHERWISE NOTED, VARY FLOW LINE UNIFORMLY FROM DEPTH SHOWN ON PLANS.
7. CENTERLINE OF FIRE HYDRANT TO BE LOCATED AT 3' FROM BACK OF CURB WITH CENTERLINE OF STEAMER NOZZLE 22 INCHES ABOVE FINISHED GRADE. TURN STEAMER OUTLET TO FACE STREET.
8. WHERE WATER LINE CROSSES SANITARY SEWER LINE OR LEAD WITH LESS THAN NINE FEET (9') VERTICAL SEPARATION, PROVIDE ONE MINIMUM 18-FOOT JOINT OF WATER LINE CENTERED ON LEAD. INCLUDE COST OF LEAD CROSSING IN UNIT PRICE BID PER LINEAR FOOT FOR WATER LINE IN APPROPRIATE SIZES.
9. THE CONTRACTOR AT ALL TIMES PROVIDE MAXIMUM UNINTERRUPTED FLOW TO ALL SERVICES AND MAINS AND SHALL AVAIL OF ANY ROUTING METHOD AND EQUIPMENT TO ACCOMPLISH THIS.

CENTERPOINT ENERGY / ENTEX NOTES

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE, LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE NOT USUALLY SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT (979) 849-4364 OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

* WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (800) 752-8036 OR (713) 659-2111 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
* WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
* WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
* FOR EMERGENCIES REGARDING GAS LINES CALL (800) 659-2111 OR (713) 659-2111.

THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY
NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT OUR SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-5769.

WARNING: OVERHEAD ELECTRICAL FACILITIES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL TEXAS NEW MEXICO ENERGY AT 888-866-7456.

SBC NOTES

THE LOCATIONS OF SOUTHWESTERN BELL TELEPHONE CO. UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

TEXAS NEW MEXICO POWER NOTES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTMPETD TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES. PARTIES RESPONSIBLE FOR THE WORK, INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL TEXAS NEW MEXICO POWER AT (888) 866-7456.

GENERAL CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE ANGLETON CONSTRUCTION MANUAL (ACM) AND LAND DEVELOPMENT CODE, HEREAFTER REFERRED TO THE ACM AND THE LDC.
2. APPROVAL OF THESE CONSTRUCTION PLANS DOES NOT CONSTITUTE A VERIFICATION OF ALL DATA, INFORMATION AND CALCULATIONS SUPPLIED BY THE APPLICANT. THE ENGINEER OF RECORD IS SOLELY RESPONSIBLE FOR THE COMPLETENESS, ACCURACY, ADEQUACY, AND COMPLIANCE OF THE SUBMITTED PLANS.
3. ALL RESPONSIBILITY FOR RESTS ON DESIGN ENGINEER WHO PREPARED THEM, IN APPROVING THESE PLANS, THE CITY MUST RELY ON THE ADEQUACY AND ACCURACY OF THE DESIGN ENGINEER.
4. DESIGNS SHALL BE IN COMPLETE COMPLIANCE WITH THE LDC AND THE ACM. ANY WAIVER, DEVIATION, VARIANCE, OR EXCEPTION FROM ANY SPECIFIC REQUIREMENT(S) OF THE LDC OR ACM THAT WERE NOT EXPRESSLY REQUESTED WHEN PLANS ARE SUBMITTED, SHALL NOT BE CONSTRUED TO HAVE BEEN GRANTED IF PLANS ARE APPROVED. IT IS THE RESPONSIBILITY OF THE ENGINEER TO MAKE SUCH A WAIVER PROACTIVELY WHEN PLANS ARE SUBMITTED.
5. A MINIMUM OF TWO EXISTING BENCHMARKS SHOULD BE SHOWN ON THE PLANS. IN ADDITION, TWO PERMANENT BENCHMARKS PER SUBDIVISION SHALL BE INSTALLED IN EACH NEW SUBDIVISION TO INCLUDE DESCRIPTION, LOCATION, AND ELEVATION AND TIE TO CITY STANDARDS.
6. CAST BRONZE SURVEY MARKERS SHALL BE PLACED IN CONCRETE IN PERMANENT, ACCESSIBLE LOCATIONS AT THE TIME OF CONSTRUCTION. THE LOCATIONS OF THE MARKERS SHALL BE INDICATED ON THE CONSTRUCTION PLANS. A MINIMUM OF ONE MARKER SHALL BE PLACED FOR EACH 20 ACRES OF THE PROJECT.
7. PRIOR TO BEGINNING CONSTRUCTION, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE WITH THE CITY, THE DEVELOPER'S CONSULTING ENGINEER, CONTRACTOR, AND ANY OTHER AFFECTED PARTIES. THE CITY SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE TIME OF THE CONFERENCE AND 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
8. THE CONTRACTOR SHALL PROVIDE THE CITY A MINIMUM OF 48 HOURS' NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
9. BARRICADES, BUILT TO CITY SPECIFICATIONS, SHALL BE CONSTRUCTED ON ALL DEAD-END STREETS AND AS NECESSARY DURING CONSTRUCTION TO MAINTAIN JOB SAFETY.
10. IF BLASTING IS PLANNED, A BLASTING PERMIT MUST BE SECURED PRIOR TO COMMENCEMENT OF ANY BLASTING.
11. ANY EXISTING PAVEMENT, CURBS, AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE BEFORE ACCEPTANCE OF THE SUBDIVISION.
12. THE LOCATION OF ANY WATER OR WASTEWATER LINES SHOWN ON THE PLANS MUST BE VERIFIED BY THE PUBLIC WORKS DEPARTMENT.
13. USE ONE CALL UTILITY SYSTEM: DIAL 1-800-344-8377, 48 HOURS BEFORE YOU DIG.
14. ALL STORM SEWER PIPES TO BE CLASS III RCP UNLESS NOTED OTHERWISE. SPECIAL NOTES FOR PLANS, WHEN APPLICABLE.
15. THE SUBGRADE MATERIAL IN KIBER RESERVE (PHASE I) WAS TESTED BY GEOSCIENCES ENGINEERING AND TESTING ON MAY 28, 2020 AND THE STREET SECTION DESIGNED ACCORDING TO THE LDC AND ACM.
16. CONSTRUCTED STREET SECTIONS SHALL SHOW THE FOLLOWING:
   a. PROVIDE STREET NAMES, WIDTH OF R.O.W., OR OTHER METHODS TO IDENTIFY PROPOSED DESIGN OF DIFFERENT PAVEMENT THICKNESS. IN WRITING OR GRAPHICALLY, DESCRIBE THE STREET SECTION(S) TO BE CONSTRUCTED.
   b. MANHOLE FRAMES, COVERS, AND WATER VALVE COVERS WILL BE RAISED TO FINISHED PAVEMENT GRADE AT THE OWNER'S EXPENSE BY A QUALIFIED CONTRACTOR WITH CITY INSPECTION. ALL UTILITY ADJUSTMENTS SHALL BE COMPLETED PRIOR TO FINAL PAVING CONSTRUCTION.
   c. CROWNS OF INTERSECTING STREETS WILL CULMINATE IN A DISTANCE OF 40 FEET FROM THE INTERSECTING CURB LINE UNLESS OTHERWISE NOTED. INLETS ON THE INTERSECTING STREET SHALL NOT BE CONSTRUCTED WITHIN 40 FEET OF THE VALLEY GUTTER, UNLESS OTHERWISE NOTED.
   d. PRIOR TO FINAL ACCEPTANCE OF A STREET OUTSIDE THE CITY LIMITS, STREET NAME SIGNS CONFORMING TO COUNTY STANDARDS SHALL BE INSTALLED BY DEVELOPER.
   e. SIDEWALK REQUIREMENTS (GIVE STREET NAME AND LOCATION OF REQUIRED SIDEWALK, I.E., NORTH, SOUTH, EAST, OR WEST SIDE).
   f. A CURB LAY DOWN WHERE REQUIRED WHEN ALL POINTS OF SIDEWALKS INTERSECTS CURBS.
   g. INSIDE THE CITY LIMITS, SIDEWALKS SHALL BE COMPLETED PRIOR TO ACCEPTANCE OF ANY DRIVEWAY APPROACHES AND/OR ISSUANCE OF A CERTIFICATE OF OCCUPANCY. WHEN OUTSIDE THE CITY LIMITS, A LETTER OF CREDIT MAY BE POSTED OR OTHER SUITABLE FINANCIAL ARRANGEMENTS MAY BE MADE TO ENSURE CONSTRUCTION OF THE SIDEWALKS. IN EITHER CASE, SIDEWALKS ADJACENT TO "COMMON AREAS", PARKWAYS, OR OTHER LOCATIONS ON WHICH NO BUILDING CONSTRUCTION WILL TAKE PLACE, MUST BE CONSTRUCTED PRIOR TO FINAL ACCEPTANCE OF THE SUBDIVISION.
   h. A LICENSE AGREEMENT FOR LANDSCAPING MAINTENANCE AND IRRIGATION IN STREET R.O.W, SHALL BE EXECUTED BY THE DEVELOPER IN PARTY WITH THE CITY PRIOR TO FINAL ACCEPTANCE.
17. CALL THE CITY 48 HOURS PRIOR TO BEGINNING ANY WORK AND SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AND ALL AFFECTED UTILITY PROVIDERS, THE GENERAL CONTRACTOR, THE DEVELOPER AND THE DEVELOPER'S ENGINEER.

CONSTRUCTION SEQUENCING

CALL THE CITY 48 HOURS PRIOR TO BEGINNING ANY WORK AND SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AND ALL AFFECTED UTILITY PROVIDERS, THE GENERAL CONTRACTOR, THE DEVELOPER AND THE DEVELOPER'S ENGINEER.

OBTAIN A DEVELOPMENT PERMIT FROM THE CITY.

PROVIDE THE CITY WITH EVIDENCE ALL TCEQ LICENSES AND REQUIREMENTS ARE UP TO DATE.

INSTALL TEMPORARY EROSION CONTROLS AND TREE PROTECTION FENCING PRIOR TO ANY CLEARING AND GRUBBING. NOTIFY THE CITY WHEN INSTALLED.

ROUGH-CUT ALL REQUIRED OR NECESSARY PONDS. EITHER THE PERMANENT OUTLET STRUCTURE OR A TEMPORARY OUTLET MUCH BE CONSTRUCTED PRIOR TO DEVELOPMENT OF ANY EMBANKMENT OR EXCAVATION THAT LEADS TO PONDING CONDITIONS. THE OUTLET SYSTEM MUST CONSIST OF A LOW-LEVEL OUTLET AND AN EMERGENCY OVERFLOW MEETING THE REQUIREMENTS OF THE LDC. THE OUTLET SYSTEM SHALL BE PROTECTED FROM EROSION AND SHALL BE MAINTAINED THROUGHOUT THE COURSE OF CONSTRUCTION UNTIL FINAL RESTORATION IS ACHIEVED.

DELIVER APPROVED ROUGH-CUT SHEETS TO THE CITY ENGINEER PRIOR TO CLEARING AND GRUBBING.

ROUGH GRADE STREETS. NO DEVELOPMENT OF EMBANKMENT WILL BE PERMITTED AT THIS TIME.

INSTALL ALL UTILITIES TO BE LOCATED UNDER THE PROPOSED PAVEMENT OR WITHIN THE ROAD RIGHT-OF-WAY.

DELIVER STORM SEWER CUT SHEETS TO THE CITY ENGINEER.

BEGIN INSTALLATION OF STORM SEWER LINES. UPON COMPLETION, RESTORE AS MUCH DISTURBED AREAS AS POSSIBLE, PARTICULARLY CHANNELS AND LARGE OPEN AREAS.

DELIVER FINAL GRADE CUT SHEETS TO THE CITY ENGINEER.

RE-GRADE STREETS TO SUB-GRADE.

ENSURE THAT UNDERGROUND UTILITY CROSSINGS ARE COMPLETED. LAY 1ST/ COURSE BASE MATERIAL ON STREETS.

INSTALL CURB AND GUTTER

LAY FINAL BASE COURSE ON ALL STREETS.

PLACE CONCRETE.

COMPLETE FINAL GRADING AND RESTORATION OF DETENTION, SEDIMENTATION/FILTRATION PONDS.

COMPLETE PERMANENT EROSION CONTROL AND RESTORATION OF SITE VEGETATION.

REMOVE AND DISPOSE OF TEMPORARY EROSION CONTROLS.

COMPLETE ANY NECESSARY FINAL DRESS UP OF AREAS DISTURBED.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

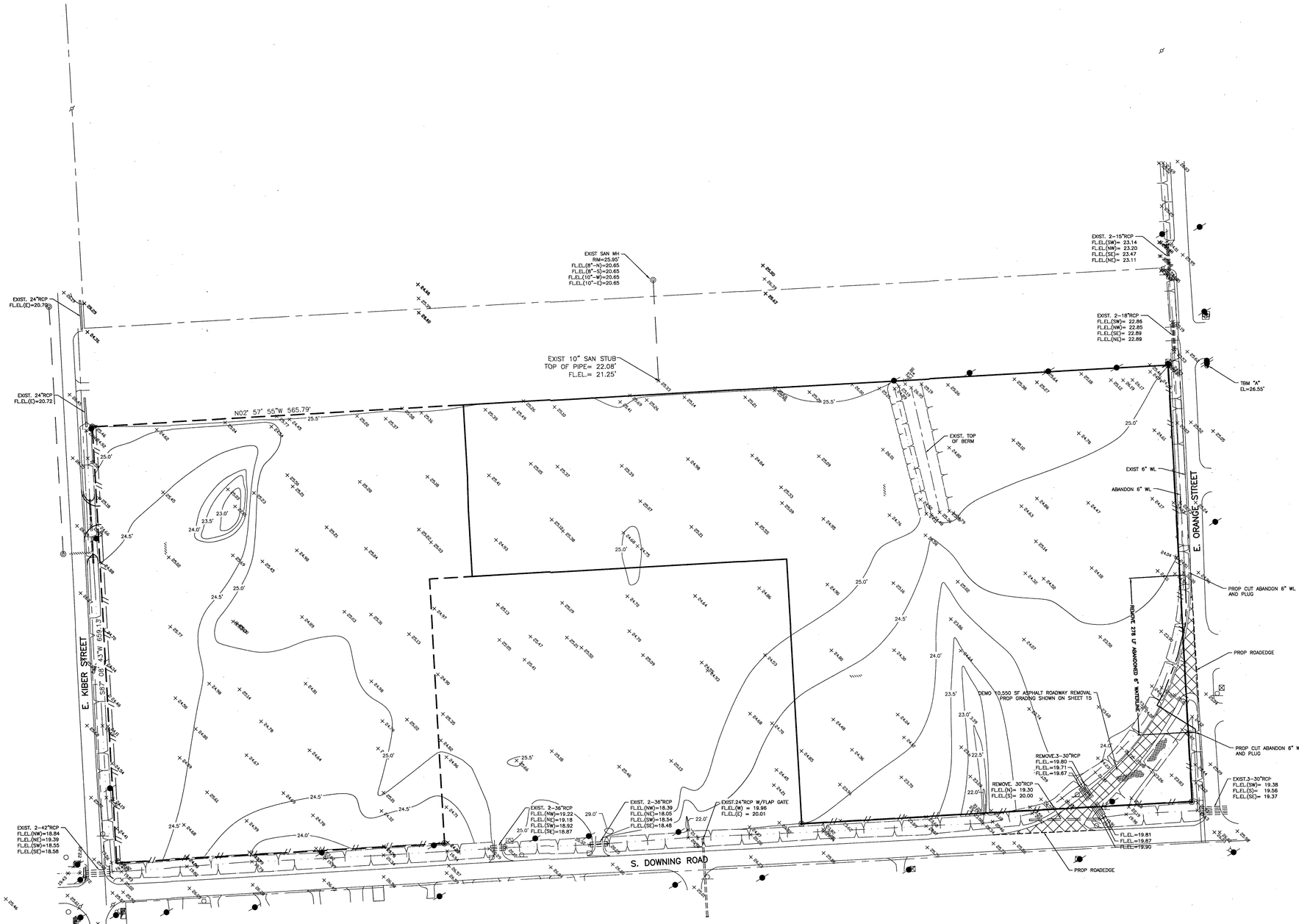
KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

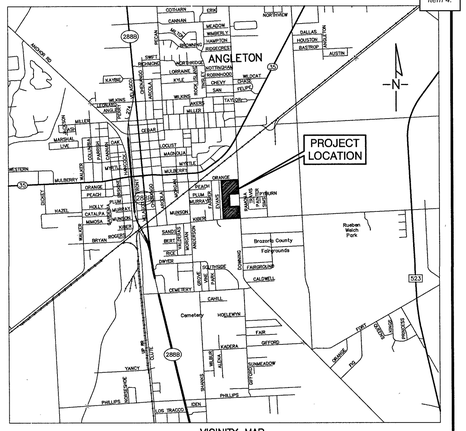
CONSTRUCTION NOTES

PROJECT NO. 13499

2

13499 SHEET SET.dwg





VICINITY MAP

0 40 80 160

SCALE : 1" = 80'

FLOOD ZONE STATEMENT

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP No. 48039C0445H EFFECTIVE JUNE 5, 1989, REVISED BY CASE No. 03-06-2336P EFFECTIVE JUNE 5, 2004, ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

THE SITE IS FULLY WITHIN ZONE X (UNSHADED) AREAS, OUTSITE THE 0.2% ANNUAL CHANCE FLOODPLAIN, ON PROPOSED FEMA PANEL 48039C0445K (NAVD 1988 DATUM)

PROJECT BENCHMARK

TXDOT L200203
A 5/8" I.R. WITH ALUMINUM CAP SET IN CONCRETE AT THE SOUTHEAST CORNER OF THE INTERSECTION OF S.H. 35 AND S. DOWNING ROAD AND 121' EAST OF THE CENTERLINE OF S. DOWNING ROAD.
ELEVATION = 25.74 FEET NGVD29

TBM-A: A 60D NAIL SET IN A POWER POLE ON THE NORTH SIDE OF ORANGE STREET, EAST POLE OF THE 2 POLES AT THE NORTHWEST CORNER OF THE SUBJECT TRACT.
ELEVATION = 26.55 FEET NGVD29

ALL COORDINATES SHOWN HEREON ARE IN GRID, BASED ON THE TEXAS COORDINATE SYSTEM OF 1983, (NAD83) SOUTH CENTRAL ZONE, PER GPS OBSERVATIONS.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
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WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN: 1" = 80'
PROFILE:
HORIZONTAL:
VERTICAL:

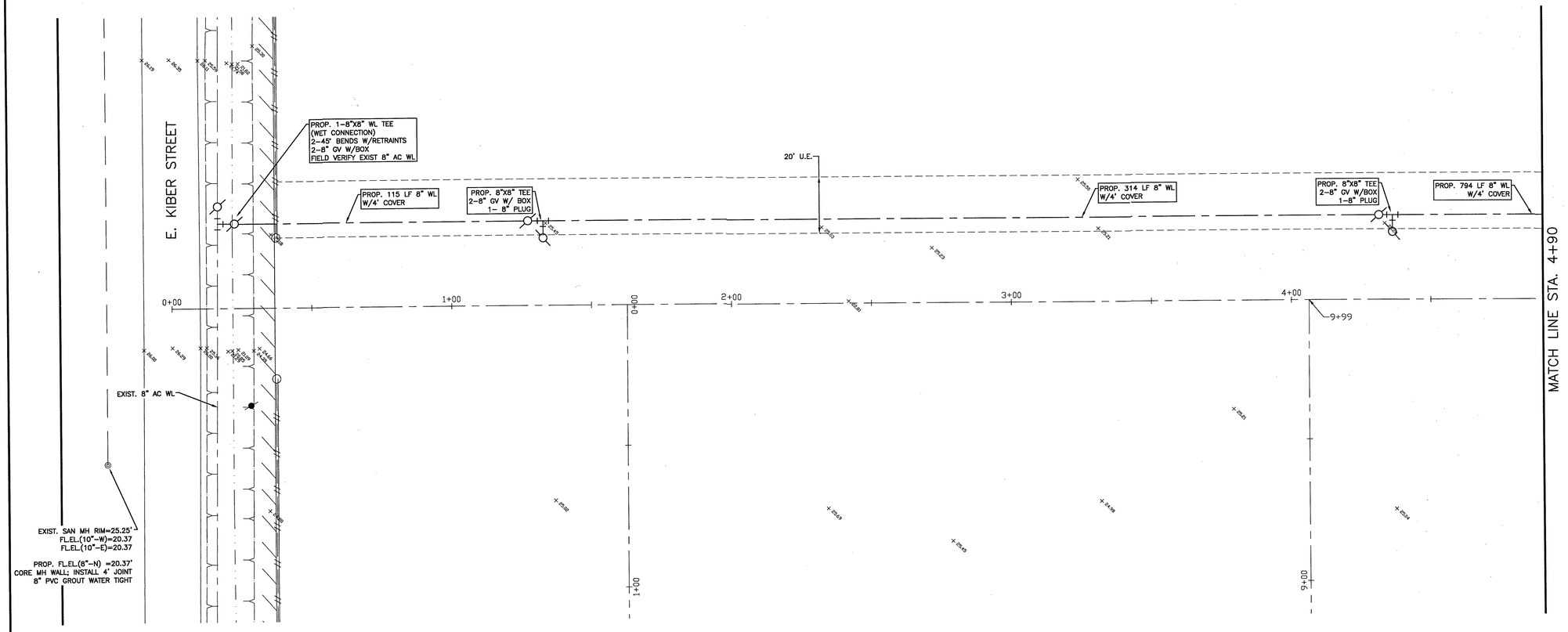
KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EXISTING CONDITION

PROJECT NO. 13499

3
32

13499 SHEET SET.dwg



0 10 20 40
SCALE : 1" = 20'

SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- STORM SEWER MANHOLE (SMH-1)
- SANITARY SEWER MANHOLE (MH-1)
- TOP BANK
- STORM SEWER LINE (REINFORCED CONCRETE PIPE, ASTM C76)
- SANITARY SEWER LINE (D3034, SDR 26, 160 PR)
- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	ADDED 2 WL PLUGS	

REVISIONS

DESIGNED MS
DRAWN BT/BB
CHECKED
DATE

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Date: 1/22/21

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WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

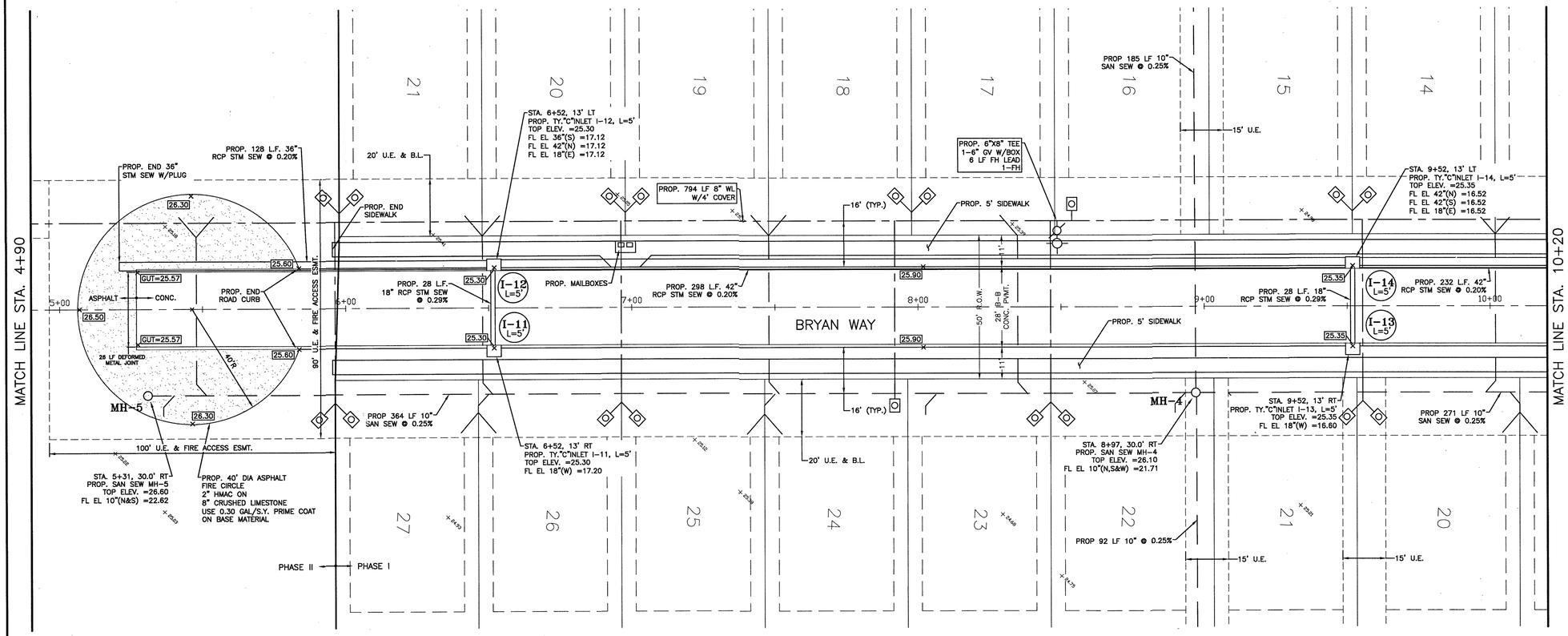
PLAN: 1" = 20'
PROFILE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

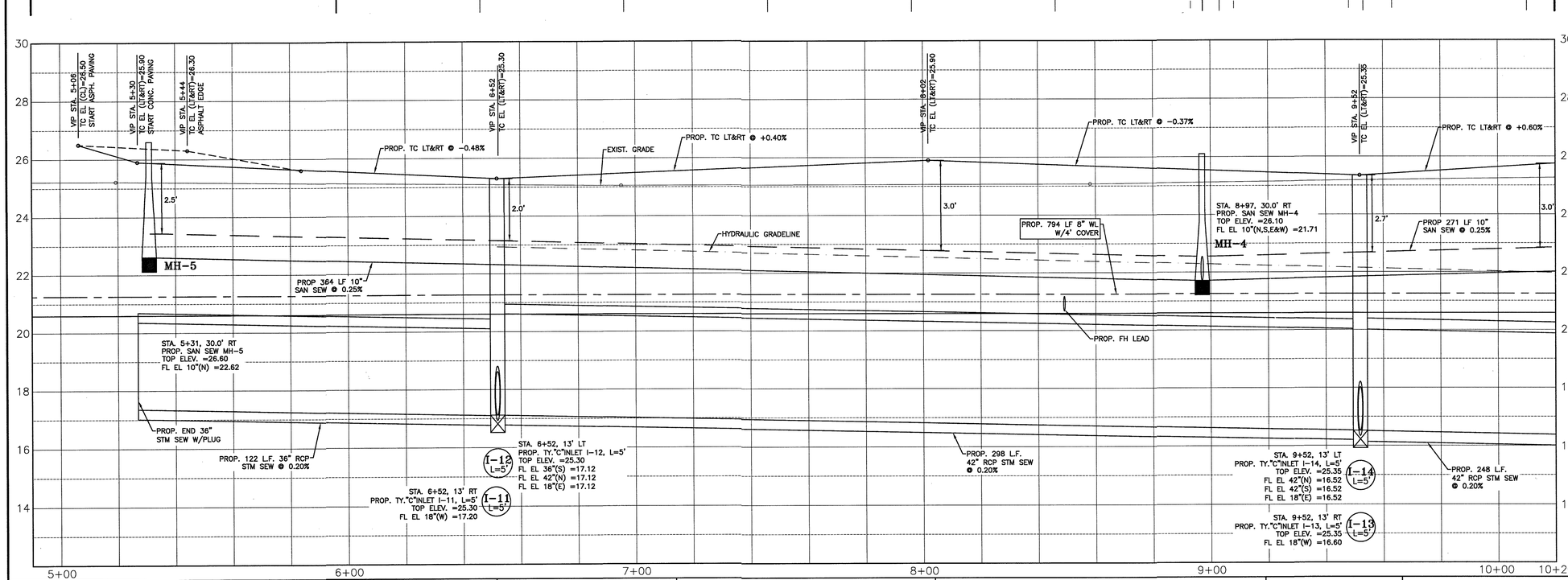
KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
BRYAN WAY
STA. 0+00 TO 4+90

PROJECT NO. 13499

13499 SHEET SET.dwg





0 10 20 40
SCALE : 1" = 20'

SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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- SANITARY SEWER LINE (D3034, SDR 26, 160 PR)
- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	ADDED 6 LF 36" RCP	

REVISIONS

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CHECKED
DATE

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121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

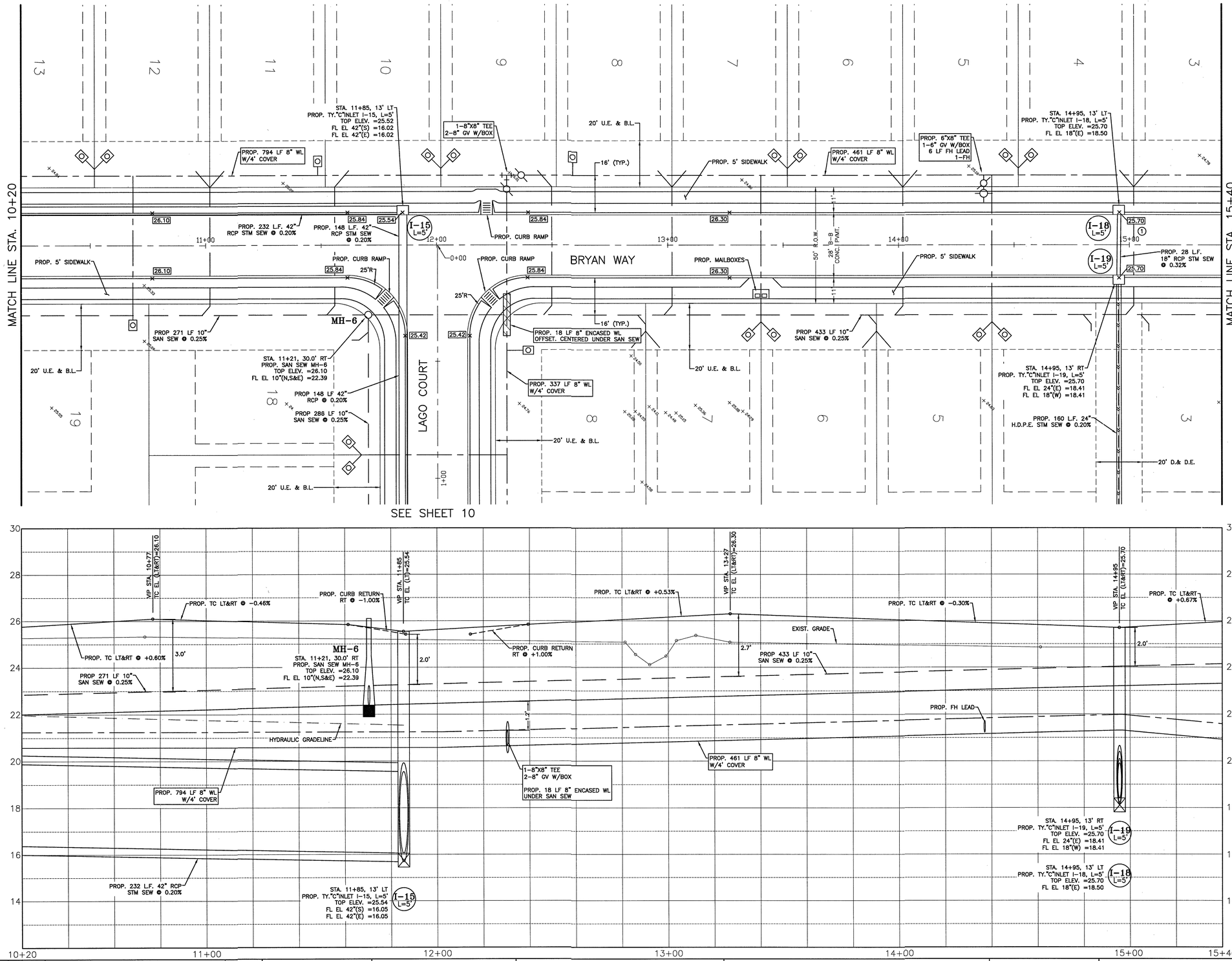
PLAN: 1" = 20'
PROFILE:
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 2'

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
BRYAN WAY
STA. 5+00 TO 10+20

PROJECT NO. 13499

13499 SHEET SET.dwg



0 10 20 40
SCALE : 1" = 20'

① INSTALL LEAD AFTER ROADWAY LIME STABILIZATION. INSTALL SANITARY SEWER LEAD AND BACKFILL W/COMPACTED STABILIZED SAND. LEAD SHALL BE ASTM 2241, DR26, 160 PSI. WYE SHALL BE ASTM D2665, DR26.

SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- STORM SEWER MANHOLE (SMH-1)
- SANITARY SEWER MANHOLE (MH-1)
- TOP BANK
- STORM SEWER LINE (REINFORCED CONCRETE PIPE, ASTM C76)
- SANITARY SEWER LINE (D3034, SDR 26, 160 PR)
- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	CORRECT STATION I-15	

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
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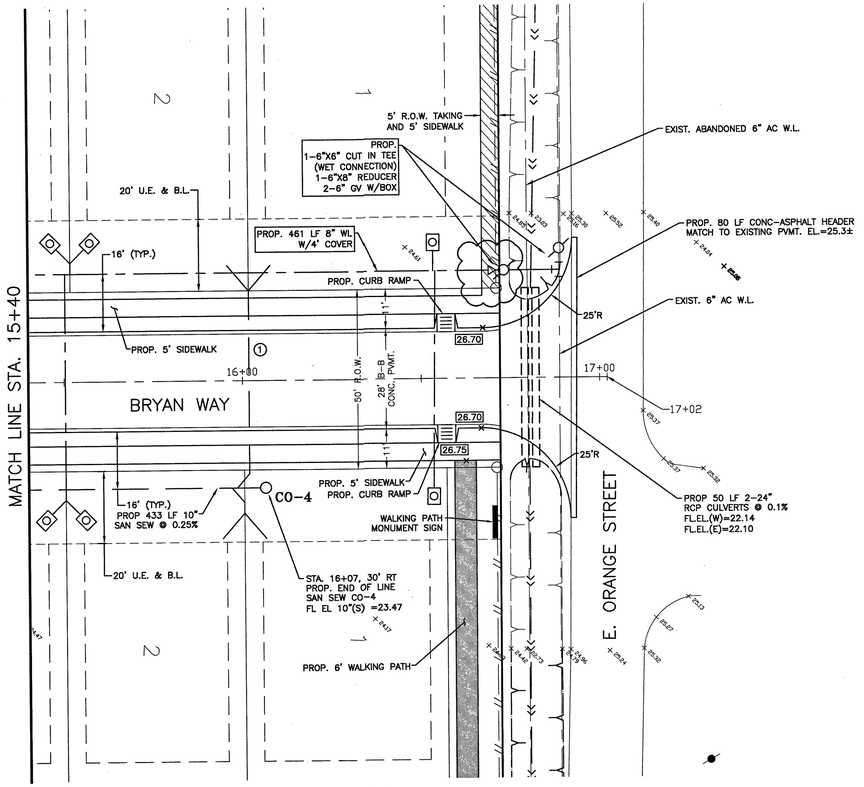
ANGLETON, TEXAS 77515

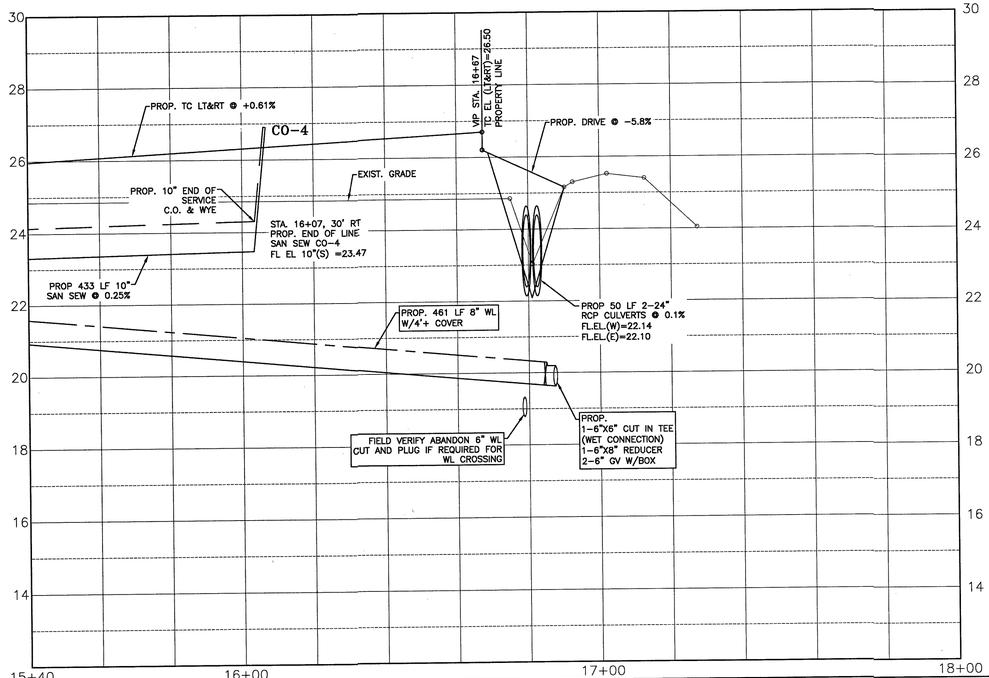
PLAN & PROFILE
BRYAN WAY
STA. 10+20 TO 15+40

PROJECT NO. 13499

6

13499 SHEET SEE.dwg





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- WATER VALVE
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- SANITARY SEWER LINE (D3034, SDR 26, 160 PR)
- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
1	1/21/21	RELOCATED GATE VALVE; ADD SIDEWALK AND RAMPS	

REVISIONS

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DATE

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STATE OF TEXAS · MIGUELANGEL A. SAUCEDA · 121992 · REGISTERED PROFESSIONAL ENGINEER

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KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
BRYAN WAY
STA. 15+40 TO 17+02

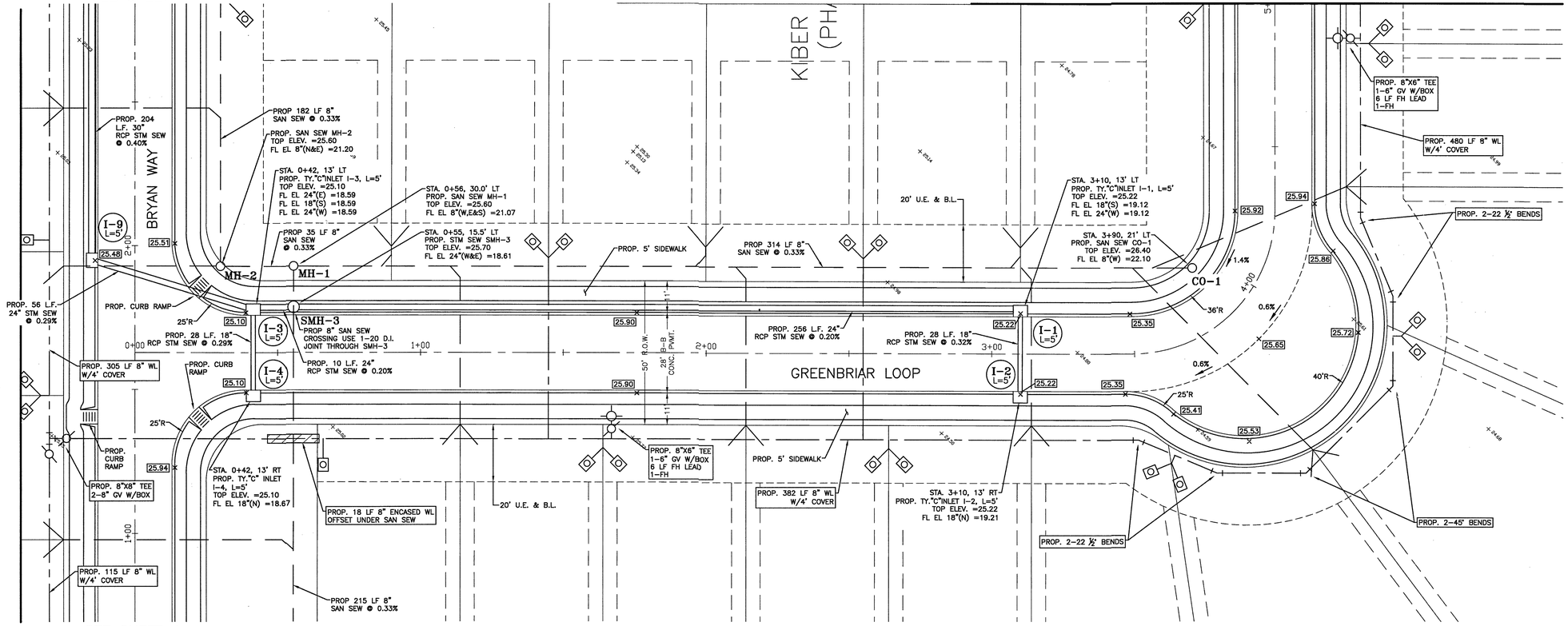
PROJECT NO. 13499

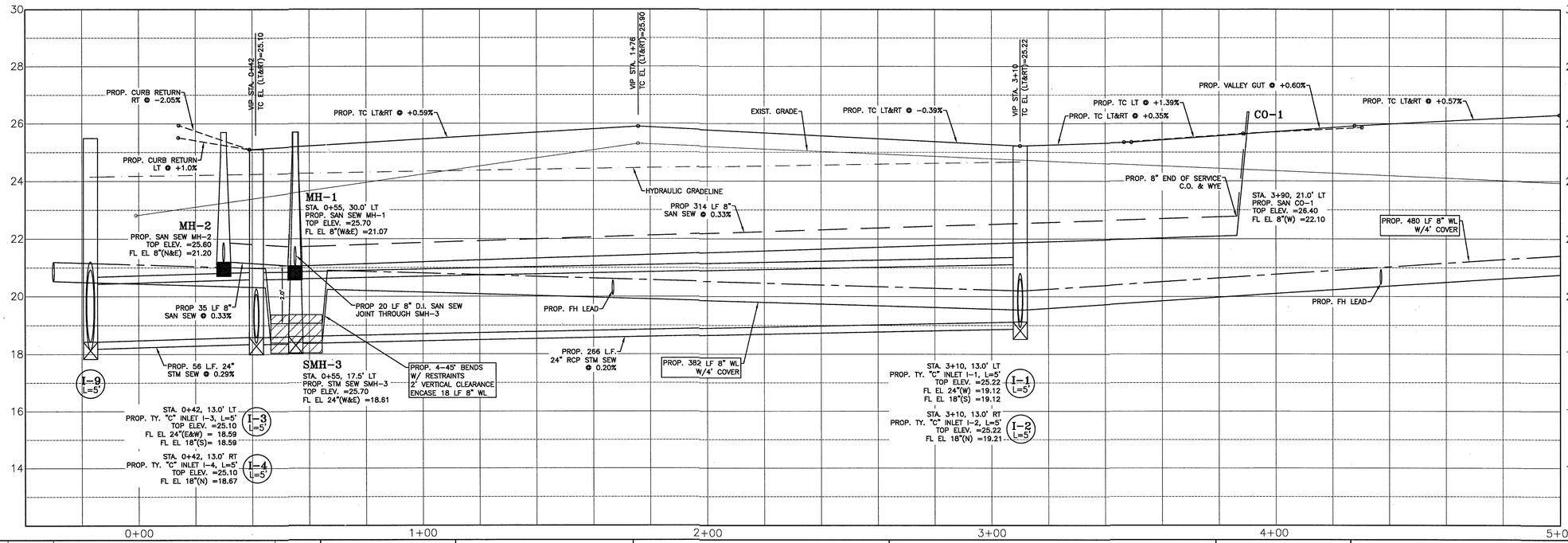
13499 SHEET SET.dwg

SEE SHEET 4

MATCH LINE STA. 5+00

SEE SHEET 4





SYMBOLS LEGEND

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- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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NO.	DATE	DESCRIPTION	APPROVED

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185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

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VERTICAL: 1" = 2'

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE GREENBRIAR LOOP STA. 0+00 TO 5+00 (PHASE II)

PROJECT NO. 13499

13499 SHEET SET.dwg

MATCH LINE STA. 5+00

SEE SHEET 4

SEE SHEET 5

RESERVE A (SEE SHEET 11)

BRYAN WAY

GREENBRIAR LOOP

50' R.O.W.

28' B-B CONC. PVMT.

PROP. 480 LF 8" WL W/4' COVER

PROP. 2-22 ½° BENDS

PROP. 2-45° BENDS

PROP. 2-22 ½° BENDS

STA. 6+09, 20' LT
PROP. SAN SEW CO-2
TOP ELEV. =26.15
FL EL 8"(W) =22.93

STA. 6+89, 13' LT
PROP. TY. "C" INLET I-6, L=5'
TOP ELEV. =25.22
FL EL 18"(NE) =18.31
FL EL 24"(W) =18.31

STA. 6+59, 13' RT
PROP. TY. "C" INLET I-5, L=5'
TOP ELEV. =25.30
FL EL 18"(SW) =18.44

PROP. 42 LF. 18" RCP STM SEW @ 0.31%

PROP 339 LF 8" SAN SEW @ 0.33%

PROP. 382 LF 8" WL W/4' COVER

PROP. 266 L.F. 24" RCP STM SEW @ 0.20%

PROP. 182 LF 8" SAN SEW @ 0.33%

STA. 9+58, 13' LT
PROP. TY. "C" INLET I-8, L=5'
TOP ELEV. =25.10
FL EL 24"(W&E) =17.78
FL EL 18"(N) =17.78

STA. 9+58, 13' RT
PROP. TY. "C" INLET I-7, L=5'
TOP ELEV. =25.10
FL EL 18"(S) =17.88

PROP. 8"X6" TEE
1-6" GV W/BOX
6 LF FH LEAD
1-FH

PROP. 28 LF. 18" RCP STM SEW @ 0.29%

PROP. 56 L.F. 24" RCP STM SEW @ 0.30%

PROP. 204 L.F. 30" RCP STM SEW @ 0.40%

PROP. 305 LF 8" WL W/4' COVER

PROP. CURB RAMP

PROP. 8"X8" TEE
1-8" GV W/BOX

PROP. 794 LF 8" WL W/4' COVER

PROP. 248 L.F. 36" RCP STM SEW @ 0.20%

PROP 84 LF 10" SAN SEW @ 0.25%

CO-2

CO-3

MH-3

I-5 L=5'

I-6 L=5'

I-7 L=5'

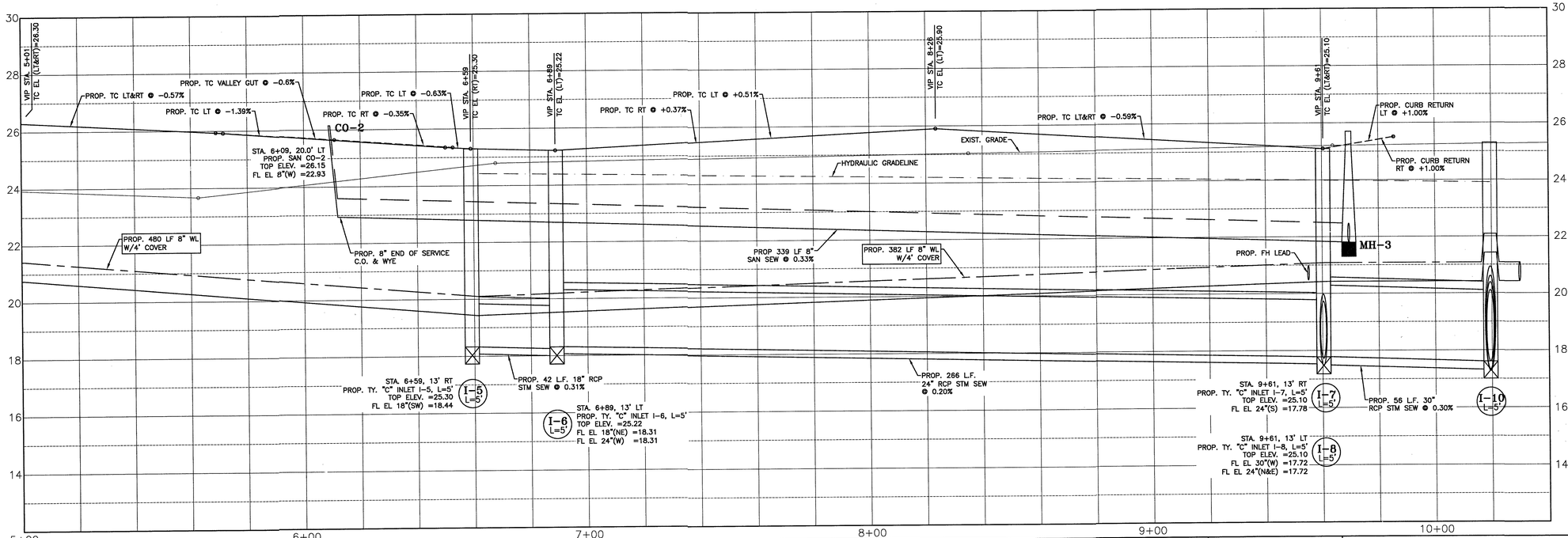
I-8 L=5'

I-10 L=5'

20' U.E. & B.L.

PROP. 5' SIDEWALK

0 10 20 40
SCALE : 1" = 20'



SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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- TOP BANK
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- SANITARY SEWER LINE (D3034, SDR 26, 160 PR)
- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

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DATE

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REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

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LIVINGSTON, TX 77351
936-646-6767

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PROFILE:
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VERTICAL: 1" = 2'

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
GREENBRIAR LOOP
STA. 5+00 TO 10+02
(PHASE II)

PROJECT NO. 13499

13499 SHEET SET.dwg

SEE SHEET 6

PROP. 461 LF 8" WL W/4' COVER

PROP 433 LF 10" SAN SEW @ 0.25%

20' D.& D.E.

PROP. 120 L.F. 48" RCP STM SEW @ 0.25%

PROP. 18 LF 8" ENCASED WL OFFSET & CENTERED UNDER SAN SEW

PROP. 6"X8" TEE 1-6" GV W/BOX 6 LF FH LEAD 1-FH

20' U.E. & B.L.

STA. 1+36, 13' LT
PROP. TY."C"INLET I-17, L=5'
TOP ELEV. =25.14
FL EL 48"(N) =15.70
FL EL 48"(S) =15.70

PROP. 339 LF 8" WL W/4' COVER

PROP. 5' SIDEWALK 16' (TYP.)

PROP. 8"X8" TEE 2-8" GV W/BOX

1-8"X8" TEE 2-8" GV W/BOX

PROP. CURB RAMP

25'R

PROP. 28 L.F. 42" RCP STM SEW @ 0.21%

I-17 L=5'

I-16 L=5'

PROP. 148 L.F. 42" RCP STM SEW @ 0.20%

LAGO COURT

50' R.O.W.

28' B-B CONC., PVMT.

PROP. 794 LF 8" WL W/4' COVER

I-15 L=5'

MH-6

PROP 286 LF 10" SAN SEW @ 0.25%

STA. 1+36, 13' RT
PROP. TY."C"INLET I-16, L=5'
TOP ELEV. =25.14
FL EL 18"(N) =15.77

16' (TYP.)

PROP. 5' SIDEWALK

PROP. 18 LF 8" ENCASED WL CENTERED UNDER SAN SEW

CO-5

STA. 3+19, 30' RT
PROP. END OF LINE
SAN SEW CO-5
TOP ELEV. =26.50
FL EL 10"(W) =23.10

20' U.E. & B.L.

PROP. 2-45° BENDS

PROP. 2-45° BENDS

PROP. 2-45° BENDS

PROP. 341 LF 8" WL LOOP W/4' COVER

DETENTION POND

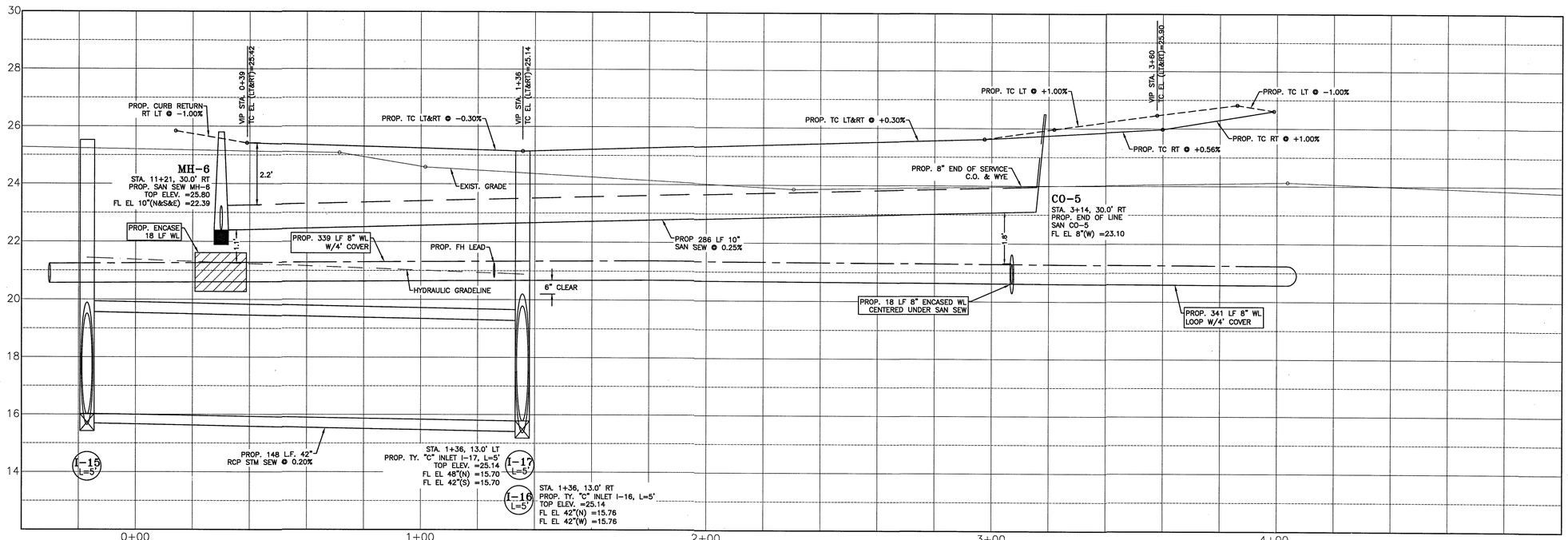
15' U.E.

PROP. 232 L.F. 42" RCP STM SEW @ 0.20%

BRYAN WAY

PROP 271 LF 10" SAN SEW @ 0.25%

SEE SHEET 6



0 10 20 40
SCALE : 1" = 20'

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SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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- TOP BANK
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- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	REVISED WATER LOOP QUANTITY	

REVISIONS

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A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
LAGO COURT
STA. 0+00 TO 3+60

PROJECT NO. 13499

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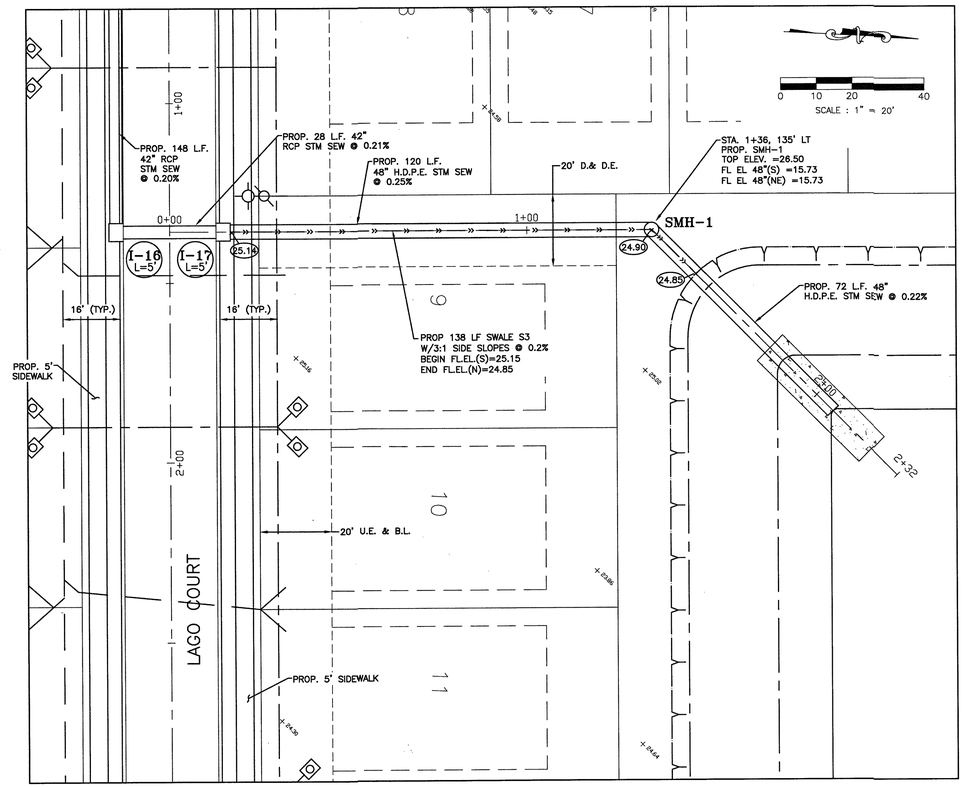
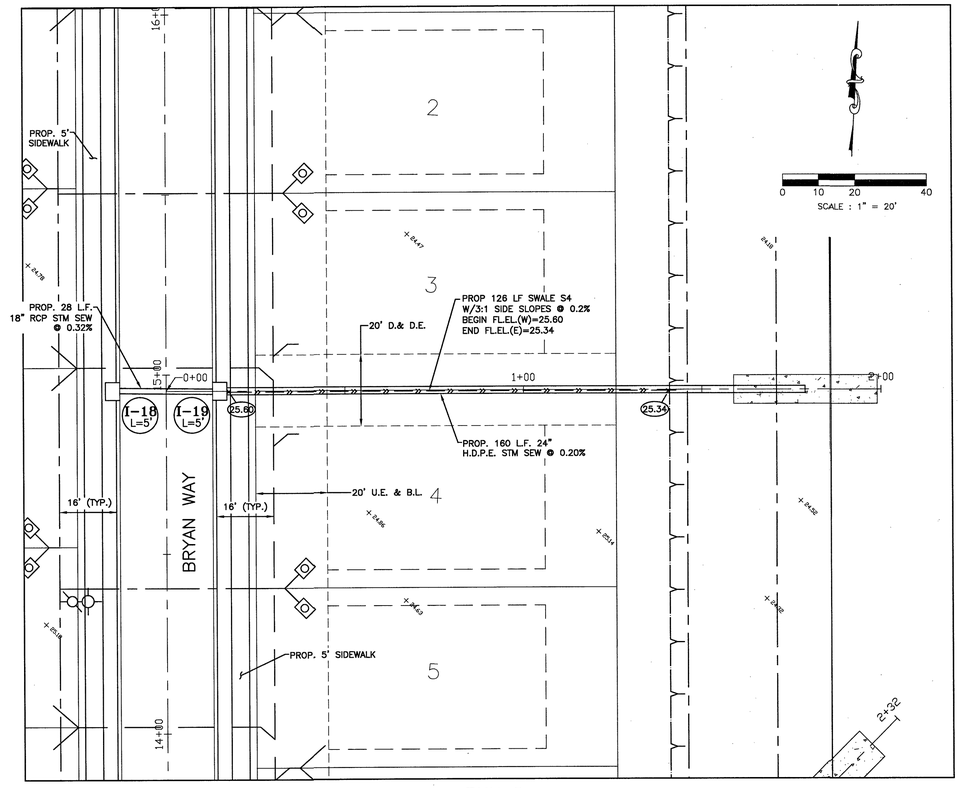
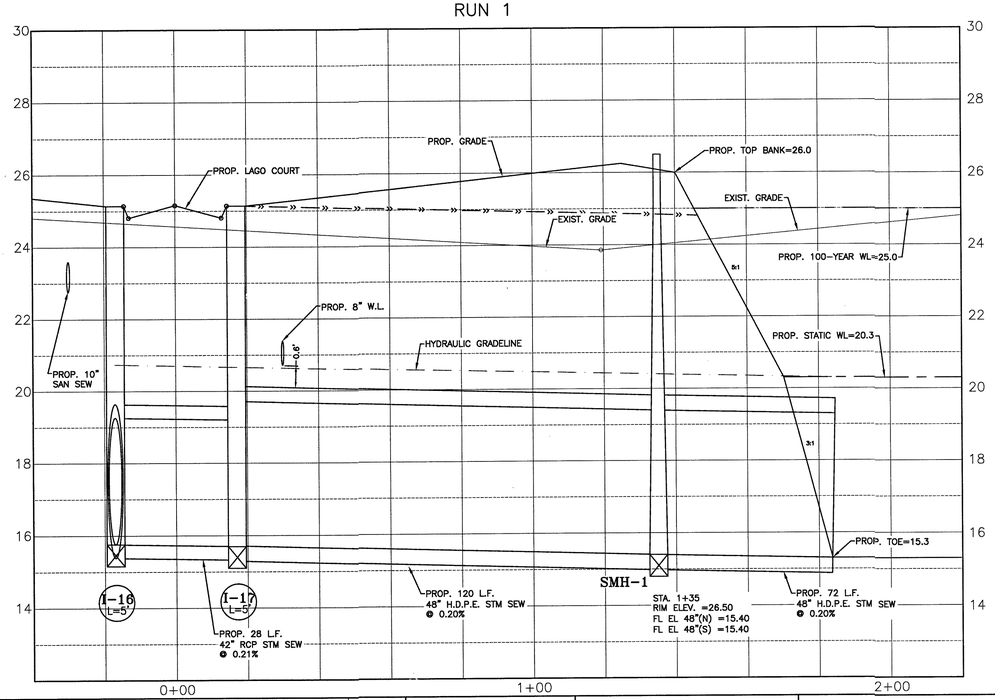


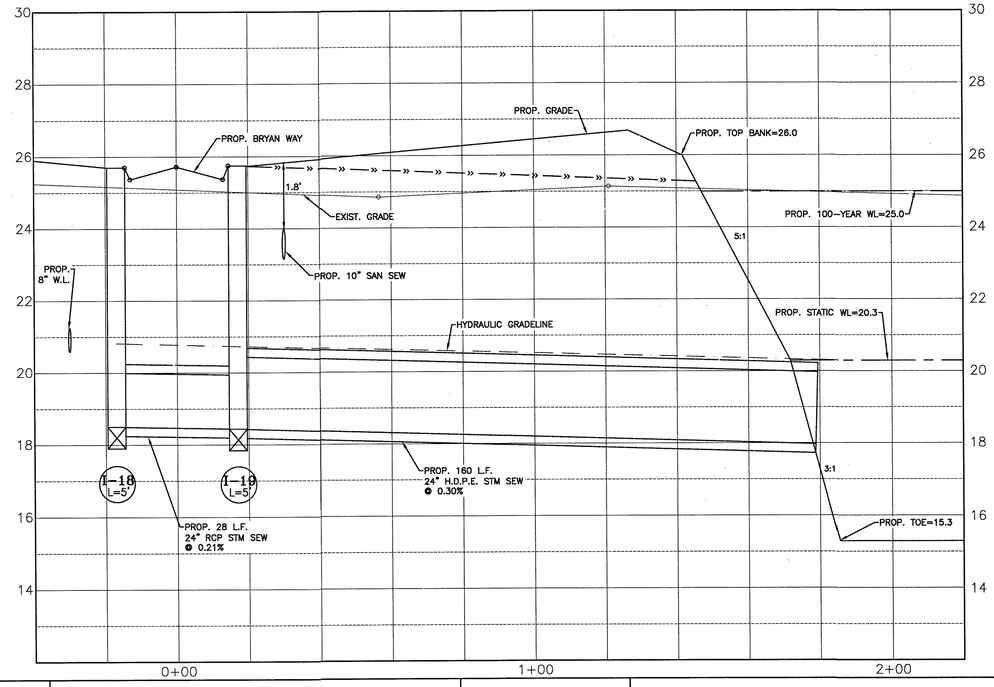
RUN 1



RUN 2



RUN 1



RUN 2

SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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ANGLETON, TEXAS 77515

PLAN & PROFILE
STORM SEWER RUN 1
BETWEEN LOTS 9 & 10
STORM SEWER RUN 2
BETWEEN LOTS 3 & 4

PROJECT NO. 13499

13499 SHEET SET.dwg

0 30 60 120
SCALE : 1" = 60'

EXIST SAN MH
RIM=25.96'
FL.EL.(8"-N)=19.32
FL.EL.(8"-S)=19.32
FL.EL.(10"-W)=19.32
FL.EL.(10"-E)=19.32

EXIST SAN MH
RIM=25.95'
FL.EL.(8"-N)=20.65
FL.EL.(8"-S)=20.65
FL.EL.(10"-W)=20.65
FL.EL.(10"-E)=20.65

EXIST 10" SAN STUB
TOP OF PIPE= 22.08'
FL.EL.= 21.25'

PROP
1-8"X8" CUT IN TEE
(WET CONNECTION)
2-8" GV W/ BOX

PROP. 115 LF 8" WL
W/4' COVER

1-8"X8" TEE
2-8" GV W/ BOX

PROP. 305 LF 8" WL
W/4' COVER

1-8"X8" TEE
2-8" GV W/ BOX

PROP. 794 LF 8" WL
W/4' COVER

PROP 185 LF 10" @ 0.25%

1-FH

1-8"X8" TEE
2-8" GV W/ BOX

PROP. 461 LF 8" WL
W/4' COVER

1-FH

PROP.
1-6"X6" CUT IN TEE
(WET CONNECTION)
1-6"X8" REDUCER
2-6" GV W/BOX

BRYAN WAY

MH-5 MH-4 MH-6 CO-4

PROP 364 LF 10" @ 0.25%

PROP 92 LF 10" @ 0.25%

PROP 271 LF 10" @ 0.25%

PROP 433 LF 10" @ 0.25%

PROP. 18 LF 8" ENCASED WL
OFFSET CENTERED UNDER SAN SEW

1-FH

PROP 286 LF
10" @ 0.25%

PROP. 339 LF 8" WL
W/4' COVER

LAGO COURT

PROP. 18 LF 8" ENCASED WL
CENTERED UNDER SAN SEW

CO-5

1-8"X8" TEE
2-8" GV W/ BOX

PROP. 341 LF 8" WL
LOOP W/4' COVER

E. KIBER STREET

E. ORANGE STREET

KIBER RESERVE
(PHASE II)

EXIST SAN MH
RIM=25.25'
FL.EL.(10"-W)=20.37
FL.EL.(10"-E)=20.37

PROP FL.EL.(8"-N)= 20.37'
CORE MH WALL; INSTALL 4' JOINT
8" PVC GROUT WATER TIGHT

S. DOWNING ROAD

SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- TOP BANK
- STORM SEWER LINE (REINFORCED CONCRETE PIPE, ASTM C76)
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- WATERLINE (AWWA C900, CLASS 150, DR18)

NO.	DATE	DESCRIPTION	APPROVED
2	1/22/21	RELOCATED THREE FIRE HYDRANTS	
1	9/23/20	REVISE WATER LOOP QUANTITY	

REVISIONS

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936-646-6767

PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
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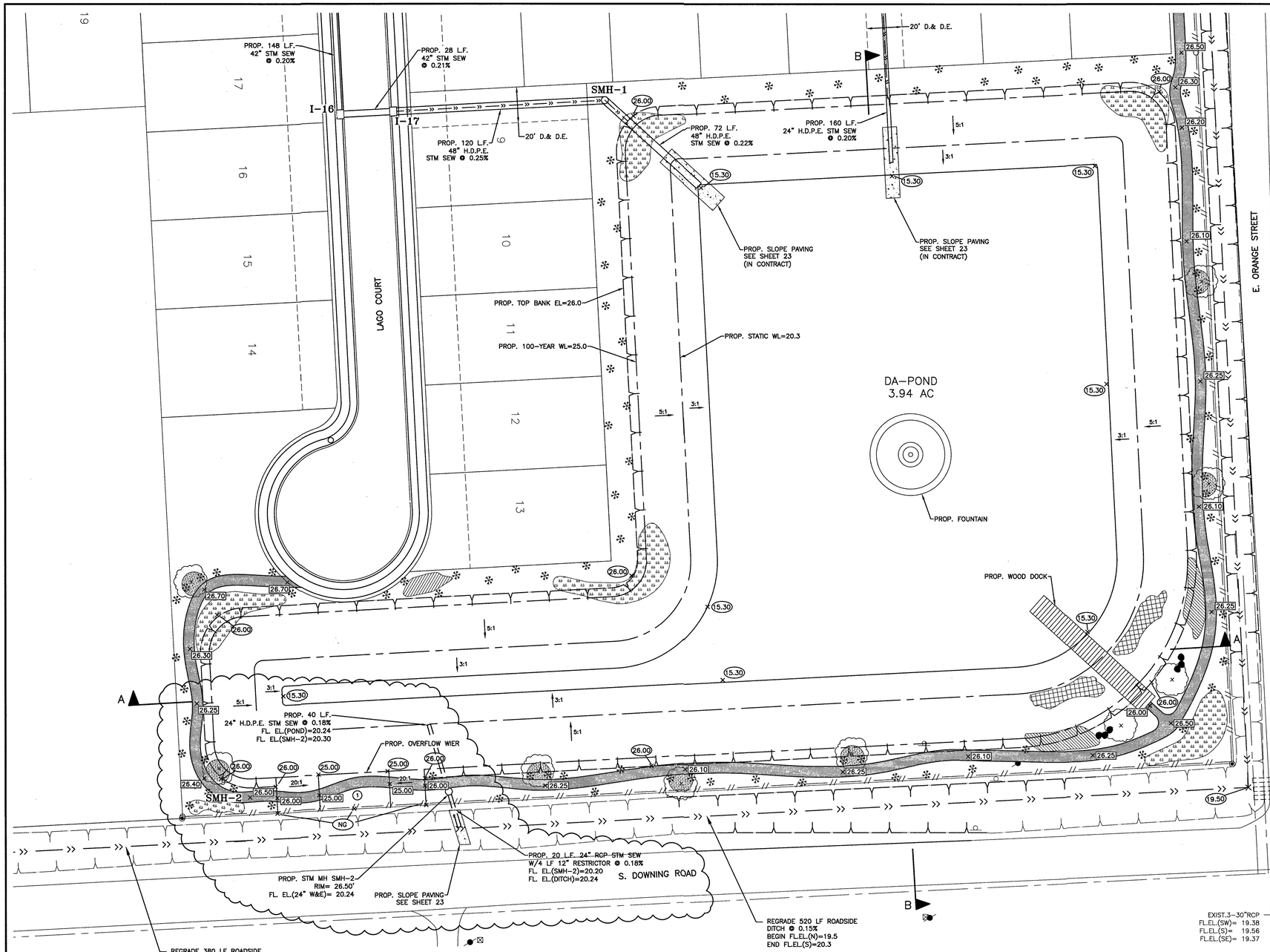
ANGLETON, TEXAS 77515

UTILITY LAYOUT

PROJECT NO. 13499

13499 SHEET SET.dwg



DETENTION CALCULATIONS

PREDEVELOPMENT FLOW RATE CALCULATION (100-YEAR STORM)
Q100 =CIA x 1.00 PK
A = 19.84 ACRES
= 0.30
TC = 15 MIN
+ 200 LF GRASS @ 0.5 FPS
+ 2010 LF DITCH @ 1.5 FPS
= 44 MIN
I100 = 5.366 IN/HR
Q100 = 19.84 X 5.366 X 0.3 X1.0 = 31.94 CPS
MAX ALLOWABLE PER ADD DRAINAGE STUDY 0.74 X 19.84 = 14.7 CFS

PROPOSED CONDITION 100-YEAR STORM
Q=CIA X 1.25 PK
A = 19.84 ACRES
C = 0.65
TC = 15 MIN + 180 CF GRASS @ 0.5 + 145 LF GUT @ 2.0 FPS
+ 1775 LF SEW @ 2.0
= 32.07 MIN
I100 = 6.309 IN/HR
Q100 = 0.65 X 6.309 X 19.84 X 1.25 = 101.71 CFS

DETENTION REQUIRED = 506,777 CF = 11.634 AC-FT

POND INFORMATION

TOP BANK ELEVATION= 26.0'
ELEVATION TOP (WSEL= 25.0')= 131,900 SF
ELEVATION STATIC WATER (EL=20.3')= 89,500 SF
ELEVATION TOE (EL=15.3')= 66,400 SF
AVERAGE DETENTION AREA= 110,700
DETENTION DEPTH= 4.7'

DETENTION PROVIDED= 520,290 CF = 11.94 AC-FT

0 15 30 60
SCALE : 1" = 30'

LEGEND:

- AQUATIC HABITAT
- COASTAL GRASSLAND HABITAT
- BUTTERFLY GARDEN
- MULCH
- FLOWERING TREE 3" DIAMETER
- CRUSHED GRANITE WALKING PATH, 6' WIDE
- NATURAL STONE SEATING

TRAPEZOIDAL WEIR FORMULA

$$Q = 3.247 L H^{1.48} - \frac{0.566 L^{1.99}}{1 + 2L^{1.48}} H^{1.9} + 0.609 H^{2.5}$$

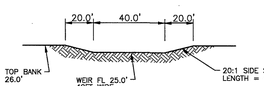
Where:
Q = flow rate in cfs.
L = Width of the weir crest in feet.
H = Height of the upstream water above the weir crest in feet.

L=	40	FT
H=	1	FT
Q=	130.08	CFS

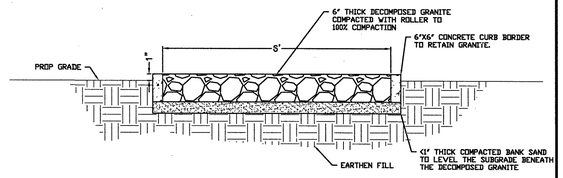
EXCEEDS PROP 100 YEAR STORM EVENT = 101.7 CFS

LANDSCAPING NOT IN CONTRACT

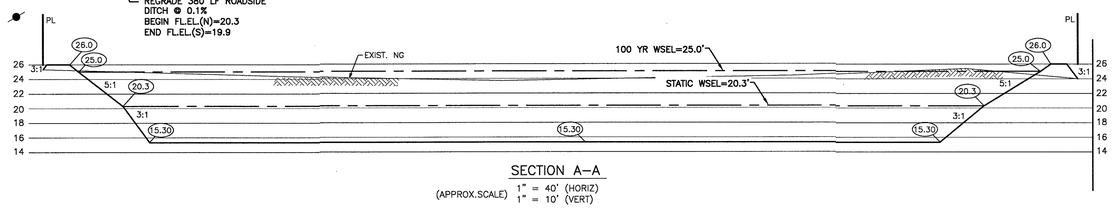
① PROP. 40' WIDE GRASSED OVERSPILL WIER FOR EXTREME RAINFALL EVENT.



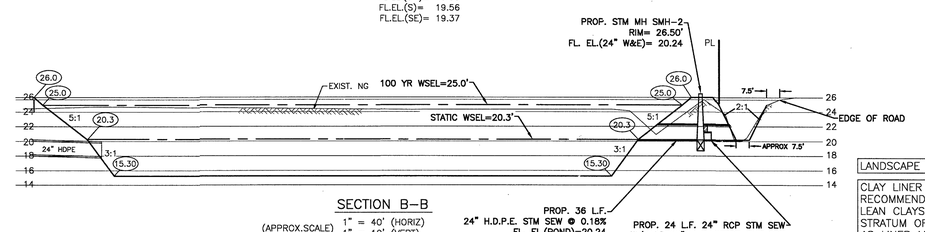
GRASS WIER DETAIL
(SECTION VIEW)
N.T.S.



GRANITE TRAIL DETAIL



SECTION A-A
(APPROX.SCALE) 1" = 40' (HORIZ)
1" = 10' (VERT)



SECTION B-B
(APPROX.SCALE) 1" = 40' (HORIZ)
1" = 10' (VERT)

LANDSCAPE PLAN DESIGNED AND PROVIDED BY OTHERS.

CLAY LINER WILL BE INSTALLED AT THE RECOMMENDATION OF THE GEOTECHNICAL REPORT. LEAN CLAYS LOCATED WITHIN THE 0-6 FT DEPTH STRATUM OF THE PROPOSED POND AREA CAN BE USED AS LINER MATERIAL.

NO.	DATE	DESCRIPTION	APPROVED
2	1/22/21	MOVED OUTFALL	
1	11.17.20	ADDENDUM 2	

REVISIONS

DESIGNED MS
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DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST., ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992
Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

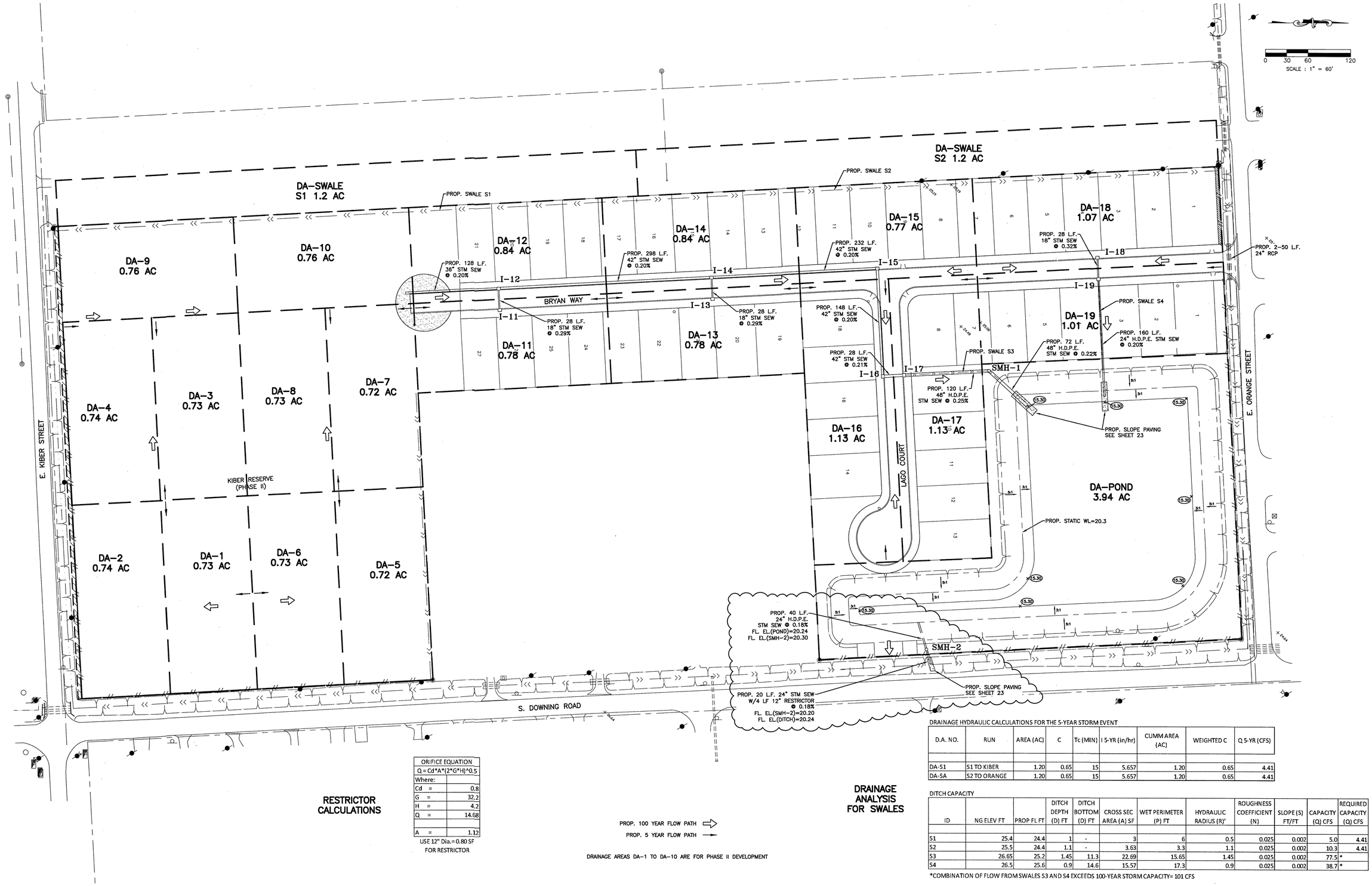
PLAN: 1" = 30'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

DETENTION POND DESIGN, CROSS SECTIONS AND LANDSCAPE PLAN

PROJECT NO. 13499

13499 SHEET SET.dwg



RESTRICTOR CALCULATIONS

ORIFICE EQUATION	
Q = Cd*A*(2*G*H)^0.5	
Where:	
Cd =	0.8
G =	32.2
H =	4.2
Q =	14.68
A =	1.12

USE 12" Dia.= 0.80 SF FOR RESTRICTOR

PROP. 100 YEAR FLOW PATH
PROP. 5 YEAR FLOW PATH

DRAINAGE AREAS DA-1 TO DA-10 ARE FOR PHASE II DEVELOPMENT

DRAINAGE ANALYSIS FOR SWALES

DRAINAGE HYDRAULIC CALCULATIONS FOR THE 5-YEAR STORM EVENT

D.A. NO.	RUN	AREA (AC)	C	Tc (MIN)	I 5-YR (in/hr)	CUMM AREA (AC)	WEIGHTED C	Q 5-YR (CFS)
DA-S1	S1 TO KIBER	1.20	0.65	15	5.657	1.20	0.65	4.41
DA-SA	S2 TO ORANGE	1.20	0.65	15	5.657	1.20	0.65	4.41

DITCH CAPACITY

ID	NG ELEV FT	PROP FL FT	DITCH DEPTH (D) FT	DITCH BOTTOM (D) FT	CROSS SEC AREA (A) SF	WET PERIMETER (P) FT	HYDRAULIC RADIUS (R)'	ROUGHNESS COEFFICIENT (N)	SLOPE (S) FT/FT	CAPACITY (Q) CFS	REQUIRED CAPACITY (Q) CFS
S1	25.4	24.4	1	-	3	6	0.5	0.025	0.002	5.0	4.41
S2	25.5	24.4	1.1	-	3.63	3.3	1.1	0.025	0.002	10.3	4.41
S3	26.65	25.2	1.45	11.3	22.69	15.65	1.45	0.025	0.002	77.5	*
S4	26.5	25.6	0.9	14.6	15.57	17.3	0.9	0.025	0.002	38.7	*

*COMBINATION OF FLOW FROM SWALES S3 AND S4 EXCEEDS 100-YEAR STORM CAPACITY= 101 CFS

NO.	DATE	DESCRIPTION	APPROVED
2	1/21/21	MOVED OUTFALL	
1	9/23/20	REVISE RUN BETWEEN I-12 AND I-14	

REVISIONS

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OWNER:
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WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

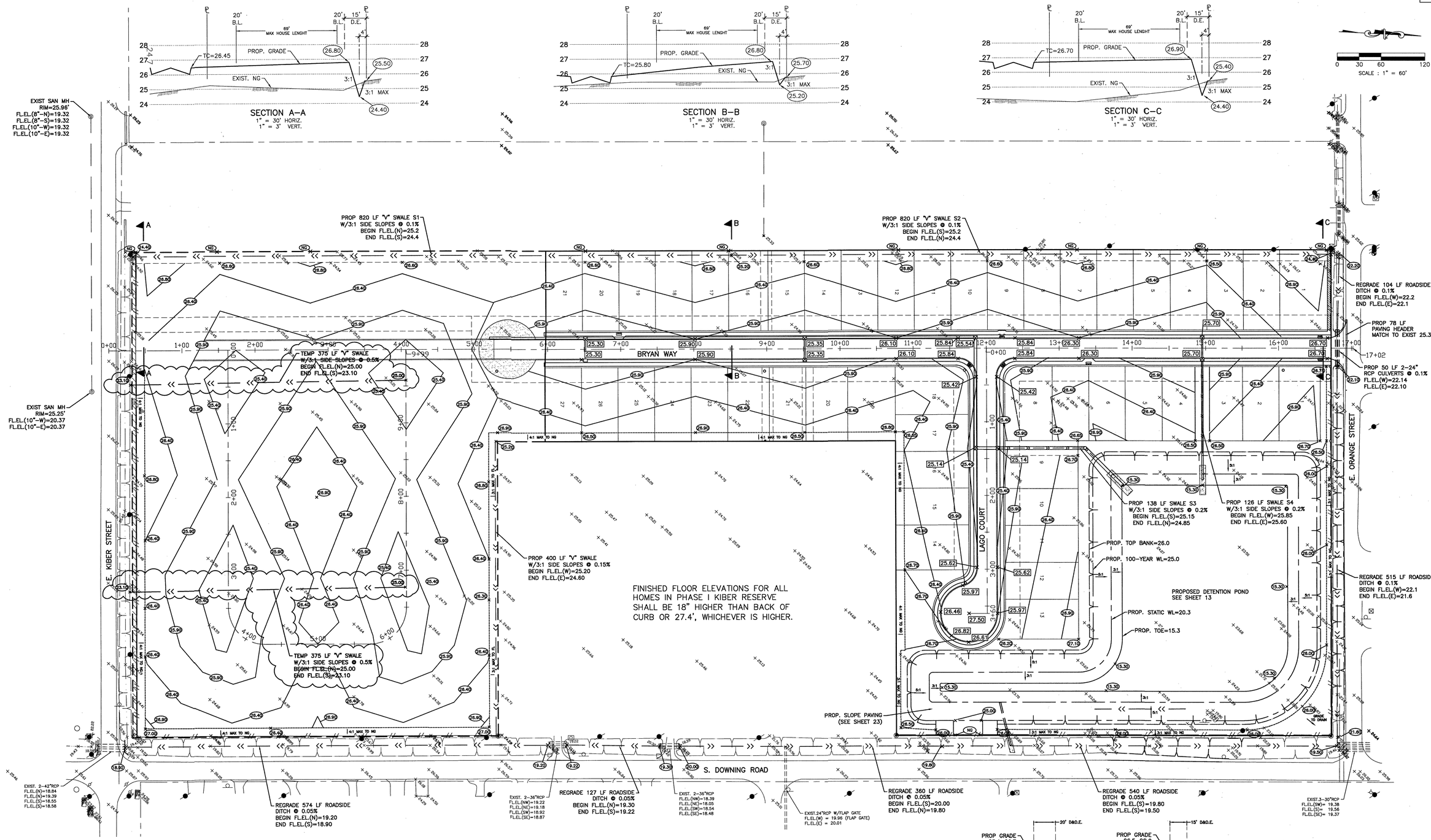
PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

DRAINAGE AREA MAP
(PHASE I & PHASE II)

PROJECT NO. 13499

13499 SHEET SET.dwg



NO.	DATE	DESCRIPTION	APPROVED
2	12.17.20	ADDED SECTIONS A–A, B–B, C–C	
1	12.09.20	ADDED TEMPORARY SWALES	

REVISIONS

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DATE

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185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

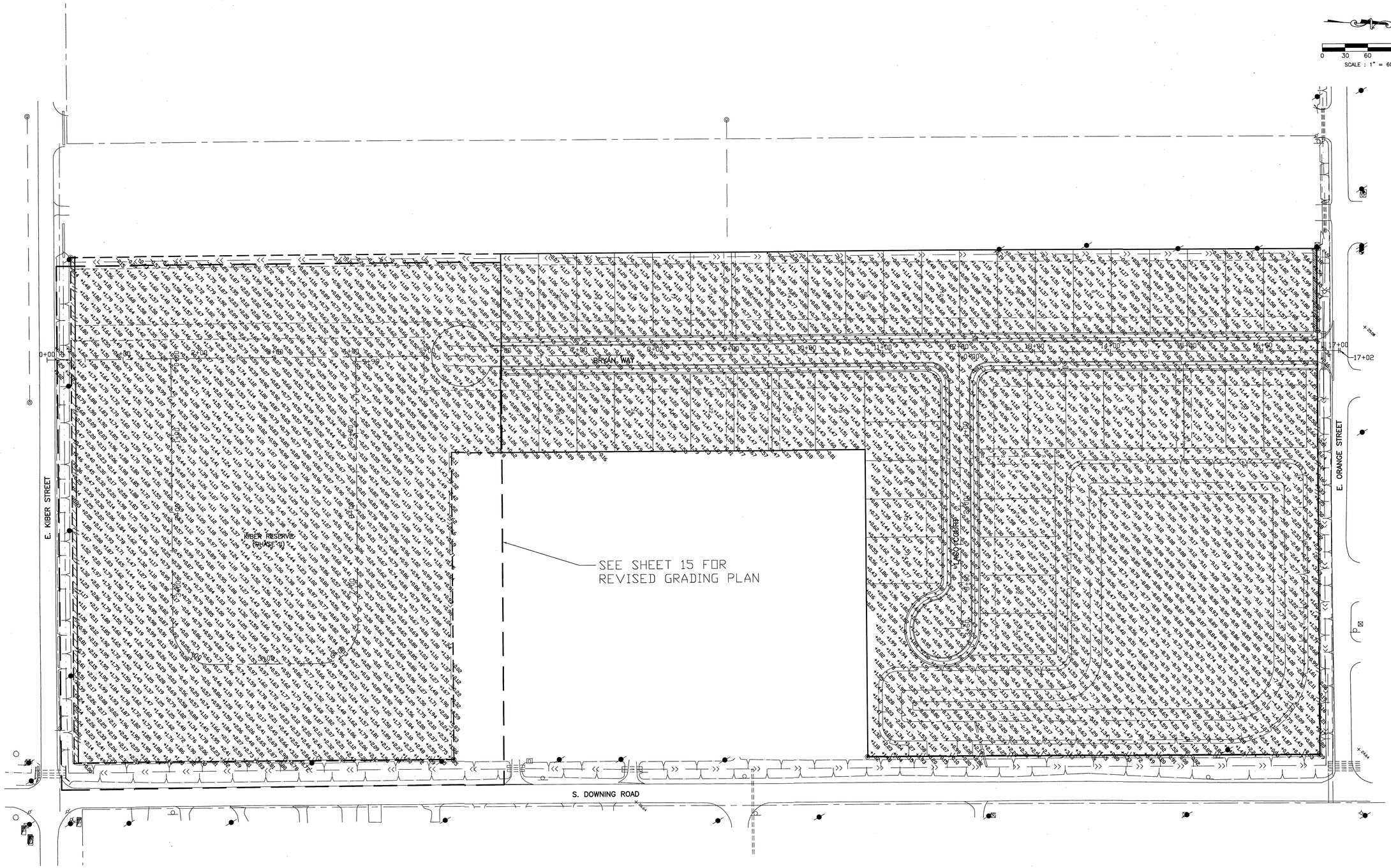
PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

GRADING PLAN

PROJECT NO. 13499

13499 SHEET SET.dwg



NOTE:
QUANTIITES WERE ESTIMATED WITH TOPOGRAPHIC DATA COLLECTED BEFORE SITE CLEARING. QUANTITIES SHALL BE REVISED AFTER LAND CLEARING FOR BETTER ESTIMATE ON FILL.

EARTHWORK QUANTITY:
CUT VOLUME: 29,732 CuYd
FILL VOLUME: 30,024 CuYd
NET FILL : 292 CuYd

NO.	DATE	DESCRIPTION	APPROVED

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LIVINGSTON, TX 77351
936-646-6767

PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

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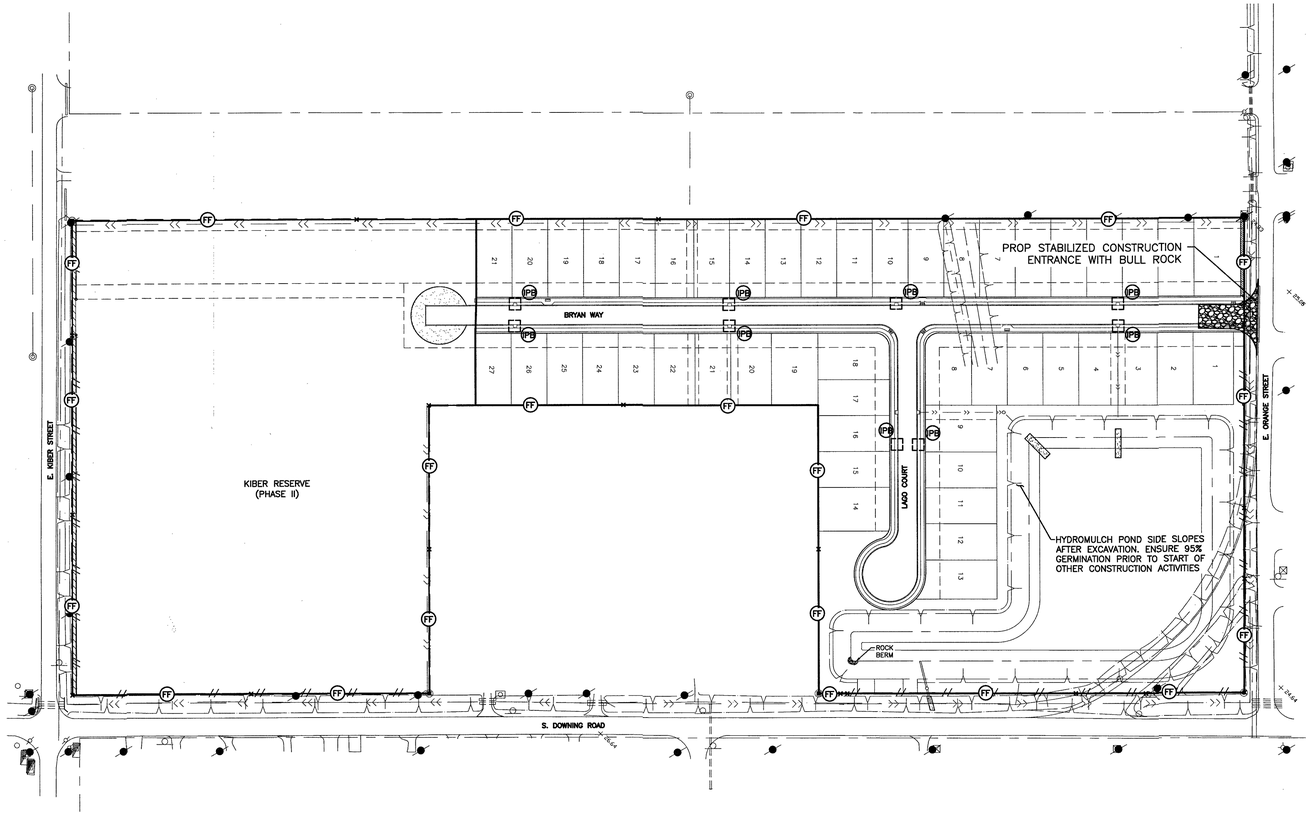
ANGLETON, TEXAS 77515

CUT AND FILL PLAN

PROJECT NO. 13499

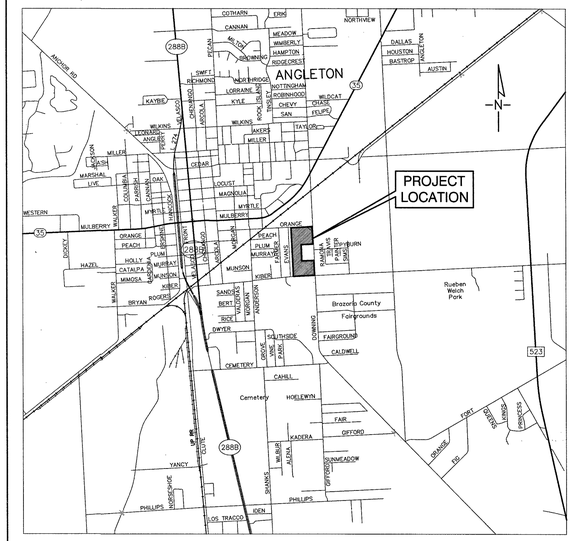
16

13499 SHEET SET.dwg

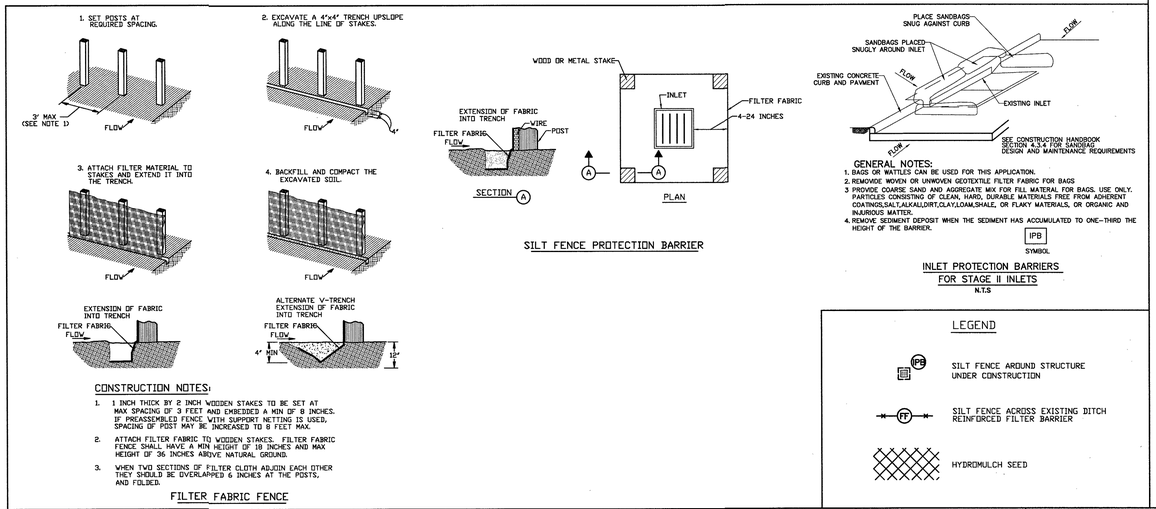


0 50 100 200
SCALE : 1" = 100'

GENERAL LOCATION MAP



NOTE:
AS SOON AS CONCRETE CURBS ARE INSTALLED, PLACE 18" WIDE SOLID SOD OR REINFORCED FILTER FABRIC BEHIND ALL CURBS.



LEGEND

- IPB — SILT FENCE AROUND STRUCTURE UNDER CONSTRUCTION
- FF — SILT FENCE ACROSS EXISTING DITCH REINFORCED FILTER BARRIER
- HYDROMULCH SEED

PROJECT/SITE INFORMATION

PROJECT NAME: KIBER RESERVE (PHASE I)

PROJECT ADDRESS/LOCATION: W. SIDE OF DOWLING STREET AND N. SIDE OF KIBER STREET

CITY: ANGLETON STATE: TX. ZIP CODE: 77515

LATITUDE: 95°29'09.5" LONGITUDE: 29°09'40.4" COUNTY: BRAZORIA

NAME OF RECEIVING WATERS: GULF OF MEXICO

12/01/2021 — MONTH/DAY/YEAR — ESTIMATED CONSTRUCTION START DATE

06/01/2021 — MONTH/DAY/YEAR — ESTIMATED COMPLETION DATE

ESTIMATE OF AREA TO BE DISTURBED: 19.84 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) ☐

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

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DATE

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STATE OF TEXAS
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Date: 11/22/21

OWNER:
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WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN: 1" = 100'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

SWPPP LAYOUT
(PHASE I & PHASE II)

PROJECT NO. 13499

C:\09 SHEET SET.dwg

1. SITE DESCRIPTION

A. NATURE OF THE CONSTRUCTION ACTIVITY:
KIBER RESERVE (PHASE I) SUBDIVISION ANGLETON, BRAZORIA COUNTY, TEXAS. BEING 11.88 ACRE DEVELOPED AREA WHICH WILL BE A RESIDENTIAL SUBDIVISION OF 48 LOTS (50' WIDE USUALLY). CONSTRUCTION WILL INCLUDE UNDERGROUND UTILITIES, STORM SEWERS, CONCRETE ROADWAYS WITH CURBS AND DETENTION POND EXCAVATION WITH MATERIAL SPREAD FOR LOT GRADING.

B. INTENDED SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
STREET RIGHT OF WAY AND LOT AREAS WILL BE STRIPPED OF ALL VEGETATIVE MATTER. THIS MATERIAL WILL BE STOCKPILED ADJACENT TO THE WORK TO BE SPREAD ON DEVELOPED LOTS AFTER FINAL GRADING. UTILITY AND STORM SEWER CONSTRUCTION WILL REQUIRE TRENCHING. EXCAVATION FOR ROADWAY SUBGRADE AND DETENTION POND WILL INVOLVE SPREADING EXCAVATED MATERIAL ON ADJACENT LOTS. RAINFALL RUNOFF WILL BE DIRECTED TO THE STREET GUTTERS AND TO THE CONSTRUCTED STORM SEWER SYSTEM. TRUCKS WILL BE USED TO DELIVER MATERIAL TO THE PROJECT INCLUDING LIME, CONCRETE, UTILITY AND STORM SEWER MATERIALS AND OTHER CONSTRUCTION MATERIALS. TRUCKS WILL ALSO BE USED TO HAUL CONSTRUCTION DEBRIS AWAY FROM THE SITE. THESE TRUCKS WILL BE ROUTED ALONG ORANGE STREET FOR INGRESS AND EGRESS. RUTTING DURING WET WEATHER WILL PROVIDE POTENTIAL FOR TRACKING MUD ALONG THE ROUTE.

C. TOTAL PROJECT AREA: 19.84 ACRES

D. TOTAL AREA TO BE DISTURBED: 19.84 ACRES

WEIGHTED RUNOFF COEFFICIENT
(BEFORE CONSTRUCTION): 0.30 (AFTER CONSTRUCTION): 0.65

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:
RUNOFF WILL BE COLLECTED IN THE STORM SEWER SYSTEM AND ROUTED TO THE DETENTION POND. THE POND OUTFALLS INTO ROADSIDE DITCH ON DOWNING STREET. DOWNING STREET OUTFALLS TO BASTROP BAYOU AND THEN TO 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. INSTALL SILT FENCE AROUND THE PERIMETER OF THE AREA TO BE DISTURBED. THE ORDER OF ACTIVITIES WILL BEGIN WITH THE COMPLETE STRIPPING OF ALL AREAS TO RECEIVE FILL MATERIAL. REMOVED VEGETATION TO BE STOCKPILED ADJACENT TO THE WORK TO BE SPREAD AFTER LOT GRADING IS COMPLETE.
2. DEMOLISED THE MERGE LANE FROM ORANGE STREET TO DOWNING STREET. REGRADE THE ROADSIDE DITCH EAST OF DOWLING STREET AND SOUTH OF ORANGE STREET. INSTALL WATER LINES, SANITARY SEWER LINES AND MANHOLES AND STORM SEWER PIPES, INLETS AND MANHOLES. INSTALL INLET PROTECTION BARRIERS AROUND ALL INLETS. FULLY EXCAVATE THE DETENTION POND TO PROVIDE OUTFALL PATH FOR THE STORM SEWER SYSTEM. INSTALL THE RESTRICTIVE OUTLET.
3. ROADWAY EXCAVATION, LIME STABILIZATION AND CONCRETE PAVING WILL FOLLOW UNDERGROUND UTILITY AND STORM SEWER CONSTRUCTION. DURING ROADWAY WORK, THE REMAINDER OF THE DETENTION POND WILL BE EXCAVATED AND MATERIAL SPREAD ON LOTS. INSTALL SILT FENCE IN THE BOTTOM OF THE POND UPSTREAM OF THE RESTRICTIVE OUTFALL CULVERT.
4. AS SOON AS CONCRETE CURBS ARE INSTALLED, PLACE 18" WIDE SOLID SOD OR REINFORCED FILTER FABRIC BEHIND ALL CURBS.
5. THE NORTH SWALE AND THE DETENTION POND SHALL BE SEEDED AND FERTILIZED UPON COMPLETION OF THE EXCAVATION. ALL SEEDED AND FERTILIZED AREA TO BE IRRIGATED TO ENSURE GROWTH.

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
REINFORCED 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		X		
TIMBER MATTING AT CONSTRUCTION EXIT				
SEDIMENT TRAPS				
SEDIMENT BASINS				
STORM INLET PROTECTION		X		
STONE OUTLET STRUCTURES				
OTHER:				

B. STORM WATER MANAGEMENT MEASURES INSTALLED DURING CONSTRUCTION TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION:
CURBS & GUTTERS STORM SEWERS

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

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	ADDED CONSTRUCTION EXIT	

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

SWPPP NARRATIVE

PROJECT NO. 13499

SHEET SET.dwg

(1)

Hydrological and Hydraulic Impacts
Kiber Tract Subdivision

Job # 13651

Brazoria County, Texas

A = 19.84 Acre Development

Pre Development:

C = 0.10895
TC = 44.0 Minutes, I = 5.366
Q = 100 Year Storm = 14.68 cfs
Q-Allowable is 0.74 cfs / ac. = 14.68 cfs

Post Development

C = 0.65
T/C = 32.07 Minutes, I= 6.309
Q = 100 Year Storm = 101.71 cfs

Required Detention:

11.634 acre - feet (506,777 c.f.)

Miguel Sauceda, P.E. Feb 21, 2020

EXISITNG CONDITIONS

Bra. Co. Master Drg. Study allows only 0.74 cfs/acre in this area (Bastrop Bayou drainage area BB 18)

TC = 15 Minutes + 200 LF overland at 0.50 fps + 2010 LF ditch @ 1.5 fps = 44.0 Minutes

PROPOSED CONDITIONS

TC = 15 Minutes + 180 LF overland @ 0.5 FPS + 145 LF gutter @ 2.0 FPS + 1775 LF sewer @ 3.0 FPS
= 32.07

C = 0.65 per Brazoria Drainage Criteria Manual for lots under 1/8 acre

(2)

Drainage Analysis

Job # 13499 - Kiber Tract Subdivision

Rainfall intensity calculations for Brazoria County

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

$i := 1..6$

$b_i :=$

71.0
70.1
96.6
89.2
86.5
120.2

$e_i :=$

0.774
0.752
0.770
0.736
0.709
0.741

$d_i :=$

8.4
7.7
17.2
10.4
10.0
21.3

$T_0 := 44.0$ ENTER PREDEVELOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 5.433$ Predevelopment Intensity of interest

$C := .10895$ ENTER PREDEVELOPMENT C VALUE

$A := 19.84$ ENTER AREA

(3)

$C_f := 1.25$

$Q := C \cdot C_f \cdot I_6 \cdot A$ Must Insert correct subscript for I to obtain the relevant Q

$Q = 14.68$

$V := (C) \cdot A \cdot 43560 \cdot 1.08$ For these calculations, total volume storage is assumed to equal (C)*A with A converted to square feet multiplied by 13" (1.08')

$V = 1.017 \times 10^5$

DEVELOPMENT OF RUNOFF HYDROGRAPH MALCOM'S METHOD AS DESCRIBED IN THE BRAZORIA COUNTY DRAINAGE CRITERIA MANUAL

$T := \frac{V}{1.39 \cdot Q}$ $T = 4.983 \times 10^3$ 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

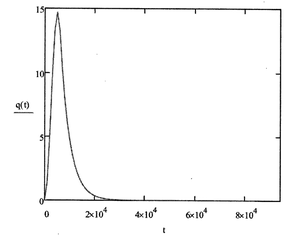
$q(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

$Volume_{pre} := \int_0^{85400} q(t)\, dt$

$Volume_{pre} = 1.021 \times 10^5$

(4)

Predevelopment hydrograph



$T_0 := 32.07$ ENTER POST DEVLOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 6.309$ Post development I of interest

$C := 0.65$ ENTER POST DEVELOPMENT C FACTOR REVISE Cf AND AREA IF NECESSARY

$C_f := 1.25$

$Q := C \cdot I_6 \cdot A \cdot C_f$

$Q = 101.705$

$V := (C) \cdot A \cdot 43560 \cdot 1.08$

$V = 6.067 \times 10^5$

$T := \frac{V}{1.39 \cdot Q}$ $T = 4.292 \times 10^3$

(5)

$t := 0, 1000 .. 25000$

$f(t) := \left(\frac{Q}{2}\right) \cdot \left(1 - \cos\left(\frac{t \cdot \pi}{T}\right)\right)$

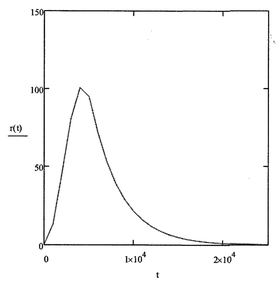
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$

$r(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

$Volume_{post} := \int_0^{86400} r(t)\, dt$

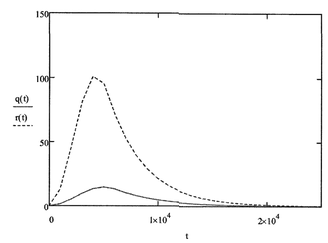
$Volume_{post} = 6.088 \times 10^5$

Post development hydrograph



(6)

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

$\frac{\int_0^{86400} v(t)\, dt}{43560} = 11.634$

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

HYDROLOGIC CALCULATIONS

PROJECT NO. 13499

19

S:\SHEET SET.dwg

Item 4.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 4/20/2020 10:15:30 AM

PROJECT NAME : Untitled
JOB NUMBER :
PROJECT DESCRIPTION :
DESIGN FREQUENCY : 5 Years
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
A-1	0.6	0.73	15.00	15.00	6.64	0.000	2.910
A-2	0.6	0.74	15.00	15.00	6.64	0.000	2.950
A-3	0.6	0.73	15.00	15.00	6.64	0.000	2.910
A-4	0.6	0.74	15.00	15.00	6.64	0.000	2.950
A-5	0.6	0.72	15.00	15.00	6.64	0.000	2.870
A-6	0.6	0.73	15.00	15.00	6.64	0.000	2.910
A-7	0.6	0.72	15.00	15.00	6.64	0.000	2.870
A-8	0.6	0.73	15.00	15.00	6.64	0.000	2.910
A-9	0.6	0.76	15.00	15.00	6.64	0.000	3.030
A-10	0.6	0.76	15.00	15.00	6.64	0.000	3.030
A-11	0.6	0.78	15.00	15.00	6.64	0.000	3.109
A-12	0.6	0.84	15.00	15.00	6.64	0.000	3.349
A-13	0.6	0.78	15.00	15.00	6.64	0.000	3.109
A-14	0.6	0.84	15.00	15.00	6.64	0.000	3.349
A-15	0.6	0.77	15.00	15.00	6.64	0.000	3.070
A-16	0.6	1.13	15.00	15.00	6.64	0.000	4.505
A-17	0.6	1.13	15.00	15.00	6.64	0.000	4.505

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
A-1	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-2	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-3	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-4	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-5	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-6	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-7	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-8	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-9	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-10	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-11	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-12	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-13	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-14	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-15	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-16	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-17	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-1	Curb	5.00	n/a	n/a	2.910	6.261	0.300	9.00	9.00
A-2	Curb	5.00	n/a	n/a	2.950	6.261	0.303	9.05	9.05
A-3	Curb	5.00	n/a	n/a	2.910	6.261	0.300	9.00	9.00
A-4	Curb	5.00	n/a	n/a	2.950	6.261	0.303	9.05	9.05
A-5	Curb	5.00	n/a	n/a	2.870	6.261	0.297	8.95	8.95
A-6	Curb	5.00	n/a	n/a	2.910	6.261	0.300	9.00	9.00
A-7	Curb	5.00	n/a	n/a	2.870	6.261	0.297	8.95	8.95
A-8	Curb	5.00	n/a	n/a	2.910	6.261	0.300	9.00	9.00
A-9	Curb	5.00	n/a	n/a	3.030	6.261	0.308	9.10	9.10
A-10	Curb	5.00	n/a	n/a	3.030	6.261	0.308	9.10	9.10
A-11	Curb	5.00	n/a	n/a	3.109	6.261	0.314	9.20	9.20
A-12	Curb	5.00	n/a	n/a	3.349	6.261	0.329	9.45	9.45
A-13	Curb	5.00	n/a	n/a	3.109	6.261	0.314	9.20	9.20
A-14	Curb	5.00	n/a	n/a	3.349	6.261	0.329	9.45	9.45
A-15	Curb	5.00	n/a	n/a	3.070	6.261	0.311	9.15	9.15
A-16	Curb	5.00	n/a	n/a	4.505	6.261	0.401	10.60	10.60
A-17	Curb	5.00	n/a	n/a	4.505	6.261	0.401	10.60	10.60

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-1	Curb	0.600	1.47	15.14	6.61	0.000	0.00	5.834
A-2	Curb	0.600	0.74	15.00	6.64	0.000	0.00	2.950
A-3	Curb	0.600	2.94	16.48	6.34	0.000	0.00	11.185
A-4	Curb	0.600	0.74	15.00	6.64	0.000	0.00	2.950
A-5	Curb	0.600	0.72	15.00	6.64	0.000	0.00	2.870
A-6	Curb	0.600	1.45	15.21	6.60	0.000	0.00	5.741
A-7	Curb	0.600	0.72	15.00	6.64	0.000	0.00	2.870
A-8	Curb	0.600	2.90	16.57	6.32	0.000	0.00	11.002
A-9	Curb	0.600	3.70	16.69	6.30	0.000	0.00	13.987
A-10	Curb	0.600	7.36	17.32	6.18	0.000	0.00	27.299
A-11	Curb	0.600	0.78	15.00	6.64	0.000	0.00	3.109
A-12	Curb	0.600	8.98	18.18	6.03	0.000	0.00	32.481
A-13	Curb	0.600	0.78	15.00	6.64	0.000	0.00	3.109
A-14	Curb	0.600	10.60	19.15	5.87	0.000	0.00	37.310
A-15	Curb	0.600	11.37	19.93	5.74	0.000	0.00	39.177
A-16	Curb	0.600	1.13	15.00	6.64	0.000	0.00	4.505
A-17	Curb	0.600	13.63	20.43	5.67	0.000	0.00	46.342
MH-1	CircMh	0.600	13.63	20.43	5.67	0.000	0.00	46.342
MH-3	CircMh	0.600	1.47	15.14	6.61	0.000	0.00	5.834
MH-4	CircMh	0.600	12.50	20.39	5.67	0.000	0.00	42.538
OUT	Outlt	0.600	13.63	20.43	5.67	0.000	0.00	46.342

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	A-2	A-1	19.21	19.12	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-1	MH-3	19.12	18.61	Circ 1	0.00	2.00	256.00	0.20	0.013
3	A-4	A-3	18.67	18.59	Circ 1	0.00	1.50	28.00	0.29	0.013
4	A-3	A-9	18.59	18.43	Circ 1	0.00	2.00	56.00	0.29	0.013
5	A-5	A-6	18.44	18.31	Circ 1	0.00	1.50	42.00	0.31	0.013
6	A-6	A-8	18.31	17.78	Circ 1	0.00	2.00	266.00	0.20	0.013
7	A-7	A-8	17.86	17.78	Circ 1	0.00	1.50	28.00	0.29	0.013
8	A-8	A-10	17.78	17.61	Circ 1	0.00	2.00	56.00	0.30	0.013
9	A-9	A-10	18.43	17.61	Circ 1	0.00	2.50	204.00	0.40	0.013
10	A-10	A-12	17.61	17.12	Circ 1	0.00	3.00	248.00	0.20	0.013
11	A-11	A-12	17.20	17.12	Circ 1	0.00	1.50	28.00	0.29	0.013
12	A-12	A-14	17.12	16.52	Circ 1	0.00	3.50	298.00	0.20	0.013
13	A-13	A-14	16.60	16.52	Circ 1	0.00	1.50	28.00	0.29	0.013
14	A-14	A-15	16.52	16.02	Circ 1	0.00	3.50	248.00	0.20	0.013
15	A-15	MH-4	16.02	15.73	Circ 1	0.00	3.50	148.00	0.20	0.013
16	A-16	MH-4	15.77	15.73	Circ 1	0.00	1.50	12.00	0.33	0.013
17	A-17	MH-1	15.70	15.40	Circ 1	0.00	4.00	120.00	0.25	0.013
18	MH-1	OUT	15.46	15.30	Circ 1	0.00	4.00	72.00	0.22	0.013
19	MH-3	A-3	18.61	18.59	Circ 1	0.00	2.00	10.00	0.20	0.013
20	MH-4	A-17	15.73	15.70	Circ 1	0.00	4.00	12.00	0.25	0.013

Conveyance Hydraulic Computations. Tailwater = 20.300 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	22.37	22.35	0.079	0.75	1.50	3.34	1.67	2.95	5.96	0.000
2	22.35	22.18	0.066	1.09	2.00	3.32	1.86	5.83	10.10	0.000
3	22.19	22.17	0.079	0.77	1.50	3.21	1.67	2.95	5.62	0.000
4	22.17	22.03	0.244	1.50	2.00	4.43	3.56	11.19	12.09	0.000
5	22.13	22.10	0.075	0.74	1.50	3.31	1.62	2.87	5.84	0.000
6	22.10	21.93	0.064	1.09	2.00	3.27	1.83	5.74	10.10	0.000
7	21.95	21.93	0.075	0.76	1.50	3.19	1.62	2.87	5.62	0.000
8	21.93	21.80	0.236	1.47	2.00	4.45	3.50	11.00	12.47	0.000
9	22.03	21.80	0.116	1.31	2.50	5.38	2.85	13.99	26.01	0.000
10	21.80	21.38	0.167	2.25	3.00	4.80	3.86	27.30	29.65	0.000
11	21.41	21.38	0.088	0.80	1.50	3.26	1.76	3.11	5.62	0.000
12	21.38	21.07	0.104	2.19	3.50	5.13	3.38	32.48	45.15	0.000
13	21.10	21.07	0.088	0.80	1.50	3.26	1.76	3.11	5.62	0.000
14	21.07	20.73	0.137	2.41	3.50	5.29	3.88	37.31	45.18	0.000
15	20.73	20.51	0.152	2.52	3.50	5.29	4.07	39.18	44.54	0.000
16	20.53	20.51	0.184	0.96	1.50	3.77	2.55	4.50	6.07	0.000
17	20.50	20.37	0.104	2.31	4.00	6.16	3.69	46.34	71.83	0.000
18	20.37	20.30	0.104	2.44	4.00	5.78	3.69	46.34	67.72	0.000
19	22.18	22.17	0.066	1.09	2.00	3.32	1.86	5.83	10.12	0.000
20	20.51	20.50	0.088	2.22	4.00	5.94	3.39	42.54	71.83	0.000

OUTPUT FOR ANALYSYS FREQUENCY of: 100 Years

Runoff Computation for Analysis Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
A-1	0.6	0.73	15.00	15.00	10.10	0.000	4.423
A-2	0.6	0.74	15.00	15.00	10.10	0.000	4.484
A-3	0.6	0.73	15.00	15.00	10.10	0.000	4.423
A-4	0.6	0.74	15.00	15.00	10.10	0.000	4.484
A-5	0.6	0.72	15.00	15.00	10.10	0.000	4.363
A-6	0.6	0.73	15.00	15.00	10.10	0.000	4.423
A-7	0.6	0.72	15.00	15.00	10.10	0.000	4.363
A-8	0.6	0.73	15.00	15.00	10.10	0.000	4.423
A-9	0.6	0.76	15.00	15.00	10.10	0.000	4.605
A-10	0.6	0.76	15.00	15.00	10.10	0.000	4.605
A-11	0.6	0.78	15.00	15.00	10.10	0.000	4.726
A-12	0.6	0.84	15.00	15.00	10.10	0.000	5.090
A-13	0.6	0.78	15.00	15.00	10.10	0.000	4.726
A-14	0.6	0.84	15.00	15.00	10.10	0.000	5.090
A-15	0.6	0.77	15.00	15.00	10.10	0.000	4.666
A-16	0.6	1.13	15.00	15.00	10.10	0.000	6.847
A-17	0.6	1.13	15.00	15.00	10.10	0.000	6.847

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
A-1	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-2	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-3	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-4	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.40
A-5	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-6	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-7	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-8	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-9	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-10	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-11	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-12	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-13	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-14	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-15	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-16	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-17	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-1	Curb	5.00	n/a	n/a	4.423	6.261	0.397	10.50	10.50
A-2	Curb	5.00	n/a	n/a	4.484	6.261	0.400	10.55	10.55
A-3	Curb	5.00	n/a	n/a	4.423	6.261	0.397	10.50	10.50
A-4	Curb	5.00	n/a	n/a	4.484	6.261	0.400	10.55	10.55
A-5	Curb	5.00	n/a	n/a	4.363	6.261	0.393	10.45	10.45
A-6	Curb	5.00	n/a	n/a	4.423	6.261	0.397	10.50	10.50
A-7	Curb	5.00	n/a	n/a	4.363	6.261	0.393	10.45	10.45
A-8	Curb	5.00	n/a	n/a	4.423	6.261	0.397	10.50	10.50
A-9	Curb	5.00	n/a	n/a	4.605	6.261	0.407	10.65	10.65
A-10	Curb	5.00	n/a	n/a	4.605	6.261	0.407	10.65	10.65
A-11	Curb	5.00	n/a	n/a	4.726	6.261	0.415	10.80	10.80
A-12	Curb	5.00	n/a	n/a	5.090	6.261	0.435	11.10	11.10
A-13	Curb	5.00	n/a	n/a	4.726	6.261	0.415	10.80	10.80
A-14	Curb	5.00	n/a	n/a	5.090	6.261	0.435	11.10	11.10
A-15	Curb	5.00	n/a	n/a	4.666	6.261	0.411	10.70	10.70
A-16	Curb	5.00	n/a	n/a	6.847	6.718	0.510	12.40	12.40
A-17	Curb	5.00	n/a	n/a	6.847	6.718	0.510	12.40	12.40

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-1	Curb	0.600	1.47	15.13	10.06	0.000	0.00	8.873
A-2	Curb	0.600	0.74	15.00	10.10	0.000	0.00	4.484
A-3	Curb	0.600	2.94	16.33	9.71	0.000	0.00	17.123
A-4	Curb	0.600	0.74	15.00	10.10	0.000	0.00	4.484
A-5	Curb	0.600	0.72	15.00	10.10	0.000	0.00	4.363
A-6	Curb	0.600	1.45	15.19	10.04	0.000	0.00	8.735
A-7	Curb	0.600	0.72	15.00	10.10	0.000	0.00	4.363
A-8	Curb	0.600	2.90	16.42	9.68	0.000	0.00	16.849
A-9	Curb	0.600	3.70	16.51	9.66	0.000	0.00	21.444
A-10	Curb	0.600	7.36	17.08	9.50	0.000	0.00	41.972
A-11	Curb	0.600	0.78	15.00	10.10	0.000	0.00	4.726
A-12	Curb	0.600	8.98	17.77	9.32	0.000	0.00	50.236
A-13	Curb	0.600	0.78	15.00	10.10	0.000	0.00	4.726
A-14	Curb	0.600	10.60	18.72	9.09	0.000	0.00	57.811
A-15	Curb	0.600	11.37	19.41	8.93	0.000	0.00	60.915
A-16	Curb	0.600	1.13	15.00	10.10	0.000	0.00	6.847
A-17	Curb	0.600	13.63	19.83	8.83	0.000	0.00	72.248
MH-1	CircMh	0.600	13.63	19.83	8.83	0.000	0.00	72.248
MH-3	CircMh	0.600	1.47	15.13	10.06	0.000	0.00	8.873
MH-4	CircMh	0.600	12.50	19.80	8.84	0.000	0.00	66.309
OUT	Outlt	0.600	13.63	19.83	8.83	0.000	0.00	72.248

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	A-2	A-1	19.21	19.12	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-1	MH-3	19.12	18.61	Circ 1	0.00	2.00	256.00	0.20	0.013
3	A-4	A-3	18.67	18.59	Circ 1	0.00	1.50	28.00	0.29	0.013
4	A-3	A-9	18.59	18.43	Circ 1	0.00	2.00	56.00	0.29	0.013
5	A-5	A-6	18.44	18.31	Circ 1	0.00	1.50	42.00	0.31	0.013
6	A-6	A-8	18.31	17.78	Circ 1	0.00	2.00	266.00	0.20	0.013
7	A-7	A-8	17.86	17.78	Circ 1	0.00	1.50	28.00	0.29	0.013
8	A-8	A-10	17.78	17.61	Circ 1	0.00	2.00	56.00	0.30	0.013
9	A-9	A-10	18.43	17.61	Circ 1	0.00	2.50	204.00	0.40	0.013
10	A-10	A-12	17.61	17.12	Circ 1	0.00	3.00	248.00	0.20	0.013
11	A-11	A-12	17.20	17.12	Circ 1	0.00	1.50	28.00	0.29	0.013
12	A-12	A-14	17.12	16.52	Circ 1	0.00	3.50	298.00	0.20	0.013
13	A-13	A-14	16.60	16.52	Circ 1	0.00	1.50	28.00	0.29	0.013
14	A-14	A-15	16.52	16.02	Circ 1	0.00	3.50	248.00	0.20	0.013
15	A-15	MH-4	16.02	15.73	Circ 1	0.00	3.50	148.00	0.20	0.013
16	A-16	MH-4	15.77	15.73	Circ 1	0.00	1.50	12.00	0.33	0.013
17	A-17	MH-1	15.70	15.40	Circ 1	0.00	4.00	120.00	0.25	0.013
18	MH-1	OUT	15.46	15.30	Circ 1	0.00	4.00	72.00	0.22	0.013
19	MH-3	A-3	18.61	18.59	Circ 1	0.00	2.00	10.00	0.20	0.013
20	MH-4	A-17	15.73	15.70	Circ 1	0.00	4.00	12.00	0.25	0.013

Conveyance Hydraulic Computations. Tailwater = 20.300 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	25.23	25.18	0.182	0.97	1.50	3.70	2.54	4.48	5.96	0.000
2	25.18	24.79	0.154	1.44	2.00	3.67	2.82	8.87	10.10	0.000
3	24.82	24.77	0.182	1.01	1.50	3.55	2.54	4.48	5.62	0.000
4	24.77	24.45	0.573	2.00	2.00	5.45	5.45	17.12	12.09	0.000
5	24.67	24.60	0.172	0.96	1.50	3.65	2.47	4.36	5.84	0.000
6	24.60	24.21	0.149	1.44	2.00	3.61	2.78	8.73	10.10	0.000
7	24.25	24.21	0.172	0.98	1.50	3.55	2.47	4.36	5.62	0.000
8	24.21	23.90	0.555	2.00	2.00	5.36	5.36	16.85	12.47	0.000
9	24.45	23.90	0.273	1.72	2.50	5.96	4.37	21.44	26.01	0.000
10	23.90	22.91	0.396	3.00	3.00	5.94	5.94	41.97	29.65	0.000
11	22.97	22.91	0.202	1.05	1.50	3.56	2.67	4.73	5.62	0.000
12	22.91	22.17	0.249	3.50	3.50	5.22	5.22	50.24	45.15	0.000
13	22.23	22.17	0.202	1.05	1.50	3.56	2.67	4.73	5.62	0.000
14	22.17	21.35	0.330	3.50	3.50	6.01	6.01	57.81	45.18	0.000
15	21.35	20.81	0.366	3.50	3.50	6.33	6.33	60.91	44.54	0.000
16	20.86	20.81	0.425	1.50	1.50	3.87	3.87	6.85	6.07	0.000
17	20.79	20.48	0.253	3.25	4.00	6.61	5.75	72.25	71.83	0.000
18	20.48	20.30	0.253	3.50	4.00	6.20	5.75	72.25	67.72	0.000
19	24.79	24.77	0.154	1.44	2.00	3.67	2.82	8.87	10.12	0.000
20	20.81	20.79	0.213	3.00	4.00	6.56	5.28	66.31	71.83	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 4/20/2020 9:20:29 AM

PROJECT NAME : Untitled
JOB NUMBER :
PROJECT DESCRIPTION :
DESIGN FREQUENCY : 5 Years
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
A-18	0.6	1.07	15.00	15.00	6.64	0.000	4.266
A-19	0.6	1.01	15.00	15.00	6.64	0.000	4.026

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
A-18	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-19	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-18	Curb	5.00	n/a	n/a	4.266	6.261	0.387	10.35	10.35
A-19	Curb	5.00	n/a	n/a	4.026	6.261	0.373	10.15	10.15

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-18	Curb	0.600	1.07	15.00	6.64	0.000	0.00	4.266
A-19	Curb	0.600	2.08	15.13	6.62	0.000	0.00	8.258
OUT	Outlt	0.600	2.08	15.13	6.62	0.000	0.00	8.258

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	A-18	A-19	18.50	18.41	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-19	OUT	18.41	18.09	Circ 1	0.00	2.00	160.00	0.20	0.011

Conveyance Hydraulic Computations. Tailwater = 20.300 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	20.50	20.45	0.165	0.94	1.50	3.67	2.41	4.27	5.96	0.000
2	20.45	20.30	0.095	1.22	2.00	4.12	2.63	8.26	11.96	0.000

OUTPUT FOR ANALYSYS FREQUENCY of: 100 Years

Runoff Computation for Analysis Frequency.

ID	C Value	Area (acre)	Tc (min)	Tc Used (min)	Intensity (in/hr)	Supply Q (cfs)	Total Q (cfs)
A-18	0.6	1.07	15.00	15.00	10.10	0.000	6.483
A-19	0.6	1.01	15.00	15.00	10.10	0.000	6.120

Sag Inlets Configuration Data.

Inlet ID	Inlet Type	Length/ Perim. (ft)	Grate Area (sf)	Left-Slope Long (%)	Left-Slope Trans (%)	Right-Slope Long (%)	Right-Slope Trans (%)	Gutter n	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev. (ft)
A-18	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00
A-19	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	26.00

Sag Inlets Computation Data.

Inlet ID	Inlet Type	Length (ft)	Grate Perim (ft)	Grate Area (sf)	Total Q (cfs)	Inlet Capacity (cfs)	Total Head (ft)	Ponded Width Left (ft)	Ponded Width Right (ft)
A-18	Curb	5.00	n/a	n/a	6.483	6.718	0.483	12.15	12.15
A-19	Curb	5.00	n/a	n/a	6.120	6.261	0.492	11.85	11.85

Cumulative Junction Discharge Computations

Node I.D.	Node Type	Weighted C-Value	Cumulat. Dr.Area (acres)	Cumulat. Tc (min)	Intens. (in/hr)	User Supply Q cfs)	Additional Q in Node (cfs)	Total Disch. (cfs)
A-18	Curb	0.600	1.07	15.00	10.10	0.000	0.00	6.483
A-19	Curb	0.600	2.08	15.12	10.06	0.000	0.00	12.556
OUT	Outlt	0.600	2.08	15.12	10.06	0.000	0.00	12.556

Conveyance Configuration Data

Run#	Node I.D. US	Node I.D. DS	Flowline Elev. US (ft)	Flowline Elev. DS (ft)	Shape #	Span (ft)	Rise (ft)	Length (ft)	Slope (%)	n_value
1	A-18	A-19	18.50	18.41	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-19	OUT	18.41	18.09	Circ 1	0.00	2.00	160.00	0.20	0.011

Conveyance Hydraulic Computations. Tailwater = 20.300 (ft)

Run#	Hydraulic Gradeline US Elev (ft)	Hydraulic Gradeline DS Elev (ft)	Fr.Slope (%)	Depth Unif. (ft)	Depth Actual (ft)	Velocity Unif. (f/s)	Velocity Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	20.76	20.65	0.381	1.41	1.50	3.77	3.67	6.48	5.96	0.000
2	20.65	20.30	0.220	1.75	2.00	4.31	4.00	12.56	11.96	0.000

END

NORMAL TERMINATION OF WINSTORM.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WINDSTORM DATA
I–1 TO I–17
AND
I–18 TO I–19

PROJECT NO. 13499

13499 SHEET SET.dwg

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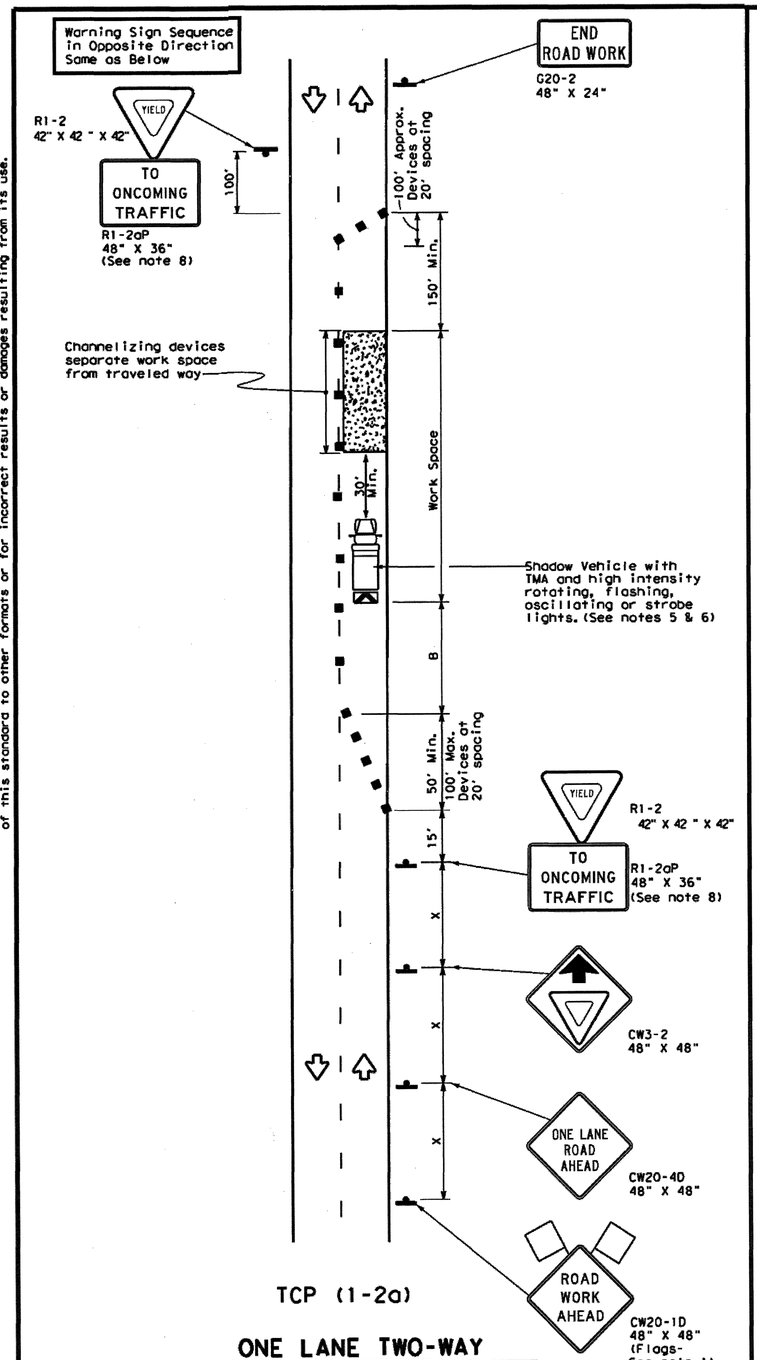
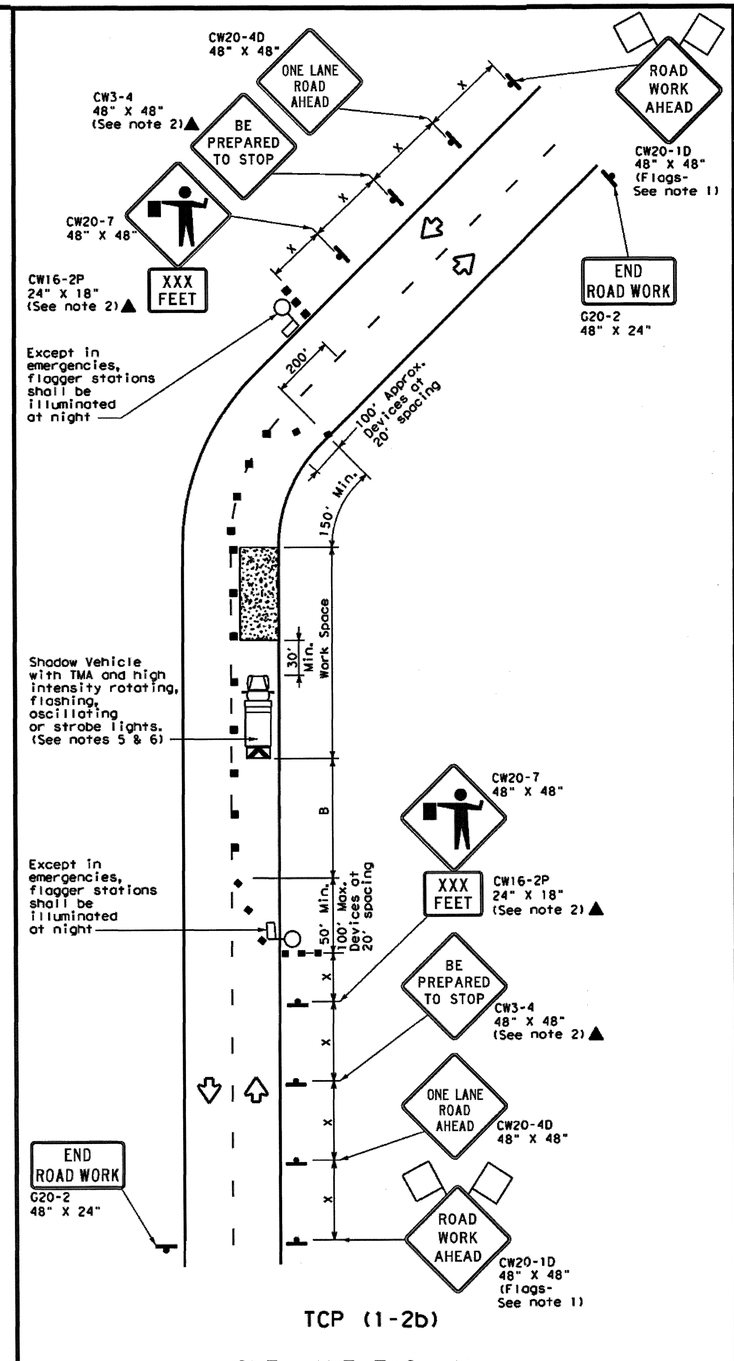


TCP (1-2a)

ONE LANE TWO-WAY CONTROL WITH YIELD SIGNS
(Less than 2000 ADT - See note 7)



TCP (1-2b)

ONE LANE TWO-WAY CONTROL WITH FLAGGERS

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board	M	Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Channelizing Devices On a Taper	On a Tangent	Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L=WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

* Conventional Roads Only
** Taper lengths have been rounded off.
L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

1. Flags attached to signs where shown are REQUIRED.
2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
4. Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.

TCP (1-2a)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP (1-2b)

9. Flaggers should use two-way radios or other methods of communication to control traffic.
10. Length of work space should be based on the ability of flaggers to communicate.
11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
12. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
13. Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY TRAFFIC CONTROL

TCP(1-2)-18

FILE: tcp1-2-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 4-90 4-98				
2-94 2-12	DIST	COUNTY		SHEET NO.
1-97 2-18				

152

DATE:
FILE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS — MIGUELANGEL A. SAUCEDA — 121992 — REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992
Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

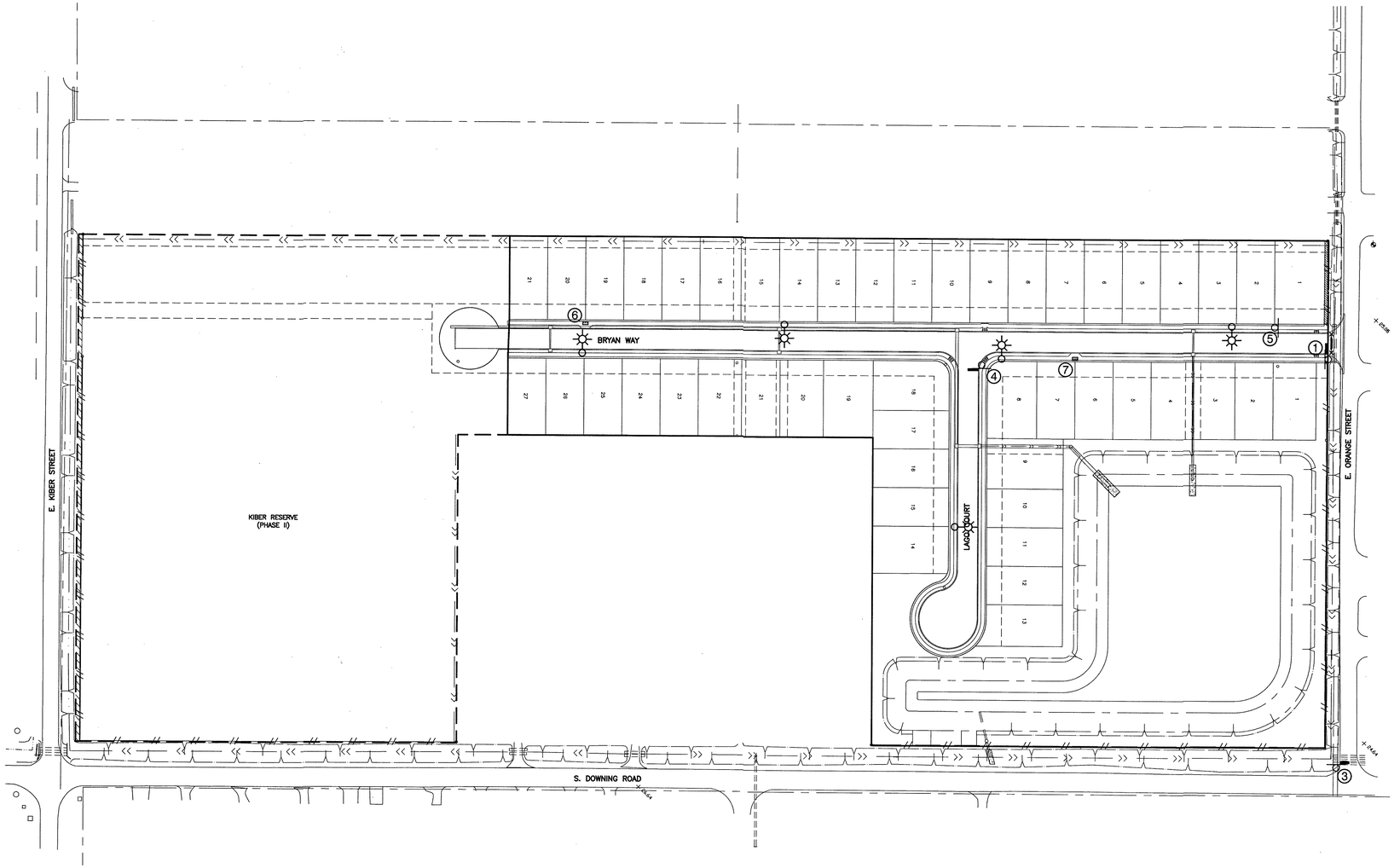
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

TRAFFIC CONTROL PLAN
TCP (1-2) -18

PROJECT NO. 13499

tcp1-2-18.dgn SHEET SET.dwg



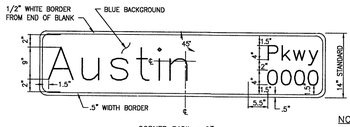
0 40 80 160

SCALE : 1" = 80'

GENERAL CONSTRUCTION NOTES:

1. SECURELY ATTACH STREET NAME SIGN TO TRAFFIC SIGNAL SUPPORT WIRES WITH MULTI-LEVELING, WIND DUMPING BRACKETS.
2. SUPPORT WIRES SHOULD NOT BE PROHIBITED FROM INDEPENDENT MOVEMENT.
3. INSTALL ONE STREET NAME SIGN APPROXIMATE 2' FROM POLE ABOVE ON-COMING TRAFFIC ON EACH TRAFFIC SIGNAL SPAN.
4. THE FIRST LETTER OF EACH WORD SHALL BE UPPER CASE, SUBSEQUENT LETTERS SHALL BE LOWER CASE, ALL INDIVIDUAL LETTERS FOR EXAMPLE "P.M." SHALL BE UPPER CASE. STREET SUFFIXES & "NO OUTLET" SHALL BE UPPER CASE.
5. ALL SHEETING SHALL BE "DIAMOND GRADE" OR APPROVED EQUAL.
6. USE ANODIZED BLANKS ONLY.
7. STREET SIGN FONTS SHALL BE HELVETICA BOLD, MEDIUM STYLE
8. MINIMUM SIGN THICKNESS: 9" SIGNS = .080", 14" SIGNS = .1875"

SL-ST-68

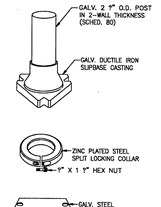


DETAIL OF SIGN FOR MAST ARM TRAFFIC SIGNAL POLES

NOTES:
1. HELVETICA BOLD, MEDIUM STYLE; WITH 9" UPPER CASE LETTERS AND 6" LOWER CASE LETTERS.
2. REFER TO C.O.S.L. DESIGN STANDARDS FOR MORE INFO.

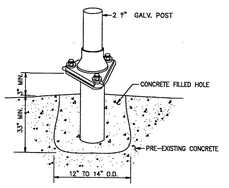
SL-ST-67

SL-ST-68



POZ-LOCK SLIPBASE SYSTEM
NTS

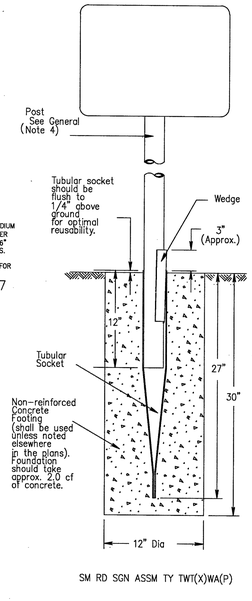
SL-ST-64



CONCRETE SIGN PEDESTAL SL-ST-65
NTS

NOTES:
1.) FILL HOLE TO GROUND LEVEL.
2.) PRESS BASE INTO CENTER OF CONCRETE.
3.) LEVEL BASE 3" ABOVE GROUND.
4.) TIGHTEN (TORQUE) NUTS BETWEEN 60 TO 80 FT/LB MAX.

Wedge Anchor System



SM RD SGN ASSM TY TWT(X)WA(P)

SL-ST-62

TYPE III BARRICADE

- STREET AREA LIGHTING (5 LOCATIONS)
- STREET SIGNS
- STOP BAR
- (1) STREET NAMES W/ STOP SIGN - FACING BRYAN WAY W/ STOP BAR
- (3) STREET NAMES W/ STOP SIGN - FACING ORANGE STREET W/ STOP BAR
- (4) STREET NAMES W/ STOP SIGN - FACING LAGO COURT W/ STOP BAR
- (5) SPEED LIMIT SIGN 30 MPH
- (6) 2 CBU (2-TYPE III 16 SLOT) ON 7'X4'X8" SLAB
- (7) 2 CBU (2-TYPE III 16 SLOT) ON 7'X4'X8" SLAB
- TYPE III BARRICADE

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	REDUCE LIGHT COUNT FOR PHASE I	

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-6689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 1/22/21

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN: 1" = 80'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

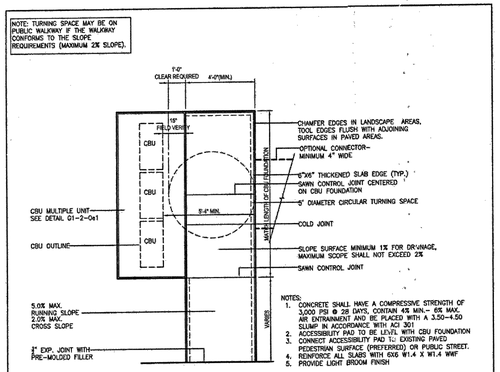
PAVEMENT MARKINGS, MAIL BOXES STREET SIGNS AND ROADWAY LIGHTING LAYOUT

PROJECT NO. 13499

SHEET SET.dwg

NOTES TO A/E:

1. IF THE ACCESSIBLE ROUTE FROM THE CBU(s) CONNECTS WITH A STREET OR OTHER PAVED SURFACE AT A VERTICAL CURB, A CURB RAMP SHOULD BE INSTALLED IN ACCORDANCE WITH RE-4 REQUIREMENTS.



Paved Pedestrian Surface (if available) or Public Street

Detail: CLUSTER BOX UNIT (CBU) ACCESS MANUVERING SPACE - MULTIPLE UNIT	Fac.	Ch.	Sect.	Para.	Detail
	G1	-	2	- 0	e3
CAD File: _uspslibrary\details\G1-2-0e3.dwg Scale: 1/4"=1'-0"	USPS SDL Issued: 10/1/2016				
	Last Revised: 7/14/2016				

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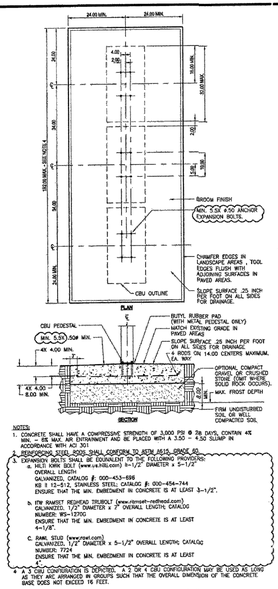
NOTES TO A/E:



NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS, CONTAIN 4% MIN. — 6% MAX. AIR ENTRAINMENT AND BE PLACED WITH A 3.50 - 4.50 SLUMP IN ACCORDANCE WITH ACI 301
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. EXPANSION BOLTS SHALL BE EQUIVALENT TO THE FOLLOWING PRODUCTS:
   a. HILTI KWIK BOLT (www.us.hilti.com) 8=1/2" DIAMETER x 5-1/2" OVERALL LENGTH
      GALVANIZED, CATALOG #: 000-453-688
      KB II 12-512, STAINLESS STEEL, CATALOG #: 000-454-744
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 3-1/2".
   b. ITW RAMSET REDHEAD TRUBOLT (www.ramset-redhead.com)
      GALVANIZED, 1/2" DIAMETER x 7" OVERALL LENGTH, CATALOG NUMBER: WH-12700
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 4=1/8".
   c. RAWL STUD (www.rawl.com)
      GALVANIZED, 1/2" DIAMETER x 5-1/2" OVERALL LENGTH, CATALOG NUMBER: 7724
      ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST
4. A 2 CBU CONFIGURATION IS SHOWN. A 2 OR 4 CBU CONFIGURATION MAY BE USED AS LONG AS THEY ARE ARRANGED IN GROUPS SUCH THAT THE OVERALL DIMENSION OF THE CONCRETE BASE DOES NOT EXCEED 16 FEET.

Detail: CLUSTER BOX UNIT (CBU) INSTALLATION - MULTIPLE UNIT	Fac.	Ch.	Sect.	Para.	Detail
	G1	-	2	- 0	e1
CAD File: _uspslibrary\details\G1-2-0e1 Scale: 1/2" = 1'-0"	USPS SDL Issued: 10/1/2016				
	Last Revised: 10/27/2016				

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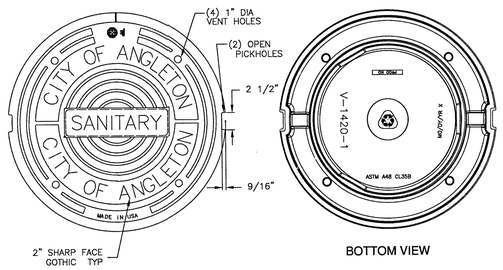
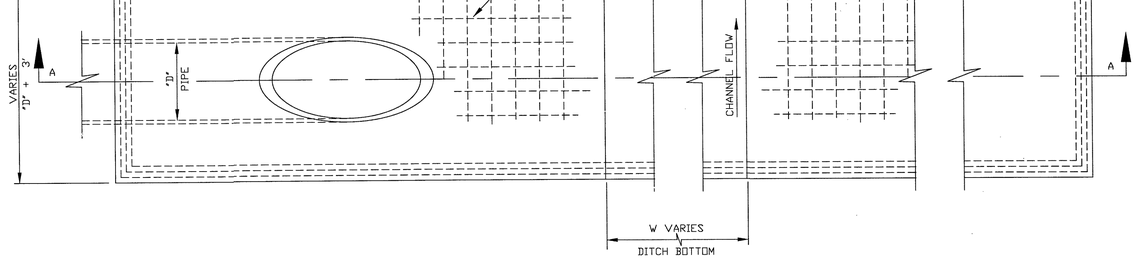
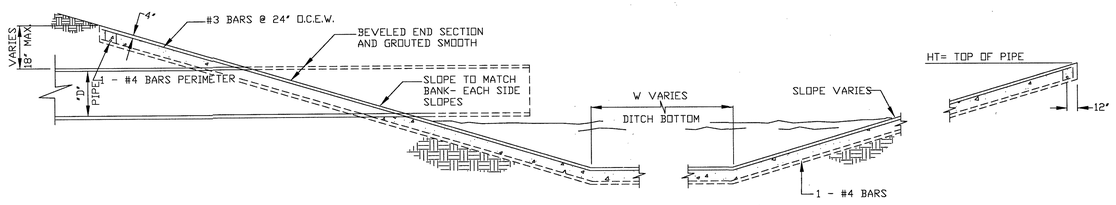
V1420-1 Cover



NOTES
1. MATERIAL SPECIFICATION SHALL BE ASTM A-48 CLASS 35B.
2. COVER TO BE SOLID, WITHOUT HOLES AND WITH NON-PENETRATION RIM ACCESS RECESSES ONLY.
3. HORIZONTAL BEARING SURFACES TO BE MACHINED AND SEALED AT INSTALLATION WITH WATERPROOF GREASE COATING.
4. LOAD RATING TO BE HEAVY-DUTY.



PLAN VIEW



W= WIDTH PER PLAN
D= PIPE DIAMETER PER PLAN
S= SLOPE PER PLAN/FIELD

SECTION "A-A"

TYPICAL DRAINAGE OUTFALL CHANNEL

NO.	DATE	DESCRIPTION	APPROVED
1	9/23/20	REVISED SLOPE PAVING DETAIL	

REVISIONS

DESIGNED MS
DRAWN BT
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DATE

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ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST., ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-6689
REG. NO. F-825

STATE OF TEXAS — MIGUELANGEL A. SAUCEDA — 121992 — REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992
Date: 1/22/21

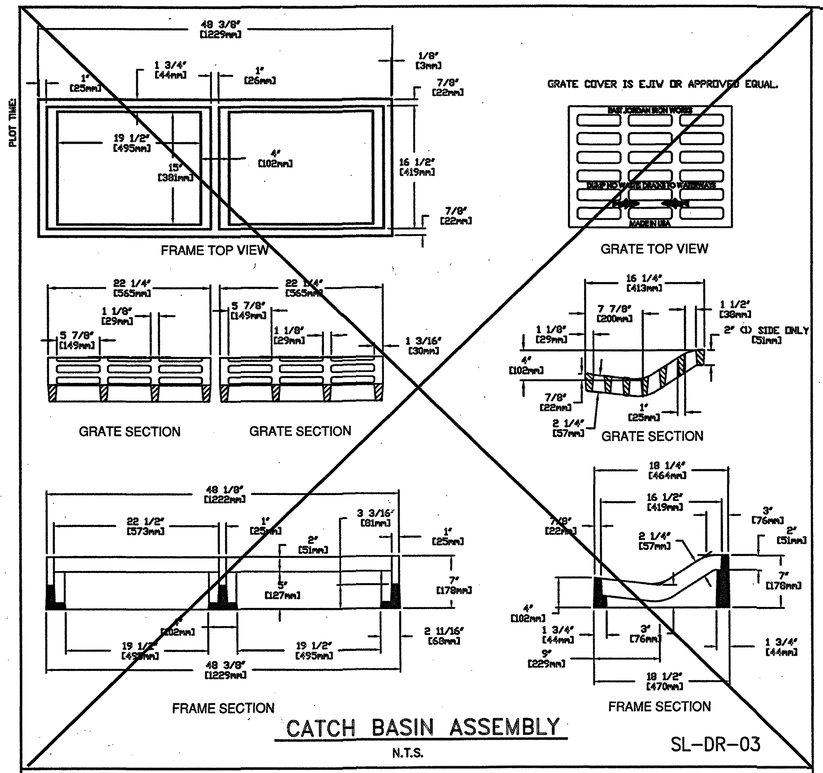
OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

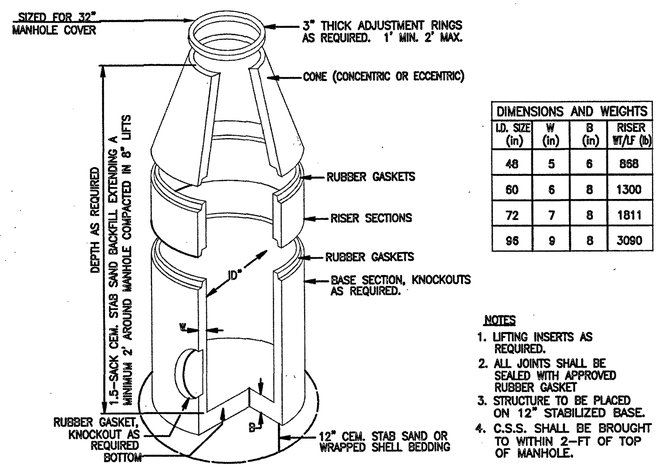
PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE (PHASE I)
A 11.88 AC, 48-LOT SUBDIVISION
ANGLETON, TEXAS 77515

MISCELLANEOUS DETAILS

PROJECT NO. 13499





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:

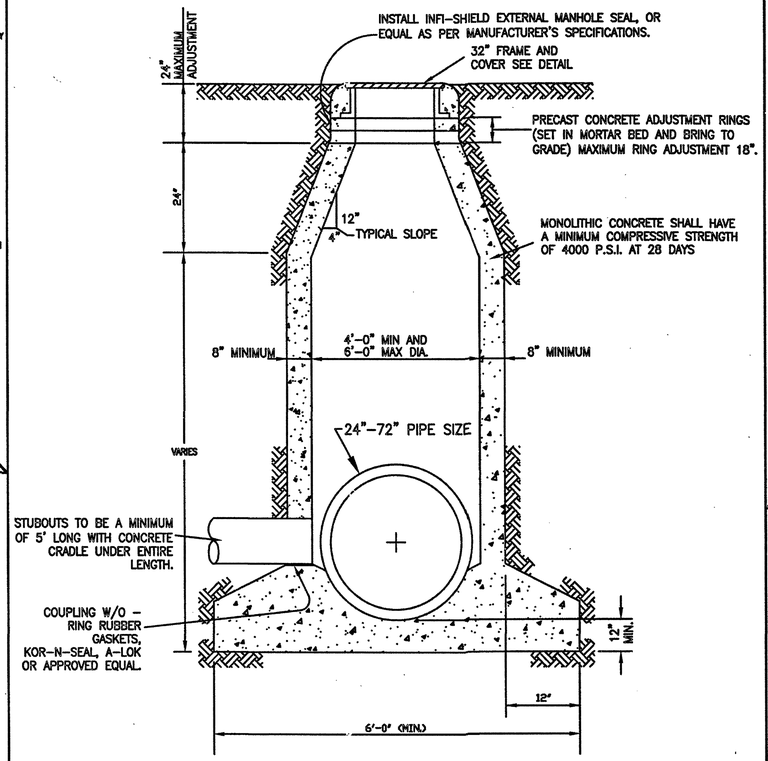
CONCRETE: CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATES FOR H-20 LOADING.

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.
SL-DR-02

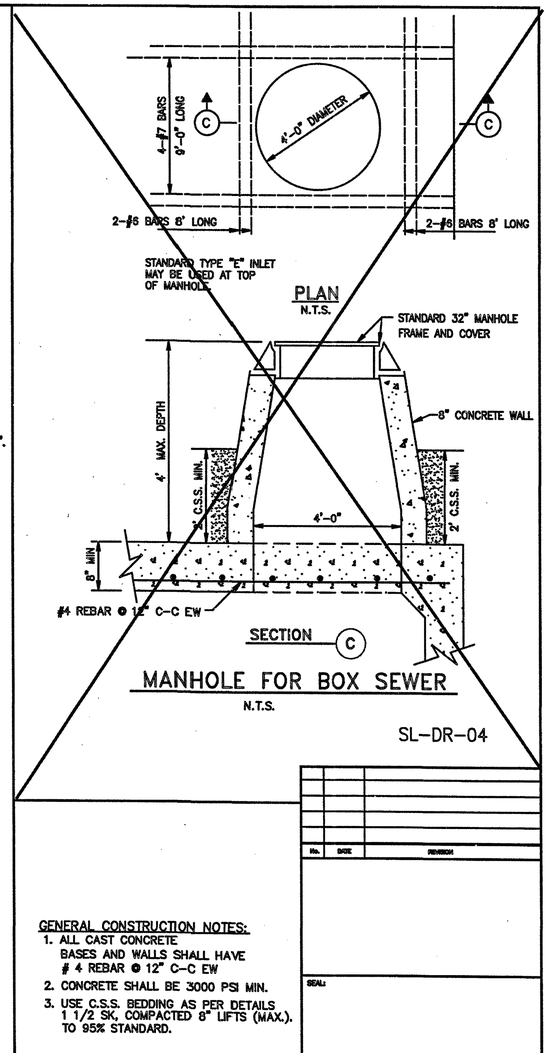
CAD FILE PATH:
PLOT DATE:



TYPE "C" CAST-IN-PLACE MANHOLE
N.T.S.

NOTES:
1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. #4 REBAR TO BE PLACED IN BASE AND WALLS @ 12" C-C EW.
3. 1-1/2" C.S.S. BACKFILL TO BE PLACED AROUND MANHOLE COMPACTED IN 8" LIFTS (MAX).

SL-DR-01



MANHOLE FOR BOX SEWER
N.T.S.
SL-DR-04

GENERAL CONSTRUCTION NOTES:
1. ALL CAST CONCRETE BASES AND WALLS SHALL HAVE # 4 REBAR @ 12" C-C EW
2. CONCRETE SHALL BE 3000 PSI MIN.
3. USE C.S.S. BEDDING AS PER DETAILS 1 1/2 SK, COMPACTED 8" LIFTS (MAX.). TO 95% STANDARD.

REFER TO:
1. *GENERAL NOTES, C.S.S & CONCRETE NOTES.*
2. *STORM SEWER NOTES*

NO.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

STORM SEWER MANHOLE CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-03

SHEET OF

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
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300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992
Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

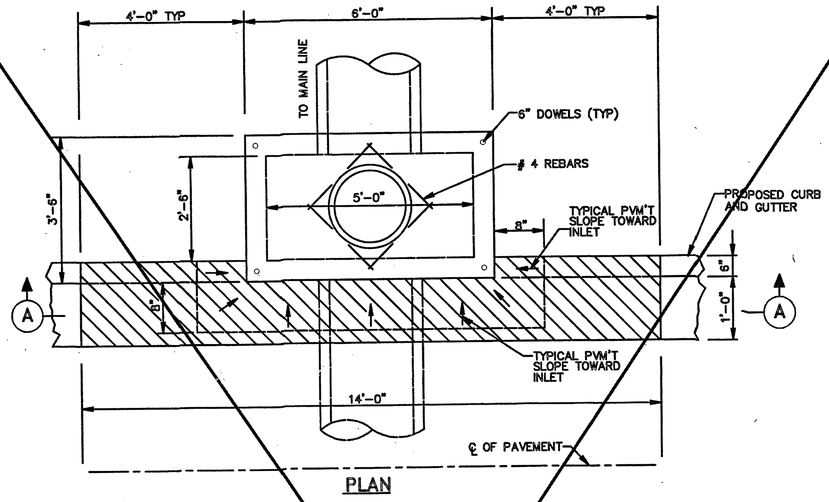
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

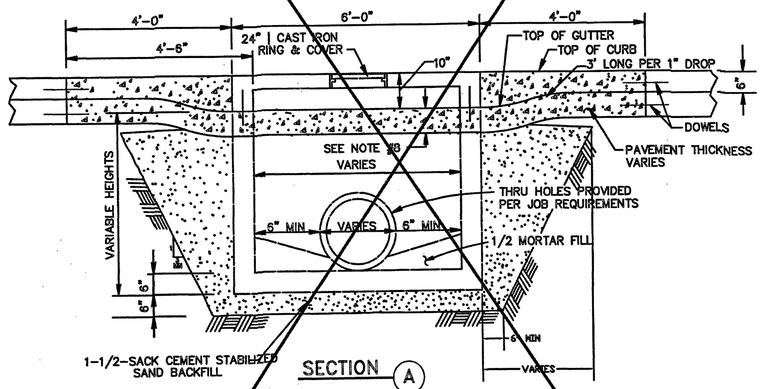
STORM SEWER MANHOLE CONSTRUCTION DETAILS
SL-03

PROJECT NO. 13499

I:\99 ANGLETON DETAIL SET.dwg



PLAN



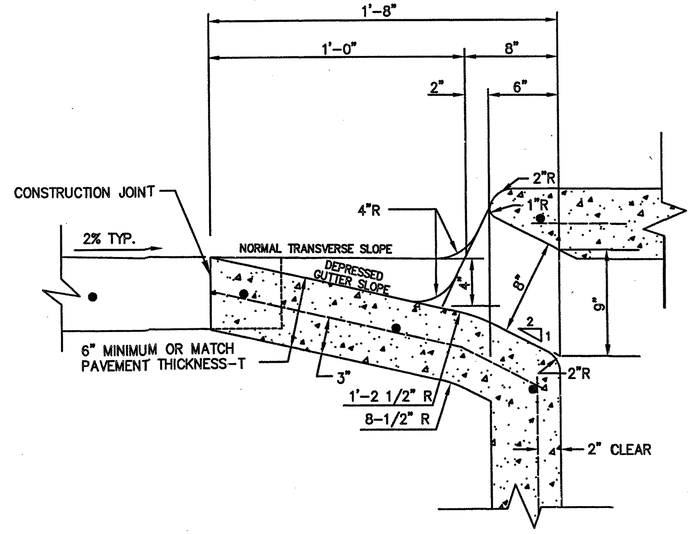
SECTION (A)

TYPE "H-2" INLET

SL-DR-25

NOTES:

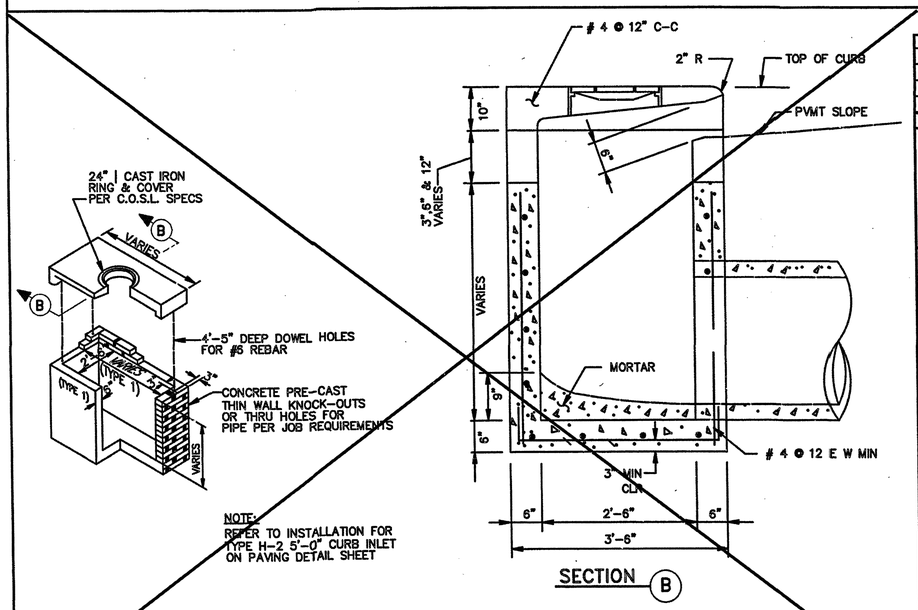
1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #5 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL. A PLAN PREPARED BY THE MANUFACTURER MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. THE PLAN SHOULD DETAIL CONNECTIONS AND SEALING OF JOINTS.
3. PRECAST INLET TOPS SHALL NOT UTILIZE MULTIPLE ONE-FOOT SECTIONS TO ACHIEVE GRADE.
4. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF THE INLET FIRST STAGE.
5. GRADE 60 REINFORCEMENT. #4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
6. PRECAST INLET MUST BE CONSTRUCTED TO SPECIFICATIONS REQUIRED BY APPROVED DRAWINGS. (SEE GENERAL NOTES).
7. TOPS POURED-IN-PLACE REQUIRE #4 REBAR @ 12" C-C EACH WAY, 4,500 PSI CONCRETE MINIMUM AND 5" THICK MINIMUM.
8. PAVEMENT DEPTH AT INLET SHALL BE EQUAL TO OR GREATER THAN REQUIRED PAVEMENT DEPTH.
9. DEPRESS GUTTER TO INLET.
10. ALL SIDES OF ALL INLETS MUST BE COMPACTED.
11. REFER TO GEOTECHNICAL REPORTS FOR RECOMMENDED TRENCH SIDE SLOPES.



THROAT DETAIL FOR STANDARD INLETS ON CONCRETE STREETS

SCALE: N.T.S.

SL-DR-40



SECTION (B)

TYPE "H-2" PRECAST INLET

N.T.S.

SL-DR-26

REFER TO:

1. *GENERAL NOTES*
2. *SEE C.S.S., PAVEMENT NOTES*

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

STORM SEWER INLET CONSTRUCTION DETAILS II

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-08

SHEET OF

CAD FILE PATH:
PLOT DATE:
PLOT TIME:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
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CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST., ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

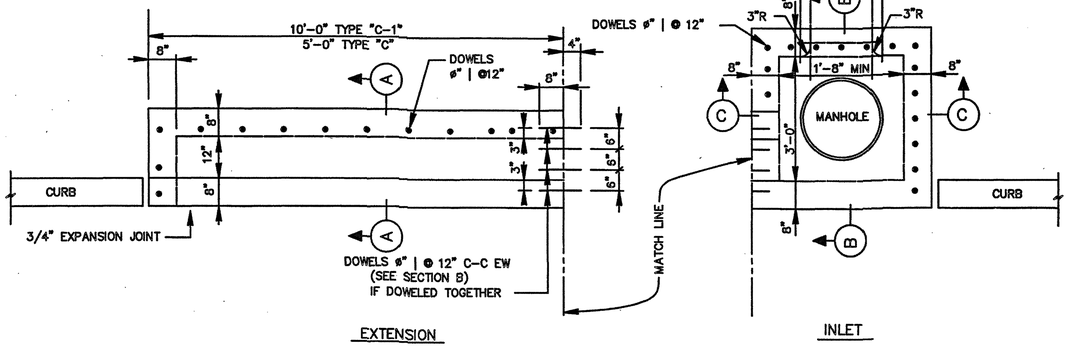
STORM SEWER INLET
CONSTRUCTION DETAILS II
SL-08

PROJECT NO. 13499

25

I:\13499 ANGLETON DETAIL SET.dwg

PLOT TIME:



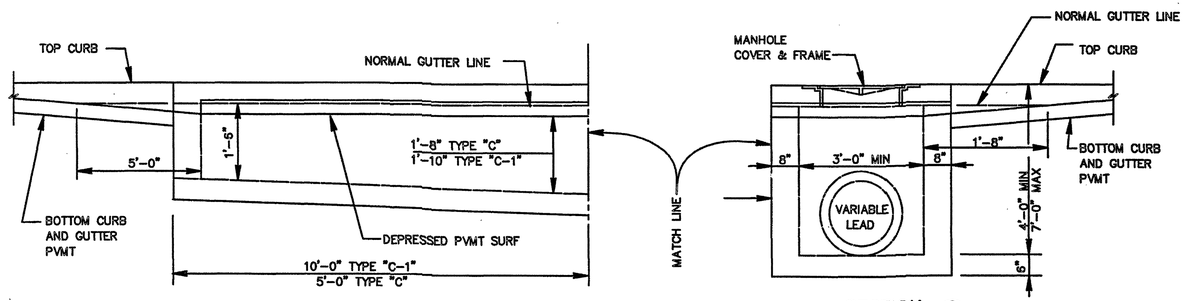
PLAN

GENERAL NOTES:

TYPE "C" INLET WITH ONE EXTENSION
TYPE "C-1" INLET WITH DOUBLE EXTENSION
TYPE "C-2" INLET WITH EXTEN. ON EACH SIDE
TYPE "C-2A" INLET WITH NO EXTENSION

NOTES:

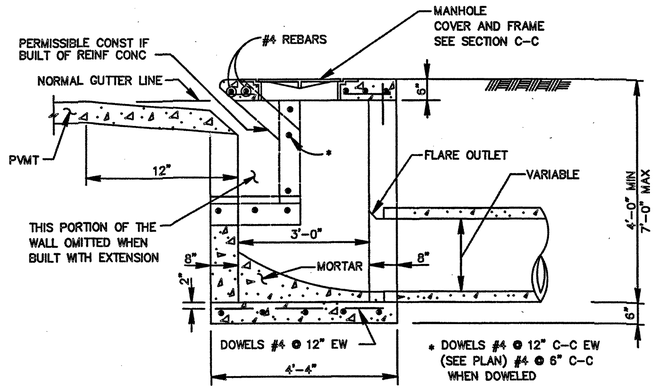
1. FOR TYPE "C-1" INLETS PROVIDE A CENTER 6"X6" COLUMNS IN THE CURB LINE BETWEEN ALL EXTENSIONS.
2. WALLS TO BE 8" IF BUILT WITH REINFORCED CONCRETE. BRICK WALLS ARE NOT ALLOWED.



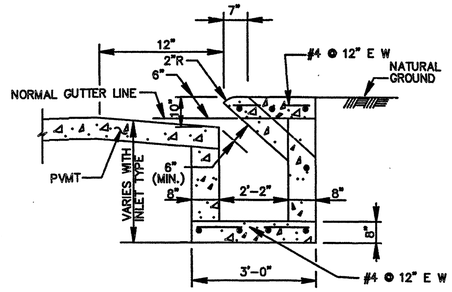
PLAN

SECTION (C)

SL-DR-27



SECTION (B)



SECTION (A)

TYPE "C" INLET

N.T.S.

SL-DR-28

REFER TO:

1. *GENERAL NOTES*
2. *STORM SEWER NOTES*

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

STORM SEWER INLET
CONSTRUCTION DETAILS III

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-09

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

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STATE OF TEXAS
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Date: 3/16/26

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185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER INLET
CONSTRUCTION DETAILS III
SL-09

PROJECT NO. 13499

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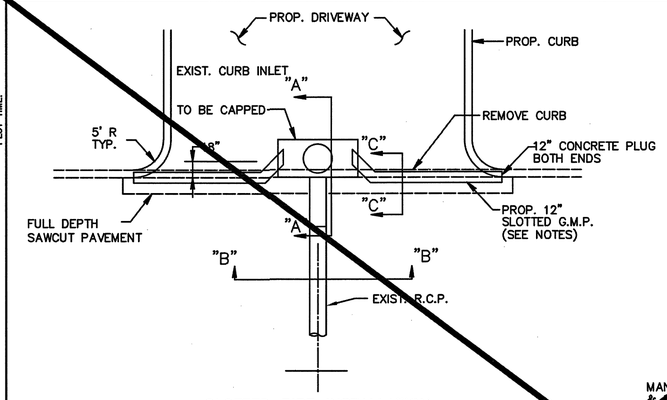
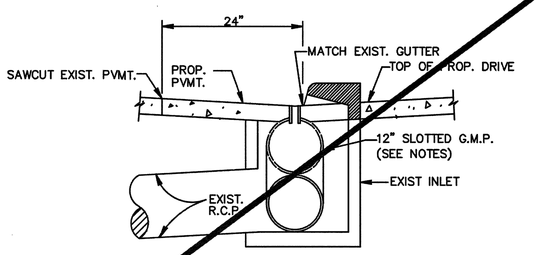
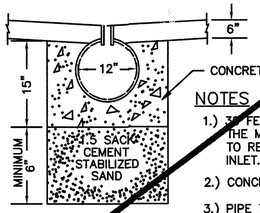
PLOT TIME:



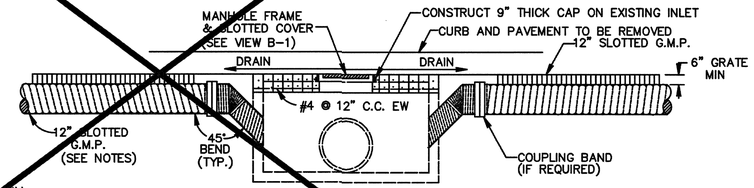
SLOTTED PIPE INSTALLATION FOR DRIVEWAY CONSTRUCTION



SECTION A–A



SECTION C–C



SECTION B–B

NOTES

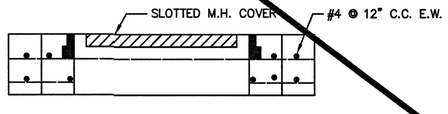
1.) 30 FEET OF SLOT IS THE MINIMUM REQUIREMENT TO REPLACE A TYPE B–B INLET.

2.) CONCRETE MIN. 3000 P.S.I.

3.) PIPE TO BE GALVANIZED TYPE II WITH GALVANIZED SLOT

4.) CONDITIONS MAY VARY. CONTRACTOR TO ROLL FITTING AND ENTER BOX BELOW 9" CAP.

5.) SEE C.S.S. NOTES.

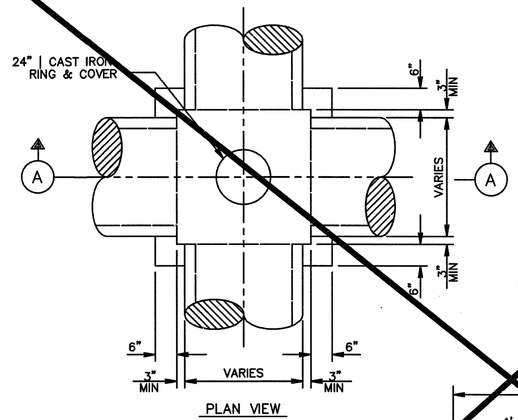


VIEW B–1

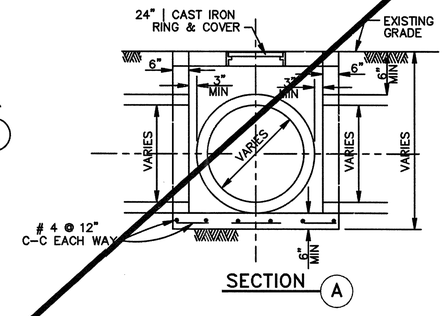
SLOTTED DRAIN DETAIL

N.T.S.

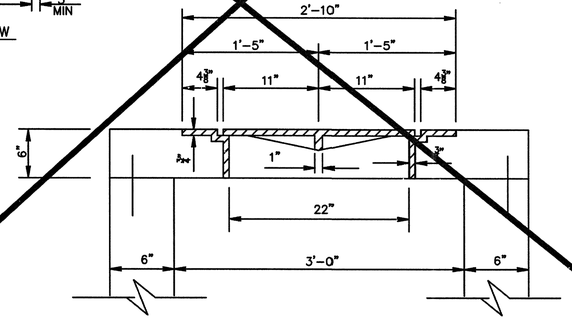
SL–DR–29



PLAN VIEW



SECTION A



FRAME AND COVER SECTION

JUNCTION BOX

N.T.S.

SL–DR–30

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

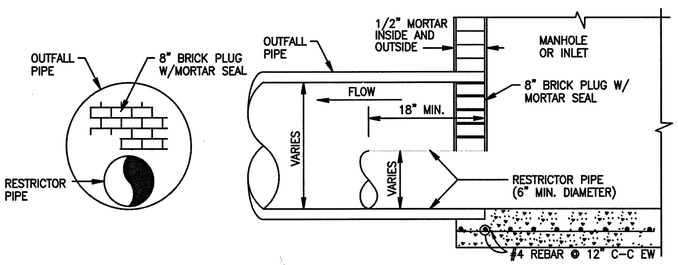
CONSTRUCTION PLANS FOR:

STORM SEWER CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL–10

SHEET OF



CHOKE OUTFALL RESTRICTOR DETAIL

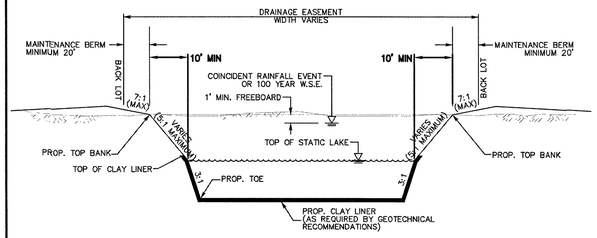
STORM SEWER CHOKE RESTRICTOR

N.T.S.

SL–DR–31

REFER TO:

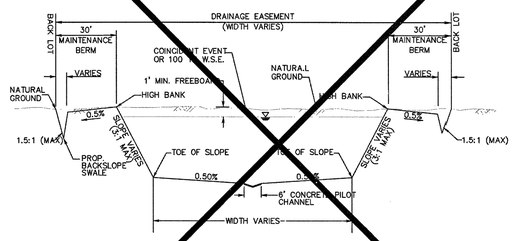
1. GENERAL NOTES
2. STORM SEWER NOTES



WET DETENTION POND/AMENITY LAKE

N.T.S.

SL–DR–32



DRY DETENTION POND

N.T.S.

SL–DR–33

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

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REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

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Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

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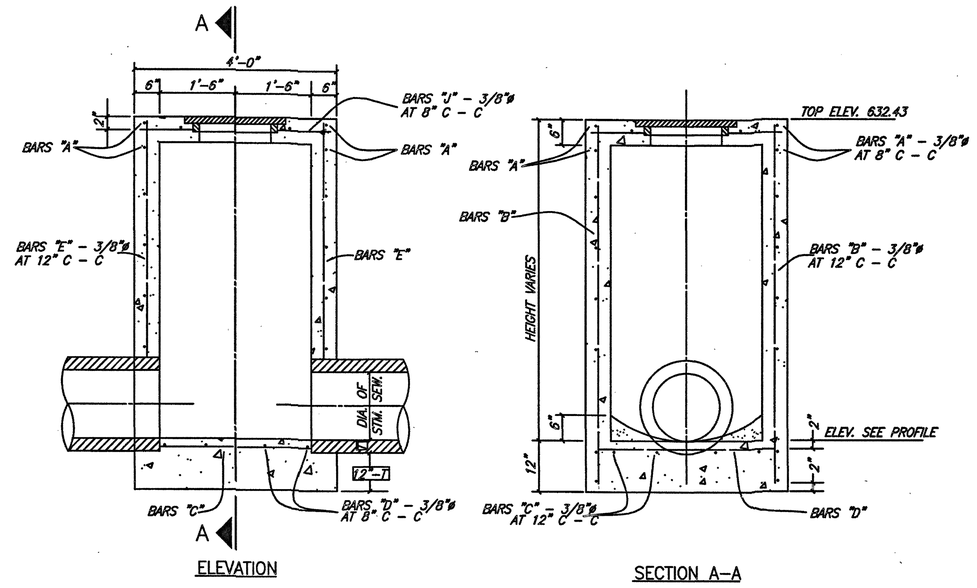
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER CONSTRUCTION DETAILS SL–10

PROJECT NO. 13499

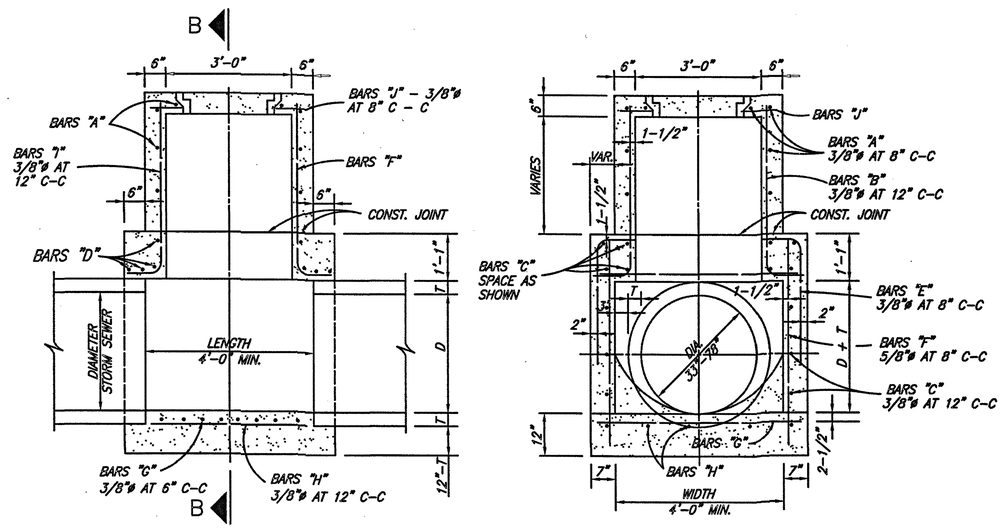
99 ANGLETON DETAIL SET.dwg

PLOT TIME:



STORM SEWER TYPE A MANHOLE

MAX. PIPE SIZE 30" – N.T.S.



TYPE B STORM SEWER MANHOLE

MAX. PIPE SIZE 78" – N.T.S.

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

JUNCTION BOX MANHOLES

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
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SCALE:

SL-11

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PLAN:
PROFILE:
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KIBER RESERVE
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ANGLETON, TEXAS 77515

JUNCTION BOX MANHOLES
SL-11

PROJECT NO. 13499

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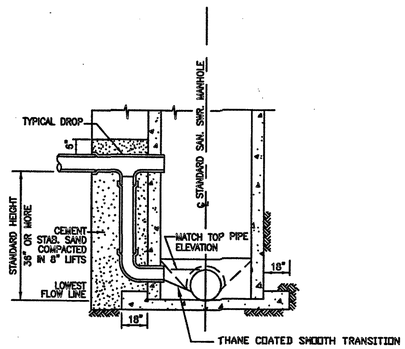
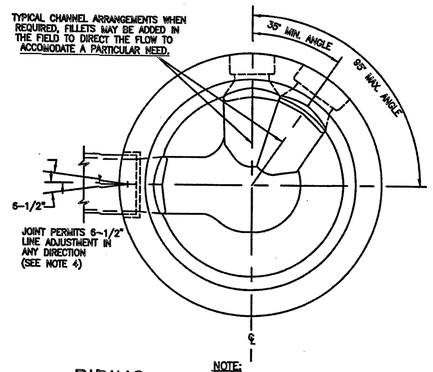
PLOT TIME:



STANDARD DROP DETAIL

(SEE C.S.S. NOTES)

SL-SS-05



PIPING CONNECTIONS DETAIL

SL-SS-05

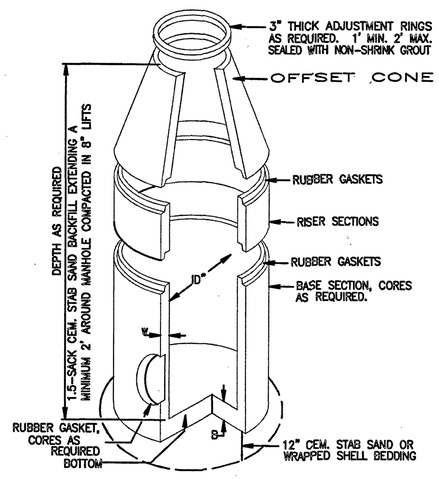
NOTE:

1. INFLUENT AND EXFLUENT PIPING CONNECTIONS TO MANHOLE SHALL BE ALIGNED TO PREVENT REVERSE FLOW.
2. INFLUENT AND EXFLUENT CONNECTIONS ARE LIMITED TO A MAXIMUM 90° INCLUDED ANGLE OF CONVERGENCE.
3. MINIMUM 35° AND MAXIMUM 90° INCLUDED ANGLES MUST BE PROVIDED BETWEEN MULTIPLE INFLUENT CONNECTIONS.
4. ANGLE OF DEFLECTION AT PIPING JOINTS AS PER MANUFACTURE'S RECOMMENDATIONS.

NOTES:

1. CONTRACTOR SHALL CONTACT CITY OF ANGLETON ENGINEERING DEPARTMENT AT (979) 849-4364 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 ANGLETON 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 ANGLETON EMBLEM AND THE WORDS "ANGLETON" AND "SANITARY SEWER" CAST IN RAISED RELIEF AS DEPICTED IN CITY OF ANGLETON 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 38 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 ANGLETON 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 ANGLETON 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.

SL-SS-07



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 LIDS ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 35.

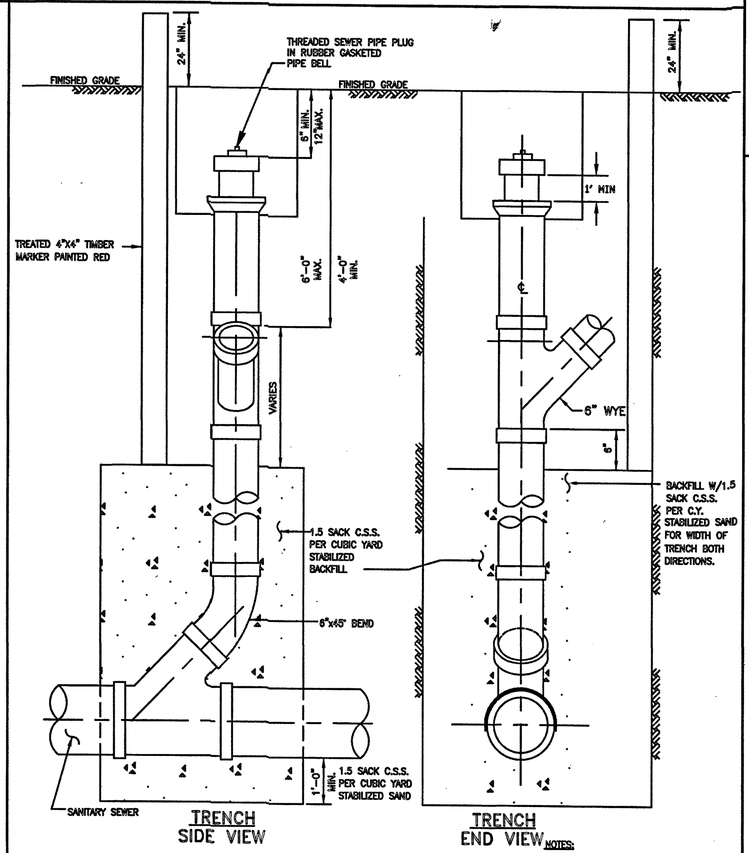
NOTES

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.
5. PRE-CAST MANHOLE SHALL BE IN COMPLIANCE APPROVED PRODUCT LIST.
6. THANE COAT SHALL BE IN COMPLANCE WITH APPROVED PRODUCT LIST.
7. INVERTS SHALL COMPLY WITH C.O.S.L., DESIGN MANUAL SPECIFICATIONS.
8. INFLOW PROTECTORS REQUIRED ON ALL SANITARY MANHOLES.
9. REFER TO SANITARY MANHOLE LIDS, C.S.S. NOTES, MODIFIED BEDDING DETAILS AND NOTES.

PRECAST SANITARY MANHOLE

N.T.S.

SL-SS-03



TRENCH SIDE VIEW

TRENCH END VIEW

STACK DETAIL

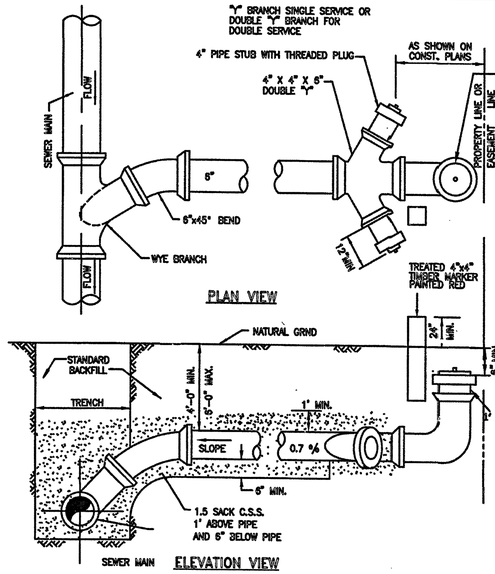
N.T.S.

NOTES:

A.) NO STACKS ON MAINS OVER 16' DEEP OR IN WET SAND CONDITIONS.

B.) ALL STACK CONNECTIONS SHALL BE IN-LINE FITTINGS.

SL-SS-04



SANITARY SEWER SERVICE CONNECTION

N.T.S.

SL-SS-06

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS · MIGUELANGEL A. SAUCEDA · 121992 · REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

SANITARY SEWER CONSTRUCTION DETAILS SL-14

PROJECT NO. 13499

NO.	DATE	REVISION

SEAL:

DESIGN ENGINEER: DATE

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

SANITARY SEWER CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-14

SHEET OF

CAD FILE PATH:
PLOT DATE:

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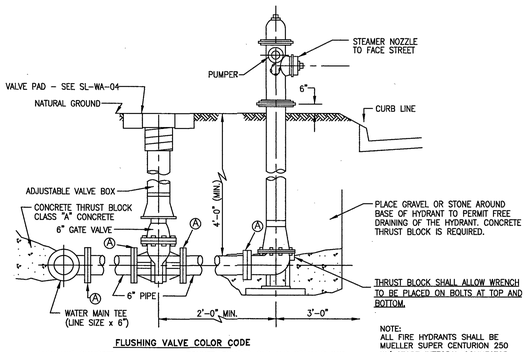


FLUSHING VALVE COLOR CODE

MAIN LINE DIAMETER	BONNET, PUMPER CAP AND STEAMER CAP
6 INCHES (AND LESS) — — — —	YELLOW
8 INCHES — — — — — — — —	WHITE
12 TO 16 INCHES — — — — — —	GREEN
GREATER THAN 16 INCHES — — — —	ORANGE

FIRE HYDRANT BODY TO BE PAINTED GEO-GLEN 301 BRIGHT SILVER ALUMINUM POLYURETHANE ENAMEL, BY GEO-GLEN ENTERPRISES OR APPROVED EQUAL.

NOTE:
ALL FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION 250 W/ STORZ INTEGRAL CONNECTOR STEAMER NOZZLE SIZE 5-1/4" TWO PUMPER 2-1/2" N.S.T.

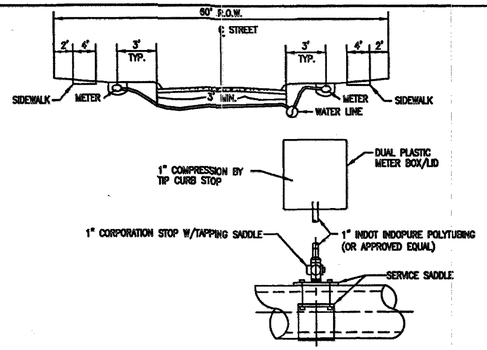
ALL FLUSHING VALVES TO BE SAND BLASTED AND PAINTED AS PER CITY OF ANGLETON DESIGN STANDARDS.

Ⓐ =RESTRAINED JOINT

TYPICAL GATE & FIRE HYDRANT INSTALLATION

N.T.S.

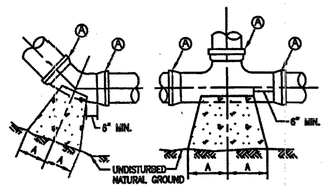
SL-WA-01

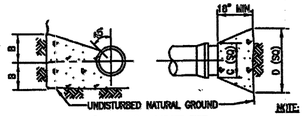


WATER SERVICE CONNECTION AND WATER SERVICE TAPPING ASSEMBLY DETAIL

N.T.S.

SL-WA-03





NOTE:
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 10 SQ. FEET AND SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER.
ALL CONCRETE SHALL BE 5 SACK MIN., 3000 P.S.I.

THRUST BLOCK DETAIL

N.T.S.

Ⓐ =RESTRAINED JOINT

SL-WA-05

NOTES: POLYETHYLENE WRAP FOR IRON PIPE

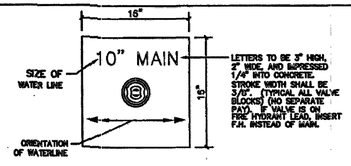
NOTE:

1. POLYETHYLENE FILM SHALL BE USED AS A WRAP TO PROTECT CAST IRON AND OTHER METALS IN A CORROSIVE SOIL ENVIRONMENT.
2. AN 8 MIL POLYETHYLENE FILM WRAP SHALL BE REQUIRED AROUND ALL METAL PIPE AND APPURTENANCES (EXCEPT FIRE HYDRANTS).
3. POLYETHYLENE FILM SHALL BE FURNISHED AND INSTALLED EITHER IN TUBULAR FORM PRIOR TO LOWERING THE PIPE IN TRENCH OR IN SHEET FORM.
4. POLYETHYLENE TUBE ENCASEMENT SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF "POLYETHYLENE ENCASEMENT FOR GRAY AND DUCTILE CAST-IRON PIPING FOR WATER AND OTHER LIQUIDS", ANSI/AWWA C105, CURRENT REVISION. SOILS WITHIN A PROJECT SHALL BE TESTED IN ACCORDANCE WITH APPENDIX A OF ANSI/AWWA C105 TO ADEQUATELY DETERMINE THE REQUIREMENTS FOR ENCASEMENT.
5. ALL FITTINGS AND PIPE JOINTS WITHIN 10' OF A FITTING SHALL HAVE RESTRAINT JOINTS

SIZE	90° BEND		45° BEND		22 1/2° BEND		TEES		PLUGS	
	A	B	A	B	A	B	A	B	A	B
2 1/2"	12"	7"	9"	7"	6"	8"	7"	8"	8"	14"
6"	16"	10"	9"	10"	6"	12"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	28"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"
20"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*76"
24"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*76"
30"	80"	48"	36"	48"	20"	36"	36"	48"	36"	*96"

BENDS, TEES & PLUGS FOR PIPE OF VARIOUS SIZES

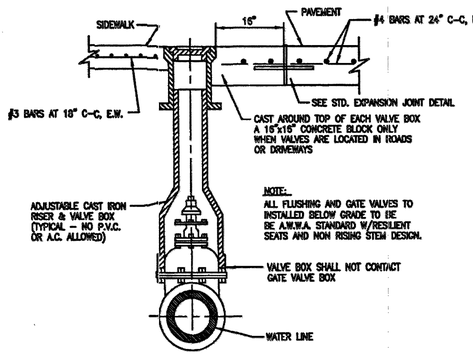
SL-WA-08



CONCRETE PAD

N.T.S.

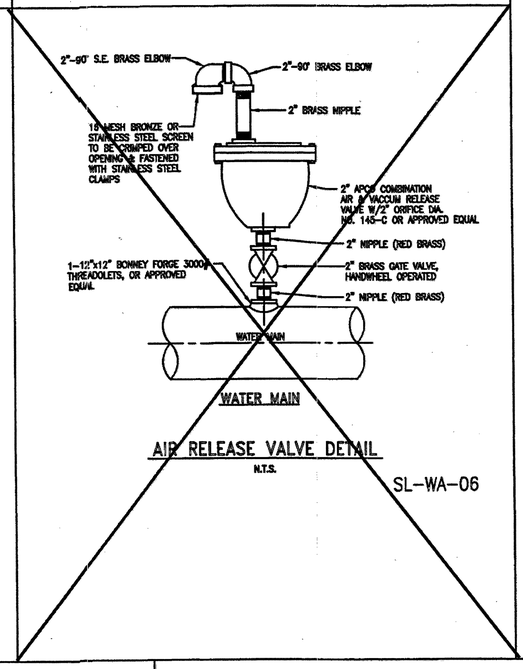
NOTE: ALL VALVES MUST HAVE CONCRETE PAD



VALVE BOX INSTALLATION DETAIL

N.T.S.

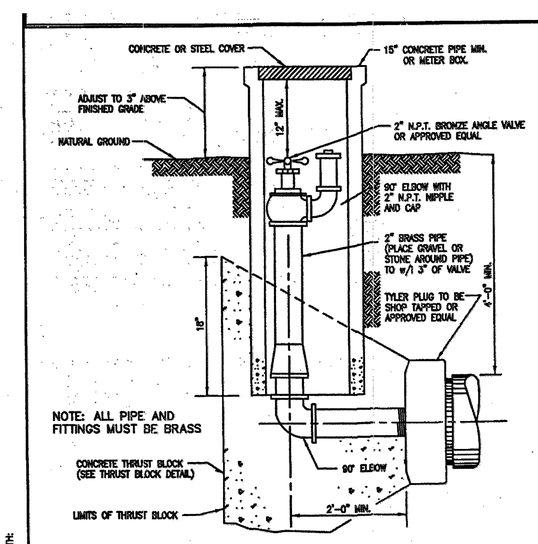
SL-WA-04



AIR RELEASE VALVE DETAIL

N.T.S.

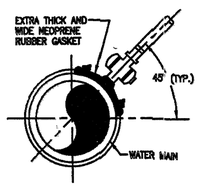
SL-WA-06

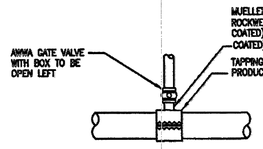


2" BLOW OFF VALVE ASSEMBLY

N.T.S.

SL-WA-02





TOP VIEW

TAPPING SLEEVE & VALVE DETAIL

N.T.S.

SL-WA-07

CONSTRUCTION NOTES:

1. WATER LINES 12" (N.) AND LESS SHALL BE AWWA C-900 DR18 WATER LINE GREATER THAN 12" (N.) IN ø SHALL BE AWWA C-905 DR 18
2. ALL FLUSHING VALVES AND GATE VALVES TO BE AMERICAN WATER WORKS ASSOC. (AWWA) STANDARD COUNTERCLOCKWISE OPENING WITH NON-RISING STEM DESIGN.
3. ALL DUCTILE IRON PIPE SHALL BE CLASS 50 MORTAR LINED. NO A.C. PIPE WILL BE ALLOWED AND ALL DUCTILE IRON FITTINGS SHALL BE MORTAR LINED PUSHON OR MECHANICAL JOINTS.
4. ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. MINIMUM SPACING BETWEEN TAPS SHALL BE 2' AT ALTERNATING TAP ANGLES.

SL-WA-08

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WATER LINE CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-15

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST., ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E, 121992

Date: 4/28/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WATER LINE CONSTRUCTION DETAILS SL-15

PROJECT NO. 13499

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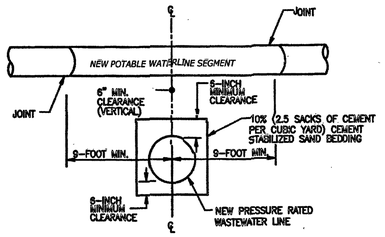
PLOT TIME:

I

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGHTS OF EIGHTEEN (18) FEET OR GREATER, HAVING 6 INCHES OF VERTICAL CLEARANCE AND 4 FEET OF HORIZONTAL CLEARANCE

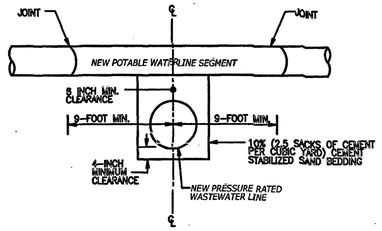


- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

SL-WA-09

II

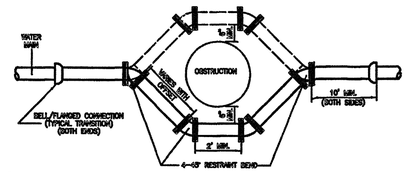
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

SL-WA-10

III



FOR A LINE TO PASS OVER AN OBSTRUCTION RATHER THAN UNDER, IT MUST HAVE ADEQUATE COVER AND BE APPROVED BY THE ENGINEERING DEPARTMENT.

MIN. PIPE WALL THICKNESS		
4"	–	0.250"
6"	–	0.280"
8"	–	0.322"
12" AND LARGER	–	0.375"

NOTES:

1. PIPE MATERIAL SHALL BE AWWA C900 PVC, DR-14, 200 PSI WITH INTEGRAL PVC RESTRAINED JOINTS.
2. OFFSET ASSEMBLY MUST PASS OVER THE OBSTRUCTION AS LONG AS THE MINIMUM CLEARANCE IS MAINTAINED. SPECIFIC APPROVAL FROM THE UTILITIES DEPARTMENT MUST BE GRANTED FOR THE OFFSET TO PASS UNDER THE OBSTRUCTION.
3. MATERIAL AND COATINGS SHALL BE IN ACCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.
4. RESTRAIN EXISTING PIPING BEYOND OFFSET SECTION AS REQUIRED TO PREVENT MOVEMENT.
5. ALL PVC PRODUCTS MUST BE LISTED ON CITY OF SUGAR LAND'S APPROVED PRODUCTS LIST.

PVC WATER PIPE OFFSET ASSEMBLY

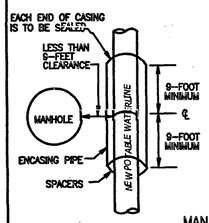
SL-WA-11

GENERAL NOTES:

1. THE CONTRACTOR SHALL CONTACT CITY OF ANGLETON ENGINEERING DEPARTMENT AT 979 849 4364 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 ANGLETON STANDARDS SHALL GOVERN.
3. ALL NEW POTABLE WATER LINES AND SANITARY SEWER FORCE MAINS SHALL BE BEDDED IN COMPACTED BANK SAND A MINIMUM OF 6 INCHES BELOW, ABOVE AND TO EITHER SIDE OF SUCH PIPING.
4. ALL NEW SANITARY SEWER GRAVITY DRAIN LINES SHALL BE BEDDED IN CEMENT STABILIZED SAND CONFORMING TO THE REQUIREMENTS FOR EITHER CLASS "A" STANDARD BEDDING OR CLASS "A-A" BEDDING AS APPLICABLE. USE OF MODIFIED "A" OR MODIFIED "A-A" BEDDING FOR SANITARY SEWER INSTALLATIONS WHERE WET SAND CONDITIONS ARE ENCOUNTERED AND SEPARATION DISTANCE TO POTABLE WATER LINES IS LESS THAN 9 FEET REQUIRES APPROVAL BY CITY ENGINEER.
5. CEMENT STABILIZED BEDDING SHALL BE A MINIMUM 1.5 SACK PER CUBIC YARD C.S.S., INSTALLED IN MAXIMUM LIFTS OF 8 INCHES AND MECHANICALLY TAMPED TO 95% PROCTOR.
6. WHERE REQUIRED, SLEEVING (ENCASEMENT) OF POTABLE WATER PIPING AND/OR SANITARY SEWER GRAVITY DRAIN LINES AND FORCE MAINS SHALL BE PROVIDED. SUCH SLEEVING (ENCASEMENT) SHALL BE CONSTRUCTED OF APPROVED PIPING MATERIALS HAVING A MINIMUM PRESSURE RATING OF 150 PSI AND ANNULAR SPACES AT EACH END SHALL BE SEALED WITH A MATERIAL APPROVED FOR SUCH USE.
7. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE A MINIMUM OF 9 FEET SEPARATION DISTANCE TO EXISTING OR PROPOSED SANITARY SEWER MANHOLE, LIFT STATION OR WASTEWATER TREATMENT PLANT CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
8. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING. WHERE PIPING IS LAID PARALLEL AND MINIMUM SEPARATION DISTANCES CANNOT BE MAINTAINED, SLEEVING SHALL EXTEND AT LEAST 9 FEET PAST THE POINT WHERE MINIMUM SEPARATION DISTANCES ARE ACHIEVED.
9. ALL NEW POTABLE WATER LINES SHALL BE CONSTRUCTED ABOVE EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS WHERE POSSIBLE. WHERE INSTALLATION BENEATH SANITARY SEWER GRAVITY LINES OR FORCE MAINS IS UNAVOIDABLE AT POINTS OF CROSSING, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL NEW POTABLE WATER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
10. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS CONSTRUCTED OF PVC PIPING MATERIALS SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING POTABLE WATER PIPING CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
11. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS SHALL BE CONSTRUCTED BELOW EXISTING POTABLE WATER LINES WHERE POSSIBLE. WHERE INSTALLATION ABOVE POTABLE WATER LINES IS UNAVOIDABLE, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL SUCH SANITARY SEWER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
12. WHERE NEW SANITARY SEWER SIZING (24 INCH AND GREATER) PRECLUDES THE USE OF PVC PIPING MATERIALS AND SLEEVING (ENCASEMENT) OF THE SANITARY SEWER WOULD OTHERWISE BE REQUIRED BUT IS IMPRACTICAL, THE EXISTING POTABLE WATER PIPING SHALL EITHER BE OFFSET TO PROVIDE THE REQUIRED MINIMUM CLEARANCES OR SLEEVED (ENCASED) IN LIEU OF SLEEVING (ENCASING) THE SANITARY SEWER LINE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
13. IN NO INSTANCE SHALL A FIRE HYDRANT BE INSTALLED WITHIN 9 LINEAR FEET OF A SANITARY SEWER SYSTEM.
14. NOTE: SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE DIAMETERS OF EACH PIPE AND FROM THE EXTERIOR SURFACES OF MANHOLES, LIFT STATIONS, WASTEWATER TREATMENT PLANTS AND ASSOCIATED APPURTENANCES.
15. REFER TO GENERAL SANITARY, WATER AND C.S.S. NOTES.

SL-WA-18

DETAIL OF WATER LINE CROSSING WASTEWATER FACILITIES WHERE SEPARATION IS LESS THAN 9' (NINE FEET)

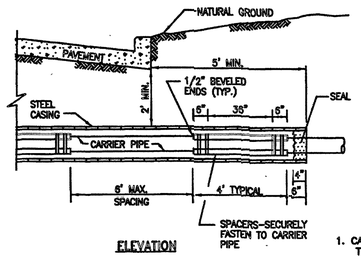


ENCASING PIPE

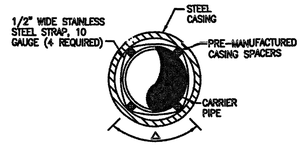
- 150 PSI PRESSURE CLASS PIPE MINIMUM 18 FEET LONG DIAMETER = 2 X WATERLINE DIAMETER
- SPACE AROUND CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT (OR LESS INTERVALS WITH SPACERS)
- CENTERED ON CROSSING
- BOTH ENDS SEALED WITH CEMENT GROUT OR A MANUFACTURED WATER TIGHT SEAL.

MANHOLE CLEARANCE

SL-WA-12



ELEVATION



CASING SCHEDULE		
CARRIER PIPE	NOMINAL CASING	MIN. WALL THICKNESS (IN.)
6"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20

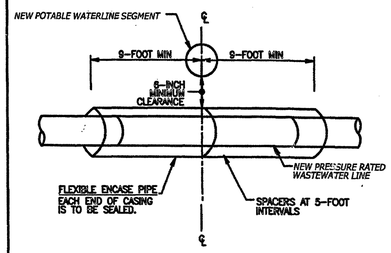
1. CASING SIZE AND THICKNESS SHALL CONFORM TO THE MINIMUM REQUIREMENTS AS SHOWN ON CASING SCHEDULE, OTHER PERMITS AS REQUIRED.
2. MAINTAIN 1" MINIMUM CLEARANCE BETWEEN THE MAXIMUM OUTSIDE DIAMETER OF CARRIER PIPE AND CASING AT ALL LOCATIONS.
3. DIMENSIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL INSTALL ADEQUATELY SIZED CASING TO ACCOMMODATE THE CARRIER PIPE.

SL-WA-13

IV

ENCASED WASTEWATER LINE

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGHTS OF OF LESS THAN EIGHTEEN (18) FEET

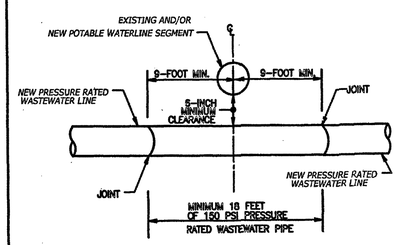


- MINIMUM CASING PIPE STIFFNEESS OF 115 PSI AT 5% DELECTION.
- MINIMUM CASING PIPE DIAMETER = 2 X WASTEWATER LINE DIAMETER.
- THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE (F) FOOT (OR LESS). INTERVALS WITH SPACERS
- EACH END CASING IS TO BE SEALED WITH WATER TIGHT NO-SHRINK GROUT OR MANUFACTURED WATER TIGHT SEAL.

SL-WA-17

ALTERNATIVE A:

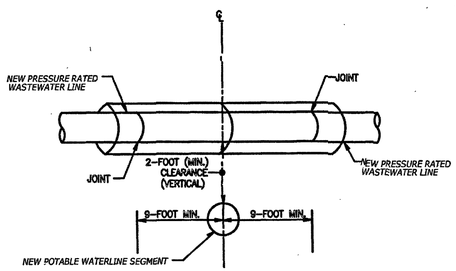
PRESSURE RATED WASTEWATER PIPE



SL-WA-14

ALTERNATIVE B:

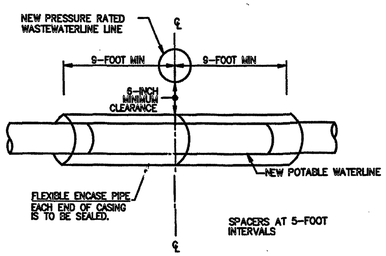
EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE



SL-WA-15

ALTERNATIVE C:

ENCASE NEW POTABLE WATERLINE UNDER A NEW PRESSURE RATED WASTEWATER LINE



- SAME ENCASEMENT CRITERIA AS "ALTERNATIVE B" OR
- NEW WATERLINE (WITHOUT CASING) TO BE CONSTRUCTED OF PVC C-900 (DR-18), DUCTILE IRON WITH MECHANICAL JOINT OR STEEL PIPE WITH WITH WELDED JOINTS.
- BOTH WATERLINE AND WASTEWATER LINE MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C900 STANDARDS.

SL-WA-16

CAD FILE PATH:
PLOT DATE:

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WATER LINE CROSSING DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-16

SHEET OF

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

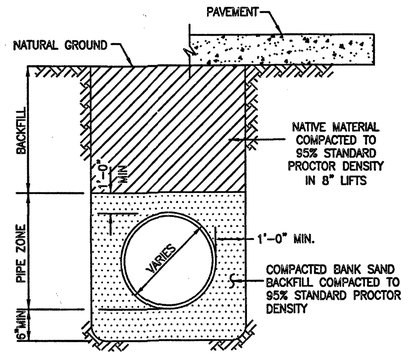
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WATER LINE CROSSING DETAILS SL-16

PROJECT NO. 13499

J:\ANGLETON DETAIL SET.dwg

PLOT TIME:



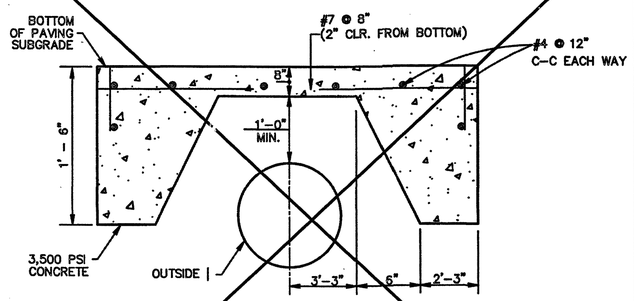
P.V.C. PIPE BEDDING & BACKFILL

N.T.S.

*SEE CONSTRUCTION NOTES

SANITARY FORCE MAIN & WATER LINE BEDDING AND BACKFILL

SL-BB-01



PROTECTIVE SLAB DETAIL

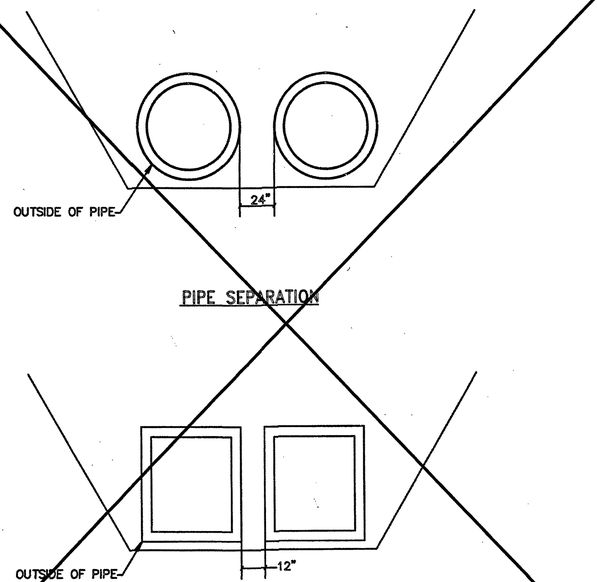
ZERO LOAD TRANSFER CONCRETE SLAB

SL-BB-04

CONSTRUCTION NOTES

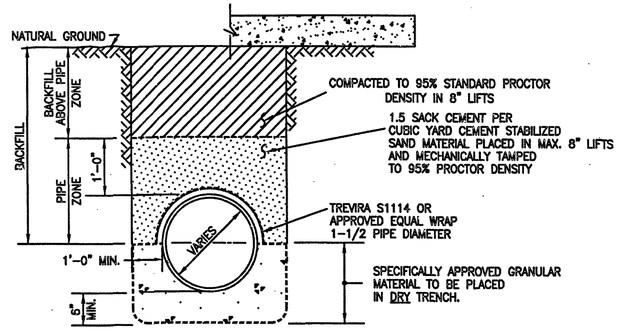
1. CONTRACTOR SHALL CONTACT CITY OF ANGLETON ENGINEERING DEPARTMENT AT (979) 849-4364 IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
2. LIMESTONE AND RECYCLED CONCRETE DIMENSIONS SHOWN ARE TYPICAL BUT MAY BE VARIED BY ORDER OF CITY ENGINEER.
3. LIMESTONE OR RECYCLED CONCRETE SHALL BE IN ACCORDANCE WITH TXDOT SPECIFICATION NO. 248 FLEXIBABLE BASE, TYPE A, GRADE 2 AGGREGATE.
4. NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS, WHEN WILL POINTING OR IN WET SAND CONDITIONS, MAINTAIN GROOUND WATER 1 (FT) BELOW BOTTOM OF TRENTCH FOR A MINIMUM OF 24-HOURS AFTER BEDDING ANND BACKFILL IS IN PLACE.
5. ALL MATERIALS SHALL BE FROM THE APPROVED PRODUCTS LIST UNLESS SPECIFICALLY APPROVED BY THE CITY ENGINEER.
6. SANITARY SEWER BEDDING FOR WET SAND CONDITIONS SHALL BE AS PER MODIFIED "A".
7. ALL SAND BEDDING FOR WATER LINES SHALL BE CLEAN, MECHANICALLY COMPACTED BANK SAND.
8. REFER TO: MANHOLE DETAILS, SANITARY, C.S.S., GENERAL, WATER CROSSING, WATER DISTRIBUTION DETAILS AND NOTES.
9. ALL BEDDING WILL BE COMPACTED TO 95% STANDARD DENSITY.
10. A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.

SL-BB-05



PIPE SEPARATION

RCB SEPARATION



MODIFIED "A"

N.T.S.

NOTE: C.S.S. SHALL BE INSTALLED A MIN. 1' ABOVE TOP OF PIPE.

SANITARY SEWER BEDDING AND BACKFILL

SL-BB-03

REFER TO:

1. *GENERAL NOTES*
2. *C.S.S. NOTES*

No.	DATE	REVISION

SEAL:

DATE

DESIGN ENGINEER:

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WATER LINE, SANITARY SEWER FORCE MAIN BEDDING DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-19

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
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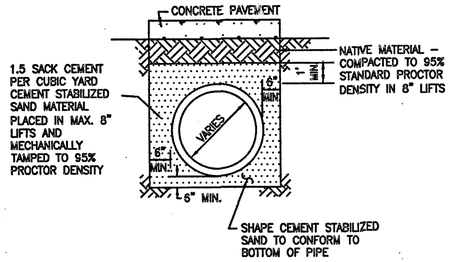
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WATER LINE, SANITARY SEWER FORCE MAIN BEDDING DETAILS SL-19

PROJECT NO. 13499

I:\Projects\2019 ANGLETON DETAIL SET.dwg

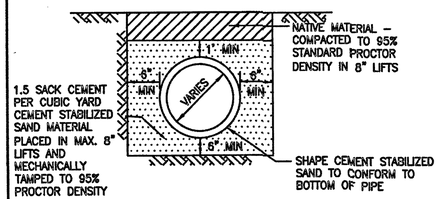


BEDDING DETAIL FOR
CONCRETE CULVERT USED
UNDER ROADWAY PAVEMENT

CLASS "A–A"

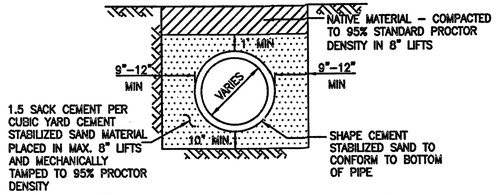
N.T.S.

SL–BB–06



BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
36" DIAMETER & SMALLER

SL–BB–07

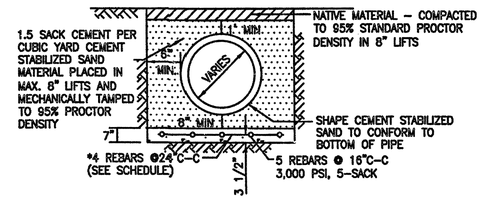


NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (10" MINIMUM FOR 42" TO 60", 14" MINIMUM FOR 66" TO 108")

BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
42" TO 108" DIAMETER
WHERE SATISFACTORY SOIL CONDITIONS EXIST

SL–BB–08

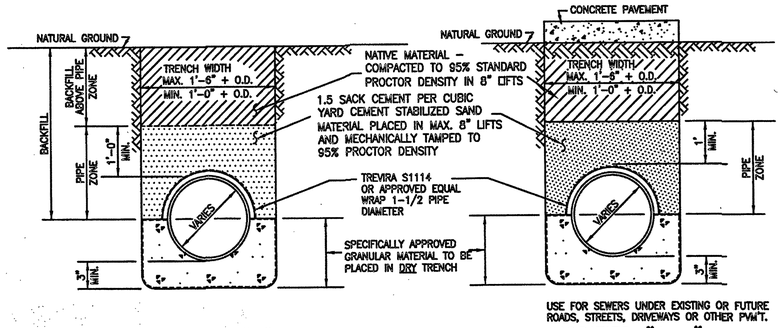


NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SEAL SLAB
BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
42" TO 108" DIAMETER
WHERE UNSATISFACTORY SOIL CONDITIONS EXIST

SL–BB–09



MODIFIED "A"

N.T.S.

1. MODOFIED BEDDING TO BE USED IN WET GROUND CONDITIONS FOR NON–COHESIVE MATERIALS WITH A SHEAR STRENGTH LESS THAN 1000 PSI.

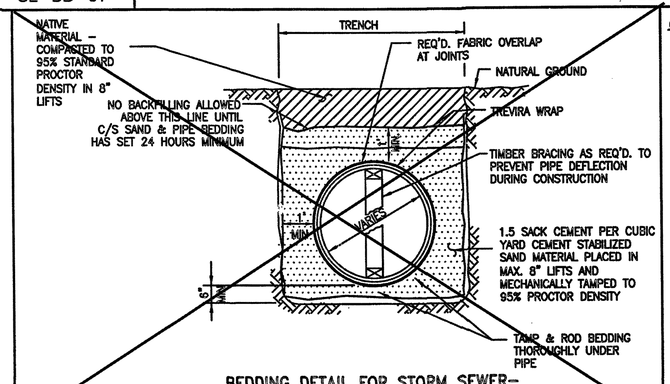
SL–BB–10

USE FOR SEWERS UNDER EXISTING OR FUTURE ROADS, STREETS, DRIVEWAYS OR OTHER PVM'T.

MODIFIED "A–A"

N.T.S.

SL–BB–11



BEDDING DETAIL FOR STORM SEWER–
CORREGATED METAL PIPE

N.T.S.

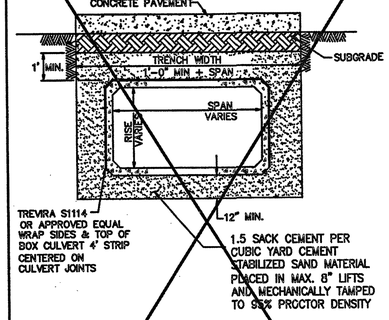
SL–BB–15

CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT THE CITY OF ANGLETON ENGINEERING DEPARTMENT IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
2. SPECIFICALLY APPROVED GRANULAR MATERIAL DIMENSIONS SHOWN ARE TYPICAL BUT MAY BE VARIED BY ORDER OF CITY ENGINEER.
3. SPECIFICALLY APPROVED GRANULAR MATERIAL SHALL BE IN ACCORDANCE WITH TXDOT SPECIFICATION No. 247 FLEXIBLE BASE, TYPE A, GRADE 2 AGGREGATE.
4. NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS. WHEN WELL POINTING OR IN WET SAND CONDITIONS, MAINTAIN GROUND WATER 1' (FT.) BELOW BOTTOM OF TRENCH FOR A MINIMUM OF 24–HRS AFTER BEDDING AND BACKFILL IS IN PLACE.
5. R.C.P. AND BOX CULVERTS SHALL BE INSTALLED WITH APPROVED GASKETS ONLY.
6. MANHOLES SHALL BE PROVIDED WHERE MODIFIED "A" OR MODIFIED "A–A" BEDDING IS USED. STACKS ARE NOT ALLOWED.
7. REFER TO: MANHOLE DETAILS, INLETS, OUTFALL AND END TREATMENT DETAILS, C.S.S., GENERAL NOTES, AND STORM NOTES.
8. SPECIFIC DESIGNS MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER FOR MANHOLE ACCESS TO BOX CULVERTS AS REQUIRED.
9. ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
10. A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.

TYPICAL SEAL SLAB
BAR SCHEDULE
(OR AS DIRECTED BY ENGINEER)

PIPE SIZE	LGT LAT #4 BARS	NO LONGIT #5 BARS
42"	5'4"	5
48"	6'8"	6
54"	6'8"	6
60"	8'0"	7
66"	8'0"	7
72"	9'4"	8
78"	9'4"	8
84"	9'4"	8
90"	10'8"	9
96"	10'8"	9
102"	12'0"	10
108"	12'0"	10

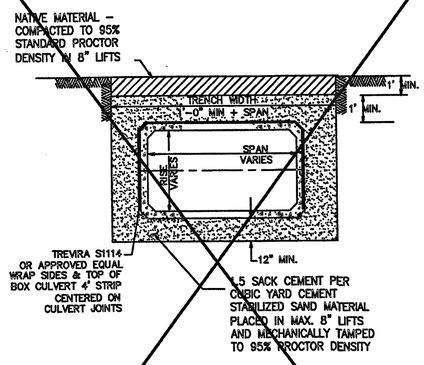


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
CULVERT UNDER ROADWAY PAVEMENT

NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SL–BB–12

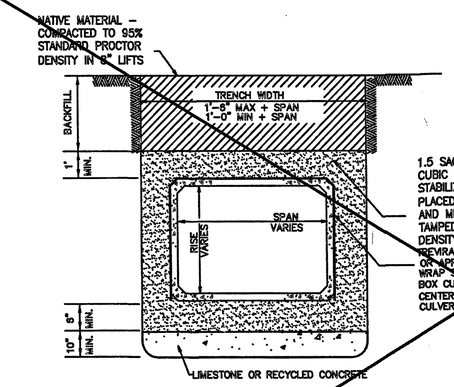


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
PLACED IN EASEMENT

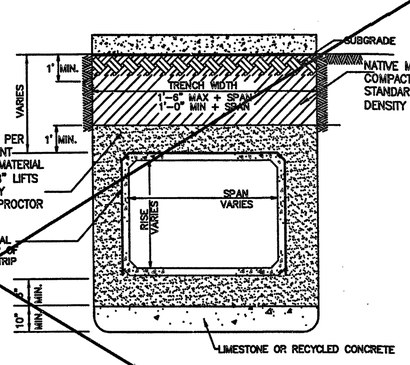
NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SL–BB–13



BEDDING DETAIL FOR
REINFORCED CONCRETE BOX CULVERT
W/MODIFIED BEDDING



BEDDING DETAIL FOR
REINFORCED CONCRETE BOX CULVERT
W/MODIFIED BEDDING
UNDER ROADWAY PAVEMENT

SL–BB–14

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849–6681 FAX: (979) 849–4689
REG. NO. F–825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER PIPE
BEDDING AND BACKFILL
DETAILS
SL–20

PROJECT NO. 13499

33

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: DATE

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

STORM SEWER PIPE BEDDING AND BACKFILL DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

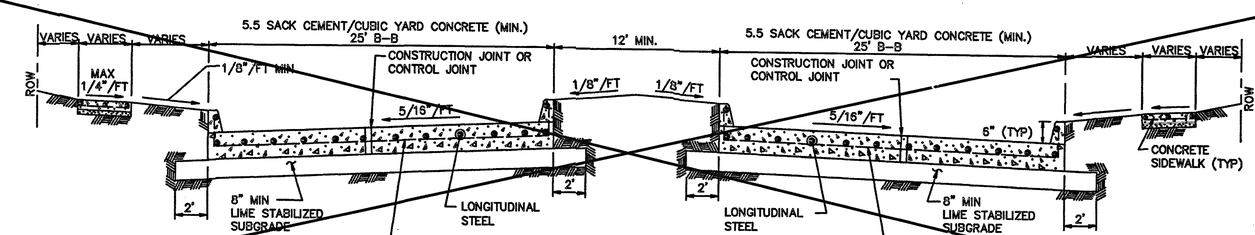
SL–20

SHEET OF

CAD FILE PATH:
PLOT DATE:
PLOT TIME:

39 ANGLETON DETAIL SET.dwg

PLOT TIME:



DOUBLE ROADWAY SECTION
N.T.S.

SL-ST-01

CONSTRUCTION NOTES:

1. 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

2. 7 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 18 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS

3. EIGHT (8) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.

4. HARD AGGREGATE IS NOT ALLOWED IN STREET PAVEMENT MIX. ADMIXTURES REQUIRE CITY OF ANGLETON PUBLIC WORKS DEPARTMENT APPROVAL.

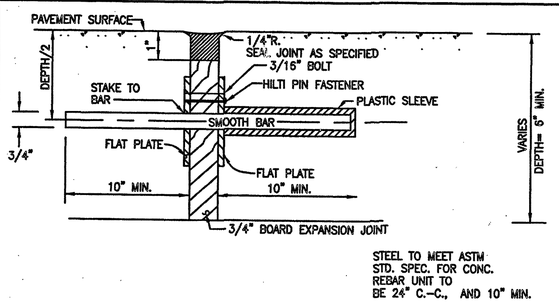
5. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED WITH SEALANT CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.

6. 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. (ELASTOMETRIC TYPE HOT POURED)

7. PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND REQUIRED ON ALL CONCRETE.

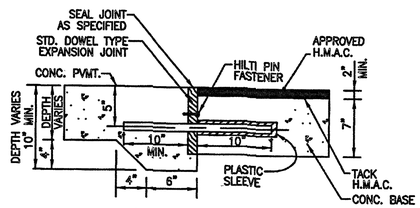
8. REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES

SL-ST-12



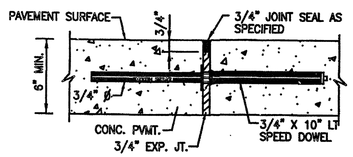
DOWEL TYPE EXPANSION JOINT
N.T.S.

SL-ST-03



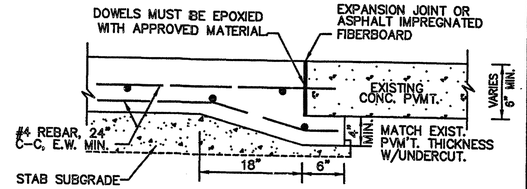
DOWEL TYPE EXPANSION JOINT
N.T.S.
(CONC. PAVING TO CONC. BASE)

SL-ST-06



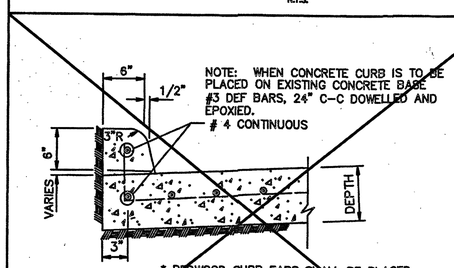
SPEED DOWEL EXPANSION JOINT
N.T.S.

SL-ST-08



UNDERCUT DETAIL WITH HEADER
N.T.S.

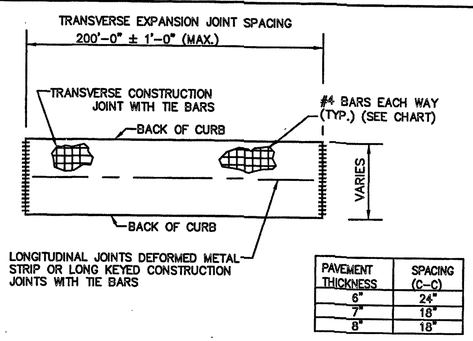
SL-ST-09



CONCRETE CURB
N.T.S.

CONSTRUCTION NOTE:
ALL NEW CURB REQUIRES 3,000 P.S.I. @ 28-DAYS.

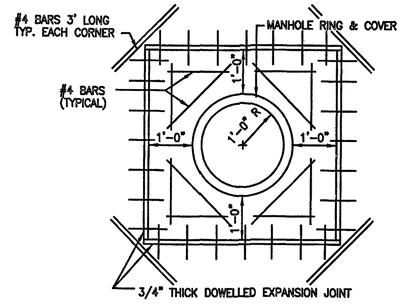
SL-ST-04



PAVEMENT THICKNESS	SPACING (C-C)
6"	24"
7"	18"
8"	18"

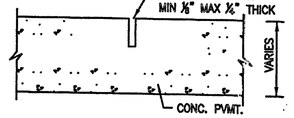
PAVING PANEL
N.T.S.

SL-ST-05



MANHOLE BLOCKOUT
N.T.S.
(STORM & SANITARY) IN PAVEMENT

SL-ST-10



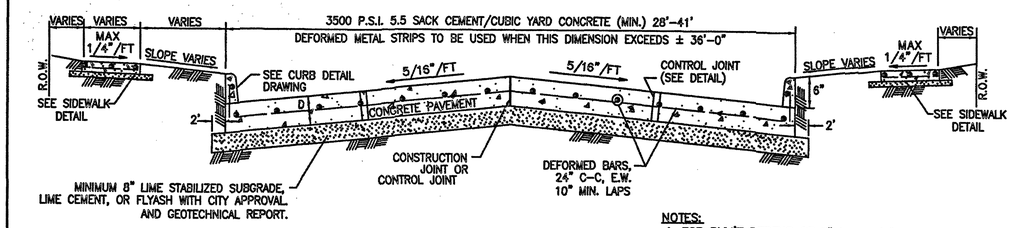
CONTROL JOINT
N.T.S.

SL-ST-11

No.	DATE	REVISION

SEAL:

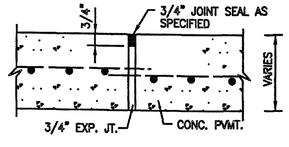
DESIGN ENGINEER: _____ DATE: _____



SINGLE ROADWAY SECTION
N.T.S.

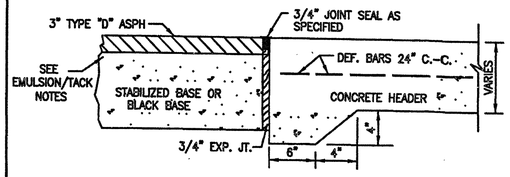
SL-ST-02

NOTES:
1. FOR PVM'T DEPTHS OF 6" USE 1/2" DEFORMED BARS, 24" C-C, 10" LAPS. ALL REINFORCING STEEL SHALL CONFORM TO GRADE 60, A.S.T.M. NO. A615. LAP SPLICES TO BE A MINIMUM OF 10 INCHES. STAGGER SPLICES IN ADJACENT BARS.



CONSTRUCTION JOINT SEAL
N.T.S.

SL-ST-12



PAVING HEADER
(FOR USE IN CONNECTING CONC. PVMT. TO ASPHALT PVMT.) (PROP. OR EXIST.)

SL-ST-07

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

CONCRETE PAVEMENT CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-21

SHEET OF

CAD FILE PATH:
PLOT DATE:

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BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

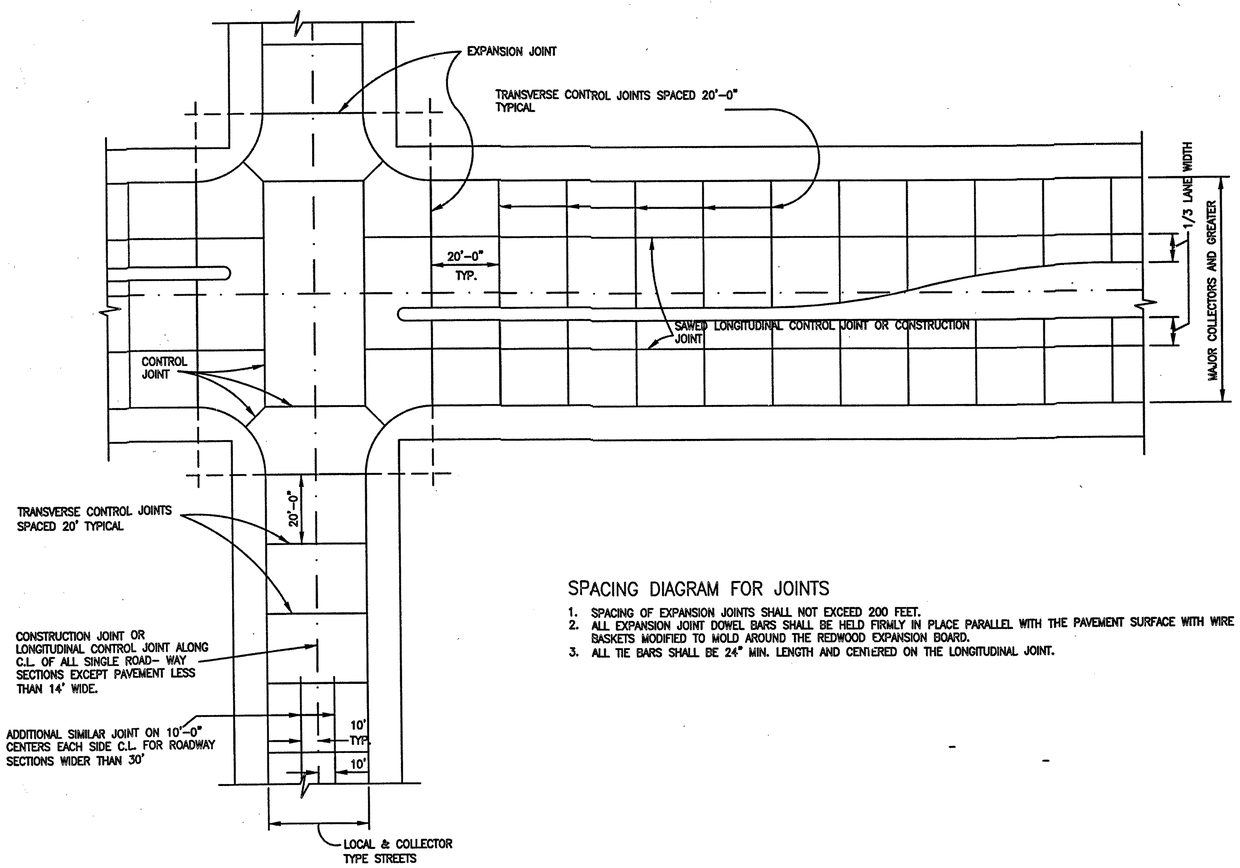
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

CONCRETE PAVEMENT CONSTRUCTION DETAILS
SL-21

PROJECT NO. 13499

89 ANGLETON DETAIL SET.dwg

PLOT TIME:



SPACING DIAGRAM FOR JOINTS

1. SPACING OF EXPANSION JOINTS SHALL NOT EXCEED 200 FEET.
2. ALL EXPANSION JOINT DOWEL BARS SHALL BE HELD FIRMLY IN PLACE PARALLEL WITH THE PAVEMENT SURFACE WITH WIRE BASKETS MODIFIED TO MOLD AROUND THE REDWOOD EXPANSION BOARD.
3. ALL TIE BARS SHALL BE 24" MIN. LENGTH AND CENTERED ON THE LONGITUDINAL JOINT.

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE: _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

CONCRETE PAVEMENT CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
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SCALE:

SL-22

SHEET OF

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NO.	DATE	DESCRIPTION	APPROVED

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936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

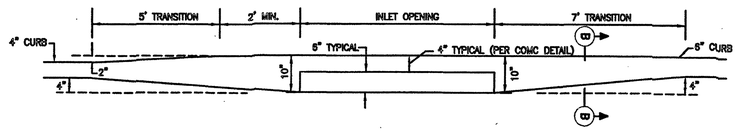
CONCRETE PAVEMENT CONSTRUCTION DETAILS
SL-22

PROJECT NO. 13499

35

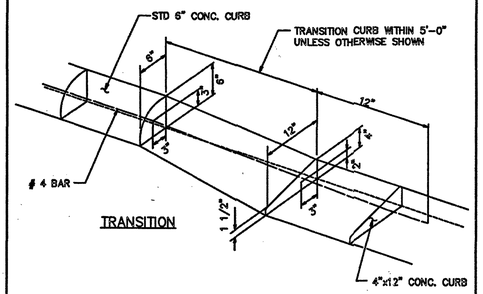
I:\99 ANGLETON DETAIL SET.dwg

PLOT TIME:



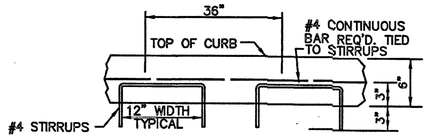
TYPICAL CURB TRANSITION FOR INLET INSTALLATION

SL-ST-13



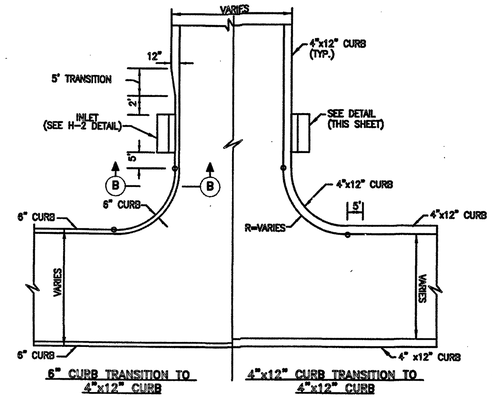
TYPICAL CURB TRANSITION

SL-ST-15



TYPICAL CONCRETE CURB REINFORCING
N.T.S.

SL-ST-16



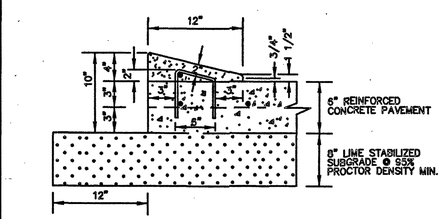
TYPICAL 4"X12" CURB W/INLET TRANSITION FOR CURB RETURNS
N.T.S.

SL-ST-14

CONSTRUCTION NOTES:

1. 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 RESIDENTIAL STREETS.
2. 7 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS
3. EIGHT (8) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.
4. 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 CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.
5. 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)
6. PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND ON ALL CONCRETE.
7. STORM WATER POLLUTION PROTECTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN TOTAL COMPLIANCE WITH THE STORM WATER QUALITY MANUAL OF THE CITY OF SUGAR LAND.
8. UNSTABLE SUBGRADE SHALL BE EXCAVATED AND REPLACED WITH CEMENT STABILIZED SAND.
9. USE 1"x2" REDWOOD STAKES FOR HEADERS.
10. EDGE ALL SIDES WITH EDGING TOOL.
11. DOWEL SHALL BE 3/4" DIAMETER, WITH MINIMUM 8" PENETRATION (BOTH SIDES).
12. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF ANGLETON OF ANY BIRDBATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.
13. REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES.
14. 1.0 LBS. OF APPROVED POLYPROPYLENE FIBER MESH PER C/Y IN 4"X12" CURBS REQUIRED.

SL-ST-20

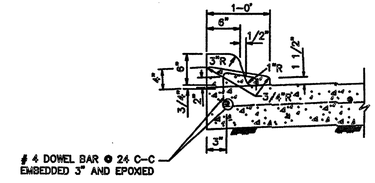


4"x12" MOUNTABLE CONCRETE CURB

NOTES:

1.) 1.0 LBS. OF APPROVED NON-METALLIC FIBER MESH PER C/Y IN 4"X12" CURBS.
2.) #3 RE-BAR STIRRUPS TO BE PLACED AT INTERVALS OF 2' (FT) C-C.
3.) #4 RE-BAR LONGITUDINAL SHALL BE TIED TO EACH STIRRUP
4.) MOUNTABLE CURB ONLY ALLOWED ON ≤ 41' (FT), UNDIVIDED, RESIDENTIAL ROADWAYS WITHIN SUBDIVISIONS.

SL-ST-17



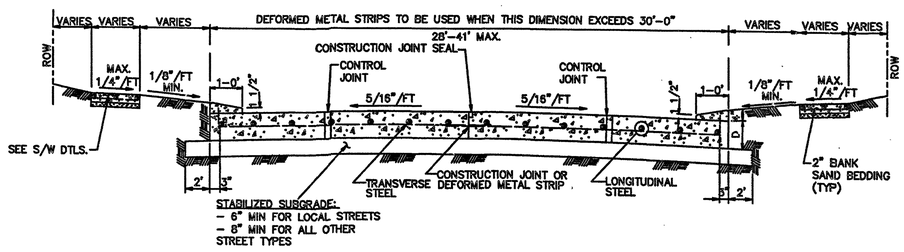
4-INCH x 12-INCH TRANSITION CURB

SL-ST-18

4"x12" MOUNTABLE CONCRETE CURB AND TRANSITION CURB NOTES:

1. 8-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS AND NON-RESIDENTIAL STREETS. RESIDENTIAL STREETS MAY BE CONSTRUCTED WITH EITHER 8-INCH CONCRETE CURB OR 4-INCH x 12-INCH CONCRETE CURB AS NOTED ON PLANS.
2. ALL 4-INCH x 12-INCH CONCRETE CURBS TO BE POURED SEPARATE FROM PROPOSED CONCRETE PAVEMENT.
3. TRANSITIONS FROM 8-INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 5 FEET (TYP.), UNLESS OTHERWISE SHOWN. REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" DETAIL IS TO BE INSTALLED.

SL-ST-20



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH 4"X12" CURB

* SEE 4" x 12" MOUNTABLE CURB DETAIL (THIS SHEET)

SL-ST-19

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

RESIDENTIAL CURB CONSTRUCTION DETAILS

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-23

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PLAN:
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VERTICAL:

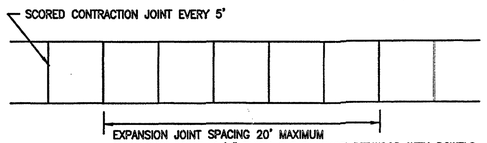
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

RESIDENTIAL CURB CONSTRUCTION DETAILS
SL-23

PROJECT NO. 13499

J:\ANGLETON DETAIL SET.dwg

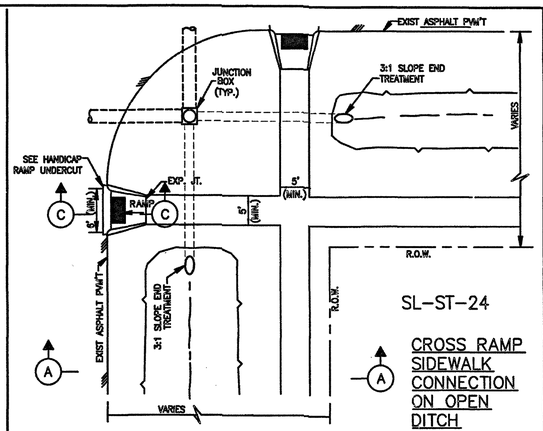
PLOT TIME:



SIDEWALK JOINT DETAILS

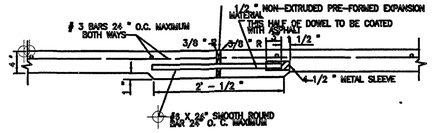
N.T.S.

SL-ST-23



SL-ST-24

CROSS RAMP SIDEWALK CONNECTION ON OPEN DITCH



B–B
EXPANSION JOINT DETAIL

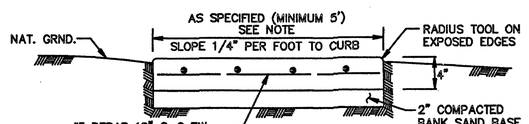
NOTES:

1. EXISTING CURB AND GUTTER TO BE SAW CUT, REMOVED AND REPLACED. DOWEL STEEL FOR MINIMUM REINFORCING OVERLAP OF 10 INCHES (10") DOWELS SHALL BE EIGHTEEN INCHES (18") LONG AND EPOXIED A MINIMUM OF (8") EIGHT INCHES INTO EXISTING PAVEMENMENT.
2. IF SIDEWALKS ARE NEITHER EXISTING NOR PROPOSED WHERE WHEELCHAIR RAMP ACCESS IS REQUIRED, CONCRETE SIDEWALKS SURFACE 4 1/2" THICK SHALL BE INSTALLED TO PROVIDE ACCESS TO THE PEDESTRIAN PUSH BUTTONS.
3. DETECTABLE WARNINGS REQUIRED BY T.A.S. SECTIONS 4.1 AND 4.7 SHALL COMPLY WITH T.A.S. SECTION 4.29
4. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACE SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE.
5. DETECTABLE WARNING SURFACE SHALL COVER THE ENTIRE WIDTH AND DEPTH OF RAMP.
6. DETECTABLE WARNINGS SHALL BE INSTALLED WITH PAVERS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
7. CONCRETE PAVER UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C-935, C-33, AND SHALL BE PLACED IN A TWO BY TWO UNIT BASKET WEAVE PATTERN, UNLESS SHOWN OTHERWISE IN THE PLANS.
8. CONCRETE PAVER UNITS SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
9. CONCRETE PAVER UNIT COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR THAT PROVIDES A LIGHT REFLECTIVE THAT SIGNIFICANTLY CONTRASTS WITH THE ADJACENT SURFACES. ADJACENT SURFACES INCLUDE SIDE FLARES.
10. CONCRETE PAVER UNITS SHALL BE SAW CUT ONLY, AND ANY CUT UNIT SHALL NOT BE LESS THAN 25% OF A FULL UNIT.

CONSTRUCTION NOTES:

1. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0"
2. EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD WITH DOWELS.
3. SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO WIDTH OF SIDEWALK.
4. ALL EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS.
5. 4 INCH, 5 SACK CEMENT PER CUBIC YARD CONCRETE, 3000 PSI. REINFORCED CONCRETE WITH #3 BARS, 18 INCHES C-C, FOR SIDEWALKS, #4 BARS 18" C-C FOR WHEEL CHAIR RAMPS IS THE MINIMUM ACCEPTED. MINIMUM 3 LONGITUDINAL BARS. FIBER REINFORCING SIDEWALKS-STEEL AND POLYPROPYLENE BLENDED FIBER REINFORCEMENT SYSTEM SUCH AS NOVOMESH ø3 AS MANUFACTURED BY S.I. CONCRETE SYSTEMS (OR PRE-APPROVED EQUAL) MAY BE USED AS AN ALTERNATE TO CONVENTIONAL REBAR REINFORCING AT A DOSAGE RATE OF 24 LBS. PER CUBIC YARD OF CONCRETE.
6. USE RADIUS TOOL ON ALL EXPOSED EDGES.
7. TOP OF THE SIDEWALK ELEVATION TO BE TOP OF CURB.
8. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 526 IN THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
9. REFER TO GENERAL NOTES AND CONCRETE/PAVING NOTES.
10. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS.

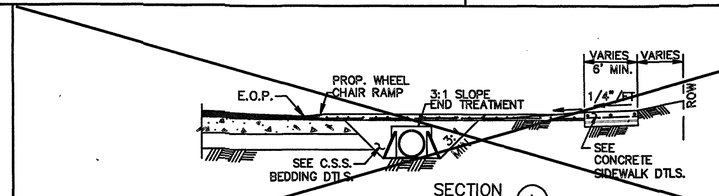
SL-ST-34



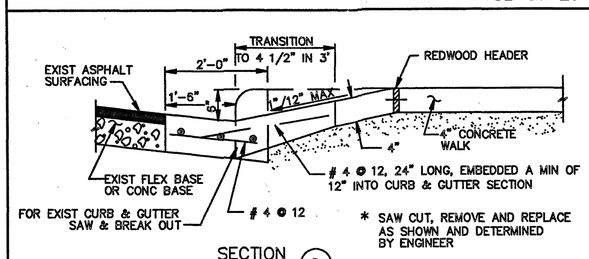
CONCRETE SIDEWALK

NOTE:
BANK SAND IS DEFINED AS A WELL-GRADED SAND, FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER, MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM GROUP SYMBOL SW CRITERIA W/ A PLASTICITY INDEX OF ≤ 10. AND NO MORE THAN 12% OF MATERIAL CAN PASS THE No. 200 SIEVE.

SL-ST-29

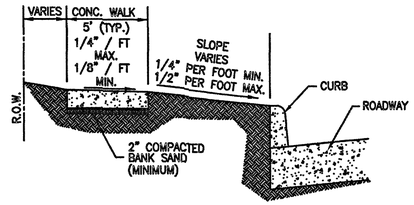


SL-ST-25



HANDICAP RAMP CURB & GUTTER*

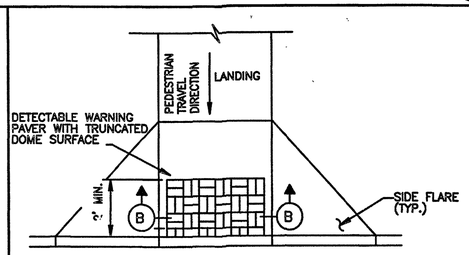
SL-ST-26



NOTE:
SEE SIDEWALK, CONC/PAVING, AND GENERAL NOTES

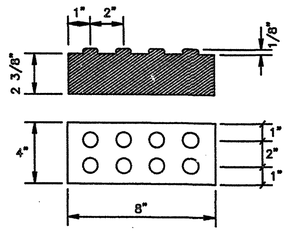
TYPICAL SINGLE ROADWAY SIDEWALK

SL-ST-28



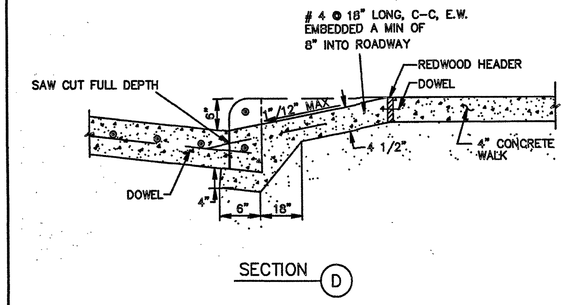
TRUNCATED DOME PATTERN CURB RAMP

SL-ST-31



CONCRETE PAVER WITH TRUNCATED DOME SURFACE

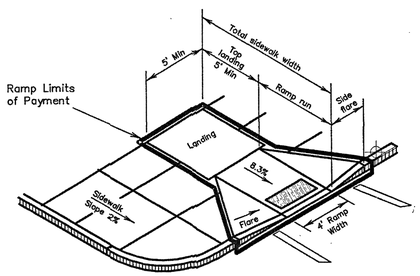
SL-ST-32



HANDICAP RAMP UNDERCUT

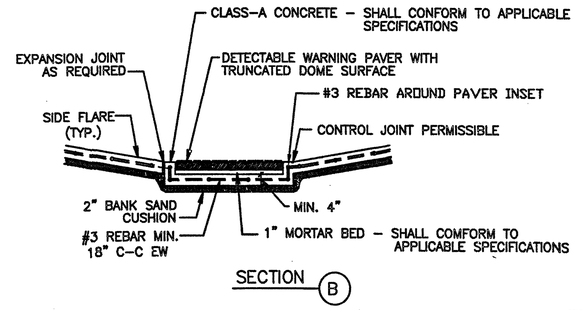
SL-ST-27

1. STANDARD FLARED SINGLE RAMPS ARE ALLOWED AT LOCAL/LOCAL STREET CROSSINGS



WHEELCHAIR RAMP SIDEWALK CONNECTION

SL-ST-30



SL-ST-33

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WHEEL CHAIR RAMP & SIDEWALK DETAILS I

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-25
SHEET OF

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121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

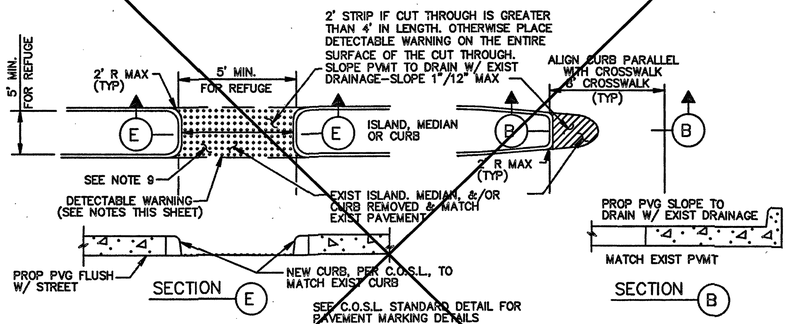
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WHEEL CHAIR RAMP & SIDEWALK DETAILS I
SL-25

PROJECT NO. 13499

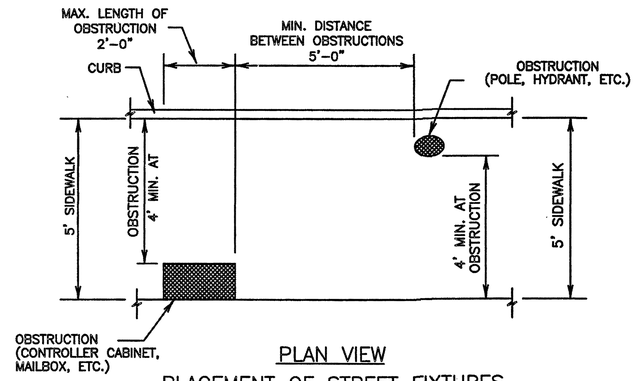
J:\99 ANGLETON DETAIL SET.dwg

PLOT TIME:



FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

SL-ST-35



PLAN VIEW

PLACEMENT OF STREET FIXTURES

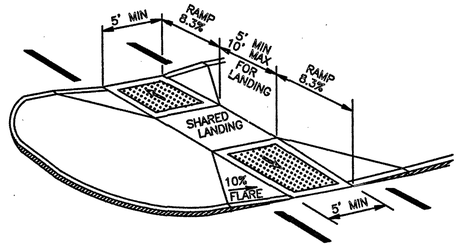
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

SL-ST-36

NOTES:

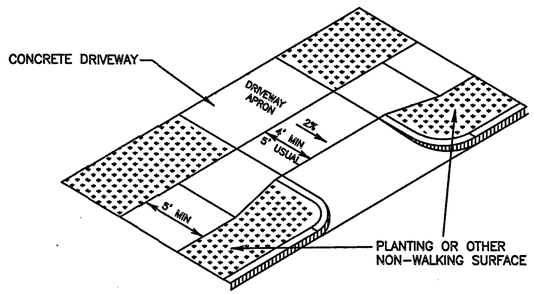
1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED
2. THE MINIMUM SIDEWALK WIDTH IS 5' (FEET). THE LANDING SHALL BE 5' x 5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS 2%. USUAL SIDEWALK CROSS SLOPE EQUALS 1.5%. CHANGES IN LEVEL GREATER THAN 1/4" (IN.) ARE NOT PERMITTED.
3. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 5' x 5' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GREATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6" (IN.) OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES, WITH THE FOLLOWING EXCEPTIONS:
   A.) HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
   B.) THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. WHERE STRUCTURALLY IMPRACTICAL TO ACHIEVE TEXAS ACCESSIBILITY STANDARDS (TAS) COMPLIANCE, THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS, WITHIN THE PUBLIC R.O.W., MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY WITHOUT INVOKING TEXAS ACCESSIBILITY STANDARDS (TAS) VARIANCES FOR LANDINGS OR HANDRAILS. WHERE A CONTINUOUS GRADE GREATER THAN 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE ON ONE OR BOTH SIDES OF THE SIDEWALK TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
6. RAMP TEXTURES MUST CONSIST OF TRUNCATED DOME SURFACES, IN ACCORDANCE WITH ADA AND TEXAS DEPARTMENT OF LICENSING AND REGULATIONS (TDLR), TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. TEXTURES ALSO SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHALL BE A MINIMUM OF 5' (FT.) WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
9. SMALL CHANNELIZATION ISLANDS, WHICH CAN NOT PROVIDE A MINIMUM 5' x 5' LANDING AT THE TOP OF RAMPS, SHALL BE CUT THROUGH LEVEL WITH THE SURFACE OF THE STREET.
10. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
11. EXISTING FEATURES THAT COMPLY WITH T.A.S. MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
12. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.

SL-ST-40



CURB RAMPS AT MEDIAN ISLANDS

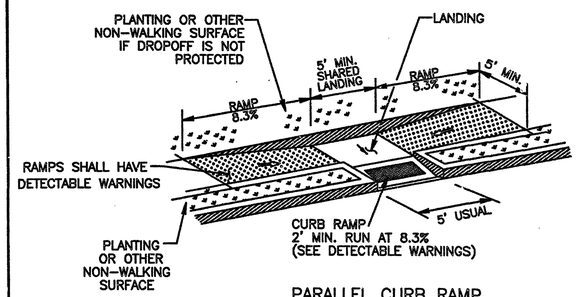
SL-ST-37



SETBACK SIDEWALK

SIDEWALK TREATMENT AT DRIVEWAYS

SL-ST-38



PARALLEL CURB RAMP

SL-ST-39

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WHEEL CHAIR RAMP & SIDEWALK DETAILS II

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-26

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED _____
DATE _____

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849-6881 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
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REGISTERED PROFESSIONAL ENGINEER

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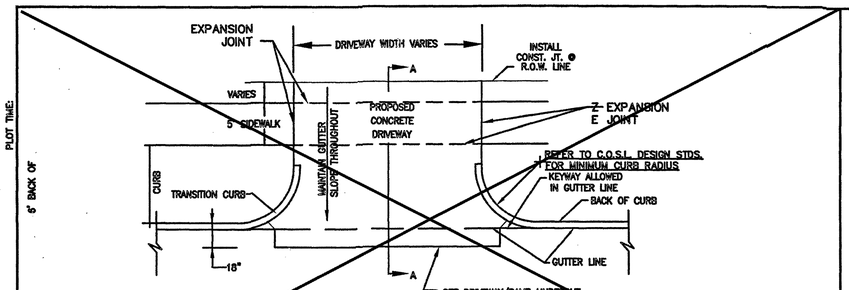
WHEEL CHAIR RAMP & SIDEWALK DETAILS II
SL-26

PROJECT NO. 13499

J:\Projects\13499 ANGLETON DETAIL SET.dwg

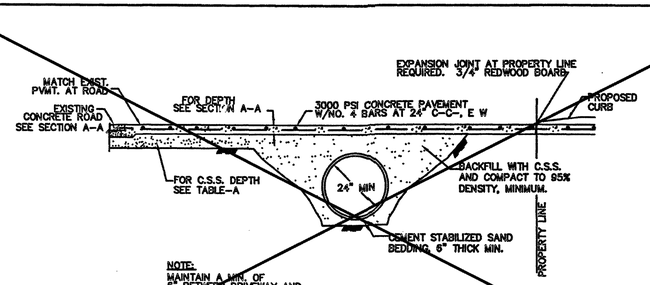
PLOT TIME:



6" CONCRETE CURB DRIVEWAY PLAN

N.T.S.

SL-ST-41



CONCRETE APRON DETAIL - DRIVEWAY PROFILE FOR CULVERT DRAINAGE

N.T.S.

SL-ST-42

SL-ST-49

NOTES:

1.) SAW CUT & BREAKOUT NO MORE THAN 72 HOURS PRIOR TO PROPOSED CONCRETE PLACEMENT. NOTIFY CITY OF ANGLETON PRIOR TO CUT.

2.) UNSTABLE SUBGRADE SHALL BE OVER EXCAVATED & REPLACED WITH CONCRETE.

3.) IT IS CONTRACTOR'S RESPONSIBILITY TO NOTIFY CITY OF ANGLETON OF ANY BIRD BATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.

4.) USE 1"x2" TREATED REDWOOD FOR HEADER.

5.) EDGE ALL SIDES WITH EDGING TOOL AND BROOM FINISH

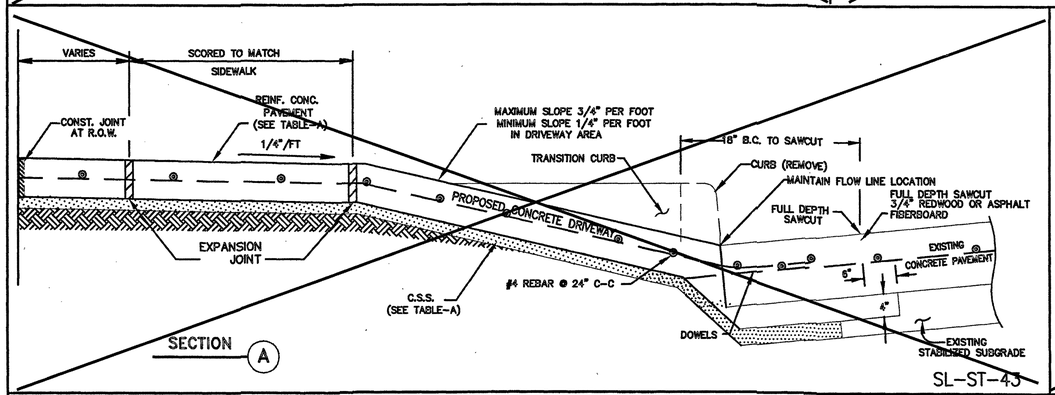
6.) FOR INDUSTRIAL DRIVES, PAVEMENT SHALL HAVE A DEPTH OF 8" (IN).

7.) EXPANSION JOINT AT PROPERTY LINE REQUIRED. 3/4" REDWOOD BOARD WITH No. 4 DOWELS MINIMUM.

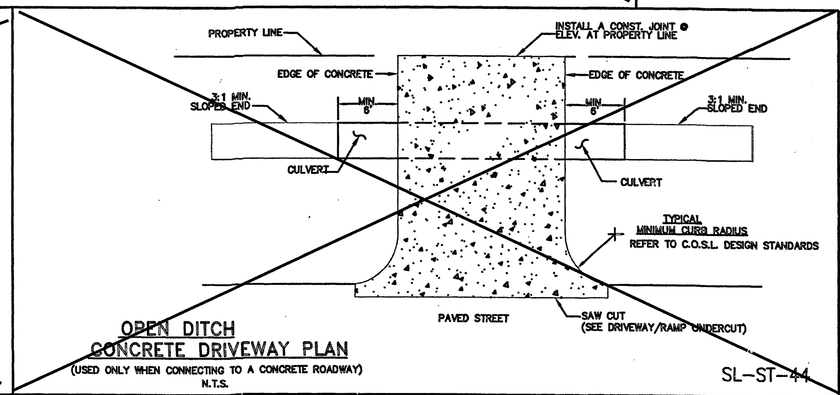
8.) MAXIMUM ALLOWABLE DRIVEWAY GRADE IN PULIC R.O.W. IS 5%.

9.) DRIVEWAY GRADE MUST MEET A.D.A AND T.A.S. SIDEWALK SLOPE, SIDEWALKS MUST BE SCORED TO MATCH ADJACENT SIDEWALK. IF SLOPE IS CONTINUED THROUGH THE R.O.W. LINE, PROVIDE A 3/4" REDWOOD EXPANSION JOINT WITH DOWELS AT R.O.W. LINE.

10.) REFER TO GENERAL , C.S.S., ASPHALT, AND CONCRETE PAVEMENT NOTES.



SL-ST-43



OPEN DITCH CONCRETE DRIVEWAY PLAN

(USED ONLY WHEN CONNECTING TO A CONCRETE ROADWAY)

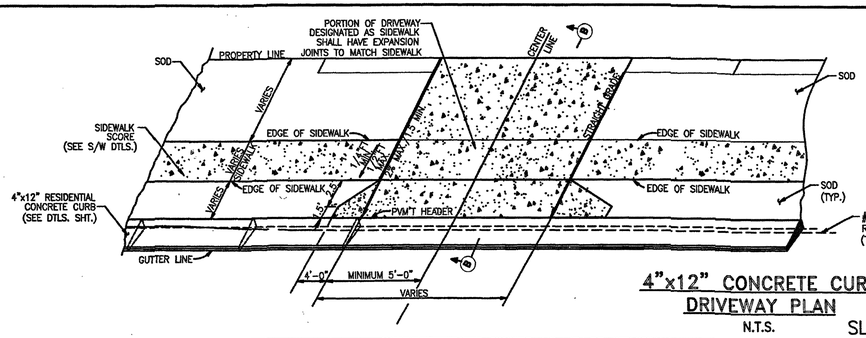
N.T.S.

SL-ST-44

TABLE-A

CEMENT STABILIZED SAND 2-SK/C.Y.	
RESIDENTIAL	4" MINIMUM
COMMERCIAL	6" MINIMUM
INDUSTRIAL	8" MINIMUM
REINFORCED CONCRETE PAVEMENT 3,000 PSI MIN	
RESIDENTIAL	4" MINIMUM
COMMERCIAL	6" MINIMUM
INDUSTRIAL	8" MINIMUM

DRIVEWAY PAVEMENT CONSTRUCTION TABLE



4"x12" CONCRETE CURB DRIVEWAY PLAN

N.T.S.

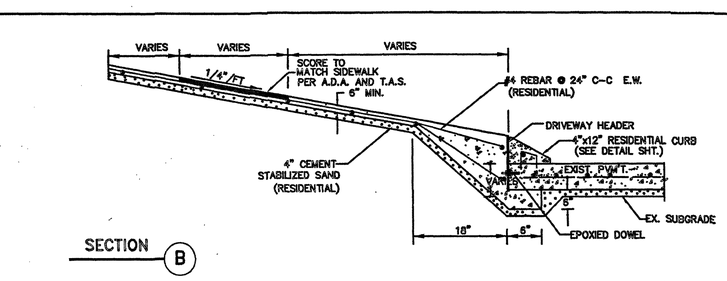
SL-ST-45

ASPHALT DRIVEWAY PLAN

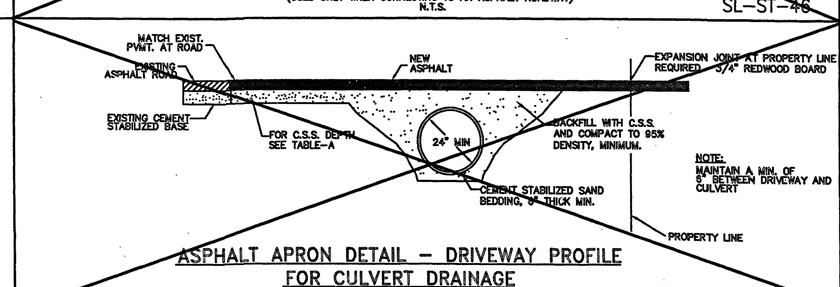
(USED ONLY WHEN CONNECTING TO AN ASPHALT ROADWAY)

N.T.S.

SL-ST-46



SL-ST-47



ASPHALT APRON DETAIL - DRIVEWAY PROFILE FOR CULVERT DRAINAGE

N.T.S.

SL-ST-48

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

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DRIVEWAY CONSTRUCTION DETAILS
SL-27

PROJECT NO. 13499

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CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

DRIVEWAY CONSTRUCTION DETAILS

JOB No.:
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DRAWN BY:
CHECKED BY:
SCALE:

SL-27
SHEET OF

9 ANGLETON DETAIL SET.dwg

PLOT TIME:

HYPER-CHLORINATED WATER NOTES

1. HYPER-CHLORINATED WATER SHALL NOT BE DISCHARGED TO THE STORM SEWER OR DRAINAGE SYSTEM UNLESS THE CHLORINE CONCENTRATION IS REDUCED TO 4 PPM OR LESS BY CHEMICALLY TREATING THE DECHLORINATE OR BY ONSITE RETENTION UNTIL NATURAL ATTENUATION OCCURS.
2. DISCHARGE OF HIGH FLOW RATE AND VELOCITIES SHALL BE DIRECTED TO VELOCITY DISSIPATION DEVICES.
3. CHLORINE CAN BURN VEGETATION, SO IT SHOULD NOT BE USED TO WATER VEGETATION THAT IS BEING USED FOR STABILIZATION, VEGETATED FILTERS OR BUFFERS, OR OTHER VEGETATION TO BE PRESERVED.
4. HYPER-CHLORINATED WATER MAY BE DISCHARGED TO AN ONSITE RETENTION AREA UNTIL NATURAL ATTENUATION OCCURS. THE AREA MAY BE A DRY STORMWATER RETENTION BASIN, OR A PORTION OF THE SITE MAY BE GRADED TO FORM A TEMPORARY PIT OR BERMED AREA.
5. NATURAL ATTENUATION OF THE CHLORINE MAY BE AIDED BY AERATION. AIR CAN BE ADDED TO THE WATER BY DIRECTING THE DISCHARGE OVER A ROUGH SURFACE BEFORE IT ENTERS THE TEMPORARY RETENTION AREA OR AN AERATION DEVICE CAN BE PLACED IN THE RETENTION AREA.
6. ONSITE DISCHARGE MAY REQUIRE SEVERAL HOURS TO A FEW DAYS BEFORE THE WATER IS SAFE TO DISCHARGE. THE RATE AT WHICH CHLORINE WILL ATTENUATE IS AFFECTED BY SOIL CONDITIONS AND WEATHER CONDITIONS. ATTENUATION WILL OCCUR QUICKEST DURING WARM, SUNNY, AND DRY PERIODS.

SANITARY WASTE NOTES

1. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE NUMBER OF PORTABLE TOILETS BASED ON THE NUMBER OF EMPLOYEES USING THE TOILETS AND THE HOURS THEY WILL WORK.
2. SANITARY FACILITIES SHALL BE PLACED ON A MINIMUM OF 50 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE, CHANNELS OR SURFACE WATERS. IF UNABLE TO MEET THE 50 FOOT REQUIREMENT DUE TO SITE CONFIGURATION, PORTABLE TOILETS SHALL BE A MINIMUM OF 20 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE CHANNELS OR SURFACE WATER AND SECONDARY CONTAINMENT SHALL BE PROVIDE IN CASE OF SPILLS.
3. THE LOCATION OF THE PORTABLE TOILETS SHALL BE ACCESSIBLE TO MAINTENANCE TRUCKS WITHOUT DAMAGING EROSION AND SEDIMENT CONTROLS OR CAUSING EROSION OR TRACKING PROBLEMS.
4. SANITARY FACILITIES SHALL BE FULLY ENCLOSED AND DESIGNED IN A MANNER THAT MINIMIZES THE EXPOSURE OF SANITARY WASTE TO PRECIPITATION AND STORMWATER RUNOFF.
5. WHEN HIGH WINDS ARE EXPECTED, PORTABLE TOILETS SHALL BE ANCHORED OR OTHERWISE SECURED TO PREVENT THEM FROM BEING BLOWN OVER.
6. THE COMPANY THAT SUPPLIES AND MAINTAINS THE PORTABLE TOILETS SHALL BE NOTIFIED IMMEDIATELY IF A TOILET IS TIPPED OVER OR DAMAGED IN A WAY THAT THE RESULTS IN A DISCHARGE. DISCHARGED SOLID MATTER SHALL BE VACUUMED INTO A SEPTIC TRUCK BY THE COMPANY THAT MAINTAINS THE TOILETS.
7. THE OPERATOR OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) SHALL BE NOTIFIED IF A DISCHARGE FROM THE PORTABLE TOILETS ENTERS THE MS4 OR A NATURAL CHANNEL.
8. SANITARY FACILITIES SHALL NOT BE PERMITTED ON PUBLIC SIDEWALKS, STREETS OR INLETS.

DEBRIS AND TRASH NOTES

1. ALL WASTE SOURCES AND STORAGE AREAS SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS AND OTHER WATERS, IF THE SITE CONFIGURATION PROVIDES SUFFICIENT SPACE TO DO SO. IN NO CASE SHALL MATERIAL AND WASTE SOURCES BE CLOSER THAN 20 FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS, AND OTHER WATERS.
2. CONSTRUCTION WASTE AND TRASH SHALL BE STORED IN A MANNER THAT MINIMIZES ITS EXPOSURE TO PRECIPITATION AND STORMWATER RUNOFF.
3. WHENEVER POSSIBLE, MINIMIZE PRODUCTION OF DEBRIS AND TRASH.
4. INSTRUCT CONSTRUCTION WORKERS IN PROPER DEBRIS AND TRASH STORAGE AND HANDLING PROCEDURES.
5. SEGREGATE POTENTIAL HAZARDOUS WASTE FROM NON-HAZARDOUS CONSTRUCTION SITE DEBRIS.
6. PROHIBIT LITTERING BY WORKERS AND VISITORS.
7. POLICE SITE DAILY FOR LITTER AND DEBRIS.
8. ENFORCE SOLID WASTE HANDLING AND STORAGE PROCEDURES.
9. IF FEASIBLE, RECYCLE CONSTRUCTION AND DEMOLITION DEBRIS SUCH AS WOOD, METAL, AND CONCRETE.
10. TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AT REGULAR INTERVALS THAT ARE SCHEDULED TO EMPTY CONTAINERS WHEN THEY ARE 90 PERCENT FULL OR MORE FREQUENTLY.
11. GENERAL CONSTRUCTION DEBRIS MAY BE HAULED TO A LICENSED CONSTRUCTION DEBRIS LANDFILL.
12. USE WASTE AND RECYCLING HAULERS/FACILITIES APPROVED BY THE LOCAL MUNICIPALITY.
13. CHIPPING OF TREES AND BRUSH FOR USE SUCH AS MULCH IS PREFERRED ALTERNATIVE TO OFFSITE DISPOSAL.
14. NO WASTE, TRASH, OR DEBRIS SHALL BE BURIED, BURNED OR OTHER WISE DISPOSED OF ONSITE.
15. CLEARLY MARK ON ALL DEBRIS AND TRASH CONTAINERS WHICH MATERIALS ARE ACCEPTABLE. FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ONSITE SOLID WASTE STORAGE AND DISPOSAL PROCEDURES DAILY.

CONCRETE SAWCUTTING WASTE NOTES

1. DURING SAWCUTTING OPERATIONS, THE SLURRY AND CUTTINGS SHALL BE CONTINUOUSLY VACUUMED OR OTHERWISE RECOVERED AND NOT BE ALLOWED TO DISCHARGE FROM THE SITE.
2. IF THE PAVEMENT TO BE CUT IS NEAR A STORM DRAIN INLET, THE INLET SHALL BE BLOCKED BY SANDBAGS OR EQUIVALENT TEMPORARY MEASURES TO PREVENT THE SLURRY FROM ENTERING THE INLET. REMOVE THE SANDBAGS IMMEDIATELY AFTER COMPLETING SAWCUTTING OPERATIONS, SO THEY DO NOT CAUSE DRAINAGE PROBLEMS DURING STORM EVENTS.
3. SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO REMAIN ON THE PAVEMENT TO DRY OUT
4. DEVELOP PRE-DETERMINED, SAFE SLURRY DISPOSAL AREAS.
5. COLLECTED SLURRY AND CUTTINGS SHOULD BE IMMEDIATELY HAULED FROM THE SITE FOR DISPOSAL AT A WASTE FACILITY. IF THIS IS NOT POSSIBLE, THE SLURRY AND CUTTINGS SHALL BE DISCHARGED INTO ONSITE CONTAINMENT.
6. THE ONSITE CONTAINMENT MAY BE EXCAVATED OR BERMED PIT LINED WITH PLASTIC MINIMUM OF 10 MILLIMETERS THICK. IF THE PROJECT INCLUDES PLACEMENT OF NEW CONCRETE, SLURRY FROM SAWCUTTING MAY BE DISPOSED OF IN FACILITIES DESIGNATED FOR THE WASHOUT OF CONCRETE TRUCKS INSTEAD CONSTRUCTING A SEPARATE CONTAINMENT.
7. THE CONTAINMENT SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS, AND OTHER WATERS, IF THE SITE CONFIGURATION PROVIDES SUFFICIENT SPACE TO DO SO. IN NO CASE SHALL THE COLLECTION AREA BE CLOSER THAN 20 FEET FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS AND OTHER WATERS.
8. SEVERAL, PORTABLE, PRE-FABRICATED, CONCRETE WASHOUT, COLLECTION BASINS ARE COMMERCIALLY AVAILABLE AND ARE AN ACCEPTABLE ALTERNATIVE TO AN ONSITE CONTAINMENT PIT.
9. REMOVE WASTER CONCRETE WHEN THE CONTAINMENT IS HALF FULL. ALWAYS MAINTAIN A MINIMUM OF ONE FOOT FREEBOARD.
10. ONSITE EVAPORATION OF SLURRY WATER AND RECYCLING OF THE CONCRETE WASTE IS THE PREFERRED DISPOSAL METHOD. WHEN THIS IS NOT FEASIBLE, DISCHARGE FROM THE COLLECTION AREA SHALL ONLY BE ALLOWED IF A PASSIVE TREATMENT SYSTEM IS USED TO REMOVE THE FINES. MECHANICAL MIXING IS REQUIRED IN THE COLLECTION AREA. THE pH MUST BE TESTED, AND DISCHARGED IS ALLOWED IN IF THE pH DOES NOT EXCEED 8.0. THE pH MAY BE LOWERED BY ADDING SULFURIC ACID TO THE SLURRY WATER.
11. CARE SHALL BE EXERCISED WHEN TREATING THE SLURRY WATER FOR DISCHARGE. MONITORING MUST BE IMPLEMENTED TO VERIFY THAT DISCHARGES FROM THE COLLECTION AREA DO NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.
12. GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SILT FENCE SHOULD NOT BE USED TO CONTROL SAWCUTTING WASTE, SINCE THE GRAIN SIZE IS SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.

SPILL AND LEAK RESPONSE NOTES

1. RECORDS OF RELEASES THAT EXCEED THE REPORTABLE QUANTITY (RQ) FOR OIL AND HAZARDOUS SUBSTANCES SHOULD BE MAINTAINED IN ACCORDANCE WITH THE FEDRAL AND STATE REGULATIONS.
2. EMERGENCY CONTACT INFORMATION AND SPILL RESPONSE PROCEDURES SHALL BE POSTED IN A READILY AVAILABLE REA FOR ACCESS BY ALL EMPLOYEES AND SUBCONTRACTORS.
3. SPILL CONTAINMENT KITS SHOULD BE MAINTAINED FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS THAT ARE REGULARLY ONSITE. MATERIALS IN KITS SHOULD BE BASED ON CONTAINMENT GUIDELINES IN THE MATERIALS SAFETY AND DATA SHEETS (MSDSS) FOR THE SUBSTANCE MOST FREQUENTLY ONSITE.
4. SPILL KITS ARE INTENDED FOR RESPONSE TO SMALL SPILLS, TYPICALLY LESS THAN 5 GALLONS, OF SUBSTANCES THAT ARE NOT EXTREMELY HAZARDOUS.
5. SIGNIFICANT SPILLS OR OTHER RELEASES WARRANT IMMEDIATE RESPONSE BY TRAINED PROFESSIONALS.
6. SUSPECTED JOB-SITE CONTAMINATION SHOULD BE IMMEDIATELY REPORTED TO REGULATORY AUTHORITIES AND PROTECTIVE ACTIONS TAKEN.
7. THE CONTRACTOR SHOULD BE REQUIRED TO DESIGNATE A SITE SUPERINTENDENT, FOREMAN, SAFETY OFFICER, OR OTHER SENIOR PERSON WHO IS ONSITE DAILY TO BE THE SPILL AND LEAK RESPONSE COORDINATOR (SLRC) AND MUST HAVE KNOWLEDGE OF AND BE TRAINED IN CORRECT SPILL AND LEAK RESPONSE PROCEDURES.

SUBGRADE STABILIZATION NOTES

1. MINIMIZE THE DISCHARGE OF THE CHEMICAL STABILIZERS BY THE CONTRACTOR LIMITING THE AMOUNT OF STABILIZING AGENT ONSITE TO THAT WHICH CAN BE THOROUGHLY MIXED AND COMPACTED BY THE END OF EACH WORKDAY.
2. STABILIZERS SHALL BE APPLIED AT RATES THAT RESULT IN NO RUN OFF.
3. STABILIZATION SHALL NOT OCCUR IMMEDIATELY BEFORE AND DURING RAINFALL EVENTS.
4. NO TRAFFIC OTHER THAN WATER TRUCKS AND MIXING EQUIPMENT SHALL BE ALLOWED TO PASS OVER THE AREA BEING STABILIZED UNTIL AFTER COMPLETION OF MIXING THE CHEMICAL.
5. AREA ADJACENT AND DOWNSTREAM OF STABILIZED AREAS SHALL BE ROUGHENED TO INTERCEPT CHEMICAL RUNOFF AND REDUCE RUNOFF VELOCITY.
6. GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SILT FENCE SHOULD NOT BE USED TO TREAT CHEMICAL RUNOFF, BECAUSE THE CHEMICALS ARE DISSOLVED IN THE WATER AND WON'T BE AFFECTED BY A BARRIER AND THE SUSPENDED SOLIDS ARE SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.
7. IF SOIL STABILIZERS ARE STORED ONSITE, THEY SHALL BE CONSIDERED HAZARDOUS MATERIAL AND SHALL BE MANAGED ACCORDING TO THE CRITERIA OF CHEMICAL MANAGEMENT TO CAPTURE ANY ACCIDENTAL LIME OR CHEMICAL OVERFLOW.
8. THE CONTRACRTOR SHALL INSTALL BMP'S TO ALL INLETS AND OPENINGS CONNECTED TO THE STORM SEWER SYSTEMS TO PREVENT LIME FROM ENTERING THE MS4 SYSTEM.

SANDBLASTING WASTE NOTES

1. THE CONTRACTOR SHOULD BE REQUIRED TO DESIGNATE THE SITE SUPERINTENDENT, FOREMAN, OR OTHER PERSON WHO IS RESPONSIBLE FOR SANDBLASTING TO ALSO BE RESPONSIBLE FOR SANDBLASTING WASTE MANAGEMENT.
2. PROHIBIT THE DISCHARGE OF SANDBLASTING WASTE.
3. USE ONLY INERT, NON-DEGRADABLE SANDBLAST MEDIA.
4. USE APPROPRIATE EQUIPMENT FOR THE JOB; DO NOT OVER-BLAST.
5. WHENEVER POSSIBLE, BLAST IN A DOWNWARD DIRECTION.
6. CEASE BLASTING ACTIVITIES IN HIGH WINDS OR IF WIND DIRECTION COULD TRANSPORT GRIT TO DRAINAGE FACILITIES.
7. INSTALL DUST SHIELDING AROUND SANDBLASTING AREAS.
8. COLLECT AND DISPOSE OF ALL SPENT SANDBLAST GRIT, USE DUST CONTAINMENT FABRICS AND DUST COLLECTION HOPPERS AND BARRELS.
9. NON-HAZARDOUS SANDBLAST GRIT MAY BE DISPOSED IN PERMITTED CONSTRUCTION DEBRIS LANDFILLS OR PERMITTED SANITARY LANDFILLS.
10. IF SANDBLAST MEDIA CANNOT BE FULLY CONTAINED, CONSTRUCT SEDIMENT TRAPS DOWNSTREAM FROM BLASTING AREA WHERE APPROPRIATE.
11. USE SAND FENCING WHERE APPRORIATE IN AREAS WHERE BLAST MEDIA CANNOT BE FULLY CONTAINED.
12. IF NECESSARY, INSTALL MISTING EQUIPMENT TO REMOVE SANDBLAST GRIT FROM THE AIR PREVENT RUNOFF FROM MISTING OPERATIONS FROM ENTERING DRAINAGE SYSTEMS.
13. USE VACUUM GRIT COLLECTION SYSTEMS WHERE POSSIBLE.
14. KEEP RECORDS OF SANDBLASTING MATERIALS, PROCEDURES, AND WEATHER CONDITIONS ON A DAILY BASIS.
15. TAKE ALL REASONABLE PRECAUTIONS TO ENSURE THAT SANDBLASTING GRIT IS CONTAINED AND KEPT AWAY FROM DRAINAGE STRUCTURES.
16. SAND BLASTING MEDIA SHOULD ALWAYS BE STORED UNDER COVER AWAY FROM DRAINAGE STRUCTURES.
17. ENSURE THAT STORED MEDIA OR GRIT IS NOT SUBJECTED TO TRANSPORT BY WIND.
18. ENSURE THAT ALL SANDBLASTING EQUIPMENT AND STORAGE CONTAINERS COMPLY WITH CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS.
19. CAPTURE AND TREAT RUNOFF, WHICH COMES INTO CONTACT WITH SANDBLASTING MATERIALS OR WASTE.

CAD FILE PATH:
PLOT DATE:

No.	DATE	REVISION

SEAL:

DATE

DESIGN ENGINEER:

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

GENERAL EROSION CONTROL NOTES

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-33

SHEET OF

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST. ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

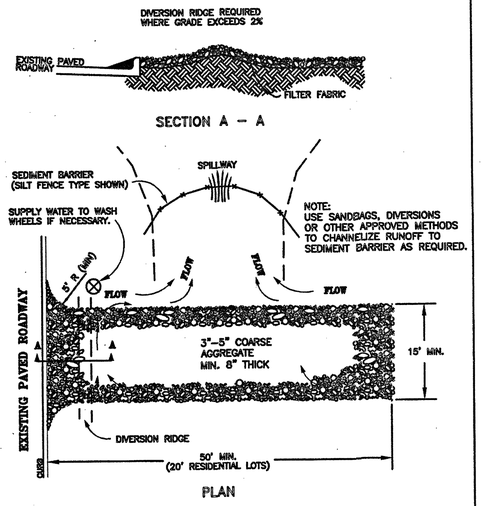
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

GENERAL EROSION CONTROL NOTES
SL-33

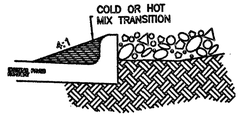
PROJECT NO. 13499

99 ANGLETON DETAIL SET.dwg

PLOT TIME:

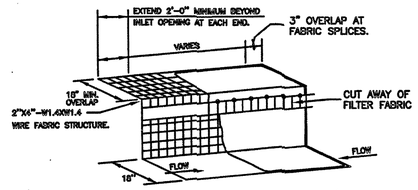


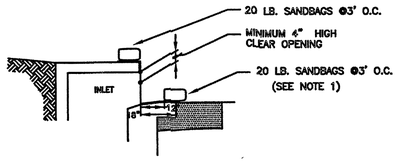
WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.

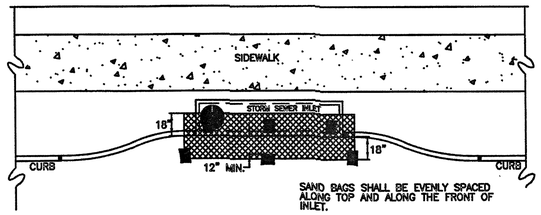


TRANSITION

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.







SAND BAGS SHALL BE EVENLY SPACED ALONG TOP AND ALONG THE FRONT OF INLET.

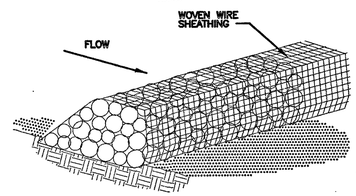
CURB INLET PROTECTION DETAIL
N.T.S.

NOTES:

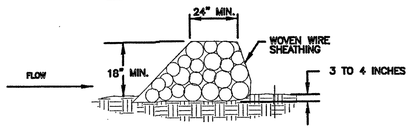
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTION IF THE STORMWATER BEGINS TO OVERTOP THE CURB.
4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF THE SEDIMENT IS STABILIZED.

INLET OPENING	MINIMUM NUMBER OF SAND BAGS	
	TOP	FRONT
5'	2	3
10'	3	3
15'	3	4
20'	4	4

ROCK BERM DETAIL
N.T.S.



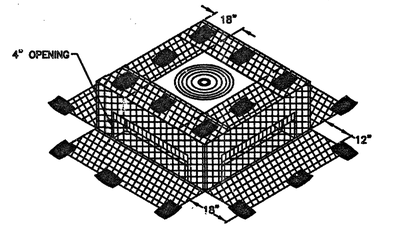
ISOMETRIC PLAN VIEW



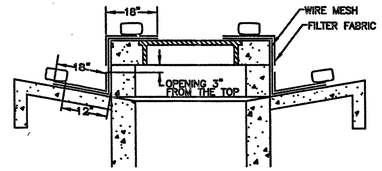
CROSS SECTION
N.T.S.

ROCK BERM GENERAL NOTES

1. USE ONLY OPEN GRADED ROCK 4–8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3–5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.
5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.
6. ROCK BERM SHOULD BE USED AS CHECK DAMS FOR CONCENTRATED FLOW AND ARE NOT INTENDED FOR USE IN PERIMETER PROTECTION.

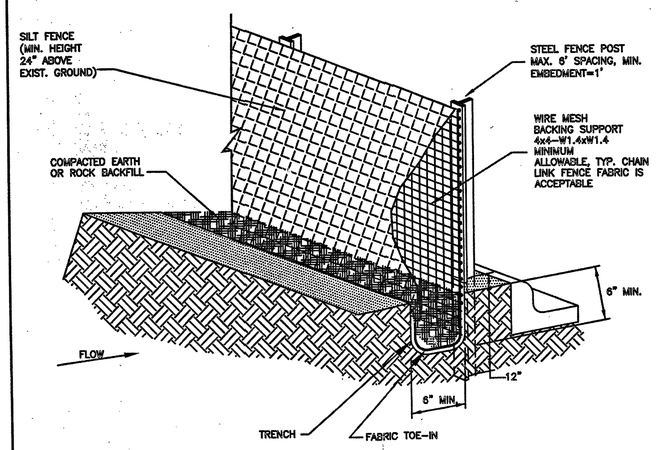


ISOMETRIC VIEW



SECTION

FILTER FABRIC WYE INLET PROTECTION
N.T.S.

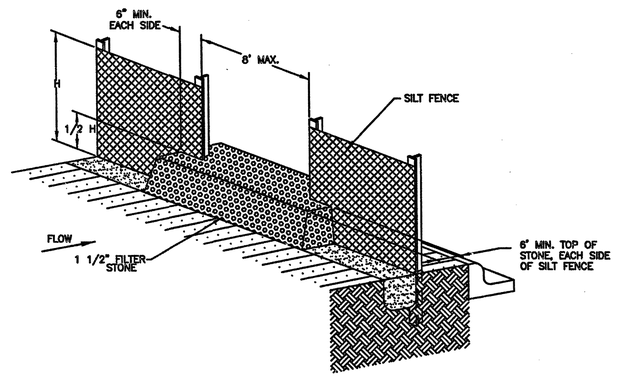


ISOMETRIC PLAN VIEW
N.T.S.

SILT FENCE GENERAL NOTES

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.
2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.
3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.
5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.
7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NOTE: STONE OVERFLOW STRUCTURES OF OTHER OUTLET CONTROL DEVICES SHALL BE INSTALLED AT ALL LOW POINTS ALONG THE FENCE OR EVERY 300 FEET IF THERE IS NO APPARENT LOW POINT



SILT FENCE STONE OVERFLOW STRUCTURE
N.T.S.

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

EROSION CONTROL DETAILS – 1

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL–34

SHEET OF

DESIGNED MS
DRAWN BT
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992

Date: 3/16/20

OWNER:
CHARLES VON SCHMIDT
WATERSTONE DEVELOPMENT GROUP
185 CEDAR POINT DRIVE
LIVINGSTON, TX 77351
936-646-6767

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

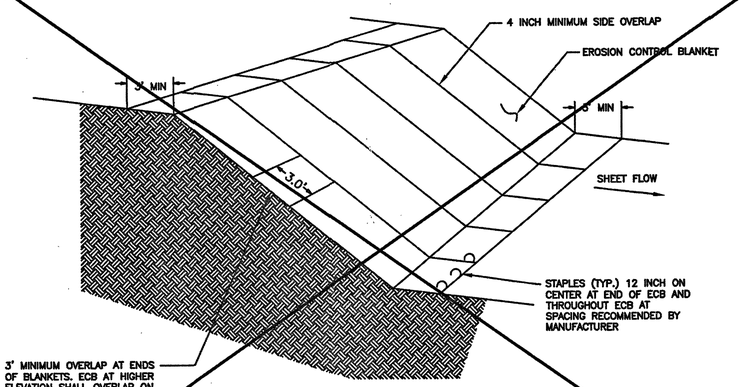
KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EROSION CONTROL DETAILS – 1
SL–34

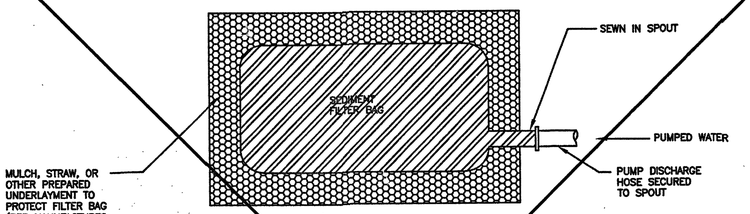
PROJECT NO. 13499

I:\99 ANGLETON DETAIL SET.dwg

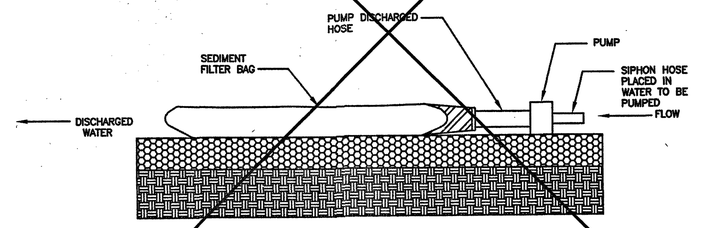
PLOT TIME:



EROSION CONTROL BLANKETS
N.T.S.



SEDIMENT FILTER BAG PLAN VIEW
N.T.S.

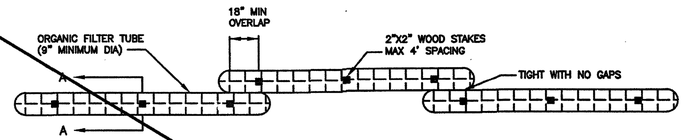


SEDIMENT FILTER BAG PROFILE
N.T.S.

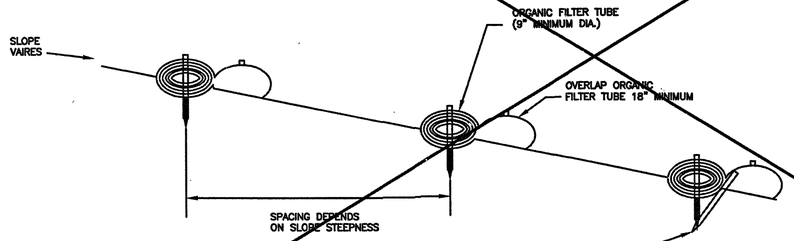
NOTE: A FILTRATION BAG IS NOT REQUIRED IF IF THE DRAINAGE SYSTEM CAN BE ADEQUATELY PROTECTED

DEWATERING CONTROLS
N.T.S.

CAD FILE PATH:
PLOT DATE:



ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.

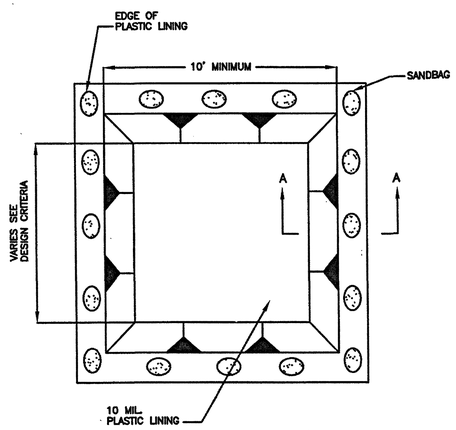


ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
N.T.S.

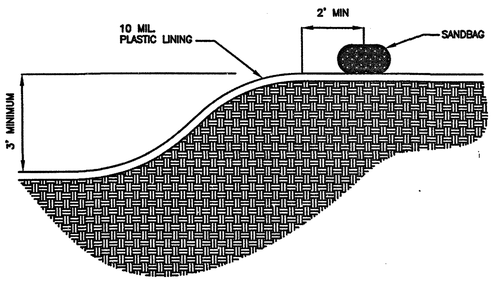
ORGANIC FILTER TUBES NOTES

1. TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS:
   - SIZE OF CONTRIBUTING DRAINAGE AREA
   - STEEPNESS OF SLOPE
   - GROUND CONDITIONS (SOIL OR PAVEMENT)
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBE ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.

FILTER TUBE
N.T.S.



CONCRETE WASHOUT PLAN VIEW
N.T.S.



CONCRETE WASHOUT SECTION A–A
N.T.S.

CONCRETE WASHOUT NOTES

1. SANDBAGS MAYBE REPLACED BY A SOIL BERM TO ANCHOR THE PLASTIC BAG

CONCRETE WASHOUT AREA
N.T.S.

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

EROSION CONTROL DETAILS – 2

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL–35

SHEET OF

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
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B&L
BAKER & LAWSON, INC.
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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
121992
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Miguelangel A. Sauceda P.E. 121992
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PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

KIBER RESERVE
A 19.84 AC, 93-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EROSION CONTROL
DETAILS – 2
SL–35

PROJECT NO. 13499

I:\99 ANGLETON\DETAIL SET.dwg

AGENDA ITEM SUMMARY FORM

MEETING DATE: February 4, 2021

PREPARED BY: Walter E. Reeves Jr., AICP Development Services Director

AGENDA CONTENT: Discuss and consider possible action on a request to recommend approval of the Final Plat of Windrose Green Section Two. The subject property consists of 13.24 acres in the T.S. Lee Survey, Abstract #318, 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.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT: None **FUNDS REQUESTED:** None

FUND: None

EXECUTIVE SUMMARY:

This a request for approval of the final plat of Windrose Green Section 2. The subject property consists of 13.24 acres in the T.S. Lee Survey, Abstract #318, 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. Except as otherwise noted in the City Engineer's memo, the proposed final plat meets all City of Angleton requirements.

RECOMMENDATION:

Staff recommends approval of the proposed final plat subject to the condition that the City Engineer's comments are cleared prior to recording of the final plat.

SUGGESTED MOTION

I move we recommend approval of the proposed final plat subject to the condition that the City Engineer's comments are cleared prior to recording of the final plat.

January 22, 2021

Mr. Walter Reeves
Director of Development Services
City of Angleton
121 S. Velasco
Angleton, TX 77515

Re: On-Going Services
Plan and Plat Review of Windrose Green Section 2 Subdivision – 2nd Submittal Review
Angleton, Texas
HDR Job No. 20-007

Dear Mr. Reeves:

HDR Engineering, Inc. (HDR) has reviewed the plans and plat for the above referenced property and offers the following comments:

Plan Review:

1. Water line along FM 523 to be shown as required size for the Section 2 development. As provided in Section 1, the upsize of the water line will be provided as a bid add alternative to provide cost/pricing information for utility oversize cost sharing.

Plat Review:

1. Provide field notes/full legal description of plat boundaries.
2. Please provide certificates and signature blocks required of all final plats (see Angleton LDC Appendix A for wording of required certificates).
3. Indicate point of beginning (POB) of plat. A corner of the plat shown must reference an existing plat.
4. Fill in blanks in General Notes #11.

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 2 Plat be Revised and Resubmitted.

If you have any questions, please feel free to contact us at our office at (713)-622-9264.

Sincerely,
HDR Engineering, Inc.

Javier Vasquez, P.E., CFM
Project Engineer

cc: Files (20-007)

Attachment

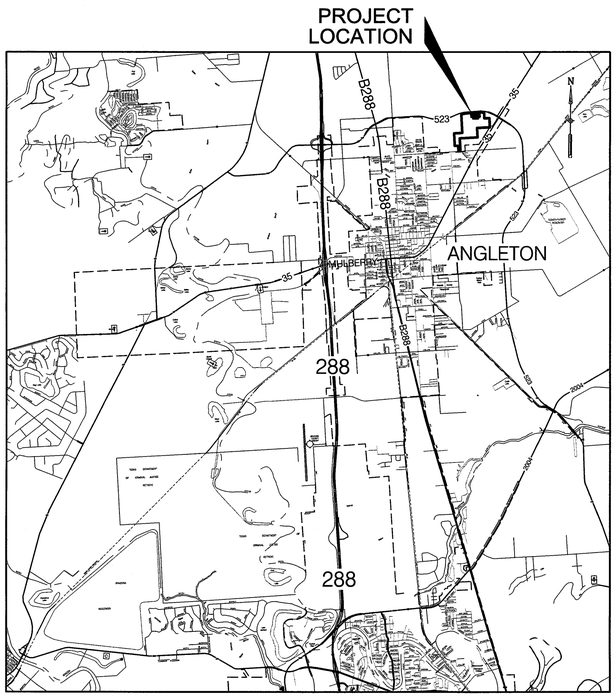
hdrinc.com 4828 Loop Central Drive, Suite 800, Houston, TX 77081-2220
T (713) 622-9264 F (713) 622-9265
Texas Registered Engineering Firm F-754

CITY OF ANGLETON, TEXAS

CONSTRUCTION PLANS FOR
WATER, SEWER, DRAINAGE & PAVING IMPROVEMENTS
FOR
WINDROSE GREEN - SECTION TWO
SERVING
RANCHO ISABELLA MUNICIPAL UTILITY DISTRICT
BRAZORIA COUNTY, TEXAS

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1.	COVER SHEET
2.	PLAT - WINDROSE GREEN - SECTION TWO
3.	CONSTRUCTION NOTES
4.	WATER AND SANITARY SEWER LAYOUT
5.	PAVING AND DRAINAGE LAYOUT
6.	DRAINAGE CALCULATIONS
7.	PAVEMENT MARKING & SIGNAGE LAYOUT
	PLAN AND PROFILE
8.	PARKS EDGE LN. - STA. 0+00.00 TO STA. 9+40.00
9.	MIDDLE PASS LN - STA. 0+00.00 TO STA. 8+22.00
10.	CARDINAL POINTE DRIVE & OFFSITE 8" WATERLINE
	MISCELLANEOUS LAYOUT
11.	STORMWATER POLLUTION PREVENTION PLAN
12.	FINAL LOT GRADING LAYOUT
	DETAILS
13.	STORM SEWER MANHOLE CONSTRUCTION DETAILS (1 OF 3)
14.	STORM SEWER MANHOLE CONSTRUCTION DETAILS (2 OF 3)
15.	STORM SEWER MANHOLE CONSTRUCTION DETAILS (3 OF 3)
16.	STORM SEWER INLET CONSTRUCTION DETAILS I
17.	STORM SEWER INLET CONSTRUCTION DETAILS II
18.	STORM SEWER PIPE BEDDING AND BACKFILL DETAILS
19.	SANITARY SEWER MANHOLE CONSTRUCTION DETAILS
20.	SANITARY SEWER CONSTRUCTION DETAILS
21.	WATER LINE , SANITARY SEWER FORCEMAIN BEDDING DETAILS
22.	WATER LINE CONSTRUCTION DETAILS
23.	WATER LINE CROSSING DETAILS
24.	WATER LINE METER VAULT DETAILS
25.	WATER LINE FIRE SERVICE METER VAULT
26.	CONCRETE PAVEMENT CONSTRUCTION DETAILS I
27.	CONCRETE PAVEMENT CONSTRUCTION DETAILS II
28.	RESIDENTIAL CURB CONSTRUCTION DETAILS
29.	WHEEL CHAIR RAMP & SIDEWALK DETAILS I
30.	WHEEL CHAIR RAMP & SIDEWALK DETAILS II
31.	DRIVEWAY CONSTRUCTION DETAILS
32.	PAVEMENT MARKING DETAILS
33.	SIGN CONSTRUCTION DETAILS
34.	GENERAL EROSION CONTROL NOTES
35.	EROSION CONTROL DETAILS - 1
36.	EROSION CONTROL DETAILS - 2



City of Angleton
OVERALL LOCATION MAP
Not to Scale
Brazoria County Key Map 18L

ANGLETON
Where the Heart is

MAYOR
JASON PEREZ
CITY COUNCIL

MIKEY SVOBODA
POSITION 1

TRAVIS TOWNSEND
POSITION 2

JOHN WRIGHT
POSITION 3 / MAYOR PRO-TEM

CECIL BOOTH
POSITION 4

MARK GONGORA
POSITION 5

GEOTECHNICAL EVALUATION PERFORMED BY Ninyo & Moore

TITLED:
WINDROSE GREEN-SECTION ONE
SERVING RANCHO ISABELLA MUD
FM 523 NEAR STATE HIGHWAY 35
ANGLETON, TEXAS
DATED: JUNE 4, 2020

THE STANDARD SHEET SPECIFICALLY INDENTIFIED BY A ( ) HAS BEEN SELECTED BY ME OR UNDER MY RESPONSIBLE SUPERVISION AS BEING APPLICABLE TO THIS PROJECT.
(*) STATEWIDE ( ) TxDOT STANDARD

A. KHOSHAKHLAGH P.E. 101133 — DATE 11/6/2021

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

MATT HANKS, P.E., COUNTY ENGINEER — DATE

JORGE REYNA, DEVELOPMENT COORDINATOR — DATE

FIRM:
FLOOD INSURANCE RATE MAP: BRAZORIA COUNTY, TEXAS AND INCORPORATED AREAS.
PANEL: (435) OF 850
MAP NO.: 48039C0435H
MAP REVISED: JUNE 5, 1989
THIS PROJECT IS LOCATED IN UNSHADED ZONE X, OUTSIDE THE 500-YEAR FLOOD PLAIN.

811 Know what's below. Call before you dig.

Release of this application does not constitute a verification of all data, information and calculations supplied by the applicant. The engineer of record is solely responsible for the completeness, accuracy and adequacy of their submittal, whether or not the application is reviewed for Code compliance by the City Engineer.

All responsibility for the adequacy of these plans remains with the Engineer who prepared them. In approving these plans, the City of Angleton must rely on the adequacy of the work of the Design Engineer.

JOB NO. 2020-161 101 JANUARY , 2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

NOTES: ALL BEARINGS REFERENCED TO THE TEXAS COORDINATE SYSTEM, NORTH AMERICAN DATUM 1983 (NAD 83), SOUTH CENTRAL ZONE.

SUBMITTED BY: _____ DATE: 11/6/2021
A. KHOSHAKHLAGH, P.E.
COSTELLO, INC.

STATE OF TEXAS — A. KHOSHAKHLAGH — P.E. 101133 — LICENSED PROFESSIONAL ENGINEER

CONTRACTOR SHALL NOTE THAT, NO SURVEYORS OTHER THAN COSTELLO, INC. SHALL PERFORM CONSTRUCTION STAKING FOR THIS PROJECT.

p:\angleton tract\2020 161.162 Windrose Section 2\dgn\2020161_001_ COVER.dgn
11/6/2021

N

60 30 0 0 60 120

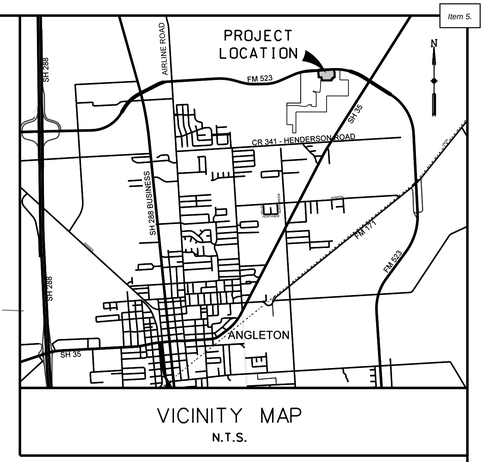
SCALE: 1"= 60'

LEGEND

- • SET 5/8 - INCH IRON ROD WITH PLASTIC CAP STAMPED "COSTELLO INC" UNLESS OTHERWISE NOTED
- ◉ • FOUND 5/8 - INCH IRON ROD UNLESS OTHERWISE NOTED
- (1) • INDICATES BLOCK NUMBER
- (A) • INDICATES RESERVE
- • INDICATES STREET NAME BREAK

Please provide certificates and signature blocks required of all final plats (see Angleton LDC Appendix A for wording of required certificates).

Provide field notes/full legal description of plat boundaries.



VICINITY MAP
N.T.S.

LINE DATA TABLE

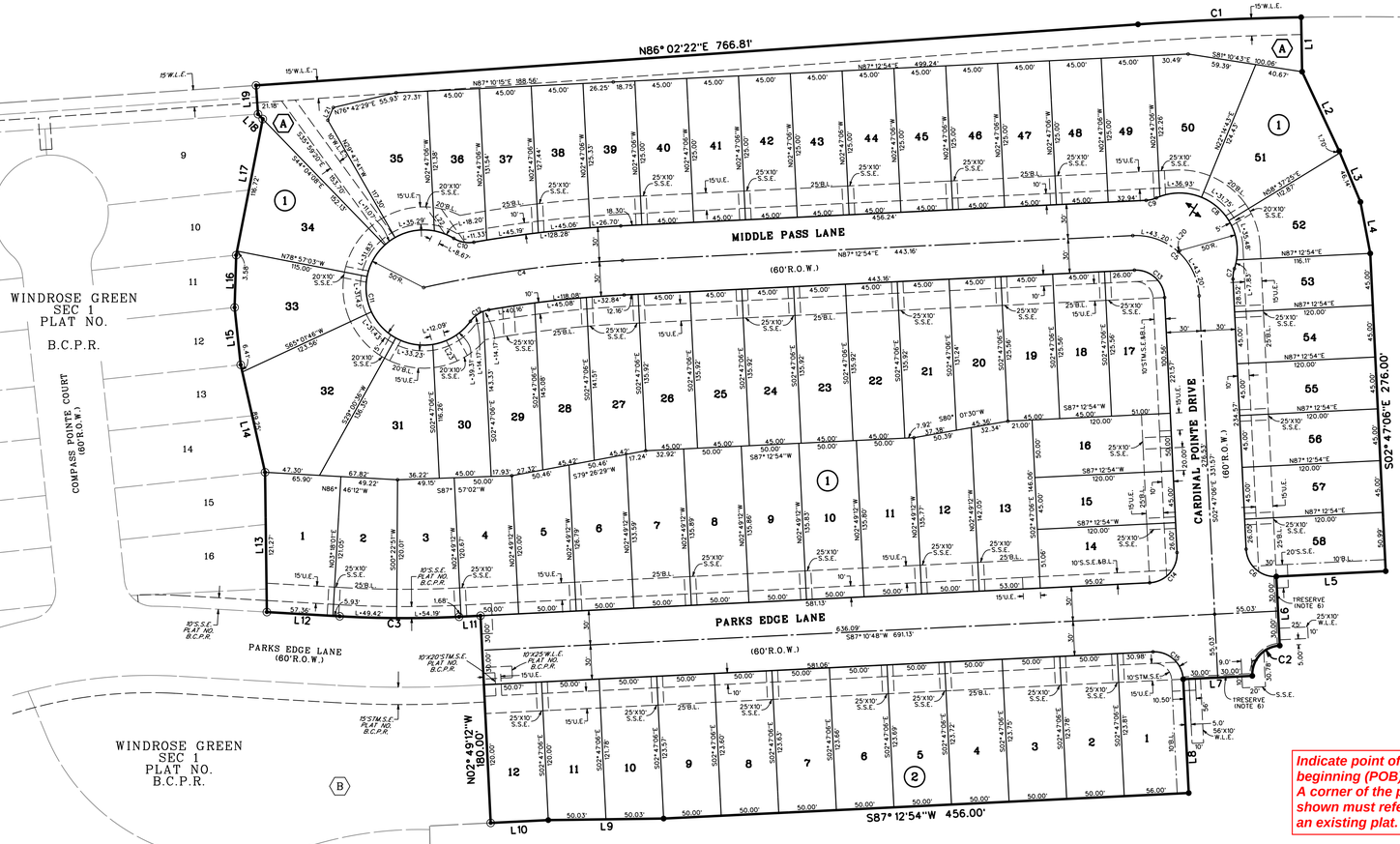
NUMBER	DIRECTION	DISTANCE (FEET)
L1	S01° 01'30"E	47.26
L2	S25° 02'33"E	75.99
L3	S22° 39'47"E	47.84
L4	S10° 45'55"E	45.44
L5	S87° 10'48"W	94.98
L6	S02° 49'12"E	60.00
L7	S87° 12'54"W	60.00
L8	S02° 47'06"E	98.83
L9	S89° 13'19"W	100.06
L10	S87° 10'48"W	50.00
L11	S87° 10'48"W	18.57
L12	N86° 41'59"W	63.29
L13	N00° 44'13"W	121.27
L14	N12° 46'37"W	95.66
L15	N06° 02'37"W	50.00
L16	N01° 45'07"E	45.42
L17	N11° 02'56"E	120.31
L18	N44° 04'08"W	5.92
L19	N03° 57'38"W	25.00
L20	N42° 12'54"E	1.57
L21	N23° 27'24"E	11.97
L22	N35° 13'30"W	28.74
L23	S28° 40'10"E	20.07

CURVE DATA TABLE

NUMBER	ARC LENGTH (FEET)	RADIUS (FEET)	DELTA ANGLE	CHORD DIRECTION	CHORD LENGTH (FEET)
C1	141.66	2764.93	2° 56' 8"	N87° 30'26"E	141.65
C2	39.39	25.00	90° 16' 22"	S42° 11'51"W	35.44
C3	103.61	970.00	6° 7' 13"	N89° 45'35"W	103.56
C4	174.19	1000.00	9° 58' 50"	N82° 13'29"E	173.97
C5	86.39	55.00	90° 0' 0"	S47° 47'06"E	77.78
C6	39.29	25.00	90° 2' 6"	N47° 48'09"W	35.37
C7	9.18	25.00	21° 2' 22"	N07° 44'05"E	9.13
C8	115.26	50.00	132° 4' 44"	N47° 47'06"W	91.38
C9	9.18	25.00	21° 2' 22"	S76° 41'43"W	9.13
C10	18.08	25.00	41° 25' 49"	N79° 12'21"W	17.69
C11	231.80	50.00	265° 37' 36"	S11° 18'15"E	73.36
C12	19.35	25.00	44° 21'27"	N58° 03'41"E	18.87
C13	39.27	25.00	90° 0' 0"	S47° 47'06"E	35.36
C14	39.25	25.00	89° 57'54"	S42° 11'51"W	35.34
C15	39.29	25.00	90° 2' 6"	S47° 48'09"E	35.37

WINDROSE GREEN SECTION TWO RESERVE TABLE

DESCRIPTION	LAND USE	ACREAGE/SQUARE FOOTAGE
RESERVE "A"	LANDSCAPE / OPEN SPACE	0.58 AC. / 25,466 SQ FT.
	TOTAL:	0.58 AC. / 25,466 SQ FT.



ABBREVIATION TABLE

O.P.R.B.C.	OFFICIAL PUBLIC RECORDS OF BRAZORIA COUNTY
D.R.B.C.	DEED RECORDS BRAZORIA COUNTY
B.C.M.R.	BRAZORIA COUNTY MAP RECORDS
C.F. NO.	CLERK'S FILE NUMBER
CAB.. SHT.	CABINET, SHEET
A.E.	AERIAL EASEMENT
U.E.	UTILITY EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
STM.S.E.	STORM SEWER EASEMENT
W.L.E.	WATER LINE EASEMENT
D.E.	DRAINAGE EASEMENT
ESMT.	EASEMENT
B.L.	BUILDING LINE
R.O.W.	RIGHT-OF-WAY
G.B.L.	GARAGE BUILDING LINE
P.L.E.	PIPELINE EASEMENT
E.E.	ELECTRICAL EASEMENT
T.B.A.	TO BE ABANDONED

STANDARD NOTES FOR ALL PLATS.

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.

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.

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."

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.

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.

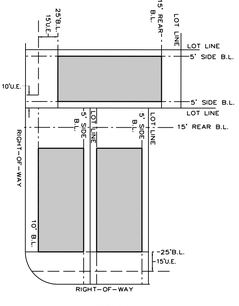
Indicate point of beginning (POB) of plat. A corner of the plat shown must reference an existing plat.

GENERAL NOTES:

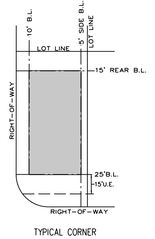
1. ALL BEARINGS ARE REFERENCED TO THE TEXAS COORDINATE SYSTEM (NAD83, 1993 ADJ.) SOUTH CENTRAL ZONE.
2. ALL EASEMENTS SHOWN ON LOT LINES ARE CENTERED UNLESS OTHERWISE NOTED.
3. EASEMENTS ARE HEREBY RESERVED AS SHOWN TO FACILITATE ROADWAYS, DRAINAGE, AND INSTALLATION OF UTILITIES, INCLUDING BUT NOT LIMITED TO ELECTRICAL LINES, WASTEWATER DISPOSAL LINES, GAS, AND WATER LINES. THERE IS ALSO A RESERVED TEN (10) FOOT STRIP CENTERED ALONG ALL TRACT LINES FOR A GENERAL DRAINAGE AND UTILITY EASEMENT.
4. ALL RESERVES SHALL BE OWNED AND MAINTAINED BY HOMEOWNER'S ASSOCIATION OR MUD.
5. ALL DRAINAGE EASEMENTS SHOWN HEREON SHALL BE DEDICATED TO THE PUBLIC AND SHALL BE MAINTAINED BY THE HOMEOWNERS ASSOCIATION.
6. A 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 PROPERTY, THE CONDITIONS OF THIS DEDICATION BEING THAT WHEN THE ADJACENT PROPERTY IS SUBDIVIDED OR RE-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.
7. 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.
8. 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.
9. NO PIPELINE OR PIPELINE EASEMENT EXISTS WITHIN THE BOUNDARIES OF THIS PLAT.
10. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE DEVELOPMENT AGREEMENT BETWEEN THE CITY OF ANGLETON, TEXAS AND OWNER.
11. RESERVES " " WILL BE OWNED AND MAINTAINED BY RANCHO ISABELLA MUNICIPAL UTILITY DISTRICT. RESERVES " " WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION.

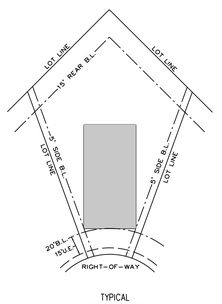
Fill in blanks.



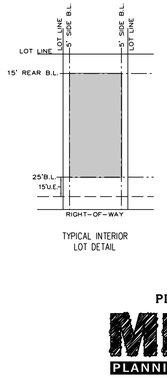
TYPICAL KEY LOT DETAIL



TYPICAL CORNER LOT DETAIL



TYPICAL CUL-DE-SAC LOT DETAIL



TYPICAL INTERIOR LOT DETAIL

PLANNER:

META PLANNING + DESIGN

24275 KATY FREEWAY, SUITE 200
KATY, TEXAS 77494
Tel: 281-810-1422

PHASE ONE
FINAL PLAT OF

WINDROSE GREEN SECTION TWO

BEING 13.23 ACRES

LOCATED IN THE
T. S. LEE SURVEY, A-318
BRAZORIA COUNTY, TEXAS

70 LOTS 2 BLOCKS 1 RESERVE

SCALE: 1" = 60' JANUARY, 2021

OWNER:

EMPTOR ANGLETON, LLC.
9950 WESTPARK DR. #285
HOUSTON, TEXAS 77063

ENGINEER/SURVEYOR:

Costello

COSTELLO, INC.
2107 CITYWEST BOULEVARD
3RD FLOOR
HOUSTON, TEXAS 77042
(713) 783-7788 FAX: 783-3580
TBPE FIRM REGISTRATION NO. 280
TBPLS FIRM REGISTRATION NO. 100486

M&B NO. 129420
S:BRAZORIACOUNTY/WINDROSE GREEN PLATS/2020162 SEC 2

GENERAL CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT THE CITY OF ANGLETON DEVELOPMENT SERVICES (979-849-2108) AND BRAZORIA COUNTY AT (engineer-construction@brazoria-county.com) 48 HOURS PRIOR TO START OF ANY CONSTRUCTION.

2. CONTRACTOR SHALL GIVE COSTELLO, INC. (713-783-7788), THREE (3) WORKING DAYS NOTICE FOR CONSTRUCTION/ CONTROL STAKING, AND 48 HOURS NOTICE IN ADVANCE OF BEGINNING CONSTRUCTION.

3. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FROM THE CITY OF ANGLETON, ANGLETON DRAINAGE DISTRICT, TxDOT, AND BRAZORIA COUNTY. ANY WORK OUTSIDE THE BOUNDARY OF THE PROJECT SHALL BE COMMUNICATED WITH THE ADJACENT LAND OWNER.

4. ALL UNSATISFACTORY AND/OR WASTE MATERIALS INCLUDING STRIPPINGS, VEGETATION, ROOTS, CONCRETE, DEBRIS AND EXCESS EXCAVATION SHALL BE HAULED OFF SITE BY THE CONTRACTOR. INCLUDE COST OF THIS WORK. INCLUDING HAUL, IN OTHER ITEMS OF THIS PROJECT. ALL TREES ARE NOT INDICATED ON THE CONSTRUCTION PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND DETERMINE THE EXTENT OF TREE REMOVAL REQUIRED.

5. CONTRACTOR SHALL MAINTAIN ADEQUATE DRAINAGE AT ALL TIMES DURING CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.

6. EXISTING UTILITIES ARE INDICATED IN AN APPROXIMATE MANNER ONLY. ALL EXISTING UTILITIES MAY HAVE NOT BEEN LOCATED. THE CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING FACILITES PRIOR TO CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY UTILITIES 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTACT TEXAS ONE-CALL (811).

7. ALL EXISTING LANDSCAPING IRRIGATION, SIDEWALKS, FENCES, UTILITIES AND OTHER EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT HIS EXPENSE.

8. ALL WORK SHALL BE COMPLETED TO THE SATISFACTION OF ALL AGENCIES LISTED UNDER NOTE 3 ABOVE, THE ENGINEER AND THE OWNER.

9. MANHOLE RIM ELEVATIONS SHOWN ON THE PLANS ARE APPROXIMATE. ALL FINAL MANHOLE RIM ELEVATIONS ARE TO BE SET AT 4-INCHES ABOVE FINISHED GRADE IN STREET R.O.W. AND 6" ABOVE NATURAL GROUND WITHIN EASEMENTS. ALL EXISTING MANHOLES WITHIN OR ADJACENT TO THE PROJECT ARE TO BE ADJUSTED TO 4-INCHES ABOVE FINISHED GRADE AFTER FINAL GRADING IS COMPLETE. THIS NOTE SHALL GOVERN SHOULD A CONFLICT ARISE WITH THE ELEVATIONS ON THE PLAN AND PROFILE SHEETS.

10. MAINTAIN A MINIMUM OF 6-INCHES OF CLEARANCE BETWEEN ALL UTILITIES.

11. INCLUDE PRICE OF ALL BEDDING AND BACKFILL REQUIRED FOR WATER LINES, SANITARY SEWERS AND STORM SEWERS IN PRICE BID PER LINEAR FOOT OF PIPE.

12. UPON PROJECT COMPLETION AND PRIOR TO FINAL RELEASE OF RETAINAGE, CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF SECTION 01710 "PROJECT RECORD DOCUMENTS" OF THE CONTRACT.

13. DELIVERY TICKETS FOR ALL MATERIALS (E.G., CONCRETE, CEMENT STABILIZED SAND, PIPES AND ETC.) SHALL BE MAINTAINED BY THE CONTRACTOR AND UPON WRITTEN REQUEST, BE MADE AVAILABLE FOR REVIEW BY THE ENGINEER.

14. PRIOR TO FINAL RELEASE OF RETAINAGE, THE CONTRACTOR SHALL PROVIDE A NOTARIZED CERTIFICATION THAT ALL MATERIALS INSTALLED IN THE PROJECT ARE COMPLETE IN PLACE IN ACCORDANCE WITH APPROVED PLANS AND SPECIFICATIONS.

15. ALL WATER, SANITARY AND STORM SEWER RIMES, COVERS AND STUBS ARE TO BE MARKED IN ACCORDANCE WITH THE CITY OF ANGLETON DESIGN STANDARDS.

16. CONTRACTOR SHALL CONFINE ALL WORK EFFORTS WITHIN THE DESIGNATED PLAT AREA UNLESS SPECIFICALLY AUTHORIZED BY OWNER. EXTREME CARE SHOULD BE EXERCISED NEAR ADJACENT PROPERTY TO PROTECT ANY EXISTING TRESS AND PROPERTY.

17. ANY CONSTRUCTION WHICH HINDERS TRAFFIC OR REQUIRES TRAFFIC DIVERSION SHALL BE IN ACCORDANCE WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. INCLUDE FLAGMEN AS REQUIRED TO CONTROL TRAFFIC FOR MATERIAL AND OR EQUIPMENT DELIVERIES. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING AND OBTAINING CITY OF ANGLETON AND BRAZORIA COUNTY (engineer-construction@brazoria-county.com) APPROVALs FOR ALL TRAFFIC CONTROL PRIOR TO IMPLEMENTING SAME.

18. THE CONTRACTOR SHALL NOTIFY CITY OF ANGLETON AND THE ENGINEER IMMEDIATELY IF UNSTABLE SOILS ARE ENCOUNTERED.

19. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL STRIP THE VEGETATION IN ALL AREAS WHERE EXCAVATION IS TO BE PERFORMED, WHERE EXCAVATED MATERIAL IS TO BE PLACED, OR IN ANY LOCATION WHERE CONSTRUCTION MACHINES OR TRUCKS ARE TO BE OPERATING. ALL AREAS PROPOSED TO BE DISTURBED IN ANY FASHION ARE TO BE STRIPPED. STRIPPING IS DEFINED AS THE REMOVAL OF ALL GRASS AND THE ORGANIC ZONE.

20. ALL EXCAVATIONS, INCLUDING THE UNTILITY SPOIL SHALL BE EVENLY SPREAD AND COMPACTED PER THE ENGINEER'S DIRECTION. UPON COMPLETION OF THE WORK, ANY STRIPPINGS SHALL BE SPREAD AND GRADED SMOOTH (NO SEPARATE PAY).

21. THE CONTRACTOR SHALL CONTACT THE CITY OF ANGLETON TO ARRANGE FOR THE PURCHASE OF WATER NEEDED FOR THE CONSTRUCTION. UNAUTHORIZED (UNMETERED) TAPS OF PUBLIC WATER LINE IS NOT PERMITTED AND SHALL RESULT IN A DAILY FINE BY THE CITY.

22. THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE DRAWINGS UNLESS SPECIFICALLY ESTABLISHED IN THE CONTRACT BID DOCUMENTS.

24. THE CONTRACTOR SHALL EXECUTE THE REQUIRED POLLUTION PREVENTION PLAN (PPP) AND NOTICE OF INTENT FORM (NOI) FOR THIS PROJECT AND BE RESPONSIBLE FOR CONSTRUCTING AND MAINTAINING ITEMS IDENTIFIED IN THE PPP. AS THE FIRST ITEM OF WORK, THE CONTRACTOR SHALL ERECT ALL PERIMETER SILT FENCES INDICATED ON THE PPP. THE CONTRACTOR SHALL CONSTRUCT INLET PROTECTION BARRIERS AROUND ALL INLETS AS PER PPP AS INLETS ARE CONSTRUCTED.

25. THESE PLANS, PREPARED BE COSTELLO, INC., DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SYSTEMS THAT MAY NOW OR HEREAFTER BE INCORPORATED IN THESE PLANS. THE CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING THE PLANS AND SPECIFICATIONS REQUIRED BY THE HOUSE BILLS 652 AND 665 ENACTED BY THE TEXAS LEGISLATURE IN THE 70TH LEGISLATURE REGULAR SESSION AND CURRENT OSHA STANDARDS FOR TRENCH SAFETY. DESIGN OF TRENCH SAFETY SYSTEMS, SEALED BY A LICENSED PROFESSIONAL ENGINEER, SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO EXECUTION OF A CONTRACT FOR THIS WORK.

CONTINUATION OF GENERAL CONSTRUCTION NOTES

26. THE CONTRACTOR SHALL COORDINATE WITH THE SOILS LABORATORY AND DIG TEST HOLES TO OBTAIN PROCTOR PRIOR TO COMMENCING WORK (NO SEPARATE PAY).

27. CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT ALL POINTS OF CROSSING OR CONNECTION TO DETERMINE IF CONFLICTS EXIST BEFORE COMMENCING ANY CONSTRUCTION. NOTIFY THE ENGINEER AT (engineer-construction@brazoria-county.com) IN CASE OF ANY CONFLICT.

28. ALL CONTRACTOR VEHICLES, INCLUDING EMPLOYEE'S VEHICLES, SHALL PARK WITHIN THE PROJECT SITE TO MINIMIZE TRAFFIC ON THE PUBLIC STREETS ADJACENT TO THE WORK SITE ENTRANCE. CONTRACTOR WILL PROVIDE SUFFICIENT PARKING AREAS TO ACCOMMODATE HIS VEHICLES. ANY AREAS DISTURBED OR DESTROYED BY VEHICULAR PARKING WILL BE REPAIRED TO ORIGINAL CONDITION PRIOR TO COMPLETION OF THE PROJECT. NO SEPARATE PAYMENT WILL BE MADE FOR THIS ITEM.

29. IF SITE CONDITIONS ARE MUDDY, THE CONTRACTOR SHALL MAINTAIN A VEHICLE WASHDOWN AREA OF SUFFICIENT SIZE AND IN A LOCATION TO FACILITATE CLEANING ALL CONSTRUCTION VEHICLES PRIOR TO LEAVING THE WORK SITE. CONTRACTOR SHALL PROVIDE THE NECESSARY EQUIPMENT, INCLUDING WATER AND DRAINAGE, TO WASH VEHICLES. VEHICLE WASHDOWN AREA WILL BE PROVIDED DURING RAINY OR MUDDY CONDITIONS FOR THE DURATION OF THE CONTRACT. ALL WASHDOWN WATER FROM SUCH AN OPERATION SHALL NOT ENTER THE STORM SEWER SYSTEM WITHOUT SUCH ENTRANCE LOCATION BEING PROTECTED BY AN APPROPRIATE SILT PROTECTION DEVICE. CONTRACTOR SHALL, ON A DAILY BASIS, CLEAN ALL STREETS IN THE VICINITY OF THE WORK SITE ENTRANCE TO ENSURE THAT NO DIRT FROM THE PROJECT ACCUMULATES IN THE EXISTING STREETS. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK. A PENALTY WILL BE ASSESSED IN ACCORDANCE WITH THE CONTRACT FOR EACH DAY STREETS ARE LEFT UNCLEANED. ALL WORK ASSOCIATED WITH THIS NOTE NO. 30 SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS WORK ITEMS.

30. THE CONTRACTOR SHALL NOT OPERATE EXISTING WATER LINE VALVES UNLESS NECESSITATED BY EMERGENCY. ALL EXISTING WATER LINE VALVES MUST BE OPERATED BY THE CITY OF ANGLETON, ONLY.

31. ALL MATERIALS INSTALLED ON THIS PROJECT MUST COMPLY WITH THE CITY OF ANGLETON, ANGLETON DRAINAGE DISTRICT, BRAZORIA COUNTY, AND TxDOT'S APPROVED PRODUCT LIST, AS RELATE.

32. ALL EXISTING DITCHES PROPOSED FOR FILL (OR THOSE FILLED DURING THE COURSE OF THE PROJECT) OR AREAS TO RECEIVE GENERAL FILL SHALL BE COMPLETELY STRIPPED (A MINIMUM OF 6-INCHES) AND OR MUCKED OUT IN THE PRESENCE OF THE SOILS LABORATORY. REMOVED MATERIAL (STRIPPING AND MUCKING) SHALL BE TEMPORARILY STOCKPILED AND GRADED TO DRAIN. ALL SOIL TO FILL EXISTING DITCHES OR GENERAL FILL SHALL BE OBTAINED FROM EXCESS EXCAVATION. ALL FILL SHALL BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DENSITY AT +/- 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.

33. THE CONTRACTOR SHALL PROVIDE A WATERTIGHT JOB BOARD NEAR THE SITE ENTRANCE FOR POSTING NOI INFORMATION AND THE POLLUTION PREVENTION PLAN. CONTRACTOR SHALL ALSO PROVIDE THE REQUIRED SANITATION FACILITIES. ALL SUCH AFOREMENTIONED ITEMS MUST BE PROVIDED PRIOR TO BEGINNING WORK. FAILURE TO PROVIDE THE AFOREMENTIONED ITEMS WILL RESULT IN THE WITHHOLDING OF PAY REQUESTS. ALL SUCH ITEMS MUST BE REMOVED UPON PROJECT COMPLETION. (NO SEPARATE PAY).

34. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE TESTING LABORATORY TO HAVE THE LAB PRESENT DURING ALL BACKFILL, PLACEMENT OF ANY FILL OR ANY OTHER REQUIRED LAB TESTING.

35. ALL FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% OF ASTM D 698 WITHIN +/- 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT.

36. FILL MATERIAL SHALL BE PLACED ONLY ON PROPERLY CLEARED AND PREPARED AREAS. ALL WET AREAS SHALL BE MUCKED OUT TO THE DEPTH DETERMINED BY THE SOILS LABORATORY. STRIP A MINIMUM OF 6-INCHES OF TOPSOIL AND SCARIFY TO PRODUCE A GOOD BOND WITH THE FILL LIFT.

37. ALL 4:1 SIDE SLOPES SHALL BE CONSIDERED AS 4' HORIZONTAL TO 1' VERTICAL. SIMILAR RULE APPLIES TO OTEHR SLOPES INDICATED ON THE PLANS, UNLESS OTHERWISE INDICATED ON THE PLANS. ANY VARIATIONS WITH THE SLOPES SHALL BE COMMUNICATED WITH THE ENGINEER FIRST.

38. ALL AREAS OF THE POND SHALL RECEIVE TURF ESTABLISHMENT BY DRY APPLICATION IN ACCORDANCE WITH THE PROJECT MANUAL. MINIMUM 95% GROWTH COVERAGE REQUIRED PRIOR TO RELEASE OF CONTRACT / ACCEPTANCE.

39. CONCRETE SLOPE PAVING SHALL BE A MINIMUM OF 5-INCH THICKNESS WITH #4 @ 24" STEEL REINFORCEMENT C.C.E.W. & 24" TOE ALL AROUND. ALL CONCRETE SLOPE PAVING NEEDS TO HAVE FOOTINGS. ALL FOOTINGS MUST HAVE 6" OF CEMENT STABILIZED SAND AROUND ITS' PERIMETER.

40. THE CONTRACTOR SHALL OBTAIN A DEVELOPMENT AND/ OR A GRADE/FILL PERMIT FROM THE FLOODPLAIN/ BUILDING DEPARTMENT (979-864-1295) PRIOR TO CONSTRUCTION.

41. THE CONTRACTOR SHALL OBTAIN A 911 ADDRESS FROM THE BRAZORIA COUNTY 911 ADMINISTRATOR (engineer-addressing@brazoria-county.com PRIOR TO CONSTRUCTION.

42. BRAZORIA COUNTY DOES NOT ALLOW OPEN CUT CONSTRUCTION ON COUNTY MAINTAINED ROADS.

43. NO INSPECTABLE WORK CAN BE CONDUCTED ON SATURDAYS, SUNDAYS AND BRAZORIA COUNTY HOLIDAYS.

STORM SEWER CONSTRUCTION NOTES

1. STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ANGLETON DESIGN STANDARDS AS CURRENTLY AMENDED OR APPROVED THROUGH A VARIANCE REQUEST.

2. ALL STORM SEWER PIPE SHALL BE ASTM C-76 CLASS III RCP (SMOOTH WALL WHERE REQUIRED). ALL STORM SEWER SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH THE CITY OF ANGLETON DESIGN STANDARDS AS INDICATED ON THE DETAIL SHEETS. ALL SIZES OF CONCRETE PIPE SHALL BE INSTALLED WITH RUBBER GASKET JOINTS.

3. STORM SEWER MANHOLE COVERS SHALL BE STANDARD CITY OF ANGLETON (NOMINAL 32" DIA.) CAST IRON, TRAFFIC BEARING TYPE RING AND COVER WITH THE WORDS "STORM SEWER" CAST INTO THE COVER, AND SHALL INDICATE THE CITY OF ANGLETON EMBLEM.

4. BEDDING AND BACKFILL IS TO BE CONSIDERED SUBSIDIARY TO PAY ITEMS FOR PIPE AND INLETS AND SHALL NOT BE PAID FOR DIRECTLY. SELECT BACKFILL(PI BETWEEN 7 AND 20) SHALL BE USED FOR ALL STORM SEWER LOCATED IN SIDE LOT EASEMENTS. (NO SEPARATE PAY)

5. ALL STORM SEWER MANHOLES SHALL BE STANDARD TYPE "C" UNLESS OTHERWISE NOTED.

6. ALL STORM MANHOLE BOTTOMS WILL HAVE #4 REBAR, ON 12" CENTERS IN BOTH DIRECTIONS.

PAVING CONSTRUCTION NOTES

1. PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH BRAZORIA COUNTY SUBDIVISION REGULATIONS ADOPTED OCTOBER 24, 2006 UNLESS OTHERWISE NOTED IN CONSTRUCTION DRAWINGS OR CONTRACT SPECIFICATIONS AND THE CITY OF ANGLETON.

2. ALLPAVEMENT WIDTHS, CURB, RADII, AND CURB ALIGNMENT SHOWN INDICATE BACK OF CURB. "TC" AND "TP" INDICATES TOP OF CURB AND TOP OF PAVEMENT RESPECTIVELY.

3. FOLLOW GUIDELINES SET FORTH IN THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, WHERE APPLICABLE.

4. TRANSVERSE EXPANSION JOINTS WITH SLEEVED LOAD TRANSMISSION DOWELS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF NOT MORE THAN 60'-0". WOOD JOINTS WILL BE SOUND HEART REDWOOD. JOINT SEAL SHALL BE O.A. 90 ASPHAT OR OTHER TYPES WITH THE CITY OF ANGLETON AND BRAZORIA COUNTY'S APPROVAL.

5. A BLUE REFLECTORIZED BUTTON IS REQUIRED AT ALL FLUSH VALVE LOCATIONS. THE BUTTON SHALL BE PLACED 6" OFF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE FLUSH VALVE.

6. ALL CURB RADII SHALL BE 25' UNLESS NOTED OTHERWISE.

7. FOR CONNECTION TO EXISTING PAVEMENT, EXPOSE AND CLEAN EXISTING REBAR AT PAVEMENT HEADER. IF EXISTING REBAR IS NONEXISTENT OR IN UNSATISFACTORY CONDITION, DRILL AND EPOXY GROUT #4 BARS AT 24" ON CENTER. A MINIMUM OF 15" INTO EXISTING PAVEMENT, EXTEND STEEL A MINIMUM OF 15" INTO PROPOSED PAVEMENT AND TIE REBAR TO PROPOSED PAVEMENT REBAR. REMOVE AND DISPOSE OR RELOCATE EXISTING TYPE III BARRICADE IF PRESENT.

8. ADA WHEELCHAIR RAMPS SHALL BE CONSTRUCTED AT THE STREET INTERSECTIONS BY PAVING CONTRACTOR.

9. ALL STREET AND TRAFFIC SIGNS WILL BE REQUIRED AT EACH STREET INTERSECTION.

10. ALL EXISTING DITCHES PROPOSED FOR FILL (OR THOSE FILLED DURING THE COURSE OF THE PROJECT) SHALL BE COMPLETELY STRIPPED (A MINIMUM OF 6-INCHES) AND MUCKED OUT IN THE PRESENCE OF THE SOILS LABORATORY. REMOVED MATERIAL (STRIPPING AND MUCKING) SHALL BE DISPOSED OF OFFSITE. ALL SOIL TO FILL EXISTING DITCHES SHALL BE OBTAINED FROM EXCESS UTILITY EXCAVATION OR HAULED TO THE SITE BY THE CONTRACTOR. ANY MATERIAL HAULED TO THE SITE MUST BE OF THE SAME SOIL TYPE AND P.I. AS EXISTING MATERIAL. ALL PORTIONS OF AN EXISTING DITCH UNDER OR WITHIN THREE FEET OF FUTURE PAVING SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND. ALL FILL SHALL BE PLACED IN MAXIMUM 8-INCH LOOSE LIFTS AND COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR MAXIMUM DRY DESNITY AT -1 TO +4 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698.

11. DEVELOPER SHALL DETERMINE LOCATIONS AND SIZES REQUIRED FOR IRRIGATION SLEEVES PRIOR TO PAVING CONTRACTOR FORMING STEEL IN THE FIELD.

12. PAVER WILL BROADCAST SEED ALL AREAS DISTURBED AFTER LOT AND RESERVE GRADES HAVE BEEN CHECKED AND ACCEPTED BY OWNER/ ENGINEER. CONTRACTOR IS RESPONSIBLE FOR WATERING IN ACCORDANCE WITH CONTRACT SPECIFICATIONS.

13. THE QUANTITY OF STREET CUT IN THE CONTRACT DOCUMENTS IS BASED UPON EXISTING TOPOGRAPHY PRIOR TO UTILITY CONSTRUCTION. THE PAVING CONTRACTOR SHALL INCLUDE ANY CONSIDERATIONS FOR UTILITY SPOIL AS INCIDENTAL TO OTHER ITEMS IN THE PROJECT. THERE WILL BE NO SEPARATE PAYMENT FOR THE PAVING CONTRACTOR TO HANDLE UTILITY SPOIL ON SITE.

14. THE PAVING CONTRACTOR SHALL COORDINATE WITH THE UTILITY CONTRACTOR AS REQUIRED TO CONSTRUCT STAGE II INLETS WITH PROPOSED PAVING.

15. ALL SUBGRADE SHALL BE ROLLED WITH ROLLING MACHINERY. SUBGRADE DENSITY REQUIRED IS AT LEAST 95% OF MAXIMUM DENSITY (STANDARD DENSITY TEST), AT 60' INTERVALS & ONE TEST IN EVERY CUL-DE-SAC. SUBGRADE SHALL NOT BE ALLOWED TO DRY, BEFORE CONCRETE IS PLACED. STABILIZATION METHODS WILL BE RECOMMENDED BY CMT CONSULTANT.

16. CONTRACTOR SHALL NOTIFY BRAZORIA COUNTY AT ENGNINEER-CONSTRUCITON@BRAZORIA-COUNTY.COM 48 HOURS BEFORE COMMENCING WORK.

17. NO LOADS OR TRAFFIC ON THE CONCRETE UNTIL CONCRETE MEETS OR EXCEEDS 80% OF ITS MAXIMUM TARGET DESIRED STRENGTH.

18. UNDER NO CIRCUMSTANCE SHALL WATER BE ADDED TO A CONCRETE LOAD AFTER SLUMP TEST AND/OR CONCRETE CYLINDERS HAVE BEEN TAKEN.

19. IF DOWEL EXPANSION JOINTS ARE TO BE FIELD FABRICATED, THEY MUST PROVIDE ADDITIONAL ROOM IN THE SLEEVES BEYOND THE LENGTH OF THE BAR.

20. LAP-SPLICES WILL BE STAGGERED WITHIN THE REBAR MAT.

21. ELIMINATE ALL TYPES OF BUTTONS ON THE KNUCKLES. PAINT OR THERMAL STRIPING MAY BE USED INSTEAD TO DELINEATE THE LANE-OF-TRAVEL.

22. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT ALL RADIUS RETURNS AND AT MAXIMUM SPACING OF 60-FOOT INTERVALS.

23. BRAZORIA COUNTY REQUIRES 6 SACK, 4,000 PSI COMPRESSIVE STRENGTH REQUIREMENT AT 28 DAYS AND 95 DEGREE TEMPERATURE. THE REQUIREMENT OVERRIDES CITY'S REQUIREMENT.

24. BRAZORIA COUNTY REQUIRES A REBAR LAP OF 21" WHICH OVERRIDES CITY'S REQUIREMENT.

25. SAW CUT TRANSVERSE JOINTS WITHIN 24 HOURS OF CONCRETE PLACEMENT.

26. 28-FOOT CONCRETE PAVEMENT SHALL BE POURED IN HALF SECTIONS. 41-FOOT CONCRETE PAVEMENT SHALL BE POURED IN HALF SECTIONS.

27. 6-INCH CONCRETE PAVEMENT TO BE MIXED AS SPECIFIED.

28. ALL 28-FOOT B-B CONCRETE PAVEMENT TO BE 6-INCHES, UNLESS OTHERWISE NOTED.

29. THE PAVING CONTRACTOR SHALL COORDINATE WITH THE UTILITY CONTRACTOR AS REQUIRED TO CONSTRUCT STAGE II INLETS WITH PROPOSED PAVING.

30. SUBGRADE TO BE STABILIZED 1-FOOT BACK OF PROPOSED CURB OR EDGE OF PAVEMENT WITH A MINIMUM OF 8% HYDRATED LIME BY DRY WEIGHT AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY. LIME REQUIREMENTS FROM GEOTECHNICAL TESTING TO BE CONFIRMED WITH ENGINEER, PRIOR TO CONSTRUCTION.

31. WHEN A THICKER PAVEMENT ROADWAY INTERESTS WITH A THINNER PAVEMENT ROADWAY, THE THICKER PAVEMENT SHALL BE CONSTRUCTED FOR THE ENTIRE INTERSECTION, TO THE ENDS OF ALL CURB RETURNS.

32. PROVIDE A GEOTECHNICAL ENGINEERING REPORT THAT PROVIDES RECOMMENDATIONS FOR PAVEMENT, SUBGRADE, AND REINFORCING STEEL (SIZE AND SPACING) BEFORE MINIMUM PAVEMENT STANDARDS CAN BE USED, THEY MUST BE SUPPORTED BY THE GEOTECHNICAL ENGINEER'S RECOMMENDATION.

32. REPRESENTATIVES FROM BRAZORIA COUNTY AND THE TESTING LABORATORY SHALL BE PRESENT FOR ALL DENSITY TESTS, LIME OPERATIONS AND PLACEMENT OF CONCRETE PAVING. PROVIDE 48 HOURS' NOTICE VIA EMAIL AT (engineer-construction@brazoria-county.com).

SANITARY SEWER CONSTRUCTION NOTES

1. ALL SANITARY SEWERS INCLUDING SERVICE LEADS SHALL BE CONSTRUCTED OF SDR 26 PVC (PR 160) PER ASTM D2241. ALL JOINTS SHALL CONFORM TO ASTM D-3139. JOINTS SHALL BE BELL AND SPIGOT TYPE WITH RUBBER GASKET CONFORMING TO ASTM F-477.CHEMICALLY WELDED PVC PIPE JOINTS ARE NOT ACCEPTABLE.

2. BEDDING AND BACKFILL SHALL BE CONSIDERED SUBSIDIARY TO PAY ITEM FOR PIPE AND SHALL NOT BE PAID FOR DIRECTLY. ALL PIPES ARE TO BE BEDDED AS PER DRAWING DETAILS ON SHEET 20.

3. ALL SANITARY SEWERS UNDER OR WITHIN THREE (3) FEET OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACKFILLED WITH 2 SACK PER TON CEMENT STABILIZED SAND TO PAVEMENT SUBGRADE.

4. NO BRICK MANHOLES WILL BE ALLOWED ON SANITARY SEWERS.

5. SANITARY MANHOLE COVERS SHALL BE LABELED "SANITARY SEWER". REFER TO SHEET 19 FOR STANDARD CITY OF ANGLETON MANHOLE FRAME AND COVER DETAIL.

6. IN AREAS WHERE THE COVER BETWEEN THE TOP OF SANITARY SEWER PIPE AND EXISTING NATURAL GROUND IS LESS THAN 3 FEET, THE UTILITY CONTRACTOR SHALL PLACE ADDITIONAL COMPACTED SOIL OVER THE SANITARY SEWER AS REQUIRED TO PROVIDE A MINIMUM COVER OF 3 FEET.

7. AT ALL LOTS NOT ACCESSIBLE TO A MANHOLE, WHERE FLOW LINE IS GREATER THAN 6'-0" BELOW FINISHED GRADE, PROVIDE A 6" STANDARD SANITARY SEWER STACK. LOCATION TO BE MARKED AS PER GENERAL NOTE 22.

8. SANITARY SEWER MANHOLE RIM ELEVATIONS SHALL BE SET AT 6-INCHES ABOVE FINISHED GRADE. IF THIS NOTE CONFLICTS WITH THE ELEVATION SHOWN ON THE PLANS, THIS NOTE SHALL GOVERN.

9. WHEN MAKING A TIE TO AN EXISTING SANITARY SEWER MANHOLE, THE UTILITY CONTRACTOR SHALL PLUG THE DOWNSTREAM END OF THE PROPOSED SANITARY LINE WITH A WATERTIGHT MECHANICAL PLUG. THIS PLUG SHALL REMAIN IN PLACE UNTIL FINAL ACCEPTANCE BY THE TCEQ IS OBTAINED. (NO SEPARATE PAY).

10. CITY OF ANGLETON APPROVALS SHALL BE VALID FOR 1 YEAR ONLY AFTER THE DATE OF ACTION OF CITY COUNCIL. ANY CHANGES MADE TO PLANS AFTER SAID DATE WILL REQUIRE REPLACEMENT AND OR UPDATE OF THE PLANS. WHEN THE SIGNATURES ARE BEING UPDATED, DESIGN CHANGES MAY BE ORDERED FOR ANY UNBUILT ITEMS FOUND ON THE PLANS.

11. IN WET SAND AREAS USE SPECIAL BEDDING & MANHOLE SUPPORT AS PER DETAILS ON SHEET 21.

12. DUCTILE IRON PIPE (WHEN CALLED FOR) SHALL BE LINED WITH 40 TO 50 MILS OF POLYETHELENE COVERING ALL SURFACES EXPOSED TO SANITARY SEWAGE. USE POLY LINE BY U.S. PIPE OR POLY BOND BY AMERICAN CORP.

SANITARY SEWER CONSTRUCTION NOTES (CONTINUED)

13. SANITARY SEWER ADJUSTMENTS ARE TO BE BY THROAT RINGS ONLY. THE MAXIMUM ALLOWED CHIMNEY HEIGHT IS 2 FEET. TIE INS TO EXISTING MANHOLES ARE TO BE BY CORE ONLY.

14. ALL EXISTING AND PROPOSED SANITARY SEWER MANHOLES WITHIN THE PROJECT SITE ARE TO BE PROVIDED WITH INFLOW PROTECTORS. THE IN FLOW PROTECTOR SHALL BE "NO FLOW IN-FLOW DISH" AS SUPPLIED BY CONTRACTOR SPECIALTIES & SUPPLY CO., SAN ANTONIO, TEXAS (210) 497-8407 OR APPROVED EQUAL.

15. MANHOLE MATERIAL:
 (A) PRE-CAST CONCRETE MANHOLE MEETING ASTM C478 (LATEST REVISION).
 (B) CAST-IN PLACE MANHOLE SHALL BE 4000 PSI CONCRETE WITH WALL THICKNESS NO LESS THAN EIGHT (8) INCHES. THE BASE SHALL BE NO LESS THAN TWELVE (12) INCHES THICK
 (C) FOUNDATION: PLACE MANHOLE BASE ON TWELVE (12") INCH MINIMUM OF COMPACTED CEMENT STABILIZED SAND.

16. PIPE CONNECTION: EACH PIPE CONNECTION TO SANITARY SEWER MANHOLES SHALL BE MADE WATER TIGHT BY EITHER: (1) APPROVED FLEXIBLE CONNECTORS OR, (2) WATER TIGHT GROUT.

17. ALL SANITARY SEWER LINES AND MANHOLES MUST BE AIR TESTED AND PASS DEFLECTION (MANDREL) TESTING 30 DAYS (OR LONGER) AFTER INSTALLATION PER MINIMUM TCEQ REGULATIONS (NO SEPARATE PAY).THE CITY RESERVES THE RIGHT TO REQUIRE FILMING OF ANY SEWER INSTALLATION, AT THE CONTRACTOR'S EXPENSE PRIOR TO ACCEPTANCE.

18. ALL SANITARY SEWER DROP CONNECTIONS WILL BE INSTALLED INTERNALLY WITH NECESSARY PIPE FITTINGS AND STRAPS IN THE SEWER MANHOLES AS SHOWN ON THE ADDITIONAL SANITARY DETAILS ON SHEET 20.

19. UNLESS SPECIFIED OTHERWISE, ALL FORCE MAIN SHALL BE 8-INCH SDR-21 PVC (ASTM D-2241) PIPE WITH DUCTILE IRON JOINTS.

WATER MAIN CONSTRUCTION NOTES

1. ALL WATER LINES 6" TO 12" SHALL HAVE A MINIMUM OF 3.5 FEET COVER FROM TOP OF CURB TO TOP OF PIPE.

2. ALL WATER LINES, AFTER INSTALLATION, SHALL BE THOROUGHLY DISINFECTED ACCORDING TO ANSI/AWWA C-651 AND THEN FLUSHED BEFORE BEING PLACED INTO SERVICE. WATER SAMPLES SHALL BE COLLECTED FOR BACTERIOLOGIC ANALYSIS, (A MINIMUM OF ONE (1) SAMPLE PER EVERY 1000' OF LINE) AND LINES WILL NOT BE ACCEPTED FOR SERVICE UNTIL WATER SAMPLES MEET THE REQUIREMENTS OF THE TEXAS DEPARTMENT OF HEALTH.

3. ALL WATER LINES 6" TO 12" SHALL BE C900-DR18 PC210 POLYVINYL CHLORIDE(P.V.C.) CONFORMING TO A.W.W.A. STANDARD C-900 AS CURRENTLY REVISED. ALL HYDROSTATIC WATER TESTS SHALL CONFORM TO A.W.W.A. C-605.

4. MAINTAIN MINIMUM NINE (9) FOOT HORIZONTAL CLEARANCE BETWEEN OUTSIDE OF SANITARY SEWER MANHOLES AND WATER LINE. (SEE TCEQ WATER NOTES)

5. REQUIRED BACKFILL:
 (A) UNDER STREETS---WRAP WATER LINE WITH A 6" LAYER OF BANK SAND, REMAINDER OF TRENCH TO BE FILLED WITH 2 SACKS (100 PSI) PER TON OF CEMENT STABILIZED SAND, COMPACTED TO A MINIMUM 95% STANDARD PROCTOR.
 (B) OTHER LOCATIONS ----WRAP WATER LINE WITH A 6" LAYER OF BANK SAND, REMAINDER OF TRENCH TO BE FILLED USING COMPACTED NATIVE SOIL. SANDY SOIL MUST BE WATER JETTED; OTHER SOILS MAY BE COMPACTED BY ROLLING WITH A "CATERPILLAR" TRACTOR OR SIMILAR METHOD.
 (C) ALL TRENCHES ARE TO BE COMPACTED TO A MINIMUM 95% STANDARD PROCTOR. DENSITY AT +/- 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT.

6. WATER LINE TRENCHES UNDER PAVEMENT OR WITHIN THREE (3) FEET OF BACK OF ALL CURBS SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND TO PAVEMENT SUBGRADE.

7. FLUSHING VALVES TO BE LOCATED 3' FROM BACK OF CURB.

8. FLUSH VALVES ARE TO HAVE 3.5' MINIMUM BURY, BUT IT IS THE CONTRACTOR'S ULTIMATE RESPONSIBILITY TO ADJUST WATER FACILITIES TO OBTAIN PROPER VERTICAL LOCATION OF FLUSH VALVE IN RELATION TO THE TOP OF CURB AFTER PAVEMENT CONSTRUCTION.

9. CONTRACTOR TO ALLOW A MINIMUM OF 6 INCHES CLEARANCE BETWEEN PROPOSED WATER LINE AND EXISTING AND PROPOSED UTILITIES.

10. ALL GATE VALVES ARE TO BE NONRISING STEM, 0-RING SEALS, MUELLER BRAND. THE VALVE SHALL OPERATE WITH A COUNTER-CLOCKWISE OPENING, MECHANICAL JOINT.

11. WHEREVER POSSIBLE, ALL MAIN LINE GATE VALVES ARE TO BE LOCATED OPPOSITE PAVING CURB RETURNS AS INDICATED ON THE CONSTRUCTION PLANS. GATE VALVES LOCATED ON A MAIN LINE ADJACENT TO A FLUSHING VALVE ARE TO BE 5 FEET FROM THE FLUSHING VALVE TEE.

12. 6-INCH THROUGH 12-INCH WATERLINE FITTINGS SHALL BE CAST IRON, CEMENT LINED, MECHANICAL JOINT. ALL FITTINGS ARE TO BE THRUST BLOCKED WITH CONCRETE. ALL FITTINGS ARE TO BE WRAPPED WITH PLASTIC OR SIMILAR MATERIAL TO PREVENT CONCRETE FROM ADHERING TO THE MECHANICAL JOINT CONNECTION COMPONENTS. MINIMUM PRESSURE RATING WILL BE 250 PSI.

13. MINIMUM OF ONE JOINT OF PIPE SHALL BE INSTALLED BETWEEN GATE VALVE AND PLUG ON DEAD-END LINES.

14. CONTRACTOR SHALL MINIMIZE DOWN TIME OF THE EXISTING WATERLINES WHEN MAKING ADJUSTMENTS AND TIES TO THE LINES.

15. ALL WATER MAIN BLOW-OFF VALVES ARE TO BE LOCATED AS INDICATED ON THE PLANS AND 3-FEET OFF THE BACK OF CURB.

16. 18" GAUGE TRACER WIRE SHALL BE LAID (CONTINUOUS) ON TOP OF ALL WATER LINE PIPE AND UP THROUGH EVERY VALVE BOX FOR EVIDENCE. IN ADDITION, THE UTILITY CONTRACTOR SHALL MARK ALL FLUSH VALVES, GATE VALVES AND RESIDENTIAL WATER SERVICE LOCATIONS WITH BLUE PAINT ON THE ADJACENT STREET CURB WITH AN "X" SYMBOL WITH A CIRCLE AROUND IT.

17. FIRE HYDRANTS:
 (A) LOCATION----AT EACH STREET INTERSECTION AND CUL-DE-SAC END. SINGLE FAMILY RESIDENTIAL AREA: SIX HUNDRED (600') FOOT INTERVALS, MAXIMUM. COMMERCIAL, INCLUDING RESERVES: THREE HUNDRED (300') FOOT INTERVALS, MINIMUM.
 (B) TYPE----MUELLER BRAND, 3 WAY 51#4" BARREL WITH 41#2" STEAMER (PUMPER) NOZZLE AND TWO (2)-21#2INCH HOSE NOZZLES. COUNTER-CLOCKWISE OPENING, MECHANICAL JOINT. EACH FIRE-HYDRANT IS TO HAVE AN INDIVIDUAL GATE VALVE (WITH ADJUSTABLE RISER BOX), LOCATED WITHIN 4 FT. OF THE FIRE HYDRANT.

18. RESIDENTIAL SERVICE:.
 (A) CORPORATION STOP----MUELLER H-15000 (COMPRESSION)
 (B) CURB STOP----MUELLER H-15275 (COMPRESSION), ENDING IN AN APPROVED CONCRETE METER BOX.
 (C) METER NIPPLE REQUIRED-MUELLER H-10890G
 (D) PIPING MATERIAL ----SOFT COPPER
 (E) SIZE----1", ONE PER EACH RESIDENTIAL LOT
 (F) CONCRETE (NO PLASTIC ALLOWED) METER BOX OF APPROPRIATE SIZE IS REQUIRED.
 (G) ALL WATER SERVICES MUST BE MARKED TO INDICATE THEIR LOCATION BY MARKING THE ADJACENT CONCRETE CURB WITH A CIRCLED "X" SYMBOL APPLIED WITH BLUE PAINT.
 (H) TAP AND SLEEVE, MUELLER ONLY (STAINLESS STEEL BAND AND BOLTS, EPOXY COATED SADDLE).

STANDARD ABBREVIATIONS

@	AT	N.G.	NATURAL GROUND
B.L.	BUILDING LINE	P.C.	POINT OF CURVATURE
BL.	BASELINE	P.O.C.	POINT ON CURVE
B/S	BACKSLOPE	PI.	POINT OF INTERSECTION
BLVD	BOULEVARD	PL	PROPERTY LINE
C.L.	CENTER LINE	P.R.C.	POINT OF REVERSE CURVE
C-C	CENTER TO CENTER	P.T.	POINT OF TANGENCY
C.O.	CLEAN OUT	PT.	POINT
C.O.H.	CITY OF HOUSTON	PROP.	PROPOSED
CONC.	CONCRETE	PVMT.	PAVEMENT
C.G.M.P.	CORRUGATED GALVANIZED METAL PIPE	R.	RADIUS
C.M.P.	CORRUGATED METAL PIPE	R.C.P.	REINFORCED CONCRETE PIPE
D.E.	DRAINAGE EASEMENT	R.O.W.	RIGHT-OF-WAY
DESC.	DESCRIPTION	R.P.	RADIUS POINT
DIA.	DIAMETER	RED.	REDUCER
E.	EAST	RT.	RIGHT
E.P.	EDGE OF PAVEMENT	S.	SOUTH
EL.	ELEVATION	S.S.	SIDE SLOPE
EXIST.	EXISTING	S.S.E.	SANITARY SEWER EASEMENT
F.H.	FIRE HYDRANT	SAN.	SANITARY
F.M.	FORCE MAIN	STA.	STATION
F.V.	FLUSHING VALVE	STL	STEEL
FL.	FLOW LINE	STM.	STORM
G.V. & B.	GATE VALVE & BOX	STM. S.E.	STORM SEWER EASEMENT
INV. EL.	INVERT ELEVATION	SWR.	SEWER
L.F.	LINEAR FEET	T.C.	TOP OF CURB
B.F.V.	BUTTERFLY VALVE	TP	TOP OF PAVEMENT
CLR.	CLEARENCE	TYP.	TYPICAL
D/W	DRIVEWAY	U.E.	UTILITY EASEMENT
PVI	POINT OF VERTICAL INTERSECTION	VPI.	VERTICAL POINT INTERSECTION
LT.	LEFT	W.	WEST
M.H.	MANHOLE	W.L.	WATERLINE
MAX.	MAXIMUM	W.L.E.	WATER LINE EASEMENT
MIN.	MINIMUM	W/	WITH
N.	NORTH	ESMT	EASEMENT

ADDITIONAL TCEQ NOTES ON LOCATION OF WATERLINES

THE FOLLOWING RULES APPLY TO INSTALLATIONS OF WATERLINES, WASTEWATER MAINS OR LATERALS, AND OTHER CONVEYANCES/ APPURTENANCES IDENTIFIED AS POTENTIAL SOURCES OF CONTAMINATION. FURTHERMORE, ALL RATINGS SPECIFIED SHALL BE DEFINED BY ASTM OR AWWA STANDARDS UNLESS STATED OTHERWISE. NEW MAINS, SERVICE LINES, OR LATERALS ARE THOSE THAT ARE INSTALLED WHERE NO MAIN, SERVICE LINE, OR LATERAL PREVIOUSLY EXISTED, OR WHERE EXISTING MAINS, SERVICE LINES, OR LATERALS ARE REPLACED WITH PIPES OF DIFFERENT SIZE OR MATERIAL.

(1) WHEN NEW POTABLE WATER DISTRIBUTION LINES ARE CONSTRUCTED, THEY SHALL BE INSTALLED NO CLOSER THAN NINE FEET IN ALL DIRECTIONS TO WASTEWATER COLLECTION FACILITIES. ALL SEPARATION DISTANCES SHALL BE MEASURED FROM THE OUTSIDE SURFACE OF EACH OF THE RESPECTIVE PIECES.

(2) POTABLE WATER DISTRIBUTION LINES AND WASTEWATER MAINS OR LATERALS THAT FORMPARALLEL UTILITY LINES SHALL BE INSTALLED IN SEPARATE TRENCHES.

(3) NO PHYSICAL CONNECTION SHALL BE MADE BETWEEN A DRINKING WATER SUPPLY AND A SEWER LINE. ANY APPURTENANCE SHALL BE DESIGNED AND COSNTRUCTED SO AS TO PREVENT ANY POSSIBILTY OF SEWAGE ENTERING THE DRINKING WATER SYSTEM.

(4) WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE FOLLOWING CRITERIA SHALL APPLY.

(A) NEW WATERLINE INSTALLATION - PARALLEL LINES.

(I) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING, NON-PRESSURE OR PRESSURE RATED WASTEWATER MAIN OR LATERAL AND THE LICENSED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS IS ABLE TO DETERMINE THAT THE EXISTING WASTEWATER MAIN OR LATERAL IS NOT LEAKING, THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE EXISTING WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE EXISTING WASTEWATER MAIN OR LATERAL. EVERY EFFORT SHALL BE EXERTED NOT TO DISTURB THE BEDDING AND BACKFILL OF THE EXISTING WASTEWATER MAIN OR LATERAL.

(II) WHERE A NEW POTABLE WATERLINE PARALLELS AN EXISTING PRESSURE-RATED WASTEWATER MAIN OR LATERAL AND IT CANNOT BE DETERMINED BY THE LICENSED PROFESSIONAL ENGINEER IF THE EXISTING LINE IS LEAKING, THE EXISTING WASTEWATER MAIN OR LATERAL SHALL BE REPLACED WITH AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE NEW WASTEWATER LINE, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE REPLACED WASTEWATER MAIN OR LATERAL.

(III) WHERE A NEW POTABLE WATERLINE PARALLELS A NEW WASTEWATER MAIN, THE WASTEWATER MAIN OR LATERAL SHALL BE CONSTRUCTED OF AT LEAST 150 PSI PRESSURE-RATED PIPE. THE NEW POTABLE WATERLINE SHALL BE LOCATED AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL, MEASURED VERTICALLY, AND AT LEAST FOUR FEET AWAY, MEASURED HORIZONTALLY, FROM THE WASTEWATER MAIN OR LATERAL.

(B) NEW WATERLINE INSTALLATION - CROSSING LINES.

(I) WHERE A NEW POTABLE WATERLINE CROSSES ABOVE A WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND MUST BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. WHEN CROSSING AN EXISTING WASTEWATER MAIN OR LATERAL AND IT IS DISTURBED OR SHOWS SIGNS OF LEAKING, THE WASTEWATER MAIN OR LATERAL SHALL BE REPLACED FOR AT LEAST NINE FEET IN BOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE-RATED PIPE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT OF EACH END.

(i) THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE AN EXISTING, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL.

(ii) THE POTABLE WATERLINE SHALL BE AT LEAST SIX INCHES ABOVE AN EXISTING, PRESSURE-RATED WASTEWATER MAIN OR LATERAL.

(II) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, NON-PRESSURE RATED WASTEWATER MAIN OR LATERAL, THE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER MAIN OR LATERAL SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTERLINE OF THE WASTEWATER MAIN OR LATERAL. THE POTABLE WATERLINE SHALL BE AT LEAST TWO FEET ABOVE THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARARGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END. THE MATERIALS AND METHOD OF INSTALLATION SHALL CONFORM TO ONE OF THE FOLLOWING OPTIONS:

(i) WITHIN NINE FEET HORIZONTALLY OF EITHER SIDE OF THE WATERLINE, THE WASTEWATER PIPE AND JOINTS SHALL BE CONSTRUCTED WITH PIPE MATERIAL HAVING A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. AN ABSOLUTE MINIMUM VERTICAL SEPARATION DISTANCE OF TWO FEET SHALL BE PROVIDED. THE WASTEWATER MAIN OR LATERAL SHALL BE LOCATED BELOW THE WATERLINE.

(ii) ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 18-FOOT (OR LONGER) SECTION OF PIPE. FLEXIBLE ENCASING PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 115 PSI AT 5.0% DEFLECTION. THE ENCASING PIPE SHALL BE CENTERED ON THE WATERLINE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WASTEWATER MAIN OR LATERAL. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. EACH END OF THE CASING SHALL BE SEALED WITH WATERTIGHT NON-SHRINK CEMENT GROUT OR A MANUFACTURED WATERTIGHT SEAL. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF SIX INCHES BETWEEN THE ENCASEMENT PIPE AND THE WATERLINE SHALL BE PROVIDED. THE WASTEWATER LINE SHALL BE LOCATED BELOW THE WATERLINE.

(iii) WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL,THE WATERLINE SHALL BE ENCASED AS DESCRIBED FOR WASTEWATER MAINS OR LATERALS IN CLAUSE (II) OF THIS SUBPARAGRAPH OR CONSTRUTCED OF DUCTILE IRON OR STEEL PIPE WITH MECHANICAL OR WELDED JOINTS AS APPROPRIATE. AN ABSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN, THE PROCEDURES IN RULE 217.53(d) OF THIS TITLE (RELATING TO PIPE DESIGN) MUST BE FOLLOWED.

(iv) WHERE A NEW POTABLE WATERLINE CROSSES A NEW, PRESSURE-RATED WASTEWATER MAIN OR LATERAL, ONE SEGMENT OF THE WATERLINE PIPE SHALL BE CENTERED OVER AND SHALL BE PERPENDICULAR TO THE WASTEWATER LINE SUCH THAT THE JOINTS OF THE WATERLINE PIPE ARE EQUIDISTANT AND AT LEAST NINE FEET HORIZONTALLY FROM THE CENTER LINE OF THE WASTEWATER MAIN OR LATERAL. WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN THE JOINTS OF THE WASTEWATER MAIN OR LATERAL. THE WASTEWATER PIPE SHALL HAVE A MINIMUM PRESSURE RATING OF AT LEAST 150 PSI. THE WASTEWATER MAIN OR LATERAL SHALL BE EMBEDDED IN CEMENT STABILIZED SAND (SEE CLAUSE (V) OF THIS SUBPARAGRAPH) FOR THE TOTAL LENGTH OF ONE PIPE SEGMENT PLUS 12 INCHES BEYOND THE JOINT ON EACH END.

(v) WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF CEMENT STABILIZED SAND MIXTURE, BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.5 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL. THE USE OF BROWN COLORING IN CEMENT STABILIZED SAND FOR WASTEWATER MAIN OR LATERAL BEDDING IS RECOMMENDED FOR THE IDENTIFICATION OF PRESSURE RATED WASTEWATER MAINS DURING FUTURE CONSTRUCTION.

ADDITIONAL TCEQ NOTES ON LOCATION OF FORCE MAIN PIPES

(A) A DETECTABLE UNDERGROUND WARNING TAPE MUST BE LAID IN THE SAME TRENCH AS A FORCE MAIN PIPE. THE DETECTABLE UNDERGROUND WARNING TAPE MUST BE LOCATED ABOVE AND PARALLEL TO THE FORCE MAIN.

(B) A DETECTABLE UNDERGROUND WARNING TAPE MUST BEAR THE LABEL "PRESSURIZED WASTEWATER" CONTINOUSLY REPEATED IN AT LEAST 1.5 INCHES TALL LETTERS.

CONTRACTOR PROTOCOL WHEN ENCOUNTERING AREAS OF HYDROCARBON IMPACT

1. CONTRACTORS AND SUBCONTRACTORS ARE INFORMED THAT THEY COULD POTENTIALLY COME ACROSS AREAS OF HYDROCARBON IMPACT.

2. IF ANY SOILS WITH UNUSUAL ODORS, TEXTURES OR COLORS ARE ENCOUNTERED, THE AREA OF CONCERN WILL BE MARKED AND THE ENGINEER WILL BE NOTIFIED.

3. THE ENGINEER WILL NOTIFY THE ENVIRONMENTAL CONSULTANT WHO WILL EVALUATE THE MATERIAL AND, IF NECESSARY, TAKE SAMPLES TO CLASSIFY IT. IT IS ANTICIPATED THAT ONSITE EQUIPMENT WILL ASSIST IN THE DELINEATION OF THE AREA.

4. FOR MATERIAL DETERMINED TO BE INAPPROPRIATE FOR RESIDENTIAL DEVELOPMENT, THIS MATERIAL WILL BE REMOVED TO PREDETERMINED SITES ON THE DEVELOPMENT FOR:

 A) LAND FARMING
 B) USE AS BASE MATERIAL IN AREAS THAT WILL NOT HAVE RESIDENTIAL DEVELOPMENT SUCH AS COMMERCIAL AREAS THAT WILL BE COVERED WITH ROADS OR PARKING

5. HANDLING OF AFFECTED MATERIAL WILL BE LOGGED AND MANIFESTED. THIS INFORMATION SHALL BE AVAILABLE FOR REVIEW UPON REQUEST. TCEQ WILL BE CONTACTED FOR GUIDANCE ON ANY AREAS OF CONCERN BEYOND SMALL ISOLATED AREAS AS DETERMINED BY THE ENGINEER OR ASSIGNED CONSULTANT/S.

THE CONTRACTOR'S RESPONSIBILITY WITH REGARD TO THE ABOVE NOTES WILL BE LIMITED TO:
NOTIFYING THE LAB AND THE ENGINEER IF SUSPECT MATERIAL IS ENCOUNTERED AND WORKING WITH THEM TO HELP WITH THE SITUTAION.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

CONSTRUCTION NOTES

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET
Date:	HORZ: VERT:	3
Dwn By:	CAD FILE:	
Chkd By:		OF 36

CI JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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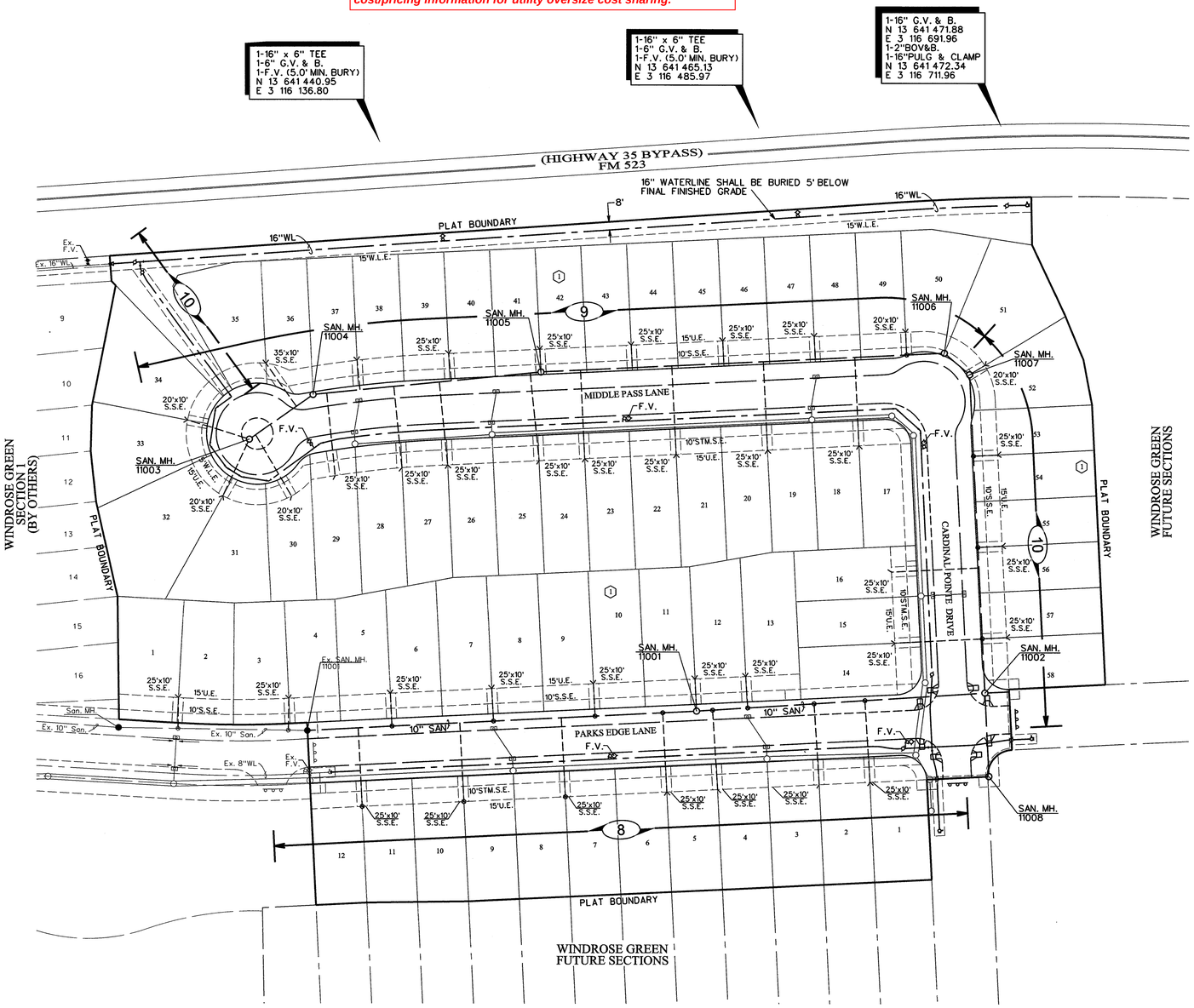
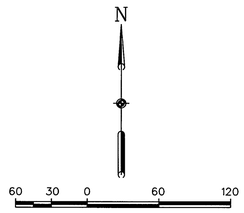
Water line along FM 523 to be shown as required size for the Section 2 development. As provided in Section 1, the upsize of the water line will be provided as a bid add alternative to provide cost/pricing information for utility oversize cost sharing.





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.

LEGEND

(3)	BLOCK NUMBER
11	LOT NUMBER
10	SHEET REFERENCE

EXISTING
SAN. SEWER LINE — LINE SIZE 8" — MANHOLE

PROPOSED
SAN. SEWER LINE — LINE SIZE 8" — MANHOLE

PROPOSED
TEE — FLUSH VALVE — GATE VALVE — WATER LINE — BLOW-OFF

NOTE:
ALL SANITARY SEWER LINES ARE 8-INCH, ALL SANITARY SEWER LEADS ARE 6-INCH AND ALL WATER LINES ARE 8-INCH UNLESS OTHERWISE INDICATED ON THE PLANS.

DESIGNED BY: _____
DESIGN CHECKED BY: _____
DRAWN BY: _____
COGO CHECKED BY: _____
SURVEY CHECKED BY: _____
QA/QC BY: _____ DATE: _____
QA/QC REVISIONS BY: _____

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100288

ANGLETON
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ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WATER AND SANITARY SEWER LAYOUT

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET	
Date:	HORZ:	4	
Dwn By:	VERT:	OF 36	
Chkd By:	CAD FILE:		

CI JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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By: ADMIN
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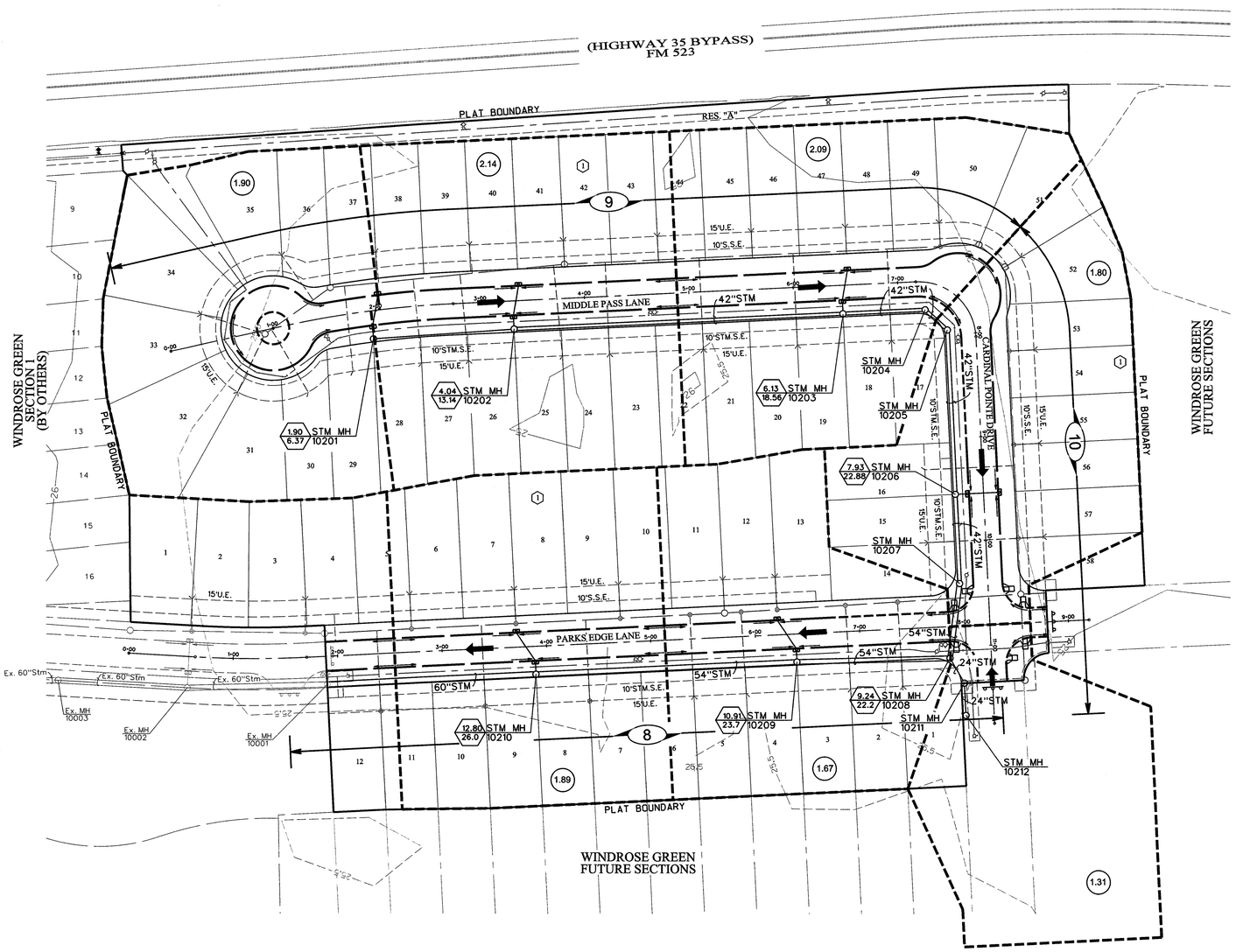

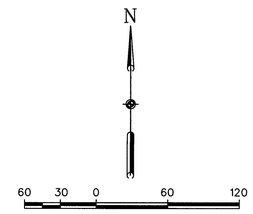

NOTE: THE CONTOURS REFLECT THE GROUND SHOTS PRIOR TO MASS GRADING & DETENTION IMPROVEMENTS. WITH MASS GRADING & DETENTION IMPROVEMENTS, THE CHANNEL CROSSING THE PROPOSED SECTION WILL BE FILLED & COMPACTED.

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.

LEGEND

EXISTING
STORM SEWER LINE — LINE SIZE 24" R.C.P. — MANHOLE — INLET

PROPOSED
STORM SEWER LINE — LINE SIZE 24" R.C.P. — MANHOLE — INLET

DRAINAGE BOUNDARY

100 YEAR OVERLAND FLOW (EXTREME EVENT)

10 — SHEET REFERENCE

ACS / CFS — ACS = CUMULATIVE DRAINAGE AREA (ACRES); CFS = 5 YR. FREQUENCY STORM RUNOFF

1.83 — DRAINAGE AREA

142 — EXISTING CONTOUR

LINE CODE LEGEND

PROPOSED 4" CURB

PROPOSED 6" CURB

UNLESS OTHERWISE SPECIFIED ALL PROPOSED : STORM SEWERS ARE 24"

DESIGNED BY: _____
DESIGN CHECKED BY: _____
DRAWN BY: _____
COGO CHECKED BY: _____
SURVEY CHECKED BY: _____
QA/QC BY: _____ DATE: _____
QA/QC REVISIONS BY: _____

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
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LICENSED PROFESSIONAL ENGINEER
11/6/2021

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(713) 783-7788 (713) 783-3580, Fax
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ANGLETON
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ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

PAVING AND DRAINAGE LAYOUT

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 5
Date:		OF 36
Dwn By:	CAD FILE:	
Chkd By:		

CI JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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STORM SEWER CALCULATIONS
BRAZORIA COUNTY DRAINAGE DISTRICT CRITERIA
Storm Event : 5-YEAR
Project : Windrose Green Section 2 and Existing
Date : October 14, 2020
By : ML

Select Rainfall Data: TxDOT 2019

Brazoria County DD I-D-F Coefficients		
Return Freq (yr)	5	25
b :	80.57	99.91
d :	13.10	13.21
e :	0.7741	0.7385
Peaking Factor C_f :	1.00	1.10

$i = b/(d+Tc)^e$ $Q = C_f C A i$

Initial T_c = 15 min (Minimum)

V_{MAX} in Pipe =
10.00

V_{MAX} @ Outfall	
CGMP	Concrete
3.50	8.00

Atlas 14 WSEL		
Pond	25-Year	100-Year
Pond A	24.49	26.26
Pond B	24.48	26.20
Pond C	24.44	26.05

Fixed Curb Height @ Inlet (ft)
0.50

Starting 25-yr TW @ Outfall =

$Q_{Weir} = C_{Weir} * W_{Pvmt} * H_{AVG}^{1.5}$

Where W_{Pvmt} = Width of Pavement to F/C;
H_{AVG} = Avg Depth @

2.10

Street Name	Subdivision Section	FROM M.H. #	TO M.H. #	Contributing Drainage Area: Delta (ac)	Contributing Drainage Area: Total (ac)	Composite Runoff Coefficient "C"	Sum of C*A	Time of Concentration (T_c): Delta or Trib T_c	Time of Concentration (T_c): Total	5-year Computations: Intensity " i " (in/hr)	5-year Computations: Runoff Flow (cfs)	Pipe Size, Length & Type Input Data: Reach (ft)	No. of BBLs	Pipe Diameter (inches) or: Span (ft)	X	Height (ft)	Pipe Type	Pipe Hydraulic Data & Design Capacities: Manning's Coefficient "N"	X-Sect Area of Pipe/Box	Hydraulic Radius (ft)	Flowline Design Slope (%)	Design Velocity (V_{DES}) (fps)	Design Capacity (Q_{DES}) (cfs)	Pipe Elevation Data: Fall in Pipe Reach (ft)	M.H. Drop to D/S FL (ft)	Pipe Flowline Elevation: @ U/S M.H.	@ D/S M.H.	Pipe Soffitt Elevation: U/S (ft)	D/S (ft)	5-year Design Computations: Actual Velocity (V_{ACT}) (fps)	Velocity Check	Hydraulic Gradient Slope (S_{HYD}) (%)	Headloss (ft)	Hydraulic Grade Line Elevation: U/S (ft)	D/S (ft)	Elevations @ Inlet Location: Top of Curb (ft)	Gutter (ft)	Natural Ground @ R.O.W. (ft)	HGL Above(+) / Below(-) Gutter @ Inlets (ft)	5-yr Design Check @ Inlet Location	100-Year Analysis Calculations: Actual Velocity (V_{ACT}) (fps)	Velocity Check	Hydraulic Gradient Slope (S_{HYD}) (%)	Headloss (ft)	Hydraulic Grade Line Elevation: U/S (ft)	D/S (ft)	Check HGL or Act Gutter Depth vs. Nat Grnd @ ROW Locations	100-yr Analysis Check @ D/S High Point
SYSTEM PARKS EDGE																																																	
Middle Pass Ln	**2**	MH 10201	**MH 10202**	1.90	1.90	0.55	1.05	**15.0**	15.0	6.09	6.37	**135**				**24**	**RCP**	0.013	3.14	0.500	0.180	3.1	9.60	0.24	**1.960**	21.53	21.29	23.53	23.29	2.03	Vel-OK	0.079	0.107	25.07	24.96	**28.07**	27.57	**28.40**	-2.503	OK	4.49	Vel-OK	0.389	0.52	28.11	27.58	OK	Method 1 - OK
Middle Pass Ln	**2**	MH 10202	**MH 10203**	2.14	4.04	0.55	2.22	1.1	16.1	5.91	13.14	**315**				**42**	**RCP**	0.013	9.62	0.875	0.090	3.1	30.18	0.28	0.000	19.33	19.05	22.83	22.55	1.37	Vel-OK	0.017	0.054	24.96	24.91	**27.53**	27.03	**28.10**	-2.070	OK	3.08	Vel-OK	0.087	0.27	27.58	27.31	OK	Method 1 - OK
Middle Pass Ln	**2**	MH 10203	**MH 10204**	2.09	6.13	0.55	3.37	3.8	20.0	5.37	18.11	**79**				**42**	**RCP**	0.013	9.62	0.875	0.090	3.1	30.18	0.07	0.000	19.05	18.98	22.55	22.48	1.88	Vel-OK	0.032	0.026	24.91	24.88	**27.39**	26.89	**27.80**	-1.983	OK	4.49	Vel-OK	0.184	0.15	27.31	27.16	OK	Method 1 - OK
Middle Pass Ln	**2**	MH 10204	**MH 10205**	-	6.13	0.55	3.37	0.7	20.7	5.29	18.11	**29**				**42**	**RCP**	0.013	9.62	0.875	0.090	3.1	30.18	0.03	**0.000**	18.98	18.95	22.48	22.45	1.88	Vel-OK	0.032	0.009	24.88	24.87	**27.39**	26.89	**27.80**	-2.009	OK	4.49	Vel-OK	0.184	0.05	27.16	27.11	OK	Method 1 - OK
Cardinal Pointe Dr	**2**	MH 10205	**MH 10206**	-	6.13	0.55	3.37	0.3	20.9	5.25	18.11	**158**				**42**	**RCP**	0.013	9.62	0.875	0.090	3.1	30.18	0.14	0.000	18.95	18.81	22.45	22.31	1.88	Vel-OK	0.032	0.051	24.87	24.82	**27.39**	26.89	**27.80**	-2.018	OK	4.49	Vel-OK	0.184	0.29	27.11	26.82	OK	Method 1 - OK
Cardinal Pointe Dr	**2**	MH 10206	**MH 10207**	1.80	7.93	0.55	4.36	1.4	22.3	5.09	22.21	**85**				**42**	**RCP**	0.013	9.62	0.875	0.090	3.1	30.18	0.08	**0.000**	18.81	18.73	22.31	22.23	2.31	Vel-OK	0.049	0.041	24.82	24.78	**26.78**	26.28	**27.20**	-1.459	OK	5.68	Vel-OK	0.295	0.25	26.82	26.57	OK	Method 1 - OK
Cardinal Pointe Dr	**2**	MH 10207	**MH 10208**	-	7.93	0.55	4.36	0.6	22.9	5.03	22.21	**72**				**54**	**RCP**	0.013	15.90	1.125	0.060	3.0	48.17	0.04	0.000	18.73	18.69	23.23	23.19	1.40	Vel-OK	0.013	0.009	24.78	24.77	**26.83**	26.33	**27.20**	-1.551	OK	3.44	Vel-OK	0.077	0.06	26.57	26.51	OK	Method 1 - OK
Parks Edge Ln	**2**	MH 10208	**MH 10209**	**1.31**	9.24	**0.55**	5.08	**15.7**	23.8	4.93	25.08	**147**				**54**	**RCP**	0.013	15.90	1.125	0.060	3.0	48.17	0.09	0.000	18.69	18.60	23.19	23.10	1.58	Vel-OK	0.016	0.024	24.77	24.75	**26.83**	26.33	**27.20**	-1.560	OK	3.95	Vel-OK	0.102	0.15	26.51	26.36	OK	Method 1 - OK
Parks Edge Ln	**2**	MH 10209	**MH 10210**	1.67	10.91	0.55	6.00	1.6	25.3	4.78	28.68	**250**				**54**	**RCP**	0.013	15.90	1.125	0.060	3.0	48.17	0.15	**0.000**	18.60	18.45	23.10	22.95	1.80	Vel-OK	0.021	0.053	24.75	24.69	**26.83**	26.33	**27.20**	-1.584	OK	4.60	Vel-OK	0.139	0.35	26.36	26.02	OK	Method 1 - OK
Parks Edge Ln	**2**	MH 10210	**MH 10001**	1.89	12.80	0.55	7.04	2.3	27.6	4.57	32.16	**200**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.12	**0.000**	18.45	18.33	23.45	23.33	1.64	Vel-OK	0.015	0.031	24.69	24.66	**26.78**	26.28	**27.20**	-1.587	OK	4.29	Vel-OK	0.105	0.21	26.02	25.81	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10001	**MH 10002**	-	12.80	0.55	7.04	2.0	29.7	4.40	32.16	**134**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.08	0.000	18.33	18.25	23.33	23.25	1.64	Vel-OK	0.015	0.020	24.66	24.64	**26.78**	26.28	**27.20**	-1.618	OK	4.29	Vel-OK	0.105	0.14	25.81	25.67	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10002	**MH 10003**	2.30	15.10	0.55	8.31	1.4	31.0	4.29	35.66	**124**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.07	0.000	18.25	18.18	23.25	23.18	1.82	Vel-OK	0.019	0.023	24.64	24.62	**26.47**	25.97	**27.00**	-1.328	OK	4.93	Vel-OK	0.138	0.17	25.67	25.49	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10003	**MH 10004**	-	15.10	0.55	8.31	1.1	32.2	4.21	35.66	**97**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.06	0.000	18.18	18.12	23.18	23.12	1.82	Vel-OK	0.019	0.018	24.62	24.60	**26.47**	25.97	**27.00**	-1.351	OK	4.93	Vel-OK	0.138	0.13	25.49	25.36	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10004	**MH 10005**	**3.03**	18.13	**0.55**	9.97	**17.2**	33.1	4.15	41.35	**125**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.08	0.000	18.12	18.04	23.12	23.04	2.11	Vel-OK	0.025	0.032	24.60	24.57	**26.47**	25.97	**27.00**	-1.370	OK	5.83	Vel-OK	0.194	0.24	25.36	25.12	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10005	**MH 10006**	**1.83**	19.96	**0.55**	10.98	**20.7**	34.1	4.08	44.79	**45**				**60**	**RCP**	0.013	19.63	1.250	0.060	3.2	63.80	0.03	**0.000**	18.04	18.01	23.04	23.01	2.28	Vel-OK	0.030	0.013	24.57	24.56	**26.47**	25.97	**27.00**	-1.401	OK	6.38	Vel-OK	0.231	0.10	25.12	25.01	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10006	**MH 10007**	0.21	20.17	0.55	11.09	0.3	34.4	4.06	45.02	**99**				**66**	**RCP**	0.013	23.76	1.375	0.050	3.2	75.09	0.05	0.000	18.01	17.96	23.51	23.46	1.89	Vel-OK	0.018	0.018	24.56	24.54	**26.50**	26.00	**27.30**	-1.444	OK	5.32	Vel-OK	0.141	0.14	25.01	24.87	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10007	**MH 10008**	-	20.17	0.55	11.09	0.9	35.3	4.00	45.02	**72**				**66**	**RCP**	0.013	23.76	1.375	0.050	3.2	75.09	0.04	0.000	17.96	17.92	23.46	23.42	1.89	Vel-OK	0.018	0.013	24.54	24.52	**26.50**	26.00	**27.30**	-1.462	OK	5.32	Vel-OK	0.141	0.10	24.87	24.77	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10008	**MH 10009**	**4.89**	25.06	**0.55**	13.78	**19.1**	35.9	3.96	54.60	**27**				**66**	**RCP**	0.013	23.76	1.375	0.050	3.2	75.09	0.01	**9.860**	17.92	17.91	23.42	23.41	2.30	Vel-OK	0.026	0.007	24.52	24.52	**26.50**	26.00	**27.30**	-1.475	OK	6.54	Vel-OK	0.214	0.06	24.77	24.72	OK	Method 1 - OK
Parks Edge Ln	**1**	MH 10009	**POND A**	**8.80**	33.86	**0.55**	18.62	**26.6**	36.1	3.95	73.54	**92**				**72**	**RCP**	0.013	28.27	1.500	0.050	3.3	94.70	0.05	0.000	8.05	**8.00**	14.05	14.00	2.60	Vel-OK	0.030	0.028	24.52	**24.49**	**26.58**	26.08	**27.30**	-1.562	OK	7.41	Vel-OK	0.245	0.23	24.72	**24.49**	OK	Method 1 - OK
Cardinal Pointe Dr	**2**	MH 10210	**MH 10211**	1.31	1.31	0.55	0.72	**15.0**	15.0	6.09	4.39	**28**				**24**	**RCP**	0.013	3.14	0.500	0.180	3.1	9.60	0.05	0.000	19.96	19.91	21.96	21.91	1.40	Vel-OK	0.038	0.011	24.79	24.78	**27.30**	26.80	**27.50**	-2.008	OK	3.10	Vel-OK	0.185	0.05	26.62	26.57	OK	Method 1 - OK
Cardinal Pointe Dr	**2**	MH 10211	**MH 10208**	-	1.31	0.55	0.72	0.3	15.3	6.04	4.39	**31**				**24**	**RCP**	0.013	3.14	0.500	0.180	3.1	9.60	0.06	**1.160**	19.91	**19.85**	21.91	21.85	1.40	Vel-OK	0.038	0.012	24.78	**24.77**	**27.23**	26.73	**27.43**	-1.948	OK	3.10	Vel-OK	0.185	0.06	26.57	**26.51**	OK	Method 1 - OK

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

DRAINAGE CALCULATIONS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 6
Date:		
Dwn By:	CAD FILE:	OF 36
Chkd By:		

CI JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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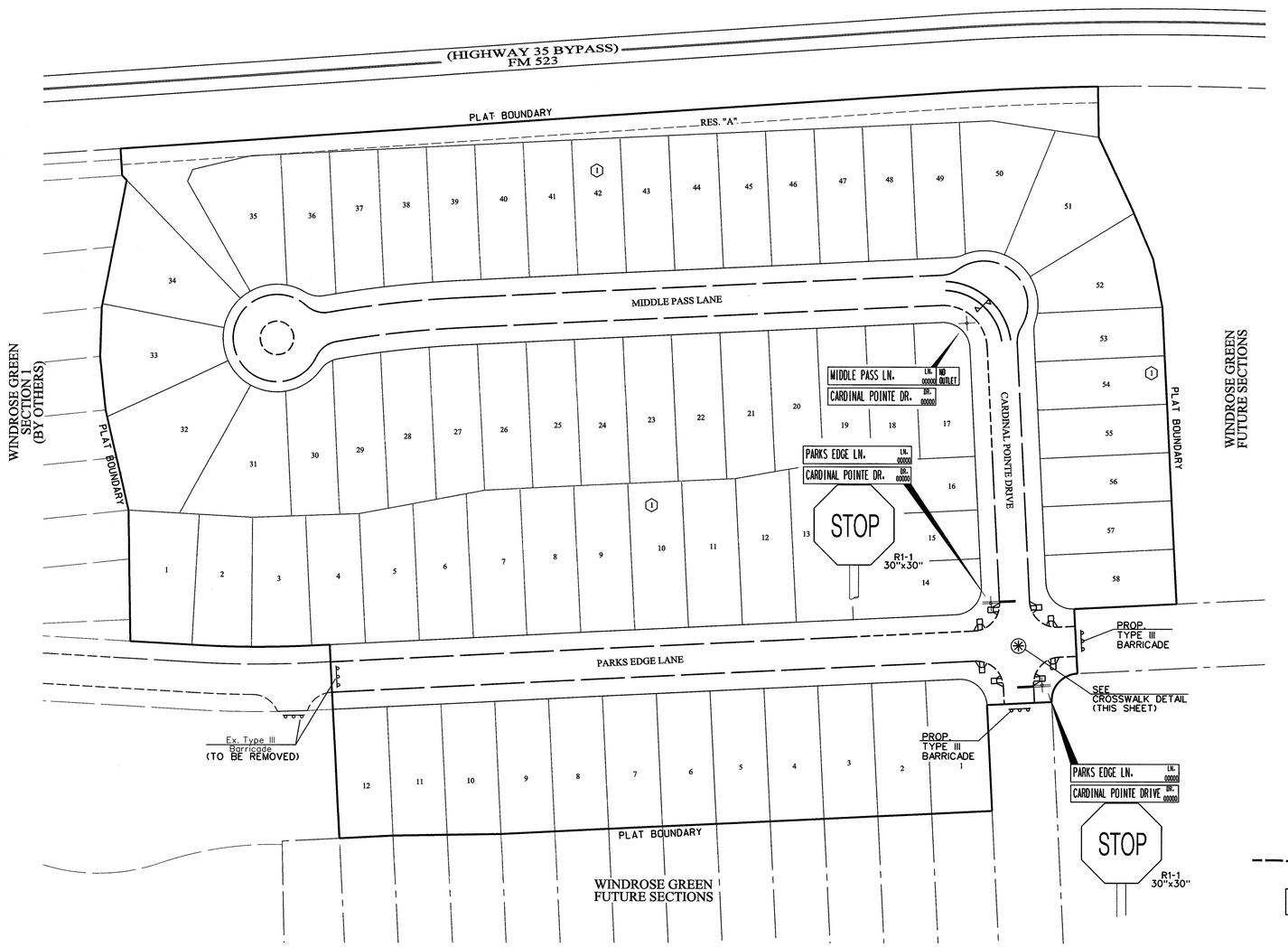
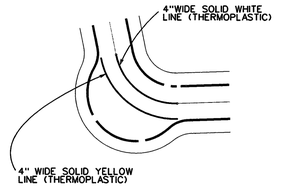
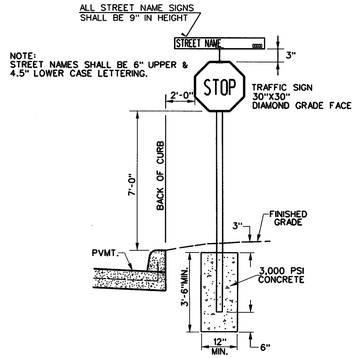
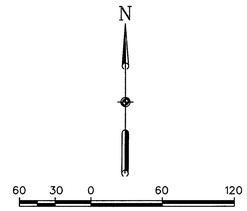




KNUCKLE STRIPING DETAIL
N.T.S.



TRAFFIC SIGN DETAIL
N.T.S.

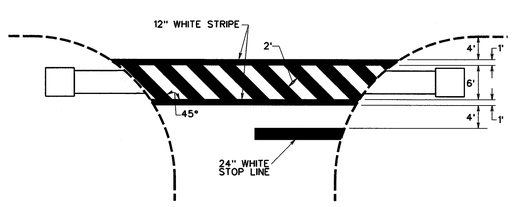


VERTICAL DATUM

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.

LEGEND

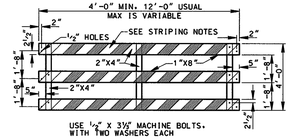
①/1	BLOCK NUMBERS / LOT NUMBERS
	STREET SIGN w/STREET NAMES
	STREET SIGN
	STREET NAME CHANGE SIGN
	WHEELCHAIR RAMPS
	24" WIDE STOP BAR



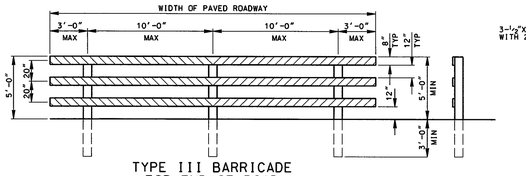
CROSSWALK DETAIL
N.T.S.

NOTES:

1. MEDIAN CURB SHALL BE PAINTED YELLOW AS PER TRAFFIC CONTROL SPECIFICATIONS.
2. SOLID 24-INCH WIDE REFLECTORIZED WHITE STOP BAR PLACED 4-FEET IN ADVANCE OF AND PARALLEL TO CROSSWALKS OR NEAREST EDGE OF INTERSECTING ROADWAY.
3. SIGN POSTS SHALL BE IN ACCORDANCE WITH DETAIL SHEET.
4. ALL SIDEWALKS SHALL HAVE A CROSS-SLOPE OF 2%. ALL SIDEWALK RAMPS SHALL CONFORM WITH ADA REQUIREMENTS. SIDEWALK RAMPS SHALL TERMINATE AT A PORTION OF SIDEWALK (MINIMUM 5'LENGTH) HAVING A MAXIMUM 2% SLOPE IN ALL DIRECTIONS. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK IS TO BE 5%. THE CONTRACTOR IS RESPONSIBLE FOR GRADING AND LAYING OUT SIDEWALKS TO CONFORM TO THIS CRITERIA.

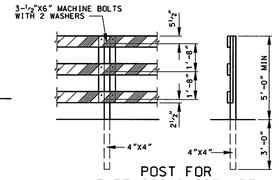


PANEL FOR TYPE III BARRICADE

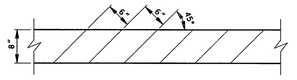


TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD. THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND RELFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC



POST FOR TYPE III BARRICADE



STRIPING FOR BARRICADE

FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'-0" LONG. STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.

STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC. SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45° DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.

WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

DESIGNED BY:
DESIGN CHECKED BY:
DRAWN BY:
COGO CHECKED BY:
SURVEY CHECKED BY:
QA/QC BY: DATE:
QA/QC REVISIONS BY:

MK.	DESCRIPTION	DWN.	DATE	CHK.

11/8/2021
STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

PAVEMENT MARKING & SIGNAGE LAYOUT

Job No.:	Scale: HORZ: VERT:	SHEET 7 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

CI JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

Autodesk Docs://2020 161,162 Windrose Section 2/2020161_DP7_TRAFFIC LAYOUT.dgn
11/8/2021 10:59:09 AM

C/L STA. 8+24.77 ~ PARKS EDGE LANE ~
C/L STA. 10+80.28 ~ CARDINAL POINTE DRIVE

CORE INTO SAN. MH.
Ex. SAN. MH. 11001
STA. 1+88.53
22.17' LT.

STA. 1+88.68
14.00' LT.
TC 26.96

CONNECT TO Ex. 6" STACK

Ex. C.O.H. TYPE III BARRICADE (TO BE REMOVED)

2-TYPE "H-2" INLETS
STA. 3+71.79 LT
STA. 3+88.68 RT
TC 26.78 LT
TC 26.72 RT
24"FL 21.68 RT
24"FL 21.48 LT

2-TYPE "H-2" INLETS
STA. 6+21.79 LT
STA. 6+38.68 RT
TC 26.91 LT
TC 26.83 RT
24"FL 21.81 RT
24"FL 21.61 LT

SAN. MH. 11001
STA. 5+71.81
23.22' LT.

78'~6" IN 12" STL CASING (34' STL CASING)

80'~6" IN 12" STL CASING (34' STL CASING)

STM. MH. 10005
(SEE SHEET 10)

STA. 7+85.79
14.00' LT.
TC 27.48

SAN. MH. 11002
STA. 8+55.88
27.50' LT.

STA. 8+63.79
14.00' LT.
TC 27.48

10" PLUG
STA. 8+79.80
27.50' LT.

STA. 8+79.80
14.00' LT.
TC 27.42

CARDINAL POINTE DR.
(SEE SHEET 10)

PROP. C.O.H. TYPE III BARRICADE

END w/LOAD TRANSFER DEVICE

Ex. San. MH.

PLAT BOUNDARY

Ex. 10" San.

0+00 S 86°41'59" E

Ex. 24"STM

PT STA 1+70.11

PC STA 0+63.29

C-1

Ex. 8"WL

Ex. 60"STM

Ex. 10"STM.S.E.

Ex.STM. MH. 10002
STA. 0+57.36
30.00' RT.

CONNECT TO Ex. LOAD TRANSFER DEVICE

STA. 1+88.68
14.00' RT.
TC 26.96

CONTRACTOR TO BREAK INTO
Ex.STM. MH. 10001 AND CONNECT PROP. 54" STM
STA. 1+88.68
27.00' RT.

PROP. 6" CONC. PVMT.

R.O.W. 60'

B/B 28'

10"SAN

33'-24"

12'-24"

5' (TYP)

8"W/L (TYP)

N 87°10'48" E

54"STM

10'STM.S.E.

15'U.E.

60"STM

77°@ 0.70%

78°@ 0.70%

78°@ 0.70%

STM. MH. 10210
STA. 3+88.68
27.00' RT.

STM. MH. 10209
STA. 6+38.68
27.00' RT.

78'~6" IN 12" STL CASING (34' STL CASING)

80'~6" IN 12" STL CASING (34' STL CASING)

STA. 7+85.75
14.00' RT.
TC 27.48

STM. MH. 10208
STA. 7+85.17
30.44' RT.

STM. MH. 10210
(SEE SHEET 10)

STM. MH. 10212
(SEE SHEET 10)

SAN. MH. 11008
(SEE SHEET 10)

24"STM

8"W/L

10"SAN

20'S.E.

9+00

STA. 8+79.80
14.00' RT.
TC 27.42

STA. 8+63.75
14.00' RT.
TC 27.48

REMOVE EXISTING 8" PLUG & CLAMP AND CONNECT PROP. 8"W/L
1-WET CONNECTION
STA. 2+08.68, 20.00' RT.

1-8" x 6" TEE
1-6" G.V. & B.
1-F.V. (4.0' MIN. BURY)
STA. 4+88.75, 17.00' RT.

1-8" G.V.&B.
1-8" x 6" TEE
1-6" G.V. & B.
1-F.V. (4.0' MIN. BURY)
STA. 7+81.27, 17.00' RT.

1-8"x8" CROSS
STA. 8+01.31
23.45' RT

1-8"G.V.&B.
STA. 8+79.80, 20.00' RT
1-8"PLUG & CLAMP
STA. 8+99.80, 20.00' RT

SANITARY SEWER 6"LEADS

PT*	STATION	OFFSET	ELEV.
1	0+58.63	24.43'LT	22.34
2	0+57.36	55.00'LT	23.01
3	1+69.71	23.40'LT	22.64
4	1+71.79	55.00'LT	23.44
5	2+38.54	22.31'LT	15.83
* 6	2+38.75	55.00'RT	16.37
* 7	2+71.81	22.40'LT	23.13
8	2+71.72	55.00'LT	23.96
* 10	3+38.53	22.58'LT	16.08
* 11	3+71.81	22.67'LT	22.75
12	3+71.72	55.00'LT	23.55
13	4+38.54	22.85'LT	16.33
* 14	4+38.75	55.00'RT	16.86
* 15	4+71.81	22.94'LT	23.16
16	4+71.72	55.00'LT	23.96
* 17	5+38.54	23.13'LT	23.60
18	5+38.75	55.00'RT	24.15
19	5+71.72	55.00'LT	23.53
* 20	5+87.55	23.45'LT	23.63
21	5+88.74	55.00'RT	24.18
* 22	6+22.19	23.98'LT	22.84
23	6+21.72	55.00'LT	23.62
* 24	6+87.53	24.96'LT	23.69
25	6+88.74	55.00'RT	24.25
* 26	7+37.58	25.72'LT	23.72
27	7+38.80	55.00'RT	24.29

*•6" STACK

CONTROL BENCHMARK:
NGS MONUMENT "R 1182"; DISK FOUND ON TOP OF CONCRETE CURB OF BRIDGE ALONG COUNTY ROAD (CR) 171, APPROXIMATELY 270 FEET SOUTHWEST OF AN INTERSECTION WITH CR 428. DISK LOCATED 4.3 FEET SOUTHWEST OF THE NORTHEAST END OF THE CONCRETE CURB ON THE NORTHWEST SIDE OF THE BRIDGE, AND BEING 14 FEET NORTHWEST OF THE CENTERLINE OF ROAD.

ELEVATION = 26.30 NGVD29, 1979 ADJUSTMENT

CL CURVE DATA

C-1
PC STA 0+63.29
PT STA 1+70.11
Δ= 6° 07'13" (LT)
R = 1,000.00
L = 106.82
T = 53.46
CB = S 89° 45' 35" E
CH = 106.77

NOTES

1. 1~ 20' PVC SANITARY RESTRAINED JOINT CENTERED OVER/UNDER ONE 20' RESTRAINED WATER LINE JOINT EMBED SS WITH CSS FOR TOTAL LENGTH OF 1 PIPE SEGMENT PLUS 1' ON EACH END. IF WL (LESS THAN 24") CROSS UNDER SS, PROVIDE DIP FOR WL OR ENCASE WL IN STEEL TWO NOMINAL SIZES LARGER WITH SPACERS.
2. UNLESS OTHERWISE NOTED, ALL STORM SEWERS AND INLET LEADS WILL BE PROPOSED REINFORCED CONCRETE PIPE (C-76, CL. III) W/PROPOSED TYPE "C" MANHOLES.
3. ALL CURB RADII SHALL BE 25' UNLESS OTHERWISE NOTED. MINIMUM SLOPE AROUND CURB RETURN 1.0%
4. EXIST. TEMP. SWALES WITHIN R.O.W. TO BE MUCKED OUT, PROOF ROLLED & FILLED.

(X) • INDICATES MIN. VERTICAL CLEARANCE

(T) • INDICATES VERTICAL CURB TRANSITION FROM 4" TO 6" IN MIN. 5 L.F. TO MAX. 10 L.F.

[X] • INDICATES AN OFFSET OF 1.08' HORIZONTAL FEET @ 45° FROM 8" SAN. TRUNKLINE & 0.78' VERTICAL FEET ADDED TO 8" SAN. FLOWLINE. SEE SANITARY SEWER DETAIL SHEET.

6" CURB
4" CURB

PARKS EDGE LN. (60' R.O.W.)

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

ALL TOP OF CURB ELEVATIONS SHOWN ARE BASED ON 6" CURB

STA. 1+88.68 TC 26.96
STA. 2+54.43 TC 27.19
STA. 3+71.79 TC 26.78 LT
STA. 3+88.68 TC 26.72 RT
STA. 5+13.75 TC 27.39
STA. 6+21.79 TC 26.91 LT
STA. 6+38.68 TC 26.83 RT
STA. 7+85.79 TC 27.48
CARDINAL POINTE DR
STA. 8+63.79 TC 27.48
STA. 8+79.80 TC 27.42

6" STACK TOP EL. 23.6
6" STACK TOP EL. 23.4
6" STACK TOP EL. 23.0

Ex. Top of Curb
TC @ 0.35%
TC @ -0.35%
TC @ 0.43% LT
TC @ 0.54% RT
TC @ -0.44%
TC @ 0.54% RT
TC @ 0.41% LT
TC @ -0.37%

6" SAN. LEAD
6" SAN. LEAD
Ex. FV
8"WL
Natural Ground
24" LEAD
6" STACK (TYP.)
24" LEAD
54" RCP
24" RCP
8"PLUG & CLAMP
8"WL
8"SAN.
10" PLUG

Ex. 8"WL
Ex. 60" STM
60" STM FL 18.33
Ex. 10" SAN.
Ex. 8" SAN FL 14.84

200' 60" RCP @ 0.06%
250' 54" RCP @ 0.06%
147' 54" RCP @ 0.06%
F.V. LEAD
F.V. LEAD
8"WL
6"STANDARD DROP CONNECTION
10"SAN.
10"SAN.
114'-8" RESTRAINED JOINT

Ex STM. MH. 10001
60" FL 18.33

STM. MH. 10210
54" FL 18.50
24" FL 21.38

STM. MH. 10209
54" FL 18.69 E&W
24" FL 21.51

STM. MH. 10208
54" FL 18.69 E&W
24" FL 19.85

383'
284'
24'
10" SDR26 PVC @ 0.25% AS PER BEDDING DETAIL SHT. 21.

SAN. M.H. 11001
10" FL 15.80
6" LD 22.73

SAN. M.H. 11002
10"~FL 16.51
8" FL 16.71
10" PLUG FL 16.57

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

DESIGNED BY:
DESIGN CHECKED BY:
DRAWN BY:
COGO CHECKED BY:
SURVEY CHECKED BY:
QA/QC BY: DATE:
QA/QC REVISIONS BY:

MK.	DESCRIPTION	DWN.	DATE	CHK.

1/6/2021
STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

PARKS EDGE LN.
STA. 0+00.00 TO STA. 9+40.00

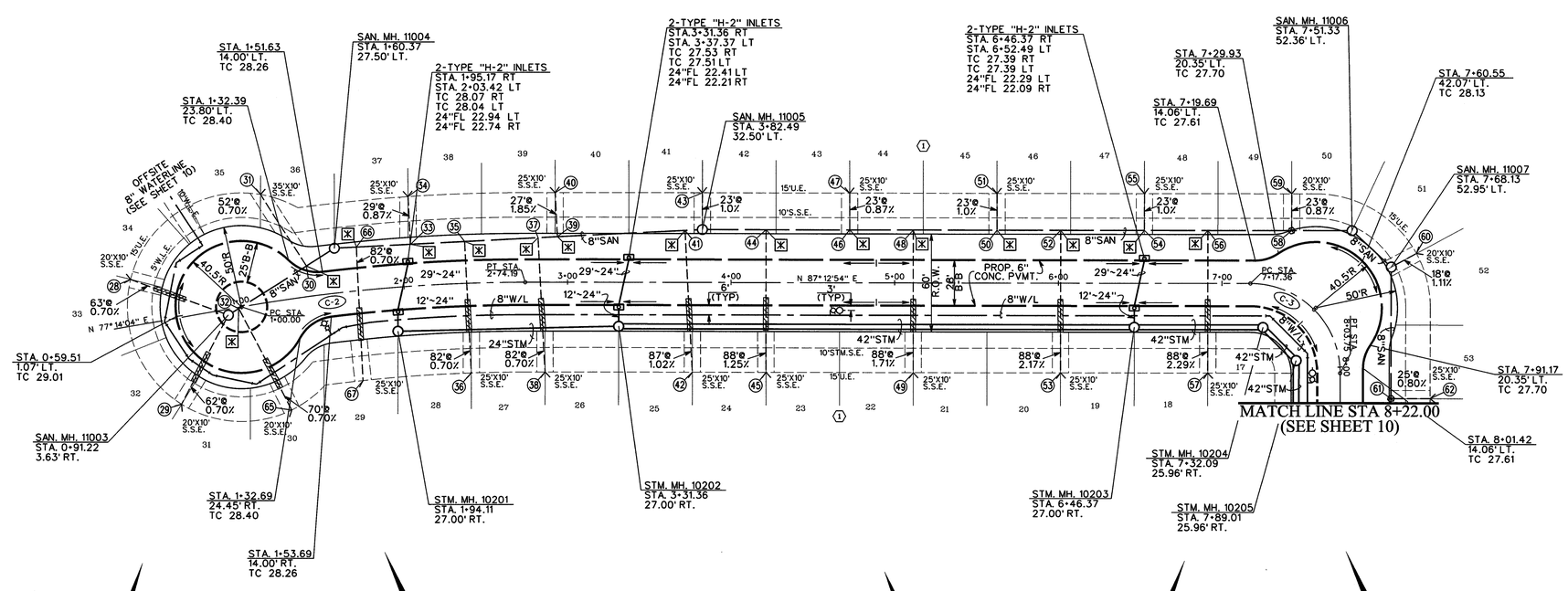
Job No.:	Scale: HORZ: 1" = 40' VERT: 1" = 4'	SHEET 8 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

CI JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

CONTROL BENCHMARK:

NGS MONUMENT "R 1182"; DISK FOUND ON TOP OF CONCRETE CURB OF BRIDGE ALONG COUNTY ROAD (CR) 171. APPROXIMATELY 270 FEET SOUTHWEST OF AN INTERSECTION WITH CR 428. DISK LOCATED 4.3 FEET SOUTHWEST OF THE NORTHEAST END OF THE CONCRETE CURB ON THE NORTHWEST SIDE OF THE BRIDGE, AND BEING 14 FEET NORTHWEST OF THE CENTERLINE OF ROAD.

ELEVATION = 26.30 NGVD29, 1979 ADJUSTMENT



1-8"x90° BEND
2-8"x45° BEND
2-8"x22.5° BEND
1-8"x 45° BEND

1-8" x 6" TEE
1-6" G.V. & B.
1-F.V. (4.0' MIN. BURY)
STA. 1+48.84, 17.51' RT.

1-8" x 6" TEE
1-6" G.V. & B.
1-F.V. (4.0' MIN. BURY)
STA. 4+66.36, 17.00' RT.

1-8"x45° BEND
STA. 7+35.52, 18.00' RT
1-8"x45° BEND
STA. 7+85.58, 18.00' RT

1-8" x 6" TEE
1-6" G.V. & B.
1-F.V. (4.0' MIN. BURY)
STA. 8+03.75, 17.00' RT.

CL CURVE DATA

C-2	C-3
C-2-1	C-2-2
PC STA 1+00.00	PC STA 7+17.36
PT STA 2+74.19	PT STA 8+03.75
- 9°58'50" (RT)	- 90°00'00" (RT)
R - 1,000.00	R - 55.00
L - 174.19	L - 86.39
T - 87.32	T - 55.00
CB - N 82°13'29" E	CB - S 47° 47'06" E
CH - 173.97	CH - 77.78

SANITARY SEWER 6"LEADS

PT*	STATION	OFFSET	ELEV.
28	0+35.96	28.26'LT	24.39
29	0+53.37	52.20'RT	24.38
30	1+42.50	18.81'LT	24.23
31	1+21.95	66.24'LT	24.59
32	0+98.16	0.76'RT	24.42
65	1+20.56	67.12'RT	24.91
33	2+05.71	25.70'LT	23.96
34	2+06.18	55.00'LT	24.40
35	2+38.12	25.67'LT	23.83
36	2+39.44	55.00'RT	24.40
37	2+82.11	27.32'LT	23.65
38	2+86.36	55.00'RT	24.42
39	2+93.89	27.93'LT	23.60
40	2+92.49	55.00'LT	24.10
41	3+71.87	31.95'LT	23.28
42	3+76.36	55.00'RT	24.08
43	3+82.49	55.00'LT	23.91
44	4+21.36	32.50'LT	23.09
45	4+21.36	55.00'RT	24.19
46	4+72.49	32.50'LT	22.86
47	4+72.49	55.00'LT	23.08
48	5+11.36	32.50'LT	22.72
49	5+11.36	55.00'RT	24.22
50	5+62.49	32.50'LT	22.09
51	5+62.49	55.00'LT	22.32
52	6+01.36	32.50'LT	22.35
53	6+01.36	55.00'RT	24.26
54	6+52.49	32.50'LT	22.08
55	6+52.49	55.00'LT	22.31
56	6+91.36	32.50'LT	21.99
57	6+91.36	55.00'RT	24.00
* 58	7+32.74	36.04'LT	24.23
59	7+29.72	57.84'LT	24.43
60	7+69.27	70.29'LT	24.10
* 61	8+19.20	31.10'LT	23.68
62	8+19.20	55.00'LT	23.88
66	1+73.54	26.79'LT	24.09
67	1+69.29	55.00'LT	24.66

* -6" STACK

NOTES

1. 1~ 20' PVC SANITARY RESTRAINED JOINT CENTERED OVER/UNDER ONE 20' RESTRAINED WATER LINE JOINT EMBED SS WITH CSS FOR TOTAL LENGTH OF 1 PIPE SEGMENT PLUS 1' ON EACH END. IF WL (LESS THAN 24") CROSS UNDER SS, PROVIDE DIP FOR WL OR ENCASE WL IN STEEL TWO NOMINAL SIZES LARGER WITH SPACERS.
2. UNLESS OTHERWISE NOTED, ALL STORM SEWERS AND INLET LEADS WILL BE PROPOSED REINFORCED CONCRETE PIPE (C-76, CL. III) W/PROPOSED TYPE "C" MANHOLES.
3. ALL CURB RADII SHALL BE 25' UNLESS OTHERWISE NOTED. MINIMUM SLOPE AROUND CURB RETURN 1.0%
4. EXIST. TEMP. SWALES WITHIN R.O.W. TO BE MUCKED OUT. PROOF ROLLED & FILLED.

(X) - INDICATES MIN. VERTICAL CLEARANCE

(T) - INDICATES VERTICAL CURB TRANSITION FROM 4" TO 6" IN MIN. 5 L.F. TO MAX. 10 L.F.

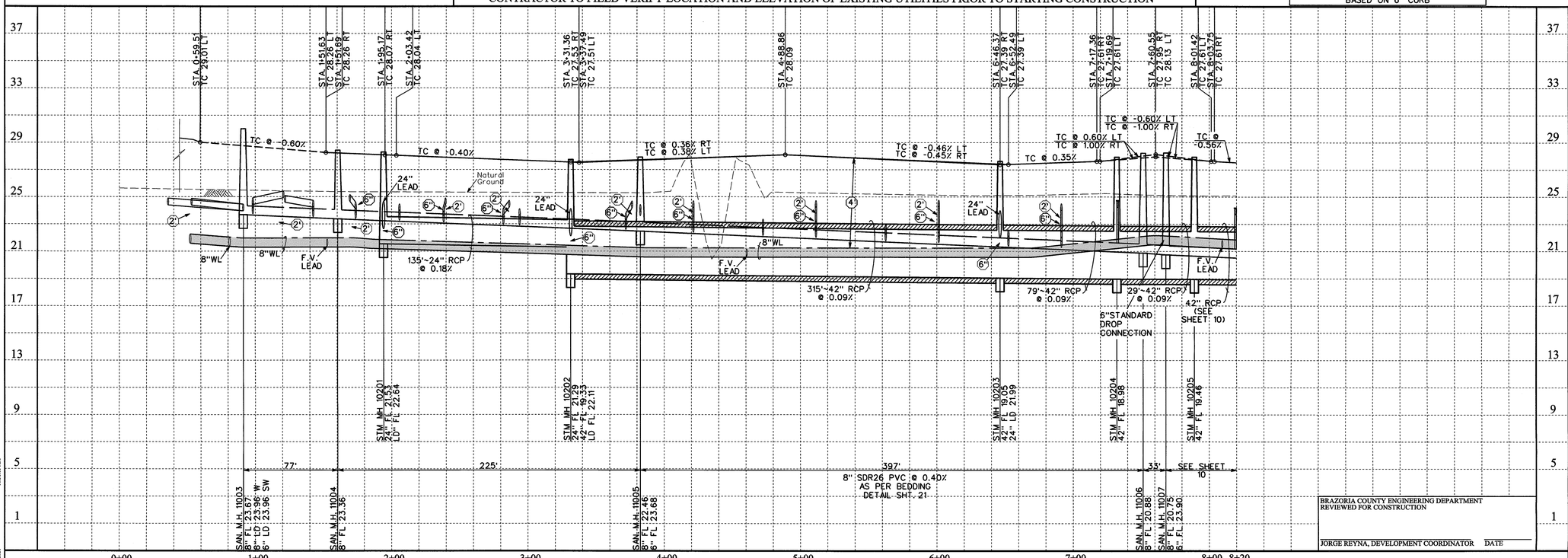
[X] - INDICATES AN OFFSET OF 1.08' HORIZONTAL FEET @ 45° FROM 8" SAN. TRUNKLINE & 0.78' VERTICAL FEET ADDED TO 8" SAN. FLOWLINE. SEE SANITARY SEWER DETAIL SHEET.

6" CURB
4" CURB

MIDDLE PASS LANE (60' R.O.W.)

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

ALL TOP OF CURB ELEVATIONS SHOWN ARE BASED ON 6" CURB



BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

DESIGNED BY: _____
DESIGN CHECKED BY: _____
DRAWN BY: _____
COGO CHECKED BY: _____
SURVEY CHECKED BY: _____
QA/QC BY: _____ DATE: _____
QA/QC REVISIONS BY: _____

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

MIDDLE PASS LANE
STA. 0+00.00 TO STA. 8+22.00

Job No.:	Scale: HORZ: 1" = 40' VERT: 1" = 4'	SHEET 9 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

C1 JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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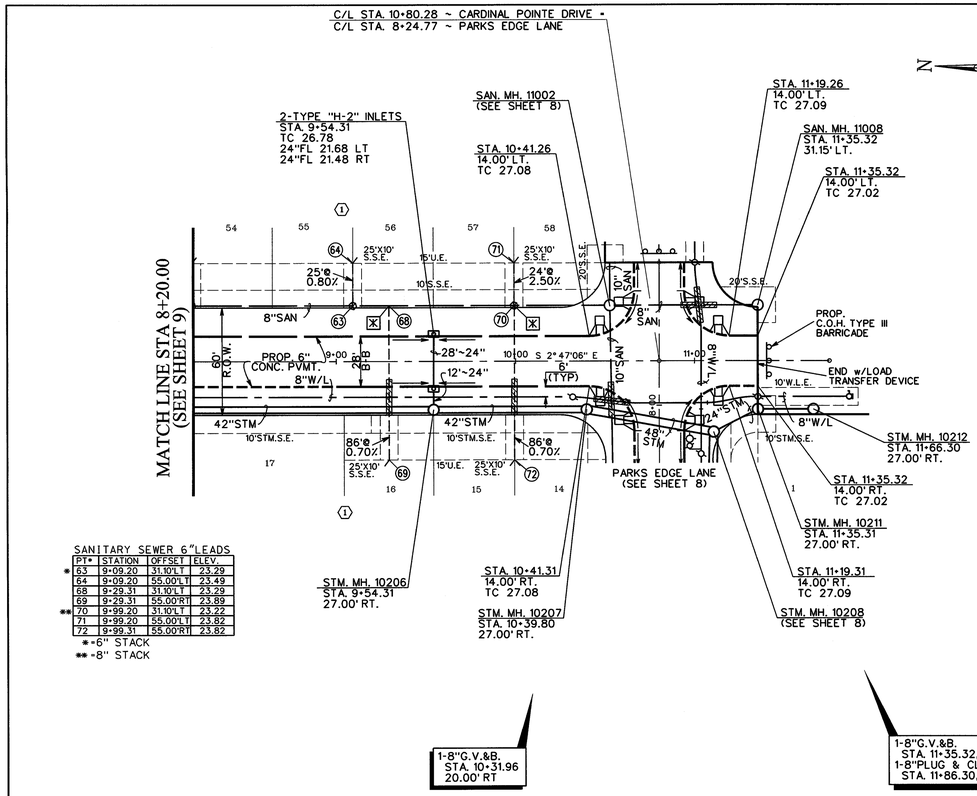

SANITARY SEWER 6"LEADS

	PT*	STATION	OFFSET	ELEV.
*	63	9+09.20	31.10'LT	23.29
	64	9+09.20	55.00'LT	23.49
	68	9+29.31	31.10'LT	23.29
	69	9+29.31	55.00'RT	23.89
**	70	9+99.20	31.10'LT	23.22
	71	9+99.20	55.00'LT	23.82
	72	9+99.31	55.00'RT	23.82

*=6" STACK
**=8" STACK

CONTROL BENCHMARK:

NGS MONUMENT "R 1182"; DISK FOUND ON TOP OF CONCRETE CURB OF BRIDGE ALONG COUNTY ROAD (CR) 171. APPROXIMATELY 270 FEET SOUTHWEST OF AN INTERSECTION WITH CR 428. DISK LOCATED 4.3 FEET SOUTHWEST OF THE NORTHEAST END OF THE CONCRETE CURB ON THE NORTHWEST SIDE OF THE BRIDGE, AND BEING 14 FEET NORTHWEST OF THE CENTERLINE OF ROAD.

ELEVATION = 26.30 NGVD29, 1979 ADJUSTMENT

NOTES

1. 1- 20' PVC SANITARY RESTRAINED JOINT CENTERED OVER/UNDER ONE 20' RESTRAINED WATER LINE JOINT EMBED SS WITH CSS FOR TOTAL LENGTH OF 1 PIPE SEGMENT PLUS 1' ON EACH END. IF WL (LESS THAN 24") CROSS UNDER SS, PROVIDE DIP FOR WL OR ENCASE WL IN STEEL TWO NOMINAL SIZES LARGER WITH SPACERS.
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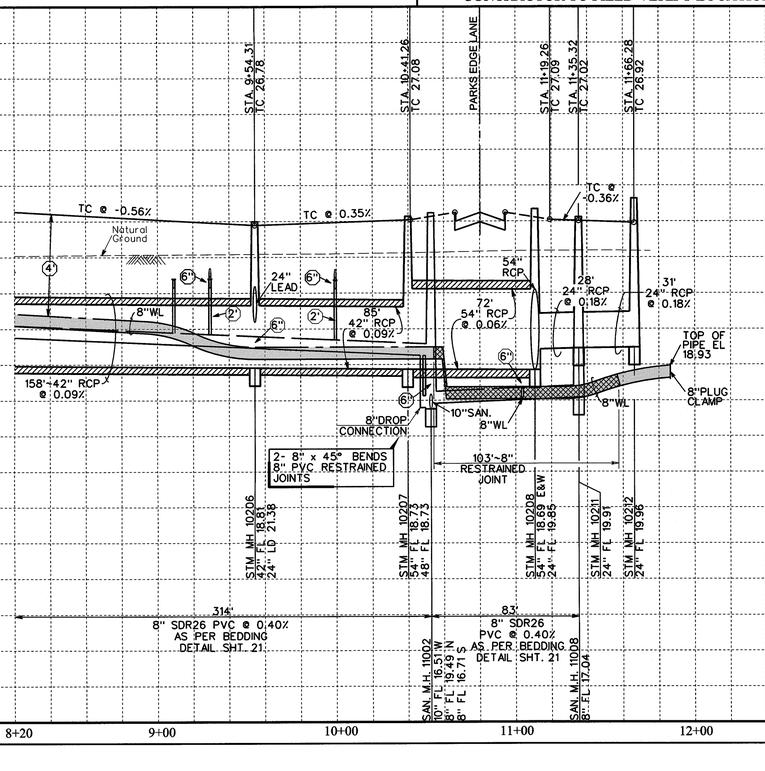
6" CURB
4" CURB

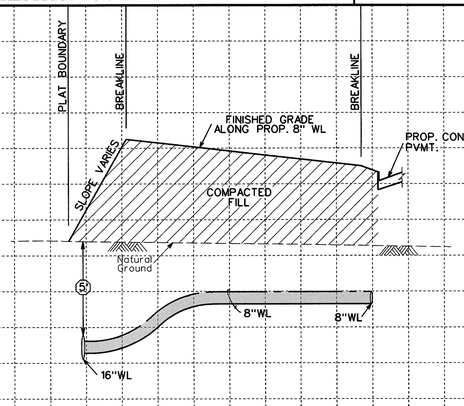
CARDINAL POINTE DRIVE (60' R.O.W.)

OFFSITE 8" WATERLINE

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

ALL TOP OF CURB ELEVATIONS SHOWN ARE BASED ON 6" CURB





BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

DESIGNED BY:
DESIGN CHECKED BY:
DRAWN BY:
COGO CHECKED BY:
SURVEY CHECKED BY:
QA/QC BY: DATE:
QA/QC REVISIONS BY:

MK.	DESCRIPTION	DWN.	DATE	CHK.

1/6/2021
STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER

Costello
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Houston, Texas 77042
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TBPE FIRM REG. No. 280,
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

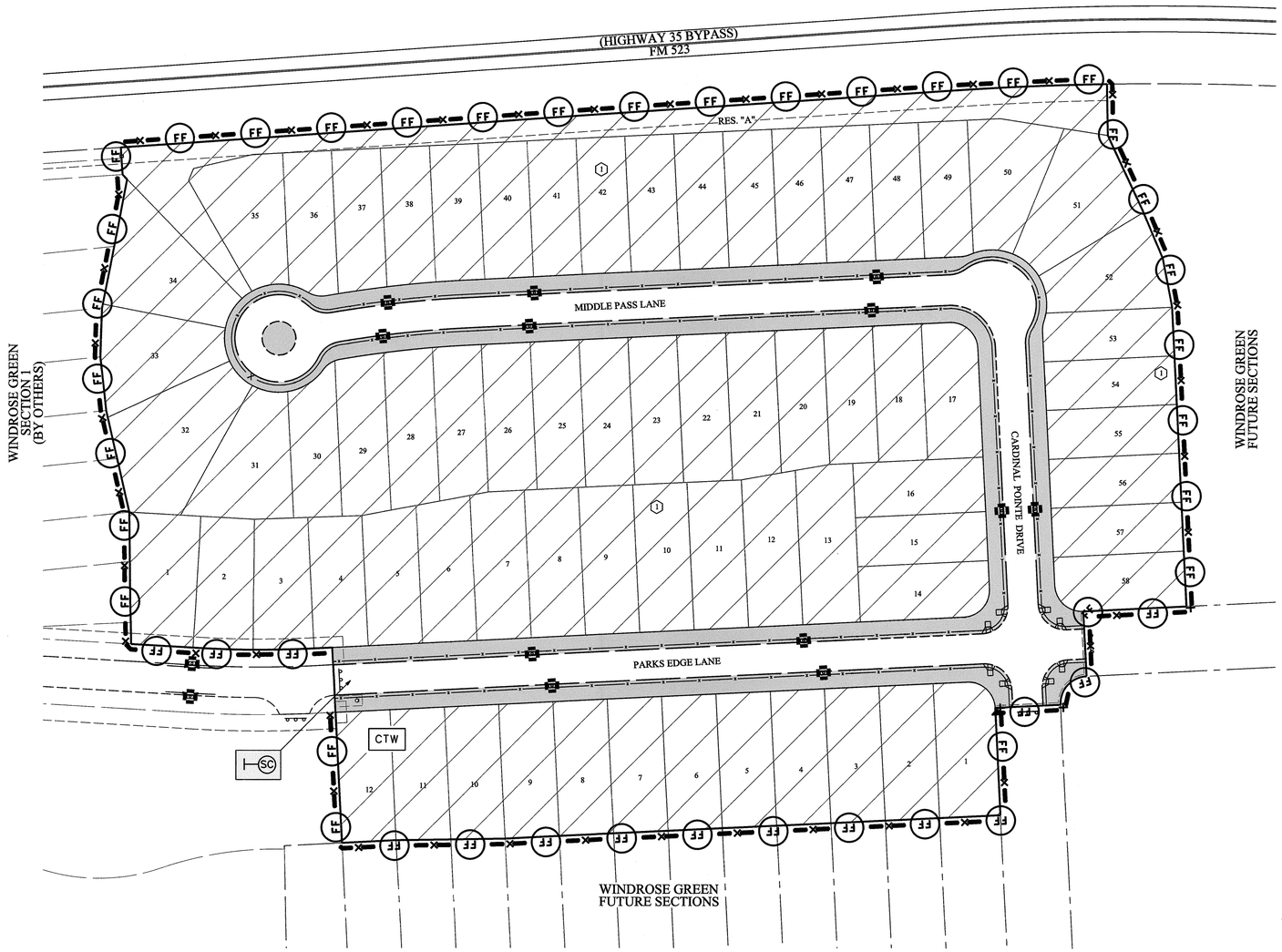
ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

CARDINAL POINTE DRIVE & OFFSITE 8" WATERLINE

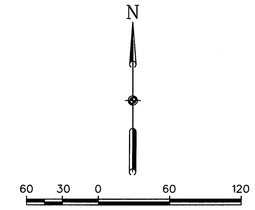
Job No.:	Scale:	SHEET
Date:	HORZ: 1" = 40'	10
Dwn By:	VERT: 1" = 4'	OF 36
Chkd By:	CAD FILE:	

CI JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2



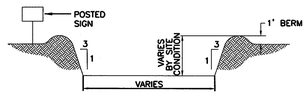
VERTICAL DATUM

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.

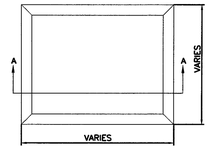


LEGEND

- HYDROMULCH SEEDING (BACK OF CURB/EDGE OF PVMT. AND IN ISLANDS)
- 1 / 3 — BLOCK NUMBER/LOT NUMBER
- FF — FILTER FABRIC FENCE
- SC — STABILIZED CONSTRUCTION ACCESS
- INLET PROTECTION BARRIER (STAGE 1 & STAGE 2)
- FILTER FABRIC FENCE BEHIND BACK OF CURB
- BROADCAST SEEDING
- CTW — CONCRETE WASH OUT AREA



SECTION A–A
N.T.S.



PLAN VIEW
N.T.S.

GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

CONCRETE TRUCK WASHOUT AREA

CTW
SYMBOL

DESIGNED BY: _____
DESIGN CHECKED BY: _____
DRAWN BY: _____
COGO CHECKED BY: _____
SURVEY CHECKED BY: _____
QA/QC BY: _____ DATE: _____
QA/QC REVISIONS BY: _____

MK.	DESCRIPTION	DWN.	DATE	CHK.

11/6/2021
STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
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ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

STORMWATER
POLLUTION PREVENTION PLAN

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET
Date:	HORZ: VERT:	11
Dwn By:	CAD FILE:	OF 36
Chkd By:		

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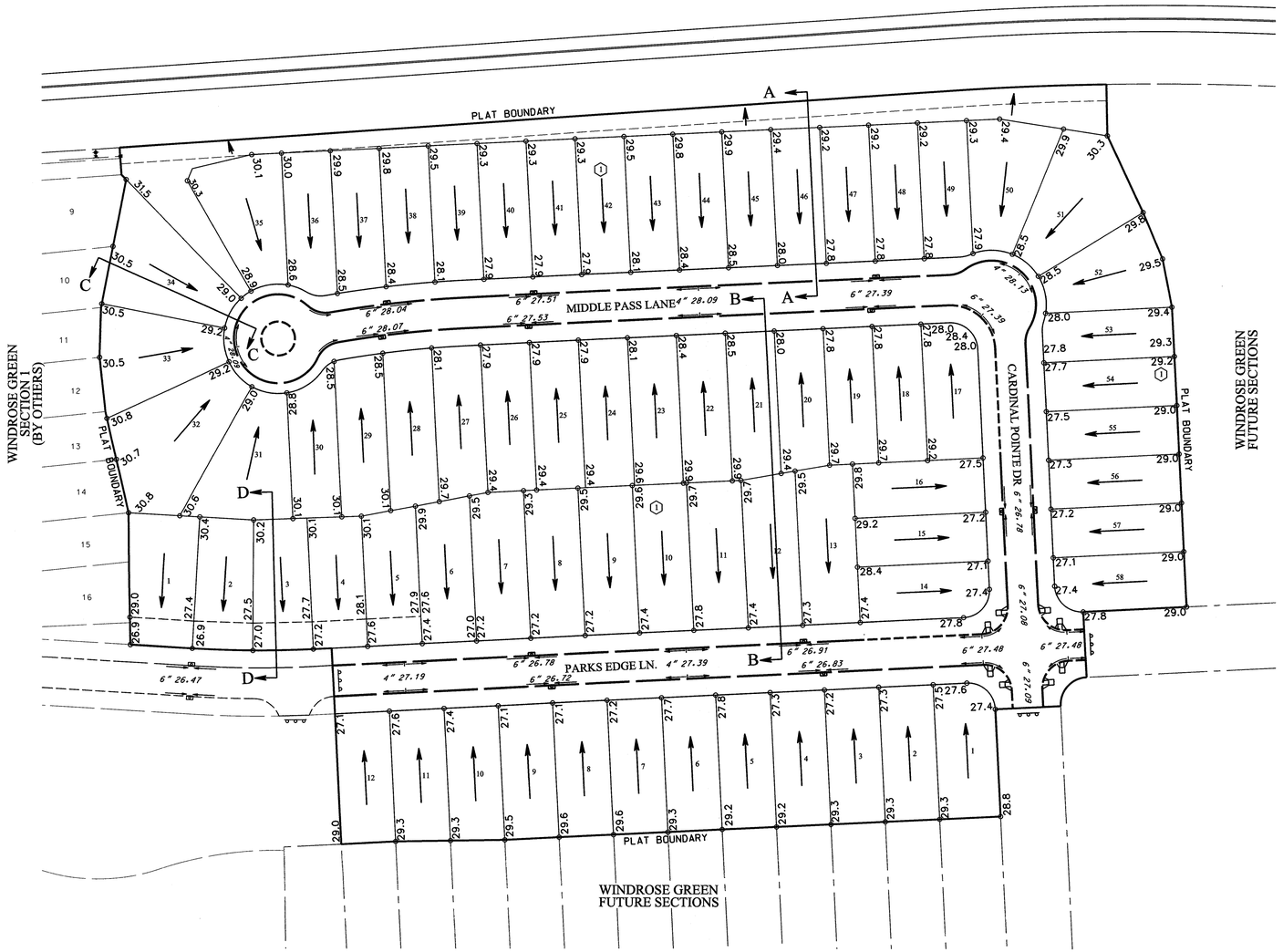
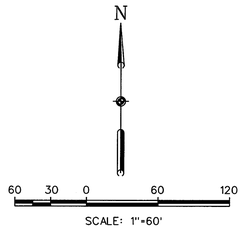




VERTICAL DATUM

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.

LEGEND

4" 91.23	TOP OF CURB
26.6	FINISHED GRADE ELEVATION
142	EXISTING CONTOUR
	TEMPORARY SWALE w/ 3:1 S.S.
	LOT FLOW DIRECTION
11/(1)	LOT NUMBER / BLOCK NUMBER

NOTES:

1. BROADCAST SEED ALL FILL AREAS AND TEMPORARY SWALES
2. MUCK OUT AND PROOF ROLL LOW AREAS.

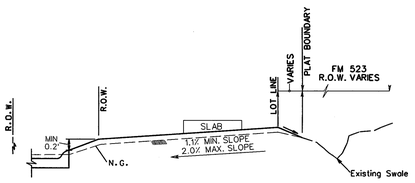
ALL FILL AREAS SHALL BE PROOF ROLLED AND BE PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY AT +/-2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT.

EXISTING CONTOURS INDICATED ON THIS SHEET ARE PRIOR TO ANY MASS GRADING / DETENTION EXCAVATION

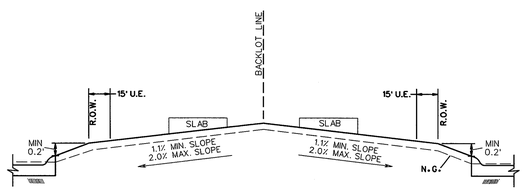
LINE CODE LEGEND

PROPOSED 4" CURB

PROPOSED 6" CURB



SECTION "A-A"
N.T.S.



SECTION "B-B"
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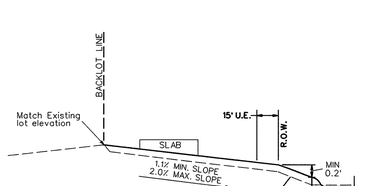
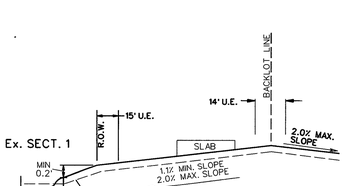


SECTION "C-C"
N.T.S.



SECTION "D-D"
N.T.S.

DESIGNED BY: _____
DESIGN CHECKED BY: _____
DRAWN BY: _____
COGO CHECKED BY: _____
SURVEY CHECKED BY: _____
QA/QC BY: _____ DATE: _____
QA/QC REVISIONS BY: _____

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101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

FINAL LOT GRADING LAYOUT

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: 1" = 60' VERT:	SHEET 12
Date:	CAD FILE:	OF 36
Dwn By:		
Chkd By:		

CI JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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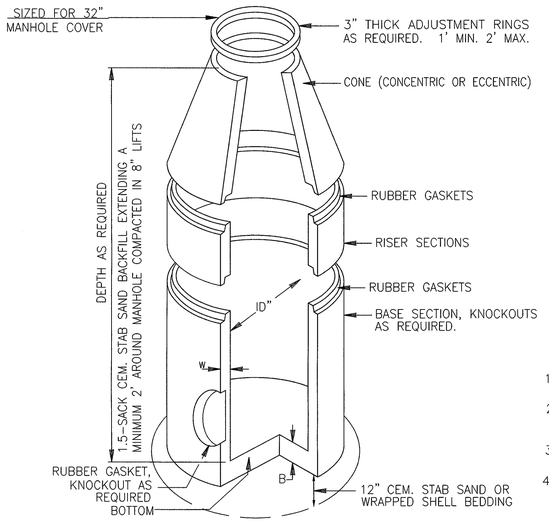
Tuesday, September 29, 2020 10:47:42 AM



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:

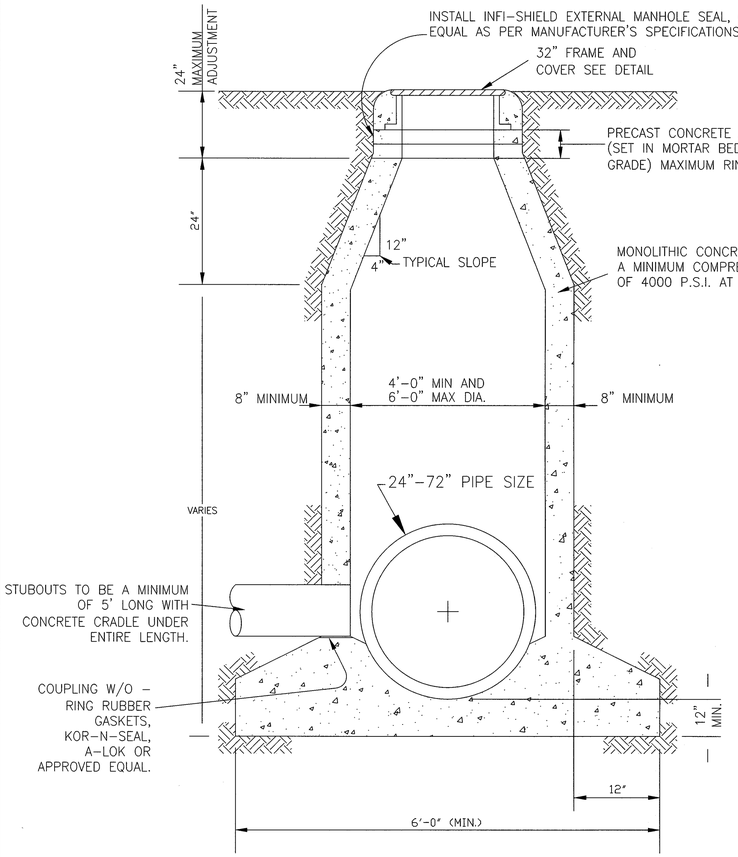
CONCRETE: CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATES FOR H-20 LOADING.

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.

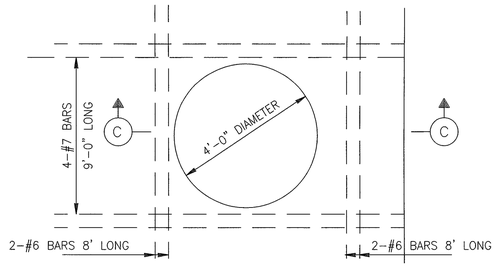


TYPE "C" CAST-IN-PLACE MANHOLE

N.T.S.

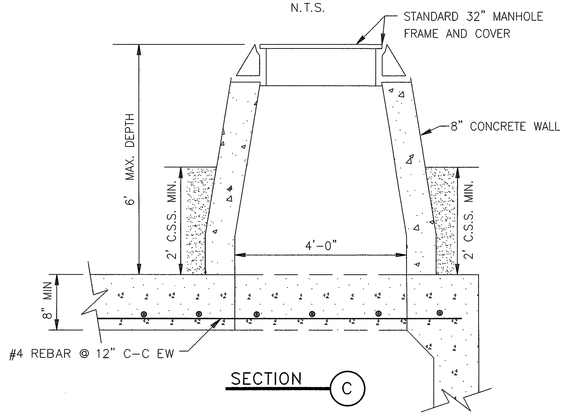
NOTES:

1. CONCRETE SHALL BE A MONOLITHIC POUR.
2. #4 REBAR TO BE PLACED IN BASE AND WALLS @ 12" C-C EW.
3. 1-1/2" C.S.S. BACKFILL TO BE PLACED AROUND MANHOLE COMPACTED IN 8" LIFTS (MAX).



STANDARD TYPE "E" INLET MAY BE USED AT TOP OF MANHOLE.

PLAN
N.T.S.



MANHOLE FOR BOX SEWER

N.T.S.

GENERAL CONSTRUCTION NOTES:

1. ALL CAST CONCRETE BASES AND WALLS SHALL HAVE # 4 REBAR @ 12" C-C EW
2. CONCRETE SHALL BE 3000 PSI MIN.
3. USE C.S.S. BEDDING AS PER DETAILS 1-1/2 SK, COMPACTED 8" LIFTS (MAX.). TO 95% STANDARD.

REFER TO:

1. *GENERAL NOTES, C.S.S & CONCRETE NOTES.*
2. *STORM SEWER NOTES*

MK.	DESCRIPTION	DWN.	DATE	CHK.

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WINDROSE GREEN SECTION 2

STORM SEWER MANHOLE CONSTRUCTION DETAILS (1 OF 3)

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: N.T.S. VERT:	SHEET	13
Date:		OF	36
Dwn By:	CAD FILE:		
Chkd By:			

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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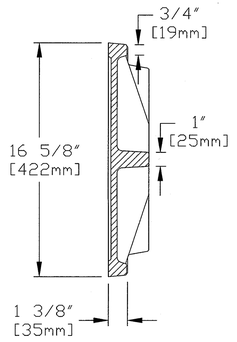

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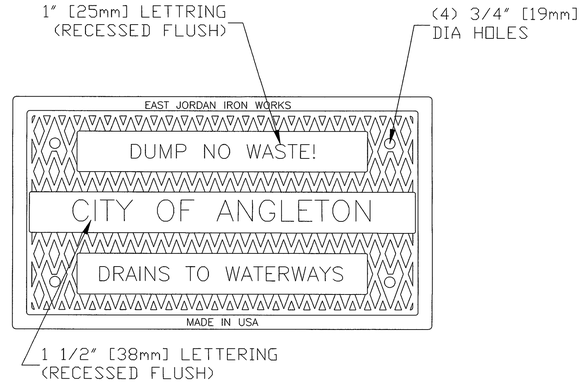
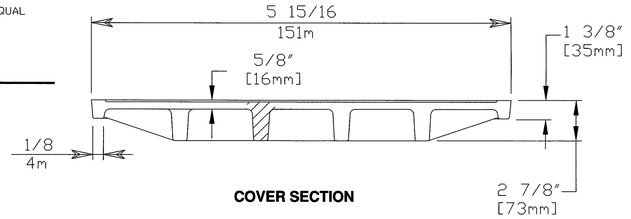


EAST JORDAN IRON WORKS OR APPROVED EQUAL

ANGLETON COVER

N.T.S.



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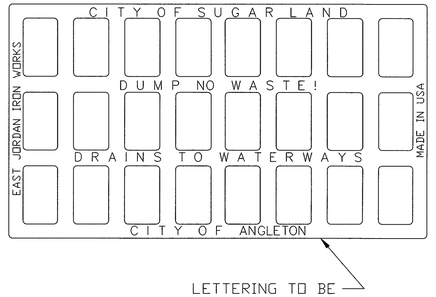

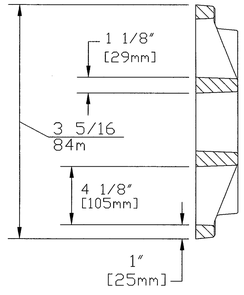

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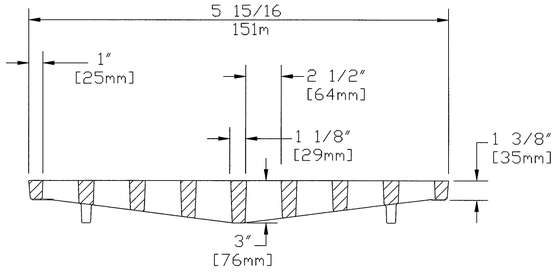

SECTION

EAST JORDAN IRON WORKS OR APPROVED EQUAL

CATCH BASIN GRATE

N.T.S.

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WINDROSE GREEN SECTION 2

STORM SEWER MANHOLE CONSTRUCTION DETAILS (2 OF 3)

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: N.T.S. VERT:	SHEET 14 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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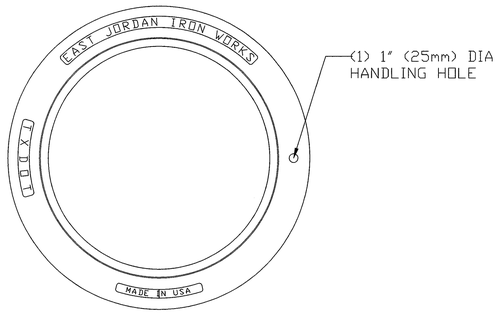
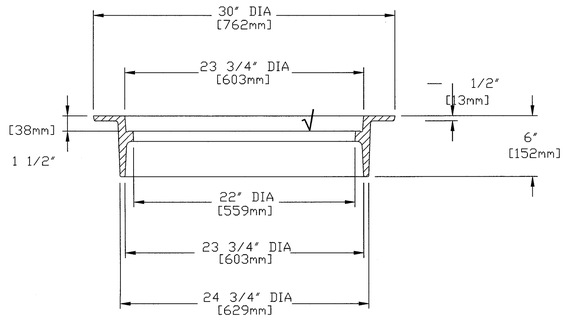
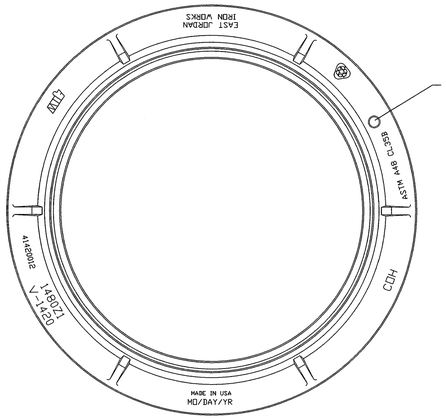


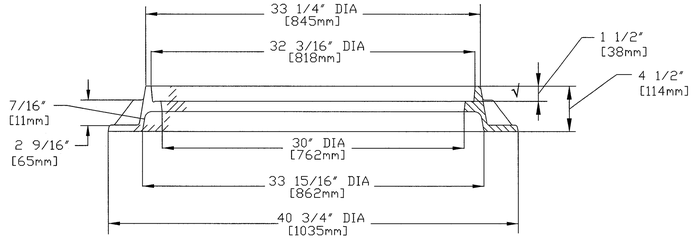


EAST JORDAN IRON WORKS OR APPROVED EQUAL

24" MANHOLE FRAME

N.T.S.





FRAME SECTION

EAST JORDAN IRON WORKS OR APPROVED EQUAL

32" MANHOLE FRAME W/O MUD RING

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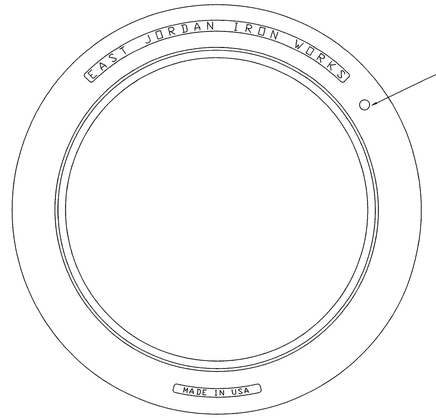
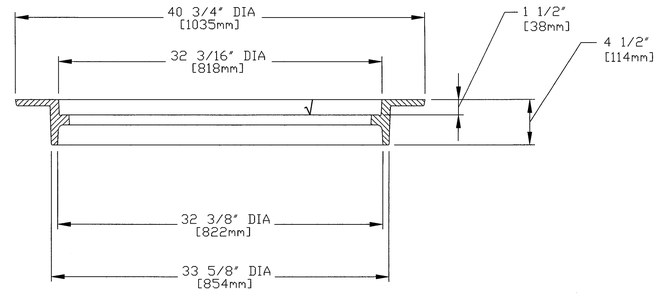
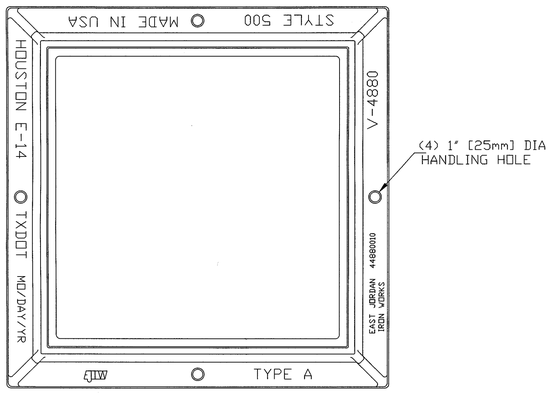


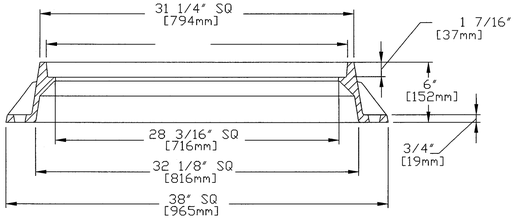


EAST JORDAN IRON WORKS OR APPROVED EQUAL

32" MANHOLE FRAME

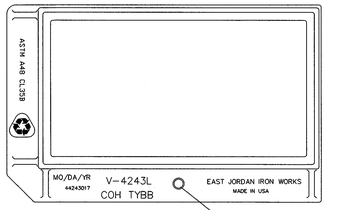
N.T.S.





FRAME SECTION TYPE A INLET FRAME

EAST JORDAN IRON WORKS OR APPROVED EQUAL N.T.S.



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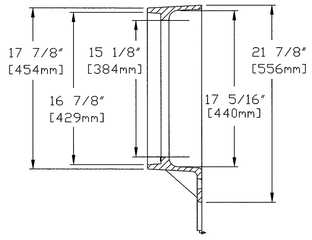

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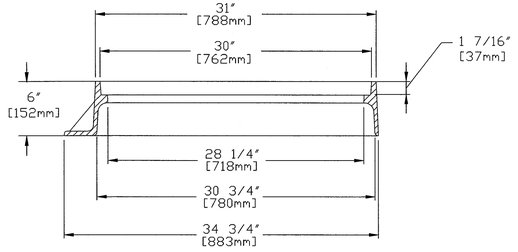
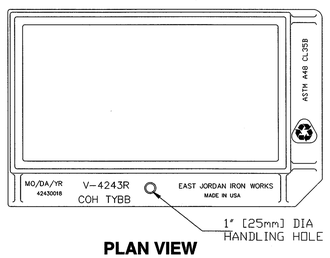


SECTION VIEW

EAST JORDAN IRON WORKS OR APPROVED EQUAL

LEFT FRAME

N.T.S.



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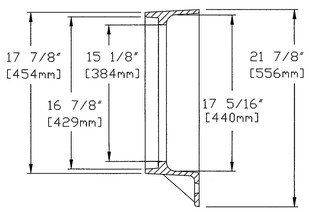

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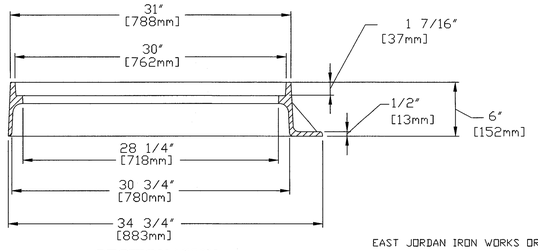

SECTION VIEW

EAST JORDAN IRON WORKS OR APPROVED EQUAL

RIGHT FRAME

N.T.S.

MK.	DESCRIPTION	DWN.	DATE	CHK.

11/6/2021

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ANGLETON
Where the Heart is

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WINDROSE GREEN SECTION 2

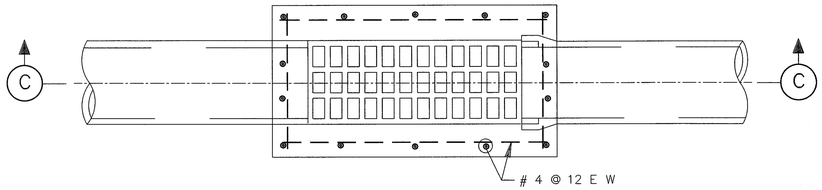
STORM SEWER MANHOLE CONSTRUCTION DETAILS (3 OF 3)

Job No.:	Scale: HORZ: N.T.S. VERT:	SHEET 15
Date:	CAD FILE:	OF 36
Dwn By:		
Chkd By:		

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2



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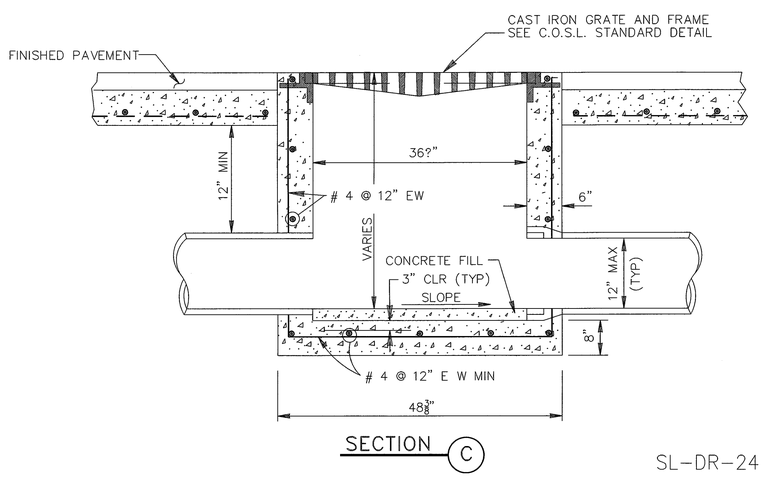
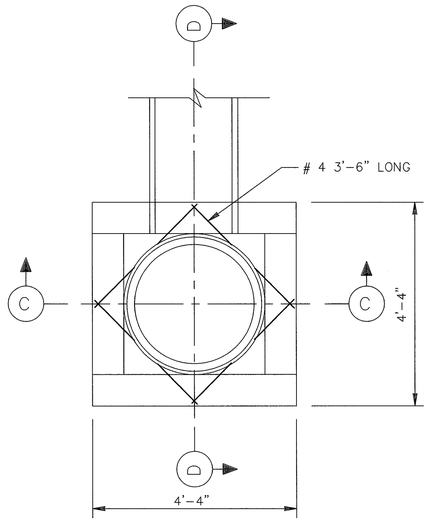


SECTION C

SL-DR-24

TYPE "D" INLET



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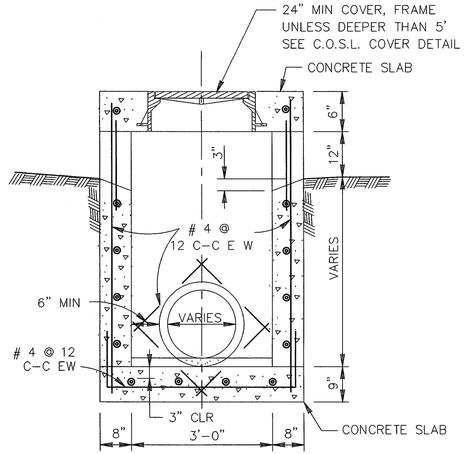

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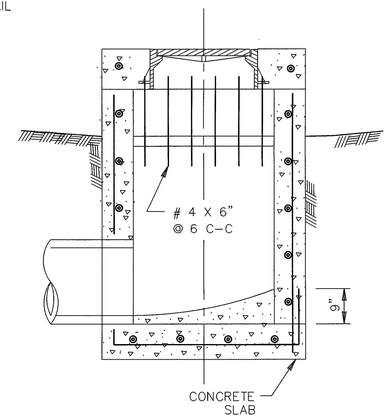


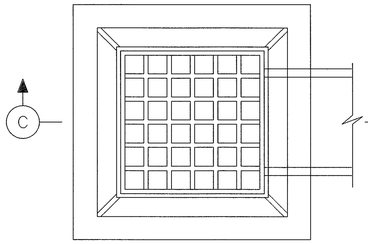
SECTION D

TYPE "E" INLET

N.T.S.

TYPE "A" INLET

N.T.S.



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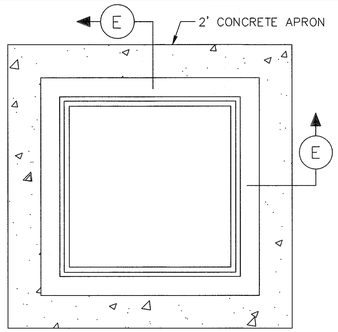

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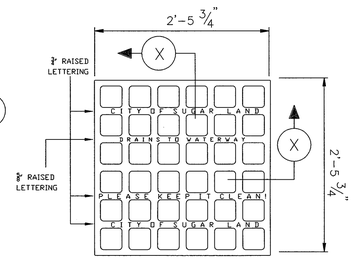

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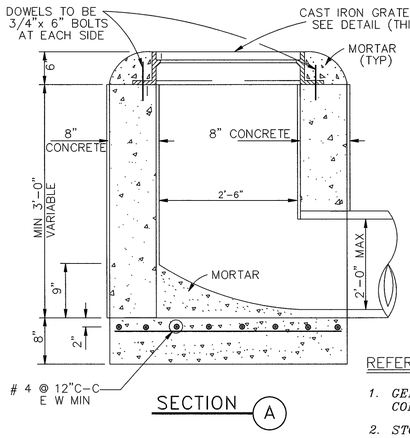
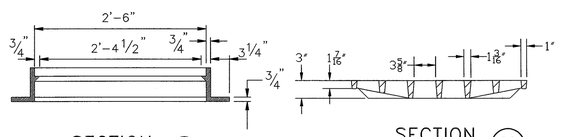


SECTION A



SECTION E

SECTION X

GENERAL CONSTRUCTION NOTES:

1. CONCRETE CAST WALLS SHALL HAVE #4 REBAR PLACED @ 12" C-C EW.
2. GRATE LID IS EAST JORDAN IRON WORKS OR APPROVED EQUAL

REFER TO:

1. *GENERAL NOTES, C.S.S & CONCRETE NOTES.*
2. *STORM SEWER NOTES*

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WINDROSE GREEN SECTION 2

STORM SEWER INLET CONSTRUCTION DETAILS I

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 16
Date:		OF 36
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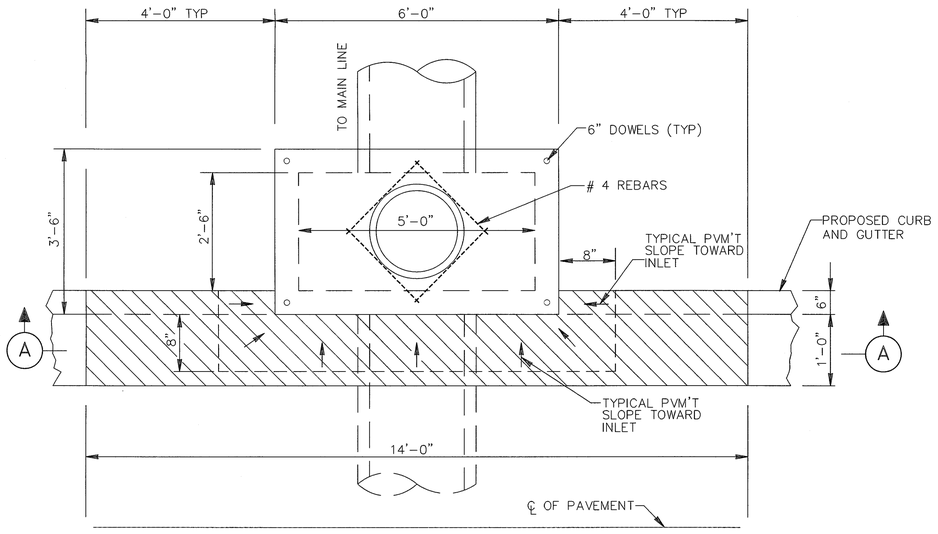
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2



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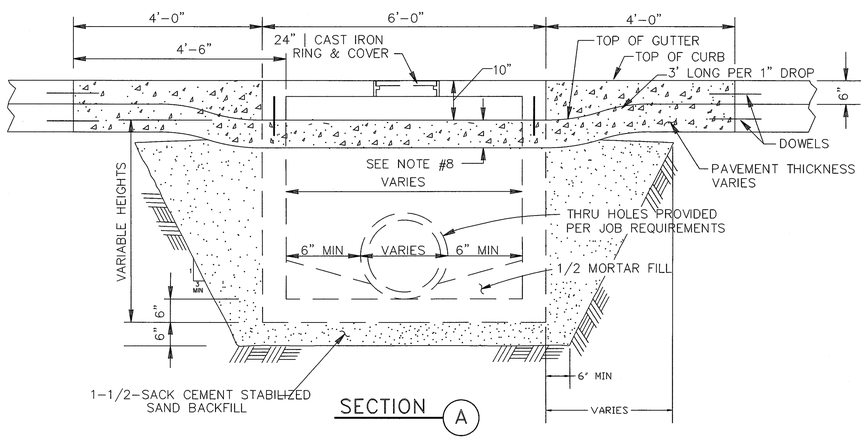
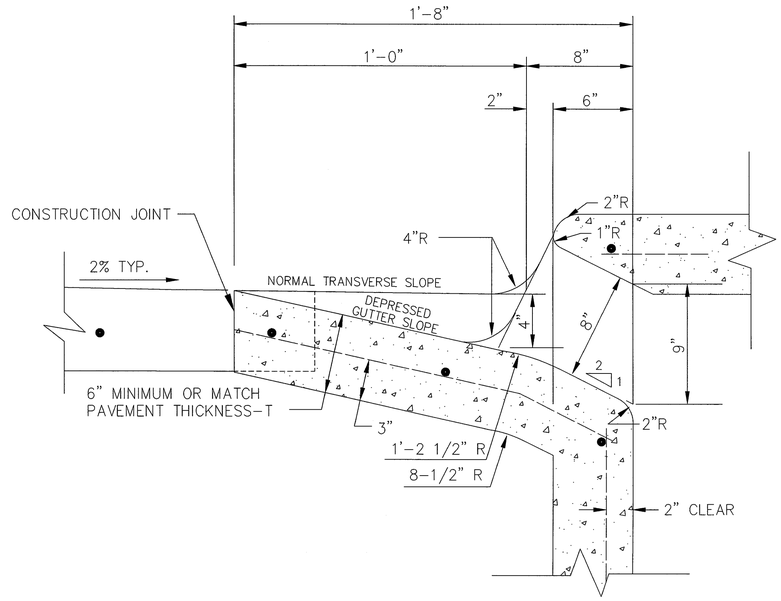


SECTION (A)

TYPE "H-2" INLET

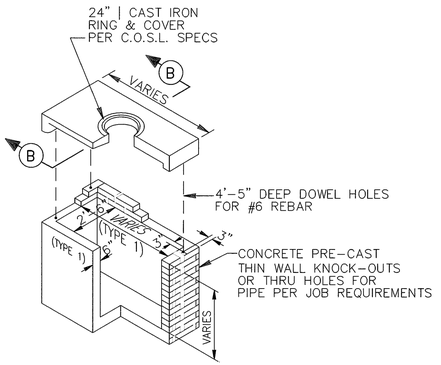
NOTES:

1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL. A PLAN PREPARED BY THE MANUFACTURER MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. THE PLAN SHOULD DETAIL CONNECTIONS AND SEALING OF JOINTS.
3. PRECAST INLET TOPS SHALL NOT UTILIZE MULTIPLE ONE-FOOT SECTIONS TO ACHIEVE GRADE.
4. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF THE INLET FIRST STAGE.
5. GRADE 60 REINFORCEMENT. #4 STEEL REBAR TO CONFORM TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
6. PRECAST INLET MUST BE CONSTRUCTED TO SPECIFICATIONS REQUIRED BY APPROVED DRAWINGS. (SEE GENERAL NOTES).
7. TOPS POURED-IN-PLACE REQUIRE #4 REBAR @ 12" C-C EACH WAY, 4,500 PSI CONCRETE MINIMUM AND 3" THICK MINIMUM.
8. PAVEMENT DEPTH AT INLET SHALL BE EQUAL TO OR GREATER THAN REQUIRED PAVEMENT DEPTH.
9. DEPRESS GUTTER TO INLET.
10. ALL SIDES OF ALL INLETS MUST BE COMPACTED.
11. REFER TO GEOTECHNICAL REPORTS FOR RECOMMENDED TRENCH SIDE SLOPES.



THROAT DETAIL FOR STANDARD INLETS ON CONCRETE STREETS

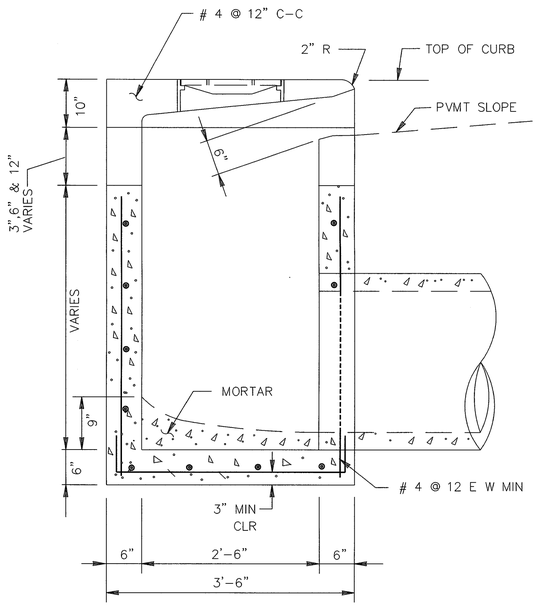
SCALE: N.T.S.



REFER TO:

1. *GENERAL NOTES, C.S.S & CONCRETE NOTES.*
2. *STORM SEWER NOTES*

NOTE:
REFER TO INSTALLATION FOR TYPE H-2 5'-0" CURB INLET ON PAVING DETAIL SHEET



SECTION (B)

TYPE "H-2" PRECAST INLET

N.T.S.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

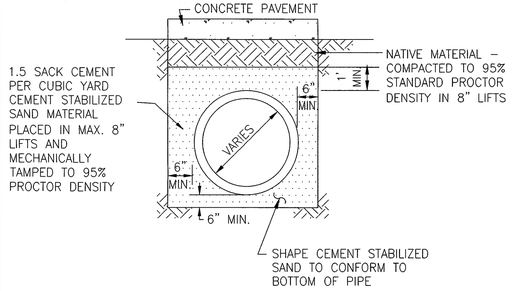
STORM SEWER INLET CONSTRUCTION DETAILS II

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET	
Date:	HORZ:	17	
Dwn By:	VERT:	OF	36
Chkd By:	CAD FILE:		

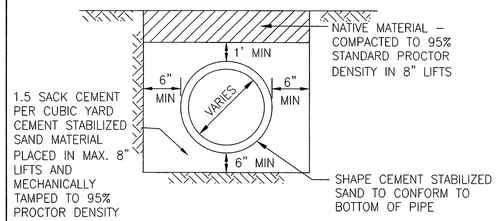
JOB NO. 2020.161.162 WINDROSE GREEN SECTION 2



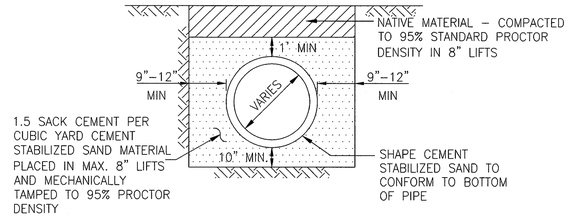
BEDDING DETAIL FOR
CONCRETE CULVERT USED
UNDER ROADWAY PAVEMENT

CLASS "A–A"

N.T.S.



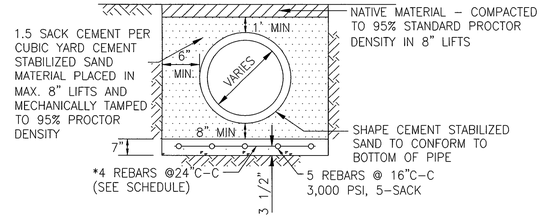
BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
36" DIAMETER & SMALLER



NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (10" MINIMUM FOR 42" TO 60", 14" MINIMUM FOR 66" TO 108")

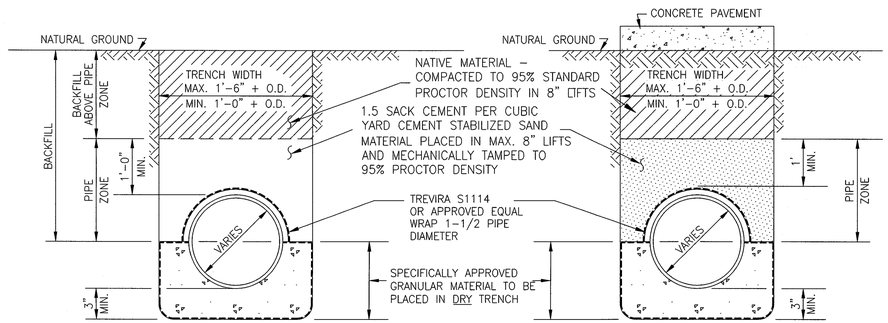
BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
42" TO 108" DIAMETER
WHERE SATISFACTORY SOIL CONDITIONS EXIST



NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SEAL SLAB
BEDDING DETAIL FOR
REINFORCED CONCRETE PIPE
STORM SEWER
42" TO 108" DIAMETER
WHERE UNSATISFACTORY SOIL CONDITIONS EXIST



MODIFIED "A"

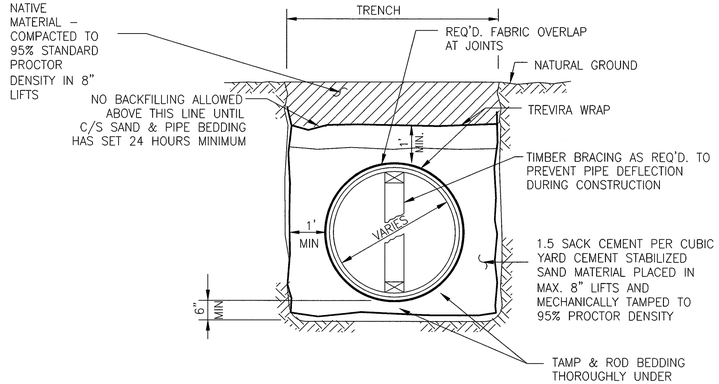
N.T.S.

USE FOR SEWERS UNDER EXISTING OR FUTURE ROADS, STREETS, DRIVEWAYS OR OTHER PVM'T.

MODIFIED "A–A"

N.T.S.

1. MODOFIED BEDDING TO BE USED IN WET GROUND CONDITIONS FOR NON=COHESIVE MATERIALS WITH A SHEAR STRENGTH LESS THAN 1000 PSI.



BEDDING DETAIL FOR STORM SEWER–
CORREGATED METAL PIPE

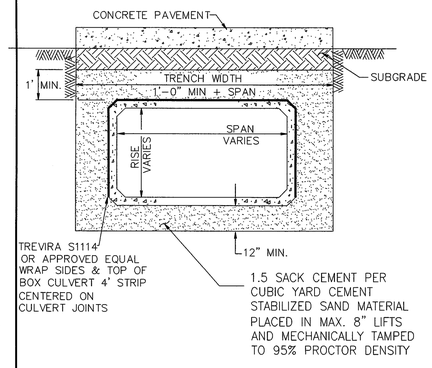
N.T.S.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT SUGAR LAND ENGINEERING DEPARTMENT IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
2. SPECIFICALLY APPROVED GRANULAR MATERIAL DIMENSIONS SHOWN ARE TYPICAL BUT MAY BE VARIED BY ORDER OF CITY ENGINEER.
3. SPECIFICALLY APPROVED GRANULAR MATERIAL SHALL BE IN ACCORDANCE WITH TXDOT SPECIFICATION No. 247 FLEXIBLE BASE, TYPE A, GRADE 2 AGGREGATE.
4. NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS. WHEN WELL POINTING OR IN WET SAND CONDITIONS, MAINTAIN GROUND WATER 1' (FT.) BELOW BOTTOM OF TRENCH FOR A MINIMUM OF 24–HRS AFTER BEDDING AND BACKFILL IS IN PLACE.
5. R.C.P. AND BOX CULVERTS SHALL BE INSTALLED WITH APPROVED GASKETS ONLY.
6. MANHOLES SHALL BE PROVIDED WHERE MODIFIED "A" OR MODIFIED "A–A" BEDDING IS USED. STACKS ARE NOT ALLOWED.
7. REFER TO: MANHOLE DETAILS, INLETS, OUTFALL AND END TREATMENT DETAILS, C.S.S., GENERAL NOTES, AND STORM NOTES.
8. SPECIFIC DESIGNS MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER FOR MANHOLE ACCESS TO BOX CULVERTS AS REQUIRED.
9. ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
10. A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.

TYPICAL SEAL SLAB
BAR SCHEDULE
(OR AS DIRECTED BY ENGINEER)

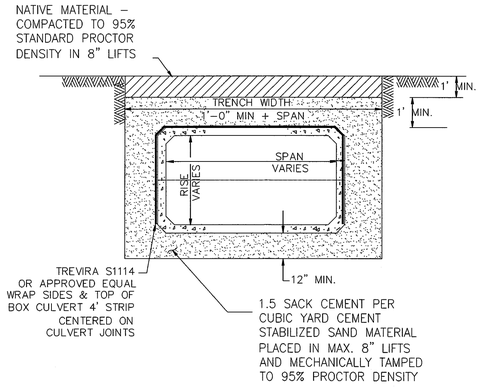
PIPE SIZE	LGT LAT #4 BARS	NO LONGIT #5 BARS
42"	5'4"	5
48"	6'8"	6
54"	6'8"	6
60"	8'0"	7
66"	8'0"	7
72"	9'4"	8
78"	9'4"	8
84"	9'4"	8
90"	10'8"	9
96"	10'8"	9
102"	12'0"	10
108"	12'0"	10



BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
CULVERT UNDER ROADWAY PAVEMENT

NOTES

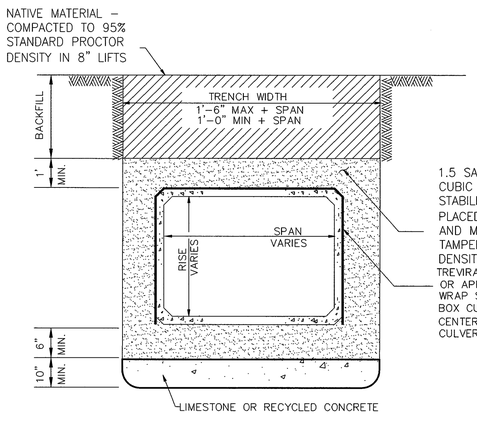
1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").



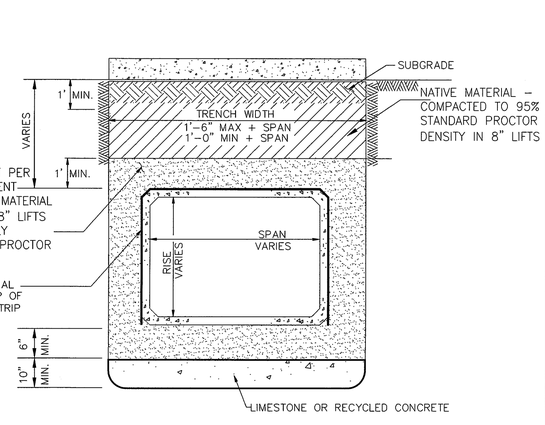
BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
PLACED IN EASEMENT

NOTES

1. 1.5–SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").



BEDDING DETAIL FOR
REINFORCED CONCRETE BOX CULVERT
W/MODIFIED BEDDING



BEDDING DETAIL FOR
REINFORCED CONCRETE BOX CULVERT
W/MODIFIED BEDDING
UNDER ROADWAY PAVEMENT

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
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ANGLETON
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ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

STORM SEWER PIPE BEDDING AND BACKFILL DETAILS

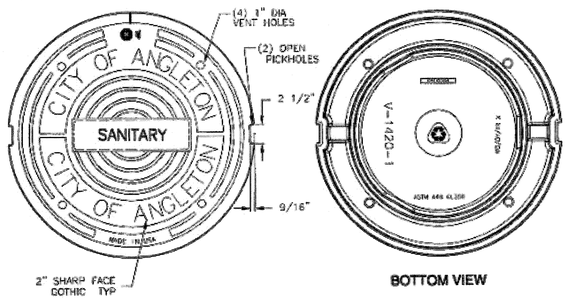
BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

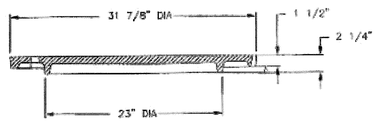
Job No.:	Scale:	SHEET
Date:	HORZ: N.T.S. VERT:	18
Dwn By:	CAD FILE:	OF 36
Chkd By:		

JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

V1420-1 Cover



BOTTOM VIEW



COVER SECTION

1 **32" Manhole Cover and Frame**
Scale: NTS

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
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LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
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WINDROSE GREEN SECTION 2

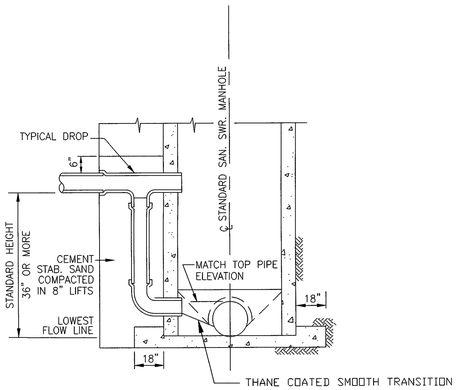
SANITARY SEWER MANHOLE CONSTRUCTION DETAILS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

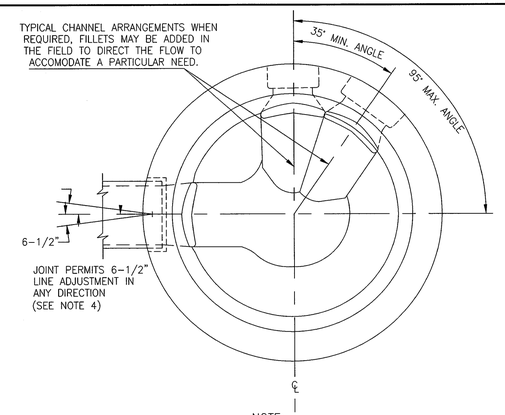
Job No.:	Scale: HORZ: VERT:	SHEET 19
Date:		OF 36
Dwn By:	CAD FILE:	
Chkd By:		

C:\JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2



STANDARD DROP DETAIL

(SEE C.S.S. NOTES)



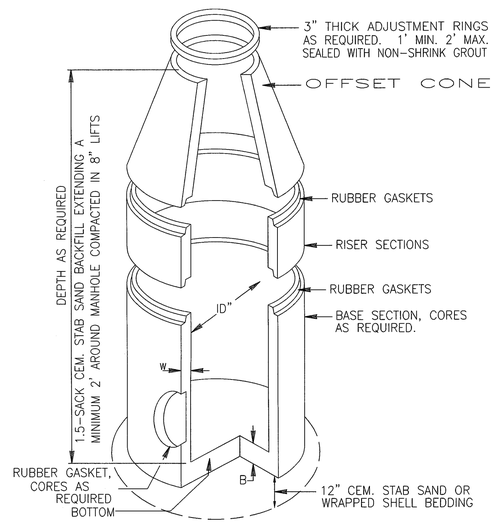
PIPING CONNECTIONS DETAIL

NOTE:

1. INFLUENT AND EXFLUENT PIPING CONNECTIONS TO MANHOLE SHALL BE ALIGNED TO PREVENT REVERSE FLOW.
2. INFLUENT AND EXFLUENT CONNECTIONS ARE LIMITED TO A MAXIMUM 90° INCLUDED ANGLE OF CONVERGENCE.
3. MINIMUM 35° AND MAXIMUM 90° INCLUDED ANGLES MUST BE PROVIDED BETWEEN MULTIPLE INFLUENT CONNECTIONS.
4. ANGLE OF DEFLECTION AT PIPING JOINTS AS PER MANUFACTURE'S RECOMMENDATIONS.

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.



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.

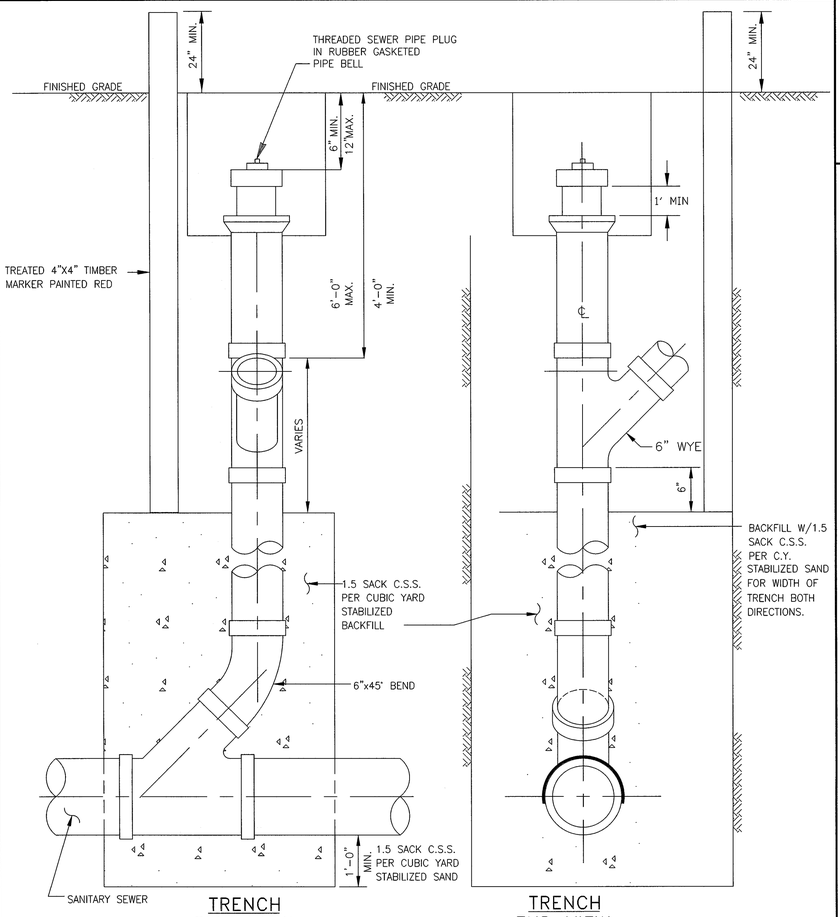
C.I. CASTINGS: CAST IRON FRAMES AND LIDS ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 35.

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.
5. PRE-CAST MANHOLE SHALL BE IN COMPLIANCE APPROVED PRODUCT LIST.
6. THANE COAT SHALL BE IN COMPLIANCE WITH APPROVED PRODUCT LIST.
7. INVERTS SHALL COMPLY WITH C.O.S.L., DESIGN MANUAL SPECIFICATIONS.
8. INFLOW PROTECTORS REQUIRED ON ALL SANITARY MANHOLES.
9. REFER TO SANITARY MANHOLE LIDS, C.S.S. NOTES, MODIFIED BEDDING DETAILS AND NOTES.

PRECAST SANITARY MANHOLE

N.T.S.



TRENCH SIDE VIEW

TRENCH END VIEW

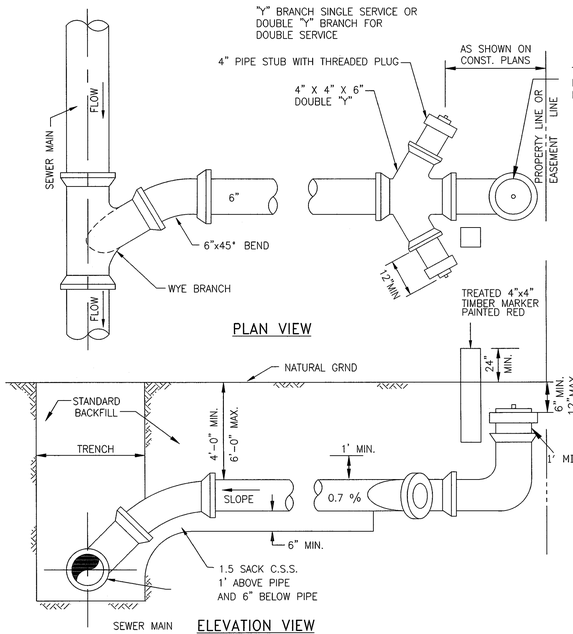
STACK DETAIL

N.T.S.

NOTES:

A.) NO STACKS ON MAINS OVER 16' DEEP OR IN WET SAND CONDITIONS.

B.) ALL STACK CONNECTIONS SHALL BE IN-LINE FITTINGS.



SANITARY SEWER SERVICE CONNECTION

N.T.S.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS 11/6/2021 A. KHOSHAKHLAGH 101133 LICENSED PROFESSIONAL ENGINEER

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
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ANGLETON Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

SANITARY SEWER CONSTRUCTION DETAILS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET	20
Date:		OF	36
Dwn By:	CAD FILE:		
Chkd By:			

JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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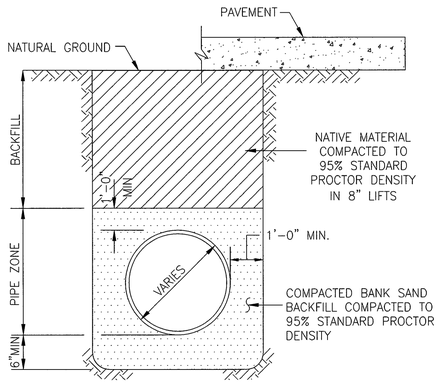
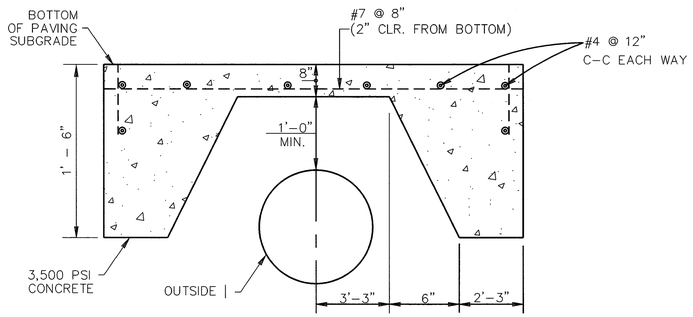


P.V.C. PIPE BEDDING & BACKFILL

N.T.S.

*SEE CONSTRUCTION NOTES

SANITARY FORCE MAIN & WATER LINE BEDDING AND BACKFILL

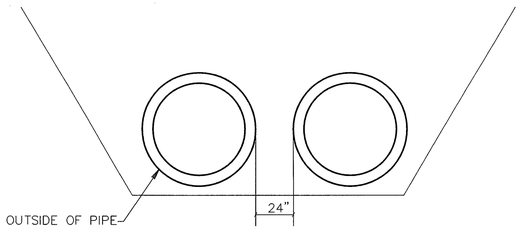


PROTECTIVE SLAB DETAIL

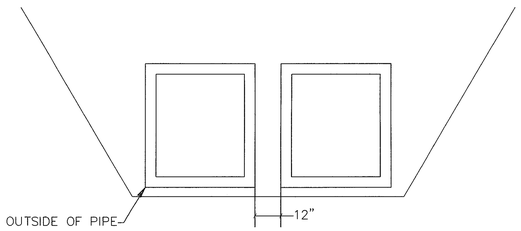
ZERO LOAD TRANSFER CONCRETE SLAB

CONSTRUCTION NOTES

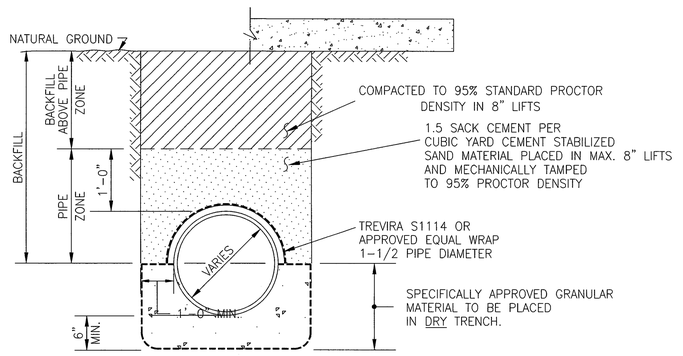
1. CONTRACTOR SHALL CONTACT SUGAR LAND ENGINEERING DEPARTMENT IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
2. LIMESTONE AND RECYCLED CONCRETE DIMENSIONS SHOWN ARE TYPICAL BUT MAY BE VARIED BY ORDER OF CITY ENGINEER.
3. LIMESTONE OR RECYCLED CONCRETE SHALL BE IN ACCORDANCE WITH TXDOT SPECIFICATION No. 248 FLEXIBLE BASE, TYPE A, GRADE 2 AGGREGATE.
4. NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS. WHEN WELL POINTING OR IN WET SAND CONDITIONS, MAINTAIN GROUND WATER 1 (FT) BELOW BOTTOM OF TRENCH FOR A MINIMUM OF 24-HRS AFTER BEDDING AND BACKFILL IS IN PLACE.
5. ALL MATERIALS SHALL BE FROM THE APPROVED PRODUCTS LIST UNLESS SPECIFICALLY APPROVED BY THE CITY ENGINEER.
6. SANITARY SEWER BEDDING FOR WET SAND CONDITIONS SHALL BE AS PER MODIFIED "A".
7. ALL SAND BEDDING FOR WATER LINES SHALL BE CLEAN, MECHANICALLY COMPACTED BANK SAND.
8. REFER TO: MANHOLE DETAILS, SANITARY, C.S.S., GENERAL, WATER CROSSING, WATER DISTRIBUTION DETAILS AND NOTES.
9. ALL BEDDING WILL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
10. A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.



PIPE SEPARATION



RCB SEPARATION



MODIFIED "A"

N.T.S.

NOTE: C.S.S. SHALL BE INSTALLED A MIN. 1' ABOVE TOP OF PIPE.

SANITARY SEWER BEDDING AND BACKFILL

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WATER LINE, SANITARY SEWER FORCE MAIN BEDDING DETAILS

REFER TO:
1. GENERAL NOTES
2. C.S.S. NOTES

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION
JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET
Date:	HORZ:	21
Dwn By:	VERT:	OF 36
Chkd By:	CAD FILE:	

JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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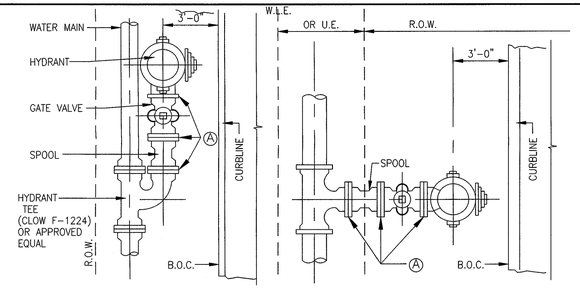
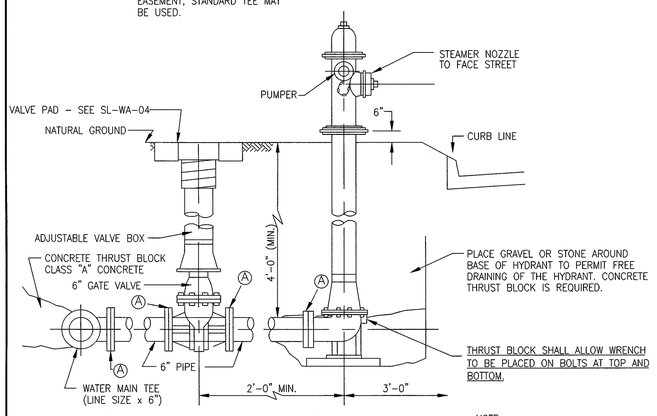


R.O.W. INSTALLATION
N.T.S.

EASEMENT INSTALLATION
N.T.S.

NOTE:
WHEN WATER LINE IS LOCATED IN EASEMENT, STANDARD TEE MAY BE USED.



FLUSHING VALVE COLOR CODE

MAIN LINE DIAMETER	BONNET, PUMPER CAP AND STEAMER CAP
6 INCHES (AND LESS)	YELLOW
8 INCHES	WHITE
12 TO 16 INCHES	GREEN
GREATER THAN 16 INCHES	ORANGE

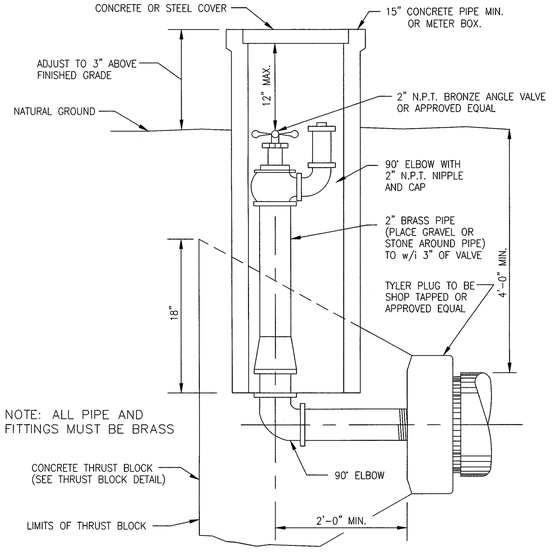
FIRE HYDRANT BODY TO BE PAINTED GEO-GLEN 301 BRIGHT SILVER ALUMINUM POLYURETHANE ENAMEL, BY GEO-GLEN ENTERPRISES OR APPROVED EQUAL.

NOTE:
ALL FIRE HYDRANTS SHALL BE MUELLER, W/ STROZ INTEGRAL CONNECTOR WITH STEAMER NOZZLE SIZE 4.125" PUMPER 2.5" N.S.T.

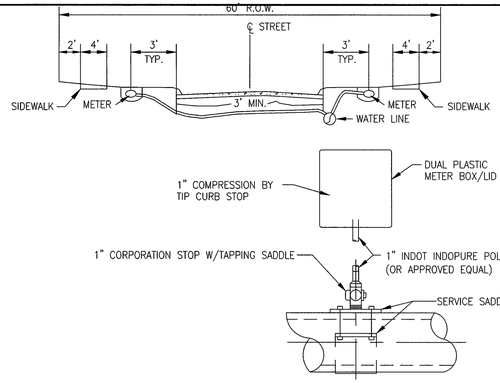
ALL FLUSHING VALVES TO BE SAND BLASTED AND PAINTED AS PER C.O.S.L. DESIGN STANDARDS.

Ⓐ =RESTRAINED JOINT

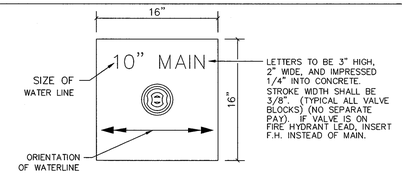
TYPICAL GATE & FIRE HYDRANT INSTALLATION
N.T.S.



2" BLOW OFF VALVE ASSEMBLY
N.T.S.

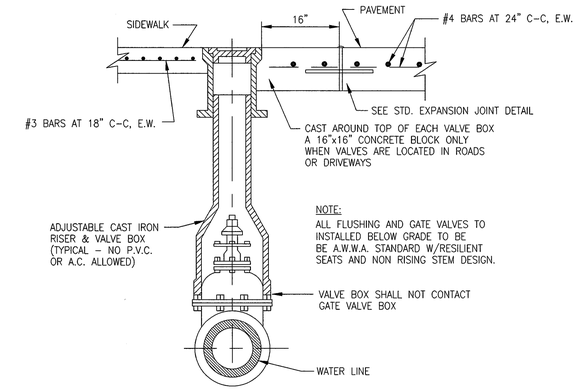


WATER SERVICE CONNECTION AND WATER SERVICE TAPPING ASSEMBLY DETAIL
N.T.S.

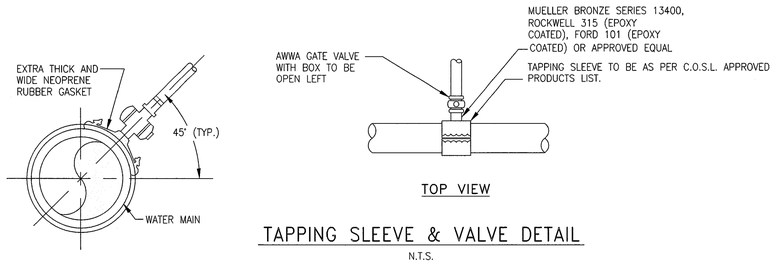


CONCRETE PAD
N.T.S.

NOTE: ALL VALVES MUST HAVE CONCRETE PAD

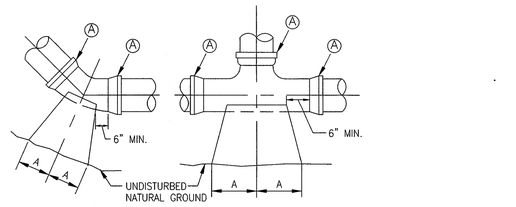


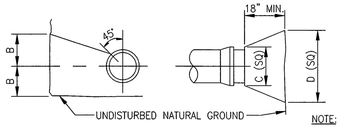
VALVE BOX INSTALLATION DETAIL
N.T.S.



TOP VIEW

TAPPING SLEEVE & VALVE DETAIL
N.T.S.



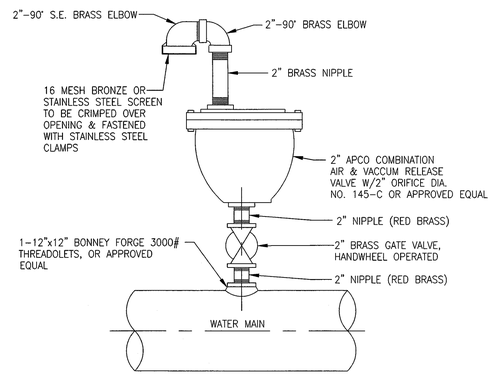


BEND & TEE PLUG

THRUST BLOCK DETAIL
N.T.S.

NOTE:
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 10 SQ. FEET AND SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER.
ALL CONCRETE SHALL BE 5 SACK MIN., 3000 P.S.I.

Ⓐ =RESTRAINED JOINT



WATER MAIN

AIR RELEASE VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. WATER LINES 12" (IN.) AND LESS SHALL BE AWWA C-900 DR18 WATER LINE GREATER THAN 12" (IN.) IN ø SHALL BE AWWA C-905 DR 18
2. ALL FLUSHING VALVES AND GATE VALVES TO BE AMERICAN WATER WORKS ASSOC. (AWWA) STANDARD COUNTERCLOCKWISE OPENING WITH NON-RISING STEM DESIGN.
3. ALL DUCTILE IRON PIPE SHALL BE CLASS 50 MORTAR LINED. NO A.C. PIPE WILL BE ALLOWED AND ALL DUCTILE IRON FITTINGS SHALL BE MORTAR LINED PUSHON OR MECHANICAL JOINTS.
4. ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. MINIMUM SPACING BETWEEN TAPS SHALL BE 2' AT ALTERNATING TAP ANGLES.

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

NOTES: POLYETHYLENE WRAP FOR IRON PIPE

NOTE:

1. POLYETHYLENE FILM SHALL BE USED AS A WRAP TO PROTECT CAST IRON AND OTHER METALS IN A CORROSIVE SOIL ENVIRONMENT.
2. AN 8 MIL POLYETHYLENE FILM WRAP SHALL BE REQUIRED AROUND ALL METAL PIPE AND APPURTENANCES (EXCEPT FIRE HYDRANTS).
3. POLYETHYLENE FILM SHALL BE FURNISHED AND INSTALLED EITHER IN TUBULAR FORM PRIOR TO LOWERING THE PIPE IN TRENCH OR IN SHEET FORM.
4. POLYETHYLENE TUBE ENCASEMENT SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF "POLYETHYLENE ENCASEMENT FOR GRAY AND DUCTILE CAST-IRON PIPING FOR WATER AND OTHER LIQUIDS", ANSI/AWWA C105, CURRENT REVISION, SOILS WITHIN A PROJECT SHALL BE TESTED IN ACCORDANCE WITH APPENDIX A OF ANSI/AWWA C105 TO ADEQUATELY DETERMINE THE REQUIREMENTS FOR ENCASEMENT.
5. ALL FITTINGS AND PIPE JOINTS WITHIN 10' OF A FITTING SHALL HAVE RESTRAINT JOINTS

SIZE	90° BEND		45° BEND		22 1/2° BEND		TEES		PLUGS	
	A	B	A	B	A	B	A	B	A	B
2 1/2"	12"	7"	6"	7"	6"	6"	7"	8"	8"	14"
6"	16"	10"	9"	10"	6"	12"	10"	12"	10"	21"
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"
20"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*78"
24"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*78"
30"	60"	48"	36"	48"	20"	36"	36"	48"	36"	*96"

BENDS, TEES & PLUGS FOR PIPE OF VARIOUS SIZES

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WATER LINE CONSTRUCTION DETAILS

Job No.:	Scale: HORZ: VERT:	SHEET 22 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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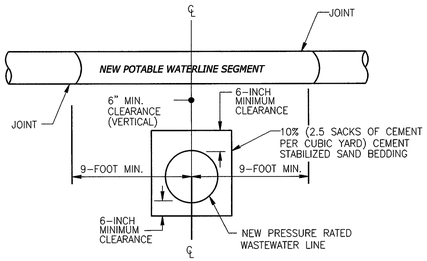
I

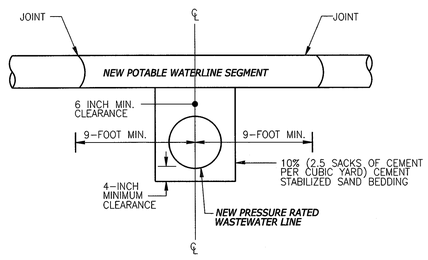
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGHTS OF EIGHTEEN (18) FEET OR GREATER, HAVING 6 INCHES OF VERTICAL CLEARANCE AND 4 FEET OF HORIZONTAL CLEARANCE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

II

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



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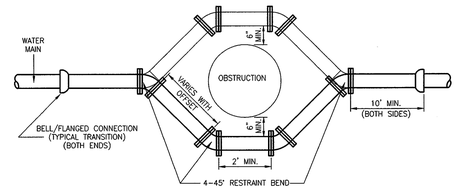
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

III



FOR A LINE TO PASS OVER AN OBSTRUCTION RATHER THAN UNDER, IT MUST HAVE ADEQUATE COVER AND BE APPROVED BY THE ENGINEERING DEPARTMENT.

NOTES:

1. PIPE MATERIAL SHALL BE AWWA C900 PVC, DR-14, 200 PSI WITH INTEGRAL PVC RESTRAINED JOINTS.
2. OFFSET ASSEMBLY MUST PASS OVER THE OBSTRUCTION AS LONG AS THE MINIMUM CLEARANCE IS MAINTAINED. SPECIFIC APPROVAL FROM THE UTILITES DEPARTMENT MUST BE GRANTED FOR THE OFFSET TO PASS UNDER THE OBSTRUCTION.
3. MATERIAL AND COATINGS SHALL BE IN ACCCORDANCE WITH WATER MAIN STANDARD SPECIFICATIONS.
4. RESTRAIN EXISTING PIPING BEYOND OFFSET SECTION AS REQUIRED TO PREVENT MOVEMENT.
5. ALL PVC PRODUCTS MUST BE LISTED ON CITY OF SUGAR LAND'S APPROVED PRODUCTS LIST.

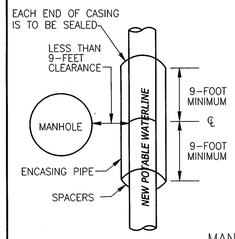
MIN. PIPE WALL THICKNESS		
4"	–	0.250"
6"	–	0.280"
8"	–	0.322"
12" AND LARGER	–	0.375"

PVC WATER PIPE OFFSET ASSEMBLY

GENERAL NOTES:

1. CONTRACTOR SHALL CONTACT CITY OF ANGLETON DEVELOPMENT SERVICES DEPARTMENT AT (979) 849-2108 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. ALL NEW POTABLE WATER LINES AND SANITARY SEWER FORCE MAINS SHALL BE BEDDED IN COMPACTED BANK SAND A MINIMUM OF 6 INCHES BELOW, ABOVE AND TO EITHER SIDE OF SUCH PIPING.
4. ALL NEW SANITARY SEWER GRAVITY DRAIN LINES SHALL BE BEDDED IN CEMENT STABILIZED SAND CONFORMING TO THE REQUIREMENTS FOR EITHER CLASS "A" STANDARD BEDDING OR CLASS "A-A" BEDDING AS APPLICABLE. USE OF MODIFIED "A" OR MODIFIED "A-A" BEDDING FOR SANITARY SEWER INSTALLATIONS WHERE WET SAND CONDITIONS ARE ENCOUNTERED AND SEPARATION DISTANCE TO POTABLE WATER LINES IS LESS THAN 9 FEET REQUIRES APPROVAL BY CITY ENGINEER.
5. CEMENT STABILIZED BEDDING SHALL BE A MINIMUM 1.5 SACK PER CUBIC YARD C.S.S., INSTALLED IN MAXIMUM LIFTS OF 8 INCHES AND MECHANICALLY TAMPED TO 95% PROCTOR.
6. WHERE REQUIRED, SLEEVING (ENCASEMENT) OF POTABLE WATER PIPING AND/OR SANITARY SEWER GRAVITY DRAIN LINES AND FORCE MAINS SHALL BE PROVIDED. SUCH SLEEVING (ENCASEMENT) SHALL BE CONSTRUCTED OF APPROVED PIPING MATERIALS HAVING A MINIMUM PRESSURE RATING OF 150 PSI AND ANNULAR SPACES AT EACH END SHALL BE SEALED WITH A MATERIAL APPROVED FOR SUCH USE.
7. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE A MINIMUM OF 9 FEET SEPARATION DISTANCE TO EXISTING OR PROPOSED SANITARY SEWER MANHOLE, LIFT STATION OR WASTEWATER TREATMENT PLANT CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
8. ALL NEW POTABLE WATER LINES SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING. WHERE PIPING IS LAID PARALLEL AND MINIMUM SEPARATION DISTANCES CANNOT BE MAINTAINED, SLEEVING SHALL EXTEND AT LEAST 9 FEET PAST THE POINT WHERE MINIMUM SEPARATION DISTANCES ARE ACHIEVED.
9. ALL NEW POTABLE WATER LINES SHALL BE CONSTRUCTED ABOVE EXISTING OR PROPOSED SANITARY SEWER GRAVITY LINES OR FORCE MAINS WHERE POSSIBLE. WHERE INSTALLATION BENEATH SANITARY SEWER GRAVITY LINES OR FORCE MAINS IS UNAVOIDABLE AT POINTS OF CROSSING, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL NEW POTABLE WATER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
10. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS CONSTRUCTED OF PVC PIPING MATERIALS SHALL BE SLEEVED (ENCASED) WHERE LESS THAN 2 FEET VERTICAL OR 4 FEET HORIZONTAL CLEARANCE TO EXISTING POTABLE WATER PIPING CANNOT BE MAINTAINED. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CLOSEST PROXIMITY.
11. ALL NEW SANITARY SEWER GRAVITY LINES AND/OR FORCE MAINS SHALL BE CONSTRUCTED BELOW EXISTING POTABLE WATER LINES WHERE POSSIBLE. WHERE INSTALLATION ABOVE POTABLE WATER LINES IS UNAVOIDABLE, SLEEVING (ENCASEMENT) IS REQUIRED FOR ALL SUCH SANITARY SEWER LINES CONSTRUCTED OF PVC PIPING MATERIALS, REGARDLESS OF SEPARATION DISTANCE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
12. WHERE NEW SANITARY SEWER SIZING (24 INCH AND GREATER) PRECLUDES THE USE OF PVC PIPING MATERIALS AND SLEEVING (ENCASEMENT) OF THE SANITARY SEWER WOULD OTHERWISE BE REQUIRED BUT IS IMPRACTICAL, THE EXISTING POTABLE WATER PIPING SHALL EITHER BE OFFSET TO PROVIDE THE REQUIRED MINIMUM CLEARANCES OR SLEEVED (ENCASED) IN LIEU OF SLEEVING (ENCASING) THE SANITARY SEWER LINE. SLEEVING SHALL BE A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING.
13. IN NO INSTANCE SHALL A FIRE HYDRANT BE INSTALLED WITHIN 9 LINEAR FEET OF A SANITARY SEWER SYSTEM.
14. NOTE: SEPARATION DISTANCES ARE MEASURED FROM THE OUTSIDE DIAMETERS OF EACH PIPE AND FROM THE EXTERIOR SURFACES OF MANHOLES, LIFT STATIONS, WASTEWATER TREATMENT PLANTS AND ASSOCIATED APPURTENANCES.
15. REFER TO GENERAL SANITARY, WATER AND C.S.S. NOTES.

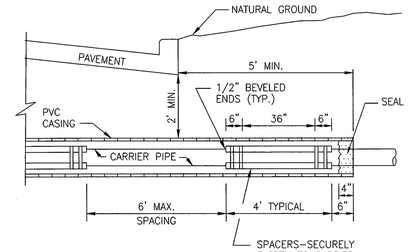
DETAIL OF WATER LINE CROSSING WASTEWATER FACILITIES WHERE SEPARATION IS LESS THAN 9' (NINE FEET)



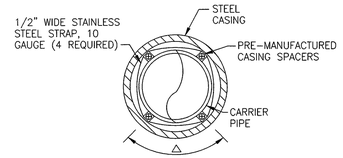
ENCASING PIPE

- 150 PSI PRESSURE CLASS PIPE MINIMUM 18 FEET LONG DIAMETER = 2 X WATERLINE DIAMETER
- SPACE AROUND CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT (OR LESS INTERVALS WITH SPACERS)
- CENTERED ON CROSSING
- BOTH ENDS SEALED WITH CEMENT GROUT OR A MANUFACTURED WATER TIGHT SEAL.

MANHOLE CLEARANCE



ELEVATION



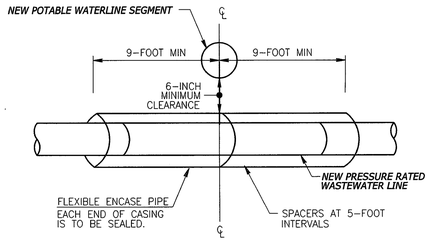
CASING SCHEDULE		
CARRIER PIPE	NOMINAL CASING	MIN. WALL THICKNESS (IN.)
6"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20

1. CASING SIZE AND THICKNESS SHALL CONFORM TO THE MINIMUM REQUIREMENTS AS SHOWN ON CASING SCHEDULE, OTHER PERMITS AS REQUIRED.
2. MAINTAIN ½" MINIMUM CLEARANCE BETWEEN THE MAXIMUM OUTSIDE DIAMETER OF CARRIER PIPE AND CASING AT ALL LOCATIONS.
3. DIMENSIONS ARE APPROXIMATE ONLY. CONTRACTOR SHALL INSTALL ADEQUATELY SIZED CASING TO ACCOMMODATE THE CARRIER PIPE.

IV

ENCASED WASTEWATER LINE

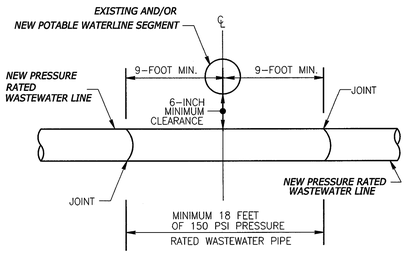
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGHTS OF OF LESS THAN EIGHTEEN (18) FEET



- MINIMUM CASING PIPE STIFFNEESS OF 115 PSI AT 5% DELECTION.
- MINIMUM CASING PIPE DIAMETER ⁎ 2 X WASTEWATER LINE DIAMETER.
- THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE (F) FOOT (OR LESS). INTERVALS WITH SPACERS
- EACH END CASING IS TO BE SEALED WITH WATER TIGHT NO-SHRINK GROUT OR MANUFACTURED WATER TIGHT SEAL.

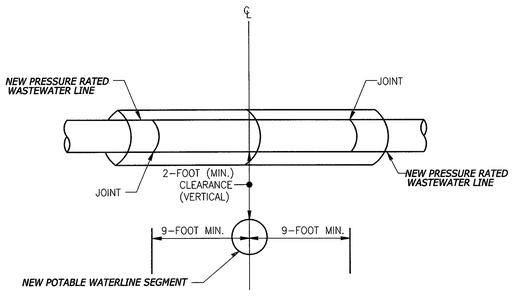
ALTERNATIVE A:

PRESSURE RATED WASTEWATER PIPE



ALTERNATIVE B:

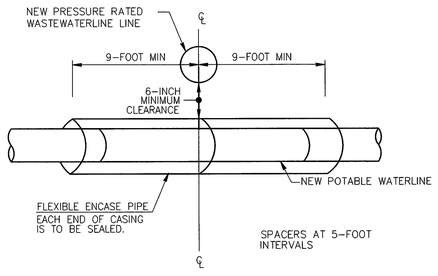
EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE



MINIMUM 18' (FEET) OF 150 PSI PRESSURE RATED WASTEWATER PIPE

ALTERNATIVE C:

ENCASE NEW POTABLE WATERLINE UNDER A NEW PRESSURE RATED WASTEWATER LINE



- SAME ENCASEMENT CRITERIA AS "ALTERNATIVE B" OR
- NEW WATERLINE (WITHOUT CASING) TO BE CONSTRUCTED OF PVC C-900 (DR-18), DUCTILE IRON WITH MECHANICAL JOINT OR STEEL PIPE WITH WITH WELDED JOINTS.
- BOTH WATERLINE AND WASTEWATER LINE MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C600 STANDARDS.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

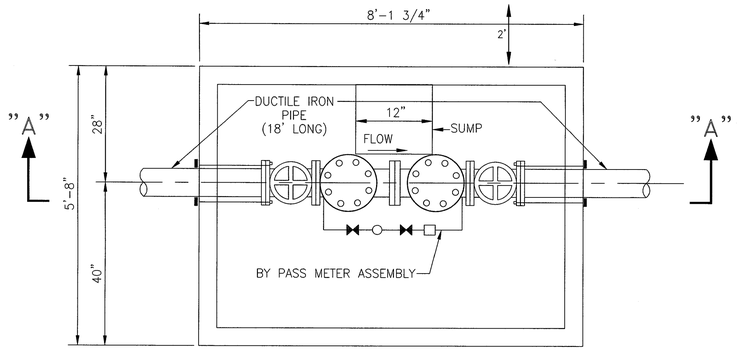
WATER LINE CROSSING DETAILS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

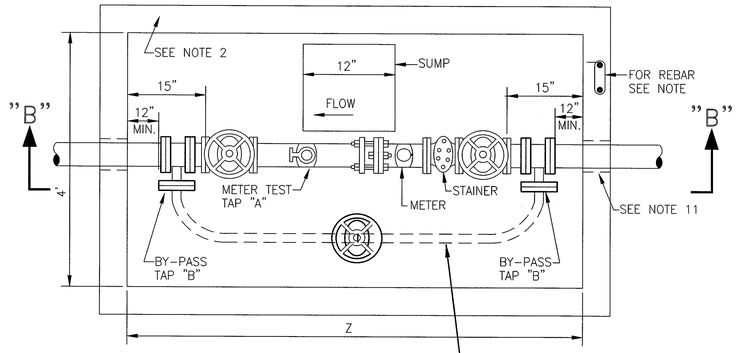
JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET	
Date:	HORZ: VERT:	23	
Dwn By:	CAD FILE:	OF 36	
Chkd By:			

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2



PLAN VIEW

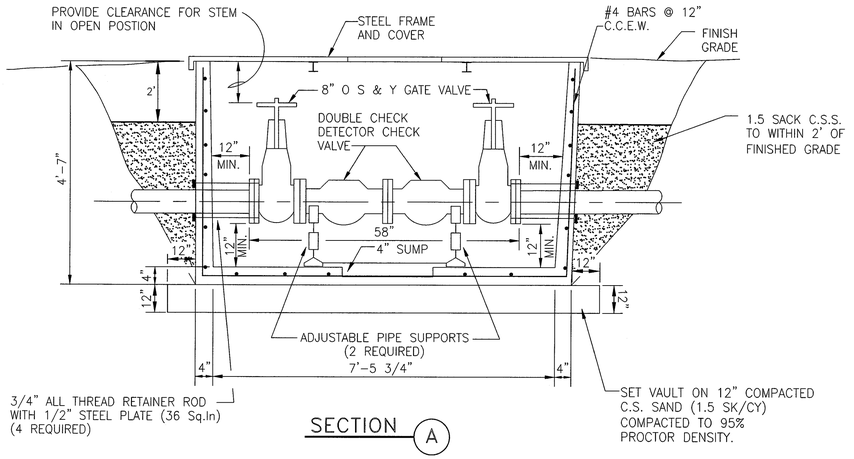


PLAN VIEW

DUCTILE IRON BYPASS FOR 3" AND ABOVE

NOTES:

1. NOTIFY THE ENGINEERING DEPARTMENT AT (979) 849-2108 PRIOR TO CONSTRUCTION OF VAULT OR BY-PASS ASSEMBLY.
2. THE METER VAULT CAN BE EITHER POURED IN PLACE OR PREFABRICATED. CONCRETE SHALL BE SIX INCHES (6") THICK AND BE 3,000 PSI WITH #4 REINFORCEMENT STEEL ON TWELVE INCH (12") CENTERS EACH WAY IF THE VAULT IS POURED IN PLACE. PREFABRICATED VAULTS SHALL BE FOUR INCHES (4") THICK AND BE 4,500 PSI CONCRETE WITH #4 REINFORCEMENT STEEL ON EIGHT INCH (8") CENTERS EACH WAY. THESE ARE MINIMAL SPECIFICATIONS.
3. THE VAULT WILL NOT BE LOCATED IN ANY DRIVE OR PARKING AREAS AND MUST BE LOCATED IN A WATER METER EASEMENT.
4. THE VAULT LID SHALL BE A BILCO LID, TYPE Q-4 SINGLE LEAF DESIGN. ANGLE FRAME IS 1/4-INCH STEEL WITH STRAP ANCHORS BOLTED TO THE EXTERIOR. THE LEAF IS 1/4-INCH STEEL DIAMOND PATTERN PLATE, PIVOTING ON TORSION BARS FOR EASY OPERATION. THE MINIMUM LIVE LOAD CAPACITY IS 150 POUNDS PER SQUARE FOOT. THE SIZE OF THE DOOR IS THREE FEET (3') BY THREE FEET (3').
5. THE LID SHALL BE PAINTED WITH 43-38 TNEMEC DIFFUSED ALUMINUM PAINT OR APPROVED EQUAL, AND CENTERED OVER METER/NO.
6. THE BY-PASS AND METER TEST TAP SHALL BE INSTALLED INSIDE THE VAULT. TAP "A" MUST BE AT LEAST TWO (2) PIPE DIAMETERS DOWNSTREAM OF THE METER. TAPS "B" AND "C" MUST BE MADE AT APPROXIMATE FORTY-FIVE DEGREE (45°) ANGLE ON EACH END OF THE PIPE AND CENTERED TEN INCHES (10") AWAY FROM THE WALL. ALL TAPS SHALL BE TWO INCHES (2") AND SHALL BE HARD PIPED
7. THE STRAINER, METER AND FLEXIBLE COUPLING WILL NOT BE SET UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE DISTRICT OPERATOR. ALL UTILITIES MUST ALSO HAVE BEEN ACCEPTED AND RELEASED BY THE CITY OF SUGAR LAND PUBLIC WORKS DEPARTMENT PRIOR TO METER
8. THE VALVES SHALL BE ANY RESILENT WEDGE DESIGN GATE VALVE WHICH HAS RECEIVED FORMAL APPROVAL FROM THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT. ALL VALVES SHALL BE FLANGED BOTH ENDS AND HAVE HAND WHEELS.
9. THE METER VAULT SHALL BE SET ON 12" C.S.S. BEDDING AS SHOWN ON DETAIL DRAWINGS. A SUMP FOUR-INCHES (4") DEEP AND TWELVE INCHES (12") IN DIAMETER SHALL BE INSTALLED TO ONE SIDE IN THE CENTER OF THE BOTTOM SLAB. IF PRECAST VAULT IS USED, RAM-NEK SHALL BE USED TO SEAL ALL COLD JOINTS.
10. ALL THE WALL PENETRATIONS SHALL BE MADE WITH A CAST IN PLACE WALL SLEEVE AS APPROVED BY THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT. BREAKING OUT THE WALL USING A JACKHAMMER OR USING KNOCKOUT PANELS WILL NOT BE ALLOWED.
11. A CONCRETE SUPPORT WILL BE INSTALLED UNDER EACH VALVE.
12. DEPTH OF VAULT SHALL BE A MINIMUM OF 4-1/2' AND A MAXIMUM OF 6'
13. ALL PIPING INSIDE THE VAULT SHALL BE DUCTILE IRON WITH FLANGE FITTINGS. ALL PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF ANGLETON ENGINEERING DEPARTMENT
14. THE TYPE OF METER, TURBINE OR COMPOUND, WILL BE DETERMINED BASED ON THE APPLICATION AND APPROVED BY THE ENGINEERING DEPARTMENT.



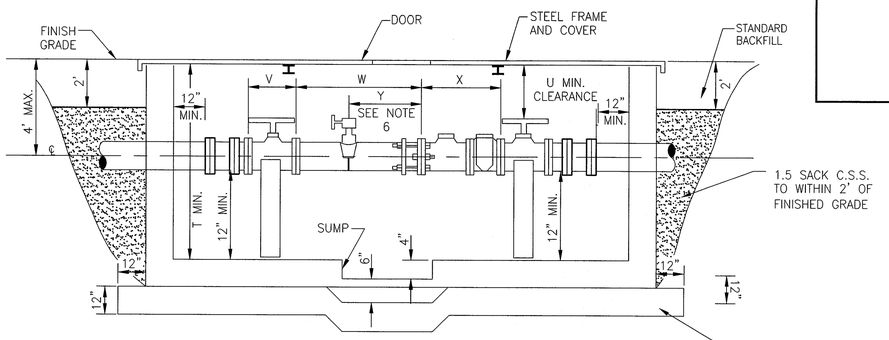
SECTION (A)

NOTES:

1. SIAMESE CONNECTION MAY BE ALLOWED WITHIN THE VAULT WHEN APPROVED BY THE ENGINEERING DEPARTMENT.
2. FIRE VALVE MAY BE SUBSTITUTED FOR GATE VALVE ON THE CUSTOMER SIDE. SUPPLIED BY PARK EQUIPMENT COMPANY, OR APPROVED EQUAL.

DETECTOR CHECK VALVE

N.T.S.



SECTION (B)

METER VAULT															
DOMESTIC															
METER SIZE	T	U	V	W	X	Y	Z	METER SIZE	T	U	V	W	X	Y	Z
3"	4'-6"	25"	8"	11-1/2"	24"	9"	6'-10"	3"	4'-6"	25"	8"	16-1/2"	19"	9"	6'-10"
4"	4'-6"	22"	9"	13-1/2"	29"	10"	7'-7"	4"	4'-6"	22"	9"	19-1/2"	23"	10"	7'-7"
6"	5'-2"	26"	10-1/2"	13-1/2"	33"	13"	8'-2"	6"	5'-2"	26"	10-1/2"	19-1/2"	27"	13"	8'-2"
								8"	6'-0"	31"	11-1/2"	25-1/2"	30"	17"	9'-1"
								10"	7'-0"	37"	13"	29-1/2"	41"	21"	10'-7"

3" TO 10" METER

N.T.S.

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 220
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WATER LINE
METER VAULT DETAILS

Job No.:	Scale: HORZ: VERT:	SHEET 24 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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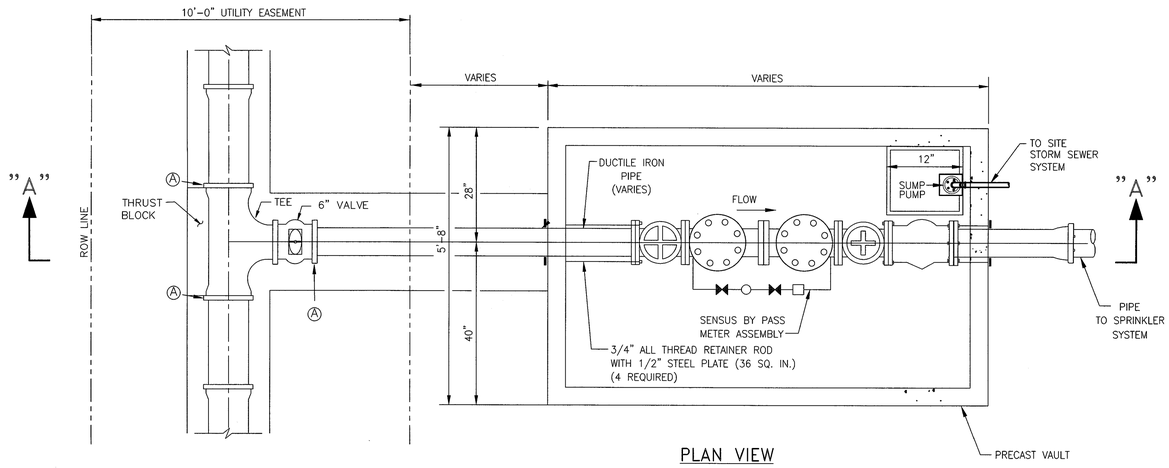


PLAN VIEW

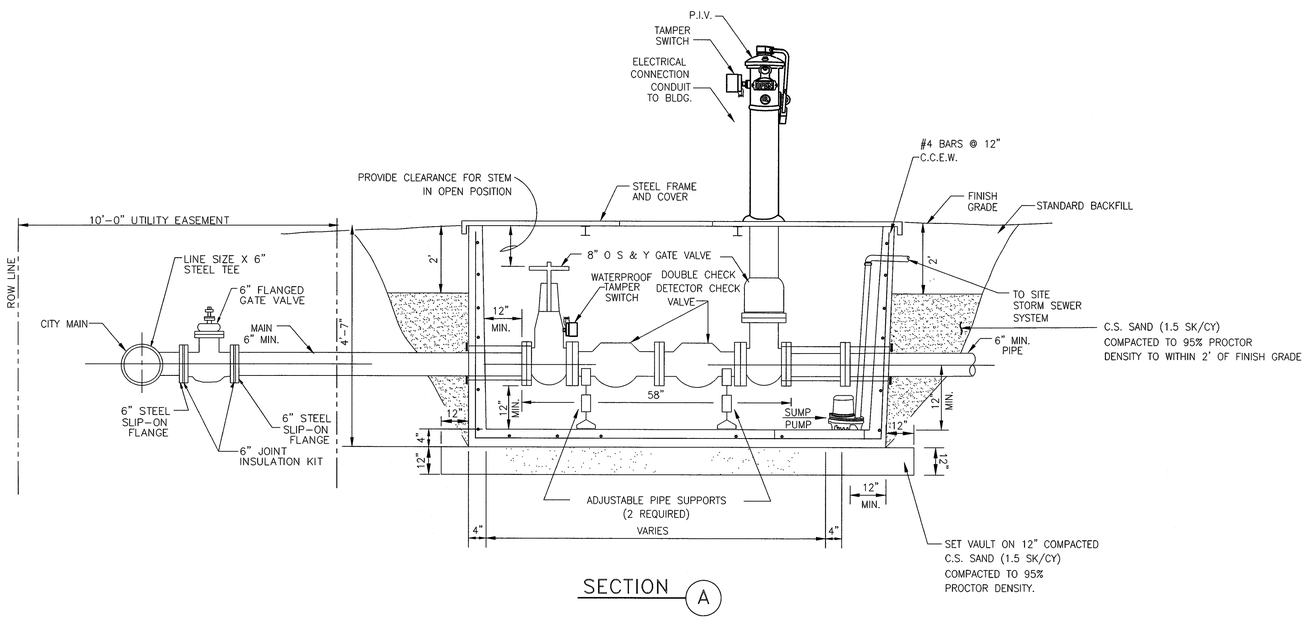
TYPICAL FIRE SERVICE METER

Ⓐ =RESTRAINED JOINT

NOTES:

1. FIRE HYDRANT REQUIRED WITHIN 50' LINEAR FEET OF THE FIRE DEPARTMENT CONNECTION.
2. FIRE VALVE MAY BE SUBSTITUTED FOR GATE VALVE ON THE CUSTOMER SIDE. SUPPLIED BY PARK EQUIPMENT COMPANY, OR APPROVED EQUAL.
3. ALL FIRE LINE VAULTS SHALL BE EQUIPPED WITH A SUMP PUMP CAPABLE OF MAINTAINING WATER LEVELS BELOW THE CENTER LINE OF THE CHECK VALVES. OUTLET SHALL BE CONNECTED TO SITE STORM SEWER SYSTEM.
4. SUMP PUMP MAY BE ELIMINATED IF BOX CAN BE DRAINED VIA GRAVITY TO SITE STORM SEWER SYSTEM.
5. ALL COMPONENTS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13 "STANDARDS FOR THE INSTALLATION OF SPRINKLER SYSTEMS".
6. REFER TO GENERAL NOTES, WATER LINE AND STORM SEWER NOTES.
7. ALL FITTINGS AND PIPE JOINTS WITHIN 10' OF A FITTING SHALL HAVE RESTRAINT JOINTS

SL-WA-23



SECTION Ⓐ

TYPICAL FIRE SERVICE METER

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WATER LINE
FIRE SERVICE METER VAULT

Job No.:	Scale: HORZ: VERT:	SHEET 25 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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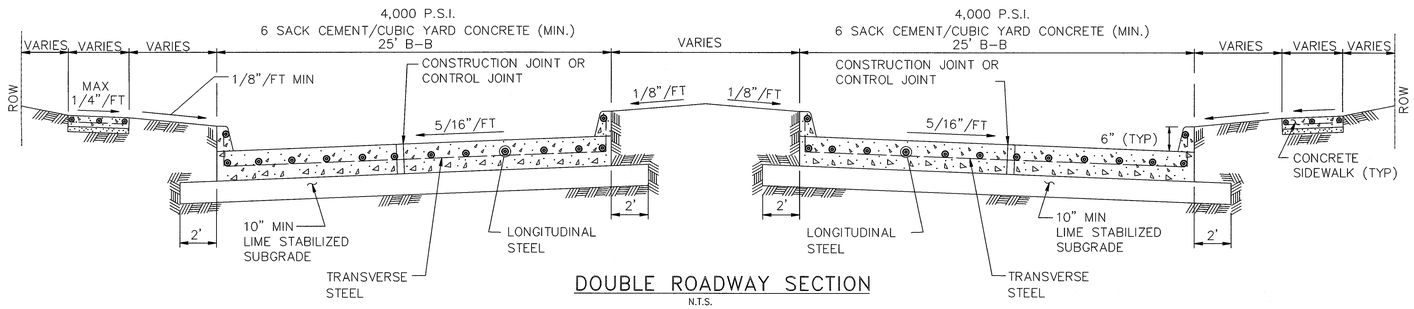


DOUBLE ROADWAY SECTION

N.T.S.

CONSTRUCTION NOTES:

1. 6 INCH, 6 SACK CEMENT PER CUBIC YARD CONCRETE, 4000 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, E.W. IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR LOCAL STREETS

2. 7 INCH, 6 SACK CEMENT PER CUBIC YARD CONCRETE, 4000 PSI REINFORCED CONCRETE WITH #4 BARS 18 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS

3. EIGHT (8) INCH, 6 SACK, 4000 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.

4. HARD AGGREGATE IS NOT ALLOWED IN STREET PAVEMENT MIX. ADMIXTURES REQUIRE CITY OF SUGAR LAND PUBLIC WORKS DEPARTMENT APPROVAL.

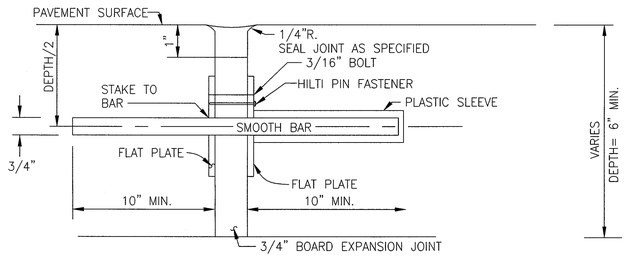
5. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 60' AND BE SEALED WITH SEALANT CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.

6. 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)

7. PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND REQUIRED ON ALL CONCRETE.

8. STORM WATER POLLUTION PROTECTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN TOTAL COMPLIANCE WITH THE STORM QUALITY MANUAL OF THE CITY OF ANGLETONAND BRAZORIA COUNTY ENGINEER'S APPROVAL.

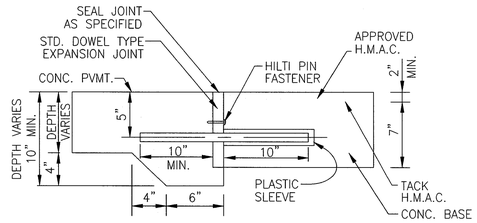
9. REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES.



STEEL TO MEET ASTM STD. SPEC. FOR CONC. REBAR UNIT TO BE 24" C.-C., AND 10" MIN.

DOWEL TYPE EXPANSION JOINT

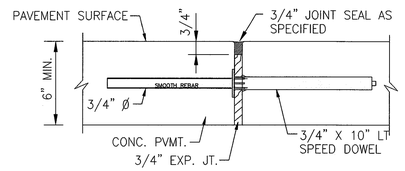
N.T.S.



DOWEL TYPE EXPANSION JOINT

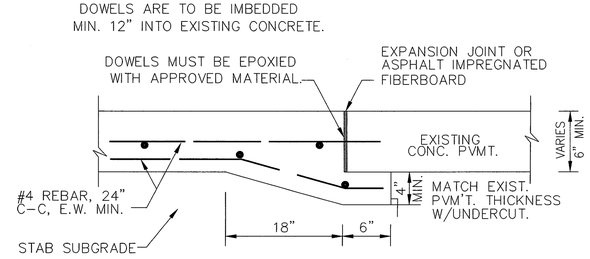
N.T.S.

(CONC. PAVING TO CONC. BASE)



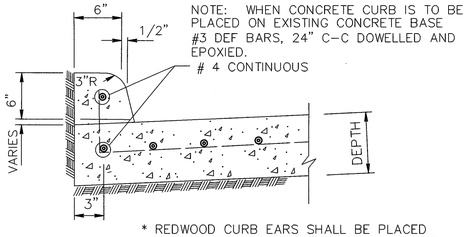
SPEED DOWEL EXPANSION JOINT

N.T.S.



UNDERCUT DETAIL WITH HEADER

N.T.S.



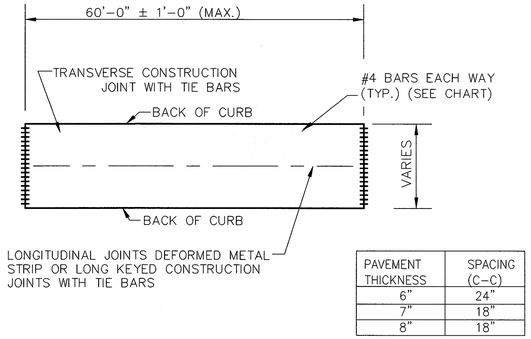
* REDWOOD CURB EARS SHALL BE PLACED AT ALL TRANSVERSE JOINTS IN PAVEMENT.

CONCRETE CURB

N.T.S.

CONSTRUCTION NOTE:

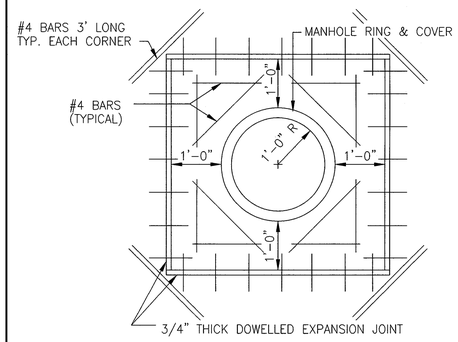
ALL NEW CURB REQUIRES 4,000 P.S.I. @ 28-DAYS.



PAVEMENT THICKNESS	SPACING (C-C)
6"	24"
7"	18"
8"	18"

PAVING PANEL

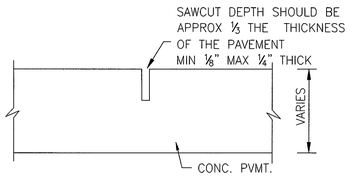
N.T.S.



MANHOLE BLOCKOUT

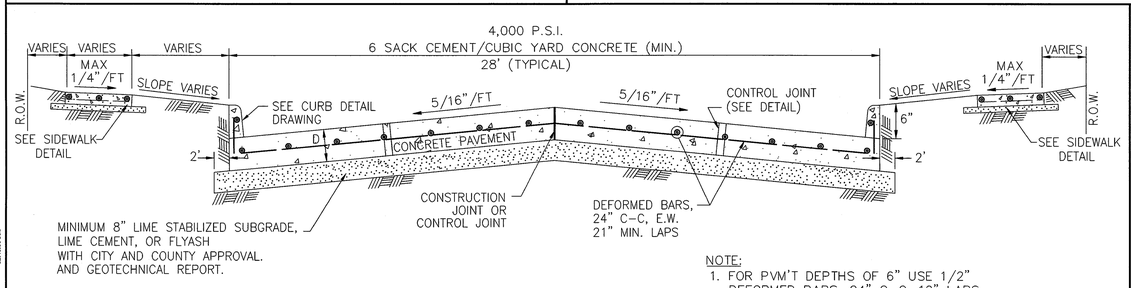
N.T.S.

(STORM & SANITARY) IN PAVEMENT



CONTROL JOINT

N.T.S.

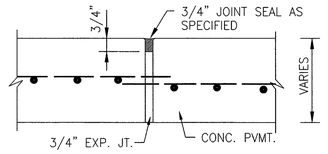


SINGLE ROADWAY SECTION

N.T.S.

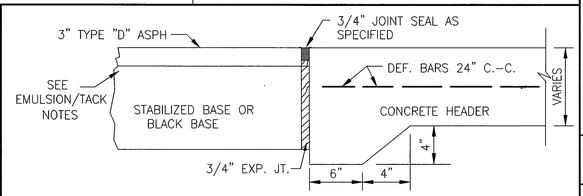
NOTE:

1. FOR PVM'T DEPTHS OF 6" USE 1/2" DEFORMED BARS, 24" C-C, 10" LAPS. ALL REINFORCING STEEL SHALL CONFORM TO GRADE 60, A.S.T.M. NO. A615. LAP SPLICES TO BE A MINIMUM OF 21 INCHES. STAGGER SPLICES IN ADJACENT BARS.



CONSTRUCTION JOINT SEAL

N.T.S.



PAVING HEADER

(FOR USE IN CONNECTING CONC. PVMT. TO ASPHALT PVMT.) (PROP. OR EXIST.)

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

CONCRETE PAVEMENT CONSTRUCTION DETAILS I

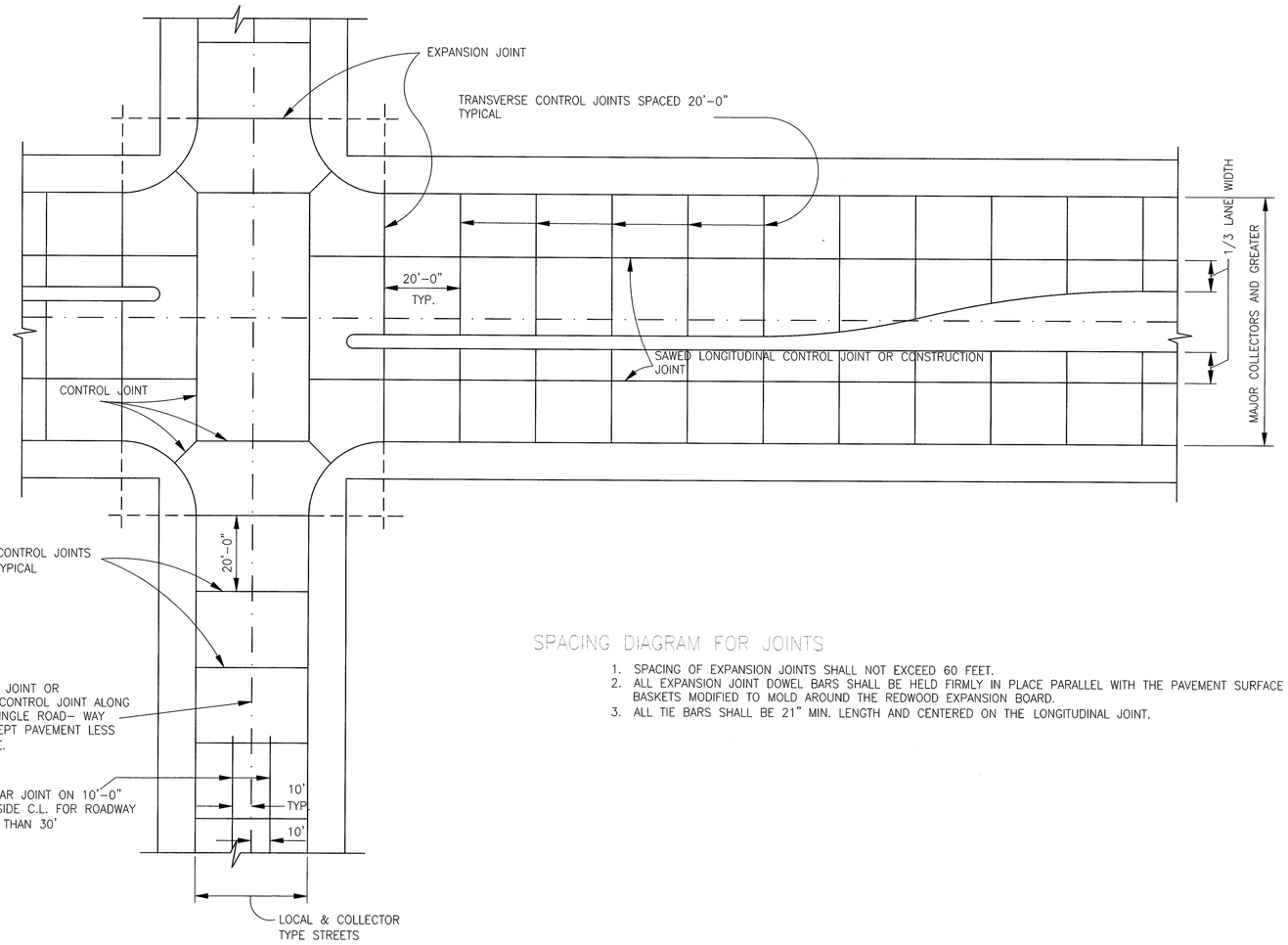
BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 26 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

Plotted on: Mar/2020 161.162 Windrose Section 2\2020161_DTL_PAVEMENT.dgn
Plotted by: Ahmad Khoshakhlagh



SPACING DIAGRAM FOR JOINTS

1. SPACING OF EXPANSION JOINTS SHALL NOT EXCEED 60 FEET.
2. ALL EXPANSION JOINT DOWEL BARS SHALL BE HELD FIRMLY IN PLACE PARALLEL WITH THE PAVEMENT SURFACE WITH WIRE BASKETS MODIFIED TO MOLD AROUND THE REDWOOD EXPANSION BOARD.
3. ALL TIE BARS SHALL BE 21" MIN. LENGTH AND CENTERED ON THE LONGITUDINAL JOINT.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

CONCRETE PAVEMENT CONSTRUCTION DETAILS II

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 27
Date:		OF 36
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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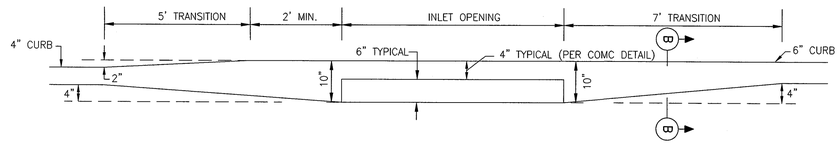
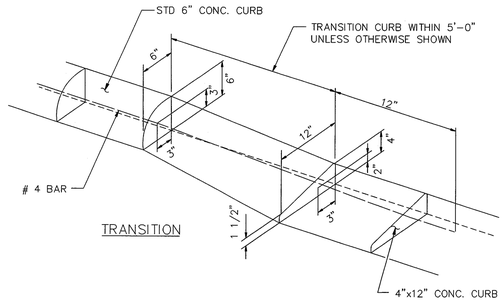
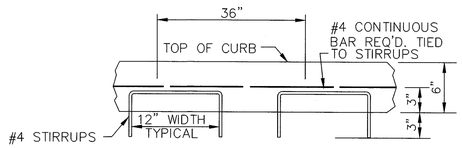


TYPICAL CURB TRANSITION FOR INLET INSTALLATION

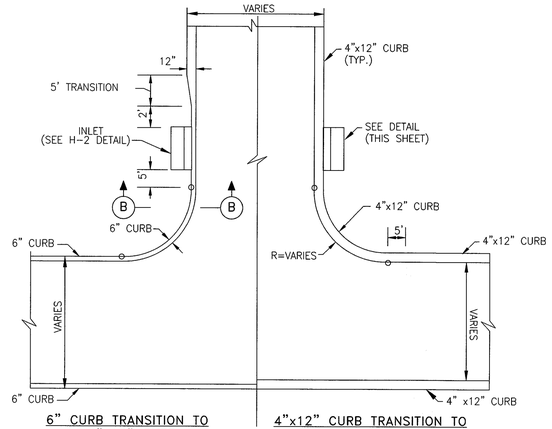


TYPICAL CURB TRANSITION



TYPICAL CONCRETE CURB REINFORCING

N.T.S.

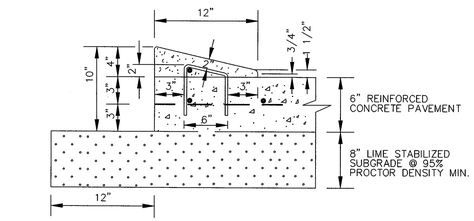


TYPICAL 4"X12" CURB W/INLET TRANSITION FOR CURB RETURNS

N.T.S.

CONSTRUCTION NOTES:

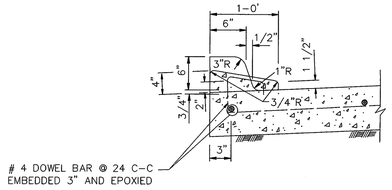
1. 6 INCH, 6 SACK CEMENT PER CUBIC YARD CONCRETE, 4000 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, E.W. IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR RESIDENTIAL STREETS.
2. 7 INCH, 6 SACK CEMENT PER CUBIC YARD CONCRETE, 4000 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS
3. EIGHT (8) INCH, 6 SACK, 4000 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.
4. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 60' AND BE SEALED CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.
5. 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)
6. PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND ON ALL CONCRETE.
7. STORM WATER POLLUTION PROTECTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN TOTAL COMPLIANCE WITH THE STORM WATER QUALITY MANUAL OF THE CITY OF SUGAR LAND.
8. UNSTABLE SUBGRADE SHALL BE EXCAVATED AND REPLACED WITH CEMENT STABILIZED SAND.
9. USE 1"x2" REDWOOD STAKES FOR HEADERS.
10. EDGE ALL SIDES WITH EDGING TOOL.
11. DOWEL SHALL BE 3/4" DIAMETER, WITH MINIMUM 10" PENETRATION (BOTH SIDES).
12. IT IS THE CONTRACTOR'S RESPONSIBLITY TO NOTIFY THE CITY OF ANGLETON OF ANY BIRDBATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.
13. REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES.
14. **1.0 LBS. OF APPROVED POLYPROPYLENE FIBER MESH PER C/Y IN 4"X12" CURBS REQUIRED.**



4"x12" MOUNTABLE CONCRETE CURB

NOTES:

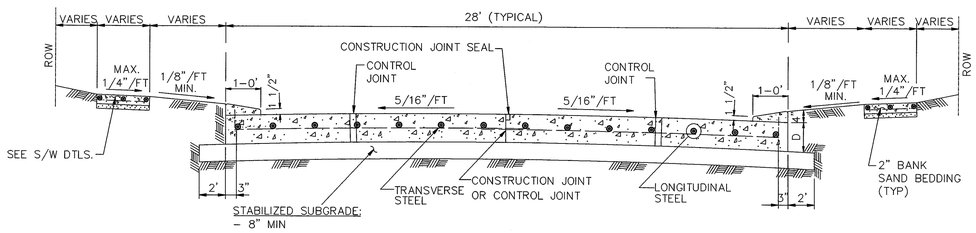
1.) 1.0 LBS. OF APPROVED NON-METALLIC FIBER MESH PER C/Y IN 4"X12" CURBS.
2.) #3 RE-BAR STIRRUPS TO BE PLACED AT INTERVALS OF 2' (FT) C-C.
3.) #4 RE-BAR LONGITUDINAL SHALL BE TIED TO EACH STIRRUP
4.) MOUNTABLE CURB ONLY ALLOWED ON ≤ 41' (FT), UNDIVIDED, RESIDENTIAL ROADWAYS WITHIN SUBDIVISIONS.



4-INCH x 12-INCH TRANSITION CURB

4"x12" MOUNTABLE CONCRETE CURB AND TRANSITION CURB NOTES:

1. 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS AND NON-RESIDENTIAL STREETS. RESIDENTIAL STREETS MAY BE CONSTRUCTED WITH EITHER 6-INCH CONCRETE CURB OR 4-INCH x 12-INCH CONCRETE CURB AS NOTED ON PLANS.
2. ALL 4-INCH x 12-INCH CONCRETE CURBS TO BE POURED SEPARATE FROM PROPOSED CONCRETE PAVEMENT.
3. TRANSITIONS FROM 6-INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 5 FEET (TYP.), UNLESS OTHERWISE SHOWN. REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" DETAIL IS TO BE INSTALLED.



TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH 4"X12" CURB

* SEE 4" x 12" MOUNTABLE CURB DETAIL (THIS SHEET)

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

MK.	DESCRIPTION	DWN.	DATE	CHK.

A. KHOSHAKHLAGH 101133 LICENSED PROFESSIONAL ENGINEER
STATE OF TEXAS
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON Where the Heart is

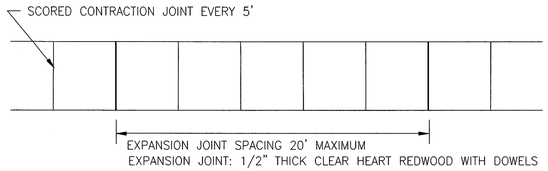
ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

RESIDENTIAL CURB CONSTRUCTION DETAILS

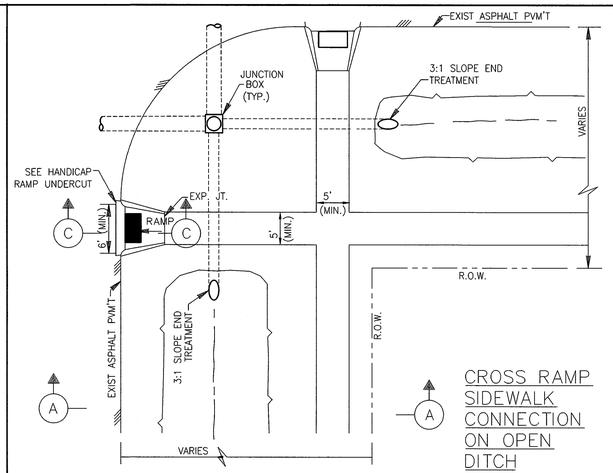
Job No.:	Scale: HORZ: VERT:	SHEET 28 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

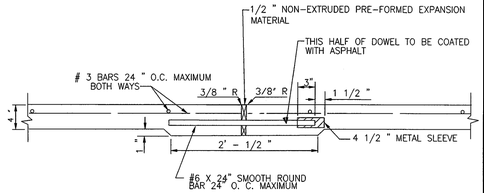


SIDEWALK JOINT DETAILS

N.T.S.



CROSS RAMP SIDEWALK CONNECTION ON OPEN DITCH



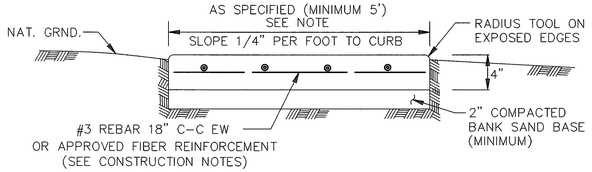
B–B
EXPANSION JOINT DETAIL

NOTES:

1. EXISTING CURB AND GUTTER TO BE SAW CUT, REMOVED AND REPLACED. DOWEL STEEL FOR MINIMUM REINFORCING OVERLAP OF 10 INCHES (10") DOWELS SHALL BE EIGHTEEN INCHES (18") LONG AND EPOXIED A MINIMUM OF (8") EIGHT INCHES INTO EXISTING PAVEMNENT.
2. IF SIDEWALKS ARE NEITHER EXISTING NOR PROPOSED WHERE WHEELCHAIR RAMP ACCESS IS REQUIRED, CONCRETE SIDEWALKS SURFACE 4 1/2" THICK SHALL BE INSTALLED TO PROVIDE ACCESS TO THE PEDESTRIAN PUSH BUTTONS.
3. DETECTABLE WARNINGS REQUIRED BY T.A.S. SECTIONS 4.1 AND 4.7 SHALL COMPLY WITH T.A.S. SECTION 4.29
4. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACE SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE.
5. DETECTABLE WARNING SURFACE SHALL COVER THE ENTIRE WIDTH AND DEPTH OF RAMP.
6. DETECTABLE WARNINGS SHALL BE INSTALLED WITH PAVERS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
7. CONCRETE PAVER UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C-935, C-33, AND SHALL BE PLACED IN A TWO BY TWO UNIT BASKET WEAVE PATTERN, UNLESS SHOWN OTHERWISE IN THE PLANS.
8. CONCRETE PAVER UNITS SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
9. CONCRETE PAVER UNIT COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR THAT PROVIDES A LIGHT REFLECTIVE THAT SIGNIFICANTLY CONTRASTS WITH THE ADJACENT SURFACES. ADJACENT SURFACES INCLUDE SIDE FLARES.
10. CONCRETE PAVER UNITS SHALL BE SAW CUT ONLY, AND ANY CUT UNIT SHALL NOT BE LESS THAN 25F A FULL UNIT.

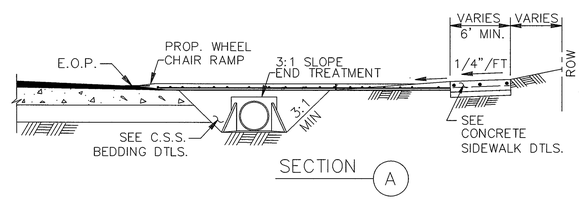
CONSTRUCTION NOTES:

1. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0"
2. EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD WITH DOWELS.
3. SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO WIDTH OF SIDEWALK.
4. ALL EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS.
5. 4 INCH, 5 SACK CEMENT PER CUBIC YARD CONCRETE, 3000 PSI. REINFORCED CONCRETE WITH #3 BARS, 18 INCHES C-C, FOR SIDEWALKS, #4 BARS 18' C-C FOR WHEEL CHAIR RAMPS IS THE MINIMUM ACCEPTED. MINIMUM 3 LONGITUDINAL BARS. FIBER REINFORCING SIDEWALKS-STEEL AND POLYPROPYLENE BLENDED FIBER REINFORCEMENT SYSTEM SUCH AS NOVOMESH e3 AS MANUFACTURED BY S.I. CONCRETE SYSTEMS (OR PRE-APPROVED EQUAL) MAY BE USED AS AN ALTERNATE TO CONVENTIONAL REBAR REINFORCING AT A DOSAGE RATE OF 24 LBS. PER CUBIC YARD OF CONCRETE.
6. USE RADIUS TOOL ON ALL EXPOSED EDGES.
7. TOP OF THE SIDEWALK ELEVATION TO BE TOP OF CURB.
8. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 526 IN THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
9. REFER TO GENERAL NOTES AND CONCRETE/PAVING NOTES.
10. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS.

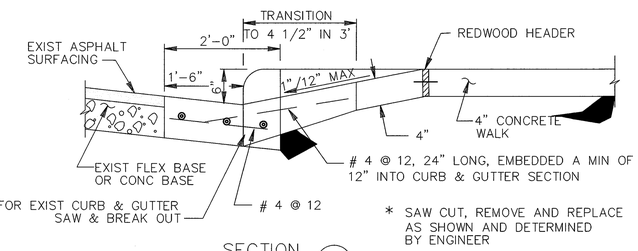


CONCRETE SIDEWALK

NOTE:
BANK SAND IS DEFINED AS A WELL-GRADED SAND, FREE OF SILT, CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER, MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM GROUP SYMBOL SW CRITERIA W/ A PLASTICITY INDEX OF ≤ 10. AND NO MORE THAN 12F MATERIAL CAN PASS THE No. 200 SIEVE.

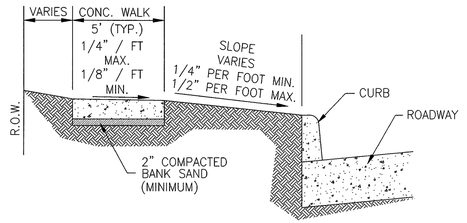


SECTION A



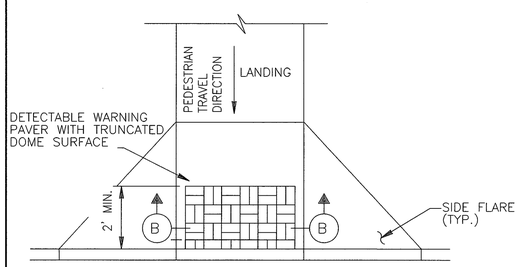
SECTION C

HANDICAP RAMP CURB & GUTTER*

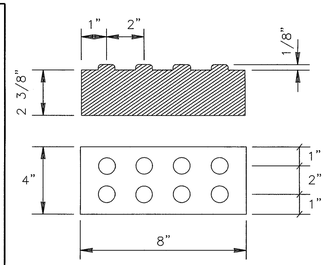


NOTE:
SEE SIDEWALK, CONC/PAVING, AND GENERAL NOTES

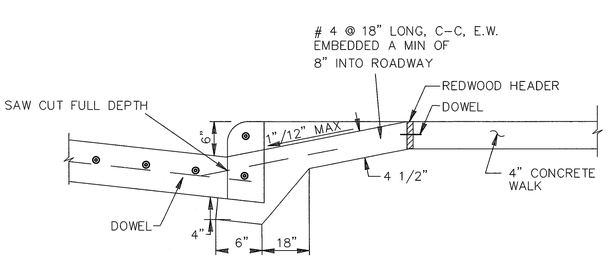
TYPICAL SINGLE ROADWAY SIDEWALK



TRUNCATED DOME PATTERN CURB RAMP



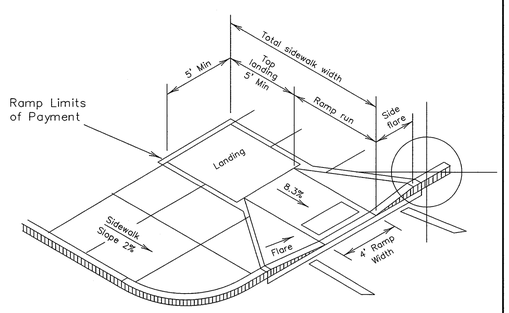
CONCRETE PAVER WITH TRUNCATED DOME SURFACE



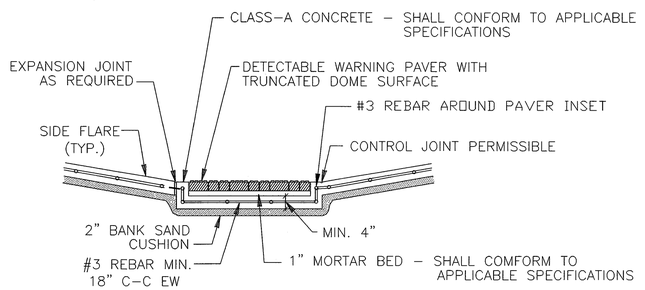
SECTION D

HANDICAP RAMP UNDERCUT

1. STANDARD FLARED SINGLE RAMPS ARE ALLOWED AT LOCAL/LOCAL STREET CROSSINGS



WHEELCHAIR RAMP SIDEWALK CONNECTION



SECTION B

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS — A. KHOSHAKHLAGH — 101133 — LICENSED PROFESSIONAL ENGINEER — 11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON — Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

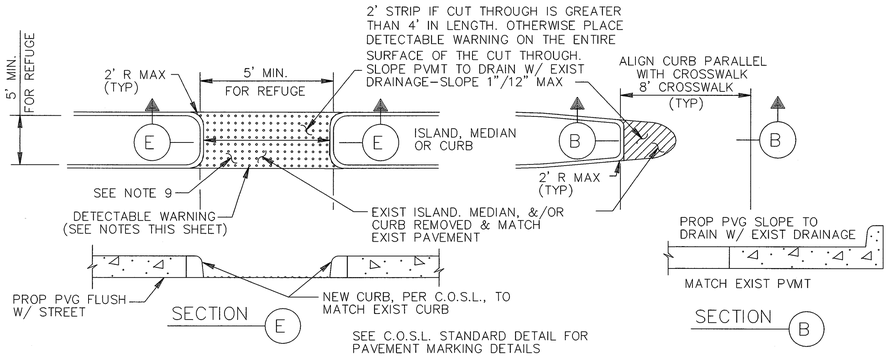
WHEEL CHAIR RAMP & SIDEWALK DETAILS I

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

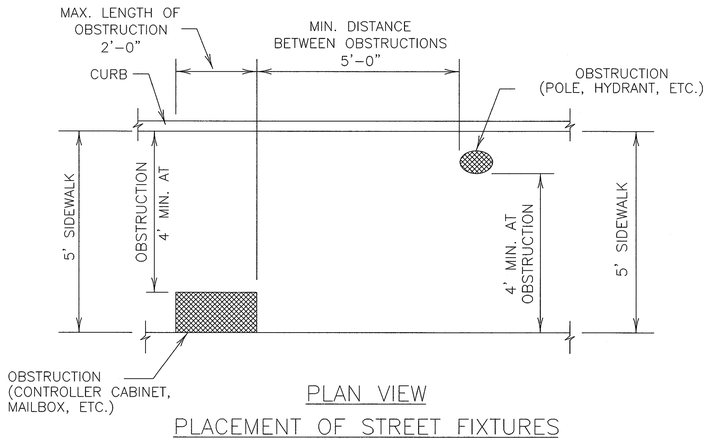
JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET	
Date:	HORZ: VERT:	29	
Dwn By:	CAD FILE:	OF 36	
Chkd By:			

JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2



FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS



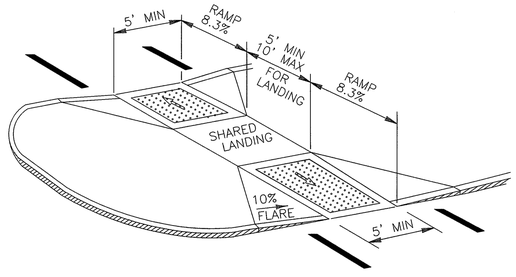
PLAN VIEW

PLACEMENT OF STREET FIXTURES

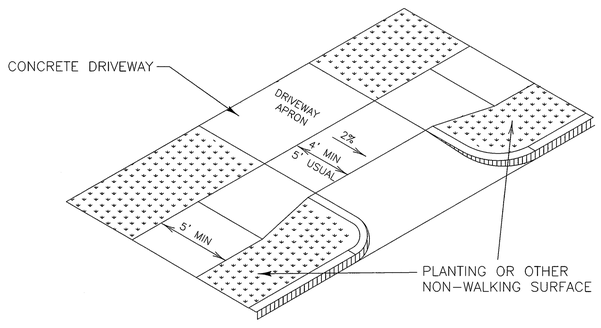
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

NOTES:

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED
2. THE MINIMUM SIDEWALK WIDTH IS 5' (FEET). THE LANDING SHALL BE 5' x 5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS 2%. USUAL SIDEWALK CROSS SLOPE EQUALS 1.5%. CHANGES IN LEVEL GREATER THAN 1/4" (IN.) ARE NOT PERMITTED.
3. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 5' x 5' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GREATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6" (IN.) OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES, WITH THE FOLLOWING EXCEPTIONS:
   A.) HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
   B.) THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. WHERE STRUCTURALLY IMPRACTICAL TO ACHIEVE TEXAS ACCESSIBILITY STANDARDS (TAS) COMPLIANCE, THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS, WITHIN THE PUBLIC R.O.W., MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY WITHOUT INVOKING TEXAS ACCESSIBILITY STANDARDS (TAS) VARIANCES FOR LANDINGS OR HANDRAILS. WHERE A CONTINUOUS GRADE GREATER THAN 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE ON ONE OR BOTH SIDES OF THE SIDEWALK TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
6. RAMP TEXTURES MUST CONSIST OF TRUNCATED DOME SURFACES, IN ACCORDANCE WITH ADA AND TEXAS DEPARTMENT OF LICENSING AND REGULATIONS (TDLR), TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. TEXTURES ALSO SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHALL BE A MINIMUM OF 5' (FT.) WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
9. SMALL CHANNELIZATION ISLANDS, WHICH CAN NOT PROVIDE A MINIMUM 5' x 5' LANDING AT THE TOP OF RAMPS, SHALL BE CUT THROUGH LEVEL WITH THE SURFACE OF THE STREET.
10. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
11. EXISTING FEATURES THAT COMPLY WITH T.A.S. MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
12. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.

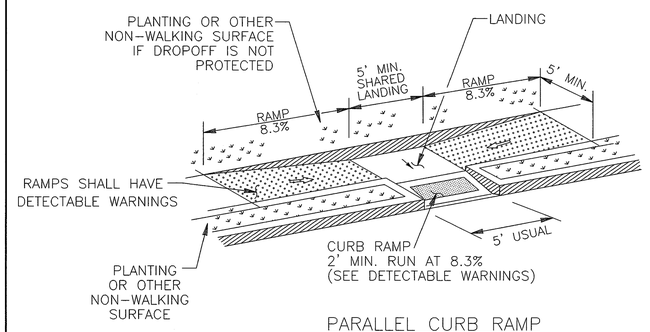


CURB RAMPS AT MEDIAN ISLANDS



SETBACK SIDEWALK

SIDEWALK TREATMENT AT DRIVEWAYS



PARALLEL CURB RAMP

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

WHEEL CHAIR RAMP & SIDEWALK DETAILS II

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 30
Date:		
Dwn By:	CAD FILE:	OF 36
Chkd By:		

T JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

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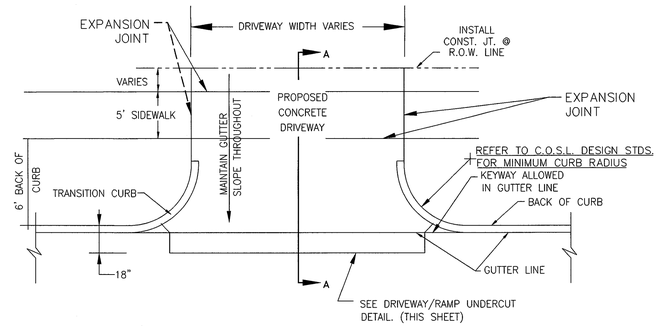
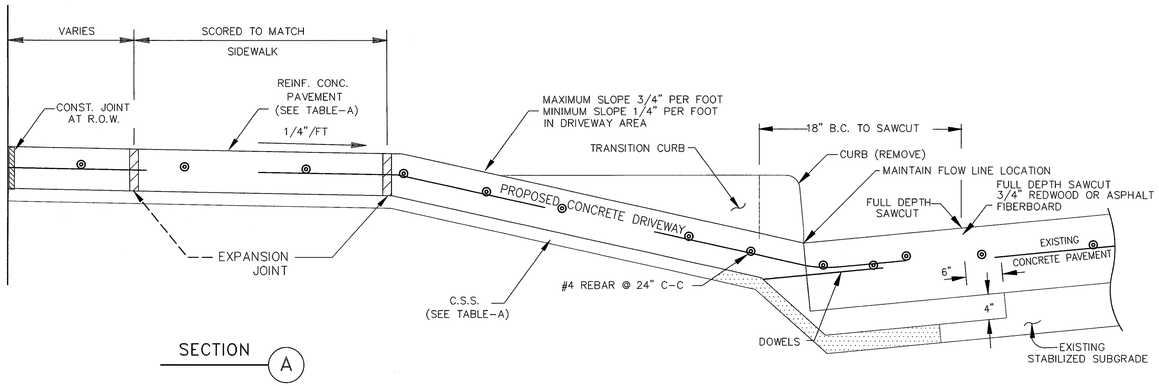
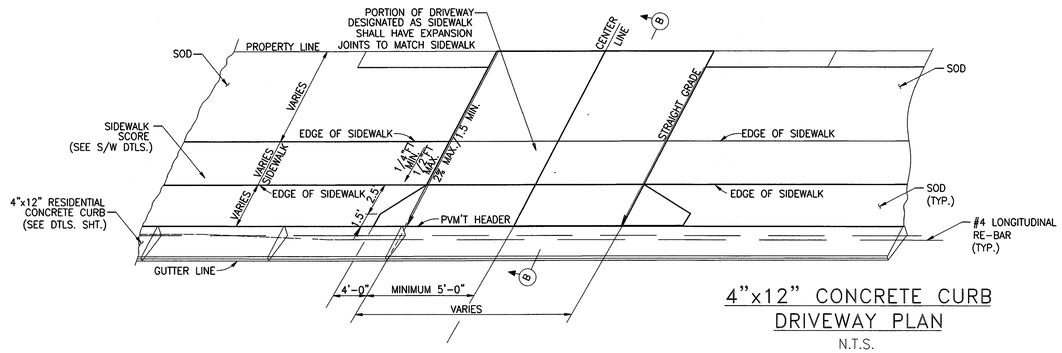


6" CONCRETE CURB DRIVEWAY PLAN

N.T.S.

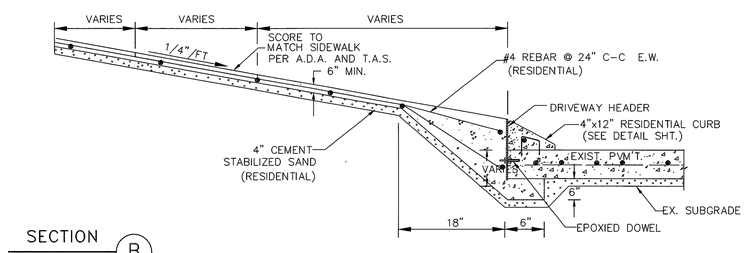


SECTION A



4"x12" CONCRETE CURB DRIVEWAY PLAN

N.T.S.



SECTION B

NOTES:

1.) SAW CUT & BREAKOUT NO MORE THAN 72 HOURS PRIOR TO PROPOSED CONCRETE PLACEMENT. NOTIFY SUGAR LAND PRIOR TO CUT.

2.) UNSTABLE SUBGRADE SHALL BE OVER EXCAVATED & REPLACED WITH CONCRETE.

3.) IT IS CONTRACTOR'S RESPONSIBILITY TO NOTIFY SUGAR LAND OF ANY BIRD BATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.

4.) USE 1"x2" TREATED REDWOOD FOR HEADER.

5.) EDGE ALL SIDES WITH EDGING TOOL AND BROOM FINISH

6.) FOR INDUSTRIAL DRIVES, PAVEMENT SHALL HAVE A DEPTH OF 8" (IN).

7.) EXPANSION JOINT AT PROPERTY LINE REQUIRED. 3/4" REDWOOD BOARD WITH No. 4 DOWELS MINIMUM.

8.) MAXIMUM ALLOWABLE DRIVEWAY GRADE IN PULIC R.O.W. IS 5%

9.) DRIVEWAY GRADE MUST MEET A.D.A AND T.A.S. SIDEWALK SLOPE, SIDEWALKS MUST BE SCORED TO MATCH ADJACENT SIDEWALK. IF SLOPE IS CONTINUED THROUGH THE R.O.W. LINE, PROVIDE A 3/4" REDWOOD EXPANSION JOINT WITH DOWELS AT R.O.W. LINE.

10.) REFER TO GENERAL , C.S.S., ASPHALT, AND CONCRETE PAVEMENT NOTES.

TABLE-A

CEMENT STABILIZED SAND 2-SK/C.Y.	
RESIDENTIAL	4" MINIMUM
REINFORCED CONCRETE PAVEMENT 3,000 PSI MIN	
RESIDENTIAL	4" MINIMUM

DRIVEWAY PAVEMENT CONSTRUCTION TABLE

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
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TBPE FIRM REG. No. 280
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ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

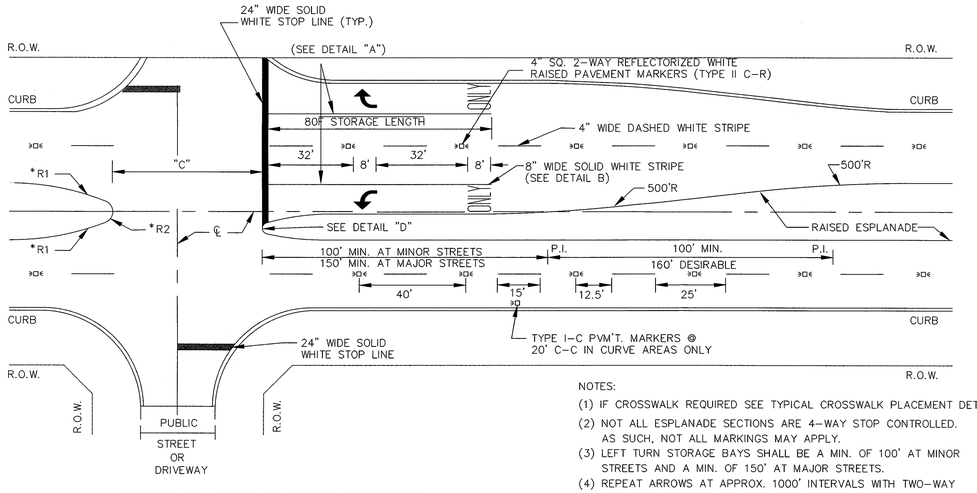
DRIVEWAY CONSTRUCTION DETAILS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale:	SHEET
Date:	HORZ: VERT:	31
Dwn By:	CAD FILE:	OF 36
Chkd By:		

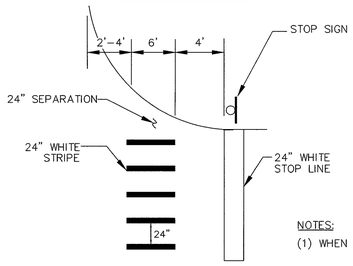
JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2



TYPICAL ESPLANADE SECTION

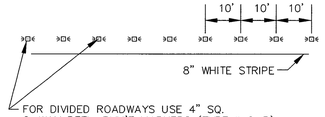
NOTES:
(1) IF CROSSWALK REQUIRED SEE TYPICAL CROSSWALK PLACEMENT DETAIL.
(2) NOT ALL ESPLANADE SECTIONS ARE 4-WAY STOP CONTROLLED. AS SUCH, NOT ALL MARKINGS MAY APPLY.
(3) LEFT TURN STORAGE BAYS SHALL BE A MIN. OF 100' AT MINOR STREETS AND A MIN. OF 150' AT MAJOR STREETS.
(4) REPEAT ARROWS AT APPROX. 1000' INTERVALS WITH TWO-WAY LEFT TURN SECTION.

STANDARD TYPE

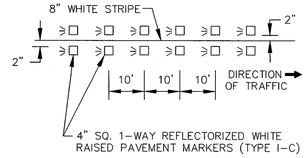


NOTES:
(1) WHEN POSSIBLE, PLACE CROSSBAR MARKINGS TO AVOID WHEELPATHS

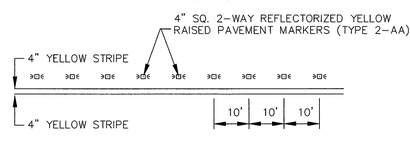
TYPICAL CROSSWALK PLACEMENT



DETAIL "A"



DETAIL "B"



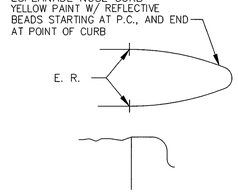
DETAIL "C"

RADIUS DIMENSIONS

ESPLANADE	*R1	*R2
<8'	N/A	W/2
8'-38'	90°	W/5
>38'	N/A	15'

PAVEMENT MARKER LEGEND

SYMBOL	DESCRIPTION
□	4" X 4" REFLECTORIZED RAISED PAVEMENT MARKER
□≤	INDICATES DIRECTION OF TRAFFIC FLOW



TYPICAL CURB SECTION

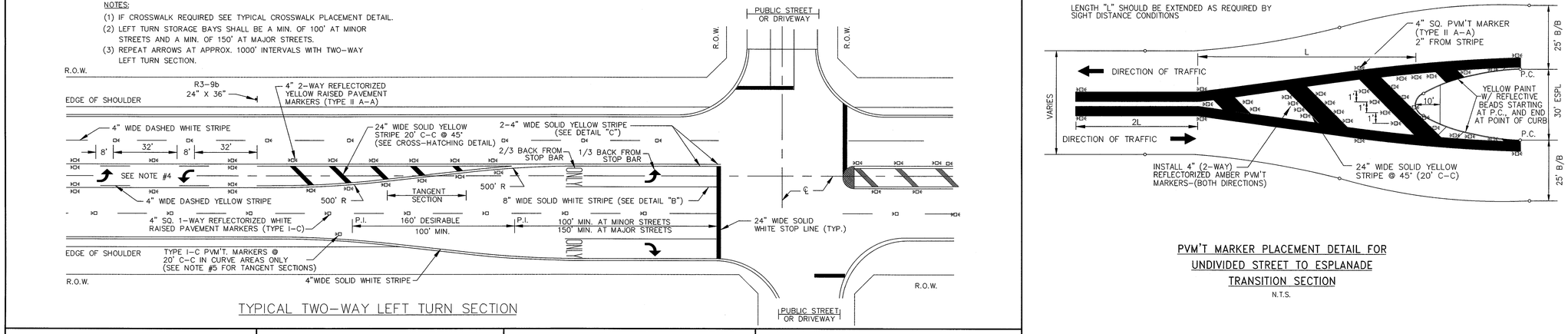
PAINT FROM THE BACK OF CURB TO THE GUTTER LINE

DETAIL "D"

NOTES:
1. ALL INTERSECTIONS WHERE A STOP SIGN IS LOCATED SHALL HAVE A STOP BAR. STOP BARS SHALL BE LOCATED WHERE PEDESTRIAN CROSSWALKS ARE PROVIDED, 4' BEHIND CROSSWALKS.
2. STOP BARS SHALL BE 24" WIDE, AND CONSIST OF SOLID WHITE LINES EXTENDING ACROSS APPROACH LANES TO INDICATE THE POINT AT WHICH THE STOP IS INTENDED OR REQUIRED TO BE MADE.
3. ON APPROACH – BEGINNING WITH STOP BAR, INSTALL A 4" WIDE SOLID WHITE LINE FOR 50 FT BACK FROM STOP BAR SKIP 25' AND BEGIN NORMAL LANE LINES.
4. ON EXIT – BEGINNING WITH CROSSWALK, OR 12' FROM CURB LINE OF INTERSECTING STREET, INSTALL A 4" WIDE SOLID WHITE LINE FOR 50 FT. AND BEGIN NORMAL LANE LINE.
5. CROSSWALKS SHALL BE A MINIMUM INSIDE WIDTH OF 5'(FT.). AT LOCATIONS WHERE ADDITIONAL VISIBILITY IS REQUIRED, WHERE TRAFFIC CONTROL DEVICES ARE NOT PRESENT, AND IN SCHOOL ZONES CONTINENTAL CROSSWALKS SHALL BE USED.
6. ALL PAVEMENT MARKINGS WITHIN CITY ROW SHALL BE MULTIPOLYMER (GRADES 65 AND ABOVE) IN ACCORDANCE WITH C.O.S.L. APPROVED PRODUCT LIST.
7. PAVEMENT MARKINGS MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS. ALL PAVEMENT MARKINGS MUST BE RETRO-REFLECTIVE MATERIAL APPLIED TO THE ROAD SURFACE IN A MOLTEN STATE BY SCREED/EXTRUSION, SUSPENDED EXTRUSION, OR SPRAY MEANS, WITH A SURFACE APPLICATION OF GLASS BEADS.
8. THE COLOR OF RAISED PAVEMENT MARKERS UNDER BOTH DAYLIGHT AND NIGHTTIME CONDITIONS SHALL CONFORM TO THE COLOR OF THE MARKING FOR WHICH THEY SERVE AS A POSITIONING GUIDE OR FOR WHICH THEY SUPPLEMENT OR SUBSTITUTE.
9. ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROX. 2")
10. ALL BUTTONS SHALL BE INSTALLED WITH AN APPROVED EPOXY.
11. A BLUE REFLECTORIZED BUTTON SET 6" OFF CENTERLINE OF ROADWAY SHALL BE INSTALLED ADJACENT TO ALL FIRE HYDRANTS.
12. PAVEMENT SURFACE AREAS PRIOR TO PLACEMENT OF PAVEMENT MARKINGS, AND/OR RAISED PAVEMENT MARKERS SHALL BE CLEANED IN ACCORDANCE WITH C.O.S.L. STANDARDS. CONCRETE SURFACES SHALL BE CLEANED BY ABRASIVE BLASTING MEDIUM. ASPHALT PAVEMENT SURFACES SHALL BE CLEANED BY BRUSHING, WASHING, COMPRESSED AIR, AND/OR HIGH-PRESSURE WATER. AREAS MUST BE FREE OF CURING MEMBRANCE, DIRT, GREASE, LOOSE AND/OR FLAKING EXISTING MARKERS AND OTHER FORMS OF DEBRIS.
13. ALL ESPLANADE NOSES, AND CURBS IN LEFT TURN BAY'S SHALL BE PAINTED WITH YELLOW REFLECTORIZED PAINT. AND SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC DEVICES, A.D.A., T.A.S., AND C.O.S.L. STANDARDS AND ALL REVISIONS THEREOF.
14. ALL ROADWAYS WITHOUT CURB SHALL HAVE A SOLID 4" WHITE REFLECTORIZED STRIPE 12" INSIDE THE EDGE OF PAVEMENT.
15. WITHIN A TANGENT SECTION THE TYPE I-C PAVEMENT MARKERS CAN BE PLACED AT 40' C-C ON ROADWAYS WITHOUT CURB AND GUTTERS.
16. ALL STREET CROSSINGS SHALL COMPLY WITH T.A.S. AND A.D.A., SEE HANDICAP CROSS DETAIL.
17. ALL PAVEMENT MARKINGS, AND/OR RAISED PAVEMENT MARKERS SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC DEVICES, A.D.A., T.A.S., AND C.O.S.L. STANDARDS AND ALL REVISIONS THEREOF.
18. ALL MARKINGS SHALL HAVE A UNIFORM CROSS-SECTION, AND THE DENSITY AND QUALITY OF THE MARKING'S SHALL BE UNIFORM THROUGHOUT THEIR THICKNESS.
19. PAVEMENT MARKING'S PLACED THAT ARE NOT IN ALIGNMENT OR SEQUENCE, AS SHOWN ON THE PLANS OR STATED IN THE PROJECT SPECIFICATION'S SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
20. FOR SKEW INTERSECTIONS AND STREET WIDTHS NOT SHOWN, COORDINATE WITH THE C.O.S.L., ENGINEERING DEPARTMENT (281) 275-2780
21. PRIOR TO PLACING MARKING, CONTACT COSL TO COORDINATE AND REVIEW IN THE FIELD. COORDINATE WITH THE C.O.S.L., ENGINEERING DEPARTMENT (281) 275-2780

NOTE:
FOR SPEEDS 45 MPH OR MORE L=0.62 WS (L=WS)
FOR SPEEDS LESS THAN 45 MPH L= $WS^2/155$ ($L=WS^2/60$)
S=POSTED, 85TH-PERCENTILE, OR STATUTORY SPEED IN MPH
W= OFFSET DISTANCE IN FEET

MAXIMUM LENGTH OF: L= 100 FT IN URBAN AREAS
L= 200 FT IN RURAL AREAS

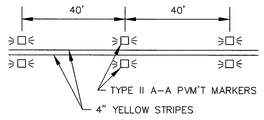


TYPICAL TWO-WAY LEFT TURN SECTION

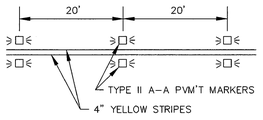
PVM'T MARKER PLACEMENT DETAIL FOR UNDIVIDED STREET TO ESPLANADE TRANSITION SECTION

N.T.S.

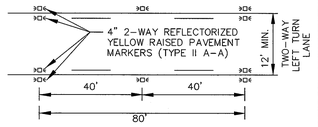
CENTER LINE DETAIL
TANGENT SECTION



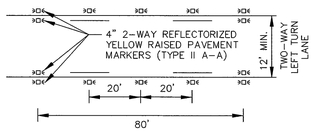
SL-ST-59
CENTER LINE DETAIL
CURVE SECTION



TWO-WAY LEFT TURN
TANGENT SECTION



TWO-WAY LEFT TURN
CURVE SECTION



MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED
PROFESSIONAL ENGINEER
1/6/2021

Costello

Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

PAVEMENT MARKING DETAILS

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: VERT:	SHEET 32 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

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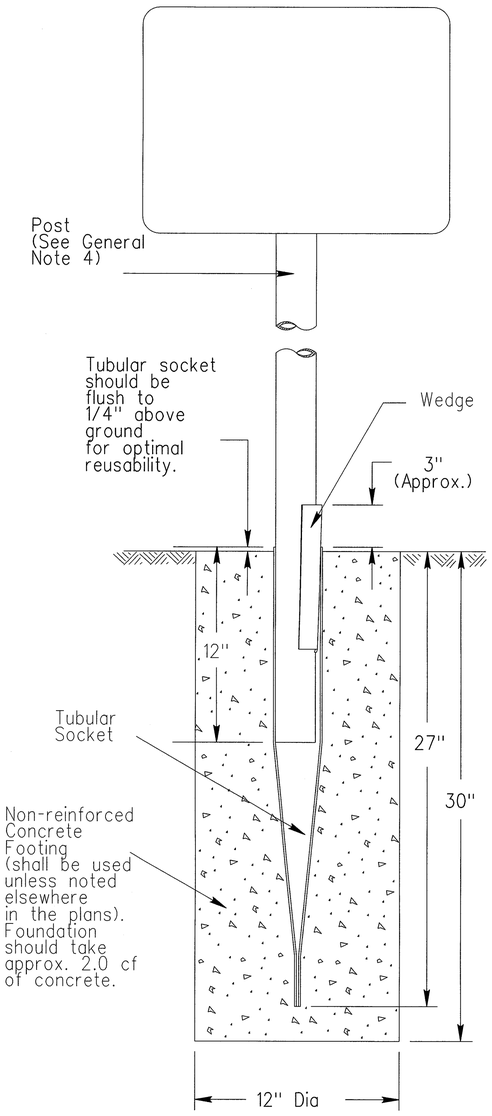
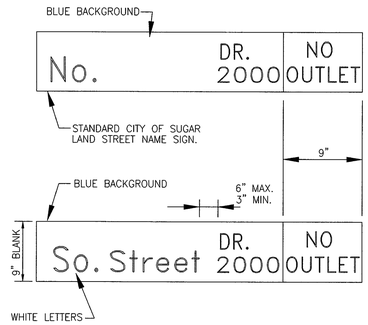
Wedge Anchor System



SM RD SGN ASSM TY TWT(X)WA(P)



NOTES:

1. HELVETICA BOLD, MEDIUM STYLE; WITH 6" UPPER CASE LETTERS AND 4' LOWER CASE LETTERS.
2. REFER TO C.O.S.L. DESIGN STANDARDS FOR MORE INFO.

DETAIL OF STANDARD STREET NAME SIGN

NOTICE TO BE AFFIXED TO THE BACK OF ALL COSL STREET SIGNS

NO PERSON SHALL ATTEMPT TO, OR IN FACT ALTER, DEFACE, INJURE, KNOCK DOWN OR REMOVE ANY OFFICAL TRAFFIC CONTROL DEVICE, SIGN OR SIGNAL

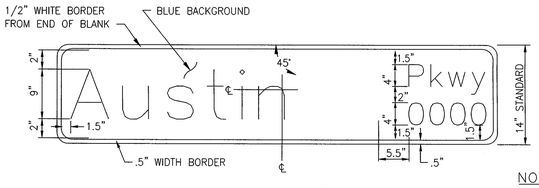
MAXIMUM FINE $200.00

MONTH	YEAR
1 2 3 4 5 6	06 07 08
7 8 9 10 11 12	09 10 11

SIGN I.D. TAG DETAIL

GENERAL CONSTRUCTION NOTES:

1. SECURELY ATTACH STREET NAME SIGN TO TRAFFIC SIGNAL SUPPORT WIRES WITH MULTI-LEVELING, WIND DUMPING BRACKETS.
2. SUPPORT WIRES SHOULD NOT BE PROHIBITED FROM INDEPENDENT MOVEMENT.
3. INSTALL ONE STREET NAME SIGN APPROXIMATE 2' FROM POLE ABOVE ON-COMING TRAFFIC ON EACH TRAFFIC SIGNAL SPAN.
4. THE FIRST LETTER OF EACH WORD SHALL BE UPPER CASE, SUBSEQUENT LETTERS SHALL BE LOWER CASE, ALL INDIVIDUAL LETTERS FOR EXAMPLE "F.M." SHALL BE UPPER CASE. STREET SUFFIXES & "NO OUTLET" SHALL BE UPPER CASE.
5. ALL SHEETING SHALL BE "DIAMOND GRADE" OR APPROVED EQUAL.
6. USE ANODIZED BLANKS ONLY.
7. STREET SIGN FONTS SHALL BE HELVETICA BOLD, MEDIUM STYLE
8. MINIMUM SIGN TIHICKNESS: 9" SIGNS = .080", 14" SIGNS = .1875"



CORNER RADII = 2"
PLINE WIDTH = .5"

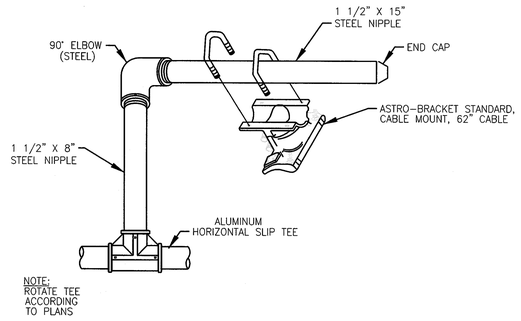
DETAIL OF SIGN FOR MAST ARM TRAFFIC SIGNAL POLES

NOTES:

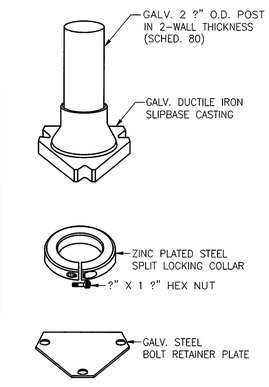
1. HELVETICA BOLD, MEDIUM STYLE; WITH 9" UPPER CASE LETTERS AND 6" LOWER CASE LETTERS.
2. REFER TO C.O.S.L. DESIGN STANDARDS FOR MORE INFO.

MAST ARM:

1. 2-EACH ASTRO FOR 4 SECTION AND LARGER TRAFFIC SIGNAL HEADS.

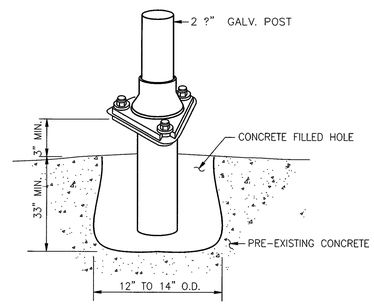


ASTRO BRACKET CABLE MOUNT DETAIL



POZ-LOCK SLIPBASE SYSTEM

NTS



CONCRETE SIGN PEDESTAL SL-ST-65

NTS

NOTES:

1.) FILL HOLE TO GROUND LEVEL.
2.) PRESS BASE INTO CENTER OF CONCRETE.
3.) LEVEL BASE 3" ABOVE GROUND.
4.) TIGHTEN (TORQUE) NUTS BETWEEN 60 TO 80 FT/LB MAX.

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

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STATE OF TEXAS — A. KHOSHAKHLAGH — 101133 — LICENSED PROFESSIONAL ENGINEER — 11/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
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ANGLETON — Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

SIGN CONSTRUCTION DETAILS

Job No.:	Scale: HORZ: VERT:	SHEET 33 OF 36
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Chkd By:		

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

HYPER–CHLORINATED WATER NOTES

1. HYPER–CHLORINATED WATER SHALL NOT BE DISCHARGED TO THE STORM SEWER OR DRAINAGE SYSTEM UNLESS THE CHLORINE CONCENTRATION IS REDUCED TO 4 PPM OR LESS BY CHEMICALLY TREATING THE DECHLORINATE OR BY ONSITE RETENTION UNTIL NATURAL ATTENUATION OCCURS.
2. DISCHARGE OF HIGH FLOW RATE AND VELOCITIES SHALL BE DIRECTED TO VELOCITY DISSIPATION DEVICES.
3. CHLORINE CAN BURN VEGETATION, SO IT SHOULD NOT BE USED TO WATER VEGETATION THAT IS BEING USED FOR STABILIZATION, VEGETATED FILTERS OR BUFFERS, OR OTHER VEGETATION TO BE PRESERVED.
4. HYPER–CHLORINATED WATER MAY BE DISCHARGED TO AN ONSITE RETENTION AREA UNTIL NATURAL ATTENUATION OCCURS. THE AREA MAY BE A DRY STORMWATER RETENTION BASIN, OR A PORTION OF THE SITE MAY BE GRADED TO FORM A TEMPORARY PIT OR BERMED AREA.
5. NATURAL ATTENUATION OF THE CHLORINE MAY BE AIDED BY AERATION. AIR CAN BE ADDED TO THE WATER BY DIRECTING THE DISCHARGE OVER A ROUGH SURFACE BEFORE IT ENTERS THE TEMPORARY RETENTION AREA OR AN AERATION DEVICE CAN BE PLACED IN THE RETENTION AREA.
6. ONSITE DISCHARGE MAY REQUIRE SEVERAL HOURS TO A FEW DAYS BEFORE THE WATER IS SAFE TO DISCHARGE. THE RATE AT WHICH CHLORINE WILL ATTENUATE IS AFFECTED BY SOIL CONDITIONS AND WEATHER CONDITIONS. ATTENUATION WILL OCCUR QUICKEST DURING WARM, SUNNY, AND DRY PERIODS.

SANITARY WASTE NOTES

1. THE CONTRACTOR SHALL PROVIDE AN APPROPRIATE NUMBER OF PORTABLE TOILETS BASED ON THE NUMBER OF EMPLOYEES USING THE TOILETS AND THE HOURS THEY WILL WORK.
2. SANITARY FACILITIES SHALL BE PLACED ON A MINIMUM OF 50 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE, CHANNELS OR SURFACE WATERS. IF UNABLE TO MEET THE 50 FOOT REQUIREMENT DUE TO SITE CONFIGURATION, PORTABLE TOILETS SHALL BE A MINIMUM OF 20 FEET AWAY FROM STORM DRAIN INLETS, CONVEYANCE CHANNELS OR SURFACE WATER AND SECONDARY CONTAINMENT SHALL BE PROVIDE IN CASE OF SPILLS.
3. THE LOCATION OF THE PORTABLE TOILETS SHALL BE ACCESSIBLE TO MAINTENANCE TRUCKS WITHOUT DAMAGING EROSION AND SEDIMENT CONTROLS OR CAUSING EROSION OR TRACKING PROBLEMS.
4. SANITARY FACILITIES SHALL BE FULLY ENCLOSED AND DESIGNED IN A MANNER THAT MINIMIZES THE EXPOSURE OF SANITARY WASTE TO PRECIPITATION AND STORMWATER RUNOFF.
5. WHEN HIGH WINDS ARE EXPECTED, PORTABLE TOILETS SHALL BE ANCHORED OR OTHERWISE SECURED TO PREVENT THEM FROM BEING BLOWN OVER.
6. THE COMPANY THAT SUPPLIES AND MAINTAINS THE PORTABLE TOILETS SHALL BE NOTIFIED IMMEDIATELY IF A TOILET IS TIPPED OVER OR DAMAGED IN A WAY THAT THE RESULTS IN A DISCHARGE. DISCHARGED SOLID MATTER SHALL BE VACUUMED INTO A SEPTIC TRUCK BY THE COMPANY THAT MAINTAINS THE TOILETS.
7. THE OPERATOR OF THE MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) SHALL BE NOTIFIED IF A DISCHARGE FROM THE PORTABLE TOILETS ENTERS THE MS4 OR A NATURAL CHANNEL.
8. SANITARY FACILITIES SHALL NOT BE PERMITTED ON PUBLIC SIDEWALKS, STREETS OR INLETS.

DEBRIS AND TRASH NOTES

1. ALL WASTE SOURCES AND STORAGE AREAS SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS AND OTHER WATERS, IF THE SITE CONFIGURATION PROVIDES SUFFICIENT SPACE TO DO SO. IN NO CASE SHALL MATERIAL AND WASTE SOURCES BE CLOSER THAN 20 FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS, AND OTHER WATERS.
2. CONSTRUCTION WASTE AND TRASH SHALL BE STORED IN A MANNER THAT MINIMIZES ITS EXPOSURE TO PRECIPITATION AND STORMWATER RUNOFF.
3. WHENEVER POSSIBLE, MINIMIZE PRODUCTION OF DEBRIS AND TRASH.
4. INSTRUCT CONSTRUCTION WORKERS IN PROPER DEBRIS AND TRASH STORAGE AND HANDLING PROCEDURES.
5. SEGREGATE POTENTIAL HAZARDOUS WASTE FROM NON–HAZARDOUS CONSTRUCTION SITE DEBRIS.
6. PROHIBIT LITTERING BY WORKERS AND VISITORS.
7. POLICE SITE DAILY FOR LITTER AND DEBRIS.
8. ENFORCE SOLID WASTE HANDLING AND STORAGE PROCEDURES.
9. IF FEASIBLE, RECYCLE CONSTRUCTION AND DEMOLITION DEBRIS SUCH AS WOOD, METAL, AND CONCRETE.
10. TRASH AND DEBRIS SHALL BE REMOVED FROM THE SITE AT REGULAR INTERVALS THAT ARE SCHEDULED TO EMPTY CONTAINERS WHEN THEY ARE 90 PERCENT FULL OR MORE FREQUENTLY.
11. GENERAL CONSTRUCTION DEBRIS MAY BE HAULED TO A LICENSED CONSTRUCTION DEBRIS LANDFILL.
12. USE WASTE AND RECYCLING HAULERS/FACILITIES APPROVED BY THE LOCAL MUNICIPALITY.
13. CHIPPING OF TREES AND BRUSH FOR USE SUCH AS MULCH IS PREFERRED ALTERNATIVE TO OFFSITE DISPOSAL.
14. NO WASTE, TRASH, OR DEBRIS SHALL BE BURIED, BURNED OR OTHER WISE DISPOSED OF ONSITE.
15. CLEARLY MARK ON ALL DEBRIS AND TRASH CONTAINERS WHICH MATERIALS ARE ACCEPTABLE. FOREMAN AND/OR CONSTRUCTION SUPERVISOR SHALL MONITOR ONSITE SOLID WASTE STORAGE AND DISPOSAL PROCEDURES DAILY.

SANDBLASTING WASTE NOTES

1. THE CONTRACTOR SHOULD BE REQUIRED TO DESIGNATE THE SITE SUPERINTENDENT, FOREMAN, OR OTHER PERSON WHO IS RESPONSIBLE FOR SANDBLASTING TO ALSO BE RESPONSIBLE FOR SANDBLASTING WASTE MANAGEMENT.
2. PROHIBIT THE DISCHARGE OF SANDBLASTING WASTE.
3. USE ONLY INERT, NON–DEGRADABLE SANDBLAST MEDIA.
4. USE APPROPRIATE EQUIPMENT FOR THE JOB; DO NOT OVER–BLAST.
5. WHENEVER POSSIBLE, BLAST IN A DOWNWARD DIRECTION.
6. CEASE BLASTING ACTIVITIES IN HIGH WINDS OR IF WIND DIRECTION COULD TRANSPORT GRIT TO DRAINAGE FACILITIES.
7. INSTALL DUST SHIELDING AROUND SANDBLASTING AREAS.
8. COLLECT AND DISPOSE OF ALL SPENT SANDBLAST GRIT, USE DUST CONTAINMENT FABRICS AND DUST COLLECTION HOPPERS AND BARRELS.
9. NON–HAZARDOUS SANDBLAST GRIT MAY BE DISPOSED IN PERMITTED CONSTRUCTION DEBRIS LANDFILLS OR PERMITTED SANITARY LANDFILLS.
10. IF SANDBLAST MEDIA CANNOT BE FULLY CONTAINED, CONSTRUCT SEDIMENT TRAPS DOWNSTREAM FROM BLASTING AREA WHERE APPROPRIATE.
11. USE SAND FENCING WHERE APPROPRIATE IN AREAS WHERE BLAST MEDIA CANNOT BE FULLY CONTAINED.
12. IF NECESSARY, INSTALL MISTING EQUIPMENT TO REMOVE SANDBLAST GRIT FROM THE AIR PREVENT RUNOFF FROM MISTING OPERATIONS FROM ENTERING DRAINAGE SYSTEMS.
13. USE VACUUM GRIT COLLECTION SYSTEMS WHERE POSSIBLE.
14. KEEP RECORDS OF SANDBLASTING MATERIALS, PROCEDURES, AND WEATHER CONDITIONS ON A DAILY BASIS.
15. TAKE ALL REASONABLE PRECAUTIONS TO ENSURE THAT SANDBLASTING GRIT IS CONTAINED AND KEPT AWAY FROM DRAINAGE STRUCTURES.
16. SAND BLASTING MEDIA SHOULD ALWAYS BE STORED UNDER COVER AWAY FROM DRAINAGE STRUCTURES.
17. ENSURE THAT STORED MEDIA OR GRIT IS NOT SUBJECTED TO TRANSPORT BY WIND.
18. ENSURE THAT ALL SANDBLASTING EQUIPMENT AND STORAGE CONTAINERS COMPLY WITH CURRENT LOCAL, STATE, AND FEDERAL REGULATIONS.
19. CAPTURE AND TREAT RUNOFF, WHICH COMES INTO CONTACT WITH SANDBLASTING MATERIALS OR WASTE.

SPILL AND LEAK RESPONSE NOTES

1. RECORDS OF RELEASES THAT EXCEED THE REPORTABLE QUANTITY (RQ) FOR OIL AND HAZARDOUS SUBSTANCES SHOULD BE MAINTAINED IN ACCORDANCE WITH THE FEDRAL AND STATE REGULATIONS.
2. EMERGENCY CONTACT INFORMATION AND SPILL RESPONSE PROCEDURES SHALL BE POSTED IN A READILY AVAILABLE REA FOR ACCESS BY ALL EMPLOYEES AND SUBCONTRACTORS.
3. SPILL CONTAINMENT KITS SHOULD BE MAINTAINED FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS THAT ARE REGULARLY ONSITE. MATERIALS IN KITS SHOULD BE BASED ON CONTAINMENT GUIDELINES IN THE MATERIALS SAFETY AND DATA SHEETS (MSDSS) FOR THE SUBSTANCE MOST FREQUENTLY ONSITE.
4. SPILL KITS ARE INTENDED FOR RESPONSE TO SMALL SPILLS, TYPICALLY LESS THAN 5 GALLONS, OF SUBSTANCES THAT ARE NOT EXTREMELY HAZARDOUS.
5. SIGNIFICANT SPILLS OR OTHER RELEASES WARRANT IMMEDIATE RESPONSE BY TRAINED PROFESSIONALS.
6. SUSPECTED JOB–SITE CONTAMINATION SHOULD BE IMMEDIATELY REPORTED TO REGULATORY AUTHORITIES AND PROTECTIVE ACTIONS TAKEN.
7. THE CONTRACTOR SHOULD BE REQUIRED TO DESIGNATE A SITE SUPERINTENDENT, FOREMAN, SAFETY OFFICER, OR OTHER SENIOR PERSON WHO IS ONSITE DAILY TO BE THE SPILL AND LEAK RESPONSE COORDINATOR (SLRC) AND MUST HAVE KNOWLEDGE OF AND BE TRAINED IN CORRECT SPILL AND LEAK RESPONSE PROCEDURES.

SUBGRADE STABILIZATION NOTES

1. MINIMIZE THE DISCHARGE OF THE CHEMICAL STABILIZERS BY THE CONTRACTOR LIMITING THE AMOUNT OF STABILIZING AGENT ONSITE TO THAT WHICH CAN BE THOROUGHLY MIXED AND COMPACTED BY THE END OF EACH WORKDAY.
2. STABILIZERS SHALL BE APPLIED AT RATES THAT RESULT IN NO RUN OFF.
3. STABILIZATION SHALL NOT OCCUR IMMEDIATELY BEFORE AND DURING RAINFALL EVENTS.
4. NO TRAFFIC OTHER THAN WATER TRUCKS AND MIXING EQUIPMENT SHALL BE ALLOWED TO PASS OVER THE AREA BEING STABILIZED UNTIL AFTER COMPLETION OF MIXING THE CHEMICAL.
5. AREA ADJACENT AND DOWNSTREAM OF STABILIZED AREAS SHALL BE ROUGHENED TO INTERCEPT CHEMICAL RUNOFF AND REDUCE RUNOFF VELOCITY.
6. GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SILT FENCE SHOULD NOT BE USED TO TREAT CHEMICAL RUNOFF, BECAUSE THE CHEMICALS ARE DISSOLVED IN THE WATER AND WON'T BE AFFECTED BY A BARRIER AND THE SUSPENDED SOLIDS ARE SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.
7. IF SOIL STABILIZERS ARE STORED ONSITE, THEY SHALL BE CONSIDERED HAZARDOUS MATERIAL AND SHALL BE MANAGED ACCORDING TO THE CRITERIA OF CHEMICAL MANAGEMENT TO CAPTURE ANY ACCIDENTAL LIME OR CHEMICAL OVERFLOW.
8. THE CONTRACRTOR SHALL INSTALL BMP'S TO ALL INLETS AND OPENINGS CONNECTED TO THE STORM SEWER SYSTEMS TO PREVENT LIME FROM ENTERING THE MS4 SYSTEM.

CONCRETE SAWCUTTING WASTE NOTES

1. DURING SAWCUTTING OPERATIONS, THE SLURRY AND CUTTINGS SHALL BE CONTINUOUSLY VACUUMED OR OTHERWISE RECOVERED AND NOT BE ALLOWED TO DISCHARGE FROM THE SITE.
2. IF THE PAVEMENT TO BE CUT IS NEAR A STORM DRAIN INLET, THE INLET SHALL BE BLOCKED BY SANDBAGS OR EQUIVALENT TEMPORARY MEASURES TO PREVENT THE SLURRY FROM ENTERING THE INLET. REMOVE THE SANDBAGS IMMEDIATELY AFTER COMPLETING SAWCUTTING OPERATIONS, SO THEY DO NOT CAUSE DRAINAGE PROBLEMS DURING STORM EVENTS.
3. SLURRY AND CUTTINGS SHALL NOT BE ALLOWED TO REMAIN ON THE PAVEMENT TO DRY OUT
4. DEVELOP PRE–DETERMINED, SAFE SLURRY DISPOSAL AREAS.
5. COLLECTED SLURRY AND CUTTINGS SHOULD BE IMMEDIATELY HAULED FROM THE SITE FOR DISPOSAL AT A WASTE FACILITY. IF THIS IS NOT POSSIBLE, THE SLURRY AND CUTTINGS SHALL BE DISCHARGED INTO ONSITE CONTAINMENT.
6. THE ONSITE CONTAINMENT MAY BE EXCAVATED OR BERMED PIT LINED WITH PLASTIC MINIMUM OF 10 MILIMETERS THICK. IF THE PROJECT INCLUDES PLACEMENT OF NEW CONCRETE, SLURRY FROM SAWCUTTING MAY BE DISPOSED OF IN FACILITIES DESIGNATED FOR THE WASHOUT OF CONCRETE TRUCKS INSTEAD CONSTRUCTING A SEPARATE CONTAINMENT.
7. THE CONTAINMENT SHALL BE LOCATED A MINIMUM OF 50 FEET AWAY FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS, AND OTHER WATERS, IF THE SITE CONFIGURATION PROVIDES SUFFICIENT SPACE TO DO SO. IN NO CASE SHALL THE COLLECTION AREA BE CLOSER THAN 20 FEET FROM INLETS, SWALES, DRAINAGE WAYS, CHANNELS AND OTHER WATERS.
8. SEVERAL, PORTABLE, PRE–FABRICATED, CONCRETE WASHOUT, COLLECTION BASINS ARE COMMERCIALLY AVAILABLE AND ARE AN ACCEPTABLE ALTERNATIVE TO AN ONSITE CONTAINMENT PIT.
9. REMOVE WASTER CONCRETE WHEN THE CONTAINMENT IS HALF FULL. ALWAYS MAINTAIN A MINIMUM OF ONE FOOT FREEBOARD.
10. ONSITE EVAPORATION OF SLURRY WATER AND RECYCLING OF THE CONCRETE WASTE IS THE PREFERRED DISPOSAL METHOD. WHEN THIS IS NOT FEASIBLE, DISCHARGE FROM THE COLLECTION AREA SHALL ONLY BE ALLOWED IF A PASSIVE TREATMENT SYSTEM IS USED TO REMOVE THE FINES. MECHANICAL MIXING IS REQUIRED IN THE COLLECTION AREA. THE pH MUST BE TESTED, AND DISCHARGED IS ALLOWED IN IF THE pH DOES NOT EXCEED 8.0. THE pH MAY BE LOWERED BY ADDING SULFURIC ACID TO THE SLURRY WATER.
11. CARE SHALL BE EXERCISED WHEN TREATING THE SLURRY WATER FOR DISCHARGE. MONITORING MUST BE IMPLEMENTED TO VERIFY THAT DISCHARGES FROM THE COLLECTION AREA DO NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.
12. GEOTEXTILE FABRICS SUCH AS THOSE USED FOR SILT FENCE SHOULD NOT BE USED TO CONTROL SAWCUTTING WASTE, SINCE THE GRAIN SIZE IS SIGNIFICANTLY SMALLER THAN THE APPARENT OPENING SIZE OF THE FABRIC.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
1/6/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

GENERAL EROSION CONTROL NOTES

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	Scale: HORZ: N.T.S. VERT:	SHEET 34 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

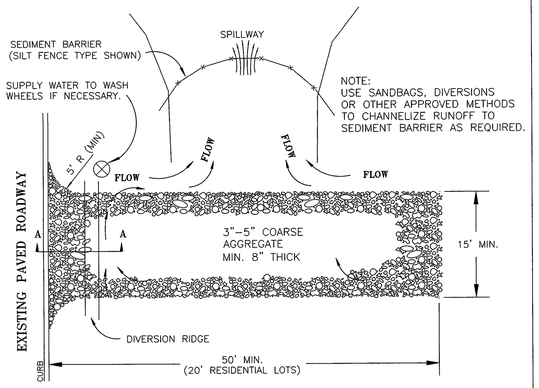
JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

Plotted: 06 Jan 2021 - 10:43AM By: Ashley Khoshakhlagh
File: C:\Users\akhoshakhlagh\Costello, Inc\2020 161,162 Windrose Green Section 2 - Documents\Engineering\Plan Sheets\2020161_017_PPP_DETAILS.dgn

PLOT TIME:

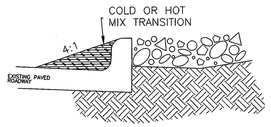
DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%

SECTION A – A



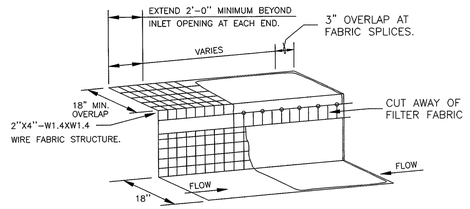
PLAN

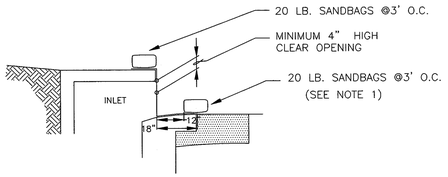
WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.

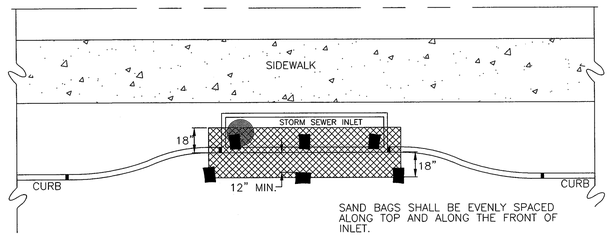


TRANSITION

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.







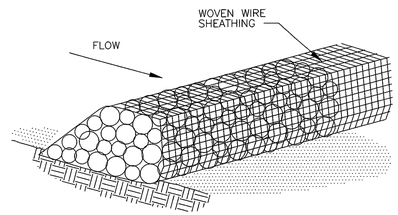
CURB INLET PROTECTION DETAIL
N.T.S.

NOTES:

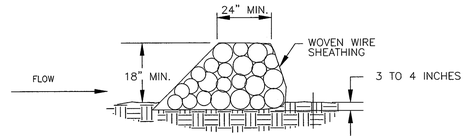
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
3. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTION IF THE STORMWATER BEGINS TO OVERTOP THE CURB.
4. INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF THE SEDIMENT IS STABILIZED.

INLET OPENING	MINIMUM NUMBER OF SAND BAGS	
	TOP	FRONT
5'	2	3
10'	3	3
15'	3	4
20'	4	4

ROCK BERM DETAIL
N.T.S.



ISOMETRIC PLAN VIEW



CROSS SECTION
N.T.S.

ROCK BERM GENERAL NOTES

1. USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER FOR STREAM FLOW CONDITION. USE OPEN GRADED ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.

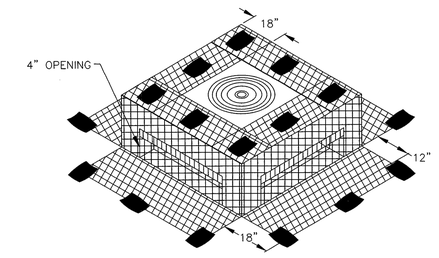
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.

3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS OR AFTER EACH 1/2" RAIN EVENT AND SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTEDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

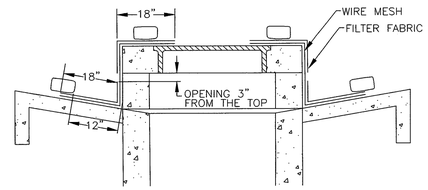
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

6. ROCK BERM SHOULD BE USED AS CHECK DAMS FOR CONCENTRATED FLOW AND ARE NOT INTENDED FOR USE IN PERIMETER PROTECTION.

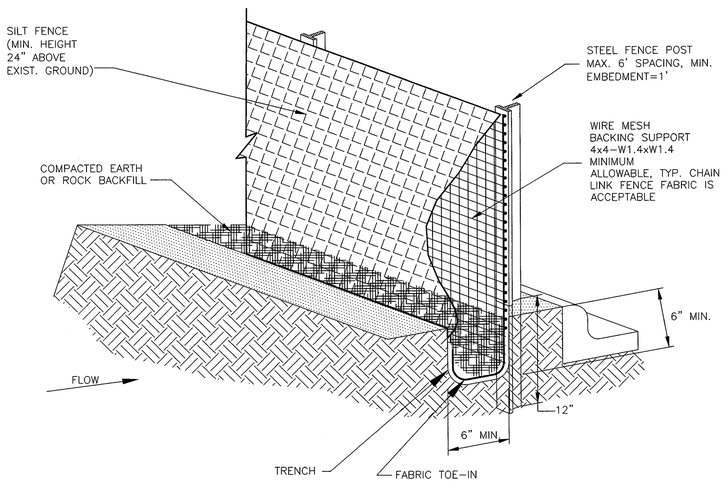


ISOMETRIC VIEW



SECTION

FILTER FABRIC WYE INLET PROTECTION
N.T.S.



ISOMETRIC PLAN VIEW
N.T.S.

SILT FENCE GENERAL NOTES

1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

2. THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

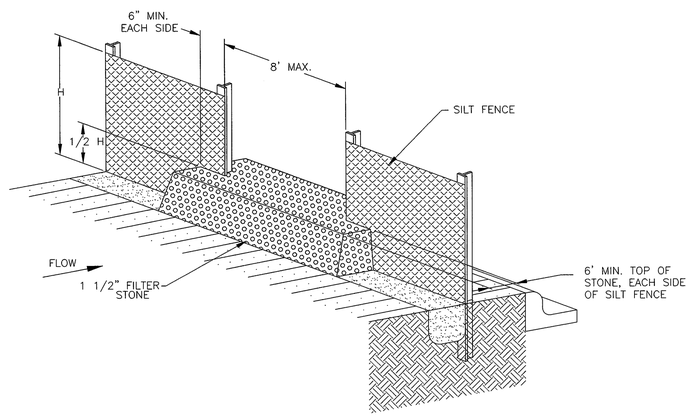
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

6. SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NOTE: STONE OVERFLOW STRUCTURES OF OTHER OUTLET CONTROL DEVICES SHALL BE INSTALLED AT ALL LOW POINTS ALONG THE FENCE OR EVERY 300 FEET IF THERE IS NO APPARENT LOW POINT



STONE OVERFLOW STRUCTURE
N.T.S.

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

MK.	DESCRIPTION	DWN.	DATE	CHK.

11/6/2021

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

EROSION CONTROL DETAILS - 1

Job No.:	Scale: HORZ: N.T.S. VERT:	SHEET 35 OF 36
Date:		
Dwn By:	CAD FILE:	
Chkd By:		

CAD FILE PATH:
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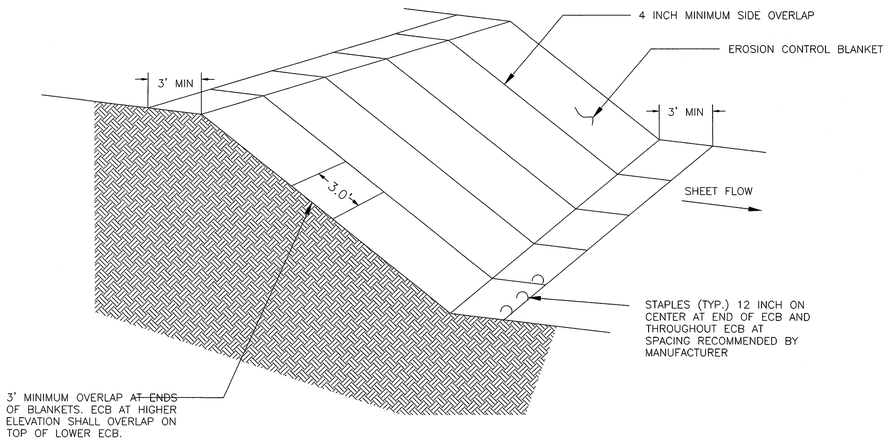
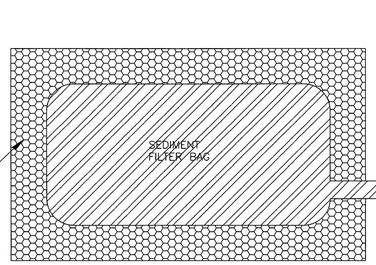
CT JOB NO. 2020 161,162 WINDROSE GREEN SECTION 2

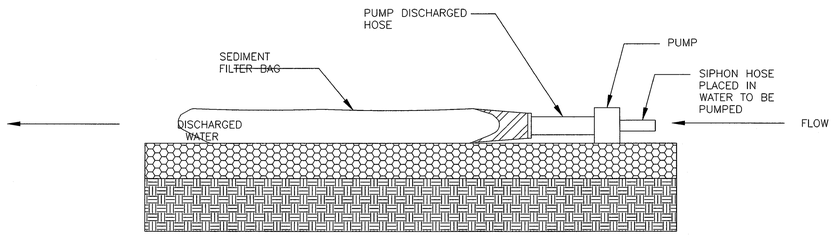
PLOT TIME:



EROSION CONTROL BLANKETS
N.T.S.



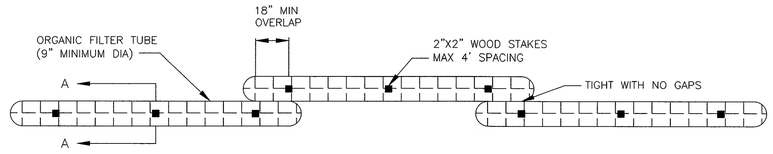
SEDIMENT FILTER BAG PLAN VIEW
N.T.S.



SEDIMENT FILTER BAG PROFILE
N.T.S.

NOTE: A FILTRATION BAG IS NOT REQUIRED IF IF THE DRAINAGE SYSTEM CAN BE ADEQUATELY PROTECTED

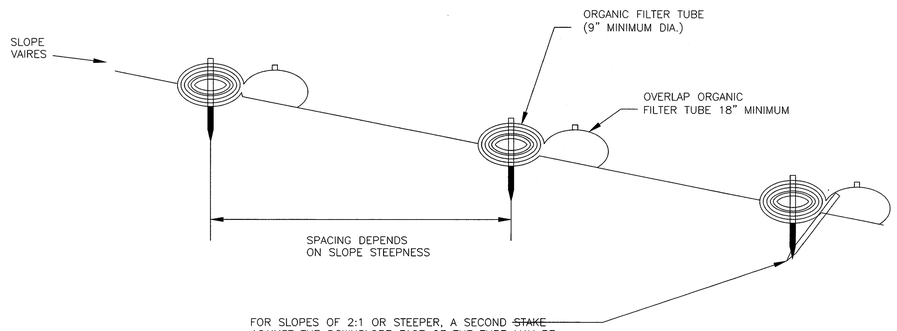
DEWATERING CONTROLS
N.T.S.



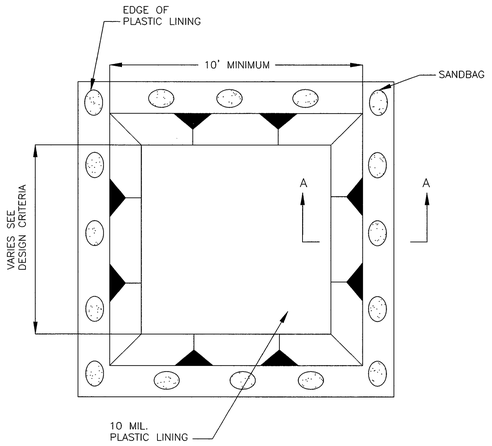
ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.

ORGANIC FILTER TUBES NOTES

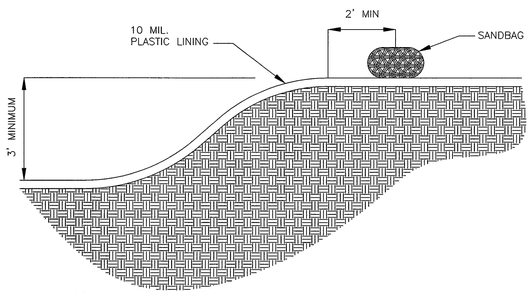
1. TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS:
   - SIZE OF CONTRIBUTING DRAINAGE AREA
   - STEEPNESS OF SLOPE
   - GROUND CONDITIONS (SOIL OR PAVEMENT)
2. DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBE ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.



ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
N.T.S.



CONCRETE WASHOUT PLAN VIEW
N.T.S.



CONCRETE WASHOUT SECTION A–A
N.T.S.

CONCRETE WASHOUT NOTES

1. SANDBAGS MAYBE REPLACED BY A SOIL BERM TO ANCHOR THE PLASTIC BAG

CONCRETE WASHOUT AREA
N.T.S.

MK.	DESCRIPTION	DWN.	DATE	CHK.

STATE OF TEXAS
A. KHOSHAKHLAGH
101133
LICENSED PROFESSIONAL ENGINEER
11/12/2021

Costello
Engineering and Surveying
2107 CityWest Blvd., 3rd Floor
Houston, Texas 77042
(713) 783-7788 (713) 783-3680, Fax
TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

ANGLETON
Where the Heart is

ANGLETON, TEXAS

WINDROSE GREEN SECTION 2

EROSION CONTROL DETAILS - 2

BRAZORIA COUNTY ENGINEERING DEPARTMENT
REVIEWED FOR CONSTRUCTION

JORGE REYNA, DEVELOPMENT COORDINATOR DATE

Job No.:	
Date:	
Dwn By:	
Chkd By:	
Scale: HORZ: N.T.S. VERT:	
CAD FILE:	

SHEET 36 OF 36

JOB NO. 2020 161.162 WINDROSE GREEN SECTION 2

CAD FILE PATH:
PLOT DATE: