CITY OF ANGLETON
CITY COUNCIL REGULAR MEETING
120 S. CHENANGO STREET, ANGLETON, TEXAS 77515
TUESDAY, JANUARY 12, 2021 AT 6:00 PM

AGENDA

NOTICE IS HEREBY GIVEN PURSUANT TO V.T.C.A., GOVERNMENT CODE, CHAPTER 551, THAT THE CITY COUNCIL FOR CITY OF ANGLETON WILL CONDUCT A MEETING, OPEN TO THE PUBLIC, ON TUESDAY, JANUARY 12, 2021 AT 6:00 P.M., AT THE CITY OF ANGLETON COUNCIL CHAMBERS LOCATED AT 120 S. CHENANGO STREET ANGLETON, TEXAS 77515.

Mayor | Jason Perez
Mayor Pro-Team | John Wright
Council Members | Cecil Booth, Mark Gongora, Mikey Svoboda, Travis Townsend
City Manager | Chris Whittaker
City Secretary | Frances Aguilar

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://zoom.us/j/321262155 Meeting ID: 321-262-155
2. Phone in at 888 475 4499 or 877 853 5257 and enter Meeting ID: 321-262-155
3. Download the ZOOM app to your phone and enter Meeting ID: 321-262-155

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 Monday 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

PLEDGE OF ALLEGIANCE

INVOCATION

CITIZENS WISHING TO ADDRESS CITY COUNCIL

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

WORKSHOP

1. Discussion on utility infrastructure.

2. Discussion on the City's future water needs.

EXECUTIVE SESSION

The City Council will now convene into executive session pursuant to the provisions of Chapter 551 Texas Government Code, in accordance with the authority contained therein:

Deliberate the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; pursuant to Section 551.074 of the Texas Government Code.

3. Temporary Municipal Court Judge

4. Director of Finance

OPEN SESSION

The City Council will now adjourn Executive Session, reconvene into Open Session pursuant to the provisions of Chapter 551 Texas Government Code and take action, if any, on item(s) discussed during Closed Executive Session.

CONSENT AGENDA

5. Discussion and possible action to approve Ordinance No. 20210112-005 fully repealing and replacing Ordinance 20201027-007 amending Division 2 of Article II of Chapter 22 of Angleton Code of Ordinances relating to the obstruction of streets, sidewalks, and parking lots caused by trees, shrubs, bushes, and other vegetative material; providing a penalty; providing for severability; providing for repeal; and providing an effective date.

6. Discussion and possible action on Ordinance No. 20210112-006 adopting the FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Maps effective December 30, 2020 revising

paragraph B of Section 23-54 of the City of Angleton Land Development Code to reflect this adoption.

7. Discussion and possible action on Resolution No. 20210112-007 extending ratification of the disaster declaration signed by the Mayor on March 17, 2020 and consenting to its continuation through February 16, 2021; repealing conflicting ordinances and resolutions; including a severability clause; and establishing an effective date. (LaMont)

8. Discussion and possible action on TxDOT traffic controller cabinet wrap art submissions and artist agreements.

9. Discussion and possible action on an agreement with Burditt Consultants LLC. for the Freedom Park Master Plan.

10. Discussion and possible action on a Memorandum of Agreement with FEMA on the use of the City's Code Red system to access the IPAWS OPEN Platform for Emergency Networks.

11. Discussion and possible action on the City's participation in the cost share of upsizing the 12" water line on FM 523 at the Windrose Green Development to a 16" water line.

12. Discussion and action on a Police Department personnel change.

13. Discussion and possible action to approve the Municipal Court Prosecutor Agreement.

PUBLIC HEARINGS AND ACTION ITEMS

14. Conduct a public hearing, discussion and possible action on Ordinance No. 20200112-014 amending Ordinance No. 20200609-006 Exhibit "A" Permitted Uses for Riverwood Ranch Planned Development Overlay District to add "Farms, General (Livestock/Ranch) and Farms, General (Crops) as permitted uses within the Riverwood Ranch Planned Development Overlay District.

15. Conduct a public hearing, discussion and possible action on Ordinance No. 20210112-015 rezoning an approximate 0.50 acres of land out of Tract No. 44 of the New York and Texas Land Company Subdivision situated in the J. de J. Valderas Survey, Abstract No. 380, Brazoria County, Texas from the Single-Family Residential 6.3 (SF-6.3) and Commercial-Neighborhood (C-N) Districts to the Single-Family Residential 5 (SF-5) District.

16. Conduct a public hearing, discussion and possible action on the Final Replat of Angleton Village being a portion of Lots 27 and 28 of the Oliver and Barrow Subdivision.

17. Conduct a public hearing, discussion and possible action on the Final Replat of Gifford Meadows Subdivision being all of Lots 1-7 and Lot 16 of the Gifford Meadows Subdivision.

18. Conduct a public hearing, discussion and possible action on the Heritage Oaks Section 7 Final Replat, being a portion of lots 47, 48,49, 50 and 51 of the New York and Texas Land Company Subdivision located in the J.D.J. Valderas Survey.

REGULAR AGENDA

19. Discussion on the Livable Centers by Freese and Nichols.

20. Discussion and possible action on the Freedom Park Water Well Facility Improvements.

21. Discussion and possible action on the Oyster Creek WWTP Headworks Improvements.

22. Discussion and possible action on any of Governor Abbott's latest executive orders, Brazoria County's emergency declarations and impact on the City of Angleton and how to proceed with city business in the future.

ADJOURNMENT

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

CERTIFICATION

I, Frances Aguilar, City Secretary, do hereby certify that this Notice of a Meeting was posted on the City Hall bulletin board, a place convenient and readily accessible to the general public at all times and to the City's website, www.angleton.tx.us, in compliance with Chapter 551, Texas Government Code. The said Notice was posted on the following date and time: Friday, January 8, 2020 by 6:00 p.m. and remained so posted continuously for at least 72 hours proceeding the scheduled time of said meeting.

/S/ Frances Aguilar
Frances Aguilar, TRMC, CMC
City Secretary

In compliance with the Americans with Disabilities Act, the City of Angleton will provide reasonable accommodations for persons attending City Council 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.

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Memo

Date: Wednesday, January 06, 2021

To: Mayor and City Council

From: John Peterson, P.E.; CFM

Subject: Utility Infrastructure Update

A. Existing Systems

1. **Water Infrastructure –** The City of Angleton currently has three water plants and two elevated storage tanks. **See Appendix A** for the layout of the City's distribution system.

   a. *Chenango Water Plant*

   The Chenango Water Plant was constructed in the early 1960's and is currently located in a residential neighborhood. The existing well that is on the Chenango site has been abandoned/plugged and currently the plant only receives treated water from the Henderson Water Plant. The plant is used as a booster pump station to meet the water demands and to provide the required working pressures to the area. The plant's existing 1-million-gallon ground storage tank, piping, pumps, and motors appear to have reached their life expectancies and are in need massive rehabilitation or replacement. The City has expressed a desire to decommission the existing plant and build a new plant **(See Appendix B)**.

   With the decommissioning of the Chenango Water Plant, the City will require a new booster pump station and ground storage tank in the area to satisfy water demands and meet TCEQ required operating pressures. The new Water Plant will continue to be the feed from the Henderson Water Plant (no water well on site) from a transmission main that feeds the current Chenango Water Plant **(See Appendix C)**. The new plant will also include the following:

   - (1) New 500,000-gallon pre-stressed concrete ground storage tank
   - (3) 850 gpm pumps
   - Building to protect electrical, chemical feed system, pumps
   - Electrical service and controls
   - Chemical Feed System (Storage and Feed – NH3-N and Chlorine)
   - SCADA System
   - Transmission and distribution water lines and valves
   - Site work (Driveway, Parking, Fencing, Grading)

   Associated Cost: The Opinion of Probable Total Project Cost (including decommissioning and abandoning of existing plant) for this project is **$4,500,000**.

b. *Henderson Transmission Line*

The existing transmission water main that supplies treated water from the Henderson Water Plant to the Chenango Water Plant is also utilized as a well supply line when Water Wells 8, 9, and 10 are required to produce to meet water demands. The City staff is able to operate valves on the existing transmission line and direct well water from Water Wells 8, 9, and 10 to the Henderson Water Plant or Chenango Water Plant. However, during this time, the Chenango Water Plant cannot receive any treated water from the Henderson Plant (combined surface water and well water – Chloraminated water) and can only utilize well water that has been disinfected with chlorine. It is disadvantageous to have two different types of disinfection treatments combining in the same system. The chloramine treated water from the Henderson Plant and Jamison Plant mixing with the Chlorine treated water from the Chenango Plant will cause odor and taste issues as well as potentially cause a disinfection byproduct.

City staff would like to have two separate lines, one for wells (existing transfer Line) and one for supply (New Line – 9,400 LF). This will allow water quality to remain consistent in the City and more efficient to operate when Water Wells #8, 9, & 10 are required to meet water demands. (**Please see Appendix D)**.

The Opinion of Probable Total Project Cost for this project is **$1,500,000**.

Another option would be to install an ammonia feed at the old/new Chenango Plant to be able to provide chloramine treated water to the well water that is received at the plant when the Henderson Plant is unable to supply the water demand. However, this will require more testing, manpower, and awareness than just receiving treated water from the Henderson Plant with a separate supply transmission main as recommended above.

c. *AWIA Risk & Resiliency Assessment*

America's Water Infrastructure Act of 2018 (AWIA) requires all public water systems serving populations greater than 3,300 persons to assess the risks to, and resilience of, its system (referred to as the Risk and Resilience Assessment or "RRA"). The RRA is to include:

- Risk to the Local Drinking Water System from Malevolent Acts and Natural Hazards
- Resilience of the Infrastructure, including SCADA/Cyber Resilience
- The Monitoring Practices of the System
- The Financial Infrastructure of the System
- The Use, Storage, or Handling of Various Chemicals by the System
- The Operation and Maintenance of the System

The submittal of the RRA is due on June 30, 2021. This will identify items that need to be addressed and the cost associated with bringing them into compliance. This effort

is on-going at this time and these deficiencies have not yet been identified. A cost to address these items will be determined at a later time.

Within six months of completion of the RRA, America's Water Infrastructure Act of 2018 also requires each system to submit a letter of certification to the EPA that the Emergency Response Plan (ERP) for a utility to be created or updated (where necessary).

Associated Cost: The cost to perform this task is **$50,000**.

2. Sanitary Infrastructure

a. *Gravity Collection System*

The City's current sanitary sewer gravity collection system has reached its life expectancy. City staff performs yearly emergency point repairs to the gravity sanitary sewer which have completely collapsed forming sinkholes in the area, backing up the collection system, and causing damage to the above ground structures (fences, roadways, etc.) (**See Appendix E**). Additionally, during large rain events, peak flows at the wastewater treatment plant increase 8-10 times the daily average flow due to inflow and infiltration (I&I) of rainwater into the collection system costing the City additional money on electricity, chemicals, manpower, and potentially litigation from sanitary sewer overflows (**See Appendix F & G**). The City has recently received a letter from TCEQ on unauthorized discharge of wastewater **(See Appendix H)**.

The City should begin to evaluate the existing collection system, establish a priority, provide budgetary numbers, and create a Capital Improvement Plan (CIP) to rehabilitate the gravity collection system.

i. Sanitary Sewer Evaluation Survey (SSES)

City Staff has identified five areas with approximately 177,500 LF of sanitary sewer line in the City's system where repetitive maintenance has been performed in the area **(See Appendix I)**.

- Perform 570 Manhole Inspections
- Smoke testing up to 15" Sanitary Sewer – approximately 160,000 LF
- CCTV of Sanitary Sewer -approximately 17,800 LF
- Dye testing – 10 locations
- Evaluation of Collected Data
- Identify Methods of Rehabilitation (manhole and sanitary sewer)
- Prioritized Line Segments
- Anticipated capital costs for budgeting purposes
- Recommendations

Associated Cost: The fee to provide these services, identify cost, and create a CIP program for I&I reduction is **TBD**.

b. *Lift Stations*

The City of Angleton has 41 wastewater lift stations in its current collection system. These lift stations are of varying ages, designs, and conditions. The City has identified fifteen (15) lift stations that will require maintenance (**See Appendices J&K**).

i. Lift Station Assessment

- Assess the existing condition of the lift stations
- Recommend improvements
- Prioritized lift station maintenance projects

- Anticipated capital costs for budgeting purposes
- Recommendations

Associated Cost: The fee to provide these services, identify cost, and create a CIP program for lift station rehabilitation is **$73,000**.

c. *Oyster Creek WWTP Facilities Assessment*

The City has inquired about potential energy savings at the Oyster Creek WWTP. This is to identify equipment, procedures, etc. that would provide a cost savings to the City by providing more efficient operations.

An initial evaluation of past electric bills and benchmark energy usage to national benchmarks would allow us to refine the estimate by the processes in the City's facility. After our initial findings from the benchmarking effort, we focus our efforts on determining potential energy savings in the following areas:

- Equipment efficiency – We use tools to determine the efficiency of all major assets, including establishing of new pump/blower curves, wire to water efficiencies, and amperage usage. Once we establish the current state of major assets, we then compare them to the potential savings by replacing them with new, more efficient assets. A payback period is also calculated.
- Process Improvements – We also compare existing processes to other proven processes. For example, the use of a fine bubble diffuser or an automatic pump control system may result in significant energy savings.
- Building efficiencies – HDR also will evaluate the potential cost savings that could result from items such as installing energy efficient lighting and controls, as well as climate control efficiencies.

The monthly savings identified in assessment can be utilized in the reimbursement of any debt accrued during the installation of the upgrades. The fee to provide these services, identify cost, and create a CIP program is **TBD**.

d. *Oyster Creek WWTP Improvements*

During Hurricane Harvey, the City was forced to sandbag the blower building and lift stations to keep the facilities operational while the site inside the levee was inundated due to heavy rains within the protection levee. The existing storm sewer system did not function properly due to electrical service malfunctions and pump inefficiencies (age and condition). Also, the existing storm water force main and the plant's effluent outfall system were reportedly seen leaking and "bubbling up" inside the protection levee as these systems were fighting the head pressure of the flood waters outside of the treatment plant's protection levee.

i. Sanitary Sewer Gravity Line Improvements

The existing 24-inch concrete sanitary sewer line beginning in the southeast corner of the WWTP site has reached its expected life cycle and is undersized.

- Remove and replace two existing sanitary manholes with new larger manholes to allow for force main reconnections and larger diameter sanitary sewer gravity pipe
- Reconnect two (2) force mains to new manhole at the southeast corner of the plant
- Remove and replace 650 LF of 36-inch gravity sanitary sewer pipe with 54-inch pipe
- Grout fill and abandon two (2) existing force mains
- 7-inch thick concrete point repair at driveway crossing
- Bypass pumping

These improvements will mitigate potential structural deficiencies with the aging sanitary sewer collection system, provide adequate capacity in the most downstream section of the collection system, reduce the potential for sanitary sewer overflows upstream, and allow the installation of the larger diameter gravity line in the WWTP site The currently gravity line is located between two force mains which may cause damage to them during construction. Therefore, it is recommended that they be tied into the new 54-inch pipe **(See Appendix L)**.

ii. New WWTP Lift Station

There are two existing lift stations that service the WWTP. One of the existing lift stations (the original) has a dry pit configuration, which means that the pumps, motors, and valves are housed separately from the wet well component. This station is past its life expectancy and is heavily deteriorated and is becoming structurally compromised **(See Appendix M)**. This dry pit is approximately 15 to 20 feet deep and is only accessible by confined-spaced entry. When the WWTP site starts to experience flooding during storm events, the structure becomes inaccessible due to safety concerns. There is an additional concern that the dry pit may flood during storm events, rendering pumping components inoperable.

The second lift station (new lift station) is showing heavy signs of deterioration on the concrete walls and exposed rebar that is structurally compromised (rusted to half of its original size) inside of the wet well **(See Appendix N)**.

The proposed improvements under this task consist of the following:

- Salvage equipment and abandon the two (2) existing lift stations

- Install a new 25-ft diameter wet well with six (6) submersible pumps one-foot above the BFE
- Install electrical switch gear
- Elevate wet well one foot above the BFE
- Electrical and controls upgrade
- Install two (2) valve pits with flood proof hatching
- Install new Motor Control Room (MCC) Building for new lift station one foot above the BFE
- Install sanitary sewer manhole to redirect flow to new lift station
- Install 40 linear feet of 36-inch sanitary sewer to new wet well
- Bypass pumping

These improvements will mitigate lift station components from becoming inaccessible/inoperable during extreme storm events and reduce risks associated with confined-space entry during routine maintenance operations. The proposed improvements will also provide more efficient pumps and eliminate the cost of equipment required for performing confined-space entries. Submersible pumps would provide more efficient pumping of the lift station and reduce power required for pumping operations. These improvements would provide a cost benefit to the City with regards to the manpower, time, energy usage, and equipment **(See Appendix L)**.

iii. New Blower Room Improvements

The existing blower equipment at the WWTP is currently located at ground level. They are utilized to provide oxygen to the aeration basins in the WWTP that assists in the digestive process to comply with effluent regulations set by the TCEQ. The blowers are critical equipment in the wastewater treatment process. During Hurricane Harvey, the blower room was required to be sandbagged to prevent the equipment from being inundated by the extreme storm event within the WWTP site **(See Appendix O)**. The existing elevation makes them susceptible to flooding during extreme storm events.

The proposed improvements under this task consist of the following:

- Salvage equipment and demolish the existing blower structure
- Construct a new blower room with five (5) new blowers and piping
- Elevate new blower room and controls one foot above the BFE
- Electrical switch Gear and MCC Instrumentation & Controls
- Hazardous materials survey (LBP and Asbestos) and abatement

This will mitigate the potential flooding of the blower room building and its equipment, provide a more efficient blower system to the WWTP, and properly dispose of existing blower room/existing lift station material **(See Appendix L)**.

iv. New Storm Sewer Pumps and Force Main Improvements

The existing WWTP storm sewer pumps and force main have reached their life expectancy and are in poor condition. The existing power supply and breaker box do not provide sufficient power to allow concurrent operation of both existing site storm pumps. The existing storm sewer pumps convey rainwater outside of the protection levees during normal and extreme operations and are in need of replacement. During Hurricane Harvey, it was noted by staff that leaks inside of the WWTP site were seen "bubbling up" when the storm water pumps where operational and pumping against the flood water outside of the protection levee **(See Appendix P)**. These storm water pumps are critical infrastructure to the operations of the WWTP and provide service in normal and extreme weather events.

The proposed improvements under this task consist of the following:

- Abandon existing storm water force main
- Install new storm water force main
- Remove and replace existing storm water pump
- Electrical switch Gear, Instrumentation & Controls

These improvements will mitigate potential flooding at the WWTP site caused by runoff produced inside of the protection levee.

v. Rehabilitation of Effluent Outfall Pipe

The existing 48-inch corrugated metal effluent outfall pipe at the WWTP is 30 years old and in deteriorating condition and showing visible signs of oxidation and rust. This pipe was observed to be leaking during Hurricane Harvey due to head pressure from flood waters outside of the protection levee **(See Appendix Q)**. There are concerns that the pipe may fail structurally or create sinkholes at or adjacent to the protection levee.

Proposed improvements under this task consists of the following:

- Installation of a temporary bypass system to allow for normal plant function during construction
- Clean and televise the existing corrugated metal outfall pipe to determine its conditions
- Rehabilitate the corrugated metal pipe with the installation of cured-in-place pipe (CIPP)

- Clean and televise the pipe to verify correct installation of the CIPP liner

Rehabilitation of the outfall pipe will mitigate potential structural failures and mitigate potential levee failures. At the completion of this project, the City will have a rehabilitated outfall pipe with a 100-year life expectancy.

vi. Valve Operator to Bypass Clarifier

There is an existing manual valve that is used to redirect flow to the additional clarifier when there is a flood event. This redirects the additional influent to the bypass clarifier and provide relief to the WWTP. Due to its size, manual operation of the valve is tedious and labor-intensive. The time required to open or close this valve can have an effect on the operations of the WWTP **(See Appendix R)**.

The installation of a valve operator at the WWTP would allow Staff to operate the valve to the additional clarifier more efficiently and potentially mitigate permit violations or damage to the facilities by reducing time taken to operate the valve. The valve operator would allow for the WWTP Staff to be more efficient and tend to other parts of the WWTP during critical times.

Associated Cost: The Opinion of Probable Total Project Cost for the Oyster Creek WWTP Improvements Project is **$12,000,000.**

B. Future Growth

The City of Angleton is experiencing a major increase in development in its City Limits and ETJ **(See Appendix S)**. Many of these developments are requesting that the City be the provider for the water and sewer services. This allows the City to increase its revenues and its rate base while the development installs the required infrastructure. However, this increases the demands on the existing infrastructure.

1. Water Infrastructure

As development continues and developers request water services for the proposed development the City must make investments to remain in compliance with TCEQ regulations. Currently, the City is in the process of constructing a new 750,000-gallon Southside Elevated Storage Tank and bringing the Freedom Park Water Plant on-line. Once this occurs the following is the amount of available water connections to the City's system:

Table 1: Surplus in Water System

Existing - Current Water System						Proposed - In Design or Construction (Freedom Park and Southside EST)		Total Surplus Connections (Existing + proposed)
Facility Type	**Total Capacity**	**TCEQ Criteria**	**Min. Requirement**	**Surplus**	**Additional Connections**	**Capacity Increase**	**Additional Connections**	
Booster Pumps	5,100 gpm	110 Gal/Capita/day 3 person/Conn. 2.125 PHF	4,290 gpm	810 gpm	**1,662**	750 gpm	**1,540**	**3,200**
Total Storage	3,450,000 Gal	200 Gal/Connection	1,762,000 Gal	1,688,000 Gal	**8,440**	300,000 Gal (250,000+ 50,000)	**1,500**	**9,940**
Elevated Storage	1,000,000 Gal	100 Gal/Conn.	881,000 Gal	119,000 Gal	**1,190**	250,000 Gal	**2,500**	**3,690**
Water Supply	4,100 gpm	0.37 gpm/conn.	3,260 gpm	840 gpm	**2,270**	1,000 gpm	**2,700**	**4,970**

- Utilizing 8,810 Connections

The following Developments are currently under construction and the City has agreed to provide utility services.

Table 2: Current Developments

Development	Bayou Bend	Gifford Meadows	Heritage Oaks	Windrose Green	Kiber Tract	Riverwood Ranch	Greystone	Brownstone	Reserve (Woodlands)	**Total**
Proposed Connections	35	85	34	660	93	318	91	111	837	**2,264**

The remaining amount of available water connections is approximately 936 connections (Limited by Booster Pump Capacity).

Please be aware these numbers are for residential growth only and does not include commercial and industry growth or the potential new UTMB Campus.

The following are potential Developments or have previously shown interest.

Table 3: Planned Developments

Development	Henderson Apartments	Anderson Place	Phillips MFG	Stasney Ranch (MUD 76)	Palmetto Creek (MUD 13)	Mulberry Landing (MUD 78)	**Total**
Proposed Connections	120	18	77	1,100	816	450	**2,581**

a. *BWA Surface Water Capacity*

As growth continues in the City, water supply will become a bigger issue. Currently, there is no subsidence district limiting the amount of well water a city can utilize to meet its water demand. However, with the amounts of development in the county a subsidence district will be established in the future which will have limits on pumping. Cities to the north have already begun planning for this scenario and how to meet their water demands through treated surface water.

The City currently receives 1.8 MGD of treated surface water from BWA. Recently, the City contacted BWA regarding the availability of additional surface water to meet the project future demands (7.2 MGD). BWA's existing transmission main is at its maximum capacity and will need to increase its capacity **(See Appendix T)**. The following are comments received from the BWA on additional Capacity:

- A parallel line is required
- Route Study has been completed
- Required to sell 3.5 MGD so no increase $1.30/1,000 Gallons (service debit)
- This is the cost the City will pay monthly to reserve the capacity of the water.
- Once the City begins to take the water, the Current O&M will be added. Currently it is $1.30 (debit service) + $1.98 (O&M) = $3.28/1,000 Gallons
- 24-30 months before the City could start taking water after the agreement are executed
- BWA will have the capacity to meet the City's 7.2 MGD over the next ten years
- Required to reserve the capacity in advance.

b. *Update to the Master Utility Plan*

The City is experiencing more growth than previously projected. The City needs to update the Master Utility Plan to verify the additional demands are not adversely affecting the System. Also, the data over the past three years allows for more defined areas of growth and projections. The following are tasks that are included:

- Data Collection
- Population, Water Demand, and Wastewater Flow Projections
- Hydraulic Model Update
- Future System Analysis (5, 10, & 20 year projections)
- Identify deficiencies
- Master planning for ETJ/north Growth area
- Additional Capacity of the Oyster Creek Treatment Plant
- Creation of a Capital Improvements Plan

Associated Cost: The fee to provide these services, identify cost, and create a CIP program is **TBD**.

1. Sanitary Infrastructure

The City's north side sanitary sewer collection system is serviced by LS 44 located adjacent to the decommissioned treatment plant on Henderson road. The sewer is collected in the lift station and is pumped over five (5) miles through the City to the Oyster Creek Wastewater Treatment Plant (WWTP). LS 44 and its force main has reached its capacity and requires additional capacity to meet the Windrose Green Agreement. New developers are approaching the City about developing in this area and would like the City to provide sanitary sewer services. Staff have discussed the potential to install a new larger lift station and a new parallel force main five (5) miles to the City Oyster Creek Treatment Plant. However, after researching the cost to replace the lift station and add another force main five (5) miles through the City, the staff has elected to begin investigating the installation of a new treatment plant on the north side of the City. This will allow for more growth in the north and free up capacity at the existing treatment plant to service areas to the south.

a. *North Side Wastewater Treatment Study*

The City of Angleton (City) has been approached by various private development companies interested in developing residential neighborhoods north of Angleton and outside of Angleton's existing wastewater service area. To eliminate the need for multiple, smaller MUD-type wastewater treatment plants that Angleton would eventually own, operate and maintain, Angleton desires to understand the concepts and costs associated with the design, construction and operations of a new greenfield WWTP to serve these new growth areas. These developments are expected to include between 1,000- and 2,500-acres and would be developed and built out over the next 10 to 20 years **(See Appendix U).**

The purpose of a study is to develop concepts for the entire Build-Out Phase (Scenario) to understand physical site needs and limitations, and to develop WWTP concepts (e.g., sizing, layout, etc.) for the Initial Phase of development, including costs for the design, construction, and operations of the new WWTP **(See Appendix V)**. This includes:

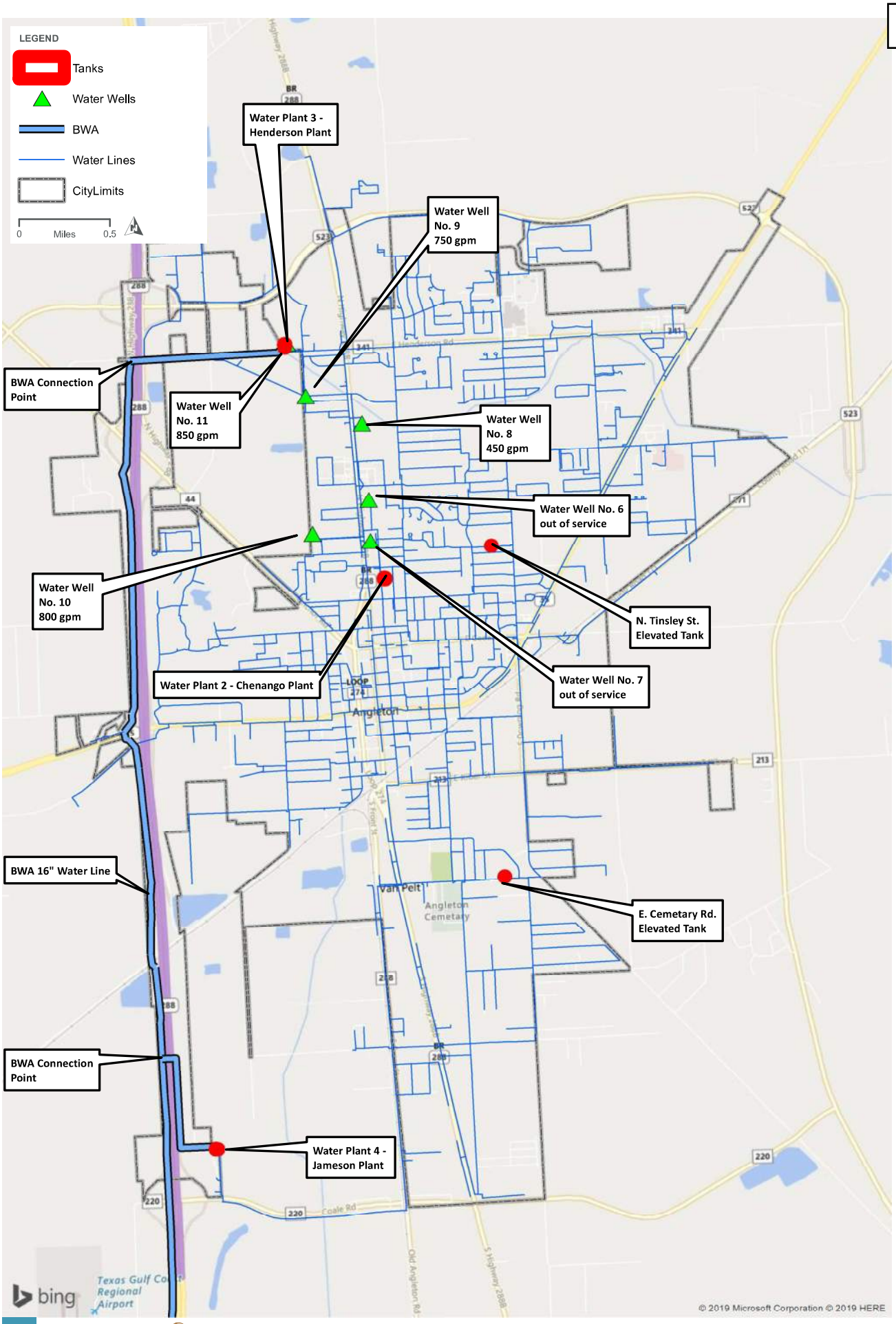
- Flow and Load Projections

- Treatment Process Selection and Sizing
- Civil/Site Element and Considerations
- TCEQ Wastewater Effluent Permitting Evaluation
- Opinion of Probable Construction Cost
- Final Conceptual Design Report

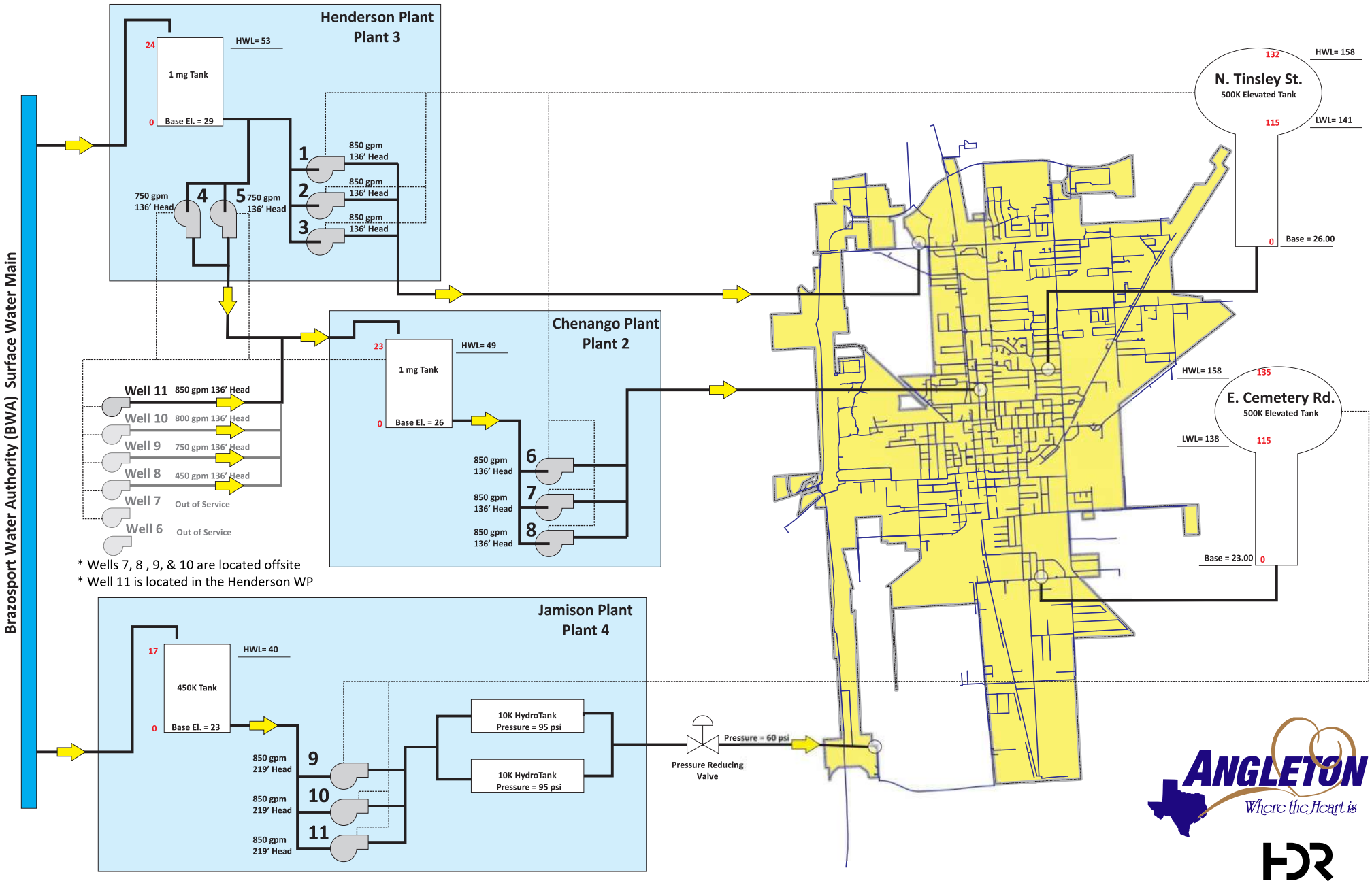
Associated Cost: The fee to provide these services and provide budgetary cost is **$243,000**.

Appendix A

Angleton Water Facilities



PATH: Z:\CLIENTS\ANGLETON\MASTER PLAN\WATER MODEL\FIGURE 3-1.MXD - USER: JMALDONA - DATE: 3/26/2019



ANGLETON
Where the Heart is

HDR

Appendix B

Chenango Site Photos

Appendix B – Chenango Site Photos



B-1. Ground Storage Tank at Plant and Riser Pipe



B-2. Ground Storage Tank at Plant



B-3. Ground Storage Tank at Plant



B-4. Stairs to Top of Ground Storage Tank



B-5. Stairs to Top of Ground Storage Tank



B-6. Water Header at Ground Storage Tank



B-7. Broken Ladder Inside Ground Storage Tank



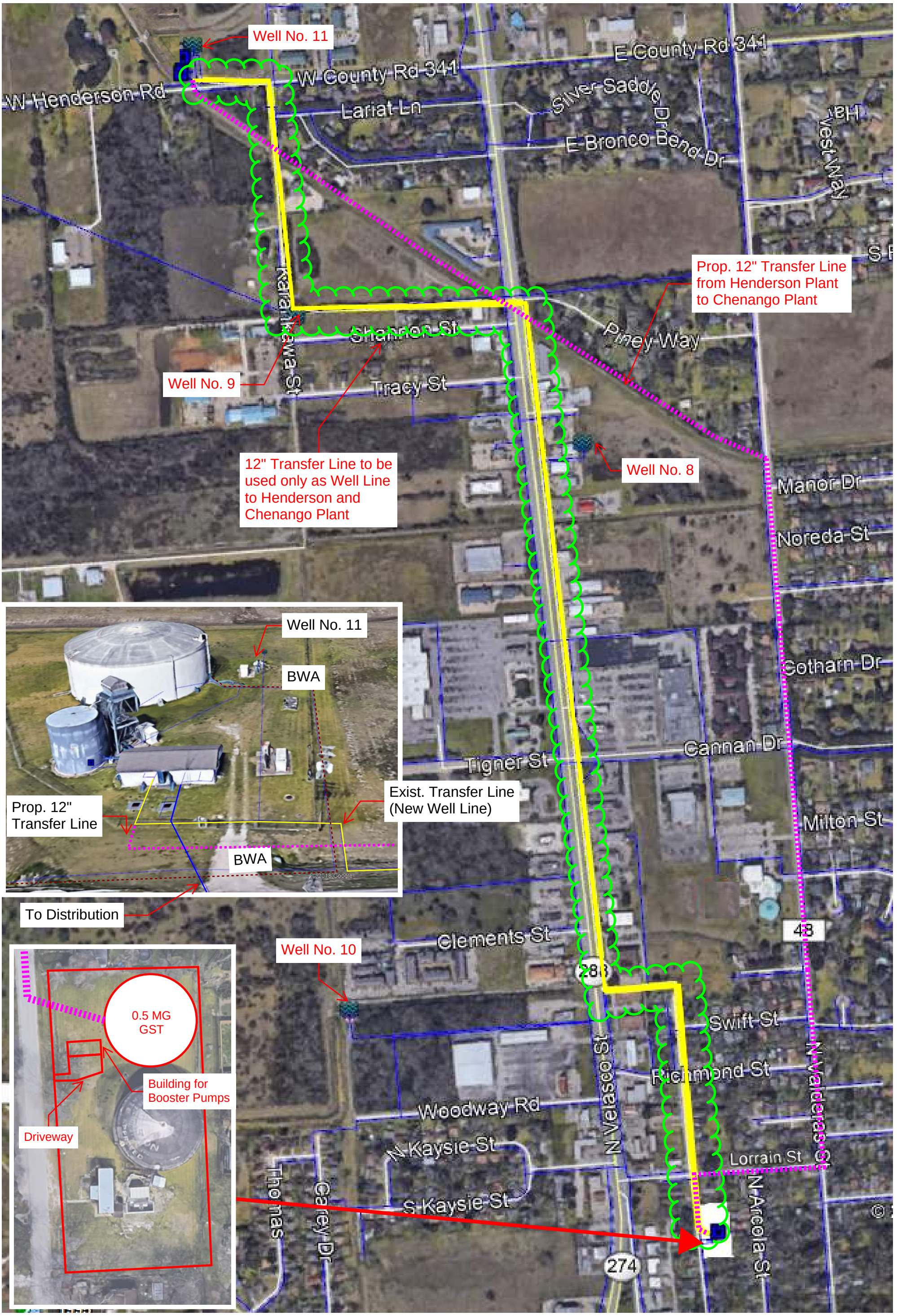
B-8. Exposed Rebar on the Inside of Roof



B-9. Coating Falling Off

Appendix C

Potential Layout for New Pumping Station



APPENDIX C - POTENTIAL LAYOUT FOR NEW PUMPING STATION

CITY OF ANGLETON

Appendix D

Chenango Pump Station and Transfer Line Cost Estimates

Appendix D.1 - Chenango Pump Station

City of Angleton

Item	Item Description	Unit	Quantity	Unit Price	Cost
1	0.5 MG Ground Storage Tank	EA	1	$1,150,000.00	$1,150,000.00
2	Pumps	EA	3	$46,000.00	$138,000.00
3	Motors	EA	3	$23,000.00	$69,000.00
4	Piping and Valves	LS	1	$357,075.00	$357,075.00
5	Chemical Feed	EA	2	$75,000.00	$150,000.00
6	SCADA	LS	1	$82,119.00	$82,119.00
7	Electrical	LS	1	$90,000.00	$90,000.00
8	Building	LS	1	$414,000.00	$414,000.00
9	10" PVC Distribution Water Line	LF	900	$80.50	$72,450.00
10	Demolition and Decommissioning of Existing Plant	LS	1	$262,500.00	$262,500.00
				SUBTOTAL	**$2,785,144.00**

15% PUMP STATION CONTINGENCY	$417,772.00
CONSTRUCTION	$3,210,000.00
20% CONSTRUCTION CONTINGENCY	$650,000.00
ENGINEERING	$640,000.00
TOTAL	**$4,500,000.00**

Appendix D.2 - 12" Transfer Line

City of Angleton

Item	Item Description	Unit	Quantity	Unit Price	Cost
1	12" PVC Transmission Water Line	LF	9400	$85.00	$799,000.00
2	20" Steel Casing	LF	300	$325.00	$97,500.00
3	12" Gate Valve (every 2000 LF)	EA	5	$3,500.00	$17,500.00
4	12" Air Release Valve (every 2000 LF)	EA	5	$5,000.00	$25,000.00
5	Sidewalk Replacement	SF	8360	$10.00	$83,600.00
				SUBTOTAL	**$1,022,600.00**

TOPOGRAPHIC SURVEY	$75,200.00
GEOTECHNICAL	$18,800.00
CONSTRUCTION	$1,023,000.00
20% CONTINGENCY	$204,600.00
ENGINEERING	$154,000.00
TOTAL	**$1,480,000.00**

Appendix E

Invoices and Photographs of Sink Hole and Repairs

Matula & Matula Construction, Inc.

122 West Way, Ste 325
Lake Jackson, TX 77566

Invoice

Date	11/13/2018
Invoice #	**2011-1856**

Bill To

Angleton, City of
121 S. Velasco
Angleton, TX 77515

Job	21848 Manhole at Sewer Plant	P.O. No.	

Qty	Unit	Description	Rate	Amount
		Removed and replaced collapsed manhole at sewer plant		
		Mobilization	1,250.00	1,250.00
		Labor	8,250.00	8,250.00
		Material	7,621.70	7,621.70
		Equipment (Equip., Trench box, Steel plates)	1,800.00	1,800.00
		Plug rental	250.00	250.00

Thank you for your business.

Total	$19,171.70
Payments/Credits	$0.00
Balance Due	$19,171.70

Phone #	Fax #
979-480-0030	979-480-0060

Matula & Matula Construction, Inc.

122 West Way, Ste 325
Lake Jackson, TX 77566

Invoice

Date	11/13/2018
Invoice #	**2011-1857**

Bill To

Angleton, City of
121 S. Velasco
Angleton, TX 77515

Job	21847 Emg SS Repair	P.O. No.	

Qty	Unit	Description	Rate	Amount
		Repaired two collapsed sewer lines. Emergency repairs		
		Mobilization	1,500.00	1,500.00
		Labor	10,650.50	10,650.50
		Equipment & Trench boxes	2,500.00	2,500.00
		Material	4,000.00	4,000.00

Thank you for your business.

Total	$18,650.50
Payments/Credits	$0.00
Balance Due	$18,650.50

Phone #	Fax #
979-480-0030	979-480-0060

Matula & Matula Construction, Inc

PROJECT **MH Repair @ Phillips Road and Shanks Road**
ENGINEER
BID DATE
COST EST.

ITEM No.	DESCRIPTION	QTY	UNIT	UNIT PRICE	BID AMOUNT
1	Repair Sanitary MH and pavement	1	LS	$ 12,735.20	$ 12,735.20

$ 12,735.20

FILE NAME:

HTI Construction Inc.
515 Reinhard St.
Rosenberg TX 77471

30- Inch Sanitary Sewer Emergency Repair
City of Angleton
HDR- Job No. 19-007
Final Pay Estimate - 04/30/2019 - 05/07/2019

City of Angleton
121 S. Velasco St.
Angleton, TX 77515

Item No.	Item Description	Unit	Quan.	Unit Price	Total Price	Quan. This Period	Total This Period	Quan. Previous Period	Total Previous Period	Total Quan. to Date	Total Amount to Date
1	30-inc plug for PVC PS 115 (ASTM F679) sanitary sewer line, complete in place, the sum of:	EA	1	$ 1,000.00	$ 1,000.00	0	$ -	1 EA	$ 1,000.00	1 EA	$ 1,000.00
2	30-inch PVC P5 115 (ASTM F679) sanitary sewer line, complete in place, the sum of:	LF	400	$ 190.00	$ 76,000.00	0	$ -	100 LF	$ 19,000.00	400 LF	$ 76,000.00
3	18-inch ductile iron pipe (DIP)sanitary sewer line, class 250 w/push-on joints, complete in place, the sum of:	LF	115	$ 160.00	$ 18,400.00	0	$ -	15 LF	$ 2,400.00	115 LF	$ 18,400.00
4	Remove and replace 32-inch sanitary sewer ring and cover, complete in place, the sum of:	EA	1	$ 1,000.00	$ 1,000.00	0	$ -	1 EA	$ 1,000.00	1 EA	$ 1,000.00
5	Proposed 6-ft diameter sanitary sewer manhole with 32-inch ring and cover, all depths,complete in place , the sum of:	EA	1	$ 10,500.00	$ 10,500.00	0	$ -	1 EA	$ 10,500.00	1 EA	$ 10,500.00
6	Trench protection for sanitary sewer utilities, complete in place, the sum of:	LF	515	$ 8.00	$ 4,120.00	0	$ -	115LF	$ 920.00	515 LF	$ 4,120.00
7	Abandon existing 30-inch RCP sanitary sewer by grout filling include plugs on both ends, complete in place, the sum of:	CY	70	$ 428.00	$ 29,960.00	70 CY	$ 29,960.00	0	$ -	70 CY	$ 29,960.00
8	Connect proposed sanitary sewer to existing manhole, all sizes, complete in place, the sum of:	EA	2	$ 2,000.00	$ 4,000.00	0	$ -	1 EA	$ 2,000.00	2 EA	$ 4,000.00
9	Remove and reset existing 8' wooden fence, complete in place, the sum of:	LF	60	$ 20.00	$ 1,200.00	0	$ -	60 LF	$ 1,200.00	60 LF	$ 1,200.00
10	Fill existing sinkhole, complete in place, the sum of:	LS	1	$ 4,000.00	$ 4,000.00	0	$ -	1 LS	$ 4,000.00	1 LS	$ 4,000.00
11	Bypass pumping for sanitary sewer, complete in place the sum of:	LS	1	$ 5,000.00	$ 5,000.00	0	$ -	1 LS	$ 5,000.00	1 LS	$ 5,000.00
12	Hydromulching, (25-ft wide), complete in place, the sum of:	AC	0.20	$ 7,500.00	$ 1,500.00	.20 AC	$ 1,500.00	0	$ -	.20 AC	$ 1,500.00
13	Storm water pollution prevention, including installation, maintenance and removal, complete in place, the sum of:	LS	1	$ 3,100.00	$ 3,100.00	0	$ -	.5 LS	$ 1,550.00	1 LS	$ 3,100.00
	Total Sanitary Sewer Emergency Repair				**$ 159,780.00**		**$ 31,460.00**		$ 48,570.00		**$ 159,780.00**

	B) Supplemental Items											
14	Well pointing for sanitary sewer, all sizes, all depths, including all necessary appurtenances, complet in place, the sum of:	LF	515	$ 28.00	$ 14,420.00	0	$ -	115 LF	$ 3,220.00	515 LF	$ 14,420.00
15	Well pointing for sanitary sewer manhole construction, all sizes, all depths, including all necessary appurtenances, complet in place, the sum of:	EA	1	$ 1,000.00	$ 1,000.00	0	$ -	1 EA	$ 1,000.00	1 EA	$ 1,000.00
16	Piezometer, including installation and removal, complete in place, the sum of:	EA	3	$ 250.00	$ 750.00	0	$ -	0	$ -	0	$ -
17	Wet condition bedding for sanitary sewer installation, all sizes, all depths, consisting of limestone or recycled concrete foundation, filter fabric and all appurtenances, complete in place, the sum of:	LF	515	$ 4.00	$ 2,060.00	0	$ -	315 LF	$ 1,260.00	315 LF	$ 1,260.00
18	Wet condition bedding for sanitary sewer manhole construction, all sizes, all depths, consisting of limestone or recycled concrete foundation, filter fabrics and all appurtenances, complete in place, the sum of:	EA	1	$ 500.00	$ 500.00	0	$ -	1 EA	$ 500.00	1 EA	$ 500.00
19	Cement stabilized sand, complet in place, the sum of:	CY	20	$ 25.00	$ 500.00	0	$ -	20 CY	$ 500.00	20 CY	$ 500.00
20	Brace existing palm tree, complete in place, the sum of:	EA	1	$ 400.00	$ 400.00	0	$ -	1 EA	$ 400.00	1 EA	$ 400.00
					$ 19,630.00		**$ -**		**$ 6,880.00**		**$ 18,080.00**

Pay Estimate Prepared By:
HTI Construction, Inc.
Thomas Gutierrez
Vice President

05/09/2019

Total Item Description	$ 31,460.00
10% Retainage	$ 3,146.00
Final Pay Estimate Total Amount	$ 28,314.00
Total Items To Date	$ 177,860.00
10% Retainage To Date	$ 17,786.00
Less Previous Pay Estimate No.1 & 2	$ 131,760.00
Final Pay Estimate plus 10% Retainage Total Amount	**$ 46,100.00**

HTI Construction, Inc.
515 Reinhard St.
Rosenberg, TX 77471
832-600-7632
tg.hticonstruction@gmail.com
www.hticonstructioninc.com

Invoice

BILL TO
City of Angleton
Attn. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 1904B
DATE 05/09/2019

DESCRIPTION	AMOUNT
30- Inch Sanitary Sewer Emergency Repair- City of Angleton HDR- Job No. 19-007 Final Pay Estimate Total Item Description 31,460.00 10% Retainage 3,146.00	28,314.00
Project Complete 10% Retainage Refund	17,786.00

D.O.S - 04/30/2019 - 05/07/2019

BALANCE DUE **$46,100.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

HTI Construction Inc.
515 Reinhard St.
Rosenberg TX 77471

30- Inch Sanitary Sewer Emergency Repair
City of Angleton
HDR- Job No. 19-007
Final Pay Estimate - 04/30/2019 - 05/07/2019

City of Angleton
121 S. Velasco St.
Angleton, TX 77515

Item No.	Item Description	Unit	Quan.	Unit Price	Total Price	Quan. This Period	Total This Period	Quan. Previous Period	Total Previous Period	Total Quan. to Date	Total Amount to Date
1	30-inc plug for PVC PS 115 (ASTM F679) sanitary sewer line, complete in place, the sum of:	EA	1	$ 1,000.00	$ 1,000.00	0	$ -	1 EA	$ 1,000.00	1 EA	$ 1,000.00
2	30-inch PVC PS 115 (ASTM F679) sanitary sewer line, complete in place, the sum of:	LF	400	$ 190.00	$ 76,000.00	0	$ -	100 LF	$ 19,000.00	400 LF	$ 76,000.00
3	18-inch ductile iron pipe (DIP)sanitary sewer line, class 250 w/push-on joints, complete in place, the sum of:	LF	115	$ 160.00	$ 18,400.00	0	$ -	15 LF	$ 2,400.00	115 LF	$ 18,400.00
4	Remove and replace 32-inch sanitary sewer ring and cover, complete in place, the sum of:	EA	1	$ 1,000.00	$ 1,000.00	0	$ -	1 EA	$ 1,000.00	1 EA	$ 1,000.00
5	Proposed 6-ft diameter sanitary sewer manhole with 32-inch ring and cover, all depths,complete in place , the sum of:	EA	1	$ 10,500.00	$ 10,500.00	0	$ -	1 EA	$ 10,500.00	1 EA	$ 10,500.00
6	Trench protection for sanitary sewer utilities, complete in place, the sum of:	LF	515	$ 8.00	$ 4,120.00	0	$ -	115LF	$ 920.00	515 LF	$ 4,120.00
7	Abandon existing 30-inch RCP sanitary sewer by grout filling include plugs on both ends, complete in place, the sum of:	CY	70	$ 428.00	$ 29,960.00	70 CY	$ 29,960.00	0	$ -	70 CY	$ 29,960.00
8	Connect proposed sanitary sewer to existing manhole, all sizes, complete in place, the sum of:	EA	2	$ 2,000.00	$ 4,000.00	0	$ -	1 EA	$ 2,000.00	2 EA	$ 4,000.00
9	Remove and reset existing 8' wooden fence, complete in place, the sum of:	LF	60	$ 20.00	$ 1,200.00	0	$ -	60 LF	$ 1,200.00	60 LF	$ 1,200.00
10	Fill existing sinkhole, complete in place, the sum of:	LS	1	$ 4,000.00	$ 4,000.00	0	$ -	1 LS	$ 4,000.00	1 LS	$ 4,000.00
11	Bypass pumping for sanitary sewer, complete in place the sum of:	LS	1	$ 5,000.00	$ 5,000.00	0	$ -	1 LS	$ 5,000.00	1 LS	$ 5,000.00
12	Hydromulching, (25-ft wide), complete in place, the sum of:	AC	0.20	$ 7,500.00	$ 1,500.00	.20 AC	$ 1,500.00	0	$ -	.20 AC	$ 1,500.00
13	Storm water pollution prevention, including installation, maintenance and removal, complete in place, the sum of:	LS	1	$ 3,100.00	$ 3,100.00	0	$ -	.5 LS	$ 1,550.00	1 LS	$ 3,100.00
	Total Sanitary Sewer Emergency Repair				**$ 159,780.00**		**$ 31,460.00**		$ 48,570.00		**$ 159,780.00**

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16	Piezometer, including installation and removal, complete in place, the sum of:	EA	3	$ 250.00	$ 750.00	0	$ -	0	$ -	0	$ -
17	Wet condition bedding for sanitary sewer installation, all sizes, all depths, consisting of limestone or recycled concrete foundation, filter fabric and all appurtenances, complete in place, the sum of:	LF	515	$ 4.00	$ 2,060.00	0	$ -	315 LF	$ 1,260.00	315 LF	$ 1,260.00
18	Wet condition bedding for sanitary sewer manhole construction, all sizes, all depths, consisting of limestone or recycled concrete foundation, filter fabrics and all appurtenances, complete in place, the sum of:	EA	1	$ 500.00	$ 500.00	0	$ -	1 EA	$ 500.00	1 EA	$ 500.00
19	Cement stabilized sand, complet in place, the sum of:	CY	20	$ 25.00	$ 500.00	0	$ -	20 CY	$ 500.00	20 CY	$ 500.00
20	Brace existing palm tree, complete in place, the sum of:	EA	1	$ 400.00	$ 400.00	0	$ -	1 EA	$ 400.00	1 EA	$ 400.00
					$ 19,630.00		$ -		$ 6,880.00		$ 18,080.00

Pay Estimate Prepared By:
HTI Construction, Inc.
Thomas Gutierrez
Vice President

05/09/2019

Total Item Description	$ 31,460.00
10% Retainage	$ 3,146.00
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HTI Construction, Inc.
515 Reinhard St.
Rosenberg, TX 77471
832-600-7632
tg.hticonstruction@gmail.com
www.hticonstructioninc.com

Invoice

BILL TO
City of Angleton
Attn. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 1909
DATE 06/28/2019

DESCRIPTION	AMOUNT
15- Inch Sanitary Sewer Emergency Point Repair N. Valdares St. Installed sheet piling, back fill behind sheet piling to stabilize road. Removed existing water in damaged area. Cut damaged pipe out and reconnect new 15-Inch Sanitary Sewer pipe with 15- Inch 45-degree bend, install thrust block behind 45-degree bend, back fill and compact with stabilized sand, formed 50'x14' section of street, 100 LF of curb, 240 Sf of sidewalk Installed 5 sack ready mix in all concrete areas, cleaned up all disturb areas due to construction.	57,450.00

D.O.S- 06/13/2019 - 06/28/2019

BALANCE DUE **$57,450.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

November 10, 2020

Mayor and City Council Members
City of Angleton, Texas
121 S. Velasco
Angleton, TX 77515

Re: Miller Street Sanitary Sewer Improvements Project
City of Angleton, Texas
HDR Job No. 20-031

Dear Mayor and City Council Members:

On October 30, 2020, six (6) bids were received on the above referenced project.

1. Bid Tabulation Sheet – Six (6) construction firms participated in the bidding process. Each bid was checked for mathematical errors and/or bid irregularities. Appropriate corrections to the errors were made and included in the attached bid tabulations. The errors did not affect the order of the bids. The project was bid with Base Bid, Supplemental items and one Add Alternate. A bid tab is included in Section 1. The bids for the project are as follows:

CONTRACTOR	TOTAL (BASE BID AND SUPPLEMENTAL ITEMS)	TOTAL + ADD ALTERNATE NO. 1
HTI Construction, LLC (Apparent Low Bidder)	**$298,200.00**	**$396,720.00**
DL Glover, Inc.	$329,088.00	$416,241.00
C&A Construction, LLC	$349,954.00	$457,694.00
Matula and Matula Construction, Inc.	$440,487.08	$567,286.18
Aranda Industries, LLC	$593,230.30[1]	$754,730.30[1]
AR Turnkee Construction Company, Inc.	$626,375.00[1]	$760,425.00[1]

[1]Price shown reflects error notated in bid

2. Evaluation of the Apparent Low Bidder - The apparent low bidder is HTI Construction, Inc. HDR has contacted references of recent work performed. They have previously performed similar work for the City of Angleton on the 30-inch Emergency Sanitary Sewer Repair. Please see Section 2 of this report.

3. Telephone Conversations with References – HTI Construction, Inc. provided a list of references including areas of work in Brazoria County including Angleton. Three (3) references were contacted by telephone and were asked to respond to a questionnaire as part of the evaluation process of the apparent low bidder. The Contractor received excellent ratings on their previous projects. The references indicated that they were satisfied with the

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

HTI Construction, Inc.
515 Reinhard St.
Rosenberg, TX 77471
832-600-7632
tg.hticonstruction@gmail.com
www.hticonstructioninc.com

INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2045
DATE 12/08/2020

DESCRIPTION	AMOUNT
Lift Station Rehab Improvements S. Walker St. & Munson Place, Angleton TX Installed confined space safety to enter lift station wet well. (10' depth) Totally removed all 4" pipe & fittings inside wet well. Installed new 4" ductile iron w/fittings (90's, wedge flange, SS flange package) Installed 2- new 4" check valves. Tied new pipe into existing manhole. Cleaned up all disturb areas due to construction.	12,500.00

D.O.S- 11/30/2020 - 12/02/2020

BALANCE DUE **$12,500.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

HTI Construction, Inc.
515 Reinhard St.
Rosenberg, TX 77471
832-600-7632
tg.hticonstruction@gmail.com
www.hticonstructioninc.com

INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2040
DATE 11/03/2020

DESCRIPTION	AMOUNT
Sewer Point Repair 1217 Tay Wal Loop, Angleton, TX Hand excavated & exposed all existing utilities. Removed 40' of chain link fence, trimed trees & removed debris. Excavated down (10' depth) to 8" concrete pipe. Installed trench box safety. Removed 22' of deteriorated 8" concrete pipe, replaced with 22' of 8" SDR26. Backfilled & compacted dirt. Replaced 40' of chain link fence. Cleaned up all disturb areas due to construction.	6,500.00

D.O.S- 10/28/2020 - 10/30/2020

BALANCE DUE **$6,500.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

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Rosenberg, TX 77471
832-600-7632
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INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2039
DATE 10/27/2020

DESCRIPTION	AMOUNT
W. Wilkins 8" Sewer Repair Relocated 300' of telephone cable that was buried on existing sewer line. Removed 252' of existing deteriorated 8" concrete pipe, replaced with 252' of 8" Sdr26 pipe. Installed 3- 4" sewer w/all necessary fittings. Backfilled & compacted. Cleaned up all disturb areas due to construction. Total Repair: (Removed & Replaced 252' of 8" pipe) (Installed 3- 4" Sanitary Sewer Services) (Regraded 300' of ditch area)	9,500.00

D.O.S- 10/23/2020 -10/26/2020

BALANCE DUE **$9,500.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

HTI Construction, Inc.
515 Reinhard St.
Rosenberg, TX 77471
832-600-7632
tg.hticonstruction@gmail.com
www.hticonstructioninc.com

INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2038
DATE 10/27/2020

DESCRIPTION	AMOUNT
N. Valderas & Richmond St. Point Repair Excavated down 10' depth. Installed trench box to inspect 27" sewer line. 27" sewer line had no problems. Discovered water service leak in middle of N. Valderas St. causing street sinkhole. Repaired water service leak. Backfilled & compacted sinkhole. Cleaned up all disturb areas due to construction.	2,500.00

D.O.S- 10/20/2020 -10/20/2020

BALANCE DUE **$2,500.00**

Payment is greatly appreciated within 15 Days.

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INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2035
DATE 10/27/2020

DESCRIPTION	AMOUNT
6" Sanitary Sewer Line Install Location: N. Chenango St. ally between E.Cedar & E. Ash St. Installed 300' of 6" Sch 40 main line. Tie-in new 6" line to existing manhole. Installed 6"x6" clean out at the end of main line. Installed 8- long 4" sewer service w/clean out. Installed 4-short 4" sewer service w/clean out. Backfilled & compacted sewer line & services. Graded existing spoils for proper drainage. Cleaned up all disturb areas due to construction. Total Install: (300' 6" sch40) (8- Long services) (4-short service)	15,230.00

D.O.S- 10/14/2020 - 10/21/2020

BALANCE DUE **$15,230.00**

Payment is greatly appreciated within 15 Days.

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INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2037
DATE 10/20/2020

DESCRIPTION	AMOUNT
27" Sewer Point Repair Valdares & Anglewood, Angleton TX Excavated down 11' depth to damaged 27" sewer pipe. Repaired 27" sewer pipe by slip line method. Backfilled & compacted big sink hole with 1.5 stabilized sand. Cleaned up all disturb areas due to construction.	4,200.00

D.O.S- 10/16/2020 -10/19/2020

BALANCE DUE **$4,200.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

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Rosenberg, TX 77471
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INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2023
DATE 09/09/2020

DESCRIPTION	AMOUNT
Emergency Lift Station Pipe Repair Anderson St., Angleton TX Installed confine spacing safety equipment for lift station wet well. Removed broken 4" pipe from inside of wet well. Installed new 4" pipe w/clamps.	3,000.00

D.O.S - 09/08/2020 - 09/09/2020

BALANCE DUE **$3,000.00**

Payment is greatly appreciated within 15 Days.

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INVOICE

BILL TO
City of Angleton
Attn. Mr. Jeff Sifford
901 S Velasco
Angleton, TX 77515

INVOICE # 2013
DATE 06/05/2020

DESCRIPTION	AMOUNT
Downing St. Emergency Street Repair Downing & Molina Ct., Angleton TX Maintained traffic control. Saw cut 65 LF of paving. Break out & hauled off 1360 SF of street & curb concrete. Removed & hauled off 6" old base. Compacted all low area existing dirt. Installed, graded & compacted 6" of 1.5 stabilized sand. Installed forms, redwood expansion joints, No.4 rebar 18" center to center. Poured 1360 SF street & curb with 5 1/2 sack 3500 PSI ready mix, hand smooth/brush finish. Clean up all disturb areas due to construction.	16,325.00

D.O.S- 05/28/2020 - 06/03/2020

BALANCE DUE **$16,325.00**

Payment is greatly appreciated within 15 Days.

Thank you for trusting HTI Construction, Inc.

We appreciate the business and look forward to working with you in the near future!

Jeff Sifford

From: Jeff Sifford
Sent: Monday, December 28, 2020 10:08 AM
To: Jeff Sifford

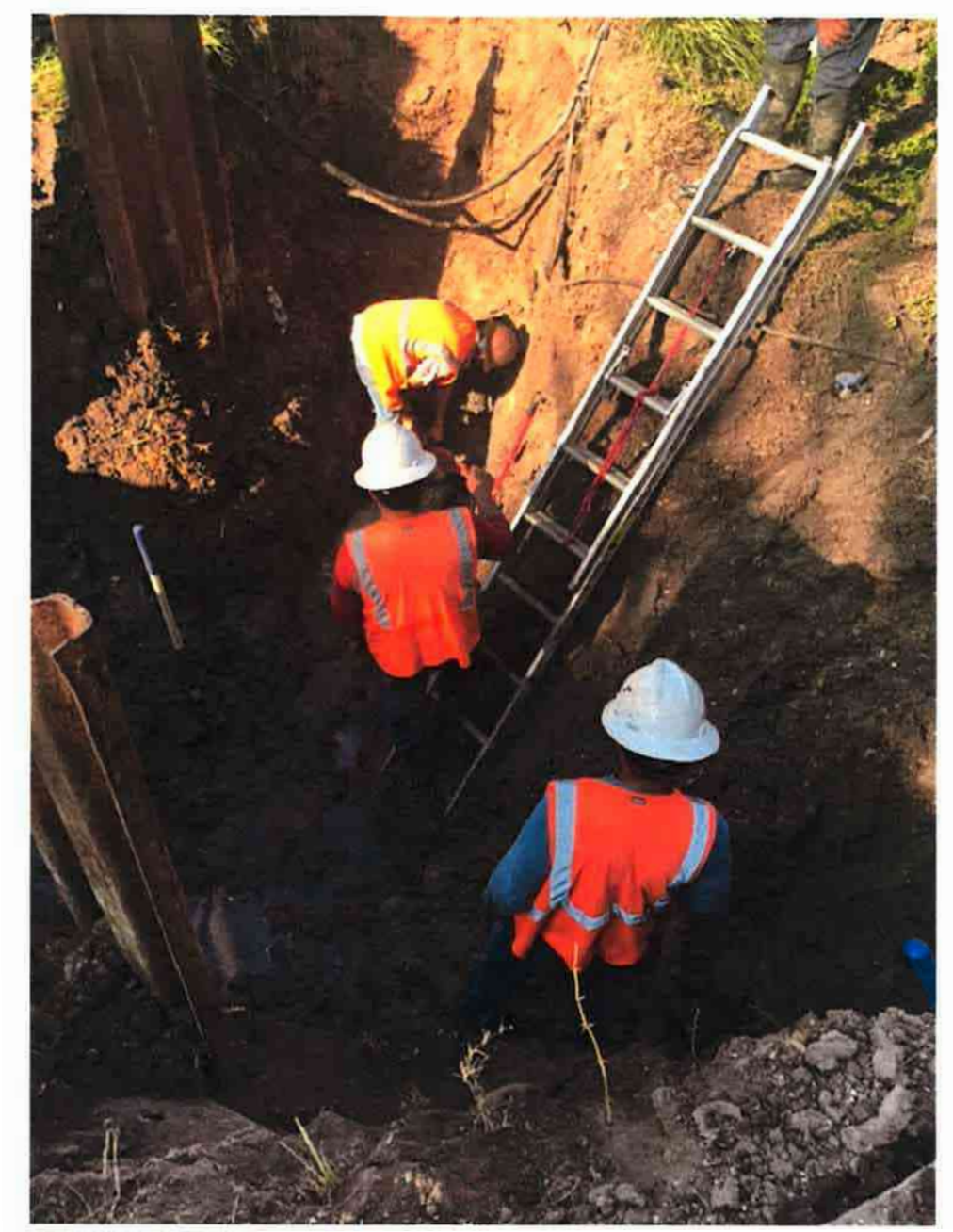


Sent from my iPhone

Heritage Oaks Dr.

Jeff Sifford

From: Jeff Sifford
Sent: Monday, December 28, 2020 10:06 AM
To: Jeff Sifford



Sent from my iPhone

W Walker

Jeff Sifford

From: Jeff Sifford
Sent: Monday, December 28, 2020 10:06 AM
To: Jeff Sifford



Sent from my iPhone

horrain - st

Jeff Sifford

From: Jeff Sifford <jeffs63@me.com>
Sent: Thursday, November 29, 2018 8:11 AM
To: Jeff Sifford
Subject: IMG_1917.jpeg



Sent from my iPhone

Parrish Rd.

Jeff Sifford

From: Jeff Sifford <jeffs63@me.com>
Sent: Thursday, November 29, 2018 8:10 AM
To: Jeff Sifford
Subject: IMG_1920.jpeg

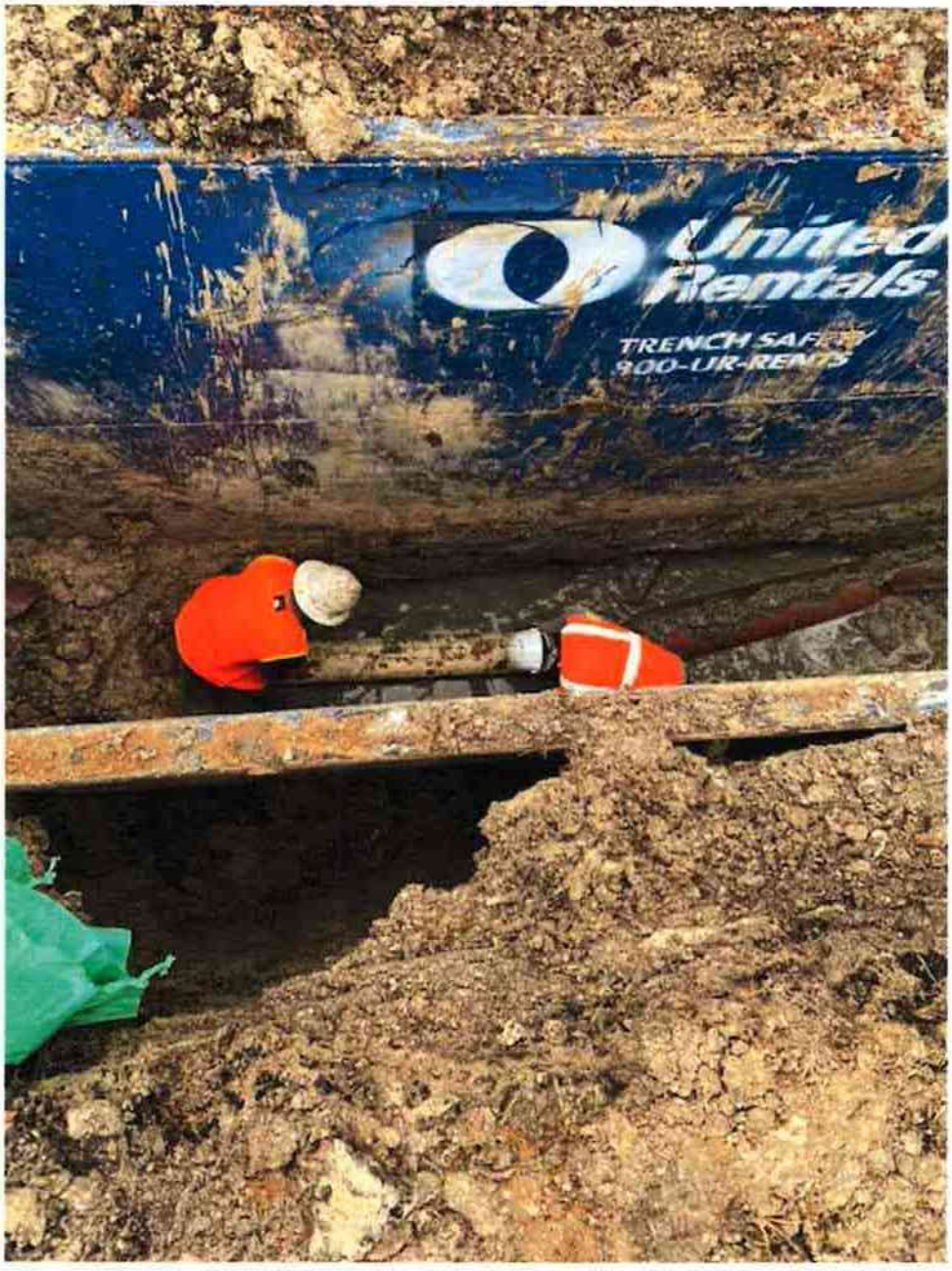


Sent from my iPhone

Parrish. Rd.

Jeff Sifford

From: Jeff Sifford
Sent: Monday, December 28, 2020 10:04 AM
To: Jeff Sifford

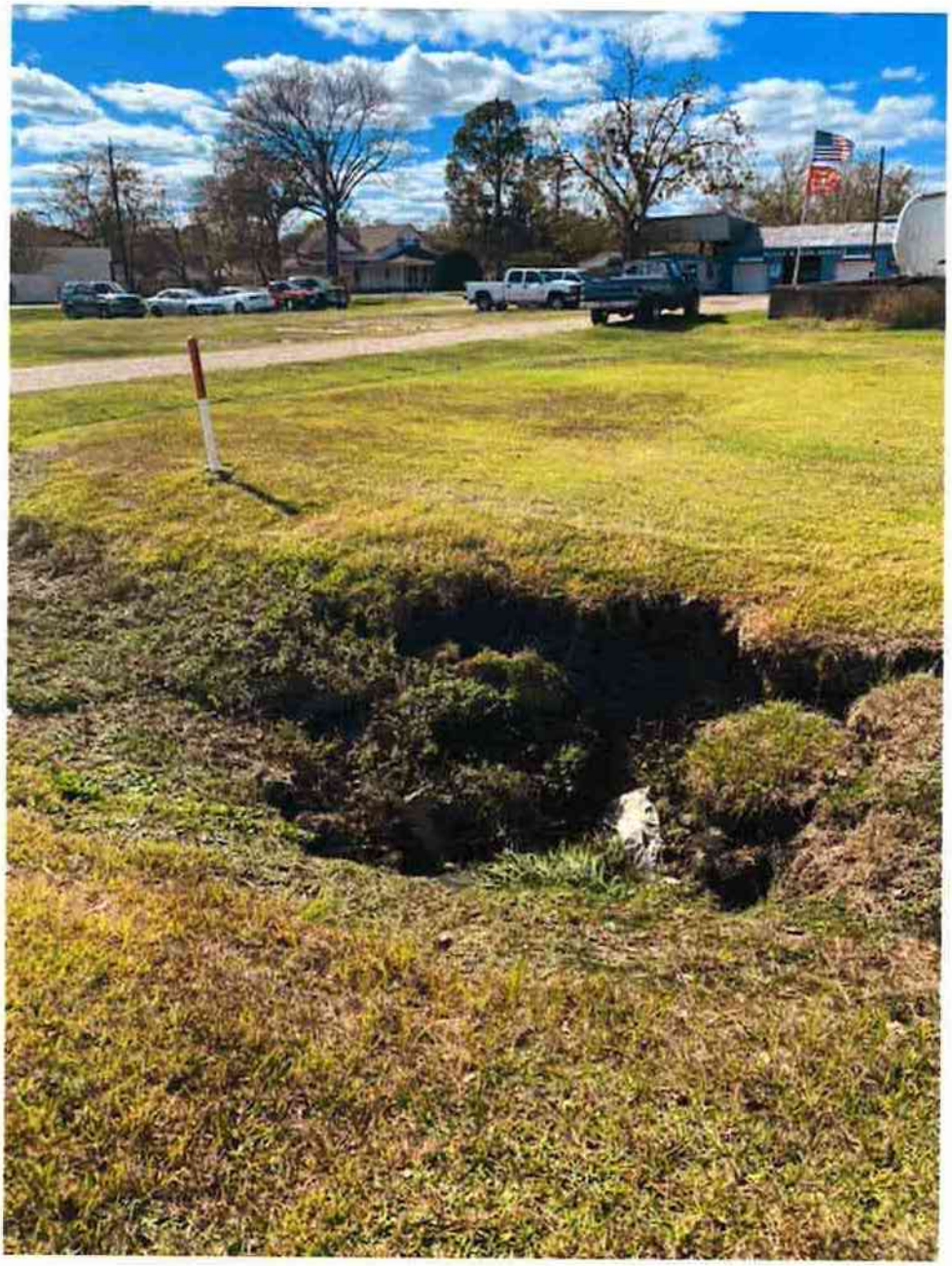


Sent from my iPhone

S 288-B

Jeff Sifford

From: Jeff Sifford
Sent: Monday, December 28, 2020 10:05 AM
To: Jeff Sifford



Sent from my iPhone

S 288 B



Pine Place



Pine Place.

Appendix F

Monthly Flow Rates
vs.
Rainfall Events

Oyster Creek WWTP - Monthly Flow and Rain Data

2018

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
JANUARY		
1/1/2018	1.38200	
1/2/2018	1.57100	
1/3/2018	1.44600	
1/4/2018	1.56000	
1/5/2018	1.40000	
1/6/2018	1.45000	
1/7/2018	1.67000	
1/8/2018	1.33200	0.20
1/9/2018	1.51400	
1/10/2018	1.38400	
1/11/2018	2.45800	
1/12/2018	1.51600	0.52
1/13/2018	1.18900	
1/14/2018	1.60000	
1/15/2018	1.28000	0.18
1/16/2018	2.05000	0.10
1/17/2018	1.76800	
1/18/2018	1.74000	
1/19/2018	2.21500	0.35
1/20/2018	3.55000	0.15
1/21/2018	2.22000	0.40
1/22/2018	1.78000	0.10
1/23/2018	1.50400	
1/24/2018	1.44000	
1/25/2018	1.56000	
1/26/2018	1.63100	
1/27/2018	2.49700	0.05
1/28/2018	2.08000	0.45
1/29/2018	1.50300	
1/30/2018	1.34000	
1/31/2018	1.67000	
Minimum	1.18900	0.05
Maximum	3.55000	0.52
Total	53.30000	2.50
Average	1.71935	0.25

Date	Eff Flow (MGD)	Rain (In)
FEBRUARY		
2/1/2018	1.59000	
2/2/2018	1.41000	
2/3/2018	1.57000	
2/4/2018	1.48600	0.10
2/5/2018	1.46500	0.10
2/6/2018	1.53800	0.05
2/7/2018	2.60000	0.02
2/8/2018	1.99000	0.47
2/9/2018	2.97200	0.03
2/10/2018	8.64000	3.50
2/11/2018	3.22500	0.20
2/12/2018	2.59100	0.01
2/13/2018	2.35800	
2/14/2018	2.03600	0.08
2/15/2018	2.39000	
2/16/2018	1.92500	
2/17/2018	1.44500	
2/18/2018	1.68100	
2/19/2018	1.71400	
2/20/2018	1.99900	
2/21/2018	3.48100	0.20
2/22/2018	2.64200	0.12
2/23/2018	2.28800	0.08
2/24/2018	1.86800	
2/25/2018	1.93300	0.05
2/26/2018	1.57900	0.02
2/27/2018	1.76600	
2/28/2018	1.73200	
Minimum	1.41000	0.01
Maximum	8.64000	3.50
Total	63.91400	5.03
Average	2.28264	0.34

Date	Eff Flow (MGD)	Rain (In)
MARCH		
3/1/2018	1.70000	
3/2/2018	1.56000	
3/3/2018	1.67000	
3/4/2018	1.49000	
3/5/2018	1.75700	0.03
3/6/2018	2.28800	
3/7/2018	1.59200	0.20
3/8/2018	1.61400	
3/9/2018	1.78700	
3/10/2018	1.60900	0.04
3/11/2018	1.38300	
3/12/2018	1.37300	0.01
3/13/2018	1.37800	
3/14/2018	1.45100	
3/15/2018	1.61000	
3/16/2018	1.58000	
3/17/2018	1.39000	
3/18/2018	1.57000	
3/19/2018	1.25200	
3/20/2018	1.32400	
3/21/2018	1.35200	
3/22/2018	1.31500	
3/23/2018	1.54900	
3/24/2018	1.66300	
3/25/2018	1.29300	
3/26/2018	1.46800	
3/27/2018	1.53600	
3/28/2018	2.55800	
3/29/2018	5.04000	1.70
3/30/2018	1.74000	
3/31/2018	1.50000	
Minimum	1.25200	0.01
Maximum	5.04000	1.70
Total	52.39200	1.98
Average	1.69006	0.40

Date	Eff Flow (MGD)	Rain (In)
APRIL		
4/1/2018	1.37400	
4/2/2018	1.48300	
4/3/2018	1.57700	
4/4/2018	1.32700	0.02
4/5/2018	1.61000	0.05
4/6/2018	1.71300	0.13
4/7/2018	1.41600	
4/8/2018	1.40600	
4/9/2018	1.68600	0.05
4/10/2018	1.32400	0.04
4/11/2018	1.44300	
4/12/2018	1.48600	
4/13/2018	1.85000	
4/14/2018	1.62000	0.50
4/15/2018	1.33000	
4/16/2018	1.29000	
4/17/2018	1.43700	
4/18/2018	1.47000	
4/19/2018	1.42600	
4/20/2018	1.46200	0.02
4/21/2018	2.94000	
4/22/2018	2.19500	1.70
4/23/2018	1.53400	
4/24/2018	1.23800	
4/25/2018	1.46700	
4/26/2018	1.06600	
4/27/2018	1.48000	
4/28/2018	1.27000	
4/29/2018	1.18200	
4/30/2018	1.41700	
Minimum	1.06600	0.02
Maximum	2.94000	1.70
Total	45.51900	2.51
Average	1.51730	0.31

Oyster Creek WWTP - Monthly Flow and Rain Data

2018

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
MAY		
5/1/2018	1.49500	
5/2/2018	1.40800	
5/3/2018	1.40100	
5/4/2018	1.32800	
5/5/2018	1.29400	
5/6/2018	1.15500	
5/7/2018	1.99000	
5/8/2018	1.19100	
5/9/2018	1.22100	
5/10/2018	1.34000	
5/11/2018	1.39000	
5/12/2018	1.21000	
5/13/2018	1.03300	
5/14/2018	1.29800	
5/15/2018	1.19800	
5/16/2018	1.16900	
5/17/2018	1.22000	
5/18/2018	1.15800	
5/19/2018	1.16600	
5/20/2018	1.34000	
5/21/2018	1.29100	0.05
5/22/2018	1.22500	1.80
5/23/2018	2.63000	0.03
5/24/2018	1.63600	1.86
5/25/2018	1.61000	0.05
5/26/2018	1.32000	
5/27/2018	1.89800	0.60
5/28/2018	1.19200	
5/29/2018	1.19700	
5/30/2018	1.22900	
5/31/2018	1.33300	
Minimum	1.03300	0.03
Maximum	2.63000	1.86
Total	42.56600	4.39
Average	1.37310	0.73

Date	Eff Flow (MGD)	Rain (In)
JUNE		
6/1/2018	1.23000	
6/2/2018	1.06400	
6/3/2018	1.06200	
6/4/2018	1.12800	
6/5/2018	1.12900	
6/6/2018	1.15800	
6/7/2018	1.13900	
6/8/2018	1.14000	
6/9/2018	1.35000	
6/10/2018	1.02700	0.20
6/11/2018	0.88900	
6/12/2018	1.14900	
6/13/2018	1.08500	
6/14/2018	1.15500	
6/15/2018	1.24600	
6/16/2018	1.08900	0.04
6/17/2018	1.11400	0.04
6/18/2018	2.52800	0.10
6/19/2018	2.43700	0.93
6/20/2018	3.39100	0.92
6/21/2018	7.56800	1.51
6/22/2018	2.10000	2.75
6/23/2018	1.43000	
6/24/2018	1.26000	
6/25/2018	1.18900	
6/26/2018	1.27800	
6/27/2018	1.17400	
6/28/2018	1.45400	
6/29/2018	1.34500	0.05
6/30/2018	1.30700	
Minimum	0.88900	0.04
Maximum	7.56800	2.75
Total	47.61500	6.54
Average	1.58717	0.73

Date	Eff Flow (MGD)	Rain (In)
JULY		
7/1/2018	1.05800	
7/2/2018	1.18000	
7/3/2018	1.48000	
7/4/2018	7.29600	2.25
7/5/2018	2.21700	0.06
7/6/2018	1.75000	
7/7/2018	1.50000	0.25
7/8/2018	1.52100	0.20
7/9/2018	1.84600	0.63
7/10/2018	1.54000	0.20
7/11/2018	1.38800	
7/12/2018	1.48800	
7/13/2018	2.04200	
7/14/2018	3.07700	0.70
7/15/2018	1.55000	1.25
7/16/2018	1.41000	
7/17/2018	1.25700	
7/18/2018	1.49900	
7/19/2018	1.44100	
7/20/2018	1.35000	
7/21/2018	1.36000	
7/22/2018	1.22700	
7/23/2018	1.30800	
7/24/2018	1.24200	
7/25/2018	1.20800	
7/26/2018	1.26800	
7/27/2018	1.27000	
7/28/2018	1.07000	
7/29/2018	0.98700	
7/30/2018	1.29700	
7/31/2018	4.89300	4.00
Minimum	0.98700	0.06
Maximum	7.29600	4.00
Total	55.02000	9.54
Average	1.77484	1.06

Date	Eff Flow (MGD)	Rain (In)
AUGUST		
8/1/2018	1.45500	
8/2/2018	1.36300	
8/3/2018	1.47000	
8/4/2018	1.32000	
8/5/2018	1.24000	0.15
8/6/2018	1.32000	
8/7/2018	1.31800	0.10
8/8/2018	1.33800	
8/9/2018	1.42100	
8/10/2018	1.53600	
8/11/2018	1.52000	0.12
8/12/2018	1.37300	0.15
8/13/2018	1.27500	
8/14/2018	1.45900	
8/15/2018	1.33900	
8/16/2018	1.41700	
8/17/2018	1.45000	
8/18/2018	1.23000	
8/19/2018	1.42000	
8/20/2018	1.31000	
8/21/2018	1.22100	
8/22/2018	1.24600	
8/23/2018	1.33200	
8/24/2018	1.14700	
8/25/2018	1.19400	
8/26/2018	1.21300	
8/27/2018	1.18000	
8/28/2018	1.25900	
8/29/2018	1.34600	
8/30/2018	1.40600	
8/31/2018	1.12000	0.01
Minimum	1.12000	0.01
Maximum	1.53600	0.15
Total	41.23800	0.53
Average	1.33026	0.11

Oyster Creek WWTP - Monthly Flow and Rain Data

2018

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
SEPTEMBER		
9/1/2018	1.22000	
9/2/2018	1.30800	
9/3/2018	1.87400	0.57
9/4/2018	2.37100	0.47
9/5/2018	1.96600	0.36
9/6/2018	2.20100	0.50
9/7/2018	1.57700	0.84
9/8/2018	1.31400	
9/9/2018	1.42400	0.40
9/10/2018	4.96600	0.04
9/11/2018	6.80500	2.85
9/12/2018	7.99600	1.32
9/13/2018	8.14200	0.90
9/14/2018	8.93000	1.27
9/15/2018	6.14000	0.80
9/16/2018	3.62000	0.40
9/17/2018	2.27800	0.60
9/18/2018	1.81500	
9/19/2018	1.61100	
9/20/2018	1.78600	
9/21/2018	2.11600	0.30
9/22/2018	4.56800	0.65
9/23/2018	4.46400	1.86
9/24/2018	2.55000	0.02
9/25/2018	2.92000	0.05
9/26/2018	4.25600	1.00
9/27/2018	3.87200	0.42
9/28/2018	3.60000	0.02
9/29/2018	6.88000	1.20
9/30/2018	6.62800	0.40
Minimum	1.22000	0.02
Maximum	8.93000	2.85
Total	111.19800	17.24
Average	3.70660	0.72

Date	Eff Flow (MGD)	Rain (In)
OCTOBER		
10/1/2018	6.41100	0.54
10/2/2018	3.53300	0.26
10/3/2018	2.93000	
10/4/2018	2.06100	
10/5/2018	2.25600	
10/6/2018	2.21400	
10/7/2018	2.69000	
10/8/2018	1.80900	0.15
10/9/2018	1.69700	0.12
10/10/2018	1.40900	0.05
10/11/2018	1.74100	
10/12/2018	1.71000	
10/13/2018	1.56000	
10/14/2018	1.54000	
10/15/2018	2.57500	
10/16/2018	1.92300	1.58
10/17/2018	1.69600	
10/18/2018	1.78300	
10/19/2018	2.02500	0.07
10/20/2018	3.41000	1.60
10/21/2018	1.45700	
10/22/2018	2.04000	
10/23/2018	6.03200	0.23
10/24/2018	7.02000	1.14
10/25/2018	6.40100	1.50
10/26/2018	3.26000	0.01
10/27/2018	2.33000	
10/28/2018	2.06000	
10/29/2018	1.76500	
10/30/2018	1.97700	
10/31/2018	7.15000	
Minimum	1.40900	0.01
Maximum	7.15000	1.60
Total	88.46500	7.25
Average	2.85371	0.60

Date	Eff Flow (MGD)	Rain (In)
NOVEMBER		
11/1/2018	5.71300	3.25
11/2/2018	3.02900	
11/3/2018	2.34900	
11/4/2018	2.15200	
11/5/2018	2.04100	0.06
11/6/2018	1.96600	
11/7/2018	2.06200	
11/8/2018	1.75000	
11/9/2018	3.55000	0.35
11/10/2018	2.03000	0.50
11/11/2018	1.92700	
11/12/2018	1.93000	0.20
11/13/2018	1.78000	
11/14/2018	1.49000	0.05
11/15/2018	1.38700	
11/16/2018	1.75600	0.08
11/17/2018	1.41500	
11/18/2018	1.45000	
11/19/2018	2.40000	0.30
11/20/2018	1.64000	0.05
11/21/2018	2.23000	0.04
11/22/2018	2.05000	0.35
11/23/2018	1.71000	
11/24/2018	1.76000	
11/25/2018	1.50100	
11/26/2018	1.46000	0.01
11/27/2018	1.36000	
11/28/2018	1.59000	
11/29/2018	1.55200	
11/30/2018	1.64200	0.03
Minimum	1.36000	0.01
Maximum	5.71300	3.25
Total	60.67200	5.27
Average	2.02240	0.41

Date	Eff Flow (MGD)	Rain (In)
DECEMBER		
12/1/2018	1.27200	
12/2/2018	1.40500	
12/3/2018	1.40000	
12/4/2018	1.36000	
12/5/2018	1.34000	
12/6/2018	1.46000	
12/7/2018	6.33000	
12/8/2018	6.22500	4.40
12/9/2018	2.89400	
12/10/2018	2.27300	
12/11/2018	2.26900	0.02
12/12/2018	2.51000	
12/13/2018	2.26200	0.30
12/14/2018	2.22600	
12/15/2018	1.83700	
12/16/2018	1.80000	
12/17/2018	1.55000	
12/18/2018	1.95900	
12/19/2018	1.78300	0.05
12/20/2018	1.98300	0.16
12/21/2018	1.80000	
12/22/2018	1.57000	
12/23/2018	1.49700	
12/24/2018	1.93800	
12/25/2018	1.32600	
12/26/2018	1.76600	
12/27/2018	3.50900	0.20
12/28/2018	2.14700	0.50
12/29/2018	1.70600	0.02
12/30/2018	1.83500	0.03
12/31/2018	2.01800	0.13
Minimum	1.27200	0.02
Maximum	6.33000	4.40
Total	67.25000	5.81
Average	2.16935	0.58

Oyster Creek WWTP - Monthly Flow and Rain Data

2019

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
JANUARY		
1/1/2019	1.64400	
1/2/2019	5.51800	0.01
1/3/2019	5.81900	1.70
1/4/2019	3.38500	0.18
1/5/2019	2.26100	0.01
1/6/2019	2.26500	
1/7/2019	2.10300	
1/8/2019	1.92700	
1/9/2019	2.30000	
1/10/2019	1.30000	
1/11/2019	1.57000	
1/12/2019	2.52000	0.90
1/13/2019	3.23000	
1/14/2019	2.13000	
1/15/2019	1.65000	
1/16/2019	1.79000	0.03
1/17/2019	1.88000	0.10
1/18/2019	1.68000	0.01
1/19/2019	2.22900	0.35
1/20/2019	2.15800	
1/21/2019	1.62400	0.01
1/22/2019	1.82500	
1/23/2019	2.78500	0.78
1/24/2019	4.60000	0.15
1/25/2019	2.34000	
1/26/2019	2.03000	
1/27/2019	1.82400	0.03
1/28/2019	1.65000	
1/29/2019	1.69000	0.08
1/30/2019	1.54000	
1/31/2019	1.82000	
Minimum	1.30000	0.01
Maximum	5.81900	1.70
Total	73.08700	4.34
Average	2.35765	0.31

Date	Eff Flow (MGD)	Rain (In)
FEBRUARY		
2/1/2019	4.85000	1.00
2/2/2019	2.79000	
2/3/2019	2.71000	0.45
2/4/2019	3.24000	0.03
2/5/2019	2.38000	
2/6/2019	2.24000	
2/7/2019	1.95000	
2/8/2019	1.98000	0.03
2/9/2019	1.79500	
2/10/2019	1.62300	
2/11/2019	1.84000	0.03
2/12/2019	1.79000	0.10
2/13/2019	1.69000	
2/14/2019	1.55000	
2/15/2019	1.62000	0.02
2/16/2019	1.51200	
2/17/2019	1.59100	0.01
2/18/2019	1.65000	
2/19/2019	1.35000	0.10
2/20/2019	1.54000	0.12
2/21/2019	1.47000	0.12
2/22/2019	2.06000	0.08
2/23/2019	1.74000	
2/24/2019	1.49500	
2/25/2019	1.47000	
2/26/2019	1.67900	0.10
2/27/2019	1.84200	0.14
2/28/2019	1.87120	0.06
Minimum	1.35000	0.01
Maximum	4.85000	1.00
Total	55.31820	2.39
Average	1.97565	0.16

Date	Eff Flow (MGD)	Rain (In)
MARCH		
3/1/2019	2.31900	0.25
3/2/2019	1.83540	
3/3/2019	1.73040	0.03
3/4/2019	1.73110	
3/5/2019	1.66420	
3/6/2019	1.46020	
3/7/2019	1.51900	0.06
3/8/2019	1.68300	0.04
3/9/2019	1.68100	
3/10/2019	1.61900	
3/11/2019	1.52800	
3/12/2019	1.44800	
3/13/2019	1.53750	0.02
3/14/2019	1.60400	0.10
3/15/2019	1.30010	
3/16/2019	1.34120	
3/17/2019	1.13160	0.02
3/18/2019	1.26400	
3/19/2019	1.32800	
3/20/2019	1.11290	
3/21/2019	1.12400	
3/22/2019	1.12500	
3/23/2019	1.17800	
3/24/2019	1.29900	
3/25/2019	1.37100	
3/26/2019	1.18800	
3/27/2019	1.10400	
3/28/2019	1.08300	
3/29/2019	1.22400	
3/30/2019	1.30400	
3/31/2019	1.37300	0.50
Minimum	1.08300	0.02
Maximum	2.31900	0.50
Total	44.21060	1.02
Average	1.42615	0.13

Date	Eff Flow (MGD)	Rain (In)
APRIL		
4/1/2019	1.74000	0.03
4/2/2019	1.30400	
4/3/2019	1.11610	
4/4/2019	1.38800	0.10
4/5/2019	1.51400	0.03
4/6/2019	1.32300	
4/7/2019	1.64500	
4/8/2019	3.72600	0.96
4/9/2019	1.98200	
4/10/2019	1.78800	
4/11/2019	1.74890	
4/12/2019	1.34100	
4/13/2019	1.35600	
4/14/2019	1.18100	
4/15/2019	1.16600	
4/16/2019	1.18900	
4/17/2019	1.33200	
4/18/2019	1.40100	0.32
4/19/2019	1.67000	0.20
4/20/2019	1.26300	
4/21/2019	1.21000	
4/22/2019	1.26500	
4/23/2019	1.24400	
4/24/2019	1.38200	0.05
4/25/2019	1.38800	0.12
4/26/2019	1.17000	
4/27/2019	1.23900	
4/28/2019	1.24800	
4/29/2019	1.16500	
4/30/2019	1.40000	
Minimum	1.11610	0.03
Maximum	3.72600	0.96
Total	43.88500	1.81
Average	1.46283	0.23

Oyster Creek WWTP - Monthly Flow and Rain Data

2019

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
MAY		
5/1/2019	1.36300	
5/2/2019	1.37600	
5/3/2019	1.26900	0.03
5/4/2019	1.67500	0.95
5/5/2019	1.86300	
5/6/2019	1.27800	
5/7/2019	1.31000	
5/8/2019	1.90700	0.37
5/9/2019	2.07200	0.06
5/10/2019	2.66600	4.10
5/11/2019	6.32200	0.20
5/12/2019	6.46500	0.80
5/13/2019	2.72900	
5/14/2019	1.88270	
5/15/2019	1.58540	
5/16/2019	1.52500	
5/17/2019	1.45500	
5/18/2019	1.40940	
5/19/2019	1.52060	
5/20/2019	1.57430	
5/21/2019	1.63060	
5/22/2019	1.43800	
5/23/2019	1.42950	
5/24/2019	1.49130	
5/25/2019	1.61690	
5/26/2019	1.37450	
5/27/2019	1.23200	
5/28/2019	1.39010	
5/29/2019	1.38660	0.04
5/30/2019	1.46200	
5/31/2019	1.48900	0.26
Minimum	1.23200	0.03
Maximum	6.46500	4.10
Total	59.25090	6.81
Average	1.91132	0.76

Date	Eff Flow (MGD)	Rain (In)
JUNE		
6/1/2019	1.46520	0.35
6/2/2019	1.27000	
6/3/2019	1.28300	
6/4/2019	1.13400	
6/5/2019	1.58900	1.60
6/6/2019	7.32000	2.10
6/7/2019	4.88000	0.90
6/8/2019	2.62900	
6/9/2019	1.69200	
6/10/2019	1.45500	0.23
6/11/2019	1.38560	
6/12/2019	1.33500	0.22
6/13/2019	1.50200	
6/14/2019	1.69900	
6/15/2019	1.42100	
6/16/2019	1.51600	
6/17/2019	1.72900	0.65
6/18/2019	1.82800	
6/19/2019	1.36200	
6/20/2019	1.52500	
6/21/2019	1.49500	
6/22/2019	1.60000	
6/23/2019	1.42000	
6/24/2019	1.47200	1.65
6/25/2019	4.06200	0.95
6/26/2019	7.54450	1.50
6/27/2019	2.56200	
6/28/2019	2.04860	
6/29/2019	3.77040	0.50
6/30/2019	2.28300	0.20
Minimum	1.13400	0.20
Maximum	7.54450	2.10
Total	68.27730	10.85
Average	2.27591	0.90

Date	Eff Flow (MGD)	Rain (In)
JULY		
7/1/2019	1.76040	
7/2/2019	1.61890	
7/3/2019	2.17400	0.15
7/4/2019	5.36400	0.40
7/5/2019	2.28100	
7/6/2019	1.77570	
7/7/2019	1.37670	
7/8/2019	1.71890	
7/9/2019	1.55700	
7/10/2019	1.55610	
7/11/2019	1.33490	
7/12/2019	1.61770	
7/13/2019	1.31930	
7/14/2019	1.51430	
7/15/2019	1.57120	0.13
7/16/2019	1.42030	0.06
7/17/2019	1.43074	
7/18/2019	1.30970	
7/19/2019	1.11590	
7/20/2019	1.33740	
7/21/2019	1.44500	
7/22/2019	1.45850	
7/23/2019	1.58700	
7/24/2019	1.28550	
7/25/2019	1.15000	
7/26/2019	1.23760	
7/27/2019	1.28400	
7/28/2019	1.30520	
7/29/2019	2.52540	1.40
7/30/2019	1.42389	
7/31/2019	1.37062	0.06
Minimum	1.11590	0.06
Maximum	5.36400	1.40
Total	51.22685	2.20
Average	1.65248	0.37

Date	Eff Flow (MGD)	Rain (In)
AUGUST		
8/1/2019	1.17940	
8/2/2019	1.28420	
8/3/2019	1.27000	
8/4/2019	1.47640	0.73
8/5/2019	2.70800	0.28
8/6/2019	1.62880	0.04
8/7/2019	1.75430	
8/8/2019	1.48300	
8/9/2019	1.41470	
8/10/2019	1.39710	
8/11/2019	1.30420	
8/12/2019	1.55730	
8/13/2019	1.21930	
8/14/2019	1.28060	
8/15/2019	1.24870	
8/16/2019	1.37010	0.13
8/17/2019	1.32980	0.13
8/18/2019	1.35560	
8/19/2019	1.41290	
8/20/2019	1.26990	
8/21/2019	1.34790	0.10
8/22/2019	1.25420	
8/23/2019	1.50500	0.10
8/24/2019	2.60630	2.10
8/25/2019	1.56130	
8/26/2019	1.76060	
8/27/2019	1.42140	
8/28/2019	1.38560	
8/29/2019	2.70400	0.22
8/30/2019	1.39560	
8/31/2019	1.31480	
Minimum	1.17940	0.04
Maximum	2.70800	2.10
Total	47.20100	3.83
Average	1.52261	0.43

Oyster Creek WWTP - Monthly Flow and Rain Data

2019

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
SEPTEMBER		
9/1/2019	1.37540	
9/2/2019	1.21770	
9/3/2019	1.36530	
9/4/2019	1.24810	
9/5/2019	1.19360	
9/6/2019	1.19890	
9/7/2019	1.03927	
9/8/2019	1.29278	
9/9/2019	1.29230	0.02
9/10/2019	1.14280	
9/11/2019	1.23320	0.80
9/12/2019	1.52010	0.04
9/13/2019	1.30700	0.03
9/14/2019	1.60890	0.34
9/15/2019	1.34270	0.33
9/16/2019	1.32130	0.06
9/17/2019	1.92170	0.80
9/18/2019	6.99880	7.80
9/19/2019	7.72360	1.50
9/20/2019	6.38748	2.00
9/21/2019	7.05687	0.10
9/22/2019	3.09680	
9/23/2019	2.23663	
9/24/2019	6.07646	0.80
9/25/2019	2.82386	
9/26/2019	2.05304	
9/27/2019	1.68600	
9/28/2019	2.48840	0.25
9/29/2019	2.67000	0.20
9/30/2019	1.91200	0.03
Minimum	1.03927	0.02
Maximum	7.72360	7.80
Total	75.83099	15.10
Average	2.52770	0.94

Date	Eff Flow (MGD)	Rain (In)
OCTOBER		
10/1/2019	1.64540	
10/2/2019	1.51500	
10/3/2019	1.51400	
10/4/2019	1.40540	
10/5/2019	1.35030	
10/6/2019	1.40710	
10/7/2019	1.41776	
10/8/2019	1.22640	
10/9/2019	1.27260	
10/10/2019	1.33640	
10/11/2019	1.39240	
10/12/2019	1.37730	
10/13/2019	1.22350	
10/14/2019	1.34780	0.25
10/15/2019	2.26200	0.78
10/16/2019	1.45840	
10/17/2019	6.51010	2.10
10/18/2019	3.00400	
10/19/2019	1.99000	
10/20/2019	1.81100	
10/21/2019	1.78710	1.50
10/22/2019	6.21860	0.12
10/23/2019	2.39920	
10/24/2019	1.97250	
10/25/2019	2.38645	1.50
10/26/2019	5.95343	0.04
10/27/2019	2.60600	
10/28/2019	2.10103	
10/29/2019	1.95840	0.04
10/30/2019	2.48030	0.37
10/31/2019	3.45510	1.20
Minimum	1.22350	0.04
Maximum	6.51010	2.10
Total	69.78497	7.90
Average	2.25113	0.79

Date	Eff Flow (MGD)	Rain (In)
NOVEMBER		
11/1/2019	4.05440	
11/2/2019	2.27450	
11/3/2019	1.87850	
11/4/2019	1.87180	
11/5/2019	1.95730	
11/6/2019	1.75200	
11/7/2019	1.61660	
11/8/2019	5.37240	1.70
11/9/2019	4.38430	
11/10/2019	2.46200	
11/11/2019	2.08180	
11/12/2019	2.06910	0.08
11/13/2019	1.96510	
11/14/2019	1.84470	0.09
11/15/2019	2.42000	0.19
11/16/2019	1.72260	
11/17/2019	1.69100	
11/18/2019	1.85900	
11/19/2019	1.52800	
11/20/2019	1.69600	
11/21/2019	1.66300	
11/22/2019	1.65500	0.15
11/23/2019	1.94800	0.17
11/24/2019	1.54090	
11/25/2019	1.51870	
11/26/2019	1.72800	
11/27/2019	1.79030	
11/28/2019	1.53030	
11/29/2019	1.71440	
11/30/2019	1.77000	
Minimum	1.51870	0.08
Maximum	5.37240	1.70
Total	63.35970	2.38
Average	2.11199	0.40

Date	Eff Flow (MGD)	Rain (In)
DECEMBER		
12/1/2019	1.64560	
12/2/2019	1.47430	
12/3/2019	1.61790	
12/4/2019	1.63450	
12/5/2019	1.67580	
12/6/2019	1.93250	
12/7/2019	1.74120	
12/8/2019	1.23260	
12/9/2019	1.51220	
12/10/2019	1.57700	0.70
12/11/2019	2.70370	0.07
12/12/2019	1.35940	
12/13/2019	1.54200	
12/14/2019	1.33770	
12/15/2019	1.47290	
12/16/2019	1.74694	
12/17/2019	1.18660	
12/18/2019	1.46850	
12/19/2019	1.23712	
12/20/2019	1.33560	
12/21/2019	1.50720	0.10
12/22/2019	1.48530	
12/23/2019	1.29090	
12/24/2019	1.21668	
12/25/2019	1.38046	
12/26/2019	1.26464	
12/27/2019	1.26080	
12/28/2019	1.46880	
12/29/2019	1.63070	0.20
12/30/2019	1.95550	0.24
12/31/2019	1.39600	
Minimum	1.18660	0.07
Maximum	2.70370	0.70
Total	47.29104	1.31
Average	1.52552	0.26

Oyster Creek WWTP - Monthly Flow and Rain Data

2020

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
JANUARY		
1/1/2020	1.40220	
1/2/2020	1.46620	0.11
1/3/2020	1.71440	0.10
1/4/2020	1.38340	
1/5/2020	1.28300	
1/6/2020	1.41200	
1/7/2020	1.45900	
1/8/2020	1.21980	
1/9/2020	1.47800	
1/10/2020	1.53700	
1/11/2020	2.78700	1.10
1/12/2020	2.67840	
1/13/2020	1.83220	0.10
1/14/2020	2.45590	0.15
1/15/2020	2.13150	
1/16/2020	1.85200	
1/17/2020	1.74842	0.03
1/18/2020	2.09780	0.03
1/19/2020	6.18429	1.20
1/20/2020	3.08130	
1/21/2020	2.66280	
1/22/2020	2.48220	0.02
1/23/2020	4.32800	0.78
1/24/2020	4.66400	0.03
1/25/2020	2.75130	
1/26/2020	3.56910	2.10
1/27/2020	7.09340	
1/28/2020	3.60680	
1/29/2020	6.96580	0.70
1/30/2020	3.22700	0.04
1/31/2020	2.64100	0.02
Minimum	1.21980	0.02
Maximum	7.09340	2.10
Total	85.19521	6.51
Average	2.74823	0.43

Date	Eff Flow (MGD)	Rain (In)
FEBRUARY		
2/1/2020	2.29060	0.03
2/2/2020	2.08700	
2/3/2020	2.04410	
2/4/2020	2.05840	
2/5/2020	1.82300	
2/6/2020	1.83860	
2/7/2020	1.65180	
2/8/2020	1.76500	
2/9/2020	1.76240	
2/10/2020	1.91620	
2/11/2020	1.83580	0.02
2/12/2020	1.84270	0.05
2/13/2020	1.78590	0.03
2/14/2020	1.55890	
2/15/2020	1.41940	
2/16/2020	1.68240	
2/17/2020	1.60280	
2/18/2020	1.78210	
2/19/2020	1.61120	
2/20/2020	1.51430	0.02
2/21/2020	1.52780	
2/22/2020	1.30430	
2/23/2020	1.48790	
2/24/2020	1.62362	
2/25/2020	3.75350	0.08
2/26/2020	1.70136	
2/27/2020	1.57668	
2/28/2020	1.36820	
2/29/2020	1.44540	
Minimum	1.30430	0.02
Maximum	3.75350	0.08
Total	51.66136	0.23
Average	1.78143	0.04

Date	Eff Flow (MGD)	Rain (In)
MARCH		
3/1/2020	1.55770	
3/2/2020	1.72063	
3/3/2020	1.54580	
3/4/2020	1.55598	
3/5/2020	1.56425	
3/6/2020	1.36980	
3/7/2020	1.21950	
3/8/2020	1.29090	
3/9/2020	1.58140	
3/10/2020	1.40260	
3/11/2020	1.44300	0.04
3/12/2020	1.37430	
3/13/2020	1.40330	
3/14/2020	1.44940	
3/15/2020	1.44700	
3/16/2020	1.37166	
3/17/2020	1.58060	0.12
3/18/2020	1.47610	0.10
3/19/2020	1.42122	
3/20/2020	1.39580	
3/21/2020	1.36860	
3/22/2020	2.18750	0.70
3/23/2020	1.68090	0.02
3/24/2020	1.29800	
3/25/2020	1.25330	
3/26/2020	1.30980	
3/27/2020	1.30140	
3/28/2020	1.27869	
3/29/2020	1.17910	
3/30/2020	1.31200	
3/31/2020	1.36330	
Minimum	1.17910	0.02
Maximum	2.18750	0.70
Total	44.70353	0.98
Average	1.44205	0.20

Date	Eff Flow (MGD)	Rain (In)
APRIL		
4/1/2020	1.70220	
4/2/2020	1.73190	
4/3/2020	1.78280	
4/4/2020	2.18460	0.10
4/5/2020	2.49030	0.70
4/6/2020	1.98059	0.02
4/7/2020	1.68370	0.06
4/8/2020	1.37478	
4/9/2020	1.23225	
4/10/2020	1.29630	0.09
4/11/2020	1.37400	
4/12/2020	1.31650	
4/13/2020	1.15520	
4/14/2020	0.95270	
4/15/2020	1.12724	
4/16/2020	1.05310	
4/17/2020	1.13960	
4/18/2020	1.36140	0.10
4/19/2020	1.46070	
4/20/2020	1.66090	0.60
4/21/2020	1.30700	
4/22/2020	1.12640	
4/23/2020	1.39640	
4/24/2020	1.03600	
4/25/2020	1.24090	
4/26/2020	1.12340	
4/27/2020	1.04950	
4/28/2020	1.19940	
4/29/2020	1.48990	1.54
4/30/2020	2.25490	0.20
Minimum	0.95270	0.02
Maximum	2.49030	1.54
Total	43.28456	3.41
Average	1.44282	0.38

Oyster Creek WWTP - Monthly Flow and Rain Data

2020

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
MAY		
5/1/2020	1.13140	
5/2/2020	1.18920	
5/3/2020	1.13110	
5/4/2020	1.09000	
5/5/2020	1.22000	
5/6/2020	1.46000	0.04
5/7/2020	1.24000	0.11
5/8/2020	1.24400	
5/9/2020	1.24800	0.13
5/10/2020	1.30200	
5/11/2020	0.95000	
5/12/2020	1.20000	
5/13/2020	1.34000	0.29
5/14/2020	1.21000	
5/15/2020	1.12000	0.11
5/16/2020	2.02000	1.20
5/17/2020	2.24000	
5/18/2020	1.33000	
5/19/2020	1.14000	
5/20/2020	1.22000	
5/21/2020	1.20800	
5/22/2020	1.25200	
5/23/2020	1.31200	
5/24/2020	1.14600	
5/25/2020	1.38000	0.40
5/26/2020	1.30000	0.18
5/27/2020	1.24000	
5/28/2020	1.25900	0.06
5/29/2020	3.05400	1.90
5/30/2020	1.64280	
5/31/2020	1.28870	
Minimum	0.95000	0.04
Maximum	3.05400	1.90
Total	42.10820	4.42
Average	1.35833	0.44

Date	Eff Flow (MGD)	Rain (In)
JUNE		
6/1/2020	3.66800	2.00
6/2/2020	1.73690	
6/3/2020	1.31960	
6/4/2020	1.27070	0.04
6/5/2020	1.18740	
6/6/2020	1.18671	
6/7/2020	1.25522	
6/8/2020	1.13718	
6/9/2020	1.37170	
6/10/2020	1.26530	
6/11/2020	1.01260	
6/12/2020	1.08252	
6/13/2020	1.01100	
6/14/2020	1.01100	
6/15/2020	1.14450	
6/16/2020	1.08170	
6/17/2020	1.02380	
6/18/2020	1.10090	
6/19/2020	1.23540	
6/20/2020	1.29410	0.05
6/21/2020	1.56640	0.04
6/22/2020	1.20290	1.03
6/23/2020	2.54470	1.80
6/24/2020	2.27837	2.25
6/25/2020	7.33040	1.20
6/26/2020	4.17645	1.22
6/27/2020	1.92972	
6/28/2020	1.64474	
6/29/2020	1.50425	
6/30/2020	1.45550	
Minimum	1.01100	0.04
Maximum	7.33040	2.25
Total	52.02965	9.63
Average	1.73432	1.07

Date	Eff Flow (MGD)	Rain (In)
JULY		
7/1/2020	1.36040	
7/2/2020	1.16270	
7/3/2020	1.30030	
7/4/2020	1.21154	
7/5/2020	1.26918	
7/6/2020	1.31956	
7/7/2020	1.36213	
7/8/2020	1.29759	
7/9/2020	1.31206	
7/10/2020	1.26506	
7/11/2020	1.15875	
7/12/2020	1.19517	
7/13/2020	1.21573	
7/14/2020	1.25134	
7/15/2020	1.17904	
7/16/2020	1.09316	
7/17/2020	1.13133	
7/18/2020	1.10794	0.08
7/19/2020	1.28299	
7/20/2020	1.15343	0.08
7/21/2020	1.41232	1.21
7/22/2020	1.86661	0.26
7/23/2020	1.67186	0.12
7/24/2020	0.93943	0.38
7/25/2020	1.81936	0.60
7/26/2020	3.52526	1.40
7/27/2020	2.51396	0.60
7/28/2020	2.32069	0.12
7/29/2020	3.70954	0.95
7/30/2020	1.85208	0.05
7/31/2020	1.50550	
Minimum	0.93943	0.05
Maximum	3.70954	1.40
Total	47.76601	5.85
Average	1.54084	0.49

Date	Eff Flow (MGD)	Rain (In)
AUGUST		
8/1/2020	1.50183	0.13
8/2/2020	2.86147	0.35
8/3/2020	1.63896	
8/4/2020	1.44174	
8/5/2020	1.24079	
8/6/2020	1.45016	
8/7/2020	1.59834	
8/8/2020	1.49555	
8/9/2020	1.24257	
8/10/2020	1.26704	
8/11/2020	1.58150	
8/12/2020	1.51634	
8/13/2020	1.41668	
8/14/2020	1.56475	
8/15/2020	1.17414	
8/16/2020	1.17590	
8/17/2020	1.26650	0.70
8/18/2020	1.18870	
8/19/2020	1.16273	
8/20/2020	1.08754	
8/21/2020	1.24973	
8/22/2020	1.16912	
8/23/2020	1.20348	
8/24/2020	1.27230	0.15
8/25/2020	1.13390	
8/26/2020	1.21850	0.03
8/27/2020	1.31262	
8/28/2020	1.25796	
8/29/2020	1.39693	0.25
8/30/2020	1.22174	
8/31/2020	1.45754	
Minimum	1.08754	0.03
Maximum	2.86147	0.70
Total	42.76705	1.61
Average	1.37958	0.27

Oyster Creek WWTP - Monthly Flow and Rain Data

2020

Eff Flow ≥ 5.6 MGD

Associated Rain Event

Date	Eff Flow (MGD)	Rain (In)
SEPTEMBER		
9/1/2020	1.25321	
9/2/2020	1.22563	
9/3/2020	1.14128	
9/4/2020	1.25110	
9/5/2020	1.10958	0.20
9/6/2020	1.05800	
9/7/2020	1.19024	0.17
9/8/2020	1.24709	0.78
9/9/2020	1.65202	0.56
9/10/2020	1.41553	0.70
9/11/2020	1.49461	0.66
9/12/2020	1.09192	
9/13/2020	1.12442	0.06
9/14/2020	1.24708	
9/15/2020	1.20010	
9/16/2020	1.10260	
9/17/2020	1.01570	0.03
9/18/2020	1.08410	0.01
9/19/2020	1.00500	
9/20/2020	1.03390	
9/21/2020	1.34600	0.52
9/22/2020	7.46030	5.18
9/23/2020	3.50500	0.25
9/24/2020	1.82400	
9/25/2020	1.50040	
9/26/2020	1.13830	
9/27/2020	1.08940	
9/28/2020	1.40210	
9/29/2020	1.05483	
9/30/2020	0.97508	
Minimum	0.97508	0.01
Maximum	7.46030	5.18
Total	45.23852	9.12
Average	1.50795	0.76

Date	Eff Flow (MGD)	Rain (In)
OCTOBER		
10/1/2020	1.02140	
10/2/2020	1.09808	
10/3/2020	0.98090	
10/4/2020	1.04026	
10/5/2020	0.98880	
10/6/2020	1.07194	
10/7/2020	1.08900	
10/8/2020	1.08600	
10/9/2020	1.22570	0.10
10/10/2020	1.21910	0.06
10/11/2020	1.06680	
10/12/2020	1.24100	
10/13/2020	1.13140	
10/14/2020	1.05710	
10/15/2020	1.17160	
10/16/2020	1.11586	0.10
10/17/2020	1.21033	0.15
10/18/2020	1.08629	
10/19/2020	1.19725	0.06
10/20/2020	1.20435	
10/21/2020	1.04593	
10/22/2020	1.00118	
10/23/2020	1.06620	
10/24/2020	1.05398	
10/25/2020	0.95480	
10/26/2020	1.20965	
10/27/2020	1.12112	
10/28/2020	1.22840	0.20
10/29/2020	0.88609	
10/30/2020	1.02012	
10/31/2020	1.10320	
Minimum	0.88609	0.06
Maximum	1.24100	0.20
Total	33.99383	0.67
Average	1.09658	0.11

Date	Eff Flow (MGD)	Rain (In)
NOVEMBER		
11/1/2020	0.90840	
11/2/2020	1.23540	
11/3/2020	0.94578	
11/4/2020	1.04010	
11/5/2020	1.09850	
11/6/2020	1.10111	
11/7/2020	0.96190	
11/8/2020	0.97821	
11/9/2020	1.03743	
11/10/2020	1.06140	0.02
11/11/2020	1.05590	
11/12/2020	0.91841	
11/13/2020	1.06290	
11/14/2020	1.09474	0.10
11/15/2020	1.10999	0.15
11/16/2020	0.97809	
11/17/2020	0.83106	
11/18/2020	0.83093	
11/19/2020	1.05920	
11/20/2020	1.01378	
11/21/2020	1.15346	
11/22/2020	1.06970	
11/23/2020	1.05673	
11/24/2020	1.10648	
11/25/2020	1.16212	
11/26/2020	1.11370	
11/27/2020	1.03960	
11/28/2020	1.50531	1.89
11/29/2020	5.69850	1.60
11/30/2020	1.93207	
Minimum	0.83093	0.02
Maximum	5.69850	1.89
Total	37.16090	3.76
Average	1.23870	0.75

Date	Eff Flow (MGD)	Rain (In)
DECEMBER		
12/1/2020	1.89590	
12/2/2020	1.30220	0.07
12/3/2020	1.89584	1.84
12/4/2020	2.06085	
12/5/2020	1.32424	
12/6/2020	1.38494	0.15
12/7/2020	1.28785	
12/8/2020	1.14237	
12/9/2020	1.14901	
12/10/2020	1.11204	
12/11/2020	1.21977	
12/12/2020	1.29896	0.20
12/13/2020	1.21414	
12/14/2020	5.07474	1.20
12/15/2020	2.06246	
12/16/2020	1.98622	0.14
12/17/2020	1.52966	
12/18/2020	1.25943	
12/19/2020	1.51761	0.15
12/20/2020	6.35605	1.60
12/21/2020	2.65645	
12/22/2020	2.00100	
12/23/2020	1.67713	
12/24/2020	2.28299	0.15
12/25/2020	1.62066	
12/26/2020	1.26900	
12/27/2020	1.29191	
12/28/2020	1.43683	
12/29/2020		
12/30/2020		
12/31/2020		
Minimum	1.11204	0.07
Maximum	6.35605	1.84
Total	55.60394	5.50
Average	1.98586	0.61

Appendix G

Oyster Creek Treatment Plant Over Flows



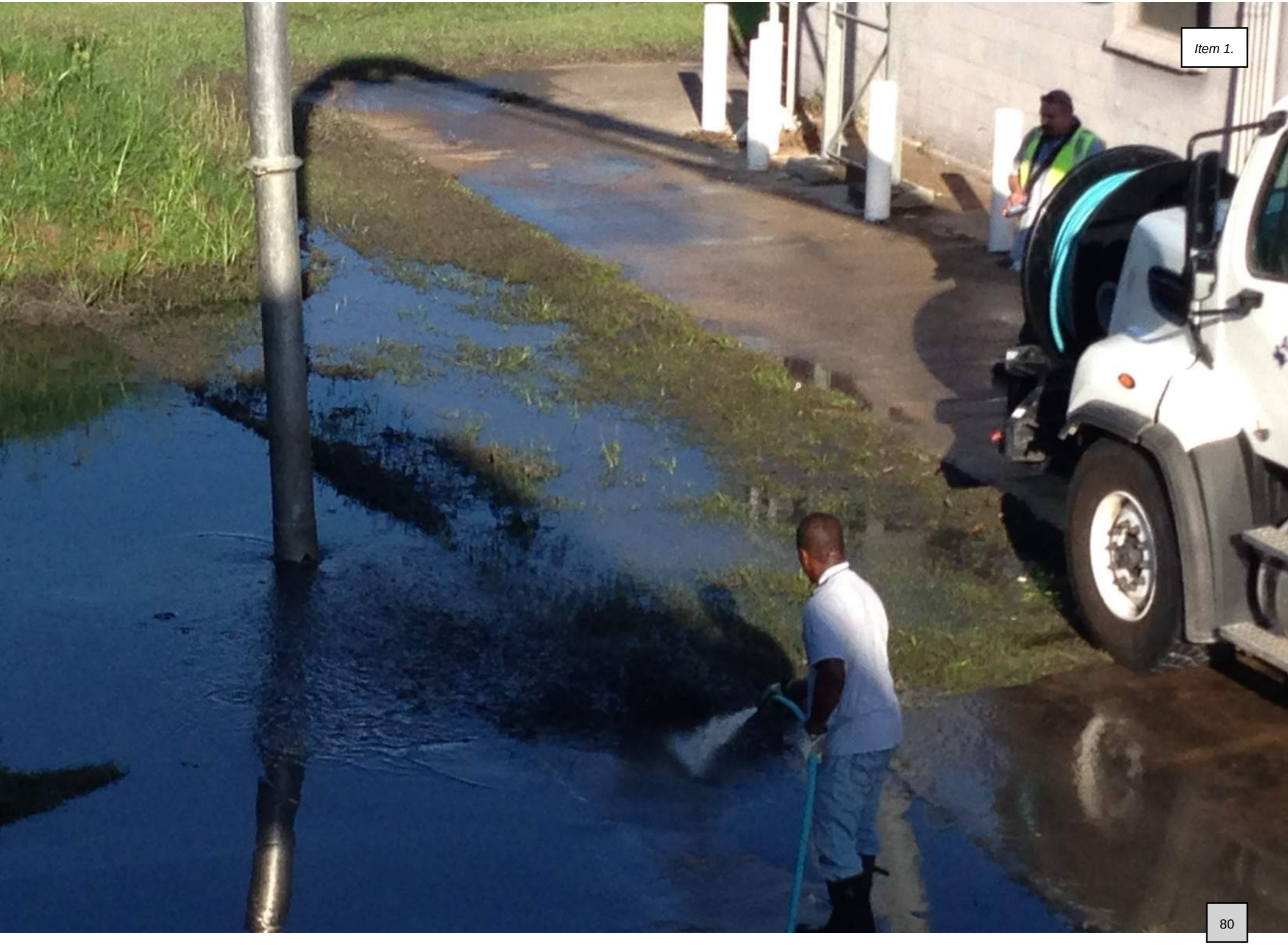
G.1 Original LS during Extreme Rain Events



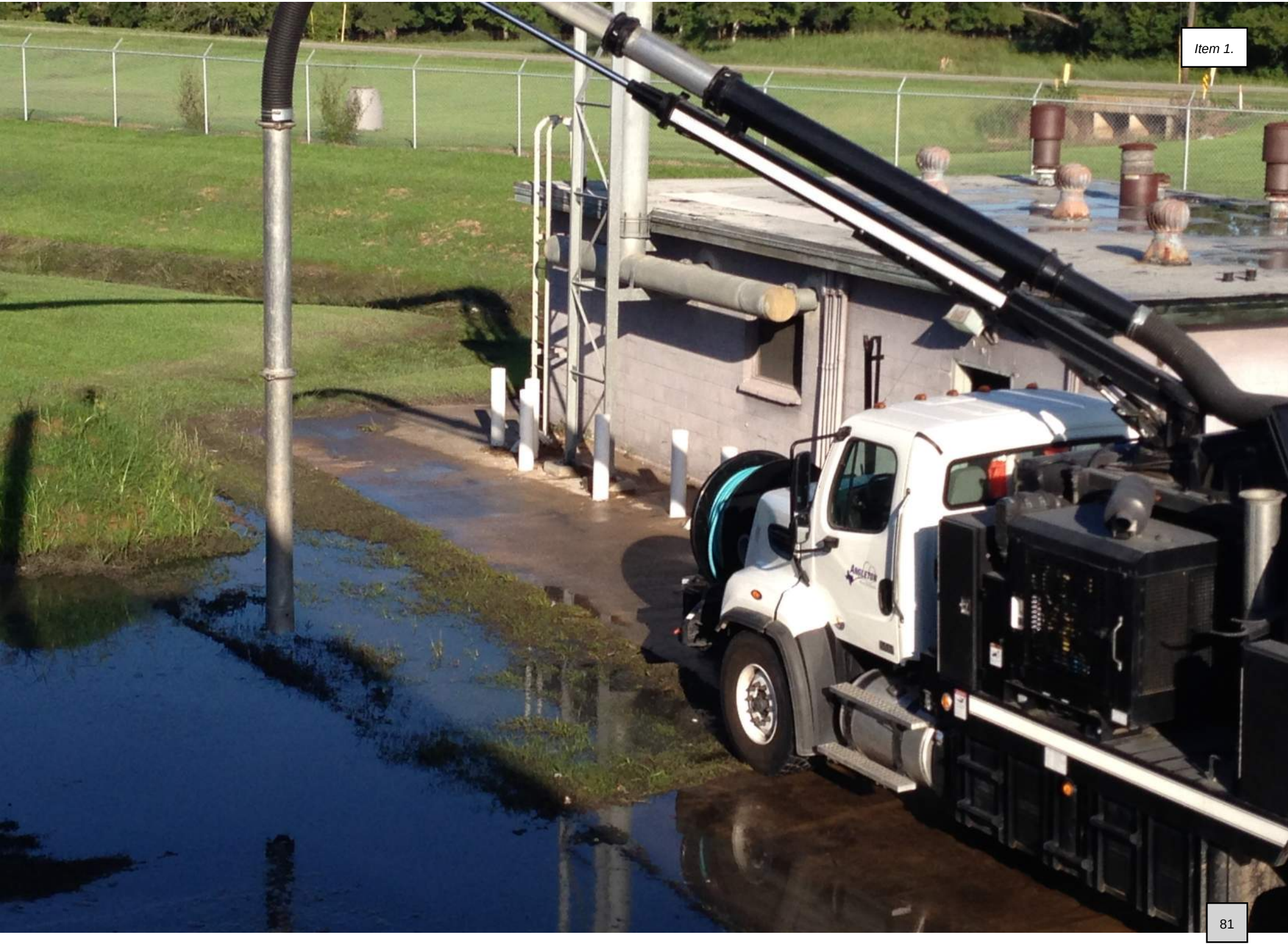
G.2 New Lift Station Extreme High Rain Events



G.3 Original LS During Extreme Rain Events



G.4 Clean Up Efforts



G.5 Clean Up Efforts

Appendix H

TCEQ Letter on Unauthorized Wastewater Discharge

Summary of Investigation Findings

OYSTER CREEK WWTP
500 SEBESTA RD
ANGLETON, BRAZORIA COUNTY, TX 77515

Investigation # 1683946
Investigation Date: 10/15/2020

Additional ID(s): TX0056316
WQ0010548004

ALLEGED VIOLATION(S) NOTED AND RESOLVED

Track No: 762535
2D TWC Chapter 26.121(a)(1)
EPA ID TX0056316, WQ0010548004
Permit Conditions (2)(d)

Alleged Violation:
Investigation: 1683946 Comment Date: 11/02/2020

Failure to prevent the unauthorized discharge of wastewater. Specifically, during the 18 months preceding the investigation, one unauthorized discharge from the collection system was reported on September 18, 2019.

Recommended Corrective Action: There shall be no unauthorized discharge of wastewater. Submit the steps taken to prevent the unauthorized discharges from the collection system.

Resolution: This alleged violation has been resolved based on documentation previously submitted to the TCEQ Houston Region Office on September 20, 2019, which indicated the steps taken to prevent the recurrence of unauthorized discharges from the collection system.

AREA OF CONCERN

Track No: 765846
30 TAC Chapter 305.125(11)(C)
EPA ID TX0056316, WQ0010548004
Permit Conditions (C)vi

Alleged Violation:
Investigation: 1683946 Comment Date: 12/11/2020

The facility failed to maintain documentation as required. Specifically, during the Comprehensive Compliance Investigation, it was noted that the reduced pressure Principle Backflow Prevention Assembly (RPBA) test and certification form on March 19, 2020 did not include the results of the test analysis.

Recommended Corrective Action: It is the responsibility of the Regulated Entity to ensure that the backflow prevention devices are tested annually, documented properly, and records of such retained for TCEQ inspections.

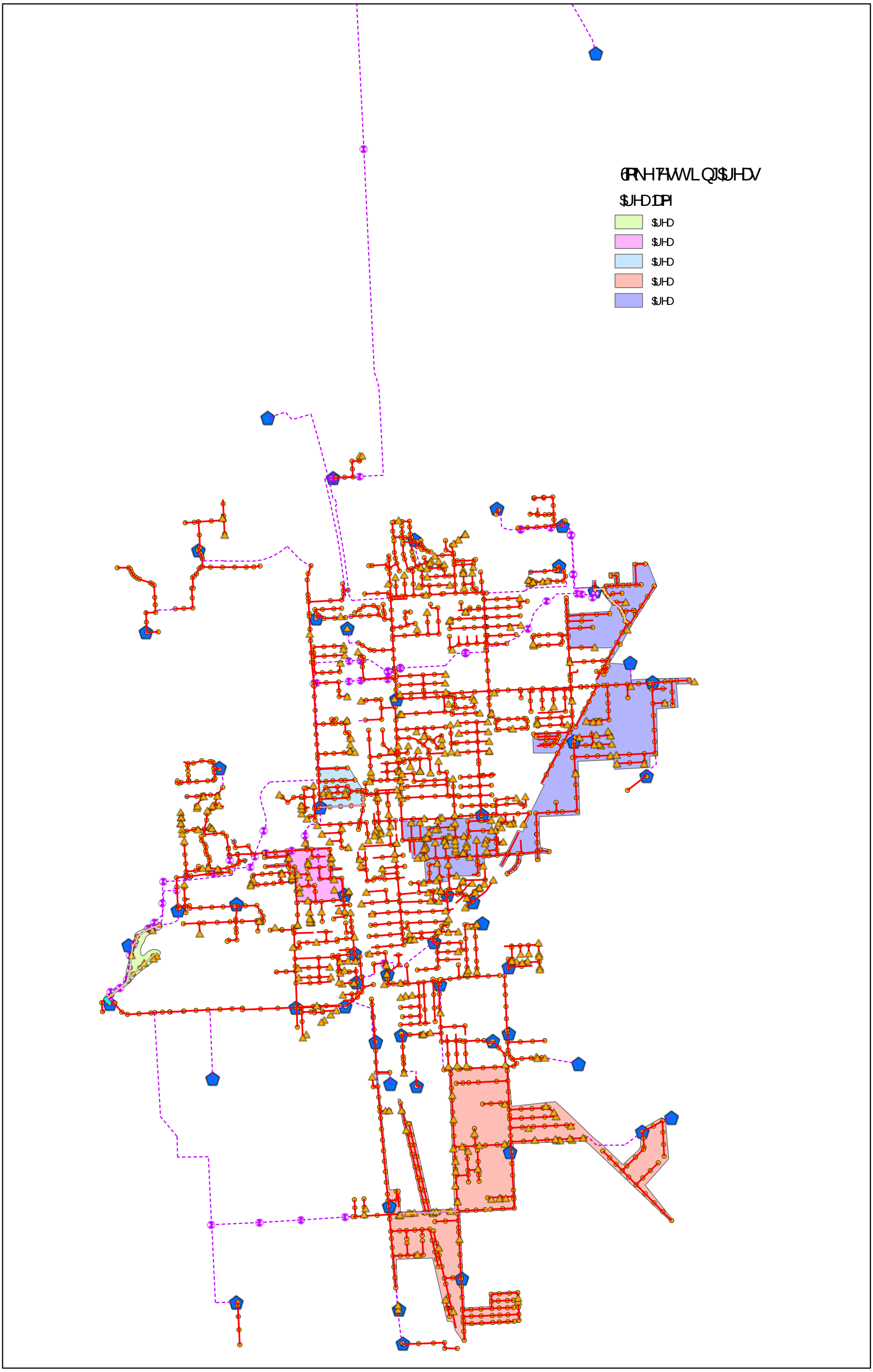
Resolution: This alleged violation has been resolved as an area of concern based on documentation submitted to the TCEQ Houston Region Office on November 16, 2020, which indicated that the reduced pressure Principle Backflow Prevention Assembly (RPBA) was re-tested and certified on November 13, 2020.

ADDITIONAL ISSUES

Description **Additional Comments**

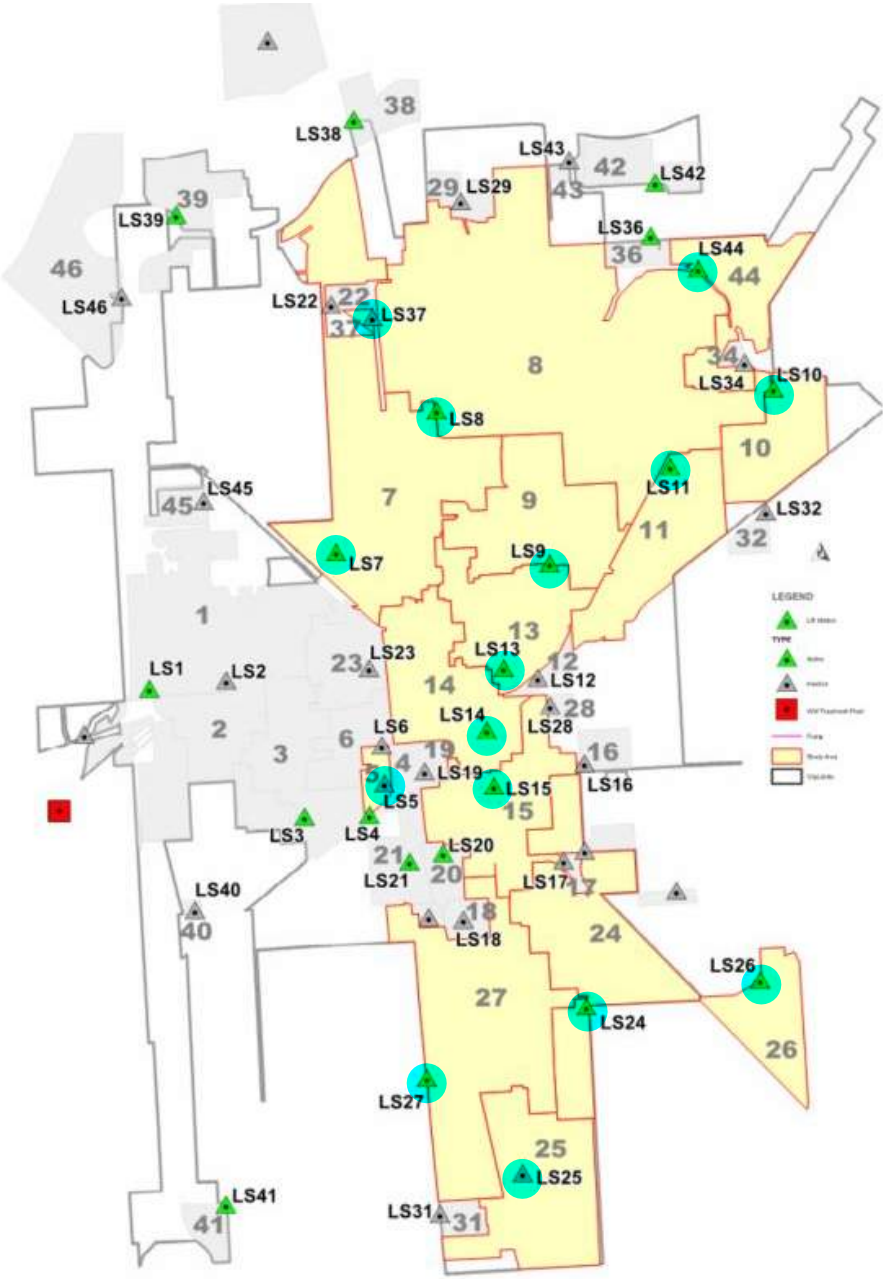
Appendix I

Identified SSES Areas


6RNHTAWWL QJ$JHDV
$JHD1DPH
$JHD
$JHD
$JHD
$JHD
$JHD

Appendix J

Identified 15 Lift Stations



Lift Stations:

- LS-5
- LS-7
- LS-8
- LS-9
- LS-10
- LS-11
- LS-13
- LS-14
- LS-15
- LS-24
- LS-25
- LS-26
- LS-27
- LS-37
- LS-44

Appendix K

Scope and Fee of Lift Station Assessment

PROJECT BACKGROUND

The City of Angleton has a wastewater collection system that includes 41 wastewater lift stations which assist in the conveyance of wastewater to the Oyster Creek Wastewater Treatment Plant. These lift stations are of varying ages, designs, and conditions. The City has requested a proposal from HDR to perform a condition assessment on fifteen (15) identified City lift stations. The purpose of this assessment is to assess the existing condition of the existing lift stations, recommend required improvements, prioritized lift station maintenance projects, and include anticipated capital costs for budgeting purposes.

The following are the identified Lift Station included in this assessment:

1. Lift Station - 5
2. Lift Station - 7
3. Lift Station - 8
4. Lift Station - 9
5. Lift Station - 10
6. Lift Station - 11
7. Lift Station - 13
8. Lift Station - 14
9. Lift Station - 15
10. Lift Station - 24
11. Lift Station - 25
12. Lift Station - 26
13. Lift Station - 27
14. Lift Station - 37
15. Lift Station - 44

SCOPE OF WORK

Item 1 – Information Gathering

HDR will conduct a meeting with City operations personnel to gather all existing lift station information for the project including, but not limited to, the following:

- Information including manufacturer and model, installation dates, and pump curves
- Review of as built drawings
- Maintenance history
- Flow projections that will impact lift station capacity

We will also discuss the City's required level of service. This may include any specific requirements for redundancy, backup power, emergency connections, and future growth projections.

Item 2 – Desktop Review

HDR will review the collected information and determine its compliance with TCEQ requirements for lift stations (Chapters 217.59 to 217.67). This will include topics such as:

- Lift Station Site Requirements
- Wet Well and Dry Well Design
- Lift Station Pumps
- Lift Station Pipes
- Emergency Provisions for Lift Stations
- Force Main Design: our review will be limited to the portion that is visible at the lift station.

This will maximize efforts to identify compliance prior to Task 3 – Field Investigation. Any further field information required will be identified for collection in Task 3.

Item 3 – Field Investigation

HDR will assess the condition of each lift station using the Rapid Condition Approach. Each site will be assessed in three areas:

Performance: Each site will be rated on a scale of 1 to 5 on its performance in relation to the required level of service. This will include such items as **flow rates**, redundancy, and compliance with TCEQ regulations.

Reliability: Each site will be rated on a scale of 1 to 5 on its maintenance history. This will include corrective maintenance issues, as well as consistency with industry standard preventative maintenance tasks.

Condition: Each site will be rated on a scale of 1 to 5 on the condition of its assets in four key areas: Structural, Electrical, Mechanical, and Instrumentation/Control.

Data will be collected using the Survey123 software platform, which is installed on HDR's iPads. Sufficient photos will be taken to effectively convey site information on the final report.

Item 4 – Assessment Scoring and Improvement Prioritization

HDR will meet with the City to develop a Criticality Score of 1 to 5 for each lift station. While all lift stations are critical, the Criticality Score will be a subjective rating of the station's importance to the overall wastewater system.

HDR will combine the Performance, Reliability, Condition, and Criticality scores to develop a prioritized list of lift stations that should receive improvements. We will develop the anticipated cost of recommended improvements at each station.

Item 5 – Operational Improvement Recommendations

HDR will develop a list of recommended operational improvements that can be implemented at the lift stations. The recommendations will include items specific to each lift station, as well as those that can be implemented for all lift stations.

DELIVERABLES

HDR will deliver a draft and final Assessment Report to the City. This Report will include HDR's findings, recommendations, and budgetary cost at each lift station, as well as an appendix detailing the findings at each lift station. It is estimated to take approximately Four Months to complete this assessment.

BUDGET

A budgetary Amount of $73,000 is suggested for this assessment project.

Appendix L

Oyster Creek Treatment Plant Improvements

City of Angleton

City of Angleton GIS Mapping

Connect exist. 18" dual force mains to proposed lift station

Prop. 7-ft dia. manhole w/ epoxy liner

Prop. 36" san swr

Abandon exist. 36" san swr

Abandon exist. lift station/ blower room

Location of prop. blower room

Abandon exist 24" san swr

Prop. Motor Control Center (MCC) Building

Prop. 54" san swr

Prop. lift station with epoxy liner

Prop. concrete paving point repair

Remove and Replace Exist. 36" san. sew. with 54" san. sew. and connect to Prop. lift station

Replace exist. manhole with 7-ft dia. manhole w/cementitious liner

Abandon exist 18" force mains

Abandon exist 18" force mains

Remove and replace exist. 24" san swr with 54" san swr

Connect (2) exist. 18" force mains to prop. manhole

Replace exist. manhole with 7' dia. manhole. w/cementitious liner. Reconnect force mains to prop. manhole

30" RCP

18" PVC

30" PVC

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 or 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.

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

1 " = 30 '

CDBG-MIT: Budget Justification of Retail Costs
(Former Table 2)

Cost Verification Controls must be in place to assure that construction costs are reasonable and consistent with market costs at the time and place of construction.

Applicant/Subrecipient:	City of Angleton
Site/Activity Title:	Wastewater Treatment Plant Improvements
Eligible Activity:	Flood Mitigation

Materials/Facilities/Services	$/Unit	Unit	Quantity	Construction	Acquisition	Total
Blower Building Structure 10' above natural ground (1 foot above BFE) including Roof System, Wall System, Floor System, & Foundation System, HVAC, etc.	$ 1,180,000.00	LS	1	$ 1,180,000.00	$ -	$ 1,180,000.00
Blowers Package (S - 140 HP), Local Controls, and blower piping	$ 580,000.00	LS	1	$ 580,000.00	$ -	$ 580,000.00
MCC Building 10 foot above natural ground (1 foot above BFE), Roof System, Wall System, Floor System, & Foundation System, HVAC, etc.	$ 400,000.00	LS	1	$ 400,000.00	$ -	$ 400,000.00
Electrical switch Gear and MCC Instrumentation & Controls for proposed Lift Station and Blower Room including PLC Panel, fittings, RGS Conduit, VFD/starter cables, PLC panel and I&C prep, Field Testing, PLC programing, HMI graphics and configuration, etc.	$ 750,000.00	LS	1	$ 750,000.00	$ -	$ 750,000.00
25' diameter Lift Station elevated 10' above natural ground and 24" force main including stairs, platform and rails, two valve vaults, check valves, plug valves, hatches, 12" risers, guild rails, 6 pumps (4-60 hp & 2-70 hp pumps), VFD/Starters, vents, bypass pumping, etc.	$ 5,200,000.00	LS	1	$ 5,200,000.00	$ -	$ 5,200,000.00
Remove amd Dispose Existing Sanitary Gravity Sewer	$ 26.00	LF	650	$ 16,900.00	$ -	$ 16,900.00
Remove Existing Manhole	$ 1,600.00	EA	2	$ 3,200.00	$ -	$ 3,200.00
54" Sanitary Sewer	$ 350.00	LF	650	$ 227,500.00	$ -	$ 227,500.00
36" Sanitary Sewer	$ 275.00	LF	40	$ 11,000.00	$ -	$ 11,000.00
7' Diameter Sanitary Manhole	$ 10,400.00	EA	3	$ 31,200.00	$ -	$ 31,200.00
Install 18" force main and reconnect to proposed Manhole	$ 130.00	LF	650	$ 84,500.00	$ -	$ 84,500.00
Install 24" Force Main and wet connection	$ 150.00	LF	650	$ 97,500.00	$ -	$ 97,500.00
Hedwall and eroision control for storm sewer forcemain and effluient outfall	$ 200,000.00	LS	1	$ 200,000.00	$ -	$ 200,000.00
Forcemain construction for Leeve protion	$ 120,000.00	LS	1	$ 120,000.00	$ -	$ 120,000.00
18" Check Valve	$ 6,000.00	EA	1	$ 6,000.00	$ -	$ 6,000.00
24" Check Valve	$ 8,500.00	EA	1	$ 8,500.00	$ -	$ 8,500.00
Replace Control Panels, new power feed, and replace Existing Storm Water Pumps	$ 350,000.00	LS	1	$ 350,000.00	$ -	$ 350,000.00
42" Cured In Place Liner for Effluent Discharge Pipe	$ 570.00	LF	600	$ 342,000.00	$ -	$ 342,000.00

Bypass Pumping (sanitary and Storm)	$ 225,000.00	LS	1	$ 225,000.00	$ -	$ 225,000.00
CCVT Inspection	$ 15,000.00	LS	1	$ 15,000.00	$ -	$ 15,000.00
Add a Motor Operator to the Overflow Clarifier Valve	$ 80,000.00	EA	1	$ 80,000.00	$ -	$ 80,000.00
Gout Fill Existing Abandoned Utilities	$ 275.00	CY	500	$ 137,500.00	$ -	$ 137,500.00
7" Concrete Point Repair with 12" of Cement Stabilized Sand	$ 195.00	SY	25	$ 4,875.00	$ -	$ 4,875.00
Hazardous materials survey (LBP and Asbestos) and abatement	$ 45,000.00	LS	1	$ 45,000.00	$ -	$ 45,000.00
Demolition of Existing Blower Building, Salvage Equipment, and Abandonment of Wet Wells (2)	$ 200,000.00	LS	1	$ 200,000.00	$ -	$ 200,000.00
	$ -		0	$ -	$ -	$ -
TOTAL	$ 9,373,471.00			$ 10,315,675.00	$ -	$ 10,315,675.00

1. Identify and explain the annual projected operation and maintenance costs associated with the proposed activities.

2. Identify and explain any special engineering activities.



Date:	10/23/2020
Phone Number:	713-622-9264

Signature of Registered Engineer/Architect Responsible For Budget Justification:

Appendix M

Original Wet Well Condition

Appendix M – Original Wet Well Condition



M-1. Wet Well at Original Lift Station at Oyster Creek WWTP



M-2. Wet Well at Original Lift Station at Oyster Creek WWTP



M-3. Dry Well at Original Lift Station at Oyster Creek WWTP



M-4. Dry Well at Original Lift Station at Oyster Creek WWTP

Appendix N

New Wet Well Condition

Appendix N – New Wet Well Condition



N-1. New Lift Station at Oyster Creek WWTP



N-2. New Lift Station at Oyster Creek WWTP

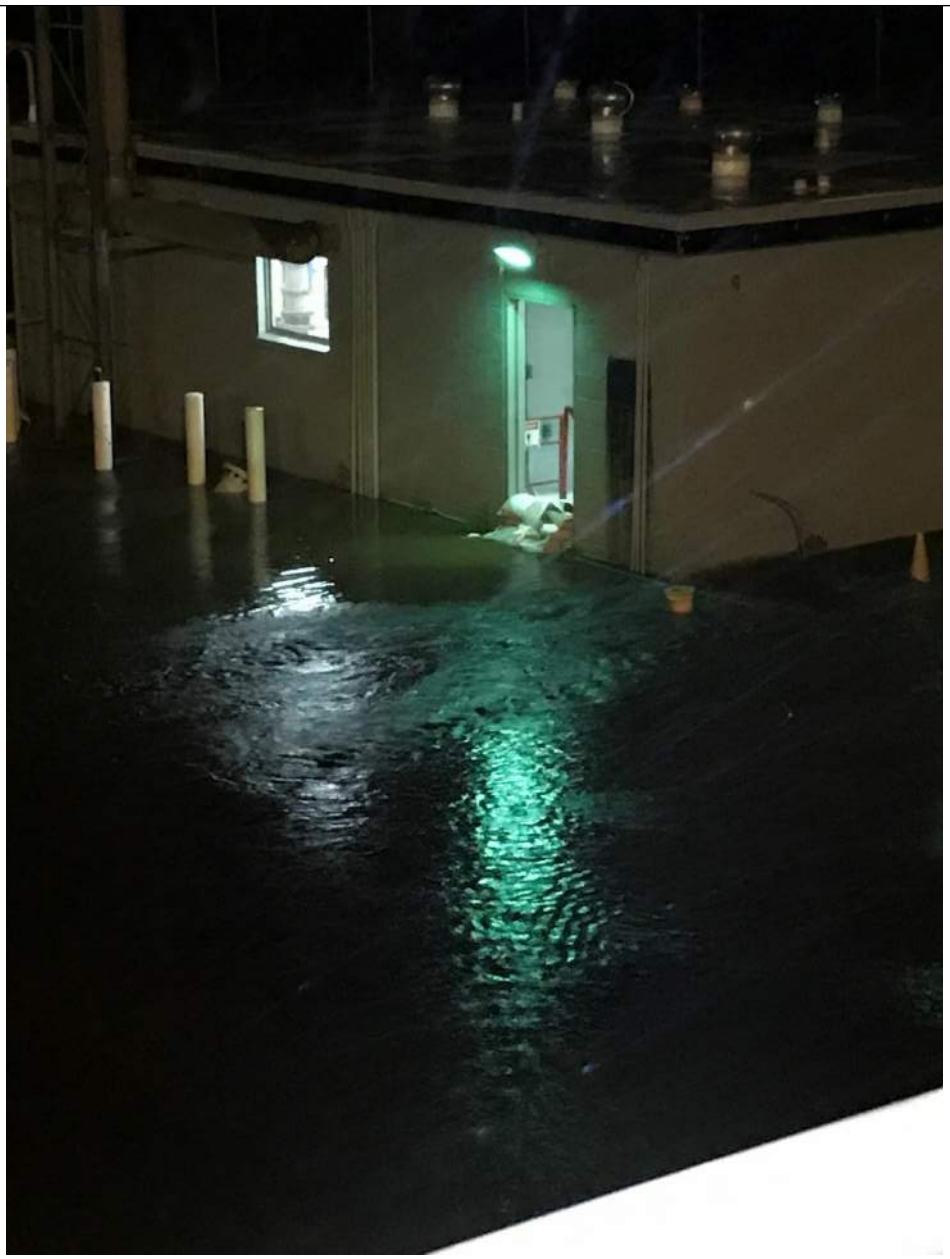


N-3. Wet Well at New Lift Station at Oyster Creek WWTP

Appendix O

Existing Blower Room

Appendix O – Existing Blower Room



O-1. Blower Room Flooding



O-2. Blower Room Where Original Pipe Corroded Out and Pumps Removed



O-3. Blower Reset to Other Side with Blower Pipe Through the Wall



O-4. Blower Pipe Through the Top of the Wall



O-5. Blower Room/Original Lift Station and New Lift Station at Ground Level Inside Treatment Plant Levee

Appendix P

Treatment Plant Site Flooding



Appendix Q

Effluent Outfall Pipe

Appendix Q – Effluent Outfall Pipe



Q-1. Effluent Line from the Wastewater Treatment Plant



Q-2. Effluent Line from the Wastewater Treatment Plant



Q-3. Hole in Effluent Line from the Wastewater Treatment Plant

Appendix R

Valve Operator to Bypass Clarifier

Appendix R – Valve Operator to Bypass Clarifier



R-1. Operator Valve to Standby Clarifier



R-2. Operator Valve to Standby Clarifier

Appendix S

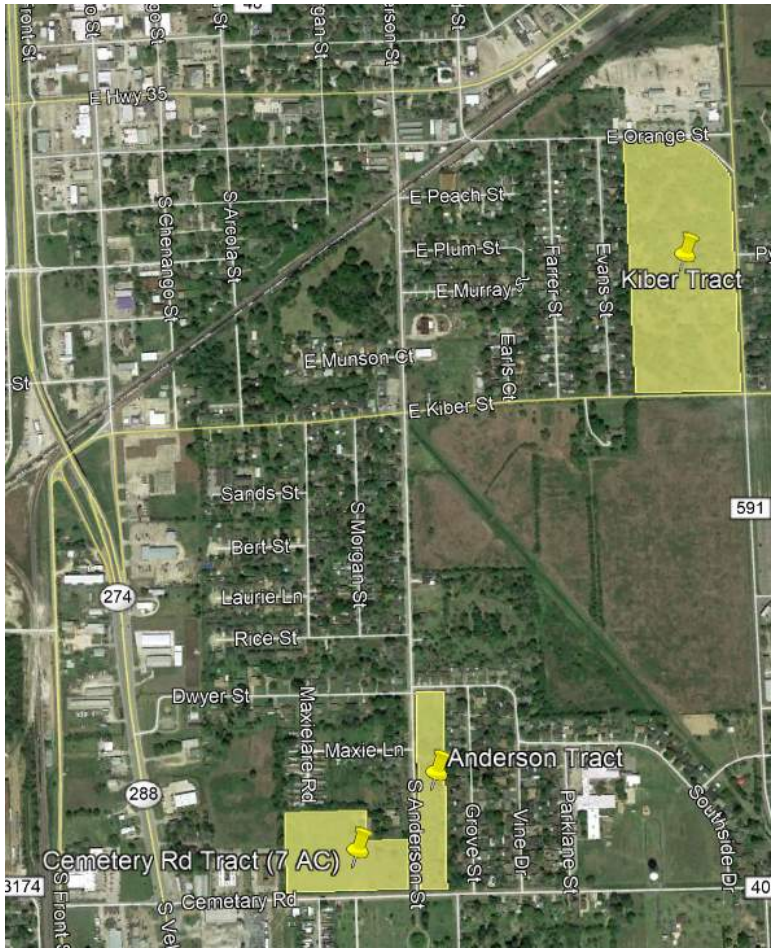
Potential Growth in the City

Angleton Developments



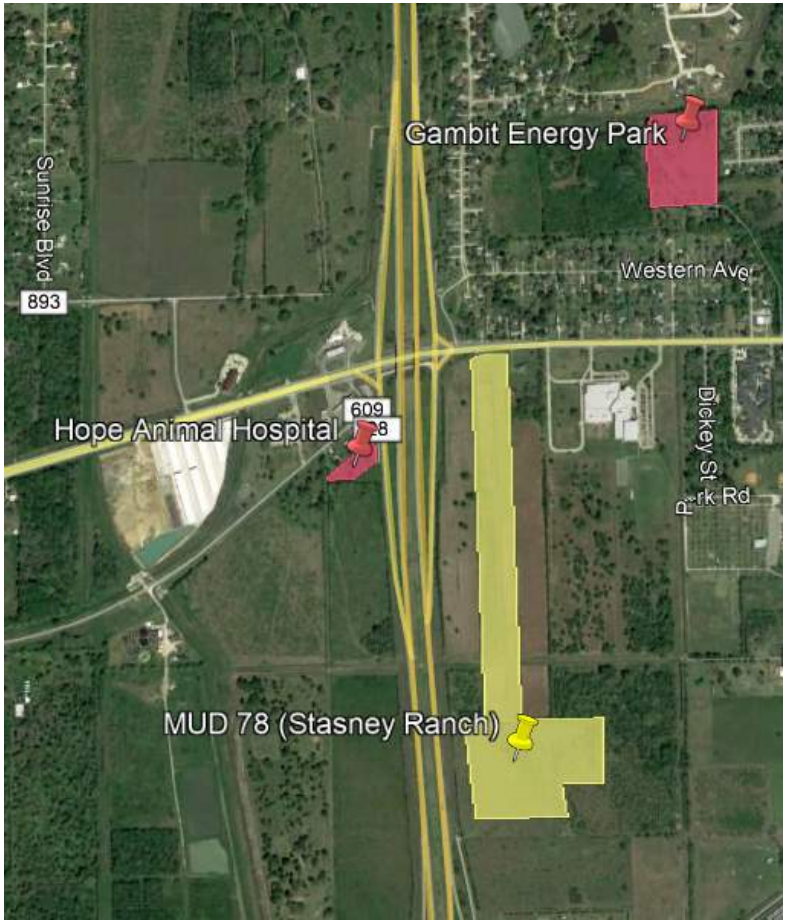


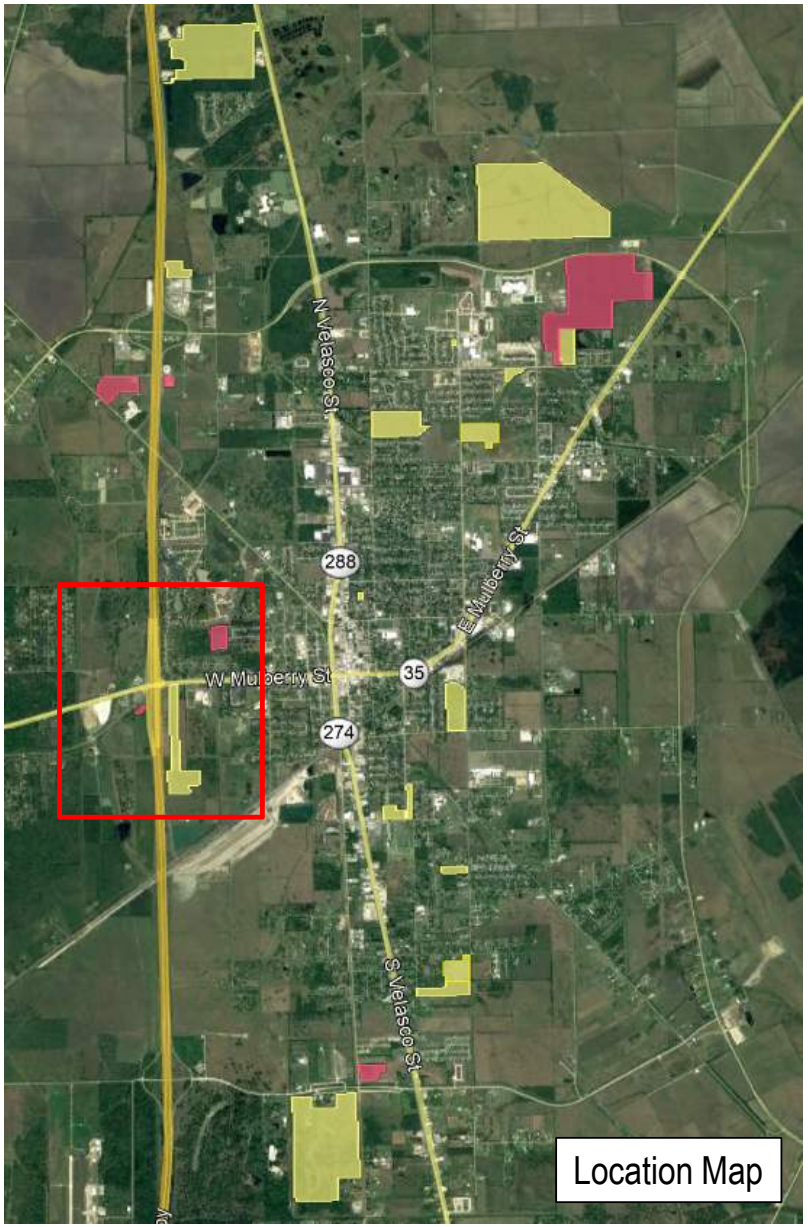
Angleton Developments



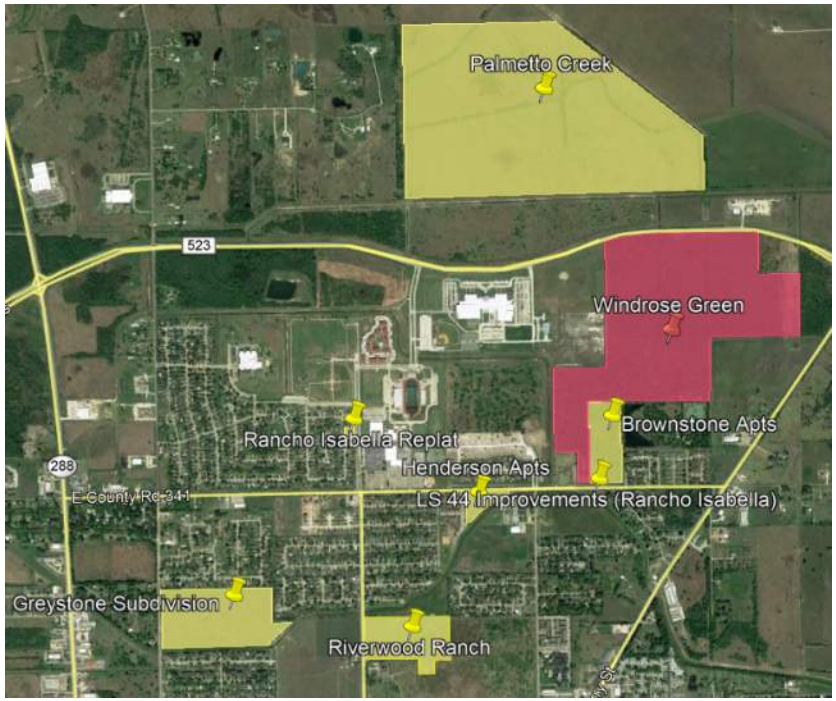


Angleton Developments





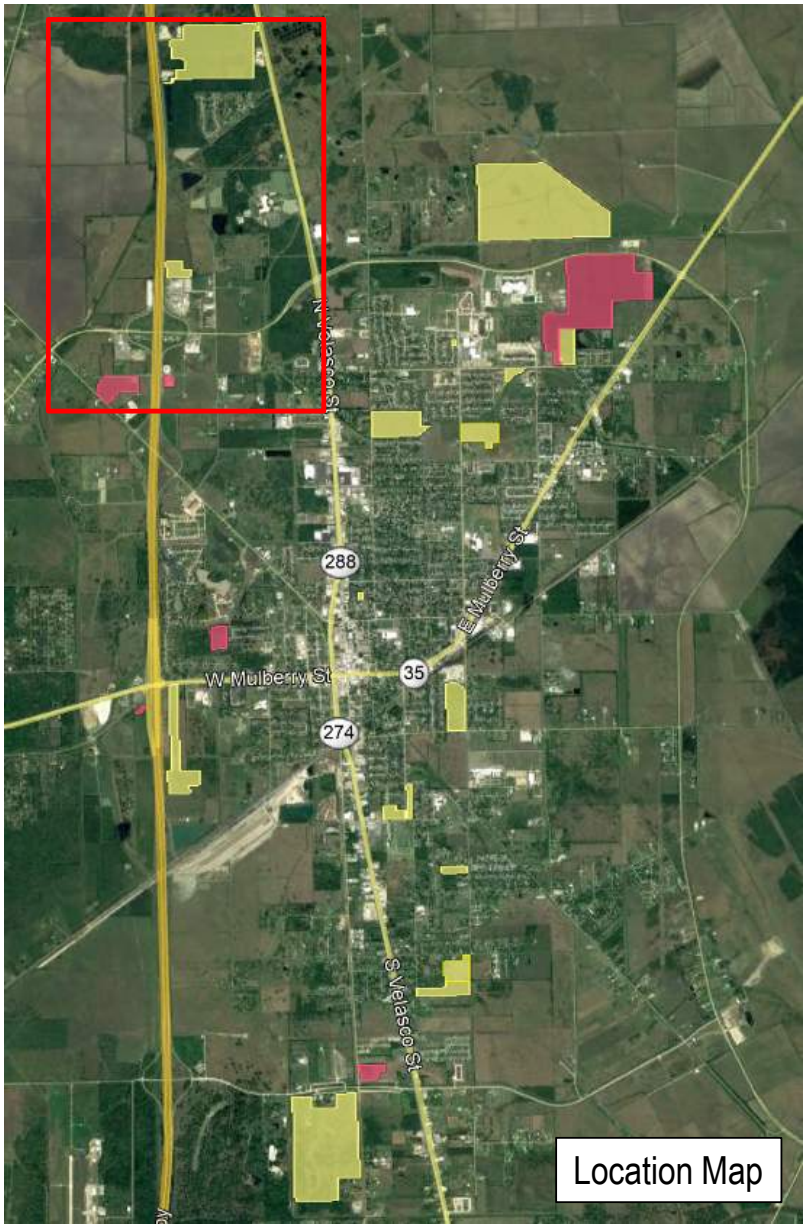
Angleton Developments





Angleton Developments





Appendix T

Correspondence with BWA

ANGLETON
Where the Heart is

October 29, 2020

Mayor Jason Perez

**John Wright,
Mayor pro-tem,
Position 3**

**Mikey Svoboda
Council Member,
Position 1**

**Travis Townsend
Council Member,
Position 2**

**Cecil Booth
Council Member,
Position 4**

**Mark Gongora
Council Member,
Position 5**

**Chris Whittaker
City Manager**

**Frances Aguilar
City Secretary**

Mr. Ronnie Woodruff
General Manager
Brazosport Water Authority
1251 FM 2004
Lake Jackson, TX 77566

RE: City of Angleton Future Water Needs

Mr. Woodruff,

I hope this letter finds you well. I apologize for the late response to your request regarding the City's future water needs, but I wanted to make sure we provided you with our best forecast for the next ten years.

The City currently has 8,737 connections which include residential, commercial, and apartments. The City is estimating a conservative growth over the next ten years of 5,000 additional connections equating to a total of 13,737 connections by 2030. Based on TCEQ's supply requirement of 0.6 gpm demand per connection, this gives us approximately 8,243 gpm (13,737 connections x 0.6 gpm) or 11.9 MGD.

The City currently has 2,850 gpm total well capacity, or 4.1 MGD, and purchases 1.8 MGD from BWA. This gives the City a total available capacity of 5.9 MGD. However, the City's largest well (Freedom Park) is out of service, dropping the City's capacity to 4.7 MGD. Therefore, the additional water supply needed over the next ten years would be 7.2 MGD (11.9 MGD - 4.7 MGD).

Attached to this letter is a data sheet the City provided HDR Engineering, Inc. in determining our future water needs.
Feel free to contact me if you have any further questions.

Sincerely,

Chris Whittaker
City of Angleton
City Manager

**121 S Velasco
Angleton, TX 77515
Phone: 979-849-4364
Fax: 979-849-5561**

www.angleton.tx.us

Wells

The City has four operational production wells and one inoperable well.

Well #8 – 450 gpm
Well #9 – 750 gpm
Well #10 – 800 gpm
Well #11 – 850 gpm
Freedom Park – 0 gpm (Out of Service)

GST

The City has three GSTs.

Henderson Plant	1,000,000 gallons
Jamison Plant	450,000 gallons
Chenango Plant	1,000,000 gallons

EST

The City has two ESTs.

N. Tinsley St.	500,000 gallons
E. Cemetery Rd.	500,000 gallons

1. The current amount the City purchases from BWA.
   Our contract with BWA allows for 1,800,000 MGD which equates to roughly 656 MG annually.

2. Existing # of connections.
   Below, the apartment complexes in Angleton and trailer park total approximately 1,950 units shown below.

Albion Apartments	1300 Buchta Rd	192 units
Angleton Manor Apartments	1100 Buchta Rd	128 units
Arbor Pines Villas	1094 E Mulberry	140 units
Cambridge Apartments	301 Cannan Dr	128 units
Chateau Apartments	501 N Pecan St	39 units
Country Lane Apartments	300 W Henderson Rd	80 units
Cranbrook Court Apartments	105 N Rock Island St	20 units
Henderson Apartments	201 S Kaysie St	25 units
Las Brisas Apartment Homes	105 Cemetery Rd	45 units
Lexington Square Apartments	1324 Hospital Dr	80 units

Magnolia Acres	108 Deborah Dr	66 units
Northside Manor Apartments	1745 E Henderson Rd	112 units
Northside Plaza Apartments	1753 E Henderson Rd	48 units
Summer House Apartments	4 Stadium Dr	120 units
Towne Square Apartments	1200 Hospital Dr	41 units
Westport Apartments	121 Clements Dr	152 units
Country Village Care	733 W Mulberry	136 beds
Northside Senior Citizen Complex	1749 E Henderson Rd	48 units
Angleton Mobile Home Park	2645 Shanks Rd	200 units

Apartment and Mobile Home park – 1,950
Residential – 6,108
Commercial – 653
Other – 26

Totals Current Units – 8,737

City of Angleton Future Water Needs

John

Thank you for contacting BWA on the City of Angleton's future water needs. As you stated in the letter that the City could potentially need an additional 7.2 MGD over the contracted amount of 1.8 MGD. Currently as it stands the main line that feeds the City is at Max capacity, therefore if the City called today to increase its amount over the 1.8 MGD it could not be done at this time. BWA needs to parallel its main line from the BWA plant to Henderson road to over come this bottle neck. BWA has already done the route study, to make this line happen BWA needs to sell 3.5 MGD to cover the cost of the new bond required for this project. At this volume of 3.5 MGD customers would not see an increase of the $1.30 per 1000 gallons based on current project estimates. If any time during the time line the City see's that they would not need the 3.5 MGD it could be reassigned to another BWA customer as the need comes available for other customers. Once the City starts taking water the rate would be the debt service plus the current O & M (Example $ 1.30 + 1.98 = $3.28 current rate per 1000 gal). If the City signs for the 3.5 mgd in early 2021 it would be 24-30 months before the city could start taking water over the 1.8 MGD contract amount, that puts City getting the additional water around Aug 2023. BWA would have the plant capacity to meet the City's potential needs of additional of 7.2 mgd over the next 10 years. The City can use a stair step approach to reach the desired water needs over the next 10 years by reserving capacity in advance.

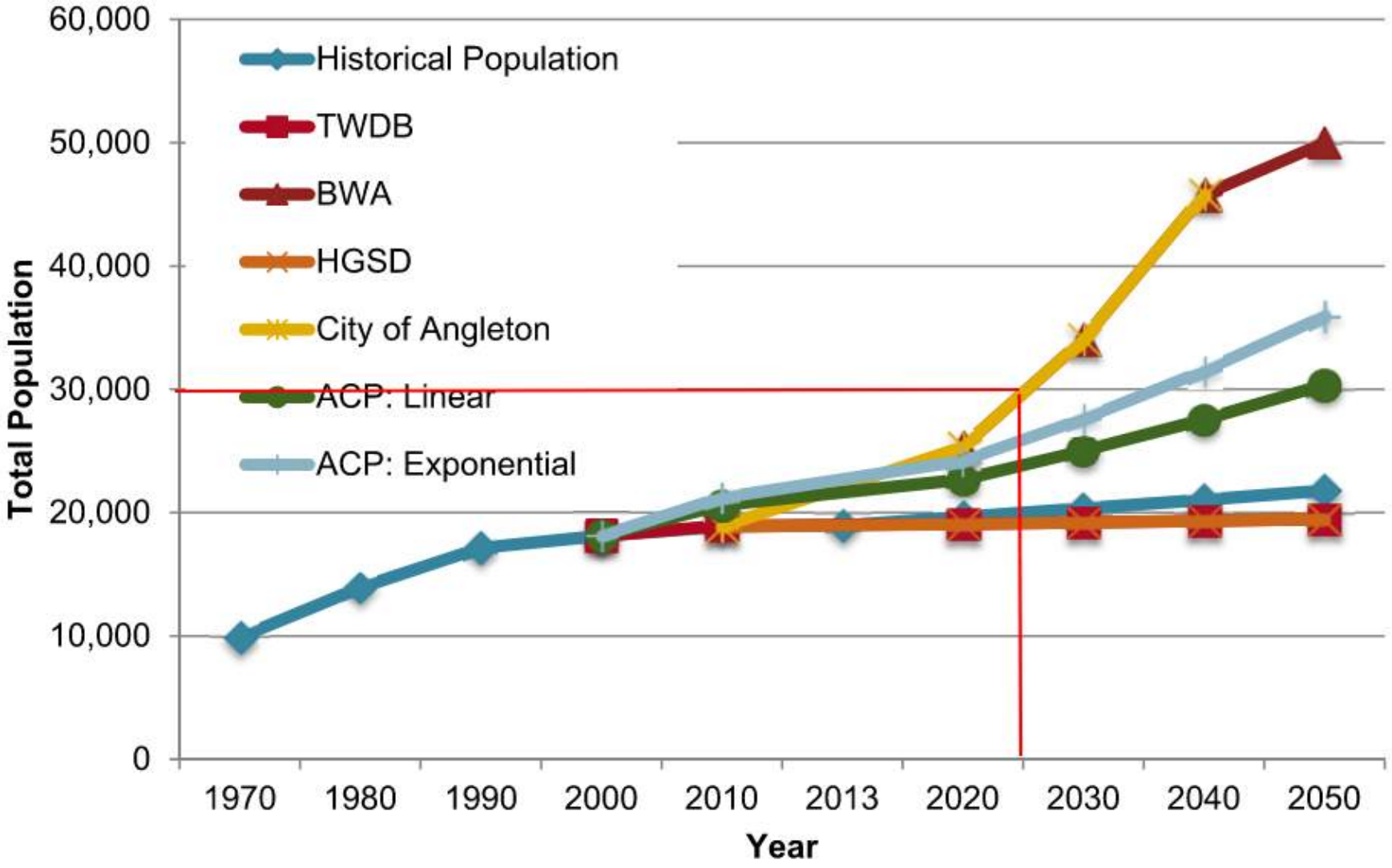
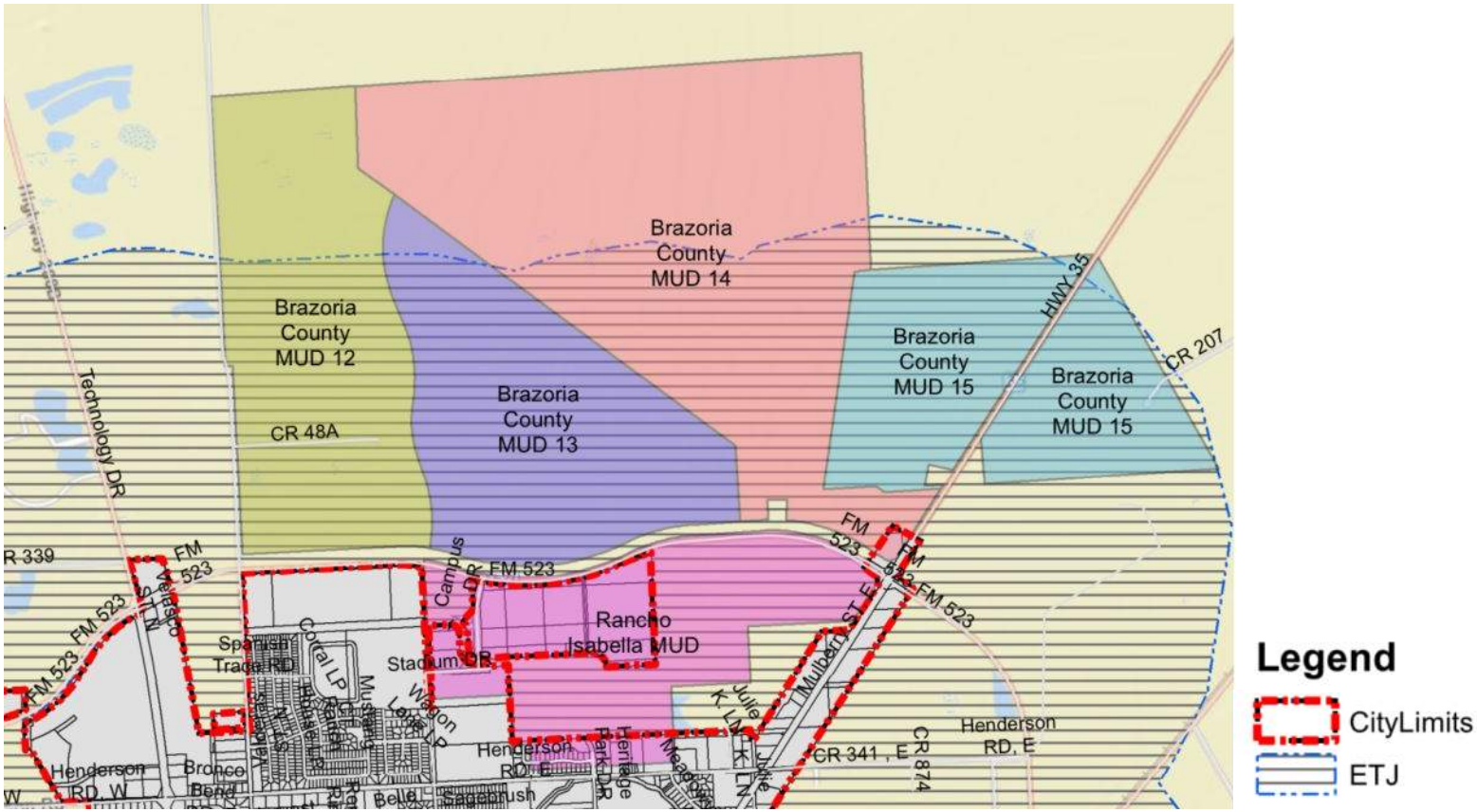


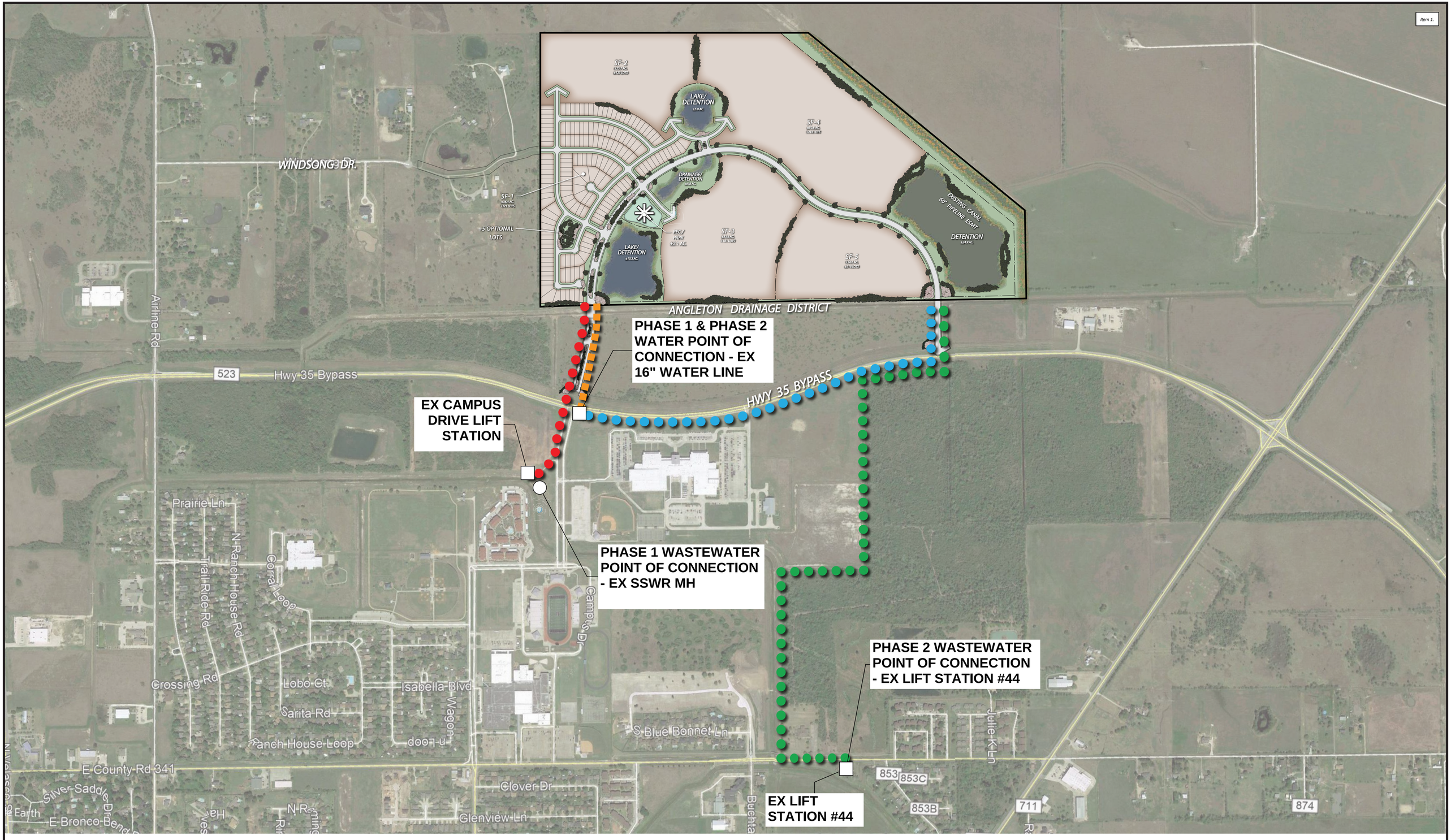
Figure 4-3 Comparison of City of Angleton Population Projections

Appendix U

Development on North Side of City

Northern MUD Map





PHASE 1
INTERNAL WATER FACILITIES

PHASE 1
OFFSITE SANITARY SEWER FACILITIES

PHASE 2
OFFSITE SANITARY SEWER FACILITIES

PHASE 2
OFFSITE WATER FACILITIES

0 200 400 600 800
1" = 400'
PLANNER: SEAN WILLIAMS
4/17/19

EXHIBIT FOR

PALMETTO CREEK

THIS DRAWING IS A PICTORIAL REPRESENTATION FOR PRESENTATION PURPOSES ONLY AND IS SUBJECT TO CHANGE WITHOUT NOTICE. FURTHER, SAID DRAWING IS A SCANNED IMAGE ONLY AND IS NOT FOR COMPUTATION OR CONSTRUCTION PURPOSES. THIS DRAWING MAY OR MAY NOT INCORPORATE INFORMATION AND/OR DATA RELATIVE TO ENGINEERING AND DRAINAGE, FLOOD PLAINS AND ENVIRONMENTAL ISSUES AND SHOULD NOT BE RELIED UPON FOR ANY PURPOSE. NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE ACTUAL DESIGN, LOCATION, AND CHARACTER OF THE FACILITATES SHOWN ON THIS MAP ARE INTENDED. ADDITIONALLY, NO WARRANTY IS MADE TO THE ACCURACY OF THE

PAPE-DAWSON ENGINEERS
HOUSTON I SAN ANTONIO I AUSTIN I FORT WORTH I DALLAS
10350 RICHMOND AVE, STE 200 I HOUSTON, TX 77042 I 713.428.2400
TBPE FIRM REGISTRATION #470 I TBPLS FIRM REGISTRATION #10

Appendix V

Northside Treatment Plant
Scope & Fee

City of Angleton North WWTP

Conceptual Design Phase

Scope of Services

Background

The City of Angleton (City) has been approached by various private development companies interested in developing residential neighborhoods north of Angleton and outside of Angleton's existing wastewater service area. To eliminate the need for multiple, smaller MUD-type wastewater treatment plants (WWTP) that Angleton would eventually own, operate and maintain, Angleton desires to understand the concepts and costs associated with the design, construction and operations of a new greenfield WWTP to serve these new growth areas. These developments are expected to include between 1,000- and 2,500-acres and would be developed and built out over the next 10 to 20 years.

Expected housing densities will be 4 homes per acre, with limited commercial properties. No industrial developments are expected. Thus, wastewater characteristics for this new WWTP are expected to be consistent with typical domestic wastewater in accordance with TCEQ requirements for planning.

The purpose of this scope is to develop concepts for the entire Build-Out Phase (Scenario) to understand physical site needs and limitations, and to develop WWTP concepts (e.g., sizing, layout, etc.) for the Initial Phase of development, including costs for the design, construction and operations of the new WWTP.

HDR Scope of Services

Task 1. Project Management

A. HDR will complete the steps necessary to establish and deliver this project within HDR's project management system,

B. HDR will prepare and provide monthly project status and invoices.

C. HDR will manage the ongoing work of the project, perform project control services, and perform internal project reviews.

D. HDR will meet either via Webex or in person (in conjunction with subsequent Task meetings) with City Project Manager, on a monthly basis to review progress, invoicing, and other project management activities.

Task 2. Project Kickoff Meeting

A. HDR will conduct a 2-hour Kickoff Meeting with City staff.

i. The Project Manager, and the Senior Project Engineer will be in attendance in

person in the City of Angleton.

ii. Additional project staff will attend by Webex.

B. During this meeting, HDR and City will:

i. Review project scope and schedule,

ii. Discuss pertinent items related to the scope, specifically related to treatment processes and preferences (refer to Tasks 4 and 5), and

iii. Tentatively schedule meetings (described in subsequent tasks).

C. HDR will prepare a meeting summary and transmit to City for review and comment within five business days after the meeting.

Task 3. Flow and Load Projections

A. HDR will meet with City staff to discuss:

i. Expected growth in the new WWTP service area to confirm housing densities, commercial development, etc.,

ii. Confirm City's ETJ,

iii. Confirm Municipal Utility Districts (MUDs) in the proposed service area,

iv. Commitments made by City to potential developers,

v. Extents of new service area for new WWTP, and

vi. Expected phasing of new developments.

B. Using TCEQ planning standard and HDR industry knowledge, HDR will develop projected flow (ADF and Peak Flows) and loading rates (e.g., BOD, TSS, ammonia-nitrogen, phosphorus, etc.,) and summarize this data in the *Flow and Load Technical Memorandum* (TM1).

C. City will provide HDR with existing influent wastewater characteristics at the City's Oyster Creek WWTP for comparison and consideration.

D. No statistical evaluation of daily or monthly flow and load data is expected since there are no existing flows in the new service area.

E. HDR will present the results of this Task and the *Flow and Load Technical Memorandum* to City staff via a 2-hour Webex.

i. City will review, provide comments and approve *Flow and Load Technical Memorandum.*

ii. HDR will respond to one round of review comments provided by City.

Task 4. WWTP Treatment Process Selection and Sizing

A. Influent Pumping

i. For this scope, HDR has assumed influent flow to the new WWTP will be via gravity sewers, designed and constructed by the developers, thus an influent pumping station will be necessary at new WWTP.

ii. HDR will develop a submersible pumping scheme for City consideration to transfer influent flows from the new service area's gravity sewer system or forcemain(s) (by developers) into the WWTP.

iii. HDR will provide the City with conceptual cost estimate for the pumping schemes.

B. Preliminary and Primary Treatment

i. Influent Screening and Grit Removal

a. HDR will present up to two available technologies for influent screening and grit removal for City consideration, along with advantages and disadvantages of each scheme.

C. Secondary Treatment

i. Biological Treatment

a. HDR will present up to three available activated sludge technologies for biological treatment for City consideration, along with advantages and disadvantages of each technology.

1. Two technologies will focus on continuous flow approaches (e.g., oxidation ditch, diffused air, etc.,).
2. One technology will focus on batch flow approaches (e.g., sequential batch reactor).
3. Membrane treatment technologies analyses and considerations are not included in this scope of services.
4. Nutrient removal (e.g., stringent Phosphorus limits) are not expected for this WWTP and are therefore not included in this scope of services.

D. Tertiary Treatment

i. HDR will present up to two effluent filtration and two disinfection systems for City consideration, along with advantages and disadvantages of each technology.

a. Filtration technology is expected to be limited to media (cloth) systems (e.g., disc filters or linear diamond-shaped filters).

b. Disinfection system consideration is expected to consist of a UV disinfection system or a liquid/chemical disinfection system.

E. Effluent Pumping

i. Given the topography of the area north of Angleton, expected WWTP sites will likely be exposed to flooding and inundation preventing, at times, gravity discharge from the process. Therefore, HDR expects effluent pumping to be necessary during flood event to prevent overflows in the new WWTP.

ii. HDR will develop two effluent pumping schemes: 1) submersible, and 2) vertical turbine for City considerations to discharge final effluent into the receiving

stream.

iii. HDR will provide the City with conceptual cost estimates for both pumping schemes, along with advantages and disadvantages of each scheme.

F. Solids Conveyance, Dewatering and Storage

i. HDR will present up to two available sludge (e.g., secondary waste activated sludge) conveyance systems for City consideration, along with advantages and disadvantages of each technology. These will be presented in a 2-hour Webex workshop with City staff.

ii. HDR will present up to two available sludge dewatering systems for City consideration, along with advantages and disadvantages of each technology. HDR will present up to two available sludge storage systems for City consideration, along with advantages and disadvantages of each technology.

G. Initial Flow Scheme

i. Since design and construction of the new WWTP will be concurrent with the development that produces new wastewater, base wastewater flows will be necessary to aid the startup and commissioning of the new WWTP.

ii. HDR will examine methods to redirect some fraction of existing flows from existing Lift Station (LS) 44 from Oyster Creek to the new WWTP.

iii. The following options will be considered in this subtask:

a. A valved-branch forcemain will be constructed from the existing forcemain to the new WWTP, assuming the existing pump station can convey sufficient flow, or

b. A new smaller lift station (LS 44a) will be constructed near LS 44 to convey a portion of existing flows directly to the new WWTP, through a new forcemain.

H. Electrical Power

i. Based on the selected technologies in the prior subtasks, and the power demands, HDR will develop a list of expected connected electrical loads.

ii. Using the expected connected electrical loads, HDR will provide recommendations for backup power.

iii. HDR will coordinate with the local Electrical Utility, along with the City and HDR process engineers; to understand the utility standards, power requirements, starting requirements for larger loads, factors of safety, reliability of power feed, and if available from Utility: timing and costs to extend suitable power to the proposed project site(s).

I. WWTP Controls

i. HDR will develop a conceptual supervisory control and data acquisition (SCADA) system architecture drawing for plant operation that is consistent with prior SCADA strategies developed by HDR and employed by City.

ii. This task will also determine the general type of field instrumentation and level of automation desired for plant automation and automatic operation of desired process loops.

iii. Plant SCADA will be based on:

a. Programmable Logic Controllers (PLCs) manufactured by Rockwell Automation.

b. Cellular modem capable of cellular communication using Verizon 4G LTE wireless. The City has an existing contract with Verizon wireless and the plant will be added to that existing contract during construction. This will enable the plant to be connected to the City's existing VTScada HMI which is located at the Public Works Building and in the Police Department HQ. A VTScada thin client terminal (workstation) will be provided at the WWTP for local controls.

c. VTScada client workstation capable of performing day-to-day SCADA tasks at the plant such as starting and stopping equipment, setpoint changes, alarming and report generation.

J. WWTP Treatment Process Selection and Sizing Workshop

i. HDR will conduct a 6-hour workshop with City to review the equipment discussed in the prior Subtasks A – G.

K. Equipment Site Visits

i. HDR will attend up to 2 site visits of similar equipment with the City. These site visits are meant for City staff to see various technologies and discuss with City peers the advantages and disadvantages of owning and operating this equipment

a. Each site visit will be to facilities in the Greater Houston area and will be limited to an 8-hour day trip.

L. WWTP Treatment Process Selection and Sizing Technical Memorandum

i. Following the Equipment Site Visits and the WWTP Treatment Process Selection and Sizing Workshop, City will select preferred treatment systems to incorporate into final conceptual design.

ii. The findings of the prior Subtasks A – I will be summarized and presented in the *WWTP Treatment Process Selection and Sizing Technical Memorandum* (TM2).

iii. Also included in TM2 will be:

a. Process Flow Diagrams (liquids and solids)

b. Preliminary site layout of selected unit processes

Task 5. Civil/Site Elements and Considerations

A. Preliminary GIS Siting Evaluation – To support a phased site suitability evaluation, HDR will utilize Geographical Information Systems (GIS) to analyze potential existing infrastructure and environmental constraints. This initial evaluation will be the first

phase of the siting evaluation based on publicly available database that requires minimal processing for use in a GIS database spatial model. A weighted evaluation matrix and buffer zone will be developed for each category and / or feature type, which will result in a constraint heat map for an approximately 10,000-acre study area generally to the north of Angleton. The map will use color visualization ranging from green (least constrained) to red (most constrained). HDR will conduct the analysis using the following datasets, if available:

i. Existing high voltage transmission lines
ii. Existing petro-chemical pipelines
iii. Department of Energy easements
iv. Public roadways and railroads
v. Landfills
vi. Existing platted subdivisions and public (federal, state, and local) parklands
vii. Critical habitat mapping of federally listed threatened and endangered species designated by the USFWS
viii. U.S. Environmental Protection Agency Superfund and hazmat shapefile datasets
ix. FEMA 100-year floodplain GIS datasets
x. National Wetland Inventory (NWI) mapping
xi. National Hydrography Mapping (HGM) flowlines
xii. Texas Parks & Wildlife Department (TPWD) vegetation community mapping to differentiate native woodlands / prairie from previously disturbed land (e.g., crops, fallow farmland, etc.)
xiii. Texas Archeological Sites Atlas database of previously identified cultural resource sites including prehistoric and historic sites and National Register of Historic Places properties.

B. Flood Hazards – Given the proximity and topography of the area, HDR will:

i. Examine available current effective FEMA special flood hazard area (SFHA) data for the site to evaluate FEMA designated flood risk,
ii. Examine existing flood mapping to determine flood zone and expected 100- and 500-year flood elevations, and
iii. Examine recent inundation records from hurricane events.

C. Potential Alternative Site Identification – To support the second phase of the site selection process, HDR will use information gathered in aforementioned subtasks 5A-5B, HDR will review potential sites for new WWTP consideration based on the combination of constraints, hazards, site hydrology, and existing infrastructure.

i. HDR will provide mapping to the city with at least five (5) potential locations in a workshop setting to the City. The sites are anticipated to be approximately 25-30 acres each.
ii. City will select up to 3 sites for further analysis.
iii. HDR will then conduct more detailed environmental and preliminary engineering assessment, permitting evaluations, topographic mapping, site

layouts, and preliminary desktop analyses for each of the 3 sites using GIS, Brazoria County property information, and publicly available data.

D. Environmental and Cultural Resource Constraints Evaluation

i. The objectives of this subtask are to collect existing data on potential environmental constraints to document regulatory coordination requirements for futures task and project phases, as well as initiate the development of a geographic information system (GIS) database for use in future on- site survey and permitting efforts.

ii. Evaluation– To help understand the potential environmental impacts and plan for future agency coordination, HDR will perform more detail GIS desktop analysis utilizing a combination of publicly available environmental data, restricted cultural resources data, and HDR generated site mapping by experienced wetland permitting specialists for:

a. Potentially hazardous sites from EPA and TCEQ databases sources, and privately managed databases meeting ASTM standards for due diligence records reviews.

b. Wells listed by the Railroad Commission of Texas

c. Permitted wetland mitigation banks.

d. Potential for presence of and preliminary mapping of waters of the U.S., including streams and wetlands, by review of aerial photography and previously acquired National Wetland Inventory (NWI) mapping;

e. Texas Archeological Sites Atlas database of previously identified cultural resource sites including prehistoric and historic sites and National Register of Historic Places properties. Evaluation will also include a review of the extent of previously conducted modern archeological surveys and review of soils and historic aerials to determine probability for potential archeological sites,

f. Environmentally sensitive areas by comparison to designated federal, state, and local preserves, natural areas, wildlife management areas, heritage ranch properties, and parklands in the vicinity

g. TPWD Natural Diversity Database (TXNDD) known occurrence records for state and federal protected wildlife and plant species,

h. Review of USFWS spatial database Information for Planning and Consultation (IPaC) to evaluate designated Critical Habitat and known habitat conditions to determine potential suitability for federally listed species.

iii. Natural Resources Conservation Service (NRCS) Web Soil Survey mapping, including hydric soils units and prime farmland.

iv. Based on evaluation of items 5.E.i-vii, HDR will develop a permitting and agency coordination summary for each site to be incorporated into a Technical Memorandum as described in subtask G below.

E. Geotechnical Impacts
   i. To obtain a general understanding of subsurface conditions and geotechnical design considerations of the selected site, HDR will perform a desktop study of publicly available geotechnical data.
   ii. Based on review of available data HDR will provide a general discussion of site physiography, topography, shrink/swell potential of on-site soils, geologic hazards, groundwater conditions, excavation potential, and potential foundation types.
   iii. Typical publicly available data to review includes:
      a. Google Earth Pro,
      b. Natural Resources Conservation Service (NRCS) soil surveys,
      c. United States Geological Survey (USGS) geologic maps,
      d. Texas Water Development Board (TWDB) water well reports,
      e. Published reports regarding growth faults and subsidence, and past geotechnical studies by HDR and/or its geotechnical staff in the area.
   iv. Field investigations are not part of this scope of work.

F. HDR will summarize the results of this Task in a *Civil/Site Elements and Considerations TM* (TM3).
   i. The TM will include a mapping summarizing the results of the GIS constraints evaluation review of aerial photography and publicly available datasets.
   ii. HDR will prepare a technical memorandum to summarize the findings of the studies and identify the anticipated regulatory permits and/or approvals required for the proposed WWT.P
   iii. HDR will present the results in workshop to City staff via a Webex.
   iv.

Task 6. TCEQ Wastewater Effluent Permitting Evaluation

A. To support the new WWTP discharge, locations of existing natural drainage and water courses will be considered, HDR will:
   i. Review aerial photos, ownership maps, and flood plain maps with respect to potential outfall locations and existing flow rates,
   ii. Evaluate possible outfall locations and collect readily available data (from public sources) on existing water quality of said possible drainage and water courses, and,
   iii. Develop anticipated permit limits to establish discharge quality requirements and estimated maximum flow rate that could be permitted at each location,

B. HDR will attend a Webex meeting with TCEQ staff to discuss the project and need for a Texas Pollutant Discharge Elimination System (TPDES) permit.
   i. Meeting minutes will be delivered electronically in PDF five working days following meeting.
   ii. Discussion will include the following:

a. Timeline of project
b. Method of disposal for treated wastewater effluent
c. Related Title 30 Texas Administrative Code (TAC), Chapter 210 water reuse authorizations that may be necessary to obtain in conjunction with TPDES permit

C. HDR will summarize the results of this Task in a *TCEQ Effluent Permitting TM* (TM5). HDR will present the results in workshop to City staff via a Webex.

Task 7. Opinion of Probable Costs

A. HDR will develop an opinion of probable construction cost (OPCC) estimate to develop the construction costs. This will be a Class 4 estimate as defined by American Association Cost Engineering International. This cost estimate will be a built-up of cost elements with productivity adjustments for the work's complexity, location, and height/depth. This will include major equipment quotations on process equipment, gates, and large valves. Scope allowances for specific scope elements may be used. Percentage of total construction may be used for electrical and instrumentation and control.

B. HDR will develop a written basis of estimate, which provides major assumptions, estimate methodology, cost basis, and excluded items. The OPCC will consist of a summary and detailed cost reports delivered in a PDF.

C. HDR will summarize the results of this Task in an *Opinion of Probable Construction Costs TM* (TM5). HDR will present the results in workshop to City staff via a Webex.

Task 8. Final Conceptual Design Report

A. The Final Conceptual Design Report (Report) will consist of the aforementioned TMs, with each TM as a chapter of the Report.

B. HDR will present the Report to City, in person, at a 2-hour meeting.
i. The Project Manager, and the Senior Project Engineer will be in attendance in person in Angleton.
ii. Additional project staff will attend by Webex and are expected to include Senior Electrical Engineer, Senior Civil Engineer, and Senior Environmental Professional

C. HDR will respond to questions posed and clarifications requested by the City within 14 days.

D. Rework or reconsideration related to decisions made by City in prior Tasks (e.g., reconsideration of technologies, etc.,) will be considerate additional services.

E. HDR will finalize the Conceptual Design Report and submit to City within 14 days of aforementioned meeting

Assumptions

1. Draft meetings minutes will be provided for each meeting and Webex within 5 business days of the meeting unless otherwise noted. HDR assumes City will provide review and comment on meeting minutes within 3 business days. HDR will issue final meeting minutes within 3 days of City's review comments unless otherwise noted.
2. Due to the expected capacity of the initial WWTP size, primary clarification is not expected to be required by TCEQ. Subsequent phases may require primary clarification. Therefore, HDR will include future phase primary clarification as part of site planning by reserving space for future phase primary clarification.
3. HDR assumes secondary clarifiers will be circular with hydraulic methods for solids removal.
4. HDR assumes influent pumping will be accomplished via submersible pump station configuration. Wet Well / Dry Pit influent pumping is not a preferred approach and therefore will not be examined.
5. City will provide available raw wastewater, and effluent water quality data from existing Oyster Creek WWTP. Any additional sampling required to adequately characterize the raw wastewater will be collected and tested by the City.
6. Rework, revisiting or reconsideration of decisions, technology, or selections made by City, in Tasks 3, 4 and 5 will be considered additional services.
7. Effluent from the new WWTP will be discharged into water courses, and schemes related to water reuse are not included in this scope of work.
8. City will provide available data related to the project's water rights, including water supply sources.
9. No architectural space programming, planning or building concepts will be developed during this phase of services.
10. Rockwell Automation PLCs are used at City of Angleton water facilities and are also planned to be installed at the WWTP and several lift stations. This will provide the City with consistency for control system hardware.
11. No odor control system planning, or design will be included in this phase of services.
12. No onsite investigations for prehistoric or historic cultural resources is included in this scope of work. If necessary, a separate scope of work and fee estimate will be provided.
13. A review of a due diligence level hazardous materials database report from a private vendor such as EDR or Geo-Search for up to three 30-acre sites is included to better understand potentials sites for new WWTP.
14. A Phase I ESA can be performed as an optional service or in a future phase once property acquisition plan is developed. A Phase I Environmental Site Assessment (ESA), in general conformance with ASTM E-1527-13, is typically considered valid for real estate transactions for 180 days, or up to 1 year if updated. Therefore, a Phase I ESA is not proposed during this project

phase.

15. An on-site delineation of potential waters of the U.S. and a delineation and proposed Jurisdictional Determination (JD) report suitable for submittal with a Clean Water Act Section 404 permit application is not included. If necessary, a separate scope of work and fee estimate will be provided.
16. No TCEQ permit applications are completed in this phase, including but not limited to:
    a. TCEQ water rights application
    b. TCEQ Texas Pollutant Discharge Elimination System (TPDES) permit application
    c. TCEQ Title 30 Texas Administrative Code, Chapter 210 water reuse authorization application
17. No funding source identification, or acquisition is included in this scope of work.
18. No additional site visits, meetings or workshops beyond those included above are anticipated.
19. HDR's Opinions of Probable Construction Cost (OPCC) are to be made on the basis of HDR's experience, qualifications, and general familiarity with the construction industry. HDR will develop OPCC to include estimated materials, equipment, labor, overhead and profit in accordance with AACE Estimate Class 4 consistent with 1% to 15% project definitions.
    a. However, because HDR has no control over the cost of labor, materials, equipment, or services furnished by others, or over contractors' methods of determining prices, or over competitive bidding or market conditions, HDR cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from opinions of probable construction cost prepared by HDR.

Schedule and Compensation

1. Project is expected to commence in January 2021 and be complete in 8 months.

AGENDA ITEM SUMMARY FORM

MEETING DATE: 1/12/2021

PREPARED BY: Frances Aguilar

AGENDA CONTENT: Discussion and possible action to approve Ordinance No. 20210112-000 fully repealing and replacing Ordinance 20201027-007 amending Division 2 of Article II of Chapter 22 of Angleton Code of Ordinances relating to the obstruction of streets, sidewalks, and parking lots caused by trees, shrubs, bushes, and other vegetative material; providing a penalty; providing for severability; providing for repeal; and providing an effective date.

AGENDA ITEM SECTION: Consent Agenda

BUDGETED AMOUNT: EnterTextHere **FUNDS REQUESTED:** EnterTextHere

FUND: EnterTextHere

EXECUTIVE SUMMARY:

This ordinance was previously approved with out Exhibit A. This new ordinance replaces the old one with Exhibit A.

RECOMMENDATION:

Staff recommend Council approve the ordinance.

ORDINANCE NO. 20210112-005

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, FULLY REPEALING AND REPLACING ORDINANCE NO. 20201027-007 AMENDING DIVISION 2 OF ARTICLE II OF CHAPTER 22 OF ANGLETON'S CODE OF ORDINANCES RELATING TO THE OBSTRUCTION OF STREETS, SIDEWALKS, AND PARKING LOTS CAUSED BY TREES, SHRUBS, BUSHES, AND OTHER VEGETATIVE MATERIAL; PROVIDING A PENALTY; PROVIDING FOR SEVERABILITY; PROVIDING FOR REPEAL; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, pursuant to Texas Local Government Code Chapter 51, the City Council has the general authority to adopt and publish an ordinance or police regulation that is for the good government, peace or order of the municipality and is necessary or proper for the carrying out a power granted by law to the municipality; and

WHEREAS, pursuant to Texas Local Government Code Chapter 217, the City Council has the general authority to identify, prevent and abate public nuisances; and

WHEREAS, Division 2 of Article II of Chapter 22 of Angleton's code of ordinances contains rules and regulations concerning streets, sidewalks, and other public places; and

WHEREAS, the City Council finds that such rules and regulations should be updated to require that all trees, shrubs, bushes, or other vegetative material be maintained so as to provide a fourteen foot clearance above all streets and parking lots; and

WHEREAS, the City Council finds that such rules and regulations should be updated to require that all sidewalks are clear of any obstructions caused by shrubs, bushes, or other vegetative material, and that trees be maintained so as to provide a nine foot clearance above all sidewalks; and

WHEREAS, the City Council finds that it is necessary to fully repeal and replace Ordinance No. 20201027-007.

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

SECTION 1. All of the facts recited in the preamble to this Ordinance are hereby found by the City Council of the City of Angleton, Texas to be true and correct and are incorporated by reference herein and expressly made a part thereof, as if copied herein verbatim.

SECTION 2. Division 2 of Article II of Chapter 22 of Angleton's Code of Ordinances be amended as follows:

"Sec. 22-31. – Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Visibility triangle shall mean a triangle sign area at all intersections, which shall include that portion of the public right-of-way and any corner lot within the adjacent right of way line and a diagonal line intersecting such right of way lines at points 35 feet back from their intersection (Point C), as shown in Exhibit A which is available for inspection in the office of the city secretary. At the intersection of all street-to-street intersections the city engineer may increase the clear site distance for "Point C" as necessary to ensure the public health, safety and welfare.

Parkway area shall mean that area between the curbline or grade line of any public street and the abutting private property line.

Sidewalk shall mean the portion of the parkway area that is improved and designed for or is ordinarily used for pedestrian travel.

Street shall mean the entire width of a way that has a part open for public use for vehicular travel.

Sec. 22-32. - Obstructions prohibited within visibility triangle.

(a) It shall be unlawful to set out, maintain or permit or cause to be set out or maintained, any tree, shrub, plant, sign or other view obstruction having a height greater than two feet as measured from the top of the curb of the adjacent streets within the visibility triangle.

(b)

This restriction shall not apply to permanent structures authorized by the zoning ordinance or to traffic-control signs and signals, street signs or utility poles placed within such area by authority of the city council.

Sec. 22-33. - View obstructions in parkway.

(a) It shall be unlawful to set out, maintain or permit or cause to be set out or maintained, any tree, shrub, plant, sign or other view obstruction within any parkway area, which exceeds two feet in height above curb level.

(b) This prohibition shall not apply to trees within the parkway area which are trimmed at all times so that no branches are less than nine feet above curb level, and which are planted no less than 25 feet apart. Such trees shall not interfere with the free passage of vehicles on the street or pedestrians on the public right-of-way or obscure the view of motor vehicle operators of any traffic-control device or street sign or otherwise create a traffic hazard.

(c) It shall be unlawful for anyone to maintain bushes, shrubs, or other vegetative material upon a public sidewalk that extend into any part of the paved surface of the public sidewalk.

Sec. 22-34. – Obstruction of Streets

It shall be unlawful for anyone to maintain trees, shrubs or other vegetative material upon a public street without keeping the same properly trimmed so as to provide a minimum clearance, measured from the ground to the lowest limb, branch or part thereof, extending over the road or right of way of not less than fourteen feet.

Sec. 22-35. – Obstruction of Parking Lots

It shall be unlawful for anyone to maintain trees, shrubs or other vegetative material upon a parking lot without keeping the same properly trimmed so as to provide a minimum clearance, measured from the surface of the parking lot to the lowest limb, branch or part thereof, extending over the surface of the parking lot of not less than fourteen feet.

Sec. 22-36 – Obstruction of Other Public Places

It shall be unlawful for anyone to maintain trees, shrubs or other vegetative material upon any public facility without keeping the same properly trimmed so as to provide a minimum clearance, measured from the ground to the lowest limb, branch or part thereof, extending over the ground of not less than nine feet.

Sec. 22-37. - Enforcement.

(a) It shall be the duty of the code enforcement officer to cause a written notice to be served upon the owner of any property upon which any of the above violations exist, or upon any owner or occupant of any property which abuts any parkway area upon which any of the above violations exist to correct such violations within ten days after service of such notice.

(b) Such notice shall be given personally or by letter addressed to such owner at his post office address, or, if the owner's address be not known and personal service not possible, by publication at least twice within ten consecutive days.

(c) If such violation is not corrected within a ten-day period, the code enforcement officer is hereby authorized and directed to cause a tree, plant, structure or obstruction constituting such violation to be trimmed, pruned or removed to eliminate such prohibited condition."

SECTION 3. 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 five hundred dollars ($500.00) unless such violation is governed by fire safety, zoning, or public health and sanitation including dumping of refuse in which case the fine amount shall not be more than two thousand dollars ($2,000.00), except where state law provides otherwise, in which case the range of fine shall be as provided by in such state law. Each occurrence of any such violation of this Ordinance shall constitute a separate offense. Each day on which any such violation of this Ordinance occurs shall constitute a separate offense.

SECTION 4. 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 one or more parts.

SECTION 5. This Ordinance shall become effective immediately and enforceable when published as required by law.

SECTION 6. It is hereby officially found and determined that the meeting at which this Ordinance was passed was open to the public, and that public notice of the time, place and purpose of said meeting was given as required by the Open Meetings Act, Texas Government Code, Chapter 551.

SECTION 7. All other Ordinances or parts of Ordinances inconsistent or in conflict herewith are, to the extent of such inconsistency or conflict, hereby repealed.

PASSED AND APPROVED THIS THE 12th DAY OF JANUARY 2021.

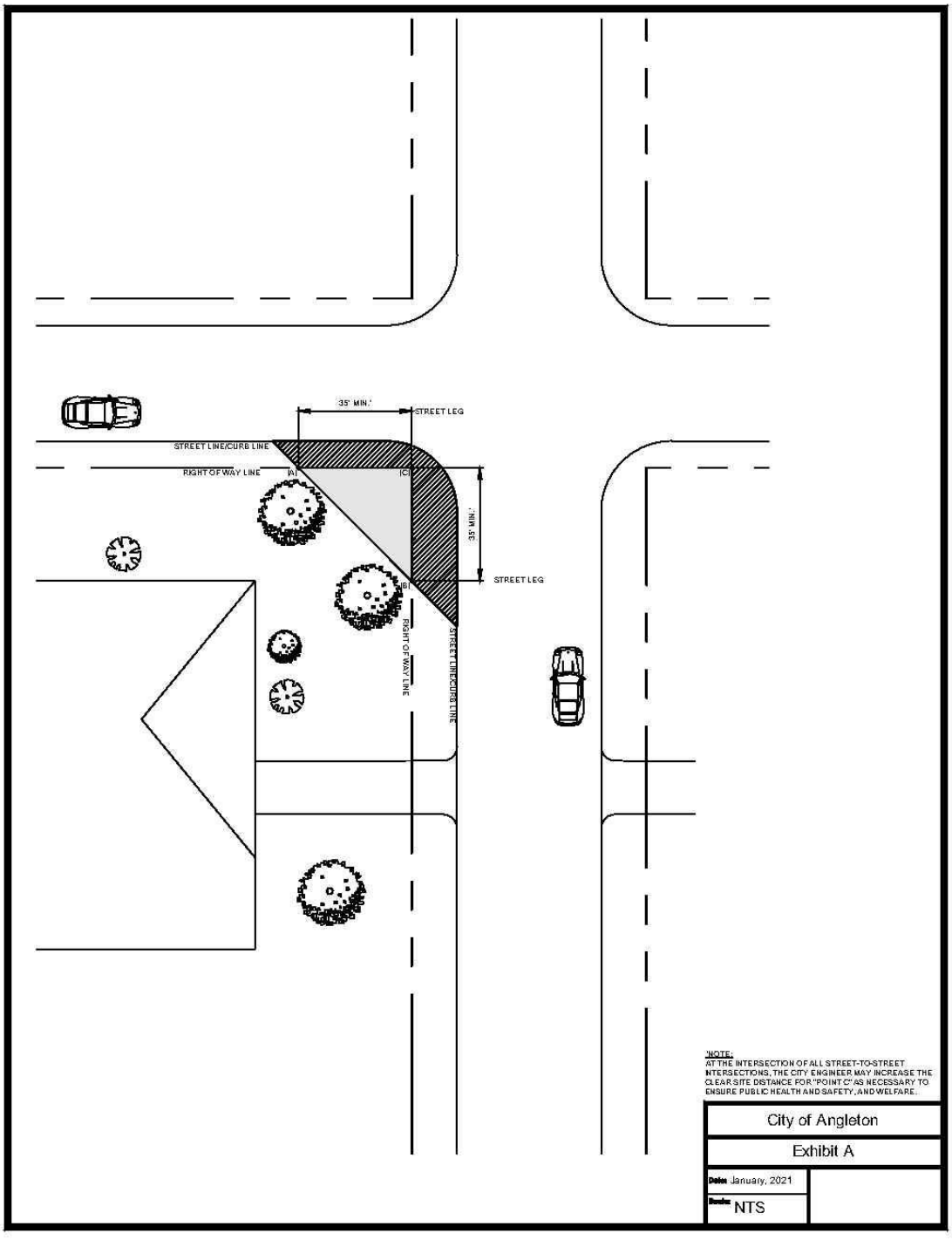
CITY OF ANGLETON, TEXAS

_____
Jason Perez
Mayor

ATTEST:

_____
Frances Aguilar, TRMC, CMC
City Secretary

EXHIBIT A


35' MIN.
STREET LEG
STREET LINE/CURB LINE
RIGHT OF WAY LINE
35' MIN.
STREET LEG
RIGHT OF WAY LINE
STREET LINE/CURB LINE
*NOTE:
AT THE INTERSECTION OF ALL STREET-TO-STREET INTERSECTIONS, THE CITY ENGINEER MAY INCREASE THE CLEAR SITE DISTANCE FOR 'POINT C' AS NECESSARY TO ENSURE PUBLIC HEALTH AND SAFETY, AND WELFARE.
City of Angleton
Exhibit A
Date January, 2021
Scale NTS

AGENDA ITEM SUMMARY FORM

MEETING DATE: 1/12/2021

PREPARED BY: Glenn LaMont

AGENDA CONTENT: Approve an Ordinance Change to adopt the FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Maps effective December 30, 2020 revising paragraph B of Section 23-54 of the City of Angleton Land Development Code to reflect this adoption. (LaMont)

AGENDA ITEM SECTION: Consent Agenda

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

FUND: N/A

EXECUTIVE SUMMARY:

New FIS and FIRM are effective December 30, 2020 after being published and available for public comment and appeal throughout 2019. There were no appeals filed. Legally enforceable floodplain measures are required to be adopted in accordance with Title 44 Code of Federal Regulations Section 60.3(d). This was originally adopted at Council in December 2020 but FEMA wanted more precise wording in the establishing paragraph. Failure to adopt the latest studies will leave businesses and residents unable to obtain Federal Flood Insurance. Planning and Zoning Commission reviewed on December 3rd, 2020.

RECCOMENDATION:

Staff and Planning and Zoning Commission recommend adopting the latest FEMA FIS and FIRM.

ORDINANCE NO. 20210112-006

AN ORDINANCE OF THE CITY OF ANGLETON, TEXAS, REPEALING ORDINANCE 20201208-007 AMENDING CHAPTER 23 LAND DEVELOPMENT CODE, ARTICLE V. ENVIRONMENTAL MANAGEMENT, DIVISION 1. FLOOD DAMAGE PREVENTION, SECTION 23-54 GENERAL PROVISIONS AND AMENDING ARTICLE IX. RULES OF CONSTRUCTION, ACRONYMS, DEFINITIONS, SECTION 23-113 DEFINITIONS OF THE CITY OF ANGLETON CODE OF ORDINANCES; PROVIDING FOR A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY; AND PROVIDING FOR REPEAL AND EFFECTIVE DATE.

WHEREAS, the City is authorized by Chapter 54 of the Texas Local Government Code to promulgate and enforce ordinances to protect health, life, and property, and authorized by the Texas Water Code §16.315 to adopt regulations to minimize flood loss; and

WHEREAS, Chapter 23 Land Development Code (LDC), Article V. Environmental Management, Division 1. Flood Damage Prevention of the City of Angleton Code of Ordinances contains provisions concerning restriction of land development that causes excessive increases in flooding, controls alteration of natural floodplains, controls filling and dredging and prevention of floodwater diversion; and

WHEREAS, Chapter 23 Land Development Code, Article IX. Rules of Construction, Acronyms, Section 23-113 Definitions contains definitions; and

WHEREAS, Chapter 23 Land Development Code, Article VII Permits and Procedures, Division 4. Public Meetings: Permits and Procedures, Section 23-99 LDC Text Amendment requires that amendments to the text of the LDC may be initiated by the Planning and Zoning Commission. The Planning & Zoning Commission after considering the public testimony received at such public hearing, if any, the Planning and Zoning Commission has recommended that the LDC be amended as set forth in this ordinance; and

WHEREAS, City Council of the City of Angleton, Texas conducted a public hearing on December 8, 2020, and January 12, 2021 and considered the Planning & Commission recommendation to amend the text of the LDC and decided to approve the amendment of Chapter 23 Land Development Code, Article V. Environmental Management, Division 1. Flood Damage Prevention of the City of Angleton Code of Ordinances and amend Article IX. Rules of Construction, Acronyms, Definitions, Section 23-113 Definitions; and

WHEREAS, Chapter 23 Land Development Code (LDC), Article V. Environmental Management, Division 1. Flood Damage Prevention, Section 23-54 General Provisions B. Basis for establishing the areas of special flood hazard; establishes flood damage prevention measures, identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) dated June 5, 1989; and,

WHEREAS, the National Flood Insurance Act of 1968 requires a community to adopt the FHBM

to continue to be eligible to participate in the National Flood Insurance Program (NFIP), and failure to participate would leave businesses and residents vulnerable in the event of flood damage, and FEMA has conducted a lengthy flood insurance study and has revised the local flood insurance rate maps, and flood boundary floodway maps ; and

WHEREAS, the City Council desires to repeal and replace Chapter 23 Land Development Code (LDC), Article V. Environmental Management, Division 1. Flood Damage Prevention, Section 23-54 General Provisions B. Basis for establishing the areas of special flood hazard; and

WHEREAS, the City Council desires to amend Chapter 23 Land Development Code (LDC), Article IX. Rules of Construction, Acronyms, Section 23-113 Definitions by adding definitions.

WHEREAS, the City Council approved and adopted Ordinance Number 20201208-007 with the same title on December 8, 2020 and City Council now desires to repeal and replace that ordinance in its entirety with this ordinance due to a scrivener's error; and

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

SECTION 1. The facts and recitations contained in the preamble of this Ordinance are hereby found and declared to be true and correct and are incorporated by reference herein and expressly made a part hereof, as if copied verbatim.

SECTION 2. Chapter 23 Land Development Code (LDC), Article V. Environmental Management, Division 1. Flood Damage Prevention, Section 23-54 General Provisions B. Basis for establishing the areas of special flood hazard is hereby repealed and replaced with the following:

Section 23-54 General Provisions
B. Basis for establishing the areas of special flood hazard. The areas of special flood hazard identified by the Federal Emergency Management Agency in the current scientific and engineering report entitled, "Flood Insurance Study (FIS) for Brazoria County, Texas and Incorporated Areas," dated effective December 30, 2020 with accompanying Flood Insurance Rate Maps and Flood Boundary-Floodway Maps (FIRM and FBFM) dated December 30, 2020 and any FEMA approved revisions or FEMA approved amendments thereto are hereby adopted by reference and declared to be a part of this ordinance.
SECTION 3. Chapter 23 Land Development Code (LDC), Article IX. Rules of Construction, Acronyms, Definitions, Section 23-113 Definitions is amended by adding the following:

HISTORIC STRUCTURE: For the purpose of establishing flood damage prevention measures, identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention as set forth in Article V Environmental Management, Division 1. Flood Damage Prevention of the City Code of Ordinances; any structure that is:

(1) Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
(2) Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the

Secretary to qualify as a registered historic district;
(3) Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
(4) Individually listed on a local inventory or historic places in communities with historic preservation programs that have been certified either:

(a) By an approved state program as determined by the Secretary of the Interior or;
(b) Directly by the Secretary of the Interior in states without approved programs.

NEW CONSTRUCTION: For the purpose of determining insurance rates, structures for which the "start of construction" commenced on or after the effective date of an initial flood insurance rate map (FIRM) or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. For floodplain management purposes, "new construction" means structures for which the "start of construction" commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.

NEW MANUFACTURED HOME PARK OR SUBDIVISION: A term used in the administration of the flood damage prevention measures identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention, as defined in 44 CFR 59.1, as amended. A manufactured home park or subdivision for which the construction of facilities for servicing the lots on which the manufactured homes are to be affixed (including at a minimum, the installation of utilities, the construction of streets, and either final site grading or the pouring of concrete pads) is completed on or after the effective date of floodplain management regulations adopted by a community.

RECREATIONAL VEHICLE: A term used in the administration of the flood damage prevention measures identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention, as defined in 44 CFR 59.1, as amended.. A vehicle which is (i) built on a single chassis; (ii) 400 square feet or less when measured at the largest horizontal projections; (iii) designed to be self-propelled or permanently towable by a light duty truck; and (iv) designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or seasonal use.

STRUCTURE: A term used in the administration of the flood damage prevention measures identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention, as defined in 44 CFR 59.1, as amended.. For floodplain management purposes, a walled and roofed building, including a gas or liquid storage tank, that is principally above ground, as well as a manufactured home.

SUBSTANTIAL DAMAGE: A term used in the administration of the flood damage prevention measures identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention, as defined in 44 CFR 59.1, as amended. Damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

SUBSTANTIAL IMPROVEMENT: A term used in the administration of the flood damage

prevention measures identified by the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Map (FHBM) and flood damage prevention. Any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before "start of construction" of the improvement. This term includes structures which have incurred "substantial damage", regardless of the actual repair work performed. The term does not, however, include either: (1) Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or (2) Any alteration of a "historic structure", provided that the alteration will not preclude the structure's continued designation as a "historic structure."

SECTION 4. A signed copy of this Ordinance shall be sent to FEMA to ensure the City of Angleton remains a participant in the National Flood Insurance Program.

SECTION 5. 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 this Ordinance occurs shall constitute a separate offense.

SECTION 6. 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 7. 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 one or more parts.

SECTION 8. This Ordinance shall be effective and in full force immediately upon its adoption.

SECTION 9. 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.

Signature page to follow

PASSED AND APPROVED THIS THE 12th DAY OF JANUARY 2021.

CITY OF ANGLETON, TEXAS

_____
Jason Perez
Mayor

ATTEST:

_____
Frances Aguilar, TRMC, CMC
City Secretary

AGENDA ITEM SUMMARY FORM

MEETING DATE: 01/12/2021

PREPARED BY: Glenn LaMont

AGENDA CONTENT: Discussion and possible action on Resolution No. 20210112-000 ratifying the disaster declaration signed by the Mayor on March 17, 2020 and consenting to its continuation through February 16, 2021; repealing conflicting ordinances and resolutions; including a severability clause; and establishing an effective date. (LaMont)

AGENDA ITEM SECTION: Consent Agenda

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

FUND: N/A

EXECUTIVE SUMMARY:

Extending the Mayor's COVID-19 Disaster Declaration for another month.

RECCOMENDATION:

Staff recommends council approve Resolution 20210112-000

RESOLUTION NO. 20210112-007

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS, RATIFYING THE DISASTER DECLARATION SIGNED BY THE MAYOR ON MARCH 17, 2020 AND CONSENTING TO ITS CONTINUATION THROUGH FEBRUARY 16, 2021; REPEALING CONFLICTING ORDINANCES AND RESOLUTIONS; INCLUDING A SEVERABILITY CLAUSE; AND ESTABLISHING AN EFFECTIVE DATE.

WHEREAS, on March 17, 2020, Mayor Jason Perez, acting in accordance with authority granted to him under Section 418.108(a) of the Texas Government Code and the City's Home Rule Charter, declared a local state of disaster for the City due to concerns related to the novel coronavirus (COVID-19);

WHEREAS, the conditions necessitating the disaster declaration continue to exist; and

WHEREAS, Section 418.108(b) of the Texas Government Code the City of Angleton, Texas on March 24, 2020, enacted Resolution No. 20200324-012, on April 21, 2020, enacted Resolution No. 20200421-002, on May 12, 2020 enacted Resolution No. 20200512-009, on June 9, 2020 enacted Resolution No. 20200609-002, on July 14, 2020 enacted Resolution No. 20200714-004, on August 11, 2020 enacted Resolution No. 20200811-004, on September 8, 2020, enacted Resolution No. 20200908-005, on October 13, 2020 enacted Resolution No. 20201013-007, on November 10, 2020 enacted Resolution No. 20201110-001, and on December 08, 2020 enacted Resolution No. 20201208-002 consenting to the renewal and continuation of the declaration of disaster;

WHEREAS, the City Council supports the disaster declaration signed by Mayor Jason Perez on March 17, 2020 and consents to its continuation.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS:

SECTION 1. The facts and recitations contained in the preamble of this Resolution are hereby found and declared to be true and correct and are incorporated by reference herein and expressly made a part hereof, as if copied verbatim.

SECTION 2. That a local state of disaster for public health is hereby declared for the City of Angleton, Texas pursuant to §418.108(a) of the Texas Government Code, and the City Council hereby ratifies the disaster declaration signed by Mayor Jason Perez on March 17, 2020, and continued on March 24, 2020, April 21, 2020, May 12, 2020, June 9, 2020, July 14, 2020, August 11, 2020, September 8, 2020, October 13, 2020, November 10, 2020, December 8, 2020 and City Council consents to its continuation through February 16, 2021, or until such time as it is terminated by the Mayor provided that the Mayor gives City Council seventy-two hours' notice of proposed termination.

SECTION 3. Pursuant to §418.108(c) of the Government Code, this declaration of a local state of disaster for public health emergency shall be given prompt and general publicity and shall be filed promptly with the City Secretary.

SECTION 4. Pursuant to §418.108(d) of the Government Code, this declaration of a local state of disaster activates the City emergency management plan.

SECTION 5. The Mayor is authorized to sign this Resolution and the City Secretary to attest.

SECTION 6. This Resolution shall become effective and be in full force and effect upon execution by the Mayor.

PASSED AND APPROVED THIS THE 12th DAY OF JANUARY 2021.

CITY OF ANGLETON, TEXAS

_____
Jason Perez
Mayor

ATTEST:

_____
Frances Aguilar, TRMC, CMC
City Secretary

AGENDA ITEM SUMMARY FORM

MEETING DATE: 1/12/2021

PREPARED BY: Megan Mainer

AGENDA CONTENT: Discussion and possible action on TxDOT traffic controller cabinet wrap art submissions and artist agreements.

AGENDA ITEM SECTION: Consent Agenda

BUDGETED AMOUNT: $5,415 **FUNDS REQUESTED:** NA

FUND: 13-500-407

EXECUTIVE SUMMARY:
In January of 2019, Staff began communicating with TxDOT regarding public art on traffic signal controller cabinets as an opportunity to support the aesthetic improvement of the state highway system within Angleton city limits. Additionally, developing a Traffic Signal Controller Cabinet Wrap Project Plan fulfills goal four, revitalize downtown, objective three, attract arts, entertainment, and specialty retail downtown, of the Strategic Plan adopted by City Council on June 26, 2018. KAB provided staff direction regarding a theme which included Texas Wildflowers, historical Texas heroes, coastal birds, and Texas butterflies, for the Request for Proposal (RFP). The RFP was advertised on August 7, 2020 and closed on September 15, 2020.

Staff received several submissions from three artists which were presented to KAB commission for review and evaluation.

The commission evaluated and ranked the submissions, staff compiled results to present to the commission on October 26, 2020. KAB recommended the top three submissions enclosed be selected for wrap installation.

TxDOT approved the top three art submission on December 3, 2020. The email correspondence is enclosed.

RECOMMENDATION:

Staff recommends City Council approve TxDOT artist submissions and authorize the City Manager to execute artist agreements enclosed.

Megan Mainer

From: James Keener <James.Keener@txdot.gov>
Sent: Thursday, December 3, 2020 8:12 AM
To: Megan Mainer; Eliza Paul
Cc: William Flores; Michael Awa; Sylvester Onwas; Daveyon Edwards; PAR Leadership Team; Chris Whittaker
Subject: [EXTERNAL] RE: Angleton TxDOT Cabinet Art

Good Morning,

We have no objections to the proposed art work submitted. Should you have any additional questions or issues please let us know. Thank you and have a fantastic day.

James Keener
Traffic Engineering
(713) 802-5185

From: Megan Mainer [mailto:mmainer@angleton.tx.us]
Sent: Wednesday, December 02, 2020 3:28 PM
To: Eliza Paul <Eliza.Paul@txdot.gov>
Cc: James Keener <James.Keener@txdot.gov>; William Flores <William.Flores@txdot.gov>; Michael Awa <Michael.Awa@txdot.gov>; Sylvester Onwas <Sylvester.Onwas@txdot.gov>; Daveyon Edwards <dedwards@angleton.tx.us>; PAR Leadership Team <PARLeadershipTeam@angleton.tx.us>; Chris Whittaker <cwhittaker@angleton.tx.us>
Subject: FW: Angleton TxDOT Cabinet Art

This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Eliza,

I am hoping you might be able to direct us to the proper contact for TxDOT cabinet box wrap art approval. I have attached our signed agreement and three artists submissions. We'd like to proceed with artists agreements and wrap installation but must receive TxDOT approval before we take our recommendations to City Council.

I appreciate any assistance you may be able to provide.

Respectfully,

Megan Mainer
Parks & Recreation Director
City of Angleton
1601 N. Valderas Street
Angleton, TX 77515
(979)849-4364, ext. 4101

www.angleton.tx.us

Please be advised that email correspondence may be subject to public release pursuant to the Texas Public Information Act.

From: Megan Mainer
Sent: Wednesday, November 18, 2020 11:29 AM
To: james.keener@txdot.gov; William.Flores@txdot.gov; Michael.Awa@txdot.gov; Sylvester Onwas <Sylvester.Onwas@txdot.gov>
Cc: Daveyon Edwards <dedwards@angleton.tx.us>; PAR Leadership Team <PARLeadershipTeam@angleton.tx.us>; Chris Whittaker <cwhittaker@angleton.tx.us>
Subject: RE: Angleton TxDOT Cabinet Art

Good Afternoon All,

We sent the email below about three weeks ago and are wanting to move forward with this project. Our agreement specifies that TxDOT must approve the designs. If you all are not who needs to approve them please direct us to the proper contact. We've also tried to make contact via phone but we've had no response. Please advise on our next steps.

Thank you,

Megan Mainer
Parks & Recreation Director
City of Angleton
1601 N. Valderas Street
Angleton, TX 77515
(979)849-4364, ext. 4101
www.angleton.tx.us

Please be advised that email correspondence may be subject to public release pursuant to the Texas Public Information Act.

From: Megan Mainer
Sent: Thursday, October 29, 2020 5:25 PM
To: james.keener@txdot.gov; William.Flores@txdot.gov; Michael.Awa@txdot.gov
Cc: Daveyon Edwards <dedwards@angleton.tx.us>
Subject: Angleton TxDOT Cabinet Art

Good Afternoon All,

We just recently decided on three pieces of art for our the TxDOT Cabinet wraps. Please see attached for your approval. Once we receive approval we'll inform the artists, execute artist agreements and being working with the contractor for installation.

Thank you,

Megan Mainer
Parks & Recreation Director
City of Angleton
1601 N. Valderas Street
Angleton, TX 77515
(979)849-4364, ext. 4101
www.angleton.tx.us



Please be advised that email correspondence may be subject to public release pursuant to the Texas Public Information Act.



CITY OF ANGLETON, TEXAS

CONTRACT FOR THE DESIGN OF A TRAFFIC SIGNAL BOX PUBLIC ART WRAP

This Contract ("Contract") is made between the City of Angleton, a Texas municipal corporation, ("City"), and Joy Chandler, ("Artist"), providing for an art wrap design for a traffic signal box for the City. The foregoing parties are herein collectively referred to as "Parties" and individually referred to as a "Party". The purpose of this agreement is to set forth the terms for selected art to be used on display in the public and in particular for wraps on traffic signal boxes. For good and valuable consideration, the sufficiency of which is acknowledged by all Parties, the Parties hereby agree as follows:

1. **Definitions.** In this contract**:**

Work means the art and design for a traffic signal box art wrap, the design to be created by the Artist and provided to the City for fabrication and installation on a traffic signal control box/cabinet in the City, as described in the proposal provided by the Artist, attached to this Contract as Exhibit A (hereinafter, the "Proposal").

Wrap means a traffic signal box art wrap displaying the Work that has been fabricated by and installed on a traffic signal control box/cabinet by the City.

2. **Effective Date.** This Contract will be effective as of the latest of the dates signed by the Parties ("Effective Date").

3. **Artist's Obligations.**

(a) Artist will create and provide to the City the Work described in this Contract, in conformity with the Proposal and the terms of this Contract.

(b) Artist will provide the Work to the City in a digital format.

(c) Artist grants an irrevocable license for the use of the Work to the City, and to make reproductions of the Work for any municipal or public purpose, including but not limited to any publicity the City deems appropriate or beneficial.

4. **City's Obligations.**

(a) The City will provide credit to the Artist and a copyright notice substantially in the following form: Copyright © [Joy Chandler] [2021]. This credit may be included on the City website next to a digital copy of the Wrap. Any reproductions of the Work made by the City will credit the Artist and contain a copyright notice.

(b) The City will fabricate and install any traffic signal box art wraps displaying the Work, and pay all costs associated with the fabrication and installation, however, the City is not obligated hereunder to use the Work on any traffic signal box art wraps.

5. Compensation.

(a) The City will pay the Artist a total one-time payment of two hundred and fifty dollars ($250.00), upon the Effective Date of this Contract.

(b) This amount, as specified in Subsection 5(a) above, is the only compensation to be paid by the City and the payment is intended to cover all of Artist's costs associated with the Work including, but not limited to, Artist's design fee, project documentation, and any other costs associated with the creation of the Work, including the irrevocable license granted to the City.

6. Final Design.

(a) Artist submitted her Proposal pursuant to a request for proposals seeking to commission traffic signal box art wraps suitable for fabrication and installation on traffic signal control boxes/cabinets in the City. The Proposal included a proposed concept or concepts for the traffic box art wrap(s) instrumental in the City selecting the Artist for this project.

(b) Upon execution of this Contract, Artist will undertake the preparation of the final concept for the Work (the "Final Design").

(c) Artist will provide the Final Design to the City for review and final approval and acceptance within three (3) business days of the Effective Date of this Contract. Within three (3) business days after receipt of the Final Design from Artist, the City will notify the Artist, in writing: (1) of the City's approval and acceptance of the Final Design; or (2) if the City requires any revisions to the Final Design in order to comply with the Proposal, or any other reasons. If agreed upon by all Parties, such revisions will become a part of the Final Design.

(d) Upon the City's approval and acceptance of the Final Design, the Final Design, and license for its use, will immediately be conveyed to the City, and is subject to any Copyright rights retained by Artist.

7. Fabrication and Installation. After approval of the Final Design, the City may fabricate and install traffic box art wraps displaying the Work in substantial conformity with the

Final Design. As part of the license granted to the City under this Contract, the City is expressly authorized to use the Work to fabricate and install an unlimited number of additional traffic box art wraps.

8. **Warranties of Title.** Artist represents and warrants that:

(a) The Work is solely the result of the artistic effort of the Artist and Artist is the sole author, as that term is used in the United States Copyright laws, of the Work. Artist further represents that it will be the sole author, as that term is used in the United States Copyright laws, of all artistic works created pursuant to this Contract, including any intermediate works created during the creation of the Work;

(b) Except as otherwise disclosed in writing to the City, the Work is unique and original and does not infringe upon any copyright or the rights of any person;

(c) The Work (or duplicate thereof) has not been accepted for use, license, or sale elsewhere;

(d) Artist has not sold, assigned, transferred, licensed, granted, encumbered, or utilized the Work or any element thereof or any copyright related thereto which may affect or impair the rights granted pursuant to this Contract;

(e) Upon payment to the Artist by, and delivery of the Work to, the City, that the title transferred to the Work is free and clear of any claims or encumbrances from any source whatsoever;

(f) All Work created or performed by the Artist under this Contract, including any intermediate works created during the creation of the Work, will be wholly with the Artist and will not infringe upon or violate the rights of any third party;

(g) Artist has not and will not grant any licenses to the Work, including but not limited to the Work and any intermediate works created during the creation of the Work, other than the exclusive license granted herein to the City, its successors, and assigns;

(h) Artist has the full power to enter into and perform this Contract and to make the grant of rights contained in this Contract, and Artist created the Work in accordance with all applicable laws, regulations, ordinances, and with all necessary care, skill, and diligence;

9. **Wrap Duration, Repair; Removal; Replacement.** A Wrap is expected to have a lifespan of five (5) to seven (7) years. A Wrap will be removed by the City after 5 to 7 years, depending on its condition, in the City's sole discretion. The City will have the right to remove, repair, or replace any Wrap, as needed, in the City's sole discretion.
10. **Wrap Maintenance.** The City will be responsible for maintenance and conservation of any Wrap, for so long as the Wrap remains in use. The City will have the right, in its sole discretion, and without Artist's input or approval, to determine the appropriate method of maintenance.
11. **Term of Contract & Survival of Obligations.** The Contract is effective as of the Effective Date and, unless terminated earlier pursuant to such provisions in the Contract, will extend until approval and acceptance of the Final Design by the City under Subsection 6(c) above, but in no event will extend beyond a period of one year. All provisions of this Contract that impose continuing obligations on the Parties, including but not limited to granting an irrevocable license to the City, warranty, indemnification, limitation of liability, and keeping addresses for notice current, shall survive the expiration or termination of this Contract.
12. **Termination.**
    (a) The City may terminate this Contract during its term at any time for any reason by giving written notice to Artist not less than three (3) business days prior to the termination date.
    (b) Termination of this Contract will not terminate the license or any other rights granted to City.

13. **Liability and Indemnity.**
    (a) ARTIST HEREBY RELEASES THE CITY AND THE CITY'S ELECTED OFFICIALS, THE RESPECTIVE OFFICERS, EMPLOYEES, AGENTS, ATTORNEYS, AND REPRESENTATIVES OF THE CITY AND ITS/THEIR SUCCESSORS AND ASSIGNS, IN BOTH THEIR INDIVIDUAL AND OFFICIAL CAPACITIES, INDIVIDUALLY AND COLLECTIVELY, (COLLECTIVELY REFERRED TO AS THE "CITY-RELATED PARTIES") FROM, AND SHALL INDEMNIFY, DEFEND, AND HOLD THE CITY-RELATED PARTIES HARMLESS AGAINST, ALL ALLEGATIONS, CLAIMS (INCLUDING WITHOUT LIMITATION CLAIMS OF PERSONAL INJURY, ENVIRONMENTAL INJURY, BODILY INJURY, SICKNESS, DISEASE, DEATH, PROPERTY

DAMAGE, CONSEQUENTIAL DAMAGES, DESTRUCTION, OR OTHER IMPAIRMENT), DEMANDS, LEGAL ACTIONS, EQUITABLE ACTIONS, COSTS (INCLUDING ALL COURT COSTS, REASONABLE ATTORNEYS' FEES, EXPERTS' FEES OR OTHER COSTS INCURRED IN CONNECTION WITH ANY MATTER RELATING TO THE TERMS OF THIS CONTRACT, OR ARE ALLEGED TO HAVE ARISEN FROM, ANY OF THE FOLLOWING:

(1) **ANY INFRINGEMENT OF PATENT, COPYRIGHT, TRADEMARK, TRADE SECRET OR OTHER PROPRIETARY RIGHT CAUSED BY ARTIST.**

14. Title. Title to the Work subject to Section 15 of this Agreement is exclusively and irrevocably licensed to the City upon the City's approval and acceptance of the Final Design.

15. Copyright Ownership.

(a) Subject to the terms of this Contract, including any covenants herein prohibiting the creation of additional works, the exclusive license granted to the City, its successors and assigns, and the tangible ownership rights of the City in the Work, Artist will have and retain all rights to the Work afforded to Artist by the Copyright Laws of the United States. Artist agrees to do and perform all acts necessary to effect and protect the copyright and renewals thereof. However, if necessary, the City, its successors, and assigns, may take reasonable steps to conserve or maintain the Work in its original form upon prior consultation with the Artist.

(b) The requirements and obligations in this Section 15 will survive termination or expiration of the Contract.

16. Covenant; License; Reproduction Rights.

(a) In view of the intention that the final Work will be unique, Artist on behalf of itself and its successors, assigns, and affiliates, covenants, warrants, and agrees that it will not knowingly aid, abet, participate in, assist, authorize, condone, or permit the making, copying, displaying, or selling of any exact duplicate, or two- or three-dimensional reproductions of the final Work, nor will the Artist grant permission to others to do so except with the written permission of the City. This covenant will survive termination or expiration of the Contract. However, nothing herein will prevent the Artist from creating future works in the Artist's manner and style of artistic expression, including works that include design elements similar to the Work, so long as such works do not replicate the exact composition of the Work.

(b) Artist grants to the City, its successors and assigns, an irrevocable, fully transferable, fully sub-licensable, exclusive license to make unlimited two- and three-dimensional reproductions of the Work for non-commercial purposes, including, but not limited to, additional Wraps, photographs and digital reproductions of the Work for inclusion in the City of Angleton's catalogues, books, brochures, website, postcards, posters, invitations, magazines, newspapers, journals, films, television programs, and other electronic, online media. The City may include information about the Work and Artist on other plaques or materials and in other information as determined by the City.

(c) All reproductions by the City will contain a credit to the Artist and a copyright notice in substantially the following form: Copyright © [Joy Chandler], [2021].

(d) Artist will use the Artist's best efforts in any public showing or résumé use of reproductions to give acknowledgment to the City in substantially the following form: "an original Work commissioned by and in the public art collection of the City of Angleton."

(e) Artist will, at Artist's expense, cause to be registered with the United States Register of Copyrights, a copyright in the Work in the Artist's name.

(f) If the City wishes to make reproductions of the Work for commercial purposes, including, but not limited to, tee shirts, post cards, and posters, the Parties will execute a separate agreement to address the terms of the license granted by the Artist and the royalty the Artist will receive, if any.

(g) Third Party Infringement. The City is not responsible for any third-party infringement of Artist's copyright and not responsible for protecting the intellectual property rights of Artist.

17. Artist's Waiver Under 17 U.S.C. §106A.

(a) Scope of Waiver. Artist's waiver applies to the Work described herein.

(b) Uses Covered. This waiver applies to the following uses: any and all applications in which either the attribution right or the integrity right may be implicated.

(c) Waiver. With respect to works enumerated in subparagraph (a) above for uses enumerated in subparagraph (b) above, Artist hereby expressly and forever waives any and all rights arising under 17 U.S.C. § 106A, and any rights arising under United States federal law, the laws of any states within the United States, or the laws of any other country that convey rights of the same nature as those conveyed under 17 U.S.C. § 106A, or any other

type of moral right.

18. Assignment and Transfer.

(a) Except as otherwise provided in this Contract**,** no Party has the right to assign this Contract without the prior written consent of the other Parties.

(b) The Work and services required of the Artist are sole and personal and will not be assigned, sublet, or transferred. Any attempt by Artist to assign any rights, duties, or obligations arising under this Contract will be void and of no effect unless prior written consent is given by the City.

The City will have the right to assign or transfer the Contract, and any and all of the City's rights and obligations under the Contract, without Artist's consent, if ownership of the Work is transferred.

19. Entire Contract. This Contract represents the entire Contract between the City and the Artist. This Contract may be amended only by written instrument signed by both parties.

20. Severability. If a court finds or rules that any part of this Contract is invalid or unlawful, the remainder of the Contract continues to be binding on the parties.

21. Waivers. A waiver of any breach of any of the provisions of this Contract will not be construed as a continuing waiver of other breaches of the same or other provisions.

22. Notices. All notices will be in writing and may be delivered by mail, in person, or by email. Mailed notice is deemed received three days after the date of deposit in the United States mail. Unless otherwise provided in this Contract, all notices will be delivered to the following addresses:

To Artist: Joy Chandler
[Address]
[Address]
Email:

To the City: Chris Whittaker
City Manager
City of Angleton
121 S Velasco
Angleton, TX 77515
Email: cwhittaker@angleton.tx.us

If any Party changes its mailing or email address it will notify the other Parties in writing of the change, as provided for in this section.

23. Law Governing and Venue. This Contract is governed by the law of the State of Texas and a lawsuit may only be prosecuted on this Contract in a court of competent jurisdiction located in or having jurisdiction in Brazoria County, Texas.

24. Compliance with Laws. Artist must comply with any federal, state, and local laws, rules, and regulations applicable to the Work and its services under this Contract.

25. Additional Contract Documents. The following documents attached to this Contract are part of this Contract:

Exhibit A. Artist's Additional Contract Documents:

A. Joy Chandler's Traffic Box Art Wrap Project Proposal (___ pages).

Exhibit B. City's Additional Contract Documents:

B. City of Angleton Request for Proposal – Traffic Box Art Wrap Project (9 pages)

[*Signature Page Follows*]

CITY OF ANGLETON, a Texas municipal corporation

_____
Jason Perez, Mayor

Date: _____

Joy Chandler
Artist

_____
By: _____, Artist

Date: _____

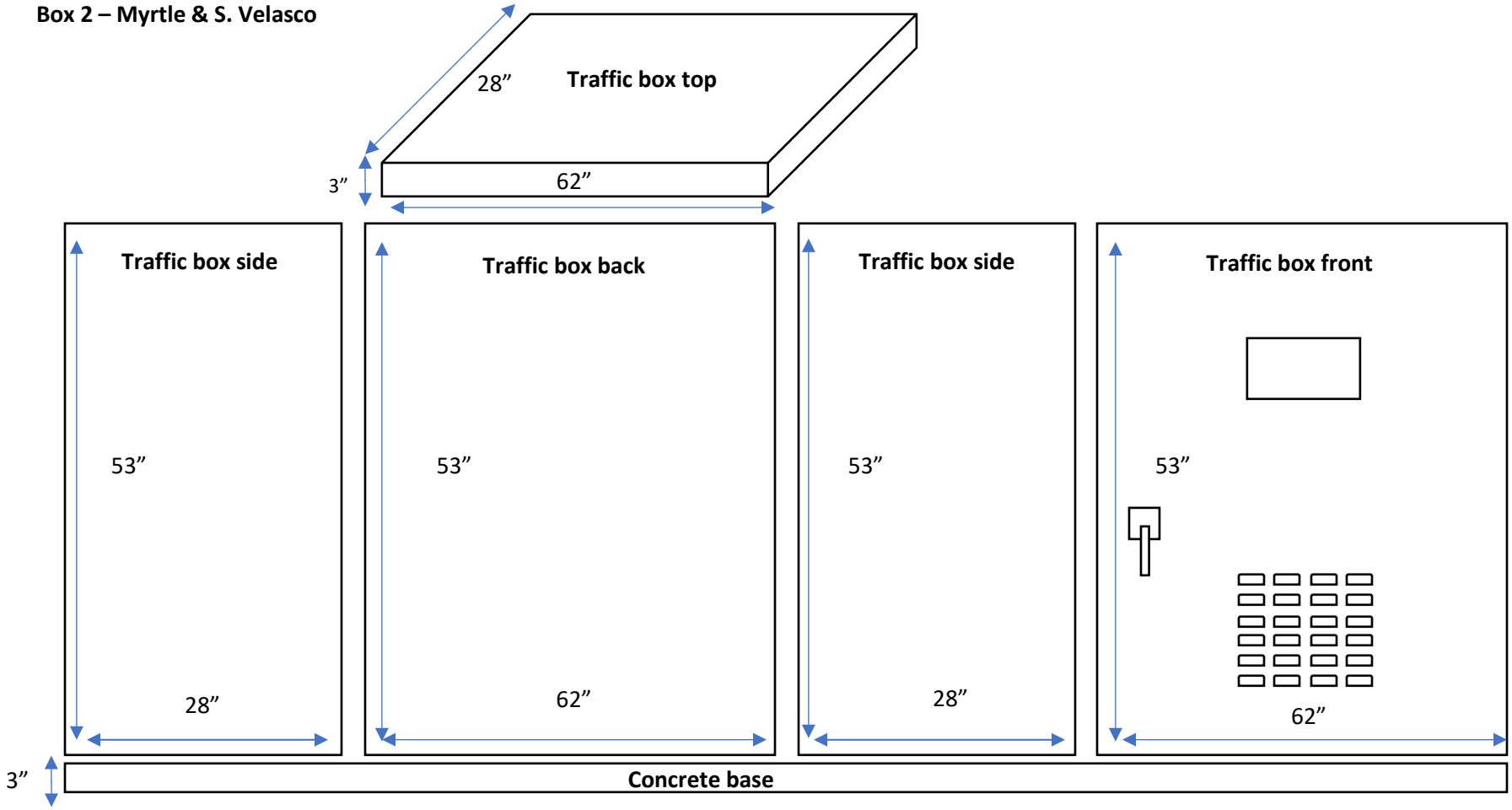
ATTEST:

_____
Frances Aguilar, City Secretary

EXHIBIT A-1

Joy Chandler's Traffic Box Art Wrap Project Proposal

Box 2 – Myrtle & S. Velasco



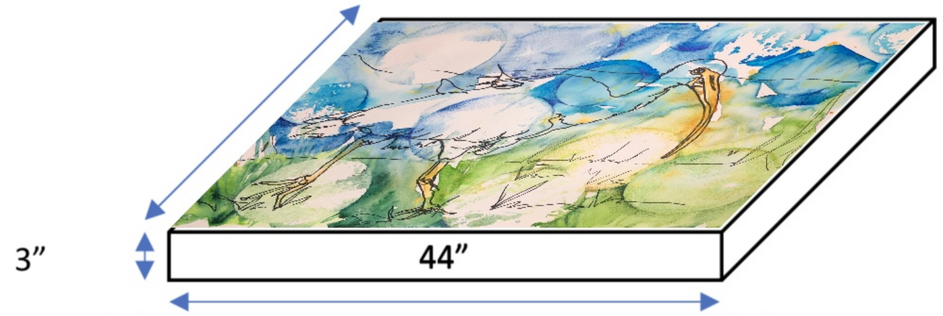








BOX 1 – LOOP 274 & SHIPLEY'S





Copy Selec

3”

Concrete base









EXHIBIT B-1

City of Angleton Request for Proposals – Traffic Box Art Wrap Project

(*See Attached*)

Request for Proposals
Traffic Controller Cabinet Art Wrap Project
for the City of Angleton

Invitation
The City of Angleton is seeking artists to aesthetically treat utility infrastructure throughout the community. Artists will be commissioned to transform traffic signal controller cabinets in Angleton from functional infrastructure into colorful and inspired works of art revolved around Texas wildflower, birds and/or butterflies.

The City of Angleton will accept responses to the RFP until 5:00 p.m. on Monday, September 15, 2020, at the following address:

City of Angleton
Attn: Keep Angleton Beautiful
Traffic Box Art Wrap Project
dedwards@angleton.tx.us

If you have any questions regarding the Request for Proposals contact:

Mr. Daveyon Edwards
Parks and Recreation Administrative Specialist
979-849-4364 ext.5104
dedwards@angleton.tx.us

Background

The City of Angleton, with input from the Keep Angleton Beautiful Board, will select up to three artists and artist teams to develop designs for signal boxes in Angleton. Artists will submit digital files that can be fabricated into vinyl wraps. Signal box locations include areas along Business 288, South Velasco and Loop 274. The Keep Angleton Beautiful Board will determine the specific location of each artwork.

Eligibility
The specific goals of the project include the following:

- Artists, students, schools and community organizations are encouraged to apply.
- This opportunity is limited to Angleton-area, and regional artists (living/working within 70-mile radius of Angleton, Texas).
- Artists who apply in teams will have the opportunity to work collaboratively on their design. All artists contributing to a team project will receive equal recognition for their artistic input, but will need to divide the $250 stipend amongst themselves as they desire.
- Staff members, board members, advisory board members, City Council members and/or family members of City of Angleton are ineligible to apply.

Artwork Location
Traffic cabinets to be wrapped are located along Business 288, South Velasco, and Loop 274. The Keep Angleton

Beautiful Board will assign specific traffic cabinet locations to selected artist designs.

Traffic Box locations include:

- Bus 288 at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle

Duration

Wraps will be removed after 5-7 years depending on condition. They may be removed at any time at the discretion of the City of Angleton.

Scope of Work

The scope of work will be finalized once an artist is selected. The proposed Scope of Services is not intended to be a detailed scope of work that will be required as part of the final agreement but is intended to provide general information to firms wishing to submit proposals. The City of Angleton will negotiate the detailed Scope of Services with the artist should the organization elect to proceed with the project. The selected, qualified artist will be retained to work with Keep Angleton Beautiful board members and city staff.

Artists should submit via www.publicartist.org the following items:

1. *Resume and/or Biography/Artist Statement*: A current résumé that outlines your professional accomplishments as an artist. If applying as a team, please submit a resume for each artist, with the lead artist's resume first. If you select to submit a biography/artist statement, please do not exceed 500-word maximum.

2. *Letter of Intent*: Include a description of how the artist or artist team meets the criteria listed in the RFP. Please do not exceed 500-word maximum.

3. *Work Examples/Digital Images*. Digital images of 3-5 previously completed artworks that were commissioned or acquired as public art. If you have no previous works commissioned/acquired, please include relevant work samples.

   File format: JPEG only
   File dimensions: No smaller than 1920 pixels on the longest side
   File resolution: 72 ppi/dpi (standard web resolution)
   File size: 5 MB maximum

4. *Image list*: Include artist, title, year completed, dimensions, and budget or price (as applicable) for each image selected in your portfolio.

5. *Design for traffic box wrap utilizing provided template*: Include design concept utilizing template within the RFP.

Incomplete or ineligible applications will not be considered. Please do not submit hard copies.

Submission Guidelines & Design Considerations

- In the creation of designs, please carefully consider the sample template provided at the last page this document. Designs must conform to the shape of the attached template. Actual size of traffic boxes may vary. Selected artists should be prepared to coordinate with the City of Angleton and the Keep Angleton Beautiful Board to finalize the design.

- The art may be a new original piece or an existing work of the artist but may not be on display in other public art programs. This does not include ongoing gallery exhibitions.
- The art may not contain advertising, religious art, sexual content, negative imagery, or convey political partisanship.
- The Art must Follow the Keep Angleton Beautiful Proposed theme revolved around Texas wildflower, birds and/or butterflies only.
- Due to the heat sensitivity of the electronics contained within the utility boxes, artists are discouraged from using very dark color palates in their designs.
- Submitted designs must illustrate original artwork.
- All submissions must be provided as a digital graphic design.
- Artists may submit up to (3) designs for consideration.

Evaluation and Selection Criteria

Criteria used to select artwork include but are not limited to: appropriateness of art to the community, aesthetic quality, site suitability, quality of previous work, and commitment to carrying out the project.

Percent	Component
25	**Appropriateness of the art to the community**
25	**Aesthetic quality**
20	**Quality of previous work**
10	**Commitment to carrying out the project**
10	**References**
5	**Regional artists** (living/working within 70-mile radius ofAngleton, Texas)
5	**Additional Factors:** Gateway signage experience and other related information

Additional Information

Completed artwork will become a part of the City of Angleton's Public Art collection and will be owned by the City. Selected artists will sign a licensing agreement and participation waiver with the City of Angleton.

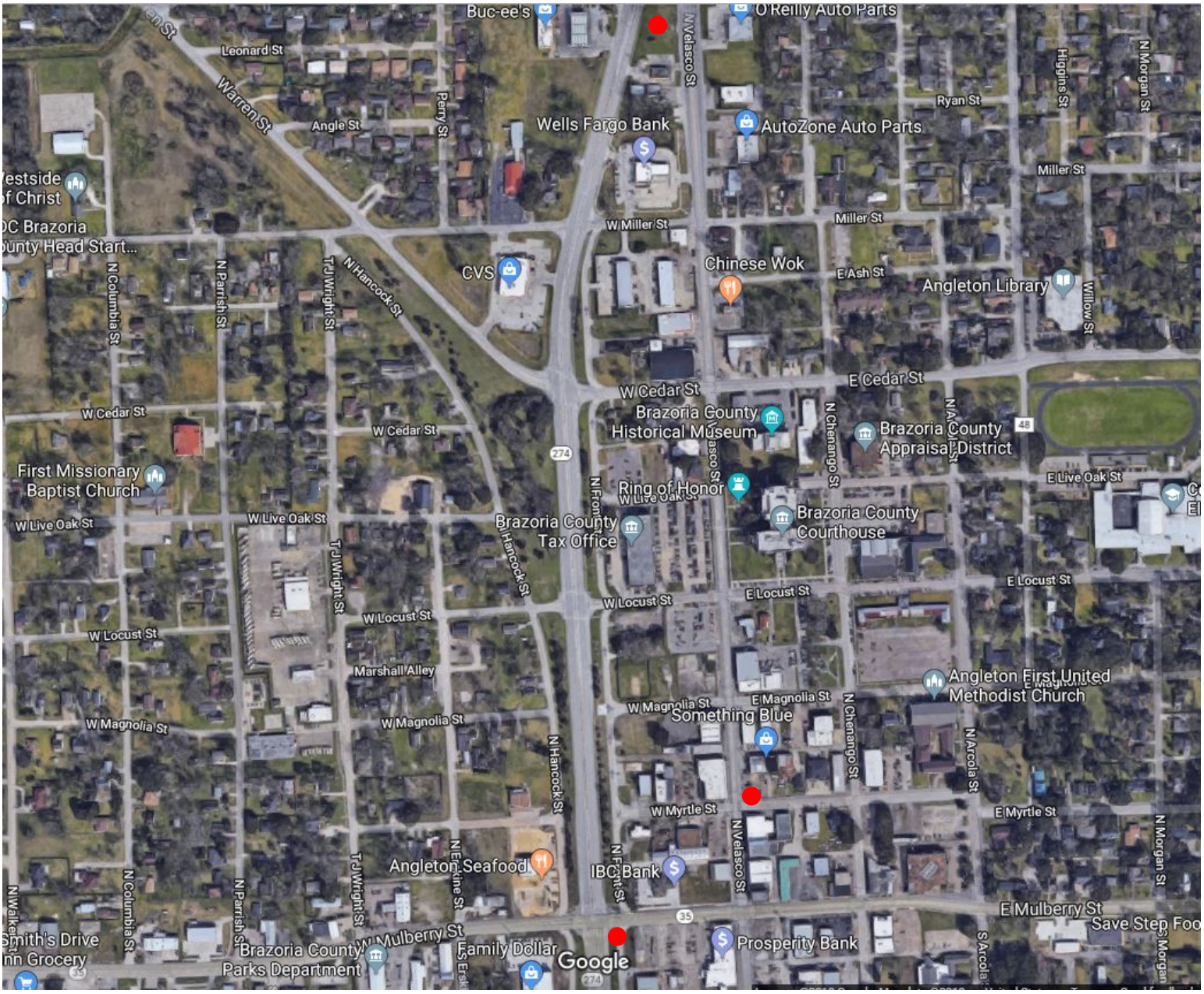
Preliminary Project Schedule

The following tentative schedule is anticipated for selection, contract negotiations and contract award.

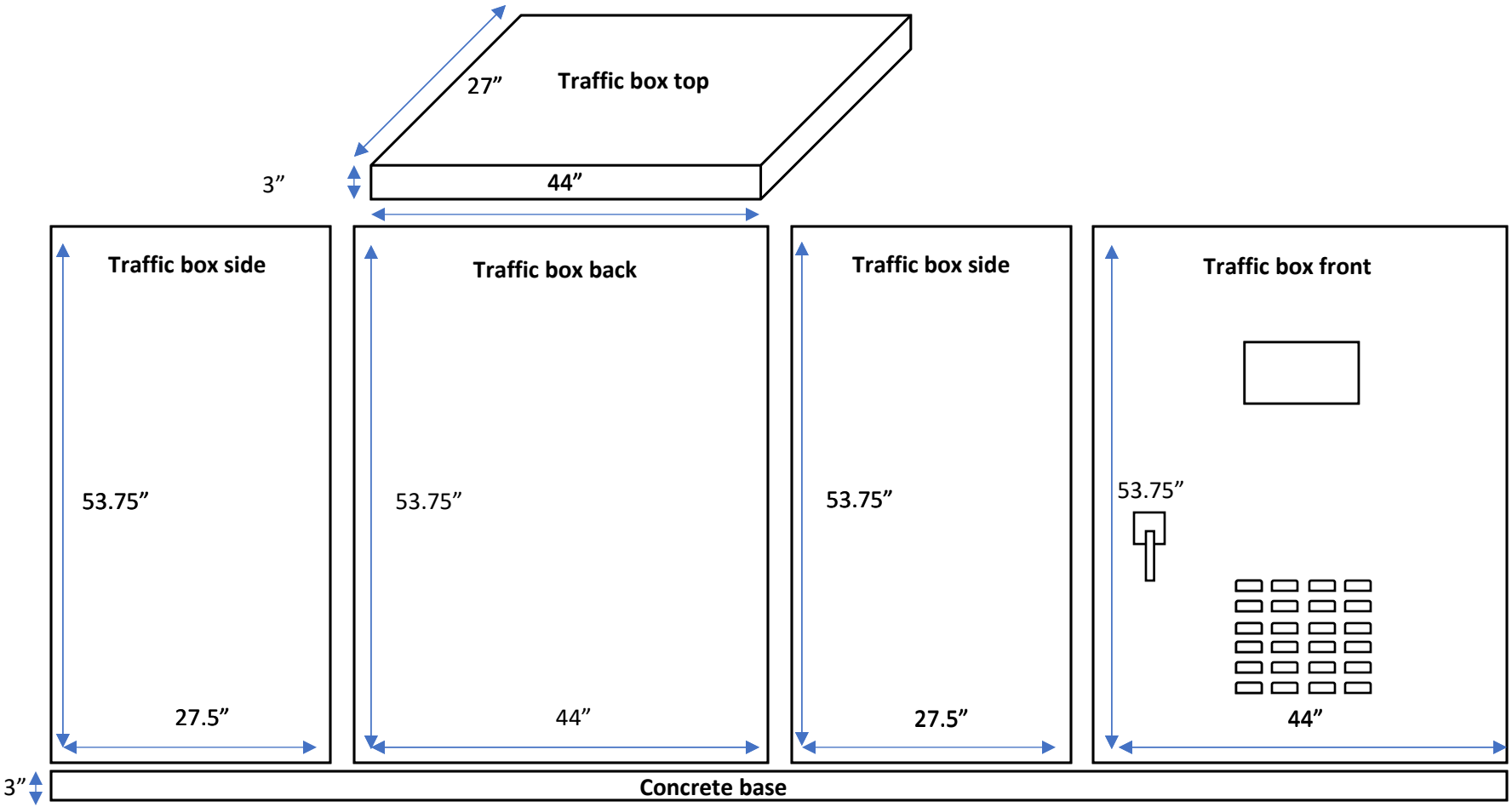
Task	**Start**
RFP Issue Date	August 8, 2020
Proposal Submittal Deadline	September 15, 2020
KAB Review	September 27, 2020
KAB Recommendation	October 5, 2020
TXDOT Approval	October 19, 2020
Artist Notified	October 20, 2020
City Council Approval	October 27, 2020
Wrap Installation	November or December

Map of Locations

- Bus 288at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle



BOX 1 – LOOP 274 & SHIPLEY'S



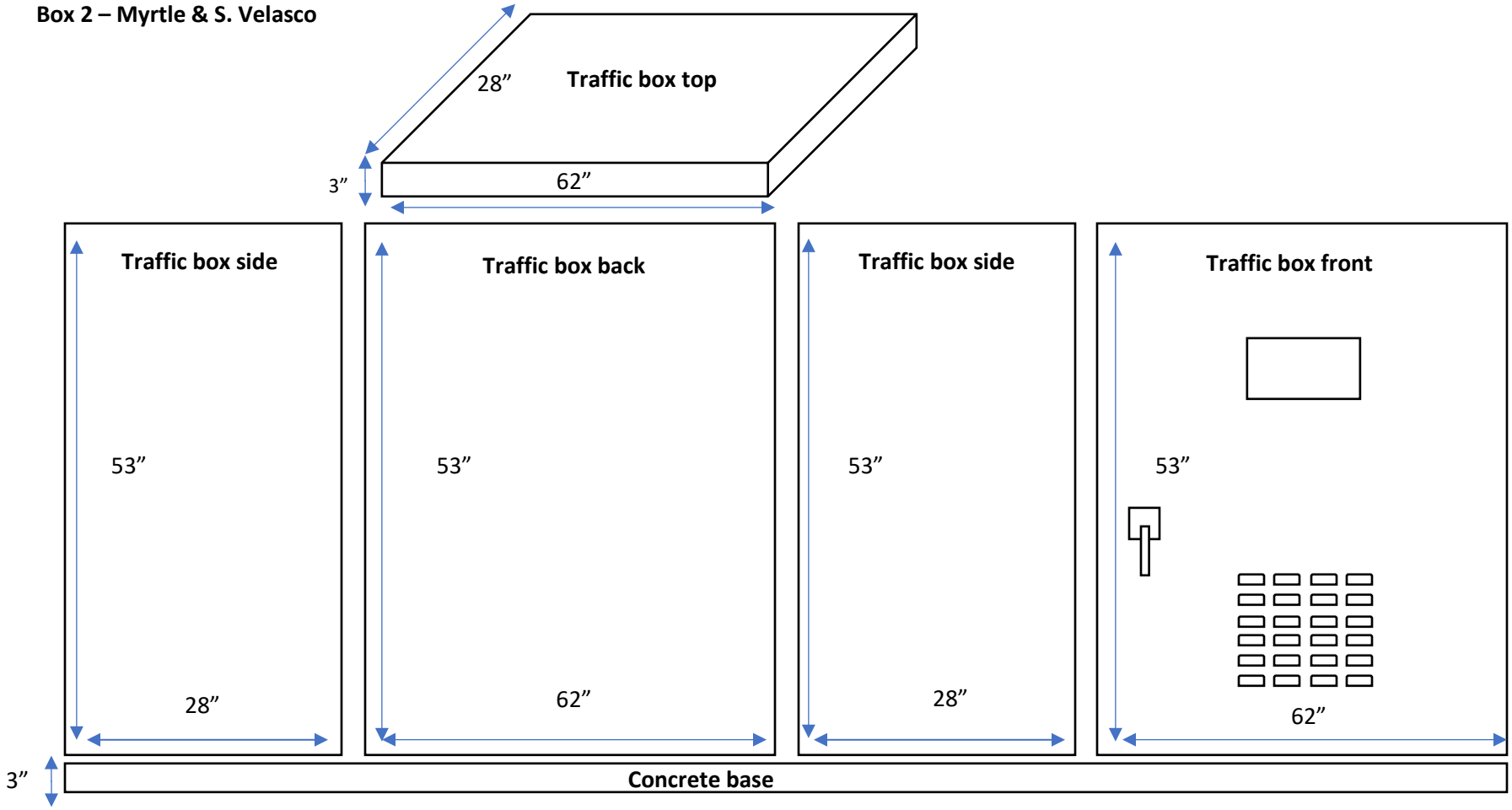








Box 2 – Myrtle & S. Velasco



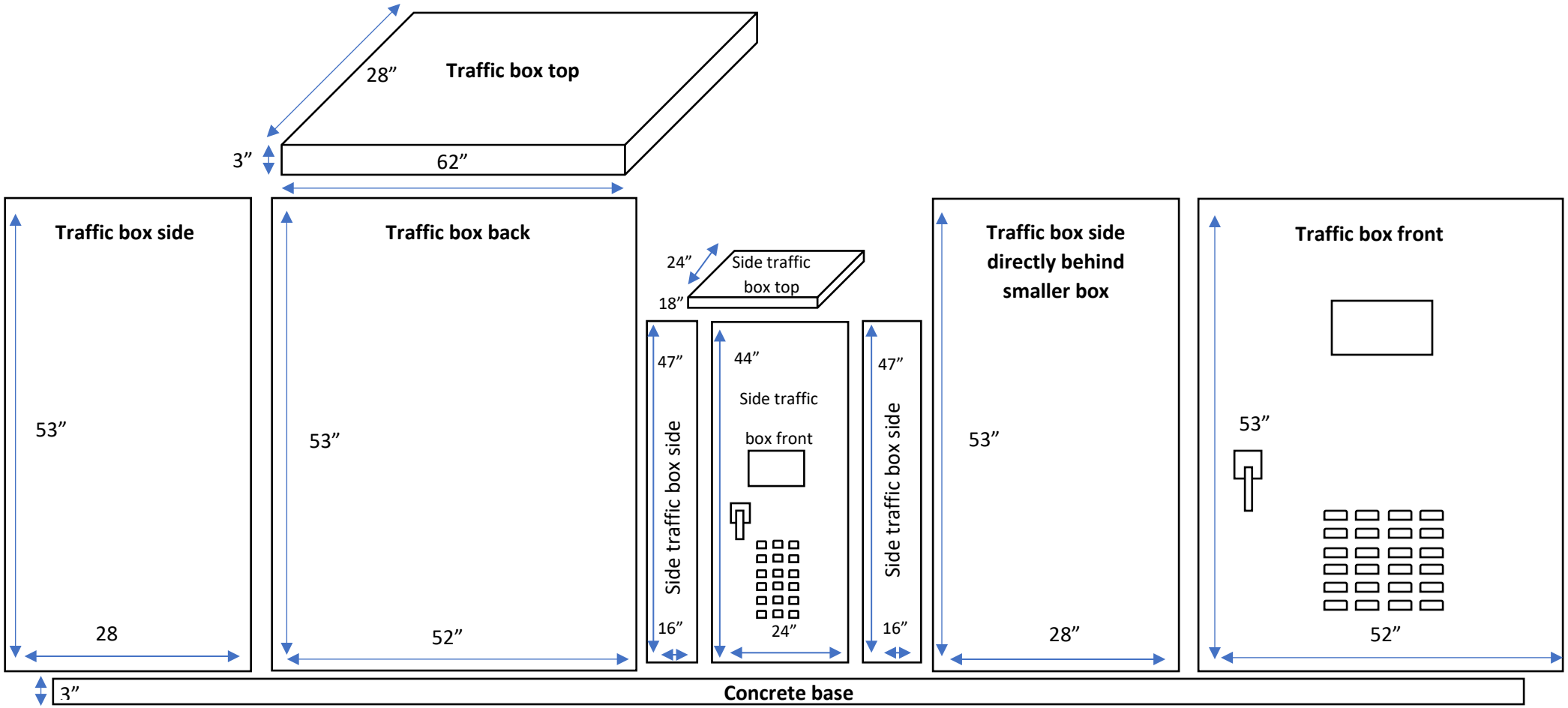








Box 3 – HWY 35 and Business 288











References:

Please PRINT or TYPE here, the names, addresses and other contact information of persons in a management capacity where other similar work has been provided within the last five (5) years, or is currently being provided that may be willing to provide a reference and recommendation for your company. Failure to complete and submit this form may be cause to disqualify your proposal. References provided must be for similar rehabilitation projects.

At least 2 references should be current and of a similar size and scope. Contractor shall also indicate the date services were performed and a brief description of the master planning project, and details involved for each reference provided.

CompanyName Contact Address Telephone E-mail

_____
_____
_____

CompanyName Contact Address Telephone E-mail

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CompanyName Contact Address Telephone E-mail

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CompanyName Contact Address Telephone E-mail

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CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

CITY OF ANGLETON, TEXAS

CONTRACT FOR THE DESIGN OF A TRAFFIC SIGNAL BOX PUBLIC ART WRAP

This Contract ("Contract") is made between the City of Angleton, a Texas municipal corporation, ("City"), and Lauren Luna, ("Artist"), providing for an art wrap design for a traffic signal box for the City. The foregoing parties are herein collectively referred to as "Parties" and individually referred to as a "Party". The purpose of this agreement is to set forth the terms for selected art to be used on display in the public and in particular for wraps on traffic signal boxes. For good and valuable consideration, the sufficiency of which is acknowledged by all Parties, the Parties hereby agree as follows:

1. **Definitions.** In this contract**:**

Work means the art and design for a traffic signal box art wrap, the design to be created by the Artist and provided to the City for fabrication and installation on a traffic signal control box/cabinet in the City, as described in the proposal provided by the Artist, attached to this Contract as Exhibit A (hereinafter, the "Proposal").

Wrap means a traffic signal box art wrap displaying the Work that has been fabricated by and installed on a traffic signal control box/cabinet by the City.

2. **Effective Date.** This Contract will be effective as of the latest of the dates signed by the Parties ("Effective Date").

3. **Artist's Obligations.**

(a) Artist will create and provide to the City the Work described in this Contract, in conformity with the Proposal and the terms of this Contract.

(b) Artist will provide the Work to the City in a digital format.

(c) Artist grants an irrevocable license for the use of the Work to the City, and to make reproductions of the Work for any municipal or public purpose, including but not limited to any publicity the City deems appropriate or beneficial.

4. **City's Obligations.**

(a) The City will provide credit to the Artist and a copyright notice substantially in the following form: Copyright © [Lauren Luna] [2021]. This credit may be included on the City website next to a digital copy of the Wrap. Any reproductions of the Work made by the City will credit the Artist and contain a copyright notice.

(b) The City will fabricate and install any traffic signal box art wraps displaying the Work, and pay all costs associated with the fabrication and installation, however, the City is not obligated hereunder to use the Work on any traffic signal box art wraps.

5. Compensation.

(a) The City will pay the Artist a total one-time payment of two hundred and fifty dollars ($250.00), upon the Effective Date of this Contract.

(b) This amount, as specified in Subsection 5(a) above, is the only compensation to be paid by the City and the payment is intended to cover all of Artist's costs associated with the Work including, but not limited to, Artist's design fee, project documentation, and any other costs associated with the creation of the Work, including the irrevocable license granted to the City.

6. Final Design.

(a) Artist submitted her Proposal pursuant to a request for proposals seeking to commission traffic signal box art wraps suitable for fabrication and installation on traffic signal control boxes/cabinets in the City. The Proposal included a proposed concept or concepts for the traffic box art wrap(s) instrumental in the City selecting the Artist for this project.

(b) Upon execution of this Contract, Artist will undertake the preparation of the final concept for the Work (the "Final Design").

(c) Artist will provide the Final Design to the City for review and final approval and acceptance within three (3) business days of the Effective Date of this Contract. Within three (3) business days after receipt of the Final Design from Artist, the City will notify the Artist, in writing: (1) of the City's approval and acceptance of the Final Design; or (2) if the City requires any revisions to the Final Design in order to comply with the Proposal, or any other reasons. If agreed upon by all Parties, such revisions will become a part of the Final Design.

(d) Upon the City's approval and acceptance of the Final Design, the Final Design, and license for its use, will immediately be conveyed to the City, and is subject to any Copyright rights retained by Artist.

7. Fabrication and Installation. After approval of the Final Design, the City may fabricate and install traffic box art wraps displaying the Work in substantial conformity with the

Final Design. As part of the license granted to the City under this Contract, the City is expressly authorized to use the Work to fabricate and install an unlimited number of additional traffic box art wraps.

8. **Warranties of Title.** Artist represents and warrants that:

(a) The Work is solely the result of the artistic effort of the Artist and Artist is the sole author, as that term is used in the United States Copyright laws, of the Work. Artist further represents that it will be the sole author, as that term is used in the United States Copyright laws, of all artistic works created pursuant to this Contract, including any intermediate works created during the creation of the Work;

(b) Except as otherwise disclosed in writing to the City, the Work is unique and original and does not infringe upon any copyright or the rights of any person;

(c) The Work (or duplicate thereof) has not been accepted for use, license, or sale elsewhere;

(d) Artist has not sold, assigned, transferred, licensed, granted, encumbered, or utilized the Work or any element thereof or any copyright related thereto which may affect or impair the rights granted pursuant to this Contract;

(e) Upon payment to the Artist by, and delivery of the Work to, the City, that the title transferred to the Work is free and clear of any claims or encumbrances from any source whatsoever;

(f) All Work created or performed by the Artist under this Contract, including any intermediate works created during the creation of the Work, will be wholly with the Artist and will not infringe upon or violate the rights of any third party;

(g) Artist has not and will not grant any licenses to the Work, including but not limited to the Work and any intermediate works created during the creation of the Work, other than the exclusive license granted herein to the City, its successors, and assigns;

(h) Artist has the full power to enter into and perform this Contract and to make the grant of rights contained in this Contract, and Artist created the Work in accordance with all applicable laws, regulations, ordinances, and with all necessary care, skill, and diligence;

9. **Wrap Duration, Repair; Removal; Replacement.** A Wrap is expected to have a lifespan of five (5) to seven (7) years. A Wrap will be removed by the City after 5 to 7 years, depending on its condition, in the City's sole discretion. The City will have the right to remove, repair, or replace any Wrap, as needed, in the City's sole discretion.
10. **Wrap Maintenance.** The City will be responsible for maintenance and conservation of any Wrap, for so long as the Wrap remains in use. The City will have the right, in its sole discretion, and without Artist's input or approval, to determine the appropriate method of maintenance.
11. **Term of Contract & Survival of Obligations.** The Contract is effective as of the Effective Date and, unless terminated earlier pursuant to such provisions in the Contract, will extend until approval and acceptance of the Final Design by the City under Subsection 6(c) above, but in no event will extend beyond a period of one year. All provisions of this Contract that impose continuing obligations on the Parties, including but not limited to granting an irrevocable license to the City, warranty, indemnification, limitation of liability, and keeping addresses for notice current, shall survive the expiration or termination of this Contract.
12. **Termination.**
    (a) The City may terminate this Contract during its term at any time for any reason by giving written notice to Artist not less than three (3) business days prior to the termination date.
    (b) Termination of this Contract will not terminate the license, or any other rights granted to City.

13. **Liability and Indemnity.**
    (a) ARTIST HEREBY RELEASES THE CITY AND THE CITY'S ELECTED OFFICIALS, THE RESPECTIVE OFFICERS, EMPLOYEES, AGENTS, ATTORNEYS, AND REPRESENTATIVES OF THE CITY AND ITS/THEIR SUCCESSORS AND ASSIGNS, IN BOTH THEIR INDIVIDUAL AND OFFICIAL CAPACITIES, INDIVIDUALLY AND COLLECTIVELY, (COLLECTIVELY REFERRED TO AS THE "CITY-RELATED PARTIES") FROM, AND SHALL INDEMNIFY, DEFEND, AND HOLD THE CITY-RELATED PARTIES HARMLESS AGAINST, ALL ALLEGATIONS, CLAIMS (INCLUDING WITHOUT LIMITATION CLAIMS OF PERSONAL INJURY, ENVIRONMENTAL INJURY, BODILY INJURY, SICKNESS, DISEASE, DEATH, PROPERTY

DAMAGE, CONSEQUENTIAL DAMAGES, DESTRUCTION, OR OTHER IMPAIRMENT), DEMANDS, LEGAL ACTIONS, EQUITABLE ACTIONS, COSTS (INCLUDING ALL COURT COSTS, REASONABLE ATTORNEYS' FEES, EXPERTS' FEES OR OTHER COSTS INCURRED IN CONNECTION WITH ANY MATTER RELATING TO THE TERMS OF THIS CONTRACT, OR ARE ALLEGED TO HAVE ARISEN FROM, ANY OF THE FOLLOWING:

(1) **ANY INFRINGEMENT OF PATENT, COPYRIGHT, TRADEMARK, TRADE SECRET OR OTHER PROPRIETARY RIGHT CAUSED BY ARTIST.**

14. Title. Title to the Work subject to Section 15 of this Agreement is exclusively and irrevocably licensed to the City upon the City's approval and acceptance of the Final Design.

15. Copyright Ownership.

(a) Subject to the terms of this Contract, including any covenants herein prohibiting the creation of additional works, the exclusive license granted to the City, its successors and assigns, and the tangible ownership rights of the City in the Work, Artist will have and retain all rights to the Work afforded to Artist by the Copyright Laws of the United States. Artist agrees to do and perform all acts necessary to effect and protect the copyright and renewals thereof. However, if necessary, the City, its successors, and assigns, may take reasonable steps to conserve or maintain the Work in its original form upon prior consultation with the Artist.

(b) The requirements and obligations in this Section 15 will survive termination or expiration of the Contract.

16. Covenant; License; Reproduction Rights.

(a) In view of the intention that the final Work will be unique, Artist on behalf of itself and its successors, assigns, and affiliates, covenants, warrants, and agrees that it will not knowingly aid, abet, participate in, assist, authorize, condone, or permit the making, copying, displaying, or selling of any exact duplicate, or two- or three-dimensional reproductions of the final Work, nor will the Artist grant permission to others to do so except with the written permission of the City. This covenant will survive termination or expiration of the Contract. However, nothing herein will prevent the Artist from creating future works in the Artist's manner and style of artistic expression, including works that include design elements similar to the Work, so long as such works do not replicate the exact composition of the Work.

(b) Artist grants to the City, its successors and assigns, an irrevocable, fully transferable, fully sub-licensable, exclusive license to make unlimited two- and three-dimensional reproductions of the Work for non-commercial purposes, including, but not limited to, additional Wraps, photographs and digital reproductions of the Work for inclusion in the City of Angleton's catalogues, books, brochures, website, postcards, posters, invitations, magazines, newspapers, journals, films, television programs, and other electronic, online media. The City may include information about the Work and Artist on other plaques or materials and in other information as determined by the City.

(c) All reproductions by the City will contain a credit to the Artist and a copyright notice in substantially the following form: Copyright © [Lauren Luna], [2021].

(d) Artist will use the Artist's best efforts in any public showing or résumé use of reproductions to give acknowledgment to the City in substantially the following form: "an original Work commissioned by and in the public art collection of the City of Angleton."

(e) Artist will, at Artist's expense, cause to be registered with the United States Register of Copyrights, a copyright in the Work in the Artist's name.

(f) If the City wishes to make reproductions of the Work for commercial purposes, including, but not limited to, tee shirts, post cards, and posters, the Parties will execute a separate agreement to address the terms of the license granted by the Artist and the royalty the Artist will receive, if any.

(g) Third Party Infringement. The City is not responsible for any third-party infringement of Artist's copyright and not responsible for protecting the intellectual property rights of Artist.

17. Artist's Waiver Under 17 U.S.C. §106A.

(a) Scope of Waiver. Artist's waiver applies to the Work described herein.

(b) Uses Covered. This waiver applies to the following uses: any and all applications in which either the attribution right or the integrity right may be implicated.

(c) Waiver. With respect to works enumerated in subparagraph (a) above for uses enumerated in subparagraph (b) above, Artist hereby expressly and forever waives any and all rights arising under 17 U.S.C. § 106A, and any rights arising under United States federal law, the laws of any states within the United States, or the laws of any other country that convey rights of the same nature as those conveyed under 17 U.S.C. § 106A, or any other

type of moral right.

18. Assignment and Transfer.

(a) Except as otherwise provided in this Contract**,** no Party has the right to assign this Contract without the prior written consent of the other Parties.

(b) The Work and services required of the Artist are sole and personal and will not be assigned, sublet, or transferred. Any attempt by Artist to assign any rights, duties, or obligations arising under this Contract will be void and of no effect unless prior written consent is given by the City.

The City will have the right to assign or transfer the Contract, and any and all of the City's rights and obligations under the Contract, without Artist's consent, if ownership of the Work is transferred.

19. Entire Contract. This Contract represents the entire Contract between the City and the Artist. This Contract may be amended only by written instrument signed by both parties.

20. Severability. If a court finds or rules that any part of this Contract is invalid or unlawful, the remainder of the Contract continues to be binding on the parties.

21. Waivers. A waiver of any breach of any of the provisions of this Contract will not be construed as a continuing waiver of other breaches of the same or other provisions.

22. Notices. All notices will be in writing and may be delivered by mail, in person, or by email. Mailed notice is deemed received three days after the date of deposit in the United States mail. Unless otherwise provided in this Contract, all notices will be delivered to the following addresses:

To Artist: Lauren Luna
[Address]
[Address]
Email:

To the City: Chris Whittaker
City Manager
City of Angleton
121 S Velasco
Angleton, TX 77515
Email: cwhittaker@angleton.tx.us

If any Party changes its mailing or email address it will notify the other Parties in writing of the change, as provided for in this section.

23. Law Governing and Venue. This Contract is governed by the law of the State of Texas and a lawsuit may only be prosecuted on this Contract in a court of competent jurisdiction located in or having jurisdiction in Brazoria County, Texas.

24. Compliance with Laws. Artist must comply with any federal, state, and local laws, rules, and regulations applicable to the Work and its services under this Contract.

25. Additional Contract Documents. The following documents attached to this Contract are part of this Contract:

Exhibit A. Artist's Additional Contract Documents:

A. Lauren Luna's Traffic Box Art Wrap Project Proposal (___ pages).

Exhibit B. City's Additional Contract Documents:

B. City of Angleton Request for Proposal – Traffic Box Art Wrap Project (9 pages)

[*Signature Page Follows*]

CITY OF ANGLETON, a Texas municipal corporation

_____
Jason Perez, Mayor

Date: _____

Lauren Luna
Artist

_____
By: _____, Artist

Date: _____

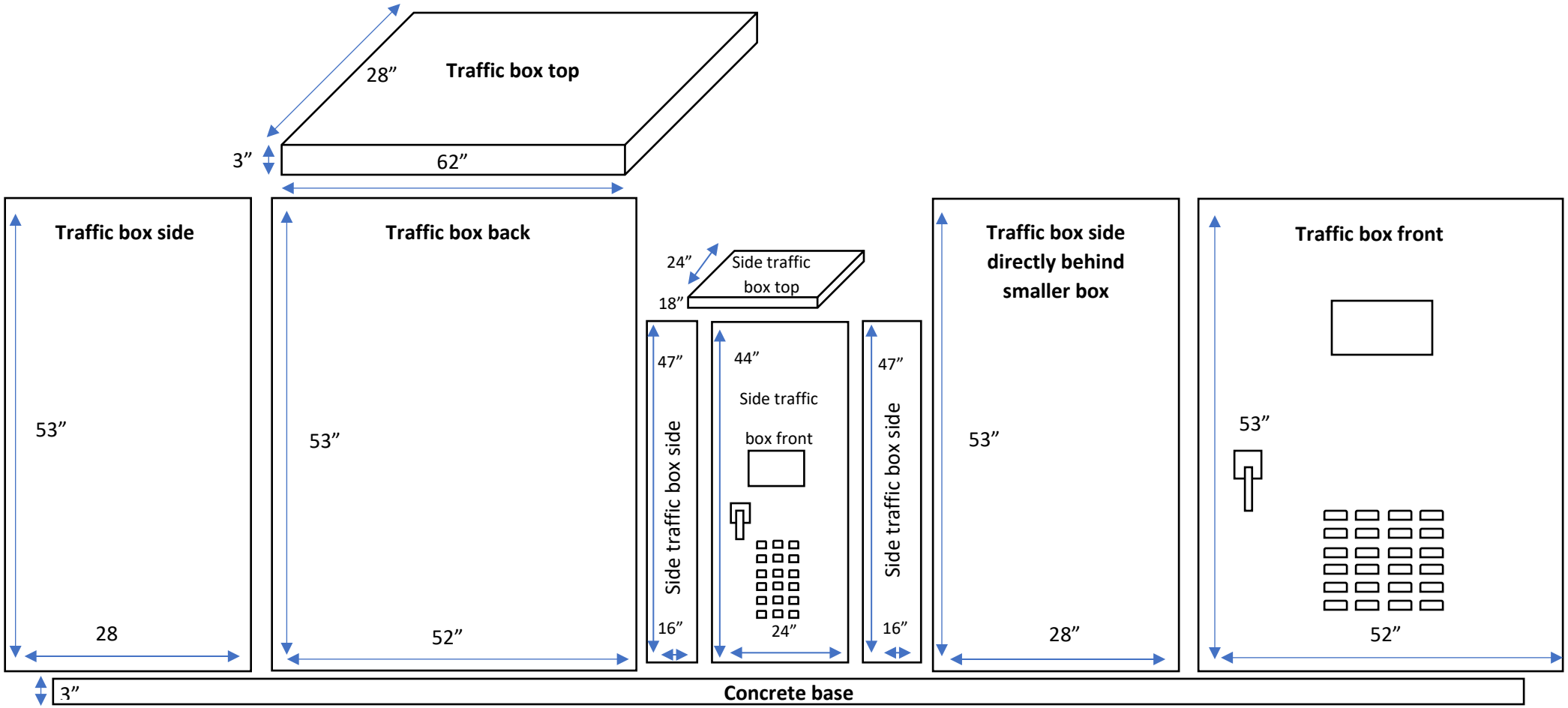
ATTEST:

_____
Frances Aguilar, City Secretary

EXHIBIT A-1

Lauren Luna's Traffic Box Art Wrap Project Proposal

Box 3 – HWY 35 and Business 288

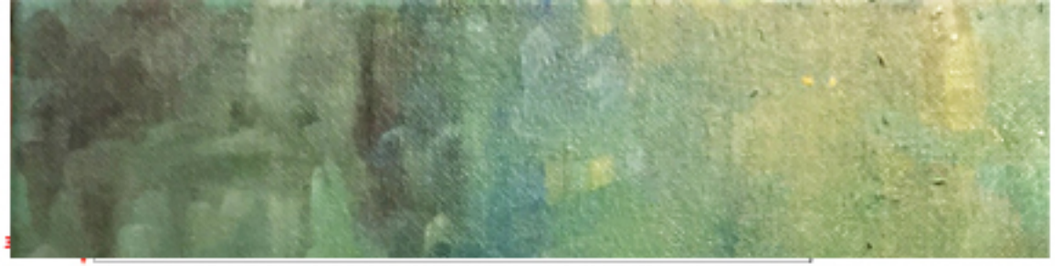












44 Inches



64 Inches



64 Inches

*** Drawing may not be to scale**

EXHIBIT B-1

City of Angleton Request for Proposals – Traffic Box Art Wrap Project

(*See Attached*)

Request for Proposals
Traffic Controller Cabinet Art Wrap Project
for the City of Angleton

Invitation

The City of Angleton is seeking artists to aesthetically treat utility infrastructure throughout the community. Artists will be commissioned to transform traffic signal controller cabinets in Angleton from functional infrastructure into colorful and inspired works of art revolved around Texas wildflower, birds and/or butterflies.

The City of Angleton will accept responses to the RFP until 5:00 p.m. on Monday, September 15, 2020, at the following address:

City of Angleton
Attn: Keep Angleton Beautiful
Traffic Box Art Wrap Project
dedwards@angleton.tx.us

If you have any questions regarding the Request for Proposals contact:

Mr. Daveyon Edwards
Parks and Recreation Administrative Specialist
979-849-4364 ext.5104
dedwards@angleton.tx.us

Background

The City of Angleton, with input from the Keep Angleton Beautiful Board, will select up to three artists and artist teams to develop designs for signal boxes in Angleton. Artists will submit digital files that can be fabricated into vinyl wraps. Signal box locations include areas along Business 288, South Velasco and Loop 274. The Keep Angleton Beautiful Board will determine the specific location of each artwork.

Eligibility

The specific goals of the project include the following:

- Artists, students, schools and community organizations are encouraged to apply.
- This opportunity is limited to Angleton-area, and regional artists (living/working within 70-mile radius of Angleton, Texas).
- Artists who apply in teams will have the opportunity to work collaboratively on their design. All artists contributing to a team project will receive equal recognition for their artistic input, but will need to divide the $250 stipend amongst themselves as they desire.
- Staff members, board members, advisory board members, City Council members and/or family members of City of Angleton are ineligible to apply.

Artwork Location

Traffic cabinets to be wrapped are located along Business 288, South Velasco, and Loop 274. The Keep Angleton

Beautiful Board will assign specific traffic cabinet locations to selected artist designs.

Traffic Box locations include:

- Bus 288 at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle

Duration

Wraps will be removed after 5-7 years depending on condition. They may be removed at any time at the discretion of the City of Angleton.

Scope of Work

The scope of work will be finalized once an artist is selected. The proposed Scope of Services is not intended to be a detailed scope of work that will be required as part of the final agreement but is intended to provide general information to firms wishing to submit proposals. The City of Angleton will negotiate the detailed Scope of Services with the artist should the organization elect to proceed with the project. The selected, qualified artist will be retained to work with Keep Angleton Beautiful board members and city staff.

Artists should submit via www.publicartist.org the following items:

1. *Resume and/or Biography/Artist Statement*: A current résumé that outlines your professional accomplishments as an artist. If applying as a team, please submit a resume for each artist, with the lead artist's resume first. If you select to submit a biography/artist statement, please do not exceed 500-word maximum.

2. *Letter of Intent*: Include a description of how the artist or artist team meets the criteria listed in the RFP. Please do not exceed 500-word maximum.

3. *Work Examples/Digital Images*. Digital images of 3-5 previously completed artworks that were commissioned or acquired as public art. If you have no previous works commissioned/acquired, please include relevant work samples.

   File format: JPEG only
   File dimensions: No smaller than 1920 pixels on the longest side
   File resolution: 72 ppi/dpi (standard web resolution)
   File size: 5 MB maximum

4. *Image list*: Include artist, title, year completed, dimensions, and budget or price (as applicable) for each image selected in your portfolio.

5. *Design for traffic box wrap utilizing provided template*: Include design concept utilizing template within the RFP.

Incomplete or ineligible applications will not be considered. Please do not submit hard copies.

Submission Guidelines & Design Considerations

- In the creation of designs, please carefully consider the sample template provided at the last page this document. Designs must conform to the shape of the attached template. Actual size of traffic boxes may vary. Selected artists should be prepared to coordinate with the City of Angleton and the Keep Angleton Beautiful Board to finalize the design.

- The art may be a new original piece or an existing work of the artist but may not be on display in other public art programs. This does not include ongoing gallery exhibitions.
- The art may not contain advertising, religious art, sexual content, negative imagery, or convey political partisanship.
- The Art must Follow the Keep Angleton Beautiful Proposed theme revolved around Texas wildflower, birds and/or butterflies only.
- Due to the heat sensitivity of the electronics contained within the utility boxes, artists are discouraged from using very dark color palates in their designs.
- Submitted designs must illustrate original artwork.
- All submissions must be provided as a digital graphic design.
- Artists may submit up to (3) designs for consideration.

Evaluation and Selection Criteria

Criteria used to select artwork include but are not limited to: appropriateness of art to the community, aesthetic quality, site suitability, quality of previous work, and commitment to carrying out the project.

Percent	Component
25	**Appropriateness of the art to the community**
25	**Aesthetic quality**
20	**Quality of previous work**
10	**Commitment to carrying out the project**
10	**References**
5	**Regional artists** (living/working within 70-mile radius ofAngleton, Texas)
5	**Additional Factors:** Gateway signage experience and other related information

Additional Information

Completed artwork will become a part of the City of Angleton's Public Art collection and will be owned by the City. Selected artists will sign a licensing agreement and participation waiver with the City of Angleton.

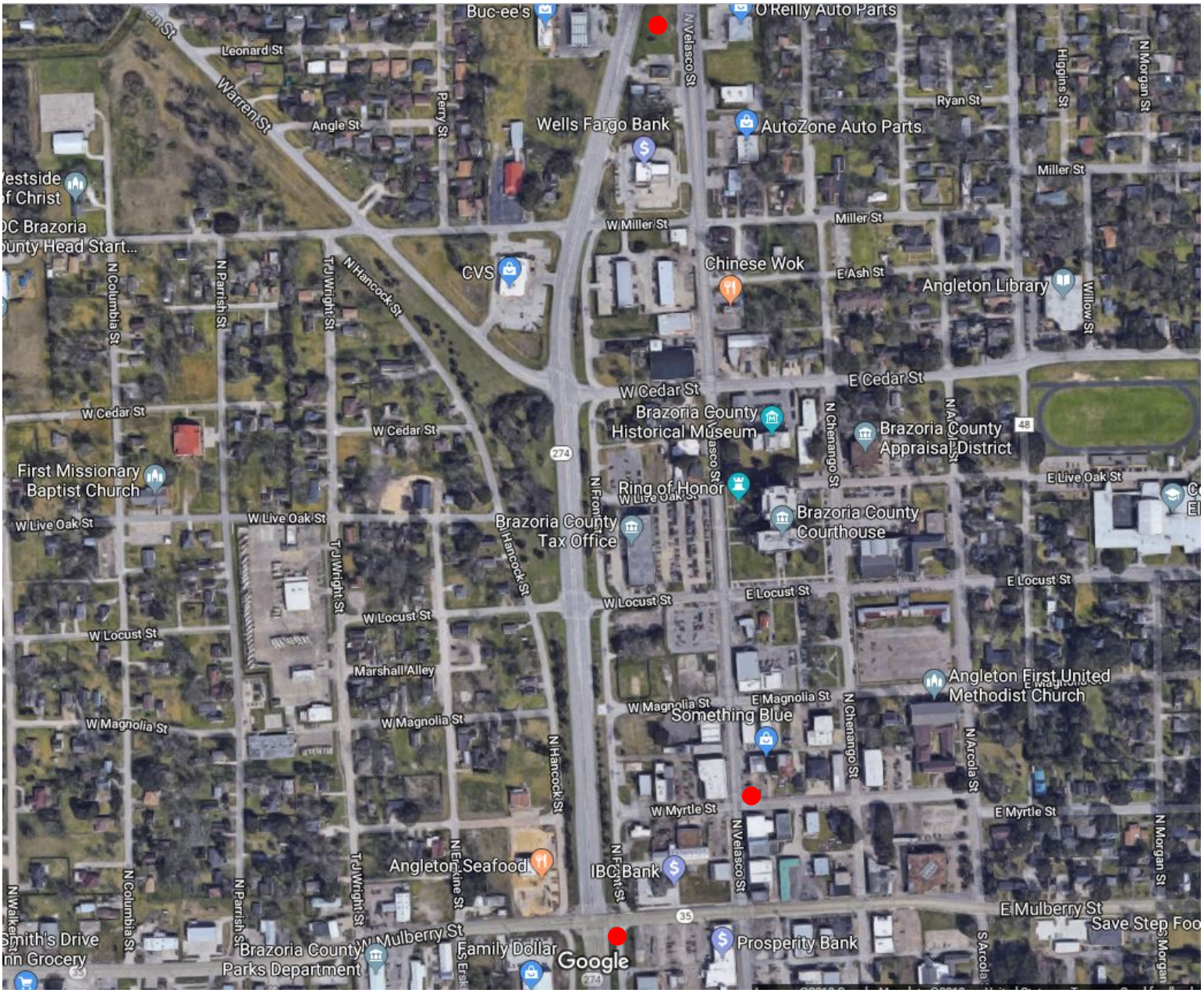
Preliminary Project Schedule

The following tentative schedule is anticipated for selection, contract negotiations and contract award.

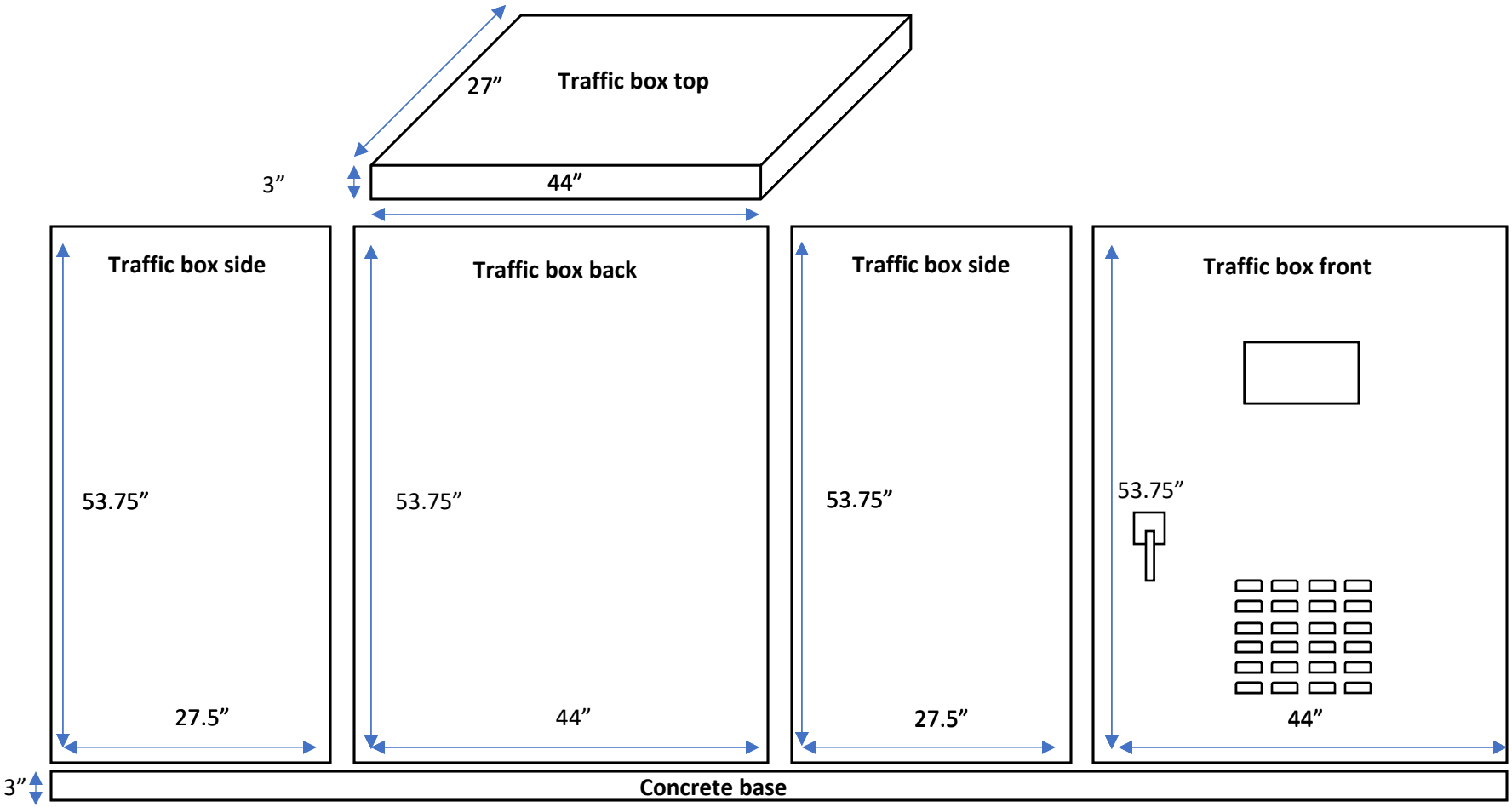
Task	**Start**
RFP Issue Date	August 8, 2020
Proposal Submittal Deadline	September 15, 2020
KAB Review	September 27, 2020
KAB Recommendation	October 5, 2020
TXDOT Approval	October 19, 2020
Artist Notified	October 20, 2020
City Council Approval	October 27, 2020
Wrap Installation	November or December

Map of Locations

- Bus 288at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle



BOX 1 – LOOP 274 & SHIPLEY'S



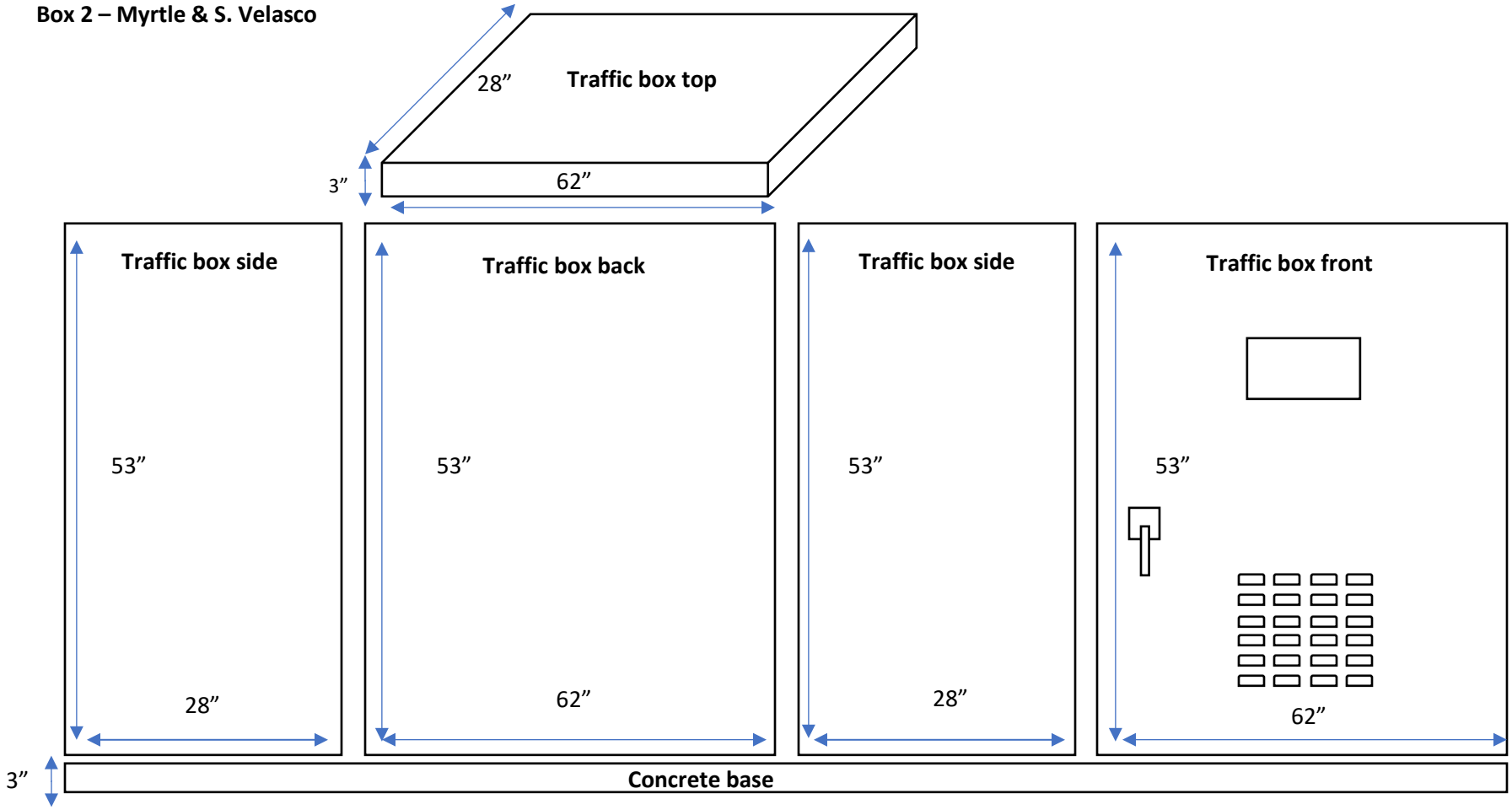








Box 2 – Myrtle & S. Velasco



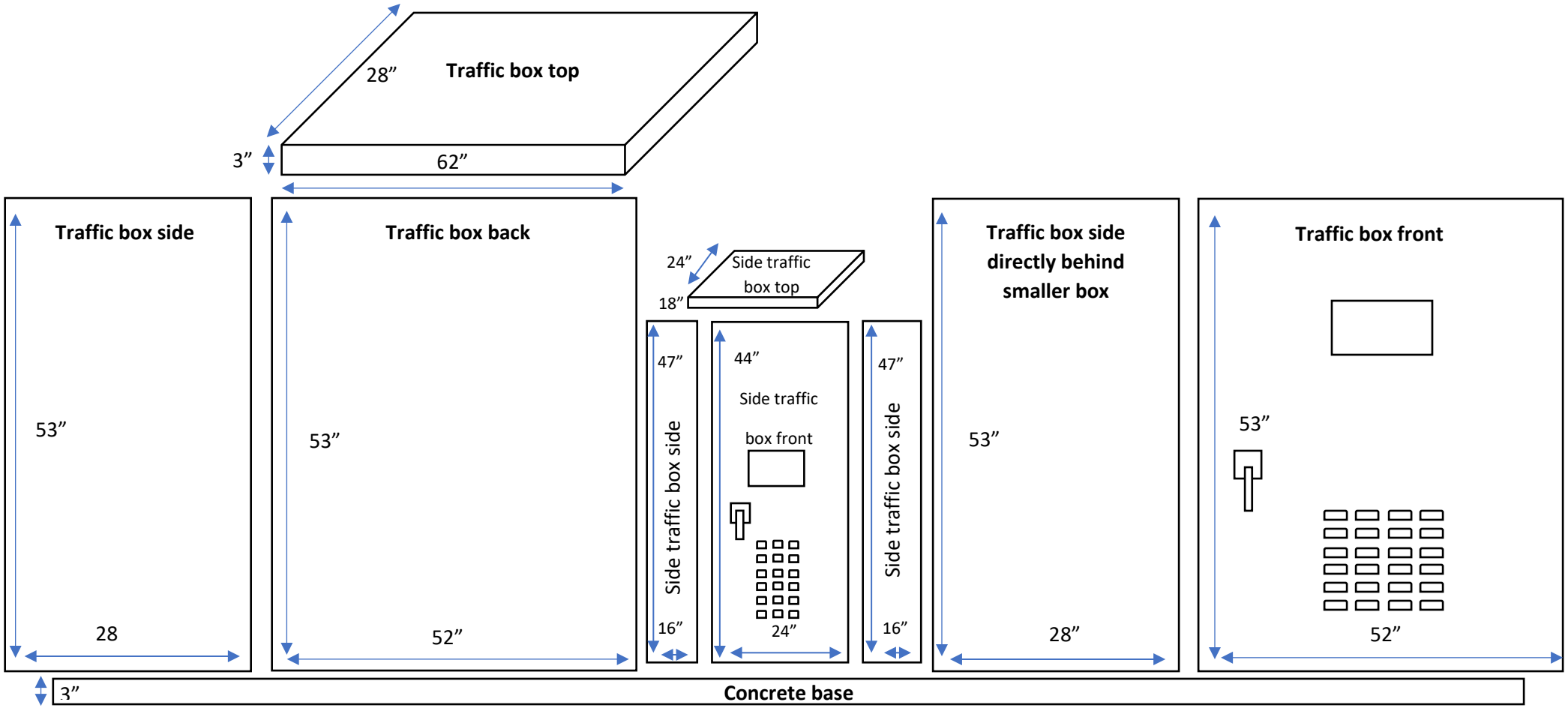








Box 3 – HWY 35 and Business 288











References:

Please PRINT or TYPE here, the names, addresses and other contact information of persons in a management capacity where other similar work has been provided within the last five (5) years, or is currently being provided that may be willing to provide a reference and recommendation for your company. Failure to complete and submit this form may be cause to disqualify your proposal. References provided must be for similar rehabilitation projects.

At least 2 references should be current and of a similar size and scope. Contractor shall also indicate the date services were performed and a brief description of the master planning project, and details involved for each reference provided.

CompanyName Contact Address Telephone E-mail

_____

_____

_____

CompanyName Contact Address Telephone E-mail

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CompanyName Contact Address Telephone E-mail

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CompanyName Contact Address Telephone E-mail

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CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

CITY OF ANGLETON, TEXAS

CONTRACT FOR THE DESIGN OF A TRAFFIC SIGNAL BOX PUBLIC ART WRAP

This Contract ("Contract") is made between the City of Angleton, a Texas municipal corporation, ("City"), and Wendy Delgado, ("Artist"), providing for an art wrap design for a traffic signal box for the City. The foregoing parties are herein collectively referred to as "Parties" and individually referred to as a "Party". The purpose of this agreement is to set forth the terms for selected art to be used on display in the public and in particular for wraps on traffic signal boxes. For good and valuable consideration, the sufficiency of which is acknowledged by all Parties, the Parties hereby agree as follows:

1. **Definitions.** In this contract**:**

Work means the art and design for a traffic signal box art wrap, the design to be created by the Artist and provided to the City for fabrication and installation on a traffic signal control box/cabinet in the City, as described in the proposal provided by the Artist, attached to this Contract as Exhibit A (hereinafter, the "Proposal").

Wrap means a traffic signal box art wrap displaying the Work that has been fabricated by and installed on a traffic signal control box/cabinet by the City.

2. **Effective Date.** This Contract will be effective as of the latest of the dates signed by the Parties ("Effective Date").

3. **Artist's Obligations.**

(a) Artist will create and provide to the City the Work described in this Contract, in conformity with the Proposal and the terms of this Contract.

(b) Artist will provide the Work to the City in a digital format.

(c) Artist grants an irrevocable license for the use of the Work to the City, and to make reproductions of the Work for any municipal or public purpose, including but not limited to any publicity the City deems appropriate or beneficial.

4. **City's Obligations.**

(a) The City will provide credit to the Artist and a copyright notice substantially in the following form: Copyright © [Wendy Delgado] [2021]. This credit may be included on the City website next to a digital copy of the Wrap. Any reproductions of the Work made by the City will credit the Artist and contain a copyright notice.

(b) The City will fabricate and install any traffic signal box art wraps displaying the Work, and pay all costs associated with the fabrication and installation, however, the City is not obligated hereunder to use the Work on any traffic signal box art wraps.

5. Compensation.

(a) The City will pay the Artist a total one-time payment of two hundred and fifty dollars ($250.00), upon the Effective Date of this Contract.

(b) This amount, as specified in Subsection 5(a) above, is the only compensation to be paid by the City and the payment is intended to cover all of Artist's costs associated with the Work including, but not limited to, Artist's design fee, project documentation, and any other costs associated with the creation of the Work, including the irrevocable license granted to the City.

6. Final Design.

(a) Artist submitted her Proposal pursuant to a request for proposals seeking to commission traffic signal box art wraps suitable for fabrication and installation on traffic signal control boxes/cabinets in the City. The Proposal included a proposed concept or concepts for the traffic box art wrap(s) instrumental in the City selecting the Artist for this project.

(b) Upon execution of this Contract, Artist will undertake the preparation of the final concept for the Work (the "Final Design").

(c) Artist will provide the Final Design to the City for review and final approval and acceptance within three (3) business days of the Effective Date of this Contract. Within three (3) business days after receipt of the Final Design from Artist, the City will notify the Artist, in writing: (1) of the City's approval and acceptance of the Final Design; or (2) if the City requires any revisions to the Final Design in order to comply with the Proposal, or any other reasons. If agreed upon by all Parties, such revisions will become a part of the Final Design.

(d) Upon the City's approval and acceptance of the Final Design, the Final Design, and license for its use, will immediately be conveyed to the City, and is subject to any Copyright rights retained by Artist.

7. Fabrication and Installation. After approval of the Final Design, the City may fabricate and install traffic box art wraps displaying the Work in substantial conformity with the

Final Design. As part of the license granted to the City under this Contract, the City is expressly authorized to use the Work to fabricate and install an unlimited number of additional traffic box art wraps.

8. **Warranties of Title.** Artist represents and warrants that:

(a) The Work is solely the result of the artistic effort of the Artist and Artist is the sole author, as that term is used in the United States Copyright laws, of the Work. Artist further represents that it will be the sole author, as that term is used in the United States Copyright laws, of all artistic works created pursuant to this Contract, including any intermediate works created during the creation of the Work;

(b) Except as otherwise disclosed in writing to the City, the Work is unique and original and does not infringe upon any copyright or the rights of any person;

(c) The Work (or duplicate thereof) has not been accepted for use, license, or sale elsewhere;

(d) Artist has not sold, assigned, transferred, licensed, granted, encumbered, or utilized the Work or any element thereof or any copyright related thereto which may affect or impair the rights granted pursuant to this Contract;

(e) Upon payment to the Artist by, and delivery of the Work to, the City, that the title transferred to the Work is free and clear of any claims or encumbrances from any source whatsoever;

(f) All Work created or performed by the Artist under this Contract, including any intermediate works created during the creation of the Work, will be wholly with the Artist and will not infringe upon or violate the rights of any third party;

(g) Artist has not and will not grant any licenses to the Work, including but not limited to the Work and any intermediate works created during the creation of the Work, other than the exclusive license granted herein to the City, its successors, and assigns;

(h) Artist has the full power to enter into and perform this Contract and to make the grant of rights contained in this Contract, and Artist created the Work in accordance with all applicable laws, regulations, ordinances, and with all necessary care, skill, and diligence;

9. **Wrap Duration, Repair; Removal; Replacement.** A Wrap is expected to have a lifespan of five (5) to seven (7) years. A Wrap will be removed by the City after 5 to 7 years, depending on its condition, in the City's sole discretion. The City will have the right to remove, repair, or replace any Wrap, as needed, in the City's sole discretion.
10. **Wrap Maintenance.** The City will be responsible for maintenance and conservation of any Wrap, for so long as the Wrap remains in use. The City will have the right, in its sole discretion, and without Artist's input or approval, to determine the appropriate method of maintenance.
11. **Term of Contract & Survival of Obligations.** The Contract is effective as of the Effective Date and, unless terminated earlier pursuant to such provisions in the Contract, will extend until approval and acceptance of the Final Design by the City under Subsection 6(c) above, but in no event will extend beyond a period of one year. All provisions of this Contract that impose continuing obligations on the Parties, including but not limited to granting an irrevocable license to the City, warranty, indemnification, limitation of liability, and keeping addresses for notice current, shall survive the expiration or termination of this Contract.
12. **Termination.**
    (a) The City may terminate this Contract during its term at any time for any reason by giving written notice to Artist not less than three (3) business days prior to the termination date.
    (b) Termination of this Contract will not terminate the license, or any other rights granted to City.

13. **Liability and Indemnity.**
    (a) ARTIST HEREBY RELEASES THE CITY AND THE CITY'S ELECTED OFFICIALS, THE RESPECTIVE OFFICERS, EMPLOYEES, AGENTS, ATTORNEYS, AND REPRESENTATIVES OF THE CITY AND ITS/THEIR SUCCESSORS AND ASSIGNS, IN BOTH THEIR INDIVIDUAL AND OFFICIAL CAPACITIES, INDIVIDUALLY AND COLLECTIVELY, (COLLECTIVELY REFERRED TO AS THE "CITY-RELATED PARTIES") FROM, AND SHALL INDEMNIFY, DEFEND, AND HOLD THE CITY-RELATED PARTIES HARMLESS AGAINST, ALL ALLEGATIONS, CLAIMS (INCLUDING WITHOUT LIMITATION CLAIMS OF PERSONAL INJURY, ENVIRONMENTAL INJURY, BODILY INJURY, SICKNESS, DISEASE, DEATH, PROPERTY

DAMAGE, CONSEQUENTIAL DAMAGES, DESTRUCTION, OR OTHER IMPAIRMENT), DEMANDS, LEGAL ACTIONS, EQUITABLE ACTIONS, COSTS (INCLUDING ALL COURT COSTS, REASONABLE ATTORNEYS' FEES, EXPERTS' FEES OR OTHER COSTS INCURRED IN CONNECTION WITH ANY MATTER RELATING TO THE TERMS OF THIS CONTRACT, OR ARE ALLEGED TO HAVE ARISEN FROM, ANY OF THE FOLLOWING:

(1) **ANY INFRINGEMENT OF PATENT, COPYRIGHT, TRADEMARK, TRADE SECRET OR OTHER PROPRIETARY RIGHT CAUSED BY ARTIST.**

14. Title. Title to the Work subject to Section 15 of this Agreement is exclusively and irrevocably licensed to the City upon the City's approval and acceptance of the Final Design.

15. Copyright Ownership.

(a) Subject to the terms of this Contract, including any covenants herein prohibiting the creation of additional works, the exclusive license granted to the City, its successors and assigns, and the tangible ownership rights of the City in the Work, Artist will have and retain all rights to the Work afforded to Artist by the Copyright Laws of the United States. Artist agrees to do and perform all acts necessary to effect and protect the copyright and renewals thereof. However, if necessary, the City, its successors, and assigns, may take reasonable steps to conserve or maintain the Work in its original form upon prior consultation with the Artist.

(b) The requirements and obligations in this Section 15 will survive termination or expiration of the Contract.

16. Covenant; License; Reproduction Rights.

(a) In view of the intention that the final Work will be unique, Artist on behalf of itself and its successors, assigns, and affiliates, covenants, warrants, and agrees that it will not knowingly aid, abet, participate in, assist, authorize, condone, or permit the making, copying, displaying, or selling of any exact duplicate, or two- or three-dimensional reproductions of the final Work, nor will the Artist grant permission to others to do so except with the written permission of the City. This covenant will survive termination or expiration of the Contract. However, nothing herein will prevent the Artist from creating future works in the Artist's manner and style of artistic expression, including works that include design elements similar to the Work, so long as such works do not replicate the exact composition of the Work.

(b) Artist grants to the City, its successors and assigns, an irrevocable, fully transferable, fully sub-licensable, exclusive license to make unlimited two- and three-dimensional reproductions of the Work for non-commercial purposes, including, but not limited to, additional Wraps, photographs and digital reproductions of the Work for inclusion in the City of Angleton's catalogues, books, brochures, website, postcards, posters, invitations, magazines, newspapers, journals, films, television programs, and other electronic, online media. The City may include information about the Work and Artist on other plaques or materials and in other information as determined by the City.

(c) All reproductions by the City will contain a credit to the Artist and a copyright notice in substantially the following form: Copyright © [Wendy Delgado], [2021].

(d) Artist will use the Artist's best efforts in any public showing or résumé use of reproductions to give acknowledgment to the City in substantially the following form: "an original Work commissioned by and in the public art collection of the City of Angleton."

(e) Artist will, at Artist's expense, cause to be registered with the United States Register of Copyrights, a copyright in the Work in the Artist's name.

(f) If the City wishes to make reproductions of the Work for commercial purposes, including, but not limited to, tee shirts, post cards, and posters, the Parties will execute a separate agreement to address the terms of the license granted by the Artist and the royalty the Artist will receive, if any.

(g) Third Party Infringement. The City is not responsible for any third-party infringement of Artist's copyright and not responsible for protecting the intellectual property rights of Artist.

17. Artist's Waiver Under 17 U.S.C. §106A.

(a) Scope of Waiver. Artist's waiver applies to the Work described herein.

(b) Uses Covered. This waiver applies to the following uses: any and all applications in which either the attribution right or the integrity right may be implicated.

(c) Waiver. With respect to works enumerated in subparagraph (a) above for uses enumerated in subparagraph (b) above, Artist hereby expressly and forever waives any and all rights arising under 17 U.S.C. § 106A, and any rights arising under United States federal law, the laws of any states within the United States, or the laws of any other country that convey rights of the same nature as those conveyed under 17 U.S.C. § 106A, or any other

type of moral right.

18. Assignment and Transfer.

(a) Except as otherwise provided in this Contract**,** no Party has the right to assign this Contract without the prior written consent of the other Parties.

(b) The Work and services required of the Artist are sole and personal and will not be assigned, sublet, or transferred. Any attempt by Artist to assign any rights, duties, or obligations arising under this Contract will be void and of no effect unless prior written consent is given by the City.

The City will have the right to assign or transfer the Contract, and any and all of the City's rights and obligations under the Contract, without Artist's consent, if ownership of the Work is transferred.

19. Entire Contract. This Contract represents the entire Contract between the City and the Artist. This Contract may be amended only by written instrument signed by both parties.

20. Severability. If a court finds or rules that any part of this Contract is invalid or unlawful, the remainder of the Contract continues to be binding on the parties.

21. Waivers. A waiver of any breach of any of the provisions of this Contract will not be construed as a continuing waiver of other breaches of the same or other provisions.

22. Notices. All notices will be in writing and may be delivered by mail, in person, or by email. Mailed notice is deemed received three days after the date of deposit in the United States mail. Unless otherwise provided in this Contract, all notices will be delivered to the following addresses:

To Artist: Wendy Delgado
[Address]
[Address]
Email:

To the City: Chris Whittaker
City Manager
City of Angleton
121 S Velasco
Angleton, TX 77515
Email: cwhittaker@angleton.tx.us

If any Party changes its mailing or email address it will notify the other Parties in writing of the change, as provided for in this section.

23. Law Governing and Venue. This Contract is governed by the law of the State of Texas and a lawsuit may only be prosecuted on this Contract in a court of competent jurisdiction located in or having jurisdiction in Brazoria County, Texas.

24. Compliance with Laws. Artist must comply with any federal, state, and local laws, rules, and regulations applicable to the Work and its services under this Contract.

25. Additional Contract Documents. The following documents attached to this Contract are part of this Contract:

Exhibit A. Artist's Additional Contract Documents:

A. Wendy Delgado's Traffic Box Art Wrap Project Proposal (___ pages).

Exhibit B. City's Additional Contract Documents:

B. City of Angleton Request for Proposal – Traffic Box Art Wrap Project (9 pages)

[*Signature Page Follows*]

CITY OF ANGLETON, a Texas municipal corporation

_____
Jason Perez, Mayor

Date: _____

Wendy Delgado
Artist

_____
By: _____, Artist

Date: _____

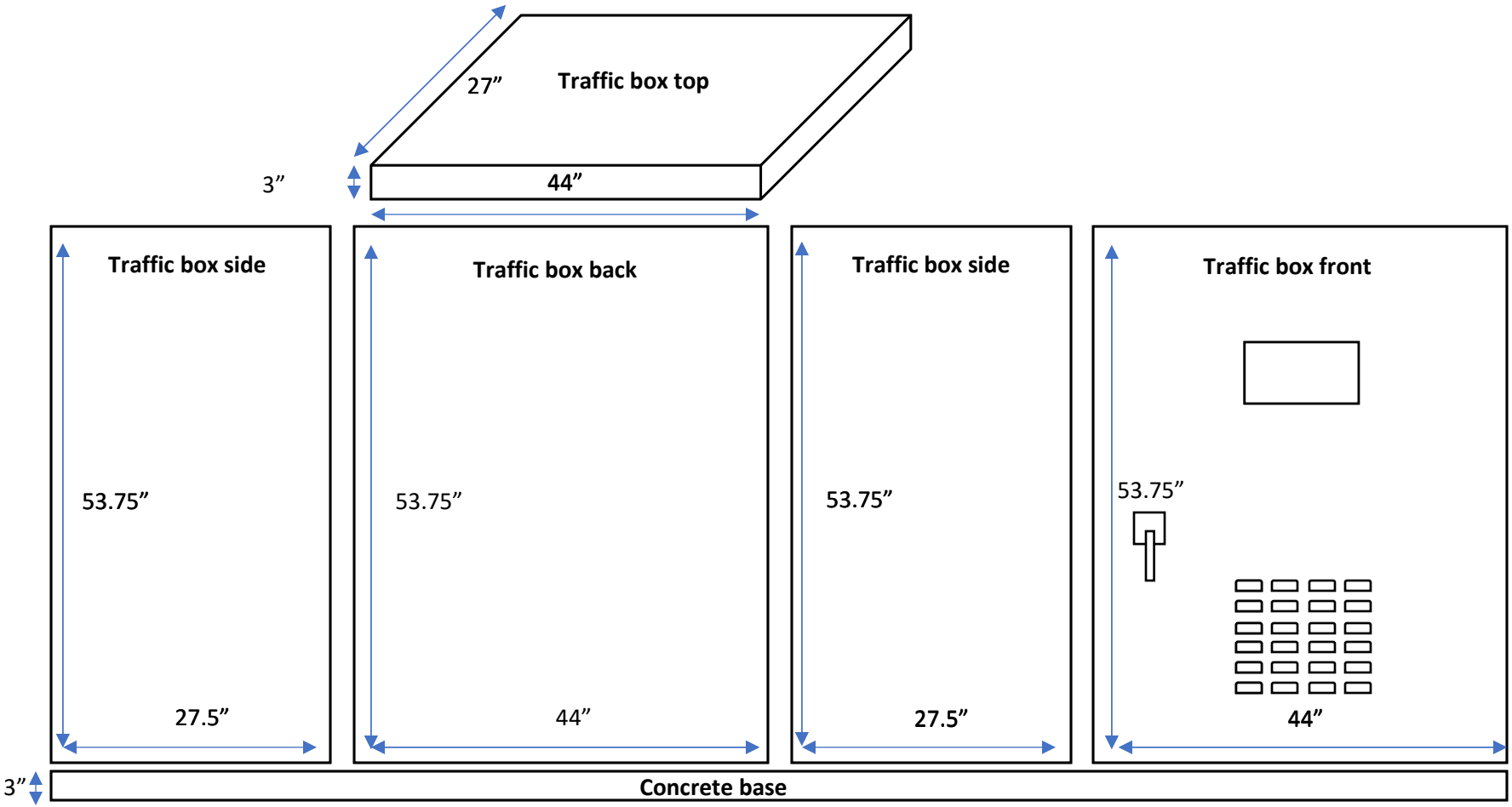
ATTEST:

_____
Frances Aguilar, City Secretary

EXHIBIT A-1

Wendy Delgado's Traffic Box Art Wrap Project Proposal

BOX 1 – LOOP 274 & SHIPLEY'S











BOX 1 – LOOP 274 & SHIPLEY'S

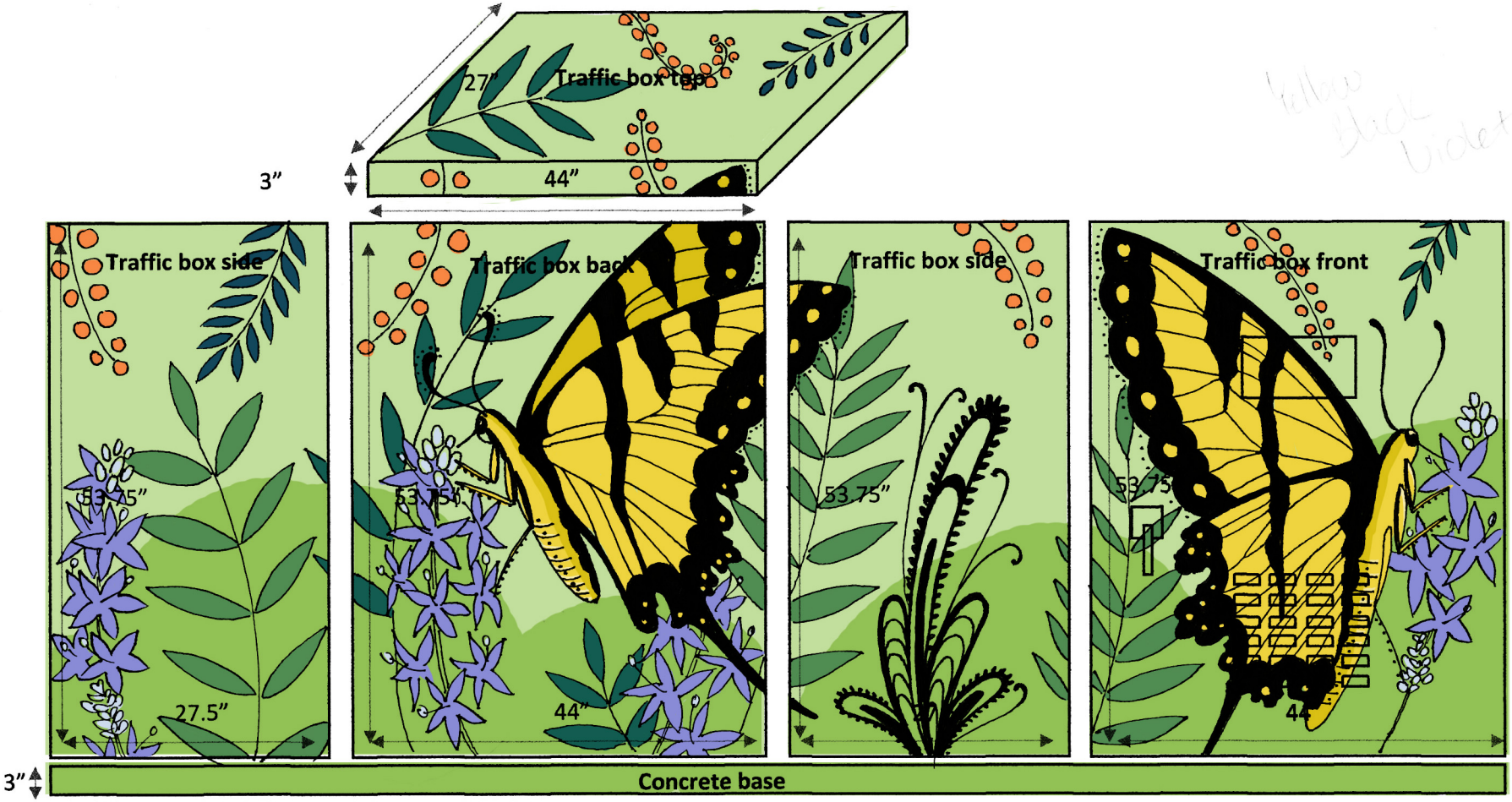










EXHIBIT B-1

City of Angleton Request for Proposals – Traffic Box Art Wrap Project

(*See Attached*)

Request for Proposals
Traffic Controller Cabinet Art Wrap Project
for the City of Angleton

Invitation

The City of Angleton is seeking artists to aesthetically treat utility infrastructure throughout the community. Artists will be commissioned to transform traffic signal controller cabinets in Angleton from functional infrastructure into colorful and inspired works of art revolved around Texas wildflower, birds and/or butterflies.

The City of Angleton will accept responses to the RFP until 5:00 p.m. on Monday, September 15, 2020, at the following address:

City of Angleton
Attn: Keep Angleton Beautiful
Traffic Box Art Wrap Project
dedwards@angleton.tx.us

If you have any questions regarding the Request for Proposals contact:

Mr. Daveyon Edwards
Parks and Recreation Administrative Specialist
979-849-4364 ext.5104
dedwards@angleton.tx.us

Background

The City of Angleton, with input from the Keep Angleton Beautiful Board, will select up to three artists and artist teams to develop designs for signal boxes in Angleton. Artists will submit digital files that can be fabricated into vinyl wraps. Signal box locations include areas along Business 288, South Velasco and Loop 274. The Keep Angleton Beautiful Board will determine the specific location of each artwork.

Eligibility

The specific goals of the project include the following:

- Artists, students, schools and community organizations are encouraged to apply.
- This opportunity is limited to Angleton-area, and regional artists (living/working within 70-mile radius of Angleton, Texas).
- Artists who apply in teams will have the opportunity to work collaboratively on their design. All artists contributing to a team project will receive equal recognition for their artistic input, but will need to divide the $250 stipend amongst themselves as they desire.
- Staff members, board members, advisory board members, City Council members and/or family members of City of Angleton are ineligible to apply.

Artwork Location

Traffic cabinets to be wrapped are located along Business 288, South Velasco, and Loop 274. The Keep Angleton

Beautiful Board will assign specific traffic cabinet locations to selected artist designs.

Traffic Box locations include:

- Bus 288 at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle

Duration

Wraps will be removed after 5-7 years depending on condition. They may be removed at any time at the discretion of the City of Angleton.

Scope of Work

The scope of work will be finalized once an artist is selected. The proposed Scope of Services is not intended to be a detailed scope of work that will be required as part of the final agreement but is intended to provide general information to firms wishing to submit proposals. The City of Angleton will negotiate the detailed Scope of Services with the artist should the organization elect to proceed with the project. The selected, qualified artist will be retained to work with Keep Angleton Beautiful board members and city staff.

Artists should submit via www.publicartist.org the following items:

1. *Resume and/or Biography/Artist Statement*: A current résumé that outlines your professional accomplishments as an artist. If applying as a team, please submit a resume for each artist, with the lead artist's resume first. If you select to submit a biography/artist statement, please do not exceed 500-word maximum.

2. *Letter of Intent*: Include a description of how the artist or artist team meets the criteria listed in the RFP. Please do not exceed 500-word maximum.

3. *Work Examples/Digital Images*. Digital images of 3-5 previously completed artworks that were commissioned or acquired as public art. If you have no previous works commissioned/acquired, please include relevant work samples.

   File format: JPEG only
   File dimensions: No smaller than 1920 pixels on the longest side
   File resolution: 72 ppi/dpi (standard web resolution)
   File size: 5 MB maximum

4. *Image list*: Include artist, title, year completed, dimensions, and budget or price (as applicable) for each image selected in your portfolio.

5. *Design for traffic box wrap utilizing provided template*: Include design concept utilizing template within the RFP.

Incomplete or ineligible applications will not be considered. Please do not submit hard copies.

Submission Guidelines & Design Considerations

- In the creation of designs, please carefully consider the sample template provided at the last page this document. Designs must conform to the shape of the attached template. Actual size of traffic boxes may vary. Selected artists should be prepared to coordinate with the City of Angleton and the Keep Angleton Beautiful Board to finalize the design.

- The art may be a new original piece or an existing work of the artist but may not be on display in other public art programs. This does not include ongoing gallery exhibitions.
- The art may not contain advertising, religious art, sexual content, negative imagery, or convey political partisanship.
- The Art must Follow the Keep Angleton Beautiful Proposed theme revolved around Texas wildflower, birds and/or butterflies only.
- Due to the heat sensitivity of the electronics contained within the utility boxes, artists are discouraged from using very dark color palates in their designs.
- Submitted designs must illustrate original artwork.
- All submissions must be provided as a digital graphic design.
- Artists may submit up to (3) designs for consideration.

Evaluation and Selection Criteria

Criteria used to select artwork include but are not limited to: appropriateness of art to the community, aesthetic quality, site suitability, quality of previous work, and commitment to carrying out the project.

Percent	Component
25	**Appropriateness of the art to the community**
25	**Aesthetic quality**
20	**Quality of previous work**
10	**Commitment to carrying out the project**
10	**References**
5	**Regional artists** (living/working within 70-mile radius ofAngleton, Texas)
5	**Additional Factors:** Gateway signage experience and other related information

Additional Information

Completed artwork will become a part of the City of Angleton's Public Art collection and will be owned by the City. Selected artists will sign a licensing agreement and participation waiver with the City of Angleton.

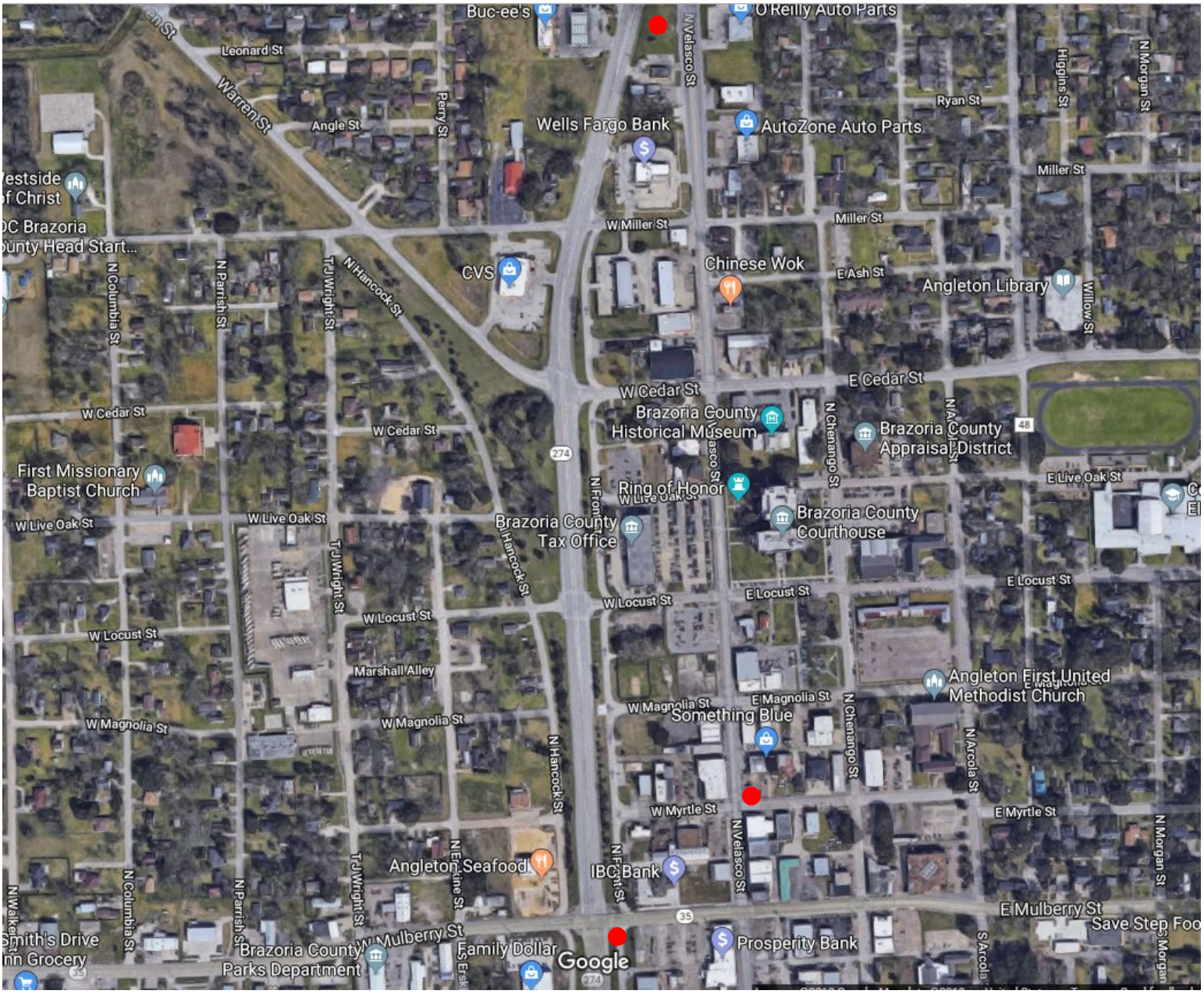
Preliminary Project Schedule

The following tentative schedule is anticipated for selection, contract negotiations and contract award.

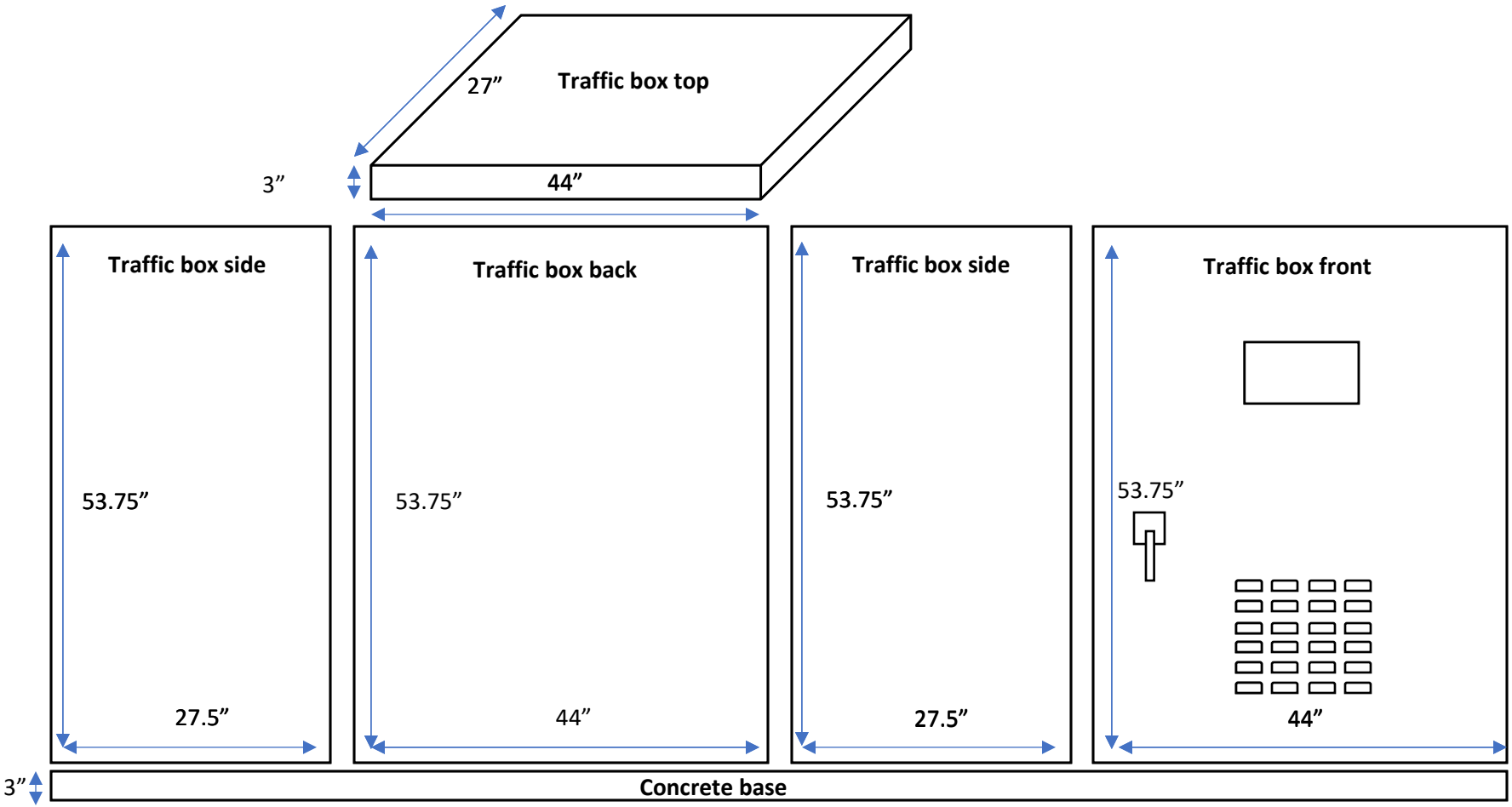
Task	**Start**
RFP Issue Date	August 8, 2020
Proposal Submittal Deadline	September 15, 2020
KAB Review	September 27, 2020
KAB Recommendation	October 5, 2020
TXDOT Approval	October 19, 2020
Artist Notified	October 20, 2020
City Council Approval	October 27, 2020
Wrap Installation	November or December

Map of Locations

- Bus 288at HW35
- Loop 274 at Shipley's
- S Velasco at Myrtle



BOX 1 – LOOP 274 & SHIPLEY'S



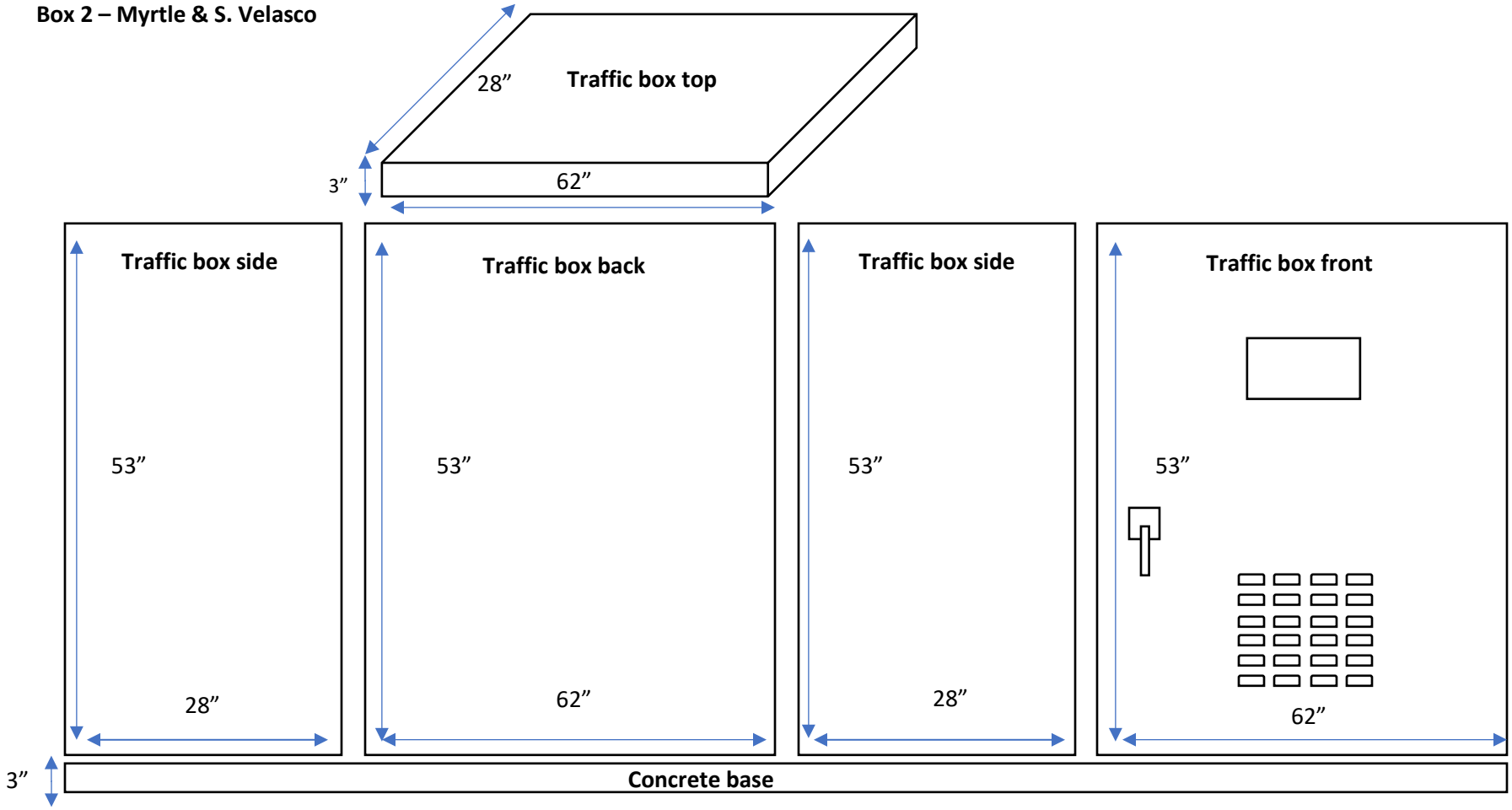








Box 2 – Myrtle & S. Velasco



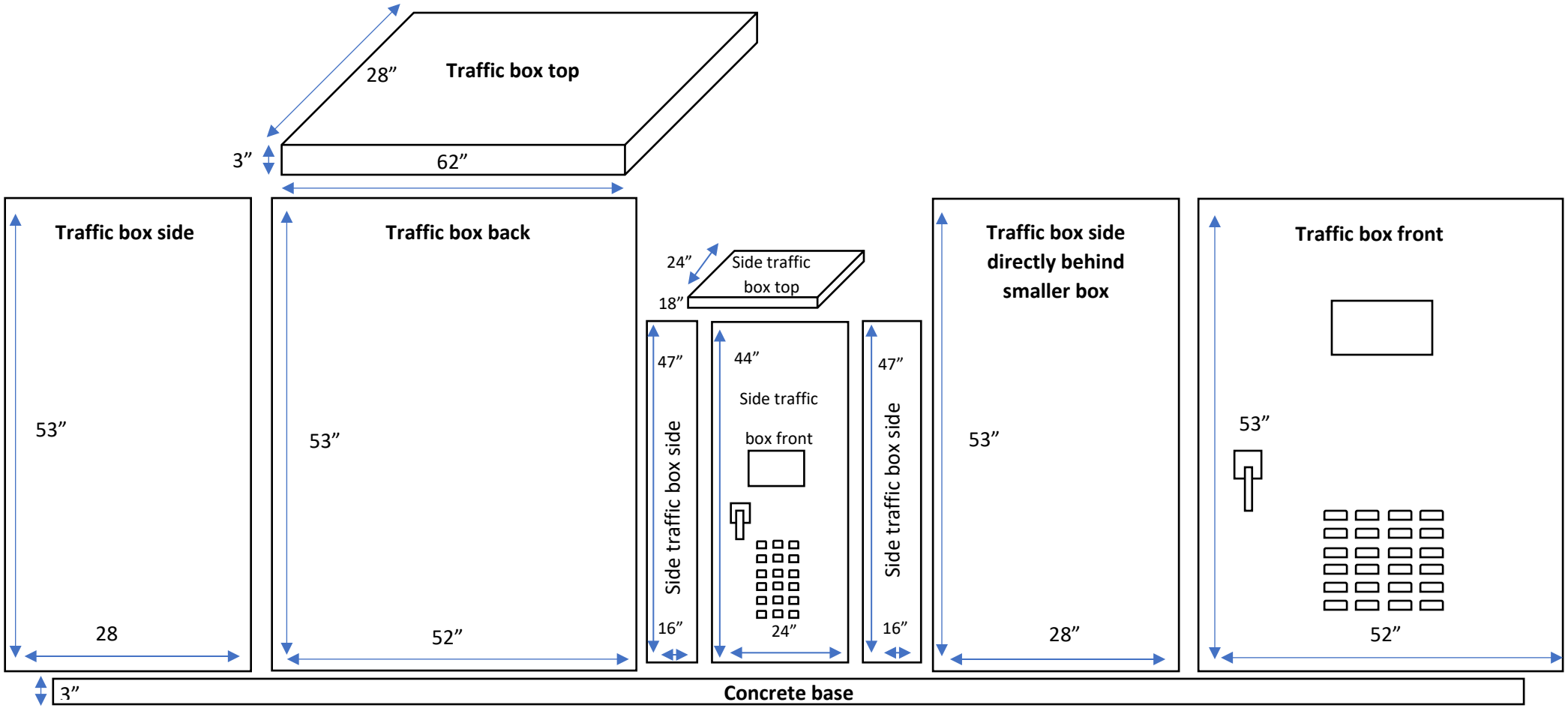








Box 3 – HWY 35 and Business 288











References:

Please PRINT or TYPE here, the names, addresses and other contact information of persons in a management capacity where other similar work has been provided within the last five (5) years, or is currently being provided that may be willing to provide a reference and recommendation for your company. Failure to complete and submit this form may be cause to disqualify your proposal. References provided must be for similar rehabilitation projects.

At least 2 references should be current and of a similar size and scope. Contractor shall also indicate the date services were performed and a brief description of the master planning project, and details involved for each reference provided.

CompanyName Contact Address Telephone E-mail

_____

_____

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CompanyName Contact Address Telephone E-mail

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CompanyName Contact Address Telephone E-mail

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CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 23, 84th Leg., Regular Session.

This questionnaire is being filed in accordance with Chapter 176, Local Government Code, by a vendor who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the vendor meets requirements under Section 176.006(a).

By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the vendor becomes aware of facts that require the statement to be filed. *See* Section 176.006(a-1), Local Government Code.

A vendor commits an offense if the vendor knowingly violates Section 176.006, Local Government Code. An offense under this section is a misdemeanor.

OFFICE USE ONLY

Date Received

1 **Name of vendor who has a business relationship with local governmental entity.**

2 ☐ **Check this box if you are filing an update to a previously filed questionnaire.** (The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date on which you became aware that the originally filed questionnaire was incomplete or inaccurate.)

3 **Name of local government officer about whom the information is being disclosed.**

_____

Name of Officer

4 **Describe each employment or other business relationship with the local government officer, or a family member of the officer, as described by Section 176.003(a)(2)(A). Also describe any family relationship with the local government officer. Complete subparts A and B for each employment or business relationship described. Attach additional pages to this Form CIQ as necessary.**

A. Is the local government officer or a family member of the officer receiving or likely to receive taxable income, other than investment income, from the vendor?

☐ Yes ☐ No

B. Is the vendor receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer or a family member of the officer AND the taxable income is not received from the local governmental entity?

☐ Yes ☐ No

5 **Describe each employment or business relationship that the vendor named in Section 1 maintains with a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership interest of one percent or more.**

6 ☐ Check this box if the vendor has given the local government officer or a family member of the officer one or more gifts as described in Section 176.003(a)(2)(B), excluding gifts described in Section 176.003(a-1).

7

_____ _____

Signature of vendor doing business with the governmental entity Date

CONFLICT OF INTEREST QUESTIONNAIRE
For vendor doing business with local governmental entity

A complete copy of Chapter 176 of the Local Government Code may be found at http://www.statutes.legis.state.tx.us/Docs/LG/htm/LG.176.htm. For easy reference, below are some of the sections cited on this form.

Local Government Code § 176.001(1-a): "Business relationship" means a connection between two or more parties based on commercial activity of one of the parties. The term does not include a connection based on:

(A) a transaction that is subject to rate or fee regulation by a federal, state, or local governmental entity or an agency of a federal, state, or local governmental entity;

(B) a transaction conducted at a price and subject to terms available to the public; or

(C) a purchase or lease of goods or services from a person that is chartered by a state or federal agency and that is subject to regular examination by, and reporting to, that agency.

Local Government Code § 176.003(a)(2)(A) and (B):

(a) A local government officer shall file a conflicts disclosure statement with respect to a vendor if:

***

(2) the vendor:

(A) has an employment or other business relationship with the local government officer or a family member of the officer that results in the officer or family member receiving taxable income, other than investment income, that exceeds $2,500 during the 12-month period preceding the date that the officer becomes aware that

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor;

(B) has given to the local government officer or a family member of the officer one or more gifts that have an aggregate value of more than $100 in the 12-month period preceding the date the officer becomes aware that:

(i) a contract between the local governmental entity and vendor has been executed; or

(ii) the local governmental entity is considering entering into a contract with the vendor.

Local Government Code § 176.006(a) and (a-1)

(a) A vendor shall file a completed conflict of interest questionnaire if the vendor has a business relationship with a local governmental entity and:

(1) has an employment or other business relationship with a local government officer of that local governmental entity, or a family member of the officer, described by Section 176.003(a)(2)(A);

(2) has given a local government officer of that local governmental entity, or a family member of the officer, one or more gifts with the aggregate value specified by Section 176.003(a)(2)(B), excluding any gift described by Section 176.003(a-1); or

(3) has a family relationship with a local government officer of that local governmental entity.

(a-1) The completed conflict of interest questionnaire must be filed with the appropriate records administrator not later than the seventh business day after the later of:

(1) the date that the vendor:

(A) begins discussions or negotiations to enter into a contract with the local governmental entity; or

(B) submits to the local governmental entity an application, response to a request for proposals or bids, correspondence, or another writing related to a potential contract with the local governmental entity; or

(2) the date the vendor becomes aware:

(A) of an employment or other business relationship with a local government officer, or a family member of the officer, described by Subsection (a);

(B) that the vendor has given one or more gifts described by Subsection (a); or

(C) of a family relationship with a local government officer.

AGENDA ITEM SUMMARY FORM

MEETING DATE: 1/12/2021

PREPARED BY: Megan Mainer

AGENDA CONTENT: Discussion and possible action regarding Freedom Park Master Plan agreement with landscape architectural firm, Burditt Consultants LLC.

AGENDA ITEM SECTION: Consent Agenda

BUDGETED AMOUNT: $70,000 **FUNDS REQUESTED:** NA

FUND: 96-500-577

EXECUTIVE SUMMARY:
Staff developed a Request for Qualifications for professional services as it relates to Freedom Park Master Plan. Additionally, staff has held two public hearings on October 12 and November 9 as well as two online surveys to solicit feedback from the public. During this time, the RFQ was posted for proposals.

The Parks & Recreation Board, Mark Gongora, Parks & Recreation Board Liaison, ABLC, Chris Whittaker, Megan Mainer, and Geri Gonzales served as the evaluating committee. RFQ submissions were sent to the committee on November 10 and evaluations were due electronically by end of day November 16, 2020. Seven evaluators responded.

Staff invited the top three firms, Clark Condon, Burditt, and Kimley-Horn, for an interview on December 14, 2020 at a Special Joint meeting with the Parks & Recreation Board, ABLC and staff. Each firm prepared a PowerPoint illustrating similar projects in the local area, Freedom Park project constraints and possible solutions, and the firm's/team's qualifications and experience that make them a great fit for this project.

The Parks & Recreation Board and ABLC unanimously recommended Burditt Consultants LLC be selected for Freedom Park Master Plan.

Concourse Development issued payment, in the amount of $70,000, for Freedom Park Master Plan mid-December.

Enclosed is a proposal from Burditt Consultants LLC for the Freedom Park Master Plan Project along with our fee quote of $70,000.

RECOMMENDATION:

Staff recommends City council authorize the City Manager to execute the agreement pending review by the City Attorney.

BURDITT Consultants LL
LAND | PLACE STUDIO – *Connecting People to Place*
PLANNING + LANDSCAPE ARCHITECTURE + ARCHITECTURE

January 4, 2021

Megan Mainer
Parks & Recreation Director
City of Angleton
1601 N. Valderas Street
Angleton, TX 77515

Re: Proposed Scope of Work and Fee Proposal, Freedom Park Master Plan

Dear Ms. Mainer,

Thank you for the opportunity to work with you on the 2021 Freedom Park Master Plan. We are excited about the project and are honored you found our qualifications and planning approach to be appropriate for Angleton. We stand ready to deliver on the City's behalf.

Attached is our proposed Scope of Basic Services and Terms and Conditions for your review. We have structured this proposal in direct response to the scope outlined in the Request for Qualifications as well as our recent teleconference clarifying the assignment. Our team is prepared to proceed expeditiously upon execution of this proposal for services or a mutually approved Professional Services Agreement.

Please advise of any revisions you see that improve upon the Scope of Work. Our goal is to make the approval process as mutual and easy as possible and to quickly respond to any modifications or clarifications as required.

On behalf of us all at Burditt, thank you again for the opportunity to collaborate with you on this important project for Angleton.

Very sincerely,

Charles Burditt

CB/ek
cc: Claudia Walker, RLA, Project Manager
J. Shane Howard, Sr. Vice President
Attachments: Exhibit "A" Basic Services - Scope of Work
Exhibit "B" Burditt Consultants - Hourly Rate Sheet 2021
Exhibit "C" Terms and Conditions

Statement of Jurisdiction: The Texas Board of Architectural Examiners has jurisdiction over complaints regarding a registrant's professional practices. The Board may be contacted at:

TEXAS BOARD OF ARCHITECTURAL EXAMINERS
P. O. BOX 12337
AUSTIN, TEXAS 78711-2337

Approval and Notice to Proceed:

_____**Date**_____

By:

CITY OF ANGLETON

"EXHIBIT A"

Basic Services Scope of Work

PROJECT UNDERSTANDING

The Freedom Park Master Plan presents a unique opportunity to study and integrate a diverse array of recreation facilities and amenities with the goal of addressing current and future recreation needs, renovations, expansions, and future construction efforts. The project requires the assessment and evaluation of existing facilities and infrastructure within the park with further attention directed to the undeveloped land within the property to achieve a visionary, yet executable, master plan with budgets, design intentions, and identified hierarchy of options to guide City Staff and Elected Leaders through future funding, design, and construction efforts.

The master planning process provides an opportunity to resolve long-standing operational, functional, environmental and aesthetic issues that may exist due to changing demand, and organizational needs. The master planning process generally includes the following key steps:

Step 1: Documenting the current conditions and needs within the existing park, facilities, and land.

Step 2: Listen to and record the City's goals, ideas, needs, concerns and desires for the park.

Step 3: Propose a future vision for the park and establish priorities for new facilities and amenities as determined through stakeholder input.

Step 4: Provide implementation guidance including preliminary opinions of probable cost for capital investment, revenue generation/cost recovery, as well as long-term operation and maintenance.

Services provided will proceed according to the tasks outlined below and as identified in a Burditt work plan to be developed upon commencement of the project.

SCOPE OF BASIC SERVICES

Services provided will proceed according to the tasks outlined below and as identified in a Burditt work plan to be developed upon commencement of the project.

Task 1 Project Initiation and Inventory

Activities: Establish project understanding and objectives with Client's Project Manager and the Consultant Team:

- Define objectives;
- Confirm schedule;
- Identify all team members (including City staff, officials, administration, boards, committees and stakeholders) and roles;
- Identify decision makers, milestones and target deliverables;
- Identify base information to be examined by team and arrange with staff to obtain;

- Identify critical community information to identify relevant issues that affect the physical planning for the project (including identification of facilities and programs to be considered);
- Study and review all incumbent and existing plans to formulate an understanding of prior planning and requirements and/or new data to be collected. Recommendations, stakeholder input and other relevant data from the existing Comprehensive Parks and Recreation Comprehensive and Strategic Plan will be utilized where appropriate to inform this planning effort; and
- Inventory existing Freedom Park recreation facilities and amenities and assess general condition assessment including appearance, maintenance, functional limitations and handicap accessibility.

Key Deliverables: ***Project Kickoff Meeting,***
Identification of Data Required to Develop Master Plan
Opportunities and Constraints/Site and Facility Evaluation Commencement

Prerequisites: Receipt of authorization by CITY.
CITY shall identify a Project Manager to be Consultant's point of contact for all matters.
City will provide copies of prior studies and documents relative to polices, regulations, standards, criteria, etc. as may be pertinent to the assigned work.

Task 2 Research and Stakeholder Involvement Planning

Activities: Burditt will, in cooperation with City's Project Manager, develop a plan to engage all Team and City-identified audiences. The purpose of this task is the following:

- Analyze recent public input findings regarding recreation needs at Freedom Park;
- Develop schedule, format, and materials for joint workshops with City Council, Angleton Better Living Corporation (ABLC), and the Parks & Recreation Board at the City's direction; and
- Provide content and assistance for use in web-oriented media.

Key Deliverables: ***Publish stakeholder and summary of public input***

Prerequisites: Availability of base information and participating CITY Committees or staff.

Task 3 Stakeholder Involvement

Key Activities: Burditt will, based on the approved Stakeholder Involvement Plan (established in Task 2), conduct an online public survey to identify recreation needs, facilitate public workshop to identify Community Vision and also to seek City Administration, Staff, Elected Officials, Boards, and other City invited participants to offer input regarding a variety of departmental or citywide issues.

The Burditt team will facilitate and attend up to:

- Three (3) joint committee meetings including City Council meetings, Angleton Better Living Corporation (ABLC), and Parks & Recreation Board to provide overview, progress, and discussion of draft Master Plan at key intervals throughout the master planning process;
- Eight (8) City Staff meetings; and
- One (1) Online public Open House to present draft master plan recommendations for citizen review and comment.

Key Deliverables: ***Facilitate and document stakeholder involvement meetings***

Prerequisites: Availability of participating City Project Manager, boards, committees, and staff.

Task 4 Develop Prioritization of Needs and Opportunities

Activities: Burditt will, based on the Public Input Summary and Demand Analysis, develop the following:

- Conduct prioritization process incorporating results from previous analysis of all phases;
- Written narrative summarizing results documenting the process followed by project team, public and CITY participants; and
- Document Program priorities as provided by Staff, Council, Parks & Recreation Board, the ABLC, and other identified Stakeholders.

Key Deliverables: ***Prepare written narrative summarizing results and identification of Prioritized Needs and Opportunities***

Prerequisites: Appropriate input from City Project Manager, Staff, Council, Boards, and other participants.

Task 5 Conceptual Park Master Plan Development (including O&M, Financial Impact Analysis, Concepts, Preliminary Opinions of Probable Costs)

Activities: Based on evaluation of City and Community input, departmental input, and facility evaluation, Burditt will develop the Master Plan Document including initial Conceptual Designs (up to 3), plan narrative, supporting graphics, and budgets (Opinions of Probable Costs – OPC). This will include supplements or edits to the plan to include the following:

- Programming changes or additions;
- Proposed Improvements or renovations to facilities;
- Proposed new construction of additional site facilities or amenities;
- Opportunities for natural resource/wildlife habitat-based recreation (trails, education, etc.);

- Opportunities for historical-based recreation;
- Consider and document existing plans, studies, and conditions;
- Interlocal, joint participation use with other public agencies: Texas Parks and Wildlife (TPWD), Texas Recreation and Parks Society (TRAPS);
- Consider the Public or Stakeholder input;
- Provide written narrative summarizing master plan recommendations, using charts, graphs, tables, photos (sketches, renderings);
- Identify and emphasize general maintenance demands required of the City in maintaining parks and recreation system;
- Develop Implementation Strategies for phased development options including funding considerations and a Budget and Expenditure Plan;
- Prepare Budget and Expenditure Plan with level of magnitude capital costs and recommendations for renovation and improvements to existing facilities;
- Generally identify potential funding sources (public/private) and other agencies and recreation providers;
- Master Plan Concepts (up to 3 to be studied) for Proposed Improvements;
- Opinions of Probable Cost (OPC);
- Financial Impact Analysis modeling the existing amenity revenues, revenues of proposed improvements, and development of a Cost Recovery Model for the park based on City goals for cost recovery; and
- Create actional item hierarchy with dated goals and accomplishments to be used by City for monitoring progress.

Applicable sections and/or components of the plan will be submitted to respective department staff for review and comment prior to compilation and submittal as a preliminary document for City review and edit. Burditt will develop a draft version for review by City Project Manager and entire City Team to be presented at City Council Workshop, and Parks & Recreation Board Meeting.

Key Deliverables: ***Preliminary (Draft) Freedom Park Master Plan***

Prerequisites: Review and approval of Preliminary Freedom Park Master Plan sections by appropriate departmental staff or City Project Manager.

Task 6 Final Freedom Park Master Plan Document, Council Adoption and Approval

Activities: Burditt will further refine the Preliminary Draft Document by incorporating comments, revisions and edits recommended by the City.

- Refine Action Plan/Expenditure Plan;
- Finalize written narrative and supporting documentation to reflect revisions;
- Plan shall, as feasible under the Basic Services Scope described be formatted to accommodate submittal for Awards as may be available from Texas Recreation & Parks Society (TRAPS), APA, and National Parks & Recreation Association (NRPA).

Additional tasks related to Adoption and Approval

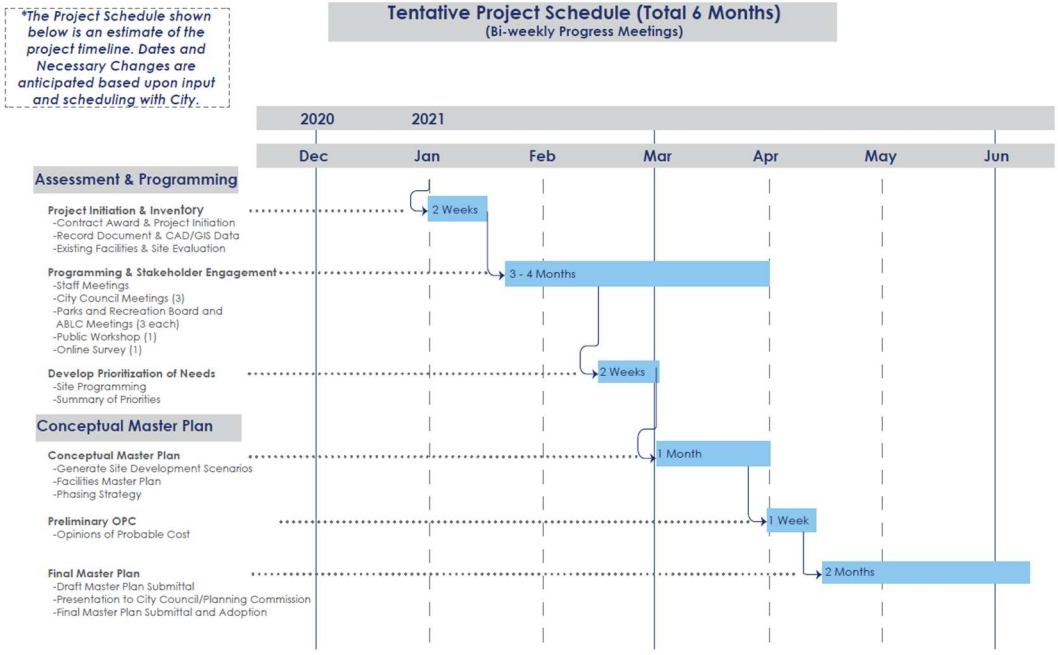
- The document will be created in both bound and electronic format for additional Client printing. Twelve (12) final hard copies will be provided when adopted by City Council or prior to adoption if previously authorized by City's Project Manager. Interim Draft copies, if provided by Burditt, will be provided at the City's expense. Additional final copies in excess of 12 will be provided at City's expense;
- Burditt Team will attend Council Meeting in preparation for adoption.

Key Deliverables: ***Final Freedom Park Master Plan (also suitable for Web Publishing)***
12 Bound Copies of the Final Master Plan Document

ADDITIONAL SPECIAL SERVICES

The City has entered into agreement with a local Developer/MUD to assist in the design and construction of additional detention for its development. The City will require Boundary and/or Topographic Survey and Engineering Design for a potential drainage detainment as required via the existing City development agreement. Burditt will obtain proposals from appropriate subconsultants for these services at the earliest possible stage of the Freedom Park Master Planning Project. The proposal(s) and recommendations will be presented to the City and managed under Burditt's Professional Services Agreement with the City. Upon approval, this Agreement may be modified to address the Additional Special Services relating to Professional Engineering Services required to construct the drainage detainment device(s). Burditt shall engage the Engineer(s) per the City's authorization and manage the assignment on a Cost Plus Ten Percent (10%) Basis.

Preliminary Project Schedule*



Some components of the schedule above will allow for concurrent operations; the Project Schedule shown above is an estimate of the project timeline. Dates and necessary changes will be based upon input and scheduling with CITY.

We have identified a preliminary project timeline of Five Months to conduct the Basic Services of Data Collection, Demand Analysis, Online Survey, Public Workshop, Facility Assessments, Preliminary Freedom Park Master Plan Draft, and Final Freedom Park Master Plan for City Council Adoption.

While we believe this timeframe is generally appropriate, the City's input, schedule, and authorization to proceed may dictate potential adjustments to the schedule. Upon project initiation, we will develop a revised schedule reflecting the actual milestones, meeting dates, etc.

Project Schedule – A detailed Work Plan will be determined upon approval of proposal, professional services agreement execution and project initiation; however, a target for completion of Basic Services is Five Calendar Months.

Compensation

Basic Services	**A. Tasks 1-6** – For the Basic Services associated with the defined scope, we propose a lump sum fee of: ***SEVENTY THOUSAND AND NO/100 DOLLLARS ($70,000)*** Basic Services compensation will be paid by the Client to the Consultant as specified in Terms and Conditions attached or by terms of Agreement for Services to be executed by parties.
Additional Services	Additional Services outside the scope of work will be invoiced at the Burditt established hourly rates as shown in the attached Exhibit "B" - *Burditt Consultants, LLC 2021 Hourly Rate Sheet* document or via an amendment to the Agreement for specific services at an approved amount. Additional Services include, but are not limited to, any changes due to revisions in the original scope of work, base data relating to this matter, or any such services requested by Client. Additional services will be agreed upon in writing by both parties prior to commencement.
Reimbursable Expenses	Burditt will limit reimbursable expenses to printing costs associated with issuance of final documents beyond the defined deliverables quantity (12) outlined in the Basic Services Scope of Work, and similar expenses. Travel expenses will not be charged to the Client as they are contemplated in the lump sum compensation amount.
Project Commencement	We are prepared to begin upon receipt of a signed agreement Changes in scope of work or additional design time will be provided upon Client's request and agreement.

EXHIBIT "B"

BURDITT CONSULTANTS, LLC
2021 HOURLY RATES

HOURLY RATES APPLY ONLY TO ADDITIONAL SERVICES OR FOR REQUESTS MADE OUTSIDE OF BASIC SERVICES. Hourly Basis Rates for Professional Services not covered under Basic Services and requested by Owner shall be at the following rates:

CLASSIFICATION	HOURLY RATE
Principal	$180
Program Manager	$175
Project Manager	$160
Project Architect/Landscape Architect	$145
Senior Planner	$145
Senior Urban Forester	$145
Wetland Scientist	$135
Natural Resource Planner	$135
Licensed Irrigator	$135
Geographic Information Systems (GIS)	$130
Planning Associate	$120
Architecture/Landscape Architecture Associate	$110
Natural Resource/Forester Associate	$110
CAD Designer II	$ 90
CAD Designer I	$ 80
Administrative Assistant II	$ 70
Administrative Assistant I	$ 55

Invoices are prepared monthly with payments due 30 days of receipt. Interest at the rate of 1 ½ % per month will be charged on all accounts not paid by the 30th day following the billing date. Reimbursable expenses and necessary sub-consultants not currently required by project and approved by Owner shall be invoiced at cost plus ten percent (10%).

EXHIBIT "C"
EXCLUSIONS TO BASIC SERVICES

EXCLUSIONS TO BASIC SERVICES:

CLIENT requests for any of the following shall be considered Additional Services and compensation to CONSULTANT shall be made according to CONSULTANT's published 2021 hourly rates (attached) or fixed fees with prior approval by the CLIENT, or as an Additional Sub-Consultant service:

a. Archaeological Studies or Services.
b. Surveying by a licensed surveyor (metes & bounds, easements, utilities, existing improvements, etc.).
c. Geotechnical engineering and report.
d. Ecological/Environmental or Hazardous Assessment (see Additional Special Services).
e. Hazard remediation for Asbestos, Brownfield Sites, site contamination, and other hazardous elements.
f. Re-design of key elements of project after Owner Approval has been given.
g. Off-site utility infrastructure Engineering/Design.
h. Material testing.
i. Design of off-site utility infrastructure improvements.
j. Drainage mitigation.
k. Preparation of easements by separate instrument.
l. Construction staking.
m. Record Drawings and Specifications
n. Contractor As-Built Plans.
o. Traffic impact analysis.
p. TDLR Fees with registration review and inspection for T.A.S. compliance.
q. USACE 404 Permitting or other Wetland and Endangered Species Mitigation.
r. All permits and/or fees as required by local authorities having jurisdiction.
s. Resident inspection of Construction Operations by Third Party.

(REMAINDER OF PAGE LEFT BLANK INTENTIONALLY)

EXHIBIT "D"
TERMS AND CONDITIONS

ADDITIONAL SERVICES

Additional assignments outside the scope of work will be invoiced at a mutually agreed upon lump sum amount or at the Burditt Consultants established 2021 hourly rates. Additional assignments include, but are not limited to, any changes due to revisions in the original scope of work, base data relating to this matter, and any additional services requested by Client. Additional services will be provided with prior written authorization from Client.

PAYMENT OF FEES

For the scope of services stated herein, Client agrees to pay Consultant the compensation stated in this Agreement. Consultant agrees to submit invoices monthly for services rendered. Invoices shall be forwarded upon completion or monthly, based upon the percentage of completion. Invoices are due and payable within 30 days of receipt. Any invoice payment due past 30 days will be subject to interest at the rate of the lesser of (i) one and one-half percent (1 1/2%) per month or (ii) the maximum rate allowed by law.

STANDARD OF CARE

The standard of care for all professional services performed or furnished by Consultant under this Agreement will be the skill and care used by members of Consultant's profession practicing under similar circumstances at the same time and in the same locality. Consultant makes no warranties, express or implied, under this Agreement or otherwise, in connection with Consultant's services.

RISK ALLOCATION

Burditt Consultants, LLC agrees to carry out and perform the services herein agreed to in a professional and competent manner. In recognition of the relative risks, rewards, and benefits of the project both to the Client and Burditt, the risks have been allocated so that the Client agrees that, to the fullest extent permitted by law, Burditt's total liability to the Client, for any and all claims, losses, expenses, damages or claim expenses arising out of this agreement, from any cause or causes, shall not exceed the total amount of Burditt's fee. Such causes include, but are not limited to, Burditt's negligence, errors, omissions, strict liability, breach of contract or breach of warranty.

USE OF ELECTRONIC MEDIA

Copies of documents that may be relied upon by Client are limited to the printed copies (also known as hard copies) that are signed or sealed by Consultant. Files in electronic media format or text, data, graphic or other types that are furnished by Consultant to Client are only for convenience of Client. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. When transferring documents in electronic media format, Consultant makes no representations to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems or computer hardware differing from those in use by Consultant at the beginning of this assignment.

HAZARDOUS ENVIRONMENTAL CONDITIONS

It is acknowledged by both parties that Consultant's scope of services does not include any services related to the presence at the site of asbestos, PCBs, petroleum, hazardous waste or radioactive materials. Client acknowledges that Consulting is performing professional services for Client and Consultant is not and shall not

be required to become an "arranger," "operator," "generator" or "transporter" of hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA).

GOVERNMENTAL REGULATORY PERMITTING

United States Corps of Engineers (USACE) 404 Permitting or other Wetland and Rare and Endangered Species Mitigation, Report of Letter of Map Application to FEMA/TCEQ, Texas Commission on Environmental Quality (TCEQ) Permits including but not limited to Permit 401, Water Rights Permit, and SWPPP (to be provided by Contractor awarded the project), and Environmental Protection Agency of the United States (EPA) Construction Storm Water Permits are hereby excluded from any services related to the PROJECT. If requested, these services can be provided as Additional Services.

FORCE MAJEURE

Circumstances or events may occur that are outside the control to the extent caused by any occurrence beyond the reasonable control of such party including, but not limited to, epidemic, pandemic, acts of God such as fires, hurricanes, floods, or tornadoes. Neither party shall be deemed in default of this Agreement to the extent that any delay or failure in the performance of its obligations results from any cause beyond its reasonable control and without its negligence.

OPINIONS OF COST

When included in Consultant's scope of service, opinions or estimates of probable construction cost are prepared on the basis of Consultant's experience and qualifications and represent Consultant's judgment as a professional general familiar with the industry. However, since Consultant has no control over the cost of labor, materials, equipment or services furnished by others, over contractor's methods of determining prices, or over competitive bidding or market conditions, Consultant cannot and does not guarantee that proposals, bids, or actual construction cost will not vary from Consultant's opinions or estimates of probable construction cost.

TDLR DOCUMENTATION

Pursuant to Texas Accessibility Standards (TAS) and ADA Requirements, Client is responsible for any fees associated with the review, filing and recording of the Landscape Construction Documents. If an Elimination of Architectural Barriers (EAB) project number is available, Client shall provide Burditt with the number prior to finalization of the Construction Documents. Pursuant to the requirements of the law, Burditt will file the plans for review.

CONSTRUCTION PHASE SERVICES

If this Agreement provides for any construction phase services by Consultant, it is understood that the Contractor, not Consultant, is responsible for the construction of the project, and that Consultant is not responsible for the acts or omissions of any contractor, subcontractor or material supplier; for safety precautions, programs or enforcement; or for construction means, methods, techniques, sequences and procedures employed by the Contractor.

TERMINATION OF CONTRACT

Client may terminate this Agreement with seven (7) days prior written notice to Consultant for convenience or cause. Consultant may terminate this Agreement for cause with seven (7) days prior written notice to Client. Failure of Client to make payments when due shall be cause for suspension of services or, ultimately, termination, unless and until Consultant has been paid in full all amounts due for services, expenses and other related charges.

OWNERSHIP OF DOCUMENTS

All documents prepared or furnished by Consultant pursuant to this Agreement are instruments of Consultant's professional service, and Consultant shall retain an ownership and property interest therein. Consultant grants Client a license to use instruments of Consultant's professional service for the purpose of constructing, occupying and maintaining the Project. To the fullest extent permitted by law, re-use or modification of any such documents by Client, without Consultant's written permission, shall be at Client's sole risk.

USE OF ELECTRONIC MEDIA

Copies of documents that may be relied upon by Client are limited to the printed copies (also known as hard copies) that are signed or sealed by Consultant. Files in electronic media format or text, data, graphic or other types that are furnished by Consultant to Client are only for convenience of Client. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. When transferring documents in electronic media format, Consultant makes no representations to long-term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems or computer hardware differing from those in use by Consultant at the beginning of this assignment.

AGENDA ITEM SUMMARY FORM

MEETING DATE: 01/12/2021

PREPARED BY: Glenn LaMont

AGENDA CONTENT: Approval to sign an MOU between the City of Angleton and FEMA regarding the use of the City's Code Red to access the IPAWS OPEN Platform for Emergency Networks. This will allow the city to inform residents of a specific area of a life-threatening situation. This will allow the Mayor to sign the document.

AGENDA ITEM SECTION: Regular Agenda

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

FUND: N/A

EXECUTIVE SUMMARY:

Code Red provides the City with an interoperable system that will allow access to FEMA's IPAWS platform. This will help keep our residents and visitors informed of life-threatening situations by targeting cell phones in a defined area.

RECCOMENDATION:

Staff recommends approval.

Memorandum of Agreement between the City of Angleton and the

Federal Emergency Management Agency Integrated Public Alert and Warning System (IPAWS) Program Management Office

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Regarding the use of: City of Angleton Interoperable System(s) and IPAWS OPEN Platform for Emergency Networks (IPAWS-OPEN)

Version 4.5

19 Nov 2020

WARNING: This document is FOR OFFICIAL USE ONLY (FOUO). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552). It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with DHS policy relating to FOUO information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of the FEMA Integrated Public and Warning System and the FEMA Disclosure Offices.

Document Change History

Version	Date	Author	Description
4.0	06/13/2019	Al Kenyon	Updated COG MOA with stakeholders' input
4.1	06/13/2019	Al Kenyon	Delete CISO and CIO signature blocks per CIO Corrected IPAWS Suite #, Zipcode
4.2	6/20/2019	Gustavo Barbet Jr	Fixed grammatical errors and made minor wording changes throughout document
4.3	9/6/2019	Mark Lucero	Changes to Section 3.0 from paragraph to bullet format
4.4	1/31/2020	Gustavo Barbet Jr	Updated FEMA CISO POC
4.5	6/30/2020	Gustavo Barbet Jr	Updated FEMA CISO POC
4.5	10/15/2020	Mark Lucero, Al Kenyon, Justin Singer	Authority Section, Version History Page, and Footer Updates

MEMORANDUM OF AGREEMENT

1.0 SUPERSEDES: None

2.0 INTRODUCTION

The purpose of this memorandum is to establish a management agreement between the City of Angleton hereinafter referred to as the Collaborative Operating Group (COG), and the Federal Emergency Management Agency (FEMA) IPAWS Program regarding the utilization and security of City of Angleton Interoperable System(s) (as shown in Appendix A), which interoperate with the IPAWS-Open Platform for Emergency Networks (IPAWS-OPEN). The expected benefit is to enable information interoperability across emergency response organizations and systems as intended by the FEMA IPAWS Program.

This agreement will govern the relationship between the Collaborative Operating Group and FEMA, including designated managerial and technical staff and system users associated with the aforementioned COG. As indicated within the terms of this agreement, both parties agree to allow system interoperability through the use of SOAP over HTTPS via the public internet. Under this agreement, no direct or networked connection using VPN (or equivalent technology) between the systems named in Appendix A and IPAWS-OPEN is allowed. In the event a direct connection is required, an Interconnection Security Agreement must be executed.

3.0 AUTHORITY

This agreement is authorized under the following authorities and regulations:

- Section 706 of 47 U.S.C. 666, The War Powers Act: Provides for Presidential Access to commercial communications during “a state of public peril or disaster or other national emergency”
- Public Law 93-288, The Stafford Act. Sec. 202. Disaster Warning: Directs FEMA to provide technical assistance to State and local governments to ensure that timely and effectively disaster warning is provided
- Public Law 114-143, The IPAWS Modernization Act: Enacts to law the policy statement and similar requirements found in Executive Order 14307
- Sec. 202. Disaster Warning: Directs FEMA to provide technical assistance to State and local governments to ensure that timely and effectively disaster warning is provided
- Executive Order 13407 of June 26, 2006, Public Alert and Warning System: Established as policy the requirement for the United State to have an effective, reliable, integrated, flexible, and comprehensive system to alert and warn the American people
- 47 CFR Part 10, Wireless Emergency Alert (WEA): Provide for alert and warning to devices on wireless carrier networks
- 47 CFR Part 11, Emergency Alert System (EAS): Provide for alert and warning over TV and radio broadcast

4.0 BACKGROUND

It is the intent of both parties to this agreement to establish and utilize a standardized web based application interface (as defined by the IPAWS-OPEN Web Service Interface Design Guidance) between the information technology (IT) systems shown below to facilitate the exchange of emergency messages within the production environment. The testing of the interoperability of these systems has been performed through the use of FEMA's Test and Development environment to ensure the transference and receipt of emergency messages using approved messaging standards. The interoperability between these systems is supported by the use of SOAP over HTTPS via the public internet.

5.0 COMMUNICATIONS

Frequent formal communications are essential to ensure the successful management and operation of system interoperability. Both parties agree to maintain open lines of communication between designated staff (as indicated in Appendix B) at both the managerial and technical levels. All communications described herein must be conducted in writing and may be disseminated by electronic means unless otherwise noted.

The owners of the respective systems agree to designate and provide contact information for technical leads for their respective systems, and to facilitate direct contacts between technical leads to support the management and operation of system interoperability. To safeguard the confidentiality, integrity, and availability of the systems and the data they store, process, and transmit, both parties agree to provide notice of specific events within the timeframes indicated below:

- **Security Incidents:** Technical, administrative and/or help desk staff will immediately notify their designated counterparts by telephone or e-mail when a security incident(s) is detected and/or a violation of the Rules of Behavior (see Appendix C) has been identified. Both parties agree to make the appropriate technical and administrative individuals available for all necessary inquiries and/or investigations. Containment and/or resolution procedures will be documented by the identifying party and after action reports generated and submitted to the system owner and/or designated security officials within five (5) business days after detection of the incident(s).

- **Disasters and Other Contingencies:** The FEMA IPAWS Program Office will notify the COG by telephone, e-mail or other acceptable means in the event of a disaster or other contingency that disrupts the normal operation of IPAWS-OPEN.

- **System Interconnections:** This MOA is intended for systems interoperating with IPAWS-OPEN using SOAP over HTTPS via the public Internet. If in the future, an interconnection (i.e. dedicated system-to-system connection) is required to IPAWS-OPEN, this MOA must be updated and an Interconnection Security Agreement (ISA) must be executed. If a change in status from interoperating to interconnected system is required, the initiating party will notify the other party at least 3 months before the planned interconnection is to be in place.

- **Discontinuation of Use:** In the event the use of IPAWS-OPEN is no longer required, the COG agrees to immediately notify, in writing, the FEMA IPAWS Program Office at which time the COGID and associated access credentials will be deactivated.

- **Personnel Changes:** Both parties agree to provide notification of changes to their respective system owner or technical lead. In addition, both parties will provide notification of any changes in the point of contact information provided in Appendix B. All relevant personnel changes and changes to contact information must be provided within 5 business days of the change.

6.0 TYPE OF INTERCONNECTIVITY

Both parties agree that the COG will utilize only the assigned COGID, associated credentials and digital certificates provided by the FEMA IPAWS Program Office to support interoperability between the system(s) listed in Appendix A and IPAWS-OPEN. In addition, all interoperable systems must be configured to interface with IPAWS-OPEN over the public Internet using only approved web service standards and associated requirements. A listing of approved web service standards and supporting requirements can be obtained from the IPAWS-OPEN Web Service Interface Design Guidance document.

In the event, a dedicated connection is required, both parties will agree to negotiate and execute an Interconnection Security Agreement (ISA) as required per Department of Homeland Security (DHS) policy which must be signed by all required parties before the interconnection is activated. Proposed changes to either system that affect system interoperability will be reviewed and evaluated to determine the potential impact. If the proposed changes impact the agreed upon terms, the MOA will be renegotiated and executed before changes are implemented.

7.0 SECURITY

To ensure the joint security of the systems and the message data they store, process, and transmit, both parties agree to adhere to and enforce the Rules of Behavior (as specified in Appendix C). In addition, both parties agree to the following:

- Ensure authorized users accessing the interoperable system(s) receive, agree to abide by and sign (electronically or in paper form) the IPAWS-OPEN Rules of Behavior as specified in Appendix C. Each jurisdiction is responsible for keeping the signed Rules of Behavior on file or stored electronically for each system user.

- Utilize FEMA approved PKI certificates to digitally sign messages as they are transported over the public Internet.
- Certify that its respective system is designed, managed and operated in compliance with all relevant federal laws, regulations, and policies.
- Document and maintain jurisdictional and/or system specific security policies and procedures and produce such documentation in response to official inquiries and/or requests.
- Provide physical security and system environmental safeguards for devices supporting system interoperability with IPAWS-OPEN.
- Ensure physical and logical access to the respective systems as well as knowledge of the COGID and associated access criteria are only granted to properly vetted and approved entities or individuals.
- Where applicable, ensure that only individuals who have successfully completed FEMA-required training can utilize the interoperable systems to issue alerts and warnings intended for distribution to the public.
- Where applicable, document and maintain records of successful completion of FEMA-required training and produce such documentation in response to official inquiries and/or requests.

8.0 PROFICIENCY DEMONSTRATION

Once enabled, each COG operating under this agreement must demonstrate their ability to compose and send a message through the IPAWS-OPEN system at regular intervals. Such demonstration must be performed on a monthly basis through generation of a message successfully sent through the IPAWS-OPEN Training and Demonstration environment.

9.0 ASSOCIATED SOFTWARE REQUIREMENTS

The COG will need to select a software package which will allow the COG to properly populate a Common Alerting Protocol (CAP) message which complies with both the *OASIS Common Alerting Protocol Version 1.2* and the *OASIS Common Alerting Protocol, v. 1.2 USA Integrated Public Alert and Warning System Profile Version 1.0*. With respect to the software and the software vendor selected FEMA expects the selected software to provide the following minimum critical capabilities and services:

- Permissions:
  - The ability to assign and manage user permissions; and
  - The ability to retrieve and view IPAWS Alerting Permissions
- Proficiency:
  - The provision of vendor support, to include user training, and around the clock technical support; and
  - The ability to submit both live and test digital certificates, with clear, easily identifiable information that indicates the environment to which the software is pointed (Live or Test)
- User Interface:
  - The provision of an intuitive user interface, to include help menus; and
  - The ability to notify the user of digital certificate expiration; and
  - The ability to constrain event types and geocodes to user permissions; and
  - The ability to send one alert to multiple channels; and
  - The provision of displays that show required fields based on selected channel; and
  - The ability to pre-populate fields to the greatest extent possible; and
  - The ability to support templates; and
  - The ability to create a polygon or circle, of less than 100 nodes; and

- The ability to update or cancel an alert, without having to reenter all of the data; and
- The ability to alert the end user if a software license has expired; and
- Clear explanations if alert information is case sensitive when entered

- Confirmation and Error Checking:
  - The ability to pre-check an alert message for errors, prior to sending; and
  - The ability to create free-form 90-character WEA text, while preventing prohibited characters; and
  - The provision to IPAWS of alert status codes for any sent alert, with a clear definition of whether the codes are advice codes or error codes, along with the meaning of those codes; and
  - The provision of user confirmation of connectivity to IPAWS; and
  - The ability for users to see alert history and/or logs

10.0 COST CONSIDERATIONS

This agreement does not authorize financial expenditures by the COG on behalf of FEMA. The FEMA IPAWS Program is responsible for the costs associated with developing, operating and maintaining the availability of the IPAWS-OPEN system. The COG is responsible for all costs related to providing their users with access to IPAWS-OPEN via the public Internet. These costs may include hardware, software, monthly Internet charges, completion of security awareness training and other related jurisdictional costs.

11.0 PROPERTY OWNERSHIP

Each Party agrees and acknowledges that nothing in this Agreement shall be construed as giving a party any proprietary rights in or to the intellectual property of the other party. Each Party further agrees that nothing in this Agreement shall be construed as creating or granting to a party any implied or express license in or to the intellectual property of the other party.

12.0 TIMELINE

This agreement will remain in effect based on the life of the Authority to Operate (ATO) for IPAWS-OPEN or a maximum of three (3) years after the last date on either signature in the signature block below. Upon expiration of the IPAWS-OPEN ATO or after three (3) years (whichever comes first), this agreement will expire without further action and system access privileges will be revoked. If the parties wish to extend this agreement, they may do so by reviewing, updating, and reauthorizing this agreement. This agreement supersedes all earlier agreements, which should be referenced above by title and date. If one or both of the parties wish to terminate this agreement prematurely, they may do so upon 30 days' advanced notice or in the event of a security incident that necessitates an immediate response. This agreement may be suspended by FEMA for failure to perform the Proficiency Demonstration for two consecutive months. A suspended COG may be reinstated upon a completion of a successful Proficiency Demonstration.

SIGNATORY AUTHORITY

I agree to the terms of this Memorandum of Agreement. Noncompliance on the part of either organization or its users or contractors concerning the policies, standards, and procedures explained herein may result in the immediate termination of this agreement.

City of Angleton Official
Name: Jason Perez
Title: Mayor

(Signature Date)

City of Angleton
121 North Velasco Street
Angleton, TX, 77515

Federal Emergency Management Agency
IPAWS-OPEN System Owner
Name: Mark A. Lucero
Title: Chief, IPAWS Engineering

(Signature Date)

Attn: IPAWS-OPEN System Owner, Suite 5NW-0309
Federal Emergency Management Agency
500 C Street SW
Washington, D.C. 20472-3153

Appendix A

Listing of Interoperable Systems

The FEMA IPAWS Program recognizes that Emergency Management organizations may utilize multiple tools to facilitate the emergency management process. As a result, jurisdictions may need to interoperate with IPAWS-OPEN using more than one system. In order to comply with DHS policy, all systems interoperating with IPAWS-OPEN must be documented and supported by a Memorandum of Agreement. As a result this appendix must be completed to identify all systems associated with the COG and used for interoperating with IPAWS-OPEN. This Appendix must be amended as applicable systems are added or removed from operations.

- **IPAWS-OPEN**

Function:	IPAWS-OPEN is the backbone system that structures the alert and distributes the message from one interoperating and/or interconnected system (message sender) to another interoperating and/or interconnected system (message recipient).
Location:	Bluemont, VA; Clarksville, VA
Description of data, including sensitivity or classification level:	Messaging data is considered Sensitive But Unclassified (SBU) information and does not contain Personally Identifiable Information (PII), Financial data, Law Enforcement Sensitive Information or classified information. Each message that flows through the IPAWS-OPEN system will be associated to a specifically assigned system User ID and COGID as captured within the message elements. This information will be retained in system logs.

The systems listed below are managed and operated by the COG and are subject to the terms defined within the Memorandum of Agreement including the Rules of Behavior in Appendix C. Each interoperable system will be assigned unique authentication credentials, which must be protected by the COG. In the event these credentials are compromised, the COG is expected to immediately contact the FEMA IPAWS Program Management Office. The systems listed below are only allowed to interoperate with IPAWS-OPEN based on the criteria set forth within the IPAWS-OPEN Web Service Interface Design Guidance.

- **CodeRED by OnSolve**

Function:	Web based public notification system
Location:	Atlanta, GA; Dallas, TX; Las Vegas, NV;
Description of data, including sensitivity or classification level:	Comprised of Unclassified, Non-sensitive CAP data.

Appendix B

COG Point of Contact Information

Designated COG Primary Point of Contact:

Name: Glenn LaMont

Title: Emergency Management Coordinator

Business Email Address: glamont@angleton.tx.us

Primary Phone Number: (979) 849-4364 ext. 2137

Alternate Phone Number:

Organization: City of Angleton

Mailing Address: 121 North Velasco Street, Angleton, TX, 77515

Designated Alternate Point of Contact:

Name: Martha Eighme

Title: Communications Director/Public Information Officer

Business Email Address: meighme@angleton.tx.us

Primary Phone Number: (979) 849-4364 ext. 2111

Alternate Phone Number:

Organization: City of Angleton

Mailing Address: 121 North Velasco Street, Angleton, TX, 77515

Designated Technical Point of Contact:

Name: Jason Crews

Title: Information Technology Director

Business Email Address: jcrews@angleton.tx.us

Primary Phone Number: (979) 849-4364 ext. 3114

Alternate Phone Number:

Organization: City of Angleton

Mailing Address: 121 North Velasco Street, Angleton, TX, 77515

FEMA: Integrated Public Alert and Warning System Open Platform for Emergency Networks (IPAWS-OPEN)

Contact Name	Contact Number	Email Address	Summary of System Responsibilities
Lytwaive Hutchinson	202-212-2480	lytwaive.hutchinson@fema.dhs.gov	Chief Information Officer, FEMA
Cynthia Sutherland	202-710-5329	cynthia.sutherland@fema.dhs.gov	Chief Information Security Officer
Mark Lucero	202-646-1386	mark.lucero@fema.dhs.gov	System Owner
Gary Ham	703-899-6241	gary.ham@associates.fema.dhs.gov	FEMA PMO - IPAWS-OPEN
Gustavo Barbet	202-212-3586	gustavo.barbet@associates.fema.dhs.gov	FEMA ISSO - IPAWS-OPEN
Neil Bourgeois	703-732-6331	neil.bourgeois@associates.fema.dhs.gov	FEMA-EADIS IPAWS-OPEN Tech Lead

Appendix C

IPAWS-OPEN Rules of Behavior

1.0 INTRODUCTION

The following rules of behavior apply to all persons with application access to City of Angleton Interoperable System(s) and/or who have been issued a COGID with associated credentials for IPAWS-OPEN. These individuals shall be held accountable for their actions related to the information resources entrusted to them and must comply with the following rules or risk losing their access privileges. The Rules of Behavior apply to users on official travel as well as at their primary workplace (e.g., Emergency Operations Center – EOC) and at any alternative workplace (e.g., telecommuting from a remote or satellite site) using any electronic device including laptop computers and portable electronic devices (PED's). PED's include personal digital assistants (PDA's) (e.g. Palm Pilots), cell phones, text messaging systems (e.g., Blackberry), and plug-in and wireless peripherals that employ removable media (e.g. CDs, DVDs, etc.). PEDs also encompass USB flash memory (thumb) drives, external drives, and diskettes. These Rules of Behavior are consistent with existing DHS policies and DHS Information Technology (IT) Security directives and are intended to enhance the awareness of each user's responsibilities regarding accessing, storing, receiving and/or transmitting information using IPAWS-OPEN.

2.0 APPLICATION RULES

2.1 Official Use

- IPAWS-OPEN is a Federal application to be used only in the performance of the user's official duties in support of public safety as described in the National Incident Management System (NIMS).
- The use of the IPAWS-OPEN for unauthorized activities is prohibited and could result in verbal or written warning, loss of access rights, and/or criminal or civil prosecution.
- By utilizing IPAWS-OPEN, the user of the interoperable system(s) consents to allow system monitoring to ensure appropriate usage for public safety is being observed.
- City of Angleton will be held accountable for safeguarding all configuration items and information entrusted to them by FEMA. City of Angleton is expected to manage the relationship with supporting vendors, consultants and any other entities providing system support on their behalf. In addition, City of Angleton will be held accountable in the event of a security breach or disclosure of sensitive configuration information such as digital certificates. City of Angleton understands that the use of digital signatures, used on their behalf, is binding and City of Angleton will be held accountable accordingly. In the event sensitive information is mishandled, utilization of IPAWS-OPEN may be immediately revoked by FEMA.
- If software interoperating with IPAWS-OPEN enables users to geo-target public alert messages by means of geospatial polygons or circles, then the user shall restrict any such geospatial boundaries so as to remain within the geographical limits of their public warning authority (or as near as possible), as determined by applicable state and/or local laws and duly adopted operational plans.

2.2 Access Security

- All Email addresses provided in connection with interoperable system(s) user accounts must be associated to an approved email account assigned by the user's emergency management organization. The use of personal email accounts to support emergency messaging through IPAWS-OPEN is prohibited.
- Upon approval of the MOA by FEMA, a COG account with COGID and Digital Certificate will be created and issued to the designated technical representative. All individuals with knowledge of these credentials must not share or alter these authentication mechanisms without explicit approval from the FEMA IPAWS Program.

- Every interoperable system user is responsible for remote access security as it relates to their use of IPAWS-OPEN and shall abide by these Rules of Behavior.

2.3 Interoperable System User Accounts and Passwords

- All users must have a discrete user account ID which cannot be the user's social security number. To protect against unauthorized access, passwords linked to the user ID are used to identify and authenticate authorized users.
- Accounts and passwords shall not be transferred or shared. The sharing of both a user ID and associated password with anyone (including administrators) is prohibited.
- Accounts and passwords shall be protected from disclosure and writing passwords down or electronically storing them on a medium that is accessible by others is prohibited.
- The selection of passwords must be complex and shall:
    - Be at least eight characters in length
    - Contain a combination of alphabetic, numeric and special characters
    - Not the same as any of the user's previous 8 passwords.
- Passwords shall not contain any dictionary word.
- Passwords shall not contain any proper noun or the name of any person, pet, child, or fictional character. Passwords shall not contain any employee serial number, Social Security number, birth date, phone number, or any information that could be readily guessed about the creator of the password.
- Passwords shall not contain any simple pattern of letters or numbers, such as “qwerty” or “xyz123”.
- Passwords shall not be any word, noun, or name spelled backwards or with a single digit appended, or with a two-digit “year” string, such as 98xyz123.
- Pass phrases, if used in addition to or instead of passwords, should follow the same guidelines.
- Passwords shall not be the same as the User ID.
- Users shall either log off or lock their workstations when unattended.
- Workstations shall be configured to either log off, or activate a password-protected lock, or password-protected screensaver within fifteen (15) minutes of user inactivity.
- Locked sessions shall remain locked until the user re-authenticates.
- Workstations shall be protected from theft.
- A user's account shall be automatically locked after three consecutive failed logon attempts.
- The automatic lockout period for accounts locked due to failed login attempts shall be set for a minimum of twenty (20) minutes.
- A process shall exist for manually unlocking accounts prior to the expiration of the twenty (20) minute period, after sufficient user identification is established.
- Sessions shall automatically be terminated after sixty (60) minutes of inactivity.
- Users are required to change their passwords at least once every 90 days.

- Passwords must be promptly changed whenever a compromise of a password is known or suspected.

2.4 Integrity Controls & Data Protection

- All computer workstations accessing IPAWS-OPEN must be protected by up-to-date anti-virus software. Virus scans must be performed on a periodic basis and when notified by the anti-virus software.

- Users accessing interoperable system(s) to utilize IPAWS-OPEN must:

    - Physically protect computing devices such as laptops, PEDs, blackberry devices, smartphones, etc;

    - Protect sensitive data sent to or received from IPAWS-OPEN;

    - Not use peer-to-peer (P2P) file sharing, which can provide a mechanism for the spreading of viruses and put sensitive information at risk;

    - Not program computing devices with automatic sign-on sequences, passwords or access credentials when utilizing IPAWS-OPEN.

Users may not provide personal or official IPAWS-OPEN information solicited by e-mail. If e-mail messages are received from any source requesting personal information or asking to verify accounts or other authentication credentials, immediately report this and provide the questionable e-mail to the Local System Administrator and/or the City of Angleton Help Desk.

- Only devices officially issued through or approved by DHS, FEMA and/or approved emergency management organizations are authorized for use to interoperate with IPAWS-OPEN and use of personal devices to access and/or store IPAWS-OPEN data and information is prohibited.

- If a Blackberry, smartphone or other PED is used to access the interoperable system(s) to utilize IPAWS-OPEN, the device must be password protected and configured to timeout or lock after 10 minutes of inactivity.

- If sensitive information is processed, stored, or transmitted on wireless devices, it must be encrypted using approved encryption methods.

2.5 System Access Agreement

- I understand that I am given access to the interoperable system(s) and IPAWS-OPEN to perform my official duties.

- I will not attempt to access data, information or applications I am not authorized to access nor bypass access control measures.

- I will not provide or knowingly allow other individuals to use my account credentials to access the interoperable system(s) and IPAWS-OPEN.

- To prevent and deter others from gaining unauthorized access to sensitive resources, I will log off or lock my computer workstation or will use a password-protected screensaver whenever I step away from my work area, even for a short time and I will log off when I leave for the day.

- To prevent others from obtaining my password via “shoulder surfing”, I will shield my keyboard from view as I enter my password.

- I will not engage in, encourage, or conceal any hacking or cracking, denial of service, unauthorized tampering, or unauthorized attempted use of (or deliberate disruption of) any data or component within the interoperable system(s) and IPAWS-OPEN.

- I agree to inform my Local System Administrator when access to the interoperable system(s) and/or

IPAWS-OPEN is no longer required.

- I agree that I have completed Computer Security Awareness training as may be required by my jurisdiction prior to my initial access to the interoperable system(s) and IPAWS-OPEN and that as long as I have continued access, I will complete Computer Security Awareness training on an annual basis. If my jurisdiction does not provide Computer Security Awareness training, I will complete the FEMA self-study course *IS-906: Workplace Security Awareness* (https://training.fema.gov/is/courseoverview.aspx?code=IS-906) on an annual basis.

2.6 Accountability

- I understand that I have no expectation of privacy while using any services or programs interoperating with IPAWS-OPEN.
- I understand that I will be held accountable for my actions while accessing and using interoperable system(s) and IPAWS-OPEN, including any other connected systems and IT resources.
- I understand it is my responsibility to protect sensitive information from disclosure to unauthorized persons or groups.
- I understand that I must comply with all software copyrights and licenses pertaining to the use of IPAWS-OPEN.

2.7 Incident Reporting

- I will promptly report IT security incidents, or any incidents of suspected fraud, waste or misuse of systems to the Local System Administrator and/or the City of Angleton Help Desk.

3.0 IPAWS-OPEN Rules of Behavior Statement of Acknowledgement

I have read and agree to comply with the requirements of these Rules of Behavior. I understand that the terms of this agreement are a condition of my initial and continued access to City of Angleton Interoperable System(s) *and IPAWS-OPEN and related services and that if I fail to abide by the terms of these Rules of Behavior, my access to any and all IPAWS-OPEN information systems may be terminated and I may be subject to criminal or civil prosecution. I have read and presently understand the above conditions and restrictions concerning my access.*

Printed Name (as listed in Appendix B): _____

Signature: _____ Date: _____

AGENDA ITEM SUMMARY FORM

MEETING DATE: 1/12/2021

PREPARED BY: Jeff Sifford

AGENDA CONTENT: Discussion and possible action to approve the participation in the cost share of upsizing the 12” water line on FM 523 at the Windrose Green Development to a 16” water line.

AGENDA ITEM SECTION: Consent Agenda

BUDGETED AMOUNT: EnterTextHere **FUNDS REQUESTED:** EnterTextHere

FUND: EnterTextHere

EXECUTIVE SUMMARY:

Regarding the Windrose Green Section 1 Subdivision, a portion of the public improvements to be provided is to install a 12-inch water line extension from an existing 16-inch water line near the intersection of FM 523 and Campus Drive approximately 3,984 linear feet east to the proposed Windrose Green Section 1 development. In prior discussions with the MUD Engineer (Costello Engineering) and the Developer (Concourse Development), it was noted that the City would be interested in participating in a cost share for upsizing this 12-inch water line to a 16-inch water line where the City would be responsible for the oversize cost portion of the water line pending the cost share total.

Based on the attached bid tabulation received by the MUD Engineer, the cost associated with the oversize (delta of the 16-inch water line items cost minus the 12-inch water line items cost) is approximately $34,685.76. This results in a total of approximately $8.70 per linear foot to upsize the water line to a 16-inch including all appurtenances. In review of the bid tab, the pricing of the 16-inch water line items per linear foot alone is nearly $58.24 and is our opinion that this reflects a fair pricing for items noted under this installation and would benefit the City for future expansion of City utility service to the east and for completing a water line loop for water quality improvement. therefore, it is recommended that the City participate in the cost sharing pending funding for participation cost sharing as set out in the LDC Sec. 23-36 Development and Public Improvement Agreements, C.3. Public Participation and Establishment of Public Interest – Water and Wastewater Utilities.

RECOMMENDATION:

Staff recommends approval.

December 7, 2020

Board of Directors
Rancho Isabella MUD
c/o Schwartz, Page & Harding, L.L.P.
1300 Post Oak Boulevard, Suite 1400
Houston, TX 77056

Re: Windrose Green Section One (Water, Sewer, Drainage, and Paving Improvements)
Serving Rancho Isabella Municipal Utility District
Located in Brazoria County, Texas
CI Job No. 2020006-000-DS-102/ 2020007-000-002

Dear Board:

We received bids on the referenced project on December 7, 2020. Attached is a tabulation of the bids received. The low bid was submitted by Hurtado Construction Company in the total amount of $3,634,347.58. We have worked with this contractor on similar projects and we are satisfied that this contractor is capable of obtaining materials and completing the project. We recommend that the contract for this work be awarded to Hurtado Construction Company.

Please contact us if you have any questions or require further information on this matter.

Sincerely,
COSTELLO, INC.

A. "Alex" Khoshakhlagh, P.E.
Partner/ Senior Project Manager

Cc: w/Attachment
Mr. Steve Tennis – Emptor Angleton, LLC
Mr. Mike Hurtado – Hurtado Construction Company

W:\2020\2020006 Windrose Green WS&D\102 CPS\Award Ltr.docx

Bid Summary
Windrose Green Section One (Water, Sewer, Drainage, and Paving Improvements)
Serving Rancho Isabella Municipal Utility District in Brazoria County, Texas
CI Job No. 2020006-000-DS-102 / 2020007-000-DV-002
Bids Received: December 7, 2020

	Hurtado Construction Company		TLC Construction Contract Services, Inc
A. WATER ITEMS	$ 339,914.48	*	$ 291,070.00
B. OFFSITE WATER ITEMS	$ 237,167.20		$ 188,786.00
C. SANITARY SEWER ITEMS	$ 716,727.84		$ 912,087.00
D. DRAINAGE ITEMS	$ 783,897.28		$ 1,047,856.00
E. EROSION & SEDIMENTATION CONTROL ITEMS	$ 4,576.00		$ 23,865.00
F. WS&D SUPPLMENETAL ITEMS	$ 83,200.00		$ 83,200.00
G. PAVING ITEMS	$ 1,393,064.78		$ 1,507,777.00
H. PAVING SUPPLEMENTAL ITEMS	$ 75,800.00		$ 75,800.00
TOTAL BASE BID	**$ 3,634,347.58**	*	**$ 4,130,441.00**
I. OFFSITE WATER ITEMS	$ 232,014.00		$ 249,928.00

Bid Tabulation for:
Windrose Green Section One (Water, Sewer, Drainage, and Paving Improvements)
Serving Rancho Isabella Municipal Utility District in Brazoria County, Texas
CI Job No. 2020006-000-DS-102 / 2020007-000-DV-002
Bids Received: December 7, 2020

Item No.	Description of Item	Quantity	Unit	Hurtado Construction Company Unit Price	Hurtado Construction Company Extended Total		TLC Construction Contract Services, Inc Unit Price	TLC Construction Contract Services, Inc Extended Total
A. WATER ITEMS								
1.	12" PVC Water Line, Open Cut, All Depths	2,397	LF	$ 44.88	$ 107,577.36		$ 28.00	$ 67,116.00
2.	8" PVC Water Line, Open Cut, All Depths	4,443	LF	$ 20.88	$ 92,769.84		$ 17.00	$ 75,531.00
3.	6" PVC Water Line, Open Cut, All Depths	546	LF	$ 15.88	$ 8,670.48		$ 13.00	$ 7,098.00
4.	2" PVC Water Line, Open Cut, All Depths	52	LF	$ 11.88	$ 617.76		$ 13.00	$ 676.00
5.	Flush Valve	21	EA	$ 3,018.00	$ 63,378.00		$ 2,916.00	$ 61,236.00
6.	12" Gate Valve & Box	11	EA	$ 1,848.00	$ 20,328.00		$ 2,137.00	$ 23,507.00
7.	8" Gate Valve & Box	7	EA	$ 1,000.00	$ 7,000.00		$ 1,130.00	$ 7,910.00
8.	6" Gate Valve & Box	25	EA	$ 720.00	$ 18,000.00		$ 766.00	$ 19,150.00
9.	2" Gate Valve & Box	1	EA	$ 198.00	$ 198.00		$ 185.00	$ 185.00
10.	2" Blow-Off Valve and Box	6	EA	$ 500.00	$ 3,000.00		$ 586.00	$ 3,516.00
11.	12" x 12" Tee	1	EA	$ 550.00	$ 550.00		$ 581.00	$ 581.00
12.	12" x 8" Tee	6	EA	$ 440.00	$ 2,640.00		$ 478.00	$ 2,868.00
13.	12" x 6" Tee	8	EA	$ 500.00	$ 4,000.00		$ 436.00	$ 3,488.00
14.	12" x 2" Tee	1	EA	$ 608.00	$ 608.00		$ 567.00	$ 567.00
15.	8" x 8" Tee	1	EA	$ 308.00	$ 308.00		$ 314.00	$ 314.00
16.	8" x 6" Tee	14	EA	$ 148.00	$ 2,072.00		$ 277.00	$ 3,878.00
17.	8" x 22.5° Bend	3	EA	$ 180.00	$ 540.00		$ 197.00	$ 591.00
18.	8" x 45° Bend	18	EA	$ 288.00	$ 5,184.00		$ 199.00	$ 3,582.00
19.	6" x 6" Tee	2	EA	$ 200.00	$ 400.00		$ 228.00	$ 456.00
20.	6" x 45° Bend	4	EA	$ 128.00	$ 512.00		$ 148.00	$ 592.00
21.	12" Plug & Clamp	1	EA	$ 200.00	$ 200.00		$ 209.00	$ 209.00
22.	8" Plug & Clamp	3	EA	$ 188.00	$ 564.00		$ 128.00	$ 384.00
23.	6" Plug & Clamp	2	EA	$ 100.00	$ 200.00		$ 98.00	$ 196.00
24.	2" Plug & Clamp	1	EA	$ 2.00	$ 2.00		$ 1.00	$ 1.00
25.	Trench Safety	7,438	LF	$ 0.08	$ 595.04		$ 1.00	$ 7,438.00
	WATER ITEMS SUBTOTAL				**$ 339,914.48**	*		**$ 291,070.00**
B. OFFSITE WATER ITEMS								
26.	12" PVC Water Line, Open Cut, All Depths	3,912	LF	$ 44.88	$ 175,570.56		$ 31.00	$ 121,272.00
27.	12" PVC Water Line, by Bore and Jack, All Depths	72	LF	$ 88.00	$ 6,336.00		$ 71.00	$ 5,112.00
28.	18" Steel Casing	74	LF	$ 64.88	$ 4,801.12		$ 101.00	$ 7,474.00
29.	Flush Valve	11	EA	$ 2,868.00	$ 31,548.00		$ 2,764.00	$ 30,404.00
30.	12" Gate Valve & Box	2	EA	$ 1,868.00	$ 3,736.00		$ 2,137.00	$ 4,274.00
31.	6" Gate Valve & Box	11	EA	$ 680.00	$ 7,480.00		$ 766.00	$ 8,426.00
32.	2" Blow-Off Valve and Box	1	EA	$ 498.00	$ 498.00		$ 586.00	$ 586.00
33.	12" x 12" Tee	1	EA	$ 548.00	$ 548.00		$ 581.00	$ 581.00
34.	12" x 6" Tee	12	EA	$ 420.88	$ 5,050.56		$ 436.00	$ 5,232.00
35.	Remove Ex. 12" Plug & Clamp and Connect Proposed 12" Waterline	1	EA	$ 468.00	$ 468.00		$ 652.00	$ 652.00
36.	12" Plug & Clamp	1	EA	$ 350.00	$ 350.00		$ 209.00	$ 209.00
37.	12" Wet Connection	1	EA	$ 468.00	$ 468.00		$ 652.00	$ 652.00
38.	Trench Safety	3,912	LF	$ 0.08	$ 312.96		$ 1.00	$ 3,912.00
	OFFSITE WATER ITEMS SUBTOTAL				**$ 237,167.20**			**$ 188,786.00**

*** Denotes Error In Bid Tabulation**

Bid Tabulation for:
Windrose Green Section One (Water, Sewer, Drainage, and Paving Improvements)
Serving Rancho Isabella Municipal Utility District in Brazoria County, Texas
CI Job No. 2020006-000-DS-102 / 2020007-000-DV-002
Bids Received: December 7, 2020

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C. SANITARY SEWER ITEMS							
39.	12" PVC/ SDR 26 Sanitary Sewer per ASTM D2241, Open Cut, All Depths	769	LF	$ 58.00	$ 44,602.00	$ 226.00	$ 173,794.00
40.	10" PVC/ SDR 26 Sanitary Sewer per ASTM D2241, Open Cut, All Depths	1,872	LF	$ 38.00	$ 71,136.00	$ 66.00	$ 123,552.00
41.	8" PVC/ SDR 26 Sanitary Sewer per ASTM D2241, Open Cut, All Depths	4,361	LF	$ 22.88	$ 99,779.68	$ 27.00	$ 117,747.00
42.	8" PVC/ SDR 26 Sanitary Sewer per ASTM D2241, by Bore and Jack, All Depths	31	LF	$ 102.00	$ 3,162.00	$ 57.00	$ 1,767.00
43.	6" Force Main	2,539	LF	$ 17.88	$ 45,397.32	$ 12.00	$ 30,468.00
44.	6" x 90° Force Main Bend	2	EA	$ 170.00	$ 340.00	$ 341.00	$ 682.00
45.	6" Sanitary Plug	1	EA	$ 228.00	$ 228.00	$ 221.00	$ 221.00
46.	6” PVC Sanitary Lead	4,391	LF	$ 43.88	$ 192,677.08	$ 40.00	$ 175,640.00
47.	Sanitary Sewer Manhole (0'-8' Depth)	13	EA	$ 2,588.00	$ 33,644.00	$ 3,218.00	$ 41,834.00
48.	Sanitary Sewer Manhole (8'-10' Depth)	10	EA	$ 3,448.00	$ 34,480.00	$ 4,503.00	$ 45,030.00
49.	Sanitary Sewer Manhole (10'-12' Depth)	11	EA	$ 3,448.00	$ 37,928.00	$ 4,503.00	$ 49,533.00
50.	Sanitary Sewer Manhole (Over 12' Depth)	20	EA	$ 3,728.00	$ 74,560.00	$ 4,658.00	$ 93,160.00
51.	Sanitary Air Release Valve Assembly Unit w/ Manhole	1	EA	$ 17,000.00	$ 17,000.00	$ 12,098.00	$ 12,098.00
52.	Corrosion Resistant Force Main Discharge Manhole	1	EA	$ 9,888.00	$ 9,888.00	$ 6,477.00	$ 6,477.00
53.	Core into Existing Sanitary Manhole and Connect Proposed 8" Sanitary Sewer	1	EA	$ 1,000.00	$ 1,000.00	$ 909.00	$ 909.00
54.	12" Standard Internal Drop Connection	2	EA	$ 1,888.00	$ 3,776.00	$ 1,328.00	$ 2,656.00
55.	10" Standard Internal Drop Connection	3	EA	$ 1,488.00	$ 4,464.00	$ 908.00	$ 2,724.00
56.	8" Standard Internal Drop Connection	6	EA	$ 1,288.00	$ 7,728.00	$ 753.00	$ 4,518.00
57.	6" Standard Internal Drop Connection	15	EA	$ 968.00	$ 14,520.00	$ 621.00	$ 9,315.00
58.	6" Sanitary Sewer Stack	45	EA	$ 398.00	$ 17,910.00	$ 134.00	$ 6,030.00
59.	Trench Safety	13,932	LF	$ 0.18	$ 2,507.76	$ 1.00	$ 13,932.00
	SANITARY SEWER ITEMS SUBTOTAL				**$ 716,727.84**		**$ 912,087.00**

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D. DRAINAGE ITEMS							
60.	24" RCP Storm Sewer by Open Cut	1,796	LF	$ 58.88	$ 105,748.48	$ 70.00	$ 125,720.00
61.	30" RCP Storm Sewer by Open Cut	874	LF	$ 68.00	$ 59,432.00	$ 85.00	$ 74,290.00
62.	36" RCP Storm Sewer by Open Cut	613	LF	$ 88.00	$ 53,944.00	$ 111.00	$ 68,043.00
63.	42" RCP Storm Sewer by Open Cut	522	LF	$ 118.00	$ 61,596.00	$ 142.00	$ 74,124.00
64.	48" RCP Storm Sewer by Open Cut	462	LF	$ 138.00	$ 63,756.00	$ 177.00	$ 81,774.00
65.	60" RCP Storm Sewer by Open Cut	525	LF	$ 218.00	$ 114,450.00	$ 270.00	$ 141,750.00
66.	66" RCP Storm Sewer by Open Cut	198	LF	$ 258.00	$ 51,084.00	$ 325.00	$ 64,350.00
67.	24" Inlet Lead by Open Cut	1,035	LF	$ 66.88	$ 69,220.80	$ 75.00	$ 77,625.00
68.	Type "C" Storm Sewer Manholes (42" and smaller)	37	EA	$ 1,888.00	$ 69,856.00	$ 3,861.00	$ 142,857.00
69.	Type "C" Storm Sewer Manholes (48" and larger)	10	EA	$ 2,288.00	$ 22,880.00	$ 4,358.00	$ 43,580.00
70.	Replace Existing "E" Inlet Top Manhole with Standard Type "C" Manhole Top	3	EA	$ 1,988.00	$ 5,964.00	$ 1,312.00	$ 3,936.00
71.	Type "H-2" Inlet (Stages I and II)	46	EA	$ 2,178.00	$ 100,188.00	$ 2,935.00	$ 135,010.00
72.	Type "C-1" Inlet with 5' Extention on One Side (Stages I and II)	2	EA	$ 2,648.00	$ 5,296.00	$ 4,386.00	$ 8,772.00
73.	Trench Safety	6,025	LF	$ 0.08	$ 482.00	$ 1.00	$ 6,025.00
	DRAINAGE ITEMS SUBTOTAL				**$ 783,897.28**		**$ 1,047,856.00**
E. EROSION & SEDIMENTATION CONTROL ITEMS							
74.	Construction of Stabilized Construction Access & Vehicle Wash Down Area Or RefreshIng the Existing 8" Temporary Gravel Access Entrance on Henderson Road to Serve as Stabilized Construction Access **(Maintenance and Removal Costs shall be considered Incidental)**	1	LS	$ 800.00	$ 800.00	$ 2,273.00	$ 2,273.00
75.	Traffic Control for the Proposed Access Entrance on	1	LS	$ 688.00	$ 688.00	$ 7,955.00	$ 7,955.00
76.	Construction of Stabilized Construction Access & Vehicle Wash Down Area Or RefreshIng the Existing 8" Temporary Gravel Access Entrance on FM 523 to Serve as Stabilized Construction Access **(Maintenance and Removal Costs shall be considered Incidental)**	1	LS	$ 800.00	$ 800.00	$ 2,273.00	$ 2,273.00
77.	Traffic Control for the Proposed Access Entrance on FM 523	1	LS	$ 1,488.00	$ 1,488.00	$ 7,955.00	$ 7,955.00
78.	TCEQ PPP NOI Fee	1	LS	$ 800.00	$ 800.00	$ 3,409.00	$ 3,409.00
	EROSION & SEDIMENTATION CONTROL BID ITEMS SUBTOTAL				**$ 4,576.00**		**$ 23,865.00**

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F. WS&D SUPPLMENETAL ITEMS							
79.	Clearing and Grubbing (Haul-off Cleared Material)	1	LF	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00
80.	Prepare Area for Fill	1	EA	$ 1,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00
81.	Well Point Dewatering System	500	SY	$ 20.00	$ 10,000.00	$ 20.00	$ 10,000.00
82.	Bank Sand Backfill	50	EA	$ 10.00	$ 500.00	$ 10.00	$ 500.00
83.	Extra Cement Stabilized Sand	50	LF	$ 30.00	$ 1,500.00	$ 30.00	$ 1,500.00
84.	Wet Sand Bedding for Sanitary Sewer as per City of Houston Drawing No. 02317-01	50	SY	$ 6.00	$ 300.00	$ 6.00	$ 300.00
85.	Additional Cost for Bedding for Unsatisfactory Soil Conditions per City of Houston Drawing No. 02317-02	50	EA	$ 6.00	$ 300.00	$ 6.00	$ 300.00
86.	Crushed Stone Sanitary Manhole Support as per City of Houston Drawing No. 02082-05	50	LF	$ 110.00	$ 5,500.00	$ 110.00	$ 5,500.00
84.	Extra Reinforced Filter Fabric Fence	100	SY	$ 1.00	$ 100.00	$ 1.00	$ 100.00
85.	Removal of Sewer Spoil from Construction Area	1	EA	$ 9,000.00	$ 9,000.00	$ 9,000.00	$ 9,000.00
86.	WS&D Related Construction Surveying	1	LS	$ 53,500.00	$ 53,500.00	$ 53,500.00	$ 53,500.00
	WS&D SUPPLEMENTAL ITEMS SUBTOTAL				**$ 83,200.00**		**$ 83,200.00**

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G. PAVING ITEMS							
90.	Excavation	11,816	SY	$ 1.28	$ 15,124.48	$ 3.00	$ 35,448.00
91.	Compacted Fill	100	SY	$ 0.28	$ 28.00	$ 2.00	$ 200.00
92.	Haul, Spread, and Compact Excavated Material	11,716	SY	$ 2.08	$ 24,369.28	$ 3.00	$ 35,148.00
93.	6" Concrete Pavement	21,901	SY	$ 41.00	$ 897,941.00	$ 41.00	$ 897,941.00
94.	7" Concrete Pavement	3,347	SY	$ 42.28	$ 141,511.16	$ 53.00	$ 177,391.00
95.	4" Concrete Curb	7,160	LF	$ 2.98	$ 21,336.80	$ 4.00	$ 28,640.00
96.	6" Concrete Curb	7,770	LF	$ 2.98	$ 23,154.60	$ 4.00	$ 31,080.00
97.	8-inch Stabilized Subgrade Manipulation and Compaction	27,137	SY	$ 2.58	$ 70,013.46	$ 3.00	$ 81,411.00
98.	Lime for Subgrade (40 lb/SY)	543	Ton	$ 218.00	$ 118,374.00	$ 203.00	$ 110,229.00
99.	6" PVC Irrigation Sleeve	1,162	LF	$ 18.00	$ 20,916.00	$ 26.00	$ 30,212.00
100.	Wheel Chair Ramp (ADA Approved W/ Concrete Pavers)	23	EA	$ 1,200.00	$ 27,600.00	$ 1,924.00	$ 44,252.00
101.	Traffic Signs	16	EA	$ 280.00	$ 4,480.00	$ 306.00	$ 4,896.00
102.	Traffic Striping, Pavement Markings, and Blue Reflectorized Buttons for Flush Valves	1	LS	$ 3,000.00	$ 3,000.00	$ 3,080.00	$ 3,080.00
103.	Lot Grading (148 Lots)	1	LS	$ 18,000.00	$ 18,000.00	$ 16,642.00	$ 16,642.00
104.	Install Type III Barricade	4	EA	$ 900.00	$ 3,600.00	$ 994.00	$ 3,976.00
105.	Standard Paving Header (W/ Load Transfer Device)	112	LF	$ 18.00	$ 2,016.00	$ 17.00	$ 1,904.00
106.	Saw-cut 132 LF of 2' Wide Concrete Pavement at Connection with FM 523 *(Include all costs associated with Removal and Disposal of Concrete and also Dowelling into the Existing Concrete Pavement as incidental)*	1	LS	$ 800.00	$ 800.00	$ 4,588.00	$ 4,588.00
107.	Removal/Disposal of the Existing Stabilized Construction Access & Vehicle Wash Down Area	1	EA	$ 800.00	$ 800.00	$ 739.00	$ 739.00
	PAVING ITEMS SUBTOTAL				**$ 1,393,064.78**		**$ 1,507,777.00**
H. PAVING SUPPLEMENTAL ITEMS							
108.	Clearing and Grubbing (Haul-off Cleared Material) (1)	1	AC	$ 1,500.00	$ 1,500.00	$ 1,500.00	$ 1,500.00
109.	6" PVC Irrigation Sleeve (1)	50	LF	$ 20.00	$ 1,000.00	$ 20.00	$ 1,000.00
110.	Construct/Regrade Existing Backslope Swale (3:1 Side Slop	500	LF	$ 5.00	$ 2,500.00	$ 5.00	$ 2,500.00
111.	Extra Lime for Subgrade (1)	10	Ton	$ 190.00	$ 1,900.00	$ 190.00	$ 1,900.00
112.	Fly Ash for Subgrade (35 lb/SY) (1)	475	Ton	$ 80.00	$ 38,000.00	$ 80.00	$ 38,000.00
113.	Extra Traffic Signs (1)	4	EA	$ 450.00	$ 1,800.00	$ 450.00	$ 1,800.00
114.	Extra Reinforced Filter Fabric Fence behind Back of Curb (1	100	LF	$ 1.00	$ 100.00	$ 1.00	$ 100.00
115.	Paving Related Construction Surveying (2)	1	LS	$ 29,000.00	$ 29,000.00	$ 29,000.00	$ 29,000.00
	PAVING SUPPLEMENTAL ITEMS SUBTOTAL				**$ 75,800.00**		**$ 75,800.00**
				TOTAL BASE BID	**$ 3,634,347.58** *		**$ 4,130,441.00**

*** Denotes Error In Bid Tabulation**

(1) The unit price for this Bid Item is intended to be a minimum only. Bidder may not decrease this unit price, however, Bidder may increase this unit price. If applicable, cross out the minimum unit price and write the increased unit price in the space above the minimum price.

(2) Fixed price determined prior to bid. Cannot be adjusted by Bidder.

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ALTERNATE BID ITEMS							
H. OFFSITE WATER ITEMS							
116.	16" PVC Water Line, Open Cut, All Depths	3,912	LF	$ 48.00	$ 187,776.00	$ 52.00	$ 203,424.00
117.	16" PVC Water Line, by Bore and Jack, All Depths	72	LF	$ 108.00	$ 7,776.00	$ 102.00	$ 7,344.00
118.	24" Steel Casing	74	LF	$ 98.00	$ 7,252.00	$ 140.00	$ 10,360.00
119.	16" Gate Valve & Box	2	EA	$ 8,000.00	$ 16,000.00	$ 7,106.00	$ 14,212.00
120.	16" x 12" Tee	1	EA	$ 1,280.00	$ 1,280.00	$ 1,261.00	$ 1,261.00
121.	16" x 6" Tee	12	EA	$ 848.00	$ 10,176.00	$ 858.00	$ 10,296.00
122.	Remove Ex. 12" Plug & Clamp and Connect Proposed 16" Waterline	1	EA	$ 638.00	$ 638.00	$ 1,306.00	$ 1,306.00
123.	16" Plug & Clamp	1	EA	$ 558.00	$ 558.00	$ 419.00	$ 419.00
124.	16" Wet Connection	1	EA	$ 558.00	$ 558.00	$ 1,306.00	$ 1,306.00
	ALTERNATE BID ITEMS SUBTOTAL FOR OFFSITE WATER				**$ 232,014.00**		**$ 249,928.00**

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B. OFFSITE WATER ITEMS					
26.	12" PVC Water Line, Open Cut, All Depths	3,912	LF	$ 44.88	$ 175,570.56
27.	12" PVC Water Line, by Bore and Jack, All Depths	72	LF	$ 88.00	$ 6,336.00
28.	18" Steel Casing	74	LF	$ 64.88	$ 4,801.12
30.	12" Gate Valve & Box	2	EA	$ 1,868.00	$ 3,736.00
33.	12" x 12" Tee	1	EA	$ 548.00	$ 548.00
34.	12" x 6" Tee	12	EA	$ 420.88	$ 5,050.56
35.	Remove Ex. 12" Plug & Clamp and Connect Proposed 12" Waterline	1	EA	$ 468.00	$ 468.00
36.	12" Plug & Clamp	1	EA	$ 350.00	$ 350.00
37.	12" Wet Connection	1	EA	$ 468.00	$ 468.00
	OFFSITE WATER ITEMS SUBTOTAL				**$ 197,328.24**
ALTERNATE BID ITEMS					
H. OFFSITE WATER ITEMS					
116.	16" PVC Water Line, Open Cut, All Depths	3,912	LF	$ 48.00	$ 187,776.00
117.	16" PVC Water Line, by Bore and Jack, All Depths	72	LF	$ 108.00	$ 7,776.00
118.	24" Steel Casing	74	LF	$ 98.00	$ 7,252.00
119.	16" Gate Valve & Box	2	EA	$ 8,000.00	$ 16,000.00
120.	16" x 12" Tee	1	EA	$ 1,280.00	$ 1,280.00
121.	16" x 6" Tee	12	EA	$ 848.00	$ 10,176.00
122.	Remove Ex. 12" Plug & Clamp and Connect Proposed 16" Waterline	1	EA	$ 638.00	$ 638.00
123.	16" Plug & Clamp	1	EA	$ 558.00	$ 558.00
124.	16" Wet Connection	1	EA	$ 558.00	$ 558.00
	ALTERNATE BID ITEMS SUBTOTAL FOR OFFSITE WATER				**$ 232,014.00**

AGENDA ITEM SUMMARY FORM

MEETING DATE: 01/12/2021

PREPARED BY: Aaron Ausmus

AGENDA CONTENT: Discussion and Action on personnel change from Police Lieutenant to Assistant Chief.

AGENDA ITEM SECTION: Consent Agenda

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

FUND: N/A

EXECUTIVE SUMMARY:

Promoting Police Lieutenant to Assistant Chief

RECOMMENDATION:

Staff is asking Council to approve the personnel change of promoting Police Lieutenant to Assistant Chief

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AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 2021

PREPARED BY: Colleen Martin, Director of Human Resources and Risk Management

AGENDA CONTENT: Discussion and Possible Action on Municipal Court Prosecutor Agreement.

AGENDA ITEM SECTION: Consent Agenda

BUDGETTED AMOUNT: $67,320.00 **FUNDS REQUESTED:** $67,320.00

FUND: 01-520-456

EXECUTIVE SUMMARY:

The City of Angleton employs a Municipal Court Prosecutor whose agreement expired on January 8, 2020. The agreement is a two (2) year term, and the position is a 1099 employee. The current prosecutor is Perry Stevens, JD. The prior rate of pay was $66,000 year/$5,500.00 per month. Finance has budgeted a 2% increase for FY21 making the new rate of pay $67,732.00 year/$5,610.00 per month.

RECCOMENDATION:

Staff recommends approval of a two (2) year agreement for the Municipal Court Prosecutor position with Attorney Perry Stevens.

CITY OF ANGLETON, TEXAS
CONTRACT NO. 20210112-013
MUNICIPAL PROSECUTOR LEGAL SERVICES

The Parties to this Contract for Municipal Prosecutor Legal Services are Perry R. Stevens, PO Box 17, Angleton, Texas 77515 ("Stevens") and the City of Angleton, 121 S. Velasco Street, Angleton, Texas 77515 ("the City"). Stevens and the City are referred to collectively herein as "the Parties."

WHEREAS, the City desires to contract with Stevens under Code of Criminal Procedure section 45.201 to perform the services of a Deputy City Attorney serving as a Municipal Prosecutor representing the City of Angleton; and

WHEREAS, Stevens desires to contract with the City to provide services as a Deputy City Attorney serving as a Municipal Prosecutor; and

NOW THEREFORE, for the mutual covenants and considerations described herein, the parties agree as follows:

1. ROLE OF STEVENS AND SCOPE OF WORK: Stevens agrees to provide legal services to the City as the Deputy City Attorney serving as the primary Municipal Prosecutor, representing the City as Municipal Prosecutor in cases before the Municipal Court and any appeals. Stevens shall provide no other legal services to the City.

2. QUALIFICATIONS AND PERFORMANCE: Stevens shall provide competent, zealous legal services in a professional, skilled manner consistent with the Attorney's responsibilities under the Texas Disciplinary Rules of Professional Conduct and the Texas Code of Criminal Procedure. Stevens must maintain the minimum qualifications to practice law in the state of Texas and must immediately inform the City Manager and City Attorney of any change in the status of the Attorney's licensure.

3. FEES AND EXPENSES FOR MATTERS WITHIN THE SCOPE OF WORK: The City agrees to pay Stevens for his services at the rate of $5,610.00 per month which is equivalent to the payment of $67,732.00 annually.

4. DESIGNATED DEPUTY CITY ATTORNEY: Stevens shall be designated as "Deputy City Attorney" for the City for the purposes of only representing the City in Municipal Court and appeals and shall have no other responsibility to the City under this Contract.

5. BILLING AND COMPENSATION: Stevens shall submit monthly invoices to the City for matters included in this Contract. Monthly invoices for work performed under this contract shall include a brief description of the work performed, the length of time it took to perform the work to the nearest tenth of an hour, the date that the

work was performed, the fee for the work, and an itemized list of expenses associated with the work. All invoices (s) shall be submitted by Stevens as soon as possible after the end of each calendar month and are due and payable by the City within thirty (30) day of receipt by the City.

6. TERM: Subject to the terms of Paragraph 7, below, this Contract shall remain in full force and effect beginning January 22, 2021 and ending January 21, 2023 and may be renewed for two (2) additional years as approved by the City Council and subject to the availability of funds in the City's budget process.

7. TERMINATION: Either of the Parties may terminate this contract for any reason or for no reason by giving thirty (30) days written notice to the other party. Upon termination by either party, the City agrees to pay to Stevens all fees and expenses for services performed prior to the date of termination.

8. CONFLICTS: Stevens agrees not to undertake representation of any person or entity in a manner adverse to the City's legal interests during the term of the contract. Further, Stevens agrees that, to the best of his actual knowledge, Stevens, nor anyone in his firm who will be working on specific matters related to representation of the City, has personal, business, or financial interests or relationships which would cause a reasonable individual with knowledge of the relevant facts to question the integrity or impartiality of those who are or will be acting as legal advisors and representatives of the City. Stevens agrees to evaluate on an on-going basis whether, in his professional judgment, a conflict may become apparent or imminent. In the event that Stevens believes a conflict may develop, Stevens will immediately communicate with City Attorney, City Manager and Court Clerk about the perceived potential conflict.

9. INDEPENDENT CONTRACTOR: Stevens shall be an independent contractor to the City and shall not be an employee. This Contract does not create any partnership, joint venture, or relationship other than an independent contractor relationship. Stevens, nor his partners, Of Counsel attorneys, agents, or employees shall not be deemed to be an employee of the City for any purpose whatsoever, and Stevens shall not be eligible to participate in any benefit program provided by the City for its employees. Stevens shall be exclusively responsible for the payment of his own respective taxes, withholding payments, penalties, fees, fringe benefits, contributions to insurance and pension or other deferred compensation plans, including but not limited to worker's compensation and Social Security obligations, professional fees, or dues.

10. SPECIAL TERMS: The City Attorney also has the authority to provide such backup or lead support for the provision of prosecutorial legal services to the City if it is in the best interests of the City to do so and with the approval of the City Manager.

11. ASSIGNMENT: Stevens shall not assign or transfer his interest in this Contract.

12. APPLICATION OF LAWS: This Contract shall be interpreted, construed, and governed according to the laws of the State of Texas.

13. DISPUTE RESOLUTION: Any controversy, dispute, or disagreement arising out of or relating to this Contract, or any breach thereof, shall first be mediated. Each party shall bear its own attorneys' fees and costs for such dispute resolution.

14. NOTICE: All notices required to be sent under this Contract shall be in writing and given by First Class U.S. Mail or Personal Delivery addressed:

To Stevens: Perry R. Stevens
PO Box 17
Angleton,
Texas
77515

To the City: Chris Whittaker, City Manger
City of Angleton
121 S. Velasco St.
Angleton, Texas 77515

Each Party shall have the continuing obligation to advise the other parties of any change of address.

15. AGREEMENT: This written authorization embodies the entire agreement between the Parties, and there are no other agreements, oral or written, with reference to this Contract. In case any one or more of the provisions contained in the Contract shall be held unenforceable, the remaining provisions contained herein shall not be impaired thereby.

16. AMENDMENTS: No change or modification to this Contract shall be valid unless made in writing and signed by both Parties.

17. EFFECTIVE DATE: The effective date of this Agreement is January 22, 2021.

SIGNED AND AGREED TO ON BEHALF OF THE CITY OF ANGLETON ON THIS THE 12th DAY OF JANUARY 2021.

CITY OF ANGLETON, TEXAS

_____
Chris Whittaker
City Manager

SIGNED AND AGREED TO ON THIS THE ____ DAY OF JANUARY 2021.

_____
Perry R. Stevens

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 7, 2021

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

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on an ordinance amending Ordinance No. 20200609-006 Exhibit "A" Permitted Uses for Riverwood Ranch Planned Development Overlay District to add "Farms, General (Livestock/Ranch) and Farms, General (Crops) as permitted uses within the Riverwood Ranch Planned Development Overlay District. The subject property consists of 78.10 acres, is located between Downing Road and Buchta Road on the north side of Hospital Drive and is more commonly known as 2324 Downing Street.

AGENDA ITEM SECTION: Public Hearing

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

FUND: None

EXECUTIVE SUMMARY:

This is a request to amend Ordinance No. 20200609-006, Exhibit "A" Permitted Uses for Riverwood Ranch Planned Development Overlay District to add "Farms, General (Livestock/Ranch) and Farms, General (Crops) as permitted uses within the Riverwood Ranch Planned Development Overlay District. The reason for the amendment is that the owner of the property wishes to attempt to obtain an agricultural property tax exemption on the currently undeveloped portions of the property. Brazoria County will not consider granting the exemption as the City of Angleton cannot verify that agricultural uses are permitted uses on the property, which they are not due to these uses not being included as part of Exhibit "A."

Apparently, agricultural uses (cattle) had been done on the property in the past, but with the adoption of Ordinance No. 20200609-006 agricultural uses are no longer permitted. Rather than pursue reestablishment of a non-conforming use through the Board of Adjustment it is easier to process an amendment to Exhibit "A" and makes the use a "by-right" use that cannot be lost due to failing to maintain non-conforming status.

The Planning & Zoning Commission held a public hearing on January 7, 2021 and recommends approval (7 in favor/0 opposed/0 absent/abstention) of the amendment to Ordinance No. 20200609, Exhibit "A" Permitted Uses for Riverwood Ranch Planned Development Overlay District to add "Farms, General (Livestock/Ranch) and Farms, General (Crops).

RECOMMENDATION:

Staff recommends approval of the amendment to Ordinance No. 20200609, Exhibit “A” Permitted Uses for Riverwood Ranch Planned Development Overlay District to add “Farms, General (Livestock/Ranch) and Farms, General (Crops).

ORDINANCE NO. 20210112-014

AN ORDINANCE OF THE CITY OF ANGLETON, TEXAS AMENDING ORDINANCE NO. 20200609-006 REZONING 78.1 ACRES TO CHAPTER 28 ZONING, ARTICLE III DISTRICTS, SEC. 28-62 PD ONE DISTRICT AND AMENDING THE PERMITTED USES FOR RIVERWOOD RANCH PLANNED DEVELOPMENT OVERLAY DISTRICT TO ADD "FARMS, GENERAL (LIVESTOCK/RANCH)" AND "FARMS, GENERAL (CROPS)"; 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 January 7, 2021 the Angleton Planning and Zoning Commission conducted a public hearing regarding a request by Riverwood Ranch Land Holdings LLC to amend Ordinance No 20200609-006 by adding additional permitted uses to the list of approved permitted uses for Riverwood Ranch Planned Development One District set out in Exhibit "A" to the Ordinance; specifically to add "Farms, General (Livestock/Ranch)" and "Farms, General (Crops)" as additional permitted uses following lawful publication of the notice of said public hearing; and

WHEREAS, on January 7, 2021 after considering the public testimony received at such hearing, if any, the Planning and Zoning Commission has recommended that the request by Riverwood Ranch Land Holdings LLC to amend Ordinance No 20200609-006 by adding additional permitted uses set out in Exhibit "A" Permitted Uses for Riverwood Ranch Planned Development Overlay District to add "Farms, General (Livestock/Ranch)" and "Farms, General (Crops)" as additional permitted uses within the Riverwood Ranch Planned Development Overlay District be approved; and

WHEREAS, on January 12, 2021 the City Council of the City of Angleton conducted a public hearing regarding a request by Riverwood Ranch Land Holdings LLC to amend Ordinance No 202000609-006 permitted uses set forth in Exhibit "A" "Permitted Uses for Riverwood Ranch Planned Development Overlay District" to add the following permitted uses: "Farms, General (Livestock/Ranch)" and "Farms, General (Crops)" as additional permitted uses within the Riverwood Ranch Planned Development Overlay District; and

WHEREAS, on January 12, 2021 the City Council of the City of Angleton, Texas approved the request by Riverwood Ranch Land Holdings LLC to amend Ordinance No 20200609-006 permitted uses set forth in Exhibit "A" "Permitted Uses for Riverwood Ranch Planned Development Overlay District" to add the following additional permitted uses: "Farms, General

(Livestock/Ranch)" and "Farms, General (Crops)" as permitted uses within the Riverwood Ranch Planned Development Overlay District; 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 amend Ordinance No 20200609-006 permitted uses set forth in Exhibit "A" "Permitted Uses for Riverwood Ranch Planned Development Overlay District" to add the additional permitted uses of "Farms, General (Livestock/Ranch)" and "Farms, General (Crops)" within the Riverwood Ranch Planned Development Overlay District;

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

SECTION 1. 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.

SECTION 2. The request by Riverwood Ranch Land Holdings LLC to amend Ordinance No. 20200609-006 permitted uses set forth in Exhibit "A" "Permitted Uses for Riverwood Ranch Planned Development Overlay District" to add "Farms, General (Livestock/Ranch)" and "Farms, General (Crops)" as additional permitted uses within the Riverwood Ranch Planned Development Overlay District be approved, and that all other existing terms, requirements, and conditions of Ordinance 20200609-006 shall remain in effect.

SECTION 3. 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. 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. 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. This ordinance shall be effective and in full force immediately upon its adoption.

SECTION 7. 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 AND APPROVED THIS THE 12th DAY OF JANUARY 2021.

CITY OF ANGLETON, TEXAS

_____
Jason Perez
Mayor

ATTEST:

_____
Frances Aguilar, TRMC, CMC
City Secretary

EXHIBIT A

Permitted Uses for Riverwood Ranch Planned Development Overlay District:

1. Single-Family Detached Dwelling Units and Accessory Structures
2. Farms, General (Livestock/Ranch)
3. Farms, General (Crops)

Development Requirements for Riverwood Ranch Planned Development Overlay District ("RWRPD")

(1). Density: The density for this development shall not exceed 4.5 units per acre.
(2). Lot Area: The lot area shall not be less than 4,000 sq. ft.
(3). Width: The lot width shall not be less than 45 linear feet.
(4). Depth: The lot depth shall not be less than 115 linear feet.
(5). Front Yard: The front yard shall not be less than 20 feet.
(6). Rear Yard: The rear yard shall not be less than 20 feet.
(7). Side Yard: The side yard shall not be less than 5 feet.
(8). Building Height: The building height shall be no higher than 35 feet.
(9). Garages: A two-car garage shall be provided for each dwelling unit which may be detached or attached. Garages shall be subject to the same setbacks and building heights as the dwelling unit. Garages must be maintained as garages and permanent enclosure and conversion to living space is prohibited. Carports are prohibited.
(10). Lot Coverage: Lot coverage shall not exceed 70%.
(11). Parking: Parking shall be limited to surfaces paved with concrete.
(12). Landscaping: At least one tree for each lot shall be planted between the sidewalk and the back of curb and be placed to avoid utility lines and to have minimum effect on the sidewalk and street. At planting each tree shall be a minimum of 7 feet in height and 2" in diameter as measured 12" above soil level. Each tree shall be expected to have a canopy of a minimum of fifteen feet at maturity.
(13). Sidewalks: Sidewalks shall be a minimum of 5' in width and shall be placed in the right-of -way immediately adjacent to the property line. Sidewalks shall be provided on both sides of every street.
(14). Overhead Power Lines: Overhead power lines are prohibited along any street.
(15). Accessory Buildings: One accessory building is allowed in each rear yard but shall not be visible at ground level from adjoining properties.
(16). Signs: One 32 square foot temporary entry sign may be placed at each entrance to the subdivision. In addition, one 6 square foot temporary sign may be placed in front of each model home if applicable. A 16 square foot, permanent sign may be placed at the entrance to each new section of the subdivision. Temporary subdivision entry signs shall be removed within one year of the date the first permit for construction is issued or when 80% of the lots in the subdivision have been sold whichever first occurs. Subdivision section entry signs shall be removed after one year or when 80% of the homes in that section have been sold. One 32 square foot permanent sign shall be permitted at each entrance to the subdivision.
(17). Street Lighting: Street lighting shall be installed according to the cities' lighting ordinances.
(18). Outdoor Storage: Outdoor storage is prohibited.
(19). No barbed wire, electrical or chain link fencing is permitted.

(20). Homeowners Association (HOA): The developer will create deed restrictions and an HOA. The HOA will enforce restrictions and architectural guidelines for home construction and manage all common spaces, streetscape (including replacement, maintenance, safety pruning and health of street trees), screening walls, detention ponds, community trails and recreation/park areas, subject to city attorney review for form. The developer shall include in the restrictions a provision that should the HOA fail to operate and maintain common area spaces/open areas, such as detention ponds, the city has the option, but not the obligation, to assume the maintenance of such. Should the city assume maintenance, the City will have the right to impose and collect a fee on HOA, or upon each lot, to recover the city's costs. Deed restrictions should be drafted so as to not conflict with city ordinance.

(21). Concept Plan: The subdivision plat and concept plan for Riverwood Ranch Subdivision are attached hereto and made a part hereof the ordinance governing the RWRPD. The terms concept plan, plat and subdivision plat are used interchangeably. No building permit shall be issued until the subdivision plat is recorded and all other required engineering/construction plans are first approved by the city. No certificates of occupancy shall be issued until all construction and development conforms to the concept plan and engineering/construction plans as approved by the city.

(22). Minor Revisions: It is recognized that final architectural and engineering design may necessitate minor changes in the approved concept plan and RWRPD ordinance. In such cases, the city manager, or his designee, shall have the authority to approve minor modifications. Such minor modifications shall be made on the concept plan/subdivision plat in accordance with the Land Development Code (LDC) which shall be substantially conform to the previously approved concept plan.

(23). Major Revisions: In the event of revisions that are more extensive in nature (i.e. do not conform to the rules for minor amendments contained in the Angleton Land Development Code), a new concept plan/subdivision plat must be resubmitted, reviewed, and approved in accordance with regular procedures for rezoning and replatting contained in the Angleton Land Development Code and the City of Angleton zoning ordinance.

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 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 0.50 acres of land out of Tract No. 44 of the New York and Texas Land Company Subdivision situated in the J. de J. Valderas Survey, Abstract No. 380, Brazoria County, Texas from the Single-Family Residential 6.3 (SF-6.3) and Commercial-Neighborhood (C-N) Districts to the Single-Family Residential 5 (SF-5) District. The subject property 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 from Mr. Rogelio Rodrigues, represented by Mr. Martin Rodriguez, to rezone 0.5 acres of land located on the north side of Miller Street approximately 250 feet west of Warren Street from the SF-6.3 and C-N Districts to the SF-5.

The Future Land Use Plan from the Angleton Comprehensive Plan Update designates the subject property as being appropriate for residential use. The proposed rezoning is further supported by Goals 1 & 2 of Chapter 8 Housing of the Comprehensive Plan.

Goal One: A community in which quality housing is attractive available and affordable to all residents.
Goal Two: A variety of housing options that meets the needs of an increasingly diverse population.

Existing Land Use and Zoning

North: Undeveloped land in the SF 6.3 District.

East: Undeveloped City of Angleton land in street right-of-way.

South: Some residential development in SF-6.3 zoning and some C-N zoning.

West: Scattered residential development in the SF-6.3 District.

Miller street is designated as a Minor Collector on the Mobility Plan in this area but based on the existing development pattern in the area it is hard to imagine the existing street every needing to be improved to that standard (60'-70' of right-of-way and 32' of pavement).

The proposed rezoning is consistent with the Future Land Use Plan and is supported by Chapter 8 Housing, Goals 1 & 2 and is in keeping with the existing development pattern in the area. The proposed rezoning and any subsequent development of the property will have little impact upon the City's infrastructure.

The Planning & Zoning Commission held a public on January 7, 2021 and recommended approval (7 in favor/0 opposed/0 absent/abstentions) of the proposed rezoning of 0.50 acres from the SF-6.3 and C-N Districts to the SF-5 District.

RECOMMENDATION:

Staff recommends approval of the proposed rezoning of 0.50 acres from the SF-6.3 and C-N Districts to the SF-5 District.

ORDINANCE NO. 20210112-015

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ANGLETON, TEXAS REZONING 0.5 ACRES FROM ARTICLE III ZONING DISTRICTS SECTION 28-46 SF-6.3 SINGLE FAMILY RESIDENTIAL 6.3 DISTRICT AND ARTICLE III ZONING DISTRICTS SECTION 28-55 C-N COMMERCIAL NEIGHBORHOOD DISTRICT TO ARTICLE III ZONING DISTRICTS SECTION 28-47 SF-5 SINGLE FAMILY RESIDENTIAL 5 DISTRICT OF THE CODE OF ORDINANCES CITY OF ANGLETON, TEXAS; 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 January 7, 2021 the Angleton Planning and Zoning Commission conducted a public hearing regarding a request by Mr. Rogelio Rodriguez to rezone 0.5 acres from Article III Zoning Districts Section 28-46 SF-6-3 Single Family Residential 6.3 District and Article III Zoning Districts Section 28-55 C-N Commercial - Neighborhood District to the Article III Zoning Districts Section 28-47 SF-5 Single Family Residential 5 District of the Code of Ordinances City of Angleton, Texas following lawful publication of the notice of said public hearing; and

WHEREAS, on January 7, 2021 after considering the public testimony received at such hearing, if any, the Planning and Zoning Commission has recommended that the request by Mr. Rogelio Rodriguez to rezone 0.5 acres from Chapter 28 Zoning Sec. 6.3 District and Chapter 28 Zoning Sec. 55 Commercial - Neighborhood District to the Chapter 28 Sec. 47 Single Family Residential 5 District be approved; and

WHEREAS, on January 12, 2021 the City Council of the City of Angleton conducted a public hearing regarding a request by Mr. Rogelio Rodriguez to rezone 0.5 acres from Chapter 28 Zoning Sec. 6.3 District and Chapter 28 Zoning Sec. 55 Commercial - Neighborhood District to the Chapter 28 Sec. 47 Single Family Residential 5 District of the Code of Ordinances City of Angleton, Texas; and

WHEREAS, on January 12, 2021 the City Council of the City of Angleton, Texas approved the request by Mr. Rogelio Rodriguez to rezone 0.5 acres from Chapter 28 Zoning Sec. 6.3 District and Chapter 28 Zoning Sec. 55 Commercial - Neighborhood District to the Chapter 28 Sec. 47 Single Family Residential 5 District of the Code of Ordinances City of Angleton, Texas; 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 0.5 acres from Chapter 28 Zoning Sec. 6.3 District and Chapter 28 Zoning Sec. 55 Commercial - Neighborhood District to the Chapter 28 Sec. 47 Single Family Residential 5 District of the Code of Ordinances, City of Angleton, Texas;

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

SECTION 1. 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.

SECTION 2. The request by Mr. Rogelio Rodriguez to rezone 0.5 acres, as described and depicted in Exhibit "A," from Article III Zoning Districts Section 28-46 SF-6-3 Single Family Residential 6.3 District and Article III Zoning Districts Section 28-55 C-N Commercial - Neighborhood District to the Article III Zoning Districts Section 28-47 SF-5 Single Family Residential 5 District of the Code of Ordinances, City of Angleton, Texas be approved.

SECTION 3. 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. 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. 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. This ordinance shall be effective and in full force immediately upon its adoption.

SECTION 7. 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 AND APPROVED THIS THE 12th DAY OF JANUARY 2021.

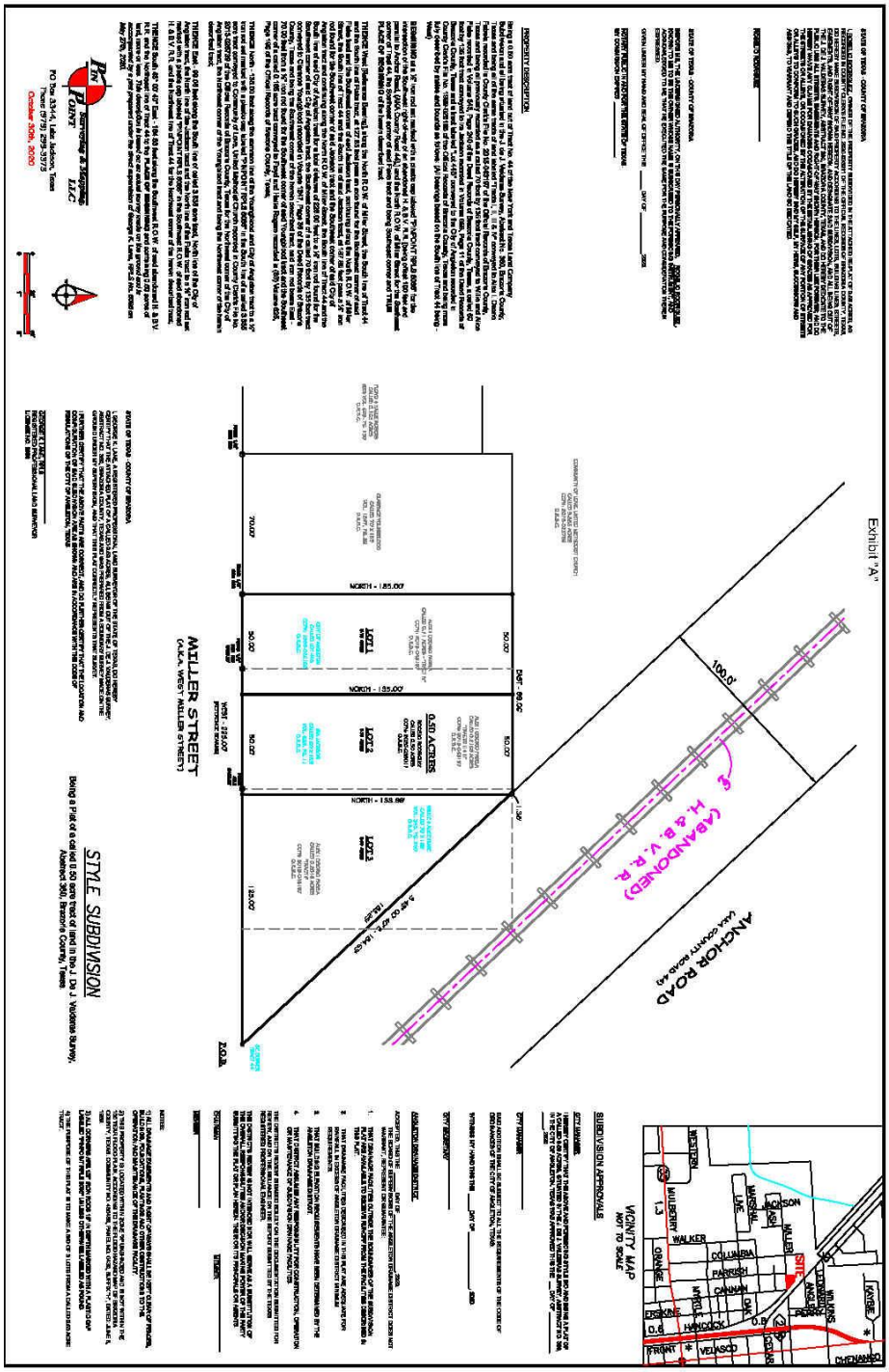
CITY OF ANGLETON, TEXAS

_____
Jason Perez
Mayor

ATTEST:

_____
Frances Aguilar, TRMC, CMC
City Secretary

EXHIBIT A


Exhibit "A"
MILLER STREET
(AKA. WEST MILLER STREET)
ANCHOR ROAD
(ABANDONED)
H. & B. V. R. R.
100.0'
SITE
VICINITY MAP
NOT TO SCALE
STYLE SUBDIVISION
Being 6 Plat of 6 called 8.50 acre tract of land in the J. Dr. J. Hopkins Survey,
Abstract 360, Brazoria County, Texas

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 2021

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

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on a recommendation regarding a request for approval of the Final Replat of Angleton Village being a portion of Lots 27 and 28 of the Oliver and Barrow Subdivision. The proposed final replat consists of one lot on 14.571 acres, is in the Multi-Family Residential - 29 (MFR-29) district and is located on the north side of Henderson Road approximately 900 feet east of Buchta Road.

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 of Angleton Village. The propose final replat consists of one lot on 14.571 acres in the Multi-Family Residential – 29 (MFR-29) district and is located on the north side of Henderson Road approximately 900 feet east of Buchta Road. 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.

The Planning and Zoning Commission held a public hearing on January 7, 2021 and recommends approval (7 in favor/0 opposed/0 absent/abstentions) of the proposed Final Replat of Angleton Village subject to the conditions listed in the City Engineer's memo.

RECOMMENDATION:

Staff recommends approval of the proposed Final Replat of Angleton Village subject to the conditions listed in the City Engineer's memo.

December 31, 2020

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

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

Dear Mr. Reeves:

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

1. A final letter of approval from the Angleton Drainage District will be required.
2. A Floodplain Development Permit will be required prior to any construction activities including grading.

HDR takes no objection to the proposed Angleton Village Final Replat and Plans with the exceptions noted. Please note, this does not necessarily mean that the entire drawings, including all supporting data and calculations, has been completely checked and verified; however, the drawings and calculations are signed, dated, and sealed by a professional engineer licensed to practice in the State of Texas, which therefore conveys the 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 DOAK D. BROWN, President And Managing Director of the BAH ANGLETON VILLAGE, LLC, acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as ANGLETON VILLAGE, 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.

FIRE LANE AND FIRE EASEMENT

That the undersigned does hereby covenant and agree that they shall construct upon the fire lane easements, as dedicated and shown hereon, a hard all-weather surface and that they shall maintain the same in a state of good repair at all times and keep the same free and clear of any structures, fences, trees, shrubs, or other improvements or obstruction, including but not limited to the parking of motor vehicles, trailers, boats, or other impediments to the access of fire apparatus. The maintenance of paving on the fire lane easements is the responsibility of the owner, and the owner shall post and maintain appropriate signs in conspicuous places along such fire lanes, stating "Fire Lane, No Parking." The police or his duly authorized representative is hereby authorized to cause such fire lanes and utility easements to be maintained free and unobstructed at all times for Fire Department and emergency use.

DRAINAGE AND DETENTION EASEMENT:

This plat is hereby adopted by the Owners and approved by the City of Angleton (called "City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees and successors: The portion 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 herein above 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 §

Doak D. Brown, manager of BAH Angleton Village, LLC, Angleton Texas, 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.

_____
DOAK D. BROWN, MANAGER

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared Doak D. Brown 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

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.

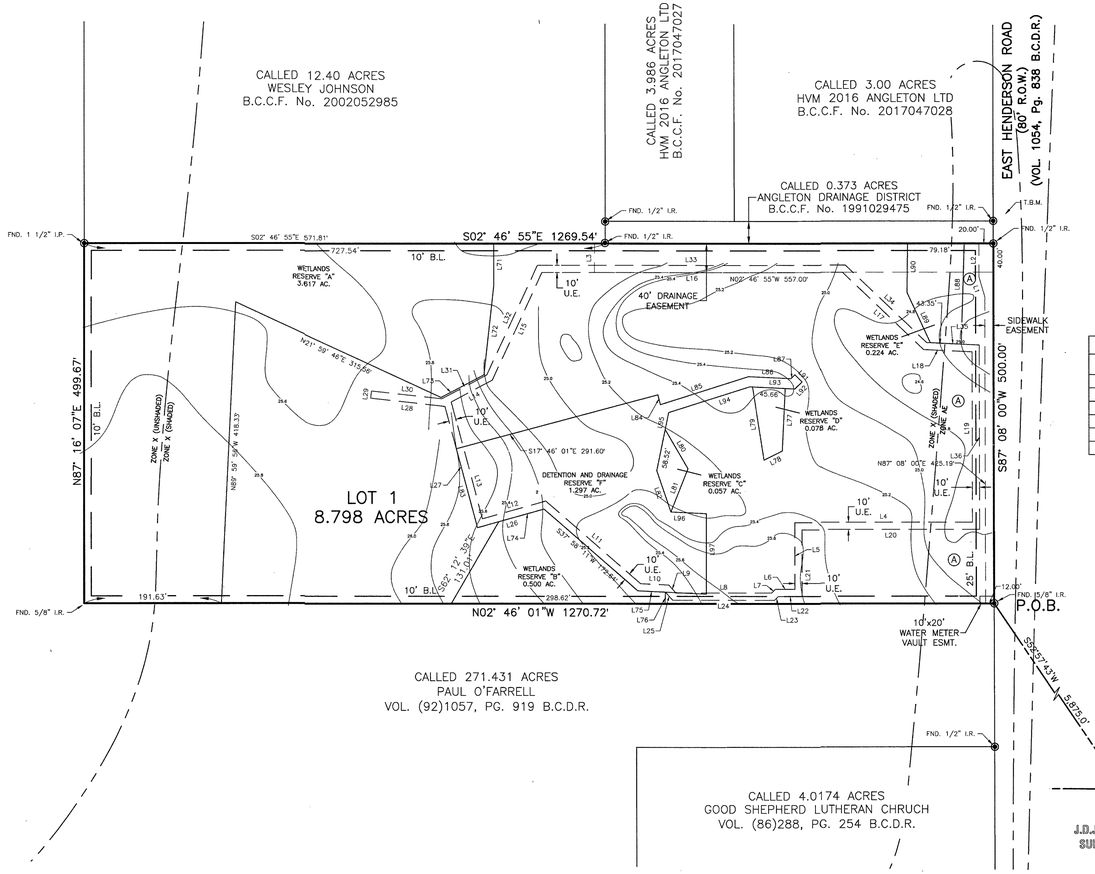
THE DISTRICT'S REVIEW IS BASED SOLELY ON THE DOCUMENTATION SUBMITTED FOR REVIEW, AND ON THE RELIANCE ON THE REPORT SUBMITTED BY THE TEXAS REGISTERED PROFESSIONAL ENGINEER.

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



Line Table		
Line No.	Length	Direction
L1	29.00'	N71°07'03"E
L2	46.97'	N87°08'00"E
L3	40.00'	N87°13'05"E
L4	248.03'	S02°46'04"E
L5	91.85'	N87°13'50"E
L6	27.25'	S02°46'01"E
L7	7.28'	S47°46'10"E
L8	133.84'	S02°46'15"E
L9	14.62'	S44°59'51"W
L10	39.62'	S00°00'00"W
L11	174.55'	S37°58'11"W
L12	91.88'	S18°20'37"E
L13	168.21'	S72°13'59"W
L14	65.17'	N30°48'01"W
L15	165.21'	N67°54'59"W
L16	419.39'	N02°46'55"W
L17	156.57'	N40°46'40"E
L18	67.81'	N00°00'00"E
L19	236.95'	N87°08'00"E
L20	248.05'	N02°46'04"W
L21	91.85'	S87°13'50"W
L22	33.11'	N02°46'01"W
L23	7.28'	N47°46'10"W
L24	142.41'	N02°46'15"W
L25	14.90'	N44°59'51"E
L26	96.63'	N18°20'37"W
L27	174.73'	N72°13'59"E
L28	104.26'	N03°33'03"E
L29	10.00'	S86°26'57"E
L30	98.98'	S03°33'03"W

Line Table		
Line No.	Length	Direction
L31	71.08'	S30°48'01"E
L32	168.24'	S67°54'59"E
L33	429.78'	S02°46'55"E
L34	156.85'	S40°46'40"W
L35	73.61'	S00°00'00"W
L36	256.48'	S87°08'00"W
L71	58.59'	S87°13'05"W
L72	124.80'	N86°29'15"W
L73	67.88'	N30°25'56"W
L74	65.55'	S18°20'37"E
L75	38.88'	S00°00'00"W
L76	15.89'	N89°58'26"W
L77	87.38'	N90°00'00"W
L78	28.48'	N29°04'52"W
L79	103.33'	N78°24'13"E
L80	63.10'	S57°07'27"W
L81	64.35'	N71°02'28"W
L82	60.29'	N68°18'11"E
L83	113.38'	N72°13'59"E
L84	14.02'	S72°13'59"W
L85	129.00'	S20°23'26"E
L86	59.42'	S00°00'00"W
L87	7.78'	S47°46'01"E
L88	140.51'	N88°56'25"E
L89	77.24'	S62°19'05"W
L90	68.28'	S87°56'18"W
L91	14.00'	S42°13'59"W
L92	13.97'	N47°46'01"W
L93	63.11'	N00°00'20"W
L94	118.95'	N20°23'26"W

Line Table		
Line No.	Length	Direction
L95	82.93'	N81°12'43"W
L96	49.63'	S00°00'00"W
L97	111.07'	S87°13'59"W

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

0 50' 100' 200'
SCALE : 1" = 100'

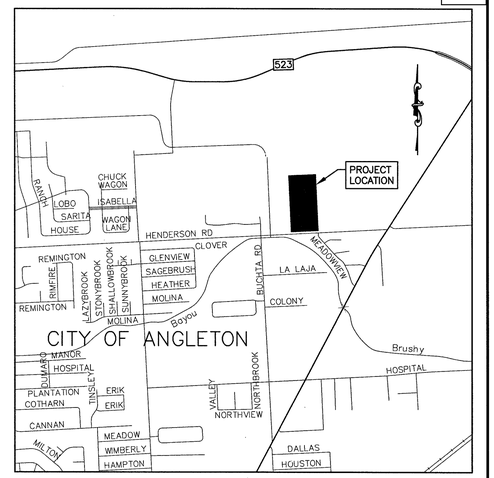
LEGEND

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
BM =	BENCHMARK
D.M.E.=	DRAINAGE/MAINTENANCE EASEMENT
U.E.=	UTILITY EASEMENT
W.L.E. =	WATER LINE EASEMENT
FND =	FOUND
I.R. =	IRON ROD
I.P. =	IRON PIPE
P.O.B. =	POINT OF BEGINNING
R.O.W. =	RIGHT-OF-WAY
VOL., Pg. =	VOLUME, PAGE

SYMBOLS

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

RESERVE TABLE		
RESERVE	PURPOSE	ACREAGE
A	WETLANDS	3.617
B	WETLANDS	0.500
C	WETLANDS	0.057
D	WETLANDS	0.078
E	WETLANDS	0.224
F	DETENTION &DRAINAGE	1.297



VICINITY MAP
NTS

Ⓐ 100 YEAR FLOODWAY EASEMENT BETWEEN SOUTH PROPERTY LINE AND ZONE "AE" LINE.

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 48039C0435H, WITH EFFECTIVE DATE OF JUNE 05, 1989, REVISED BY LOMR CASE NO. 03-06-2336P EFFECTIVE OCTOBER 6, 2004, THE PROPERTY SURVEYED LIES FULLY WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD-PLAIN, "X" (SHADED), AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD, AND "AE", SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT, BASE FLOOD ELEVATION DETERMINED. 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.
BASE FLOOD ELEVATION = 26.00' NGVD 1973 ADJUSTMENT

3. REFERENCE BENCHMARK:
HERITAGE PARK BENCHMARK: CHISELED SQUARE ON THE SOUTHWEST CORNER OF CONCRETE FOOTING FOR PIPE SUPPORT ON THE SOUTH SIDE OF HENDERSON ROAD, WEST OF CULVERT UNDER HENDERSON ROAD, AND 215' EAST OF BUCHTA ROAD.
ELEVATION = 26.08 NGVD, 1973 ADJUSTMENT.
TBM: CUT "□" ON THE TOP OF A HEADWALL ON THE WEST SIDE OF E.HENDERSON RD. AT ENTRANCE TO NORTHSIDE MANOR
ELEVATION = 26.11'

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. THE OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE DETENTION AND DRAINAGE RESERVE.

10. THE OWNER SHALL NOT DEVELOP AREAS DESIGNATED AS WETLAND RESERVES.

11. THE MINIMUM FINISHED FLOOR ELEVATION FOR STRUCTURE LOCATED IN FLOOD ZONE "AE" SHALL BE 27.00' NGVD 1973 ADJUSTMENT

FIELD NOTES FOR 14.571 ACRE

Being a tract of land containing 14.571 acre (634,856 square feet), located within Theodore S. Lee Survey, Abstract Number (No.) 318, in Brazoria County, Texas; Said 14.571 acre being a portion of Lots 27 and 28 of the Oliver and Barrow Subdivision recorded under Volume (Vol.) 2, Page 97 of the Brazoria County Plat Records (B.C.P.R.), being all of a called 14.571 acre tract recorded in the name of E.J. King, Sr. and Jackie M. King under Brazoria County Clerk's File (B.C.C.F.) No. 2014054480; Said 14.571 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 on the north right-of-way (R.O.W.) line of East Henderson Road (called eighty feet wide per Vol. 1054, Page 838 of the Brazoria County Deed Records (B.C.D.R.)), at a southeasterly corner of a called 271.431 acre tract recorded in the name of Paul O'Farrell under Vol. (92)1057, Pg. 919 B.C.D.R., for the southwest corner of the herein described tract;

THENCE, with an easterly line of said 271.431 acre tract, North 02 degrees 46 minutes 01 seconds West, a distance of 1,270.72 feet to a 5/8-inch iron rod found at an interior corner of said 271.431 acre tract, for the northwest corner of the herein described tract;

THENCE, with the southerly line of said 271.431 acre tract, North 87 degrees 16 minutes 07 seconds East, a distance of 499.67 feet to a 1 1/2" iron pipe found at the northwest corner of a called 12.40 acre tract recorded in the name of Wesley Johnson under B.C.C.F. No. 2002052985, for the northeast corner of the herein described tract;

THENCE, with the west line of said 12.40 acre tract, and a called 0.373 acre tract recorded in the name of Angleton Drainage District under B.C.C.F. No. 1991029475, South 02 degrees 46 minutes 55 seconds East, a distance of 1,269.54 feet to a 1/2-inch iron rod found on the north R.O.W. line of said East Henderson Road, at the southwest corner of said 0.373 acre tract, for the southeast corner of the herein described tract;

THENCE, with the north R.O.W. line of said East Henderson Road, South 87 degrees 08 minutes 00 seconds West, a distance of 500.00 feet to the POINT OF BEGINNING and containing 14.571 acres of land.

KNOW ALL MEN BY THESE PRESENTS:
That I, Douglas B. Roesler, do hereby certify that proper engineering consideration has been provided in this plat. To the best of my knowledge, this plat conforms to all requirements of the Angleton LDC, except for any variances that were expressly granted by the City Council.

SIGNED: _____ 12-29-20
DOUGLAS B. ROESLER DATE
PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 56739

STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

OWNERS:
BAH ANGLETON VILLAGE, LLC

REVISED:

FINAL REPLAT
ANGLETON VILLAGE
A 14.571 ACRE, 1-LOT, 1 BLOCK, 6 RESERVE SUBDIVISION

PORTION OF LOTS 27 AND 28 OF THE
OLIVER AND BARROW SUBDIVISION, VOL. 2, Pg. 97 B.C.P.R.
LOCATED IN THE
THEODORE S. LEE SURVEY, ABSTRACT No. 318
BRAZORIA COUNTY, TEXAS

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.: 13781	SCALE: 1" = 100'	DRAWN BY: DRR
DRAWING NO.: 13781 PLAT.DWG	DATE: 12/29/2020	CHECKED BY: AH

PLANS FOR CONSTRUCTION OF

PAVING, DRAINAGE AND UTILITIES ON

ANGLETON VILLAGE APARTMENTS

FOR THE

CITY OF ANGLETON

BRAZORIA COUNTY

B&L JOB No. 13781

N

0 1200 2400 3600 FT

GRAPHIC SCALE

CITY OF ANGLETON

CITY COUNCIL

MAYOR
JASON PEREZ

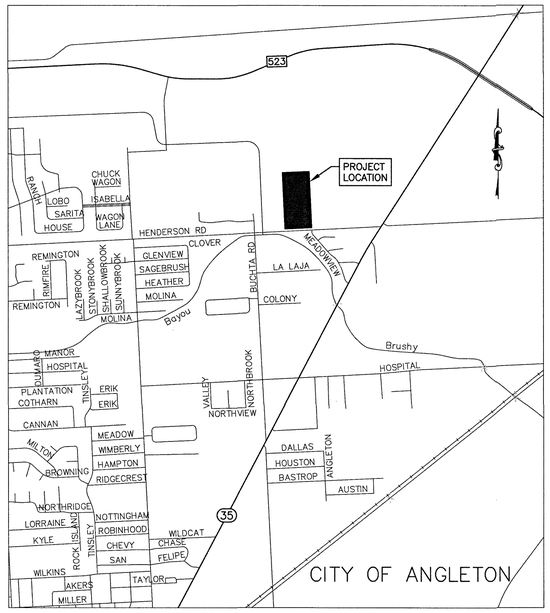
CITY MANAGER
CHRIS WHITTAKER

MIKEY SVOBODA
CECIL BOOTH
JOHN WRIGHT
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.

THIS PROPERTY LIES WITHIN THE BRUSHY BAYOU WATERSHED ACCORDING TO FEMA FIRM FOR BRAZORIA COUNTY, MAP NO. 48039C0435H AS REVISED BY LOMR DATED DECEMBER 14, 2004. THE PROPERTY SURVEYED HAS THE SOUTHERLY 70 FEET(±) IN ZONE "AE" WITH A BASE FLOOD ELEVATION OF 26 FEET. THE NORTHERLY PORTION OF THE PROPERTY LIES WITHIN A SHADED ZONE "X".



INDEX OF DRAWINGS

SHEET NO.	SHEET NAME
TS	TITLE SHEET
1	EXISTING CONDITIONS
2	DEVELOPMENT AREA
3	GRADING PLAN 1 OF 2
4	GRADING PLAN 2 OF 2
4A	ZONE "AE" CUT & FILL
5	DRAINAGE AREA MAP AND STORM SEWER LAYOUT
6	WINDSTORM DATA I-1 TO I-6, I-7 TO I-11
7	HYDRAULIC CALCULATIONS
8	DETENTION POND LAYOUT
9	UTILITY LAYOUT WATER 1 OF 2
10	UTILITY LAYOUT WATER 2 OF 2
11	UTILITY LAYOUT SANITARY SEWER 1 OF 2
12	UTILITY LAYOUT SANITARY SEWER 2 OF 2
13	UTILITY LAYOUT ELECTRIC 1 OF 2
14	UTILITY LAYOUT ELECTRIC 2 OF 2
15	SWPPP LAYOUT
16	SWPPP NARRATIVE
17	STORM SEWER PIPE BEDDING AND BACKFILL DETAILS (SL-20)
18	JUNCTION BOX MANHOLES (SL-11)
18A	STORM SEWER CONSTRUCTION DETAILS (SL-10)
19	CONCRETE PAVEMENT CONSTRUCTION DETAILS (SL-21)
20	WHEEL CHAIR RAMP & SIDEWALK DETAILS 1 (SL-25)
21	WHEEL CHAIR RAMP & SIDEWALK DETAILS 2 (SL-26)
22	SANITARY SEWER CONSTRUCTION DETAILS (SL-14)
23	WATER LINE, SANITARY SEWER FORCE MAIN BEDDING DETAILS (SL-19)
24	WATER LINE CONSTRUCTION DETAILS (SL-15)
24A	WATER LINE CONSTRUCTION DETAILS (SL-18)
24B	WATER LINE CONSTRUCTION DETAILS (SL-17)
25	WATER LINE CROSSING DETAILS (SL-16)
26	MISCELLANEOUS DETAILS
27	GENERAL EROSION CONTROL NOTES (SL-33)
28	EROSION CONTROL DETAILS - 1 (SL-34)
29	EROSION CONTROL DETAILS - 2 (SL-35)
30	TCP (1-1) - 18

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739

Date: 12/13/20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

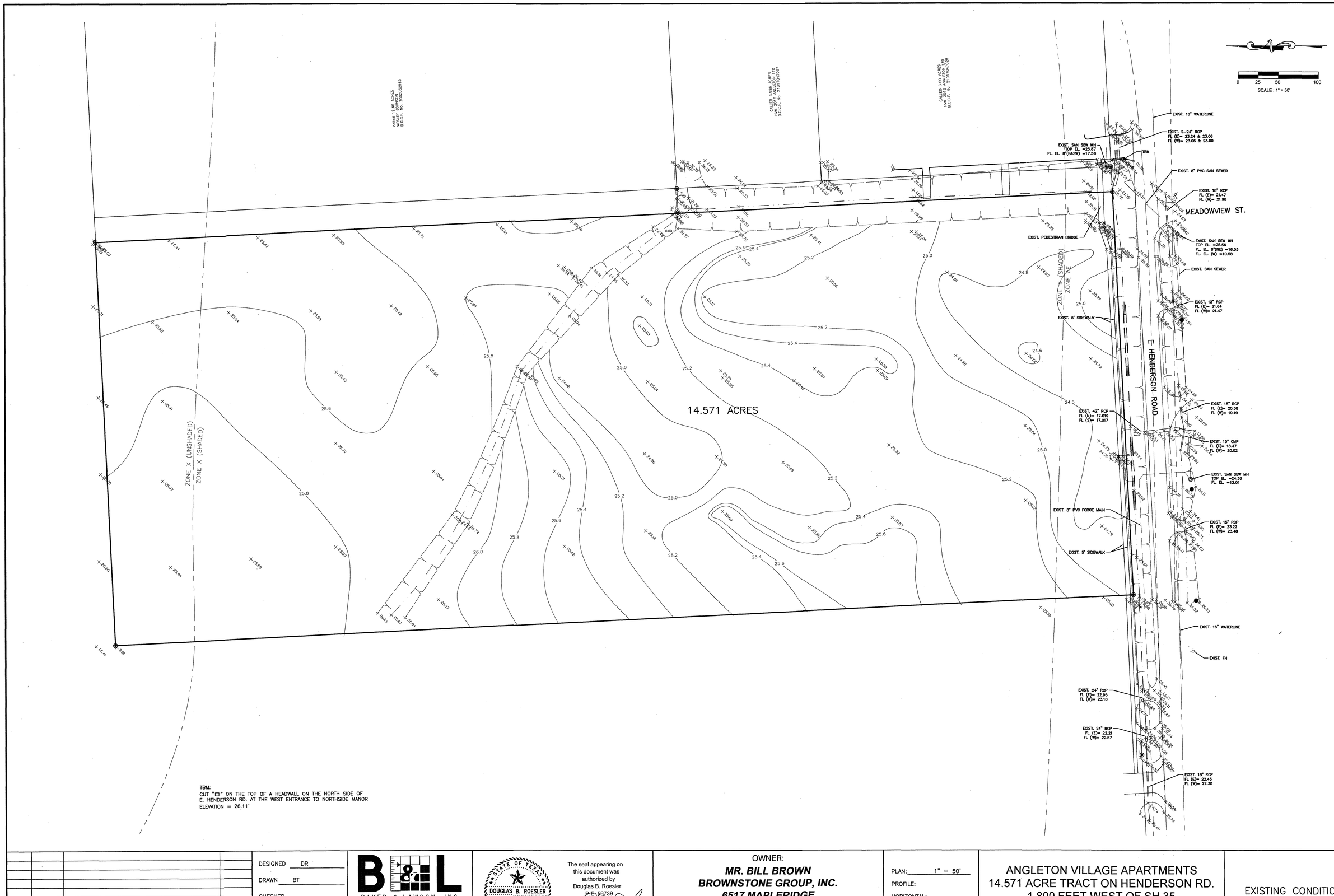
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 -1BR, 2BR AND 3BR UNITS

TITLE SHEET

PROJECT NO. 13781

TS

13781 SHEET SET.DWG



TBM:
CUT "□" ON THE TOP OF A HEADWALL ON THE NORTH SIDE OF E. HENDERSON RD. AT THE WEST ENTRANCE TO NORTHSIDE MANOR
ELEVATION = 26.11'

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739

Date 12-29-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN: 1" = 50'
PROFILE:
HORIZONTAL:
VERTICAL:

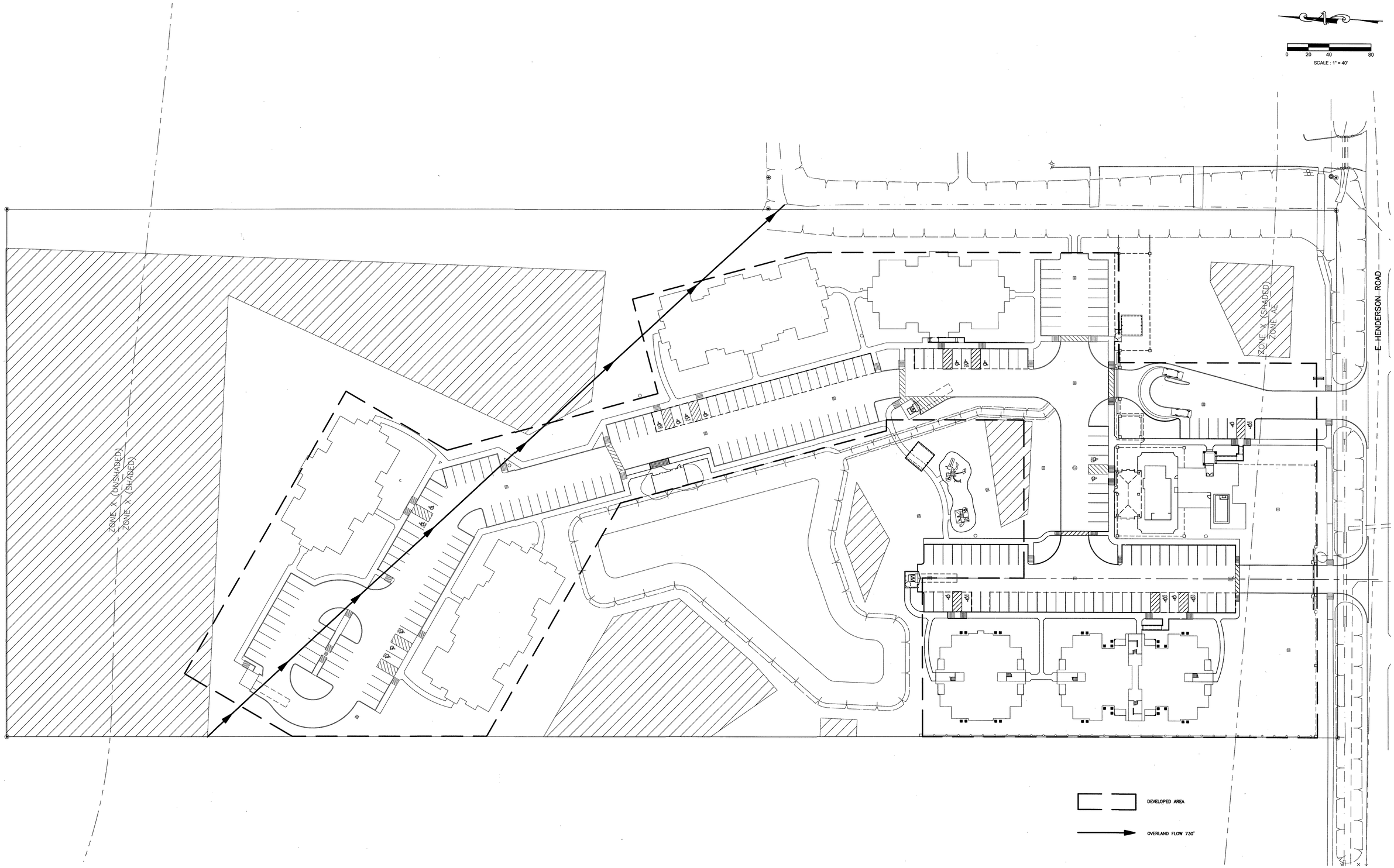
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 -1BR, 2BR AND 3BR UNITS

EXISTING CONDITIONS

PROJECT NO. 13781

13781 SHEET SET.DWG

0 20 40 80
SCALE : 1" = 40'



NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-29-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

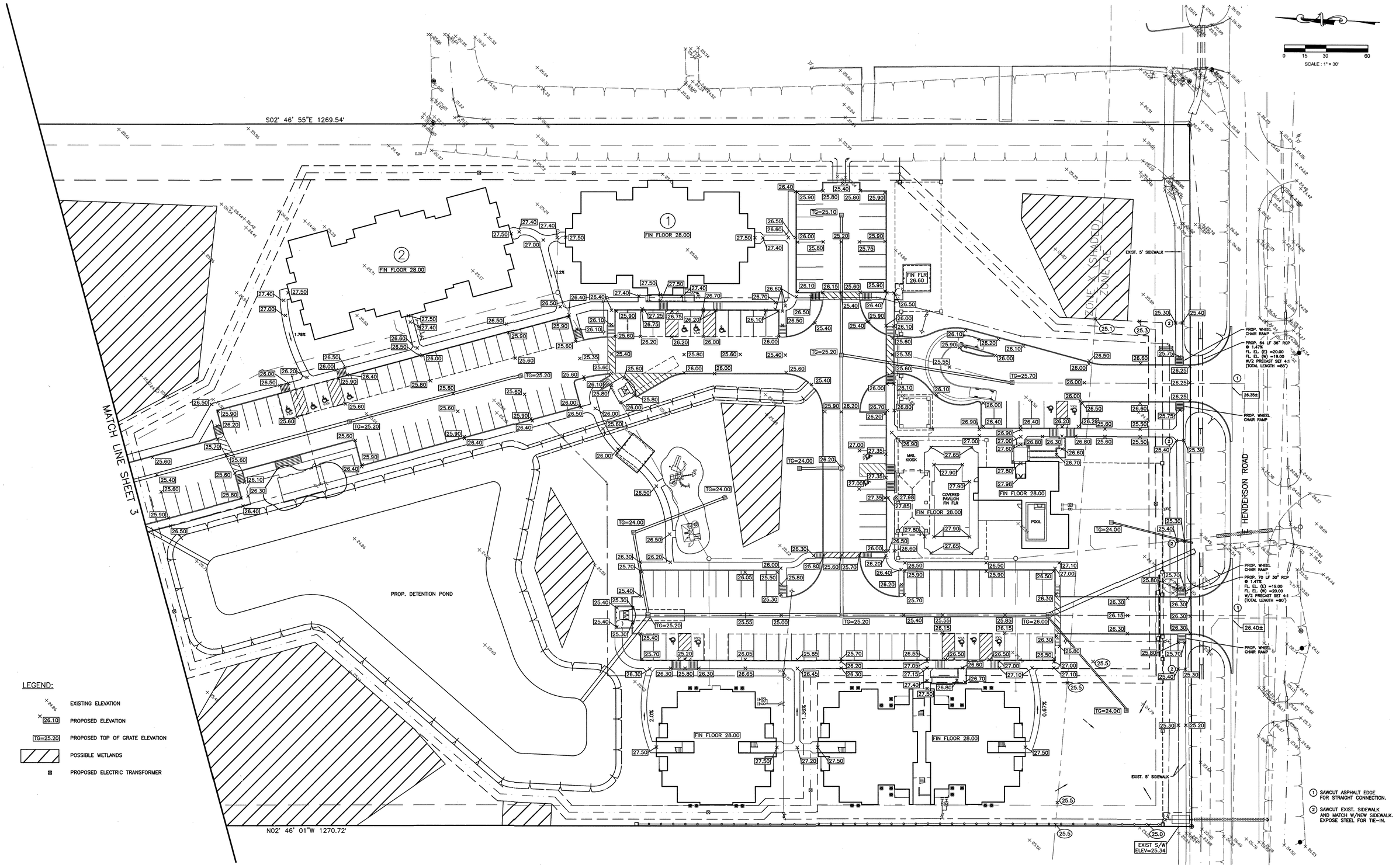
PLAN: 1" = 40'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 -1BR, 2BR AND 3BR UNITS

DEVELOPMENT AREA
(5.06 AC.)
EXISTING OVERLAND
FLOW PATH

PROJECT NO. 13781

13781 SHEET SET.DWG



LEGEND:

- EXISTING ELEVATION
- 26.10 PROPOSED ELEVATION
- TG=25.20 PROPOSED TOP OF GRATE ELEVATION
- POSSIBLE WETLANDS
- PROPOSED ELECTRIC TRANSFORMER

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN BT/BB
CHECKED
DATE

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REG. NO. F-825

STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-17-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

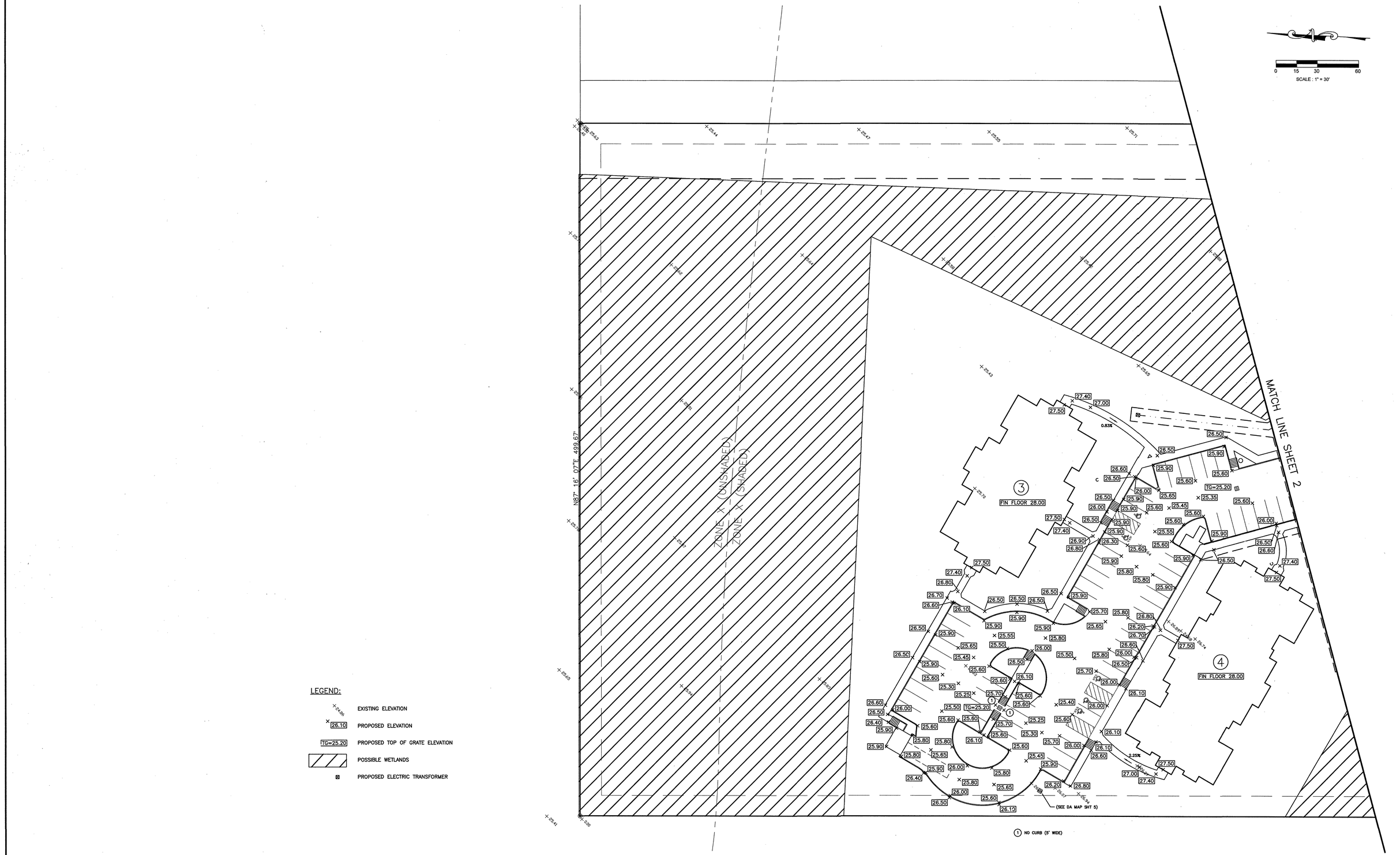
PLAN: 1" = 30'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

GRADING PLAN
(1 OF 2)

PROJECT NO. 13781

13781 SHEET SET.DWG



LEGEND:

- EXISTING ELEVATION
- PROPOSED ELEVATION
- PROPOSED TOP OF GRATE ELEVATION
- POSSIBLE WETLANDS
- PROPOSED ELECTRIC TRANSFORMER

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

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DRAWN BT
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DATE

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STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

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

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

GRADING PLAN
(2 OF 2)

PROJECT NO. 13781

13781 SHEET SET.DWG

FILL MITIGATION

Fill added to the "AE" Zone area up to elevation 26.0' totals 13,851 c.f.
(15,822 c.f. fill - 1,971 c.f. cut).

Following are fill mitigation areas and volumes:

1. Detention Pond = 36,423 c.f.

   A. Required Detention volume = 175,024 c.f.
   Detention volume provided to 25.2' = 178,875 c.f.
   Excess volume for fill mitigation = 3,851 c.f.

   B. Volume provided from elevation 25.2' to the BFE 26.0':
   Area 26.0' = 42,261 s.f.
   Area 25.2' = 39,168 s.f.
   Avg. Area = 40,715 s.f.
   Depth = 26.0' - 25.2' = 0.80'
   Fill Mitigation volume to 26.0' = 32,572 c.f.

2. Roadways and Parking = Not Calculated

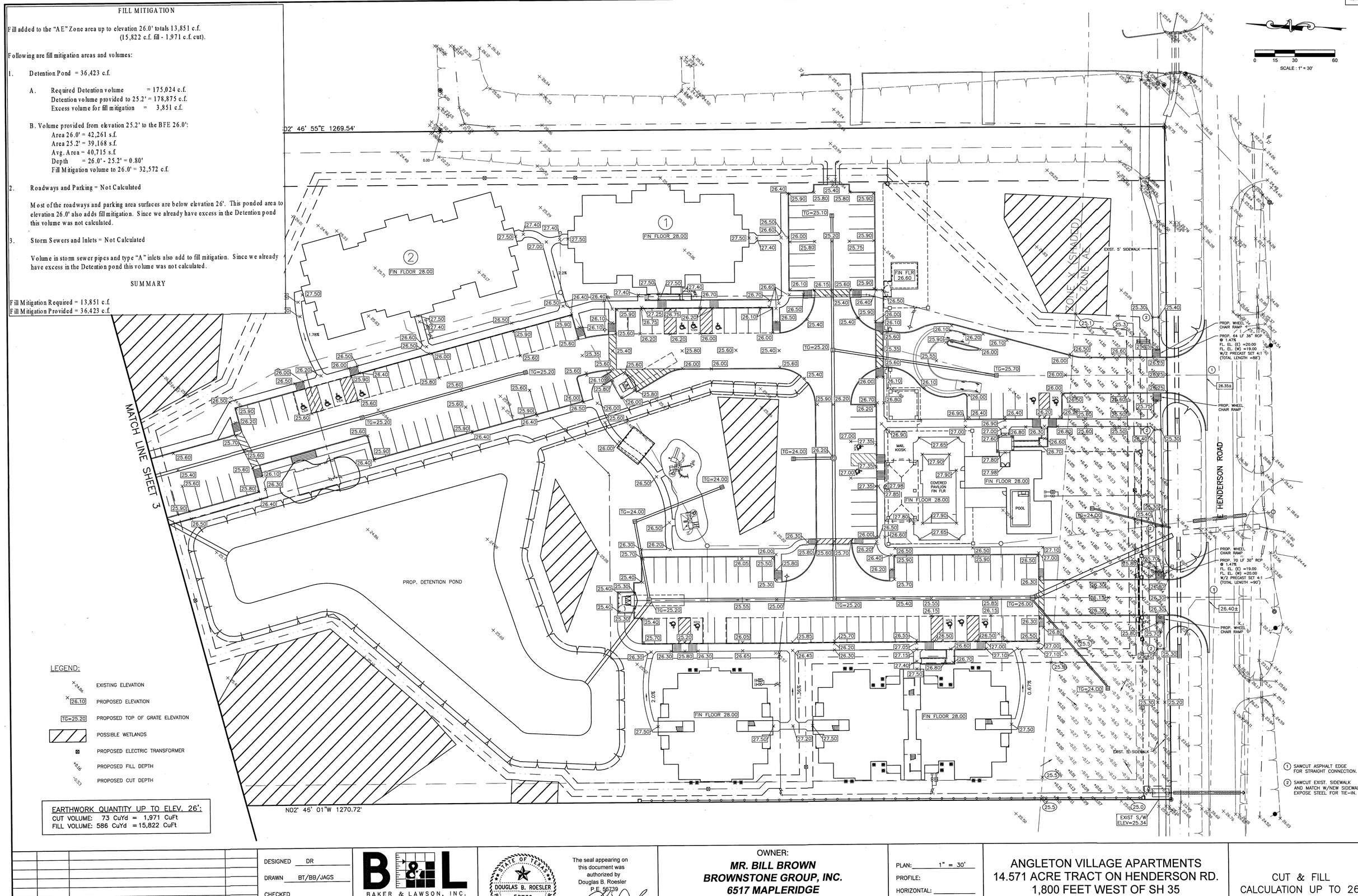
   Most of the roadways and parking area surfaces are below elevation 26'. This ponded area to elevation 26.0' also adds fill mitigation. Since we already have excess in the Detention pond this volume was not calculated.

3. Storm Sewers and Inlets = Not Calculated

   Volume in storm sewer pipes and type "A" inlets also add to fill mitigation. Since we already have excess in the Detention pond this volume was not calculated.

SUMMARY

Fill Mitigation Required = 13,851 c.f.
Fill Mitigation Provided = 36,423 c.f.



LEGEND:

- +24.86 — EXISTING ELEVATION
- 26.10 — PROPOSED ELEVATION
- TG=25.20 — PROPOSED TOP OF GRATE ELEVATION
- POSSIBLE WETLANDS
- PROPOSED ELECTRIC TRANSFORMER
- +0.16 — PROPOSED FILL DEPTH
- -0.53 — PROPOSED CUT DEPTH

EARTHWORK QUANTITY UP TO ELEV. 26':
CUT VOLUME: 73 CuYd = 1,971 CuFt
FILL VOLUME: 586 CuYd = 15,822 CuFt

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN BT/BB/JAGS
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date 12-29-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

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

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

CUT & FILL
CALCULATION UP TO 26'

PROJECT NO. 13781

13781 SHEET SET.DWG

TRUNK STORM SEWER RUN CALLS

RUN	RUN LENGTH (FT)	PIPE SIZE (IN)	SLOPE (%)	UP-STRM FL. EL. (FT)	DN-STRM FL. EL. (FT)
I-1 to I-6DET.	175	24	0.20	21.00	20.75
I-4 to I-5	125	18	0.22	21.20	20.92
I-5 to I-6	195	24	0.21	20.92	20.52
I-6 to O.F.	110	36	0.29	20.52	20.20
OFF-SITE to I-1	60	18	1.5	22.50	21.60
I-7 to I-9	124	18	0.20	21.17	20.92
I-8 to I-9	100	18	0.20	21.12	20.92
I-9 to JB-1	80	24	0.20	20.92	20.76
I-10 to JB-1	30	18	0.20	21.50	21.44
JB-1 to I-14	105	24	0.20	20.76	20.55
I-11 to I-12	70	18	0.20	21.50	21.36
I-12 to I-13	60	18	0.20	21.36	21.24
DET. to I-13	80	30	0.10	18.00	17.92
I-13 to I-14	140	30	0.11	17.92	17.76
I-14 to I-15	150	30	0.10	17.76	17.61
I-15 to O.F.	114	36	0.10	17.61	17.50
I-16 to O.F.	60	10	4.83	21.50	18.60
I-17 to O.F.	90	10	0.16	21.50	21.36

TYPE "A" INLET CALLS

PROP TYPE"A" OFF-SITE	
TOP GRATE EL. =	25.20
FL. EL. 18" (NE) =	22.20

PROP TYPE"A" INLET I-1	
TOP GRATE EL. =	25.20
FL. EL. 18" (SW) =	21.60
FL. EL. 24" (SE) =	21.10

PROP TYPE"A" INLET I-4	
TOP GRATE EL. =	25.20
FL. EL. 18" (NW) =	21.20

PROP TYPE"A" INLET I-5	
TOP GRATE EL. =	25.20
FL. EL. 18" (SE) =	20.92
FL. EL. 24" (NW) =	20.92

PROP TYPE"A" INLET I-6	
TOP GRATE EL. =	25.20
FL. EL. 24" (NW) =	
FL. EL. 30" (SE) =	20.52
FL. EL. 36" (SW) =	20.52

PROP TYPE"A" INLET I-7	
TOP GRATE EL. =	25.70
FL. EL. 18" (NE) =	21.17

PROP TYPE"A" INLET I-8	
TOP GRATE EL. =	25.20
FL. EL. 18" (NE) =	21.12

PROP TYPE"A" INLET I-9	
TOP GRATE EL. =	25.20
FL. EL. 18" (SW) =	20.92
FL. EL. 18" (E) =	20.92
FL. EL 24" (W) =	20.92

PROP TYPE"A" INLET I-10	
TOP GRATE EL. =	24.00
FL. EL. 18" (S) =	21.50

PROP. JUNC. BOX JB-1	
TOP LID EL	26.20
FL.EL 18" (N)	21.44
FL.EL. 24" (E)	20.76
FL. EL. 24" (W)	20.76

PROP TYPE"A" INLET I-11	
TOP GRATE EL. =	24.00
FL. EL. 18" (NW) =	21.50

PROP TYPE"A" INLET I-12	
TOP GRATE EL. =	24.00
FL. EL. 18" (SE) =	21.36
FL. EL. 18" (S) =	21.36

PROP TYPE"A" INLET I-13	
TOP GRATE EL. =	25.20
FL. EL. 18" (NE) =	21.24
FL. EL. 30" (NW) =	17.92
FL. EL. 30" (S) =	17.92

PROP TYPE"A" INLET I-14	
TOP GRATE EL. =	25.20
FL. EL. 30" (N) =	17.76
FL. EL. 30" (S) =	17.76
FL. EL 24" (E) =	20.55

PROP TYPE"A" INLET I-15	
TOP GRATE EL. =	26.00
FL. EL. 30" (N) =	21.36
FL. EL. 36" (SE) =	21.36
FL. EL. 10" (SW) =	21.36

PROP TYPE"A" INLET I-16	
TOP GRATE EL. =	24.00
FL. EL. 10" (S) =	21.50

PROP TYPE"A" INLET I-17	
TOP GRATE EL. =	24.00
FL. EL. 10" (S) =	21.50

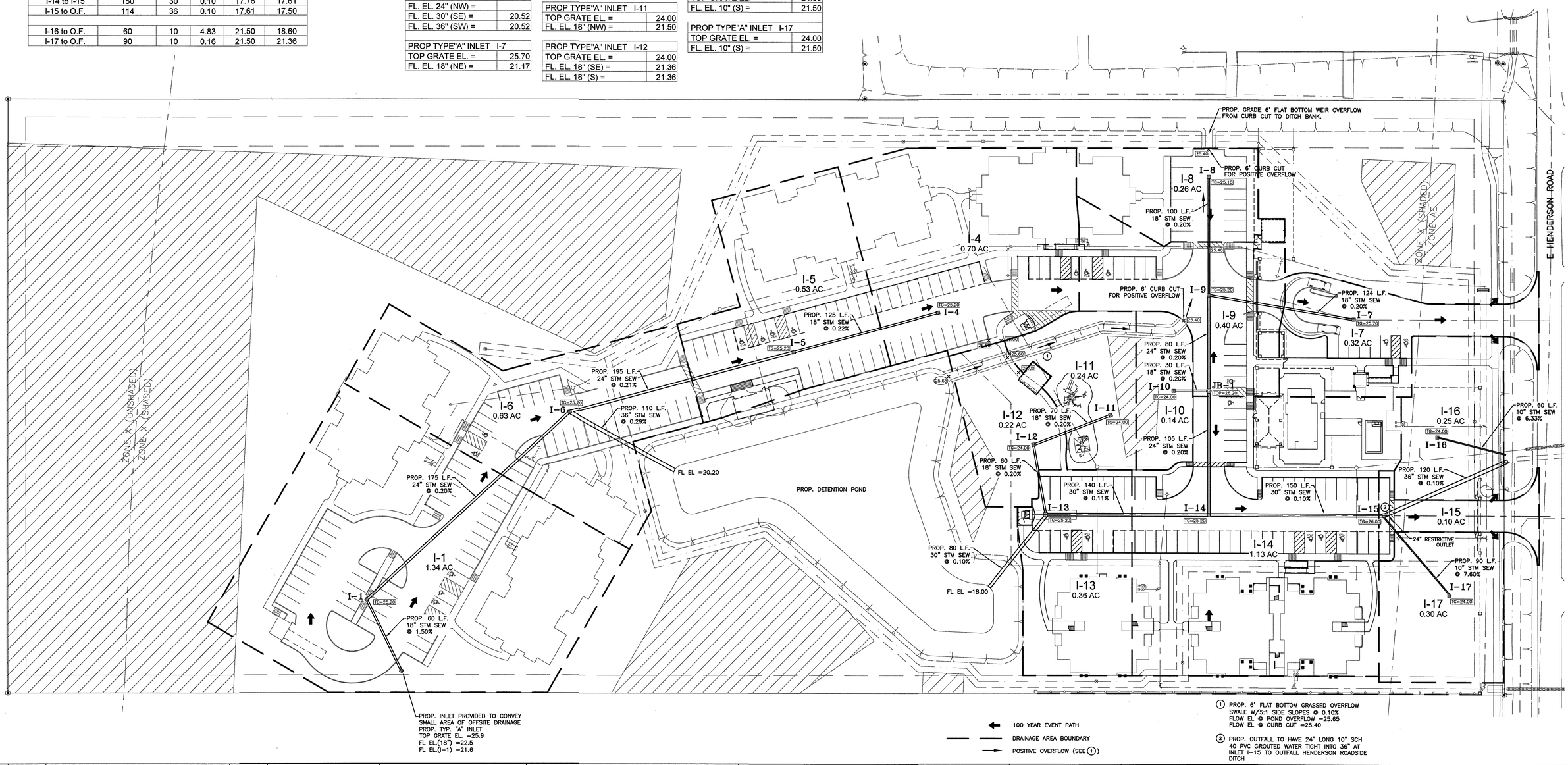
13781 - ANGLETON VILLAGE APARTMENTS, E. HENDERSON RD., ANGLETON, TX
RESTRICTIVE OUTLET WITH MAX. FLOW RATE OF 4.70 CFS AND 1.0' HEAD

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	H.C.F.C.D. EQUATION FOR A HDPE PIPE WITH KNOWN "L", "n", "D" AND ASSUMED "H"												
2	H"	Q"	ENTR. LOSS	n	L	D		EQ. 2.5204(1+D4)	EQ. 466.18*E4^2*F4	EQ. B4/(C4/10)^2	EQ. I4/G4^4	EQ. J4/G4^5.333	EQ. L4-(L4+M4)
3													
4	1	3.5	0.5	0.011	2	0.83		3.7806	0.1128	8.2709	7.9661	0.3047	0.0000
5	1	5.1	0.5	0.011	2	1		3.7806	0.1128	3.8934	3.7806	0.1128	0.0000

USE 10" RESTRICTIVE OUTLET

ORIFICE EQUATION Q = Cd*A*(2*G*H)^0.5			
Where:			
Cd =	0.8		
G =	32.2		
H =	1		
Q =	4.07		
A =	0.63	10" Dia.	0.55 s.f.

0 20 40 80
SCALE : 1" = 40'



NO.	DATE	DESCRIPTION	APPROVED

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ENGINEERS • PLANNERS • SURVEYORS
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PHONE: (979) 849-6681 FAX: (979) 849-4689
REG. NO. F-825

STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-28-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN: 1" = 40'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

DRAINAGE AREA MAP
AND
STORM SEWER LAYOUT

PROJECT NO. 13781

13781 SHEET SET.DWG

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 12/2/2020 2:28:12 PM

PROJECT NAME : Angleton Village Apartments
JOB NUMBER : 13781
PROJECT DESCRIPTION : 108 Units on E. hendersomn
DESIGN FREQUENCY : 10 Years
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 10 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)
I-7	0.8	0.32	15.00	15.00	6.21	0.000	1.590
I-8	0.8	0.26	15.00	15.00	6.21	0.000	1.291
I-9	0.8	0.40	15.00	15.00	6.21	0.000	1.987
I-10	0.3	0.14	15.00	15.00	6.21	0.000	0.261
I-11	0.3	0.24	15.00	15.00	6.21	0.000	0.447
I-12	0.3	0.22	15.00	15.00	6.21	0.000	0.410
I-13	0.8	0.36	15.00	15.00	6.21	0.000	1.788
I-14	0.8	1.13	15.00	15.00	6.21	0.000	5.613
I-15	0.8	0.10	15.00	15.00	6.21	0.000	0.497
I-16	0.3	0.25	15.00	15.00	6.21	0.000	0.466
I-17	0.3	0.30	15.00	15.00	6.21	0.000	0.559

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)
I-7	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	26.20
I-8	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-9	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-11	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-12	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-10	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-13	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-14	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-15	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	26.50

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)
I-7	Grate	n/a	7.34	3.74	1.590	8.011	0.170	7.15	7.15
I-8	Grate	n/a	7.34	3.74	1.291	8.011	0.148	6.60	6.60
I-9	Grate	n/a	7.34	3.74	1.987	8.011	0.197	7.80	7.80
I-11	Grate	n/a	7.34	3.74	0.447	8.011	0.073	4.45	4.45
I-12	Grate	n/a	7.34	3.74	0.410	8.011	0.069	4.30	4.30
I-10	Grate	n/a	7.34	3.74	0.261	8.011	0.051	3.65	3.65
I-13	Grate	n/a	7.34	3.74	1.788	8.011	0.184	7.50	7.50
I-14	Grate	n/a	7.34	3.74	5.613	8.011	0.394	11.50	11.50
I-15	Grate	n/a	7.34	3.74	0.497	8.011	0.078	4.65	4.65

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)
I-7	Grate	0.800	0.32	15.00	6.21	0.000	0.00	1.590
I-8	Grate	0.800	0.26	15.00	6.21	0.000	0.00	1.291
I-9	Grate	0.800	0.98	15.85	6.09	0.000	0.00	4.776
I-11	Grate	0.300	0.24	15.00	6.21	0.000	0.00	0.447
JB-1	CircMh	0.738	1.12	16.27	6.04	0.000	0.00	4.985
I-12	Grate	0.300	0.46	15.71	6.11	0.000	0.00	0.843
I-10	Grate	0.300	0.14	15.00	6.21	0.000	0.00	0.261
I-13	Grate	0.520	0.82	16.21	6.04	0.000	0.00	2.575
I-14	Grate	0.702	3.07	17.32	5.90	0.000	0.00	12.725
I-15	Grate	0.705	3.17	18.16	5.80	0.000	0.00	12.967
OUT	Outlt	0.705	3.17	18.16	5.80	0.000	0.00	12.967

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	I-7	I-9	21.17	20.92	Circ 1	0.00	1.50	124.00	0.20	0.013
2	I-8	I-9	21.12	20.92	Circ 1	0.00	1.50	100.00	0.20	0.013
3	I-9	JB-1	20.92	20.76	Circ 1	0.00	2.00	80.00	0.20	0.013
4	I-10	JB-1	21.50	21.44	Circ 1	0.00	1.50	30.00	0.20	0.013
5	JB-1	I-14	20.76	20.55	Circ 1	0.00	2.00	105.00	0.20	0.013
6	I-11	I-12	21.50	21.36	Circ 1	0.00	1.50	70.00	0.20	0.013
7	I-12	I-13	21.36	21.24	Circ 1	0.00	1.50	60.00	0.20	0.013
8	I-13	I-14	17.92	17.76	Circ 1	0.00	2.50	140.00	0.11	0.013
9	I-14	I-15	17.76	17.61	Circ 1	0.00	2.50	150.00	0.10	0.013
10	I-15	OUT	17.61	17.50	Circ 1	0.00	3.00	114.00	0.10	0.013

Conveyance Hydraulic Computations. Tailwater = 23.000 (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	23.30	23.27	0.023	0.60	1.50	2.42	0.90	1.59	4.72	0.000
2	23.29	23.27	0.015	0.54	1.50	2.26	0.73	1.29	4.70	0.000
3	23.27	23.24	0.045	0.97	2.00	3.17	1.52	4.78	10.12	0.000
4*	23.24	23.24	0.001	0.24	1.50	1.43	0.15	0.26	4.70	0.000
5	23.24	23.19	0.049	1.00	2.00	3.17	1.59	4.99	10.12	0.000
6	23.20	23.19	0.002	0.32	1.50	1.65	0.25	0.45	4.70	0.000
7	23.19	23.19	0.006	0.43	1.50	1.99	0.48	0.84	4.70	0.000
8	23.19	23.19	0.004	0.74	2.50	2.11	0.52	2.57	13.87	0.000
9	23.19	23.04	0.096	2.03	2.50	2.98	2.59	12.72	12.97	0.000
10	23.04	23.00	0.038	1.69	3.00	3.17	1.83	12.97	20.72	0.000

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 12/2/2020 2:31:26 PM

PROJECT NAME : Angleton Village Apartments
JOB NUMBER : 13781
PROJECT DESCRIPTION : 108 Units on E. Hendersomn
DESIGN FREQUENCY : 10 Years
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

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)
I-7	0.8	0.32	15.00	15.00	8.39	0.000	2.149
I-8	0.8	0.26	15.00	15.00	8.39	0.000	1.746
I-9	0.8	0.40	15.00	15.00	8.39	0.000	2.686
I-10	0.3	0.14	15.00	15.00	8.39	0.000	0.353
I-11	0.3	0.24	15.00	15.00	8.39	0.000	0.604
I-12	0.3	0.22	15.00	15.00	8.39	0.000	0.554
I-13	0.8	0.36	15.00	15.00	8.39	0.000	2.418
I-14	0.8	1.13	15.00	15.00	8.39	0.000	7.589
I-15	0.8	0.10	15.00	15.00	8.39	0.000	0.672
I-16	0.3	0.25	15.00	15.00	8.39	0.000	0.630
I-17	0.3	0.30	15.00	15.00	8.39	0.000	0.756

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)
I-7	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	26.20
I-8	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-9	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-11	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-12	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-10	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	24.50
I-13	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-14	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	25.70
I-15	Grate	7.34	3.74	0.50	2.00	0.50	2.00	0.014	n/a	0.50	26.50

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)
I-7	Grate	n/a	7.34	3.74	2.149	8.011	0.208	8.00	8.00
I-8	Grate	n/a	7.34	3.74	1.746	8.011	0.181	7.40	7.40
I-9	Grate	n/a	7.34	3.74	2.686	8.011	0.241	8.70	8.70
I-11	Grate	n/a	7.34	3.74	0.604	8.011	0.089	5.00	5.00
I-12	Grate	n/a	7.34	3.74	0.554	8.011	0.084	4.80	4.80
I-10	Grate	n/a	7.34	3.74	0.353	8.011	0.062	4.05	4.05
I-13	Grate	n/a	7.34	3.74	2.418	8.011	0.225	8.40	8.40
I-14	Grate	n/a	7.34	3.74	7.589	8.011	0.482	12.85	12.85
I-15	Grate	n/a	7.34	3.74	0.672	8.011	0.096	5.20	5.20

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)
I-7	Grate	0.800	0.32	15.00	8.39	0.000	0.00	2.149
I-8	Grate	0.800	0.26	15.00	8.39	0.000	0.00	1.746
I-9	Grate	0.800	0.98	15.78	8.26	0.000	0.00	6.478
I-11	Grate	0.300	0.24	15.00	8.39	0.000	0.00	0.604
JB-1	CircMh	0.738	1.12	16.17	8.20	0.000	0.00	6.773
I-12	Grate	0.300	0.46	15.64	8.29	0.000	0.00	1.144
I-10	Grate	0.300	0.14	15.00	8.39	0.000	0.00	0.353
I-13	Grate	0.520	0.82	16.09	8.21	0.000	0.00	3.498
I-14	Grate	0.702	3.07	17.09	8.05	0.000	0.00	17.364
I-15	Grate	0.705	3.17	17.80	7.95	0.000	0.00	17.767
OUT	Outlt	0.705	3.17	17.80	7.95	0.000	0.00	17.767

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	I-7	I-9	21.17	20.92	Circ 1	0.00	1.50	124.00	0.20	0.013
2	I-8	I-9	21.12	20.92	Circ 1	0.00	1.50	100.00	0.20	0.013
3	I-9	JB-1	20.92	20.76	Circ 1	0.00	2.00	80.00	0.20	0.013
4	I-10	JB-1	21.50	21.44	Circ 1	0.00	1.50	30.00	0.20	0.013
5	JB-1	I-14	20.76	20.55	Circ 1	0.00	2.00	105.00	0.20	0.013
6	I-11	I-12	21.50	21.36	Circ 1	0.00	1.50	70.00	0.20	0.013
7	I-12	I-13	21.36	21.24	Circ 1	0.00	1.50	60.00	0.20	0.013
8	I-13	I-14	17.92	17.76	Circ 1	0.00	2.50	140.00	0.11	0.013
9	I-14	I-15	17.76	17.61	Circ 1	0.00	2.50	150.00	0.10	0.013
10	I-15	OUT	17.61	17.50	Circ 1	0.00	3.00	114.00	0.10	0.013

Conveyance Hydraulic Computations. Tailwater = 24.000 (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	24.56	24.51	0.042	0.70	1.50	2.64	1.22	2.15	4.72	0.000
2	24.53	24.51	0.028	0.63	1.50	2.46	0.99	1.75	4.70	0.000
3	24.51	24.44	0.082	1.16	2.00	3.44	2.06	6.48	10.12	0.000
4	24.44	24.44	0.001	0.28	1.50	1.54	0.20	0.35	4.70	0.000
5	24.44	24.35	0.090	1.19	2.00	3.48	2.16	6.77	10.12	0.000
6	24.37	24.37	0.003	0.36	1.50	1.83	0.34	0.60	4.70	0.000
7	24.37	24.36	0.012	0.50	1.50	2.19	0.65	1.14	4.70	0.000
8	24.36	24.35	0.007	0.86	2.50	2.34	0.71	3.50	13.87	0.000
9	24.35	24.08	0.179	2.50	2.50	3.54	3.54	17.36	12.97	0.000
10	24.08	24.00	0.071	2.06	3.00	3.43	2.51	17.77	20.72	0.000

END

NORMAL TERMINATION OF WINSTORM.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN BT/BB
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6681 FAX: (979) 849-4089
REG. NO. F-825

STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN: 1" = 50'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

WINDSTORM DATA
I-1 TO I-6 &
I-7 TO I-11

PROJECT NO. 13781

6 1 SHEET SET.DWG

(1)

Drainage Analysis

Job # 13781 - Angleton Village Apts. - N Henderson Rd.

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

$i := 1..6$

$b_i :=$ $\quad$ $e_i :=$ $\quad$ $d_i :=$

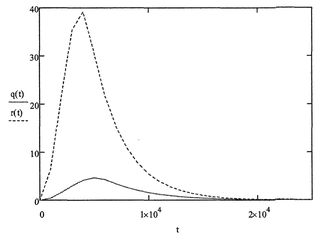
b_i	e_i	d_i
71.0	0.774	8.4
70.1	0.752	7.7
96.6	0.770	17.2
89.2	0.736	10.4
86.5	0.709	10.0
120.2	0.741	21.3

$T_\emptyset := 45.42$ ENTER PREDEVELOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_\emptyset)^{e_i}}$ $I_6 = 5.347$ Predevelopment Intensity of interest

$C := .1197$ ENTER PREDEVELOPMENT C VALUE

$A := 5.88$ ENTER AREA



$f(t) := ((r(t) - q(t))) \cdot 1$

$v(t) := if(f(t) > 0, f(t), 0)$

THE REQUIRED STORAGE COMPUTED AS THAT PART OF THE POST DEVELOPMENT HYDROGRAPH THAT FALLS ABOVE THE PREDEVELOPMENT HYDROGRAPH

ACRE -FEET

$$\frac{\int_0^{86400} v(t)\,dt}{43560} = 4.018$$

(2)

$C_f := 1.25$

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

$Q = 4.704$

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

$V = 3.311 \times 10^4$

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

$T := \frac{V}{1.39 \cdot Q}$ $T = 5.064 \times 10^3$ T = Time to peak, presented as a function of volume and peak flow and therefore indirectly related to time of concentration

$t := 0, 1000.. 84000$

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

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

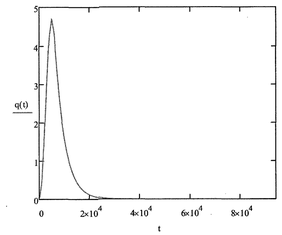
$q(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

$Volume_{pre} := \int_0^{86400} q(t)\,dt$

$Volume_{pre} = 3.323 \times 10^4$

(3)

Predevelopment hydrograph



$T_\emptyset := 23.67$ ENTER POST DEVLOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 7.163$ Post development I of interest

ENTER POST DEVELOPMENT C FACTOR REVISE CfAND AREA IF NECESSARY

$C := 0.75$

$C_f := 1.25$

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

$Q = 39.485$

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

$V = 2.075 \times 10^5$

$T := \frac{V}{1.39 \cdot Q}$ $T = 3.78 \times 10^3$

(4)

$t := 0, 1000.. 25000$

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

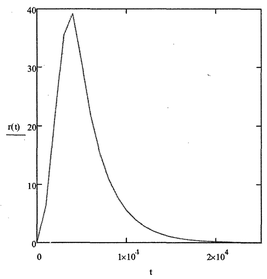
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$

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

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

$Volume_{post} = 2.082 \times 10^5$

Post development hydrograph



Combined pre and post development hydrographs

(5)

$f(t) := ((r(t) - q(t))) \cdot 1$

$v(t) := if(f(t) > 0, f(t), 0)$

THE REQUIRED STORAGE COMPUTED AS THAT PART OF THE POST DEVELOPMENT HYDROGRAPH THAT FALLS ABOVE THE PREDEVELOPMENT HYDROGRAPH

ACRE -FEET

$$\frac{\int_0^{86400} v(t)\,dt}{43560} = 4.018$$

(6)

Hydrological and Hydraulic Impacts

Angleton Village Apts. - N. Henderson Rd.
Job # 13781

Brazoria County, Texas

A = 5.88 Acre Development

Pre Development:

C = 0.1197
TC = 45.42 Minutes, I = 5.347
Q = 100 Year Storm = 4.70 cfs
Q-Allowable is 0.80 cfs / ac. = 4.70 cfs

Post Development

C = 0.75
T/C = 23.67 Minutes, I= 7.163
Q = 100 Year Storm = 39.49 cfs

Required Detention:

4.018 ac - feet (175,024 c.f.)

Douglas B. Roesler, P.E. Mar. 20, 2020

EXISITNG CONDITIONS

Bra. Co. Master Drg. Study allows only 0.80 cfs/acre in this area. These are Bastrop Bayou drainage area BB 36.

TC = 15 Minutes gather time plus diagonal length (730') overland at 0.40 fps = 45.42 Minutes

PROPOSED CONDITIONS

TC = 15 Minutes gather time + 100' overland at 0.50 fps + 100' gutter at 1.5 fps + 760 l.f. storm sewer at 3 fps = 23.67 Minutes

C = Bra. Co. Drg. Criteria Manual - Apartments = 0.75

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

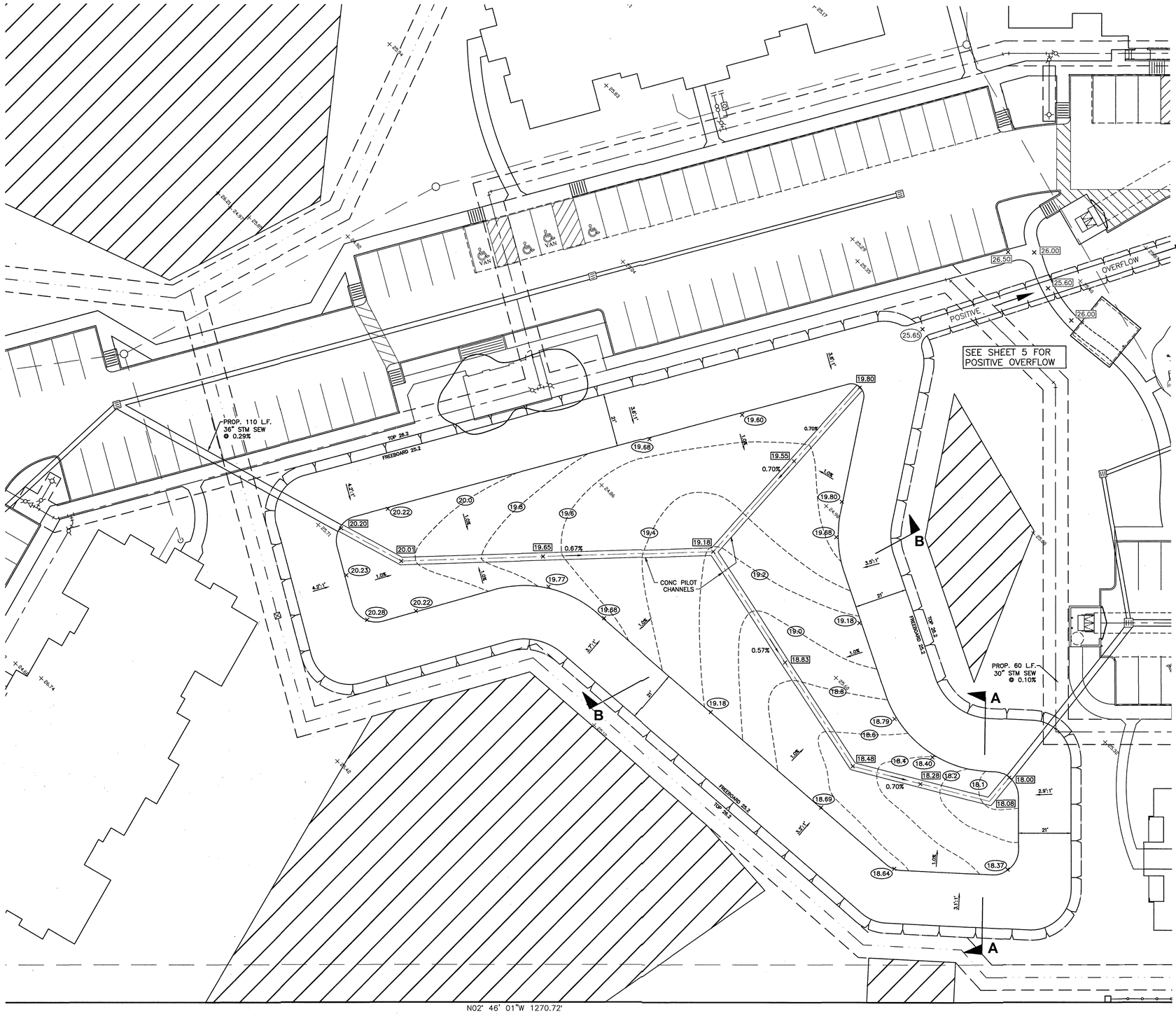
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

HYDROLOGICAL CALCULATIONS

PROJECT NO. 13781

7

11 SHEET SET.DWG



0 10 20 40
SCALE : 1" = 40'

DETENTION REQUIRED 4.018 AC.–FT (175,024 C.F.)

EXISTING CONDITION
A =5.88 AC.
C =0.25
TC =15 MIN. + 730 LF OL @ 0.40 FPS X 45.42 MINUTE

DETENTION VOLUME PROVIDED

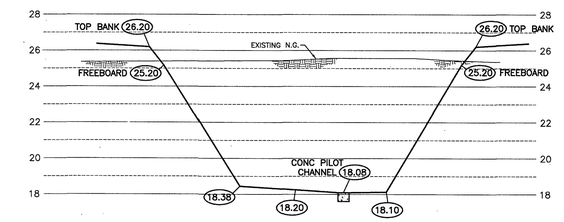
PROPOSED CONDITION
A =10.9 AC.
C =5.06 AC. @ 0.75 = 0.57
4.84 AC. @ 0.30
TC =15 MIN. + 760 LF STM SEW @ 3.0 FPS = 19.2 MINUTE

DETENTION POND VOLUME

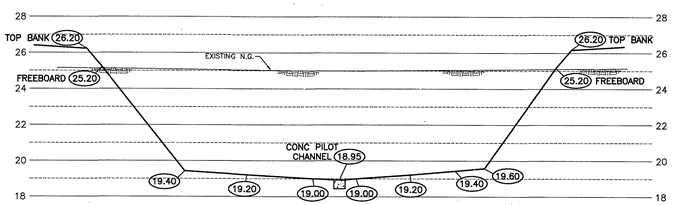
EL. 26.2' TOP (43,034 S.F.)
EL. 25.2' FREEBOARD (39,168 S.F.) — AVG. AREA =29,812.5 S.F.
19.2' BOTTOM (20,475 S.F.)

AVG. DEPTH =6.0'

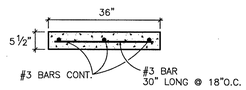
VOLUME PROVIDED TO ELEV. 25.2 =4.106 AC–FT (178,875 C.F.)
(DOES NOT INCLUDE INLETS @ STORM SEWER STORAGE)



SECTION A-A
SCALE: 1" = 20' HORIZ
1" = 4' VERT



SECTION B-B
SCALE: 1" = 20' HORIZ
1" = 4' VERT



CONCRETE PILOT CHANNEL
N.T.S.

LEGEND:
- EXISTING ELEVATION
- PROPOSED ELEVATION
- POSSIBLE WETLANDS
- PROPOSED ELECTRIC TRANSFORMER
- DETENTION POND BOTTOM SLOPE DIRECTION

NO.	DATE	DESCRIPTION	APPROVED

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PLAN: 1" = 20'
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ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

DETENTION POND LAYOUT

PROJECT NO. 13781

81 SHEET SET.DWG

S02° 46' 55"E 1269.54'

N02° 46' 01"W 1270.72'

MATCH LINE SHEET 5

ZONE X SHADED ZONE AE

E HENDERSON ROAD

0 15 30 60
SCALE : 1" = 30'

PROP. 8"X4" TEE
1-4" GV W/BOX
1-4" DBL CHECK
1-2" W.M.

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

PROP. 8"X4"-90° BEND
1-4" GV W/BOX
1-4" DBL CHECK
1-2" W.M.

PROP. 641 LF 8" WL
3-22 ½° BENDS
W/4' COVER

PROP. 8"X6" TEE
1-4" GV W/BOX
15 LF FH LEAD
1-FH

PROP. 1-8" 90° BEND

PROP. 81 LF 8" WL
W/4' COVER

PROP. 168 LF 8" WL
W/4' COVER

PROP. 1-8" TEE
2-8" GV W/BOX

PROP. 1-8" 45° BEND

PROP. 1-8" 45° BEND

PROP. 322 LF 8" WL
W/4' COVER

PROP. 1-8" 90° BEND

PROP. 8"X4" TEE
1-4" GV W/BOX
1-4" DBL CHECK
1-2" W.M.

PROP. 75 LF 4" FIRE
LINE W/3.5' COVER

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

PROP. 8"X8" TEE
1-8"X6" REDUCER
1-6" GV W/BOX
60 LF FH LEAD
1-FH

PROP. 8"X4" TEE
1-4" GV W/BOX
1-4" DBL CHECK
1-2" W.M.
20 LF 4" FIRE LINE

PROP. 116 LF 8" WL
W/4' COVER

PROP. 8"X4" TEE
1-4" GV W/BOX
1-4" DBL CHECK
1-2" W.M.

PROP. 338 LF 8" WL
W/4' COVER

PROPOSED SENSUS F-2
COMBINATION FIRE/DOMESTIC
METER ASSEMBLY IN VAULT
IN 10'x20' WATER METER
VAULT EASEMENT

APPROXIMATE LOCATION
OF EXIST. 16" W.L.

PROP. 10"X16" TS&V

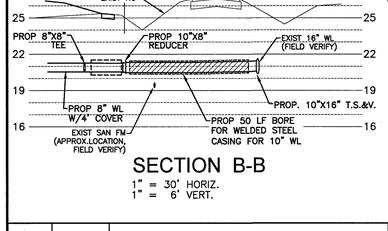
PROP. 1-10"-90° BEND
1-10"X8" REDUCER
1-8" GV W/BOX

PROP. 401 LF 10" WL
W/4' COVER

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

PROP. 10"X8" REDUCER

PROPOSED 50 LF BORE
FOR WELDED STEEL CASING
FOR 10" WATER LINE



SECTION B-B
1" = 30' HORIZ.
1" = 6' VERT.

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REVISIONS

DESIGNED DR
DRAWN BT/BB
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date 12-29-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

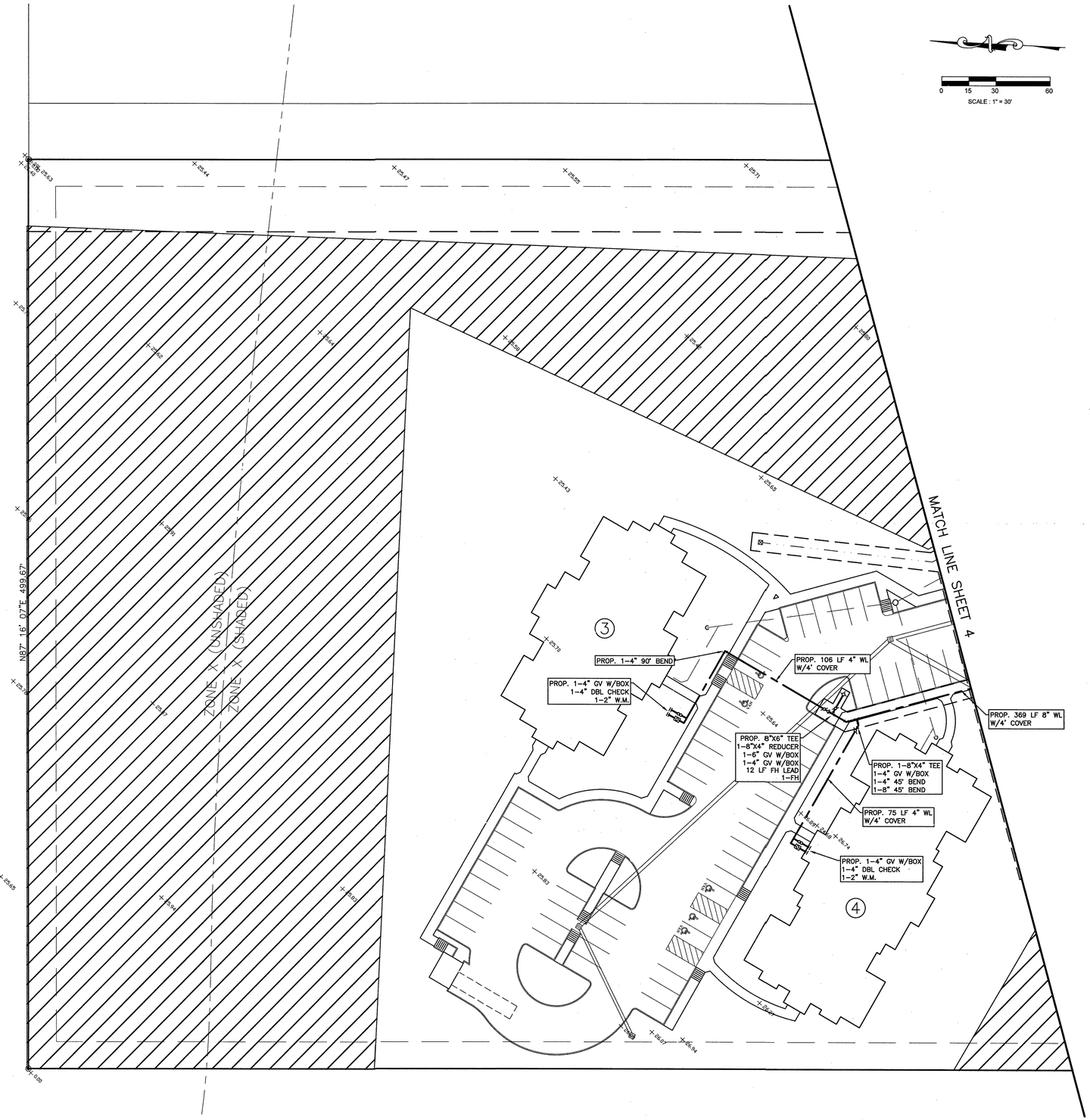
PLAN: 1" = 30'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

UTILITY LAYOUT WATER
(1 OF 2)

PROJECT NO. 13781

13781 SHEET SET.DWG



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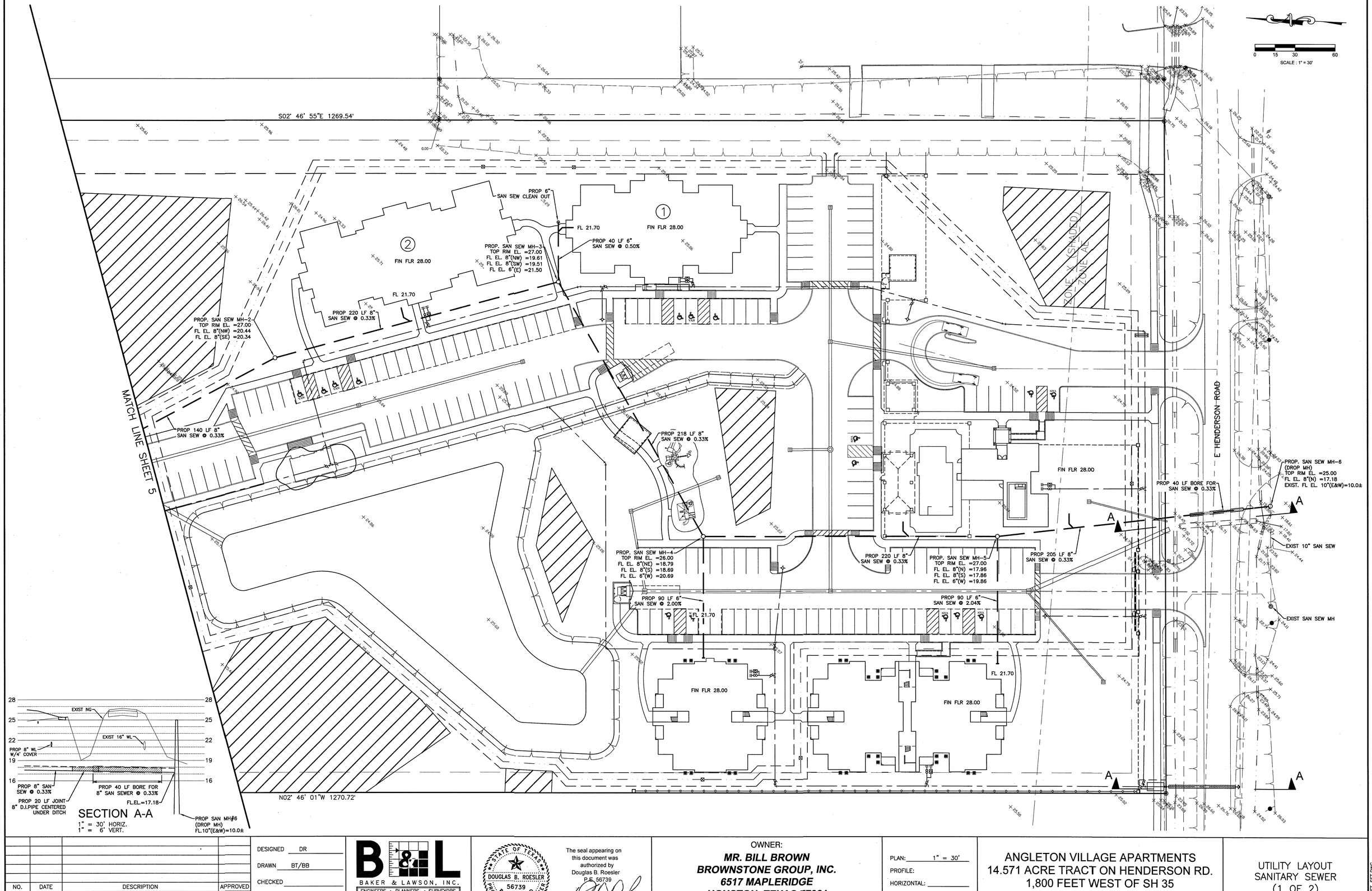
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UTILITY LAYOUT WATER
(2 OF 2)

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10

81 SHEET SET.DWG



SECTION A-A
1" = 30' HORIZ.
1" = 6' VERT.

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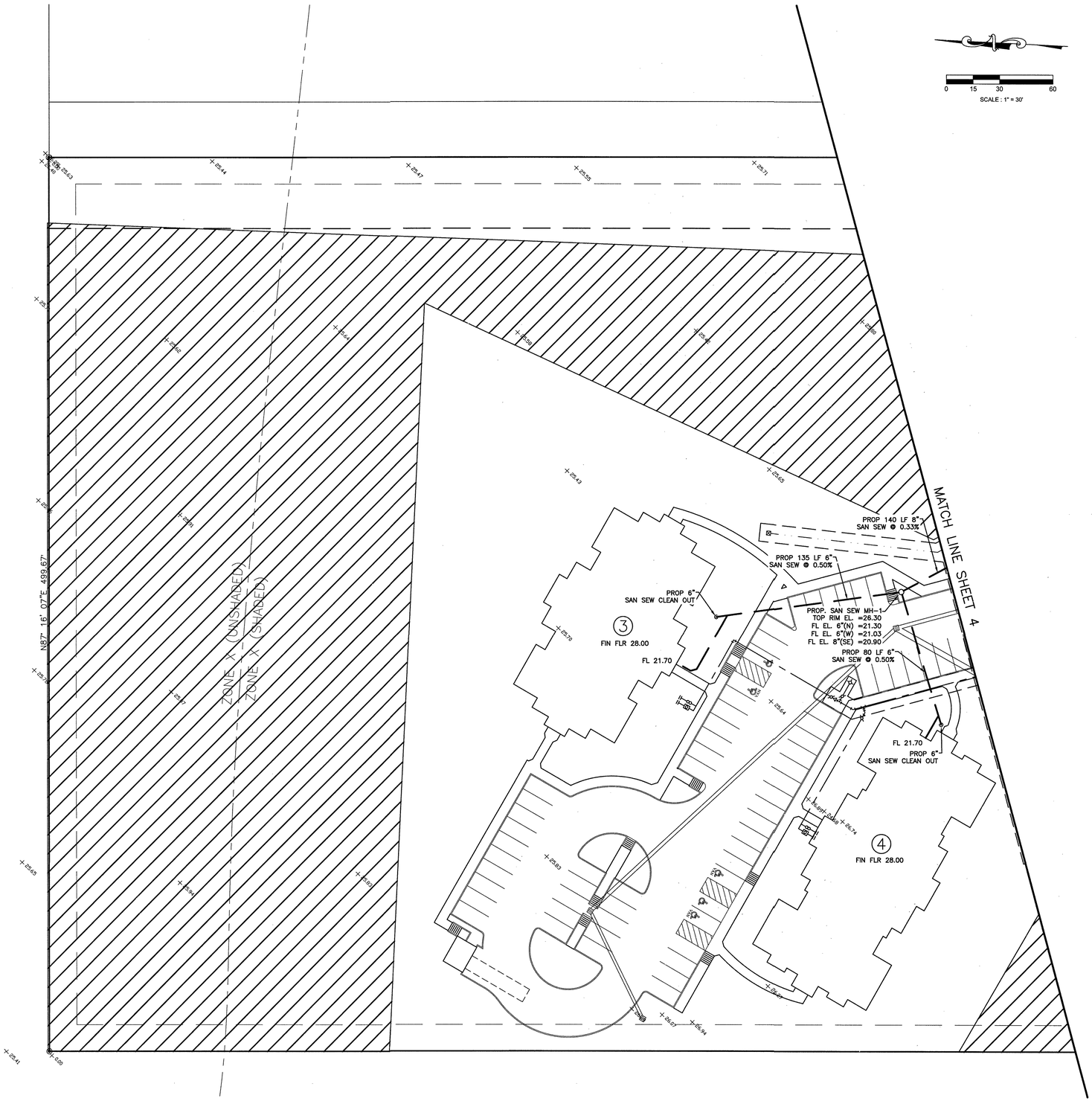
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UTILITY LAYOUT
SANITARY SEWER
(1 OF 2)

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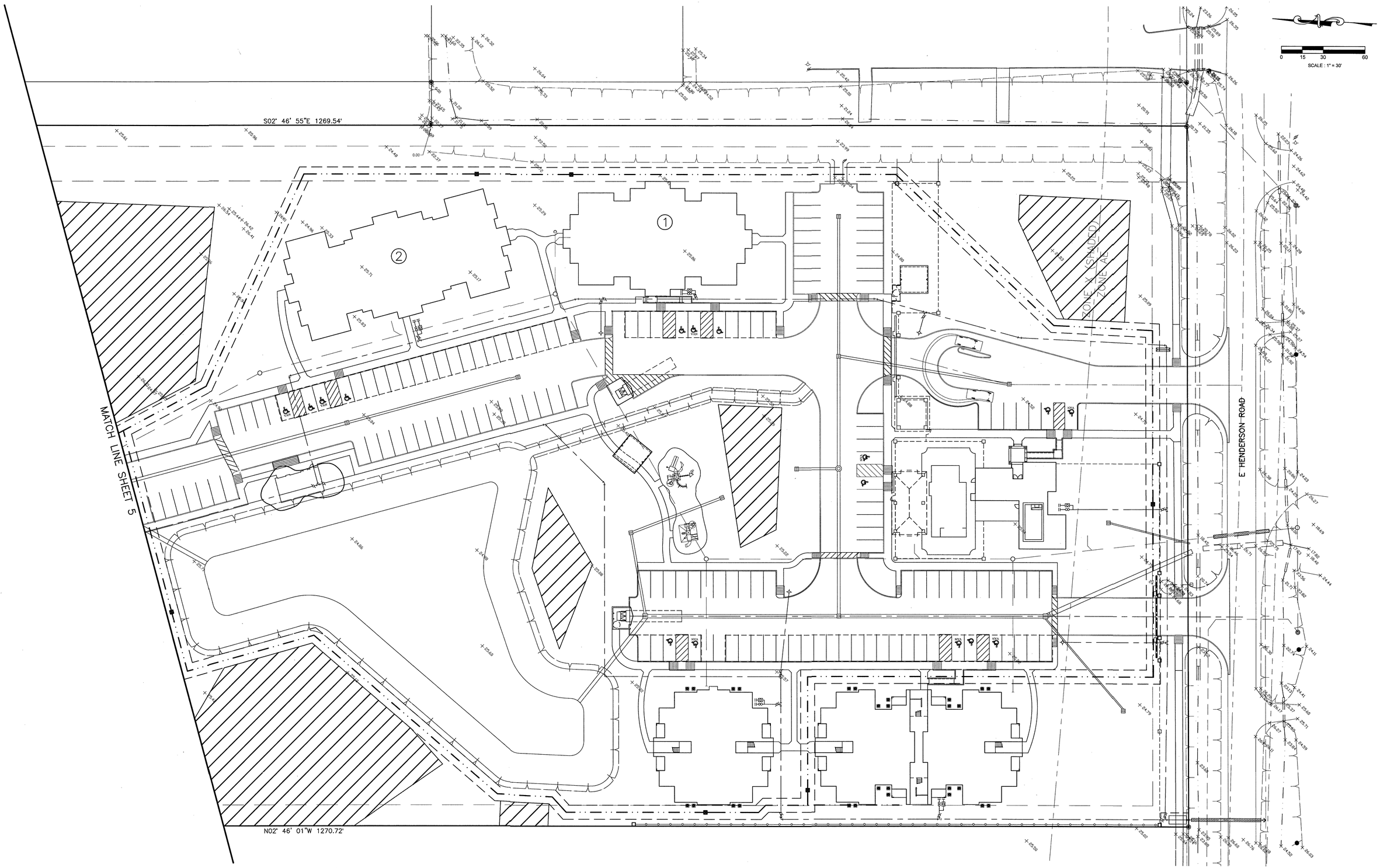
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UTILITY LAYOUT
SANITARY SEWER
(2 OF 2)

PROJECT NO. 13781

12

R1 SHEET SET.DWG



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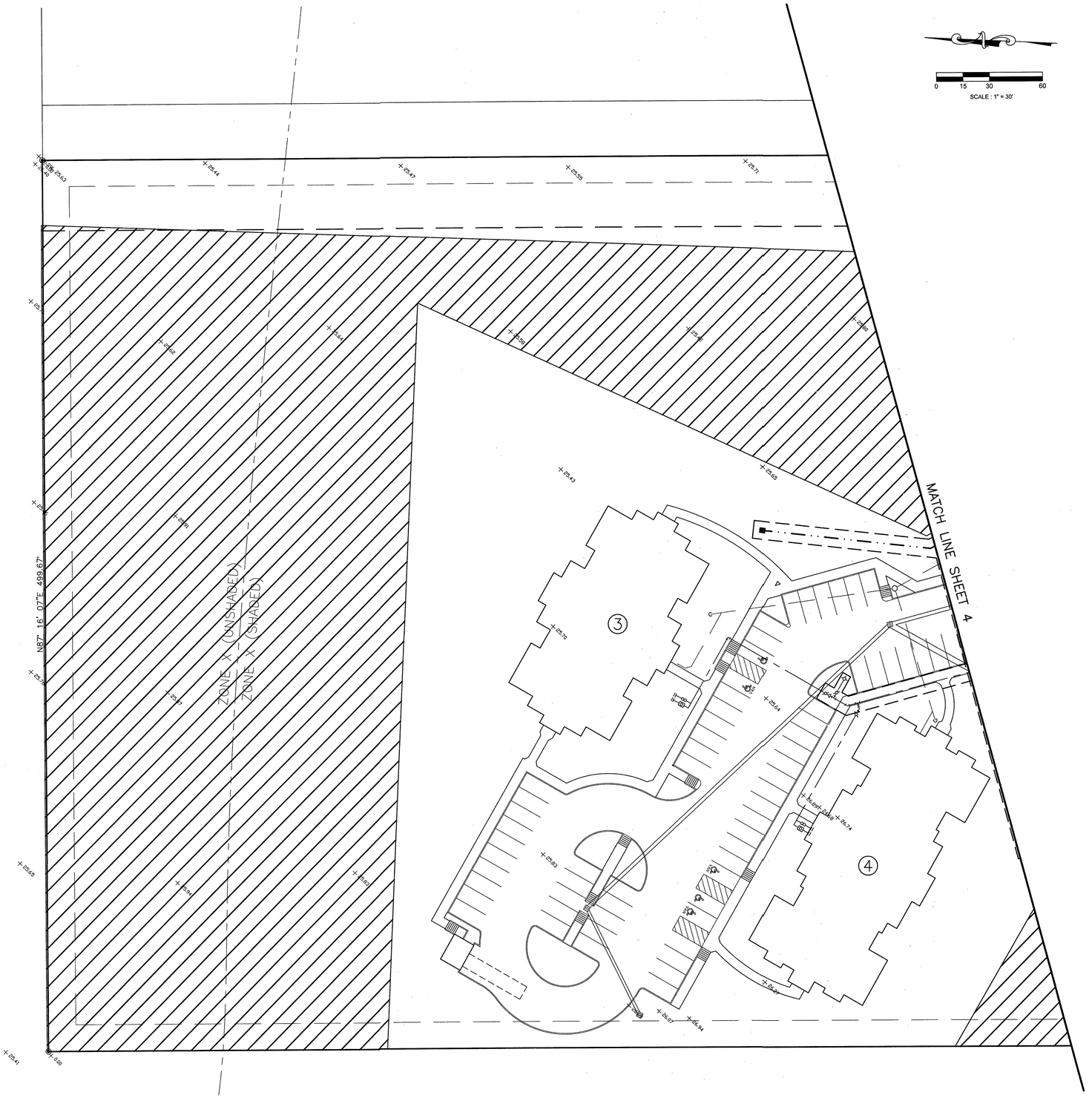
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108 - 1BR, 2BR AND 3BR UNITS

UTILITY LAYOUT
ELECTRICAL
(1 OF 2)

PROJECT NO. 13781

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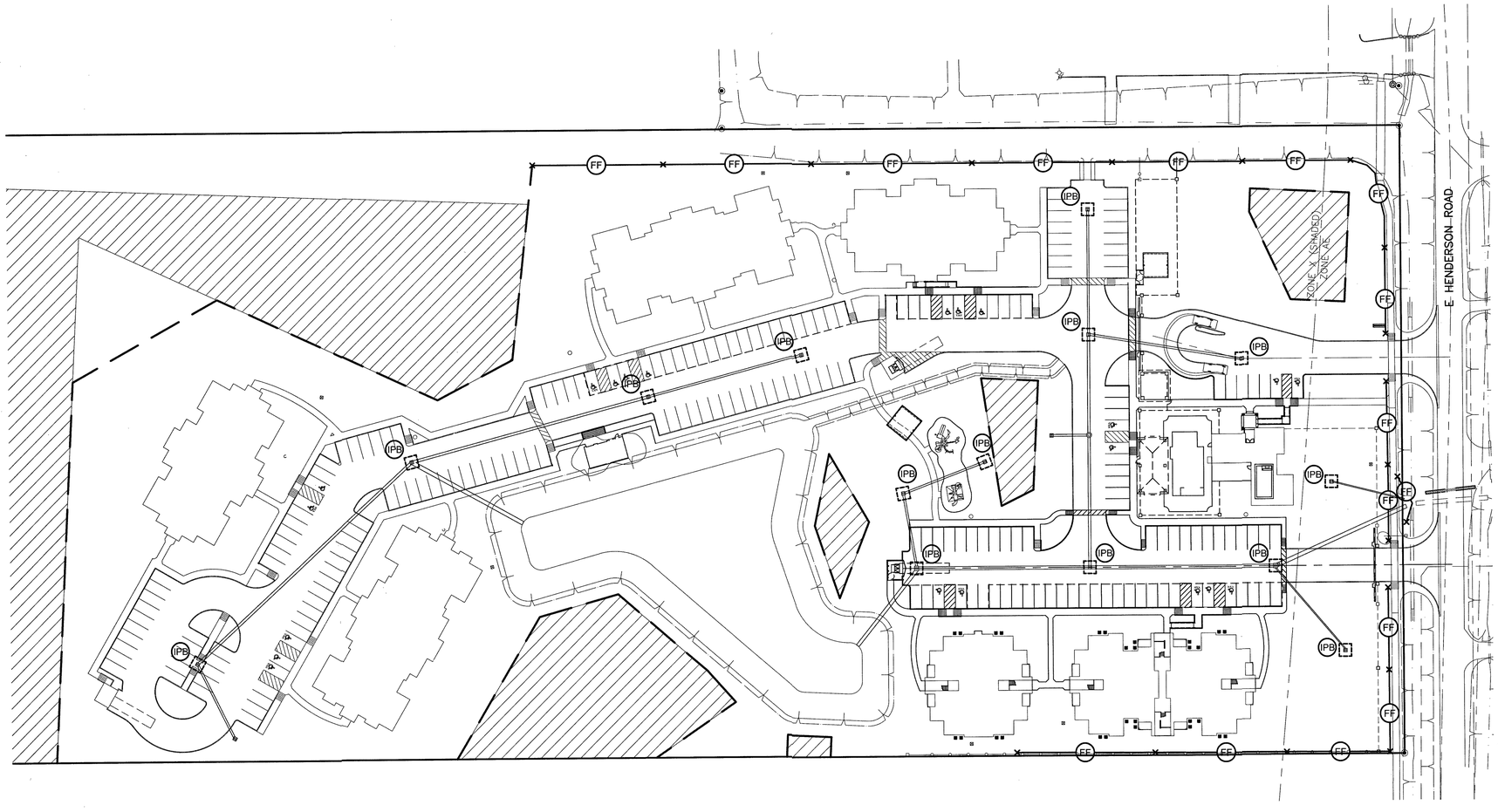
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UTILITY LAYOUT
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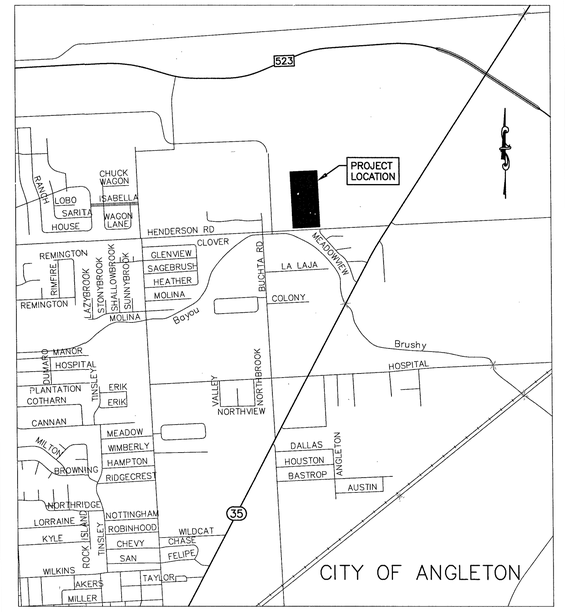
14

13781 SHEET SET.DWG



0 25 50 100
SCALE : 1" = 50'

GENERAL LOCATION MAP



PROJECT/SITE INFORMATION

PROJECT NAME: ANGLETON VILLAGE APARTMENTS

PROJECT ADDRESS/LOCATION: N. SIDE OF HENDERSON RD. AND N. 1,800' WEST OF S.H. 35

CITY: ANGLETON STATE: TX. ZIP CODE: 77515

LATITUDE: 95°24'27.2" LONGITUDE: 29°11'41.6" COUNTY: BRAZORIA

NAME OF RECEIVING WATERS: GULF OF MEXICO

01/15/2021	12/15/2021
MONTH/DAY/YEAR	MONTH/DAY/YEAR
ESTIMATED CONSTRUCTION START DATE	ESTIMATED COMPLETION DATE

ESTIMATE OF AREA TO BE DISTURBED: 5.06 ACRES

ESTIMATE OF LIKELYHOOD OF DISCHARGE:

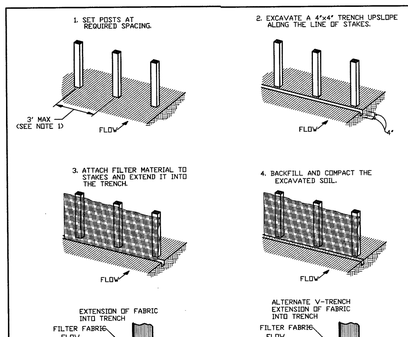
☐ UNLIKELY ☐ ONCE PER WEEK ☐ CONTINUAL
☒ ONCE PER MONTH ☐ ONCE PER DAY

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.

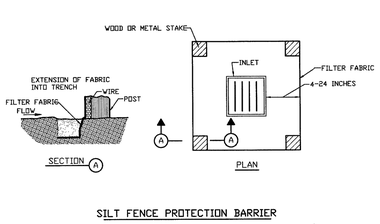
(a) ☒ (b) ☐ (c) ☐ (d) ☐



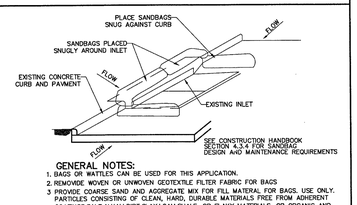
CONSTRUCTION NOTES:

1. 1 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

FILTER FABRIC FENCE



SILT FENCE PROTECTION BARRIER



GENERAL NOTES:

1. BAGS OR WATTLES CAN BE USED FOR THIS APPLICATION.
2. REMOVOE WOVEN OR UNWOVEN GEOTEXTILE FILTER FABRIC FOR BAGS
3. PROVIDE COARSE SAND AND AGGREGATE MIX FOR FILL MATERAL FOR BAGS. USE ONLY PARTICLES CONSISTING OF CLEAN, HARD, DURABLE MATERIALS FREE FROM ADHERENT COATINGS,SALT,ALKALI,DIRT,CLAY,LOAM,SHALE, OR FLAKY MATERIALS, OR ORGANIC AND INJUROUS MATTER.
4. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.

IPB
SYMBOL

INLET PROTECTION BARRIERS FOR STAGE II INLETS
N.T.S

LEGEND

IPB — SILT FENCE AROUND STRUCTURE UNDER CONSTRUCTION

FF — SILT FENCE ACROSS EXISTING DITCH REINFORCED FILTER BARRIER

4' HIGH 2"X3" PVC WELDED WIRE ROLLED GARDEN FENCE TO PREVENT INTRUSION TO POSSIBLE WETLANDS. METAL SUPPORT POST @ 6' O.C.

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PLAN: 1" = 50'
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

SWPPP LAYOUT

PROJECT NO. 13781

13781 SHEET SET.DWG

1. SITE DESCRIPTION

A. NATURE OF THE CONSTRUCTION ACTIVITY:
THE PROJECT CONSISTS OF THE CONSTRUCTION OF THE ANGLETON VILLAGE APARTMENTS (14.571 ACRE TRACT) IN ANGLETON, BRAZORIA COUNTY, TEXAS. THE SITE HAS AN APARTMENT COMPLEX TO THE EAST. HENDERSON ROAD TO THE SOUTH AND VACANT LAND TO THE WEST AND NORTH. CONSTRUCTION SHALL CONSIST OF 6 APARTMENT BUILDINGS, CLUBHOUSE, DRIVES, PARKING, DETENTION POND, UNDERGROUND UTILITIES, AND STORM SEWER.

B. INTENDED SEQUENCE OF MAJOR SOIL DISTURBING ACTIVITIES:
THE BUILDING'S SLAB AREA, ALL PARKING AREAS, THE ENTRANCE DRIVES, AND ALL UNDERGROUND UTILITY AND STORM SEWER CONSTRUCTION BEYOND THE ABOVE LISTED AREAS, WILL BE STRIPPED OF ALL VEGETATION.
UTILITY AND STORM SEWER CONSTRUCTION, WILL INVOLVE THE EXCAVATION OF TRENCHES. THE BUILDING SLAB, PARKING AREAS, AND ENTRANCE DRIVES CONSTRUCTION WILL INCLUDE EXCAVATION AND TRANSPORTATION OF SOIL. STORM WATER RUNOFF FROM THE SITE WILL BE DIRECTED TO INLETS.
TRUCKS WILL BE USED TO HAUL WASTES FROM CONSTRUCTION AND TO DELIVER EARTH FILL, LIME, CONCRETE, ASPHALTIC CONCRETE, BASE & OTHER CONSTRUCTION MATERIALS TO THE PROJECT. THESE TRUCKS WILL BE ROUTED ALONG HENDERSON ROAD FOR INGRESS AND EGRESS. RUTTING DURING WET WEATHER WILL PROVIDE THE POTENTIAL FOR TRACKING MUD ALONG HAUL ROUTES.

C. TOTAL PROJECT AREA: 14.571 ACRES

D. TOTAL AREA TO BE DISTURBED: 5.06 ACRES

WEIGHTED RUNOFF COEFFICIENT
(BEFORE CONSTRUCTION): 0.30 (AFTER CONSTRUCTION): 0.75

E. REFER TO GENERAL LOCATION MAP AND SITE MAP FOR DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES; AREAS OF SOIL DISTURBANCE; AREAS WHICH WILL NOT BE DISTURBED; LOCTIONS OF MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS; LOCATIONS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR; LOCATION OF OFF-SITE MATERIAL, WASTE, BORROW OR EQUIPMENT STORAGE AREAS; SURFACE WATERS (INCLUDING WETLANDS); AND LOCATIONS WHERE STORM WATER DISCHARGES TO A SURFACE WATER.

F. LOCATION AND DESCRIPTION OF ANY DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY OTHER THAN CONSTRUCTION:

G. NAME OF RECEIVING WATERS:
DRAINAGE WILL BE COLLECTED INTO STORM DRAINAGE PIPES VIA TYPE "A" INLETS AND FLOW BY STORM SEWER (AFTER RELEASE FROM THE DETENTION POND) INTO HENDERSON ROADSIDE DITCH WHICH FLOWS SOUTH ACROSS HENDERSON RD. TO BRUSHY BAYOU WHICH OUTFALLS INTO BASTROP BAYOU.

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 ACTIVITIES WILL BEGIN WITH THE STRIPPING OF ALL VEGETATION FROM AREAS TO BE GRADED.

1. PRIOR TO ANY WORK ON SITE, INSTALL FENCING AROUND POSSIBLE WETLAND AREAS TO PREVENT INTRUSION.

1. CONSTRUCT EITHER A SILT FENCE OR DIVERSION DIKE ALONG ALL AREAS ADJACENT TO CONSTRUCTION OPERATION AND IN THE HENDERSON ROADSIDE DITCH.

2. AFTER STRIPPING IS COMPLETED TO THE POINT WHERE UNDERGROUND UTILITIES MAY BE CONSTRUCTED, THE WATER AND SANITARY SEWER LINES AND STORM SEWER WILL BE INSTALLED. THE NEW STORM SEWER INLETS WILL BE UTILIZED TO DRAIN PORTIONS OF THE AREA DURING CONSTRUCTION. INLET PROTECTION BARRIERS WILL BE INSTALLED AND MAINTAINED UNTIL CONSTRUCTION IS COMPLETED.

3. PAVING OPERATIONS AND GRADING WILL FOLLOW UTILITY AND STORM SEWER CONSTRUCTION, BEGINNING WITH STREET EXCAVATION, LIME TREATMENT OF SUBGRADE, AND CONCRETE PAVING.

4. AS SOON AS CURBS AND INLETS ARE COMPLETE AND BACKFILLED, BROADCAST SEED AND (OR HYDROMULCH SEED) FERTILIZER WILL BE PLACED ON ALL DISTURBED AREAS.

5. THE DISTURBED AREAS ADJACENT TO THE DRIVEWAY OPENING SHALL BE MULCHED.

6. ALL SEEDED AND SODDED AREAS ARE TO BE FERTILIZED AND IRRIGATED TO INSURE GROWTH. IRRIGATION SHALL BE CONTINUED UNTIL GROWTH IS ESTABLISHED. INLET PROTECTION BARRIERS TO REMAIN IN PLACE UNTIL GROWTH IS ESTABLISHED.

A. EROSION AND SEDIMENT CONTROLS: EROSION AND SEDIMENT CONTROLS SHALL RETAIN SEDIMENT ON SITE TO THE EXTENT PRACTICABLE. CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS (WHERE APPLICABLE) AND GOOD ENGINEERING PRACTICES. OFFSITE SEDIMENT ACCUMULATIONS MUST BE REMOVED AT A FREQUENCY SUFFICIENT TO MINIMIZE OFFSITE IMPACTS. SEDIMENT MUST BE REMOVED FROM SEDIMENT TRAPS OR SEDIMENTATION PONDS WHEN CAPACITY HAS BEEN REDUCED BY 50%. LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORM WALL SHALL BE PREVENTED FROM BECOMING A POLLUTANT SOURCE FOR STORM WATER DISCHARGES.

SOIL STABILIZATION PRACTICES:	OWNER/ DEVELOPER	GENERAL CNTRTR.	BUILDER	OTHER
TEMPORARY SEEDING				
PERMANENT PLANTING, SODDING, OR SEEDING		X		
MULCHING- WHERE INDICATED		X		
SOIL RETENTION BLANKET				
VEGETATIVE BUFFER STRIPS				
PRESERVATION OF NATURAL RESOURCES				
OTHER:				

THE FOLLOWING RECORDS SHALL BE MAINTAINED AND ATTACHED TO THIS SWPPP:
DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, DATES WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE, DATES WHEN STABILIZATION MEASURES ARE INITIATED.

STRUCTURAL PRACTICES:	OWNER/ DEVELOPER	GENERAL CNTRTR.	BUILDER	OTHER
SILT FENCES		X		
HAY BALES				
ROCK BERMS				
DIVERSION, INTERCEPTOR, OR PERIMETER DIKES				
DIVERSION, INTERCEPTOR, OR PERIMETER SWALES				
DIVERSION DIKE AND SWALE COMBINATIONS				
PIPE SLOPE DRAINS				
ROCK BEDDING AT CONSTRUCTION EXIT				
TIMBER MATTING AT CONSTRUCTION EXIT				
SEDIMENT TRAPS				
SEDIMENT BASINS				
STORM INLET PROTECTION		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

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

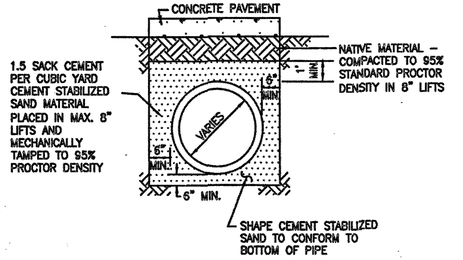
OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

SWPPP NARRATIVE

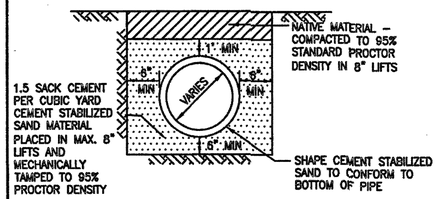
PROJECT NO. 13781



BEDDING DETAIL FOR
CONCRETE CULVERT USED
UNDER ROADWAY PAVEMENT

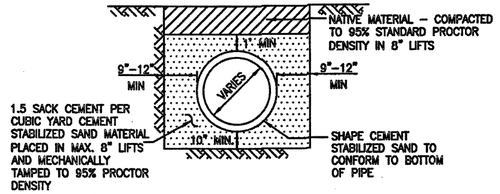
CLASS "A-A"
N.T.S.

SL-BB-06



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

SL-BB-07

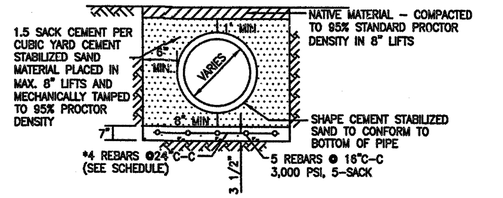


NOTES

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

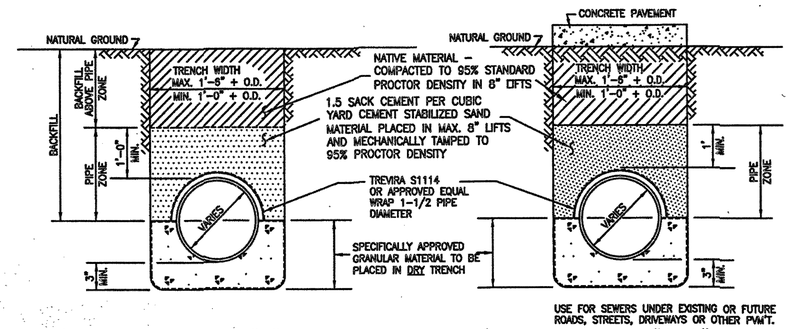


NOTES

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

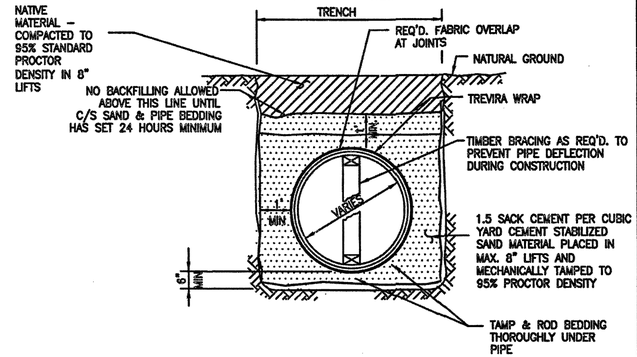


MODIFIED "A"
N.T.S.

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

MODIFIED "A-A"
N.T.S.

SL-BB-10



BEDDING DETAIL FOR STORM SEWER-
CORREGATED METAL PIPE
N.T.S.

SL-BB-11

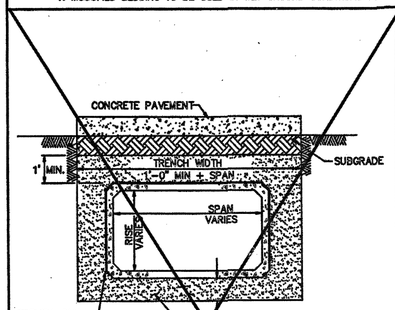
CONSTRUCTION NOTES

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
30"	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

SL-BB-15

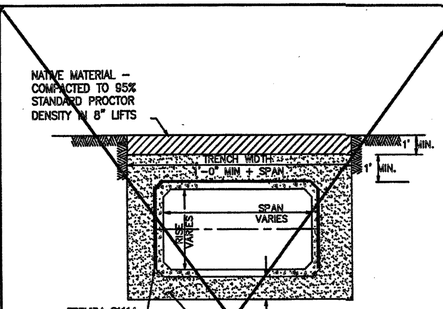


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
CULVERT UNDER ROADWAY PAVEMENT

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

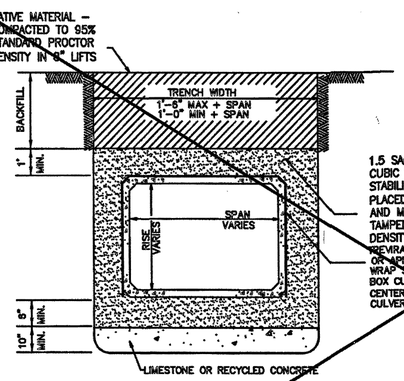


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
PLACED IN EASEMENT

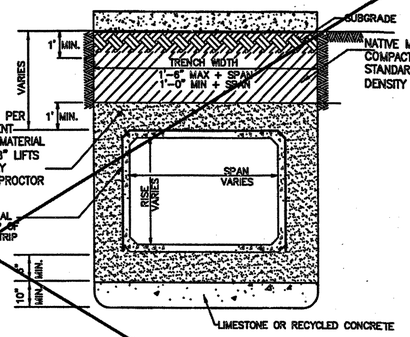
NOTES

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

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:

DESIGNED DR
DRAWN
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

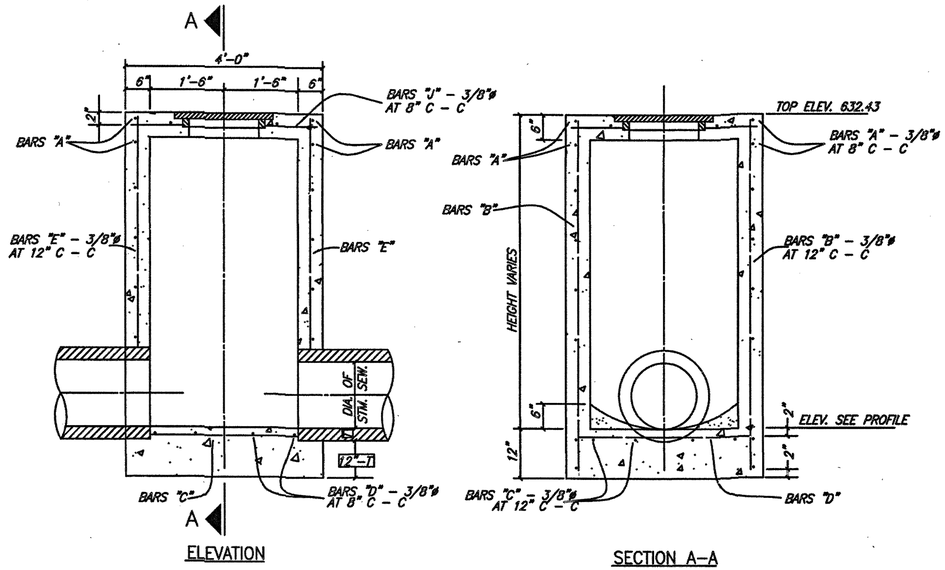
STORM SEWER
PIPE BEDDING AND
BACKFILL DETAILS
SL-20

PROJECT NO. 13781

17

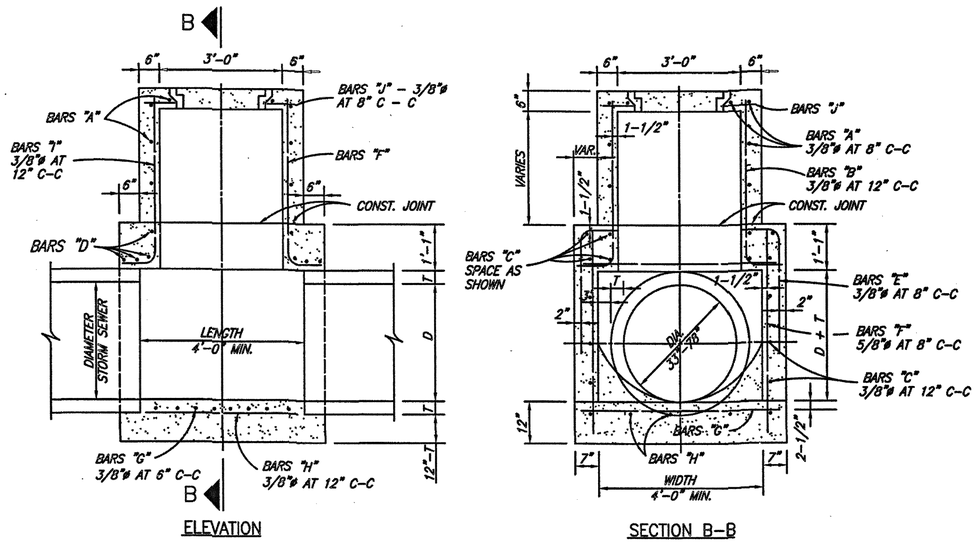
SHEET SET.DWG

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.

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
CHECKED
DATE

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ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

JUNCTION BOX MANHOLES
SL-11

PROJECT NO. 13781

18

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEEREING DEPARTMENT

CONSTRUCTION PLANS FOR:

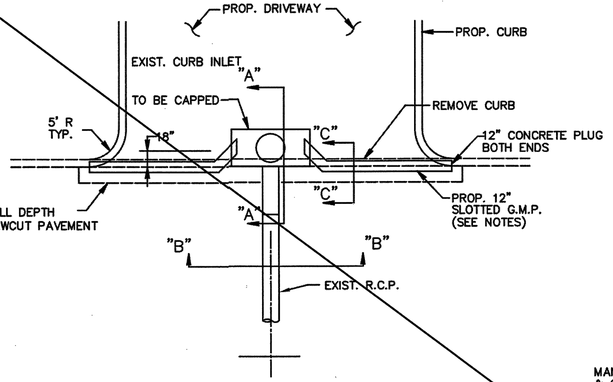
JUNCTION BOX MANHOLES

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

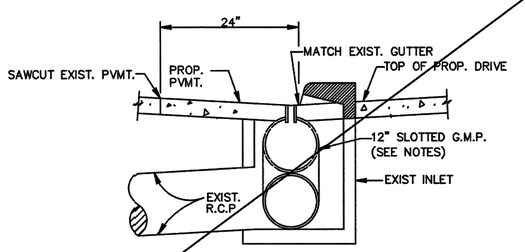
SL-11

SHEET OF

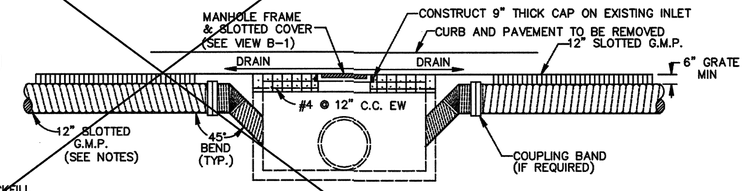
81 SHEET SET.DWG



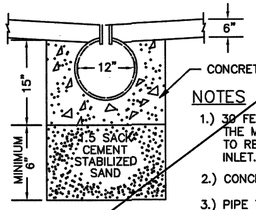
SLOTTED PIPE INSTALLATION FOR DRIVEWAY CONSTRUCTION



SECTION A–A



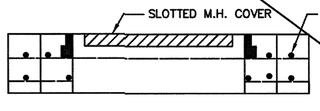
SECTION B–B



SECTION C–C

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.

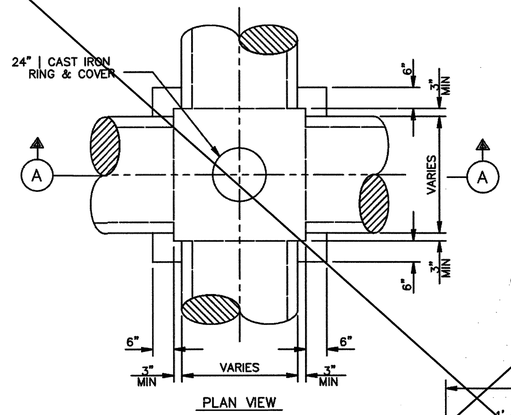


VIEW B–1

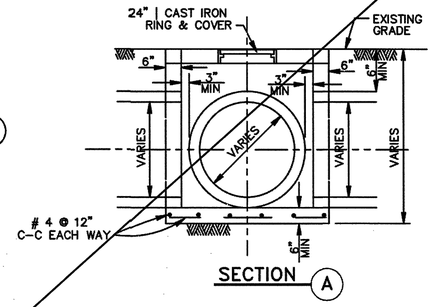
SLOTTED DRAIN DETAIL

N.T.S.

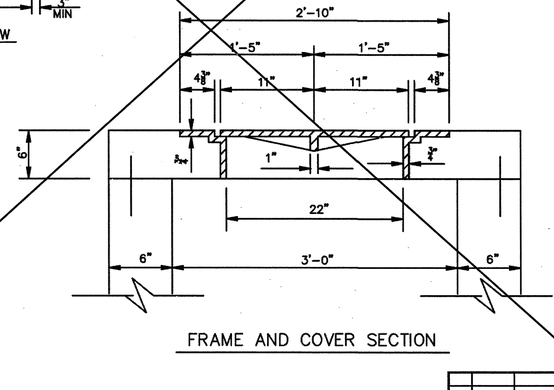
SL–DR–29



PLAN VIEW



SECTION A

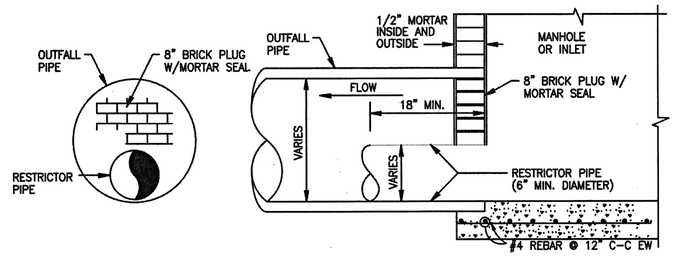


FRAME AND COVER SECTION

JUNCTION BOX

N.T.S.

SL–DR–30



CHOKE OUTFALL RESTRICTOR DETAIL

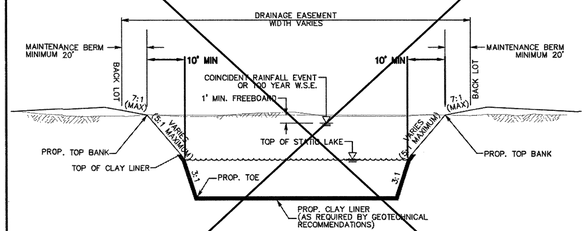
STORM SEWER CHOKE RESTRICTOR

N.T.S.

SL–DR–31

REFER TO:

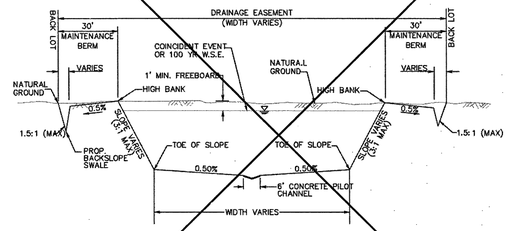
1. GENERAL NOTES
2. STORM SEWER NOTES



WET DETENTION POND/AMENITY LAKE

N.T.S.

SL–DR–32



DRY DETENTION POND

N.T.S.

SL–DR–33

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

CAD FILE PATH:
PLOT DATE:

PLOT TIME:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
CHECKED
DATE

B&L
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VERTICAL:

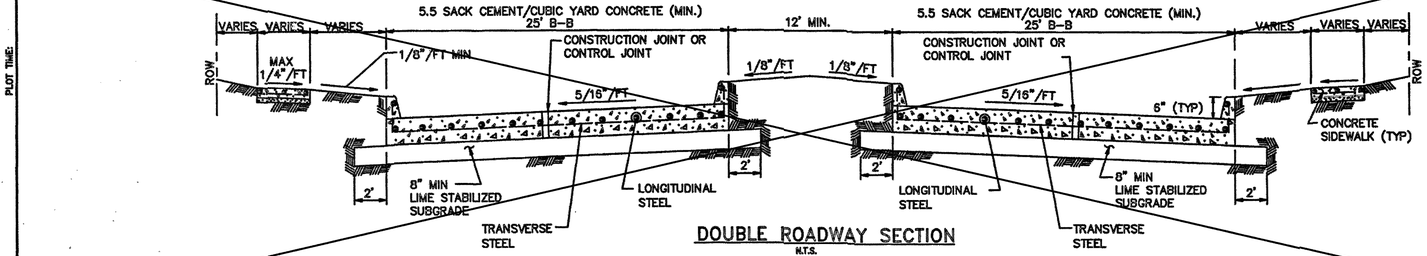
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

STORM SEWER CONSTRUCTION DETAILS SL–10

PROJECT NO. 13781

18A

81 SHEET SET.DWG



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.

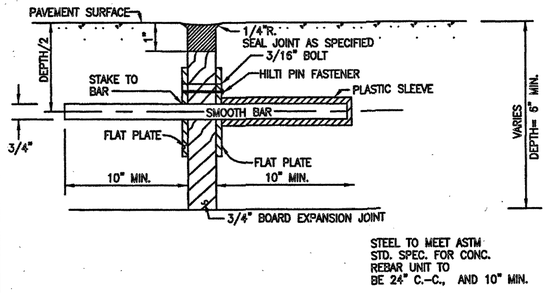
5. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED WITH SEALANT CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.

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-M173-80 FOR PAVEMENT 6" 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

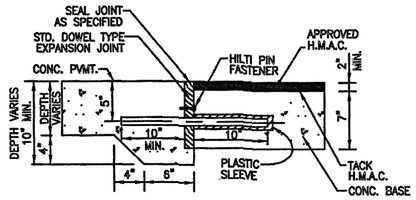


STEEL TO MEET ASTM STD. SPEC. FOR CONC. REBAR UNIT TO BE 24" C.-C., AND 10" MIN.

DOWEL TYPE EXPANSION JOINT

N.T.S.

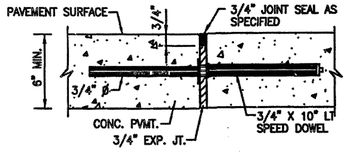
SL-ST-03



DOWEL TYPE EXPANSION JOINT

N.T.S.
(CONC. PAVING TO CONC. BASE)

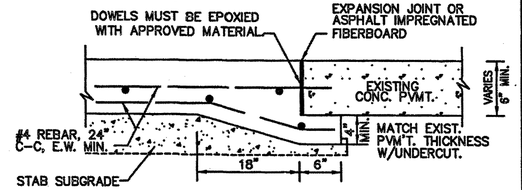
SL-ST-06



SPEED DOWEL EXPANSION JOINT

N.T.S.

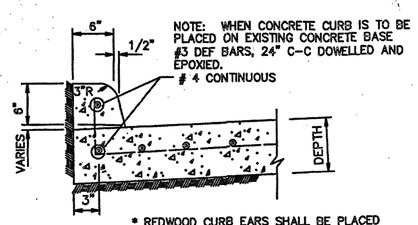
SL-ST-08



UNDERCUT DETAIL WITH HEADER

N.T.S.

SL-ST-09



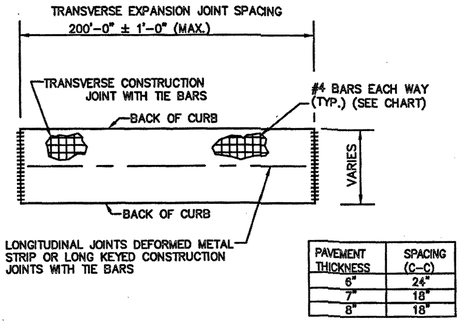
* REDWOOD CURB EARS SHALL BE PLACED AT ALL TRANSVERSE JOINTS IN PAVEMENT.

CONCRETE CURB

N.T.S.

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

SL-ST-04

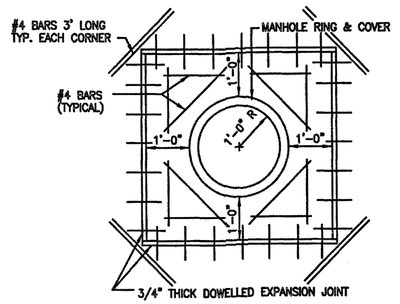


PAVEMENT THICKNESS	SPACING (C-C)
6"	24"
7"	18"
8"	18"

PAVING PANEL

N.T.S.

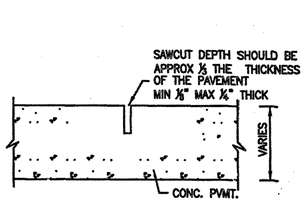
SL-ST-05



MANHOLE BLOCKOUT

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

SL-ST-10



CONTROL JOINT

N.T.S.

SL-ST-11

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739

Date: 12-13-20

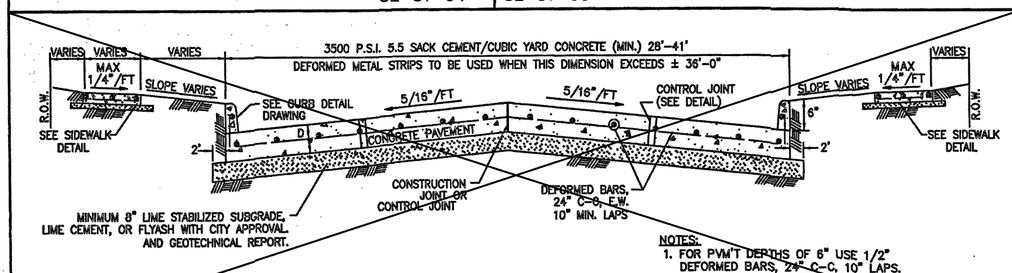
OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

CONCRETE PAVEMENT CONSTRUCTION DETAILS
SL-21

PROJECT NO. 13781

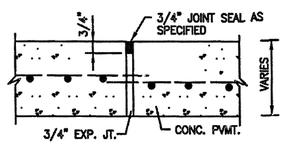


SINGLE ROADWAY SECTION

N.T.S.

SL-ST-02

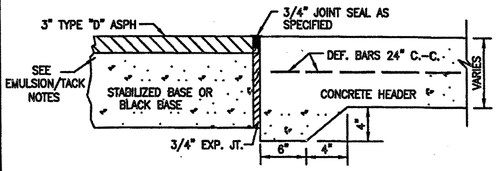
NOTES:
1. FOR PVM'T DEPTHS OF 6" USE 1/2" DEFORMED BARS, 24" C-C, 10" LAPS. ALL REINFORCING STEEL SHALL CONFORM TO GRADE 60, A.S.T.M. NO. A615. LAP SPLICES TO BE A MINIMUM OF 10 INCHES. STAGGER SPLICES IN ADJACENT BARS.



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

NO.	DATE	DESCRIPTION

SEAL:

DESIGN ENGINEER: DATE

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

CONCRETE PAVEMENT CONSTRUCTION DETAILS

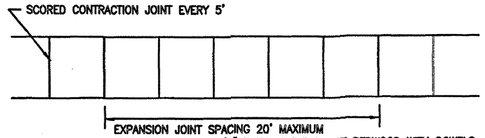
JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-21
SHEET OF

PLOT TIME:
CAD FILE PATH:
PLOT DATE:

SHEET SET.DWG

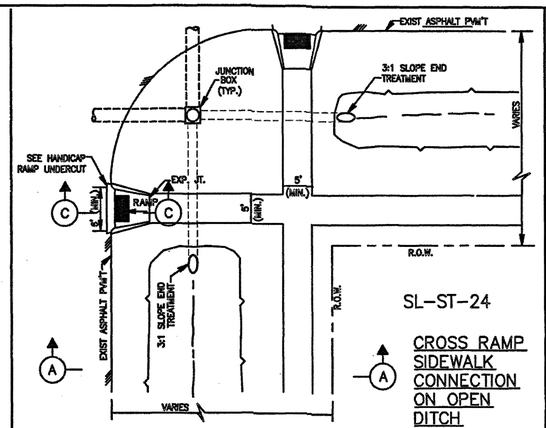
PLOT TIME:



SIDEWALK JOINT DETAILS

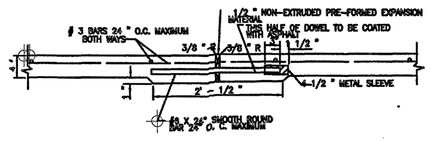
N.T.S.

SL-ST-23



SL-ST-24

CROSS RAMP SIDEWALK CONNECTION ON OPEN DITCH



B-B
EXPANSION JOINT DETAIL

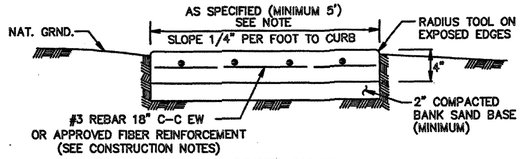
NOTES:

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 PAVEMENT.
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-936, 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 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.

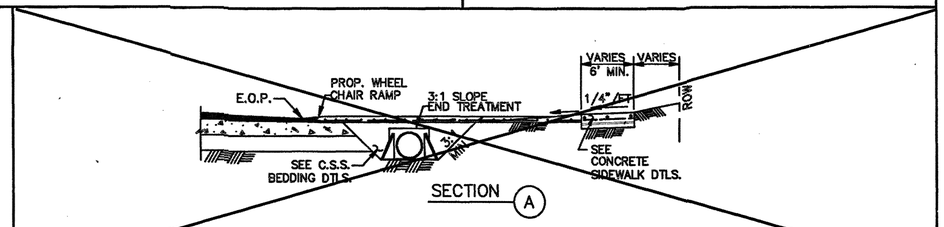
SL-ST-34



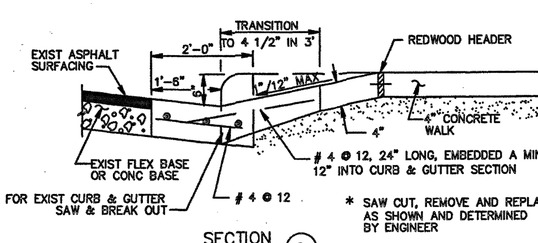
CONCRETE SIDEWALK

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

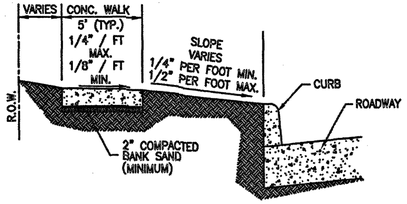


SL-ST-25



HANDICAP RAMP CURB & GUTTER*

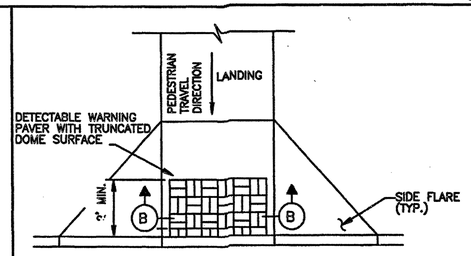
SL-ST-26



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

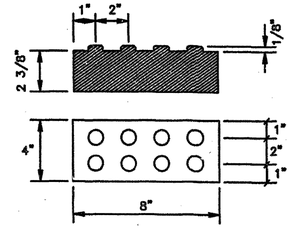
TYPICAL SINGLE ROADWAY SIDEWALK

SL-ST-28



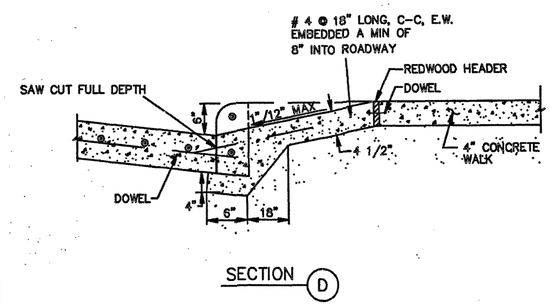
TRUNCATED DOME PATTERN CURB RAMP

SL-ST-31



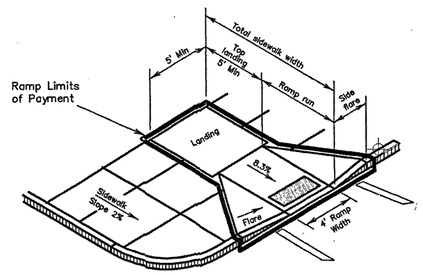
CONCRETE PAVER WITH TRUNCATED DOME SURFACE

SL-ST-32



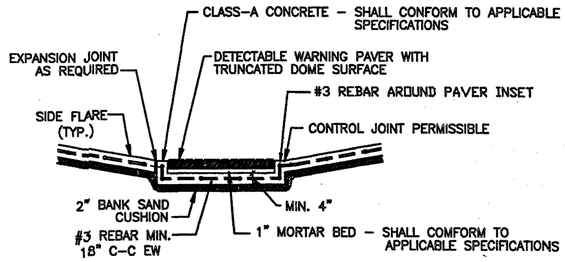
HANDICAP RAMP UNDERCUT

SL-ST-27



WHEELCHAIR RAMP SIDEWALK CONNECTION

SL-ST-30



SL-ST-33

No.	DATE	REMARKS

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

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

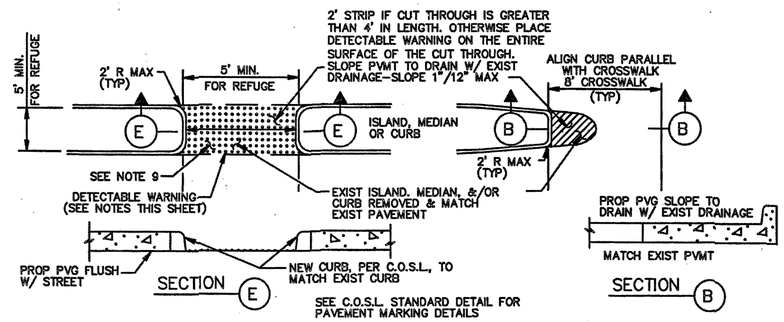
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

WHEEL CHAIR RAMP & SIDEWALK DETAILS 1
SL-25

PROJECT NO. 13781

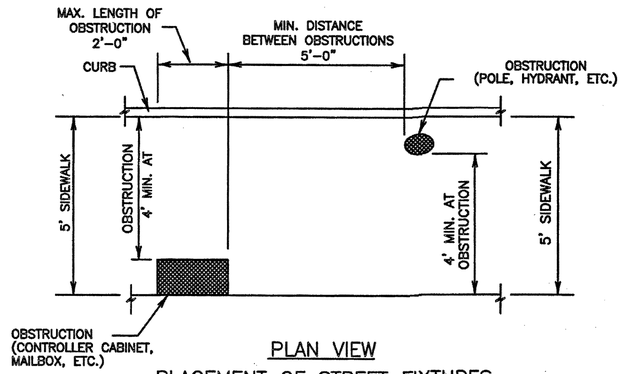
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PLOT TIME:



FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

SL–ST–35



PLAN VIEW

PLACEMENT OF STREET FIXTURES

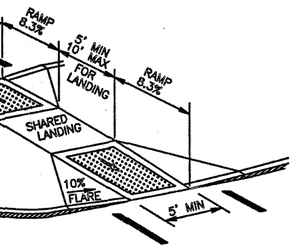
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

SL–ST–36

NOTES:

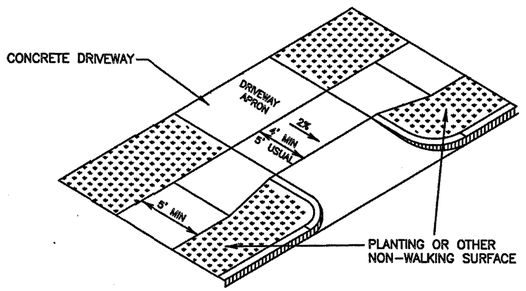
1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED
2. THE MINIMUM SIDEWALK WIDTH IS 5' (FEET). THE LANDING SHALL BE 5' x 5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. MAXIMUM 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

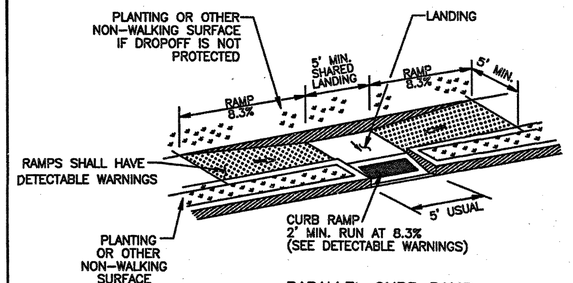
SL–ST–37



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 DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
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PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

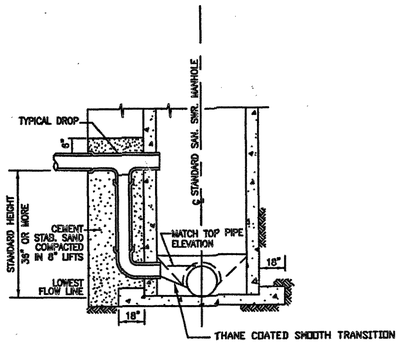
ANGLETON VILLAGE APARTMENTS
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1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

WHEEL CHAIR RAMP & SIDEWALK DETAILS 2
SL–26

PROJECT NO. 13781

T SHEET SET.DWG

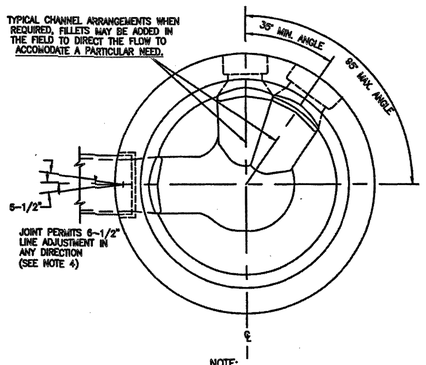
PLOT TIME:



STANDARD DROP DETAIL

(SEE C.S.S. NOTES)

SL-SS-05



PIPING CONNECTIONS DETAIL

SL-SS-05

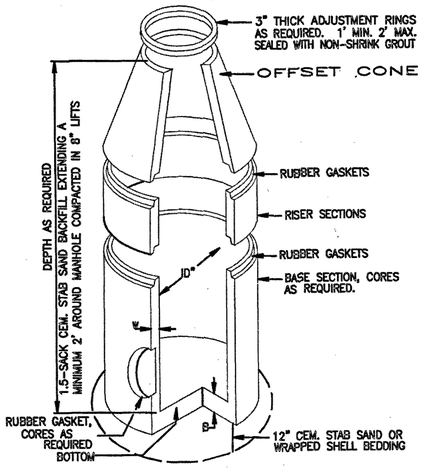
NOTE:

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.

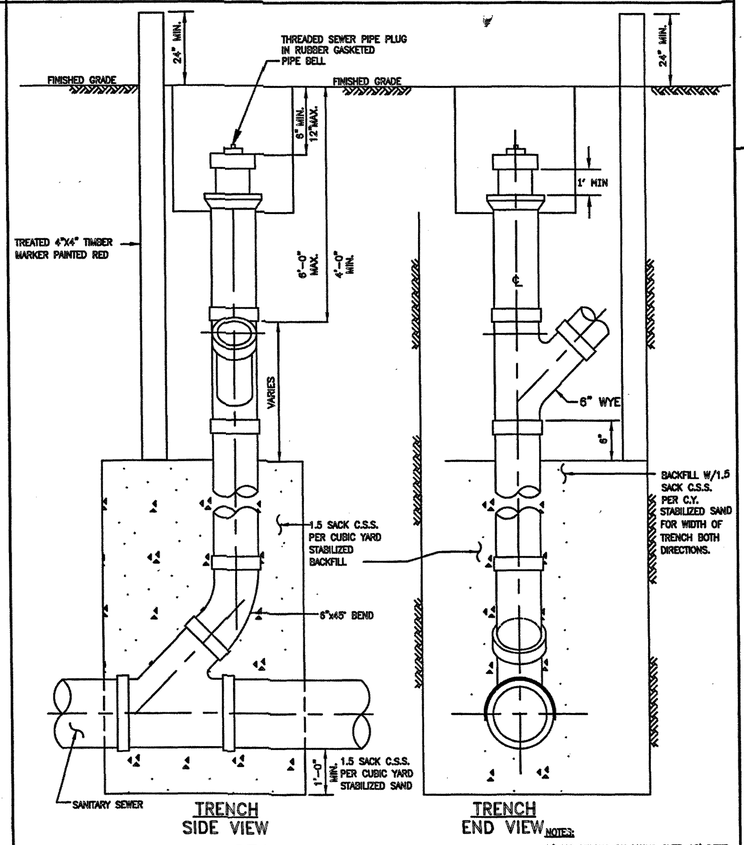
NOTES

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 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.

SL-SS-03



TRENCH SIDE VIEW

TRENCH END VIEW

STACK DETAIL

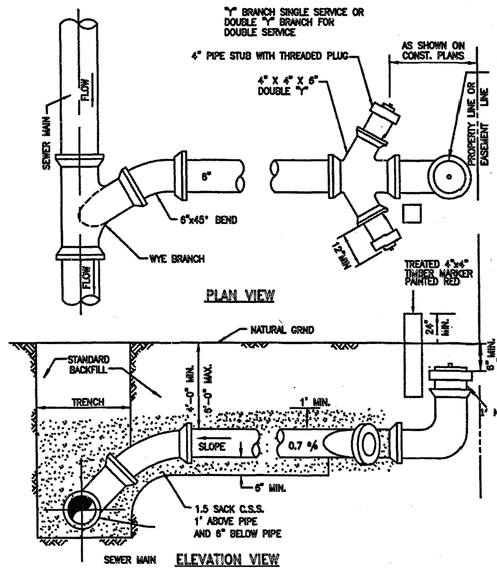
N.T.S.

SL-SS-04

NOTES:

A.) NO STACKS ON MAINS OVER 18' DEEP OR IN WET SAND CONDITIONS.

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



SANITARY SEWER SERVICE CONNECTION

N.T.S.

SL-SS-06

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:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

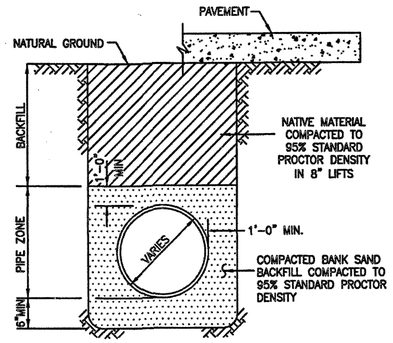
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

SANITARY SEWER CONSTRUCTION DETAILS SL-14

PROJECT NO. 13781

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PLOT TIME:



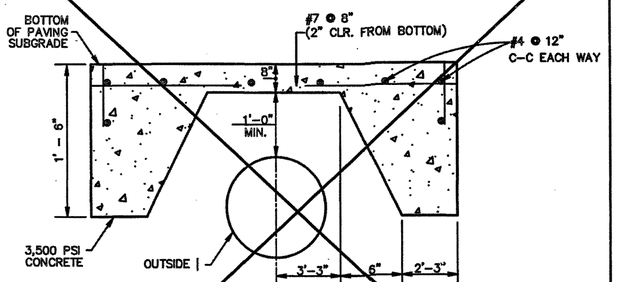
P.V.C. PIPE BEDDING & BACKFILL

N.T.S.

*SEE CONSTRUCTION NOTES

SANITARY FORCE MAIN & WATER LINE BEDDING AND BACKFILL

SL-BB-01



PROTECTIVE SLAB DETAIL

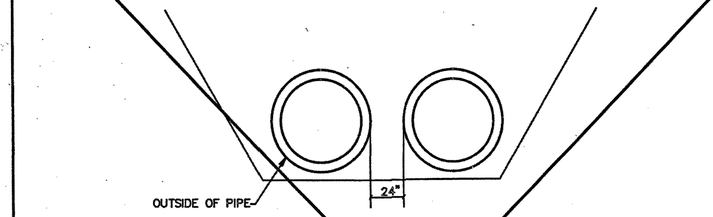
ZERO LOAD TRANSFER CONCRETE SLAB

SL-BB-04

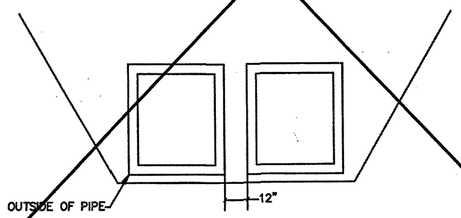
CONSTRUCTION NOTES

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 GROUND 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.

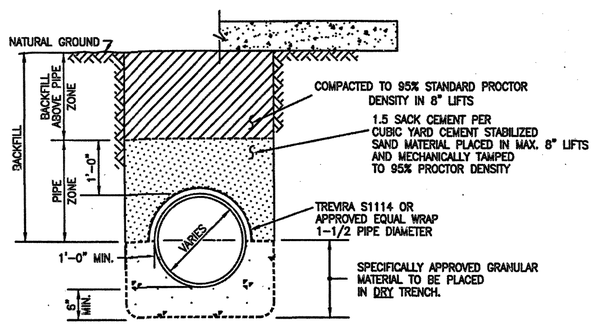
SL-BB-05



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:

DESIGN ENGINEER: _____ DATE _____

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 DR
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 · DOUGLAS B. ROESLER · 56739 · REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739

Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

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

PROJECT NO. 13781

PLOT TIME:

B. **Fire Hydrant Specifications.** Fire hydrants shall be installed in accordance with the ***Mueller Super Centurion 250*** specifications, as shown below, or an equivalent hydrant, including but not limited to the EJ Water Master SCD250 Hydrant. All hydrants shall include an integral Storz Pumper Connection, as shown below.

City of Angleton Fire Hydrant Detail

UL / FM — Mueller Co. — FIRE PROTECTION PRODUCTS

SUPER CENTURION® & MODERN CENTURION® FIRE HYDRANTS

SECTION A-1

Super Centurion 350: 350 p.s.i. (1725 kPa/17 barg) Working Pressure - 500 p.s.i. (3450 kPa/35 barg) Test Pressure.
Super Centurion 250: 250 p.s.i. (2400 kPa/24 barg) Working Pressure - 700 p.s.i. (4800 kPa/48 barg) Test Pressure.
Super Centurion 200: 200 p.s.i. (1400 kPa/14 barg) Working Pressure - 400 p.s.i. (2800 kPa/28 barg) Test Pressure.
Modern Centurion: 175 p.s.i. (1200 kPa/12 barg) Working Pressure - 350 p.s.i. (2800 kPa/28 barg) Test Pressure

Underwriter Laboratories (UL) Listed/Factory Mutual (FM) Approved/AWWA C502 Hydrants

Nominal Size of Main Valve Opening	3-way: Two 2-1/2" Hose Nozzles	3-way: Two Hose Gates and One Pumper Nozzle	3-way: Two 2-1/2" Nozzles and One Pumper Nozzle	3-way: Two Hose Gates and One Pumper Nozzle	3-way: Three Hose Gate Valves and One Pumper Nozzle	4-way: Four Hose Gate Valves	4-way: Three Hose Gate Valves and One Pumper Nozzle
	Super Centurion 200 / Modern Centurion	Super Centurion 200 / Super Centurion 200	Super Centurion 250 / Super Centurion 350	Super Centurion 250 / Modern Centurion	Super Centurion 250 / Modern Centurion	Super Centurion 250	Super Centurion 250
4-1/2"	A-423	-	A-421	-	A-421 + option 370	-	-
5-1/4"	A-458	A-423 / A-458 + option 370	A-423	A-423 + option 370	A-444	A-464 w/ option 370	A-458 w/ option 370

Integral Storz Connection

SECTION A-1

SPECIAL SERVICE FIRE HYDRANTS AND ACCESSORIES

Mueller Co. — UL / FM — FIRE PROTECTION PRODUCTS

Mueller® Centurion® Fire Hydrant with Intergral Storz Connection

Now any Mueller Centurion Hydrant (traditional or Modern style), can be ordered with an integral Storz connection on the pumper nozzle. The nozzle can also be ordered separately to retrofit hydrants in the field.

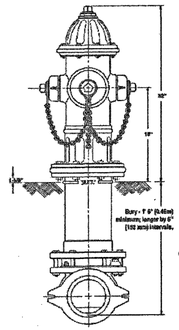
The Storz connection allows the fire department to connect its pumper hose to the hydrant with a quick, quarter-turn action. The action is fast and smooth so firefighters can get to their tasks quickly without the thread alignment, cross threading, or leakage problems sometimes associated with threaded connections.

The Storz option is available for 4" or 5" pumper nozzles on any Centurion 200, 250, or Modern hydrants. Mueller hydrants retain their UL, Approved, FM Listing, AWWA-Compliance and published pressure rating when ordered with the Storz option. Hydrants are also compliant with NFPA 1963.

When ordering the integral Storz pumper nozzle, it is no longer necessary to provide an option number on the order. On the order, state the "Storz" size, and locking or non-locking cape.



Dimensions

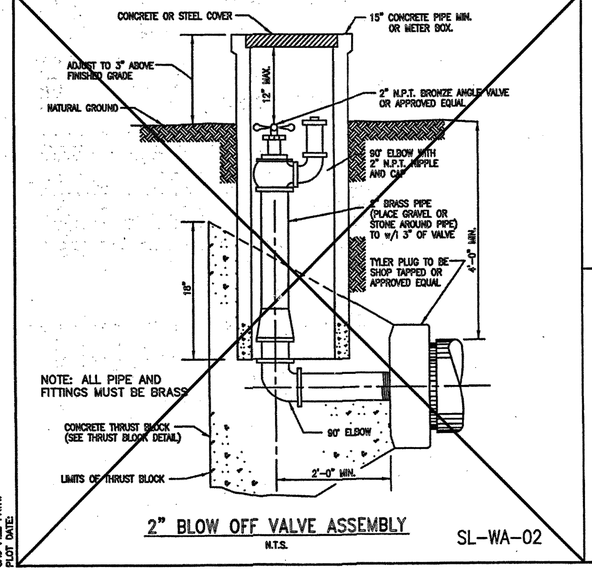


Super Centurion 250 Model Numbers and Dimensions

Super Centurion 250™ catalog numbers

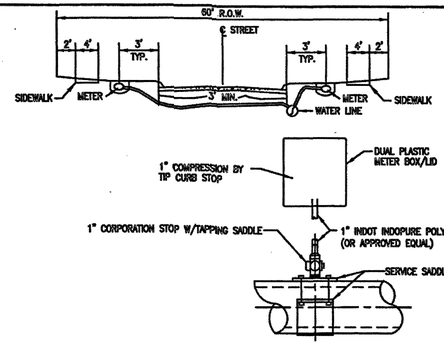
- UL 246, FM 1510 ANSI/AWWA C502 250 psi rated
- A421 4-1/2" main valve opening 3-way (2 hose nozzle / 1 pumper nozzle)
- A423 5-1/4" main valve opening 3-way (2 hose nozzle / 1 pumper nozzle)
- A454 5-1/4" main valve opening 3-way (3 hose nozzle) *
- A455 5-1/4" main valve opening 4-way (4 hose nozzle) *
- A458 5-1/4" main valve opening 4-way (3 hose nozzle / 1 pumper nozzle) *
- A459 5-1/4" main valve opening 4-way (2 hose nozzle / 2 pumper nozzle)**

* *Hose Gate Valves required on FM Approved models*
** *A459 is UL Listed and ANSI/AWWA C502*



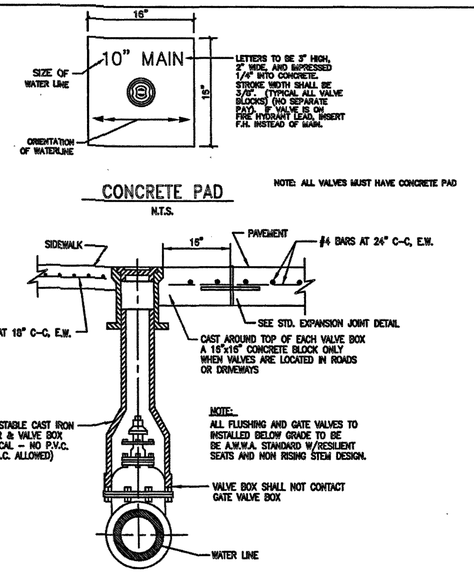
2" BLOW OFF VALVE ASSEMBLY
N.T.S.

SL-WA-02



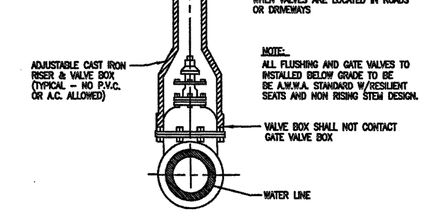
WATER SERVICE CONNECTION AND WATER SERVICE TAPPING ASSEMBLY DETAIL
N.T.S.

SL-WA-03



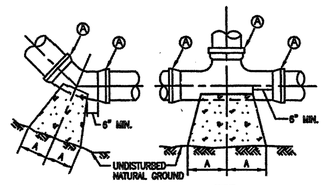
CONCRETE PAD
N.T.S.

NOTE: ALL VALVES MUST HAVE CONCRETE PAD



VALVE BOX INSTALLATION DETAIL
N.T.S.

SL-WA-04

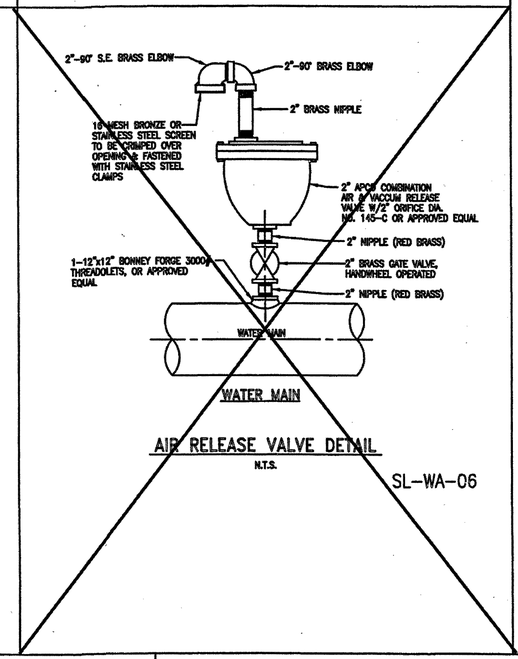


NOTE:
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 10 SQ. FEET AND SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER. ALL CONCRETE SHALL BE 5 SACK MIN., 3000 P.S.I.

THRUST BLOCK DETAIL
M.T.S.

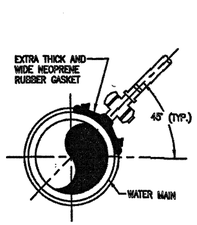
Ⓐ =RESTRAINED JOINT

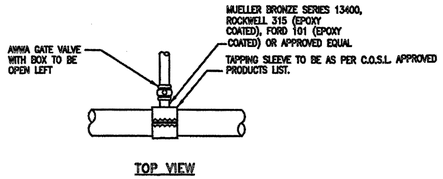
SL-WA-05



AIR RELEASE VALVE DETAIL
N.T.S.

SL-WA-06





TAPPING SLEEVE & VALVE DETAIL
N.T.S.

SL-WA-07

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.

SL-WA-08

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
4 1/2"	12"	7"	8"	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"	*78"
24"	50"	40"	30"	40"	18"	30"	30"	40"	30"	*78"
30"	60"	48"	35"	48"	20"	36"	36"	48"	35"	*86"

BENDS, TEES & PLUGS FOR PIPE OF VARIOUS SIZES

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 DR
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 — DOUGLAS B. ROESLER — 56739 — REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

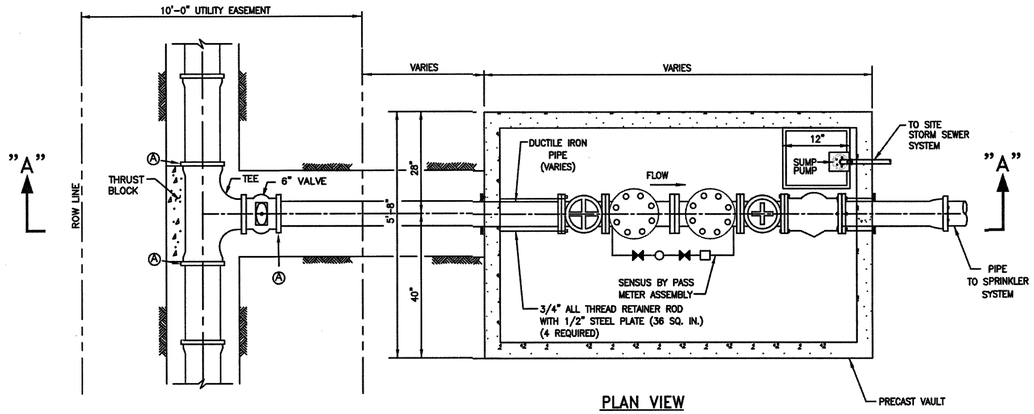
WATER LINE CONSTRUCTION DETAILS SL-15

PROJECT NO. 13781

24

01 SHEET SET.DWG

PLOT TIME:



PLAN VIEW

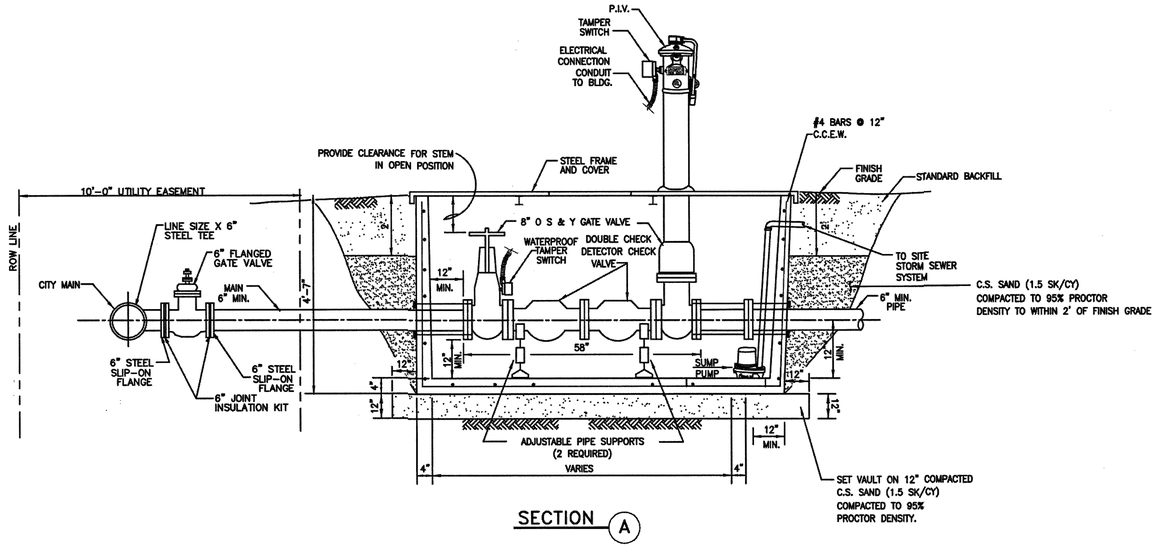
TYPICAL FIRE SERVICE METER

Ⓐ =RESTRAINED JOINT

SL-WA-23

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



SECTION (A)

TYPICAL FIRE SERVICE METER

SL-WA-24

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WATER LINE
FIRE SERVICE METER VAULT

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

SL-18

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN BT
CHECKED
DATE

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DOUGLAS B. ROESLER
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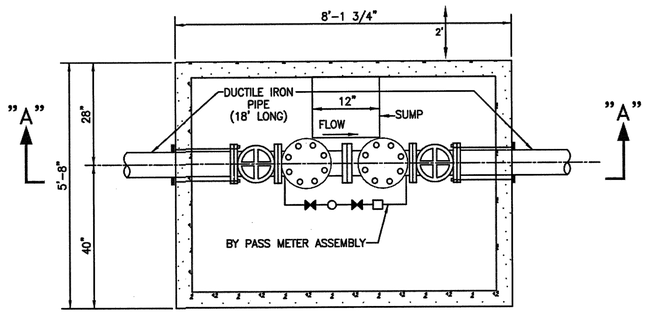
WATER LINE
CONSTRUCTION DETAILS
SL-18

PROJECT NO. 13781

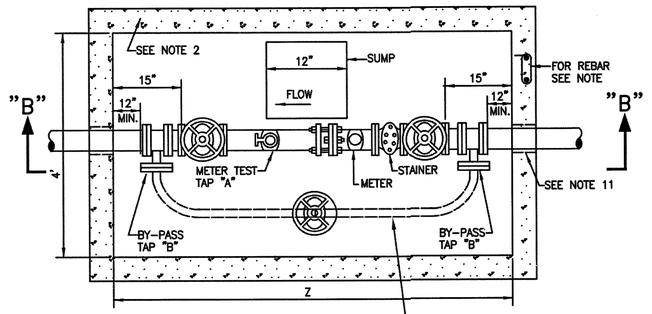
24A

B1 SHEET SET.DWG

PLOT TIME:



PLAN VIEW

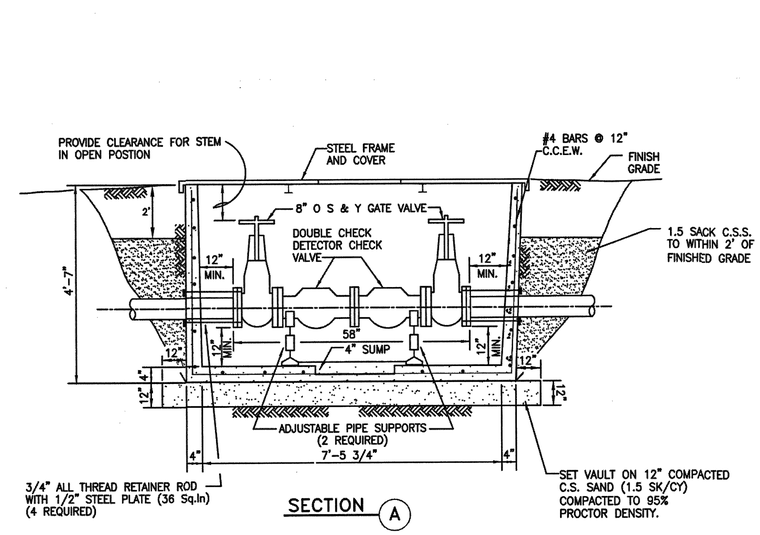


PLAN VIEW

NOTES:

1. NOTIFY THE ENGINEERING DEPARTMENT AT (281) 275-2780 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 SUGAR LAND ENGINEERING DEPARTMENT
14. THE TYPE OF METER, TURBINE OR COMPOUND, WILL BE DETERMINED BASED ON THE APPLICATION AND APPROVED BY THE ENGINEERING DEPARTMENT.

SL-WA-22



SECTION (A)

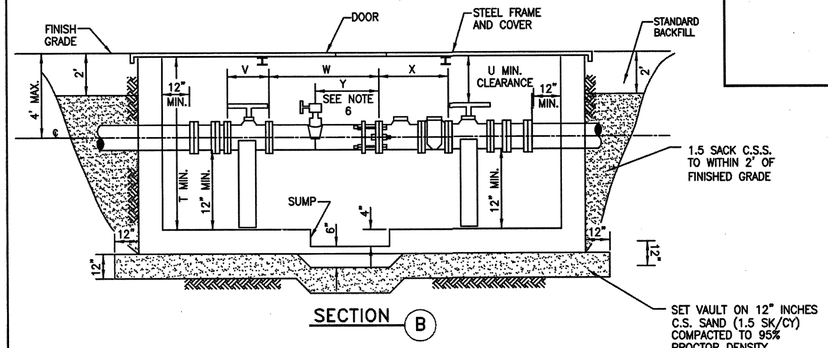
NOTES:

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.

SL-WA-20



SECTION (B)

SL-WA-21

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.

SL-WA-19

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

WATER LINE
METER VAULT DETAILS

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

SL-17

SHEET OF

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

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DRAWN BT
CHECKED
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HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
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1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

WATER LINE
CONSTRUCTION DETAILS
SL-17

PROJECT NO. 13781

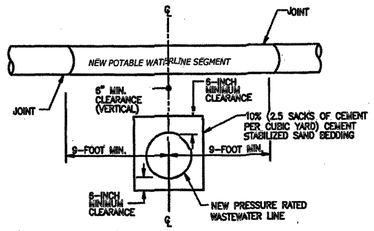
24B

13781 SHEET SET.DWG

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

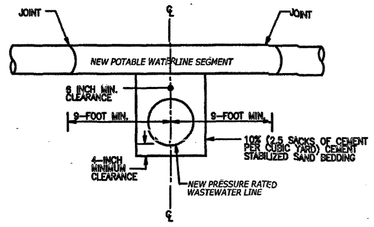


- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

SL-WA-09

II

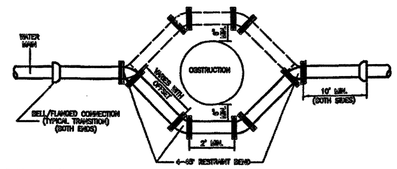
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



- 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"

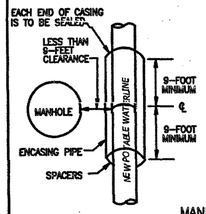
NOTES:

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 CORROSION 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

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

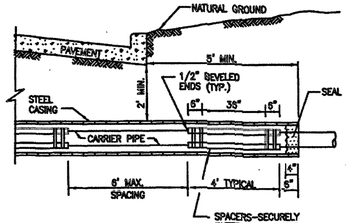


ENCASING PIPE

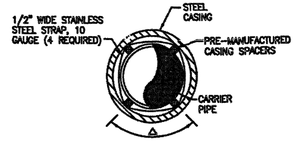
- 150 PSI PRESSURE CLASS PIPE MINIMUM 18 FEET LONG DIAMETER = 2 X WATERLINE DIAMETER
- SPACE AROUND CARRIER PIPE SHALL BE SUPPORTED AT FIVE (5) FOOT (OR LESS INTERVALS WITH SPACERS)
- CENTERED ON CROSSING
- BOTH ENDS SEALED WITH CEMENT GROUT OR A MANUFACTURED WATER TIGHT SEAL.

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 3" 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

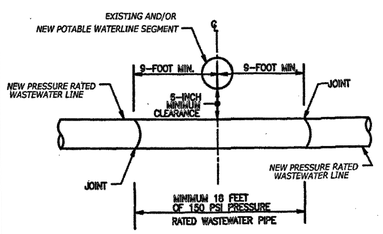
GENERAL NOTES:

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

ALTERNATIVE A:

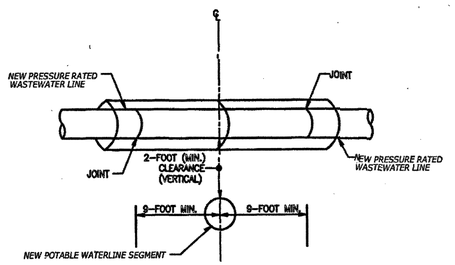
PRESSURE RATED WASTEWATER PIPE



SL-WA-14

ALTERNATIVE B:

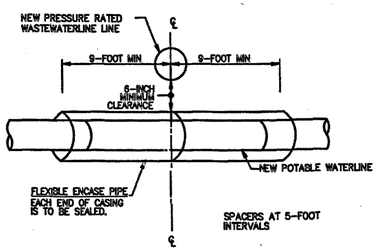
EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE



SL-WA-15

ALTERNATIVE C:

ENCASE NEW POTABLE WATERLINE UNDER A NEW PRESSURE RATED WASTEWATER LINE



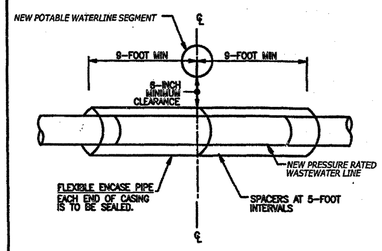
- SAME ENCASEMENT CRITERIA AS "ALTERNATIVE B" OR
- NEW WATERLINE (WITHOUT CASING) TO BE CONSTRUCTED OF PVC C-900 (DR-18), DUCTILE IRON WITH MECHANICAL JOINT OR STEEL PIPE WITH WITH WELDED JOINTS.
- BOTH WATERLINE AND WASTEWATER LINE MUST PASS A PRESSURE AND LEAKAGE TEST AS SPECIFIED IN AWWA C600 STANDARDS.

SL-WA-16

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 STIFFNESS 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

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

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
DOUGLAS B. ROESLER
56739
REGISTERED
PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

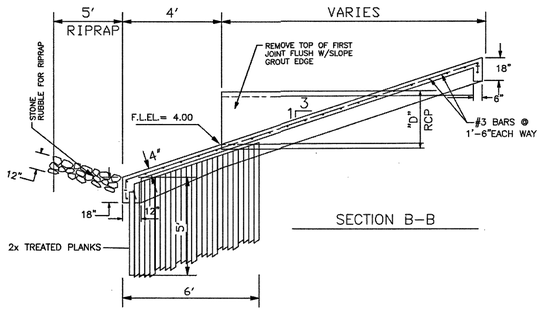
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

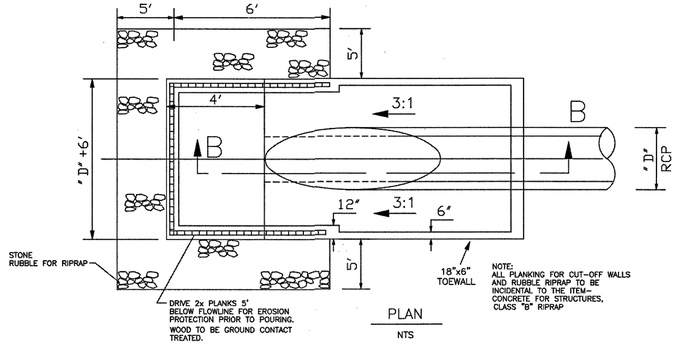
WATER LINE CROSSING DETAILS SL-16

PROJECT NO. 13781

31 SHEET SET.DWG



SECTION B–B



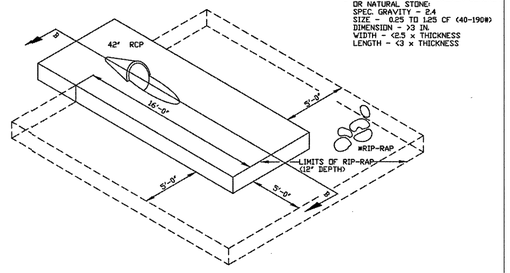
PLAN

NTS

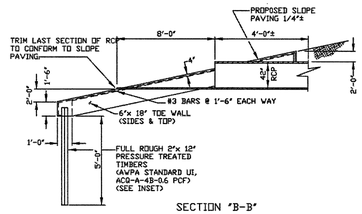
VELASCO DRAINAGE OUTFALL CHANNEL

DETAIL

PROPOSED SLOPE PAVING FOR SIDE SLOPE ENTRANCE

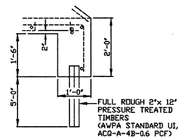


ISOMETRIC VIEW



SECTION "B-B"

VELASCO DRAINAGE OUTFALL CHANNEL

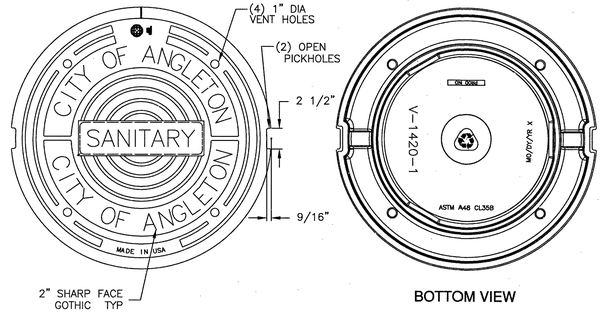


INSET

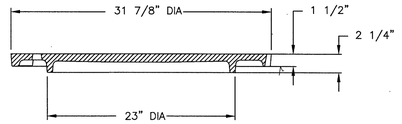
STANDARD CONCRETE SLOPE PAVING PIPE OUTFALL

N.T.S.

V1420-1 Cover



BOTTOM VIEW



COVER SECTION

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.
5. MANHOLE FRAMES AND COVERS SET IN FARM TO MARKET ROADS OR HIGHWAYS SHALL FOLLOW TXDOT SPECIFICATIONS. (UNLESS OTHERWISE NOTED BY ANGLETON)

1 32" Manhole Cover and Frame

Scale: NTS

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR

DRAWN BT

CHECKED

DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
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REG. NO. F-825

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14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

MISCELLANEOUS DETAILS

PROJECT NO. 13781

SHEET NO. 26

BT SHEET 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 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.

CAD FILE PATH:
PLOT DATE:

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN BT
CHECKED
DATE

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PHONE: (979) 849–6681 FAX: (979) 849–4689
REG. NO. F–825

STATE OF TEXAS
DOUGLAS B. ROESLER
56739
REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12-13-20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

GENERAL EROSION CONTROL NOTES
SL–33

PROJECT NO. 13781

27

SHEET SET.DWG

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

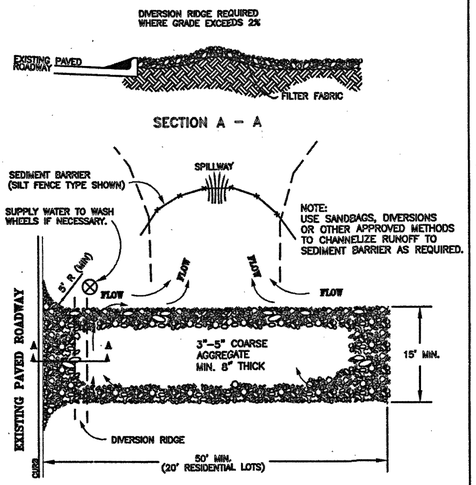
GENERAL EROSION CONTROL NOTES

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

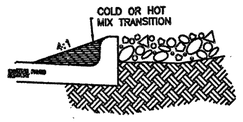
SL–33

SHEET OF

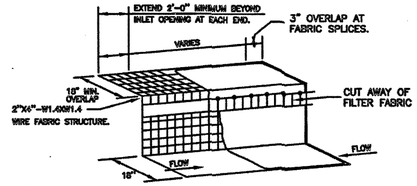
PLOT TIME:

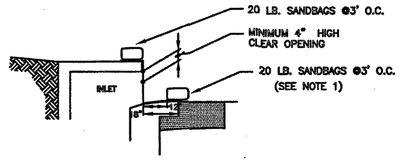


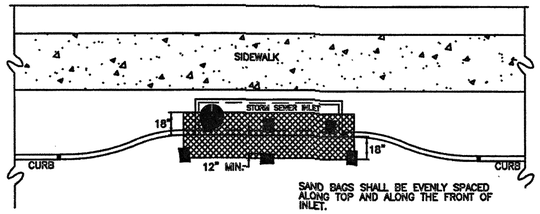
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TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.







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

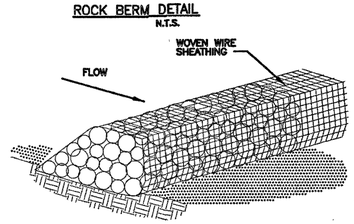
CURB INLET PROTECTION DETAIL
N.T.S.

NOTES:

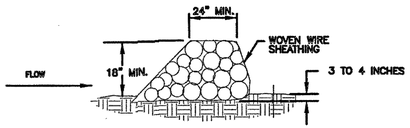
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
3. CONTRACTOR 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.

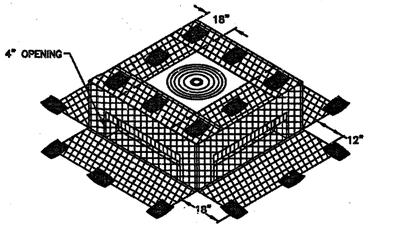
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.

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.

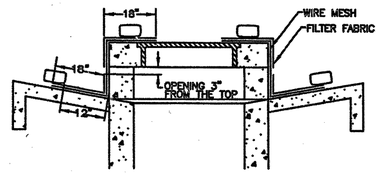
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

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.

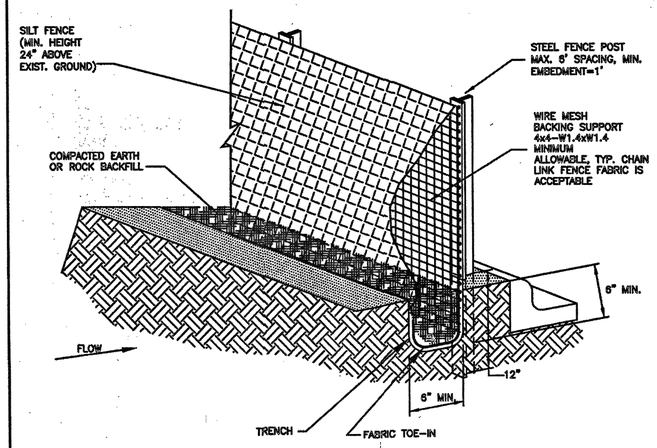


ISOMETRIC VIEW



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.

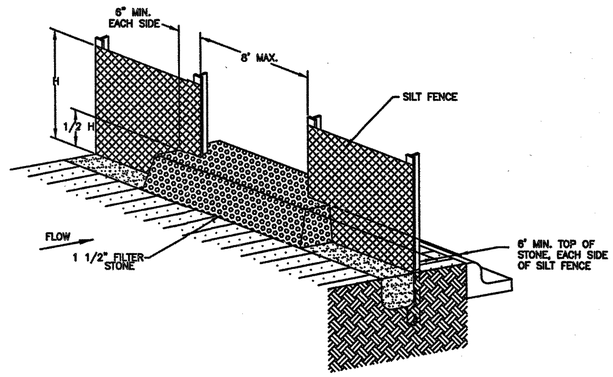
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

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	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

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
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STATE OF TEXAS
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ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

EROSION CONTROL DETAILS – 1
SL–34

PROJECT NO. 13781

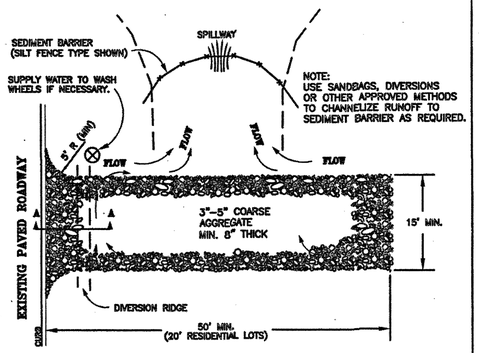
1 SHEET SET.DWG

PLOT TIME:

DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%

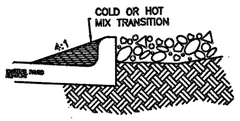


SECTION A – A



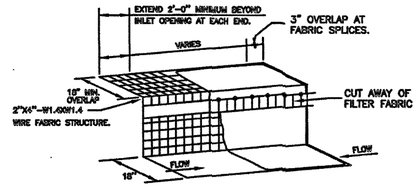
PLAN

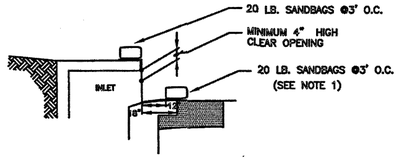
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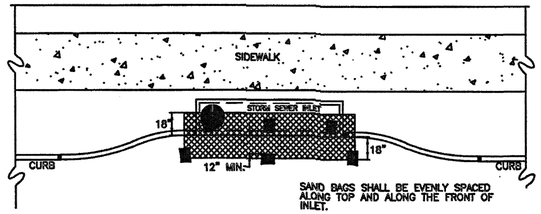


TRANSITION

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







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

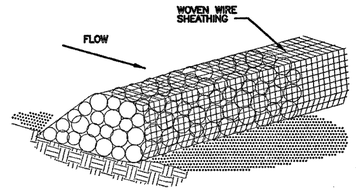
CURB INLET PROTECTION DETAIL
N.T.S.

NOTES:

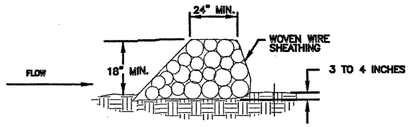
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
3. CONTRACTOR 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.

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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.

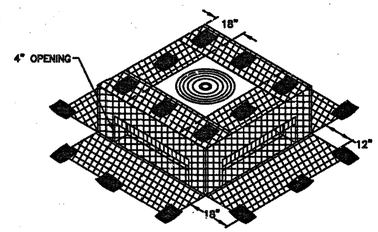
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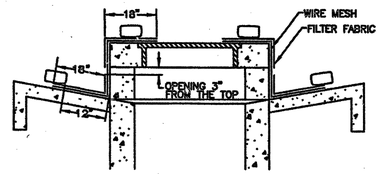
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

5. WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

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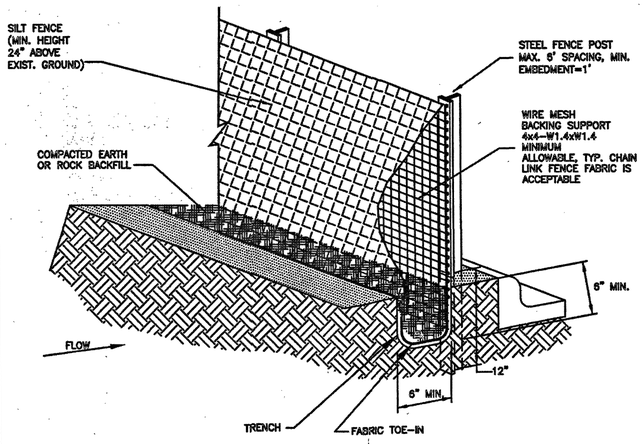


ISOMETRIC VIEW



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.

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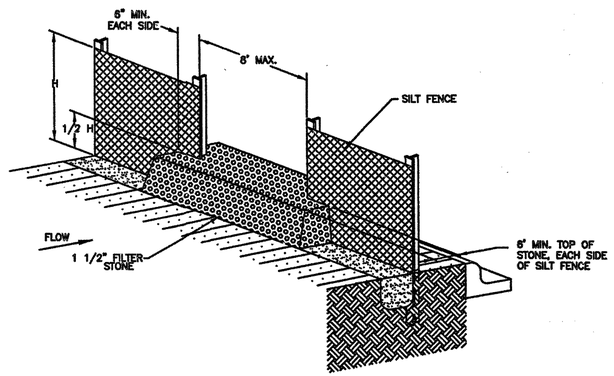
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5. INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH 1/2" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

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	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:
BOND:

SL–34

SHEET OF

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
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REGISTERED PROFESSIONAL ENGINEER

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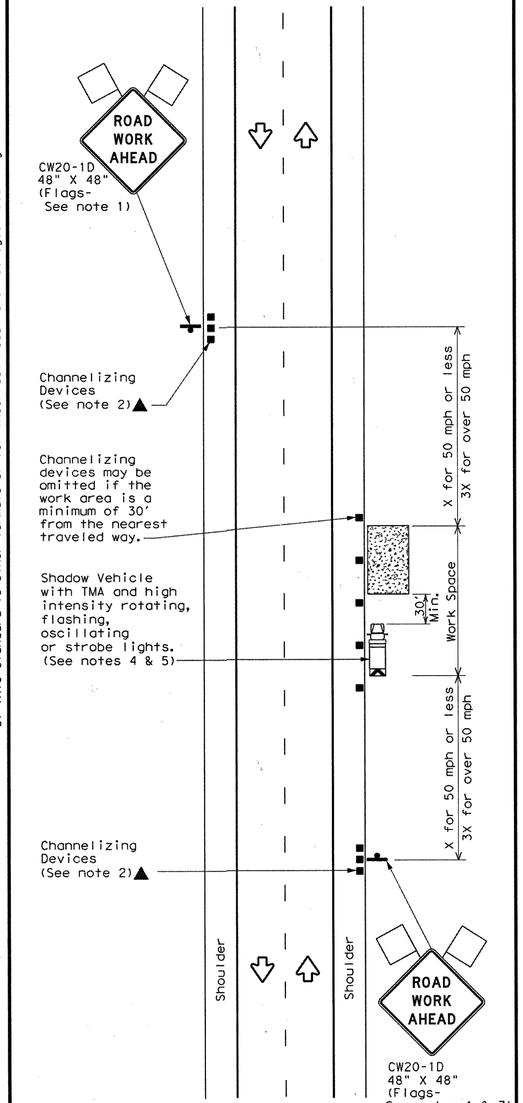
ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

EROSION CONTROL DETAILS – 2
SL–35

PROJECT NO. 13781

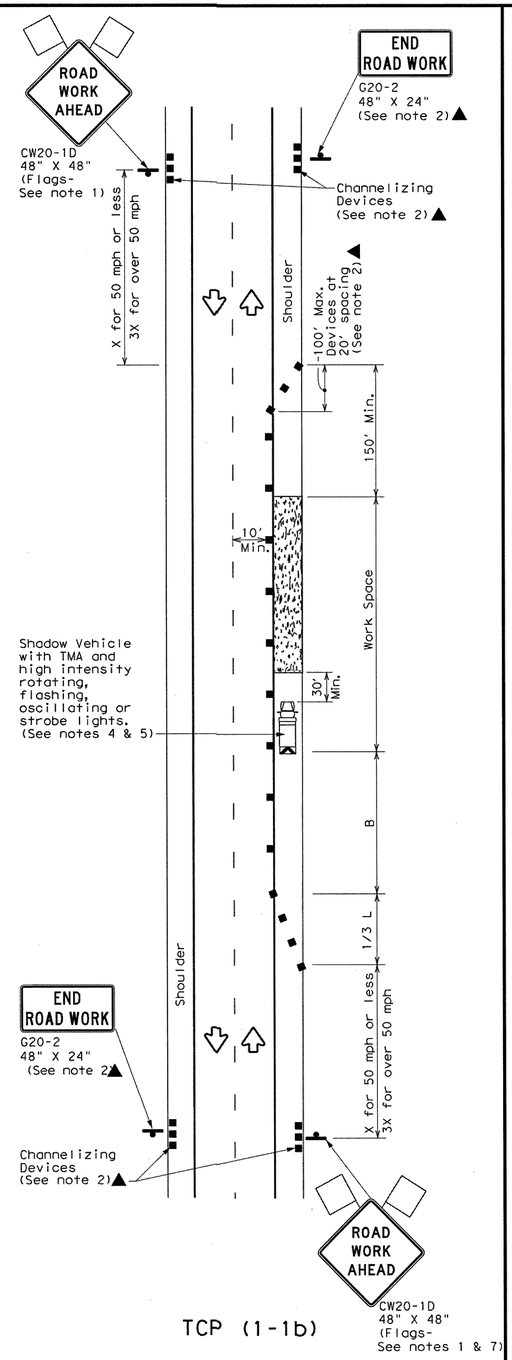
T SHEET SET.DWG

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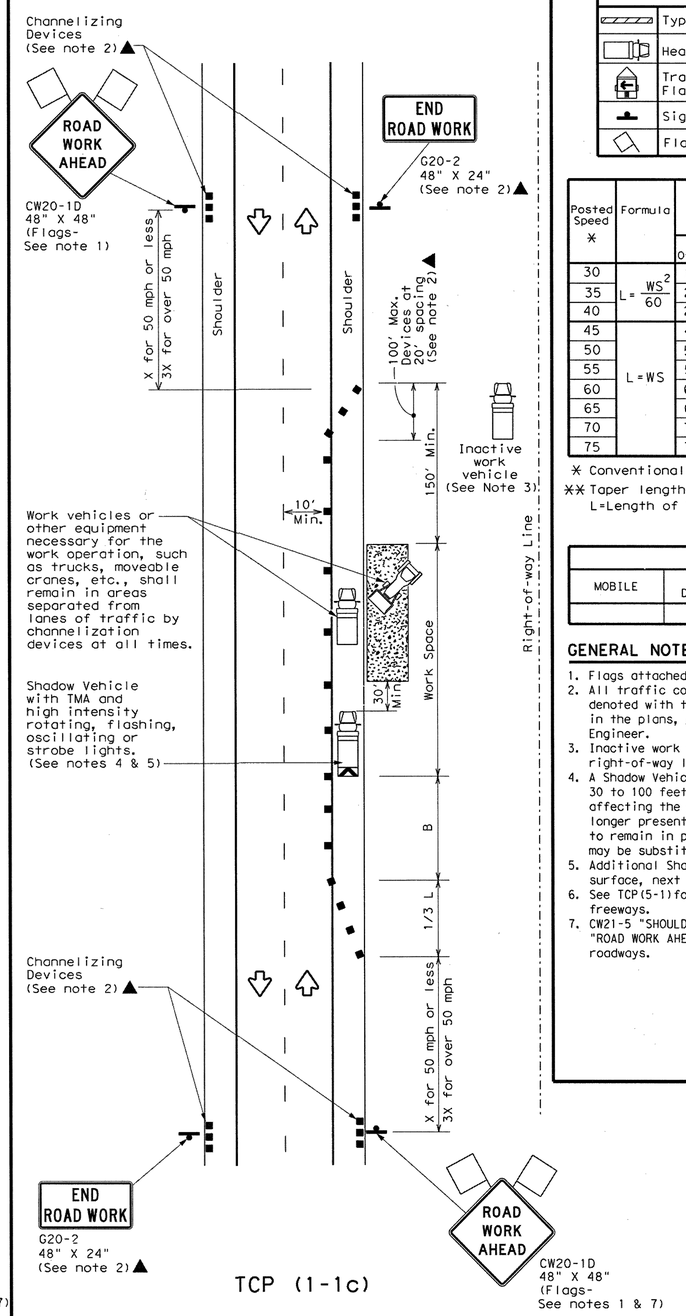
TCP (1-1a)

WORK SPACE NEAR SHOULDER
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER
Conventional Roads

DATE:
FILE:

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"
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

* 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. Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
4. 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.
5. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
6. See TCP(5-1)for shoulder work on divided highways, expressways and freeways.
7. CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation — Traffic Operations Division Standard

TRAFFIC CONTROL PLAN CONVENTIONAL ROAD SHOULDER WORK

TCP(1-1)-18

FILE: tcp1-1-18.dgn	DN:	CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB	HIGHWAY
REVISIONS 2-94 4-98 / 8-95 2-12 / 1-97 2-18	DIST	COUNTY		SHEET NO.

151

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
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 · DOUGLAS B. ROESLER · 56739 · REGISTERED PROFESSIONAL ENGINEER

The seal appearing on this document was authorized by Douglas B. Roesler P.E. 56739
Date: 12/13/20

OWNER:
MR. BILL BROWN
BROWNSTONE GROUP, INC.
6517 MAPLERIDGE
HOUSTON, TEXAS 77081
713-545-0826

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

ANGLETON VILLAGE APARTMENTS
14.571 ACRE TRACT ON HENDERSON RD.
1,800 FEET WEST OF SH 35
108 - 1BR, 2BR AND 3BR UNITS

TRAFFIC CONTROL PLAN
TCP (1-1) - 18

PROJECT NO. 13781

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 2021

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

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on a recommendation regarding a request for approval of the Final Replat of Gifford Meadows Subdivision being all of Lots 1-7 and Lot 16 of the Gifford Meadows Subdivision. The proposed final replat consists of 85 lots and 2 reserve lots on 17.31 acres, is zoned a Planned Development Overlay district and is located on the east side of Gifford Road approximately 700 feet south of Cemetery Road.

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 of Gifford Meadows Subdivision. The proposed final replat consists of 85 lots and 2 reserve lots on 17.31 acres, is in a Planned Development Overlay District and is located on the east side of Gifford Road approximately 700 feet south of Cemetery Road. The proposed replat meets all the requirements of the Code of Ordinances of the City of Angleton and the PD overlay district except as otherwise noted by the City Engineer.

The Planning and Zoning Commission held a public hearing on January 7, 2021 and recommends approval (7 in favor/0 opposed/0 absent/abstentions) of the proposed Final Replat of Gifford Meadows Subdivision subject to the conditions listed in the City Engineer's memo being cleared before recording.

RECOMMENDATION:

Staff recommends approval of the proposed Final Replat of Gifford Meadows Subdivision subject to the City Engineer's comments being cleared prior to recording.

December 31, 2020

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

Re: On-Going Services
Gifford Meadows Final Replat and Plan Review – 3rd Submittal Review
Angleton, Texas
HDR Job No. 20-007

Dear Mr. Reeves:

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

1. The Angleton Drainage District provided a revised letter of approval, dated December 9, 2020, with stipulations noted and is provided as an attachment in this review. No additional action is required.
2. The proposed Subdivision has included revisions to provide additional right of way for installation of sidewalk along the fronting portion of the Development along Gifford Road. No additional action is required for this item.
3. An existing 50-ft drainage maintenance easement is to be abandoned per this plat and replaced with a 30-ft wide land dedication to the Angleton Drainage District. A copy of the Final Replat shall include this as a note in the Plat Notes and resubmitted accordingly prior to final recordation.

HDR takes no objection to the Gifford Meadows Final Replat and Plans with the exceptions noted. Please note, this does not necessarily mean that the entire drawings, including all supporting data and calculations, has been completely checked and verified; however, the drawings and calculations are signed, dated, and sealed by a professional engineer licensed to practice in the State of Texas, which therefore conveys the engineer'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

December 9, 2020

Adobe Holdings, Inc.
David Rogers
1800 Augusta Drive, Suite 340
Houston, Texas 77057

Re: Drainage and Detention Plan
Gifford Meadows Subdivision
Angleton, Texas 77515

Dear Mr. Rogers:

During the regular public meeting of the Angleton Drainage District held October 13, 2020, the Board of Supervisors unanimously approved the drainage and detention plan for Gifford Meadows Subdivision as presented.

As presented, Gifford Meadows Subdivision is an 85-lot development on 17.31 acres. The site is located near the southwest corner of CR 543 (Downing Road) and Cemetery Road. The northeast side of the tract is CR 543 and the west side of the tract is Gifford Road. Access to the subdivision is from Gifford Road. This is a planned development zone for 45-feet wide lots. This site is in the Bastrop Bayou Drainage Area BB18 which has an allowable 100-Year Storm runoff rate of 0.74 cfs/acre. 0.74 cfs/acre*17.31 acres = 12.81 cfs. The design drawings include a 24-inch outfall pipe in the west roadside ditch of CR543 (A Ditch) with a 24-inch long 10-inch pipe grouted in the end to act as the restrictive outlet. Outfall erosion protection into A Ditch is accomplished by the proposed installation of slope paving to the toe of the ditch with cutoff boards installed to prevent undermining. There is a design onsite detention pond with a volume of 10.5 acre-feet of detention volume with 6-inches of freeboard. This development required detention is 10.342 acre-feet of detention volume. The designed detention pond is located in the north angle point of the development of the 17.31 acre site.

The 50' recorded in Plat No. 2018064548 B.C.P.R. will be abandoned with this development plat and replaced with a 30' Dedication of Property to the Angleton Drainage District. The 20' strip was previously used for a backslope swale. The swale is no longer needed with this development. The development has a 20' wide maintenance berm on their property that will be utilized by the HOA for maintenance of their detention pond.

If any 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 drainage and detention plan in no way represents that David Rogers of Gifford Meadows Subdivision has complied with any federal, state, county or other law, statute, procedure or requirement of any type beyond the approval of the drainage and detention plan approved, with the stipulations listed in this letter, if any, by the District.

Sincerely,

David B. Spoor

David B. Spoor, Chairman
Angleton Drainage District

DEDICATION STATEMENT:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: THAT DAVID ROGERS, President And Managing Director of the ADOBE HOLDINGS INC., acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as GIFFORD MEADOWS 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 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 DAVID ROGERS 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

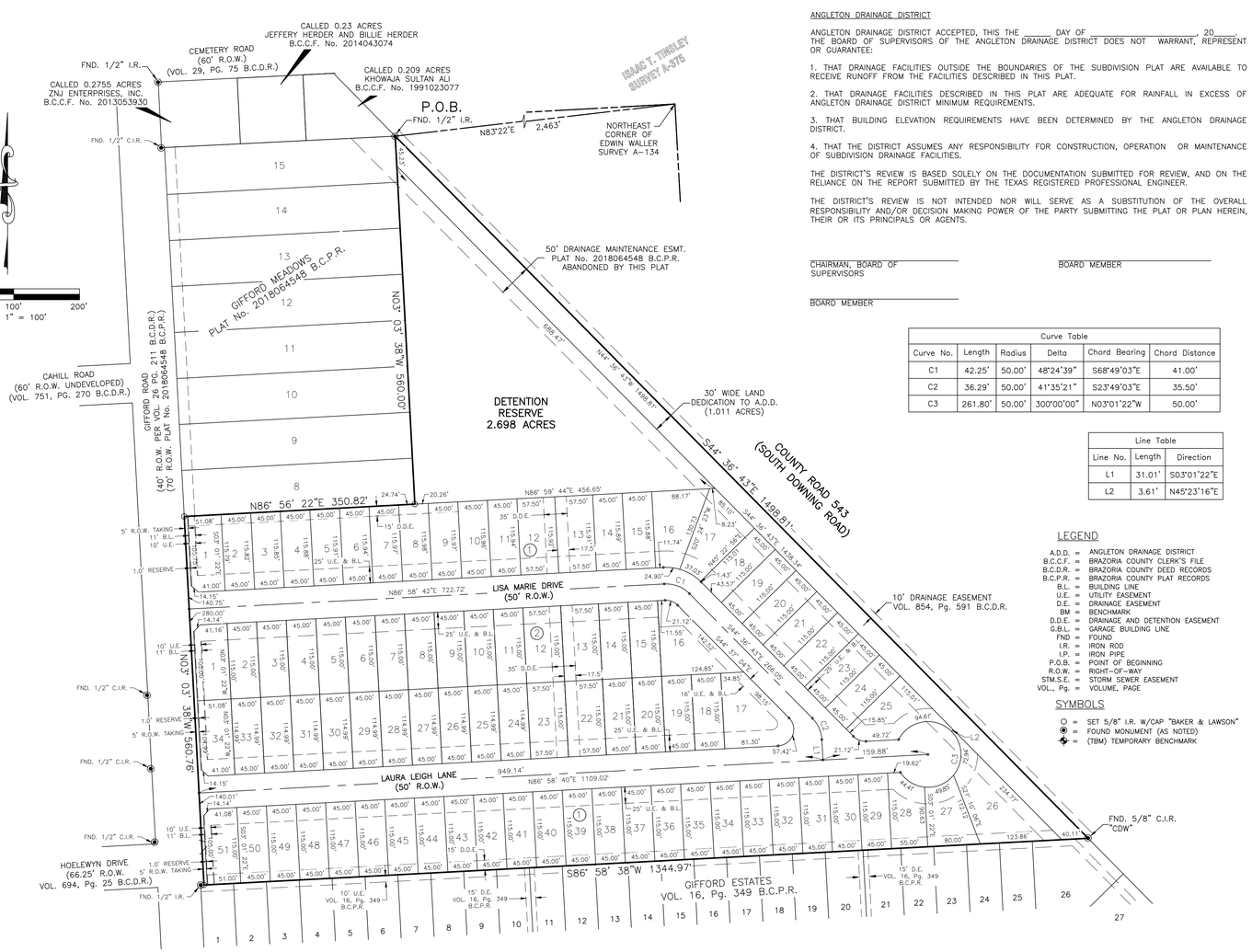
_____
FRANCES AGUILAR, City Secretary

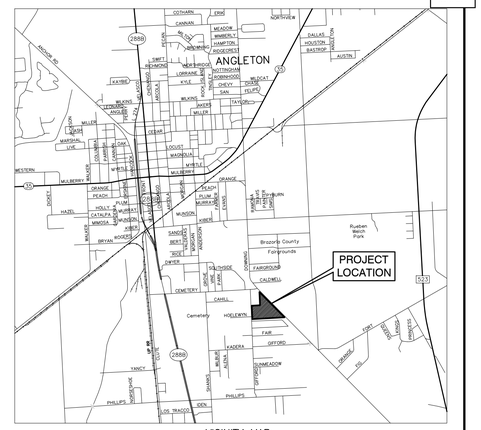
STATE OF TEXAS §
COUNTY OF BRAZORIA §

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





VICINITY MAP

Curve Table					
Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	42.25'	50.00'	48°24'39"	S68°49'03"E	41.00'
C2	36.29'	50.00'	41°35'21"	S23°49'03"E	35.50'
C3	261.80'	50.00'	300°00'00"	N03°01'22"W	50.00'

Line Table		
Line No.	Length	Direction
L1	31.01'	S03°01'22"E
L2	3.61'	N45°23'16"E

LEGEND

A.D.D. = ANGLETON DRAINAGE DISTRICT
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

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

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 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

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:
NGS MONUMENT R1182 (PID AW1171)
A BRASS DISK STAMPED R1182, ON THE NORTH LINE OF CR 171, ON THE CURB OF A BRIDGE, APPROXIMATELY 275 SOUTHWEST OF INTERSECTION WITH CR 428.
ELEVATION = 26.31 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.

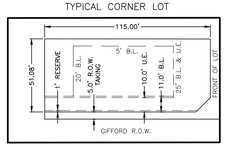
11. A MINIMUM OF TWO PARKING SPACES ON THE SAME LOT AS THE MAIN STRUCTURE AND ON A PAVED DRIVEWAY HAVING A MINIMUM LENGTH OF 20 FEET AS MEASURED FROM THE STREET RIGHT–OF–WAY LINE.

12. NOTICE: PRIVACY FENCING CROSSING PERPENDICULAR TO THE 15' DRAINAGE EASEMENT SHALL PROVIDE ADEQUATE OPENING (1 S.F. MINIMUM) FOR FLOW THROUGH FENCE OPENING.

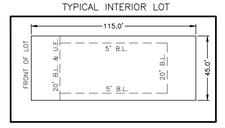
13. IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER OR PROPERTY OWNER ASSOCIATION TO MAINTAIN, DETENTION, DRAINAGE, AND UTILITY RESERVE TRACT PER ANGLETON LDC REQUIREMENTS; SEC. 23–19 RESERVATIONS.

14. ALL REAR BUILDING LINES SHALL BE 20 FEET FROM PROPERTY LINE. THE SIDE BUILDING LINES SHALL BE 5 FEET FOR INTERIOR SIDE LOTS, AND 16 FEET FOR LOTS ADJACENT TO THE ROW. THE FRONT BUILDING LINE SHALL BE 25 FEET. THE FOLLOWING EXCEPTIONS WILL BE APPLIED.
14.1. LOT 16, BLOCK 2 SHALL HAVE A 40 FEET FRONT BUILDING LINE.
14.2. LOT 25, BLOCK 1 SHALL HAVE A 25 FEET SIDE SETBACK TO LAURA LEIGH LANE ROW.
14.3. LOTS 1 & 51, BLOCK 1 AND LOTS 1 & 34, BLOCK 2 SHALL HAVE A SIDE BUILDING LINE OF 11 FEET ADJACENT TO THE GIFFORD ROW. THE AFFECTED LOTS SHALL HAVE A 1 FOOT RESERVE TO PROHIBIT DRIVEWAY ACCESS TO GIFFORD ROAD.

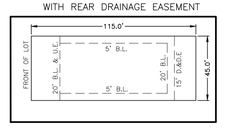
TYPICAL CORNER LOT



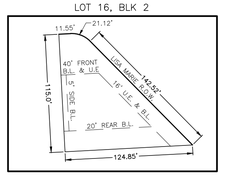
TYPICAL INTERIOR LOT



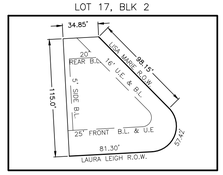
TYPICAL INTERIOR LOT
WITH REAR DRAINAGE EASEMENT



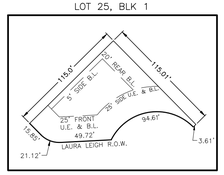
LOT 16, BLK 2



LOT 17, BLK 2



LOT 25, BLK 1



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

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

FIELD NOTES FOR 17.31 ACRE

Being a tract of land containing 17.31 acre (753,984 square feet), located Edwin Waller Survey, Abstract Number (No.) 134, in Brazoria County, Texas; Said 17.31 acre being all Lots 1 through 7 and Lot 16 of the Gifford Meadows Subdivision, as recorded in Plat No. 2018064548 of the Brazoria County Plat Records (B.C.P.R.); Said 17.31 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 1/2–inch iron rod found on the southwest line of a called ten–foot drainage easement recorded in Volume (Vol.) 854, Pg. 591 of the Brazoria County Deed Records (B.C.D.R.), at the southeast corner of a called 0.29 acre tract recorded in the name of Khowaja Sultan Ali under B.C.C.F. No. 1991023077, at the northeast corner of Lot 15 of said Gifford Meadows, for the north corner of the herein described tract;

THENCE, with the southwest line of said drainage easement and the northeast line of said Gifford Meadows, South 44 degrees 36 minutes 43 seconds East, a distance of 1,498.81 feet to a 5/8–inch iron rod with cap stamped "CDW" for the northeast corner of Lot 26, Block 1 of said Gifford Estates, a subdivision recorded in Vol. 16, Page 349 of the B.C.P.R., for the southeast corner of said Gifford Meadows and the herein described tract;

THENCE, with the north line of said Gifford Estates and the south line of said Gifford Meadows, South 86 degrees 58 minutes 38 seconds West, a distance of 1,344.97 feet to a 5/8–inch iron rod with cap stamped "Baker & Lawson" set on the east right–of–way (R.O.W.) line of Gifford Road (seventy feet wide per Plat No. 2018064548 B.C.P.R.) at the southwest corner of said Gifford Meadows and the herein described tract;

THENCE, with the east R.O.W. line of said Gifford Road, being the west line of said Gifford Meadows, North 03 degrees 03 minutes 38 seconds West, a distance of 560.76 feet to a 5/8–inch iron rod with cap stamped "Baker & Lawson" set at the southwest corner of Lot 8 of said Gifford Meadows, for the northwest corner of the herein described tract;

THENCE, with the south line of said Lot 8, North 86 degrees 56 minutes 22 seconds East, a distance of 350.82 feet to a 5/8–inch iron rod with cap stamped "Baker & Lawson" set at the southeast corner of said Lot 8, for an interior corner of the herein described tract;

THENCE, with the east lines of Lots 8–15 of Gifford Meadows, North 03 degrees 03 minutes 38 seconds West, a distance of 560.00 feet to the POINT OF BEGINNING and containing 17.31 acres of land.

OWNER:
DAVID ROGERS
ADOBE HOLDINGS INC.

REVISED:

FINAL REPLAT
GIFFORD MEADOWS SUBDIVISION
A 17.31 ACRE, 85-LOT, 1 RESERVE, 2 BLOCK SUBDIVISION

BEING ALL OF LOTS 1 THROUGH 7, AND LOT 16 OF THE GIFFORD MEADOWS SUBDIVISION, PLAT No. 2018064548 B.C.P.R.
LOCATED IN THE EDWIN WALLER SURVEY, ABSTRACT No. 134
IN 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.: 13743	SCALE: 1" = 100'	DRAWN BY: MAS
DRAWING NO.: 13743 PLAT	DATE: 12/28/2020	CHECKED BY: DRR

V:\2020\PROJECTS\13743\SURVEY\13743-PLAT.DWG 12/29/20 Brad Bowers

PLANS FOR CONSTRUCTION OF

PAVING, DRAINAGE AND UTILITIES ON

GIFFORD MEADOWS SUBDIVISION

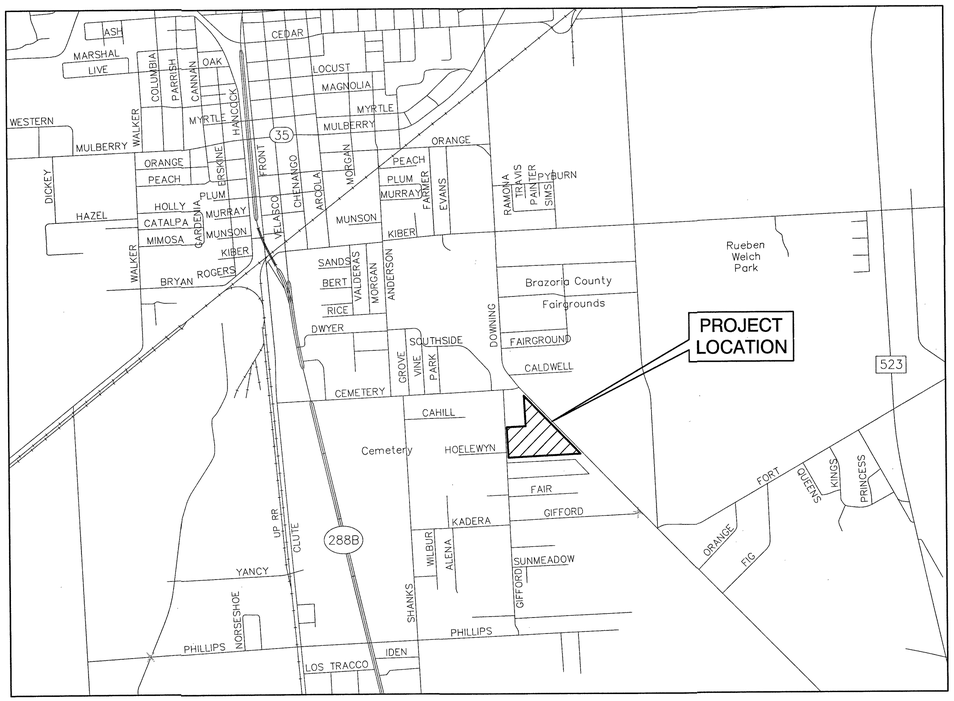
2 BLOCKS, 85 LOTS

FOR THE

CITY OF ANGLETON

BRAZORIA COUNTY

B&L JOB No. 13743



CITY OF ANGLETON

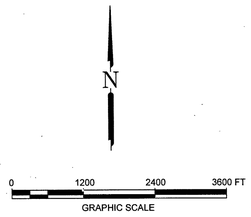
MAYOR	CITY COUNCIL
JASON PEREZ	MIKEY SVOBODA
	CECIL BOOTH
CITY MANAGER	JOHN WRIGHT
CHRIS WHITTAKER	TRAVIS TOWNSEND
	MARK GONGORA

"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."

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. ON PROPOSED FEMA PANEL, 48039C0445K, THE SITE LIES FULLY WITHIN ZONE "X", AREAS DETERMINED TO BE OUTSIDE THE 500–YEAR FLOOD–PLAIN.

THE SITE LIES WITHIN THE BASTROP BAYOU WATERSHED (DRAINAGE AREA BB18 OF THE BRAZORIA COUNTY MASTER DRAINAGE STUDY). THE ALLOWABLE DISCHARGE RATE IS 0.74 CFS/ACRE.



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NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

TITLE SHEET

PROJECT NO. 13743

1
13743 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 C.

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 THREE 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. 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.

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 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 CENTERPOINT ENERGY AT 713–207–2222.

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 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 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 (979) 345–5667.

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 DESIGN RESTS ON 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. 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. BROWNS 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

CALLED 0.2755 ACRES
ZNJ ENTERPRISES, INC.
B.C.C.F. No. 2013053930

CALLED 0.23 ACRES
JEFFERY HERDER AND
BILLIE HERDER
B.C.C.F. No. 2014043074
2001005714

CALLED 0.209 ACRES
KHOWAJA SULTAN ALI
B.C.C.F. No. 1991023077

PROJECT BENCHMARK:

NGS MONUMENT R1182 (PID AW1171):
A BRASS DISK STAMPED R1182 SET ON CONCRETE CURB OF BRIDGE ON THE NORTH SIDE OF COUNTY ROAD 171.
EELVATION = 26.31 FEET NGVD29

SITE BENCHMARKS:

TBM "A":
A 60D NAIL SET IN A POWERPOLE IN THE NORTHWEST CORNER OF THE INTERSECTION OF GIFFORD ROAD AND HOELEWYN DR.
ELEVATION = 22.10 FEET NGVD29

TBM "B":
A "BOX" CUT IN CONCRETE HEADWALL IN THE SOUTHWEST CORNER OF THE INTERSECTION OF CEMETARY ROAD AND S. DOWNING STREET.
ELEVATION = 23.19 FEET NGVD29

0 30 60 120
SCALE : 1" = 60'

50' DRAINAGE MAINTENANCE ESMT.
PLAT No. 2018064548 B.C.P.R.
ABANDONED

REMOVE 70 LF 30" HDPE OUTFALL

COUNTY ROAD 343
(S. DOWNING ROAD)

DITCH "A"

DEMO 845 LF WOOD FENCE

10' DRAINAGE EASEMENT
VOL. 854, Pg. 591 B.C.D.R.

REMOVE AND DISPOSE WOOD FENCE
PROPERTY BOUNDARY

OWNER TO COORDINATED REMOVAL OF TNMP BOXES AND ASSOCIATED ACCESSORIES

16' U.E. & B.L.

OWNER TO COORDINATED REMOVAL OF TNMP BOXES AND ASSOCIATED ACCESSORIES

DEMO 845 LF WOOD FENCE

COUNTY ROAD 407
(GIFFORD ROAD)

HOELEWYN DRIVE

GIFFORD ESTATES
VOL. 16, Pg. 349 B.C.P.R.

15' D.E.
VOL. 16, Pg. 349
B.C.P.R.

10' U.E.
VOL. 16, Pg. 349
B.C.P.R.

15' D.E.
VOL. 16, Pg. 349
B.C.P.R.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
CHECKED
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6581 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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

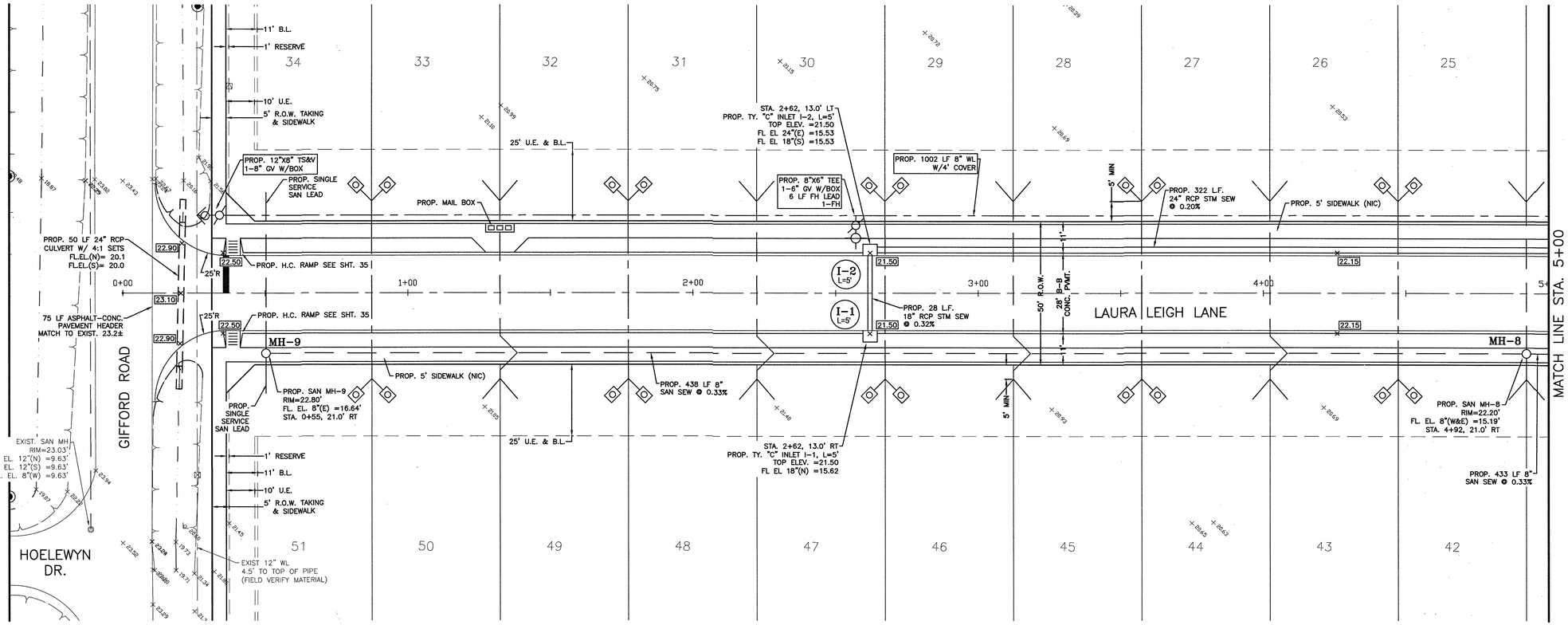
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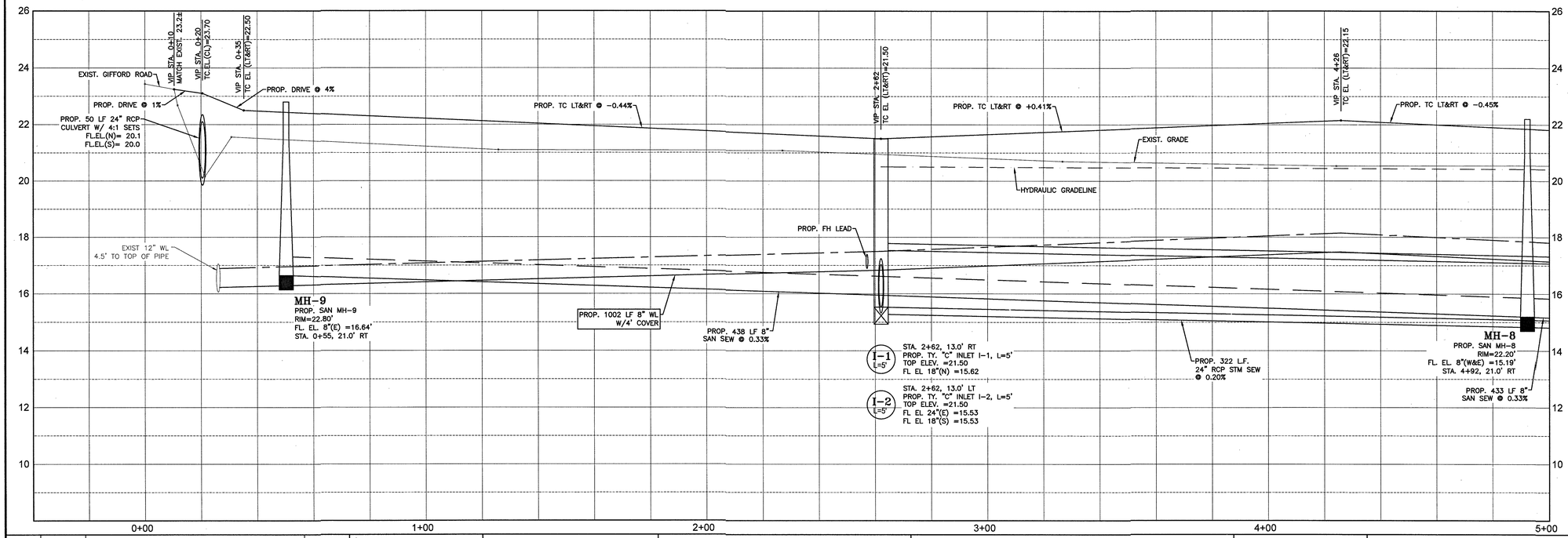
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EXISTING CONDITIONS

PROJECT NO. 13743

7
13743 SHEET SET.DWG





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)

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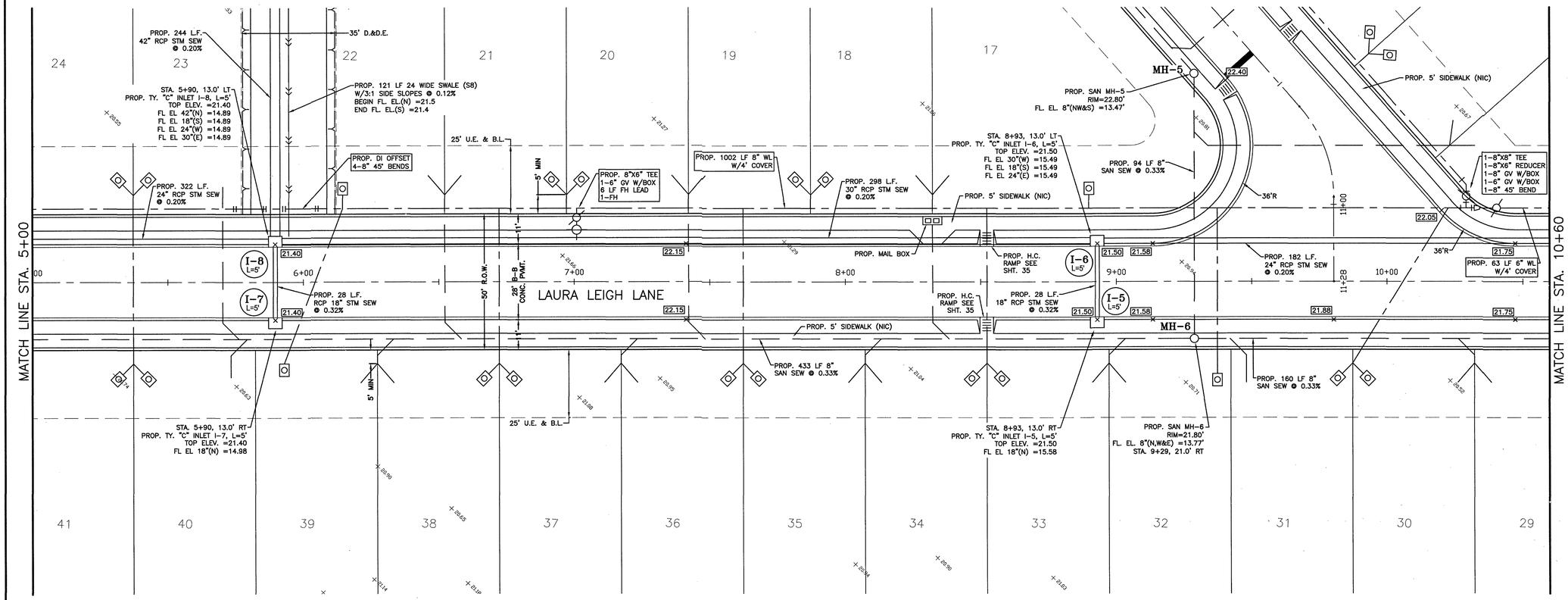
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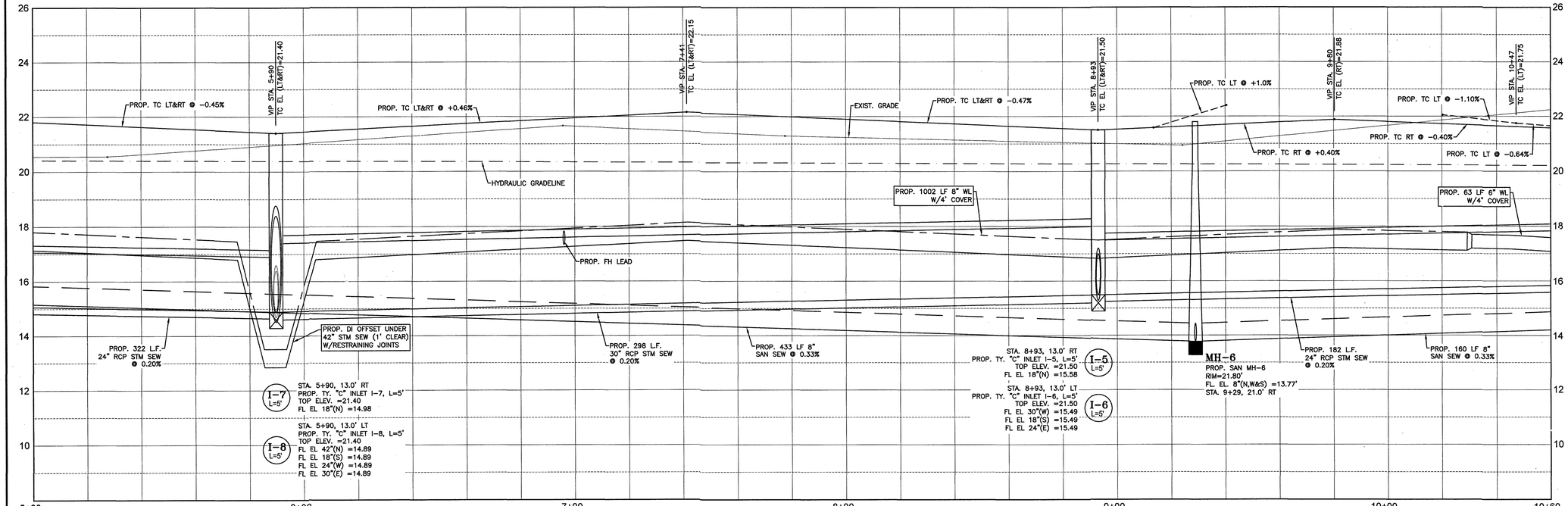
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A 17.37 AC, 85-LOT SUBDIVISION
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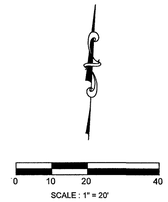
PLAN & PROFILE
LAURA LEIGH LANE
STA. 0+00 TO 5+00

PROJECT NO. 13743

13743 SHEET SET.DWG







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)

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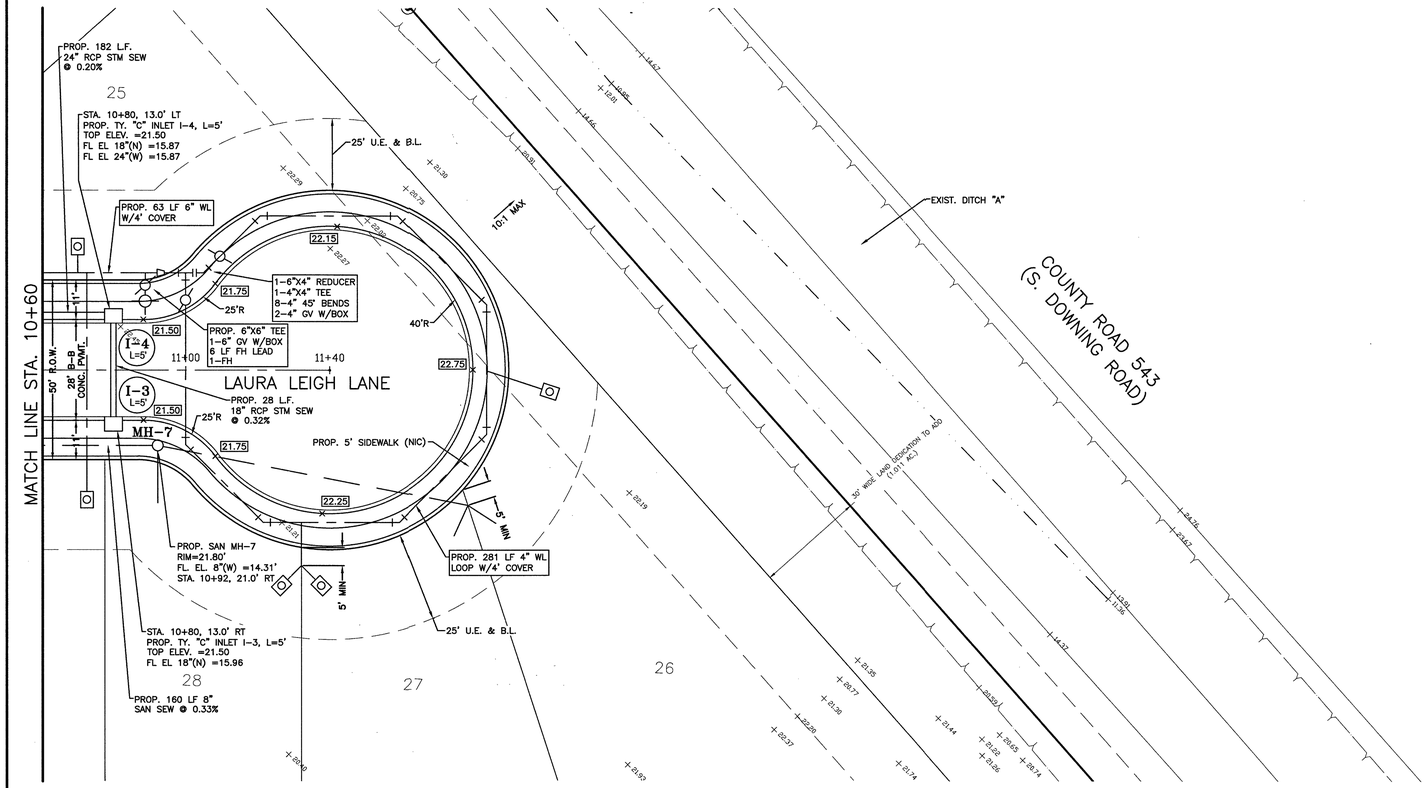
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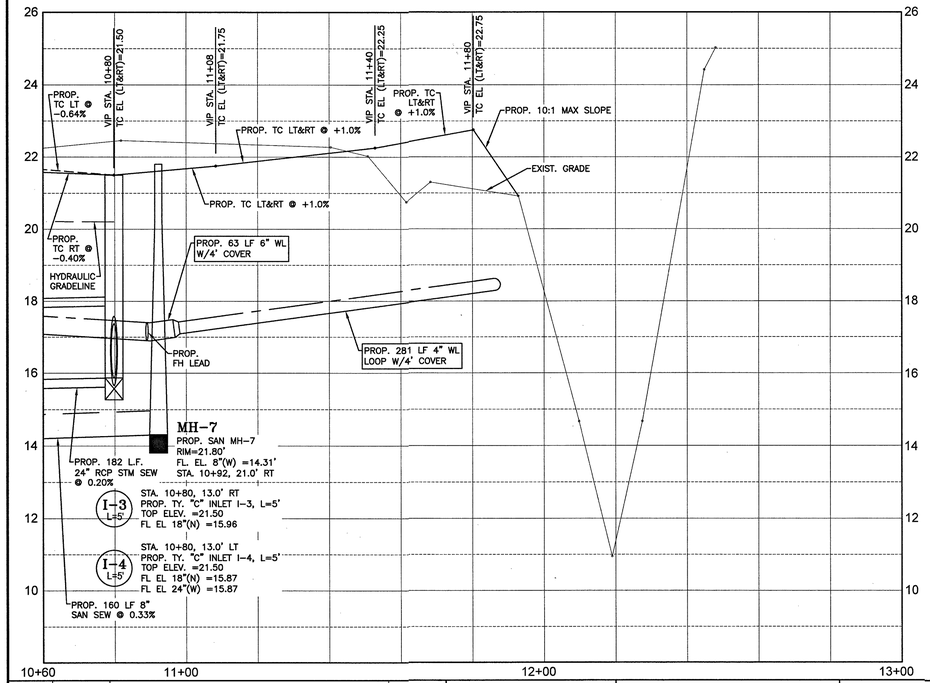
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

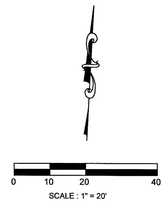
PLAN & PROFILE
LAURA LEIGH LANE
STA. 5+00 TO 10+60

PROJECT NO. 13743

13743 SHEET SET.DWG







SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- STORM SEWER MANHOLE (SMH-1)
- SANITARY SEWER MANHOLE (MH-1)
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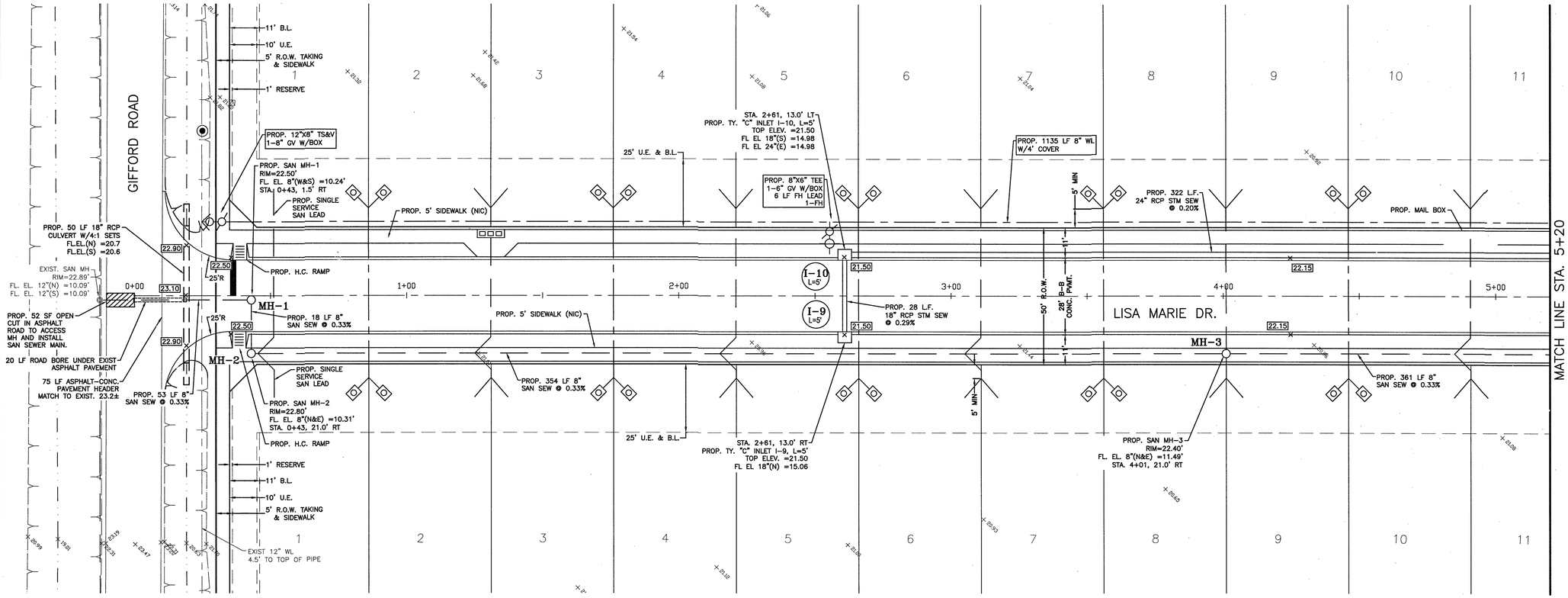
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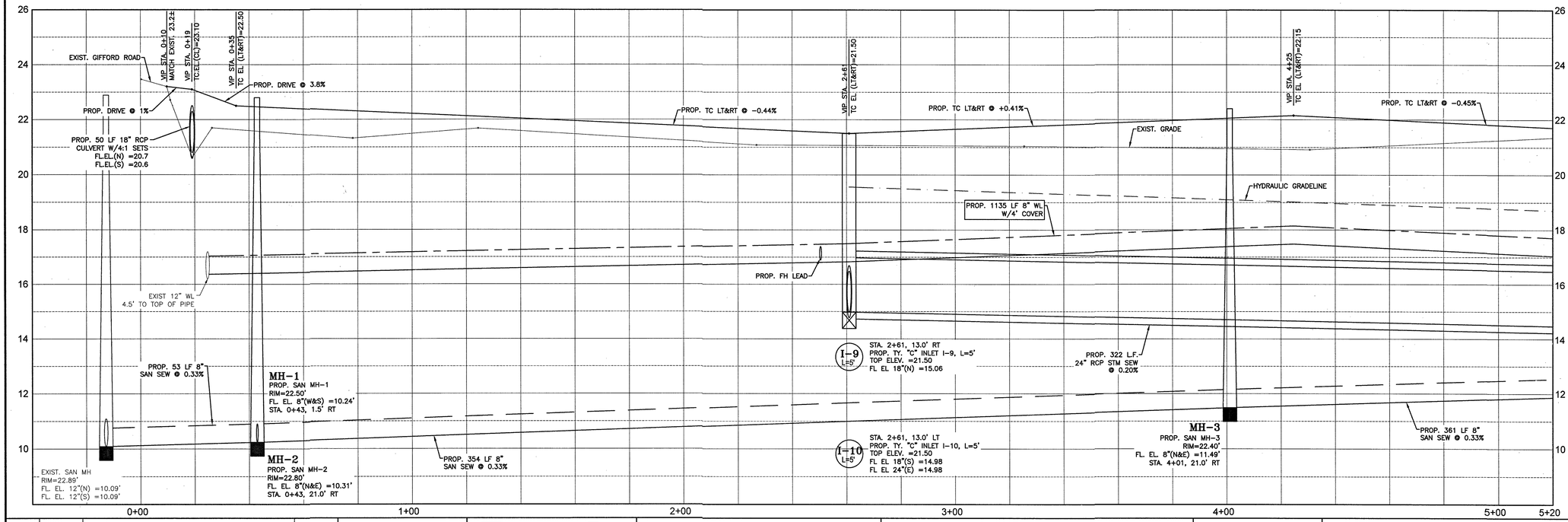
PLAN & PROFILE
LAURA LEIGH LANE
STA. 10+60 TO 11+40

PROJECT NO. 13743

6

13743 SHEET SET.DWG





SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
- STORM SEWER MANHOLE (SMH-1)
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SCALE : 1" = 20'

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REG. NO. F-825

STATE OF TEXAS MIGUELANGEL A. SAUCEDA 121992 REGISTERED PROFESSIONAL ENGINEER

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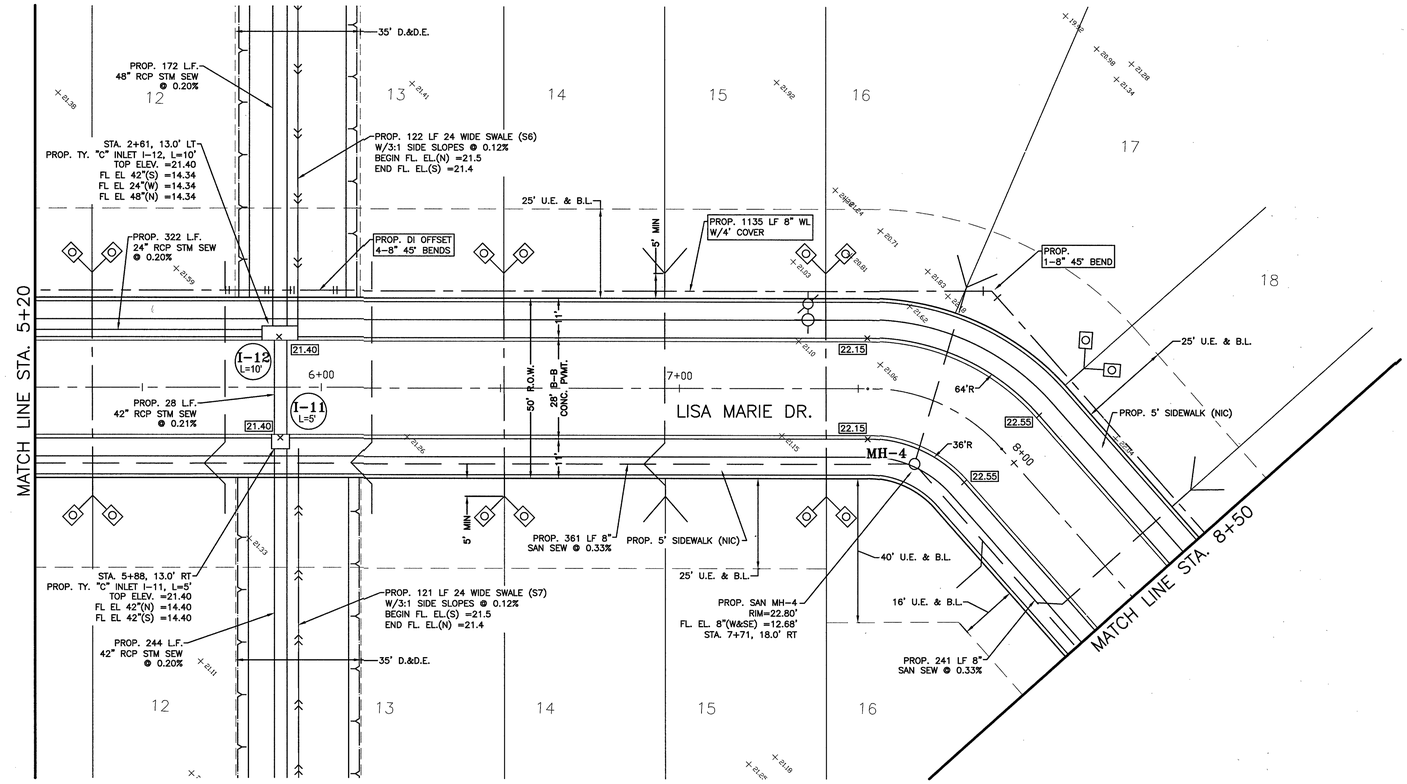
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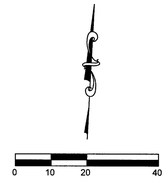
GIFFORD MEADOWS
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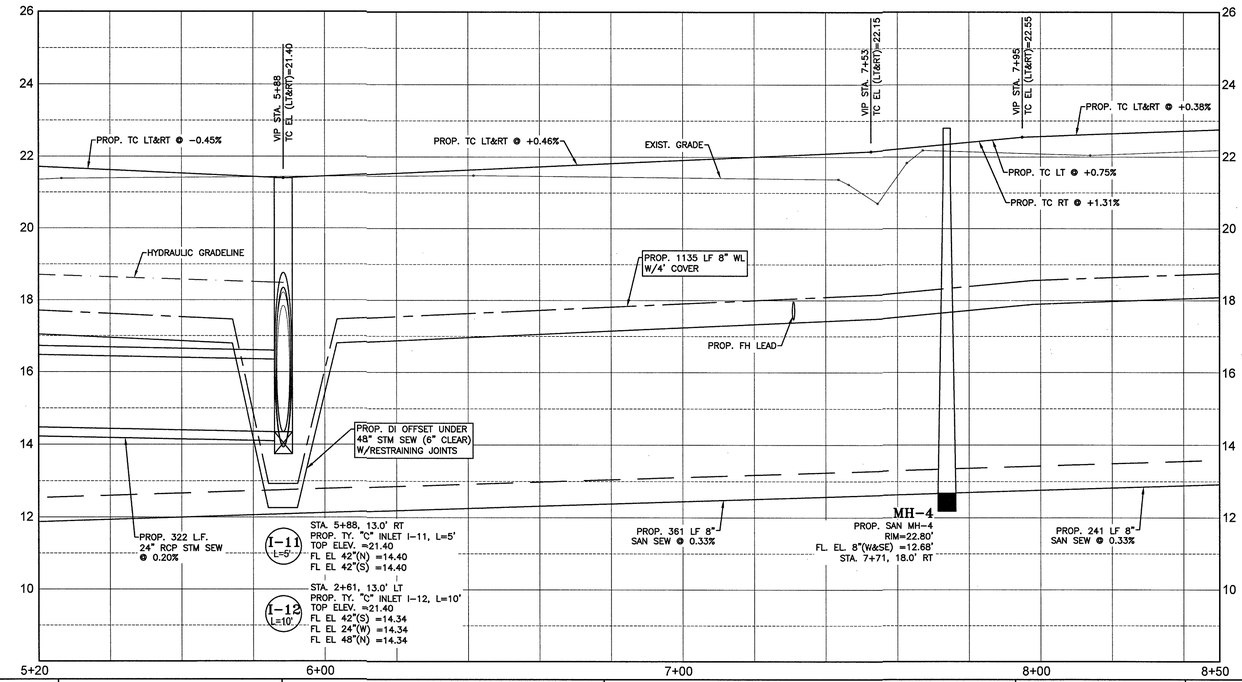
PLAN & PROFILE
LISA MARIE DRIVE
STA. 0+00 TO 5+20

PROJECT NO. 13743

7 OF 43 SHEET SET.DWG







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

REVISIONS

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DRAWN
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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

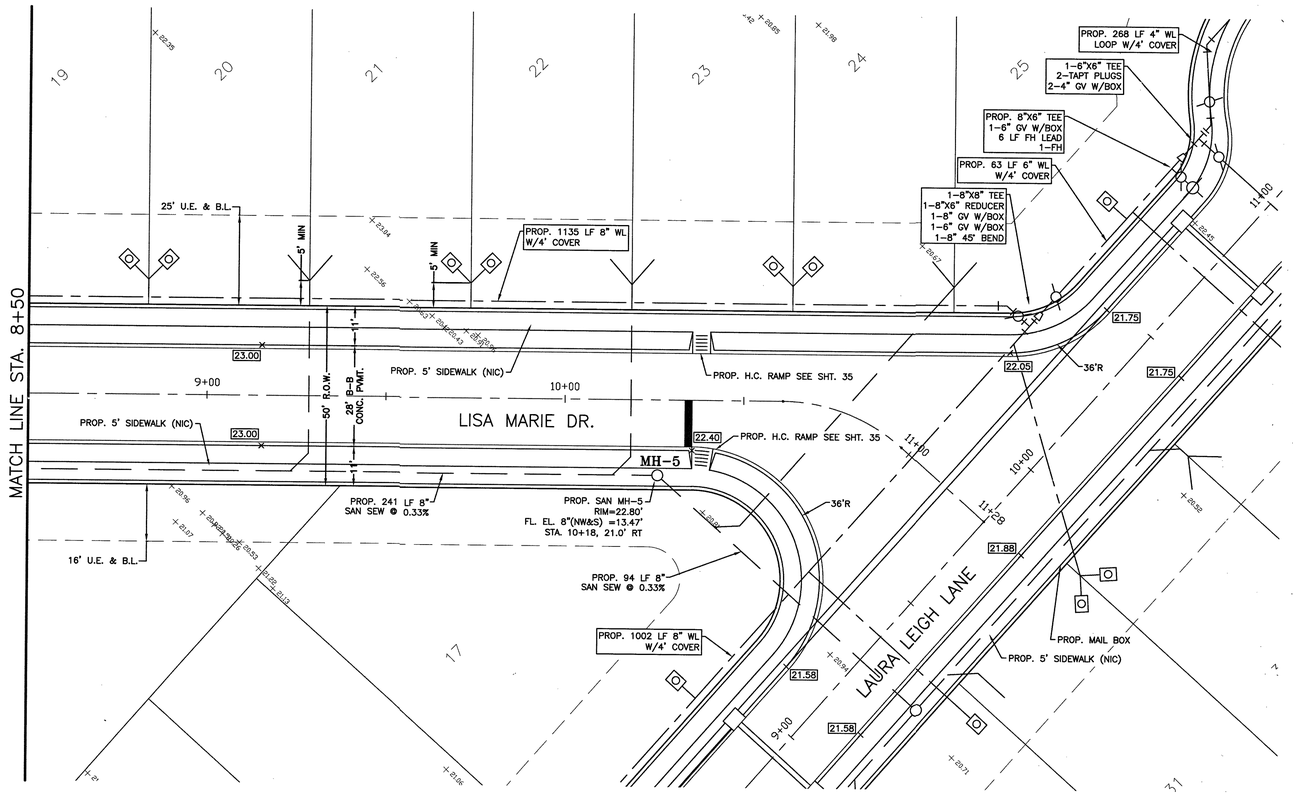
PLAN: 1" = 20'
PROFILE:
HORIZONTAL: 1" = 2'
VERTICAL: 1" = 20'

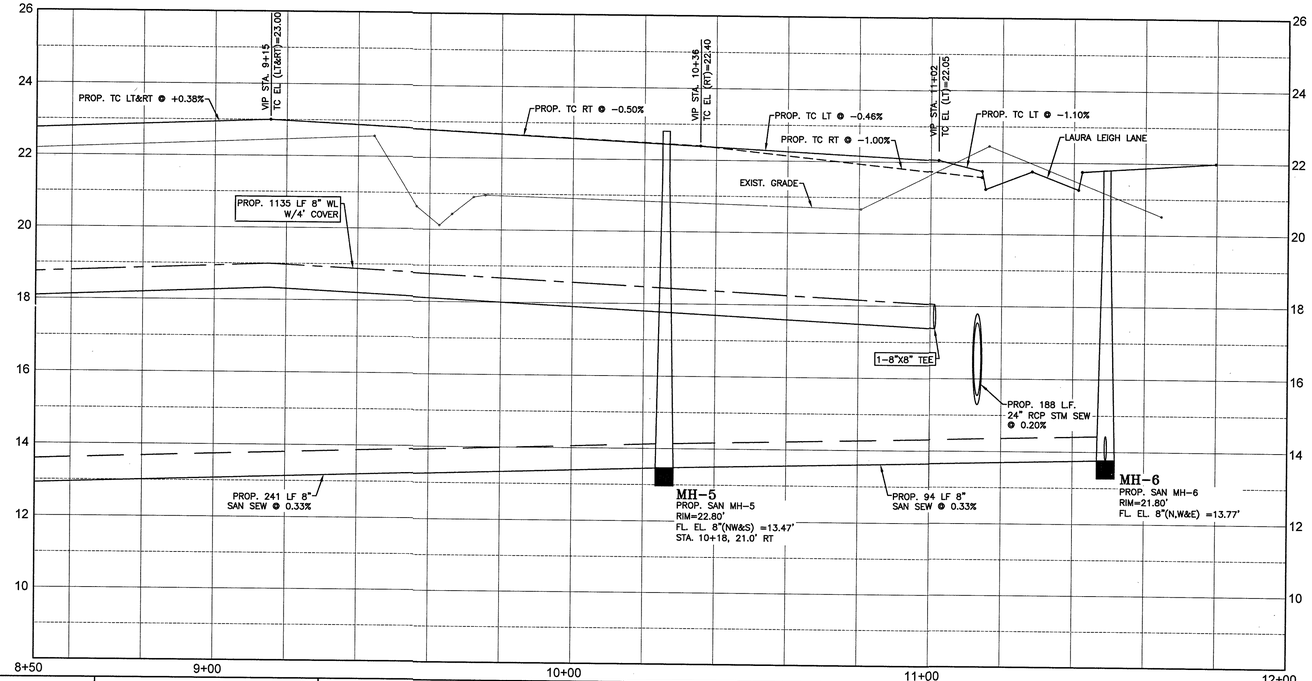
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
LISA MARIE DRIVE
STA. 5+20 TO 8+50

PROJECT NO. 13743

13743 SHEET SET.DWG





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)
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ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

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

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
LISA MARIE DRIVE
STA. 8+50 TO 11+28

PROJECT NO. 13743

SHEET SET.DWG

DETENTION

COUNTY ROAD 542 (S. DOWNING ROAD)

DITCH "A"

LISA MARIE DR.

LAURA LEIGH LANE

COUNTY ROAD 457 (GIFFORD ROAD)

HOELEWYN DRIVE

GIFFORD ESTATES
VOL. 16, Pg. 349 B.C.P.R.

SCALE : 1" = 40'

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

EXIST. SAN MH
RIM=22.89'
FL. EL. 12"(N) =10.09'
FL. EL. 12"(S) =10.09'

MH-1

MH-2

PROP. 52 SF OPEN CUT IN ASPHALT ROAD TO ACCESS MH AND INSTALL SAN SEWER

PROP. 53 LF 8" SAN SEW @ 0.33%

PROP. 18 LF 8" SAN SEW @ 0.33%

PROP. SAN MH-2
RIM=22.80'
FL. EL. 8"(N&E) =10.31'
STA. 0+43, 21.0' RT

EXIST 12" WL
4.5' TO TOP OF PIPE

PROP. 12"X8" TS&V
1-8" GV W/BOX

PROP. SAN MH-1
RIM=22.50'
FL. EL. 8"(W&S) =10.24'
STA. 0+43, 1.5' RT

PROP. 1135 LF 8" WL W/4' COVER

PROP. 354 LF 8" SAN SEW @ 0.33%

MH-3

PROP. SAN MH-3
RIM=22.40'
FL. EL. 8"(N&E) =11.49'
STA. 4+01, 21.0' RT

PROP. 361 LF 8" SAN SEW @ 0.33%

MH-4

PROP. SAN MH-4
RIM=22.80'
FL. EL. 8"(W&SE) =12.68'
STA. 7+71, 18.0' RT

PROP. 241 LF 8" SAN SEW @ 0.33%

MH-5

PROP. SAN MH-5
RIM=22.80'
FL. EL. 8"(NW&S) =13.47'
STA. 10+18, 21.0' RT

1-8"X8" TEE
1-8"X6" REDUCER
1-8" GV W/BOX
1-8" GV W/BOX
1-8" 45° BEND

PROP. 63 LF 6" WL W/4' COVER

1-6"X4" REDUCER
1-4"X4" TEE
8-4" 45° BENDS
2-4" GV W/BOX

PROP. SAN MH-7
RIM=21.80'
FL. EL. 6"(W) =14.59'

MH-7

PROP. 281 LF 4" WL LOOP W/4' COVER

MH-6

PROP. SAN MH-6
RIM=21.80'
FL. EL. 8"(N,W&E) =13.77'
STA. 9+24, 21.0' RT

PROP. 160 LF 6" SAN SEW @ 0.5%

PROP. 94 LF 8" SAN SEW @ 0.33%

PROP. 433 LF 8" SAN SEW @ 0.33%

PROP. 1002 LF 8" WL W/4' COVER

PROP. 12"X8" TS&V
1-8" GV W/BOX

EXIST. SAN MH
RIM=23.03'
FL. EL. 12"(N) =9.63'
FL. EL. 12"(S) =9.63'
FL. EL. 8"(W) =9.63'

MH-9

PROP. SAN MH-9
RIM=22.80'
FL. EL. 8"(E) =16.64'
STA. 0+55, 21.0' RT

PROP. 438 LF 8" SAN SEW @ 0.33%

MH-8

PROP. SAN MH-8
RIM=22.20'
FL. EL. 8"(W&E) =15.19'
STA. 4+92, 21.0' RT

1-FH

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STATE OF TEXAS
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HOUSTON TX. 77057

PLAN: 1" = 40'
PROFILE:
HORIZONTAL:
VERTICAL:

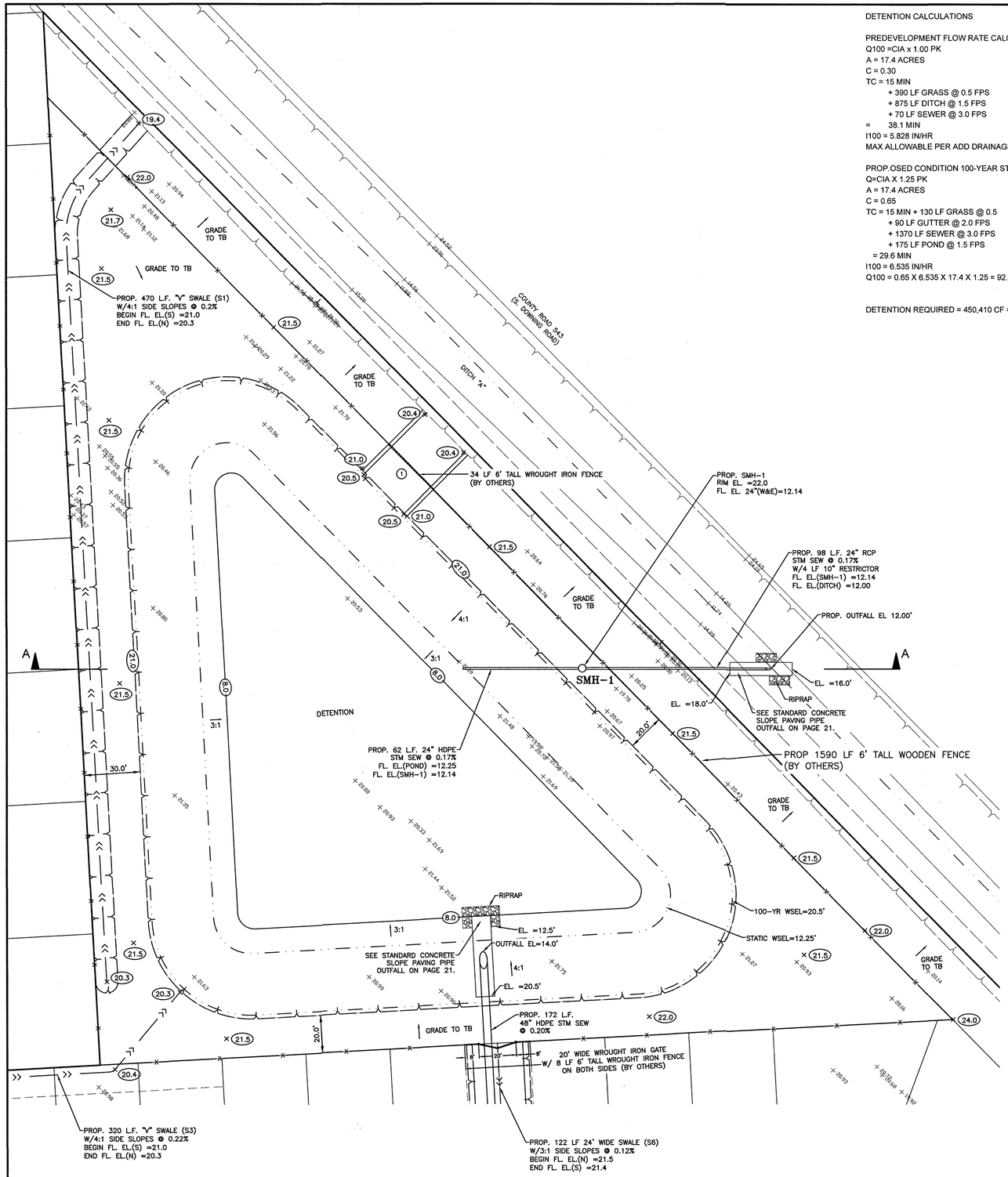
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

UTILITY LAYOUT

PROJECT NO. 13743

10

13743 SHEET SET.DWG



DETENTION CALCULATIONS

PREDEVELOPMENT FLOW RATE CALCULATION (100-YEAR STORM)
Q100 =CIA x 1.00 PK
A = 17.4 ACRES
C = 0.30
TC = 15 MIN
+ 390 LF GRASS @ 0.5 FPS
+ 875 LF DITCH @ 1.5 FPS
+ 70 LF SEWER @ 3.0 FPS
= 38.1 MIN
I100 = 5.828 IN/HR
MAX ALLOWABLE PER ADD DRAINAGE STUDY 0.74 X 17.4 = 12.88 CFS

PROP.OSED CONDITION 100-YEAR STORM
Q=CIA X 1.25 PK
A = 17.4 ACRES
C = 0.65
TC = 15 MIN + 130 LF GRASS @ 0.5
+ 90 LF GUTTER @ 2.0 FPS
+ 1370 LF SEWER @ 3.0 FPS
+ 175 LF POND @ 1.5 FPS
= 29.6 MIN
I100 = 6.535 IN/HR
Q100 = 0.65 X 6.535 X 17.4 X 1.25 = 92.385 CFS

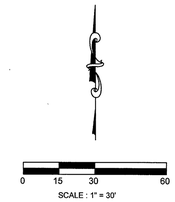
DETENTION REQUIRED = 450,410 CF = 10.34 AC-FT

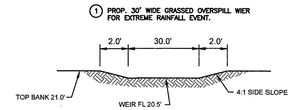
POND INFORMATION

TOP BANK ELEVATION= 21.0'
AREA TOPBANK= 74,000 SF
BOTTOM ELEVATION= 5.0'
AREA BOTTOM= 22,100 SF

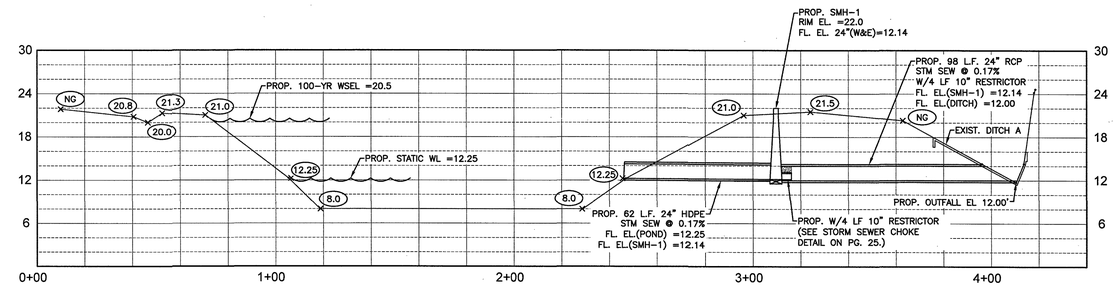
AREA @ 100-YEAR WSEL= 20.5' = 71,900 SF
AREA @ STATIC WATER LEVEL (EL=12.25')= 38,900 SF
AVERAGE DETENTION AREA= 55,400
DETENTION DEPTH= 8.25'

DETENTION PROVIDED= 457,050 CF = 10.5 AC-FT





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



SECTION "A"
SCALE: HORZ. 1" =30'
VERT. 1" =10'

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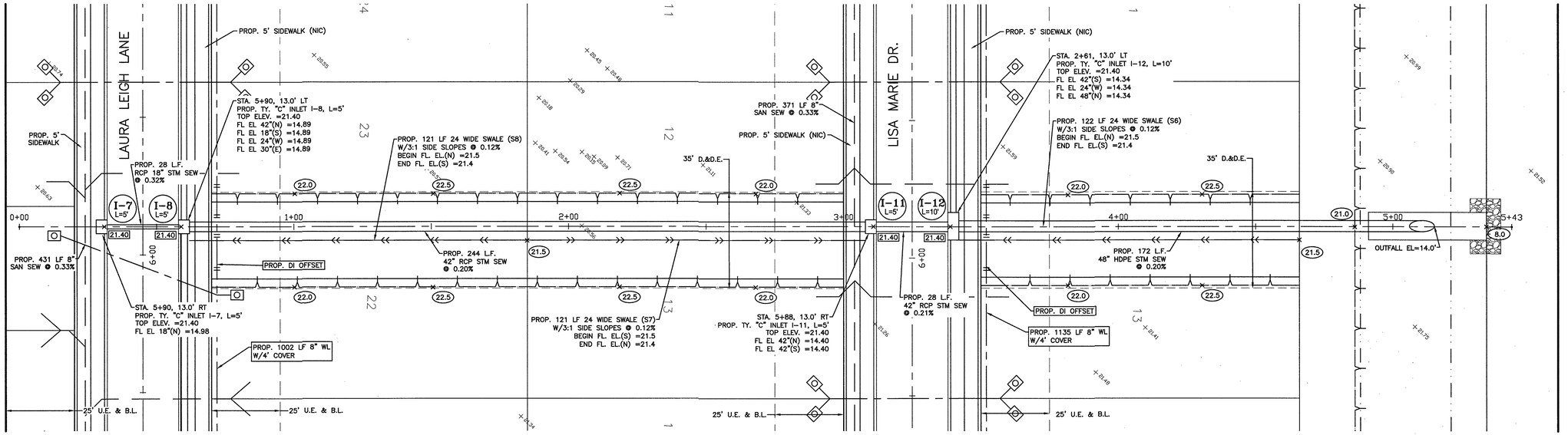
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PROFILE:
HORIZONTAL:
VERTICAL:

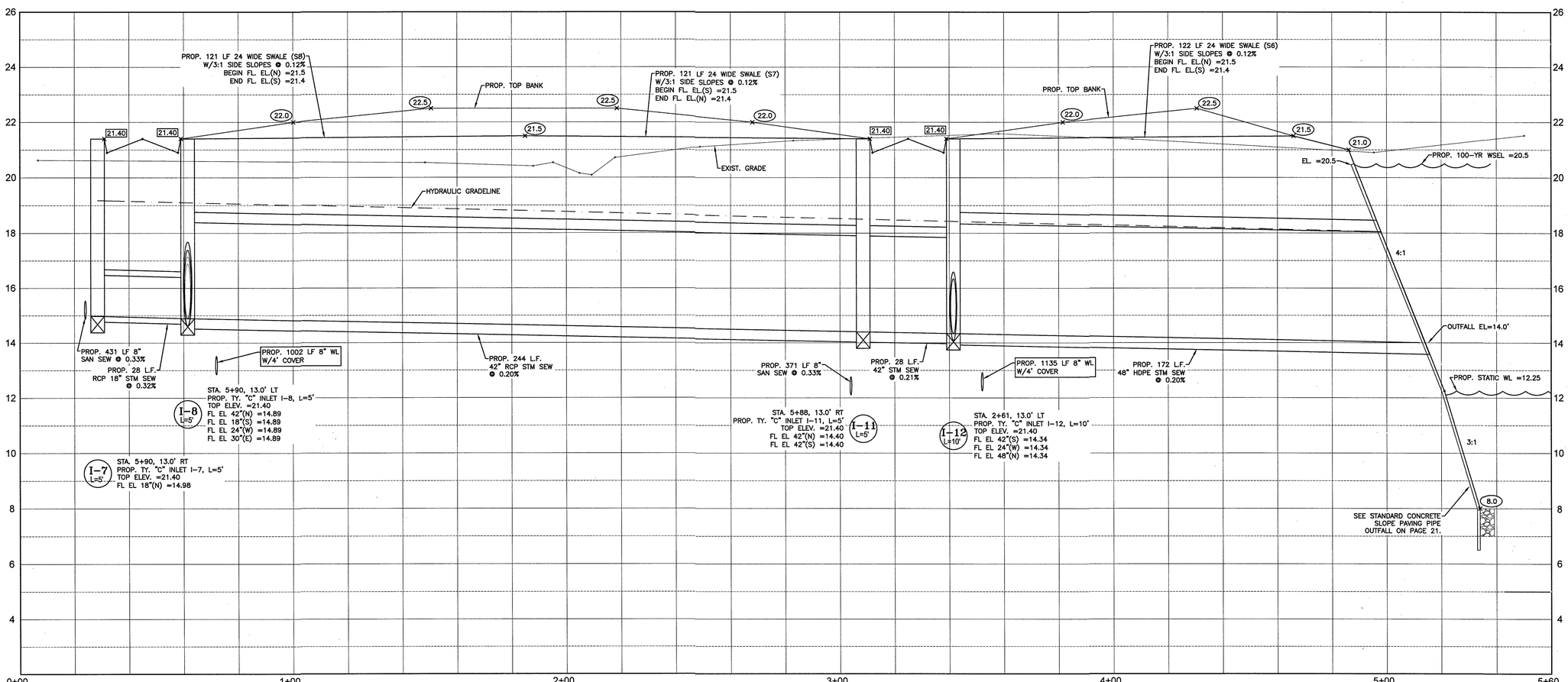
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

DETENTION POND DESIGN
AND CROSS SECTION

PROJECT NO. 13743

11
13743 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)
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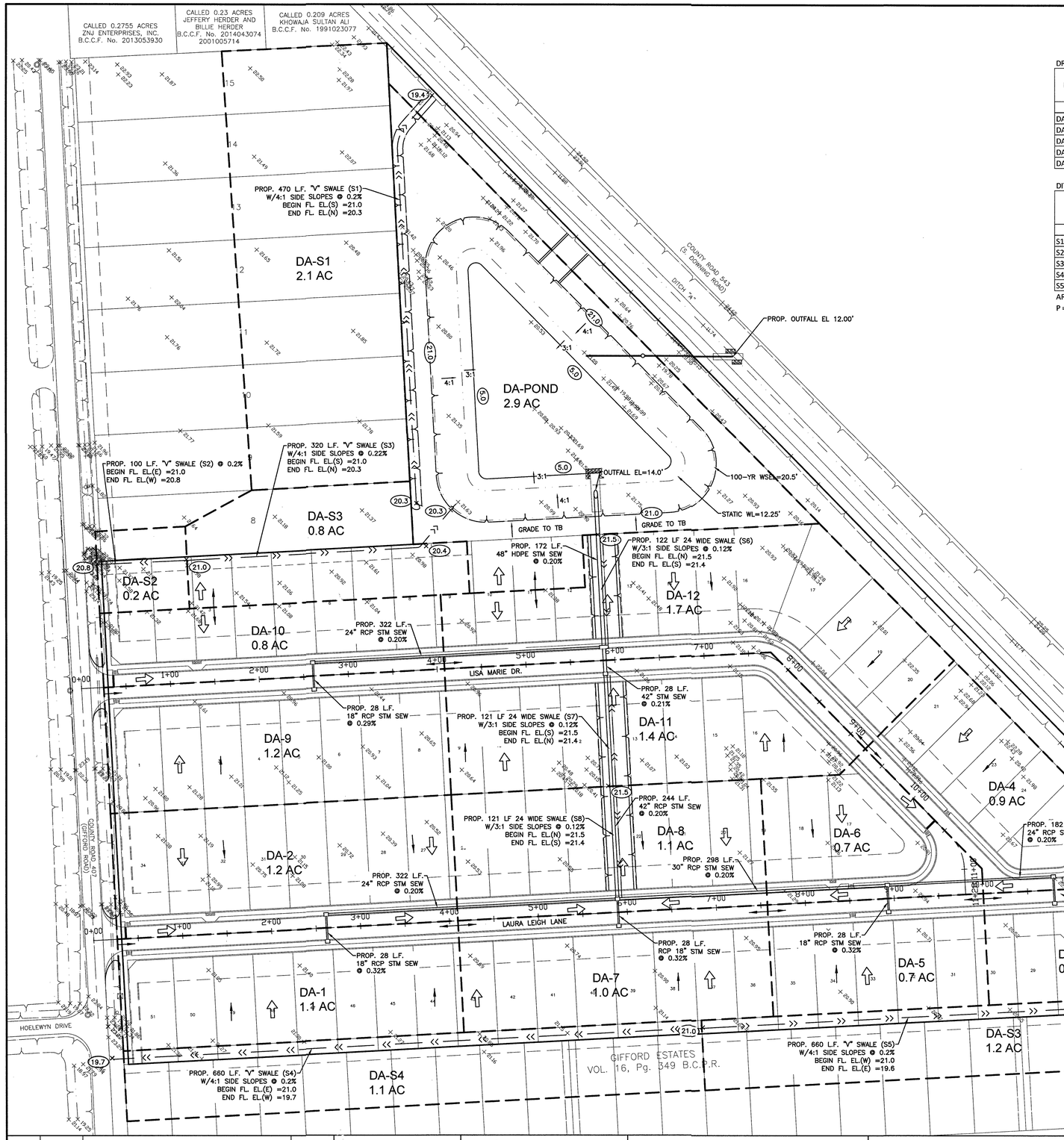
PLAN: 1" = 20'
PROFILE:
HORIZONTAL: 1" = 2'
VERTICAL: 1" = 20'

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
OUTFALL 1

PROJECT NO. 13743

13743 SHEET SET.DWG



5-YEAR DRAINAGE ANALYSIS FOR SWALES, S1 TO S5

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 OUT	2.10	0.65	15	5.657	2.10	0.65	7.72
DA-S2	S2 TO OUT	0.20	0.65	15	5.657	0.20	0.65	0.74
DA-S3	S3 TO OUT	0.80	0.65	15	5.657	0.80	0.65	2.94
DA-S4	S4 TO OUT	1.10	0.65	15	5.657	1.10	0.65	4.04
DA-S5	S5 TO OUT	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	21.3	19.9	1.4	0	7.84	11.2	0.7	0.025	0.002	16.5	7.72
S2	21.5	20.9	0.6	0	1.44	4.8	0.3	0.025	0.002	1.7	0.74
S3	21.5	20.7	0.8	0	2.56	6.4	0.4	0.025	0.002	3.7	2.94
S4	21.2	20.3	0.9	0	3.24	7.2	0.45	0.025	0.002	5.1	4.04
S5	21.2	20.3	0.9	0	3.24	7.2	0.45	0.025	0.002	5.1	4.41

AREA= 4*D^2 Q=1.49/N*R^(2/3)*S^(1/2)*A

P = 8*D (APPROXIMATE)

100-YEAR DRAINAGE ANALYSIS FOR SWALES

D.A. NO.	RUN	AREA (AC)	C	Tc (MIN)	I 100-YR (in/hr)	CUMM AREA (AC)	WEIGHTED C	Q 5-YR (CFS)
DA-S6	S1 TO OUT	13.20	0.65	15	8.395	13.20	0.65	72.03
DA-S7	S2 TO OUT	13.20	0.65	15	8.395	13.20	0.65	72.03
DA-S8	S3 TO OUT	13.20	0.65	15	8.395	13.20	0.65	72.03

SWALES S6, S7, AND S8 WILL SERVE AN OVERFLOW WEIR FOR 100 YEAR STORM INTO DETENTION POND.

TRAPEZOIDAL WEIR FORMULA

$$Q = 3.247LH^{1.48} - \frac{0.566L^{1.9}}{1 + 2L^{1.8}}H^{1.9} + 0.609H^{2.5}$$

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=	29	FT
H=	1	FT
Q=	94.38	CFS

EXCEEDS 100 YEAR STORM = 92.385 CFS

0 30 60 120

SCALE : 1" = 60'

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ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN: 1" = 60'

PROFILE:

HORIZONTAL:

VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

DRAINAGE ANALYSIS

PROJECT NO. 13743

17

13743 SHEET SET.DWG

CALLED 0.2755 ACRES
ZNJ ENTERPRISES, INC.
B.C.C.F. No. 2013053930

CALLED 0.23 ACRES
JEFFERY HERDER AND
BILLIE HERDER
B.C.C.F. No. 2014043074
2001005714

CALLED 0.209 ACRES
KHOWAJA SULTAN ALI
B.C.C.F. No. 1991023077

ALL FINISHED FLOORS SHALL BE ELEVATION 23.00'
OR 18" ABOVE PROPOSED TOP OF CURB, WHICHEVER IS HIGHER

PROP. 470 L.F. "V" SWALE (S1)
W/4:1 SIDE SLOPES @ 0.2%
BEGIN FL. EL.(S) =21.0
END FL. EL.(N) =20.3

PROP. SMH-1
RIM EL. =22.0
FL. EL. 24"(W&E)=12.14

PROP. 98 L.F. 24" RCP
STM SEW @ 0.17%
W/4 LF 10" RESTRICTOR
FL. EL.(SMH-1) =12.14
FL. EL.(DITCH) =12.00

PROP. OUTFALL EL. =12.00'

DETENTION

PROP. 62 L.F. 24" HDPE
STM SEW @ 0.17%
FL. EL.(POND) =12.25
FL. EL.(SMH-1) =12.14

100-YR WSEL=20.5'

STATIC WL=12.25'

PROP. 320 L.F. "V" SWALE (S3)
W/4:1 SIDE SLOPES @ 0.22%
BEGIN FL. EL.(S) =21.0
END FL. EL.(N) =20.3

PROP. 100 L.F. "V" SWALE (S2) @ 0.2%
BEGIN FL. EL.(E) =21.0
END FL. EL.(W) =20.8

PROP. 122 LF 24 WIDE SWALE (S6)
W/3:1 SIDE SLOPES @ 0.12%
BEGIN FL. EL.(N) =21.5
END FL. EL.(S) =21.4

PROP. 121 LF 24 WIDE SWALE (S7)
W/3:1 SIDE SLOPES @ 0.12%
BEGIN FL. EL.(S) =21.5
END FL. EL.(N) =21.4

PROP. 121 LF 24 WIDE SWALE (S8)
W/3:1 SIDE SLOPES @ 0.12%
BEGIN FL. EL.(N) =21.5
END FL. EL.(S) =21.4

PROP. 50 LF 18" RCP
CULVERT W/4:1 SETS
FL.EL.(N) =20.7
FL.EL.(S) =20.6
MATCH TO EXIST
EL.=23.2±

PROP. 50 LF 24" RCP
CULVERT W/ 4:1 SETS
FL.EL.(N)= 20.1
FL.EL.(S)= 20.0
MATCH TO EXIST
EL.=23.2±

PROP. 660 L.F. "V" SWALE (S4)
W/4:1 SIDE SLOPES @ 0.2%
BEGIN FL. EL.(E) =21.0
END FL. EL.(W) =19.7

PROP. 660 L.F. "V" SWALE (S5)
W/4:1 SIDE SLOPES @ 0.2%
BEGIN FL. EL.(W) =21.0
END FL. EL.(E) =19.6

LISA MARIE DR.

LAURA LEIGH LANE

COUNTY ROAD 143
(S. DOMINGO ROAD)

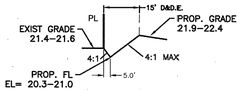
COUNTY ROAD 407
(GIFFORD ROAD)

HOELEWYN DRIVE

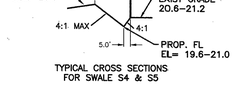
DITCH "A"

GIFFORD ESTATES
VOL. 16, Pg. 349 B.C.P.R.

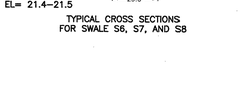
TYPICAL CROSS SECTIONS
FOR SWALE S1



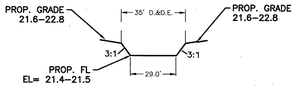
TYPICAL CROSS SECTIONS
FOR SWALE S2 & S3



TYPICAL CROSS SECTIONS
FOR SWALE S4 & S5



TYPICAL CROSS SECTIONS
FOR SWALE S6, S7, AND S8



0 30 60 120
SCALE : 1" = 60'

NO.	DATE	DESCRIPTION	APPROVED

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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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

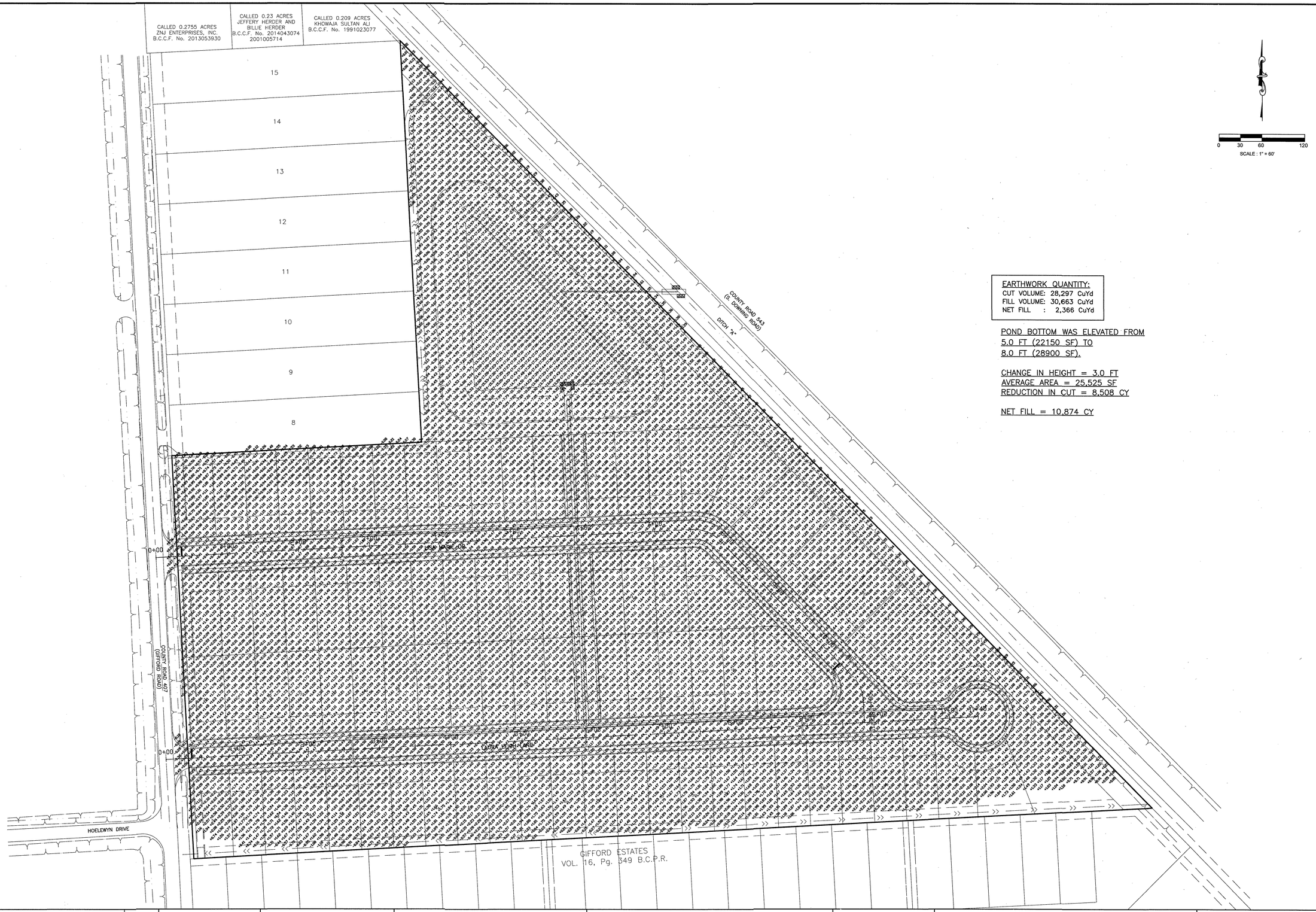
PLAN: 1" = 60'
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

GRADING PLAN

PROJECT NO. 13743

352
GRADING SHEET SET.DWG



0 30 60 120
SCALE : 1" = 60'

EARTHWORK QUANTITY:
CUT VOLUME: 28,297 CuYd
FILL VOLUME: 30,663 CuYd
NET FILL : 2,366 CuYd

POND BOTTOM WAS ELEVATED FROM
5.0 FT (22150 SF) TO
8.0 FT (28900 SF).

CHANGE IN HEIGHT = 3.0 FT
AVERAGE AREA = 25,525 SF
REDUCTION IN CUT = 8,508 CY

NET FILL = 10,874 CY

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
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DATE

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A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

CUT AND FILL PLAN

PROJECT NO. 13743

15

13743 SHEET SET.DWG

CALLED 0.2755 ACRES
ZNJ ENTERPRISES, INC.
B.C.C.F. No. 2013053930

CALLED 0.23 ACRES
JEFFERY HERDER AND
BILLIE HERDER
B.C.C.F. No. 2014043074
2001005714

CALLED 0.209 ACRES
KHOWAJA SULTAN ALI
B.C.C.F. No. 1991023077

15
14
13
12
11
10
9
8

COVER INTAKE W/ROCK BERM

DETENTION

COUNTY ROAD 643 (S. DOWNING ROAD)

DITCH "A"

STABILIZED CONSTRUCTION ENTRANCE

LISA MARIE DR.

LAURA LEIGH LANE

COUNTY ROAD 407 (GIFFORD ROAD)

HOELEWYN DRIVE

GIFFORD ESTATES
VOL. 16, Pg. 349 B.C.P.R.

1. SET POSTS AT REQUIRED SPACING.
2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
3. ATTACH FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.
4. BACKFILL AND COMPACT THE EXCAVATED SOIL.

3' MAX (SEE NOTE 1)

EXTENSION OF FABRIC INTO TRENCH
FILTER FABRIC
FLOW

ALTERNATE V-TRENCH
EXTENSION OF FABRIC INTO TRENCH
4" MIN
15"

CONSTRUCTION NOTES:

1. 1 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

FILTER FABRIC FENCE

WOOD OR METAL STAKE
INLET
FILTER FABRIC
4-24 INCHES
EXTENSION OF FABRIC INTO TRENCH
WIRE
POST
FILTER FABRIC
FLOW
SECTION A
PLAN

SILT FENCE PROTECTION BARRIER

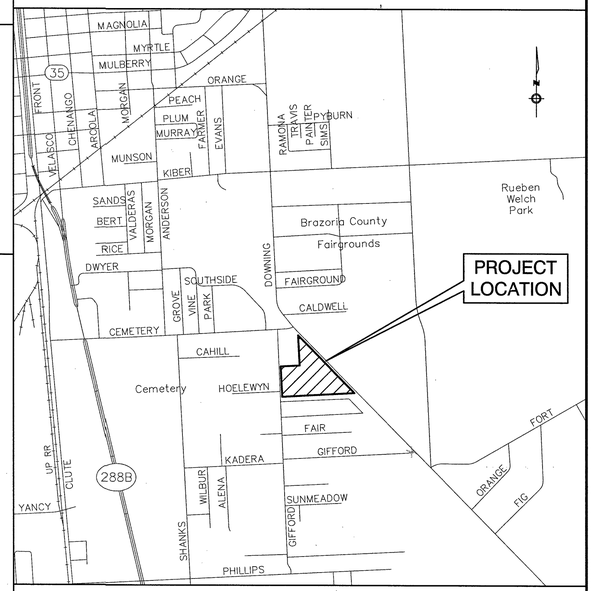
LEGEND

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

0 30 60 120
SCALE : 1" = 60'

NOTE:
CONTRACTOR TO SOD (18" BEHIND B.C.) OR INSTALL SILT FILTER FABRIC BEHIND BACK OF CURB AFTER ROAD PAVING.

GENERAL LOCATION MAP



PROJECT/SITE INFORMATION

PROJECT NAME: GIFFORD MEADOWS SUBDIVISION

PROJECT ADDRESS/LOCATION: GIFFORD ROAD NEAR HOELEWYN DRIVE

CITY: ANGLETON STATE: TX. ZIP CODE: X

LATITUDE: 29°08'54" LONGITUDE: 95°24'58" COUNTY: BRAZORIA

NAME OF RECEIVING WATERS: GULF OF MEXICO

02/01/2021 — MONTH/DAY/YEAR — ESTIMATED CONSTRUCTION START DATE

07/01/2021 — MONTH/DAY/YEAR — ESTIMATED COMPLETION DATE

ESTIMATE OF AREA TO BE DISTURBED: 17.37 ACRES

ESTIMATE OF LIKELYHOOD OF DISCHARGE:

☐ UNLIKELY ☐ ONCE PER WEEK ☐ CONTINUAL
☒ ONCE PER MONTH ☐ ONCE PER DAY

ARE THERE ANY LISTED ENDANGERED OR THREATENED SPECIES, OR DESIGNATED CRITICAL HABITAT IN THE PROJECT AREA?

☐ YES ☒ NO

ELIGIBILITY WITH REGARD TO PROTECTION OF ENDANGERED SPECIES HAS BEEN SATISFIED THROUGH THE INDICATED SECTION OF PART 1.B.3.e.(2) OF THE PERMIT.

(a) ☒ (b) ☐ (c) ☐ (d) ☐

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ANGLETON, TEXAS 77515

SWPPP LAYOUT

PROJECT NO. 13743

13743 SHEET SET.DWG

1. SITE DESCRIPTION

A. NATURE OF THE CONSTRUCTION ACTIVITY:
GIFFORD MEADOWS SUBDIVISION ANGLETON, BRAZORIA COUNTY, TEXAS. BEING 17.37 ACRE DEVELOPED AREA WHICH WILL BE A RESIDENTIAL SUBDIVISION OF 85 LOTS (45' WIDE USUALLY). CONSTRUCTION WILL INCLUDE UNDERGROUND UTILITIES, STORM SEWERS, CONCRETE ROADWAYS WITH CURBS, AND DETENTION POND.

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 AND WILL 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 GIFFORD ROAD FOR INGRESS AND EGRESS. RUTTING DURING WET WEATHER WILL PROVIDE POTENTIAL FOR TRACKING MUD ALONG THE ROUTE.

C. TOTAL PROJECT AREA: 17.37 ACRES

D. TOTAL AREA TO BE DISTURBED: 17.37 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:
DRAINAGE WILL BE COLLECTED IN THE PROPOSED DETENTION POND WHICH WILL DRAIN THRU A RCP RESTRICTIVE OUTLET INTO DITCH A OF THE ANGLETON DRAINAGE DISTRICT. DITCH A OUTFALLS INTO THE BASTROP BAYOU WHICH WILL OUTFALL INTO THE GULF OF MEXICO.

AREAL EXTENT AND DESCRIPTION OF WETLAND OR SPECIAL AQUATIC SITE AT OR NEAR THE SITE WHICH WILL BE DISTURBED OR WHICH WILL RECEIVE DISCHARGES FROM DISTURBED AREAS OFTHE PROJECT.

NONE

H. REFER TO FEDERAL REGISTER, VOLUME 63, NO.128, MONDAY JULY 6, 1998, PAGES 36497 TO 36515 FOR REQUIREMENTS OF NPDES GENERAL PERMITS FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES IN REGION 6.

I. LISTED ENDANGERED OR THREATENED SPECIES OR CRITICAL HABITAT FOUND IN PROXIMITY TO THE CONSTRUCTION ACTIVITY:

NONE

J. PROPERTY LISTED OR ELIGIBLE FOR LISTING ON THE NATIONAL REGISTER OF HISTORIC PLACES:

NONE

2. CONTROLS

NARRATIVE - SEQUENCE OF CONSTRUCTION ACTIVITIES AND APPROPRIATE CONTROL MEASURES DURING CONSTRUCTION

THE ORDER OF CONSTRUCTION WILL BEGIN WITH STRIPPING OF ALL VEGETATION FROM THE WORK AREA.

1. 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. 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 WITH ROCK SEDIMENT BERM.
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 SWALES 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
SILT FENCES (REINFORCED)		X		
HAY BALES				
ROCK BERMS		X		
DIVERSION, INTERCEPTOR, OR PERIMETER DIKES				
DIVERSION, INTERCEPTOR, OR PERIMETER SWALES		X		
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

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SWPPP NARRATIVE

PROJECT NO. 13743

13743 SHEET SET.DWG

(1)

Drainage Analysis

Job # 13743 - Gilford Meadows 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

$i := 1..6$

$b_i :=$	$e_i :=$	$d_i :=$
71.0	0.774	8.4
70.1	0.752	7.7
96.6	0.770	17.2
89.2	0.736	10.4
86.5	0.709	10.0
120.2	0.741	21.3

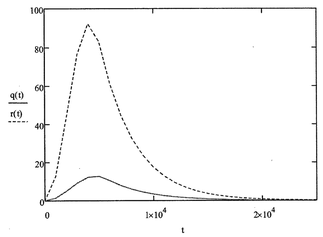
$T_0 := 38.1$ ENTER PREDEVELOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 5.828$ Predevelopment Intensity of interest

$C := .1016$ ENTER PREDEVELOPMENT C VALUE

$A := 17.4$ ENTER AREA

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

$$\frac{\int_0^{86400} v(t)\,dt}{43560} = 10.342$$

(2)

$C_f := 1.25$

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

$Q = 12.879$

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

$V = 8.317 \times 10^4$

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

$T := \frac{V}{1.39 \cdot Q}$ $T = 4.646 \times 10^3$ T = Time to peak, presented as a function of volume and peak flow and therefore indirectly related to time of concentration

$t := 0, 1000 .. 84000$

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

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

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

$Volume_{pre} := \int_0^{86400} q(t)\,dt$

$Volume_{pre} = 8.346 \times 10^4$

Hydrological and Hydraulic Impacts
Gilford Meadows Subdivision

Job # 13651

Brazoria County, Texas

A = 17.4 Acre Development

Pre Development:

C = 0.1016
TC = 38.1 Minutes, I = 5.828
Q = 100 Year Storm = 12.88 cfs
Q-Allowable is 0.74 cfs / ac. = 12.88 cfs

Post Development

C = 0.65
T/C = 29.6 Minutes, I= 6.535
Q = 100 Year Storm = 92.385 cfs

Required Detention:

10.34 acre - feet (450,410 c.f.)

Miguel Sauceda, P.E. August 4, 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 + 390 LF overland @ 0.50 FPS + 875 LF ditch @ 1.5 FPS + 70 LF sewer @ 3.0 FPS = 38.1 Minutes

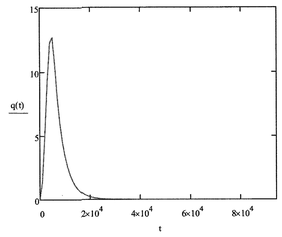
PROPOSED CONDITIONS

TC = 15 Minutes + 130 LF overland @ 0.5 FPS + 90 LF gutter @ 2.0 FPS + 1370 LF sewer @ 3.0 FPS + 175 pond @ 1.5 FPS = 29.6 Minutes

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

(3)

Predevelopment hydrograph



$T_0 := 29.6$ ENTER POST DEVLOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 6.535$ Post development I of interest

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

$C_f := 1.25$

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

$Q = 92.385$

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

$V = 5.321 \times 10^5$

$T := \frac{V}{1.39 \cdot Q}$ $T = 4.143 \times 10^3$

(4)

$t := 0, 1000 .. 25000$

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

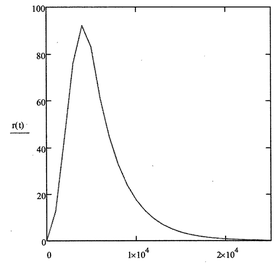
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$

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

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

$Volume_{post} = 5.34 \times 10^5$

Post development hydrograph



(5)

(6)

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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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

HYDROLOGIC CALCULATIONS

PROJECT NO. 13743

13743 SHEET SET.DWG

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 8/18/2020 4:10:56 PM

PROJECT NAME : 13743 GIFFORD
JOB NUMBER : 13743
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	0.65	1.10	15.00	15.00	6.64	0.000	4.751
A-2	0.65	1.20	15.00	15.00	6.64	0.000	5.182
A-3	0.65	0.80	15.00	15.00	6.64	0.000	3.455
A-4	0.65	0.90	15.00	15.00	6.64	0.000	3.887
A-5	0.65	0.70	15.00	15.00	6.64	0.000	3.023
A-6	0.65	0.70	15.00	15.00	6.64	0.000	3.023
A-7	0.65	1.00	15.00	15.00	6.64	0.000	4.319
A-8	0.65	1.10	15.00	15.00	6.64	0.000	4.751
A-9	0.65	1.20	15.00	15.00	6.64	0.000	5.182
A-10	0.65	0.80	15.00	15.00	6.64	0.000	3.455
A-11	0.65	1.40	15.00	15.00	6.64	0.000	6.046
A-12	0.65	1.70	15.00	15.00	6.64	0.000	7.342

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	22.50
A-2	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-3	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-4	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-5	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-6	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-7	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-8	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-9	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-10	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-11	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-12	Curb	10.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50

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	4.751	6.261	0.416	10.80	10.80
A-2	Curb	5.00	n/a	n/a	5.182	6.261	0.441	11.15	11.15
A-3	Curb	5.00	n/a	n/a	3.455	6.261	0.336	9.60	9.60
A-4	Curb	5.00	n/a	n/a	3.887	6.261	0.364	10.00	10.00
A-5	Curb	5.00	n/a	n/a	3.023	6.261	0.308	9.10	9.10
A-6	Curb	5.00	n/a	n/a	3.023	6.261	0.308	9.10	9.10
A-7	Curb	5.00	n/a	n/a	4.319	6.261	0.390	10.40	10.40
A-8	Curb	5.00	n/a	n/a	4.751	6.261	0.416	10.80	10.80
A-9	Curb	5.00	n/a	n/a	5.182	6.261	0.441	11.15	11.15
A-10	Curb	5.00	n/a	n/a	3.455	6.261	0.336	9.60	9.60
A-11	Curb	5.00	n/a	n/a	6.046	6.261	0.488	11.80	11.80
A-12	Curb	10.00	n/a	n/a	7.342	10.327	0.398	12.70	12.70

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	0.650	1.10	15.00	6.64	0.000	0.00	4.751
A-2	Curb	0.650	2.30	15.12	6.62	0.000	0.00	9.893
A-3	Curb	0.650	0.80	15.00	6.64	0.000	0.00	3.455
A-4	Curb	0.650	1.70	15.13	6.62	0.000	0.00	7.310
A-5	Curb	0.650	0.70	15.00	6.64	0.000	0.00	3.023
A-6	Curb	0.650	3.10	16.02	6.43	0.000	0.00	12.959
A-7	Curb	0.650	1.00	15.00	6.64	0.000	0.00	4.319
A-8	Curb	0.650	7.50	17.26	6.19	0.000	0.00	30.192
A-9	Curb	0.650	1.20	15.00	6.64	0.000	0.00	5.182
A-10	Curb	0.650	2.00	15.13	6.62	0.000	0.00	8.601
A-11	Curb	0.650	8.90	18.06	6.05	0.000	0.00	34.997
A-12	Curb	0.650	12.60	18.15	6.03	0.000	0.00	49.420
OUT	Outlt	0.650	12.60	18.15	6.03	0.000	0.00	49.420

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-1	A-2	15.62	15.53	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-2	A-8	15.53	14.89	Circ 1	0.00	2.00	322.00	0.20	0.013
3	A-3	A-4	15.96	15.87	Circ 1	0.00	1.50	28.00	0.32	0.013
4	A-4	A-6	15.87	15.49	Circ 1	0.00	2.00	188.00	0.20	0.013
5	A-5	A-6	15.58	15.49	Circ 1	0.00	1.50	28.00	0.32	0.013
6	A-6	A-8	15.49	14.89	Circ 1	0.00	2.50	298.00	0.20	0.013
7	A-7	A-8	14.98	14.89	Circ 1	0.00	1.50	28.00	0.32	0.013
8	A-8	A-11	14.89	14.40	Circ 1	0.00	3.50	244.00	0.20	0.013
9	A-9	A-10	15.06	14.98	Circ 1	0.00	1.50	28.00	0.29	0.013
10	A-10	A-12	14.98	14.34	Circ 1	0.00	2.00	322.00	0.20	0.013
11	A-11	A-12	14.40	14.34	Circ 1	0.00	3.50	28.00	0.21	0.013
12	A-12	OUT	14.34	14.00	Circ 1	0.00	4.00	172.00	0.20	0.013

Conveyance Hydraulic Computations. Tailwater = 12.250 (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	17.92	17.87	0.204	1.01	1.50	3.76	2.69	4.75	5.96	0.000
2	17.87	17.25	0.191	1.63	2.00	3.62	3.15	9.89	10.09	0.000
3	17.68	17.65	0.108	0.82	1.50	3.49	1.96	3.45	5.96	0.000
4	17.65	17.49	0.104	1.25	2.00	3.54	2.33	7.31	10.17	0.000
5	17.51	17.49	0.083	0.75	1.50	3.42	1.71	3.02	5.96	0.000
6	17.49	17.25	0.100	1.56	2.36	4.02	2.70	12.96	18.41	0.000
7	17.30	17.25	0.169	0.94	1.50	3.72	2.44	4.32	5.96	0.000
8	17.25	17.00	0.090	2.08	2.60	5.07	3.94	30.19	45.09	0.000
9	17.50	17.43	0.243	1.13	1.50	3.65	2.93	5.18	5.62	0.000
10	17.43	16.97	0.145	1.44	2.00	3.56	2.74	8.60	10.09	0.000
11	17.00	16.97	0.121	2.30	2.63	5.23	4.52	35.00	46.58	0.000
12	16.97	16.63	0.118	2.63	2.63	5.65	5.65	49.42	63.87	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	0.65	1.10	15.00	15.00	10.10	0.000	7.221
A-2	0.65	1.20	15.00	15.00	10.10	0.000	7.877
A-3	0.65	0.80	15.00	15.00	10.10	0.000	5.251
A-4	0.65	0.90	15.00	15.00	10.10	0.000	5.908
A-5	0.65	0.70	15.00	15.00	10.10	0.000	4.595
A-6	0.65	0.70	15.00	15.00	10.10	0.000	4.595
A-7	0.65	1.00	15.00	15.00	10.10	0.000	6.564
A-8	0.65	1.10	15.00	15.00	10.10	0.000	7.221
A-9	0.65	1.20	15.00	15.00	10.10	0.000	7.877
A-10	0.65	0.80	15.00	15.00	10.10	0.000	5.251
A-11	0.65	1.40	15.00	15.00	10.10	0.000	9.190
A-12	0.65	1.70	15.00	15.00	10.10	0.000	11.159

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	22.50
A-2	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-3	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-4	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-5	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-6	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-7	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-8	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-9	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-10	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-11	Curb	5.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50
A-12	Curb	10.00	n/a	0.50	2.00	0.50	2.00	0.014	1.50	0.50	22.50

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	7.221	6.718	0.539	12.65	12.65
A-2	Curb	5.00	n/a	n/a	7.877	6.718	0.594	13.05	13.05
A-3	Curb	5.00	n/a	n/a	5.251	6.261	0.445	11.20	11.20
A-4	Curb	5.00	n/a	n/a	5.908	6.261	0.481	11.70	11.70
A-5	Curb	5.00	n/a	n/a	4.595	6.261	0.407	10.65	10.65
A-6	Curb	5.00	n/a	n/a	4.595	6.261	0.407	10.65	10.65
A-7	Curb	5.00	n/a	n/a	6.564	6.718	0.489	12.20	12.20
A-8	Curb	5.00	n/a	n/a	7.221	6.718	0.539	12.65	12.65
A-9	Curb	5.00	n/a	n/a	7.877	6.718	0.594	13.05	13.05
A-10	Curb	5.00	n/a	n/a	5.251	6.261	0.445	11.20	11.20
A-11	Curb	5.00	n/a	n/a	9.190	6.718	0.718	13.85	13.85
A-12	Curb	10.00	n/a	n/a	11.159	13.436	0.422	14.90	14.90

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	0.650	1.10	15.00	10.10	0.000	0.00	7.221
A-2	Curb	0.650	2.30	15.11	10.06	0.000	0.00	15.045
A-3	Curb	0.650	0.80	15.00	10.10	0.000	0.00	5.251
A-4	Curb	0.650	1.70	15.12	10.06	0.000	0.00	11.117
A-5	Curb	0.650	0.70	15.00	10.10	0.000	0.00	4.595
A-6	Curb	0.650	3.10	15.99	9.81	0.000	0.00	19.758
A-7	Curb	0.650	1.00	15.00	10.10	0.000	0.00	6.564
A-8	Curb	0.650	7.50	17.13	9.49	0.000	0.00	46.263
A-9	Curb	0.650	1.20	15.00	10.10	0.000	0.00	7.877
A-10	Curb	0.650	2.00	15.10	10.07	0.000	0.00	13.087
A-11	Curb	0.650	8.90	17.92	9.29	0.000	0.00	53.727
A-12	Curb	0.650	12.60	18.00	9.27	0.000	0.00	75.892
OUT	Outlt	0.650	12.60	18.00	9.27	0.000	0.00	75.892

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-1	A-2	15.62	15.53	Circ 1	0.00	1.50	28.00	0.32	0.013
2	A-2	A-8	15.53	14.89	Circ 1	0.00	2.00	322.00	0.20	0.013
3	A-3	A-4	15.96	15.87	Circ 1	0.00	1.50	28.00	0.32	0.013
4	A-4	A-6	15.87	15.49	Circ 1	0.00	2.00	182.00	0.20	0.013
5	A-5	A-6	15.58	15.49	Circ 1	0.00	1.50	28.00	0.32	0.013
6	A-6	A-8	15.49	14.89	Circ 1	0.00	2.50	298.00	0.20	0.013
7	A-7	A-8	14.98	14.89	Circ 1	0.00	1.50	28.00	0.32	0.013
8	A-8	A-11	14.89	14.40	Circ 1	0.00	3.50	244.00	0.20	0.013
9	A-9	A-10	15.06	14.98	Circ 1	0.00	1.50	28.00	0.29	0.013
10	A-10	A-12	14.98	14.34	Circ 1	0.00	2.00	322.00	0.20	0.013
11	A-11	A-12	14.40	14.34	Circ 1	0.00	3.50	28.00	0.21	0.013
12	A-12	OUT	14.34	14.00	Circ 1	0.00	4.00	172.00	0.20	0.013

Conveyance Hydraulic Computations. Tailwater = 0.000 (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	20.63	20.50	0.472	1.50	1.50	4.09	4.09	7.22	5.96	0.000
2	20.50	19.08	0.442	2.00	2.00	4.79	4.79	15.05	10.09	0.000
3	20.29	20.22	0.250	1.10	1.50	3.78	2.97	5.25	5.96	0.000
4	20.22	19.77	0.241	1.88	2.00	3.63	3.54	11.12	10.17	0.000
5	19.82	19.77	0.191	0.98	1.50	3.74	2.60	4.59	5.96	0.000
6	19.77	19.08	0.232	2.19	2.50	4.34	4.03	19.76	18.41	0.000
7	19.18	19.08	0.390	1.50	1.50	3.71	3.71	6.56	5.96	0.000
8	19.08	18.56	0.211	3.06	3.50	5.18	4.81	46.26	45.09	0.000
9	19.71	19.56	0.562	1.50	1.50	4.46	4.46	7.88	5.62	0.000
10	19.56	18.48	0.335	2.00	2.00	4.17	4.17	13.09	10.09	0.000
11	18.56	18.48	0.285	3.50	3.50	5.58	5.58	53.73	46.58	0.000
12	18.48	18.00	0.279	4.00	4.00	6.04	6.04	75.89	63.87	0.000

END

NORMAL TERMINATION OF WINSTORM.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
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
121992
REGISTERED PROFESSIONAL ENGINEER

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

Date: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

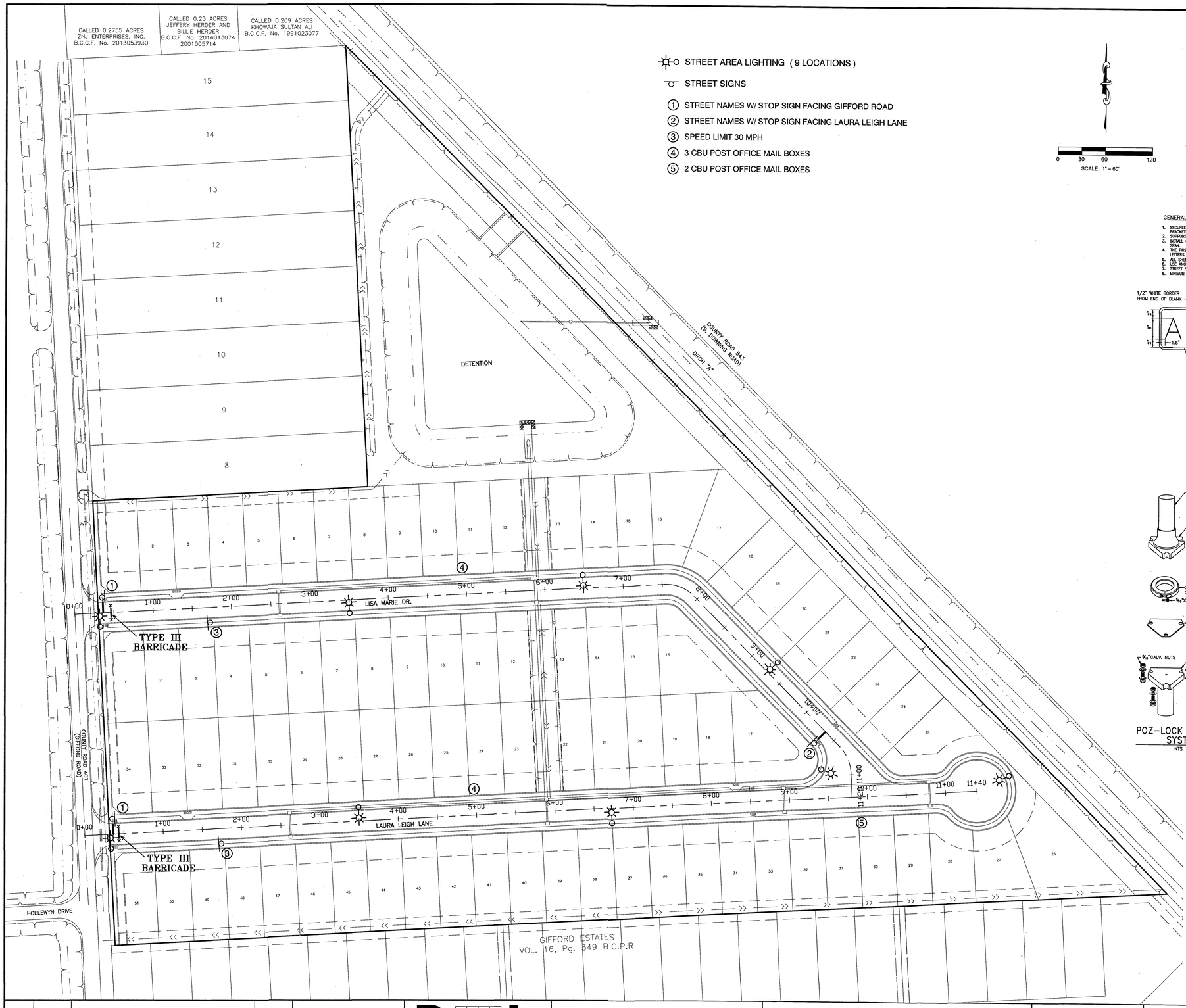
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WINDSTORM DATA

PROJECT NO. 13743

D&S SHEET SET.DWG



STREET AREA LIGHTING (9 LOCATIONS)

STREET SIGNS

1. STREET NAMES W/ STOP SIGN FACING GIFFORD ROAD
2. STREET NAMES W/ STOP SIGN FACING LAURA LEIGH LANE
3. SPEED LIMIT 30 MPH
4. 3 CBU POST OFFICE MAIL BOXES
5. 2 CBU POST OFFICE MAIL BOXES

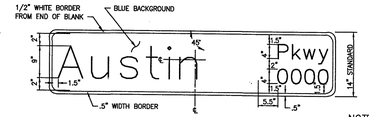
0 30 60 120

SCALE : 1" = 60'

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 "I.H." 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



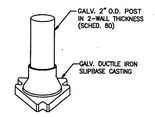
DETAIL OF SIGN FOR MAST ARM TRAFFIC SIGNAL POLES

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

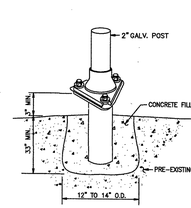
SL-ST-68



POZ-LOCK SLIPBASE SYSTEM

NTS

SL-ST-64



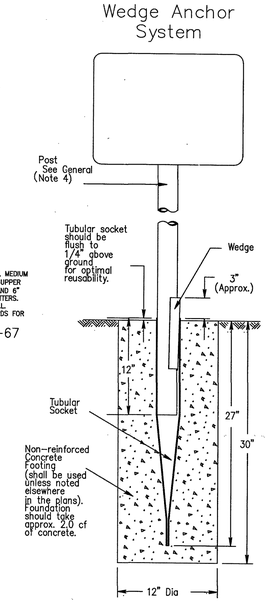
CONCRETE SIGN PEDESTAL SL-ST-65

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

LIGHTING PLAN PROVIDED IS SHOWN AS RECOMMENDED. FINAL LOCATIONS AND QUANTITIES ARE DETERMINED BY TEXAS NEW MEXICO POWER (TNMP).

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
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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: 12/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

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

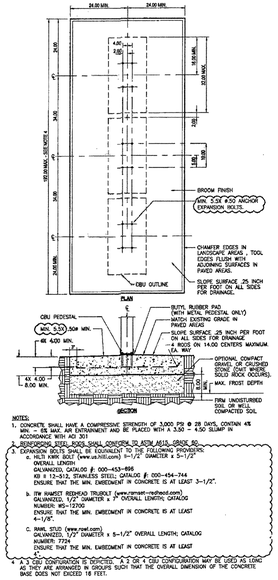
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PAVEMENT MARKING, STREET SIGN AND ROADWAY LIGHTING LAYOUT

PROJECT NO. 13743

SHEET SET.DWG

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 PROVISIONS:
   a. HILTI KWIK BOLT (www.us.hilti.com) 5–1/2" DIAMETER x 5–1/2" OVERALL LENGTH GALVANIZED, CATALOG #: 000–453–896 KB II 1/2–5/L 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: WS–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: 7224 ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 4–1/2".
4. A 2 CBU CONFIGURATION IS EFFECTIVE. 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 18 FEET.

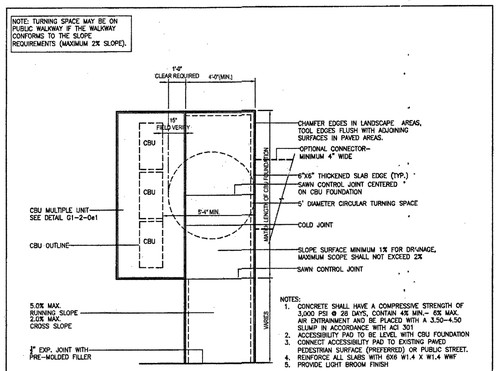
Detail	CLUSTER BOX UNIT (CBU) INSTALLATION - MULTIPLE UNIT	Fac.	Ch.	Sect.	Para.	Detail
					G1	2 – 0 e1
CAD File:	./uspe/library/details/G1-2-0e1	Scale:	1/2" = 1'-0"	0 1/2 1"	USPS SDL Issued:	10/1/2016
					Last Revised:	10/27/2016

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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.



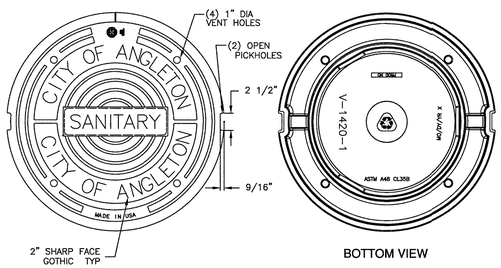
NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS, CONTAIN 4% MIN. – 6% MAX. AIR ENTRAINMENT AND BE PLACED WITH A 3.50–4.50 SLUMP IN ACCORDANCE WITH ACI 301
2. ACCESSIBILITY PAD TO BE LEVEL WITH CBU FOUNDATION
3. CONNECT ACCESSIBILITY PAD TO EXISTING PAVED PEDESTRIAN SURFACE (PREFERRED) OR PUBLIC STREET.
4. REINFORCE ALL SLABS WITH 6X6 W1.4 X W1.4 WWF
5. PROVIDE LIGHT BROOM FINISH

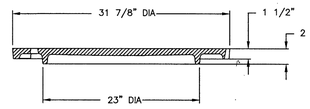
Paved Pedestrian Surface (if available) or Public Street

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

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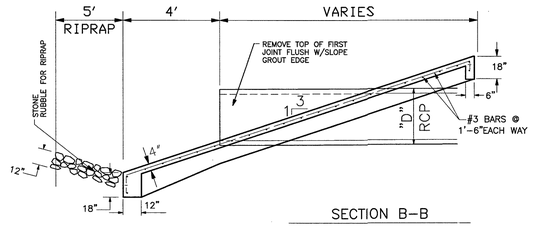
V1420-1 Cover





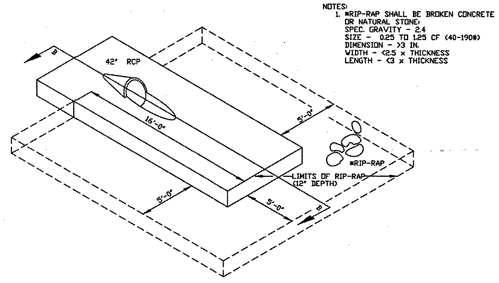
NOTES
1. MATERIAL SPECIFICATION SHALL BE ASTM A–48 CLASS 35B.
2. COVER TO BE SOLID, WITHOUT HOLES AND WITH NON–PENETRATION RIM ACCESS RECESSES ONLY.
3. HORIZONTAL BEARING SURFACES TO BE MACHINED AND SEALED AT INSTALLATION WITH WATERPROOF GREASE COATING.
4. LOAD RATING TO BE HEAVY–DUTY.
5. MANHOLE FRAMES AND COVERS SET IN FARM TO MARKET ROADS OR HIGHWAYS SHALL FOLLOW TXDOT SPECIFICATIONS. (UNLESS OTHERWISE NOTED BY ANGLETON)

1 — 32" Manhole Cover and Frame
Scale: NTS

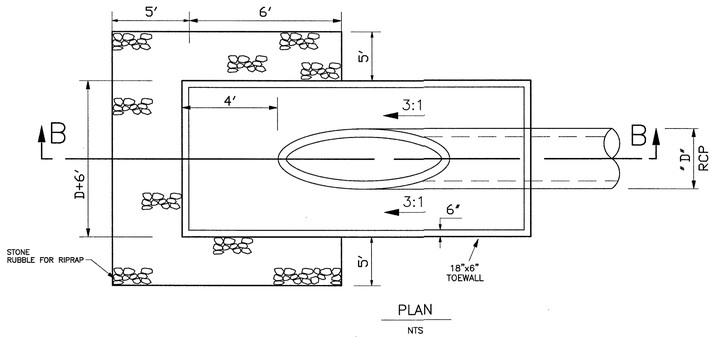


SECTION B–B

NOTES:
1. #RIP–RAP SHALL BE BROKEN CONCRETE OR NATURAL STONE:
   SPEC. GRAVITY = 2.4
   SIZE = 0.25 TO 1.25 CF (40–190#)
   DIMENSION = ⅓ IN.
   WIDTH = ≤2.5 x THICKNESS
   LENGTH = ≤3 x THICKNESS

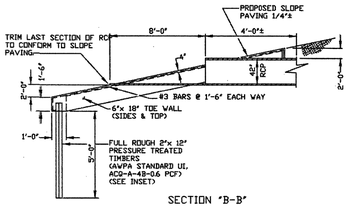


ISOMETRIC VIEW



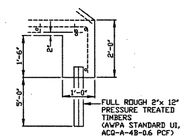
PLAN
NTS

VELASCO DRAINAGE OUTFALL CHANNEL



SECTION "B–B"

VELASCO DRAINAGE OUTFALL CHANNEL



INSET

STANDARD CONCRETE SLOPE PAVING PIPE OUTFALL
NTS

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
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CHECKED
DATE

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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

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HOUSTON TX. 77057

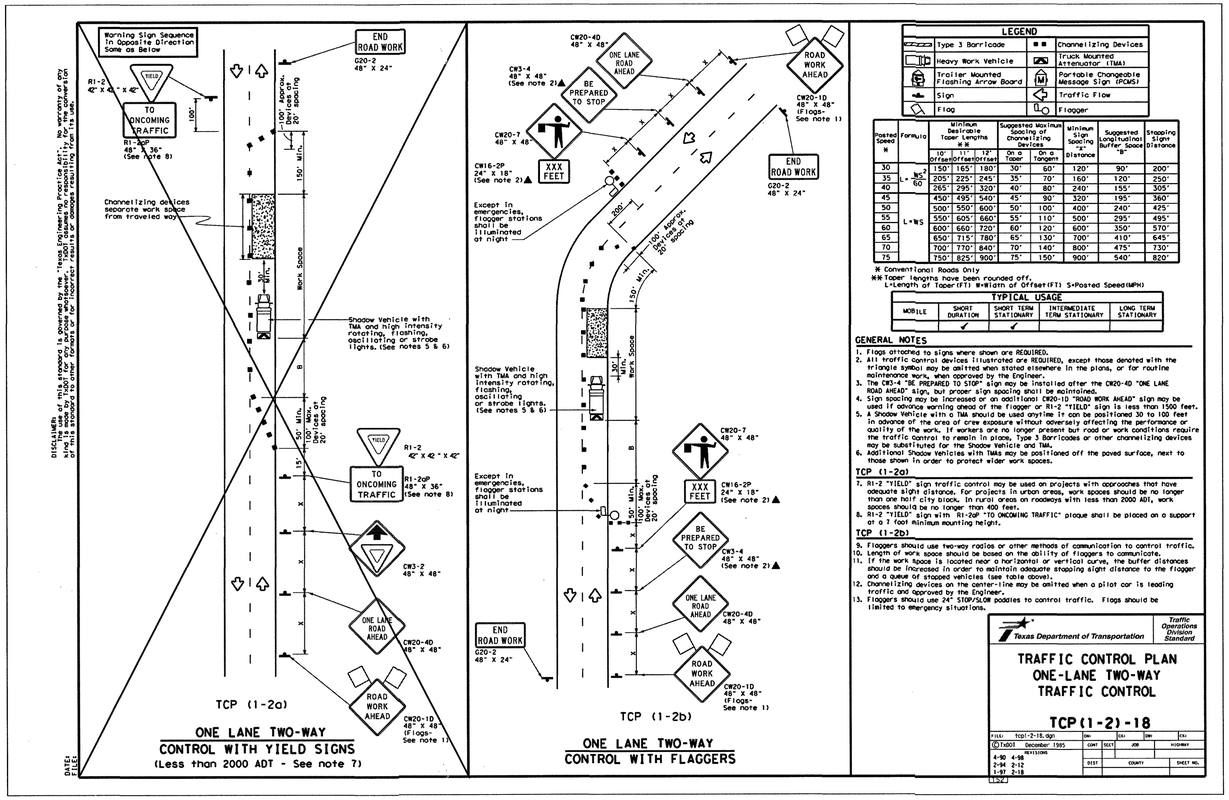
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

MISCELLANEOUS DETAILS

PROJECT NO. 13743

21



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

Posted Speed M	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		150'	165'	180'	30'	60'	120'	90'	200'
35	L = WS² / 60	205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55	L = WS	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	DIST	COUNTY		SHEET NO.
4-90 4-98				
2-94 2-12				
1-97 2-18				

WORK NARRATIVE / SEQUENCE
SANITARY SEWER INSTALLATION UNDER GIFFORD ROAD

1. Work to begin at 9:00 a.m. and end at 3:00 p.m.
2. Contractor to install approved Traffic Control Plan (TCP) devices prior to any work and remove TCP devices at the end of the day. The TCP applicable to site is TCP (1-2b) – 18: Traffic Control Plan One Lane Two Way Traffic Control.
3. Anticipated pavement section for Gifford Road:
   8" Aggregate Base with 2" HMAC Overlay (Field Verify)
4. Construction Sequence:

A. Saw cut Asphalt Pavement as needed to access manhole. Maintain vehicular access of one lane during work operation. Excavate HMAC, Base, and Subgrade to desire manhole depth. Install appropriate trench safety devices.

B. Core existing Sanitary MH wall for installation of the 8" sanitary sewer. Connection to MH will be made with a 4 ft joint. The connection will be grouted water tight.A road bore will be used to install the sanitary sewer under the existing road pavement.

C. Repair of the asphalt pavement shall follow.
1. Proof roll and compact the subgrade to 95% density within 2% of the optimum moisture content. Select fill may be placed back in the trench, and excavation spoils may be spread on site.
2. Verify existing thickness of asphalt pavement and road base. Place asphalt stabilized base and Type D Surface course ACP per TxDOT specifications. Item 345: Asphalt Stabilized Base. Item 340: Hot Mix Asphaltic Concrete Pavement.

D. Remove Traffic Control Devices

All shoulder work to be accomplished in accordance with TxDOT Standard Specifications for Item 351 – Flexible Pavement Structure Repair and in accordance with the Standard Specifications listed in Section 351.2 .

ITEM 351
FLEXIBLE PAVEMENT STRUCTURE REPAIR

351.1. Description. Repair localized sections of flexible pavement structure including subgrade, base, and surfacing as shown on the plans.

351.2. Materials. Furnish materials unless otherwise shown on the plans. Provide materials of the type and grade as shown on the plans and in accordance with:

- Item 132, "Embankment"
- Item 204, "Sprinkling"
- Item 247, "Flexible Base"
- Item 260, "Lime Treatment (Road Mixed)"
- Item 263, "Lime Treatment (Plant Mixed)"
- Item 275, "Cement Treatment (Road Mixed)"
- Item 276, "Cement Treatment (Plant Mixed)"
- Item 292, "Asphalt Treatment (Plant Mix)"
- Item 310, "Prime Coat"
- Item 316, "Surface Treatments"
- Item 330, "Limestone Rock Asphalt Pavement"
- Item 334, "Hot-Mix Cold-laid Asphalt Concrete Pavement"
- Item 340, "Hot Mix Asphalt."

For asphalt concrete materials, Contractor testing and bonus and penalty provisions will be waived unless otherwise shown on the plans.

351.3. Equipment. Furnish equipment in accordance with pertinent Items. Use of a motor grader will be permitted for asphalt concrete pavement unless otherwise shown on the plans.

351.4. Work Methods. Repair using one or more of the following operations as shown on the plans. For Contracts with callout work, begin physical repair within 24 hr. of notification, unless otherwise shown on the plans. Cut neat vertical faces around the perimeter of the work area when removing pavement structure layers. Removed materials are the property of the Contractor unless otherwise shown on the plans. Dispose of removed material in accordance with federal, state, and local regulations. Provide a smooth line and grade conforming to the adjacent pavement.

A. Removing Pavement Structure. If necessary, remove adjacent soil and vegetation to prevent contamination of the repair area, and place it in a windrow. Do not damage adjacent pavement structure during repair

operations. If subgrade work is required, remove flexible pavement structure layers from work area.

B. Preparing Subgrade. Fill holes, ruts, and depressions with approved material. If required, thoroughly wet, reshape, and compact the subgrade as directed.

Where subgrade has failed, remove unstable subgrade material to the depth directed and replace with an approved material.

C. Mixing and Placing Base Material. Place, spread, and compact material in accordance with the applicable Item to the required or directed depth. When bituminous material is to remain in pavement structure, pulverize to a maximum dimension of 2-1/2 in. and uniformly mix with existing base to the depth shown on the plans.

1. Flexible Base. Use existing base and add new flexible base as required in accordance with Item 247, "Flexible Base," and details shown on the plans to achieve required section.
2. Lime-Stabilized Base. Use existing base, add new flexible base, and stabilize with a minimum lime content of 3% by weight of the total mixture. Construct in accordance with Item 260, "Lime Treatment (Road Mixed)," and Item 263, "Lime Treatment (Plant Mixed)," and details shown on the plans to achieve required section.
3. Cement-Stabilized Base. Use existing base, add flexible base, and stabilize with a minimum cement content of 4% by weight of the total mixture. Construct in accordance with details shown on the plans and Item 275, "Cement Treatment (Road Mixed)," or Item 276, "Cement Treatment (Plant Mixed)," to achieve required section.
4. Asphalt-Stabilized Base. Place asphalt-stabilized base in accordance with details shown on the plans and Item 292, "Asphalt Treatment (Plant Mix)," or Item 340, "Hot Mix Asphalt," to achieve required section.
5. Limestone Rock Asphalt. Place in accordance with Item 330, "Limestone Rock Asphalt Pavement," and details shown on the plans to achieve required section.

D. Curing Base. Cure in accordance with the appropriate Item unless otherwise directed or approved. Maintain completed base sections until surfacing.

E. Surfacing. Apply surfacing with materials as shown on the plans to the completed base section.

1. Prime Coat. Protect the compacted, finished, and cured flexible, lime-stabilized, or cement-stabilized base mixtures with a prime coat of the type and grade shown on the plans. Apply the prime coat at the rate shown on the plans.
2. Surface Treatments. Apply surface treatment with the type and grade of asphalt and aggregate as shown on the plans in accordance with Item 316, "Surface Treatments."
3. Asphalt Concrete Pavement. Apply tack coat of the type and grade and at the rate shown on the plans unless otherwise directed. Construct in accordance with Item 330, "Limestone Rock Asphalt Pavement," Item 334, "Hot-Mix Cold-laid Asphalt Concrete Pavement," or Item 340, "Hot Mix Asphalt," to achieve required section.

F. Finishing. Regrade and compact disturbed topsoil. Clean roadway surface after repair operations.

351.5. Measurement. This Item will be measured by the square yard. In areas where material is excavated, as directed, to depths greater than those specified on the plans, measurement will be made by dividing the actual depth of such area by the plan depth and then multiplying this figure by the area in square yards of work performed. Calculations for each repaired area will be rounded up to the nearest 1/10 sq. yd. At each repair location, the minimum area for payment purposes will be 1 sq. yd.

For Contracts with callout work, the minimum quantity per callout is 5 sq. yd., unless otherwise shown on the plans.

351.6. Payment. The work performed and materials furnished in accordance with this Item and measured as provided under "Measurement" will be paid for at the unit price bid for "Flexible Pavement Structure Repair" of the specified depth. This price is full compensation for scarifying, removing, hauling, spreading, disposing of, and stockpiling existing pavement structure; removing objectionable or unstable material; furnishing and placing materials; maintaining completed section before surfacing; applying tack or prime coat; hauling, sprinkling, spreading, and compacting; and equipment, labor, tools, and incidentals.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
CHECKED
DATE

B&L
BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST, ANGLETON, TEXAS 77515
PHONE: (979) 849-6581 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: 12/15/20

OWNER:
DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

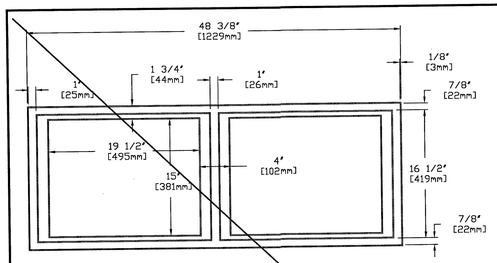
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

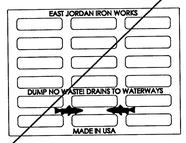
TRAFFIC CONTROL PLAN
FOR GIFFORD ROAD

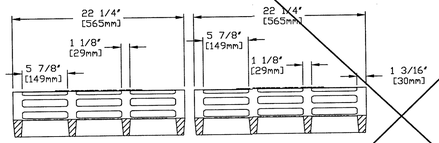
PROJECT NO. 13743

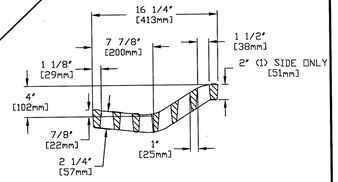
13743 SHEET SET.DWG

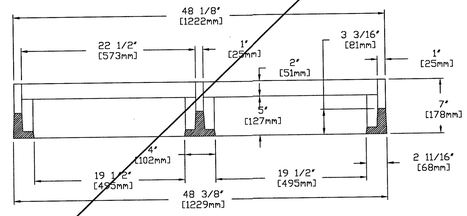


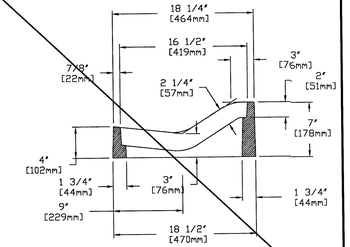
GRATE COVER IS EJIW OR APPROVED EQUAL.







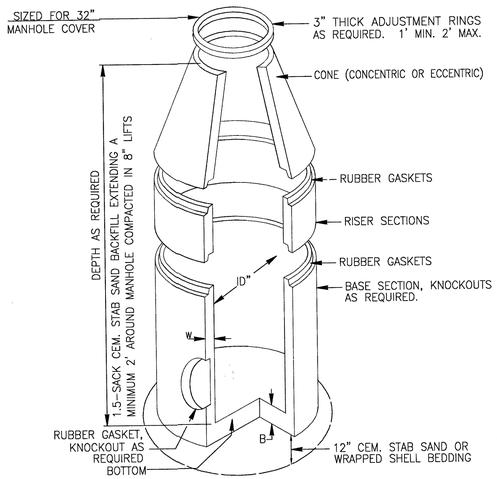




CATCH BASIN ASSEMBLY

N.T.S.

SL-DR-03



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.

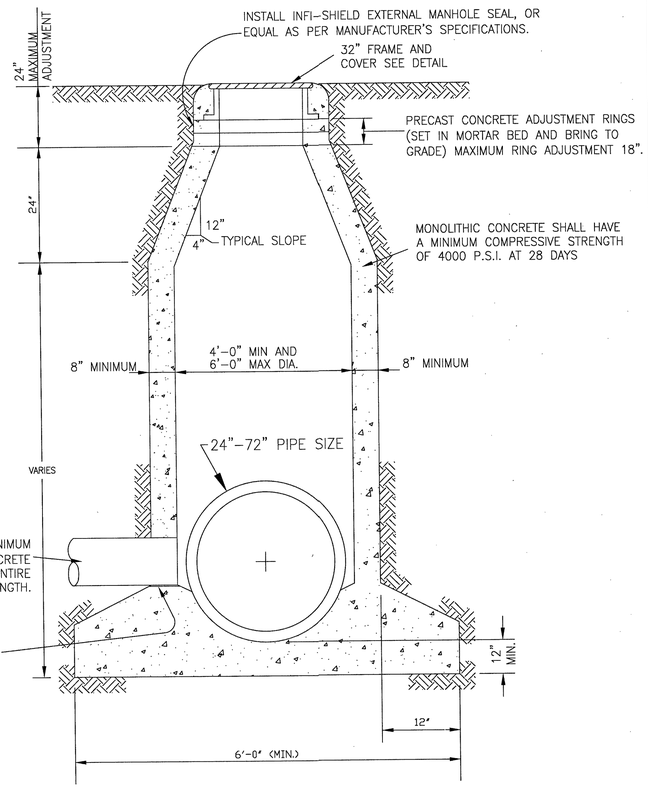
REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-478.

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



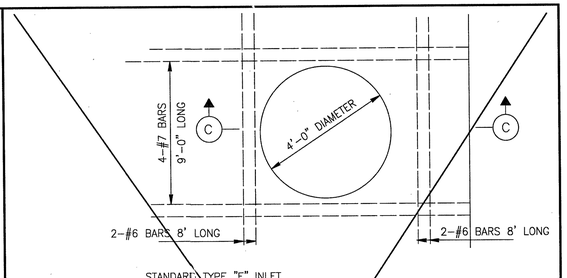
TYPE "C" CAST-IN-PLACE MANHOLE

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).

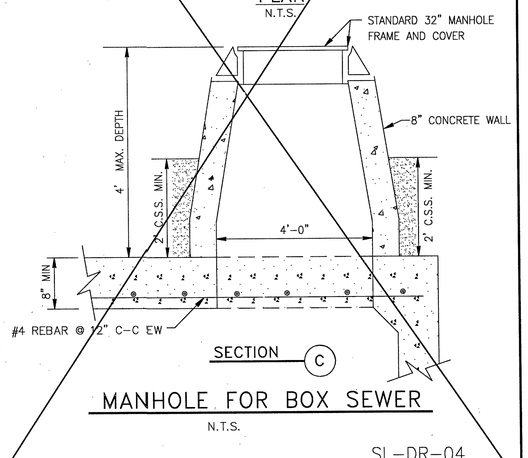
SL-DR-01



STANDARD TYPE "E" INLET MAY BE USED AT TOP OF MANHOLE.

PLAN

N.T.S.



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.
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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

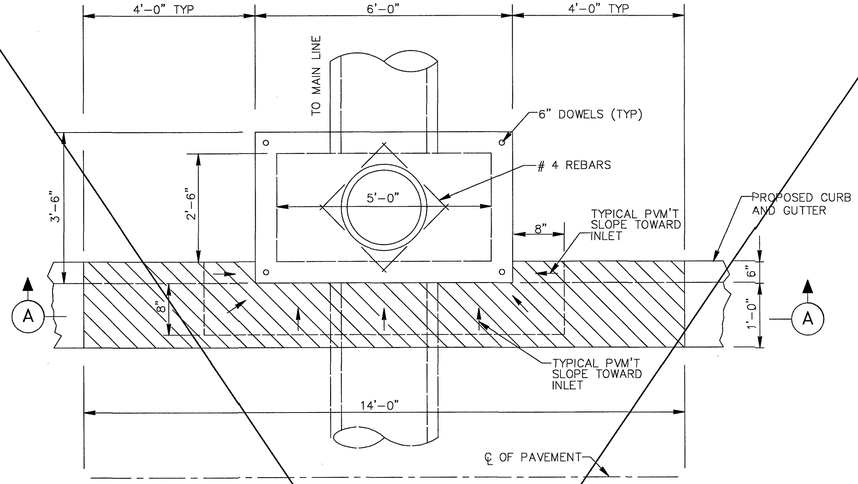
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

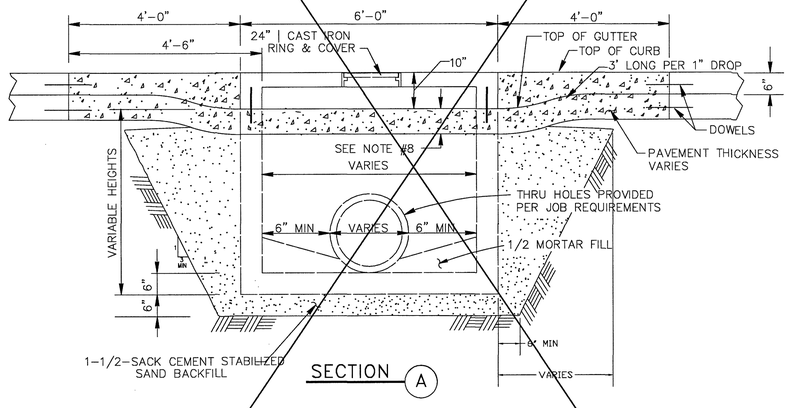
STORM SEWER MANHOLE CONSTRUCTION DETAILS
SL-03

PROJECT NO. 13743

13743 DETAIL SET.DWG



PLAN



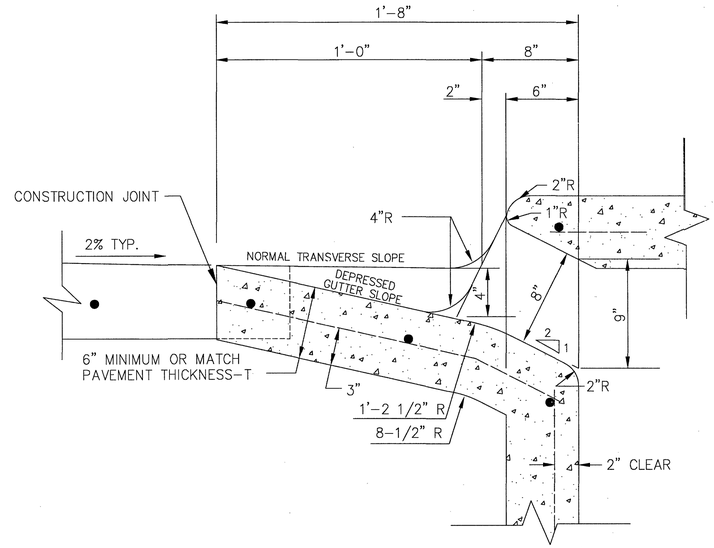
SECTION (A)

TYPE "H-2" INLET

SL-DR-25

NOTES:

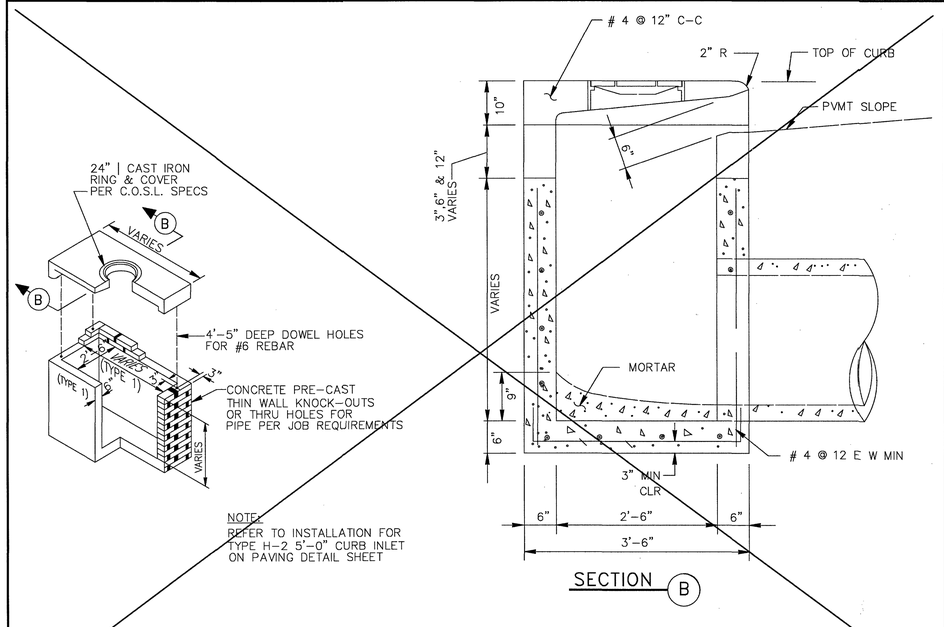
1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL. A PLAN PREPARED BY THE MANUFACTURER MUST BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION. THE PLAN SHOULD DETAIL CONNECTIONS 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.

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

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

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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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER INLET CONSTRUCTION DETAILS II
SL-08

PROJECT NO. 13743

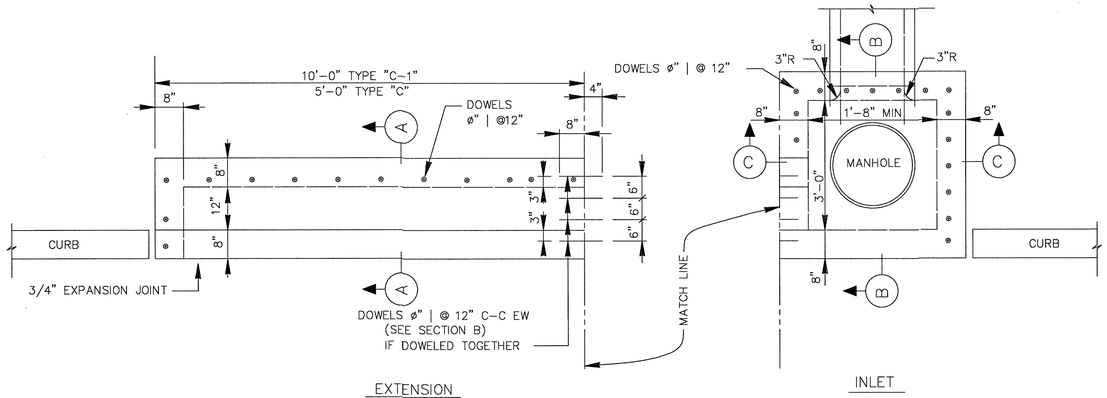
S:\...\STORM SEWER INLET CONSTRUCTION DETAILS II SL-08.DWG

GENERAL NOTES:

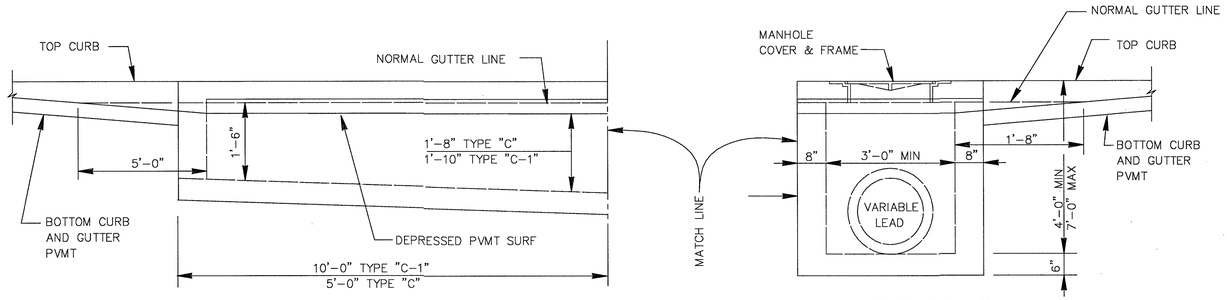
TYPE "C" INLET WITH ONE EXTENSION
TYPE "C-1" INLET WITH DOUBLE EXTENSION
TYPE "C-2" INLET WITH EXTEN. ON EACH SIDE
TYPE "C-2A" INLET WITH NO EXTENSION

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.



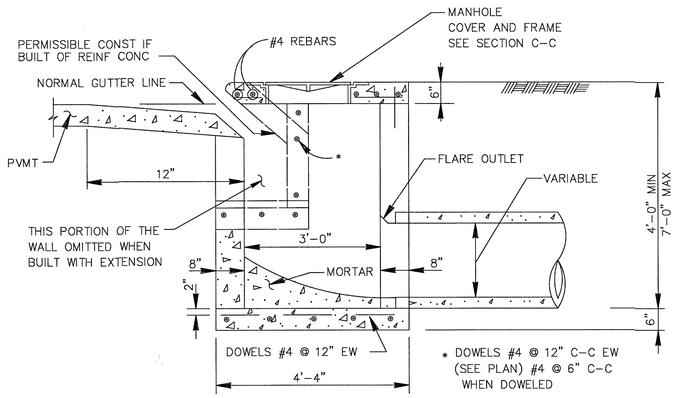
PLAN



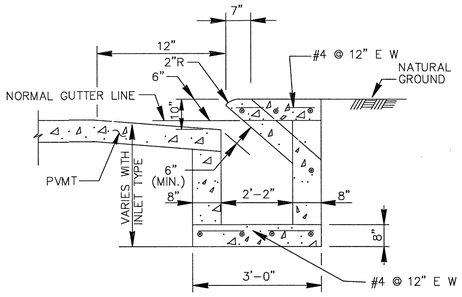
PLAN

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

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

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Date: 9/15/20

OWNER:
DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

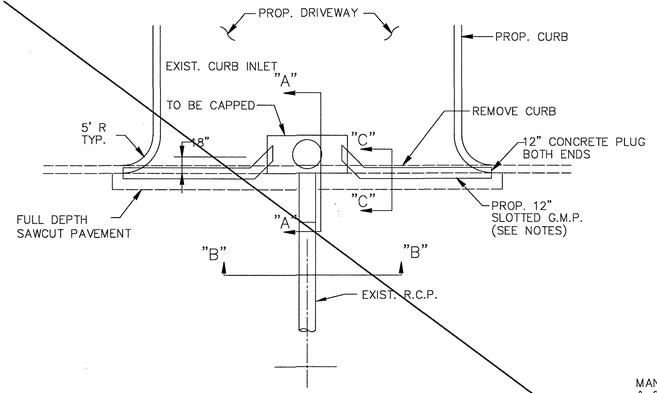
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

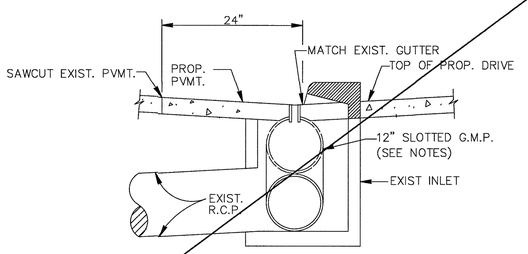
STORM SEWER INLET
CONSTRUCTION DETAILS III
SL-09

PROJECT NO. 13743

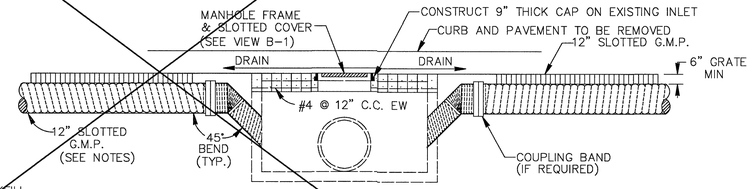
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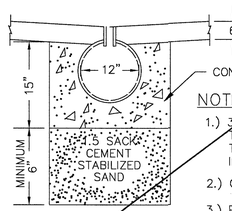
SLOTTED PIPE INSTALLATION
FOR DRIVEWAY CONSTRUCTION



SECTION A–A



SECTION B–B



SECTION C–C

NOTES

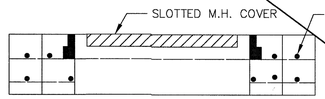
1.) 30 FEET OF SLOT IS THE MINIMUM REQUIREMENT TO REPLACE A TYPE B–B INLET.

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.

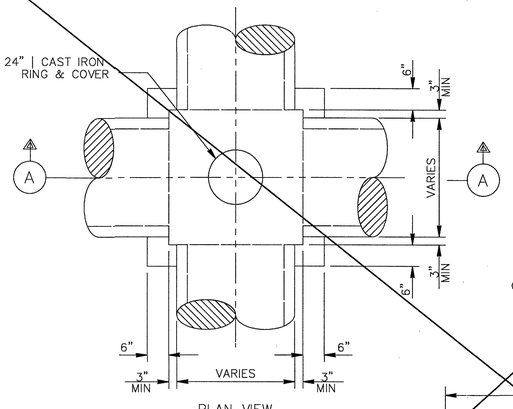


VIEW B–1

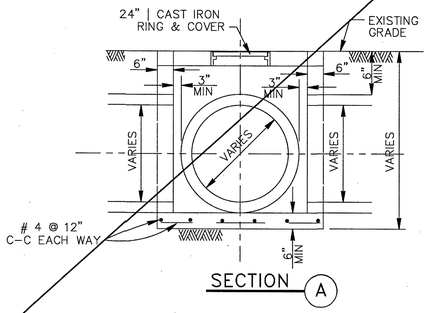
SLOTTED DRAIN DETAIL

N.T.S.

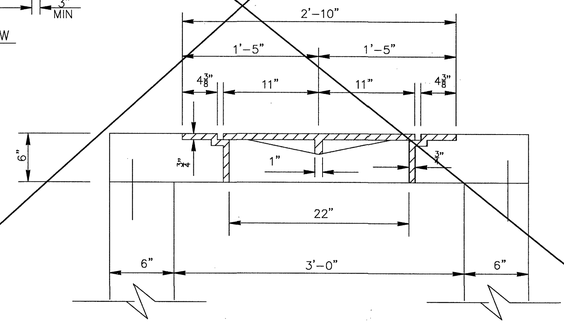
SL–DR–29



PLAN VIEW



SECTION A

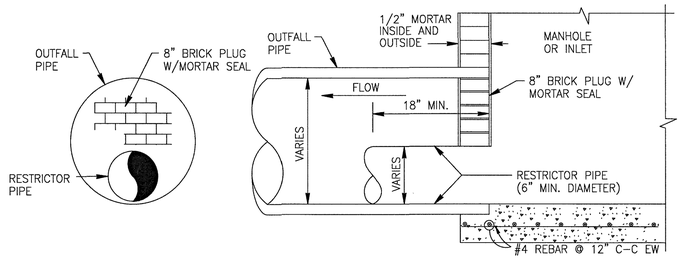


FRAME AND COVER SECTION

JUNCTION BOX

N.T.S.

SL–DR–30



CHOKE OUTFALL RESTRICTOR DETAIL

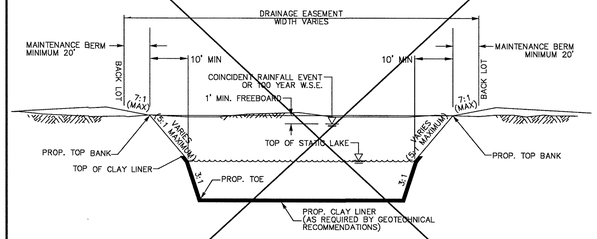
STORM SEWER CHOKE RESTRICTOR

N.T.S.

SL–DR–31

REFER TO:

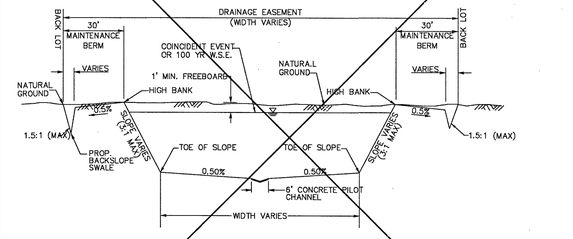
1. *GENERAL NOTES*
2. *STORM SEWER NOTES*



WET DETENTION POND/AMENITY LAKE

N.T.S.

SL–DR–32



DRY DETENTION POND

N.T.S.

SL–DR–33

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

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

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

STATE OF TEXAS
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Date: 9/15/20

OWNER:

DAVID ROGERS
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HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

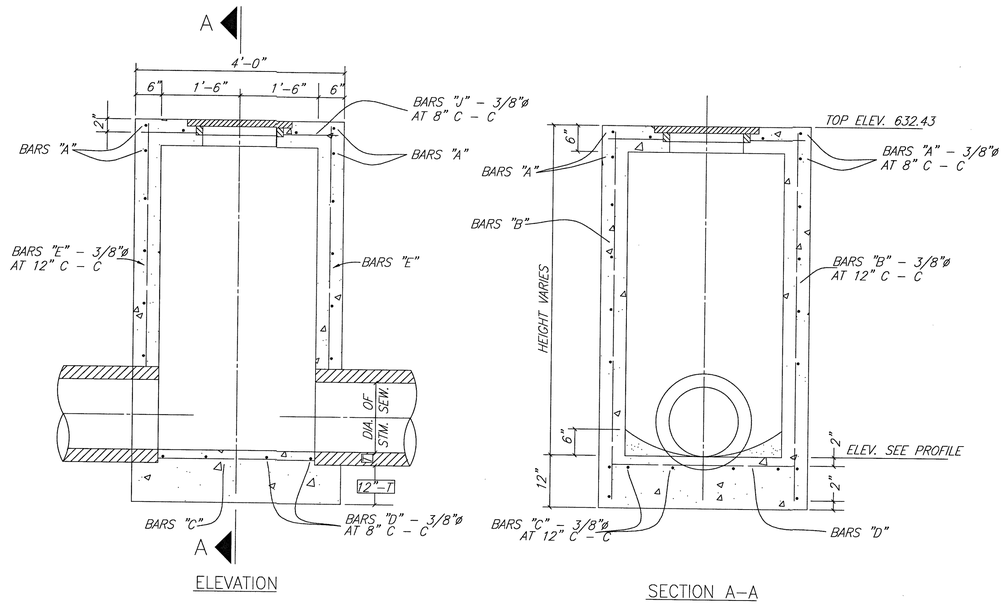
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER CONSTRUCTION DETAILS SL–10

PROJECT NO. 13743

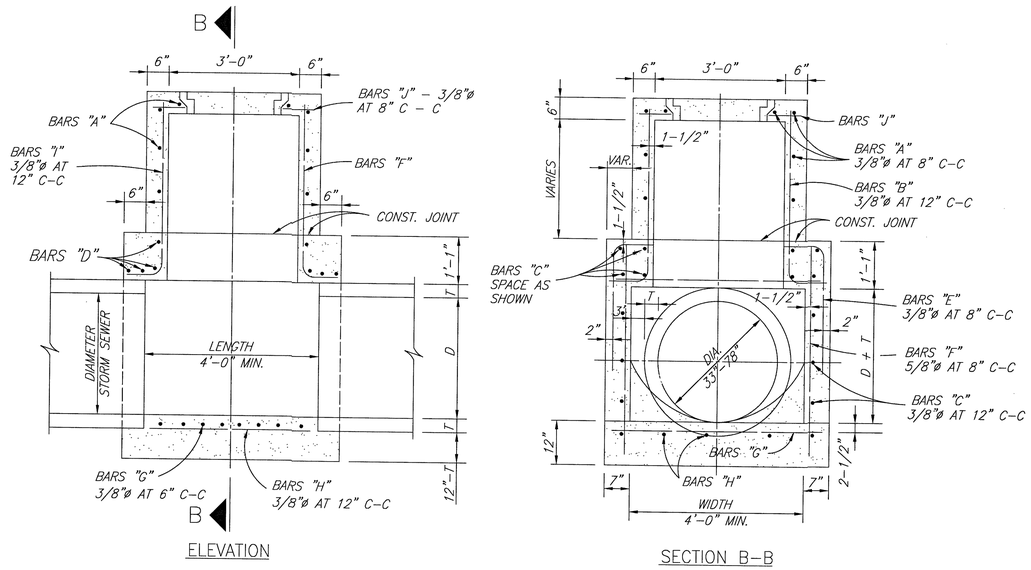
25

S DETAIL SET.DWG



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	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
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DATE

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HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

JUNCTION BOX MANHOLES
SL-11

PROJECT NO. 13743

26

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEEREING DEPARTMENT

CONSTRUCTION PLANS FOR:

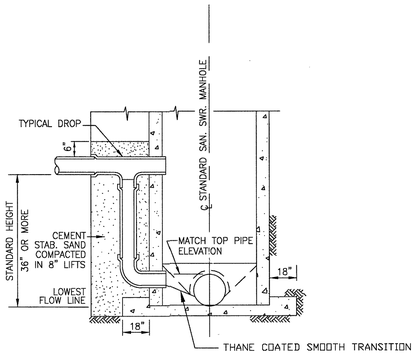
JUNCTION BOX MANHOLES

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

SL-11

SHEET OF

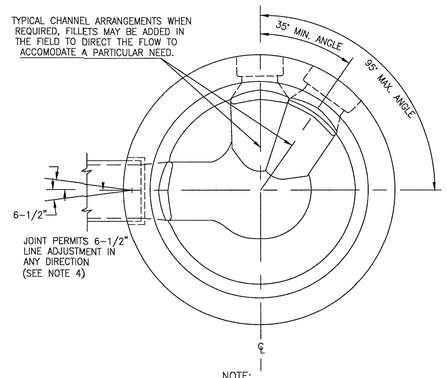
DETAIL SET.DWG



STANDARD DROP DETAIL

(SEE C.S.S. NOTES)

SL-SS-05



PIPING CONNECTIONS DETAIL

SL-SS-05

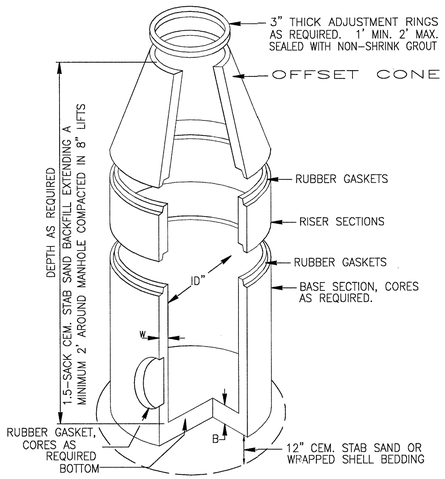
NOTE:

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 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.

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.

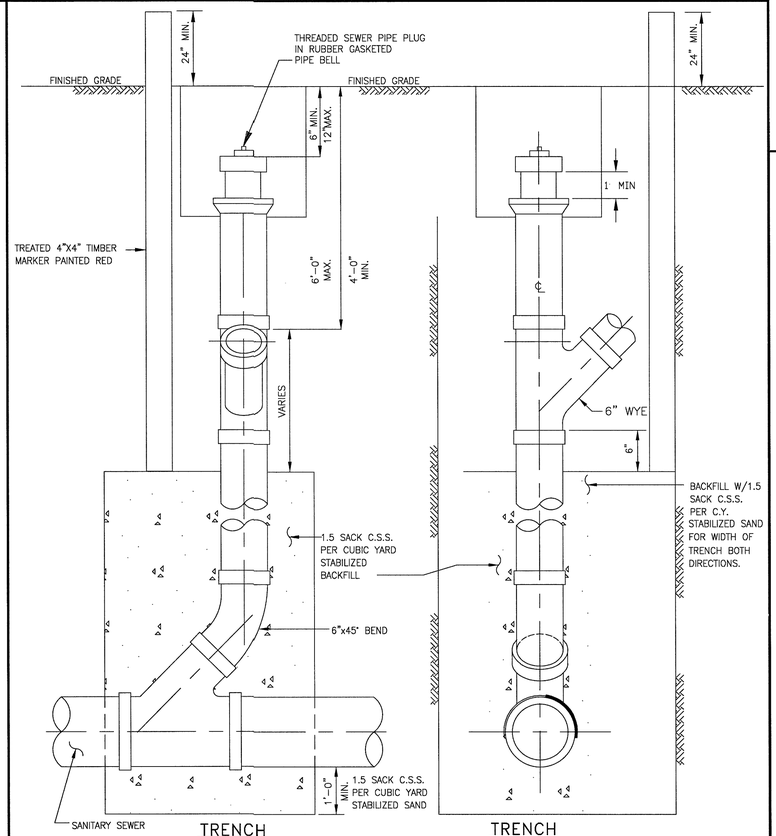
NOTES

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

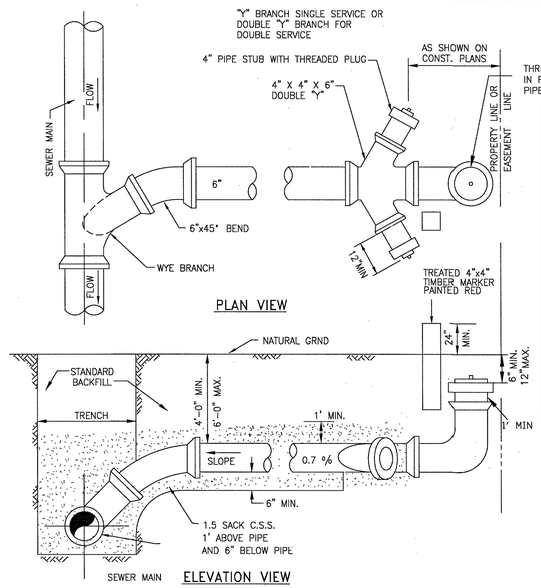
N.T.S.

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	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

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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

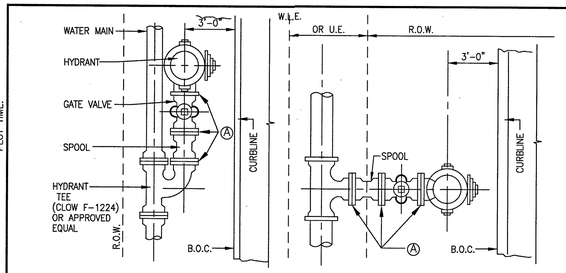
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

SANITARY SEWER CONSTRUCTION DETAILS SL-14

PROJECT NO. 13743

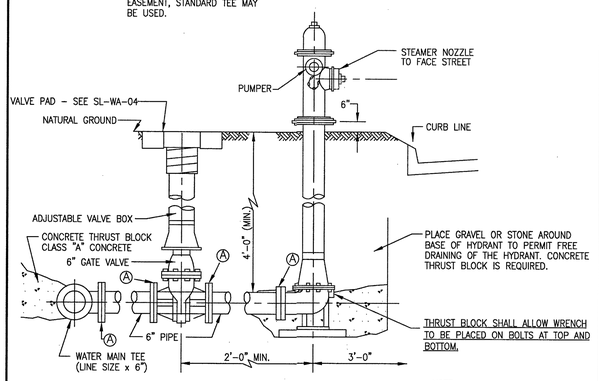
A3 DETAIL SET.DWG



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.

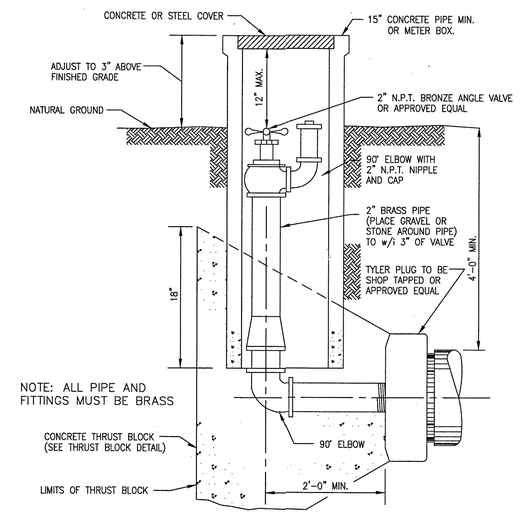
NOTE:
ALL FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION 250 W/ STORZ INTEGRAL CONNECTOR STEAMER NOZZLE SIZE 5-1/4" TWO PUMPER 2-1/2" N.S.T.

ALL FLUSHING VALVES TO BE SAND BLASTED AND PAINTED AS PER C.O.S.L. DESIGN STANDARDS.

Ⓐ =RESTRAINED JOINT

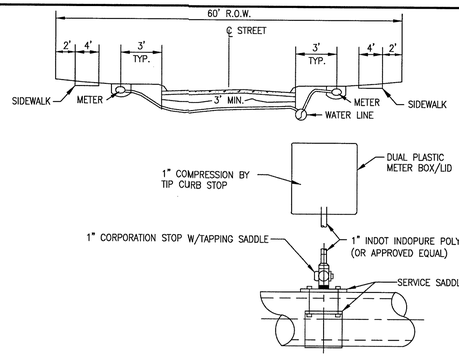
TYPICAL GATE & FIRE HYDRANT INSTALLATION
N.T.S.

SL-WA-01



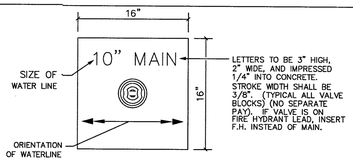
2" BLOW OFF VALVE ASSEMBLY
N.T.S.

SL-WA-02



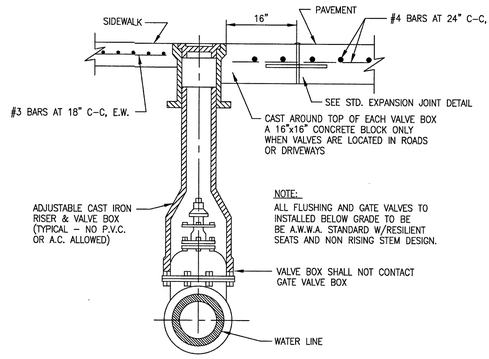
WATER SERVICE CONNECTION AND WATER SERVICE TAPPING ASSEMBLY DETAIL
N.T.S.

SL-WA-03



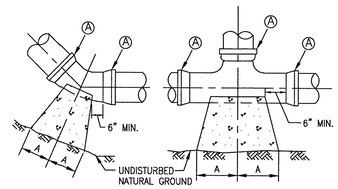
CONCRETE PAD
N.T.S.

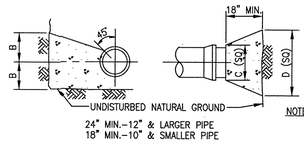
NOTE: ALL VALVES MUST HAVE CONCRETE PAD



VALVE BOX INSTALLATION DETAIL
N.T.S.

SL-WA-04



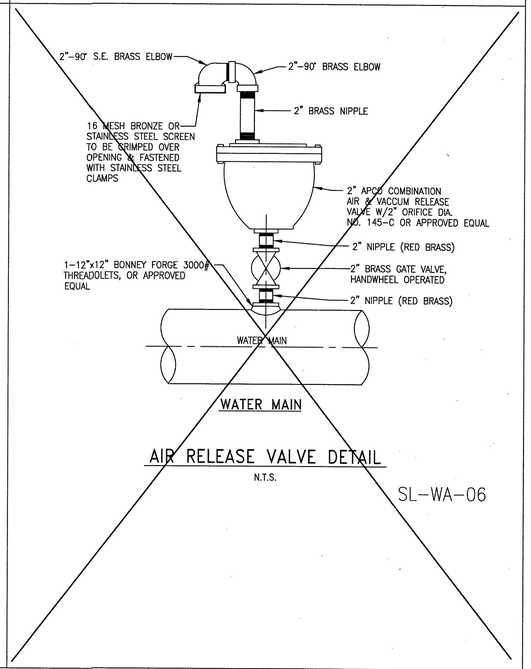


NOTE:
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 10 SQ. FEET AND SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER.
ALL CONCRETE SHALL BE 5 SACK MIN., 3000 P.S.I.

Ⓐ =RESTRAINED JOINT

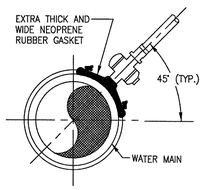
THRUST BLOCK DETAIL
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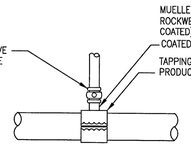
SL-WA-05



AIR RELEASE VALVE DETAIL
N.T.S.

SL-WA-06





TOP VIEW

TAPPING SLEEVE & VALVE DETAIL
N.T.S.

SL-WA-07

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.

SL-WA-08

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

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

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: 12/16/20

OWNER:
DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

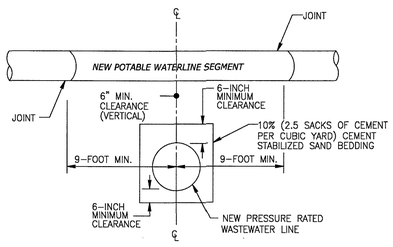
WATER LINE CONSTRUCTION DETAILS SL-15

PROJECT NO. 13743

PLOT DATE: 12/16/2020 - 2:37 PM
PLOT BY: Miguelangel Sauceda
PLOT NAME: 13743 DETAIL SET.DWG

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

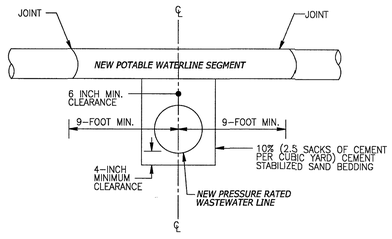


- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED BETWEEN JOINTS OF THE WASTEWATER LINE.
- MINIMUM WASTEWATER PIPE STIFFNESS OF 115 PSI AT 5% DEFLECTION.
- EMBED WASTEWATER LINE IN CEMENT STABILIZED SAND TO AT LEAST 12" INCHES BEYOND EACH JOINT OF CROSSED SECTION OF PIPE.

SL–WA–09

II

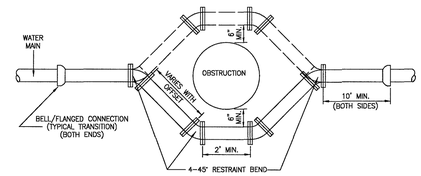
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



- 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.

NOTES:

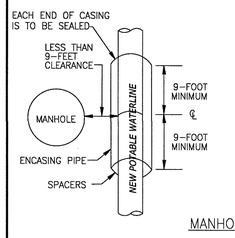
1. PIPE MATERIAL SHALL BE AWWA C900 PVC, DR–14, 200 PSI WITH INTEGRAL PVC RESTRAINED JOINTS.
2. OFFSET ASSEMBLY MUST PASS OVER THE OBSTRUCTION AS LONG AS THE MINIMUM CLEARANCE IS MAINTAINED. SPECIFIC APPROVAL FROM THE UTILITES DEPARTMENT MUST BE GRANTED FOR THE OFFSET TO PASS UNDER THE OBSTRUCTION.
3. 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

SL–WA–11

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

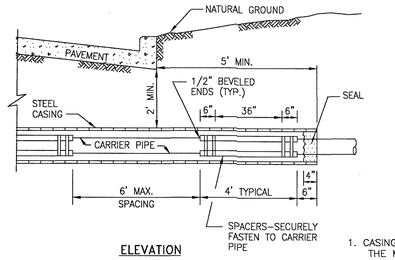


MANHOLE CLEARANCE

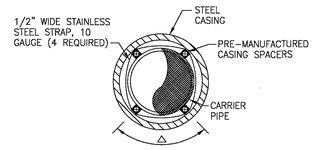
ENCASING PIPE

- 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.

SL–WA–12



ELEVATION



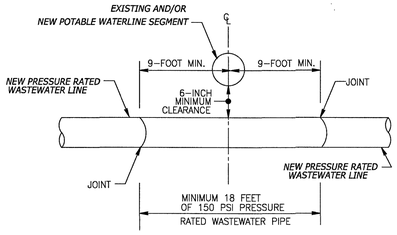
CASING SCHEDULE		
CARRIER PIPE	NOMINAL CASING	MIN. WALL THICKNESS (IN.)
6"	12"	0.11
8"	14"	0.15
10"	16"	0.18
12"	18"	0.20

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

ALTERNATIVE A:

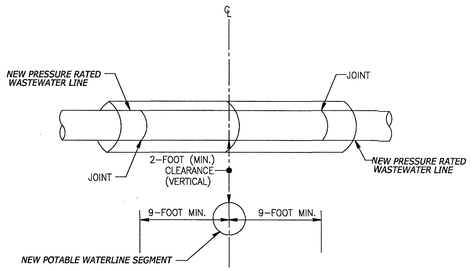
PRESSURE RATED WASTEWATER PIPE



SL–WA–14

ALTERNATIVE B:

EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE

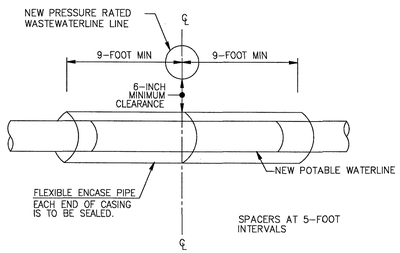


MINIMUM 18' (FEET) OF 150 PSI PRESSURE RATED WASTEWATER PIPE

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 C600 STANDARDS.

SL–WA–16

GENERAL NOTES:

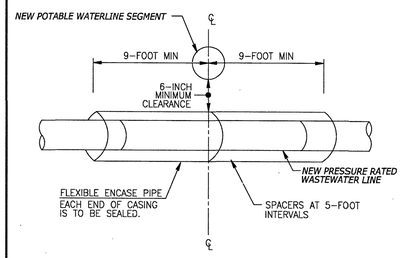
1. CONTRACTOR SHALL CONTACT CITY OF SUGAR LAND ENGINEERING DEPARTMENT AT (281) 275–2780 IF WET SAND OR OTHER UNSTABLE SOIL CONDITIONS, HIGH WATER TABLE AND/OR UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED.
2. SHOULD A CONFLICT ARISE BETWEEN INFORMATION DEPICTED ON APPROVED CONSTRUCTION DRAWINGS AND INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SHALL GOVERN.
3. 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

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

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

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 · 121992 · REGISTERED PROFESSIONAL ENGINEER

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

Date: 9/15/20

OWNER:

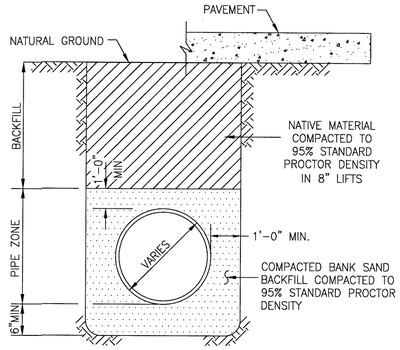
DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WATER LINE CROSSING DETAILS SL–16

PROJECT NO. 13743



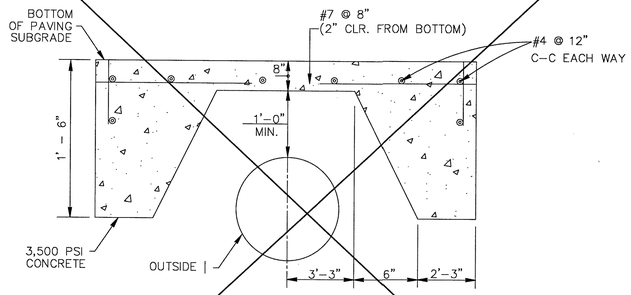
P.V.C. PIPE BEDDING & BACKFILL

N.T.S.

*SEE CONSTRUCTION NOTES

SANITARY FORCE MAIN & WATER LINE BEDDING AND BACKFILL

SL-BB-01



PROTECTIVE SLAB DETAIL

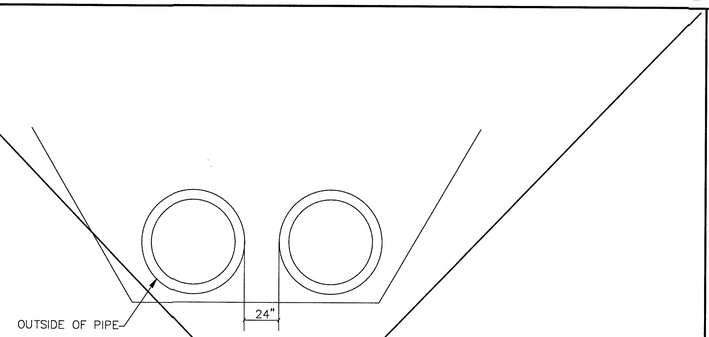
ZERO LOAD TRANSFER CONCRETE SLAB

SL-BB-04

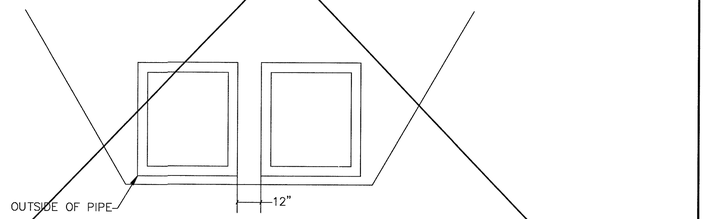
CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT 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.

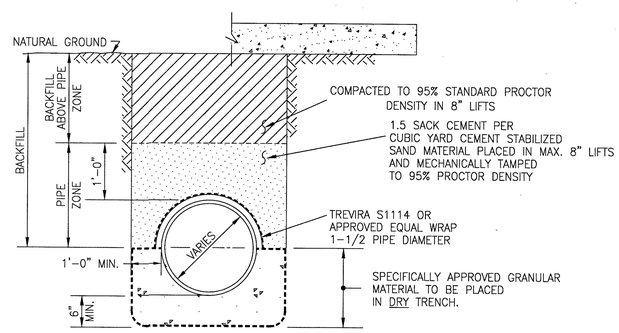
SL-BB-05



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:

DESIGN ENGINEER: _____ DATE _____

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

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) 848-4689
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: 9/5/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

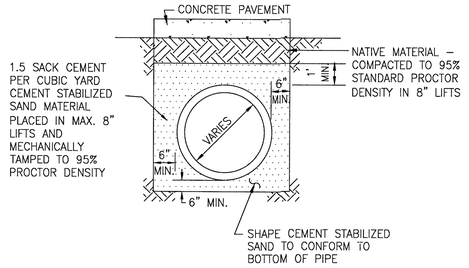
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

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

PROJECT NO. 13743

DETAIL SET.DWG

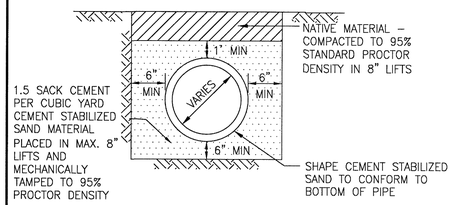


BEDDING DETAIL FOR
CONCRETE CULVERT USED
UNDER ROADWAY PAVEMENT

CLASS "A–A"

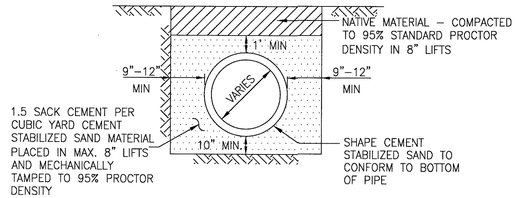
N.T.S.

SL–BB–06



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

SL–BB–07

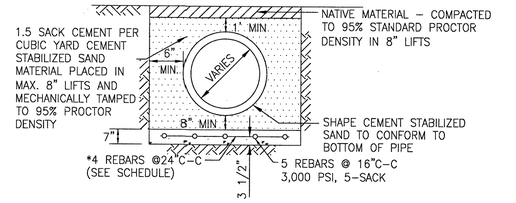


NOTES

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

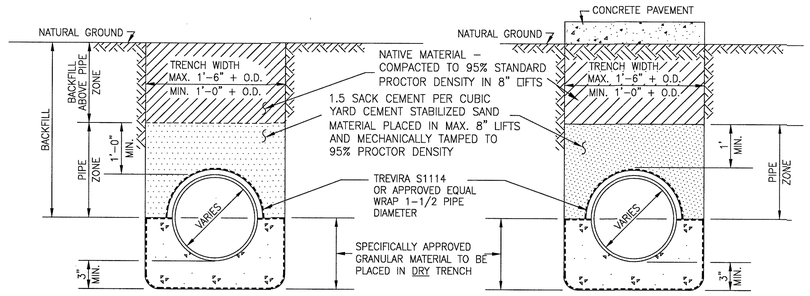


NOTES

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.

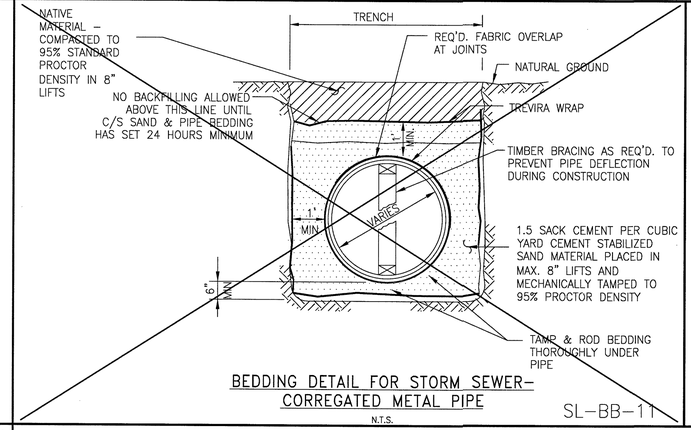
MODIFIED "A–A"

N.T.S.

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

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



BEDDING DETAIL FOR STORM SEWER–
CORREGATED METAL PIPE

N.T.S.

SL–BB–11

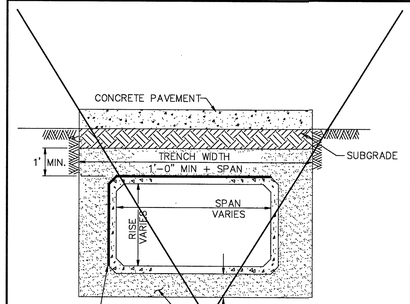
CONSTRUCTION NOTES

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

SL–BB–15

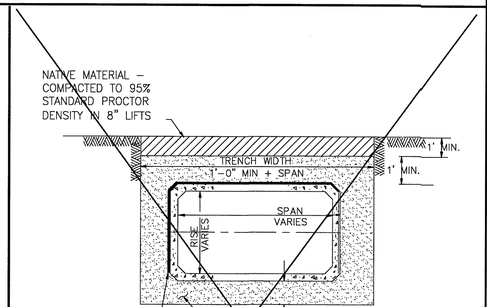


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
CULVERT UNDER ROADWAY PAVEMENT

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

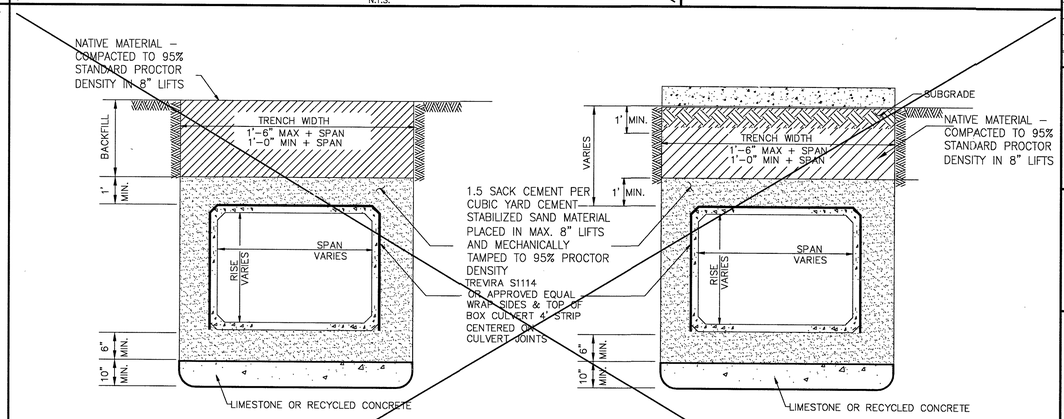


BEDDING DETAIL FOR
REINFORCED CONCRETE BOX
PLACED IN EASEMENT

SL–BB–13

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

SL–BB–14

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

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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

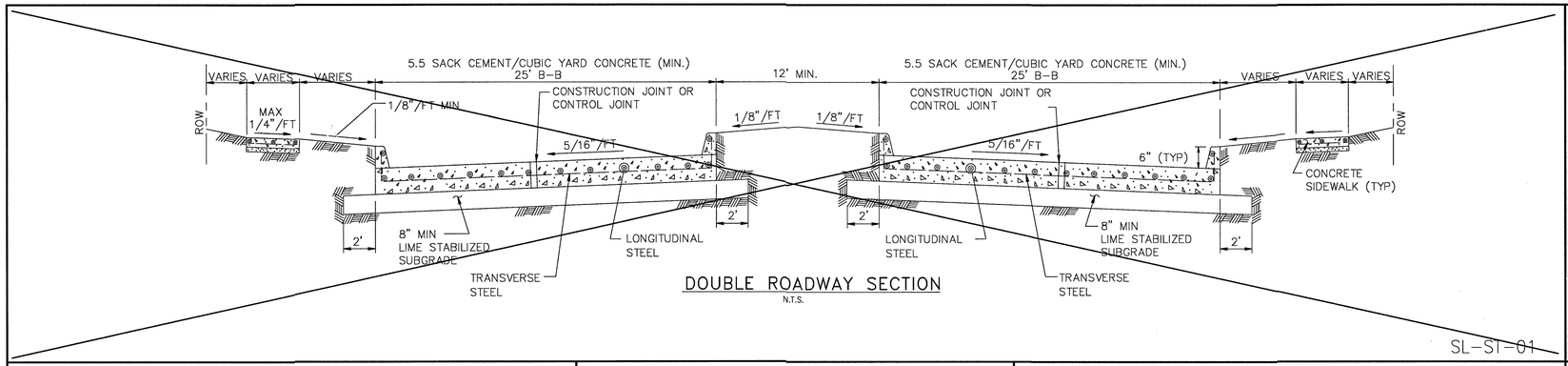
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER PIPE BEDDING AND BACKFILL DETAILS
SL–20

PROJECT NO. 13743

D DETAIL SET.DWG



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 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 200' AND BE SEALED WITH SEALANT CONFORMING TO TXDOT ITEM 360 (& ITEM 438) AND TXDOT DMS-6310, CLASS-2.

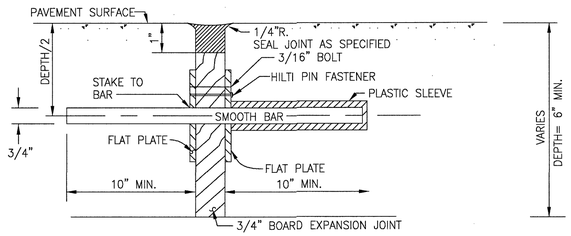
6. TRANSVERSE CONTROL JOINTS ARE REQUIRED AT MAXIMUM SPACING OF 20'-0" C-C, AND VERTICAL CURB JOINTS TO BE SEALED WITH SPECIAL JOINT SEALANT ASTM-D-1190-74 OR AASHTO-M173-60 FOR PAVEMENT 8" THICK AND GREATER. (ELASTONETRIC TYPE HOT POURED)

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 SUGAR LAND. CITY ENGINEER'S APPROVAL.

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

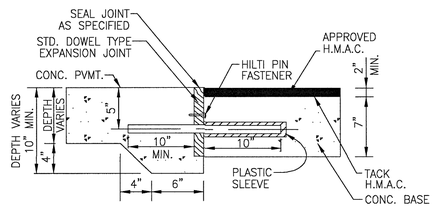
SL-ST-12



STEEL TO MEET ASTM STD. SPEC. FOR CONC. REBAR UNIT TO BE 24" C.-C., AND 10" MIN.

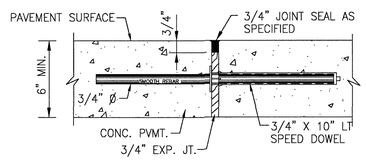
DOWEL TYPE EXPANSION JOINT
N.T.S.

SL-ST-03



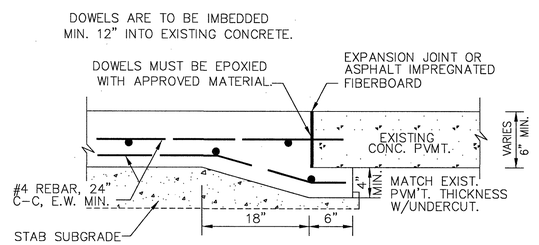
DOWEL TYPE EXPANSION JOINT
N.T.S.
(CONC. PAVING TO CONC. BASE)

SL-ST-06



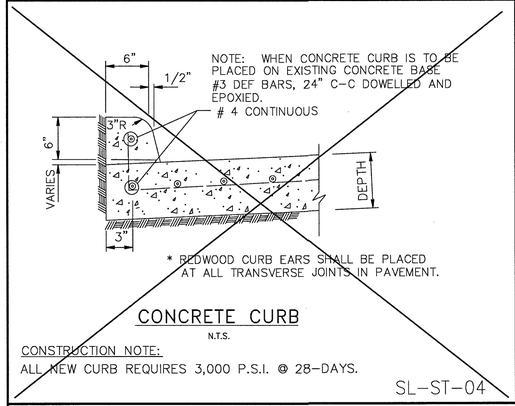
SPEED DOWEL EXPANSION JOINT
N.T.S.

SL-ST-08



UNDERCUT DETAIL WITH HEADER
N.T.S.

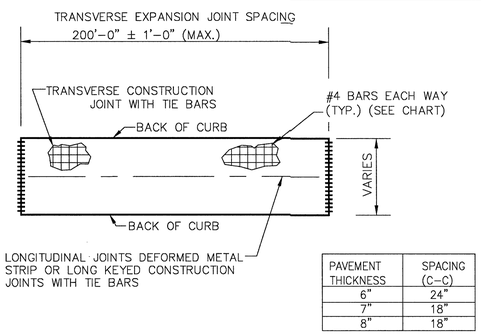
SL-ST-09



CONCRETE CURB
N.T.S.

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

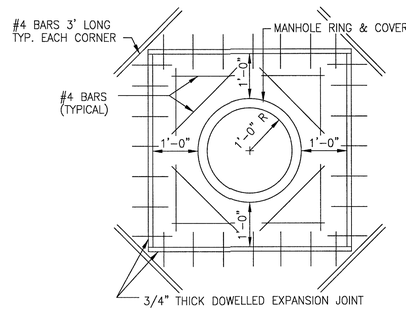
SL-ST-04



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

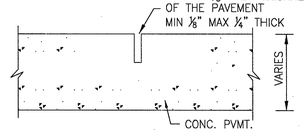
PAVING PANEL
N.T.S.

SL-ST-05



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

SL-ST-10



CONTROL JOINT
N.T.S.

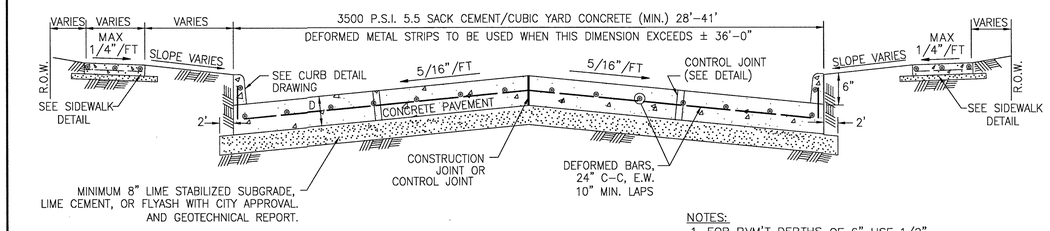
SL-ST-11

No.	DATE	REVISION

SEAL:

DATE

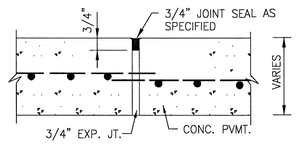
DESIGN ENGINEER:



SL-ST-02

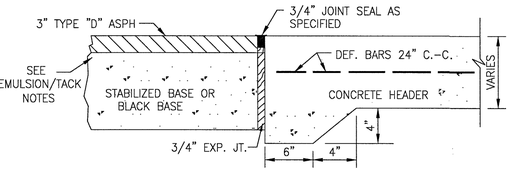
SINGLE ROADWAY SECTION
N.T.S.

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

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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

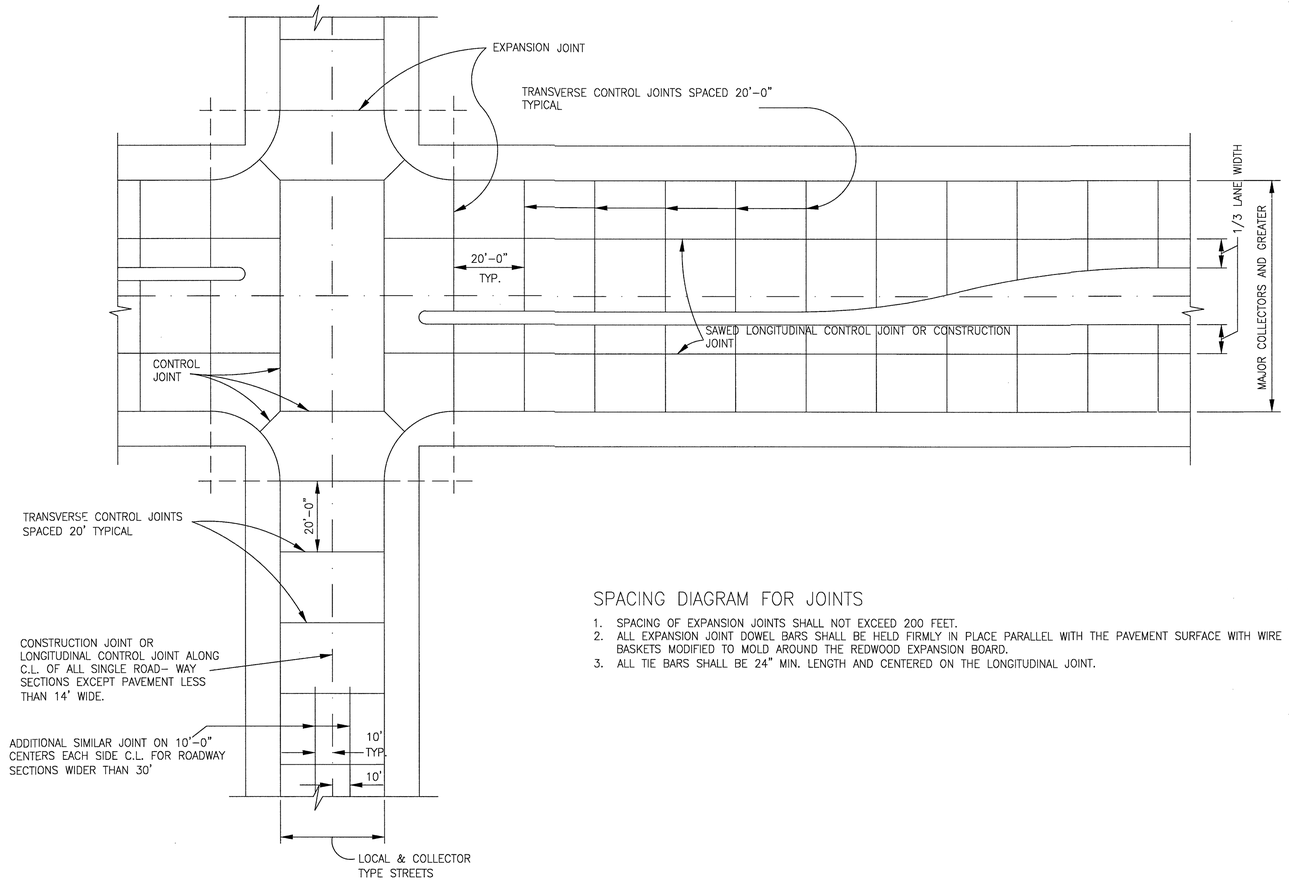
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

CONCRETE PAVEMENT CONSTRUCTION DETAILS SL-21

PROJECT NO. 13743

5 DETAIL SET.DWG



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:
CHECKED BY:
SCALE:

SL-22

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
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STATE OF TEXAS
MIGUELANGEL A. SAUCEDA
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ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

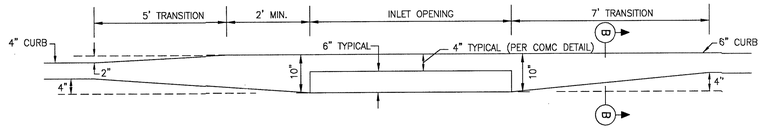
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

CONCRETE PAVEMENT CONSTRUCTION DETAILS
SL-22

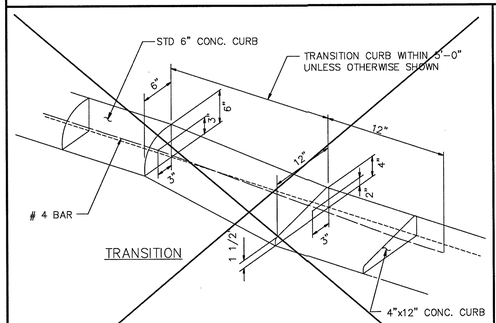
PROJECT NO. 13743

3 DETAIL SET.DWG



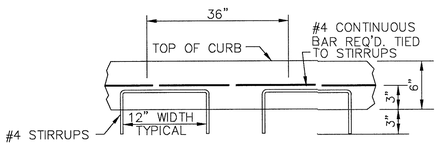
TYPICAL CURB TRANSITION FOR INLET INSTALLATION

SL-ST-13



TYPICAL CURB TRANSITION

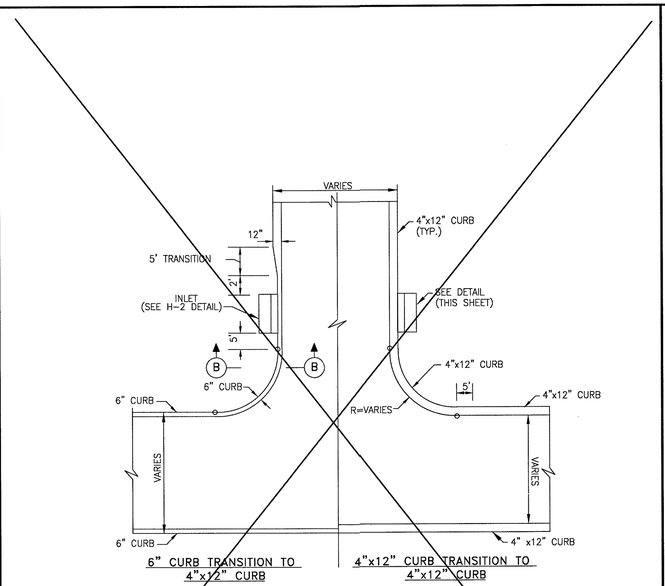
SL-ST-15



TYPICAL CONCRETE CURB REINFORCING

N.T.S.

SL-ST-16



6" CURB TRANSITION TO 4"x12" CURB

4"x12" CURB TRANSITION TO 4"x12" CURB

TYPICAL 4"X12" CURB W/INLET TRANSITION FOR CURB RETURNS

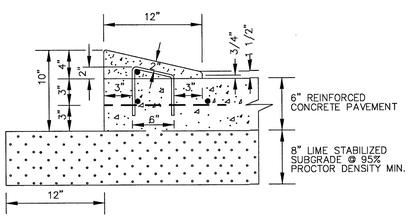
N.T.S.

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 RESPONSIBLITY TO NOTIFY THE CITY OF SUGAR LAND 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

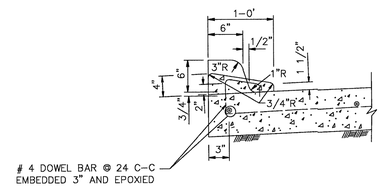


4"x12" MOUNTABLE CONCRETE CURB

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



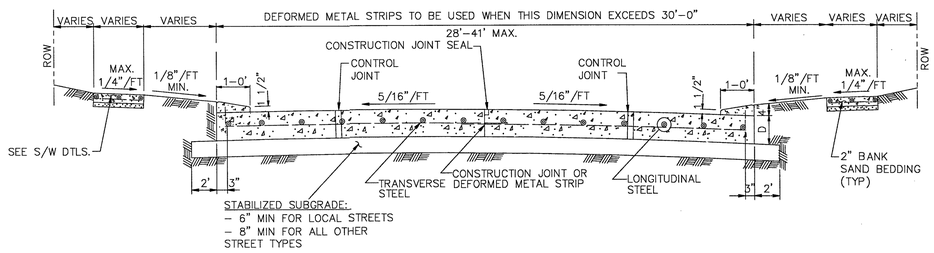
4-INCH x 12-INCH TRANSITION CURB

SL-ST-18

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

1. 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.

SL-ST-20



STABILIZED SUBGRADE:
- 6" MIN FOR LOCAL STREETS
- 8" MIN FOR ALL OTHER STREET TYPES

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

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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

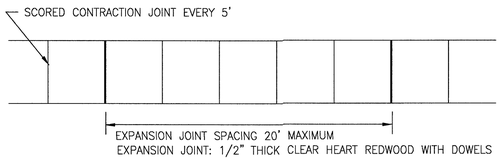
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

RESIDENTIAL CURB CONSTRUCTION DETAILS
SL-23

PROJECT NO. 13743

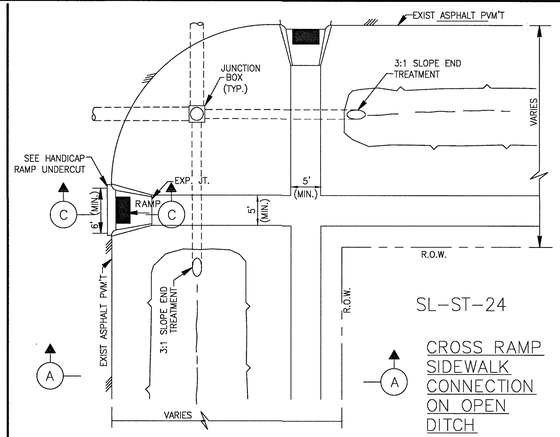
13743 DETAIL SET.DWG



SIDEWALK JOINT DETAILS

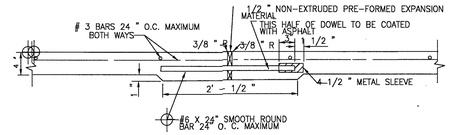
N.T.S.

SL-ST-23



SL-ST-24

CROSS RAMP SIDEWALK CONNECTION ON OPEN DITCH



B-B
EXPANSION JOINT DETAIL

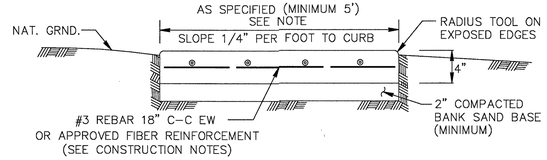
NOTES:

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 PAVEMENT.
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 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.

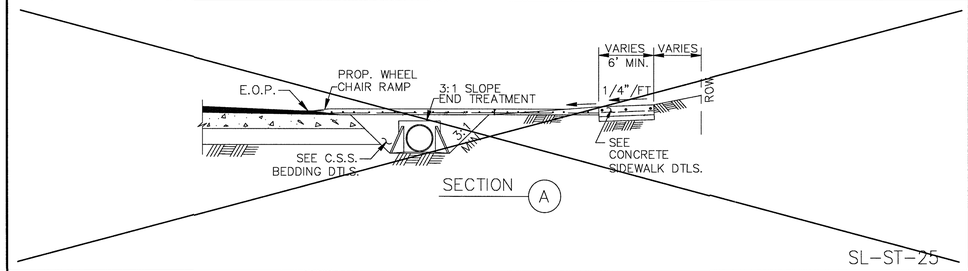
SL-ST-34



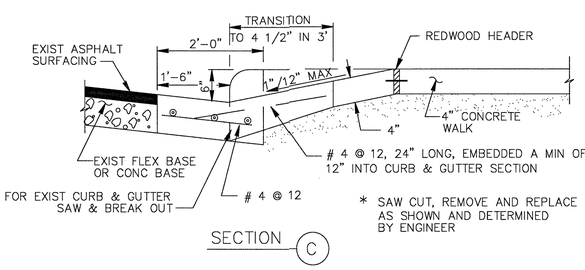
CONCRETE SIDEWALK

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

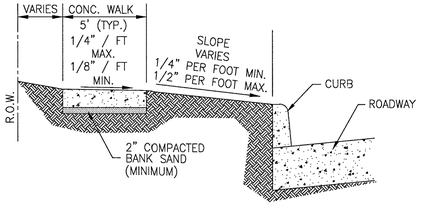


SL-ST-25



HANDICAP RAMP CURB & GUTTER*

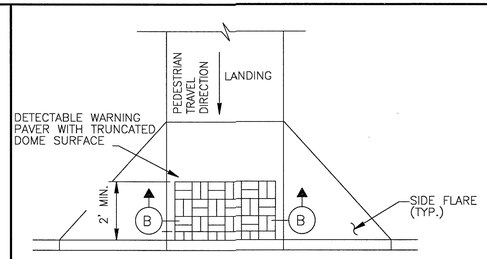
SL-ST-26



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

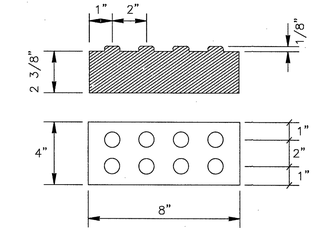
SL-ST-28

TYPICAL SINGLE ROADWAY SIDEWALK



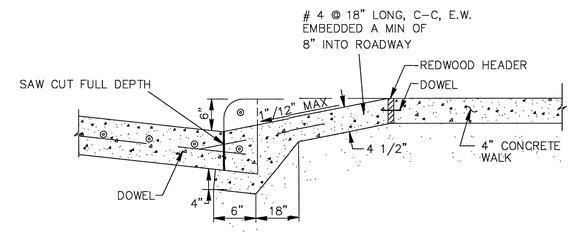
SL-ST-31

TRUNCATED DOME PATTERN CURB RAMP



CONCRETE PAVER WITH TRUNCATED DOME SURFACE

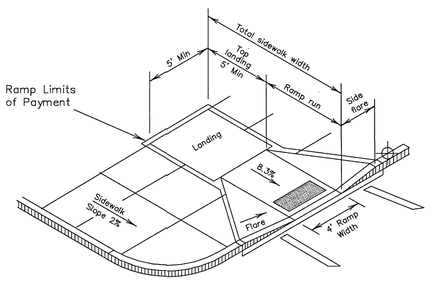
SL-ST-32



HANDICAP RAMP UNDERCUT

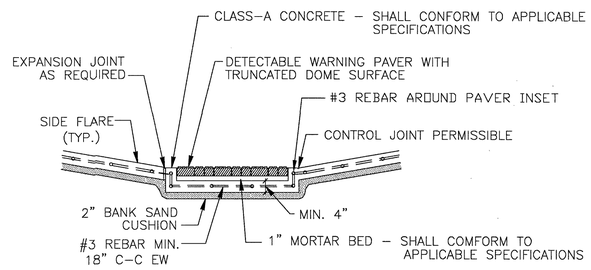
SL-ST-27

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

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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WHEEL CHAIR RAMP & SIDEWALK DETAILS I
SL-25

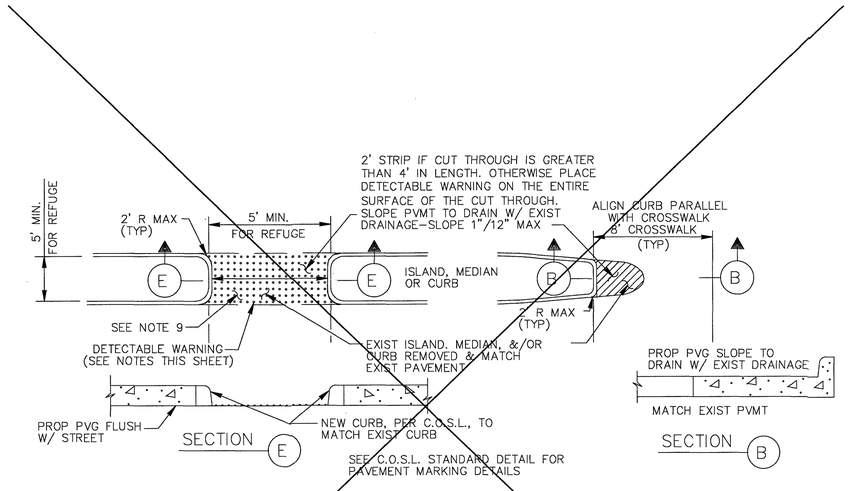
PROJECT NO. 13743

35

374

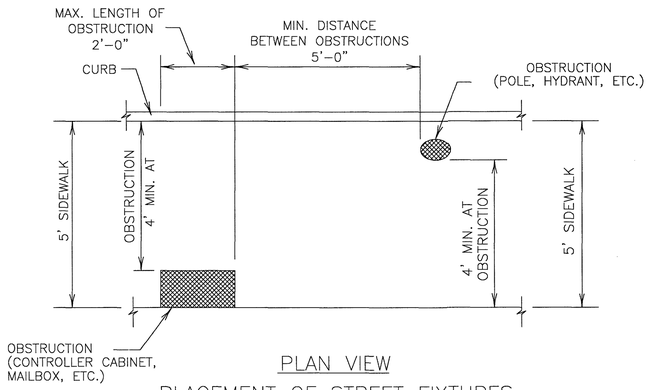
3 DETAIL SET.DWG

PLOT DATE:



FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

SL-ST-35



PLAN VIEW

PLACEMENT OF STREET FIXTURES

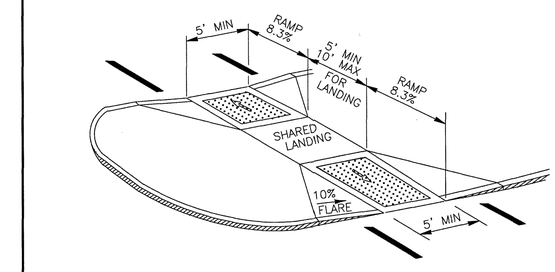
(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

SL-ST-36

NOTES:

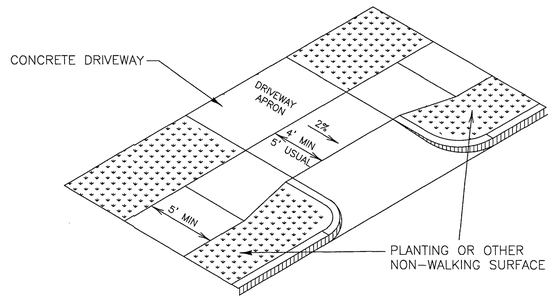
1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED
2. THE MINIMUM SIDEWALK WIDTH IS 5' (FEET). THE LANDING SHALL BE 5' x 5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. MAXIMUM 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

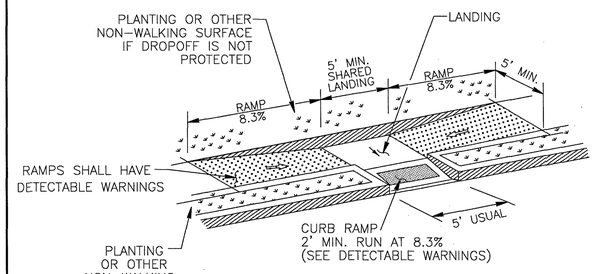
SL-ST-37



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

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: 9/15/20

OWNER:
DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

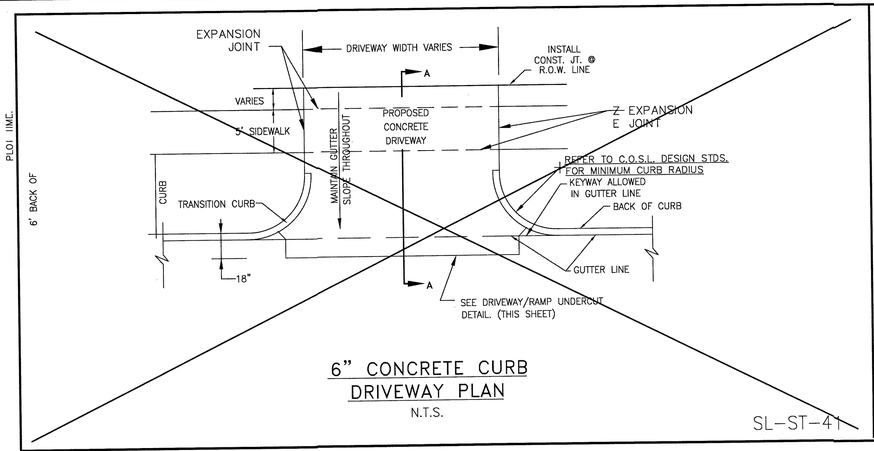
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WHEEL CHAIR RAMP & SIDEWALK DETAILS II
SL-26

PROJECT NO. 13743

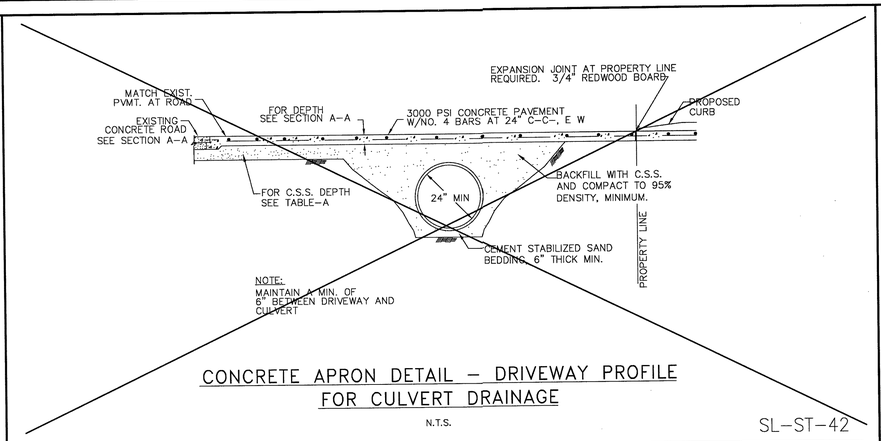
SL DETAIL SET.DWG



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

NOTES:

SL-ST-49

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

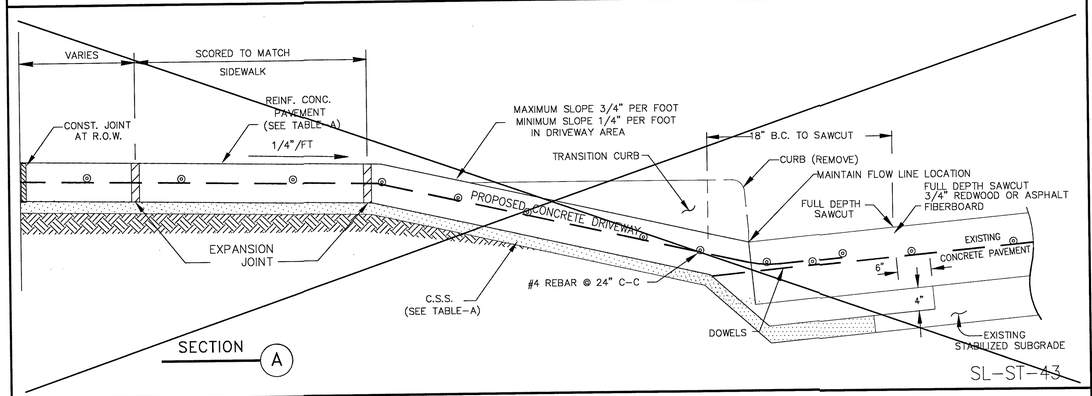
6.) FOR INDUSTRIAL DRIVES, PAVEMENT SHALL HAVE A DEPTH OF 8" (IN).

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

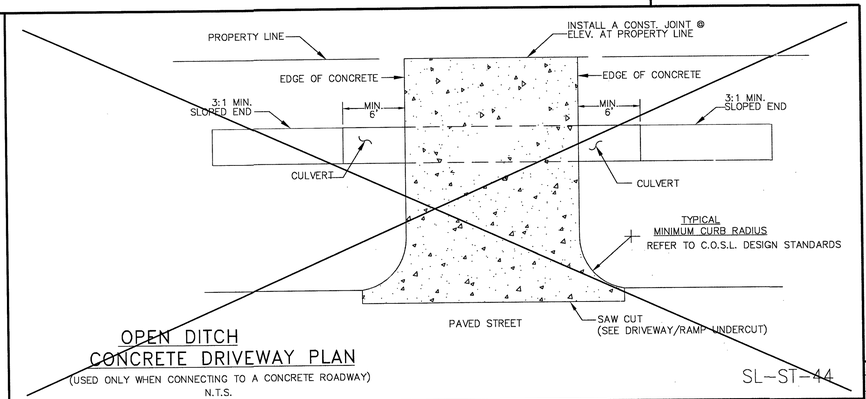
8.) MAXIMUM ALLOWABLE DRIVEWAY GRADE IN PULIC R.O.W. IS 5%

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.



SL-ST-43



OPEN DITCH CONCRETE DRIVEWAY PLAN

(USED ONLY WHEN CONNECTING TO A CONCRETE ROADWAY)

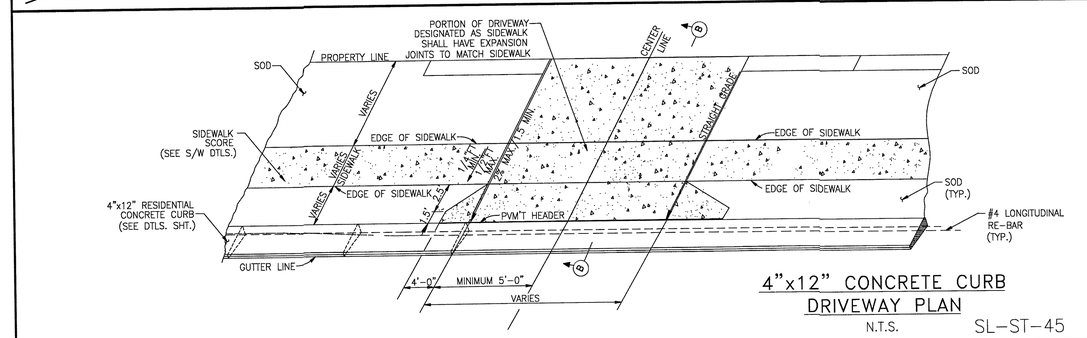
N.T.S.

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

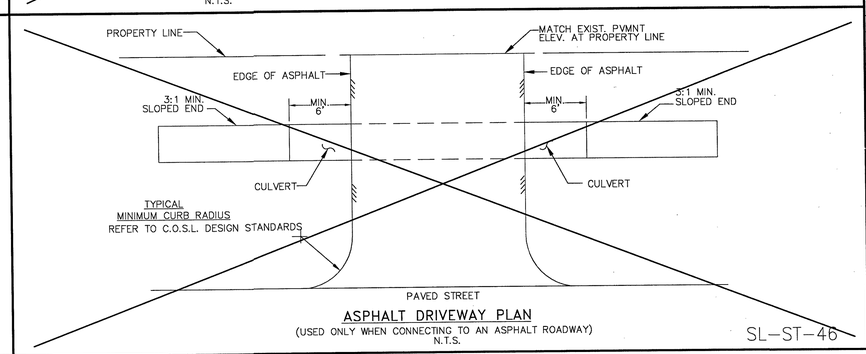
DRIVEWAY PAVEMENT CONSTRUCTION TABLE



4"x12" CONCRETE CURB DRIVEWAY PLAN

N.T.S.

SL-ST-45

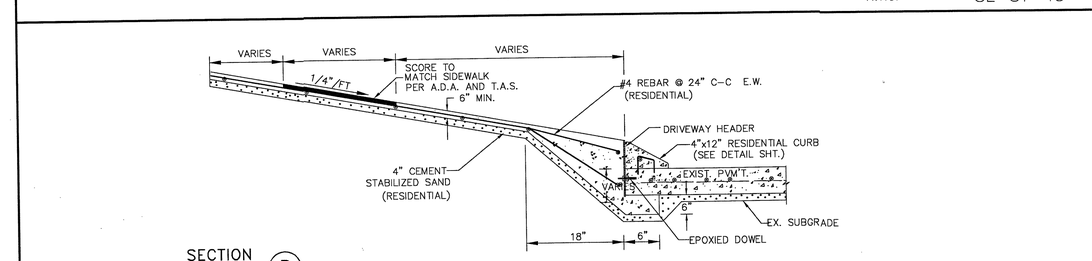


ASPHALT DRIVEWAY PLAN

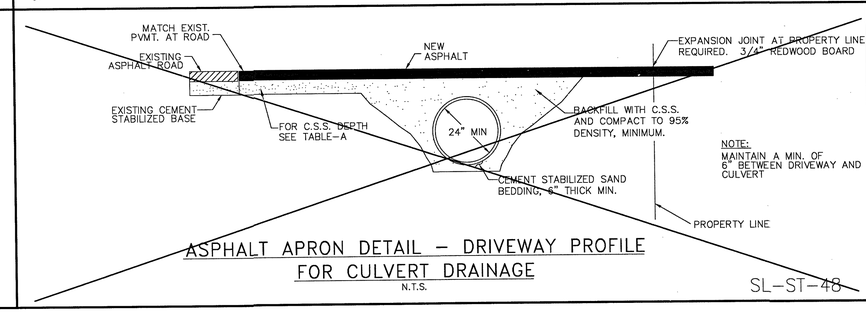
(USED ONLY WHEN CONNECTING TO AN ASPHALT ROADWAY)

N.T.S.

SL-ST-46



SL-ST-47



ASPHALT APRON DETAIL – DRIVEWAY PROFILE FOR CULVERT DRAINAGE

N.T.S.

SL-ST-48

No.	DATE	REVISION

SEAL:

DESIGN ENGINEER: _____ DATE _____

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:

DRIVEWAY CONSTRUCTION DETAILS

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

SL-27

SHEET OF

PL01 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) 849-6681 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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

DRIVEWAY CONSTRUCTION DETAILS SL-27

PROJECT NO. 13743

13743 DETAIL SET.DWG

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 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.

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.

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.
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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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

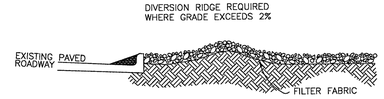
GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

GENERAL EROSION CONTROL NOTES
SL–33

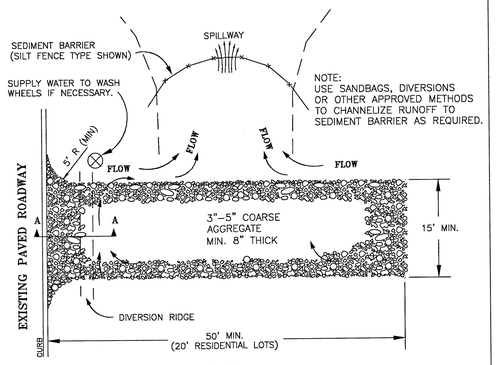
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SL–33 DETAIL SET.DWG

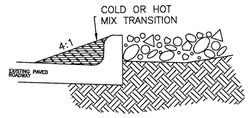


SECTION A – A



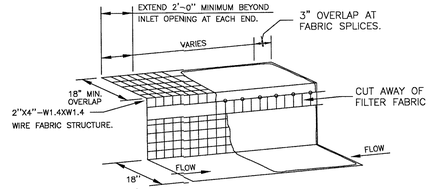
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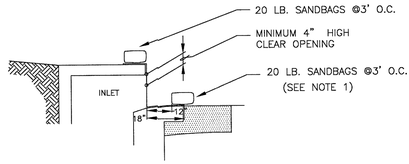
WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE–GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.

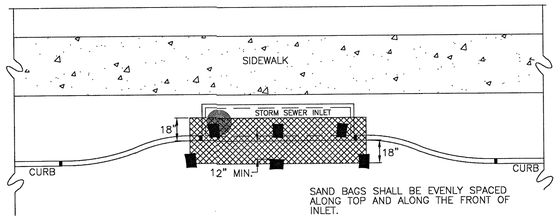


TRANSITION

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







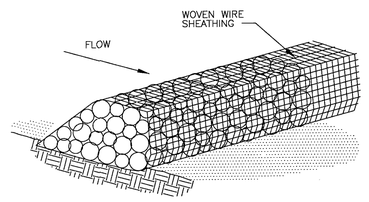
CURB INLET PROTECTION DETAIL
N.T.S.

NOTES:

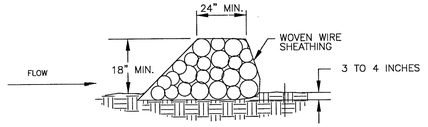
1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4" MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION
2. INSPECTION SHALL BE MADE BY CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
3. CONTRACTOR 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.

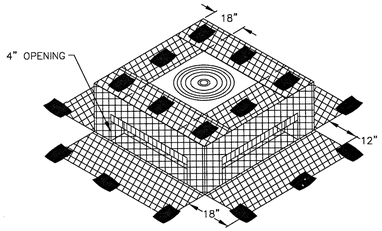
2. THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE SIZE OF 20 GAUGE AND SHALL BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.

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.

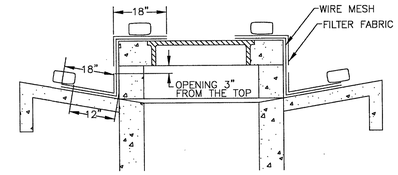
4. WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF PROPERLY.

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.

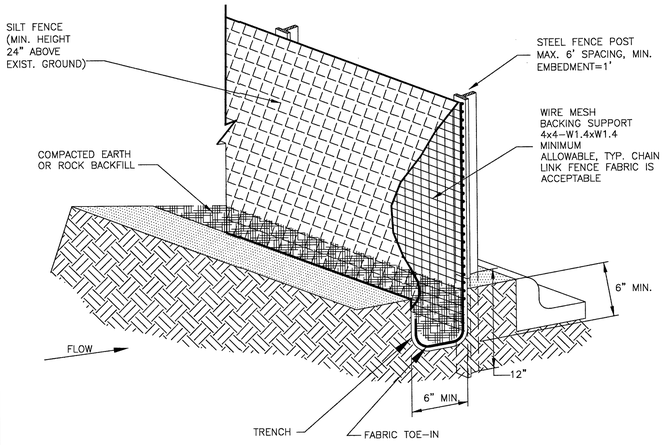


ISOMETRIC VIEW



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.

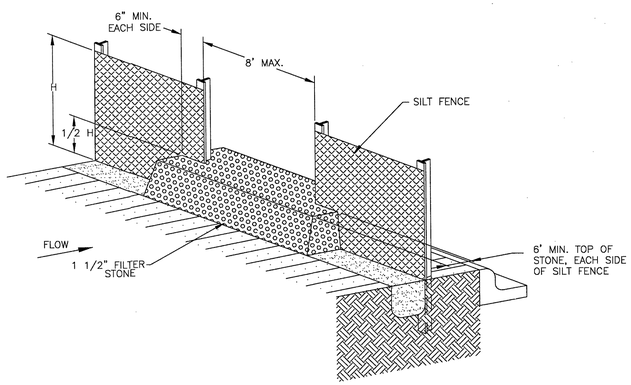
4. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

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



SILT FENCE
STONE OVERFLOW STRUCTURE
N.T.S.

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

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN BT
CHECKED
DATE

B&L
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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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

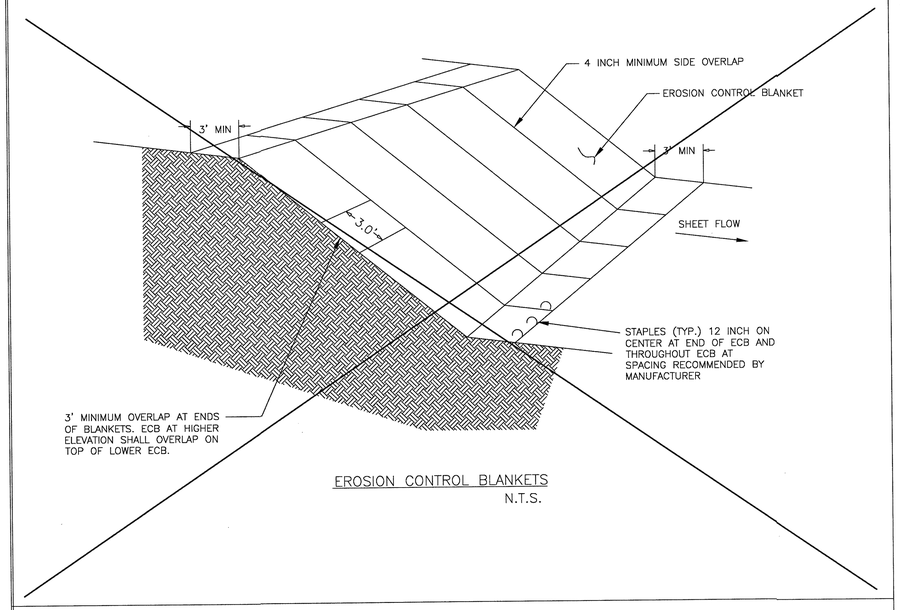
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VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

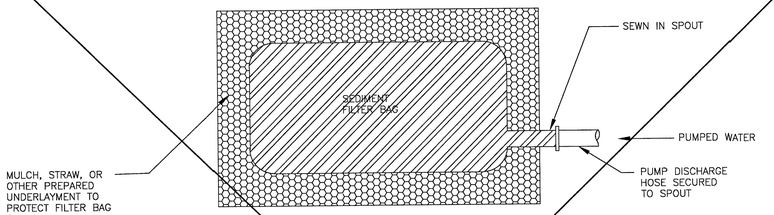
EROSION CONTROL DETAILS – 1
SL–34

PROJECT NO. 13743

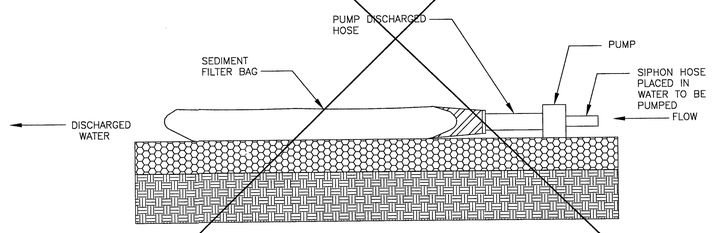
13743 DETAIL SET.DWG



EROSION CONTROL BLANKETS
N.T.S.



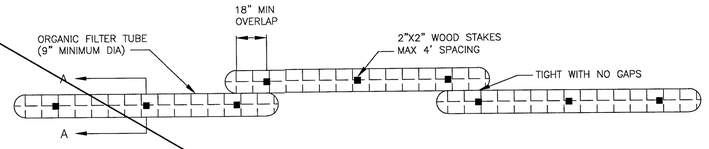
SEDIMENT FILTER BAG PLAN VIEW
N.T.S.



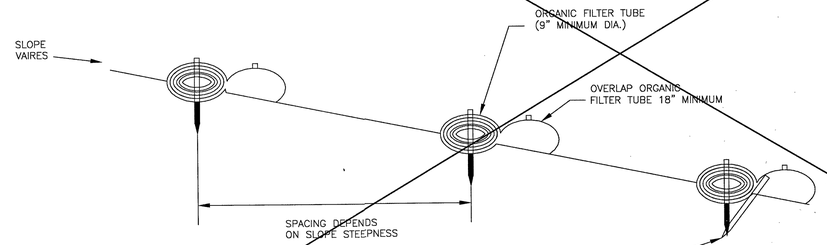
SEDIMENT FILTER BAG PROFILE
N.T.S.

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.

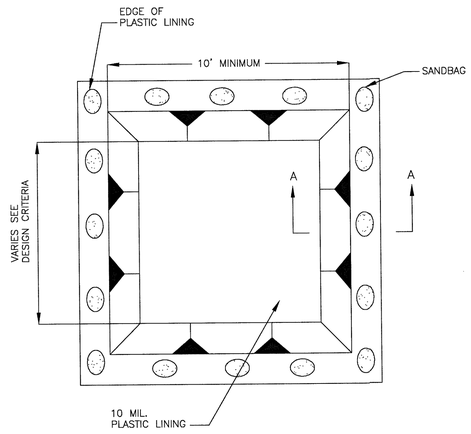


ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
N.T.S.

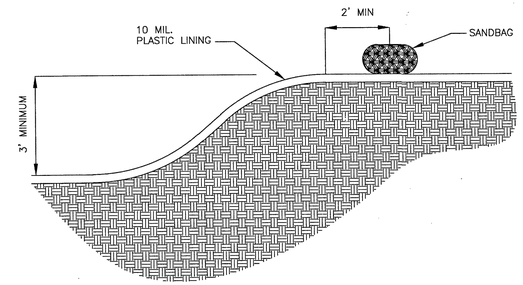
ORGANIC FILTER TUBES NOTES

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
DATE

BAKER & LAWSON, INC.
ENGINEERS • PLANNERS • SURVEYORS
300 E. CEDAR ST., ANGLETON, TEXAS 77515
PHONE: (979) 849-8681 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: 9/15/20

OWNER:

DAVID ROGERS
ADOBE HOLDINGS INC. 1800 AUGUSTA DRIVE, SUITE 340
HOUSTON TX. 77057

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

GIFFORD MEADOWS
A 17.37 AC, 85-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EROSION CONTROL DETAILS – 2
SL–35

PROJECT NO. 13743

13743 DETAIL SET.DWG

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 2021

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

AGENDA CONTENT: Conduct a public hearing, discussion and possible action on a recommendation regarding a request for approval of the Heritage Oaks Section 7 Final Replat, being a portion of lots 47, 48,49, 50 and 51 of the New York and Texas Land Company Subdivision located in the J.D.J. Valderas Survey. The propose final replat consists of 34 lots and 2 reserve lots on 27.122 acres, is zoned Single Family Residential 7.2 (SF-7.2) and is located on the extension of Oak Ridge Drive.

AGENDA ITEM SECTION: Public Hearing

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

FUND: None

EXECUTIVE SUMMARY:

This is a request for approval of the Heritage Oaks Section 7 Final Replat. The propose final replat consists of 34 lots and 2 reserve lots on 27.122 acres in the Single Family Residential 7.2 (SF-7.2) zoning district. The proposed final replat meets all requirements of the Code of Ordinances of the City of Angleton except as otherwise noted in the City Engineer memo.

The Planning and Zoning Commission held a public hearing on January 7, 2021 and recommends approval (7 in favor/0 opposed/0 absent/abstentions) of the proposed Heritage Oaks Section 7 Final Replat subject to the conditions listed in the City Engineer's memo prior to recording of the final plat.

RECOMMENDATION:

Staff recommends approval of the Heritage Oaks Section 7 Final Replat subject to addressing the outstanding comments in the City Engineer memo prior to recording of final plat.

December 17, 2020

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

Re: On-Going Services
Heritage Oaks Sec. 7 Subdivision Final Replat and Plan Review – 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. The proposed final replat and construction plans will be finalized once a utility easement location determination is confirmed for the subdivision electric service. Once the determination of the easement is made and prior to any filing and recordation of the final replat, a final copy of the plat and updated construction plans shall be submitted that provides the final utility easement determination.
2. The Angleton Drainage District provided a letter of approval, dated October 14, 2020, with stipulations noted and is provided as an attachment in this review. No additional action is required.
3. The proposed construction shall utilize bedding and backfill of utilities including cement stabilized sand per City Requirements.

HDR takes no objection to the Heritage Oaks Subdivision Sect. 7 Plat and Plans with the exceptions noted. Please note, this does not necessarily mean that the entire drawings, including all supporting data and calculations, has been completely checked and verified; however, the drawings and calculations are signed, dated, and sealed by a professional engineer licensed to practice in the State of Texas, which therefore conveys the engineer'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

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

October 14, 2020

Chris Peltier
P. O. Box 288
Angleton, TX 77516-0288

Re: Plat, Drainage and Detention Plan
Heritage Oaks, Section 7
Angleton, TX 77515

Dear Mr. Chris Peltier:

During the regular public meeting of the Angleton Drainage District held October 13, 2020, the Board of Supervisors unanimously approved the plat, drainage and detention plan for Heritage Oaks Section 7as presented

As presented, Section 7 is a 43-lot development on 27.122 acres. The site borders the south line of Lakeside Park (Old Anchor Road Pit) and has Angleton Drainage District's 10 Ditch as its east boundary. The developed area of Section 7 is 19.84 acres with the remaining platted area of 7.282 acres in the existing lake/detention pond. The site is in the Oyster Creed Drainage Area which has an allowable 100-year storm runoff rate of 0.45 cfs/acre. 0.45 cfs/acre827.122 acres = 12.20 cfs. The design drawings indicate that all drainage will be directed into the existing lake/detention pond. The existing lake outfalls into a drainage channel which flows along the south side of the Lakeside Park and has an existing outfall into 10 Ditch. The detention requirements for the design analysis computed 9.04 acre-feet of detention. This computes to a rate of 0.46 acre-foot/acre. The exiting lake/detention pond serves Heritage Oaks Section 3 (10.98 acre-feet), Section 6 (8.70 acre-feet) and Section 7 (9.04acre-feet). This is a total of 28.72 acre-feet. The detention volume provided for 30.03 acre-feet of detention volume is provided in four areas.

Pond 1 - This is the existing lake/detention pond. The outlet from this pond will be lowered at its outfall to produce a total detention volume of 24.88 acre-feet.

Pond 2 - This is a depressed area to the southwest of Section 7 and west of Section 6. The design proposed that an outfall ditch from Pond 2 to Pone 1 be excavated. Pond 2 provides an addition of 2.09 acre-feet of detention volume.

Ditch 1 - This is the 950 linear-foot outfall channel along the south line of Lakeside Park.

Ditch 2 - is the connecting ditch between Lake 2 and Lake 1. This ditch provides 0.28 acre-feet of detention volume.

If any 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 grading, drainage and detention plan in no way represents that Chris Peltier, Developer of Heritage Oaks, Section 7 has complied with any federal, state, county or other law, statute, procedure or requirement of any type beyond the approval of the grading, drainage and detention plan approved, with the stipulations listed in this letter, if any, by the District.

Sincerely,

David B. Spoor, Chairman
Angleton Drainage District

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
BM	=	BENCHMARK
C.I.R.	=	CAPPED IRON ROD
D.E.	=	DRAINAGE EASEMENT
D.&D.E.	=	DRAINAGE AND DETENTION EASEMENT
D.M.E.	=	DRAINAGE/MAINTENANCE EASEMENT
FND	=	FOUND
I.R.	=	IRON ROD
P.O.B.	=	POINT OF BEGINNING
R.O.W.	=	RIGHT-OF-WAY
S.S.E.	=	SANITARY SEWER EASEMENT
U.E.	=	UTILITY EASEMENT
VOL., Pg.	=	VOLUME, PAGE
W.L.E.	=	WATER LINE EASEMENT

SYMBOLS

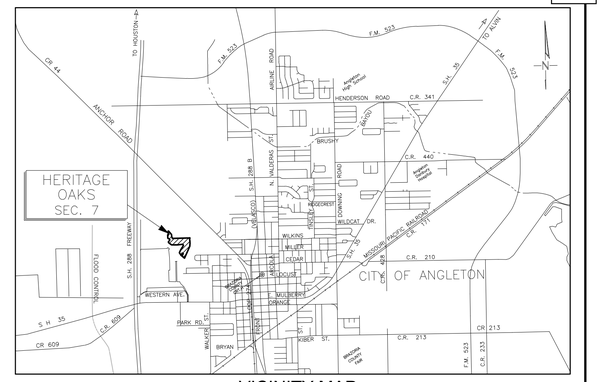
- ○ = SET 5/8" I.R. W/CAP "BAKER & LAWSON"
- ○ = FOUND MONUMENT (AS NOTED)
- ✥ = (TBM) TEMPORARY BENCHMARK

Line Table		
Line No.	Length	Direction
L1	24.71'	N85°43'21"E
L2	147.75'	S05°33'23"E
L3	106.95'	S28°07'20"E
L4	20.73'	S85°31'12"W
L5	60.00'	N74°27'38"W
L6	204.32'	N35°28'53"W
L7	77.09'	S85°53'18"W
L8	15.01'	N04°45'45"W
L9	42.58'	S85°22'28"W
L10	42.60'	N09°05'17"W
L11	16.99'	S80°59'41"W
L12	31.87'	S74°32'43"E
L13	112.93'	N04°29'54"W
L14	95.63'	N89°29'54"W
L15	114.74'	N28°08'15"W
L16	108.55'	N74°33'52"W
L17	106.90'	N21°24'40"E
L18	100.61'	N25°59'16"E
L19	45.69'	N15°47'52"W
L20	52.35'	N56°46'59"W

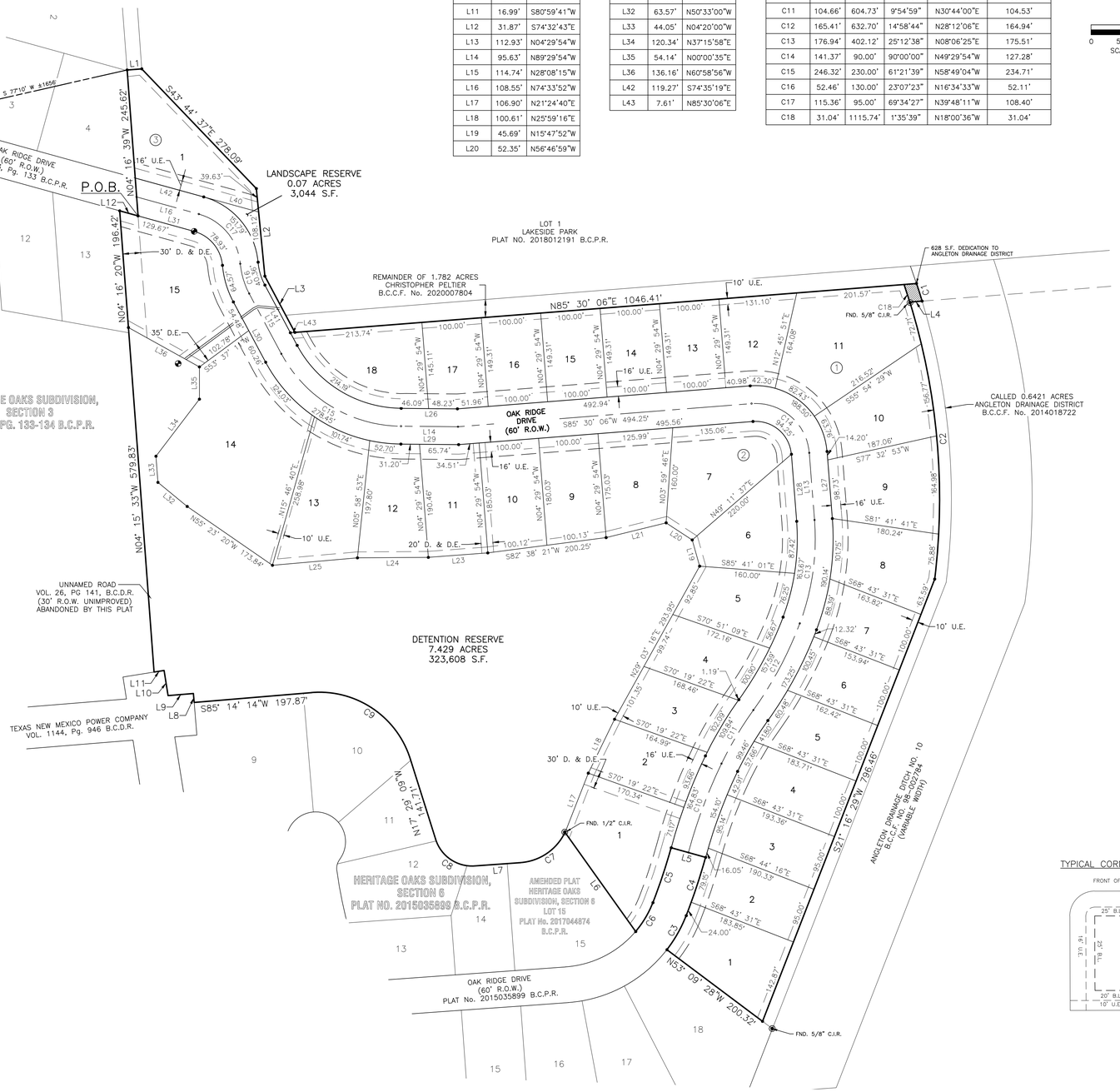
Line Table		
Line No.	Length	Direction
L21	103.72'	S76°11'19"W
L23	100.00'	S85°40'34"W
L24	119.03'	S89°36'59"W
L25	143.19'	S85°00'05"W
L26	94.32'	S89°29'54"E
L27	112.93'	S04°29'54"E
L28	112.98'	S04°29'54"E
L29	96.94'	S89°29'54"E
L30	114.74'	S28°08'15"E
L31	97.80'	S74°35'19"E
L32	63.57'	N50°33'00"W
L33	44.05'	N04°20'00"W
L34	120.34'	N37°15'58"E
L35	54.14'	N00°00'35"E
L36	136.16'	N60°58'56"W
L42	119.27'	S74°35'19"E
L43	7.61'	N85°30'06"E

Curve Table					
Curve No.	Length	Radius	Delta	Chord Bearing	Chord Distance
C1	31.01'	1313.07'	1°21'11"	S17°42'59"E	31.01'
C2	470.34'	1115.74'	24°09'10"	S05°08'12"E	466.86'
C3	66.01'	230.00'	16°26'37"	N29°29'24"E	65.78'
C4	103.16'	1032.50'	5°43'28"	N18°24'06"E	103.12'
C5	97.16'	972.50'	5°43'28"	S18°24'06"W	97.12'
C6	56.73'	170.00'	19°07'16"	S30°49'49"W	56.47'
C7	94.59'	90.00'	60°13'14"	S55°47'36"W	90.30'
C8	85.56'	63.99'	76°36'31"	N55°47'24"W	79.33'
C9	215.41'	159.71'	77°16'37"	N56°07'27"W	199.45'
C10	159.44'	849.62'	10°45'09"	N20°23'59"E	159.21'
C11	104.66'	604.73'	9°54'59"	N30°44'00"E	104.53'
C12	165.41'	632.70'	14°58'44"	N28°12'06"E	164.94'
C13	176.94'	402.12'	25°12'38"	N08°06'25"E	175.51'
C14	141.37'	90.00'	90°00'00"	N49°29'54"W	127.28'
C15	246.32'	230.00'	61°21'39"	N58°49'04"W	234.71'
C16	52.46'	130.00'	23°07'23"	N16°34'33"W	52.11'
C17	115.36'	95.00'	69°34'27"	N39°48'11"W	108.40'
C18	31.04'	1115.74'	1°35'39"	N18°00'36"W	31.04'

0 50' 100' 200'
SCALE : 1" = 100'



VICINITY MAP
N.T.S.



ELEVATIONS ARE BASED ON HERITAGE OAKS BM #1 NGVD1973

BM #1. CUT SQUARE ON TOP OF CURB AT NE CORNER OF BRIDGE, NORTHBOUND LANE, SH 288 FREEWAY AT ANGLETON DRAINAGE DISTRICT DITCH 10. ELEV. = 29.96.

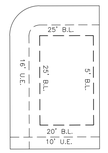
SITE BENCHMARK

TBM 1: A BOX CUT ON A CONCRETE HEADWALL IN THE WEST CORNER OF THE SUBDIVISION ELEVATION = 27.27 FEET, NGVD1973

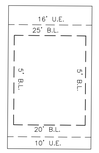
NOTES:

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 48039C0440H, REVISED DATE OF JUNE 5, 1989, THE SURVEYED PROPERTY LIES WITHIN ZONE "X" (UNSHADED), AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. 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. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. SIDEWALKS SHALL BE REQUIRED PER ANGLETON LDC SEC. 23.14 – SIDEWALKS AND ACCESSIBILITY.
10. IT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER ASSOCIATION TO MAINTAIN DRAINAGE AND DETENTION RESERVES.
11. IT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER ASSOCIATION TO MAINTAIN LANDSCAPE RESERVES.

TYPICAL CORNER LOT



TYPICAL LOT



OWNER:
CHRISTOPHER PELTIER
P.O. BOX 288
ANGLETON TX 77516

REVISED:

FINAL REPLAT

HERITAGE OAKS SEC 7 SUBDIVISION
A 27.122 ACRE, 34-LOT, 3-BLOCK 2-RESERVE SUBDIVISION

PORTION OF LOTS 47, 48, 49, 50 AND 51 OF
THE NEW YORK AND TEXAS LAND COMPANY SUBDIVISION
VOL. 26, Pg. 140 B.C.D.R.
LOCATED IN THE J.D.J. VALDERAS SURVEY,
ABSTRACT No. 380
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.: 13446	SCALE: 1" = 100'	DRAWN BY: BT
DRAWING NO.: 13446 PLAT.DWG	DATE: 06/11/2020	CHECKED BY:

SHEET 1 OF 2

I:\2020\13446\Data\Projections\Survey\Cad\13446PLAT.dwg, 11/25/20, Brian Thomas

DEDICATION STATEMENT:

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS: THAT CHRISTOPHER PELTIER, acting herein by and through its duly authorized officers, does hereby adopt this plat designating the hereinabove described property as HERITAGE OAKS SEC 7, 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 AND DETENTION EASEMENT

This plat is hereby adopted by the Owners and approved by the City of Angleton (called "City") subject to the following conditions which shall be binding upon the Owners, their heirs, grantees and successors: The portion 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 herein above 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.

_____

CHRISTOPHER PELTIER

STATE OF TEXAS §
COUNTY OF BRAZORIA §

Before me, the undersigned, personally appeared CHRISTOPHER PELTIER, 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

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, 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 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: _____
MIGUELANGEL A. SAUCEDA DATE
PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 121992

FIELD NOTES FOR 27.122 ACRE

Being a tract of land containing 27.122 acre (1,181,446 square feet), located within J.D.J. Valderas Survey, Abstract Number (No.) 380, in Brazoria County, Texas; Said 27.122 acre being a portion of Lots 47, 48, 49, 50 and 51 of the New York and Texas Land Company Subdivision recorded under Volume (Vol.) 26, Page 140 of the Brazoria County Deed Records (B.C.D.R.), being a portion of Lot 2 of Lakeside Park recorded under Plat No. 2018012191 of the Brazoria County Plat Records (B.C.P.R.), a portion of a called 1.782 acre tract recorded in the name of Chris Peltier under Brazoria County Clerk's File (B.C.C.F.) No. 2020007804 and a portion of a called 35.06 acre tract recorded in the name of Christopher Peltier under B.C.C.F. No. 2011029156, being all of a called 1.723 acre tract recorded in the name of Chris Peltier under B.C.C.F. No. 2018061649; Said 27.122 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 with cap stamped "BAKER & LAWSON" found on the west line of said Lot 2 of Lakeside Park, at the south end of the terminus line of the right-of-way (R.O.W.) of Oak Ridge Drive (sixty feet wide per Plat No. 2002057784 of the B.C.P.R.);

THENCE, with the west line of said Lot 2 of Lakeside Park and the east line of Heritage Oaks Section 3, a subdivision recorded under Volume 23, Page 133 of the B.C.P.R., North 04 degrees 16 minutes 39 seconds West, a distance of 245.62 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for the northwest corner of said 1.782 acre tract and the herein described tract;

THENCE, with the north line of said 1.782 acre tract, North 85 degrees 43 minutes 21 seconds East, a distance of 24.71 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found on the common line of Lots 1 and 2 of said Lakeside Park, for the north northeast corner of said 1.782 acre tract and the herein described tract;

THENCE, with the common line of said Lots 1 and 2 of Lakeside Park, the following two (2) courses:

1. South 43 degrees 44 minutes 37 seconds East, a distance of 278.09 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for an angle point;
2. South 05 degrees 33 minutes 23 seconds East, a distance of 147.75 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for an angle point;

THENCE, continue with the common line of said Lots 1 and 2 of Lakeside Park, and through and across said 1.782 acre tract, South 28 degrees 07 minutes 20 seconds East, a distance of 106.95 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an interior corner of the herein described tract;

THENCE, through and across said 1.782 acre tract, North 85 degrees 30 minutes 06 seconds East, a distance of 1,046.41 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the west line of a Angleton Drainage District Ditch 10 (width varies per B.C.C.F. No. 1998002784);

THENCE, with the east line of said Ditch 10 the following four (4) courses:

1. 31.01 feet along the arc of a curve to the right, having a radius of 1,313.07 feet, a central angle of 01 degrees 21 minutes 11 seconds, a chord that bears South 17 degrees 42 minutes 59 seconds East, a distance of 31.01 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set at an angle point;
2. South 85 degrees 31 minutes 12 seconds West, a distance of 20.73 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for an angle point, at the beginning of a non-tangent curve to the right;
3. 470.34 feet along the arc of said curve to the right, having a radius of 1,115.74 feet, a central angle of 24 degrees 09 minutes 10 seconds, a chord that bears South 05 degrees 08 minutes 12 seconds East, a distance of 466.86 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" found for an angle point;
4. South 21 degrees 16 minutes 29 seconds West, a distance of 796.46 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the northeast line of Lot 18, Block 2 of Heritage Oaks Subdivision Section Six recorded under Plat No. 2015035899 of the B.C.P.R., for the southeast corner of the herein described tract;

THENCE, with the north line of said Lot 18, North 53 degrees 09 minutes 28 seconds West, a distance of 200.32 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the east R.O.W. line of Oak Ridge Drive (sixty feet wide per Plat No. 2015035899 B.C.P.R.) for an angle point, at the beginning of a non-tangent curve to the left;

THENCE, with the east R.O.W. line of said Oak Ridge Drive, the following two (2) courses:

1. 66.01 feet along the arc of said curve to the left, having a radius of 230.00 feet, a central angle of 16 degrees 26 minutes 37 seconds, a chord that bears North 29 degrees 29 minutes 24 seconds East, a distance of 65.78 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the beginning of a curve to the left;
2. 103.16 feet along the arc of said curve to the left, having a radius of 1032.50 feet, a central angle of 05 degrees 43 minutes 28 seconds, a chord that bears North 18 degrees 24 minutes 06 seconds East, a distance of 103.12 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the east end of the north terminus line of said Oak Ridge Drive;

THENCE, with the north terminus line of said Oak Ridge Drive, North 74 degrees 27 minutes 38 seconds West, a distance of 60.00 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the west end of said terminus line, at the beginning of a non-tangent curve to the right;

THENCE, with the west R.O.W. line of said Oak Ridge Drive, the following two (2) courses:

1. 97.16 feet along the arc of said curve to the right, having a radius of 972.50 feet, a central angle of 05 degrees 43 minutes 28 seconds, a chord that bears South 18 degrees 24 minutes 06 seconds West, a distance of 97.12 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the beginning of a curve to the right;
2. 56.73 feet along the arc of said curve to the right, having a radius of 170.00 feet, a central angle of 19 degrees 07 minutes 16 seconds, a chord that bears South 30 degrees 49 minutes 49 seconds West, a distance of 56.47 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set at the southeast corner of the Amended Plat of Heritage Oaks Subdivision, Section 6, Lot 15 recorded under Plat No. 2017044874 of the B.C.P.R., for an angle point;

THENCE, with the east line of said Lot 15, North 35 degrees 28 minutes 53 seconds West, a distance of 204.32 feet to a 1/2-inch iron rod with cap found at the north corner of said Lot 15, for an angle point;

THENCE, with the north line of said Lot 15, 94.59 feet along the arc of a curve to the right, having a radius of 90.00 feet, a central angle of 60 degrees 13 minutes 14 seconds, a chord that bears South 55 degrees 47 minutes 36 seconds West, a distance of 90.30 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for a point of tangency;

THENCE, with the north lines of said Lot 15 and Lot 14 of said Heritage Oaks Subdivision Section Six, South 85 degrees 53 minutes 18 seconds West, a distance of 77.09 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the beginning of a curve to the right;

THENCE, with the north line of said Heritage Oaks Subdivision Section Six, the following four (4) courses:

1. 85.56 feet along the arc of said curve to the right, having a radius of 63.99 feet, a central angle of 76 degrees 36 minutes 31 seconds, a chord that bears North 55 degrees 47 minutes 24 seconds West, a distance of 79.33 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for a point of tangency;
2. North 17 degrees 29 minutes 09 seconds West, a distance of 141.71 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for the beginning of a curve to the left;
3. 215.41 feet along the arc of said curve to the left, having a radius of 159.71 feet, a central angle of 77 degrees 16 minutes 37 seconds, a chord that bears North 56 degrees 07 minutes 27 seconds West, a distance of 199.45 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for a point of tangency;
4. South 85 degrees 14 minutes 14 seconds West, a distance of 197.87 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the east line of a tract recorded in the name of Texas New Mexico Power Company under Vol. 1144, Page 946 of the Brazoria County Deed Records, at the northwest corner of Lot 9 of said Heritage Oaks Subdivision, Section 6, for the southwest corner of the herein described tract;

THENCE, with the easterly line of said Texas New Mexico Power Company tract the following four (4) courses:

1. North 04 degrees 45 minutes 45 seconds West, a distance of 15.01 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point;
2. South 85 degrees 22 minutes 28 seconds West, a distance of 42.58 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point;
3. North 09 degrees 05 minutes 17 seconds West, a distance of 42.60 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point;
4. South 80 degrees 59 minutes 41 seconds West, a distance of 16.99 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the west line of an unnamed road (thirty foot R.O.W., Vol. 26, Page 141 B.C.D.R.), on the east line of said Heritage Oaks Subdivision, Section 3, for the west southwest corner of the herein described tract;

THENCE, with the east line of said Heritage Oaks Subdivision, Section 3, being the west line of said unnamed road, North 04 degrees 15 minutes 53 seconds West, a distance of 579.83 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set for an angle point, at the southwest corner of said Lot 2;

THENCE, with the common line of said Heritage Oaks Section 3 and said Lot 2, North 04 degrees 16 minutes 39 seconds West, a distance of 196.44 feet to a 5/8-inch iron rod with cap stamped "Baker & Lawson" set on the south R.O.W. line of Oak Ridge Drive, for an angle point;

THENCE, with the south R.O.W. line of said Oak Ridge Drive, South 74 degrees 32 minutes 43 seconds East, a distance of 31.87 feet to the POINT OF BEGINNING and containing 27.122 acres of land.

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.

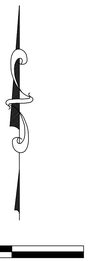
SIGNED: _____
DEVIN R. ROYAL DATE
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6667

LEGEND

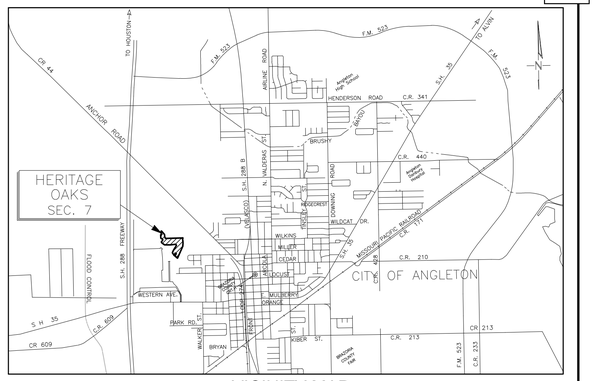
B.C.C.F.	=	BRAZORIA COUNTY CLERK'S FILE
B.C.D.R.	=	BRAZORIA COUNTY DEED RECORDS
B.C.P.R.	=	BRAZORIA COUNTY PLAT RECORDS
B.L.	=	BUILDING LINE
BM	=	BENCHMARK
C.I.R.	=	CAPPED IRON ROD
D.E.	=	DRAINAGE EASEMENT
D.&D.E.	=	DRAINAGE AND DETENTION EASEMENT
D.M.E.	=	DRAINAGE/MAINTENANCE EASEMENT
FND	=	FOUND
I.R.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

SYMBOLS

○	= SET 5/8" I.R. W/CAP "BAKER & LAWSON"
○	= FOUND MONUMENT (AS NOTED)
⊕	= (TBM) TEMPORARY BENCHMARK



0 50' 100' 200'
SCALE : 1" = 100'



VICINITY MAP
N.T.S.

OWNER:
CHRISTOPHER PELTIER
P.O. BOX 288
ANGLETON TX 77516

SHEET 2 OF 2

REVISED:

FINAL REPLAT
HERITAGE OAKS SEC 7 SUBDIVISION
A 27.122 ACRE, 34-LOT, 3 BLOCK 2-RESERVE SUBDIVISION

PORTION OF LOTS 47, 48, 49, 50 AND 51 OF
THE NEW YORK AND TEXAS LAND COMPANY SUBDIVISION
VOL. 26, Pg. 140 B.C.D.R.
LOCATED IN THE J.D.J. VALDERAS SURVEY,
ABSTRACT No. 380
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.: 13446	SCALE: 1" = 100'	DRAWN BY: BT
DRAWING NO.: 13446 PLAT.DWG	DATE: 06/11/2020	CHECKED BY:

X:\2020\13446\Engineering\Survey\Current\13446 PLAT.DWG, 6/11/2020 8:49:47 AM, Bryan Brooks

PLANS FOR CONSTRUCTION OF

PAVING, DRAINAGE AND UTILITIES ON

HERITAGE OAKS SEC. 7 SUBDIVISION

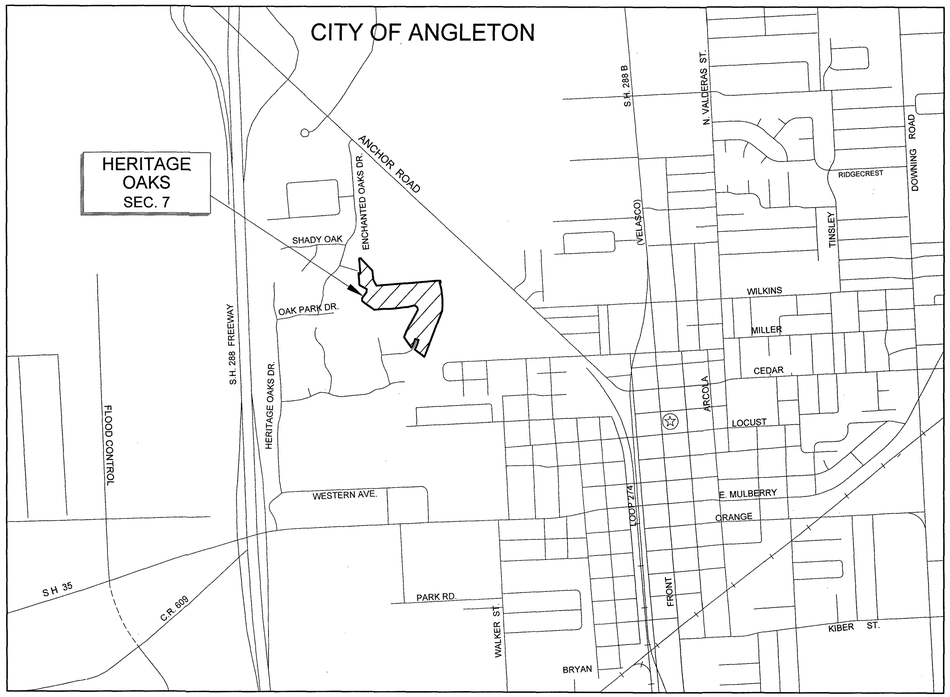
3 BLOCKS, 34 LOTS

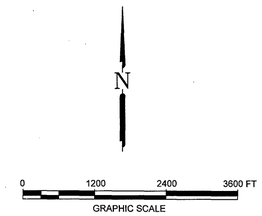
FOR THE

CITY OF ANGLETON

BRAZORIA COUNTY

B&L JOB No. 13446





CITY OF ANGLETON

MAYOR
JASON PEREZ

CITY MANAGER
CHRIS WHITTAKER

CITY COUNCIL
MIKEY SVOBODA
CECIL BOOTH
JOHN WRIGHT
TRAVIS TOWNSEND
MARK GONGORA

This subdivision lies within the Oyster Creek Watershed.

"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."

INDEX OF DRAWINGS

SHEET NO.	SHEET NAME
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1B	FINAL PLAT
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3	EXISTING CONDITIONS
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5	PLAN & PROFILE - OAK RIDGE DR. 5+00 TO 10+50
6	PLAN & PROFILE - OAK RIDGE DR. STA 10+50 TO 16+00
7	PLAN & PROFILE - OAK RIDGE DR. STA 16+00 TO 21+60
7A	PLAN & PROFILE - OAK RIDGE DR. STA 21+60 TO 22+62
8	UTILITY LAYOUT
9	DETENTION POND DESIGN, OUTFALL 1 AND SWALE S1
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19	WATERLINE DETAILS
20	SANITARY SEWER DETAILS
21	STORM SEWER DETAILS
22	WEIR DRAINAGE STRUCTURE

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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: 9/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

TITLE SHEET

PROJECT NO. 13446

SHEET NO. 1

T:\13446\Engineering\Plat\13446 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. 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.

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 CENTERPOINT ENERGY AT 713-207-2222.

SBC NOTES

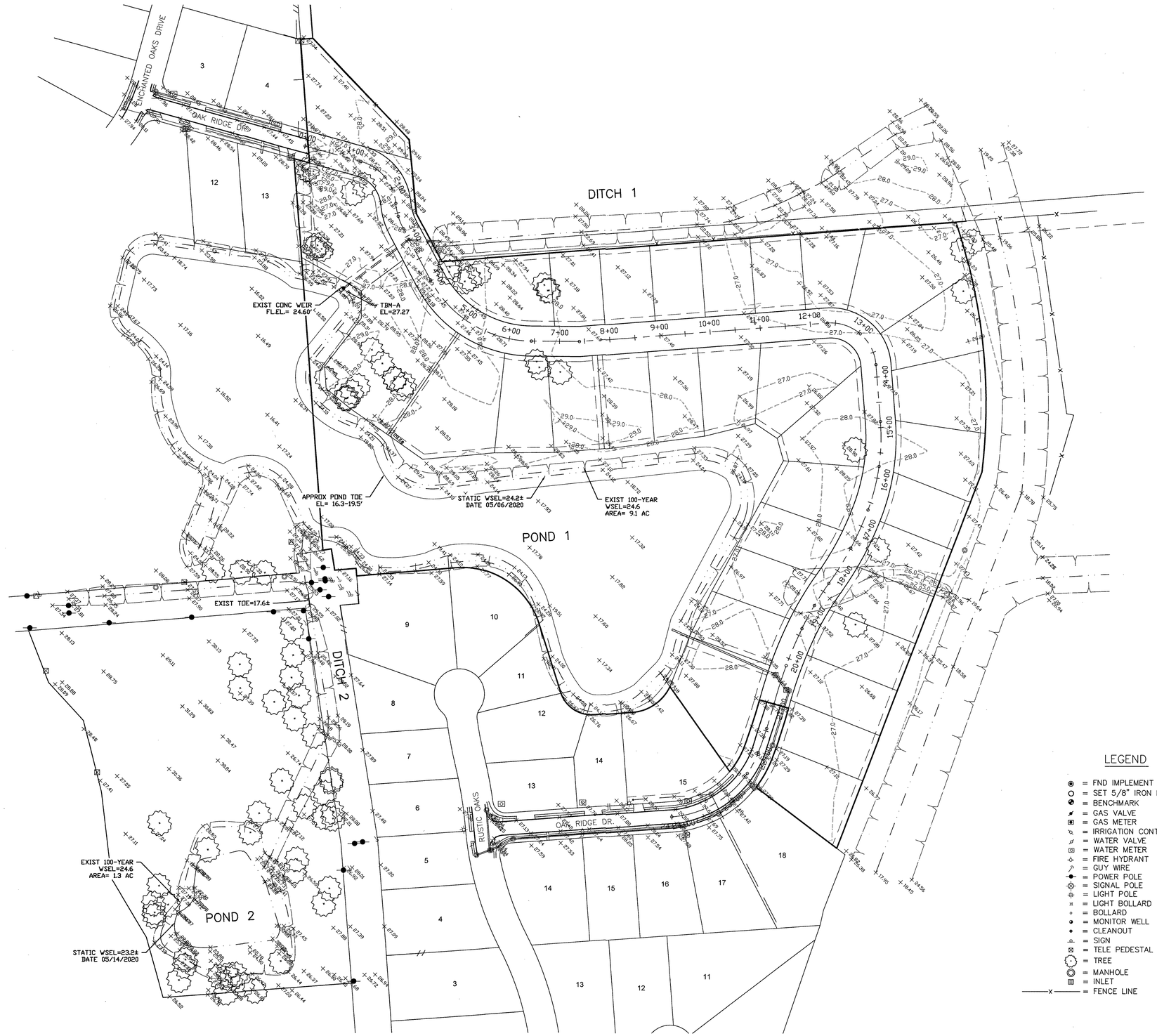
THE LOCATIONS OF SOUTHWESTERN BELL TELEPHONE CO. UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE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

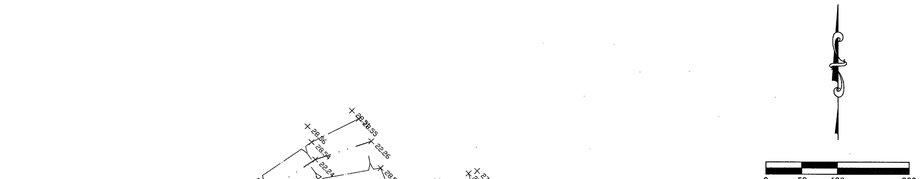
TEXAS NEW MEXICO POWER NOTES

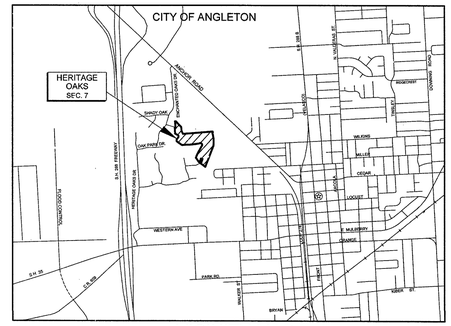
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GENERAL CONSTRUCTION NOTES

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. 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







VICINITY MAP
N.T.S.

PRE-EXISTING DETENTION SUMMARY:
POND 1 AND NORTH DITCH SERVICES HERITAGE OAKS
SECTION 3 AND SECTIONS 6

REQUIRED DETENTION SECTION 3= 10.98 AC-FT
REQUIRED DETENTION SECTION 6= 8.70 AC-FT
REQUIRED TOTAL= 19.68 AC-FT

POND 1:
AREA OF 100-YEAR WSEL @ 26.6' = 9.6 AC
AREA OF STATIC WATER LEVEL @ 24.6' = 8.7 AC
AVERAGE AREA = 9.15 AC
DEPTH= 2.0 FT
VOLUME PROVIDED= 18.3 AC-FT

POND 2:
AREA OF 100-YEAR WSEL @ 26.6' = 1.3 AC
AREA OF STATIC WATER LEVEL = 0.65 AC
AVERAGE AREA = 0.98 AC
DEPTH= 2.0 FT
VOLUME PROVIDED= 1.95 AC-FT

DITCH 1:
LENGHT= 950 LF
AVERAGE CROSS-SECTIONAL AREA= 134 SF
VOLUME PROVIDED= 127,300 CF = 2.92 AC-FT

DITCH 2:
LENGTH= 500 LF
AVERAGE CROSS-SECTION AREA= 24 SF
VOLUME PROVIDED= 12,000 CF = 0.28

TOTAL EXISTING DETENTION = 23.45
TOTAL CREDIT FOR SECTION 7 DEVELOPMENT
23.45 -19.68 = 3.77 AC-FT

ELEVATIONS ARE BASED ON HERITAGE OAKS BM #1 NGVD1973

BM #1. CUT SQUARE ON TOP OF CURB AT NE CORNER OF BRIDGE, NORTHBOUND LANE, SH 288 FREEWAY AT ANGLETON DRAINAGE DISTRICT DITCH 10. ELEV. = 29.96.

SITE BENCHMARK

TBM 1: A BOX CUT ON A CONCRETE HEADWALL IN THE WEST CORNER OF THE SUBDIVISION
ELEVATION = 27.27 FEET, NGVD1973

LEGEND

- = FND IMPLEMENT AS NOTED
- = SET 5/8" IRON ROD
- = BENCHMARK
- = GAS VALVE
- = GAS METER
- = IRRIGATION CONTROL
- = WATER VALVE
- = WATER METER
- = FIRE HYDRANT
- = GUY WIRE
- = POWER POLE
- = SIGNAL POLE
- = LIGHT POLE
- = LIGHT BOLLARD
- = BOLLARD
- = MONITOR WELL
- = CLEANOUT
- = SIGN
- = TELE PEDESTAL
- = TREE
- = MANHOLE
- = INLET
- x = FENCE LINE

1. FLOOD ZONE STATEMENT: ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR BRAZORIA COUNTY, MAP NUMBER 48039C0440H, HAVING AN EFFECTIVE DATE OF JUNE 05, 1989, REVISED BY CASE NUMBER 03-06-2336P ON OCTOBER 06, 2004, 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.
2. ACCORDING TO PROPOSED FEMA PANEL 48039C0440K, THE PROPERTY LIES FULLY WITHIN ZONE "X" (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOOD-PLAIN.
3. REMOVE VEGETATIVE MATTER. BACKFILL IN COMPACTED 8" LIFTS W/ MATERIAL HAVING LL< 65 AND PI>20.
4. REMOVE EXISTING TREES AND UNDERBRUSH. UPROOT TREE STUMPS. BACKFILL IN COMPACTED 8" LIFTS W MATERIAL HAVING LL< 65 AND PI>20.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
DRAWN
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: 9/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

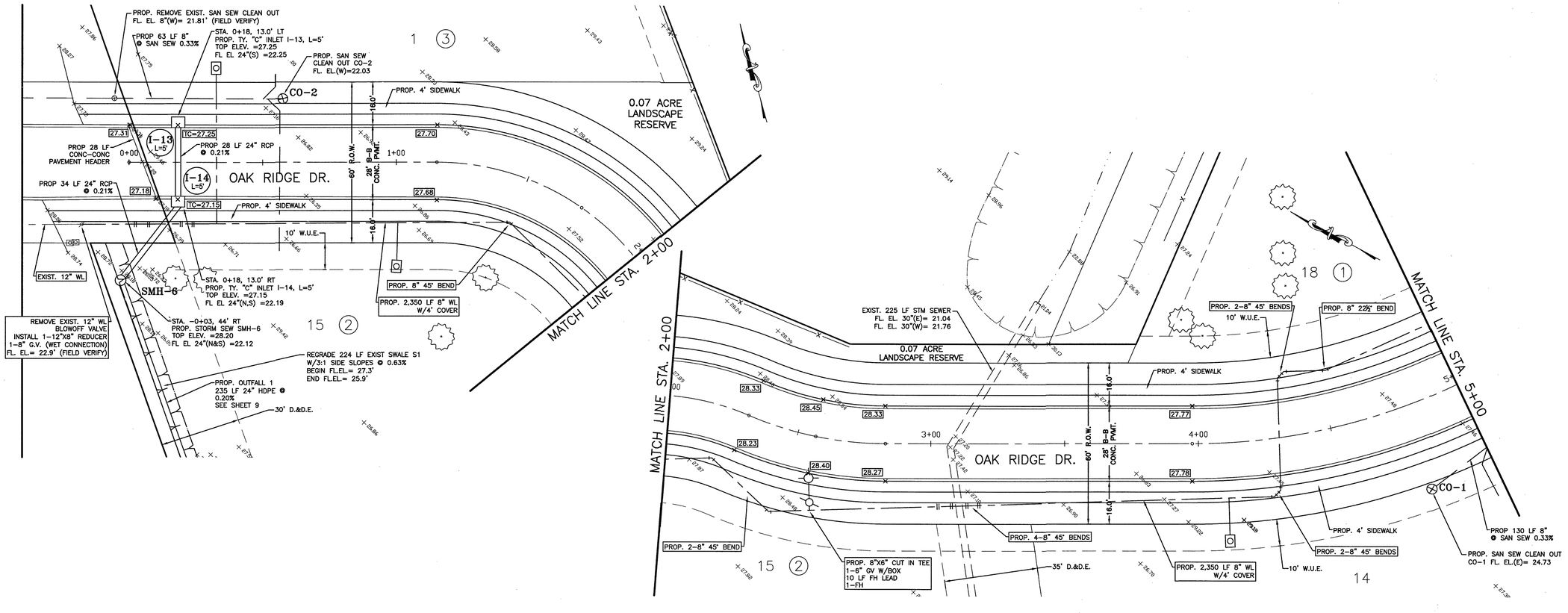
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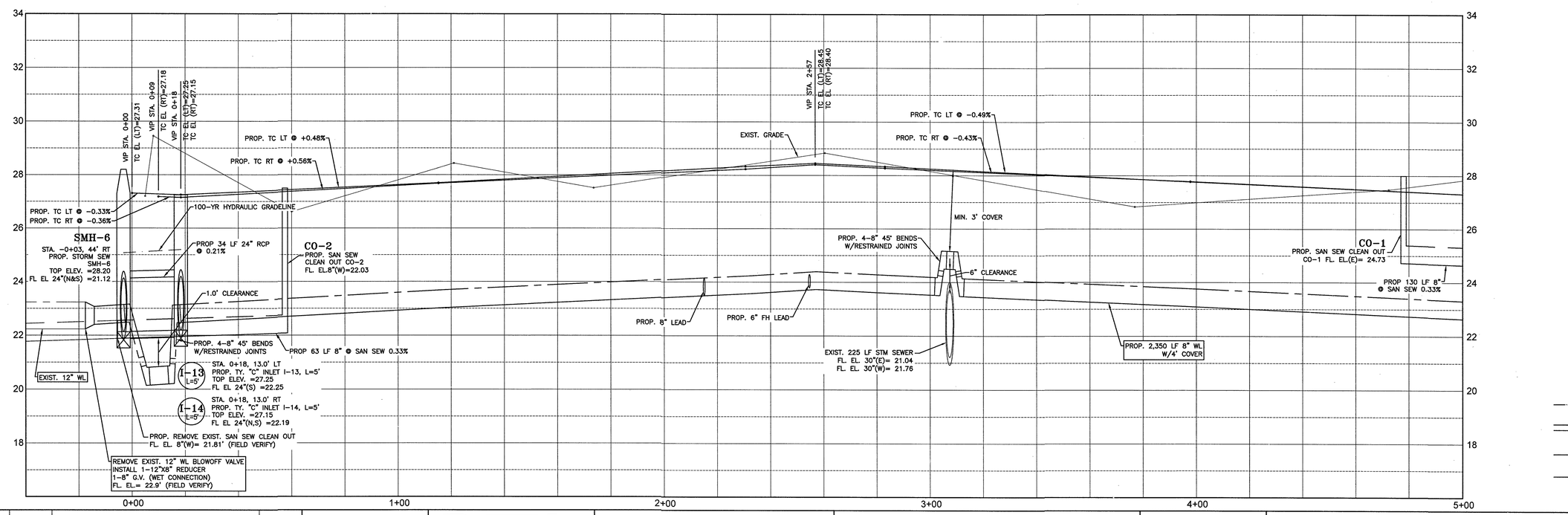
HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

EXISTING CONDITIONS
&
DEMOLITION

PROJECT NO. 13446

SHEET SET.DWG





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

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
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
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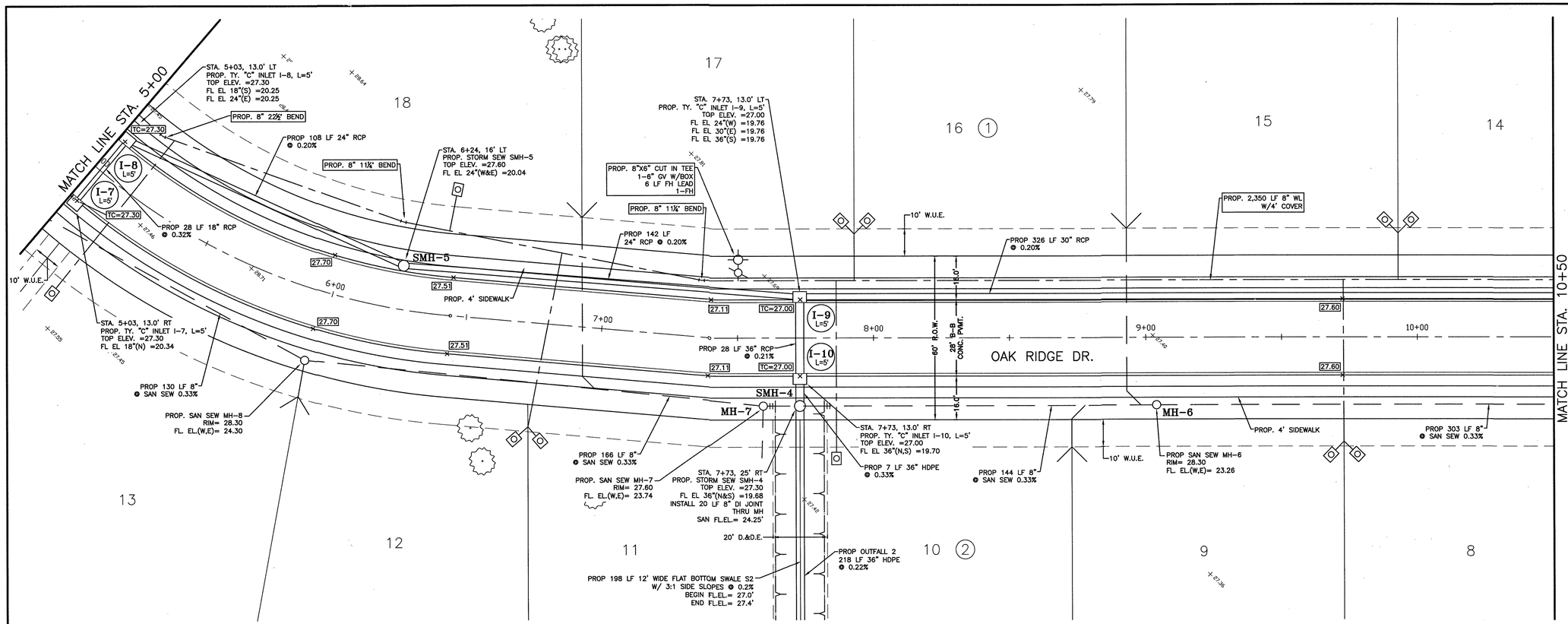
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VERTICAL: 1" = 2'

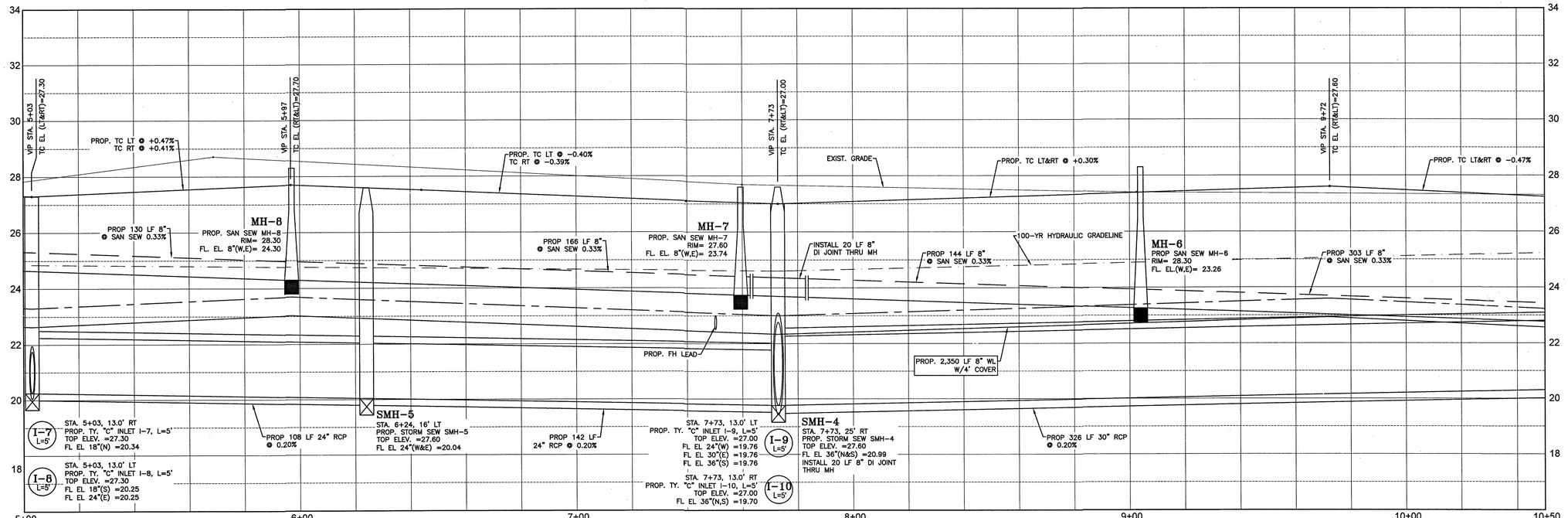
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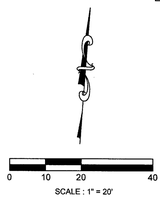
PLAN & PROFILE
OAK RIDGE DR.
STA. 0+00 TO 5+00

PROJECT NO. 13446

SHEET NO. 16 OF 16 SHEET SET.DWG







SYMBOLS LEGEND

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- FIRE HYDRANT
- WATER VALVE
- TAPPING SLEEVE AND VALVE
- REDUCER
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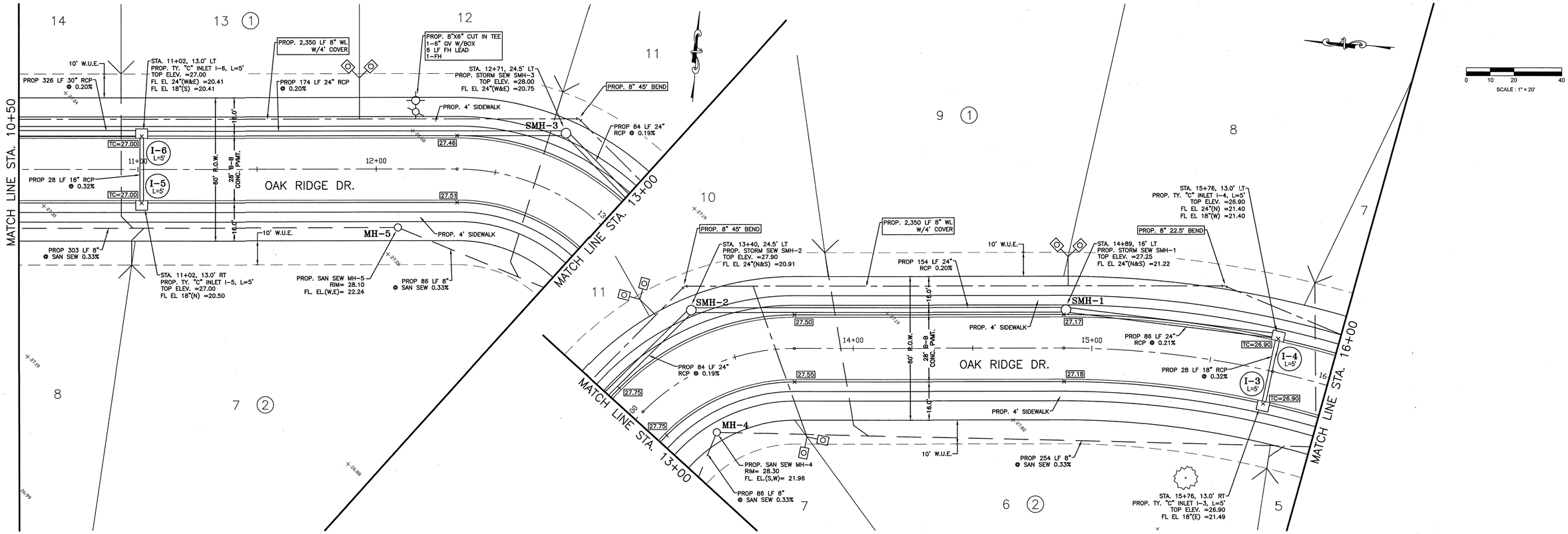
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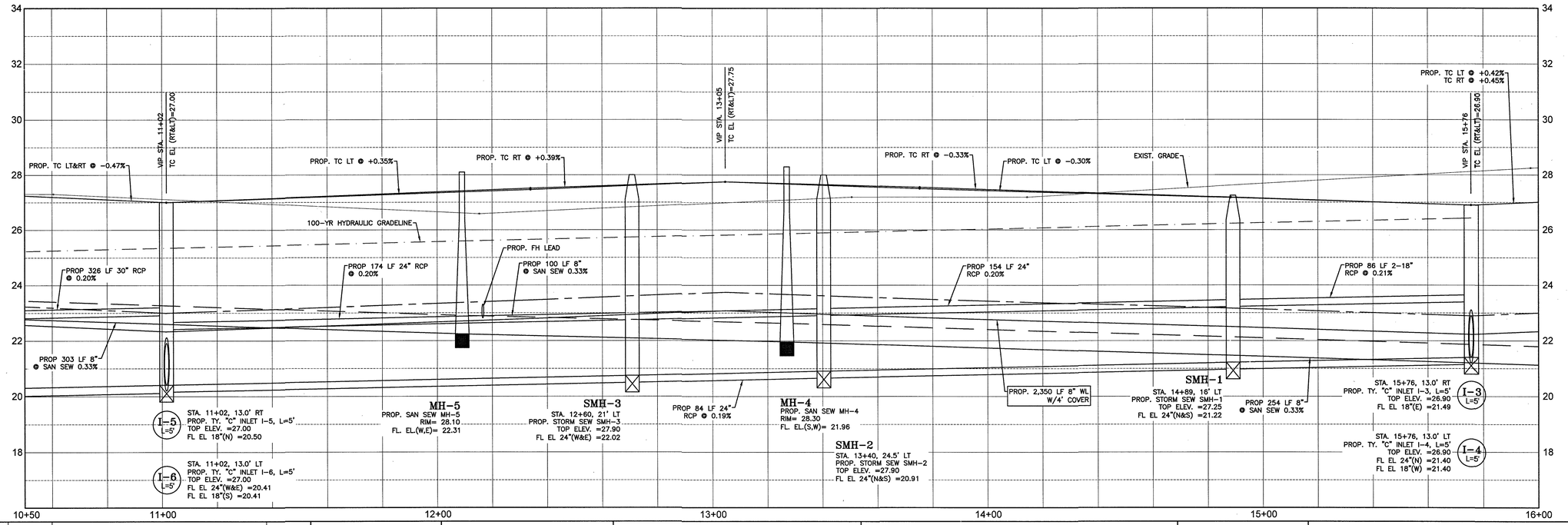
PLAN & PROFILE
OAK RIDGE DR.
STA. 5+00 TO 10+50

PROJECT NO. 13446

5

13446 SHEET SET.DWG





SYMBOLS LEGEND

- WATER METER
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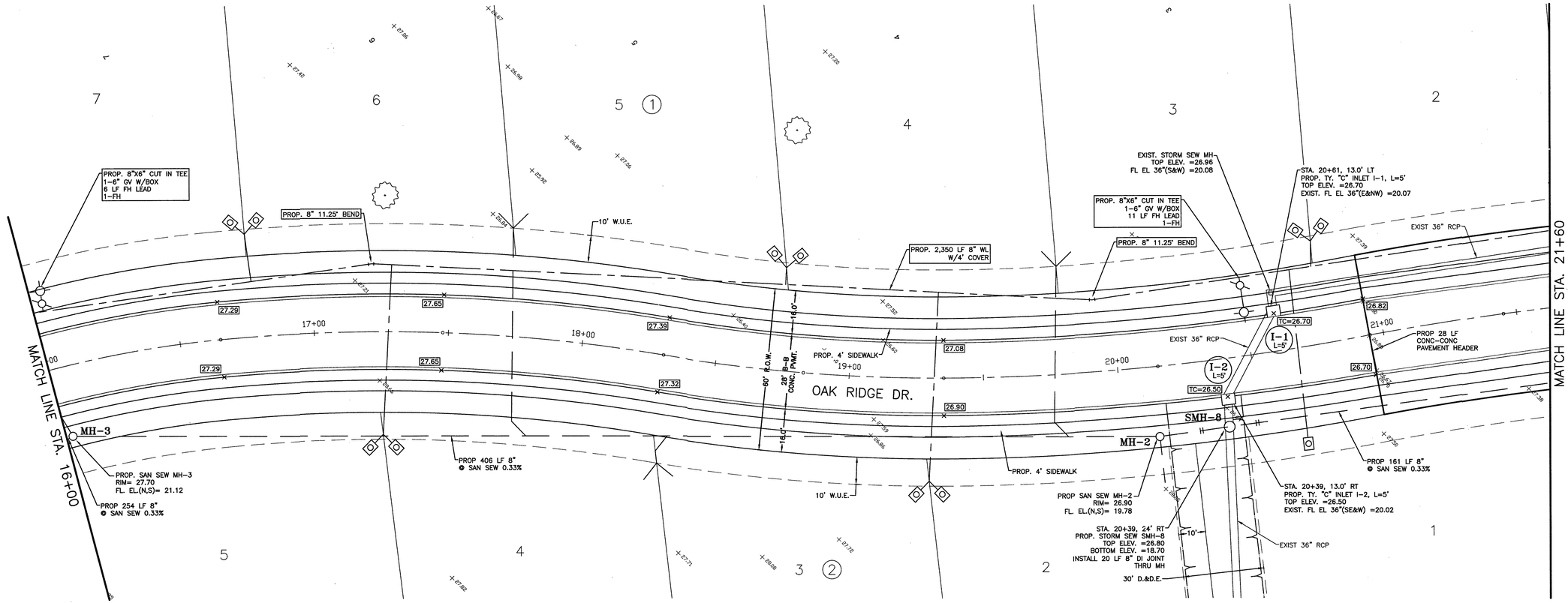
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VERTICAL: 1" = 2'

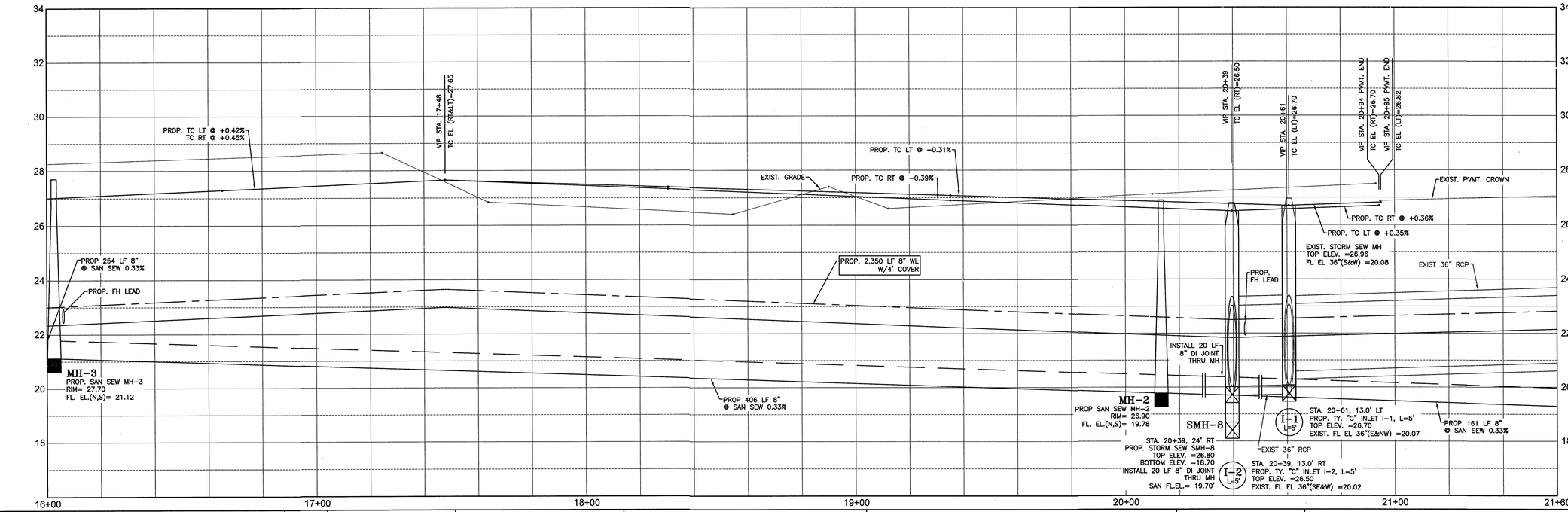
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PLAN & PROFILE
OAK RIDGE DR.
STA. 10+50 TO 16+00

PROJECT NO. 13446

13446 SHEET SET.DWG





SCALE : 1" = 20'

0 10 20 40

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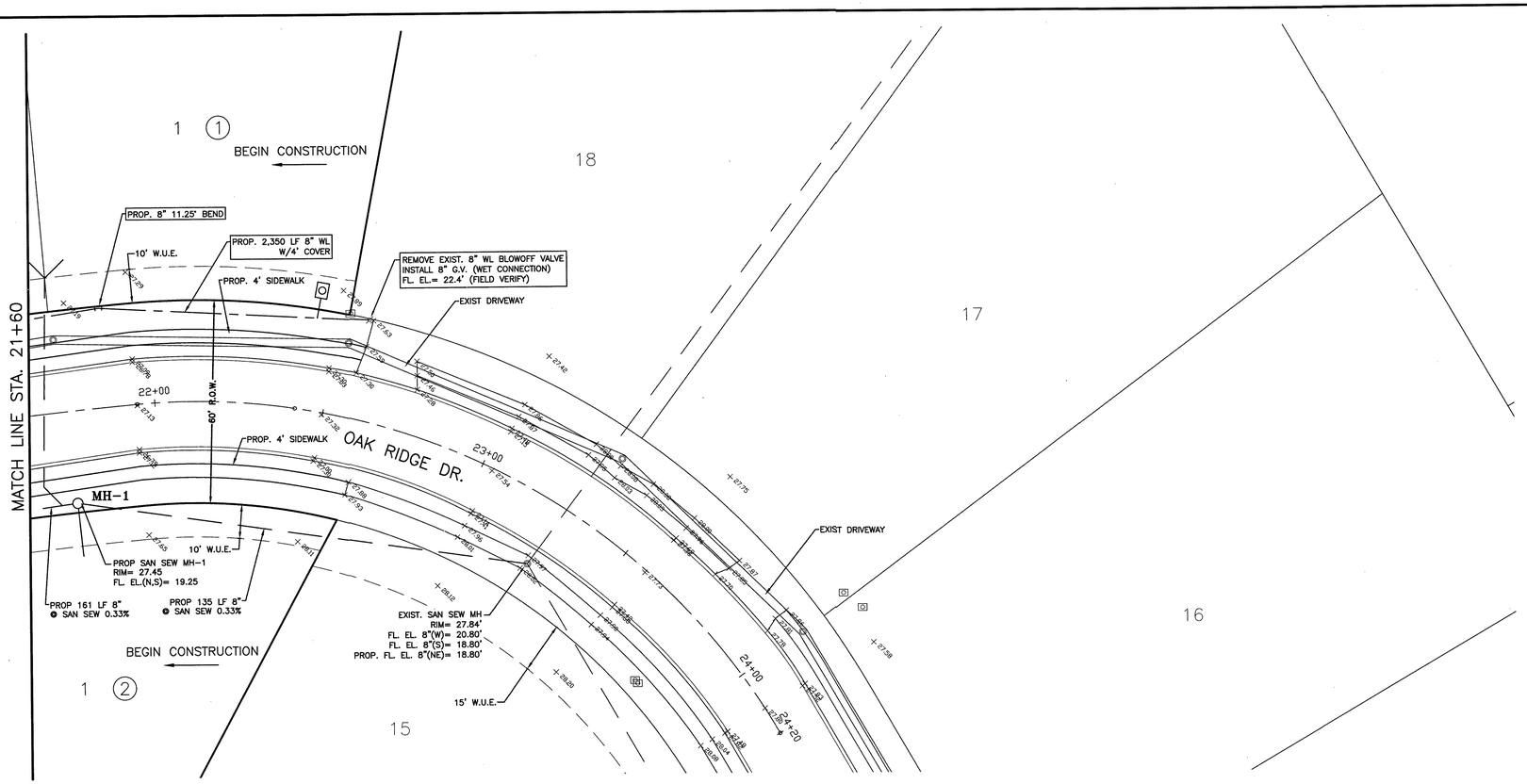
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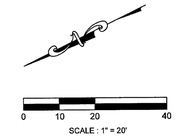
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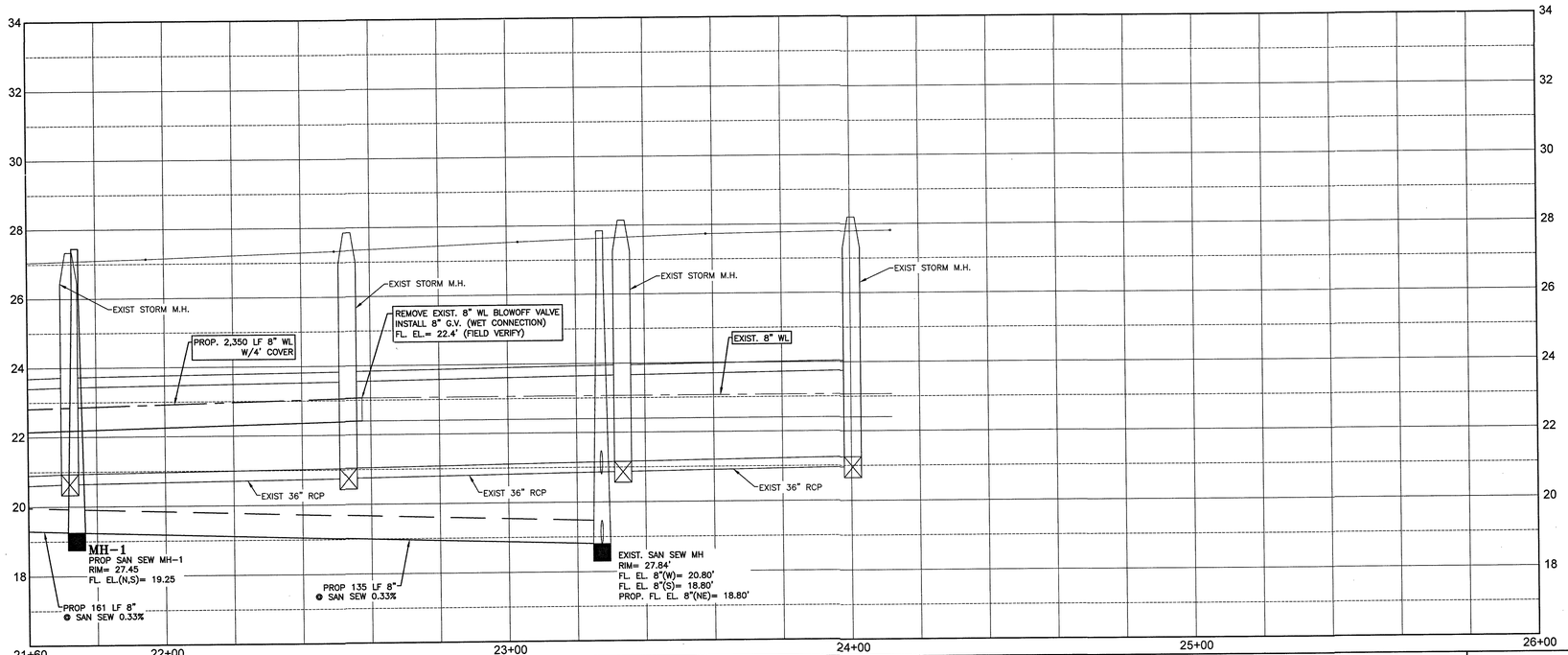
PLAN & PROFILE
OAK RIDGE DR.
STA. 16+00 TO 21+60

PROJECT NO. 13446

7
13446 SHEET SET.DWG







SYMBOLS LEGEND

- WATER METER
- FIRE HYDRANT
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PLAN: 1" = 20'
PROFILE:
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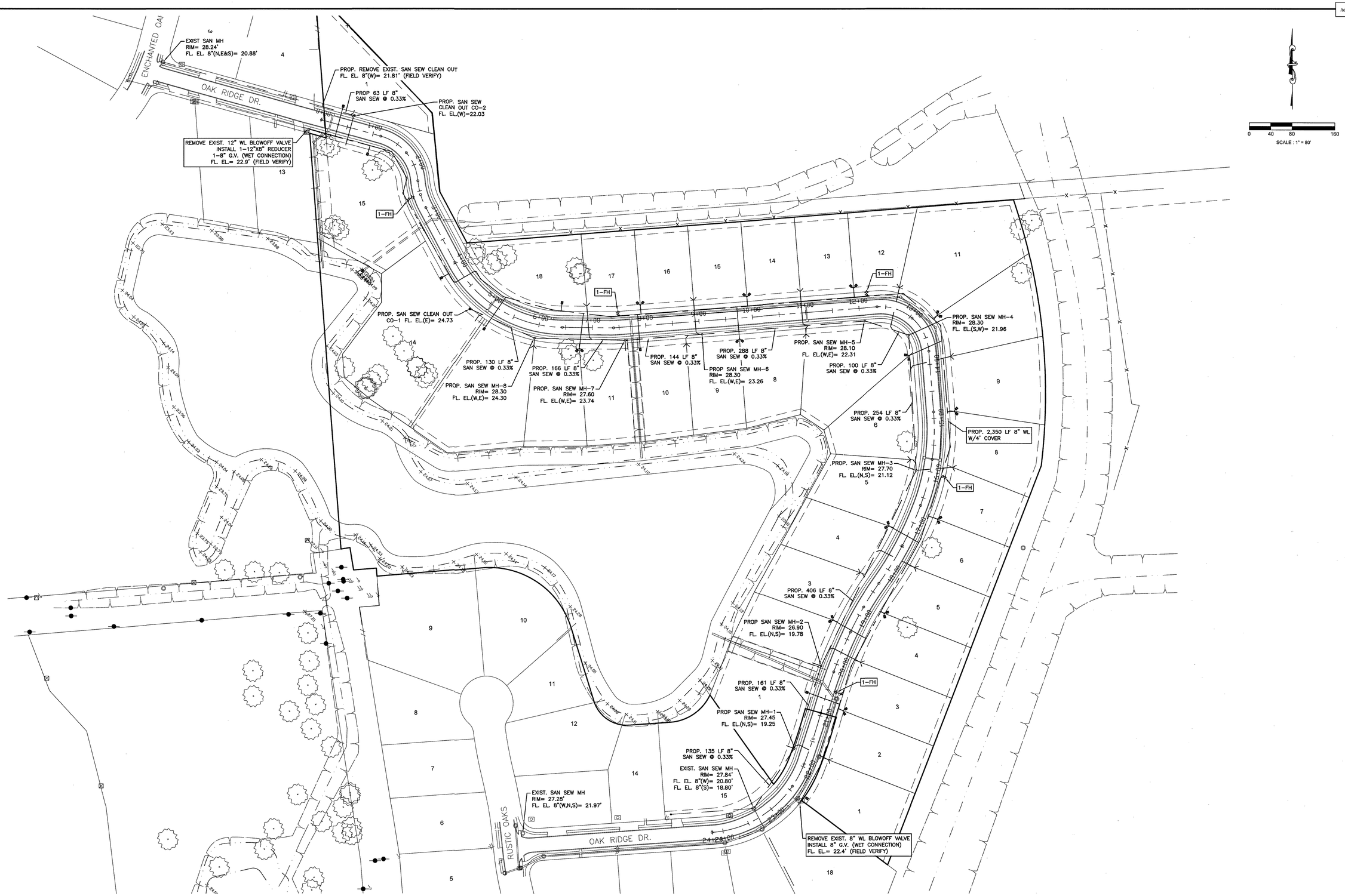
HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

PLAN & PROFILE
OAK RIDGE DR.
STA. 21+60 TO 22+62

PROJECT NO. 13446

7A

13446 SHEET SET.DWG



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

HERITAGE OAKS SEC 7 SUBDIVISION
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ANGLETON, TEXAS 77515

UTILITY LAYOUT

PROJECT NO. 13446

SHEET SET.DWG

MODIFIED POND 1 SUMMARY

REQUIRED DETENTION SECTION 3= 10.98 AC-FT
REQUIRED DETENTION SECTION 6= 8.70 AC-FT
REQUIRED DETENTION SECTION 7= 9.04 AC-FT
REQUIRED TOTAL= 28.72 AC-FT

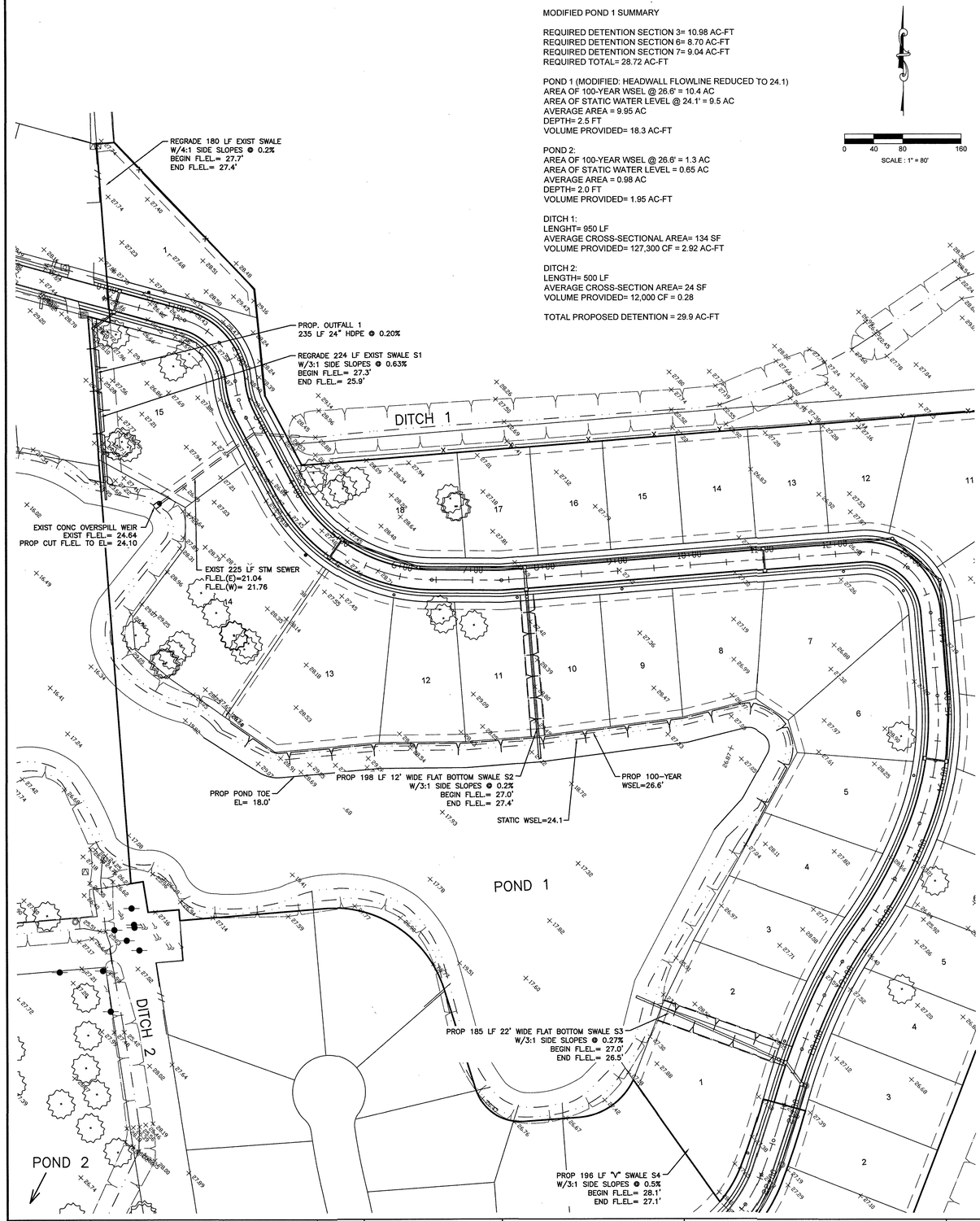
POND 1 (MODIFIED: HEADWALL FLOWLINE REDUCED TO 24.1)
AREA OF 100-YEAR WSEL @ 26.6' = 10.4 AC
AREA OF STATIC WATER LEVEL @ 24.1' = 9.5 AC
AVERAGE AREA = 9.95 AC
DEPTH= 2.5 FT
VOLUME PROVIDED= 18.3 AC-FT

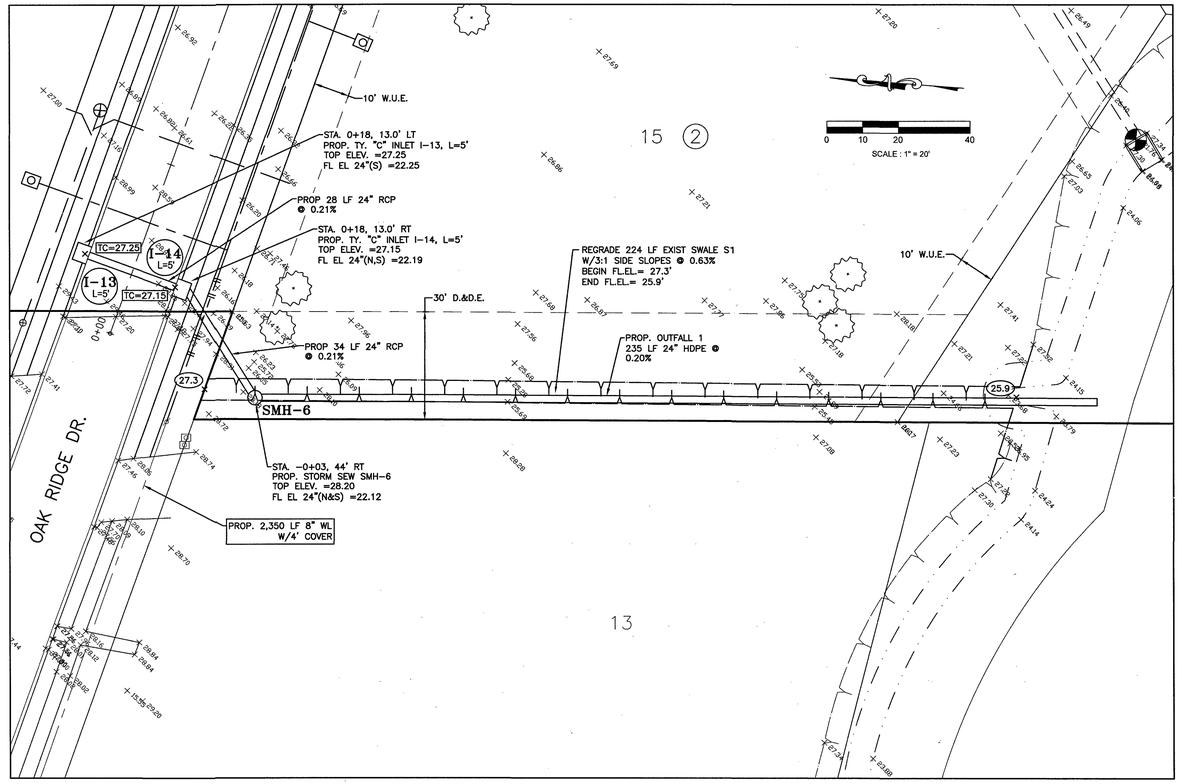
POND 2:
AREA OF 100-YEAR WSEL @ 26.6' = 1.3 AC
AREA OF STATIC WATER LEVEL = 0.65 AC
AVERAGE AREA = 0.98 AC
DEPTH= 2.0 FT
VOLUME PROVIDED= 1.95 AC-FT

DITCH 1:
LENGHT= 950 LF
AVERAGE CROSS-SECTIONAL AREA= 134 SF
VOLUME PROVIDED= 127,300 CF = 2.92 AC-FT

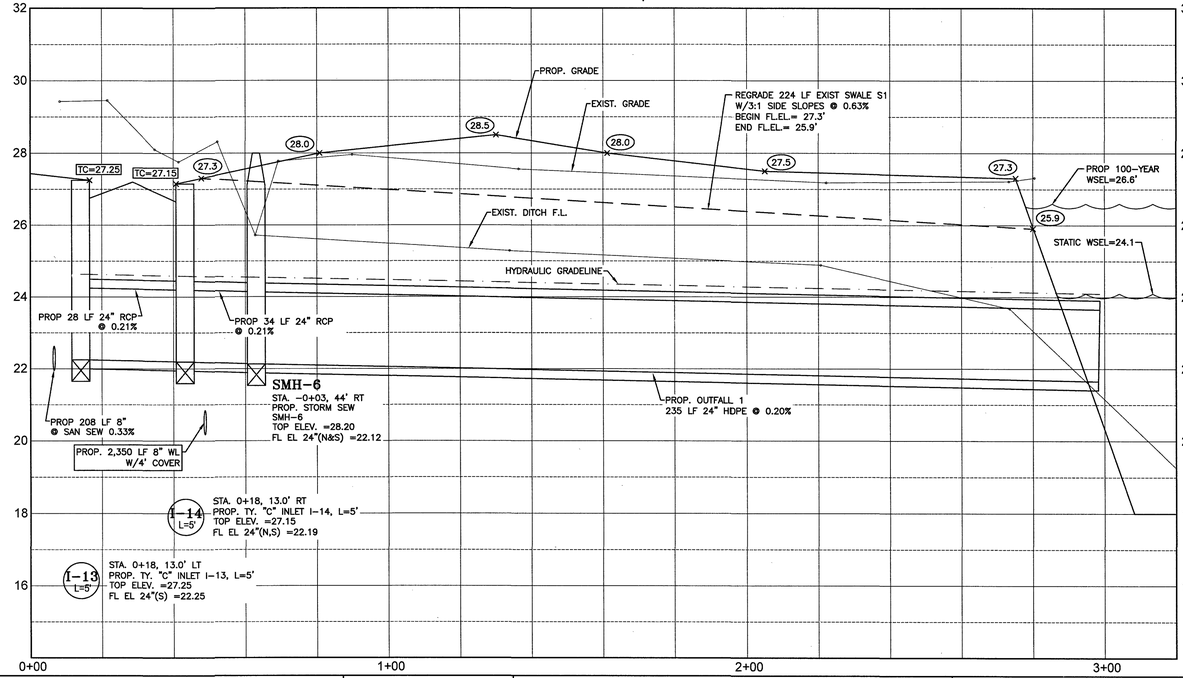
DITCH 2:
LENGTH= 500 LF
AVERAGE CROSS-SECTION AREA= 24 SF
VOLUME PROVIDED= 12,000 CF = 0.28

TOTAL PROPOSED DETENTION = 29.9 AC-FT





STORM SEWER OUTFALL 1 / SWALE S1



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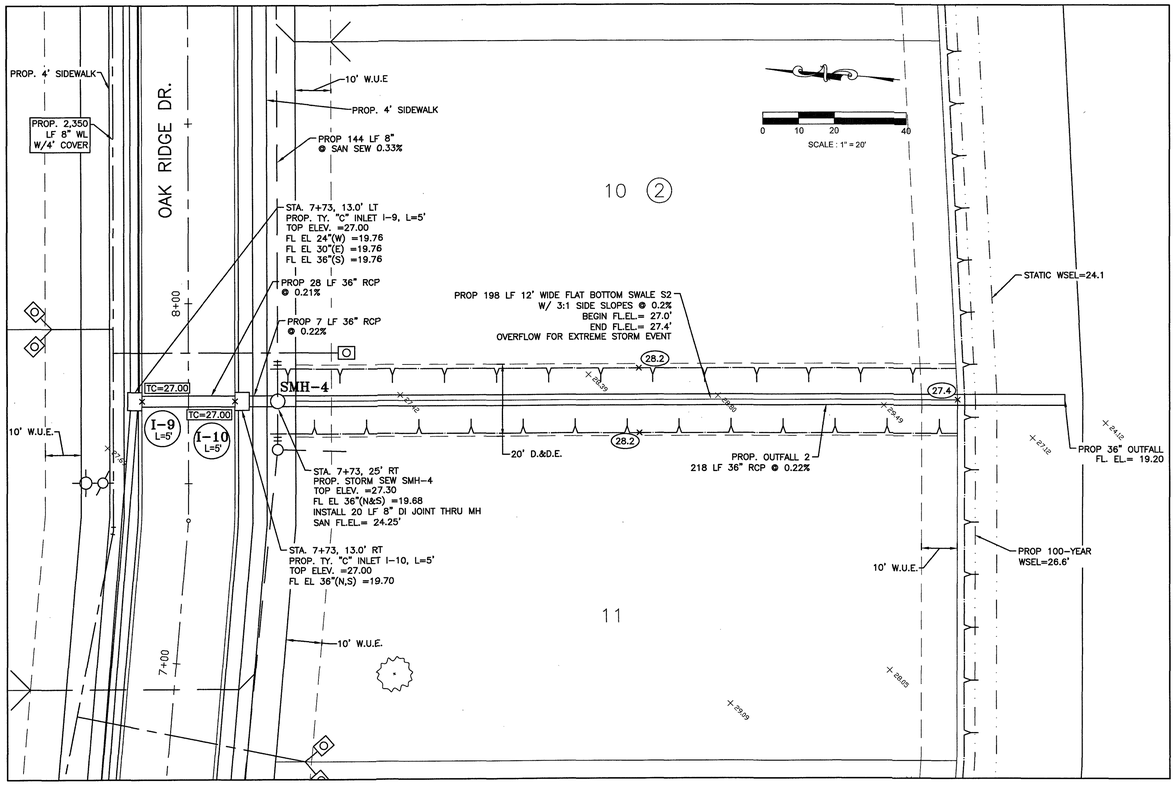
SCALE:
PLAN: AS NOTED
PROFILE:
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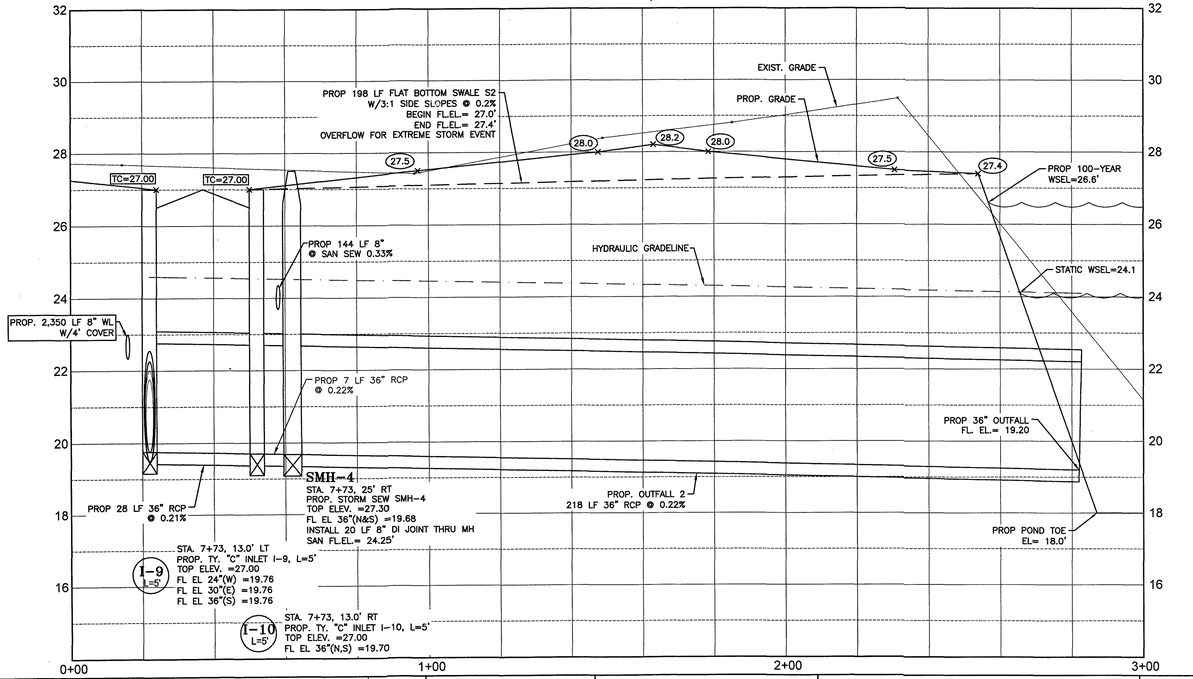
DETENTION POND DESIGN, OUTFALL 1 AND SWALE S1

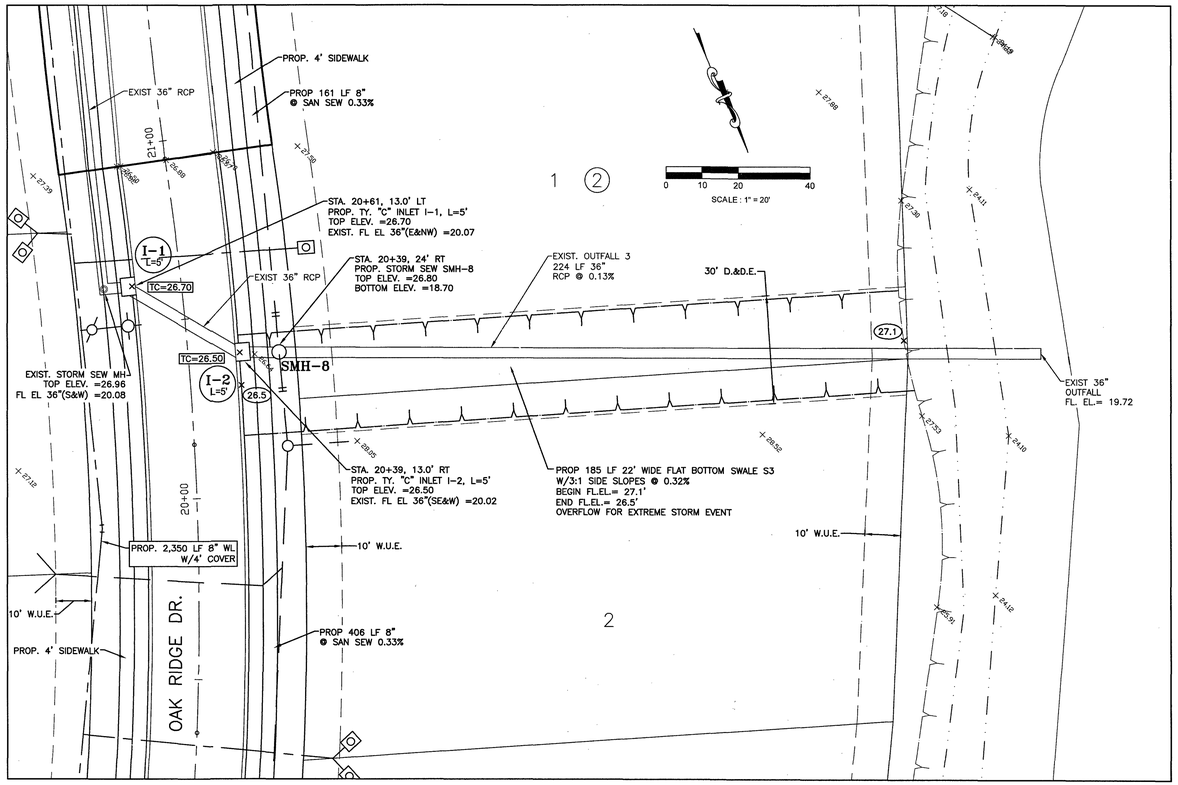
PROJECT NO. 13446

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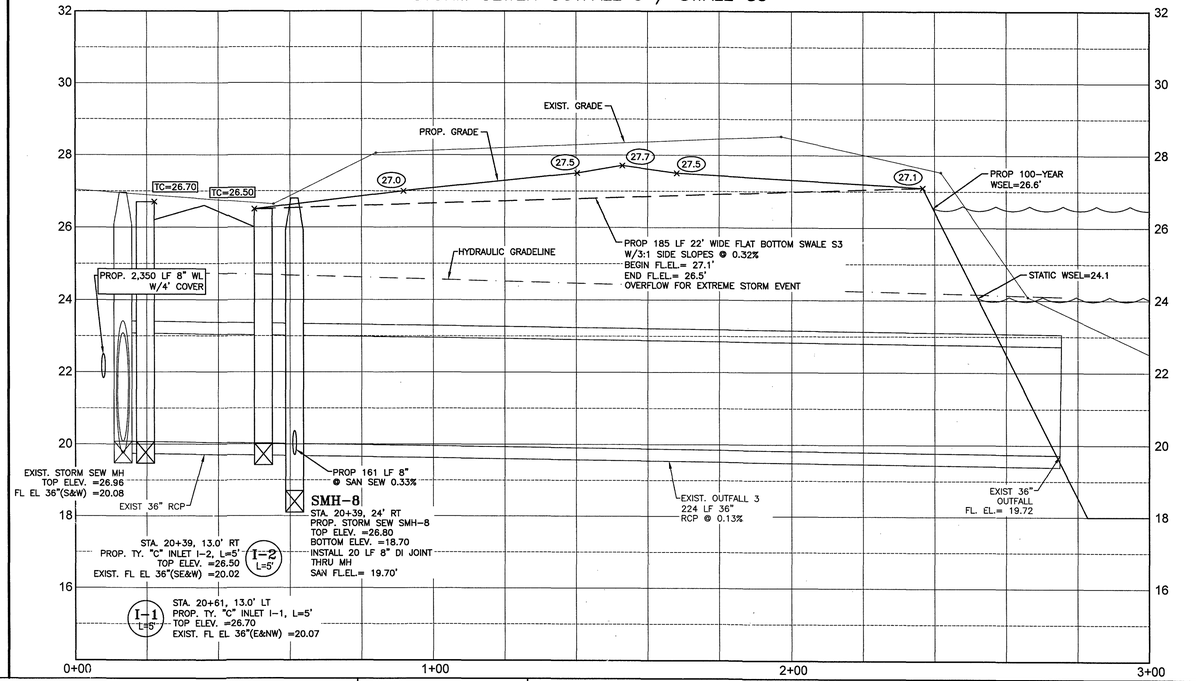


STORM SEWER OUTFALL 2 / SWALE S2





STORM SEWER OUTFALL 3 / SWALE S3



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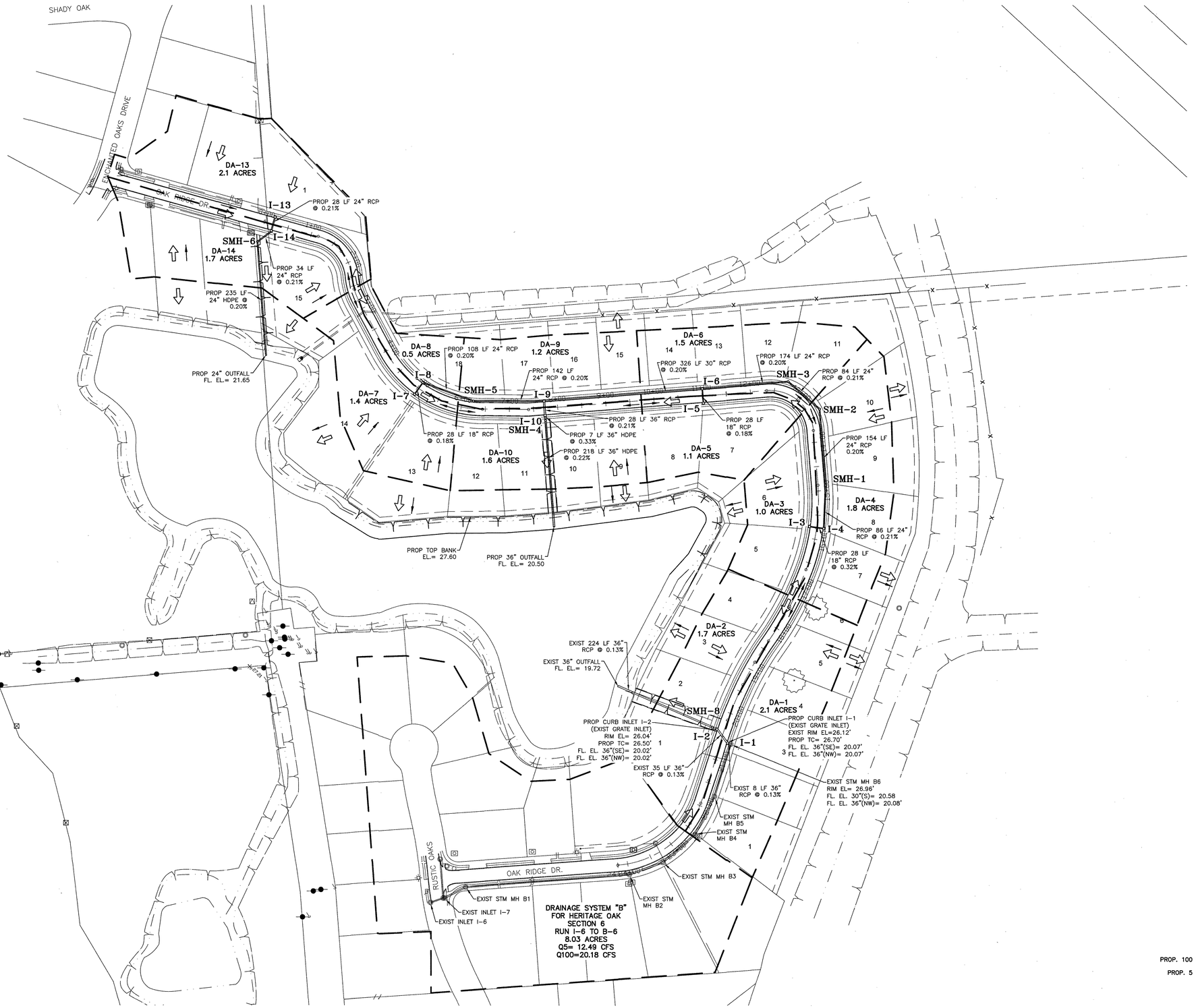
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OUTFALLS 2,3 AND SWALES S2,S3

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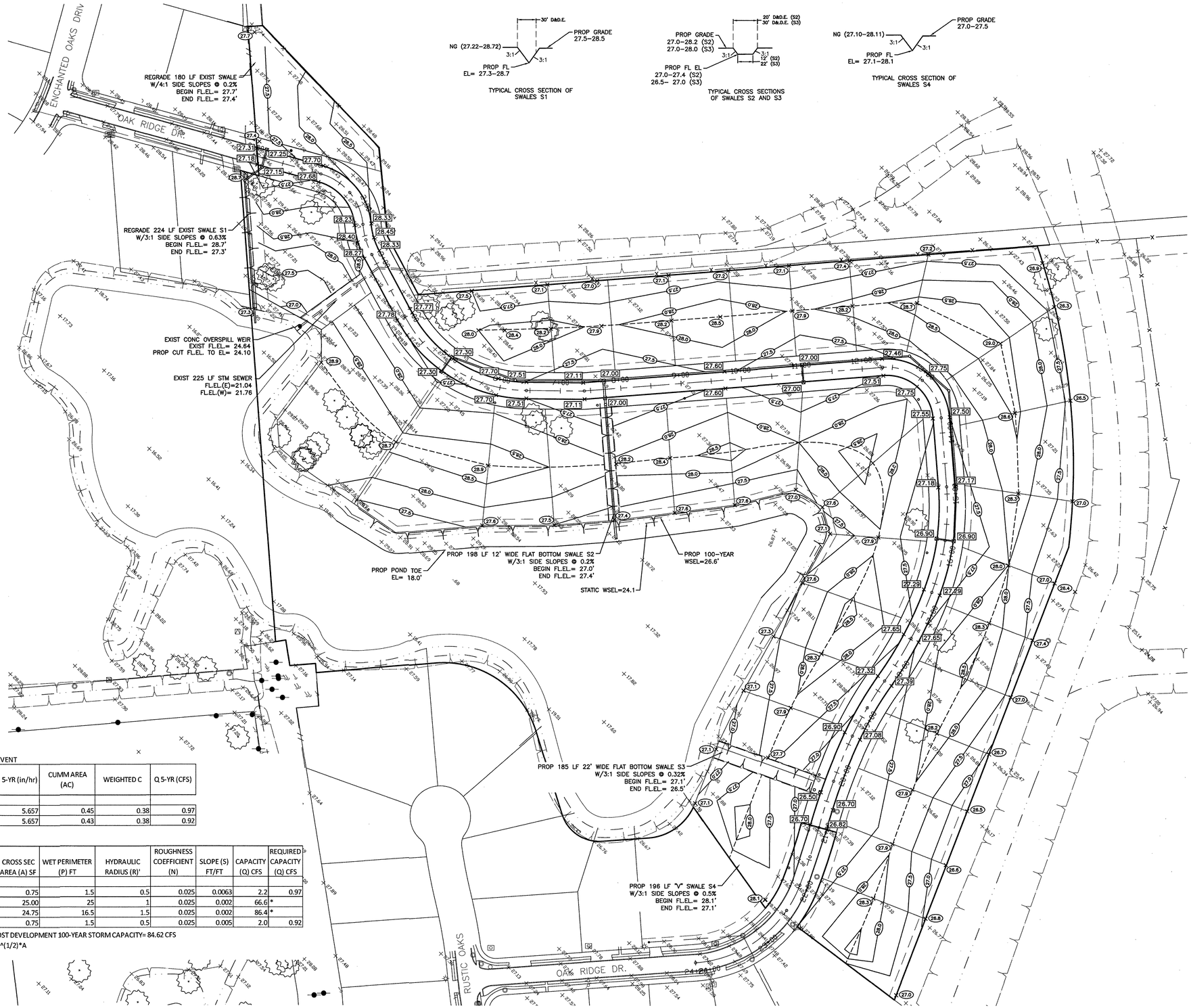
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DRAINAGE AREA MAP

PROJECT NO. 13446

10

D346 SHEET SET.DWG



TYPICAL CROSS SECTION OF SWALES S1

TYPICAL CROSS SECTIONS OF SWALES S2 AND S3

TYPICAL CROSS SECTION OF SWALES S4



FINISHED FLOORS SHALL BE 2.0' HIGHER THAN PROP TOP CURB ELEVATIONS. LOT GRADING TO BE PROVIDED BY HOME BUILDER. SEE MISC DETAILS SHEET 18.

HYDRAULIC CAPACITY 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 POND	0.45	0.38	15	5.657	0.45	0.38	0.97
DA-S4	S4 TO ORANGE	0.43	0.38	15	5.657	0.43	0.38	0.92

DITCH CAPACITY

ID	NG ELEV FT	PROP FL FT	DITCH DEPTH (D) FT	DITCH BOTTOM (B) 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	28.5	28	0.5	0	0.75	1.5	0.5	0.025	0.0063	2.2	0.97
S2	28.2	27.2	1	22	25.00	25	1	0.025	0.002	66.6	*
S3	28	26.5	1.5	12	24.75	16.5	1.5	0.025	0.002	86.4	*
S4	28	27.5	0.5	0	0.75	1.5	0.5	0.025	0.005	2.0	0.92

*COMBINATION OF FLOW FROM SWALES S2 AND S3 EXCEEDS POST DEVELOPMENT 100-YEAR STORM CAPACITY= 84.62 CFS

AREA= 3xD^2+ (B x D) Q=1.49/N*R^(2/3)*S^(1/2)*A

P = 3*D + B (APPROXIMATE)

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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: 9/25/20

OWNER:

CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

PLAN: 1" = 80'

PROFILE:

HORIZONTAL:

VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

SITE GRADING

PROJECT NO. 13446

SHEET SETDWG



EARTHWORK QUANTITY:
CUT VOLUME: 17,726 CuYd
FILL VOLUME: 11,416 CuYd
NET CUT : 6,310 CuYd

CURRENT CUT/FILL PLAN IS FOR 1% MINIMUM SLOPE ON LOTS. THE CONTRACTOR MAY INCREASE SLOPE TO MINIMIZE HAULING OF FILL

NO FILL SHALL BE PLACED WITHIN 25' OF EXISTING OAKS TREES.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS
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DATE

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CUT AND FILL PLAN

PROJECT NO. 13446

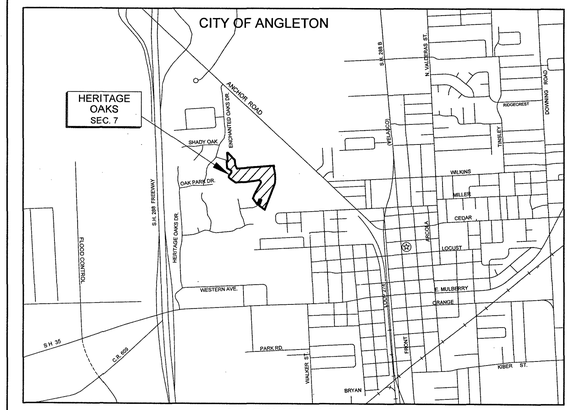
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0 30 60 120

SCALE : 1" = 60'

GENERAL LOCATION MAP



VICINITY MAP
N.T.S.

PROJECT/SITE INFORMATION

PROJECT NAME: HERITAGE OAKS SECTION 7

PROJECT ADDRESS/LOCATION: OAK RIDGE DRIVE NEAR RUSTIC OAKS

CITY: ANGLETON STATE: TX. ZIP CODE: 77515

LATITUDE: 29°10'27" LONGITUDE: 95°26'39" COUNTY: BRAZORIA

NAME OF RECEIVING WATERS: OYSTER CREEK; GULF OF MEXICO

10/01/2020	03/01/2021
MONTH/DAY/YEAR	MONTH/DAY/YEAR
ESTIMATED CONSTRUCTION START DATE	ESTIMATED COMPLETION DATE

ESTIMATE OF AREA TO BE DISTURBED: 19.7 ACRES

ESTIMATE OF LIKELYHOOD OF DISCHARGE:

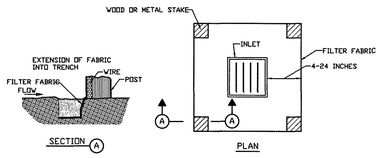
☐ UNLIKELY ☐ ONCE PER WEEK ☐ CONTINUAL
☒ ONCE PER MONTH ☐ ONCE PER DAY

ARE THERE ANY LISTED ENDANGERED OR THREATENED SPECIES, OR DESIGNATED CRITICAL HABITAT IN THE PROJECT AREA?

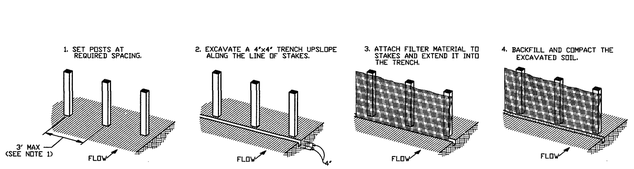
☐ YES ☒ NO

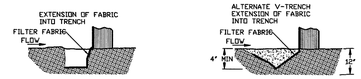
ELIGIBILITY WITH REGARD TO PROTECTION OF ENDANGERED SPECIES HAS BEEN SATISFIED THROUGH THE INDICATED SECTION OF PART 1.B.3.e.(2) OF THE PERMIT.

(a) ☒ (b) ☐ (c) ☐ (d) ☐



SILT FENCE PROTECTION BARRIER





CONSTRUCTION NOTES:

1. 1 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

FILTER FABRIC FENCE

LEGEND

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

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SWPPP LAYOUT

PROJECT NO. 13446

1 SHEET SET.DWG

1. SITE DESCRIPTION

A. NATURE OF THE CONSTRUCTION ACTIVITY:
HERITAGE OAKS SECTION 7 SUBDIVISION ANGLETON, BRAZORIA COUNTY, TEXAS. BEING 19.693 ACRE DEVELOPED AREA WHICH WILL BE A RESIDENTIAL SUBDIVISION OF 34 LOTS (100' 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 ENCHANTED OAKS DRIVE, AND LIVE OAK STREET FOR INGRESS AND EGRESS. RUTTING DURING WET WEATHER WILL PROVIDE POTENTIAL FOR TRACKING MUD ALONG THE ROUTE.

C. TOTAL PROJECT AREA: 19.693 ACRES

D. TOTAL AREA TO BE DISTURBED: 19.693 ACRES

WEIGHTED RUNOFF COEFFICIENT
(BEFORE CONSTRUCTION): 0.30 (AFTER CONSTRUCTION): 0.38

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 DITCH 10. DITCH 10 OUTFALLS TO OYSTER CREEK 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. REGRADE THE EXISTING POND AND SPREAD MATERIALS ON SITE. 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, SOD 18" BEHIND ALL CURBS.
5. 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
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				
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

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SWPPP NARRATIVE

PROJECT NO. 13446

18 SHEET SET.DWG

(1)

Drainage Analysis

Job # 13499 - Heritage Oaks Sec 7 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

$i := 1..6$

$b_i :=$ | $A_6 :=$ | $d_i :=$

b_i	A_6	d_i
71.0	0.774	8.4
70.1	0.752	7.7
96.6	0.770	17.2
89.2	0.736	10.4
86.5	0.709	10.0
120.2	0.741	21.3

$T_{A6} := 37.8$ ENTER PREDEVELOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 5.85$ Predevelopment Intensity of interest

$C_{AV} := 0.077$ ENTER PREDEVELOPMENT C VALUE

$A_{AV} := 19.7$ ENTER AREA

(2)

$C_f := 1.00$

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

$Q = 8.874$

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

$V = 7.136 \times 10^4$

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

$T := \frac{V}{1.39 \cdot Q}$ $T = 5.785 \times 10^3$ T = Time to peak, presented as a function of volume and peak flow and therefore indirectly related to time of concentration

$t := 0, 1000 .. 84000$

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

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

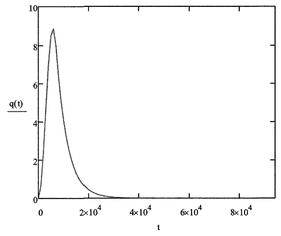
$q(t) := if(t \le 1.25 \cdot T, f(t), g(t))$

$Volume_{pre} := \int_0^{86400} q(t)\, dt$

$Volume_{pre} = 7.162 \times 10^4$

(3)

Predevelopment hydrograph



$T_{A6} := 26.25$ ENTER POST DEVLOPMENT TIME OF CONCENTRATION

$I_i := \frac{b_i}{(d_i + T_0)^{e_i}}$ $I_6 = 6.873$ Post development I of interest

$C_{AV} := 0.50$ ENTER POST DEVELOPMENT C FACTOR REVISE CI AND AREA IF NECESSARY

$C_{AV} := 1.25$

$Q_{AV} := C \cdot I_6 \cdot A \cdot C_f$

$Q = 84.622$

$V_{AV} := (C) \cdot A \cdot 43560 \cdot 1.08$

$V = 4.634 \times 10^5$

$T := \frac{V}{1.39 \cdot Q}$ $T = 3.94 \times 10^3$

(4)

$t := 0, 1000 .. 25000$

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

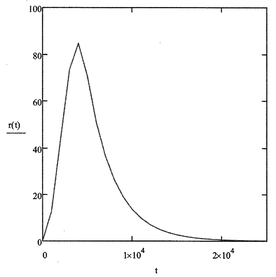
$g(t) := 4.34 \cdot Q \cdot \exp\left[-1.30 \cdot \left(\frac{t}{T}\right)\right]$

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

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

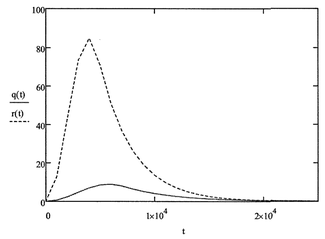
$Volume_{post} = 4.65 \times 10^5$

Post development hydrograph



(5)

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

$$\frac{\int_0^{86400} v(t)\, dt}{43560} = 9.042$$

(6)

Hydrological and Hydraulic Impacts
Heritage Oaks Sec 7 Subdivision

Job # 13651

Brazoria County, Texas

A = 19.84 Acre Development

Pre Development:

C = 0.077
TC = 37.80 Minutes, I = 5.85
Q = 100 Year Storm = 8.87 cfs
Q-Allowable is 0.45 cfs / ac. = 8.87 cfs

Post Development

C = 0.50
T/C = 26.25 Minutes, I= 6.873
Q = 100 Year Storm = 84.62 cfs

Required Detention:

9.04 acre - feet (393,782 c.f.)

_____

Miguel Sauceda, P.E. May 26, 2020

EXISITNG CONDITIONS

Bra. Co. Master Drg. Study allows only 0.45 cfs/acre in this area (Oyster Creek drainage area OC 25)

TC = 15 Minutes + 685 LF overland at 0.50 fps= 37.8 Minutes

PROPOSED CONDITIONS

TC = 15 Minutes + 190 LF overland @ 0.5 FPS + 250 LF gutter @ 2.0 FPS + 510 LF sewer @ 3.0 FPS
= 26.25

C = 0.50 per Brazoria Drainage Criteria Manual for lots between 1/4-1/2 acre

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HYDROLOGIC CALCULATIONS

PROJECT NO. 13446

16 SHEET SET.DWG

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 6/25/2020 3:26:17 PM

PROJECT NAME : HERITAGE OAKS7
JOB NUMBER : 13446
PROJECT DESCRIPTION : SEC7
DESIGN FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

ID (acre)	C Value	Area (min)	Tc (min)	Tc Used (in/hr)	Intensity (cfs)	Supply Q (cfs)	Total Q
A-1	0.38	2.10	15.00	15.00	6.64	0.000	5.302
A-2	0.38	1.70	15.00	15.00	6.64	0.000	4.292

Sag Inlets Configuration Data.

Inlet ID (ft)	Inlet Type	Length/ Perim. (sf)	Grate Area (%)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n (ft)	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev.
A-2	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-1	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00

Sag Inlets Computation Data.

Inlet ID (ft)	Inlet Type	Length (sf)	Grate Perim (cfs)	Area (cfs)	Total Q (ft)	Inlet Capacity (ft)	Total Head (ft)	Ponded Width Left	Right
A-2	Curb	5.00	n/a	n/a	4.292	6.261	0.389	10.40	10.40
A-1	Curb	5.00	n/a	n/a	5.302	6.261	0.448	11.25	11.25

Cumulative Junction Discharge Computations

Node I.D. (acres)	Node Type	Weighted C-Value (min)	Cumulat. Dr.Area (in/hr)	Cumulat. Tc (cfs)	Intens. (cfs)	User Supply Q (cfs)	Additional Q in Node	Total Disch.
A-B6	CircMh	0.000	0.00	0.00	0.00	0.000	12.49	12.490
A-2	Curb	0.380	3.80	15.15	6.61	0.000	12.49	22.037
A-1	Curb	0.380	2.10	15.00	6.64	0.000	12.49	17.792
OUT	Outlt	0.380	3.80	15.15	6.61	0.000	12.49	22.037

Conveyance Configuration Data

Run# (ft)	Node I.D. US (ft)	DS (ft)	Flowline Elev. US (ft)	DS (ft)	Shape # (ft)	Span (%)	Rise	Length	Slope	n_value
1	A-B6	A-1	20.08	20.07	Circ 1	0.00	3.00	8.00	0.13	0.013
2	A-1	A-2	20.07	20.02	Circ 1	0.00	3.00	35.00	0.14	0.013
3	A-2	OUT	20.02	19.72	Circ 1	0.00	3.00	224.00	0.13	0.013

Conveyance Hydraulic Computations. Tailwater = 24.100 (ft)

Run# (ft)	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Depth Fr.Slope (%)	Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	24.37	24.37	0.035	1.55	3.00	3.40	1.77	12.49	23.58	0.000
2	24.37	24.34	0.071	1.88	3.00	3.83	2.52	17.79	25.21	0.000
3	24.34	24.10	0.109	2.25	3.00	3.88	3.12	22.04	24.41	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 6/26/2020 9:28:29 AM

PROJECT NAME : HERITAGE OAKS7
JOB NUMBER : 13446
PROJECT DESCRIPTION : SEC7
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSYS FREQUENCY of: 100 Years

Runoff Computation for Design Frequency.

ID (acre)	C Value	Area (min)	Tc (min)	Tc Used (in/hr)	Intensity (cfs)	Supply Q (cfs)	Total Q
A-1	0.38	2.10	15.00	15.00	10.10	0.000	8.059
A-2	0.38	1.70	15.00	15.00	10.10	0.000	6.524

Sag Inlets Configuration Data.

Inlet ID (ft)	Inlet Type	Length/ Perim. (sf)	Grate Area (%)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n (ft)	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev.
A-2	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-1	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00

Sag Inlets Computation Data.

Inlet ID (ft)	Inlet Type	Length (sf)	Grate Perim (cfs)	Area (cfs)	Total Q (ft)	Inlet Capacity (ft)	Total Head (ft)	Ponded Width Left	Right
A-2	Curb	5.00	n/a	n/a	6.524	6.718	0.486	12.15	12.15
A-1	Curb	5.00	n/a	n/a	8.059	6.718	0.610	13.15	13.15

Cumulative Junction Discharge Computations

Node I.D. (acres)	Node Type	Weighted C-Value (min)	Cumulat. Dr.Area (in/hr)	Cumulat. Tc (cfs)	Intens. (cfs)	User Supply Q (cfs)	Additional Q in Node	Total Disch.
A-B6	CircMh	0.000	0.00	0.00	0.00	0.000	20.18	20.180
A-2	Curb	0.380	3.80	15.15	10.05	0.000	20.18	34.698
A-1	Curb	0.380	2.10	15.00	10.10	0.000	20.18	28.239
OUT	Outlt	0.380	3.80	15.15	10.05	0.000	20.18	34.698

Conveyance Configuration Data

Run# (ft)	Node I.D. US (ft)	DS (ft)	Flowline Elev. US (ft)	DS (ft)	Shape # (ft)	Span (%)	Rise	Length	Slope	n_value
1	A-B6	A-1	20.08	20.07	Circ 1	0.00	3.00	8.00	0.13	0.013
2	A-1	A-2	20.07	20.02	Circ 1	0.00	3.00	35.00	0.14	0.013
3	A-2	OUT	20.02	19.72	Circ 1	0.00	3.00	224.00	0.13	0.013

Conveyance Hydraulic Computations. Tailwater = 24.100 (ft)

Run# (ft)	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Depth Fr.Slope (%)	Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	24.78	24.77	0.092	2.16	3.00	3.71	2.85	20.18	23.58	0.000
2	24.77	24.71	0.179	3.00	3.00	3.99	3.99	28.24	25.21	0.000
3	24.71	24.10	0.271	3.00	3.00	4.91	4.91	34.70	24.41	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 9/21/2020 9:40:27 AM

PROJECT NAME : HERITAGE OAKS7
JOB NUMBER : 13446
PROJECT DESCRIPTION : SEC7
DESIGN FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

ID (acre)	C Value	Area (min)	Tc (min)	Tc Used (in/hr)	Intensity (cfs)	Supply Q (cfs)	Total Q
A-3	0.38	1.00	15.00	15.00	6.64	0.000	2.525
A-4	0.38	1.80	15.00	15.00	6.64	0.000	4.545
A-5	0.38	1.10	15.00	15.00	6.64	0.000	2.777
A-6	0.38	1.50	15.00	15.00	6.64	0.000	3.787
A-7	0.38	1.40	15.00	15.00	6.64	0.000	3.535
A-8	0.38	0.50	15.00	15.00	6.64	0.000	1.262
A-9	0.38	1.20	15.00	15.00	6.64	0.000	3.030
A-10	0.38	1.60	15.00	15.00	6.64	0.000	4.040

Sag Inlets Configuration Data.

Inlet ID (ft)	Inlet Type	Length/ Perim. (sf)	Grate Area (%)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n (ft)	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev.
A-3	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-4	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-5	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-6	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-7	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-8	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-9	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-10	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00

Sag Inlets Computation Data.

Inlet ID (ft)	Inlet Type	Length (sf)	Grate Perim (cfs)	Area (cfs)	Total Q (ft)	Inlet Capacity (ft)	Total Head (ft)	Ponded Width Left	Right
A-3	Curb	5.00	n/a	n/a	2.525	6.261	0.273	8.50	8.50
A-4	Curb	5.00	n/a	n/a	4.545	6.261	0.404	10.60	10.60
A-5	Curb	5.00	n/a	n/a	2.777	6.261	0.291	8.85	8.85
A-6	Curb	5.00	n/a	n/a	3.787	6.261	0.358	9.90	9.90
A-7	Curb	5.00	n/a	n/a	3.535	6.261	0.342	9.65	9.65
A-8	Curb	5.00	n/a	n/a	1.262	6.261	0.172	6.55	6.55
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	4.040	6.261	0.373	10.15	10.15

Cumulative Junction Discharge Computations

Node I.D. (acres)	Node Type	Weighted C-Value (min)	Cumulat. Dr.Area (in/hr)	Cumulat. Tc (cfs)	Intens. (cfs)	User Supply Q (cfs)	Additional Q in Node	Total Disch.
A-3	Curb	0.380	1.00	15.00	6.64	0.000	0.00	2.525
A-4	Curb	0.380	2.80	15.18	6.60	0.000	0.00	7.027
MH-1	CircMh	0.380	2.80	15.18	6.60	0.000	0.00	7.027
MH-2	CircMh	0.380	2.80	15.18	6.60	0.000	0.00	7.027
MH-3	CircMh	0.380	2.80	15.18	6.60	0.000	0.00	7.027
MH-4	CircMh	0.380	2.80	15.18	6.60	0.000	0.00	7.027
A-5	Curb	0.380	1.10	15.00	6.64	0.000	0.00	2.777
A-6	Curb	0.380	5.40	17.62	6.13	0.000	0.00	12.574
A-7	Curb	0.380	1.40	15.00	6.64	0.000	0.00	3.535
A-8	Curb	0.380	1.90	15.17	6.61	0.000	0.00	4.770
MH-5	CircMh	0.380	1.90	15.17	6.61	0.000	0.00	4.770
A-9	Curb	0.380	8.50	18.97	5.90	0.000	0.00	19.042
A-10	Curb	0.380	10.10	19.07	5.88	0.000	0.00	22.563
MH-7	CircMh	0.380	10.10	19.07	5.88	0.000	0.00	22.563
OUT	Outlt	0.380	10.10	19.07	5.88	0.000	0.00	22.563

Conveyance Configuration Data

Run# (ft)	Node I.D. US (ft)	DS (ft)	Flowline Elev. US (ft)	DS (ft)	Shape # (ft)	Span (%)	Rise	Length	Slope	n_value
1	A-3	A-4	22.74	22.69	Circ 1	0.00	1.50	28.00	0.18	0.013
2	A-4	MH-1	22.69	22.51	Circ 2	0.00	1.50	86.00	0.21	0.013
3	MH-1	MH-2	22.51	22.22	Circ 1	0.00	2.00	146.00	0.20	0.013
4	MH-2	MH-3	22.22	22.13	Circ 1	0.00	2.00	44.00	0.20	0.013
5	MH-3	MH-4	22.13	22.02	Circ 1	0.00	2.00	53.00	0.21	0.013
6	MH-4	A-6	22.02	21.71	Circ 1	0.00	2.00	160.00	0.19	0.013
7	A-5	A-6	21.76	21.71	Circ 1	0.00	1.50	28.00	0.18	0.013
8	A-6	A-9	21.71	21.06	Circ 1	0.00	2.50	326.00	0.20	0.013
9	A-7	A-8	21.60	21.55	Circ 1	0.00	1.50	28.00	0.18	0.013
10	A-8	MH-5	21.55	21.32	Circ 1	0.00	2.00	114.00	0.20	0.013
11	MH-5	A-9	21.32	21.06	Circ 1	0.00	2.00	132.00	0.20	0.013
12	A-9	A-10	21.06	21.00	Circ 1	0.00	3.00	28.00	0.21	0.013
13	A-10	MH-7	21.00	20.99	Circ 1	0.00	3.00	7.00	0.33	0.013
14	MH-7	OUT	20.99	20.50	Circ 1	0.00	3.00	218.00	0.22	0.011

Conveyance Hydraulic Computations. Tailwater = 24.100 (ft)

Run# (ft)	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Depth Fr.Slope (%)	Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	25.11	25.10	0.058	0.82	1.50	2.55	1.43	2.52	4.44	0.000
2	25.10	25.00	0.112	0.94	1.50	3.02	1.99	7.03	9.61	0.000
3	25.00	24.86	0.096	1.25	2.00	3.40	2.24	7.03	10.08	0.000
4	24.86	24.82	0.096	1.22	2.00	3.51	2.24	7.03	10.23	0.000
5	24.82	24.77	0.096	1.22	2.00	3.51	2.24	7.03	10.31	0.000
6	24.77	24.61	0.096	1.25	2.00	3.40	2.24	7.03	9.96	0.000
7	24.63	24.61	0.070	0.87	1.50	2.62	1.57	2.78	4.44	0.000
8	24.61	24.31	0.094	1.52	2.50	4.01	2.56	12.57	18.32	0.000
9	24.45	24.41	0.113	1.03	1.50	2.73	2.00	3.53	4.44	0.000
10	24.41	24.36	0.044	0.97	2.00	3.16	1.52	4.77	10.16	0.000
11	24.36	24.31	0.044	0.97	2.00	3.16	1.52	4.77	10.04	0.000
12	24.31	24.28	0.081	1.69	3.00	4.65	2.69	19.04	30.88	0.000
13	24.28	24.28	0.114	1.64	3.00	5.70	3.19	22.56	38.51	0.000
14	24.28	24.10	0.082	1.69	3.00	5.51	3.19	22.56	37.04	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 9/21/2020 9:41:39 AM

PROJECT NAME : HERITAGE OAKS7
JOB NUMBER : 13446
PROJECT DESCRIPTION : SEC7
ANALYSYS FREQUENCY : 100 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR ANALYSYS FREQUENCY of: 100 Years

Runoff Computation for Design Frequency.

ID (acre)	C Value	Area (min)	Tc (min)	Tc Used (in/hr)	Intensity (cfs)	Supply Q (cfs)	Total Q
A-3	0.38	1.00	15.00	15.00	10.10	0.000	3.838
A-4	0.38	1.80	15.00	15.00	10.10	0.000	6.908
A-5	0.38	1.10	15.00	15.00	10.10	0.000	4.221
A-6	0.38	1.50	15.00	15.00	10.10	0.000	5.756
A-7	0.38	1.40	15.00	15.00	10.10	0.000	5.373
A-8	0.38	0.50	15.00	15.00	10.10	0.000	1.919
A-9	0.38	1.20	15.00	15.00	10.10	0.000	4.605
A-10	0.38	1.60	15.00	15.00	10.10	0.000	6.140

Sag Inlets Configuration Data.

Inlet ID (ft)	Inlet Type	Length/ Perim. (sf)	Grate Area (%)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n (ft)	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev.
A-3	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-4	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-5	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-6	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-7	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-8	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-9	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-10	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00

Sag Inlets Computation Data.

Inlet ID (ft)	Inlet Type	Length (sf)	Grate Perim (cfs)	Area (cfs)	Total Q (ft)	Inlet Capacity (ft)	Total Head (ft)	Ponded Width Left	Right
A-3	Curb	5.00	n/a	n/a	3.838	6.261	0.361	9.95	9.95
A-4	Curb	5.00	n/a	n/a	6.908	6.718	0.514	12.45	12.45
A-5	Curb	5.00	n/a	n/a	4.221	6.261	0.384	10.35	10.35
A-6	Curb	5.00	n/a	n/a	5.756	6.261	0.473	11.60	11.60
A-7	Curb	5.00	n/a	n/a	5.373	6.261	0.451	11.30	11.30
A-8	Curb	5.00	n/a	n/a	1.919	6.261	0.227	7.70	7.70
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	6.140	6.261	0.494	11.90	11.90

Cumulative Junction Discharge Computations

Node I.D. (acres)	Node Type	Weighted C-Value (min)	Cumulat. Dr.Area (in/hr)	Cumulat. Tc (cfs)	Intens. (cfs)	User Supply Q (cfs)	Additional Q in Node	Total Disch.
A-3	Curb	0.380	1.00	15.00	10.10	0.000	0.00	3.838
A-4	Curb	0.380	2.80	15.17	10.05	0.000	0.00	10.691
MH-1	CircMh	0.380	2.80	15.17	10.05	0.000	0.00	10.691
MH-2	CircMh	0.380	2.80	15.17	10.05	0.000	0.00	10.691
MH-3	CircMh	0.380	2.80	15.17	10.05	0.000	0.00	10.691
MH-4	CircMh	0.380	2.80	15.17	10.05	0.000	0.00	10.691
A-5	Curb	0.380	1.10	15.00	10.10	0.000	0.00	4.221
A-6	Curb	0.380	5.40	17.47	9.40	0.000	0.00	19.291
A-7	Curb	0.380	1.40	15.00	10.10	0.000	0.00	5.373
A-8	Curb	0.380	1.90	15.15	10.05	0.000	0.00	7.257
MH-5	CircMh	0.380	1.90	15.15	10.05	0.000	0.00	7.257
A-9	Curb	0.380	8.50	18.75	9.08	0.000	0.00	29.336
A-10	Curb	0.380	10.10	18.85	9.06	0.000	0.00	34.773
MH-7	CircMh	0.380	10.10	18.85	9.06	0.000	0.00	34.773
OUT	Outlt	0.380	10.10	18.85	9.06	0.000	0.00	34.773

Conveyance Configuration Data

Run# (ft)	Node I.D. US (ft)	DS (ft)	Flowline Elev. US (ft)	DS (ft)	Shape # (ft)	Span (%)	Rise	Length	Slope	n_value
1	A-3	A-4	22.74	22.69	Circ 1	0.00	1.50	28.00	0.18	0.013
2	A-4	MH-1	22.69	22.51	Circ 2	0.00	1.50	86.00	0.21	0.013
3	MH-1	MH-2	22.51	22.22	Circ 1	0.00	2.00	146.00	0.20	0.013
4	MH-2	MH-3	22.22	22.13	Circ 1	0.00	2.00	44.00	0.20	0.013
5	MH-3	MH-4	22.13	22.02	Circ 1	0.00	2.00	53.00	0.21	0.013
6	MH-4	A-6	22.02	21.71	Circ 1	0.00	2.00	160.00	0.19	0.013
7	A-5	A-6	21.76	21.71	Circ 1	0.00	1.50	28.00	0.18	0.013
8	A-6	A-9	21.71	21.06	Circ 1	0.00	2.50	326.00	0.20	0.013
9	A-7	A-8	21.60	21.55	Circ 1	0.00	1.50	28.00	0.18	0.013
10	A-8	MH-5	21.55	21.32	Circ 1	0.00	2.00	114.00	0.20	0.013
11	MH-5	A-9	21.32	21.06	Circ 1	0.00	2.00	132.00	0.20	0.013
12	A-9	A-10	21.06	21.00	Circ 1	0.00	3.00	28.00	0.21	0.013
13	A-10	MH-7	21.00	20.99	Circ 1	0.00	3.00	7.00	0.33	0.013
14	MH-7	OUT	20.99	20.50	Circ 1	0.00	3.00	218.00	0.22	0.011

Conveyance Hydraulic Computations. Tailwater = 24.100 (ft)

Run# (ft)	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Depth Fr.Slope (%)	Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	26.47	26.44	0.133	1.08	1.50	2.82	2.17	3.84	4.44	0.000
2	26.44	26.21	0.259	1.50	1.50	3.02	3.02	10.69	9.61	0.000
3	26.21	25.89	0.223	1.75	2.00	3.67	3.40	10.69	10.08	0.000
4	25.89	25.79	0.223	1.75	2.00	3.67	3.40	10.69	10.23	0.000
5	25.79	25.67	0.223	1.75	2.00	3.67	3.40	10.69	10.31	0.000
6	25.67	25.31	0.223	1.75	2.00	3.67	3.40	10.69	9.96	0.000
7	25.36	25.31	0.161	1.17	1.50	2.85	2.39	4.22	4.44	0.000
8	25.31	24.59	0.221	2.19	2.50	4.24	3.93	19.29	18.32	0.000
9	24.92	24.85	0.262	1.50	1.50	3.04	3.04	5.37	4.44	0.000
10	24.85	24.73	0.103	1.25	2.00	3.51	2.31	7.26	10.16	0.000
11	24.73	24.59	0.103	1.25	2.00	3.51	2.31	7.26	10.04	0.000
12	24.59	24.54	0.193	2.34	3.00	4.95	4.15	29.34	30.88	0.000
13	24.54	24.53	0.272	2.25	3.00	6.11	4.92	34.77	38.51	0.000
14	24.53	24.10	0.195	2.34	3.00	5.87	4.92	34.77	37.04	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 7/23/2020 10:15:24 AM

PROJECT NAME : HERITAGE OAKS7
JOB NUMBER : 13446
PROJECT DESCRIPTION : SEC7
DESIGN FREQUENCY : 5 Years
MEASUREMENT UNITS: ENGLISH

OUTPUT FOR DESIGN FREQUENCY of: 5 Years

Runoff Computation for Design Frequency.

ID (acre)	C Value	Area (min)	Tc (min)	Tc Used (in/hr)	Intensity (cfs)	Supply Q (cfs)	Total Q
A-13	0.38	2.10	15.00	15.00	6.64	0.000	5.302
A-14	0.38	1.70	15.00	15.00	6.64	0.000	4.292

Sag Inlets Configuration Data.

Inlet ID (ft)	Inlet Type	Length/ Perim. (sf)	Grate Area (%)	Left-Slope Long Trans (%)	Right-Slope Long Trans (%)	Gutter n (ft)	Gutter DeprW (ft)	Depth Allowed (ft)	Critic Elev.
A-13	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00
A-14	Curb	5.00	n/a	0.50	2.00 0.50	2.00 0.014	1.50	0.50	27.00

Sag Inlets Computation Data.

Inlet ID (ft)	Inlet Type	Length (sf)	Grate Perim (cfs)	Area (cfs)	Total Q (ft)	Inlet Capacity (ft)	Total Head (ft)	Ponded Width Left	Right
A-13	Curb	5.00	n/a	n/a	5.302	6.261	0.448	11.25	11.25
A-14	Curb	5.00	n/a	n/a	4.292	6.261	0.389	10.40	10.40

Cumulative Junction Discharge Computations

Node I.D. (acres)	Node Type	Weighted C-Value (min)	Cumulat. Dr.Area (in/hr)	Cumulat. Tc (cfs)	Intens. (cfs)	User Supply Q (cfs)	Additional Q in Node	Total Disch.
A-13	Curb	0.380	2.10	15.00	6.64	0.000	0.00	5.302
A-14	Curb	0.380	1.70	15.14	6.61	0.000	0.00	4.292
MH-6	CircMh	0.380	3.80	15.14	6.61	0.000	0.00	9.551
OUT	Outlt	0.380	3.80	15.14	6.61	0.000	0.00	9.551

Conveyance Configuration Data

Run# (ft)	Node I.D. US (ft)	DS (ft)	Flowline Elev. US (ft)	DS (ft)	Shape # (ft)	Span (%)	Rise	Length	Slope	n_value
1	A-13	A-14	23.50	23.44	Circ 1	0.00	2.00	28.00	0.21	0.013
2	A-14	MH-6	23.44	23.38	Circ 1	0.00	2.00	26.00	0.23	0.013
3	MH-6	OUT	23.38	22.90	Circ 1	0.00	2.00	235.00	0.20	0.013

Conveyance Hydraulic Computations. Tailwater = 24.100 (ft)

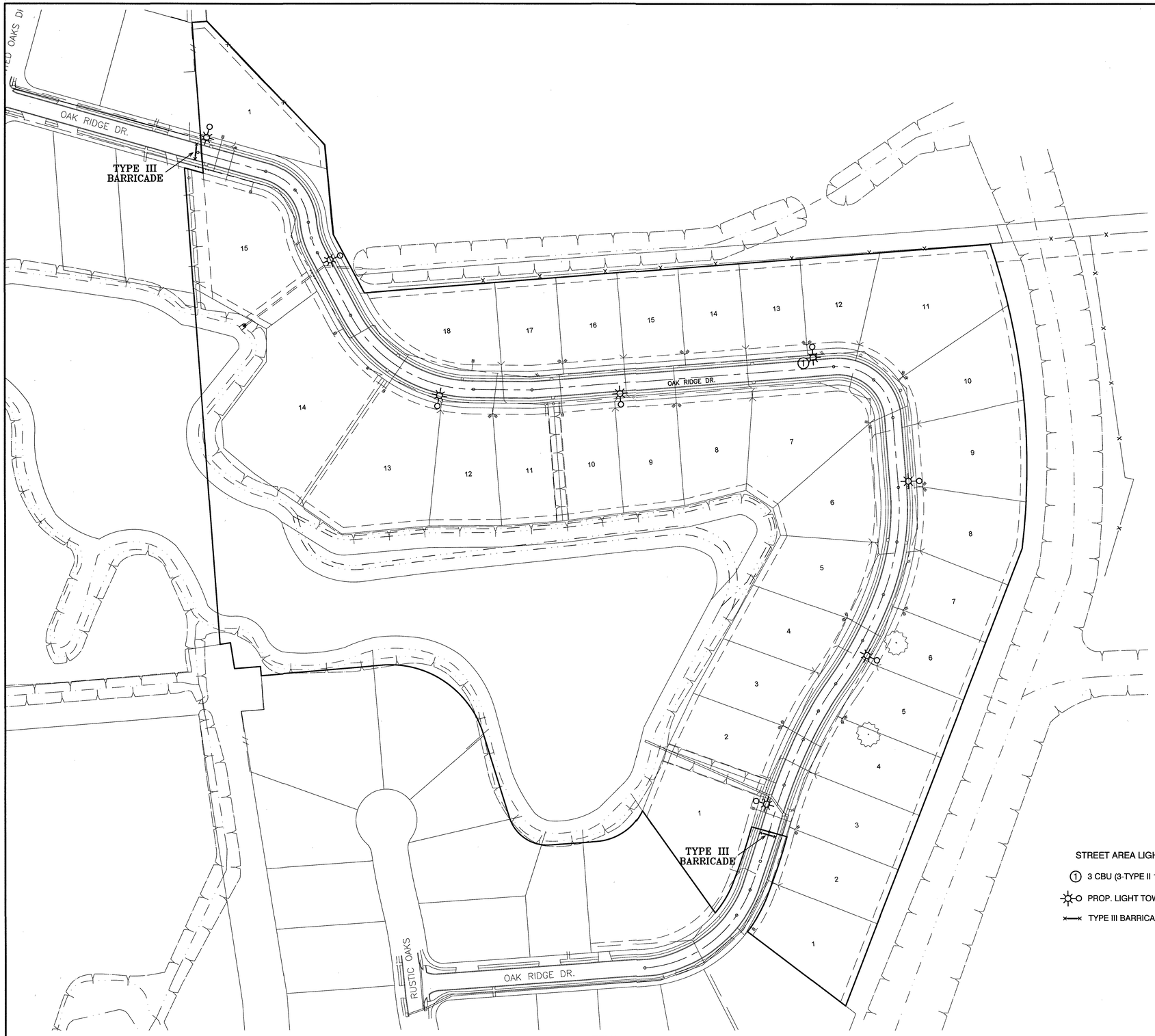
Run# (ft)	Hydraulic Gradeline US Elev (ft)	DS Elev (ft)	Depth Fr.Slope (%)	Unif. (ft)	Actual (ft)	Velocity Unif. (f/s)	Actual (f/s)	Q (cfs)	Cap (cfs)	Junc Loss (ft)
1	25.00	24.99	0.055	1.00	1.55	3.38	2.03	5.30	10.47	0.000
2	24.99	24.94	0.178	1.44	1.56	3.95	3.63	9.55	10.87	0.000
3	24.94	24.46	0.178	1.56	1.56	3.63	3.63	9.55	10.23	0.000

END

NORMAL TERMINATION OF WINSTORM.

WinStorm (STORM DRAIN DESIGN) Version 3.05, Jan. 25, 2002
Run @ 7/23/2020 10:16:17 AM

PROJECT NAME : H



STREET CLOSED R11-2

TYPE III BARRICADE

0 40 80 160

SCALE : 1" = 80'

STREET AREA LIGHTING (8 LOCATIONS)

① 3 CBU (3-TYPE II 12 SLOT) ON 10'X9'X8" SLAB

PROP. LIGHT TOWER

TYPE III BARRICADE

LIGHTING PLAN SHOWN AS RECOMMENDED. FINAL LIGHTING PLAN AND QUANTITIES ARE PROVIDED BY TEXAS NEW MEXICO POWER.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED MS

DRAWN

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: 4/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

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

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

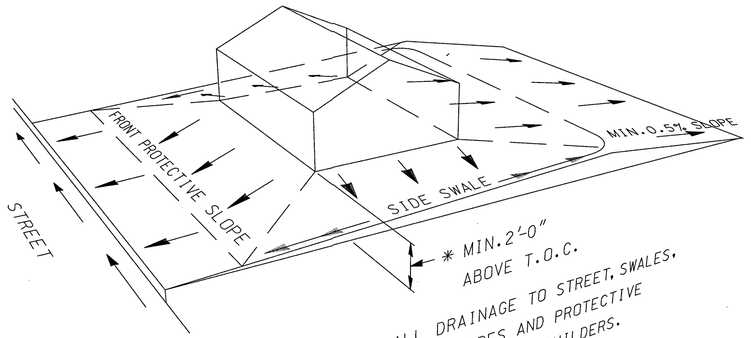
MAILBOX AND STREET LIGHTING LAYOUT

PROJECT NO. 13446

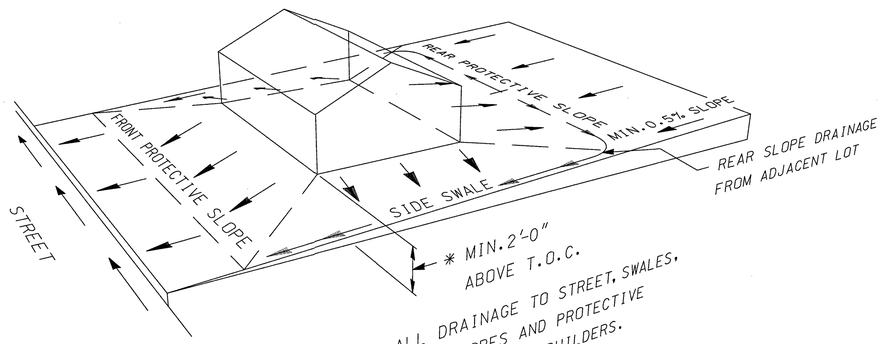
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404

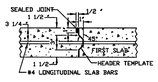
13446 SHEET SET.DWG



TYPICAL LOT GRADING
LOTS BACKING ON DITCH OR LAKE
N.T.S.

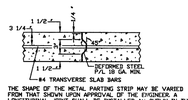


TYPICAL LOT GRADING
BACK TO BACK LOTS
N.T.S.



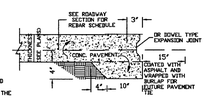
CONSTRUCTION JOINT
N.T.S.

CONSTRUCTION JOINT MAY BE USED IN LIEU OF EXPANSION JOINT WHEN WORK IS SUSPENDED PROVIDED THE JOINT IS AT LEAST 10' FROM NEAREST EXPANSION JOINT.

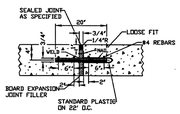


LONGITUDINAL JOINT
N.T.S.

THE SHAPE OF THE METAL PARTING STRIP MAY BE VARIED FROM THAT SHOWN UPON APPROVAL OF THE ENGINEER. A LONGITUDINAL JOINT SHALL BE INSTALLED AS SHOWN IN THE PLAN OR WHERE PAVEMENT WIDTH EXCEEDS 15'. WHEN BARS TIE IS PLACED IN HALF (1/2TH) CUT TRANSVERSE BARS TO FREE LONGITUDINAL CLEARANCE OF 4" FROM WIDTH AND CONNECT SLABS WITH #4 DEF. BARS, 3'-0" LONG ON 2'-6" CENTERS.

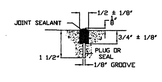


PAVEMENT HEADER
N.T.S.

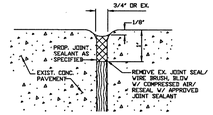


NOTES:
1. STEEL TO MEET A.S.T.M. STD. SPEC. FOR CONC. REINFORCING BARS. UNITS TO BE SPACED AS SHOWN ON PLANS.

EXPANSION/CONTRACTION JOINT
N.T.S.

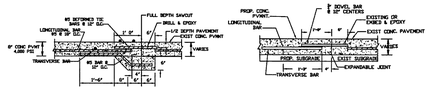


SAWED CONTRACTION
JOINT DETAIL
N.T.S.



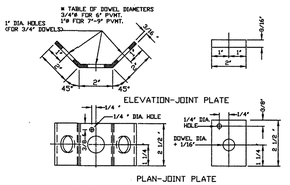
EXPANSION JOINT
SEAL DETAIL
N.T.S.

NOTE:
1. ALL REINFORCING STEEL LAPS SHALL BE 30 BAR DIAMETERS, BAR LENGTHS SHALL BE SUCH TO PROVIDE A CLEARANCE OF 3" ALONG PAVEMENT EDGES AND AT JOINTS WHERE THE REINFORCING STEEL IS NOT TO BE CONTINUOUS.
2. BOARD JOINT FILLER TO BE REDWOOD. JOINT SEAL COMPOUND TO BE RUBBERIZED ASPHALT HOT POURED (Tx DOT 360.2.7.B.CL1) OR TWO PART POLYMERIC SELF LEVELING SYSTEM. PAVEMENT ENDS WITH KEY WAY AS SHOWN FOR CONSTRUCTION JOINT. LEAVE 2" HEADER BOARD IN PLACE.
3. EXPANSION JOINT PLACEMENT TO BE AS INDICATED IN PLANS AND TYPICAL INTERSECTION AND JOINT LAYOUT.

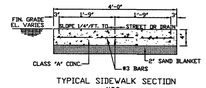


OPTION 1
PAVEMENT JUNCTURE
N.T.S.

OPTION 2
PAVEMENT JUNCTURE
N.T.S.

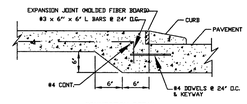


LOAD TRANSFER DEVICE
N.T.S.



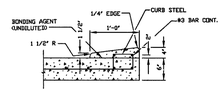
TYPICAL SIDEWALK SECTION
N.T.S.

NOTE:
1. CONCRETE SIDEWALK CONCRETE SHALL CONTAIN NOT LESS THAN FOUR AND ONE-HALF (4 1/2) SACKS OF CEMENT PER CUBIC YARD. SHALL CONTAIN NOT MORE THAN 6 1/2 GALLONS OF WATER PER SACK OF CEMENT, SHALL HAVE A MAXIMUM SLUMP OF 5" AND SHALL HAVE A MODULUS OF RUPTURE NOT LESS THAN 500 P.S.I. AT 28 DAYS. ALL CONCRETE SHALL BE READY MIXED. REINFORCING STEEL REINFORCING SHALL BE A 615 GRADE 40 STEEL. #3 BARS SPACED AS INDICATED IN THE PLAN DETAILS, AND POSITIONED BY THE USE OF PLASTIC CHAIRS. CURING COMPOUND AS SPECIFIED WILL BE REQUIRED AND APPLIED AT THE RATE OF 200 SF./GAL. SUBGRADE PREPARATION WILL REQUIRE A LEVEL OF 3" SAND MAT OF 2" MAXIMUM THICKNESS WHICH SHALL BE COMPACTED BY A SAND PLATE OR AN APPROVED MECHANICAL COMPACTION METHOD. FLOODING OR USING WATER TAMPING SHALL BE AN ALLOWABLE METHOD WHEN DETERMINED IN THE FIELD TO YIELD APPROVED RESULTS. THE SAND, EQUIPMENT AND LABOR SHALL BE CONSIDERED SUBSIDIARY TO THE MATERIALS REQUIRED FOR THE COMPLETED SIDEWALK.
2. DRAINAGE BRIDGING SHALL BE PROVIDED BY THE CONTRACTOR AT LOCATIONS SPECIFIED BY THE ENGINEER OR AS INDICATED ON THE PLANS. FORMWORK WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALKS.

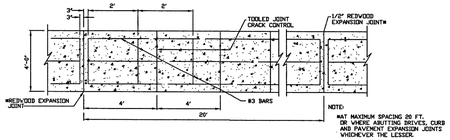


CONNECTION DETAIL

RESIDENTIAL DRIVEWAY & CONNECTION DETAIL
NEW & RECONSTRUCTION
N.T.S.



4" CONCRETE CURB
TYPE "D"
(RESIDENTIAL)



NOTE:
MAT MAXIMUM SPACING 20 FT. OR WHERE ABUTTING DRIVES, CURB AND PAVEMENT EXPANSION JOINTS WHICHEVER THE LESSER.

TYPICAL SIDEWALK JOINTING & REINFORCEMENT
N.T.S.

SIDEWALK PAVEMENT DETAILS
N.T.S.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
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: 9/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

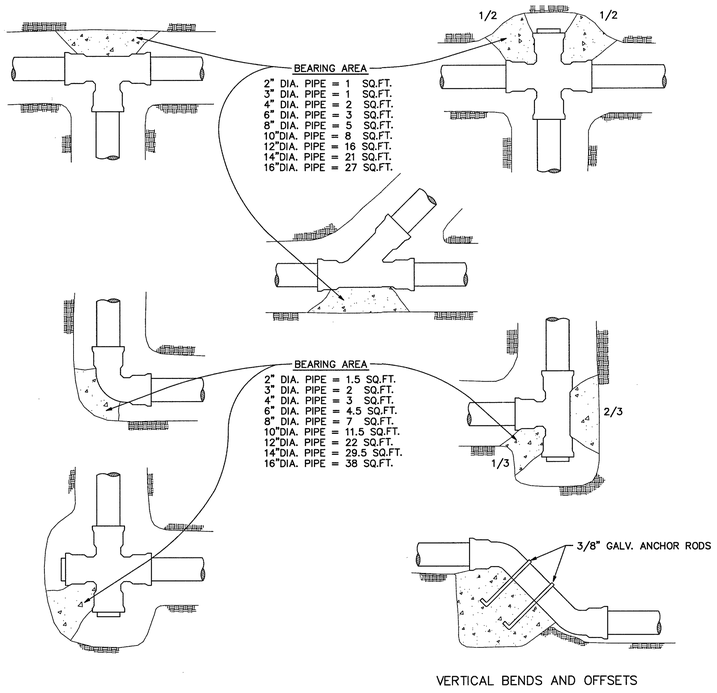
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

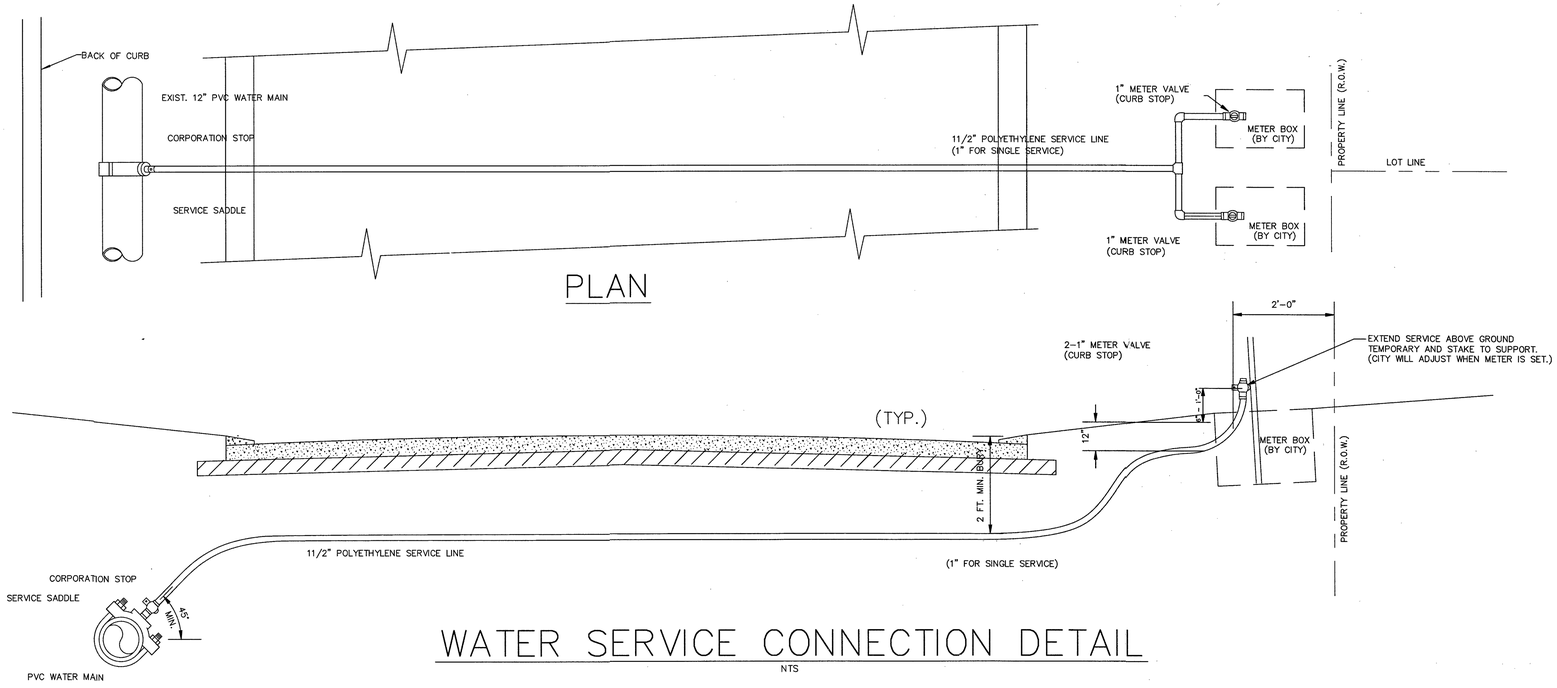
PAVEMENT AND LOT
GRADING DETAILS

PROJECT NO. 13446

13446 SHEET SET.DWG



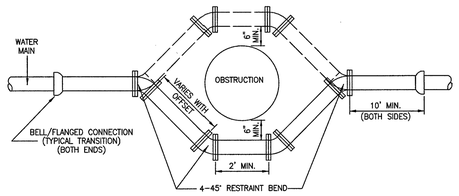
THRUST BLOCKING DIAGRAM



WATER SERVICE CONNECTION DETAIL

NTS

III



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

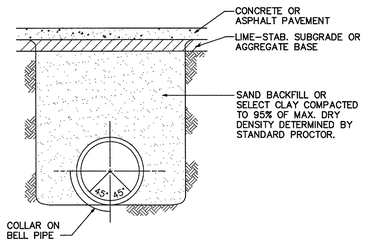
NOTES:

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.

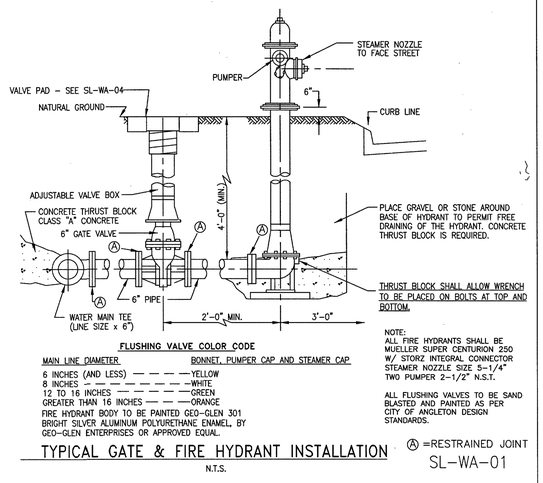
MIN. PIPE WALL THICKNESS		
4"	–	0.250"
6"	–	0.280"
8"	–	0.322"
12" AND LARGER	–	0.375"

PVC WATER PIPE OFFSET ASSEMBLY

SL-WA-11



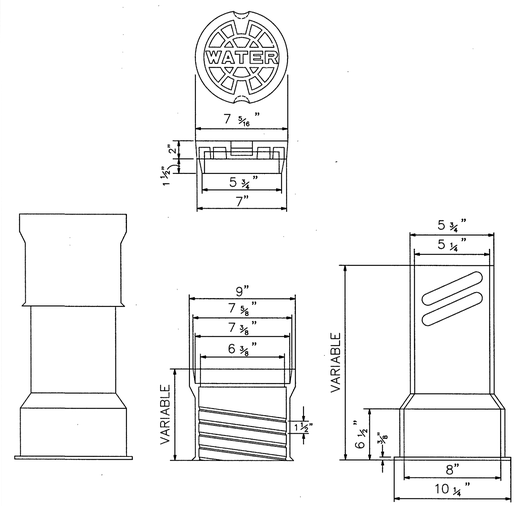
BEDDING – UNDER ROADWAYS



TYPICAL GATE & FIRE HYDRANT INSTALLATION

N.T.S.

SL-WA-01



CAST IRON VALVE BOX- TWO PIECE SCREW TYPE TYLER 6850 SERIES OR EQUAL

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
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: 9/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

PLAN:
PROFILE:
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HERITAGE OAKS SEC 7 SIJBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

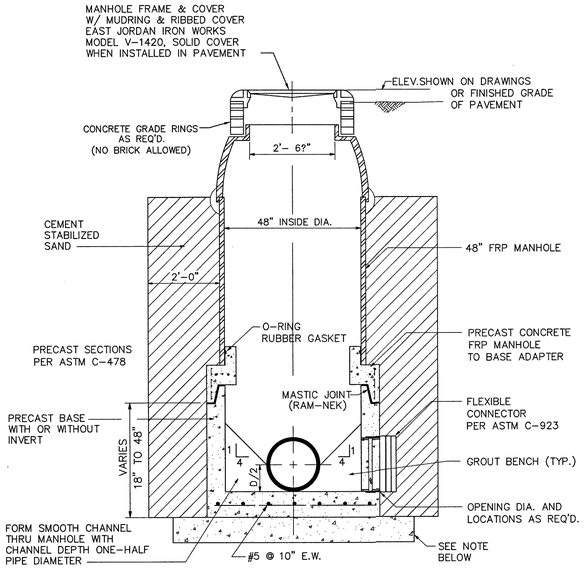
WATERLINE DETAILS

PROJECT NO. 13446

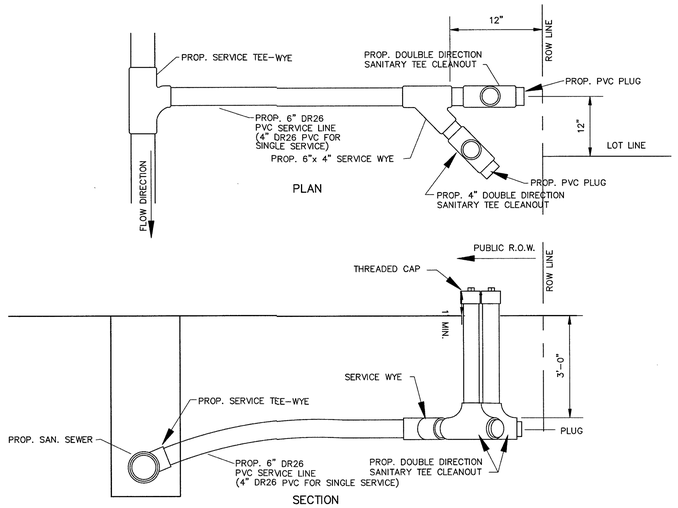
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406

SHEET SET.DWG

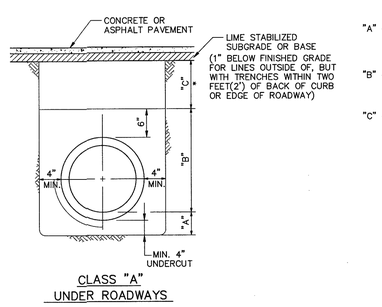


FRP MANHOLE WITH ADAPTER AND CONCRETE BASE



ALTERNATE SERVICE CONNECTION AND CLEANOUT DETAIL

N.T.S.



CLASS "A" UNDER ROADWAYS

CLASS "A" BEDDING

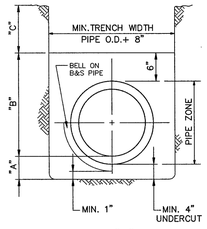
"A" – * WASHED GRAVEL SCREENINGS OR CEMENT STABILIZED SAND PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE OR ABOVE. (ASTM D2321, CLASS 1A)

"B" – * WASHED GRAVEL SCREENINGS OR CEMENT STABILIZED SAND THOROUGHLY RODDED AND COMPACTED, PLACED AFTER PIPE IS LAID.

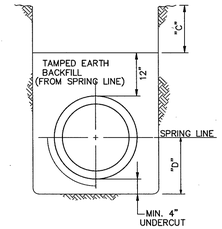
"C" – COMPACTED EARTH FILL TO BE PLACED SAME DAY AS PIPE IS LAID.
* (FOR PIPES LAID UNDER OR WITHIN 4 FEET OF ROADWAYS, USE CEMENT STAB. SAND)

CLASS "A" BEDDING SHALL BE USED IN CUTS IN EXCESS OF 10 FEET (10') OR WHEN SAND IS PRESENT. WHEN SAND IS ENCOUNTERED, THE TRENCH SHALL BE DEWATERED TO A STABLE CONDITION AND LINED WITH GEOTECHNICAL FABRIC PRIOR TO PLACING THE GRAVEL SCREENINGS FOR BEDDING AND BACKFILL ZONES A & B. FABRIC SHALL THEN BE LAPPED OVER THE TOP OF THE GRAVEL PRIOR TO COMPLETION OF BACKFILL.

* CEMENT STABILIZED SAND SHALL BE USED WHERE STABLE CLAY BOTTOM EXISTS.



CLASS "A"

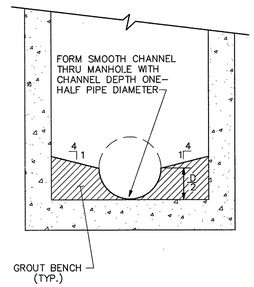


ORDINARY

"D" ZONE– BEDDING AND BACKFILL TO SPRING LINE WITH * CEMENT STABILIZED SAND

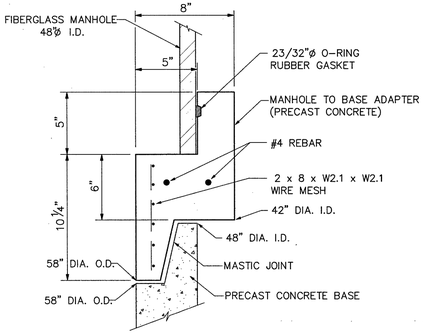
TYPICAL BEDDING FOR SANITARY SEWERS

N.T.S.



MANHOLE INVERT DETAIL FOR 8" – 12" SEWERS

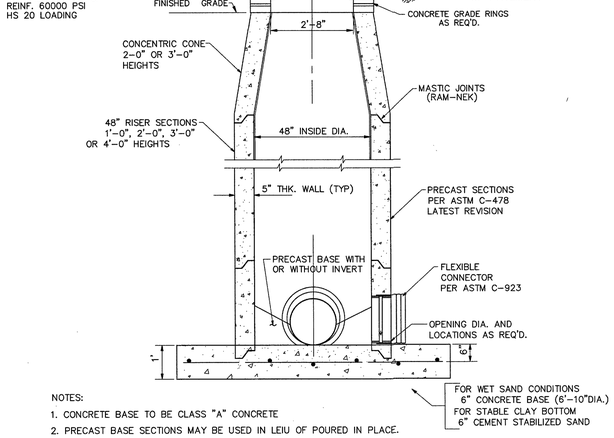
N.T.S.



FIBERGLASS MANHOLE TO CONCRETE ADAPTER

(BY MOOR-TEX Concrete Products, Inc.)

N.T.S.

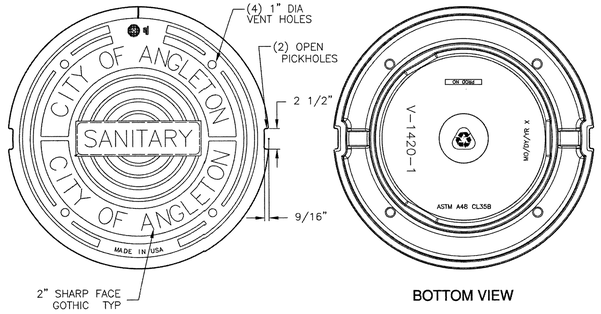


NOTES:
1. CONCRETE BASE TO BE CLASS "A" CONCRETE
2. PRECAST BASE SECTIONS MAY BE USED IN LEIU OF POURED IN PLACE.

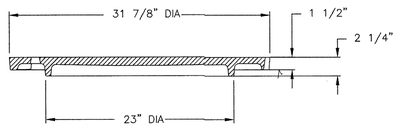
48" PRECAST CONCENTRIC MANHOLE WITH BASE POURED IN PLACE

TYPICAL SANITARY MANHOLES

V1420-1 Cover



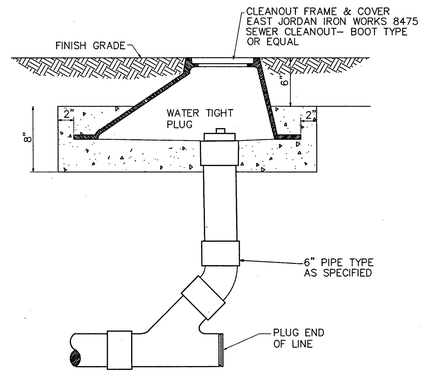
BOTTOM VIEW



COVER SECTION

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.
5. MANHOLE FRAMES AND COVERS SET IN FARM TO MARKET ROADS OR HIGHWAYS SHALL FOLLOW TXDOT SPECIFICATIONS. (UNLESS OTHERWISE NOTED BY ANGLETON)

1 32" Manhole Cover and Frame
Scale: NTS



SANITARY SEWER CLEANOUT DETAIL

N.T.S.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
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: 9/25/20

OWNER:
CHRIS PELTIER
P.O. BOX 288
ANGLETON, TEXAS 77516
chris@chrispeltierhomes.com

PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

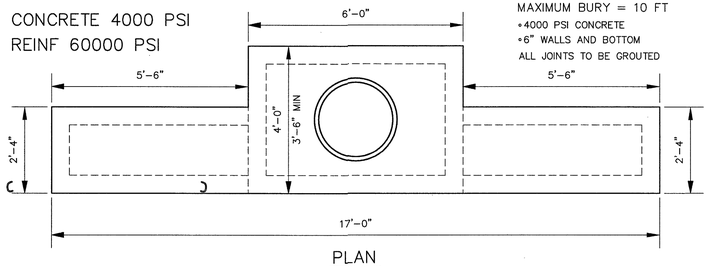
SANITARY SEWER DETAILS

PROJECT NO. 13446

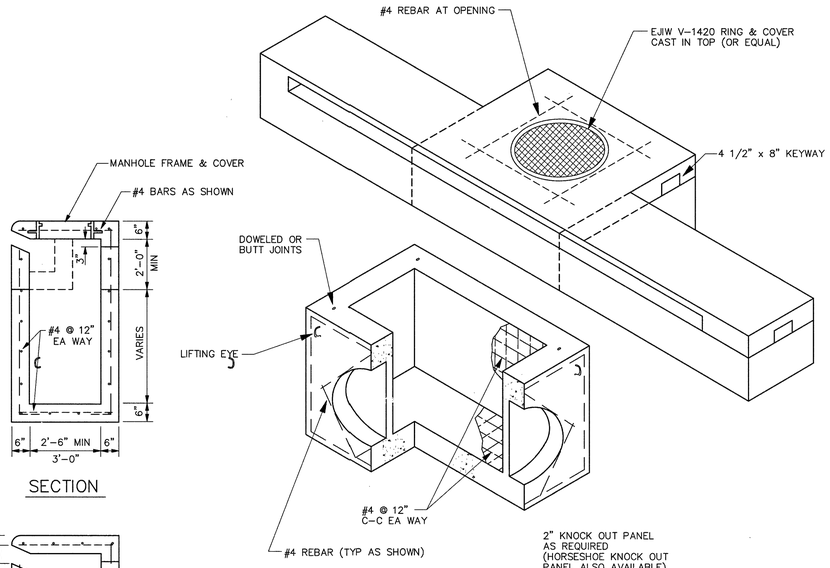
SHEET SETJWG 20 46

CONCRETE 4000 PSI
REINF 60000 PSI

MAXIMUM BURY = 10 FT
+4000 PSI CONCRETE
+6" WALLS AND BOTTOM
ALL JOINTS TO BE GROUTED

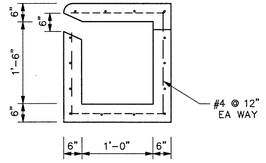


PLAN



SECTION

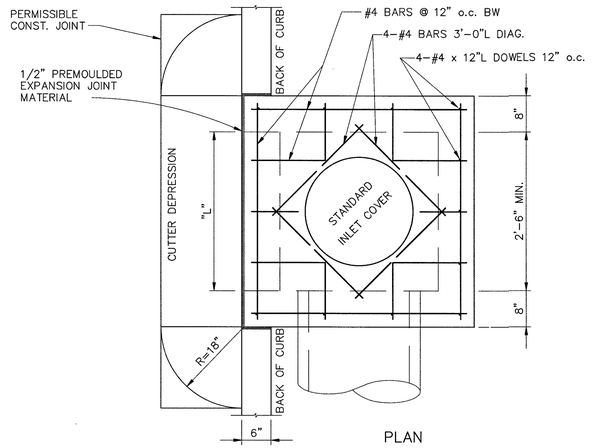
ISOMETRIC
N.T.S.



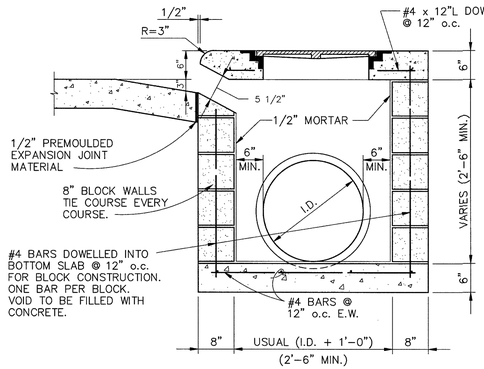
SECTION

PRECAST TYPE "C" INLET WITH OR WITHOUT EXTENSIONS

(BY MOOR-TEX)



PLAN



NOTE:
MANHOLE COVER SHALL BE EJIW V-1420 OR EQUAL.

NOTES:
ALL INTERIOR AND EXPOSED EXTERIOR SURFACES OF MASONRY WALLS SHALL RECEIVE A ONE HALF INCH (1/2") TROWELED MORTAR FINISH.

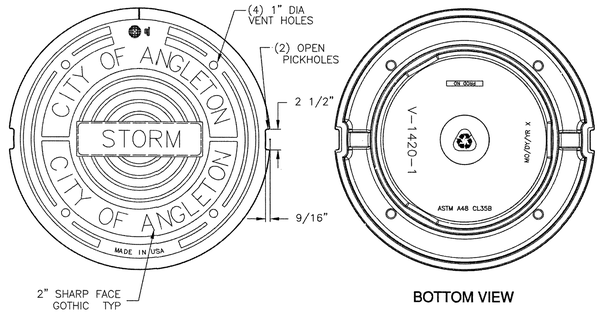
REINFORCING BAR SHALL BE GRADE 40. WELDED WIRE MESH SHALL BE GRADE 50.

SECTION

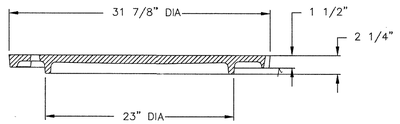
TYPICAL CURB INLET TYPE "C"

SCALE: 3/4" = 1'-0"

V1420-1 Cover

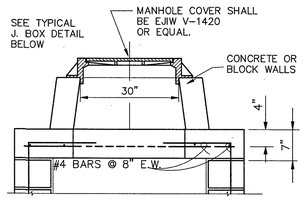


BOTTOM VIEW

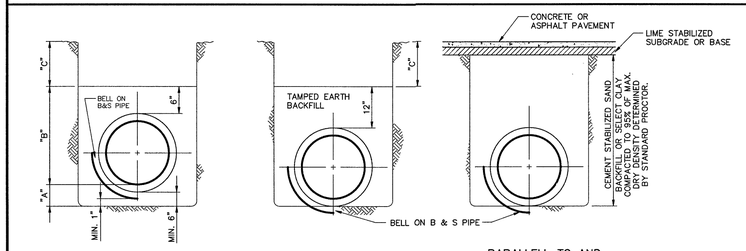


COVER SECTION

1 32" Manhole Cover and Frame
Scale: NTS



DETAIL OF ST. SEW MH. ON JUNCTION BOX



NOTES: "A" – CEMENT STABILIZED SAND PLACED BEFORE PIPE IS LAID, UP TO FLOW LINE OF PIPE OR ABOVE THE MINIMUM DEPTH OF SIX INCHES (6").

"B" – CEMENT STABILIZED SAND, THOROUGHLY RODDED, PLACED AFTER PIPE IS LAID.

"C" – EARTH FILL TO BE PLACED SAME DAY AS PIPE IS LAID.

WHERE PIPE IS PLACED UNDER THE PROPOSED STREET, BACKFILL SHALL BE COMPACTED IN LAYERS WITH MECHANICAL COMPACTORS. MATERIAL THAT IS TOO WET OR THAT CONTAINS LUMPS WHICH WILL BREAK DOWN READILY UNDER COMPACTION SHALL NOT BE USED FOR BACKFILL.

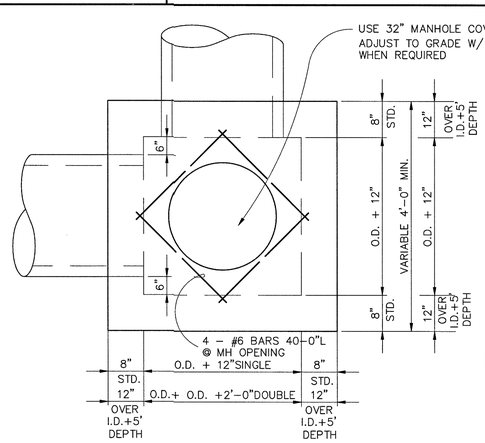
WHERE PIPE IS PLACED PARALLEL TO AND BEHIND THE CURB, THE SAME BACKFILL REQUIREMENTS APPLY.

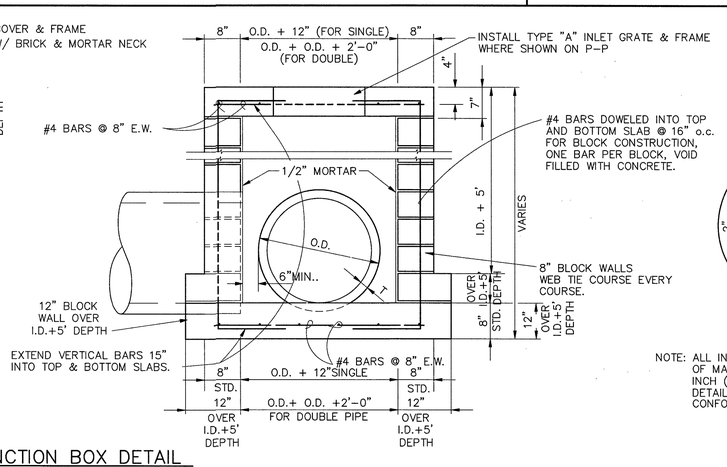
CLASS "A" BEDDING SHALL BE USED IN CUTS IN EXCESS OF 10 FEET (10') OR WHEN WET SAND IS PRESENT.

WHERE FIRE HYDRANT LEADS CROSS STORM SEWERS THAT PORTION OF THE STORM SEWER TEN FEET (10') ON BOTH SIDES OF THE PROPOSED LEAD SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND TO THE BOTTOM OF THE FIRE HYDRANT LEAD. THE SAME SHALL ALSO APPLY WHERE THRUST BLOCKING FOR WATER LINE TEES WILL FALL SO CLOSE TO STORM SEWERS THAT UNDISTURBED NATURAL GROUND WILL NOT EXIST TO SUPPORT THE THRUST BLOCKING.

TYPICAL BEDDING FOR STORM SEWERS

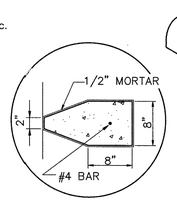
N.T.S.



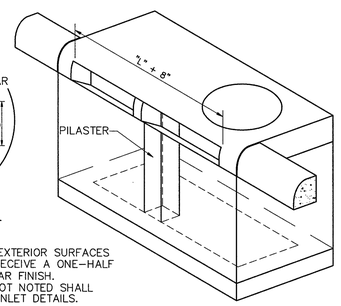


TYPICAL JUNCTION BOX DETAIL

N.T.S.



PILASTER DETAIL
N.T.S.



NOTE: ALL INTERIOR ANS EXPOSED EXTERIOR SURFACES OF MASONRY WALLS SHALL RECEIVE A ONE-HALF INCH (1/2") TROWELED MORTAR FINISH. DETAILS OF CONSTRUCTION NOT NOTED SHALL CONFORM TO TYPICAL CURB INLET DETAILS.

SPECIAL "TY" INLET WHEN "L" EXCEEDS 6'-0"

N.T.S.

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR
DRAWN
CHECKED
DATE

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ENGINEERS • PLANNERS • SURVEYORS
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chris@chrispeltierhomes.com

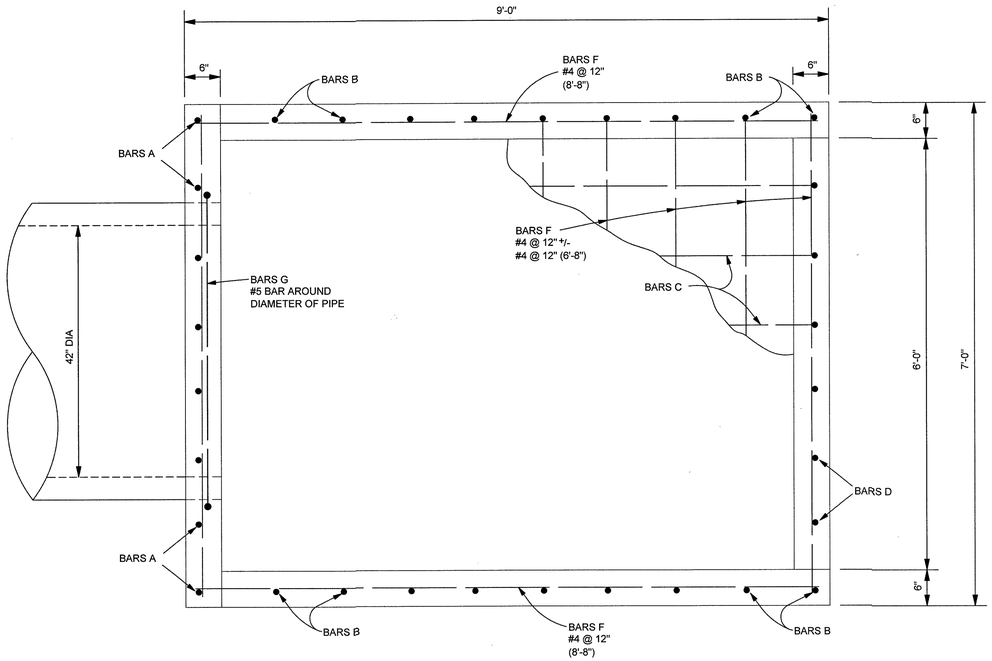
PLAN:
PROFILE:
HORIZONTAL:
VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

STORM SEWER DETAILS

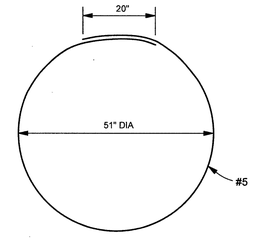
PROJECT NO. 13446

46 SHEET SET.DWG

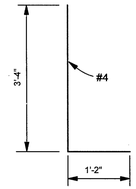


PLAN

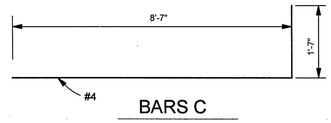
1" = 1'-0"



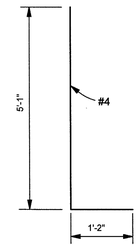
BARS G



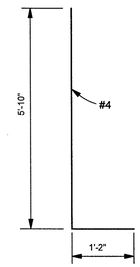
BARS D



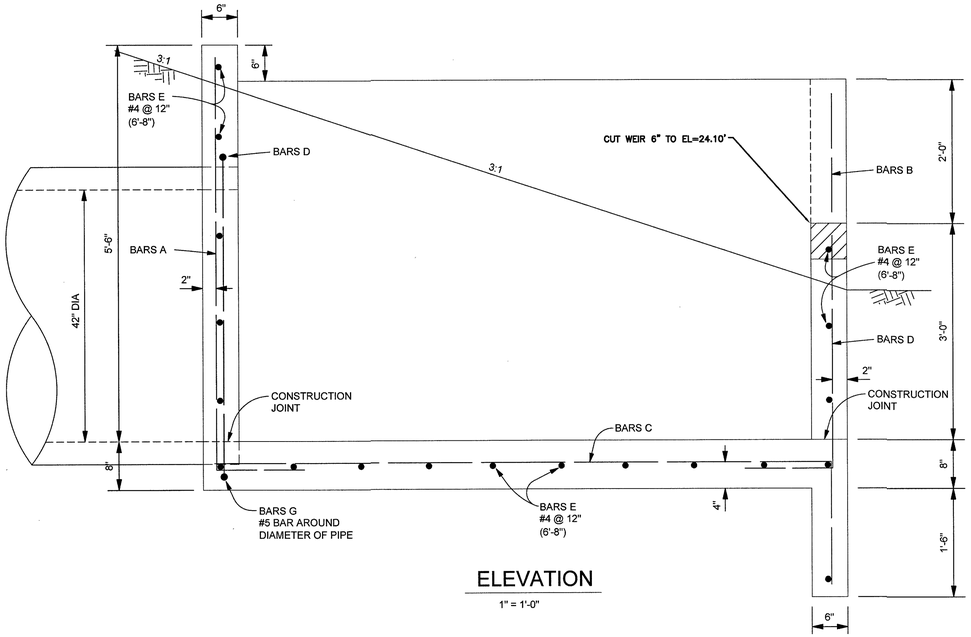
BARS C



BARS B

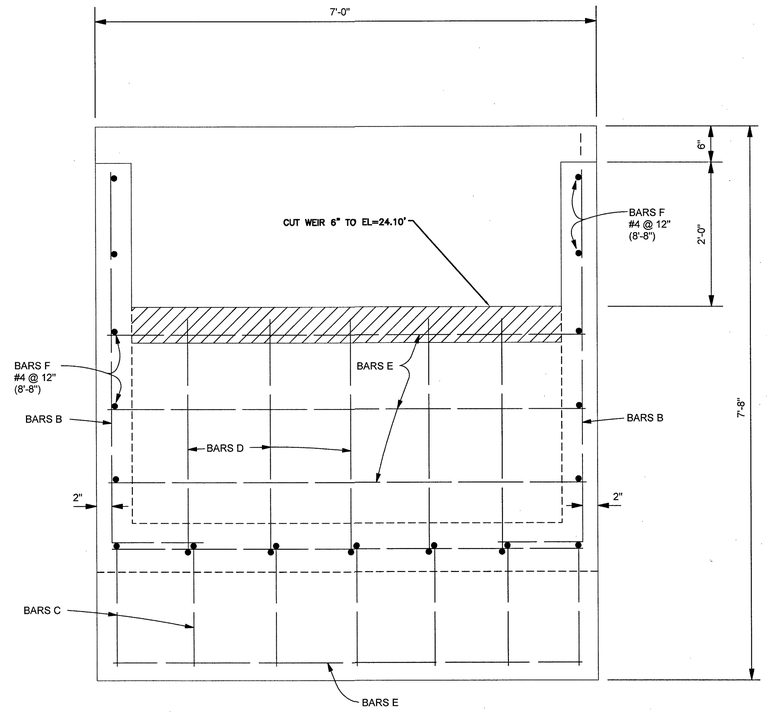


BARS A



ELEVATION

1" = 1'-0"



END

1" = 1'-0"

NO.	DATE	DESCRIPTION	APPROVED

REVISIONS

DESIGNED DR

DRAWN

CHECKED

DATE

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PLAN:

PROFILE:

HORIZONTAL:

VERTICAL:

HERITAGE OAKS SEC 7 SUBDIVISION
A 19.693 AC, 34-LOT SUBDIVISION
ANGLETON, TEXAS 77515

WEIR DRAINAGE STRUCTURE

PROJECT NO. 13446

22

13446 SHEET SET.DWG

AGENDA ITEM SUMMARY FORM

MEETING DATE: 01/12/2021

PREPARED BY: Martha Eighme

AGENDA CONTENT: Livable Centers Update from Freese and Nichols

AGENDA ITEM SECTION: Regular Agenda – Discussion Only

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

FUND: NA

EXECUTIVE SUMMARY:

Freese and Nichols to present an update on the Livable Centers Study

RECOMMENDATION: NA



CITY COUNCIL UPDATE #2

Livable Center Study

ANGLETON, TEXAS

January 12, 2021

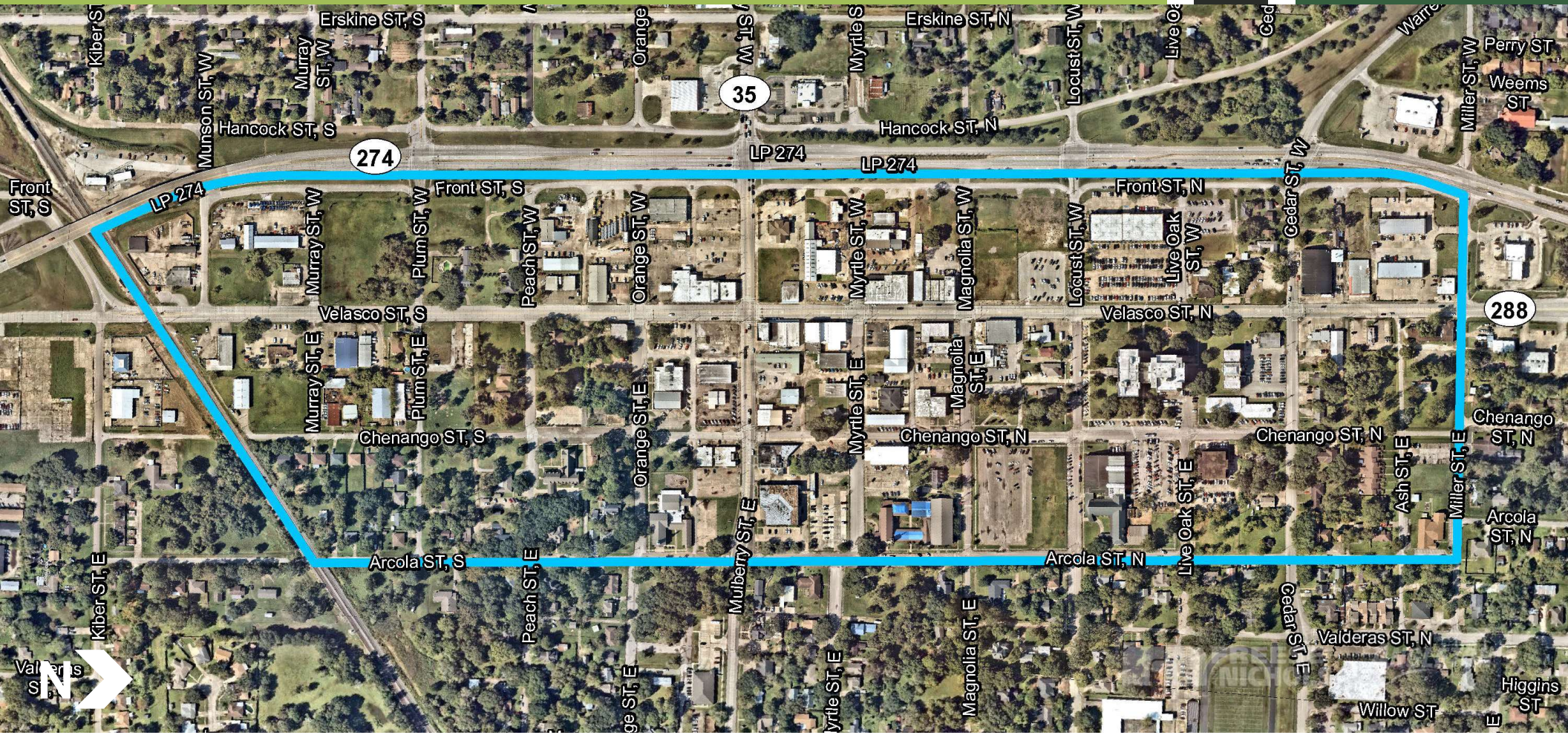
Agenda

- Project Update
- Concept Plan
- Draft Master Plan
- Priorities
- Next Steps

Project Update

Study Area

Downtown Angleton, TEXAS



Livable Center Plan Process

Public Outreach & Participation

Online Survey

Stakeholder Advisory Committee Meetings

Community Meetings

City Council Input

Needs Assessment

Analysis of Existing Conditions

Needs Assessment

Draft Plan Concepts and Recommendations

Agency Coordination

Draft Vision, Land Use, Concepts and Recommendations

Finalize Plan

Adoption of Plan by City Council

Public Outreach Events & Activities



JUNE 2020

SAC Meeting #1

JULY/ AUGUST 2020

SAC Meeting #2

City Council Input

Community Meeting

SEPTEMBER/ OCTOBER 2020

SAC Meeting #3

NOVEMBER/ DECEMBER 2020

Agency Coordination

SAC Meeting #4

City Council Briefing

JANUARY 2021/ FEBRUARY 2021

Community Meeting

SAC #5

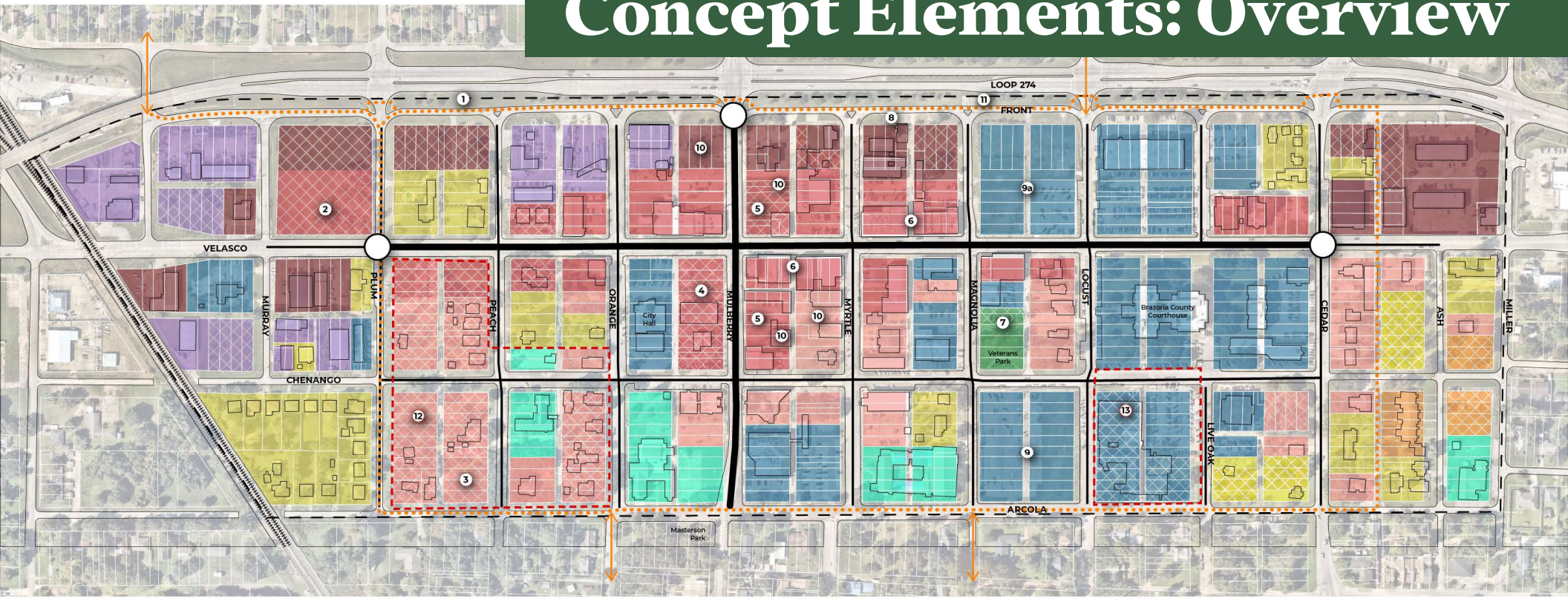
Plan Adoption

Downtown Angleton is:

"A vibrant destination for residents and visitors. It offers an eclectic mix of walkable storefronts with local retail and commercial uses. The district reflects the authentic, historic character of Angleton. It is accessible by all types of transportation."

Concept Plan

Concept Elements: Overview

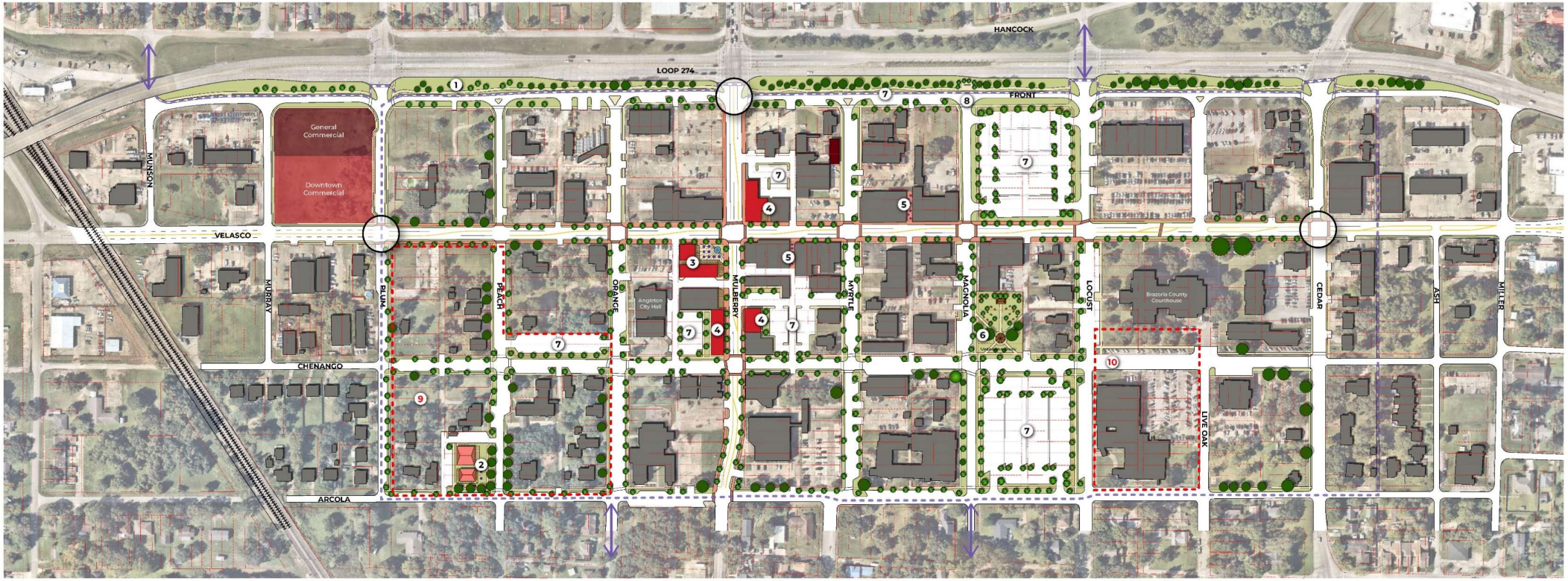


1. Linear park-like enhancements (trail, plantings, art installations)
2. Commercial or community-oriented use
3. Planned Peach Street Market expansion
4. Block with public plaza and commercial development (food/food truck element, possible water feature, gathering areas, public restrooms, parking). Possible City aquisition (from Velasco to Chenango).
5. Catalyst downtown commercial (retail) development
6. Alleys at Velasco converted to outdoor seating space
7. Park expansion and development for entertainment and events
8. One-way angled parking (typical where appropriate along Front Street)
9. Future expanded County parking lots (9a=potential future structured parking)
10. Potential public parking area
11. Enhanced Angleton “heart” (lighting, plantings)
12. Greater Peach Street District
13. County courthouse expansion and roadway closed to public

Draft Master Plan

FREESE AND NICHOLS ANGLETON H-GAC Houston-Galveston Area Council

Draft Master Plan



Mulberry / Velasco



Mulberry / Velasco





Priorities

Priorities

How can the City improve the built environment in the district to promote complimentary private development?

Economic Recommendations

Priority Order	Project Name
	Downtown Commercial and Redevelopment Opportunities
	Creation of Greater Peach Street District

Placemaking Recommendations

Priority Order	Project Name
	Update Future Land Use Map
	Alleyway Conversion to Outdoor Seating
	Veterans Park Expansion and Enhancements
	Front Street Linear Park
	Update/Revise Landscape Standards
	Gateways and Branding

Transportation Recommendations

Priority Order	Project Name
	Establish Public Parking Areas
	Reconfigure Front Street
	Sidewalk Improvements
	Develop Downtown Bike Network Loop (Tied)
	Establish Primary and Secondary Enhanced Corridor Improvements (Tied)
	Traffic Study
	Enhance Bus Stop Facilities

- What do you consider the **top** recommendations?

Next Steps

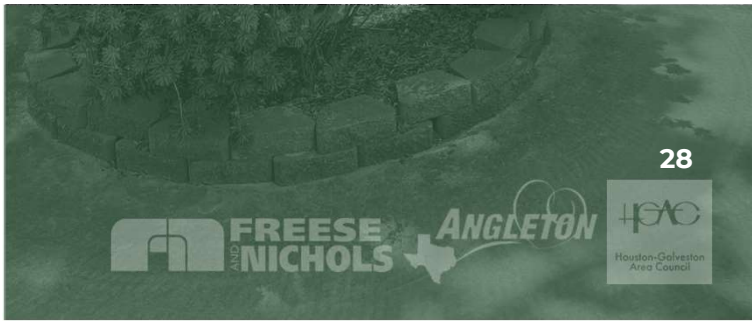
Next Steps

- **Complete Draft** (underway)
- Present concept and priorities to **City Council**
- Present draft plan to the **Community**
- **Stakeholder Advisory Committee**
- Anticipated **Adoption**



For more information and to receive updates visit the project website:

www.tinyurl.com/AngletonLC



AGENDA ITEM SUMMARY FORM

MEETING DATE:	January 12, 2021
PREPARED BY:	Jeff Sifford/Ron Bavarian, P.E.
AGENDA CONTENT:	Discussion and possible action on the Freedom Park Water Well Facility Improvements.
AGENDA ITEM SECTION:	Regular Agenda

BUDGETED AMOUNT: **FUNDS REQUESTED:**

FUND:

EXECUTIVE SUMMARY:

FNI evaluated the following alternatives in more detail to provide a recommendation for best utilizing the City's Freedom Park Well facility:

Alternative 1 – Irrigation

Alternative 2 – Plug Lower Well Section

Alternative 3 – Blending (GST or EST)

Alternative 4 – Treatment Technology (Ion Exchange, Greensand Filtration, and Adsorption).

A summary of the key factors and comparison of each alternative is presented below. Of the alternatives evaluated, three did not appear to be feasible or had significant drawbacks; namely, irrigation, well plugging, and EST blending. The benefits of using the well water for irrigation are not expected to outweigh the cost of implementation and operation of the irrigation system; ultimately, this option is not utilizing the well's full capacity and would provide marginal benefit in meeting the City's growing demands. Next, plugging the lower section of the well is considered high risk as it is possible that the arsenic concentration may migrate over time from the lower sections to the upper sections of the aquifer, as they are relatively close in proximity. Also, plugging the lower section of the well will permanently reduce the well's capacity. Finally, blending using an EST is not recommended due to the lack of operational control and risk of insufficient blending. The TCEQ's conditional approval of a blending strategy requires a specific proportion of water sources, which may not always be matched in an EST that fills and drains based on system pressure.

Of the alternatives, utilizing a treatment technology or blending using a 300,000-gallon GST are considered the only two feasible solutions. Blending using a GST is possible with additional controls and automation. However, it will have impacts on the distribution system since a large volume of water would be withdrawn daily for blending. Furthermore, it is possible that arsenic concentrations may increase in the water used for blending as

a result of short-circuiting within the distribution system. This would cause arsenic levels to increase in the distribution system over time. Overall, the GST blending alternative has several drawbacks. It will not provide significant supply to the distribution system, involves re-pumping the mixing water, and does not best utilize the well's capacity.

Of the potential treatment technologies for arsenic removal, an adsorption system is the most viable technology for this application due to reliable treatment of arsenic with minimal operational oversight and high certainty of compliance.

RECOMMENDATION:

Of the potential treatment technologies for arsenic removal, an adsorption system is the most viable technology for this application due to reliable treatment of arsenic with minimal operational oversight and high certainty of compliance.

Alternative Evaluation Summary

	Irrigation	Plug Lower Well Section	Blending – GST	Blending – EST	Treatment Technology
Well Capacity Utilized	1,000 gpm	500 gpm	1,000 gpm	N/A	1,000 gpm
	Seasonal/ Periodic	Continuous	Periodic	N/A	Continuous
Volume Added to System[1]	150,000 gpd	240,000 gpd	70,000 gpd	N/A	480,000 gpd
Capital Cost[2,3]	$145,000	$50,000	$1,065,000	N/A	$823,000
Additional Operator Skill Required	None	None	None	N/A	Moderate
Additional Maintenance Requirements	None	None	Low	N/A	Moderate
Impacts to Existing System	None	None	Moderate	High	None
Risk to Water Quality	None	High	Moderate	High	Low
FNI Recommendation	Low cost-benefit ratio	Reduced capacity, and risk of arsenic migration	Reduced capacity, Operational Risk	Unable to achieve TCEQ mixing requirements	Lowes risk, maximum benefit
	Not recommended	Not Recommended	Feasible, Not Recommended	Not Recommended	**Recommended**



FREEDOM PARK WATER WELL

WATER PLANT NO. 5

City Council Meeting

January 12, 2021

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Project Background

Existing Facility

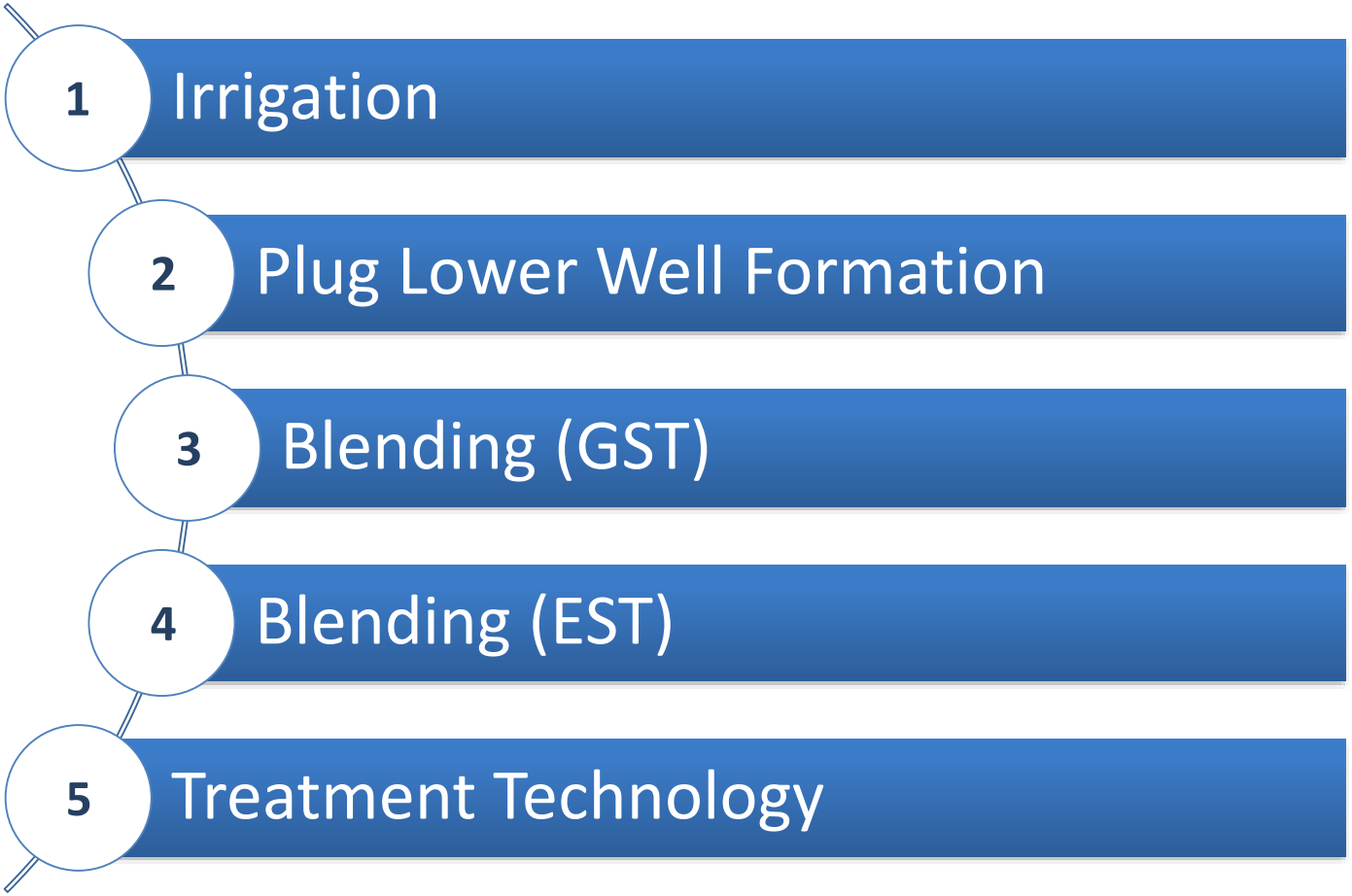
- One 1,000-gpm well pump
  - 1.5-MGD capacity
- One 50,000-gallon storage tank
- Two 750-gpm booster pumps

Parameter	Arsenic Concentration
Upper Formation	7 µg/L
Lower Formation	21 µg/L
Combined	**14.8 µg/L**
TCEQ Allowable Limit	**10 µg/L**





Alternatives Evaluation



Alternative Evaluation Summary

Alternative Evaluated	Not Technically Viable	Reduced Capacity	Risk of Failure	Expensive	Recommended Solution
Irrigation		X		X	
Plug Lower Well Formation		X	X		
Blending (GST)		X	X	X	
Blending (EST)	X	X	X	X	
Treatment Technology				X	✓

Recommended Alternative

Treatment Technology

- Technologies Evaluated
  - Ion Exchange
  - Greensand Filtration
  - Adsorption



- Considerations
  - Compact footprint
  - Low operational oversight
  - Expected media life 3.9 yrs
  - Non-hazardous media disposal

Estimated Construction Cost: $842,0

**including contingency, mobilization, OH&P and engineering*

Alternatives Evaluation

Treatment Technology

Advantages:

- ✓ **Well capacity fully utilized**
- ✓ Reliable treatment of arsenic and slow breakthrough
- ✓ Simple operation
- ✓ Common solution for arsenic removal in groundwater facilities
- ✓ Only monthly field testing required over half of media life
- ✓ Media lasts approximately 4 years before replacement required

Disadvantages:

x High capital investment: $842,000



Conclusion

Recommended

- ❖ Effective treatment
- ❖ Minimal operational oversight
- ❖ High certainty of compliance

Life Cycle Cost Analysis

Treatment Technology	Capital Cost[1]	Annual O&M Cost[2]	Life Cycle Cost (20 years)[3]
Adsorption	$734,000	$40,000	$1,394,000
Ion Exchange	$1,768,000	$87,000	$3,231,000

[1] Capital Cost includes equipment, installation, contingency, mobilization, and OH&P

[2] Annual O&M costs include labor, maintenance, media replacement and disposal, and salt as applicable

[3] Interest rate: 5%; inflation rate: 3%

Engineering Fee

Number	Task	Effort
1	Project Management	$19,140
2	Final Design	$52,330
3	Bid and Award	$4,480
4	Construction Phase Services	$27,630
5	Water Quality Testing and Survey	$4,380
		$107,960



THANK YOU

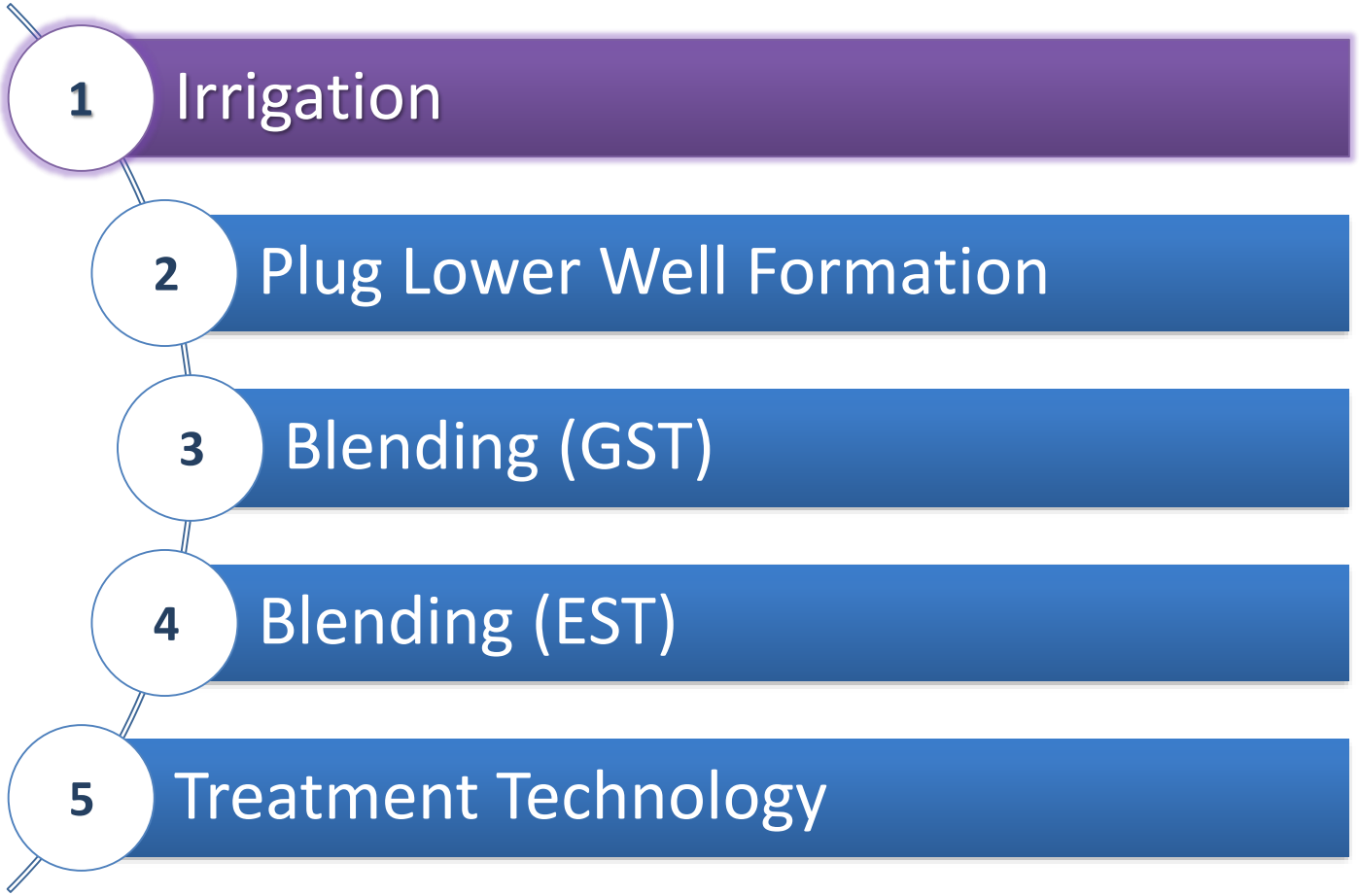
City Council Meeting

January 12, 2021

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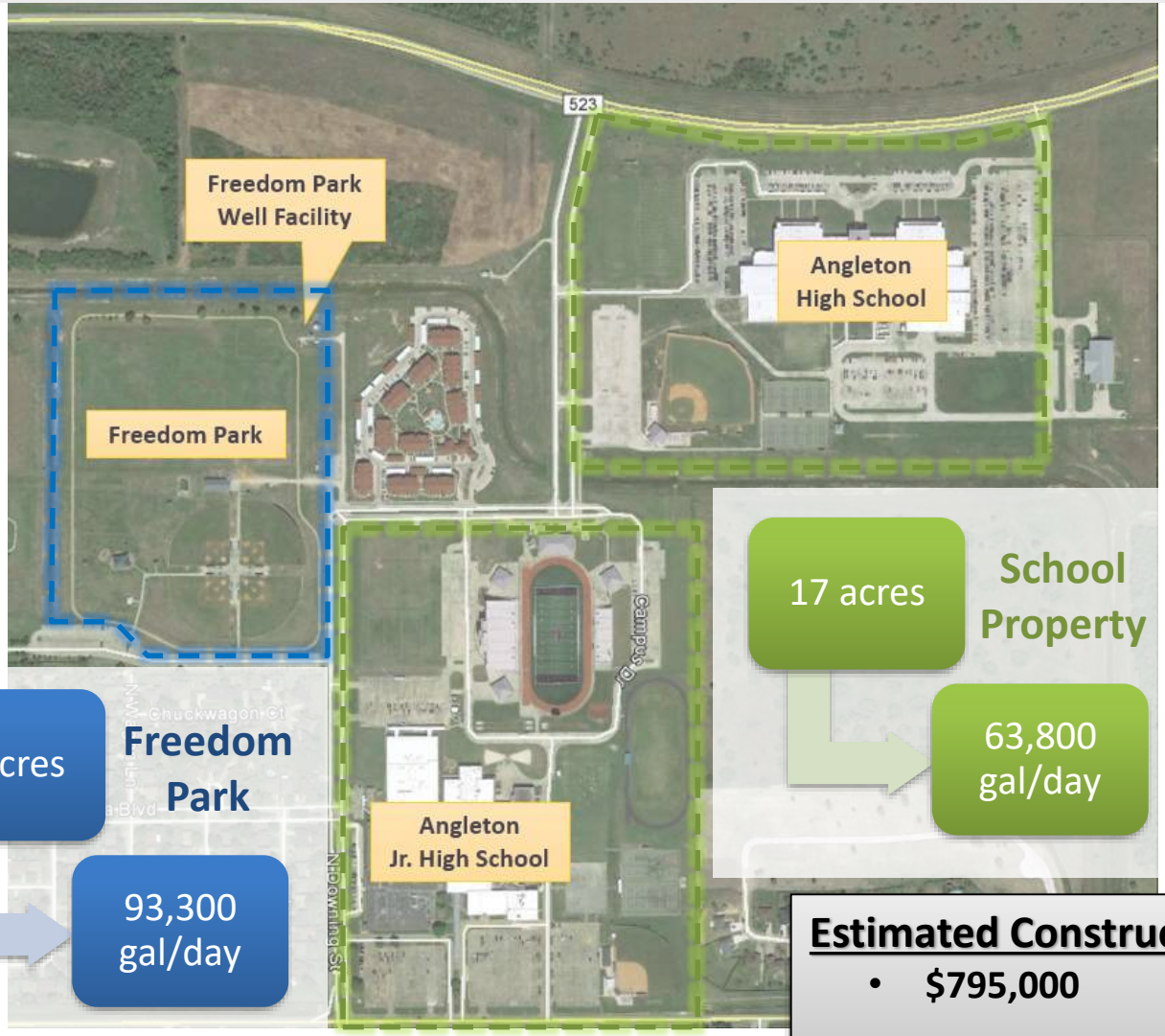
FREESE AND NICHOLS

Alternatives Evaluation



Alternatives Evaluation

Irrigation



Potential Well Usage

- 1,000 gpm
- 2.5 hours/day
- 160,000 gal./day
- 6 months/year

Estimated Construction Costs

- **$795,000**

**Costs including contingency, mobilization, OH&P and engineering*

Alternatives Evaluation

Irrigation

Advantages:

- ✓ Well water can be used without treatment or blending
- ✓ Park/school land in proximity

Disadvantages:

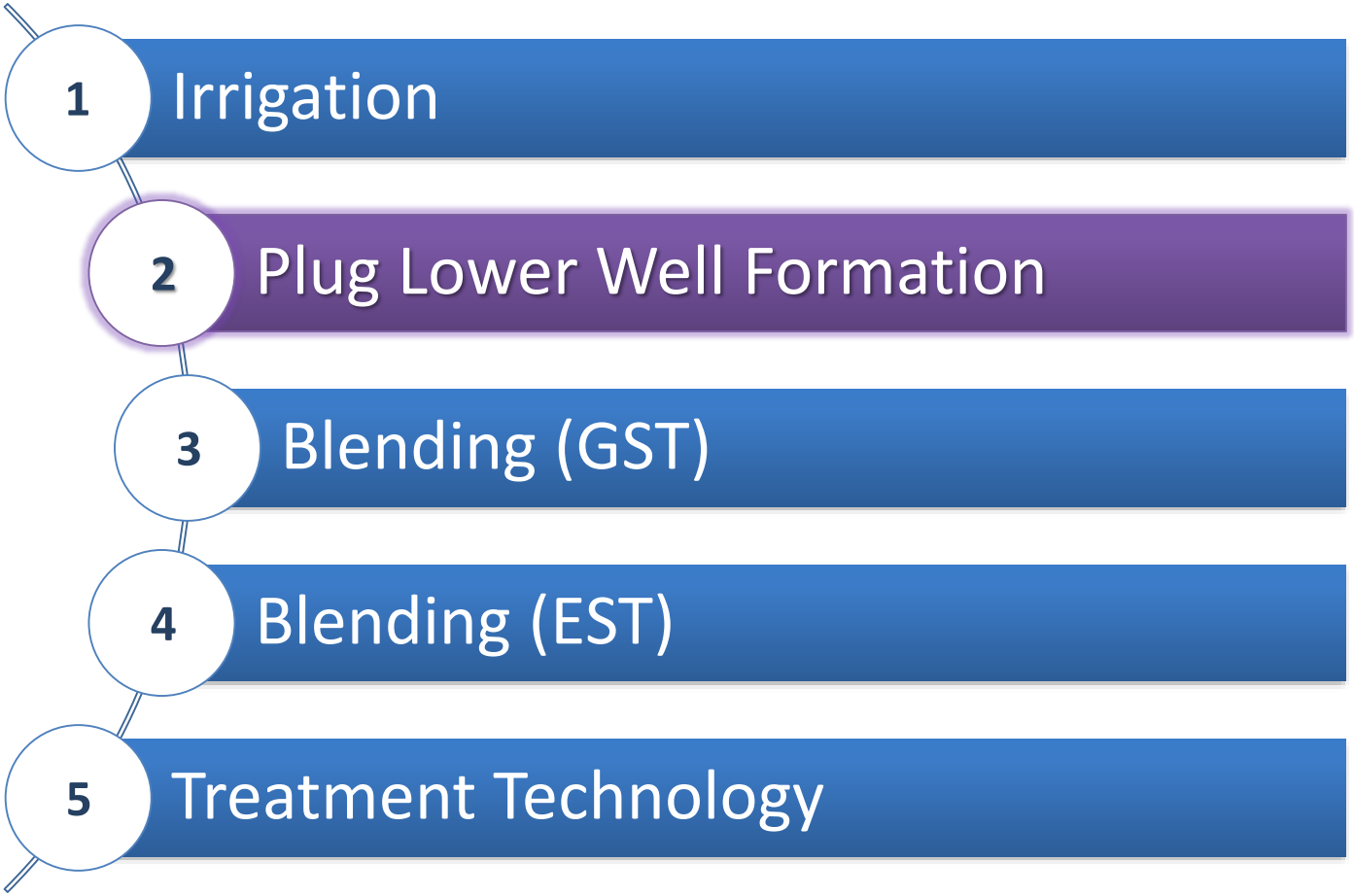
- x Seasonal demand
- x School property may not be viable
- x Well capacity not fully utilized
- x Piping modifications required – high capital cost
- x Sprinkler systems may need to be added – will increase cost

Conclusion

Not Recommended

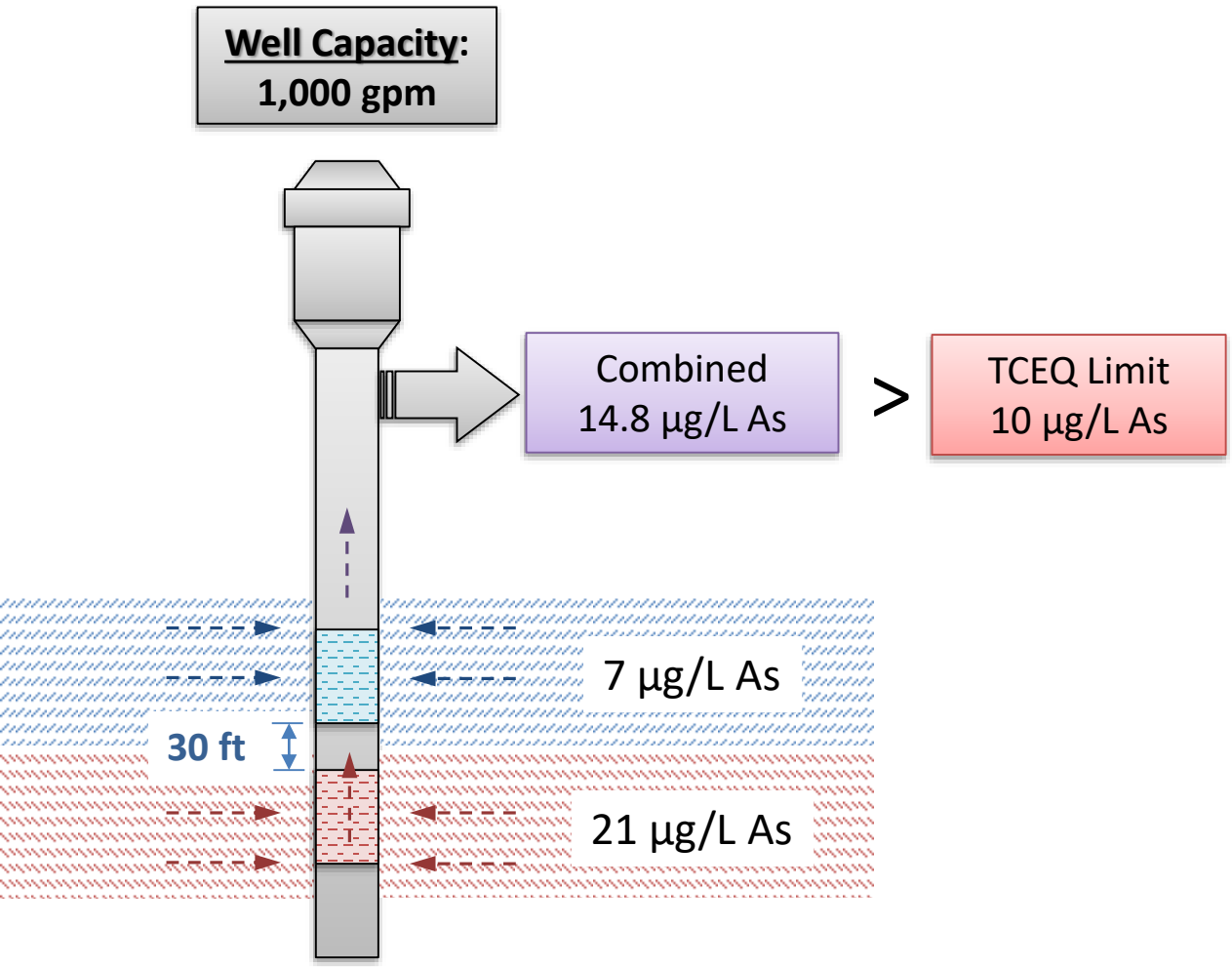
- ❖ Does not meet the City's primary need for additional water supply
- ❖ The well capacity will be only partially utilized
- ❖ Requires a capital investment in conveyance infrastructure that is unlikely to be recovered

Alternatives Evaluation



Alternatives Evaluation

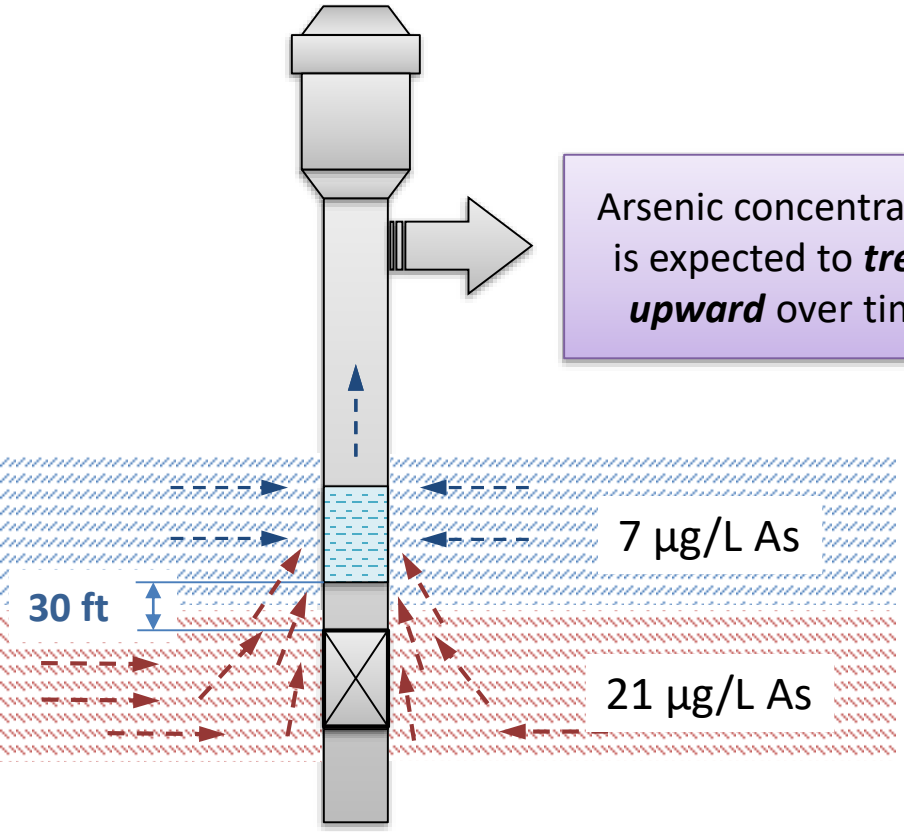
Plug Lower Well Formation



Alternatives Evaluation

Plug Lower Well Formation

Well Capacity:
~500 gpm



Arsenic concentration is expected to ***trend upward*** over time

Estimated Construction Cost: **$50,000**

(Does not include pump/motor modificatio

Alternatives Evaluation

Plug Lower Well Formation

Advantages:

- ✓ Well water can be used without treatment or blending

Disadvantages:

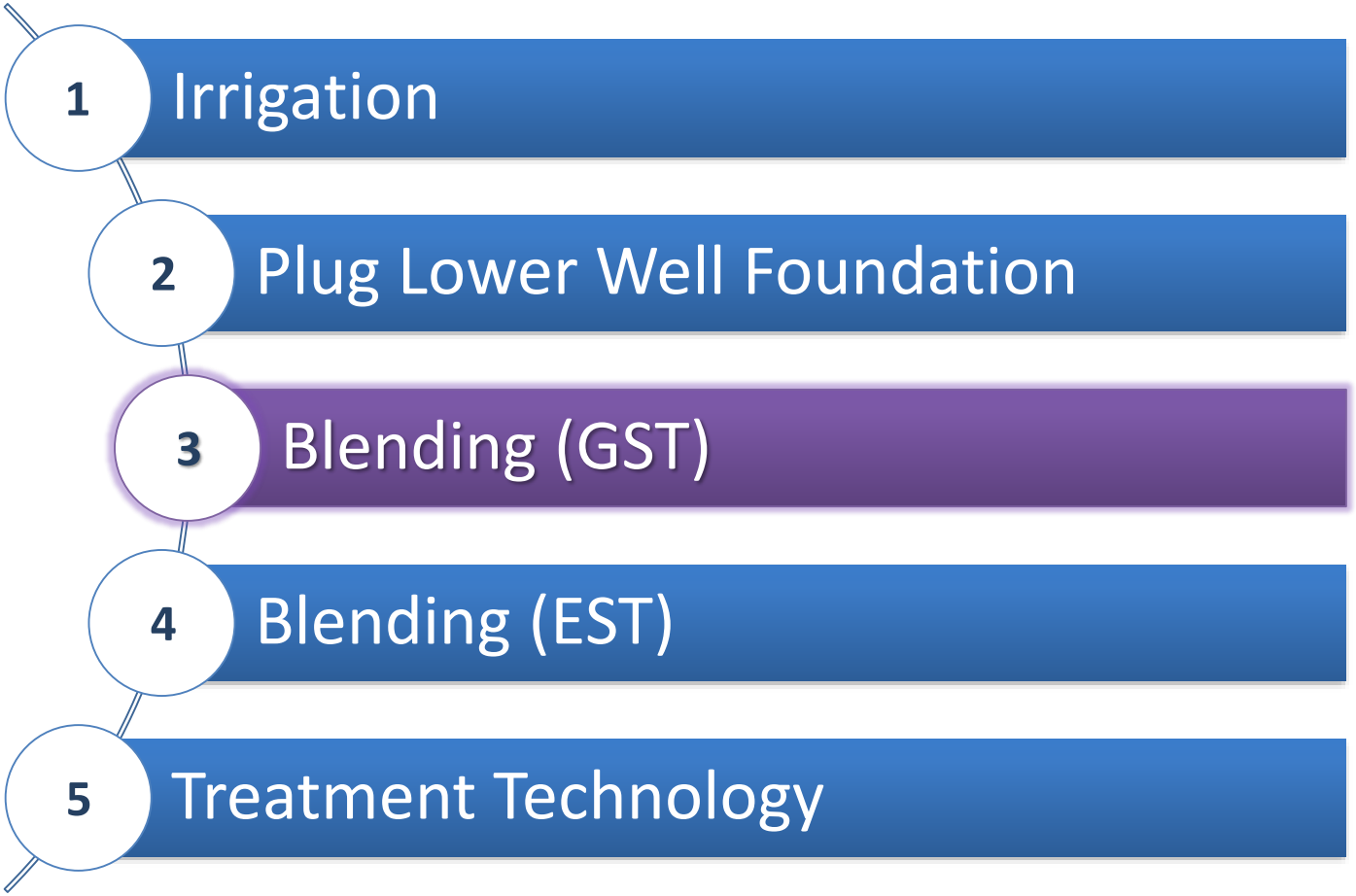
- x Well capacity reduced by approximately 50% (500 gpm)
- x Impacts pump performance and modifications may be required
- x Water from the lower foundation will likely be drawn up into the upper foundation since the foundations are only 30 feet apart
- x Frequent sampling needed to ensure compliance

Conclusion

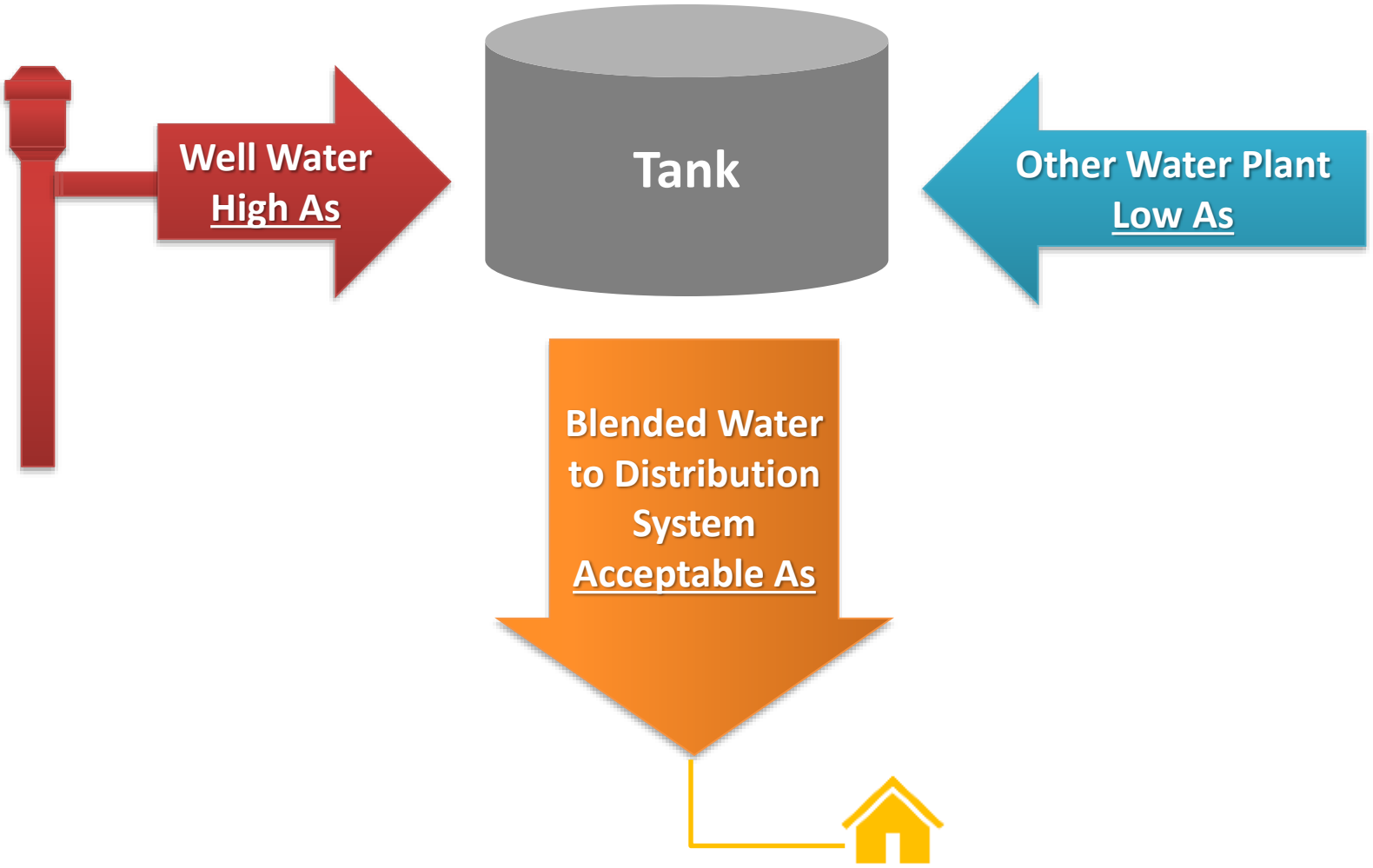
Not Recommended

- ❖ High risk – likely not a long term solution
- ❖ The well capacity will be only partially utilized
- ❖ Requires pump/motor modifications

Alternatives Evaluation



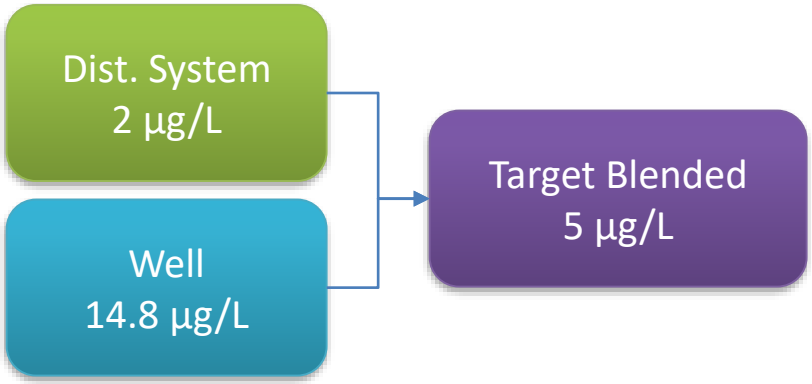
Blending Explained



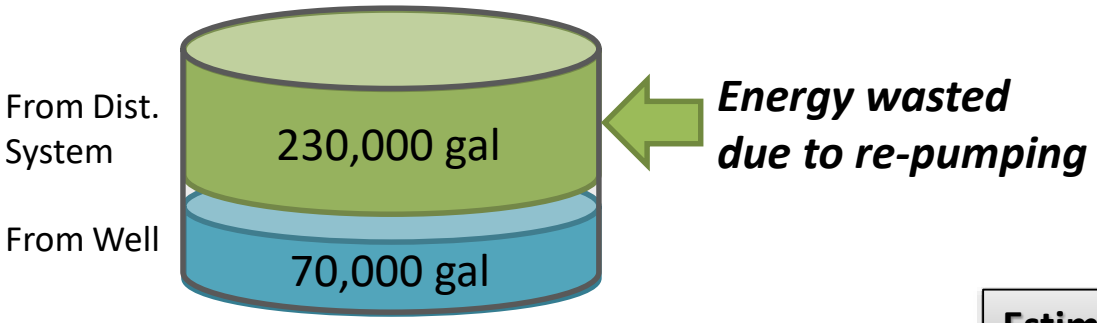
Alternatives Evaluation

Blending (GST)

Modified Blending Strategy



- ***New 300,000-gallon GST***
- 6-inch mixing line
- Fill cycle time: 6 hours
- Mixing water required per fill cycle: 638 gpm



Estimated Construction Cost: **$1,065,** 449

**including contingency, mobilization, OH&P and engineering*

Alternatives Evaluation

Blending (GST)

Advantages:

- ✓ Provides City with additional ground storage capacity

Disadvantages:

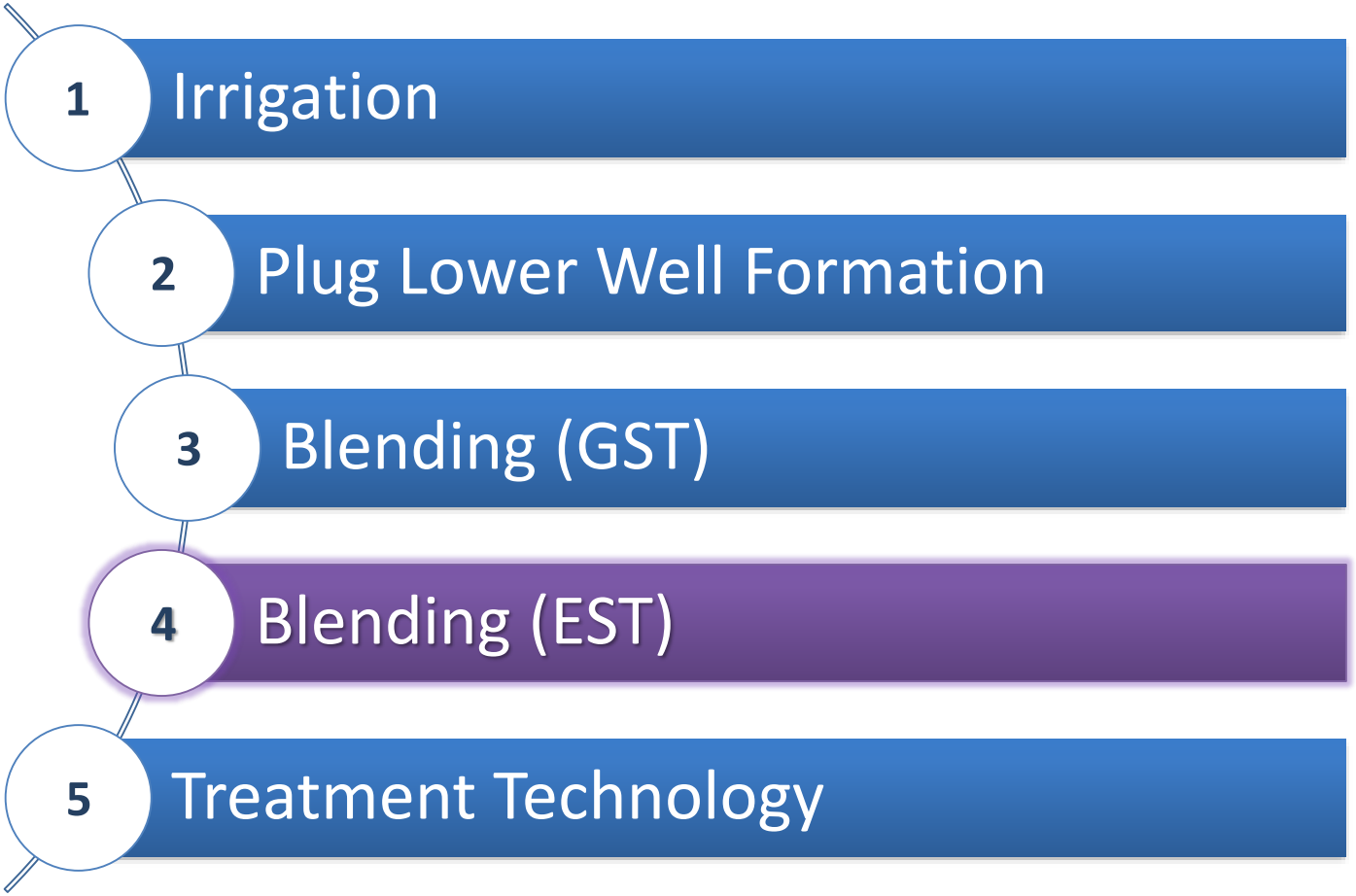
- x Batch mode operation – well capacity not fully utilized throughout day
- x Large demand on distribution system for blending – pressure impacts and re-pumping energy usage
- x Controls needed for automated operation
- x Frequent sampling needed to ensure compliance
- x Short-circuiting in the distribution system may occur
- x Large capital investment required

Conclusion

Not Recommended

- ❖ Potentially viable
- ❖ Impacts to the distribution system must be evaluated
- ❖ Does not provide significant supply

Alternatives Evaluation



Alternatives Evaluation

Blending (EST)

- An EST operates directly based on pressure in distribution system
- EST water level varies independent of blending configuration
- Operational complexity and lack of control

Conclusion

Not Recommended

❖ Not considered viable

AGENDA ITEM SUMMARY FORM

MEETING DATE: January 12, 2021

PREPARED BY: Jeff Sifford/Ron Bavarian, P.E.

AGENDA CONTENT: Discussion and possible action on the Oyster Creek WWTP Headworks Improvements.

AGENDA ITEM SECTION: Regular Agenda

BUDGETED AMOUNT:

FUNDS REQUESTED:

FUND:

EXECUTIVE SUMMARY:

The City of Angleton's WWTP existing influent screen has been out of service for the past two years. FNI has designed improvements to the headworks including replacement of existing screen, replacement of existing belt conveyor with water sluice conveyor, replacement of existing grit classifier and installation of a new washer compactor. The design of this project has been completed and the project is ready to be bid for construction.

RECOMMENDATION:

AGENDA ITEM SUMMARY FORM

MEETING DATE: 01/12/2021

PREPARED BY: Glenn LaMont, Megan Mainer and Martha Eighme

AGENDA CONTENT: Discussion and possible actions on any of Governor Abbott's latest executive orders, Brazoria County's emergency declarations and impact on the City of Angleton and how to proceed with city business in the future.

AGENDA ITEM SECTION: Regular Agenda

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

FUND: N/A

EXECUTIVE SUMMARY:

Staff would like City Council's advice and direction on latest policies. This is also an Opportunity for Council to ask questions on COVID-19 response.

RECCOMENDATION:

Discussion and Questions