



**PERMIT APPLICATION REVIEW FORM FOR
CABLE, CONDUIT, AND POLE LINE ACTIVITY
IN FORT BEND COUNTY**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

- Right of Way Permit**
 Commercial Driveway Permit

Permit No: 2017-17508

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

(1) COMPLETE APPLICATION FORM:

- a. Name of road, street, and/or drainage ditch affected.
 b. Vicinity map showing course of directions
 c. Plans and specifications

(2) BOND:

- County Attorney, approval when applicable.
- Perpetual bond currently posted. Bond No: _____ Amount: _____
- Performance bond submitted. Bond No: ██████████ Amount: \$10,000.00
- Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

We have reviewed this project and agree it meets minimum requirements.

Charles O. Ay

Permit Administrator

12/20/2017

Date



**REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT**

**Fort Bend County
Engineering Department**
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

Right of Way Permit

Commercial Driveway Permit

Permit No: 2017-17508

Applicant: Monarch Civil Constructors, LLC

Job Location Site: Intersection of Hampton Breeze Ln and Dry Stone Ln, Richmond , TX 77469

Bond No. **Date of Bond:** 12/14/2017 **Amount:** \$10,000.00

The above applicant came to make use of certain Fort Bend County property subject to, "The Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 2nd day of January, 2018, Upon Motion of Commissioner _____, seconded by Commissioner _____, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

Presented to Commissioners Court and approved.

By: 
County Engineer

Date Recorded _____ Comm. Court No. _____

Clerk of Commissioners Court

By: _____
Drainage District Engineer/Manager

By: _____
Deputy

**PERFORMANCE BOND COVERING ALL CABLE CONDUIT AND/OR POLE LINE
ACTIVITY IN UNDER ACROSS OR ALONG FORT BEND COUNTY ROAD
COMMERCIAL DRIVEWAY AND MEDIAN OPENINGS OR MODIFICATIONS
(AUTHORIZED)**

BOND NO. [REDACTED]

THE STATE OF TEXAS
COUNTY OF FORT BEND

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, Monarch Civil Constructors, LLC whose (address, phone) is 20228 Schiel Road
Cypress, TX 77433, (713) 808 - 9388 Texas, hereinafter called the Principal, and North American Specialty Insurance Company,
a Corporation existing under and by virtue of the laws of the state of NH and authorized to do an indemnifying business
in the state of Texas, and whose principal office is located at (name/address/phone) North American Specialty Insurance Company
3050 Post Oak Boulevard, Suite 850, Houston, TX 77056 whose officer
residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is
Erica Anne Cox c/o and whose address is 26623 Oak Ridge Drive, The Woodlands, TX 77380
Technical Assurance, L.L.C. hereinafter called the Surety, and held and firmly bound unto, Robert E.
Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of
Ten Thousand Dollars and 00/100 Dollars (\$10,000.00) current, lawful money of the
United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in
office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs,
executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the above bounden principal contemplates laying,
constructing maintaining and/or repairing one or more cables, conduits, and/or pole lines in, under, across and/or along
roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend, and
the State of Texas, under the jurisdiction of the Commissioners' Court of Fort Bend County, Texas, pursuant to the
Commissioners' Court order adopted on the 1st day of December, A.D. 1980, recorded in Volume 13, of the Commissioners'
Court Minutes of Fort Bend County, Texas, regulating same, which Commissioners' Court order is hereby referred to and
made a part hereof for all purposes as though fully set out herein;

AND WHEREAS, the principal desires to provide Fort Bend County with a performance bond covering all such cable,
conduit and/or pole line activity, commercial driveway and median Openings or modifications;

NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line
activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole
lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or
modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend
County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned
Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner
therein specified, and shaft pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend
County may sustain by reason of any failure or default on the part of said principal, then this obligation shall be null and
void, otherwise to remain in full force and effect.


This bond is payable at the County Courthouse in the County of Fort Bend and State of Texas.

It is understood that at any time Fort Bend County deems itself insecure under this bond, it may require further
and/or additional bonds of the principal.

EXECUTED this 14th day of December, 2017

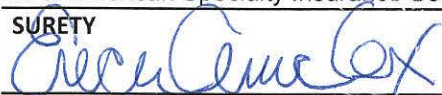
Monarch Civil Constructors, LLC

PRINCIPAL


BY Ronnie Vaughan Manager

North American Specialty Insurance Company

SURETY


BY Erica Anne Cox, Attorney-in-Fact

NAS SURETY GROUP

NORTH AMERICAN SPECIALTY INSURANCE COMPANY
WASHINGTON INTERNATIONAL INSURANCE COMPANY

GENERAL POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, THAT North American Specialty Insurance Company, a corporation duly organized and existing under laws of the State of New Hampshire, and having its principal office in the City of Manchester, New Hampshire, and Washington International Insurance Company, a corporation organized and existing under the laws of the State of New Hampshire and having its principal office in the City of Schaumburg, Illinois, each does hereby make, constitute and appoint:

EDWARD ARENS, PHILIP BAKER, MICHELE BONNIN,

ERICA ANNE COX, JILLIAN MCKENZIE and REBECCA GARZA

JOINTLY OR SEVERALLY

Its true and lawful Attorney(s)-in-Fact, to make, execute, seal and deliver, for and on its behalf and as its act and deed, bonds or other writings obligatory in the nature of a bond on behalf of each of said Companies, as surety, on contracts of suretyship as are or may be required or permitted by law, regulation, contract or otherwise, provided that no bond or undertaking or contract or suretyship executed under this authority shall exceed the amount of:

FIFTY MILLION (\$50,000,000.00) DOLLARS

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Boards of Directors of both North American Specialty Insurance Company and Washington International Insurance Company at meetings duly called and held on the 9th of May, 2012:

"RESOLVED, that any two of the Presidents, any Managing Director, any Senior Vice President, any Vice President, any Assistant Vice President, the Secretary or any Assistant Secretary be, and each or any of them hereby is authorized to execute a Power of Attorney qualifying the attorney named in the given Power of Attorney to execute on behalf of the Company bonds, undertakings and all contracts of surety, and that each or any of them hereby is authorized to attest to the execution of any such Power of Attorney and to attach therein the seal of the Company; and it is

FURTHER RESOLVED, that the signature of such officers and the seal of the Company may be affixed to any such Power of Attorney or to any certificate relating thereto by facsimile, and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be binding upon the Company when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached."



By [Signature]
Steven P. Anderson, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company



By [Signature]
Michael A. Ito, Senior Vice President of Washington International Insurance Company
& Senior Vice President of North American Specialty Insurance Company

IN WITNESS WHEREOF, North American Specialty Insurance Company and Washington International Insurance Company have caused their official seals to be hereunto affixed, and these presents to be signed by their authorized officers this 1st day of July, 2016.

North American Specialty Insurance Company
Washington International Insurance Company

State of Illinois
County of Cook ss:

On this 1st day of July, 2016, before me, a Notary Public personally appeared Steven P. Anderson, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company and Michael A. Ito, Senior Vice President of Washington International Insurance Company and Senior Vice President of North American Specialty Insurance Company, personally known to me, who being by me duly sworn, acknowledged that they signed the above Power of Attorney as officers of and acknowledged said instrument to be the voluntary act and deed of their respective companies.



[Signature]
M. Kenny, Notary Public

I, Jeffrey Goldberg, the duly elected Assistant Secretary of North American Specialty Insurance Company and Washington International Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney given by said North American Specialty Insurance Company and Washington International Insurance Company, which is still in full force and effect.

IN WITNESS WHEREOF, I have set my hand and affixed the seals of the Companies this 14th day of December, 2017.

[Signature]
Jeffrey Goldberg, Vice President & Assistant Secretary of
Washington International Insurance Company & North American Specialty Insurance Company

**North American Specialty Insurance Company
Washington International Insurance Company**

TEXAS CLAIMS INFORMATION

IMPORTANT NOTICE

In order to obtain information or make a complaint:

You may contact Jim Carpenter, Vice President –
Claims at 1-800-338-0753

You may call Washington International Insurance
Company and/or North American Specialty Insurance
Company's toll-free number for information or to
make a complaint at:

1-800-338-0753

You may also write to Washington International
Insurance Company and/or North American Specialty
Insurance Company at the following address:

**475 N. Martingale Road
Suite 850
Schaumburg, IL 60173**

You may contact the Texas Department of Insurance
to obtain information on companies, coverages,
rights or complaints at:

1-800-252-3439

You may write the Texas Department of Insurance:

**P.O. Box 149104
Austin, TX 78714-9104
Fax: (512) 475-1771
Web: <http://www.tdi.state.tx.us>
Email: ConsumerProtection@tdi.state.tx.us**

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium
or about a claim you should first contact the
Washington International Insurance Company and/or
North American Specialty Insurance Company. If the
dispute is not resolved, you may contact the Texas
Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not
become a part or condition of the attached
document.

ADVISO IMPORTANTE

Para obtener informacion o para someter un queja:

Puede comunicarse con Jim Carpenter, Vice
President – Claims, al 1-800-338-0753

Usted puede llamar al numero de telefono gratis de
Washington International Insurance Company and/or
North American Specialty Insurance Company's para
informacion o para someter una queja al:

1-800-338-0753

Usted tambien puede escribir a Washington
International Insurance Company and/or North
American Specialty Insurance Company al:

**475 N. Martingale Road
Suite 850
Schaumburg, IL 60173**

Puede escribir al Departamento de Seguros de Texas
para obtener informacion acerca de companias,
coberturas, derechos o quejas al:

1-800-252-3439

Puede escribir al Departamento de Seguros de Texas:

**P.O. Box 149104
Austin, TX 78714-9104
Fax: (512) 475-1771
Web: <http://www.tdi.state.tx.us>
Email: ConsumerProtection@tdi.state.tx.us**

DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiene una disputa concierne a su prima o a un
reclamo, debe comunicarse con el Washington
International Insurance Company and/or North
American Specialty Insurance Company primero. Si
no se resuelve la disputa, puede entonces
comunicarse con el Departamento de Seguros de
Texas.

UNA ESTE AVISO A SU POLIZA

Este aviso es solo para proposito de informacion y no
se convierte en parte o condicion del documento
adjunto.

GENERAL CONSTRUCTION NOTES

- CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY PERMITS@FORTBENDCOUNTYTX.GOV, TEXAS AND THE CITY OF ROSENBERG PRIOR TO STARTING CONSTRUCTION OF UTILITY AND/OR CULVERTS WITHIN FORT BEND COUNTY ROAD RIGHT OF WAY.
- CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF FORT BEND COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT PRIOR TO STARTING CONSTRUCTION.
- ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL REQUEST THE EXACT LOCATION OF THESE FACILITIES BY CALLING THE ONE-CALL NOTIFICATION SYSTEM. CONTRACTOR SHALL GIVE NOTICE TO TEXAS811 (TELEPHONE NUMBER 811) REQUESTING THE LOCATION OF UNDERGROUND FACILITIES AND UTILITY LINES AT EACH EXCAVATION SITE AS REQUIRED BY TEXAS UTILITIES CODE, CHAPTER 251, NOT EARLIER THAN THE 14TH DAY BEFORE THE DATE THE EXCAVATION IS TO BEGIN OR LATER THAN THE 48TH HOUR BEFORE THE TIME THE EXCAVATION IS TO BEGIN, EXCLUDING SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY OCCUR DUE TO HIS FAILURE TO REQUEST THE LOCATION AND PRESERVATION OF THESE UNDERGROUND FACILITIES. CONTRACTOR SHALL COORDINATE ALL CONFLICTS WITH THE APPROPRIATE GOVERNING AGENCY. NO SEPARATE PAY.
- CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT, CONSTRUCTION@FORTBENDCOUNTYTX.GOV, CITY ENGINEER, (713) 462-3242, AND THE CITY OF ROSENBERG, (832) 595-3400 48 HOURS BEFORE STARTING WORK IN STREET RIGHTS -OF-WAY OR EASEMENTS.
- 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.
- EXISTING PAVEMENTS, CURBS, SIDEWALKS, AND DRIVEWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO FORT BEND COUNTY STANDARDS.
- 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.
- ALIGNMENT, CENTERLINE CURVE DATA AND STATIONING TO BE VERIFIED BY ON-THE-GROUND SURVEY FROM APPROVED SUBDIVISION PLAN (OR APPROVED PLOT FOR OFFSITE 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.
- PROPOSED PAVING IS SHOWN IN THE W&B PLANS FOR INFORMATION ONLY AND IS NOT INCLUDED IN THE W&B CONTRACT.
- WATER, SANITARY AND STORM SEWERS ARE SHOWN IN THE PAVING PLANS FOR INFORMATION ONLY AND ARE NOT INCLUDED IN THE PAVING CONTRACT.
- CONTRACTOR SHALL GIVE NOTICE TO ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS, OR PERSONS IN CHARGE OF PRIVATE AND PUBLIC UTILITIES OR RAILROADS AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
- CONTRACTOR SHALL ASSURE HIMSELF THAT ALL CONSTRUCTION PERMITS HAVE BEEN OBTAINED PRIOR TO COMMENCEMENT OF WORK. REQUIRED PERMITS THAT CAN BE ISSUED TO CONTRACTOR WILL BE OBTAINED AT HIS EXPENSE.
- CONTRACTOR TO REMOVE PLUGS AND CONNECT TO EXISTING UTILITY LINES AS INDICATED ON PLANS. NO SEPARATE PAY.
- ALL UTILITY TRENCHES TO BE BACKFILLED TO 95 PERCENT STANDARD PROCTOR DENSITY UNLESS OTHERWISE NOTED.
- PROPOSED UTILITY FLOWLINE ELEVATIONS ARE ONLY PROVIDED FOR LINES SHOWN ON A PARTICULAR SHEET. FOR FLOWLINE ELEVATIONS OF PROPOSED UTILITIES PROFILED ON OTHER SHEETS, SEE OTHER SHEETS.
- NO EXTRA PAY WILL BE ALLOWED FOR WORK CALLED FOR ON THE PLANS BUT NOT INCLUDED ON THE BID SHEET. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
- CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS. THIS INCLUDES BUT IS NOT LIMITED TO COMPLIANCE WITH THE LATEST EDITION OF OSHA REGULATIONS AND THE STATE OF TEXAS LAWS CONCERNING EXCAVATION AND CLEARANCES FROM OVERHEAD POWER LINES.
- CONTRACTOR SHALL NOTIFY THE DISTRICT'S OPERATOR, MR. JEFF HALEY WITH SI ENVIRONMENTAL AT (832)490-1500 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.

WATER CONSTRUCTION NOTES

- SEPARATION DISTANCES FOR ALL WATER MAIN AND SANITARY SEWER MAIN CONSTRUCTION SHALL BE GOVERNED BY THE "TEXAS COMMISSION ON ENVIRONMENTAL QUALITY," SECTION 290.44, LATEST PRINTING.
- ALL 4" THROUGH 12" WATER MAINS TO BE PVC PIPE, AWWA C-900 CLASS 150, SDR-18 MEETING THE REQUIREMENTS OF ANSI/NSF 61 UNLESS OTHERWISE NOTED. 16" AND LARGER WATER MAINS TO BE PVC PIPE, AWWA C-905 CLASS 125, SDR-18 OR DUCTILE IRON PIPE, AWWA C151 MINIMUM THICKNESS CLASS 51 MEETING THE REQUIREMENTS OF ANSI/NSF 61 UNLESS OTHERWISE NOTED.
- WATER LINE TRENCHES UNDER OR WITHIN 1 FOOT OF PAVEMENT SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND COMPACTED TO 95% STANDARD PROCTOR DENSITY TO WITHIN 1 FOOT OF TOP OF SUBGRADE. INCLUDE COST OF BANK SAND BEDDING AND CEMENT STABILIZED SAND BACKFILL IN UNIT PRICE BID PER LINEAR FOOT FOR WATER LINE IN APPROPRIATE SIZES.
- PROVIDE A MINIMUM 6" (SIX INCHES) OF CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
- 4-INCH THROUGH 12-INCH WATER LINES TO HAVE A MINIMUM OF 4'-0" COVER BELOW TOP OF CURB. UNLESS OTHERWISE NOTED VARY FLOWLINE UNIFORMLY FROM DEPTH SHOWN ON PLANS.
- CONSTRUCT WATER LINES WITH ONE JOINT OF PIPE BEYOND VALVES AND PLUG FOR FUTURE LINES UNLESS DISTANCES SHOWN ON PLANS INDICATE OTHERWISE. THURST BLOCK ALL PLUGS.
- VALVES ARE TO BE EQUIPPED WITH OPERATING NUT EXTENSIONS TO WITHIN TWO FEET OF NATURAL GROUND (OPEN COUNTER CLOCKWISE).
- CENTERLINE OF FLUSHING VALVES TO BE LOCATED 3 FEET FROM BACK OF CURB WITH CENTERLINE OF STEAMER NOZZLE 22 INCHES ABOVE FINISHED GRADE. TURN PROPOSED 4-1/2" FLUSHING VALVE OUTLET TO FACE CURB, AND PAINT TO CITY OF ROSENBERG COLOR CODE. NO SEPARATE PAY FOR HYDRANT PAINTING.
- SERVICE CONNECTIONS ARE INCLUDED IN THIS CONTRACT. ALL WATER SERVICES ARE TO BE MARKED WITH A SAWCUT IN CURB AND PAINT BLUE.
- ALL 2" BLOW-OFF VALVES TO BE INSTALLED PER CITY OF ROSENBERG DETAIL TITLED "MAINGUARD NO. 77 BLOW-OFF HYDRANT."
- WHERE A WATER LINE CROSSSES A SANITARY SEWER MAIN, LATERAL OR LEAD WITH LESS THAN NINE-FOOT VERTICAL SEPARATION, PROVIDE ONE MINIMUM 20-FOOT JOINT OF WATER LINE CENTERED ON MAIN, LATERAL OR LEAD SUCH THAT THE JOINTS OF THE WATER LINE PIPE ARE EQUIDISTANT, AT LEAST 9-FEET HORIZONTALLY FROM THE SANITARY SEWER MAIN, LATERAL OR LEAD. INCLUDE COST OF LEAD CROSSING IN UNIT PRICE BID PER LINEAR FOOT FOR WATER LINE IN APPROPRIATE SIZES.
- ALL FIRE HYDRANTS TO BE INSTALLED PER CITY OF ROSENBERG STANDARD DETAIL TITLED "FIRE HYDRANT ASSEMBLY".
- ALL WATER DISTRIBUTION MAINS TO BE BEDDED AND BACKFILLED PER CITY OF ROSENBERG STANDARD DETAIL TITLED "WATER MAIN BEDDING AND BACKFILL".
- WATERLINE SERVICE SADDLE & TAP SHALL BE IN ACCORDANCE WITH PRODUCTS LISTED IN THE CITY OF ROSENBERG APPROVED PRODUCT LIST.
- PLASTIC METER BOXES SHALL BE DFW PLASTICS, INC. MODEL DFW 1300 OR APPROVED EQUAL.
- ALL FITTINGS SHALL BE MEGALUG MECHANICAL JOINT OR APPROVED EQUAL.

WATER CONSTRUCTION NOTES (CONT.)

- LEAKAGE DURING PRESSURE TESTING SHALL NOT EXCEED AWWA C-600 OR C-605 REQUIREMENTS. THE FOLLOWING FORMULA SHALL BE USED TO CALCULATE ALLOWABLE LEAKAGE: Q=LD³/P/148,000 WHERE:
Q=THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR
L=LENGTH OF PIPE SECTION BEING TESTED, IN FEET
D=THE NOMINAL DIAMETER OF THE PIPE IN INCHES
P=THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI)
- WASTEWATER CONSTRUCTION NOTES**
 - SANITARY SEWER PIPE 10-INCH IN DIAMETER AND SMALLER SHALL BE SDR 26 P.V.C. SEWER PIPE MEETING ASTM SPECIFICATION D-3034, UNLESS OTHERWISE NOTED. SANITARY SEWER PIPE 12-INCH TO 15-INCH IN DIAMETER SHALL BE SDR 26 P.V.C. MEETING ASTM SPECIFICATION D-3034.
 - ALL SANITARY SEWER MANHOLES SHALL BE STANDARD CITY OF ROSENBERG, 4 FOOT DIAMETER MANHOLE PER CITY OF ROSENBERG DWG. S-105 UNLESS OTHERWISE NOTED. SANITARY SEWER MANHOLE RIMS SHALL BE 2 INCHES ABOVE FINISHED GRADE. BACKFILL SHALL BE ADDED AND SLOPED AWAY FROM THE MANHOLE RIM FOR STORM WATER DRAINAGE. THE TOP ONE FOOT OF MANHOLE SHALL CONSIST OF CONCRETE RINGS NOT MORE THAN 4-INCHES THICK. BRICK MANHOLES ARE NOT ALLOWED.
 - CONTRACTOR SHALL PROVIDE RECORD OF LOCATION OF ALL STACKS, STUBS, LEADS, ETC. TO IDS ENGINEERING GROUP.
 - SEPARATION DISTANCES FOR ALL SANITARY SEWER AND WATER MAIN CONSTRUCTION SHALL BE GOVERNED BY THE "TEXAS COMMISSION ON ENVIRONMENTAL QUALITY," SECTION 217.53, LATEST PRINTING.
 - MAINTAIN 12-INCH MINIMUM VERTICAL CLEARANCE AT CROSSINGS BETWEEN SANITARY SEWERS AND CULVERTS, UNLESS OTHERWISE NOTED.
 - TOPS OF SANITARY SEWER MANHOLES WITHIN 100 YEAR FLOOD PLAIN MUST BE SEALED. EVERY 1500 FEET OF SANITARY SEWER SHALL BE VENTED. MANHOLES MAY BE RAISED ABOVE 100 YEAR FLOOD ELEVATION IN LIEU OF SEALING AND VENTING, WITH APPROVAL OF OWNER'S REPRESENTATIVE.
 - WHERE SANITARY SEWER LINE CROSSSES A WATER LINE WITH LESS THAN 9-FEET BUT MORE THAN 1-FOOT VERTICAL SEPARATION, PROVIDE ONE MINIMUM 20-FOOT JOINT OF PRESSURE RATED PVC SANITARY SEWER (ASTM D2241, CLASS 150, SDR 26) CENTERED ON WATER LINE. THE SANITARY SEWER LINE SHALL BE BEDDED AND BACKFILLED IN ACCORDANCE WITH THE CITY OF ROSENBERG STANDARD STORM SEWER BEDDING AND BACKFILL DETAIL DRAWING D-100b AND D-100c UNLESS SHOWN OTHERWISE ON DRAWINGS.
 - ALL SEWER TRENCHES, INCLUDING TRENCHES FOR LEADS AND STUBS, UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT SHALL BE BACK FILLED WITH CEMENT STABILIZED SAND UP TO WITHIN ONE (1) FOOT OF TOP OF PAVING SURGRADE. INCLUDE COST OF CEMENT STABILIZED SAND BACKFILL IN UNIT PRICE BID PER LINEAR FOOT FOR SANITARY SEWER LINE, INCLUDING LEADS, IN APPROPRIATE SIZES. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL IN 6-INCH LAYERS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY PER ASTM D698/AASHTO T99.
 - DEFLECTION TEST SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID PIPE. TEST SHALL BE CONDUCTED AFTER FINAL BACKFILL. NO PIPE SHALL EXCEED A DEFLECTION OF 5%. THE DEFLECTION TEST IS TO BE RUN WITH A RIGID MANDEREL. IT SHALL HAVE A DIAMETER OF 95% OF INSIDE DIAMETER OF PIPE AND SHALL HAVE NINE OR MORE RUNNERS OR LEGS AND THE TOTAL NUMBER OF RUNNERS OR LEGS SHALL BE AN ODD NUMBER. THE TEST SHALL BE PERFORMED USING 40 LBS. PULL MAXIMUM, WITHOUT MECHANICAL PULLING DEVICES. THE MANDEREL TEST SHALL NOT BE PERFORMED SOONER THAN 30 DAYS AFTER BACKFILLING THE SEWER LINE TRENCH.
 - SPECIAL NOTES FOR WET/UNSTABLE SOIL CONDITIONS
 - CONTRACTOR SHALL OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE AND THE CITY OF ROSENBERG FOR USE OF WELL POINTS, TRENCH SHEETING, OR BRACING WHEN TRENCH CONDITIONS WARRANT.
 - SHOULD WET STABLE TRENCH CONDITIONS BE ENCOUNTERED, CONTRACTOR SHALL OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE FOR USE OF SANITARY SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH IN ACCORDANCE WITH CITY OF ROSENBERG MODIFIED "A-A" BEDDING AND BACKFILL.
 - CONTRACTOR SHALL OBTAIN APPROVAL OF THE OWNER'S REPRESENTATIVE FOR USE OF CRUSHED STONE SUPPORTED MANHOLE FOR WET STABLE TRENCH IN ACCORDANCE WITH CITY OF HOUSTON DRAWING NO. 02082-05 OR PILE SUPPORTED MANHOLE FOR UNSTABLE SUBGRADE IN ACCORDANCE WITH CITY OF HOUSTON DRAWING NO. 02082-04.
 - WELL POINTING SHALL BE PAID FOR SEPARATELY.

- LOW PRESSURE AIR TEST SHALL BE CONDUCTED PER TCEQ TAC 217.57. HOLDING TIMES SHALL BE AS ESTABLISHED BY TCEQ. CONTRACTOR TO PROVIDE TEST PLUGS AND RISERS.
- ALL LEADS SHALL BE LAID AT MINIMUM 1.0% GRADE, UNLESS OTHERWISE NOTED.
- MARK ALL SANITARY SEWER SERVICE WITH A 4" X 4" X 4" TIMBER WITH TOP PAINTED GREEN AT TIME OF CONSTRUCTION. ALSO A SAWCUT TO BE PUT IN CURB AND PAINTED GREEN.

STORM SEWER CONSTRUCTION NOTES

- STORM SEWERS AND LEADS (INCLUDING STORM SEWERS CONSTRUCTED IN SIDE LOT EASEMENTS) SHALL BE REINFORCED CONCRETE PIPE, C-76, CLASS III WITH RUBBER GASKETED JOINTS AND SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH THE CITY OF ROSENBERG STANDARD STORM SEWER BEDDING AND BACKFILL DETAIL DRAWING D-100b AND D-100c UNLESS SHOWN OTHERWISE ON DRAWINGS.
- ALL PROPOSED PIPE STUB OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8-INCH BRICK WALLS UNLESS OTHERWISE NOTED.
- ALL CEMENT STABILIZED SAND FOR STORM SEWER CONSTRUCTION TO BE COMPACTED TO 95% PROCTOR DENSITY.
- SPECIAL NOTES FOR WET SAND CONSTRUCTION:
 - WHEN TRENCH CONDITIONS REQUIRE THE USE OF WELL POINTS, SHEETING, AND BRACING, OR SEAL SLAB OR CRUSHED STONE PER CITY OF HOUSTON DWG. 02317-06, 02317-02, AND 02317-07 THESE ARE TO BE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S REPRESENTATIVE AND THE CITY OF ROSENBERG.
 - CONTRACTOR MAY SUBSTITUTE MONOLITHIC REINFORCED STORM SEWER CONSTRUCTION IN ACCORDANCE WITH CITY OF HOUSTON DWG 02641-01 WITH THE APPROVAL OF THE OWNERS REPRESENTATIVE AND THE CITY OF ROSENBERG.
 - WELL POINTING SHALL BE PAID FOR SEPARATELY.
- ALL STORM SEWER INLETS TO BE BACKFILLED WITH CEMENT STABILIZED SAND TO BOTTOM OF PAVEMENT UNDER PROPOSED PAVEMENT. INCLUDE COST OF CEMENT STABILIZED SAND BACKFILL IN UNIT PRICE BID PER INLET.
- ALL MANHOLES SHALL BE CITY OF ROSENBERG TYPE "C" IN ACCORDANCE WITH DWG. D-101 AND D-102 UNLESS OTHERWISE NOTED.
- PROVIDE A MINIMUM OF 6" (SIX INCHES) CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
- ALL STORM SEWER MANHOLE RIMS LOCATED OUTSIDE THE PROPOSED PAVING SHALL BE SET TO PROPOSED FINISHED GROUND ELEVATIONS.
- ALL C, C-1, C-2A, AND H-2 INLETS TO BE CONSTRUCTED OFFSET 3' FROM STREET E/R/S UNLESS OTHERWISE NOTED. ALL C-2 INLETS TO BE CONSTRUCTED OFFSET 8' FROM STREET E/R/S UNLESS OTHERWISE NOTED.
- STAGE I OF INLETS TO BE CONSTRUCTED TO 6" ABOVE LEAD PIPE AND PROVIDED WITH INLET PROTECTION BARRIERS, PER DETAIL.
- BETWEEN THE TIME THAT STORM SEWER IS PLACED AND MANHOLES AND INLETS ARE BUILT, ALL PIPE OPENINGS SHALL BE SUFFICIENTLY PLUGGED TO KEEP SEDIMENT FROM ACCUMULATING IN THE PIPE.
- FOR ALL STORM SEWER TRENCHES UNDER PAVING (PROPOSED OR FUTURE) OR WITHIN 3' OF PAVEMENT, THE INITIAL BACKFILL AND ALL BACKFILL UP TO THE PAVEMENT SURGRADE SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.

CONSTRUCTION NOTES FOR PAVING (CITY OF ROSENBERG)

- PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "SUBDIVISION PLATTING POLICYS" AND THE CITY OF ROSENBERG "SUBDIVISION REGULATIONS AND DESIGN STANDARDS" AND THE LATEST REVISIONS AND/OR AMENDMENTS OF SAME.
- GUIDELINES SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES SHALL BE OBSERVED.
- FILL SHALL BE PLACED IN MAXIMUM 8" LOOSE LIFTS AND COMPACTED TO 95% OF OPTIMUM DENSITY AS DETERMINED USING TESTING METHOD ASTM D698.
- CONTRACTOR SHALL NOTIFY THE IDS ENGINEERING GROUP CONSTRUCTION DEPARTMENT (713) 462-3178, THE FORT BEND COUNTY ENGINEERING DEPARTMENT CONSTRUCTION@FORTBENDCOUNTYTX.GOV, CITY OF ROSENBERG (832) 595-3500, CITY ENGINEER (713) 462-3242, AND THE DESIGNATED MATERIAL TESTING LABORATORY FOR CONSTRUCTION QUALITY CONTROL AT LEAST 24 HOURS PRIOR TO ANY CONCRETE PLACEMENT.
- 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.
- ALL ROAD WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB. T.C. INDICATES TOP OF CURB ELEVATIONS AND T.P. INDICATES TOP OF PAVEMENT ELEVATION.
- 28-FOOT CONCRETE PAVEMENT MAY BE POURED IN HALF SECTIONS OR FULL WIDTH AT CONTRACTORS OPTION, 41-FOOT CONCRETE PAVEMENT SHALL BE POURED IN HALF SECTIONS.
- WHERE PROPOSED PAVEMENT ENDS AT A CONSTRUCTION JOINT, EXTEND REBARS 18-INCHES, COAT WITH ASPHALT AND COVER WITH PLASTIC SLIP TUBE. AT EXPANSION JOINTS, EXTEND DOWELS 5-INCHES, COAT AND WRAP SAME AS CONSTRUCTION JOINT. NO SEPARATE PAY.
- TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT ALL RADIUS RETURNS AND AT MAXIMUM SPACING OF 60-FOOT INTERVALS.
- LONGITUDINAL JOINTS TO BE INSTALLED AS SHOWN ON PAVING DETAIL SHEET. MAXIMUM SPACING BETWEEN JOINTS NOT TO EXCEED 15 FEET. DEFORMED METAL STRIP TO BE INSTALLED MAXIMUM 1/4 INCH BELOW FINISHED TOP OF PAVEMENT.
- ALL CURB RADI TO BE 24.5 FEET TO BACK OF CURB WITH A MINIMUM 1 PERCENT GRADE UNLESS OTHERWISE NOTED. FOR MACHINE-LAID CURB, OMIT MORTAR FINISH BUT MAINTAIN SAME OUTSIDE DIMENSIONS.
- WHERE PROPOSED PAVEMENT IS TO MATCH EXISTING PAVEMENT, EXISTING RE-BARS OR DOWELS PROJECTING FROM PAVEMENT TO BE CLEANED AND TIED INTO PROPOSED PAVEMENT. IF NO REBARS OR DOWELS, CONSTRUCT AS PER STANDARD PAVING HEADER DETAIL ON PAVING DETAILS SHEET. REMOVE OR RELOCATE EXISTING BARRICADES, NO SEPARATE PAY.
- TRAFFIC LANE MARKERS TYPE (CERAMIC WHITE, YELLOW AND/OR REFLECTORIZED) AND SPACING TO BE IN ACCORDANCE WITH STANDARDS. SET MARKERS CLEAR OF TRANSVERSE JOINTS AND OFFSET LONGITUDINAL JOINT AS SHOWN.
- ALL 28-FOOT B-B CONCRETE PAVEMENT TO BE 6-INCHES; ALL 41-FOOT B-B CONCRETE PAVEMENT TO BE 7-INCHES.
- ALL PAVEMENT IS CENTERED ON STREET B.L. (B.L. IS EQUAL TO CENTER OF R.O.W.) UNLESS OTHERWISE NOTED.
- USE PLASTIC CHAIRS TO SUPPORT REINFORCEMENT AT 24-INCH SPACING EACH WAY.
- SUBGRADE TO BE STABILIZED 1 FOOT BACK OF PROPOSED CURB OR EDGE OF PAVEMENT WITH A MINIMUM OF 5% HYDRATED LIME BY DRY WEIGHT AND COMPACTED TO 95% OF STANDARD PROCTOR DENSITY. LIME REQUIREMENTS FROM GEOTECHNICAL TESTING TO BE CONFIRMED WITH ENGINEER, PRIOR TO CONSTRUCTION.
- NO FLY ASH IS TO BE USED IN CONCRETE MIX DESIGN.

MOUNTABLE CURB NOTE

- ALL TOP-OF-CURB ELEVATIONS SHOWN ARE BASED ON 4-INCH CURB. WHERE 6-INCH CURB IS SHOWN ON THE PLANS, CONTRACTOR SHALL ADD 2-INCHES FROM THE TOP OF CURB ELEVATION SHOWN ON THE PLANS.

FORT BEND COUNTY GENERAL NOTES

- FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
- CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAIS.
- ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS AND REQUIREMENTS RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.
- ALL ROAD WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
- A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
- ALL CONCRETE PAVEMENT SHALL BE 5 X SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60 FEET.
- ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
- 4"X12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
- AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACED IN ACCORDANCE WITH TxDOT PED-22A STANDARD DETAIL SHEET. A.D.A. HANDICAP RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.
- CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
- ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.
- GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
- ALL 8-1/4" STOP SIGNS SHALL BE 30"x30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
- A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.
- THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS OF FORT BEND COUNTY OR PROVISION OF THIS PROJECT SHALL BE CONSTRUED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER.

CENTERPOINT ENERGY 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 USUALLY NOT 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 (713) 223-4567, 1-800-669-8344 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 (713) 945-8036 OR (713) 945-8037 (7:00 AM TO 4:30 PM), 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 ACCOMPISHED 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 (713) 659-3552 OR (713) 207-4200.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.
- WARNING: OVERHEAD ELECTRICAL FACILITIES**
- OVERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
- ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX (6) FEET OF VOLTAGE OVERHEAD HIGH VOLTAGE LINES; AND
 - OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF VOLTAGE 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.
- 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 SURVEY & RIGHT OF WAY DIVISION AT (713) 207-6248 OR (713) 207-5769.

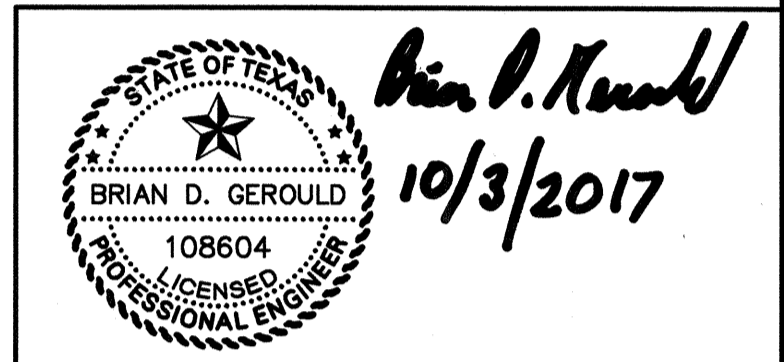
AT&T TEXAS/SWB/FACILITIES

- THE LOCATIONS OF AT&T TEXAS/SWB/FACILITIES 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 THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWB/FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWB FACILITIES.
- WHEN AT&T TEXAS/SWB FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
- THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWB UNDERGROUND CONDUIT FACILITIES OR BURIED CABLE FACILITIES SHOWN ON THESE PLANS DOES NOT MEAN THAT THERE ARE NO DIRECT BURIED CABLES OR OTHER CABLES IN CONDUIT IN THE AREA.
- PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. AT (713) 567-4552 OR E-MAIL HIM AT RL2759@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWB FACILITIES.

App.	
Revisions	
No.	Date

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED:  DEVELOPMENT COORDINATOR
DATE: 10/27/17



APPROVED: B.D.G. DATE: SEPTEMBER 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHWEST OF A JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 ADJ.) ELEVATION = 75.10

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.
NOTICE: For your safety, you are required by Texas law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

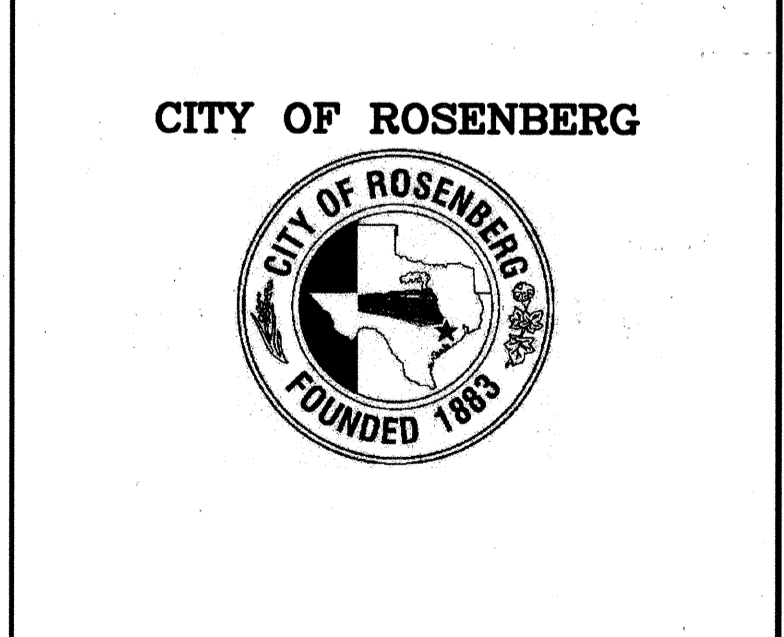
Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.

Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities shall be used for conflict verification.)
Signature Valid for six months.

Date: _____
Approved for AT&T Texas/SWB underground conduit facilities only.
Signature valid for one year

WALNUT CREEK SEC. 14

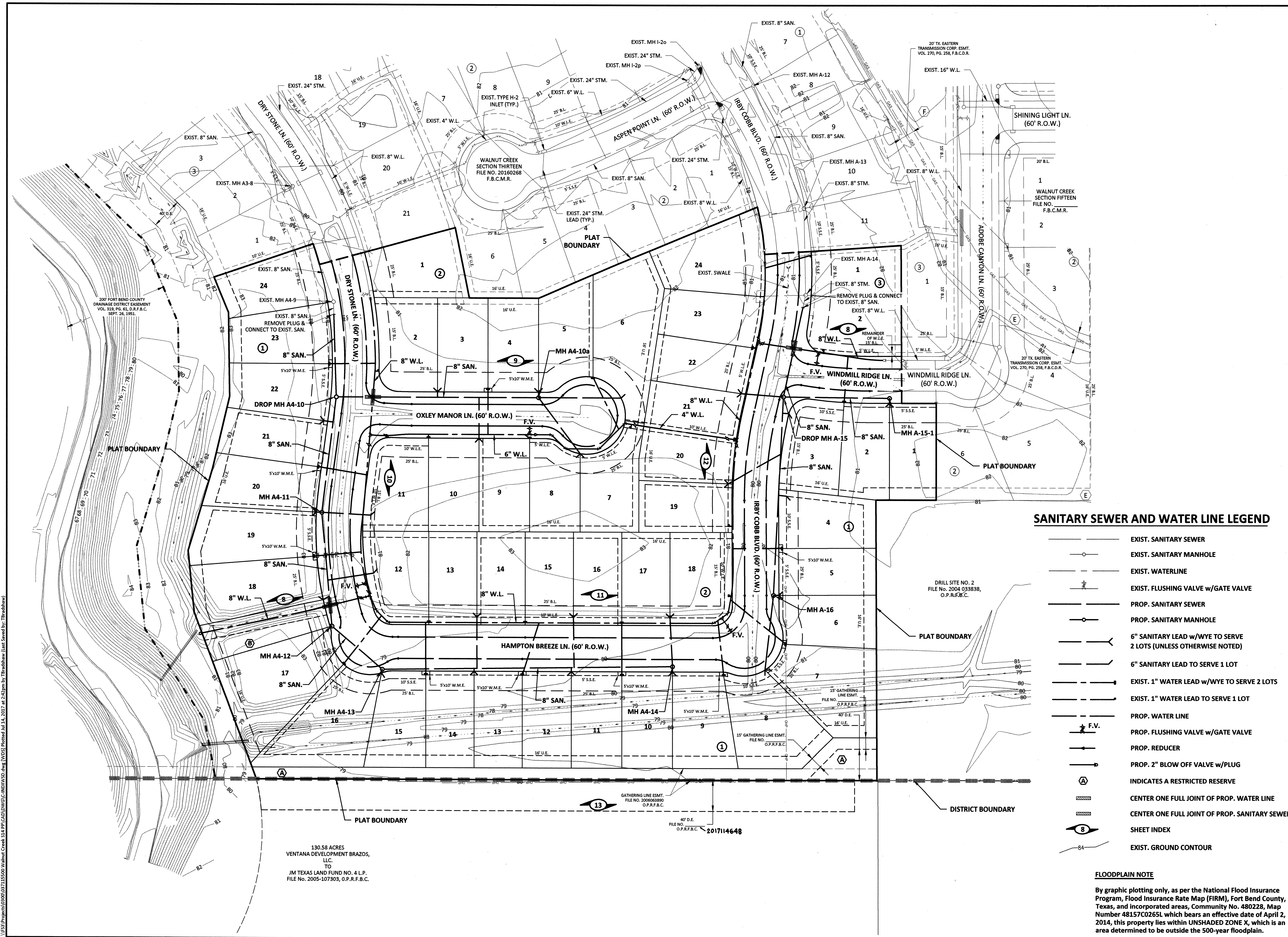
CONSTRUCTION NOTES



VERT: N/A
HORIZ: N/A
SHEET: 2 OF 24 SHEETS

EXISTING SYMBOL LEGEND	
	ADVERTISMENT SIGN
	'B' INLET
	'B-B' INLET
	BRICK PILLAR
	BUSH
	'C' INLET (ALL)
	CABLE TV JUNCTION BOX
	CABLE TV MARKER
	CABLE TV UNDG. MARKER
	CATCH BASIN
	CENTER LINE OF STREET
	CORE BORE
	'E' INLET
	ELECTRICAL JUNCTION BOX
	EXIST. SANITARY M H
	FENCE CORNER
	FENCE LINE (CHAIN LINK)
	FENCE LINE (WOOD)
	FIRE HYDRANT
	FLAG POLE
	GAS LAMP
	GAS METER
	GAS SERVICE LINE MARKER
	GAS VALVE
	GATE
	GREASE TRAP
	GUY WIRE
	H LAP MANHOLE
	H LAP TOWER LEG
	H LAP UNDG. CABLE MARKER
	LIGHT
	MAIL BOX
	METAL POST (BOLLARD)
	OVERHEAD POWER LINES
	PIPELINE MARKER
	POWER POLE
	PUBLIC PHONE
	RADIO RELAY MAST
	SANITARY CLEAN OUT
	SERVICE POLE
	SIGN STANDARD
	S.W.B.T. M H
	STORM M H
	STREET BARRICADE
	STREET LIGHT STANDARD
	TELEPHONE POLE
	TELEPHONE JUNCTION BOX
	TRAFFIC SIGN
	TRAFFIC SIGNAL CONTROL BOX
	TRAFFIC LIGHT STANDARD
	TRANSFORMER BOX
	TREE
	UNDG. CABLE MARKER
	VENT PIPE
	WATER METER
	WATER VALVE
	WATER WELL
	WELLHEAD

ABBREVIATIONS	
ADA	- AMERICANS WITH DISABILITIES ACT
B.L.	- BASELINE OR BUILDING LINE
B.O.P.	- BEGINNING OF PROJECT
B/F	- BLIND FLANGE
C.L.	- CENTER LINE
CLR.	- CLEARANCE (00-00)
CONC.	- CONCRETE
DIA.	- DIAMETER
D.I.P.	- DUCTILE IRON PIPE
D.E.	- DRAINAGE EASEMENT
E	- EAST
E.P.	- EDGE OF PAVEMENT
EL.	- ELEVATION
E.O.P.	- END OF PROJECT
EXIST.	-



FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *[Signature]*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17

APPROVED: B.D.G. DATE: JUNE 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
 AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHWEST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
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Date: _____
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 Signature Valid for six months.

Date: _____
 Approved for AT&T Texas/SWST underground conduit facilities only.
 Signature valid for one year

WALNUT CREEK SEC. 14

WATER DISTRIBUTION AND SANITARY SEWER INDEX

CITY OF ROSENBERG

VERT: 1"=60'
 HORIZ: 1"=60'
 SHEET: 3 OF 24 SHEETS

SANITARY SEWER AND WATER LINE LEGEND

- EXIST. SANITARY SEWER
- EXIST. SANITARY MANHOLE
- EXIST. WATERLINE
- EXIST. FLUSHING VALVE w/GATE VALVE
- PROP. SANITARY SEWER
- PROP. SANITARY MANHOLE
- 6" SANITARY LEAD w/WYE TO SERVE 2 LOTS (UNLESS OTHERWISE NOTED)
- 6" SANITARY LEAD TO SERVE 1 LOT
- EXIST. 1" WATER LEAD w/WYE TO SERVE 2 LOTS
- EXIST. 1" WATER LEAD TO SERVE 1 LOT
- PROP. WATER LINE
- F.V. PROP. FLUSHING VALVE w/GATE VALVE
- PROP. REDUCER
- PROP. 2" BLOW OFF VALVE w/PLUG
- Ⓜ INDICATES A RESTRICTED RESERVE
- CENTER ONE FULL JOINT OF PROP. WATER LINE
- CENTER ONE FULL JOINT OF PROP. SANITARY SEWER
- Ⓢ SHEET INDEX
- EXIST. GROUND CONTOUR

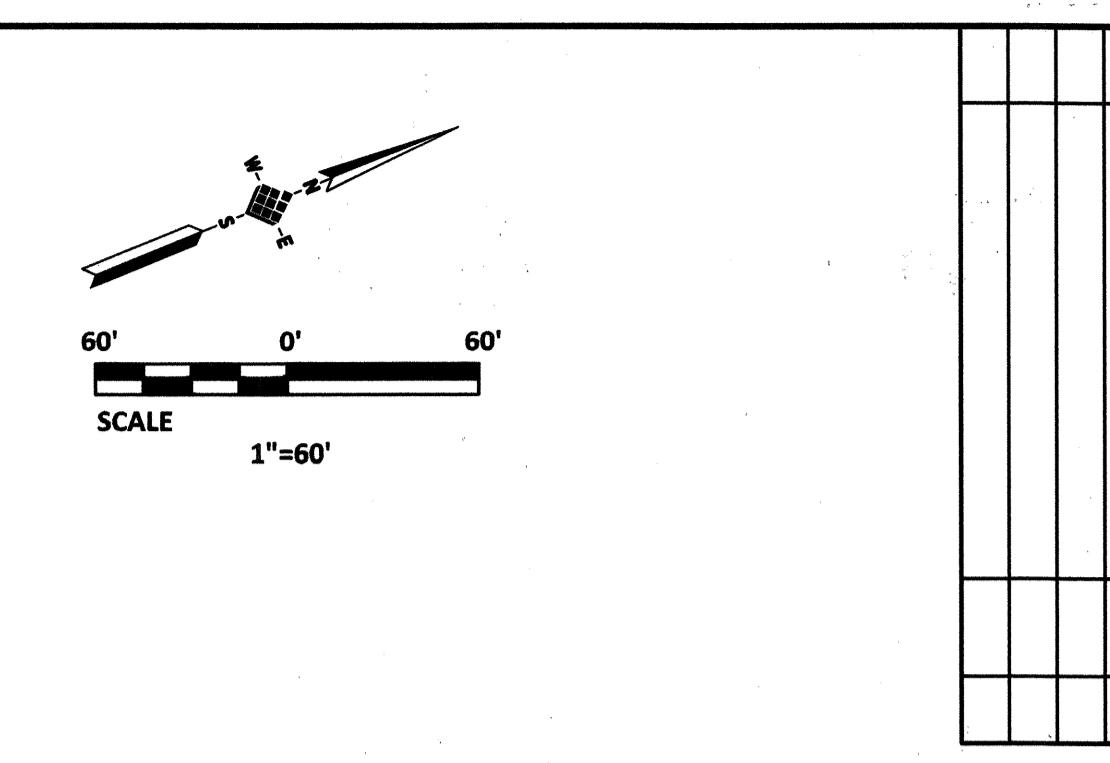
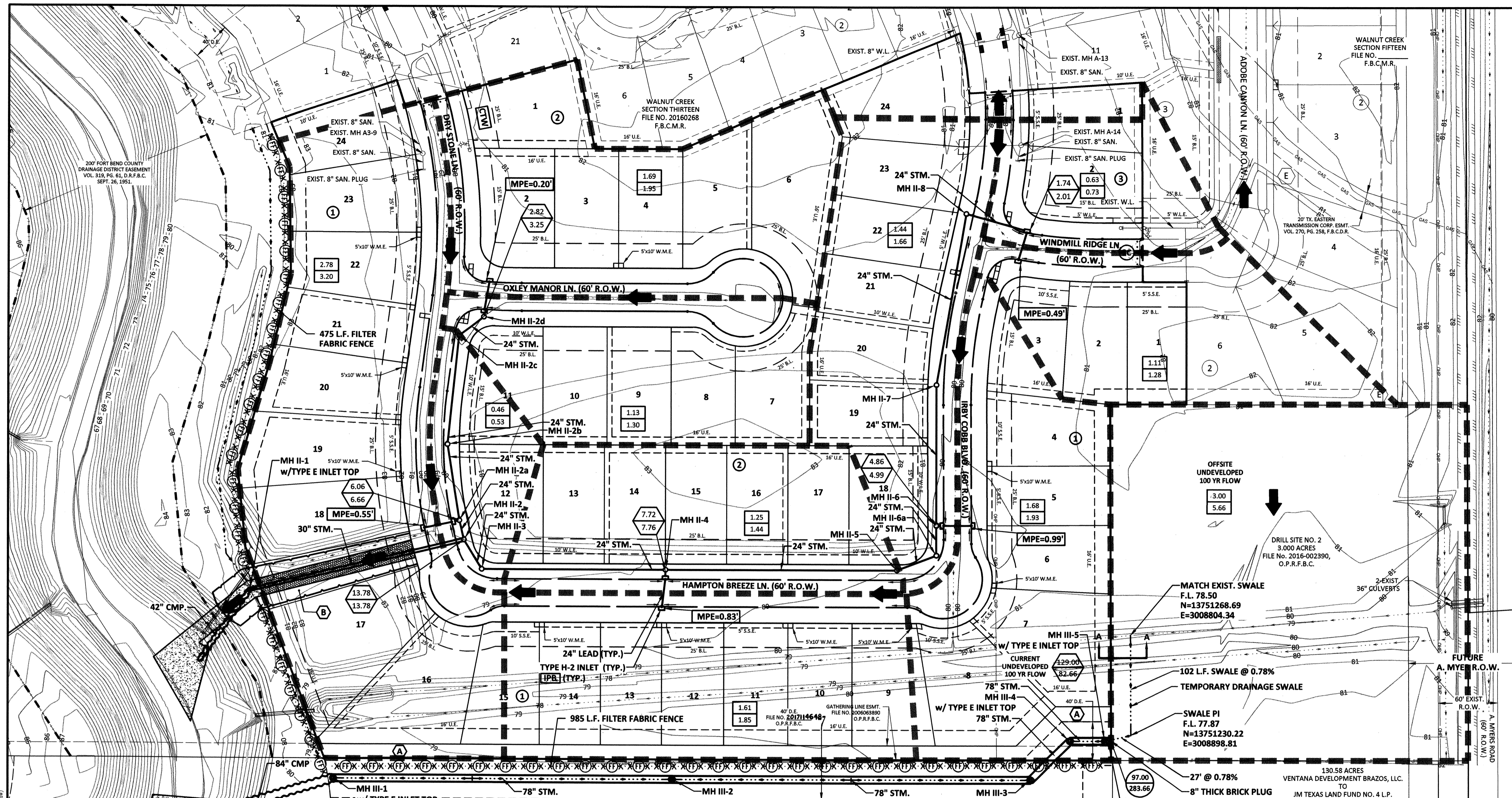
FLOODPLAIN NOTE
 By graphic plotting only, as per the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Fort Bend County, Texas, and incorporated areas, Community No. 480228, Map Number 48157C0265L which bears an effective date of April 2, 2014, this property lies within UNSHADED ZONE X, which is an area determined to be outside the 500-year floodplain.

I:\ESR\Projects\4103000\027115500 Walnut Creek_S14_P10\CD\DWG\CADD\DWG\1278-029-00.dwg (1/23) Plotted: Jul 14, 2017, 12:24:29pm by: [redacted] (User Saved by: [redacted])

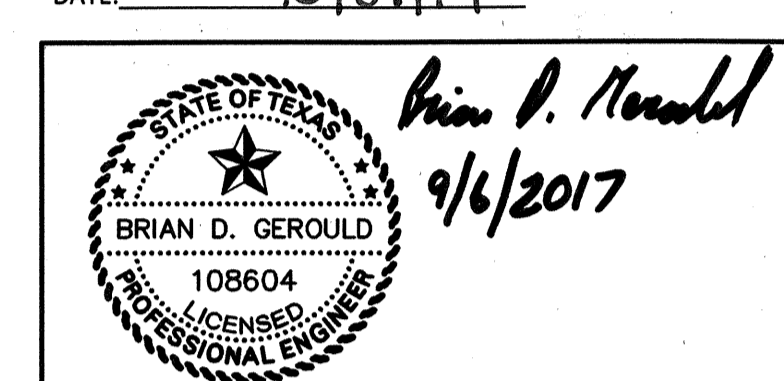
130.58 ACRES
 VENTANA DEVELOPMENT BRAZOS,
 LLC.
 TO
 JM TEXAS LAND FUND NO. 4 L.P.
 FILE NO. 2005-107303, O.P.R.F.B.C.

40' D.E.
 FILE NO. 200606990
 O.P.R.F.B.C. 2017114648

DRILL SITE NO. 2
 FILE NO. 2004 033838,
 O.P.R.F.B.C.



FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *[Signature]*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17



IDS Engineering Group
 13430 NW. Freeway Suite 700
 Houston, TX 77040
 713.462.3178
 TBPLS 10110700

APPROVED: B.D.G. DATE: JUNE 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

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 NAVD 88 (2001 ADJ.) ELEVATION = 75.10

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 NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
 CenterPoint Energy/Natural Gas Facilities Verification ONLY.
 (This signature verifies that you have shown CNP Natural Gas lines correctly - not to be used for conflict verification.) (Gas service lines are not shown.)
 Signature Valid for six months.

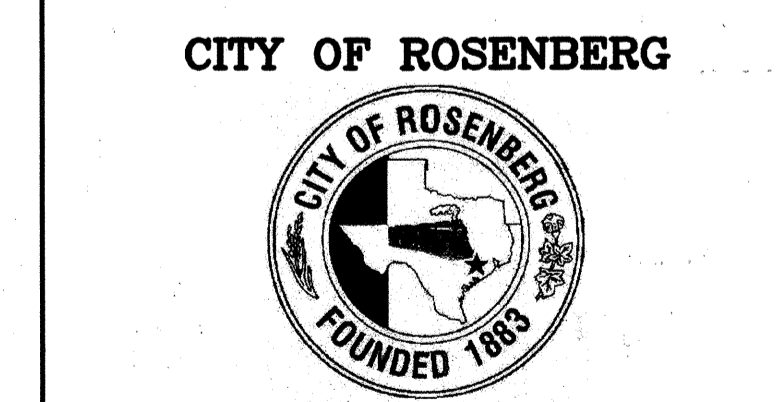
Date: _____
 CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
 (This signature verifies existing underground facilities - not to be used for conflict verification.)
 Signature Valid for six months.

Date: _____
 Approved for AT&T Texas/SWBT underground conduit facilities only.
 Signature valid for one year

WALNUT CREEK SEC. 14

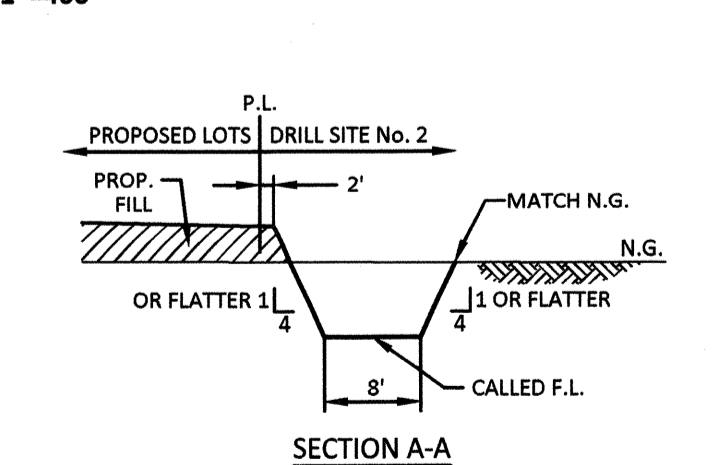
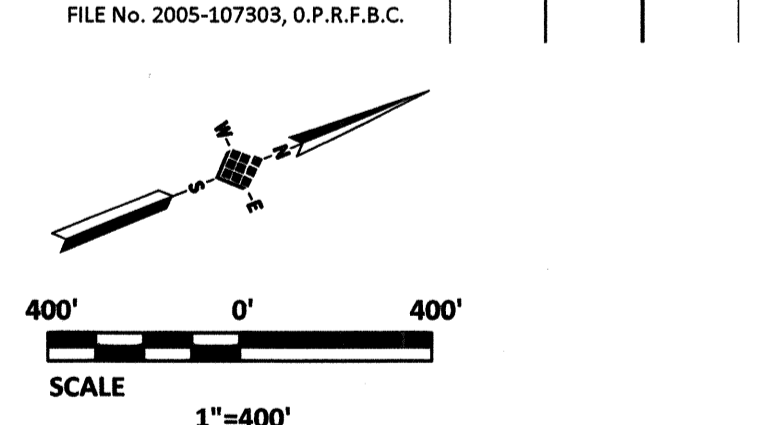
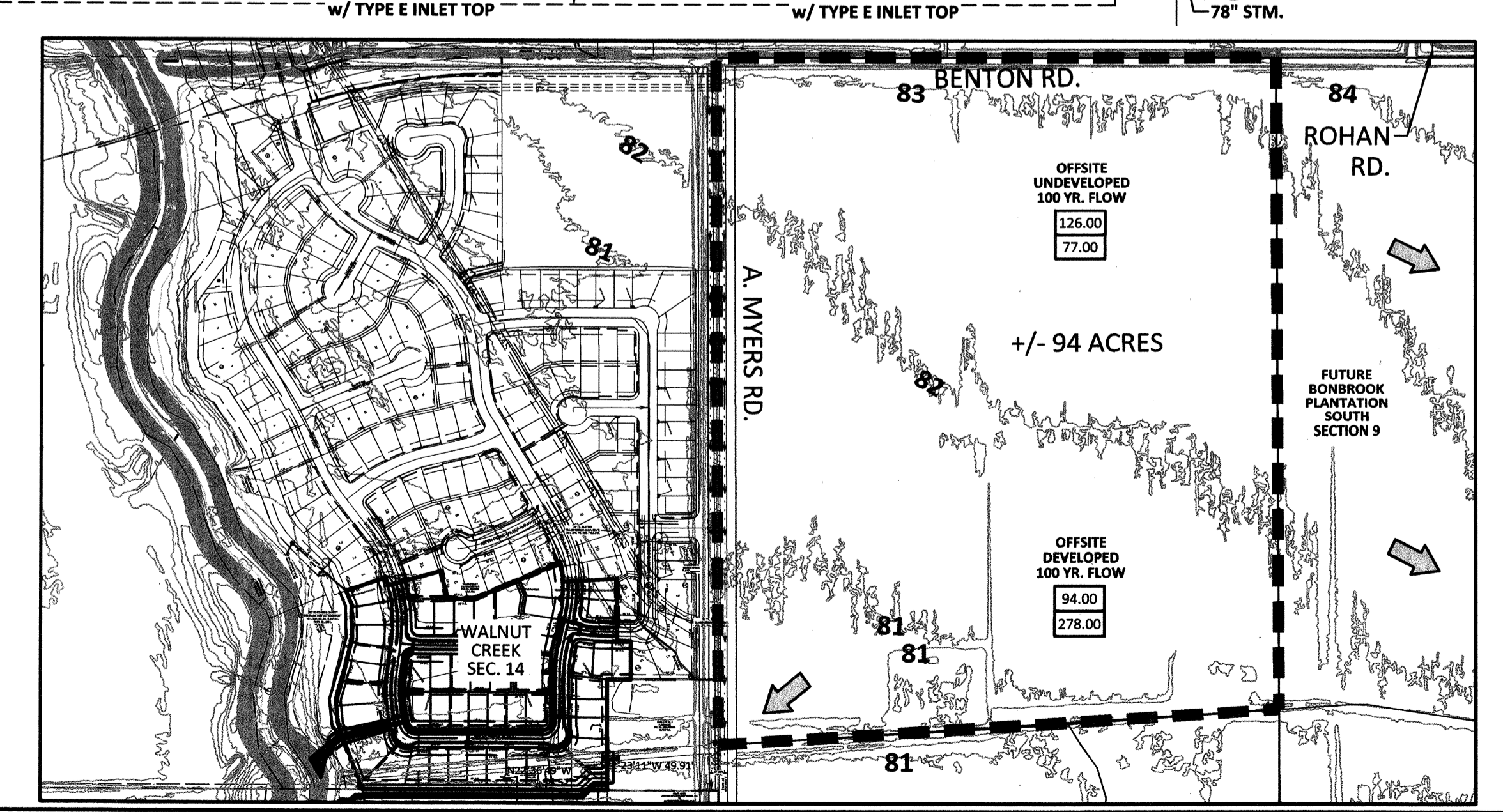
DRAINAGE AREA MAP AND POLLUTION PREVENTION PLAN

CITY OF ROSENBERG



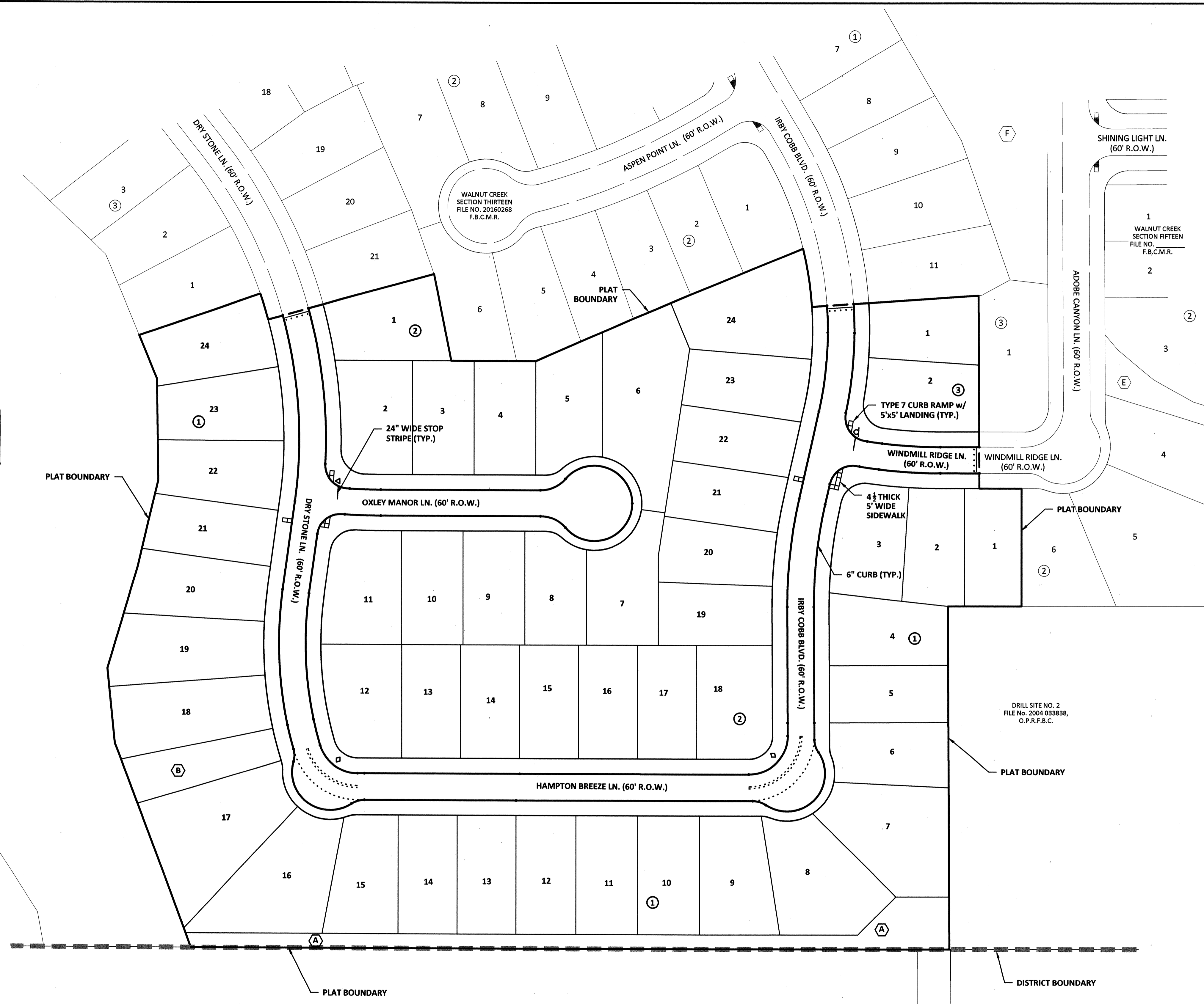
VERT: 1"=60'
 HORIZ: 1"=60'
 SHEET: 5 OF 24 SHEETS

- DRAINAGE AREA & POLLUTION PREVENTION LEGEND**
- PROPOSED PAVEMENT WITH CONCRETE CURB AND GRADE ARROWS. ALL PROPOSED PAVEMENT SHALL HAVE REINFORCED FILTER FABRIC FENCE BEHIND THE CURB.
 - EXISTING PAVEMENT
 - PROPOSED STORM SEWER AND MANHOLE
 - PROPOSED STORM SEWER, MANHOLE AND TYPE H-2 INLETS WITH FLOW DIRECTION ARROWS (ALL CURB INLETS WITH 24" LEAD UNLESS OTHERWISE NOTED)
 - INDICATES A STORM SEWER EASEMENT
 - EXISTING GROUND CONTOUR
 - INDICATES A DRAINAGE BOUNDARY
 - FILTER FABRIC FENCE
 - ACCUM. ACREAGE FROM OFFSITE (100 YR EVENT)
 97.00 ACCUM. ACREAGE FROM OFFSITE
 278.00 ACCUM. C.F.S.
 - DRAINAGE AT INLET(S) (2 YR. EVENT UNLESS OTHERWISE NOTED)
 4.29 ACREAGE
 4.70 C.F.S.
 - DRAINAGE AT STORM SEWER (DESIGN EVENT)
 43.90 ACCUM. ACREAGE WITHIN WALNUT CREEK SUBDIVISION
 43.90 ACCUM. C.F.S.
 - GRAVEL BAG
 - ⊙ STABILIZED CONSTRUCTION ACCESS
 - IPB STAGE I / STAGE II INLET PROTECTION BARRIER (TYPICAL FOR ALL PROPOSED INLETS)
 - FC FUEL CELL (TO BE LOCATED BY CONTRACTOR)
 - TC TRASH CONTAINER (TO BE LOCATED BY CONTRACTOR)
 - CTW CONCRETE TRUCK WASHOUT
 - MPE=0.53' MAXIMUM PONDING ELEVATION
 - A INDICATES A RESTRICTED RESERVE
 - ➔ EXTREME EVENT SHEET FLOW DIRECTION



FLOODPLAIN NOTE
 By graphic plotting only, as per the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Fort Bend County, Texas, and incorporated areas, Community No. 480228, Map Number 48157C0265L which bears an effective date of April 2, 2014, this property lies within UNSHADED ZONE X, which is an area determined to be outside the 500-year floodplain.

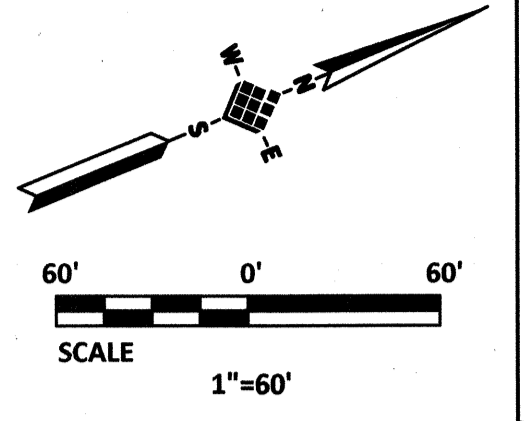
V:\Projects\2017\1500\1500.dwg (DWG) Printed: Jul 14, 2017 at 11:26am by Bradshaw (Last Saved by: Bradshaw)



130.58 ACRES
 VENTANA DEVELOPMENT BRAZOS,
 LLC,
 TO
 JM TEXAS LAND FUND NO. 4 L.P.
 FILE NO. 2005-107303, O.P.R.F.B.C.

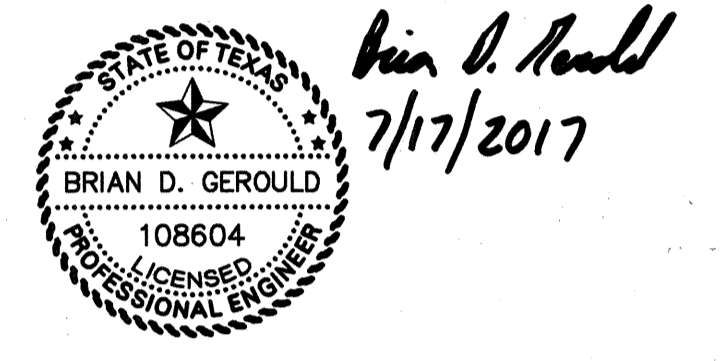
SIGNAGE LEGEND

- ◻ STREET NAME SIGN w/R1-1 STOP SIGN w/BLOCK NO. (UNLESS OTHERWISE NOTED)
- ◻ STREET NAME SIGN w/"NO OUTLET" TAB w/BLOCK NO. FOR CUL-DE-SAC STREET AND R1-1 STOP SIGN
- ◻ STREET NAME SIGN w/BLOCK NO.
- ◻ WHEEL CHAIR RAMP (SEE TXDOT DETAILS - PEDESTRIAN FACILITIES CURB RAMPS ON SHEET 22)
- ◻ INDICATES A RESTRICTED RESERVE
- STOP BAR



- NOTES:**
- ALL STREET NAME BLADES SHALL BE 9" IN HEIGHT.
 - STOP LINES SHALL BE PLACED 5-FEET BEHIND WHEEL CHAIR RAMPS AT ALL STOP SIGNS. STOP LINES SHALL BE 24-INCHES WIDE. ALL PAVEMENT MARKINGS SHALL BE TYPE I PER TXDOT SPEC. 666.

FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *Maxi...*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17



IDS Engineering Group
 13430 NW. Freeway Suite 700
 Houston, Tx. 77040 713.462.3178
 TBPE F-002726 TBPLS 10110700

APPROVED: B.D.G. DATE: JUNE 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
 AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE 5.35 MILES NORTHEAST ALONG FARM ROAD 762; AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 40.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 AD.) ELEVATION = 75.10

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 Signature Valid for six months.

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 Signature Valid for six months.

Date: _____
 Approved for AT&T Texas/SWBT underground conduit facilities only.
 Signature valid for one year

WALNUT CREEK SEC. 14

SIGNAGE PLAN

CITY OF ROSENBERG



VERT: 1"=60'
 HORIZ: 1"=60'
 SHEET
6 OF **24** SHEETS

STORM SEWER CALCULATIONS
IDS ENGINEERING GROUP

CLIENT: Lennar Homes of Texas Land and Construction
PROJECT: Walnut Creek Section Fourteen
IDS JOB NO: 1278-029-00
DATE ISSUED: 9/7/2017
DATE LAST MODIFIED: 9/8/2017 BY: BAS

STORM EVENT FREQUENCY: 2 YEAR
SELECT CURVE NUMBER: 4 CURVE NUMBER 4 - SINGLE-FAMILY RESIDENTIAL AREA
LAND USE: SFR (< 1/4 ac. lots)
ENTER 25 YEAR WSEL: 75.00 FEET
STARTING TIME OF CONCENTRATION: 10.00 MINUTES
DESIGN CURB HEIGHT: 6.00 INCHES

Line	Manhole/Inlet Number		Reach Length (feet)	Pipe Rise (inches)	Pipe Span (inches)	Pipe Material	Pipe Grade %	Area (acres)	Total Area (acres)	Q (cfs)	Actual Velocity (fps)	Design		Hydraulic Gradient (%)	Change in Head (feet)	Minor Losses (feet)	Upstream Natural Ground (feet)	Hydraulic Grade		Manhole Drop (D/S) (feet)	Pipe Flowline		Depth from Natural Ground to HGL (feet)	Hydraulic Grade 100 yr	
	Upstream	Downstream										Q (cfs)	Velocity (fps)					Upstream (feet)	Downstream (feet)		Upstream (feet)	Downstream (feet)			
II	inlets	8	64	24	RCP	0.94%	1.74	1.15	1.74	10.0	2.01	0.64	21.90	6.97	0.008%	0.01	0.01	79.50	76.11	76.10		74.70	74.10	2.89	79.99
II	8	7	177	24	RCP	0.20%	1.13	1.74	11.7	2.01	0.64	10.06	3.20	0.008%	0.01	0.00	80.15	75.96	75.95		74.10	73.75	3.69	79.99	
II	7	6	142	24	RCP	0.21%	1.07	1.74	16.3	2.01	0.64	10.40	3.31	0.008%	0.01	0.00	79.50	75.95	75.93	2.05	73.75	73.45	3.05	79.99	
II	6	5	30	24	RCP	0.20%	1.03	1.74	20.0	2.01	0.64	10.12	3.22	0.008%	0.00	0.00	79.00	75.93	75.93		71.40	71.34	2.57	79.99	
II	6a	5	43	24	RCP	0.19%	3.12	1.03	4.86	20.8	4.99	1.59	9.76	3.11	0.049%	0.02	0.04	78.20	75.93	75.87	0.76	71.34	71.28	2.77	79.99
II	5	4	235	24	RCP	0.18%	1.02	4.86	21.2	4.99	1.59	9.68	3.08	0.049%	0.11	0.02	79.60	75.87	75.74		70.50	70.07	3.23	79.79	
II	4	3	186	24	RCP	0.18%	2.86	1.01	7.72	23.7	7.76	2.47	9.67	3.08	0.118%	0.22	0.08	78.80	75.74	75.44		70.07	69.73	2.56	79.73
II	3	2	35	24	RCP	0.20%	1.00	7.72	24.9	7.76	2.47	10.12	3.22	0.118%	0.04	0.05	78.60	75.44	75.35	0.97	69.73	69.66	2.66	78.53	
II	2	1	223	30	RCP	0.13%	1.00	13.78	25.2	13.78	2.81	14.79	3.01	0.113%	0.25	0.08	78.50	75.35	75.03	0.64	68.19	67.90	2.65	78.42	
II	1	OF	89	42	CMP	0.29%	1.00	13.78	26.5	13.78	1.43	28.46	3.06	0.084%	0.06	-0.03	81.00	75.03	75.00		66.26	66.00	5.47	78.05	
II	2d	2c	32	24	RCP	0.19%	2.82	1.15	2.82	10.0	3.25	1.04	9.80	3.12	0.021%	0.01	0.02	78.85	75.51	75.49		70.11	70.05	2.84	79.05
II	2c	2b	111	24	RCP	0.18%	1.14	2.82	10.5	3.25	1.04	9.60	3.06	0.021%	0.02	0.01	79.25	75.49	75.46		70.05	69.85	3.26	79.05	
II	2b	2a	78	24	RCP	0.19%	1.12	2.82	12.3	3.25	1.04	9.92	3.16	0.021%	0.02	0.01	78.85	75.46	75.43		69.85	69.70	2.89	79.05	
II	2a	2	20	24	RCP	0.20%	3.24	1.10	6.06	13.8	6.86	2.12	10.12	3.22	0.087%	0.02	0.08	78.50	75.43	75.35	0.97	69.70	69.66	2.57	79.05

NOTES:
1. This spreadsheet has been developed using the Fort Bend County criteria outlined in the Drainage Criteria Manual for Fort Bend County, Texas. The Rational Method has been used to calculate flows, and Manning's Formula for pipes flowing full has been used to calculate velocities.
2. Minimum storm sewer grades as established in the City of Rosenberg design criteria have been used to establish the grades used in this system.
3. The minor loss calculation includes an entrance loss for the upstream inlet or a manhole in accordance with Fort Bend County criteria.
4. Where more than 2 storm sewer pipes connect to a manhole, additional minor loss calculations have been included for the change in velocity.
5. Design flow and velocity are based entirely on pipe grade and represent the condition when pipe is flowing full with the hydraulic grade line equal to the pipe grade, and are used to demonstrate that the pipe slopes used in the calculations conform to the City of Rosenberg minimum and maximum standards.

Pipe Material	Manning's "n" Value	Pipe Description
CLAY	0.012	Extra Strength Vitrified Clay Pipe
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PVC	0.013	Polyvinyl Chloride Pipe
RCA	0.013	Reinforced Concrete Arch Pipe
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RCP	0.013	Reinforced Concrete Pipe

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STORM SEWER CALCULATIONS (100yr Off-Site Future Developed Condition)
IDS ENGINEERING GROUP

CLIENT: Lennar Homes of Texas Land and Construction
PROJECT: Walnut Creek
IDS JOB NO: 1278-029-00
DATE ISSUED: 9/7/2017
DATE LAST MODIFIED: 9/8/2017 BY: BAS

STORM EVENT FREQUENCY: 2 YEAR
SELECT CURVE NUMBER: NA 100 yr flow was calculated by the Fort Bend County discharge curves
LAND USE: SFR (< 1/4 ac. lots)
ENTER 25 YEAR WSEL: 75.00 FEET
STARTING TIME OF CONCENTRATION: 10.00 MINUTES
DESIGN CURB HEIGHT: 0.00 INCHES

Line	Manhole/Inlet Number		Reach Length (feet)	Pipe Rise (inches)	Pipe Span (inches)	Pipe Material	Pipe Grade %	Area (acres)	Total Area (acres)	Q (cfs)	Actual Velocity (fps)	Design		Hydraulic Gradient (%)	Change in Head (feet)	Minor Losses (feet)	Upstream Natural Ground (feet)	Hydraulic Grade		Manhole Drop (D/S) (feet)	Pipe Flowline		Depth from Natural Ground to HGL (feet)
	Upstream	Downstream										Q (cfs)	Velocity (fps)					Upstream (feet)	Downstream (feet)		Upstream (feet)	Downstream (feet)	
III	stub	5	6	78	RCP	0.17%	97.00	283.66	8.55	214.04	6.45	0.293%	0.02	0.00	81.00	79.79	79.78		66.99	66.98	1.21		
III	5	4	36	78	RCP	0.06%	97.00	283.66	8.55	123.57	3.72	0.293%	0.11	0.10	80.50	79.78	79.57		66.98	66.96	0.72		
III	4	3	57	78	RCP	0.05%	97.00	283.66	8.55	120.28	3.62	0.293%	0.17	0.45	80.00	79.57	78.95		66.96	66.93	0.43		
III	3	2	363	78	RCP	0.04%	97.00	283.66	8.55	102.96	3.10	0.293%	1.06	0.45	79.80	78.95	77.44		66.93	66.79	0.85		
III	2	1	343	78	RCP	0.04%	97.00	283.66	8.55	102.07	3.08	0.293%	1.00	0.10	79.30	77.44	76.34		66.79	66.65	1.86		
III	1	OF	132	84	CMP	0.12%	97.00	283.66	8.55	120.47	3.13	0.672%	0.89	0.45	79.00	76.34	75.00		66.16	66.00	2.66		

NOTES:
1. This spreadsheet has been developed using the Fort Bend County criteria outlined in the Drainage Criteria Manual for Fort Bend County, Texas. The Rational Method has been used to calculate flows, and Manning's Formula for pipes flowing full has been used to calculate velocities.
2. Minimum storm sewer grades as established in the City of Rosenberg design criteria have been used to establish the grades used in this system.
3. The minor loss calculation includes an entrance loss for the upstream inlet or a manhole in accordance with Fort Bend County criteria.
4. Where more than 2 storm sewer pipes connect to a manhole, additional minor loss calculations have been included for the change in velocity.
5. Design flow and velocity are based entirely on pipe grade and represent the condition when pipe is flowing full with the hydraulic grade line equal to the pipe grade, and are used to demonstrate that the pipe slopes used in the calculations conform to the City of Rosenberg minimum and maximum standards.
6. This represents the 100yr developed flow from 94 acre offsite tract and the 100yr undeveloped flow 3 acre drill site. See memo titled "Walnut Creek Section 14 Offsite Flow Calculation from Tract North of A Meyers Road Fort Bend County, Texas" dated March 24, 2017.

Pipe Material	Manning's "n" Value	Pipe Description
CLAY	0.012	Extra Strength Vitrified Clay Pipe
CMP	0.024	Corrugated Metal Pipe
CMP(S)	0.013	CMP w/ Smooth Interior
HDPE	0.013	High Density Polyethylene Pipe
PVC	0.013	Polyvinyl Chloride Pipe
RCA	0.013	Reinforced Concrete Arch Pipe
RCB	0.015	Reinforced Concrete Box Culvert
RCE	0.013	Reinforced Concrete Elliptical Pipe
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STORM SEWER CALCULATIONS (100yr Off-Site Current Undeveloped Condition)
IDS ENGINEERING GROUP

CLIENT: Lennar Homes of Texas Land and Construction
PROJECT: Walnut Creek
IDS JOB NO: 1278-029-00
DATE ISSUED: 9/7/2017
DATE LAST MODIFIED: 9/8/2017 BY: BAS

STORM EVENT FREQUENCY: 2 YEAR
SELECT CURVE NUMBER: NA 100 yr flow was calculated by the small hydrograph method
LAND USE: SFR (< 1/4 ac. lots)
ENTER 25 YEAR WSEL: 75.00 FEET
STARTING TIME OF CONCENTRATION: 10.00 MINUTES
DESIGN CURB HEIGHT: 0.00 INCHES

Line	Manhole/Inlet Number		Reach Length (feet)	Pipe Rise (inches)	Pipe Span (inches)	Pipe Material	Pipe Grade %	Area (acres)	Total Area (acres)	Q (cfs)	Actual Velocity (fps)	Design		Hydraulic Gradient (%)	Change in Head (feet)	Minor Losses (feet)	Upstream Natural Ground (feet)	Hydraulic Grade		Manhole Drop (D/S) (feet)	Pipe Flowline		Depth from Natural Ground to HGL (feet)
	Upstream	Downstream										Q (cfs)	Velocity (fps)					Upstream (feet)	Downstream (feet)		Upstream (feet)	Downstream (feet)	
III	stub	5	6	78	RCP	0.17%	129.00	129.00	82.66	2.49	214.04	6.45	0.025%	0.00	0.10	81.00	75.59	75.49		66.99	66.98	5.41	
III	5	4	36	78	RCP	0.06%	129.00	129.00	82.66	2.49	123.57	3.72	0.025%	0.01	0.05	80.50	75.49	75.43		66.98	66.96	5.01	
III	4	3	57	78	RCP	0.05%	129.00	129.00	82.66	2.49	120.28	3.62	0.025%	0.01	0.05	80.00	75.43	75.37		66.96	66.93	4.57	
III	3	2	363	78	RCP	0.04%	129.00	129.00	82.66	2.49	102.96	3.10	0.025%	0.09	0.05	79.80	75.37	75.23		66.93	66.79	4.43	
III	2	1	343	78	RCP	0.04%	129.00	129.00	82.66	2.49	102.07	3.08	0.025%	0.09	0.05	79.30	75.23	75.10		66.79	66.65	4.07	
III	1	OF	132	84	CMP	0.12%	129.00	129.00	82.66	2.15	120.47	3.13	0.057%	0.08	0.02	79.00	75.10	75.00		66.16	66.00	3.90	

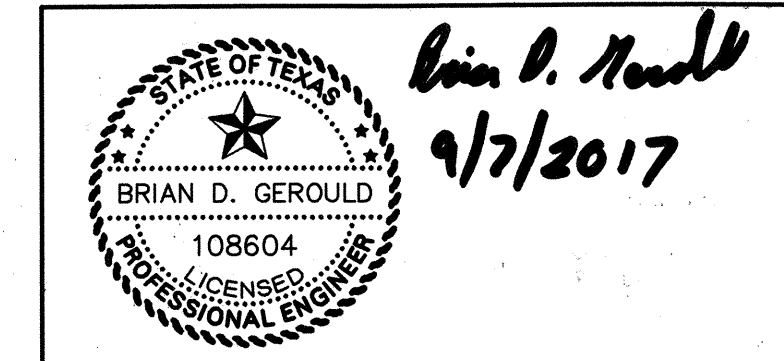
NOTES:
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6. This represents the 100yr undeveloped flow from 126 acre offsite tract and the 100yr undeveloped flow 3 acre drill site. See memo titled "Walnut Creek Section 14 Offsite Drainage Assessment" dated February 22, 2016.

Pipe Material	Manning's "n" Value	Pipe Description
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FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR
DATE: 9/27/17



IDS Engineering Group
13430 NW. Freeway Suite 700
Houston, TX 77040
713.462.3178
TSPS F-002726
TSPS F-0010700

APPROVED: B.D.G. DATE: SEPTEMBER 17
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

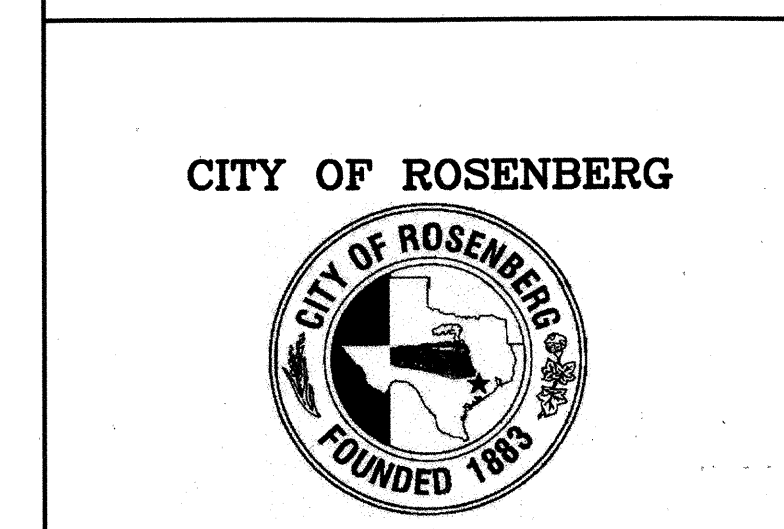
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Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities -not to be used for conflict verification.)
Signature Valid for six months.
Date: _____
Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year

WALNUT CREEK SEC. 14
DRAINAGE CALCULATIONS



VERT: N/A
HORIZ: N/A
SHEET: 7 OF 24 SHEETS

\\HOUWES3\Projects\0200\0217\15500 Walnut Creek S14 PP\CAD\DWG\C-DRAWING-C-DRAWING.dwg [Color] Plotted Sep 07, 2017 at 8:08am by mmasco (Last Saved by: mmasco)

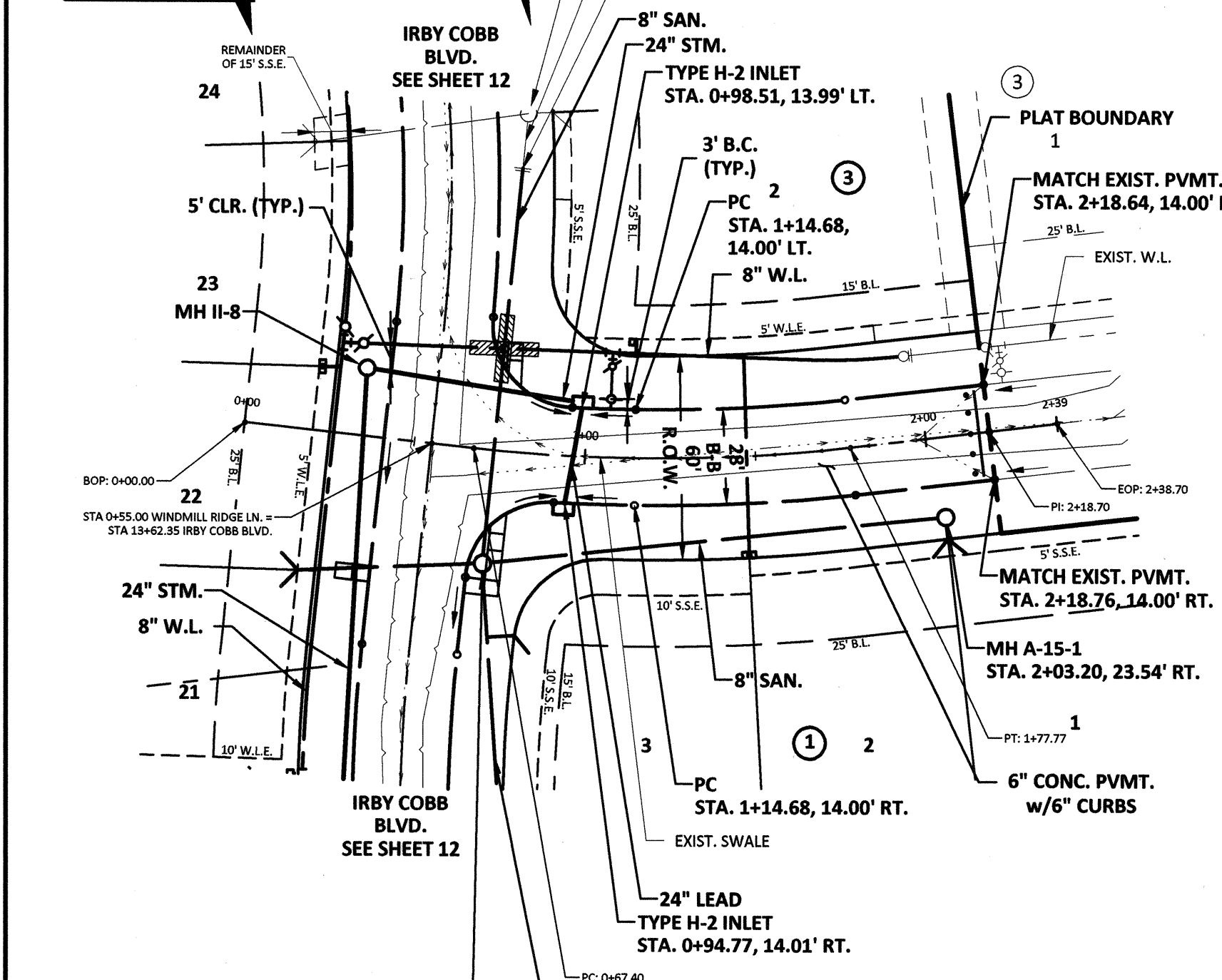
App.	
Revisions	
Date	

SAN. SWR. LEAD TABLE				
UPSTREAM STA.	DOWNSTREAM STA.	LENGTH	UPSTREAM F.L.	PIPE SIZE
STA. 2+03.20 30.00' RT.	STA. 2+03.20 23.54' RT.	6	77.50	6"

REMOVE EXIST. B.O. w/BOX & EXIST. PLUG & CONNECT TO EXIST. 8" W.L. 1-8" WET CONNECTION STA 2+20

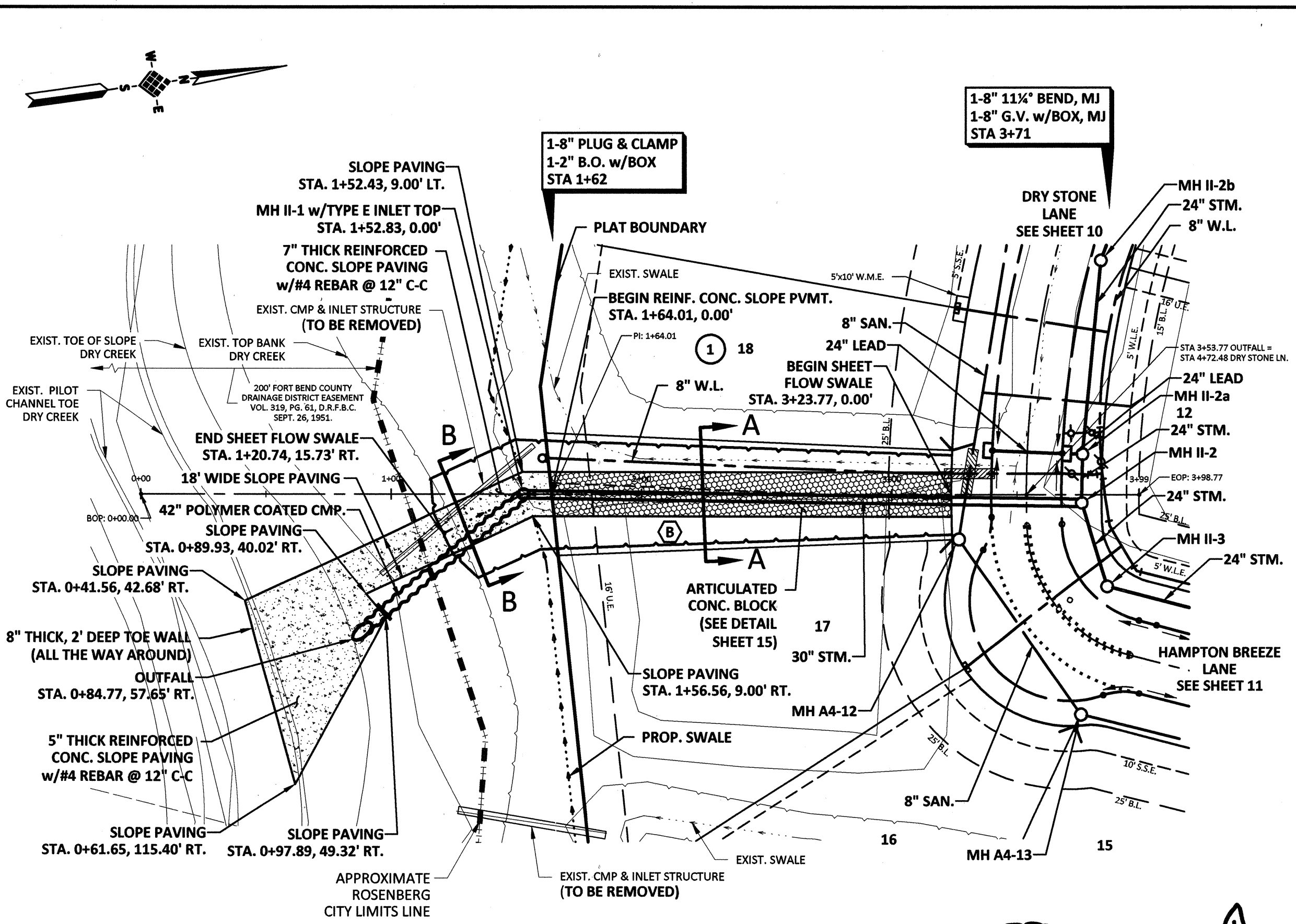
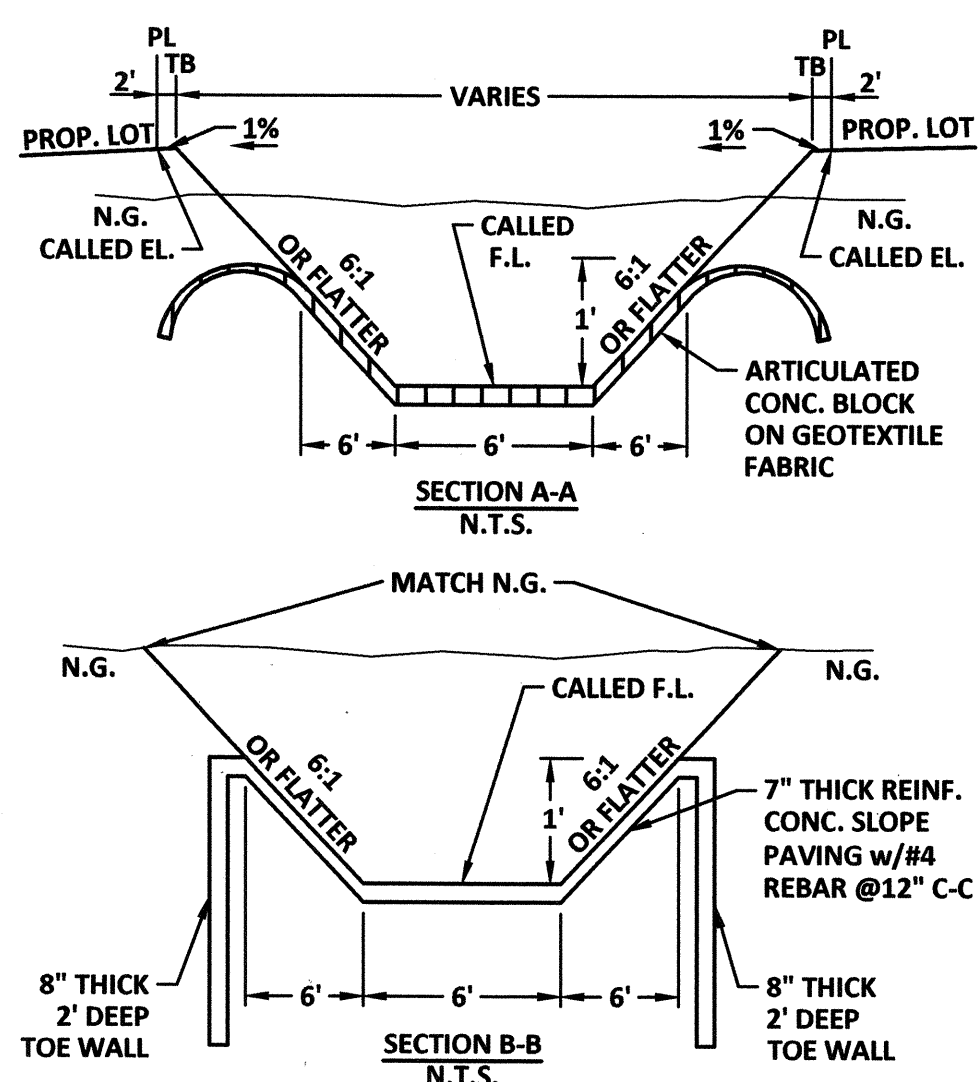
1-8"x8" TEE, MJ
1-8" G.V. w/BOX, MJ
STA 0+26

1-8"x6" TEE, MJ
1-6" G.V. w/BOX, MJ
1-F.V. (4' BURY MIN.)
STA 1+01

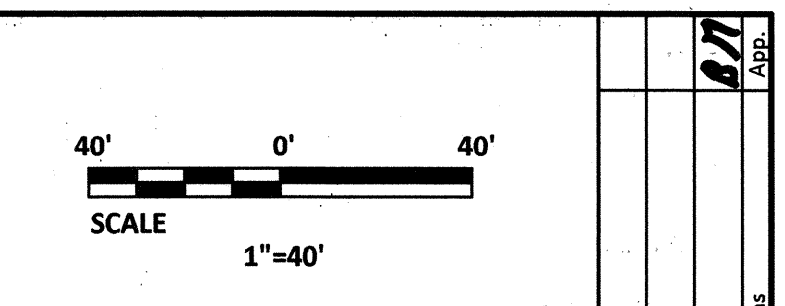
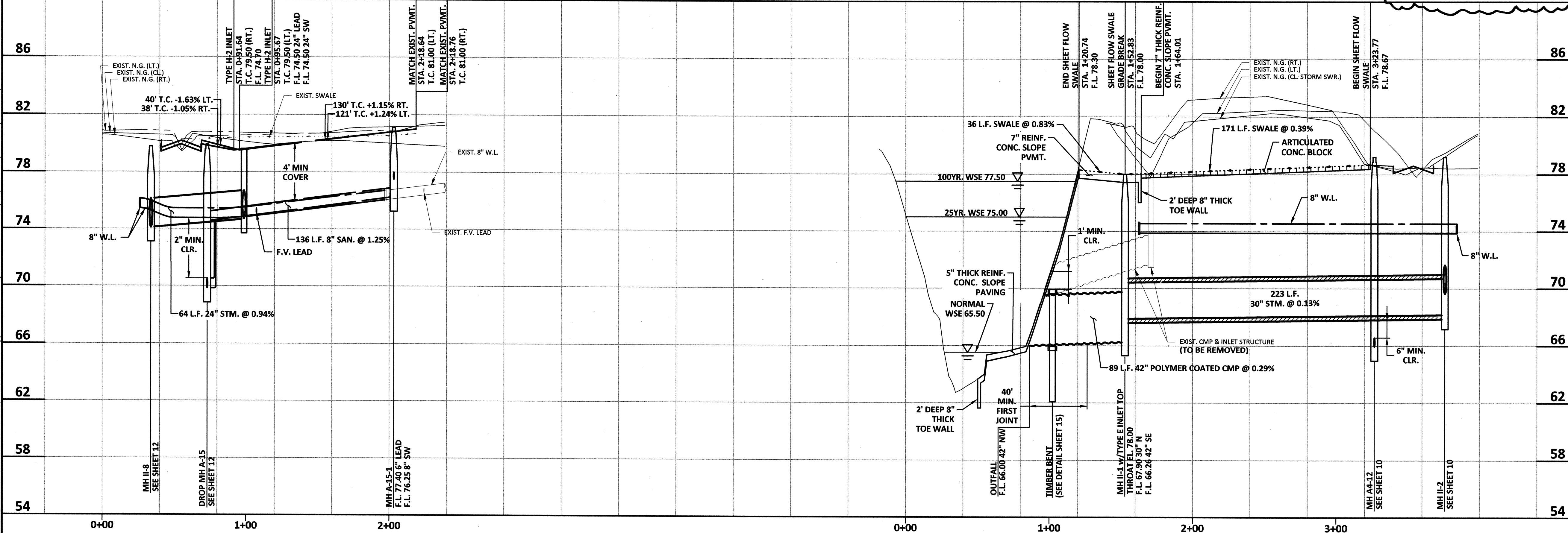


1-INCH WATER LEAD TABLE	
WATER LEAD AT STATION	LENGTH
STA 1+14.68 35.00' LT.	4
STA 1+46.65 30.00' RT.	59

WINDMILL RIDGE LANE



NOTE:
CONTRACTOR SHALL OBTAIN A PERMIT FROM THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500, PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT DRY CREEK RIGHT-OF-WAY



NOTES:
1. CONTRACTOR TO PLACE ALL WATER METER BOXES WITHIN THE RIGHT OF WAY, WATER METER EASEMENT, OR WATER LINE EASEMENT.
WATERLINE PROTECTION (SEE WATER CONSTRUCTION NOTE NO. 11 AND WASTEWATER CONSTRUCTION NOTE NO. 7 ON SHEET Z.)
FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: *Maxine*
DEVELOPMENT COORDINATOR
DATE: 10/27/17

Brian P. Road
10/17/2017

IDS Engineering Group
13430 NW Freeway Suite 700
Houston, TX 77040
713-462-3178
TBP5 F-002225
TBP5L 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00
BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX AS FOLLOWS: 7.55 MILES NORTHEAST ALONG FARM ROAD 1984 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S. 35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST SOUTHWEST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
NAVD 88 (2001 ADJ.) ELEVATION = 75.10

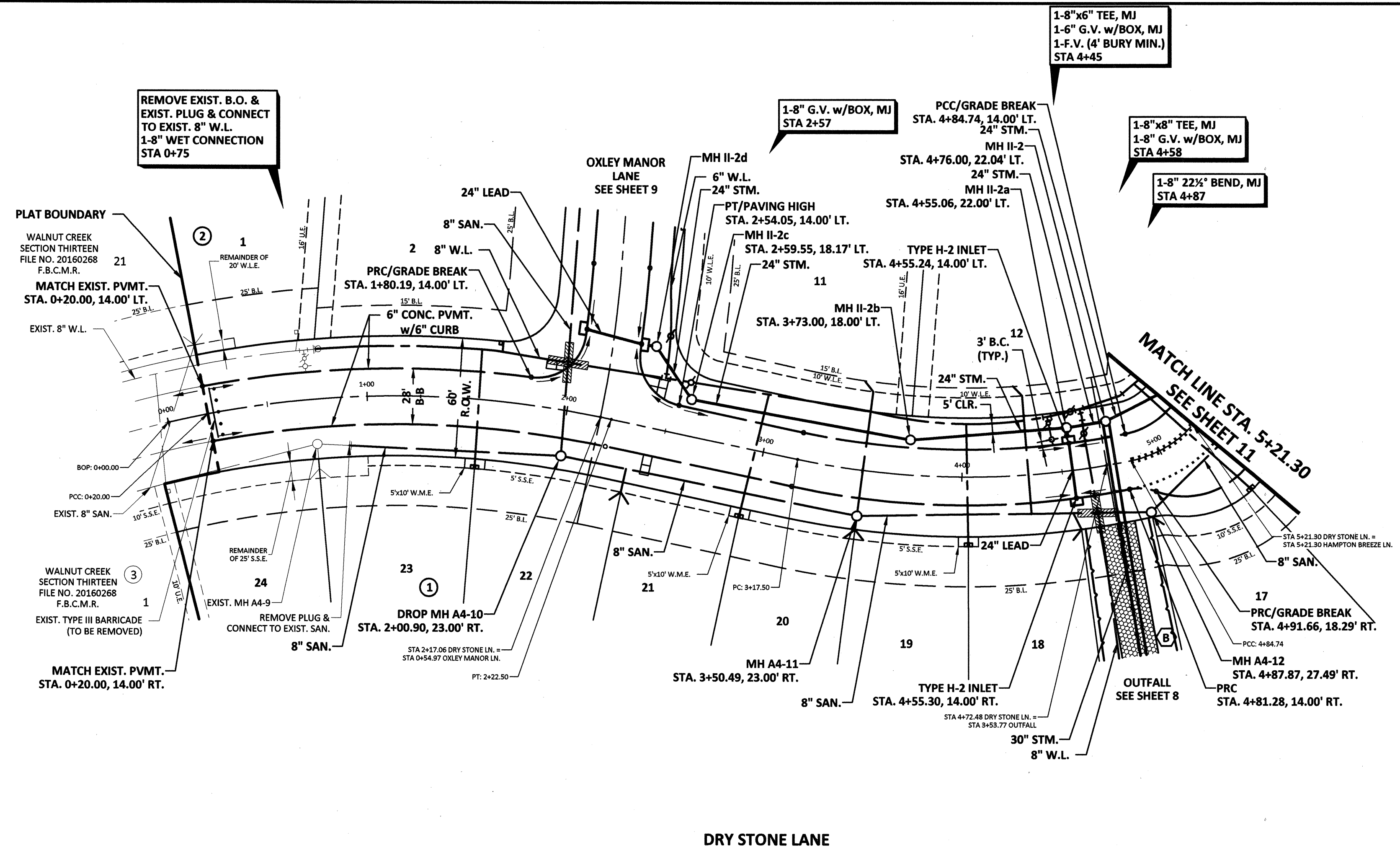
TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.
NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This Verification does not fulfill your obligation to call 811.
VERIFICATION OF PRIVATE UTILITY LINES
Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNR Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities -not to be used for conflict verification.)
Signature Valid for six months.
Date: _____
Approved for AT&T Texas/SWB underground conduit facilities only.
Signature valid for one year

WALNUT CREEK SEC. 14
PLAN AND PROFILE
WINDMILL RIDGE LANE
AND OUTFALL
CITY OF ROSENBERG

VERT: 1" = 4'
HORIZ: 1" = 40'
SHEET 8 OF 24 SHEETS

V:\E0\projects\0300007115500\walnut_creek_sec_14.dwg (PLAN AND PROFILE - 1) Plotted Jul 14, 2017 11:15:27am by: brianawh

10/17 ADD NOTE



SAN. SWR. LEAD TABLE				
UPSTREAM STA.	DOWNSTREAM STA.	LENGTH	UPSTREAM F.L.	PIPE SIZE
STA. 2+34.99 35.00' RT.	STA. 2+34.99 23.03' RT.	12	74.20	6"
STA. 3+50.49 30.00' RT.	STA. 3+50.49 23.00' RT.	7	73.60	6"
STA. 3+50.49 40.00' LT.	STA. 3+50.49 23.00' RT.	63	72.95	6"
STA. 4+33.07 40.00' LT.	STA. 4+33.29 19.59' RT.	60	72.65	6"
STA. 4+55.83 30.00' RT.	STA. 4+52.92 21.28' RT.	9	73.50	6"
STA. 4+87.79 30.10' RT.	STA. 4+87.87 27.49' RT.	3	73.50	6"

1-INCH WATER LEAD TABLE	
WATER LEAD AT STATION	LENGTH
STA 1+56.43 31.80' RT.	57
STA 1+65.19 31.80' LT.	7
STA 2+94.99 31.80' RT.	61
STA 4+03.16 31.80' RT.	59
STA 5+17.77 45.89' RT.	81

WATERLINE PROTECTION (SEE WATER CONSTRUCTION NOTE NO. 11 AND WASTEWATER CONSTRUCTION NOTE NO. 7 ON SHEET 2.)

- NOTES:
- CONTRACTOR TO PLACE ALL WATER METER BOXES WITHIN THE RIGHT OF WAY, WATER METER EASEMENT, OR WATER LINE EASEMENT.

APPROVED: *[Signature]*
 DEVELOPMENT COORDINATOR
 DATE: 10/21/17

SCALE: 1"=40'

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *[Signature]*
 DATE: JUNE 2017

DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.85 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S. 35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST SOUTHWEST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 ADJ.) ELEVATION = 75.10

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.

NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811.

IDS Engineering Group

13430 NW. Freeway Suite 700 Houston, Tx. 77040 713-462-3178 TBE F-0022726 TBPIS 10110700

APPROVED: *[Signature]*
 DATE: JUNE 2017

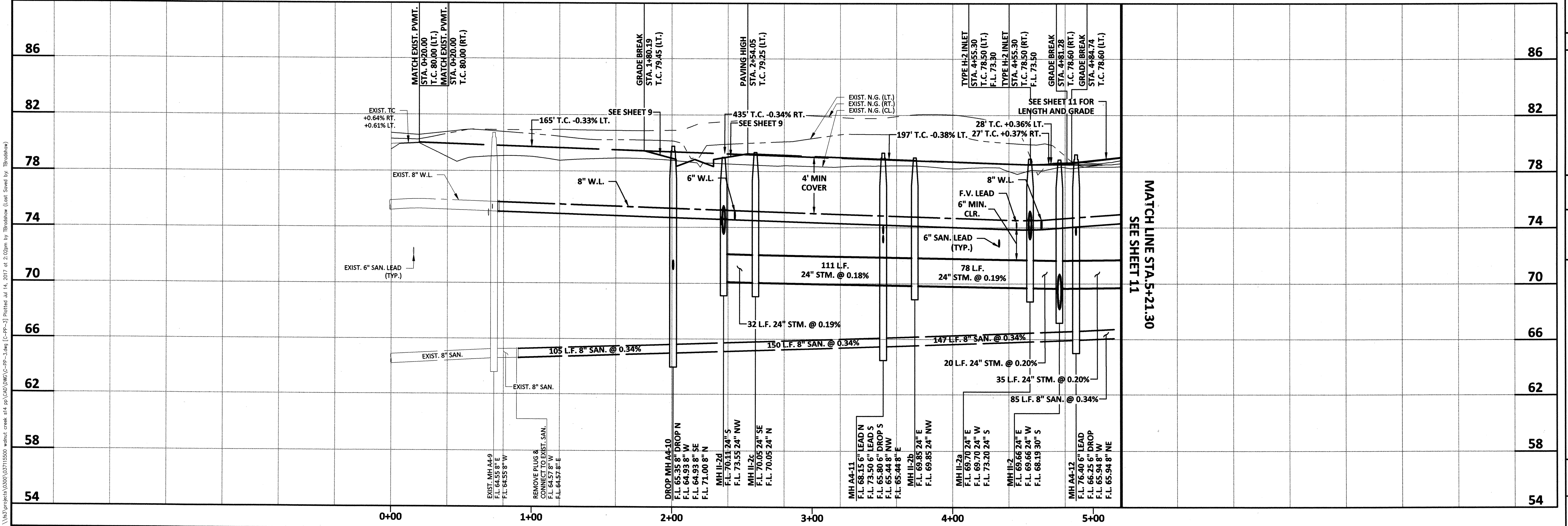
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.85 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S. 35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST SOUTHWEST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 ADJ.) ELEVATION = 75.10

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NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811.

DRY STONE LANE



VERIFICATION OF PRIVATE UTILITY LINES

Date: _____

CenterPoint Energy/Natural Gas Facilities Verification ONLY.
 (This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
 Signature Valid for six months.

Date: _____

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
 (This signature verifies existing underground facilities -not to be used for conflict verification.)
 Signature Valid for six months.

Date: _____

Approved for AT&T Texas/SWBW underground conduit facilities only.
 Signature valid for one year.

WALNUT CREEK SEC. 14

PLAN AND PROFILE
DRY STONE LANE

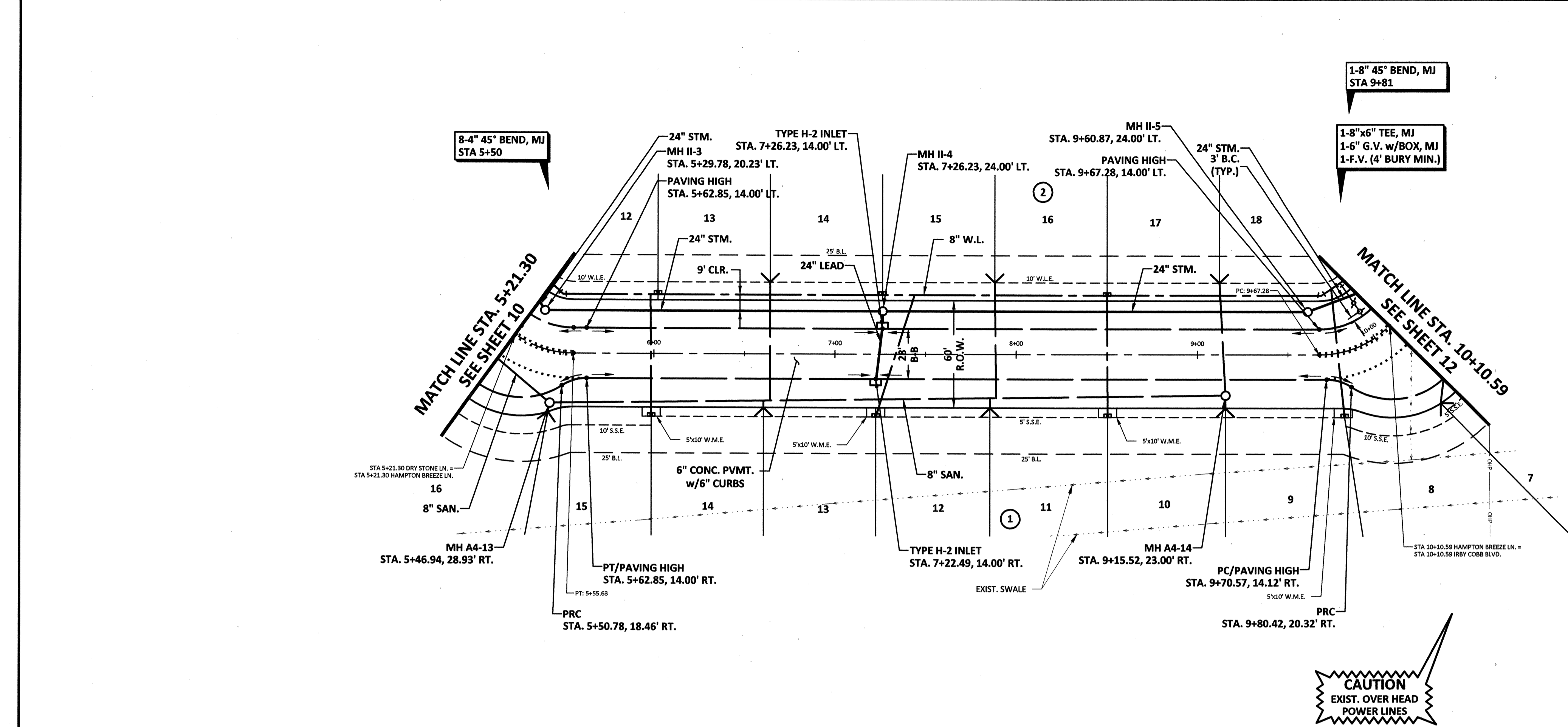
CITY OF ROSENBERG

[City of Rosenberg Seal]

VERT: 1" = 4'
 HORIZ: 1" = 40'

SHEET 10 OF 24 SHEETS

V:\s\projects\03051\03051.dwg - walnut_creek_sec_14.dwg (C:\Program Files\Autodesk\AutoCAD 2017) at 2:02pm by [Bioshadow Local Saved by: Bioshadow]



SAN. SWR. LEAD TABLE				
UPSTREAM STA.	DOWNSTREAM STA.	LENGTH	UPSTREAM F.L.	PIPE SIZE
STA. 5+46.85 33.93' RT.	STA. 5+46.94 28.93' RT.	5	74.00	6"
STA. 6+60.49 30.00' RT.	STA. 6+60.50 26.34' RT.	4	73.80	6"
STA. 6+64.23 40.00' LT.	STA. 6+64.23 26.29' RT.	66	73.20	6"
STA. 7+85.52 30.00' RT.	STA. 7+85.52 24.70' RT.	5	73.80	6"
STA. 7+88.23 40.00' LT.	STA. 7+89.05 24.66' RT.	65	73.25	6"
STA. 9+12.23 40.00' LT.	STA. 9+15.52 23.00' RT.	63	73.65	6"
STA. 9+15.52 30.00' RT.	STA. 9+15.52 23.00' RT.	7	74.20	6"
STA. 10+67.68 23.00' RT.	STA. 10+04.95 51.05' RT.	97	76.00	6"

40' 0' 40'
SCALE 1"=40'

REVISED

No. Date

1-INCH WATER LEAD TABLE	
WATER LEAD AT STATION	LENGTH
STA 5+96.49 31.80' RT.	62
STA 6+02.23 35.00' LT.	5
STA 7+16.49 31.80' RT.	74
STA 7+26.21 34.73' LT.	4
STA 8+36.49 31.80' RT.	62
STA 8+50.23 34.46' LT.	4
STA 9+56.49 35.00' RT.	65

NOTES:
1. CONTRACTOR TO PLACE ALL WATER METER BOXES WITHIN THE RIGHT OF WAY, WATER METER EASEMENT, OR WATER LINE EASEMENT.

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *Maria D. Gerould*
DEVELOPMENT COORDINATOR

DATE: 10/27/17

Brian D. Gerould
6/27/2017

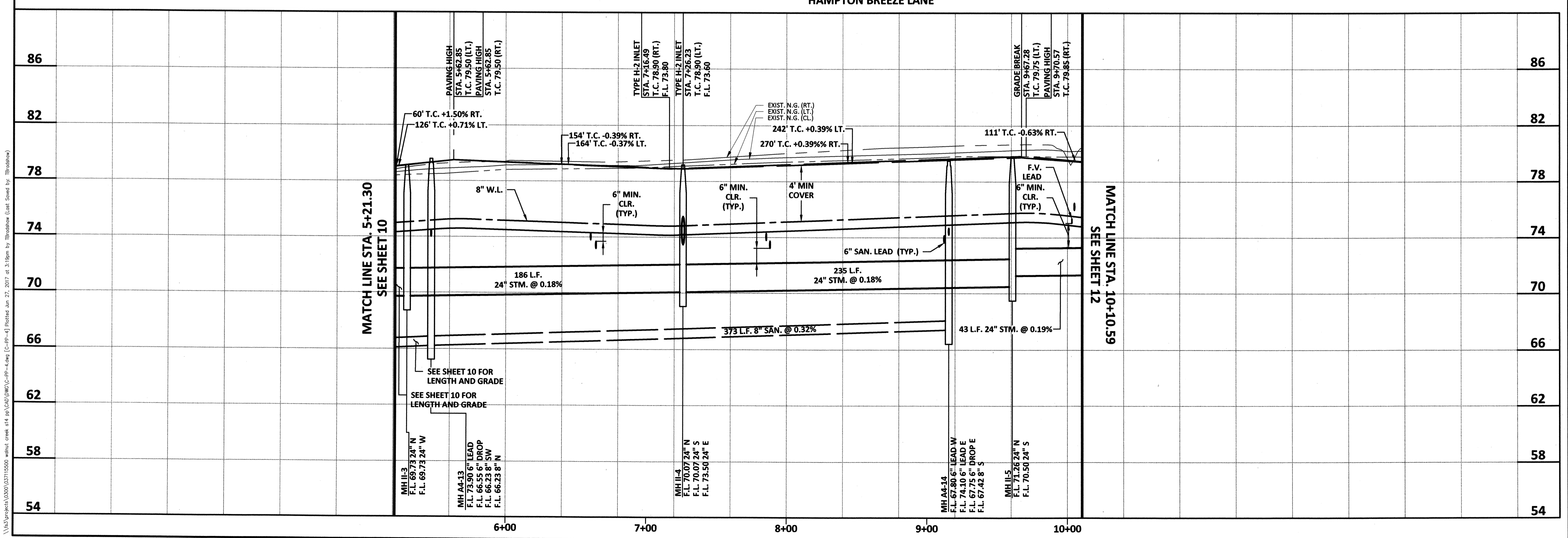
STATE OF TEXAS
BRIAN D. GEROULD
108604
LICENSED PROFESSIONAL ENGINEER

IDS Engineering Group

13430 NW Freeway Suite 700
Houston, TX 77040
713.462.3178
TBP# F-002726
TBP# LS 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
AN INGS DISC STAMPED W 811 1945, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE 5.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
NAVD 88 (2001 ADJ.) ELEVATION = 75.10



TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.

NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This Verification does not fulfill your obligation to call 811.

VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.

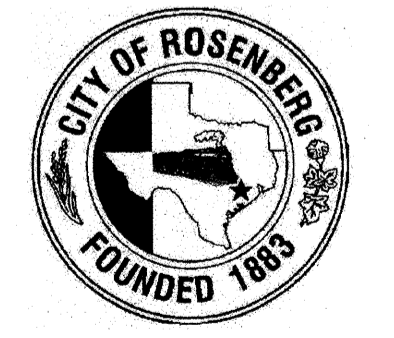
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Signature Valid for six months.

Date: _____
Approved for AT&T Texas/SWBt underground conduit facilities only.
Signature valid for one year

WALNUT CREEK SEC. 14

PLAN AND PROFILE
HAMPTON BREEZE LANE

CITY OF ROSENBERG



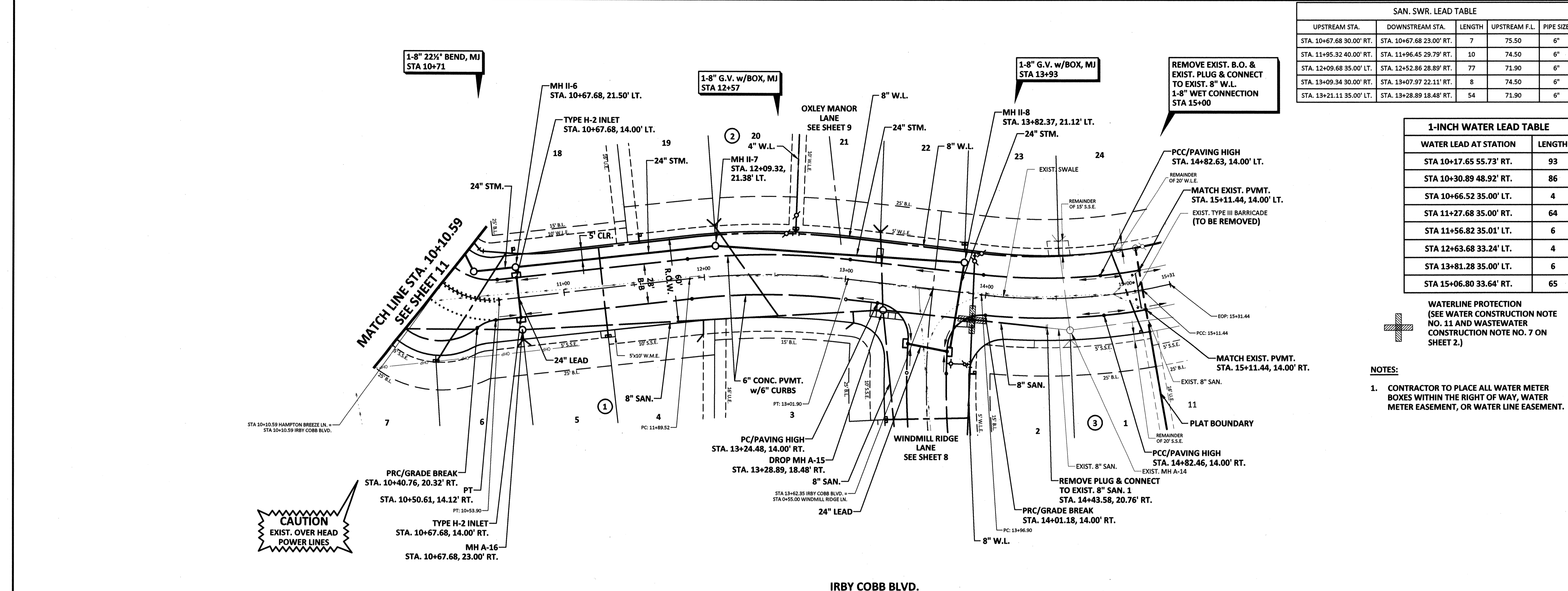
FOUNDED 1886

VERT: 1" = 4'
HORIZ: 1" = 40'

SHEET 11 OF 24 SHEETS

11 OF 24 SHEETS

\\na\projects\0200\020710500\walnut_creek_sec_14.sp\020\020710500\plan_and_profile.dwg [C:\pp\p4] Plotted: Sun 2/7/2017 10:11:11 AM by: [Redacted]



SAN. SWR. LEAD TABLE				
UPSTREAM STA.	DOWNSTREAM STA.	LENGTH	UPSTREAM F.L.	PIPE SIZE
STA. 10+67.68 30.00' RT.	STA. 10+67.68 23.00' RT.	7	75.50	6"
STA. 11+95.32 40.00' RT.	STA. 11+96.45 29.79' RT.	10	74.50	6"
STA. 12+09.68 35.00' LT.	STA. 12+52.86 28.89' RT.	77	71.90	6"
STA. 13+09.34 30.00' RT.	STA. 13+07.97 22.11' RT.	8	74.50	6"
STA. 13+21.11 35.00' LT.	STA. 13+28.89 18.48' RT.	54	71.90	6"

1-INCH WATER LEAD TABLE	
WATER LEAD AT STATION	LENGTH
STA 10+17.65 55.73' RT.	93
STA 10+30.89 48.92' RT.	86
STA 10+66.52 35.00' LT.	4
STA 11+27.68 35.00' RT.	64
STA 11+56.82 35.01' LT.	6
STA 12+63.68 33.24' LT.	4
STA 13+81.28 35.00' LT.	6
STA 15+06.80 33.64' RT.	65

APPROVED: *Mariel*
DEVELOPMENT COORDINATOR

DATE: 10/27/17

FORT BEND COUNTY ENGINEERING DEPARTMENT

SCALE: 1"=40'

13430 NW. Freeway Suite 700 Houston, TX 77040 713-462-3178

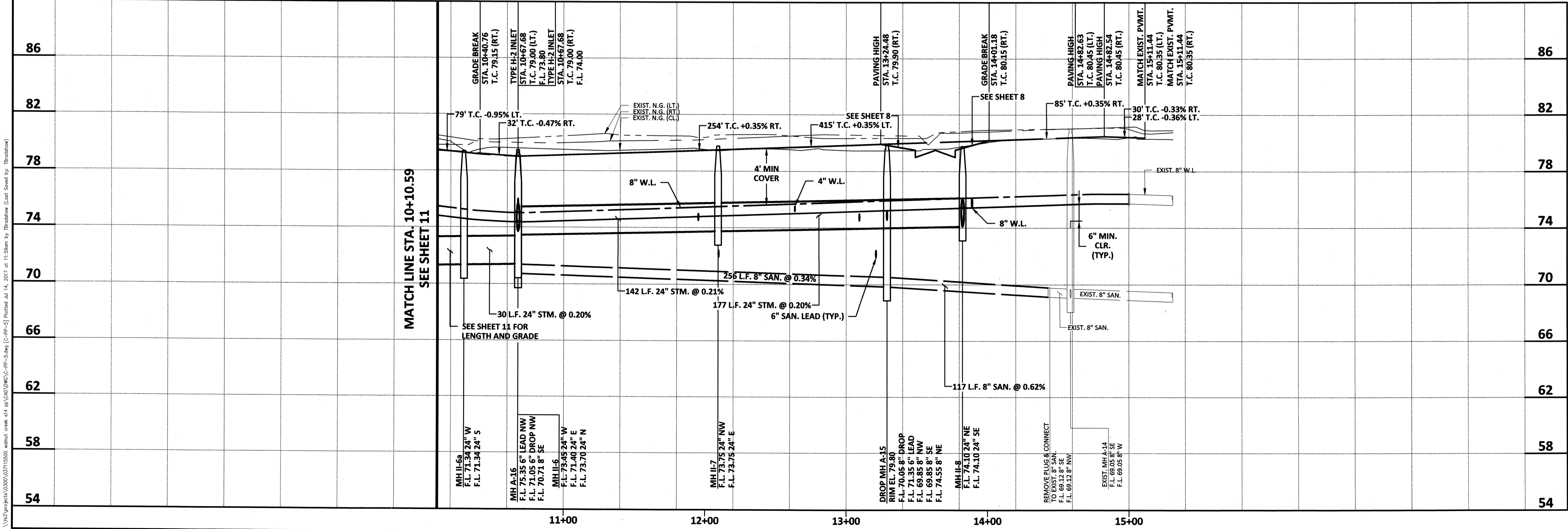
NOTES:

- CONTRACTOR TO PLACE ALL WATER METER BOXES WITHIN THE RIGHT OF WAY, WATER METER EASEMENT, OR WATER LINE EASEMENT.

APPROVED: *Brian D. Gerould*
BRIAN D. GEROULD
108604
LICENSED PROFESSIONAL ENGINEER

DATE: JUNE 2019

DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00



APPROVED: B.D.G. DATE: JUNE 2019

DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.55 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S. 35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 ADJ.) ELEVATION = 75.10

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VERIFICATION OF PRIVATE UTILITY LINES

Date: _____

CenterPoint Energy/Natural Gas Facilities Verification ONLY. (This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.) Signature Valid for six months.

Date: _____

CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. (This Signature verifies existing underground facilities -not to be used for conflict verification.) (Gas service lines are not shown.) Signature Valid for six months.

Date: _____

Approved for AT&T Texas/SWB/T underground conduit facilities only. Signature valid for one year.

WALNUT CREEK SEC. 14

PLAN AND PROFILE
IRBY COBB BLVD.

CITY OF ROSENBERG

FOUNDED 1893

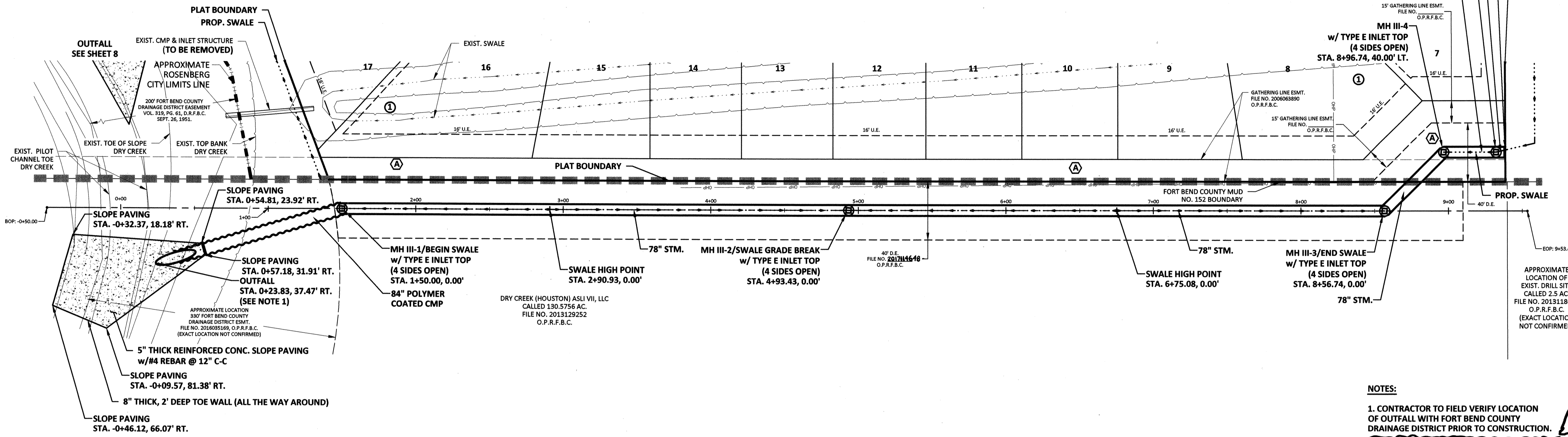
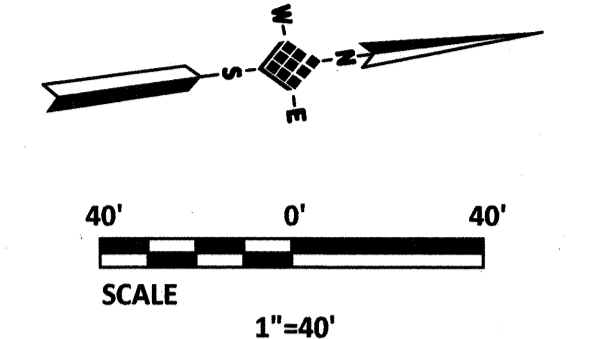
VERT: 1" = 4'
HORIZ: 1" = 40'

SHEET 12 OF 24 SHEETS

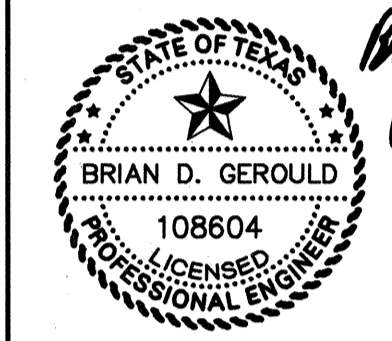
IDS Drawing No. _____

21.29 ACRES
 GARY POCHYLA AND MARY K. COBB,
 SUCCESSOR CO-TRUSTEES OF THE
 F. IRBY COBB B TRUST TO
 LENNAR HOMES OF TEXAS LAND
 AND CONSTRUCTION, LTD.
 FILE NO. 2008-017096,
 O.P.R.F.B.C.

CAUTION
 EXIST. OVERHEAD
 POWER LINES



FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *[Signature]*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17



Brian D. Gerould
 10/17/2017

IDS Engineering Group
 13430 NW Freeway Suite 700
 Houston, TX 77040
 713.462.3178
 TYPE F-002726
 TPRS 00110700

APPROVED: B.D.G. DATE: SEPTEMBER 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

- NOTES:**
- CONTRACTOR TO FIELD VERIFY LOCATION OF OUTFALL WITH FORT BEND COUNTY DRAINAGE DISTRICT PRIOR TO CONSTRUCTION.
 - CONTRACTOR SHALL OBTAIN A PERMIT FROM THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281) 633-7500, PRIOR TO ANY WORK WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT DRY CREEK RIGHT-OF-WAY

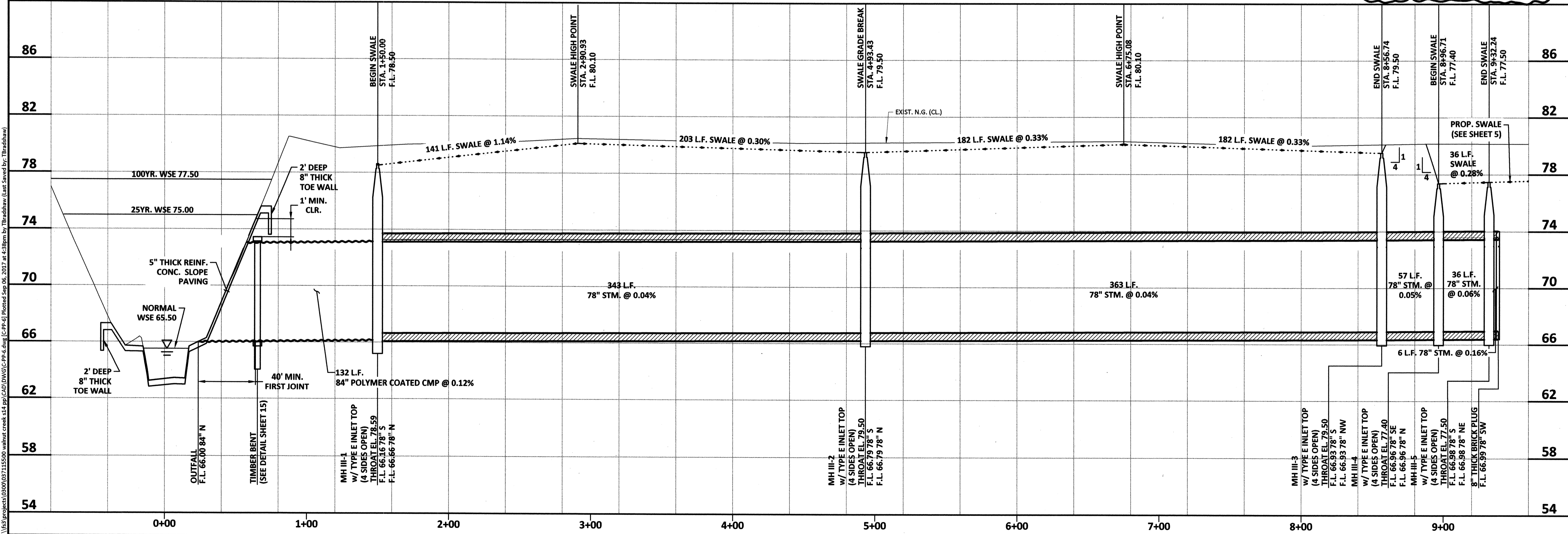
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 (This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
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Date: _____
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 Signature Valid for six months.

Date: _____
 Approved for AT&T Texas/SWBt underground conduit facilities only.
 Signature valid for one year

OFFSITE STORM



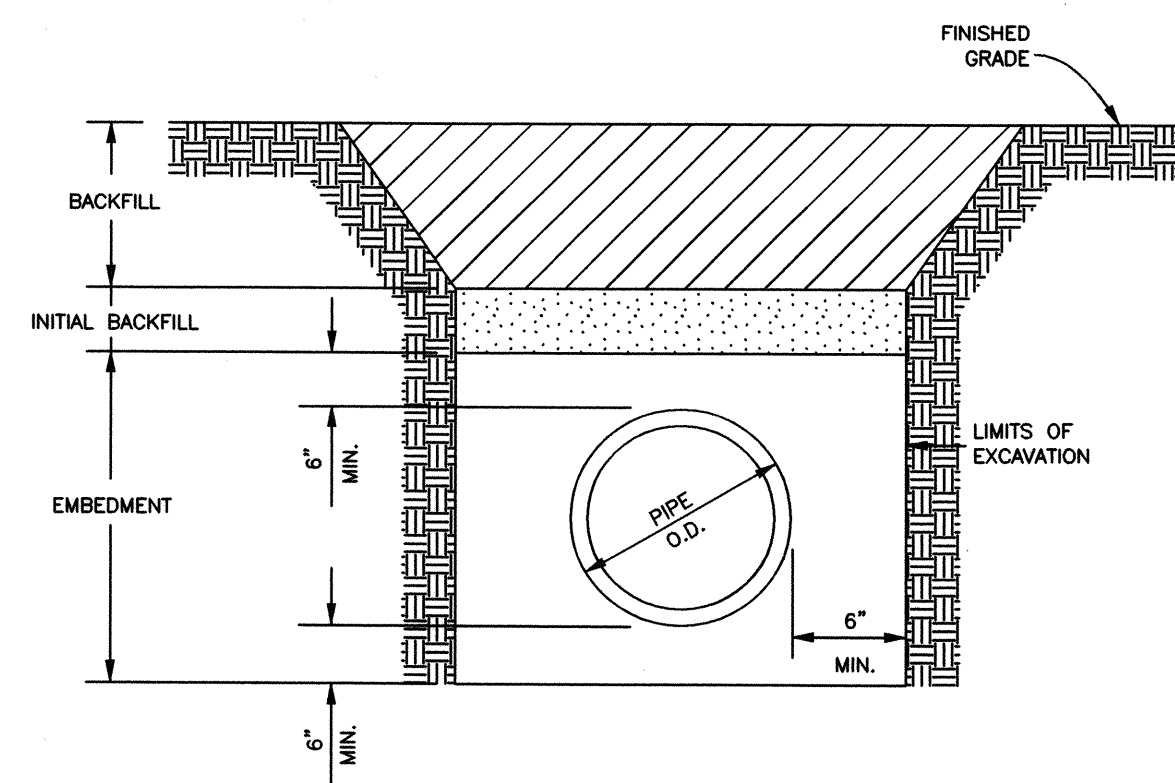
WALNUT CREEK SEC. 14

PLAN AND PROFILE OFFSITE STORM

CITY OF ROSENBERG

VERT: 1" = 4'
 HORIZ: 1" = 40'

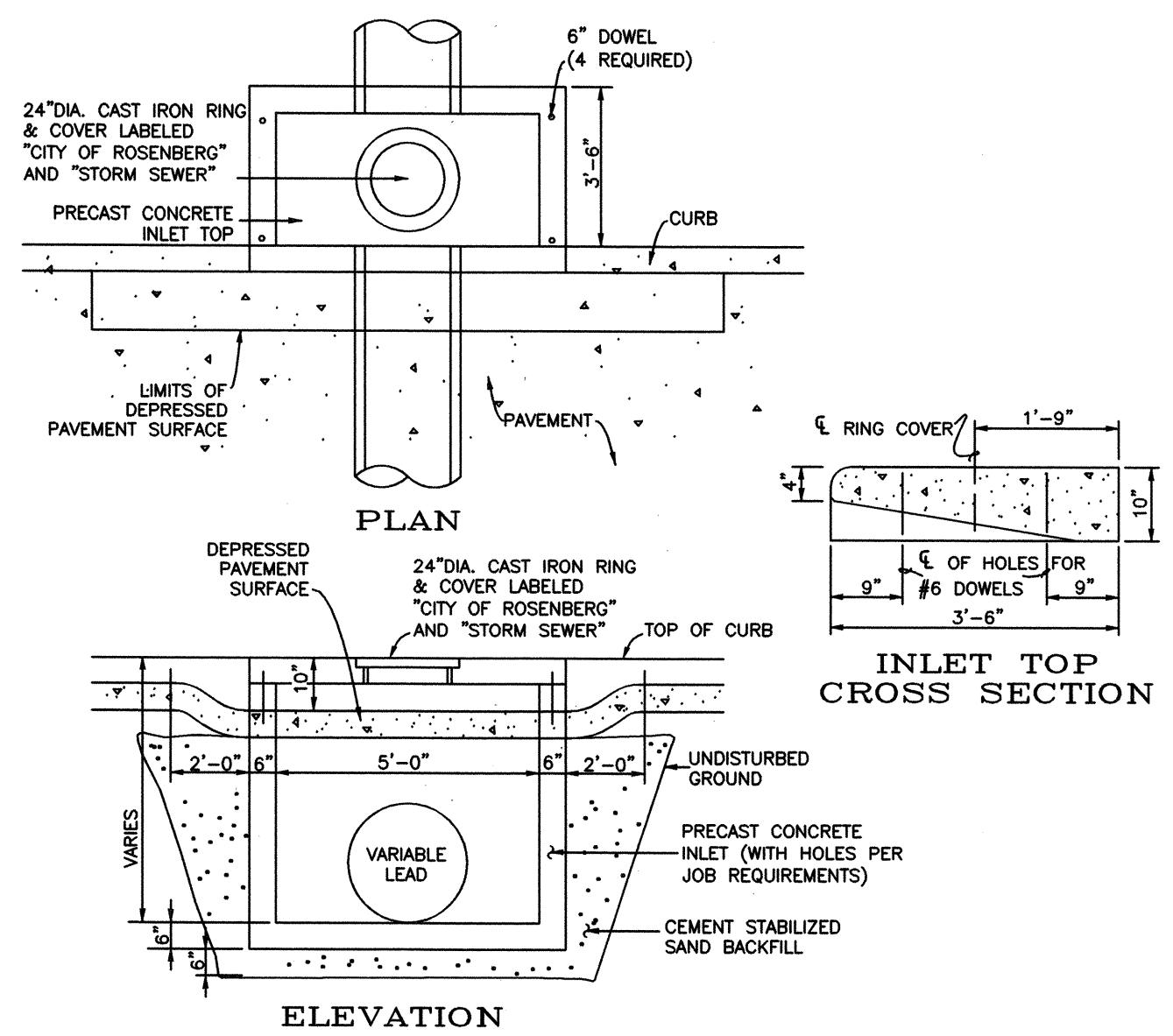
SHEET 13 OF 24 SHEETS



- NOTES:
1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED UNDER PAVEMENT.
 2. INITIAL BACKFILL SHALL BE UNIFORMLY GRADED MATERIAL (MAXIMUM SIZE, 3" DIAMETER), PLACE IN 8" LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED UNDER PAVEMENT.
 3. EMBEDMENT SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 4. UNDER PAVING OR WITHIN 3' OF PAVEMENT, THE INITIAL BACKFILL AND ALL BACKFILL UP TO THE PAVEMENT SURFACE SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 5. TRENCH SHORING IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED WHERE REQUIRED.
 6. SOIL IN THE PIPE ZONE SHALL CONSIST OF NON-WATERBEARING, COHESIVE SOILS WITH A SHEAR STRENGTH OF 1000 PSF OR GREATER. WHEN WET SAND EXISTS IN THE PIPE ZONE, MODIFIED BEDDING SHALL BE INSTALLED.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
**STORM SEWER
BEDDING & BACKFILL**

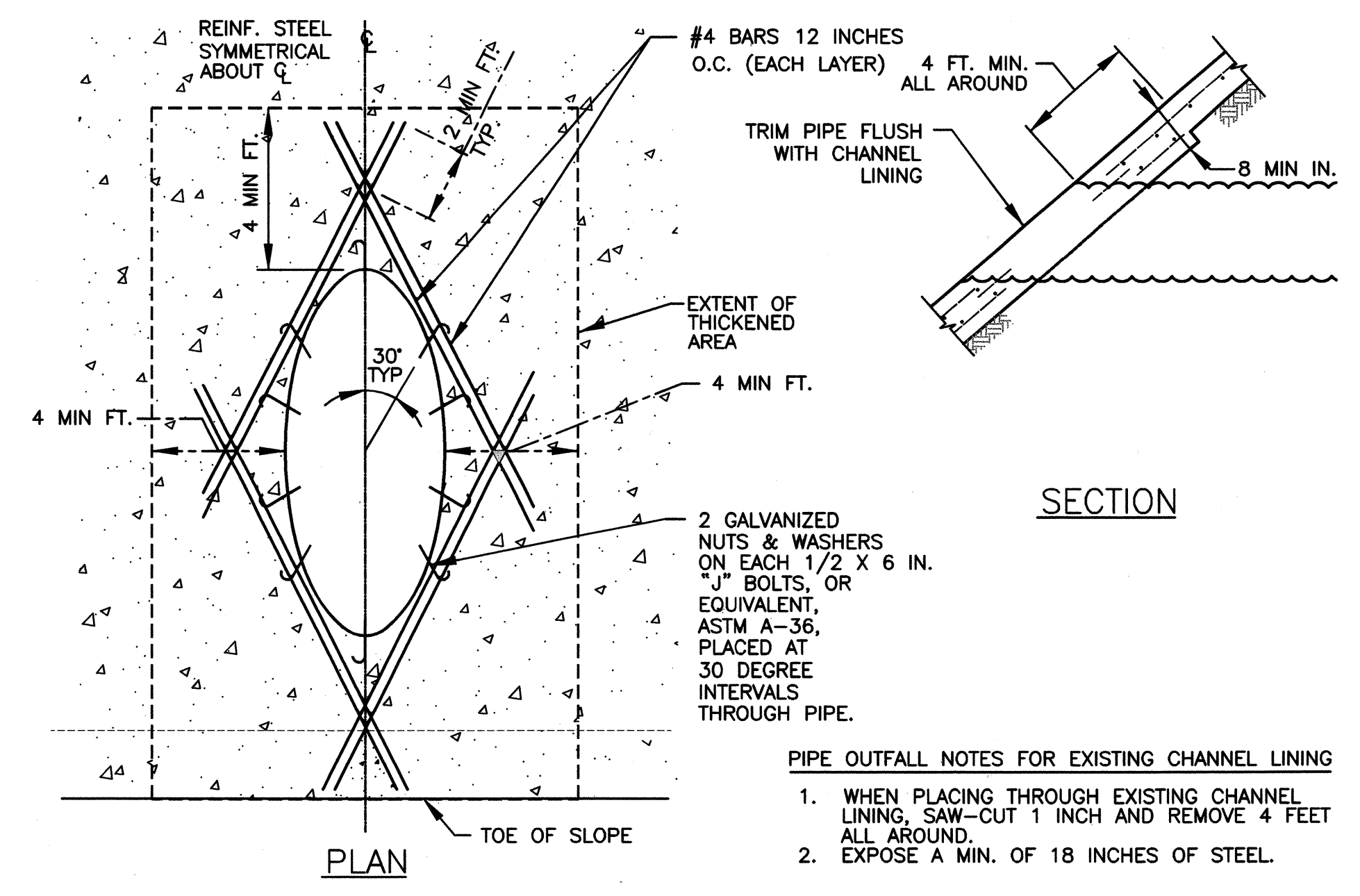
DATE	BY	CHK	APP	NO.	DESCRIPTION
11/10	NTS				D-1002



- 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.
 3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF FIRST STAGE.
 4. ALL STORM SEWER INLETS MUST HAVE A NO DUMPING STORM DRAIN MARKER [SEE DETAIL (D-109)] PLACED ON IT WHEN INSTALLED.

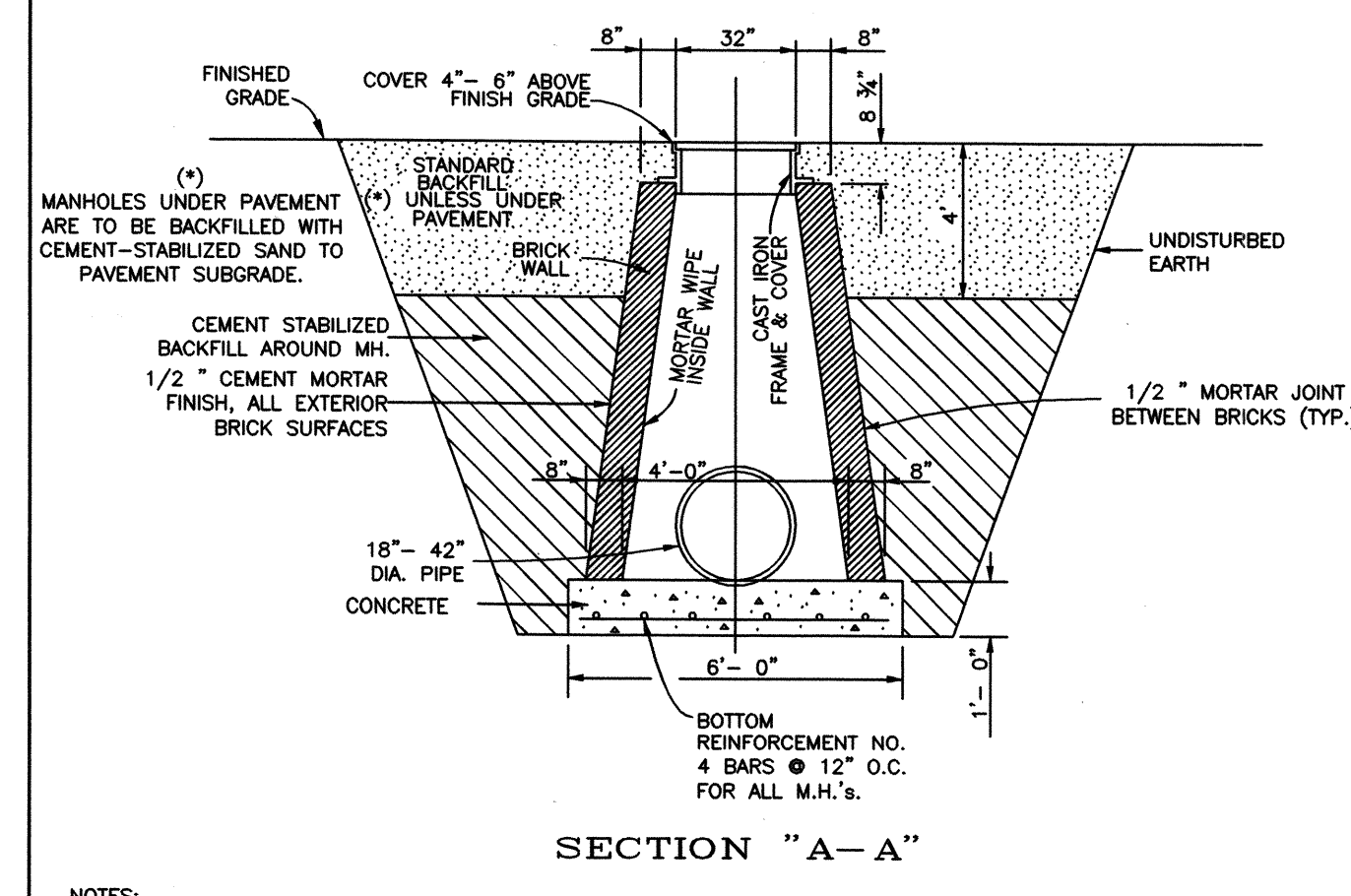
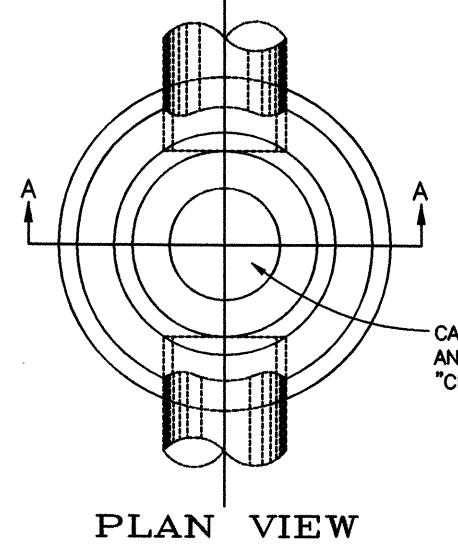
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
TYPE H-2 INLET

DATE	BY	CHK	APP	NO.	DESCRIPTION
11/10	NTS				D-108



- PIPE OUTFALL NOTES FOR EXISTING CHANNEL LINING
1. WHEN PLACING THROUGH EXISTING CHANNEL LINING, SAW-CUT 1 INCH AND REMOVE 4 FEET ALL AROUND.
 2. EXPOSE A MIN. OF 18 INCHES OF STEEL.

PIPE OUTFALL DETAILS



- NOTES:
1. BRICK WALLS 8" - 0" BELOW CASTING TO BE 12" THICK.
 2. ALL BRICK MATERIAL SHALL CONFORM WITH ASTM C32, GRADE NA, EXCEPT NOT MORE THAN 16% GRADE ABSORPTION WILL BE PERMIT.
 3. ALL MANHOLE CHIMNEYS SHALL BE BRICK OR THROAT RING.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
**BRICK
TYPE "C" MANHOLE 18" - 42"**

DATE	BY	CHK	APP	NO.	DESCRIPTION
11/10	NTS				D-101

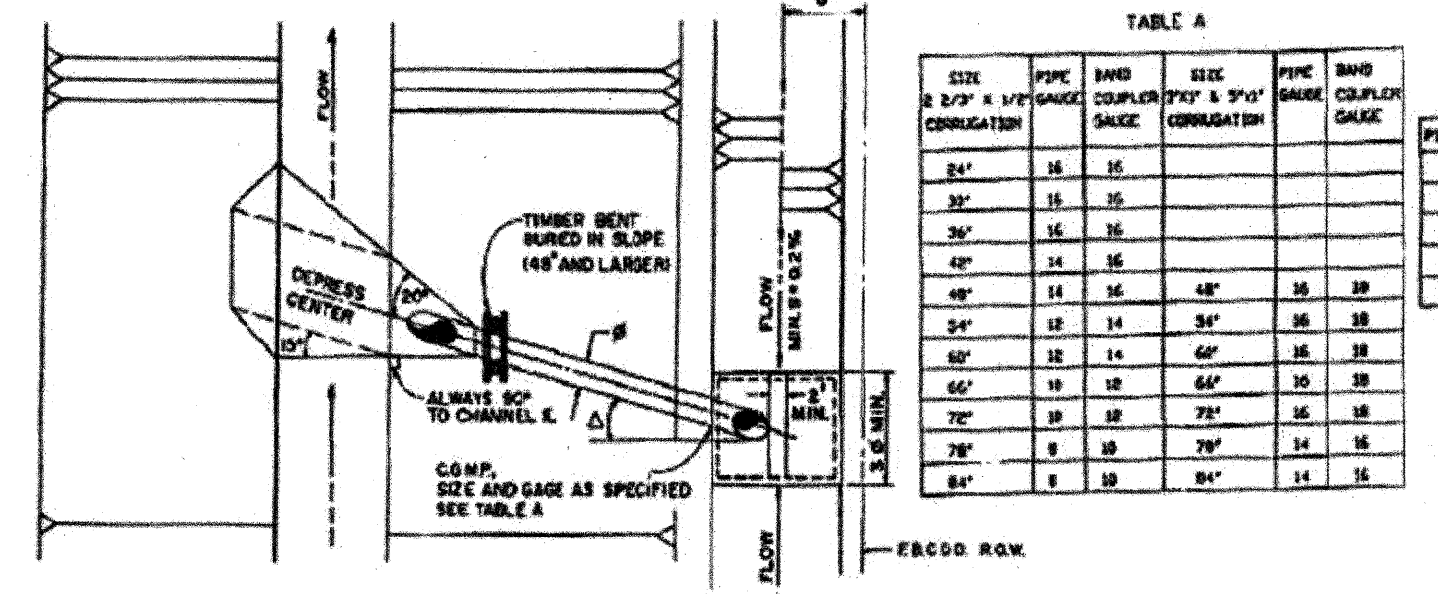
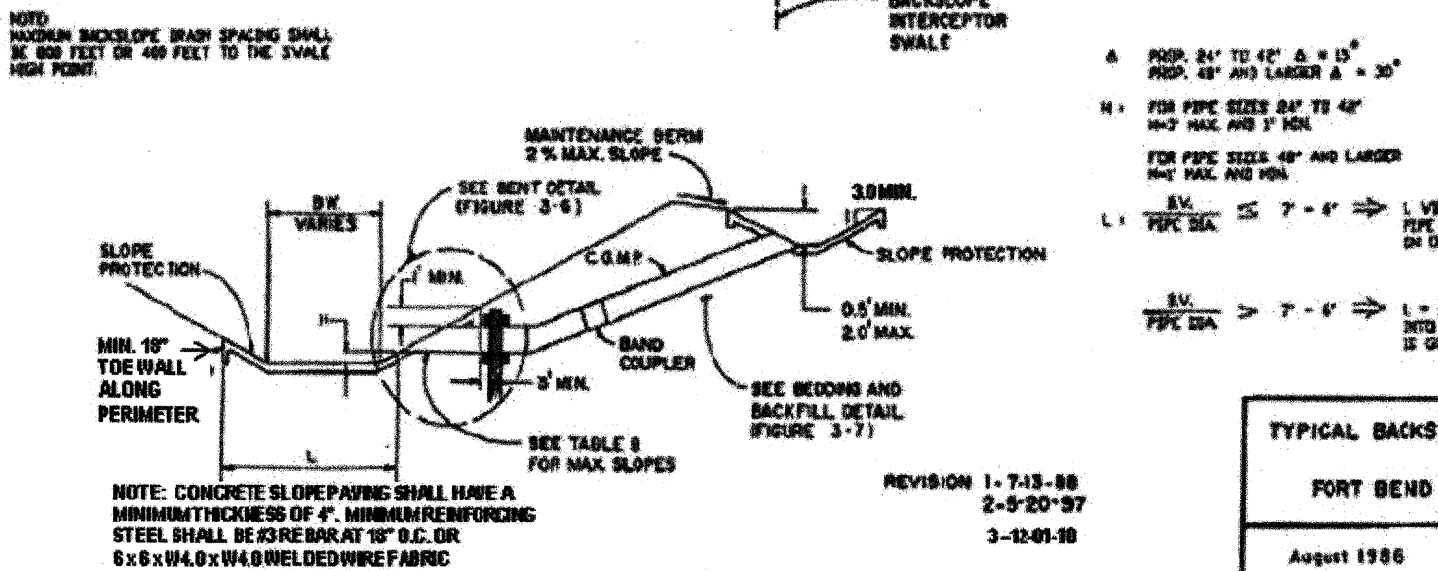


TABLE A

PIPE DIA.	SLOPE	VELOCITY
24"	0.01	3.25 f.p.m.
36"	0.01	3.99 f.p.m.
48"	0.01	4.73 f.p.m.
60"	0.01	5.47 f.p.m.
72"	0.01	6.21 f.p.m.
84"	0.01	6.95 f.p.m.



TYPICAL BACKSLOPE DRAIN DETAIL FOR FORT BEND COUNTY, TEXAS

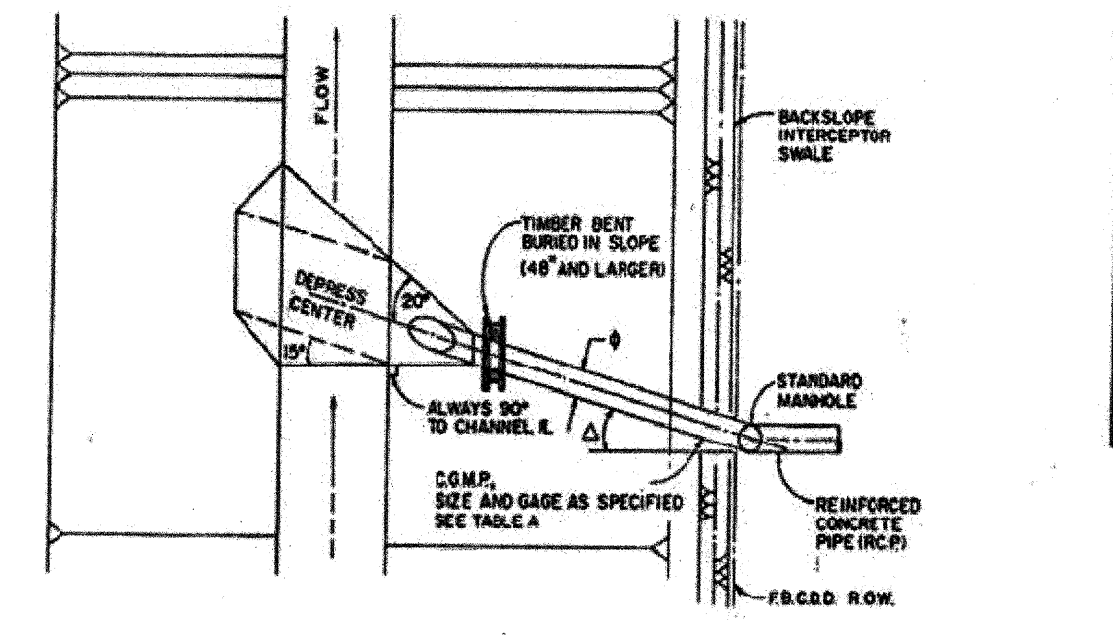
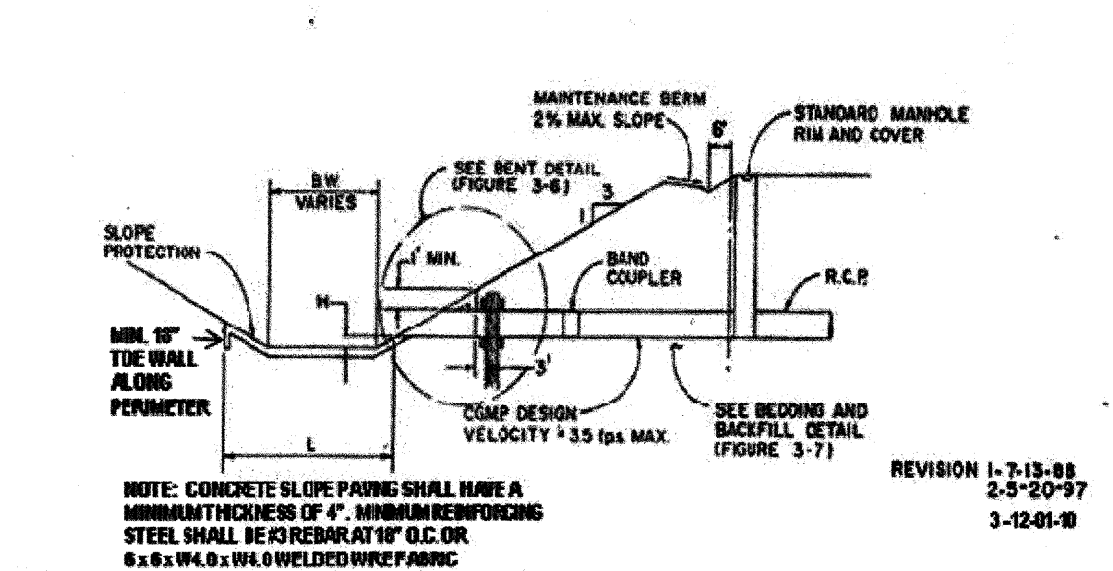


TABLE A

SIZE	PIPE COUPLER	BAND GAUGE	SIZE	PIPE COUPLER	BAND GAUGE
24"	16	16	36"	16	16
36"	16	16	48"	16	16
48"	16	16	60"	16	16
60"	16	16	72"	16	16
72"	16	16	84"	16	16



TYPICAL STORM SEWER OUTFALL DETAIL FOR FORT BEND COUNTY, TEXAS

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: *Mary D. ...*
DEVELOPMENT COORDINATOR
DATE: 10/27/17



IDS Engineering Group
13430 NW. Freeway Suite 200
Houston, TX 77040
713.462.3178
TBP# F-002726
TBP#S 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK: AN INGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX. AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S 35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHS LAKE ROAD, 11.5 FT. EAST-SOUTHWEST OF A TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND. NAVD 88 (2001 ADJ.) ELEVATION = 75.10

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.
NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811.

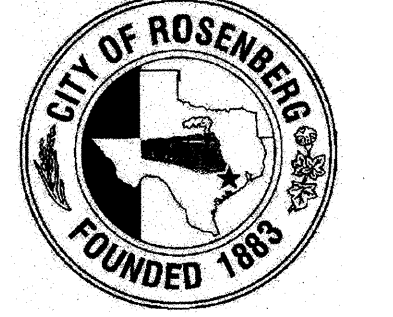
VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CPE Natural Gas lines correctly - not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities - not to be used for conflict verification.)
Signature Valid for six months.
Date: _____
Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year.

WALNUT CREEK SEC. 14

STORM SEWER DETAILS 1

CITY OF ROSENBERG



VERT: N/A
HORIZ: N/A
SHEET 14 OF 24 SHEETS

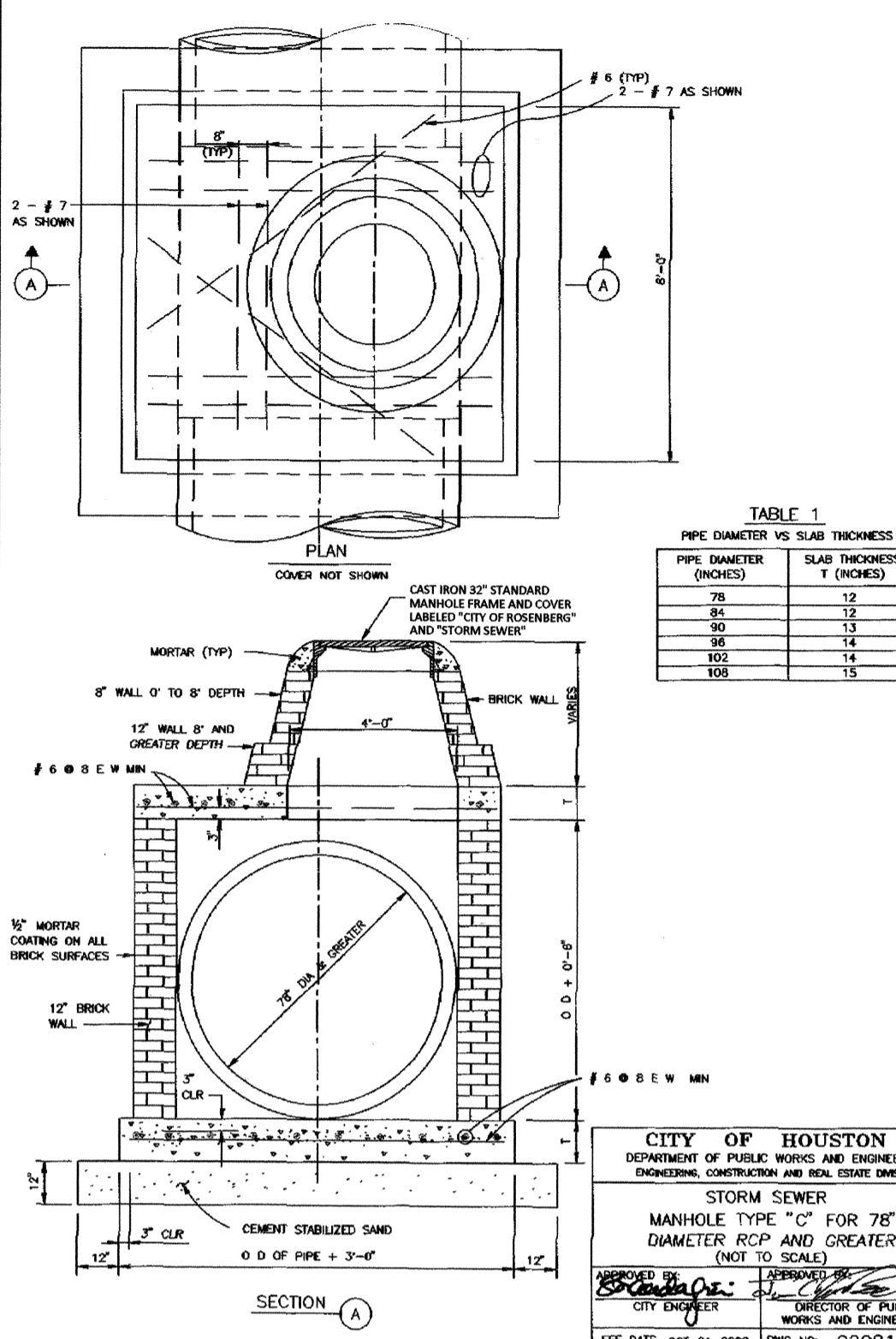
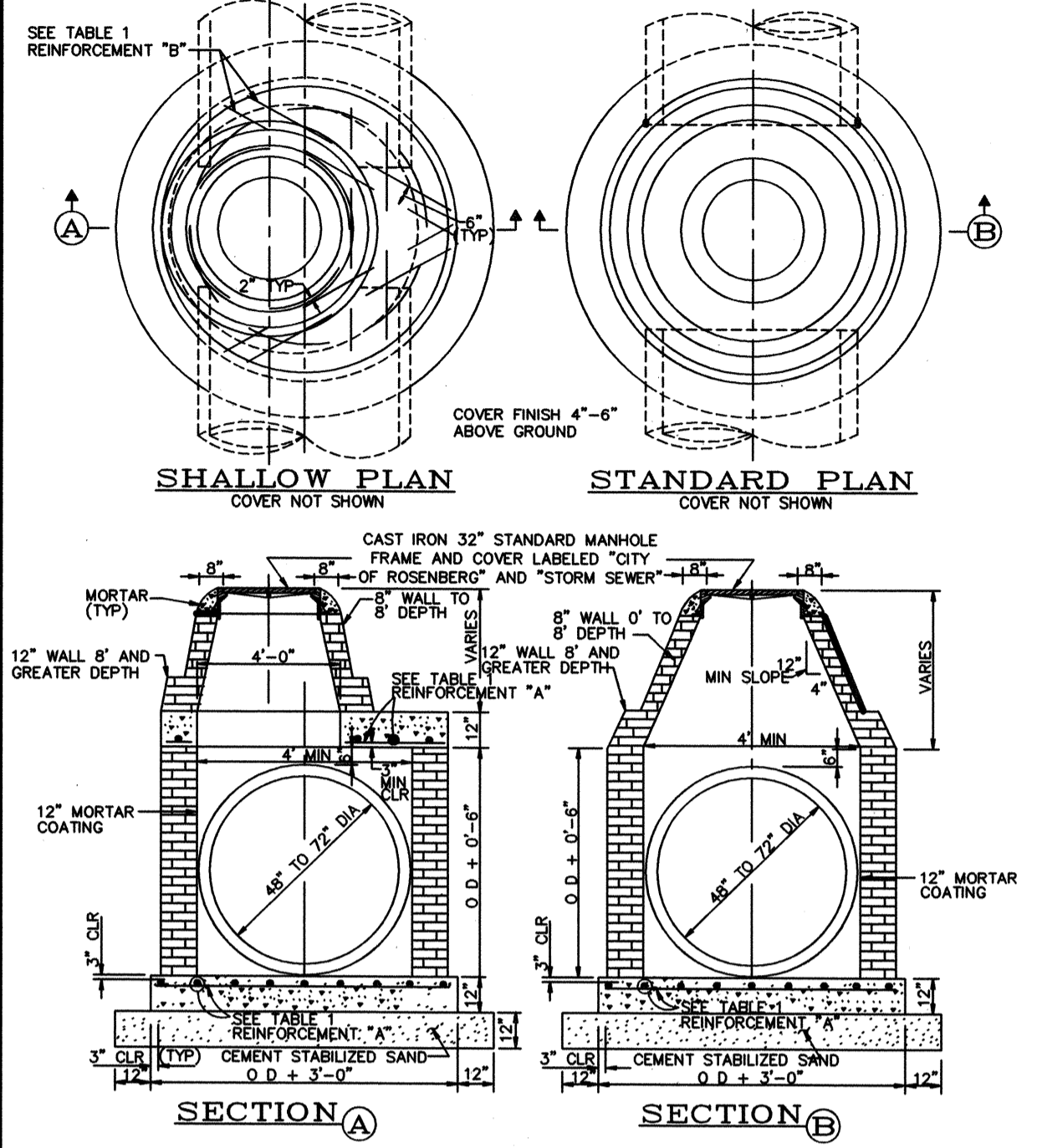


TABLE 1
PIPE DIAMETER VS SLAB THICKNESS

PIPE DIAMETER (INCHES)	SLAB THICKNESS T (INCHES)
78	13
84	13
90	14
96	14
102	15

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
STORM SEWER
MANHOLE TYPE "C" FOR 78" DIAMETER RCP AND GREATER (NOT TO SCALE)
REVISED BY: [Signature]
CITY ENGINEER: [Signature]
DATE: OCT-01-2002 DWG NO. 02081-03

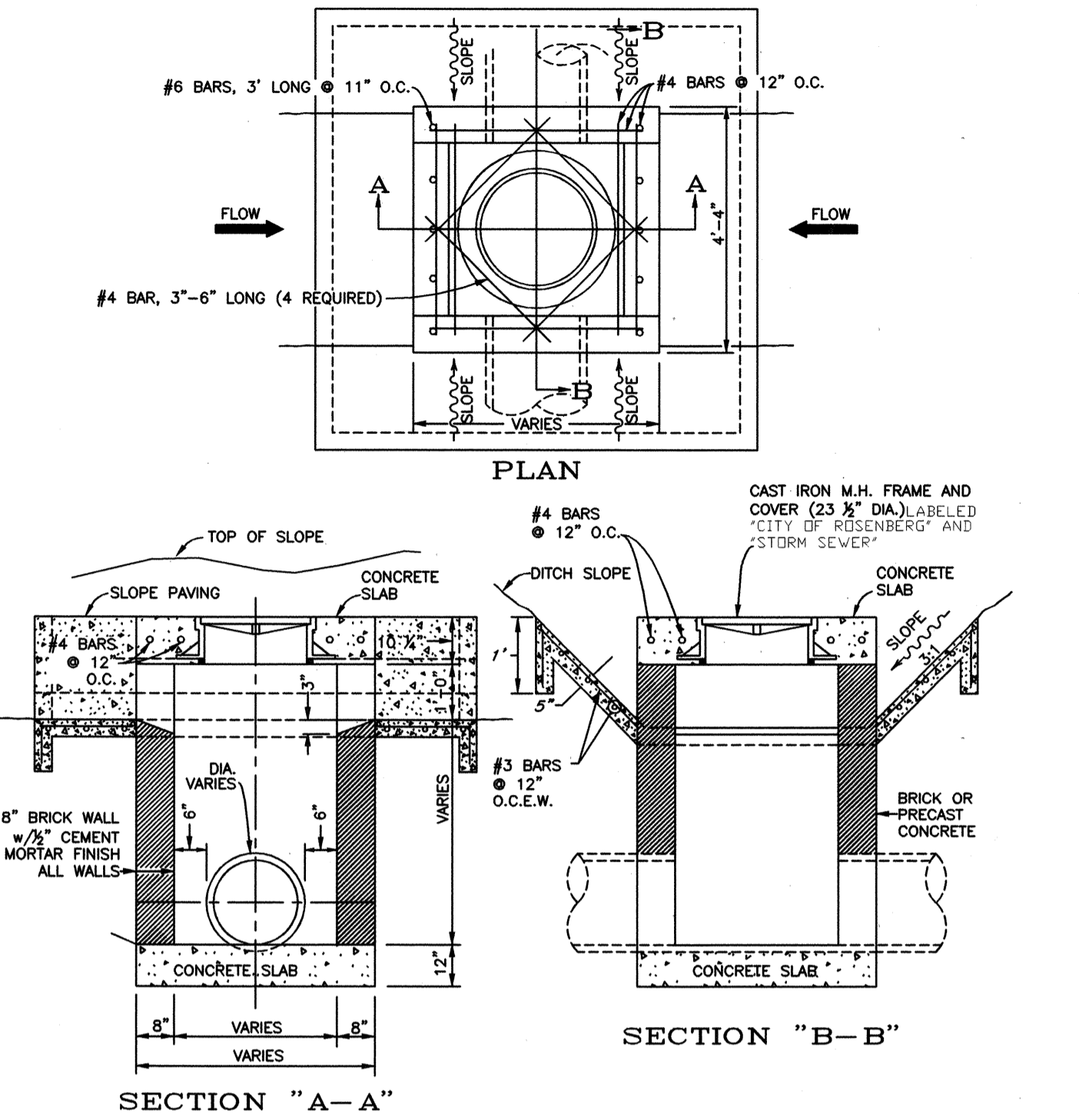


NOTE: WHEN MANHOLE HAS LESS DEPTH THAN MIN SHOWN ON TABLE 1, BUILD "SECTION A" OTHERWISE BUILD "SECTION B".

TABLE 1
DATA FOR VARIOUS PIPE DIAMETERS

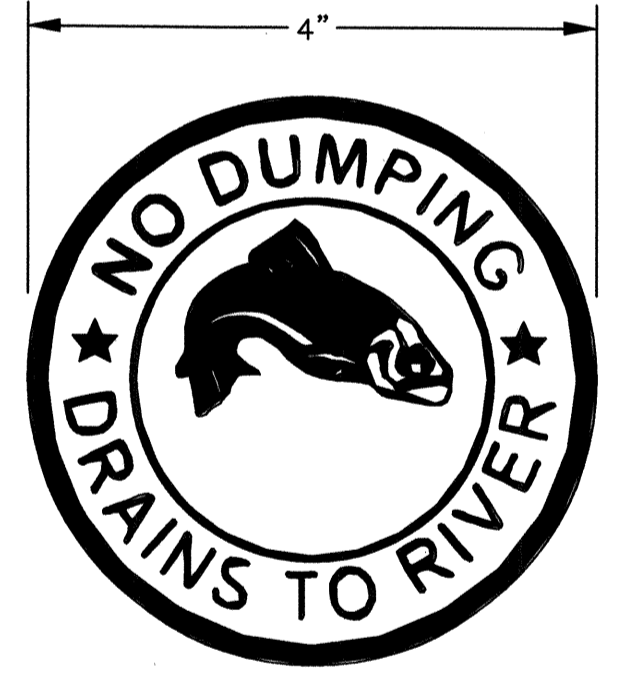
PIPE DIA (INCHES)	MIN DEPTH	REINFORCEMENT "A"	REINFORCEMENT "B"
48"	8'-0"	#5 @ 12" E-W	2 - #6
54"	9'-4"	#5 @ 10" E-W	2 - #6
60"	10'-7"	#5 @ 8" E-W	2 - #7
66"	11'-10"	#5 @ 7" E-W	2 - #7
72"	13'-2"	#5 @ 6" E-W	2 - #7

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STORM SEWER
MANHOLE TYPE "C" FOR 48" TO 72" DIAMETER RCP
REVISED BY: [Signature]
CITY ENGINEER: [Signature]
DATE: 11/10 DWG NO. D-102



NOTE: 1. ALL STORM SEWER INLETS MUST HAVE A NO DUMPING STORM DRAIN MARKER (SEE DETAIL D-109) PLACED ON IT WHEN INSTALLED.

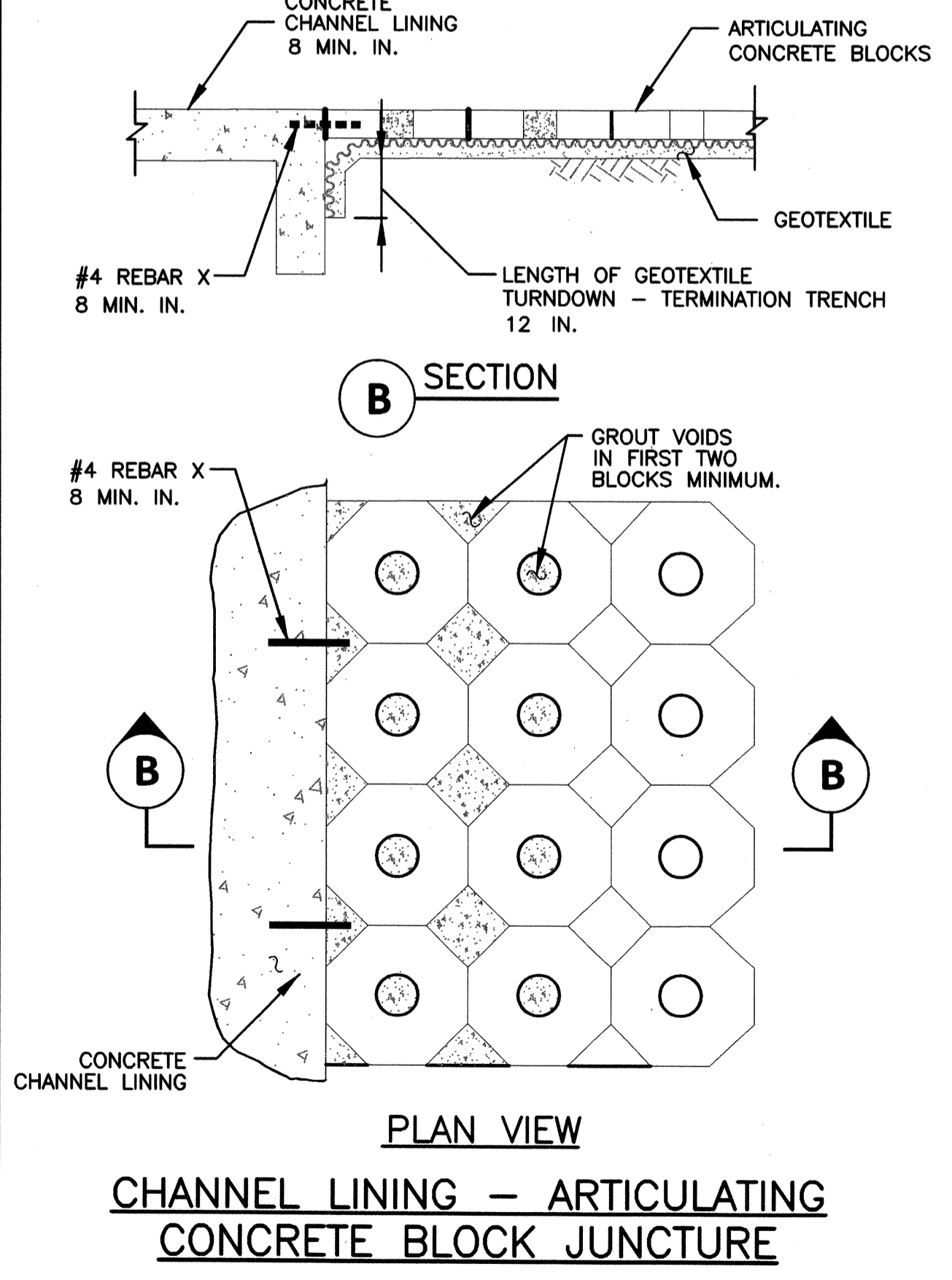
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STANDARD TYPE "E" INLET WITH SLOPE PAVING
REVISED BY: [Signature]
CITY ENGINEER: [Signature]
DATE: 11/10 DWG NO. D-105



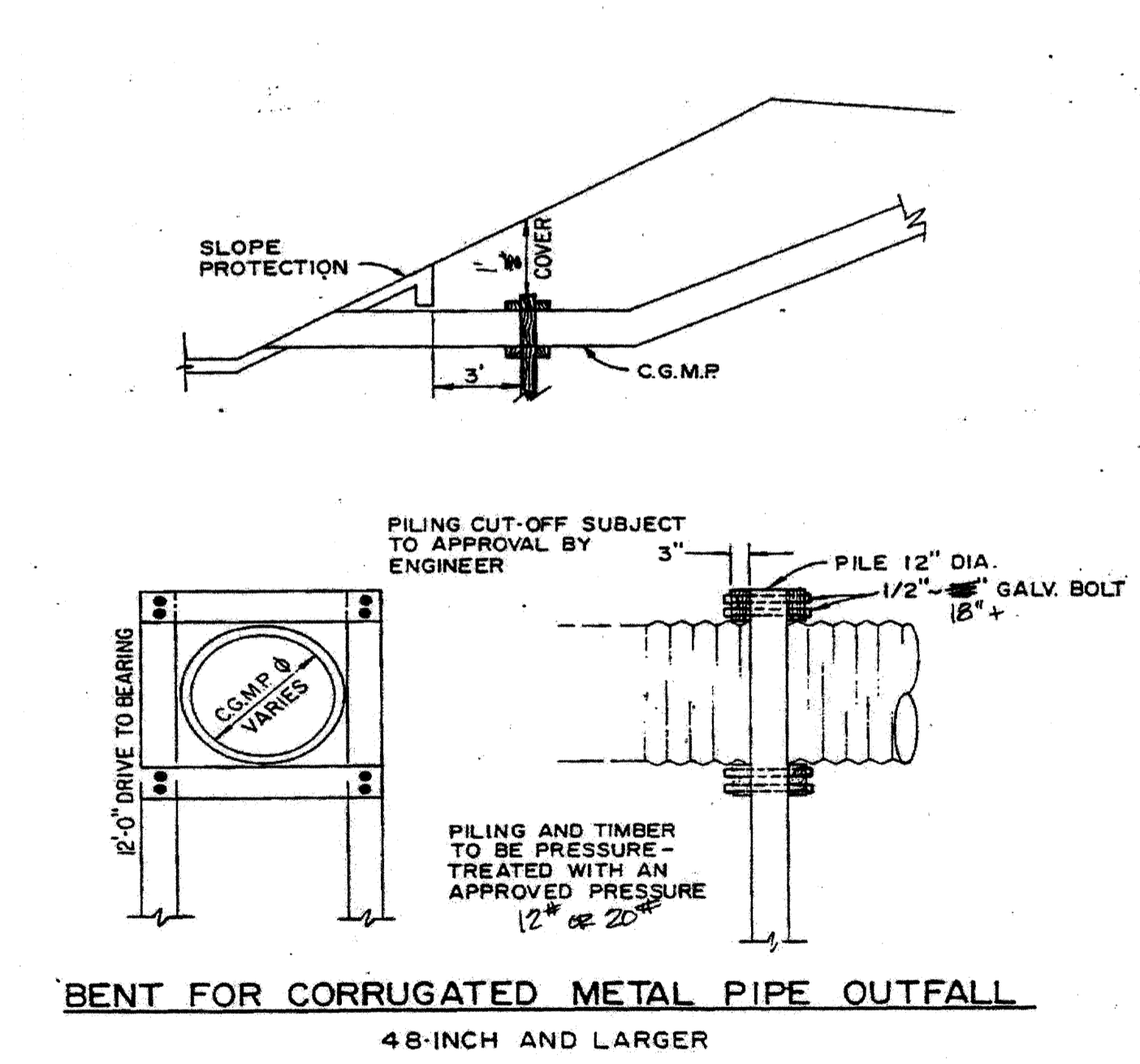
STORM DRAIN MARKER
ITEM NO. SD-4
1 COLOR: BLUE, 4" DISC
MATERIAL: STAINLESS STEEL
SYMBOL: FISH
MANUFACTURED BY:
ALMETEK INDUSTRIES, INC.
HACKETTSTOWN, NJ 07840
1 (800) 246-2080
www.almetek.com

- Surface installation requires the surface be brushed with a wire brush and all dust blown off that surface.
- Install marker with [SIKS-ADH] Sikabond Adhesive using a dripless caulking tube gun. Place the adhesive on the back side of the marker in a circular motion from the outside of the marker into the middle of the marker. Place marker in place and apply pressure to the face of the marker.
- Markers may be applied to concrete, asphalt or steel. The City of Rosenberg requires the marker to be placed on the middle of every catch basin on all storm drains.

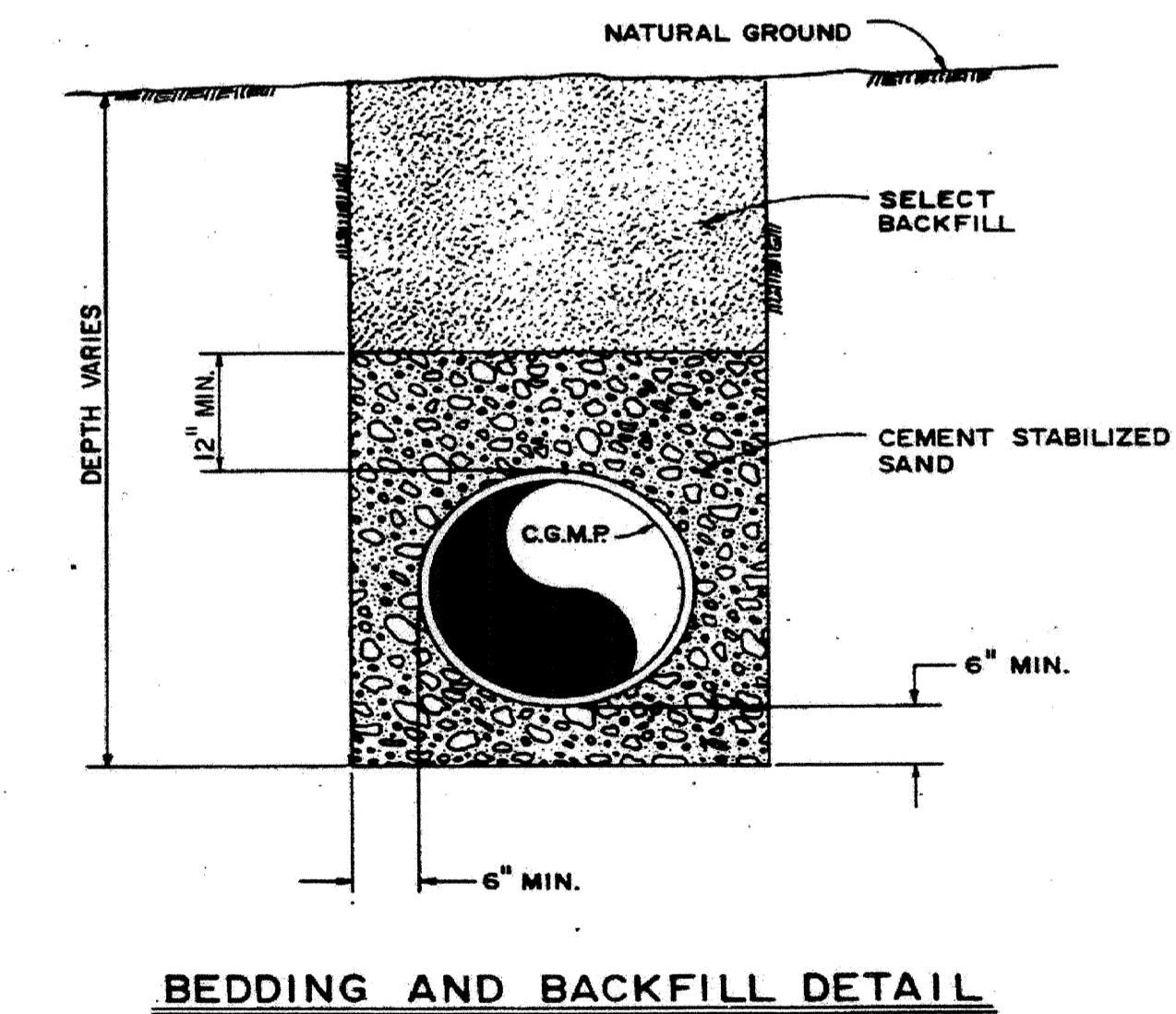
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
NO DUMPING METAL STORM DRAIN MARKER
REVISED BY: [Signature]
CITY ENGINEER: [Signature]
DATE: 11/10 DWG NO. D-109



CHANNEL LINING - ARTICULATING CONCRETE BLOCK JUNCTURE
REVISED BY: [Signature]
CITY ENGINEER: [Signature]
DATE: 11/10 DWG NO. D-109

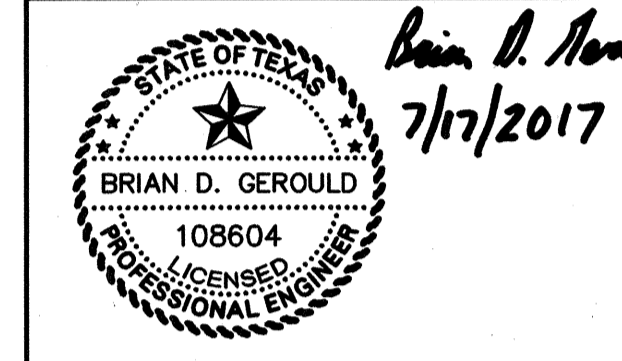


TYPICAL BENT DETAIL FOR C.G.M.P. OUTFALL FOR FORT BEND COUNTY, TEXAS
August 1996 FIGURE 3-6



TYPICAL BEDDING AND BACKFILL DETAIL FOR C.G.M.P. OUTFALL FOR FORT BEND COUNTY, TEXAS
August 1986 FIGURE 3-7

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: [Signature]
DEVELOPMENT COORDINATOR
DATE: 10/21/17



IDS Engineering Group
13430 NW Freeway Suite 700
Houston, TX 77040
713-462-3178
TBP# F-002726
TBP#LS 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1394 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S 35 MILES NORTHEAST ALONG FARM ROAD 762 AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.8 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE ROAD.
NAVD 88 (2001 ADJ.) ELEVATION = 75.10

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VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.

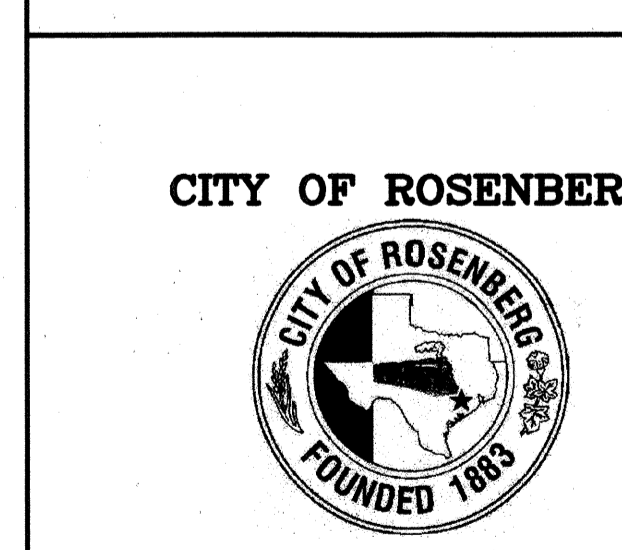
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This Signature verifies existing underground facilities -not to be used for conflict verification.)
Signature Valid for six months.

Date: _____
Approved for AT&T Texas/SWB underground conduit facilities only.
Signature valid for one year

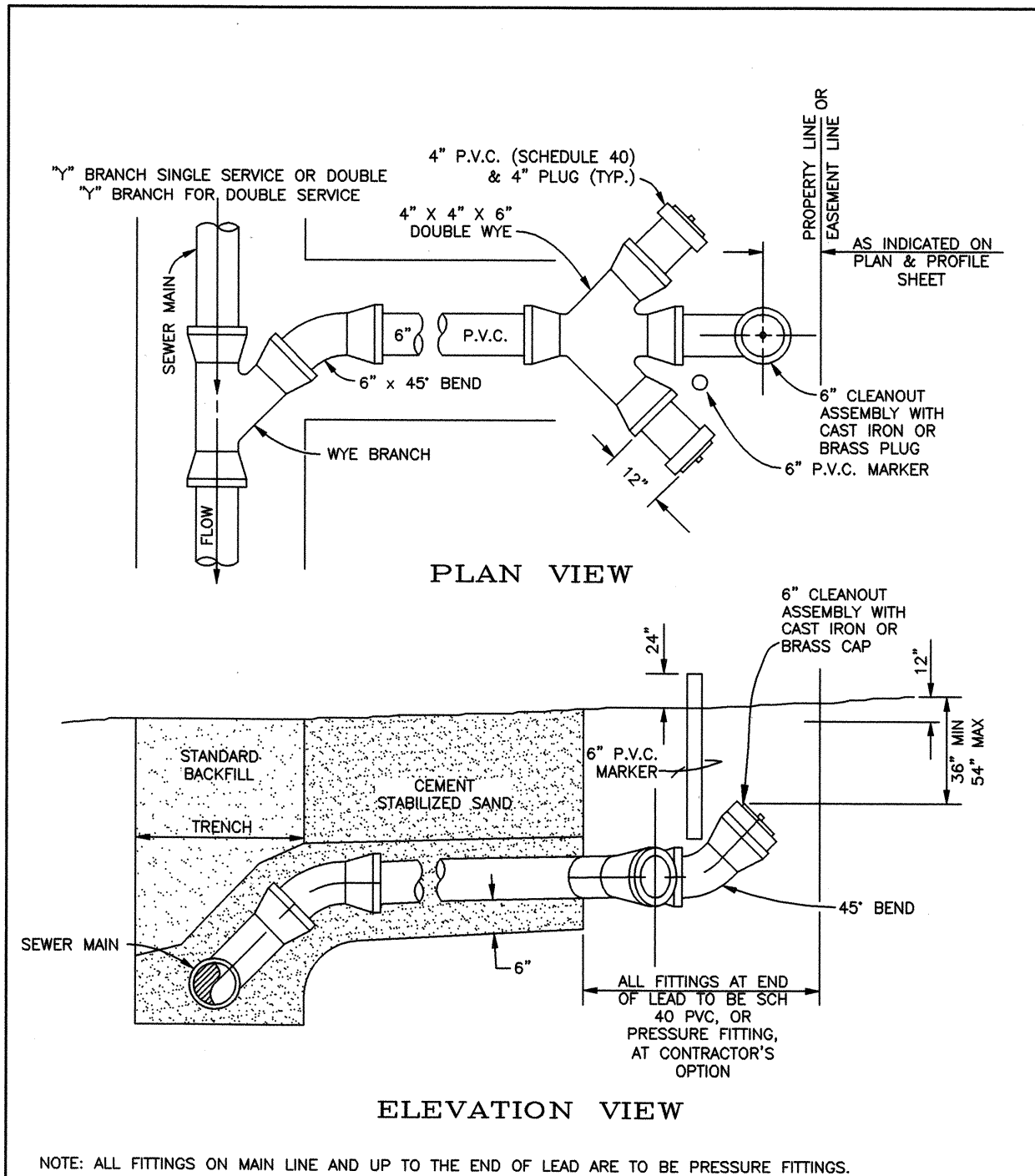
WALNUT CREEK SEC. 14

STORM SEWER DETAILS 2

CITY OF ROSENBERG

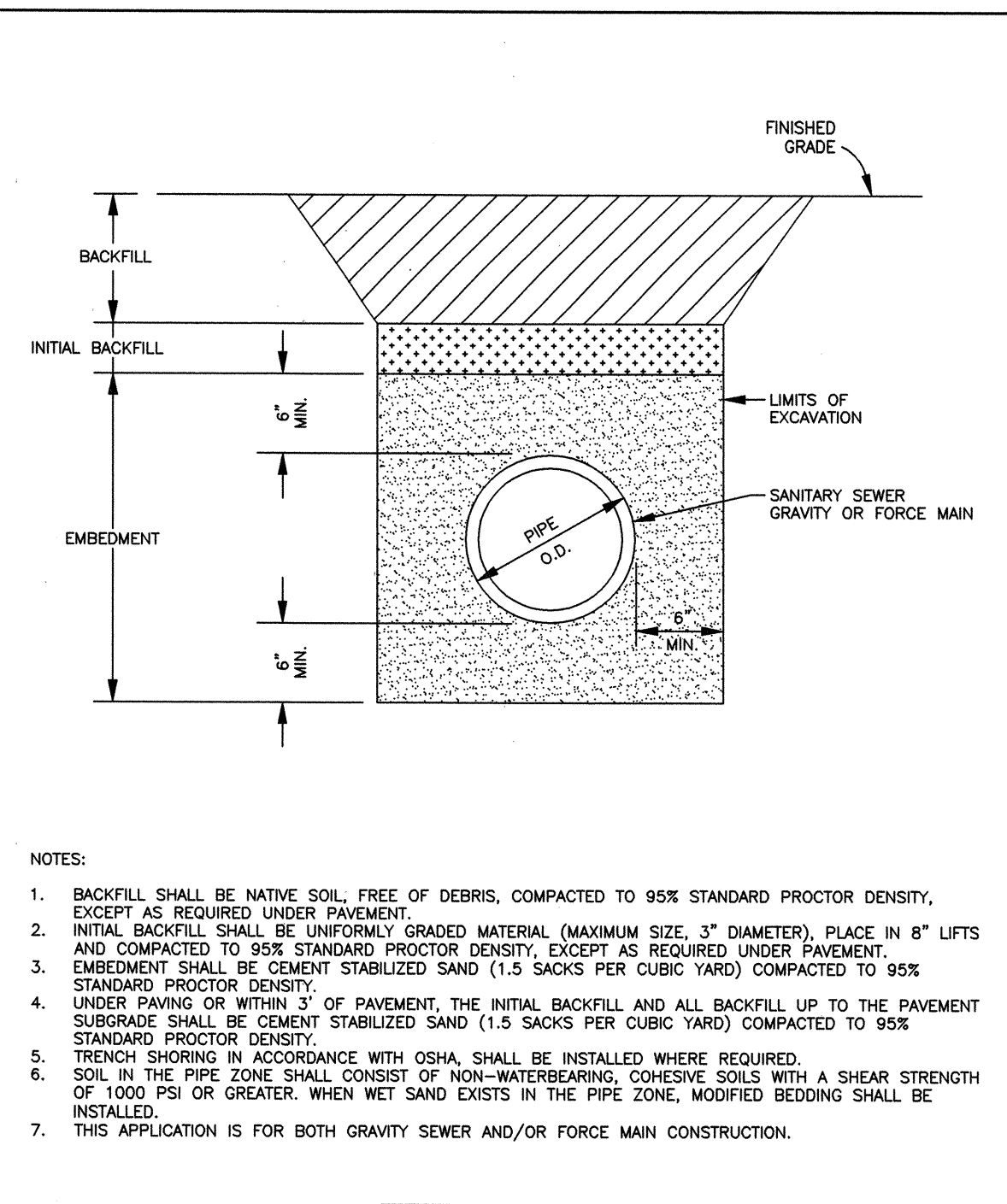


VERT: N/A
HORIZ: N/A
SHEET
15 OF 24 SHEETS



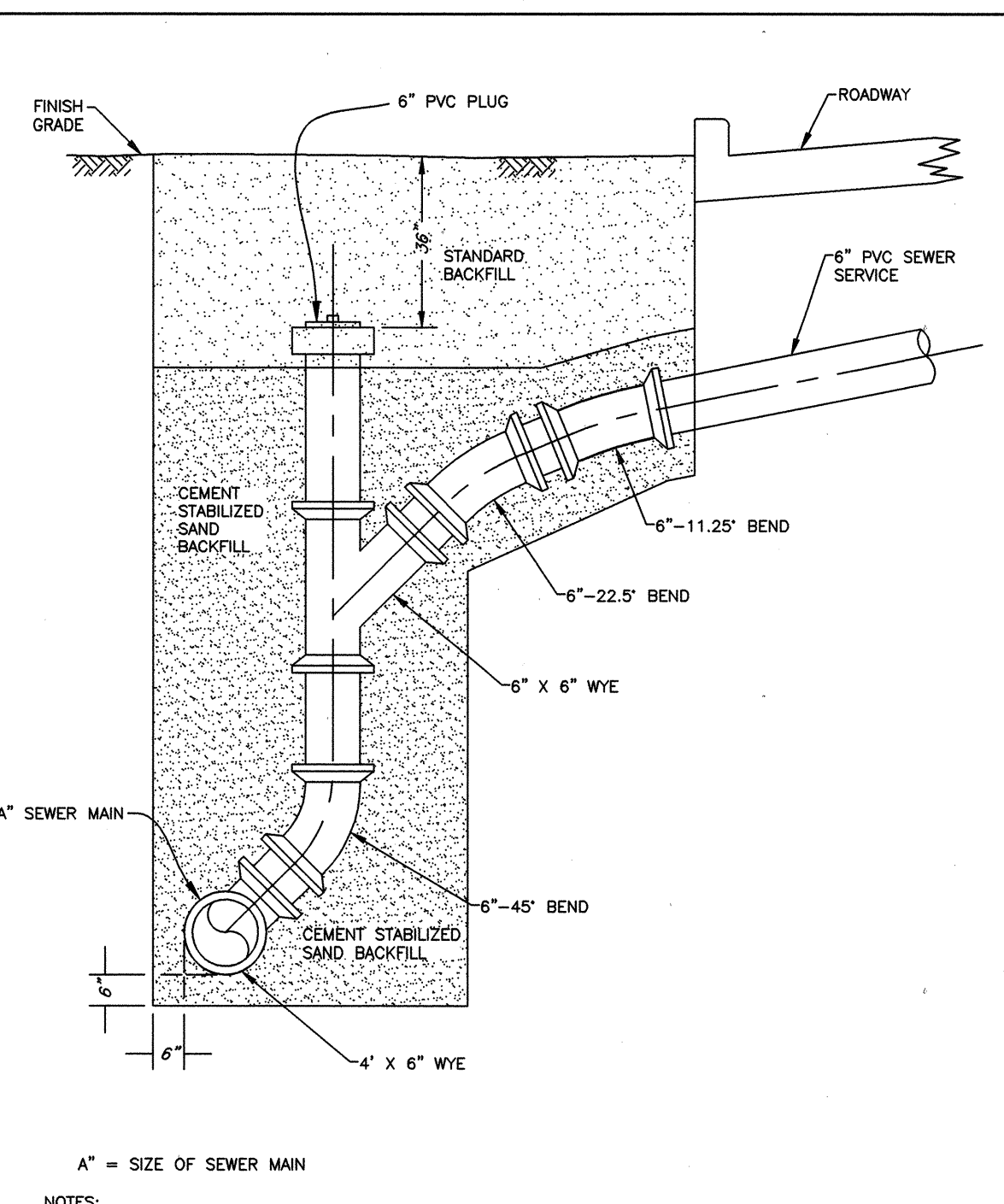
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER SERVICE CONNECTION

DESIGNED BY	CHK	DATE	12/10
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-106



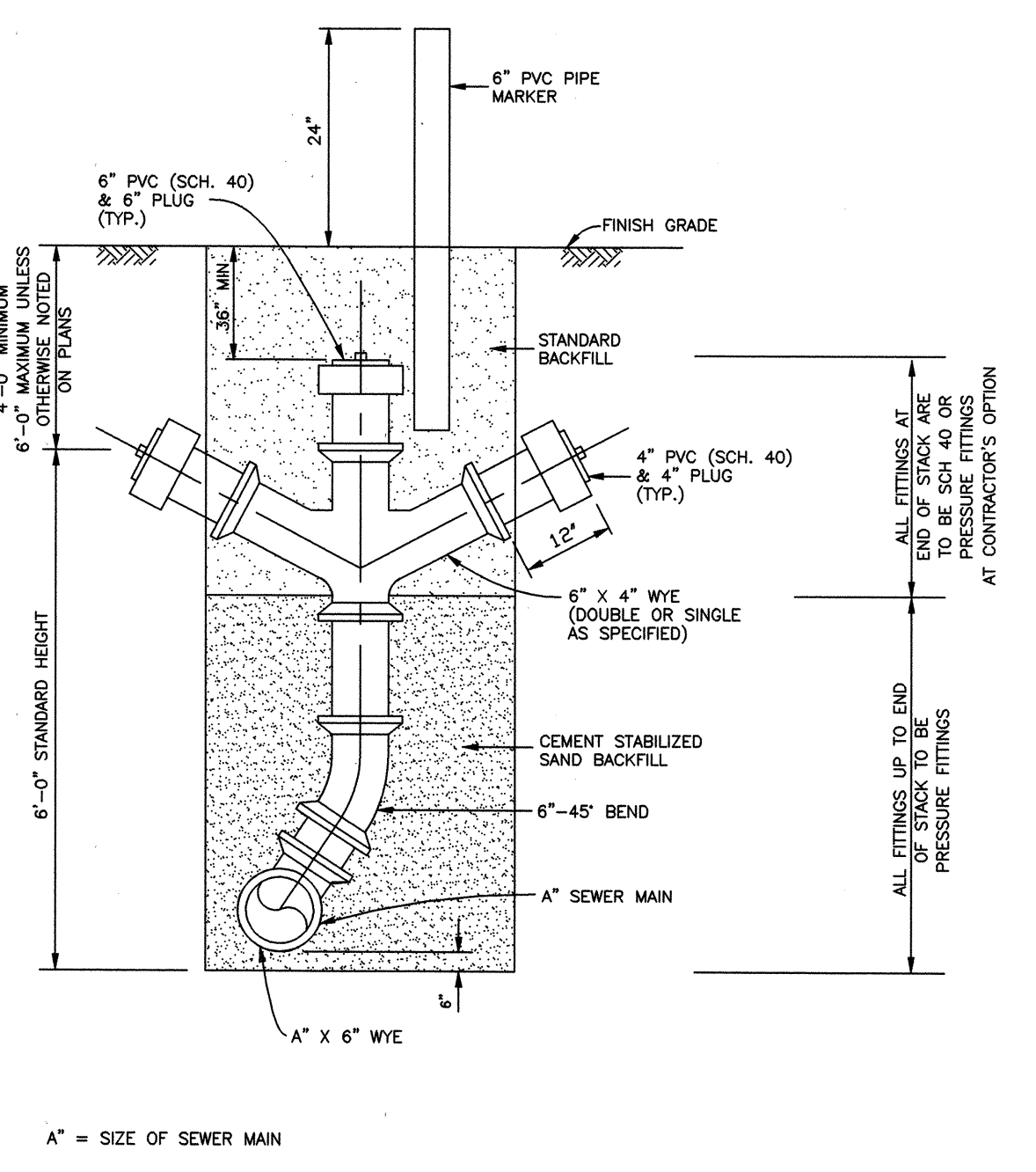
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER BEDDING & BACKFILL

DESIGNED BY	CHK	DATE	12/10
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-104



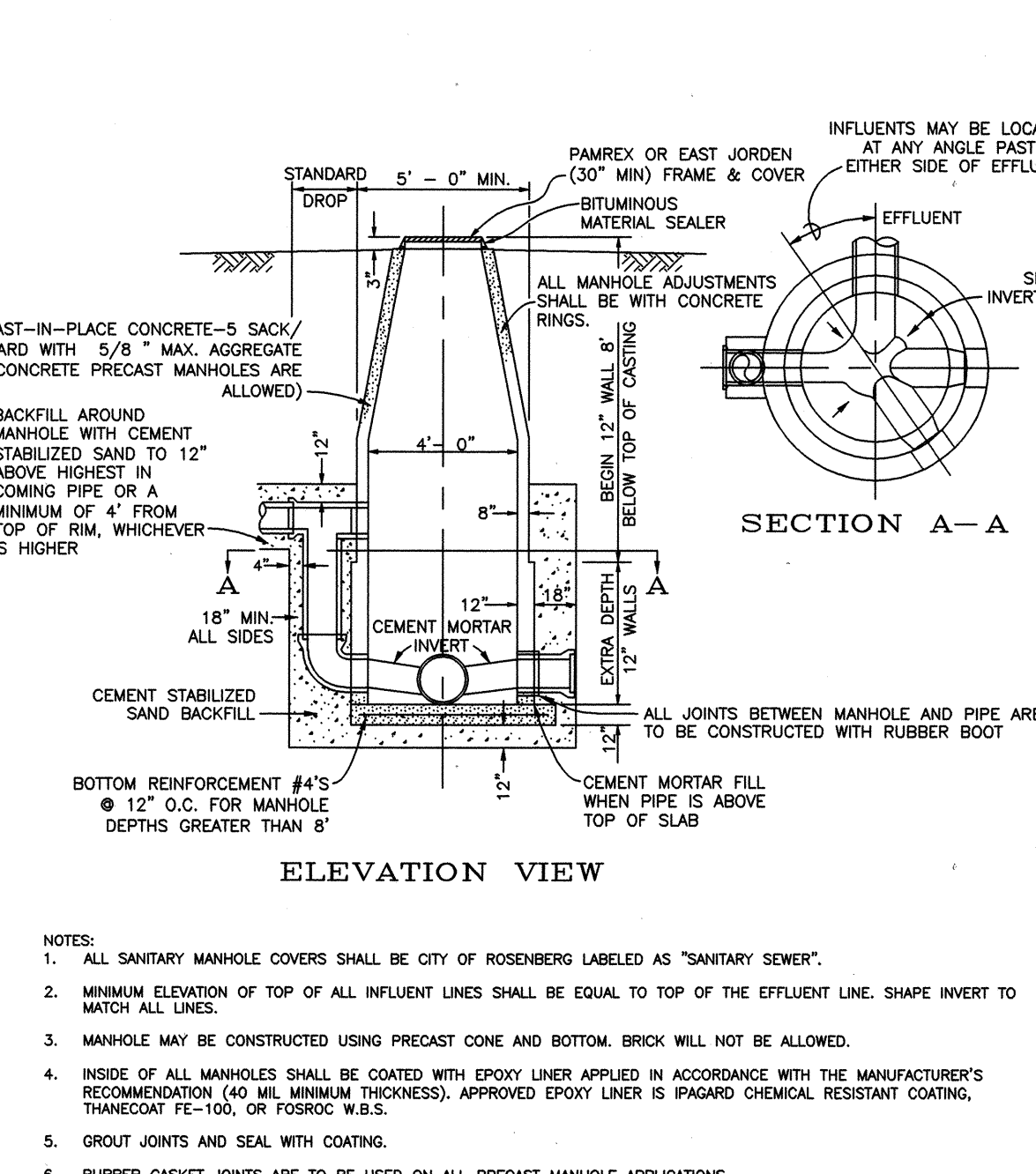
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER FAR SIDE STACK CROSSOVER

DESIGNED BY	CHK	DATE	12/10
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-100b



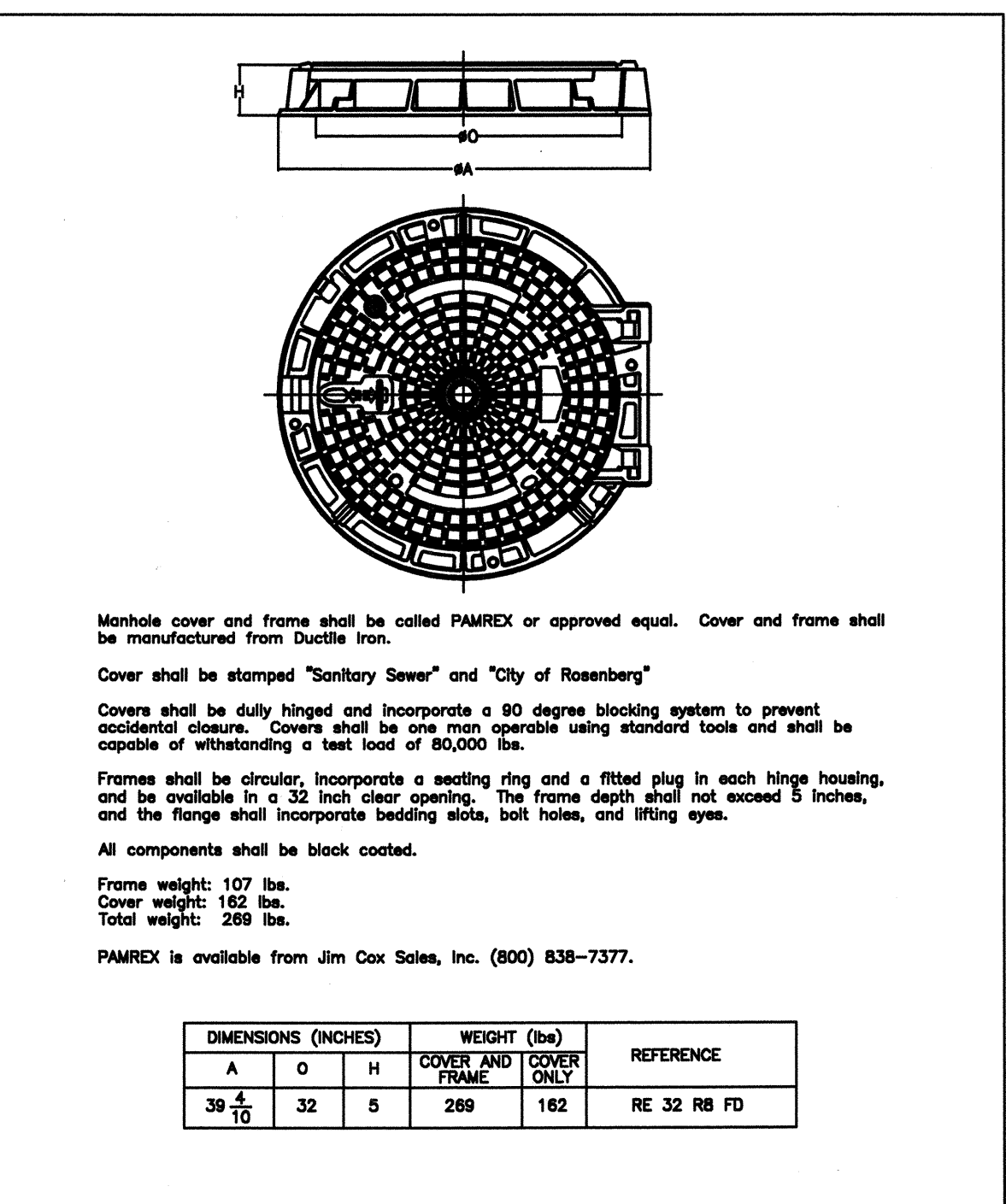
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER STACK

DESIGNED BY	CHK	DATE	12/10
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-100a



THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
SANITARY SEWER MANHOLE

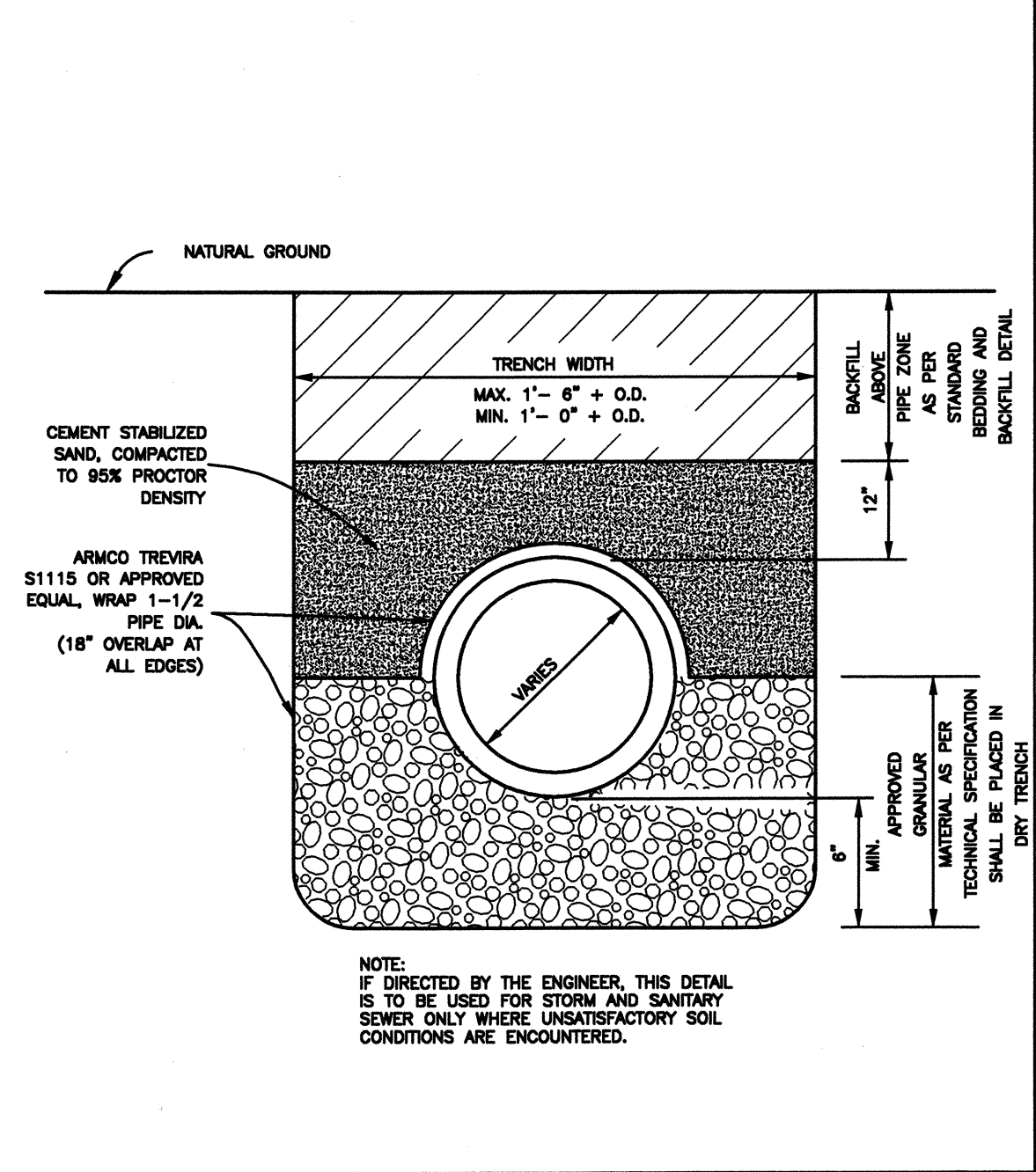
DESIGNED BY	CHK	DATE	12/10
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-105



DIMENSIONS (INCHES)		WEIGHT (lbs)		REFERENCE
A	O	COVER ONLY	FRAME ONLY	
39 1/10	32	269	162	RE 32 RB FD

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
PAMREX 32 INCH MANHOLE COVER AND FRAME

DESIGNED BY	CHK	DATE	3/05
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-106



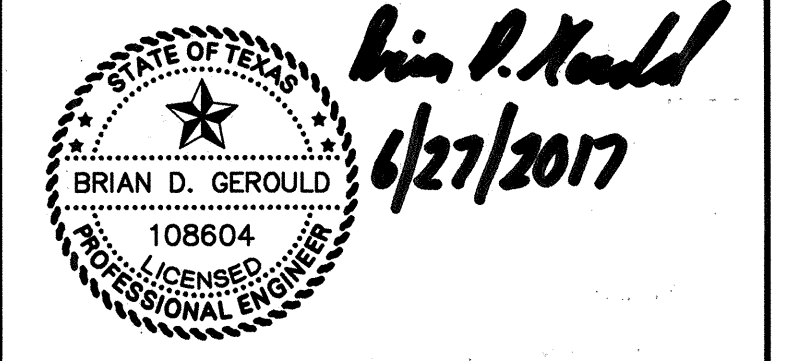
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
MODIFIED "A-A" BEDDING & BACKFILL

DESIGNED BY	CHK	DATE	3/05
DRAWN BY	STAFF	DATE	3/05
CHECKED BY	NTS	DATE	5-102

FLOODPLAIN NOTE
By graphic plotting only, as per the National Flood Insurance Program, Flood Insurance Rate Map (FIRM), Fort Bend County, Texas, and incorporated areas, Community No. 480228, Map Number 48157C0265L which bears an effective date of April 2, 2014, this property lies within UNSHADED ZONE X, which is an area determined to be outside the 500-year floodplain.

No.	Date	Revisions

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: *Maria*
DEVELOPMENT COORDINATOR
DATE: 10/27/17



IDS Engineering Group
13430 NW Freeway Suite 700
Houston, TX 77040
713.462.3178
TBEF F-002728
TBEFL 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
AN NGS DISC STAMPED W 811 1945, LOCATED 33.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1954 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE 5.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
NAVD 88 (2001 AD.) ELEVATION = 75.10

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VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.

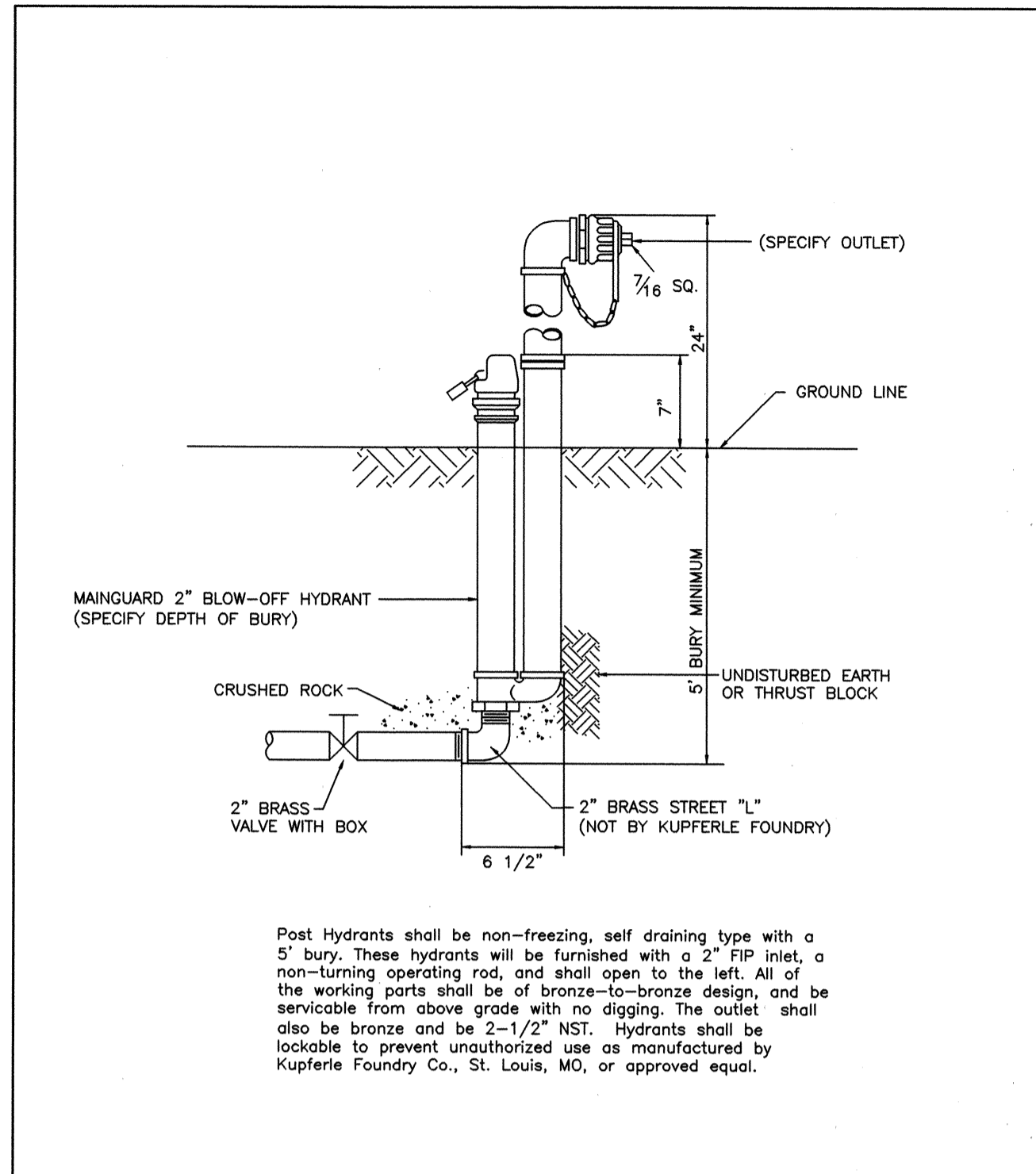
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This signature verifies existing underground facilities -not to be used for conflict verification.)
Signature Valid for six months.

Date: _____
Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year.

WALNUT CREEK SEC. 14
SANITARY SEWER DETAILS

CITY OF ROSENBERG

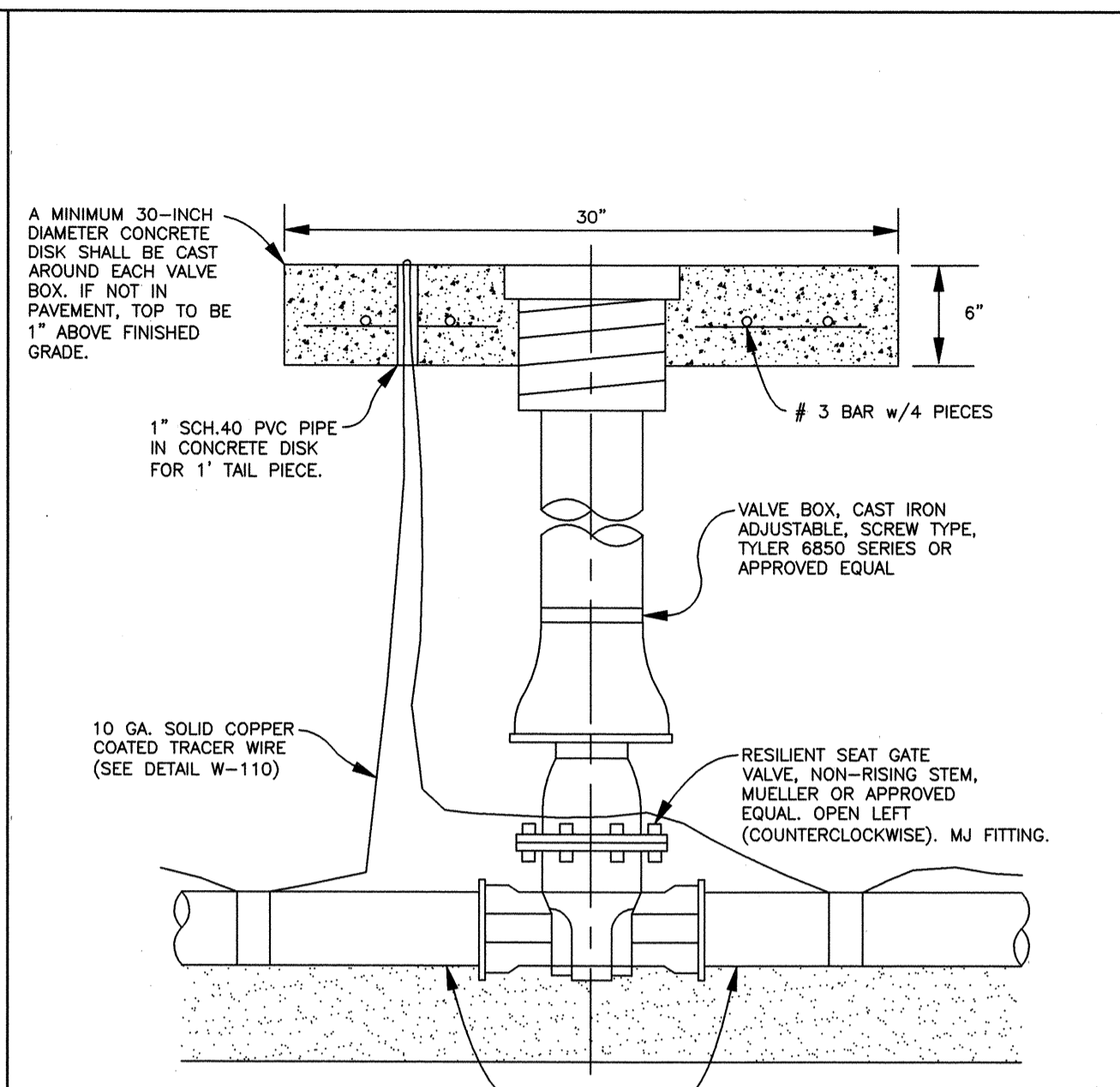
VERT: N/A
HORIZ: N/A
SHEET: 16 OF 24 SHEETS



Post Hydrants shall be non-freezing, self draining type with a 5' bury. These hydrants will be furnished with a 2" FIP inlet, a non-turning operating rod, and shall open to the left. All of the working parts shall be of bronze-to-bronze design, and be serviceable from above grade with no digging. The outlet shall also be bronze and be 2-1/2" NST. Hydrants shall be lockable to prevent unauthorized use as manufactured by Kupperle Foundry Co., St. Louis, MO, or approved equal.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
**MAINGUARD NO. 77
BLOW-OFF HYDRANT**

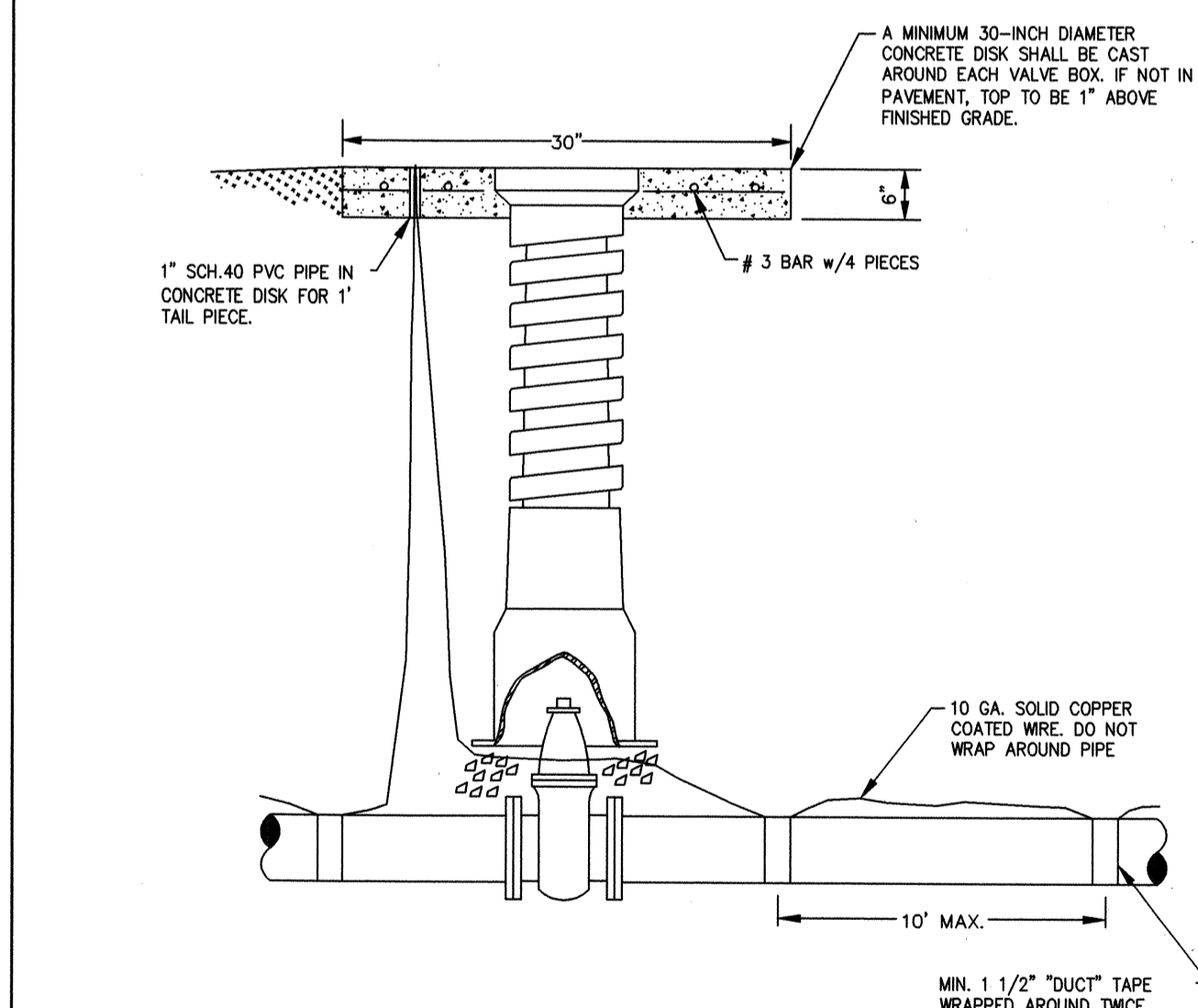
DESIGNER	DATE	SCALE	DATE	REVISIONS
CAK	STAFF	NTS	02/11	W-102



ELEVATION VIEW

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
GATE VALVE & BOX

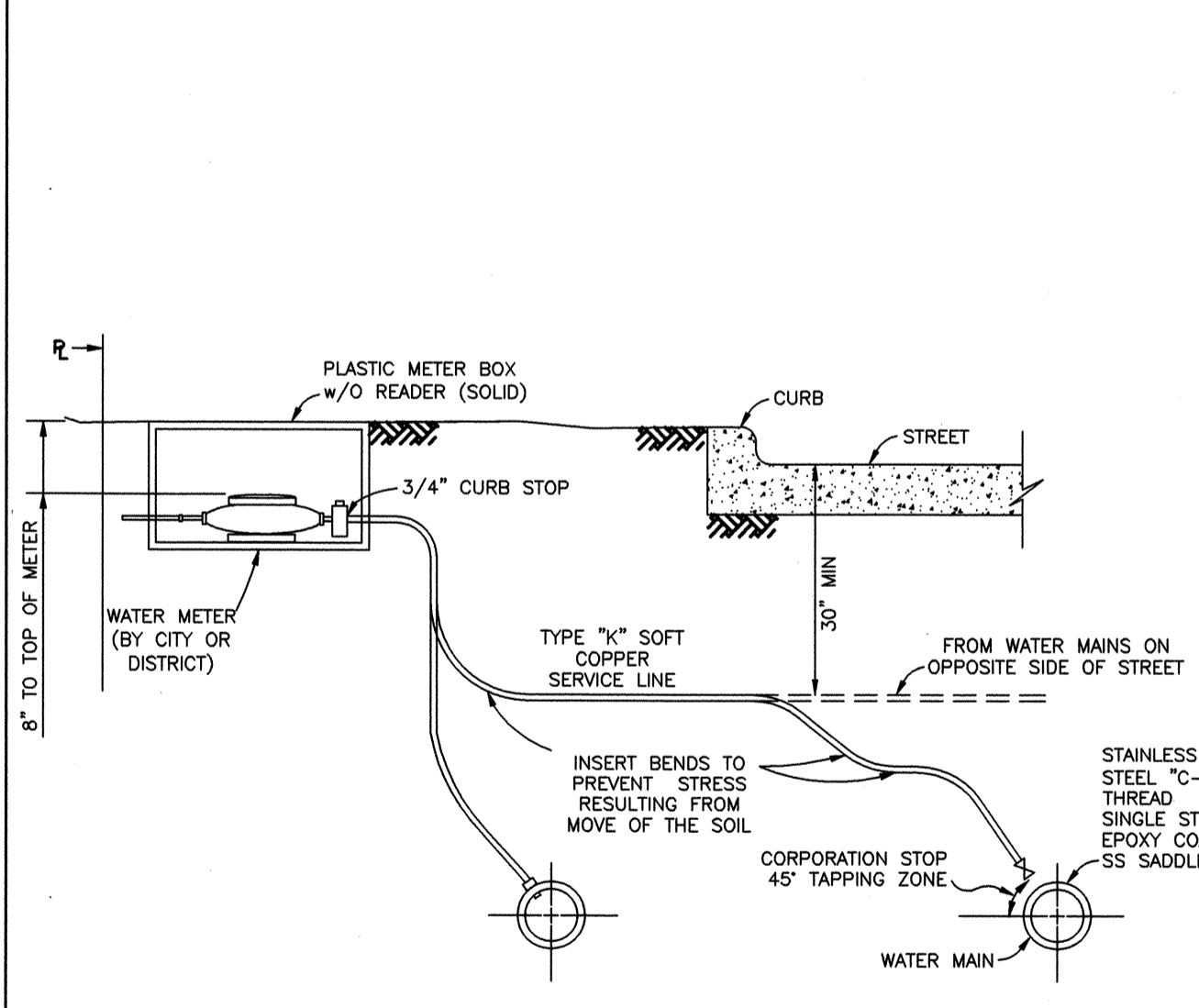
DESIGNER	DATE	SCALE	DATE	REVISIONS
CAK	STAFF	NTS	11/11	W-101



NOTES:
1. TRACER WIRE FOR PVC PIPE SHALL BE NO. 10 AWG GAUGE COATED COPPER WIRE AND ALL SPLICES SHALL BE MADE WITH A MECHANICAL WATER PROOF CONNECTION.
2. TRACER WIRE SHALL COME UP ON VALVE EXTENSIONS AND FIRE HYDRANT VALVES.
3. TRACER WIRE MUST BE "DUCT" TAPED TO THE WATER MAIN PIPE AT INTERVALS NOT TO EXCEED TEN (10)-FEET AND TAPE WRAPPED AROUND MAIN TWICE.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
**TRACER WIRE
FOR PLASTIC WATER PIPING**

DESIGNER	DATE	SCALE	DATE	REVISIONS
CAK	STAFF	NTS	02/11	W-110



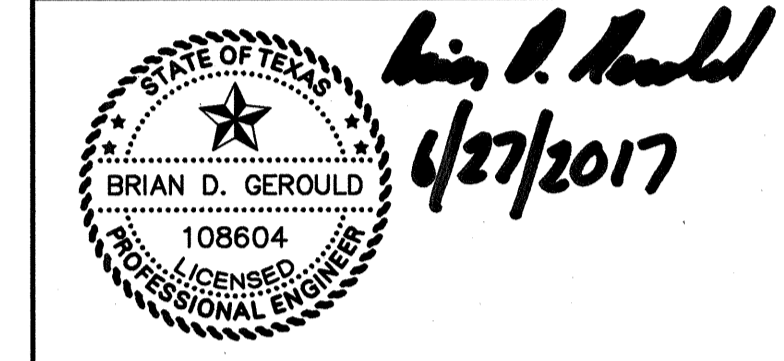
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
TYPICAL SECTION SERVICE LINE

DESIGNER	DATE	SCALE	DATE	REVISIONS
CAK	STAFF	NTS	02/11	W-104

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES**

- THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290 SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS, AT A MINIMUM, MEET TCEQ'S RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.
- AN APPOINTED ENGINEER SHALL NOTIFY IN WRITING THE LOCAL TCEQ'S REGIONAL OFFICE WHEN CONSTRUCTION WILL START. PLEASE KEEP IN MIND THAT UPON COMPLETION OF THE WATER WORKS PROJECT, THE ENGINEER OR OWNER SHALL NOTIFY THE COMMISSION'S WATER SUPPLY DIVISION, IN WRITING, AS TO ITS COMPLETION AND ATTEST TO THE FACT THAT THE WORK HAS BEEN COMPLETED ESSENTIALLY ACCORDING TO THE PLANS AND CHANGE ORDERS ON FILE WITH THE COMMISSION AS REQUIRED IN 30 TAC §290.39(h)(3).
- ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61-G AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI, AS REQUIRED BY 30 TAC §290.44(A)(1).
- PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF-PW-G) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 150 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS, AS REQUIRED BY 30 TAC §290.44(A)(2).
- NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY, AS REQUIRED BY 30 TAC §290.44(A)(3).
- WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS; HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE, AS REQUIRED BY 30 TAC §290.44(A)(4).
- PURSUANT TO 30 TAC §290.44(A)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT ANMA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS.
* THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE:
 $Q = LD \sqrt{P/148,000}$ WHERE:
Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
L = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
* THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(A)(5). PLEASE ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE:
 $L = SD \sqrt{P/148,000}$ WHERE:
L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR,
S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET,
D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
- PROJECTS CONSTRUCTED ON OR AFTER JANUARY 4, 2014 MUST COMPLY WITH CHANGES TO SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES TO 0.25 PERCENT.
- THE SYSTEM MUST BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 35 PSI AT ALL POINTS WITHIN THE DISTRIBUTION NETWORK AT FLOW RATES OF AT LEAST 1.5 GALLONS PER MINUTE PER CONNECTION. WHEN THE SYSTEM IS INTENDED TO PROVIDE FIREFIGHTING CAPABILITY, IT MUST ALSO BE DESIGNED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI UNDER COMBINED FIRE AND DRINKING WATER FLOW CONDITIONS AS REQUIRED BY 30 TAC §290.44(D).
- THE CONTRACTOR SHALL INSTALL APPROPRIATE AIR RELEASE DEVICES IN THE DISTRIBUTION SYSTEM AT ALL POINTS WHERE TOPOGRAPHY OR OTHER FACTORS MAY CREATE AIR LOCKS IN THE LINES. ALL VENT OPENINGS TO THE ATMOSPHERE SHALL BE COVERED WITH 16-MESH OR FINER, CORROSION RESISTANT SCREENING MATERIAL OR AN ACCEPTABLE EQUIVALENT AS REQUIRED BY 30 TAC §290.44(D)(1).
- PURSUANT TO 30 TAC §290.44(D)(4), ACCURATE WATER METERS SHALL BE PROVIDED. SERVICE CONNECTIONS AND METER LOCATIONS SHOULD BE SHOWN ON THE PLANS.
- PURSUANT TO 30 TAC §290.44(D)(5), SUFFICIENT VALVES AND BLOWOFFS TO MAKE REPAIRS. THE ENGINEERING REPORT SHALL ESTABLISH CRITERIA FOR THIS DESIGN.
- PURSUANT TO 30 TAC §290.44(D)(6), THE SYSTEM SHALL BE DESIGNED TO AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD-END MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD-END LINES LESS THAN TWO INCHES IN DIAMETER WILL NOT REQUIRE FLUSH VALVES IF THEY END AT A CUSTOMER SERVICE. WHERE DEAD ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO PROVIDE CIRCULATION.
- THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES INCLUDING MANHOLE AND SEPTIC TANK DRAINFIELDS. IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET 30 TAC §290.44(E)(1-4) OF THE CURRENT RULES.
- PURSUANT TO 30 TAC §290.44(E)(5), THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT.
- PURSUANT TO 30 TAC §290.44(E)(6), FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION.
- PURSUANT TO 30 TAC §290.44(E)(7), SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.
- PURSUANT TO 30 TAC §290.44(E)(8), WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS.
- PURSUANT TO 30 TAC §290.44(F)(1), THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.
- PURSUANT TO 30 TAC §290.44(F)(2), WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED.
- THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH ANMA STANDARD C-651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. TWO SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER, IN ACCORDANCE WITH 30 TAC §290.44(F)(3).

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: *M. Gerould*
DEVELOPMENT COORDINATOR
DATE: 10/27/17



IDS Engineering Group
13430 NW Freeway Suite 700
Houston, TX 77040
713.462.3178
TBPES-002726
TBPES 10110700

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

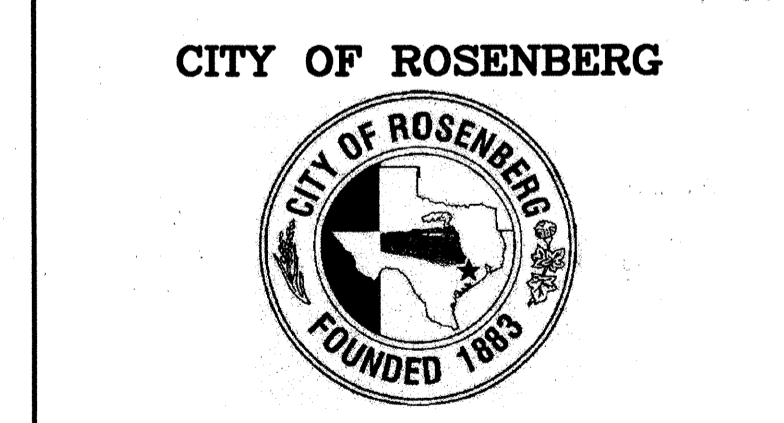
BENCHMARK:
AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1954 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE 5.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
NAVD 88 (2001 ADJ.) ELEVATION = 75.10

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.
NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground lines can be marked. This Verification does not fulfill your obligation to call 811.

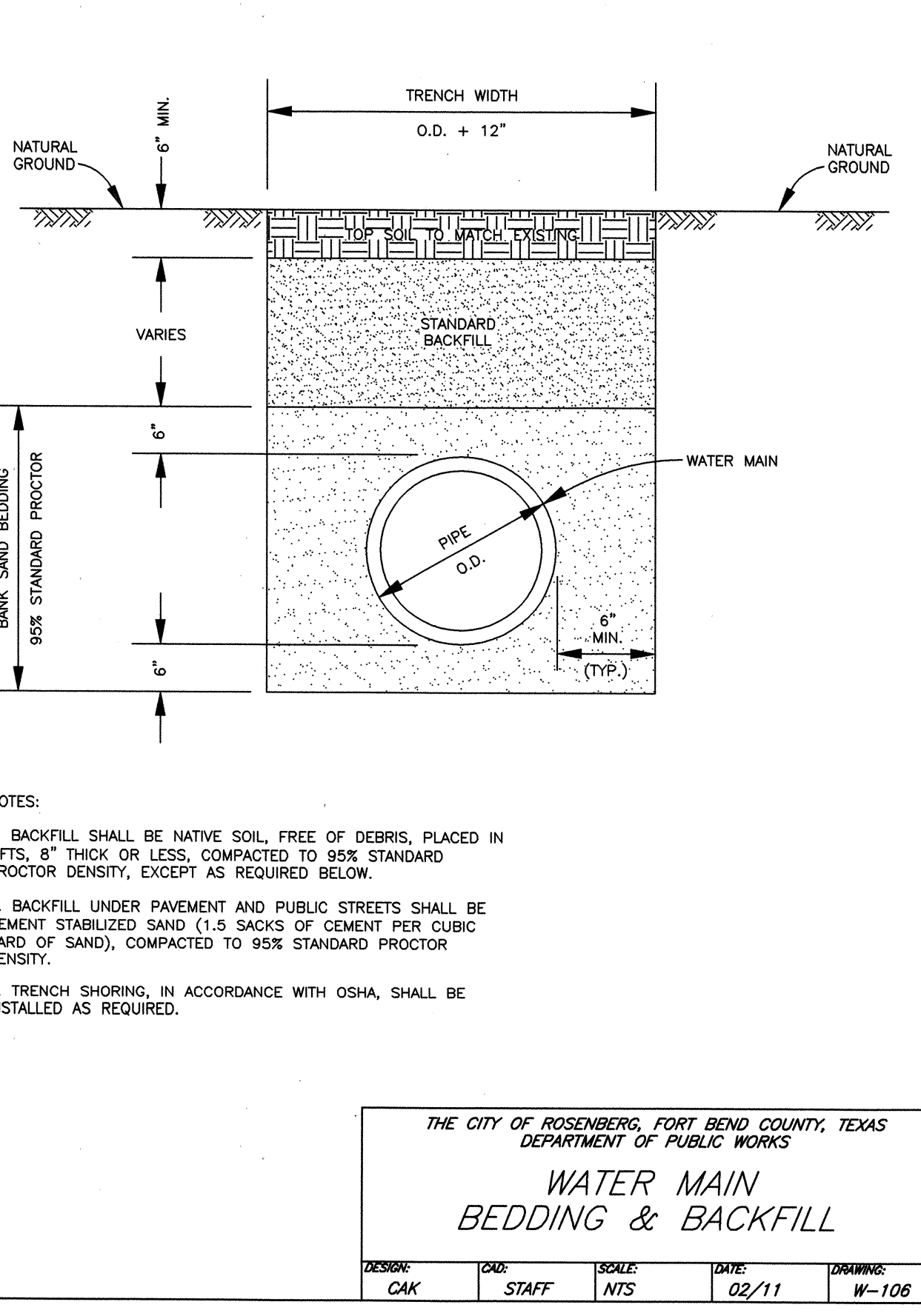
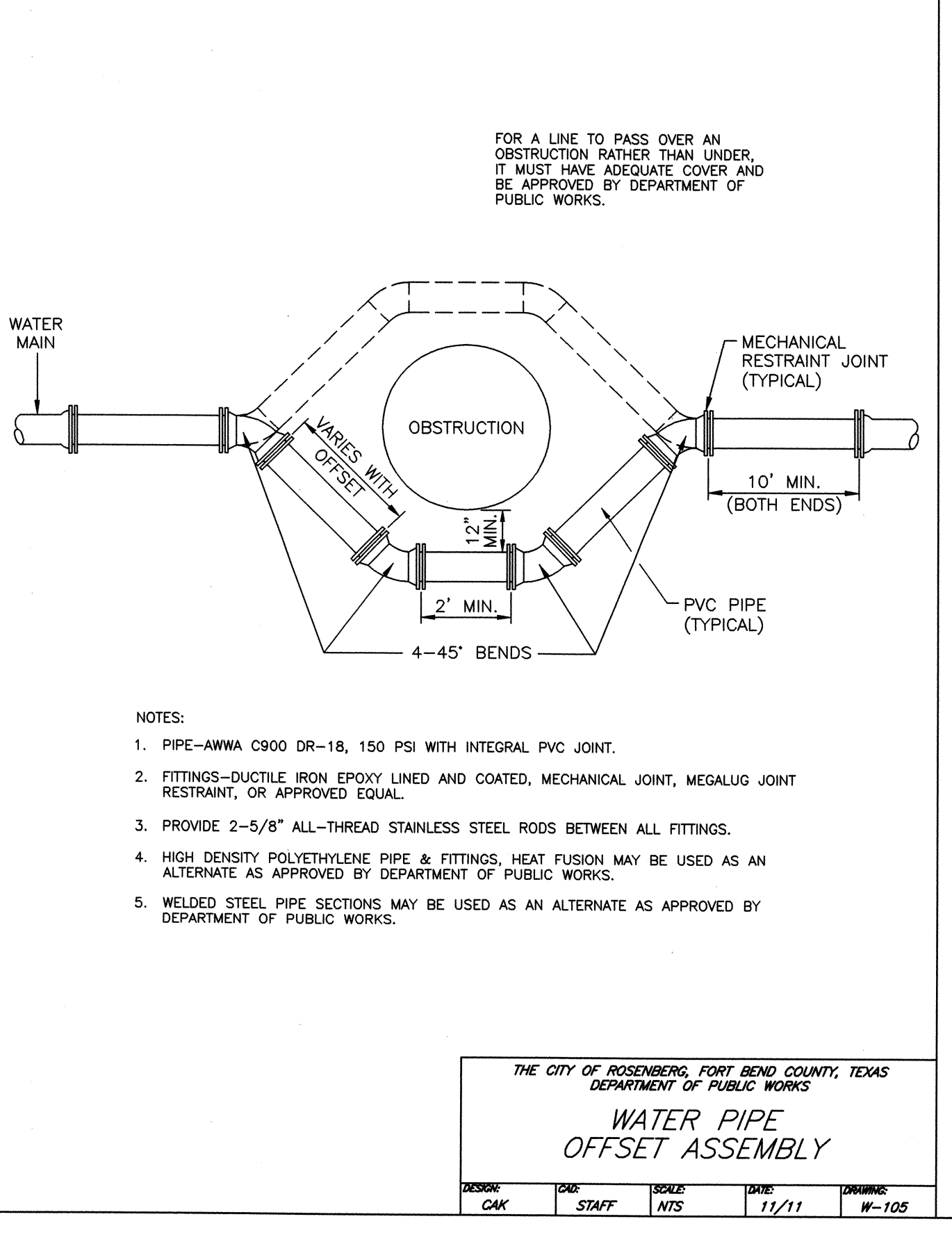
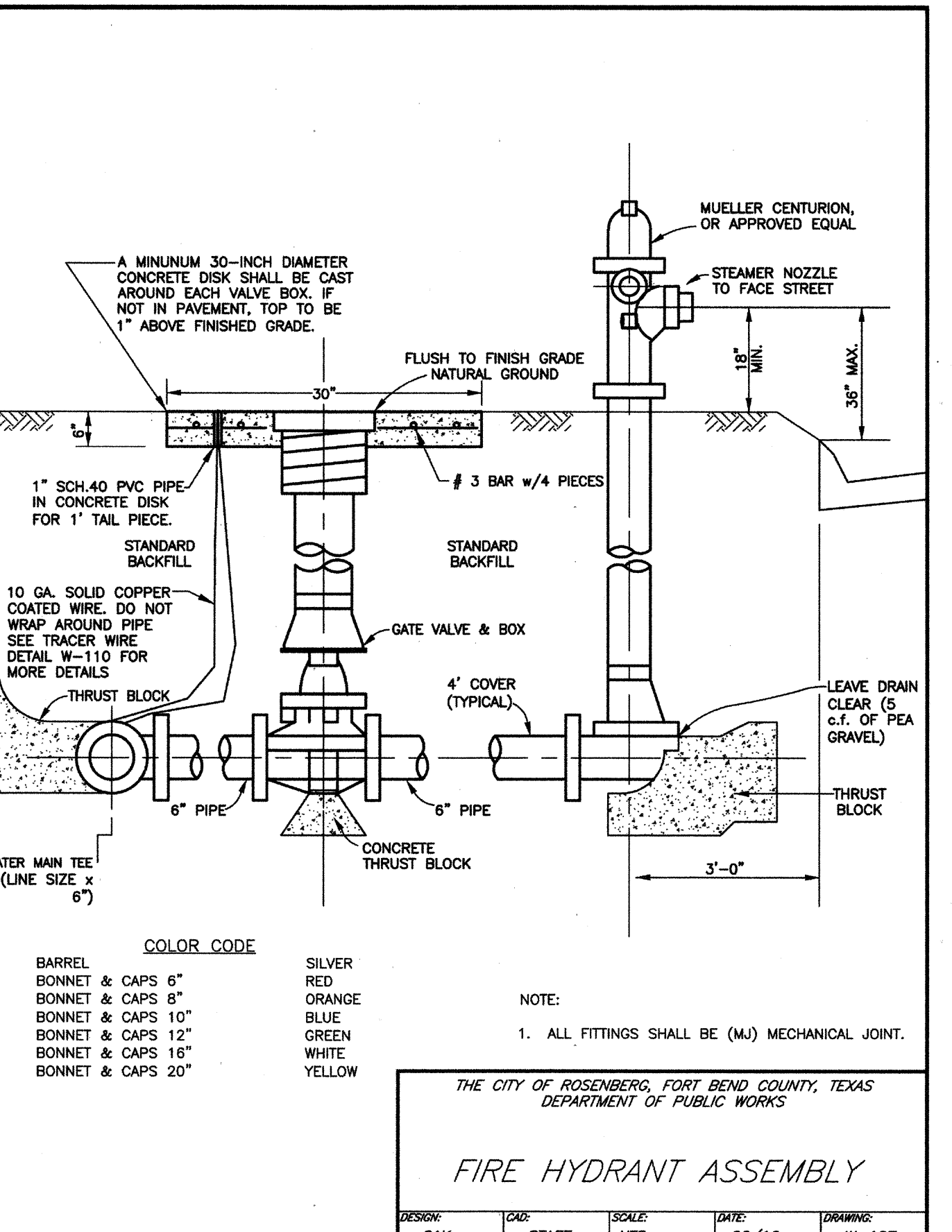
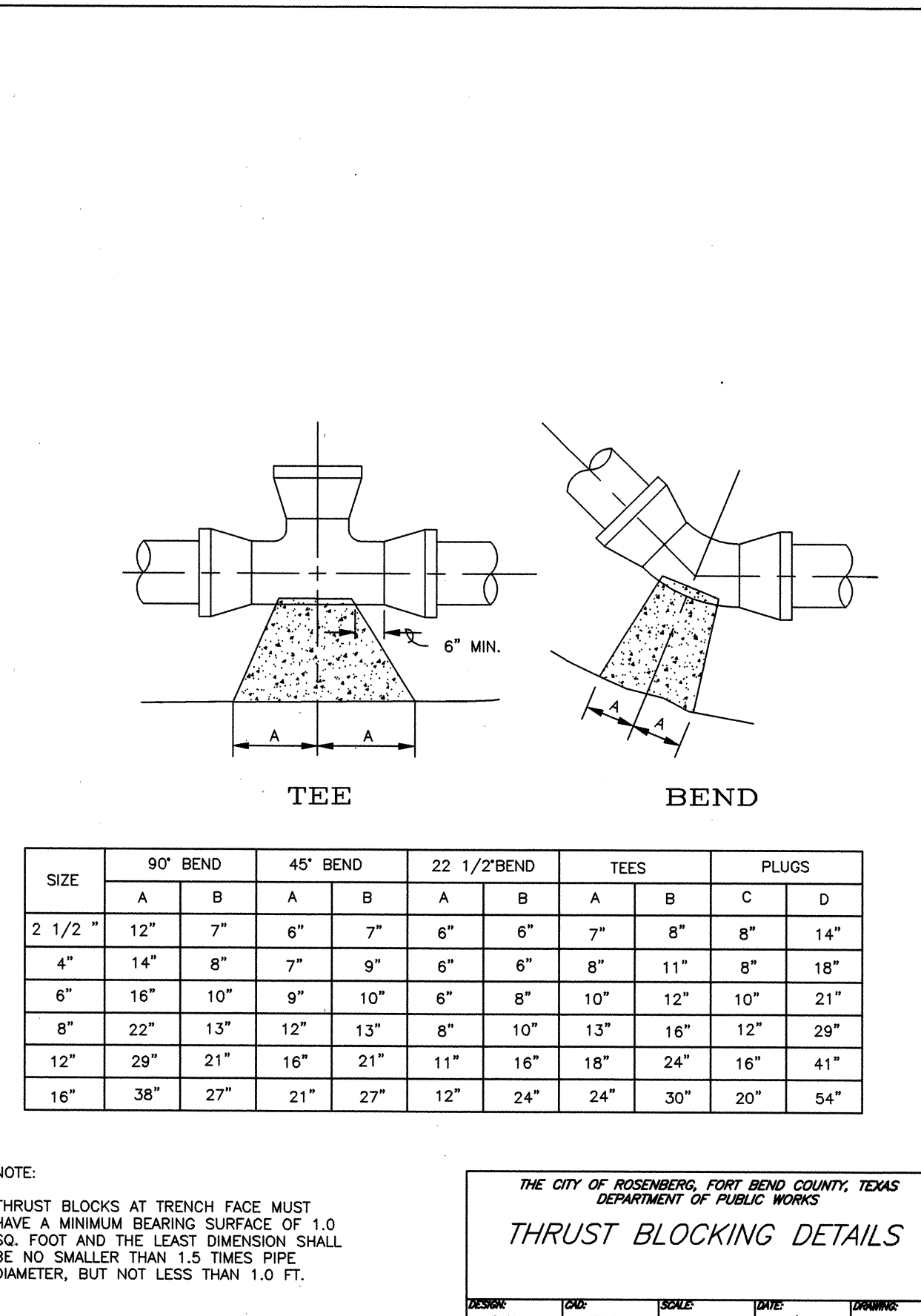
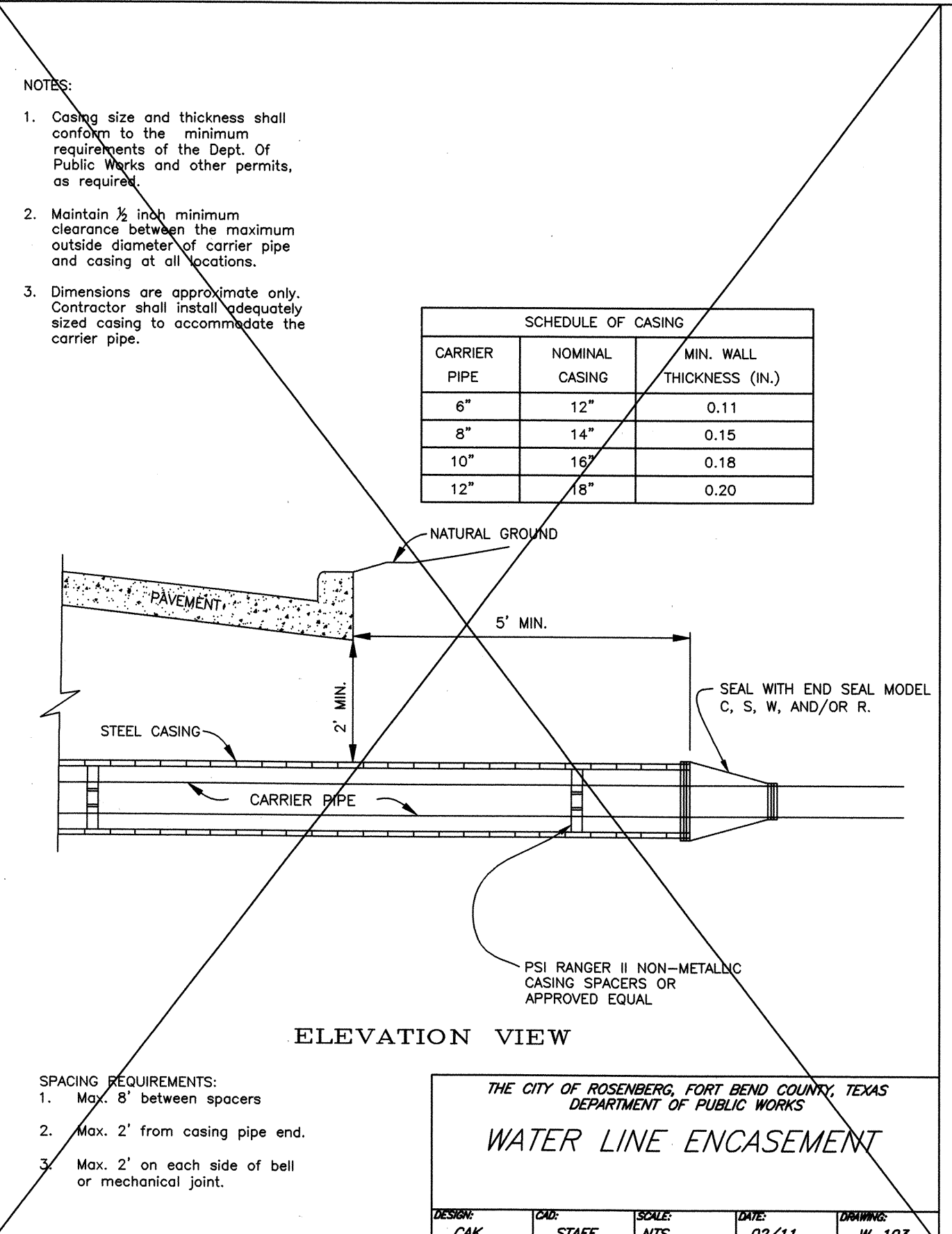
VERIFICATION OF PRIVATE UTILITY LINES

Date: _____
CenterPoint Energy/Natural Gas Facilities Verification ONLY.
(This Signature verifies that you have shown CNP Natural Gas lines correctly -not to be used for conflict verification.) (Gas service lines are not shown.)
Signature Valid for six months.
Date: _____
CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.
(This Signature verifies existing underground facilities -not to be used for conflict verification.)
Signature Valid for six months.
Date: _____
Approved for AT&T Texas/SWBt underground conduit facilities only.
Signature valid for one year

**WALNUT CREEK SEC. 14
WATER LINE DETAILS AND TCEQ NOTES**



VERT: N/A
HORIZ: N/A
SHEET
17 OF 24 SHEETS



FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 10/27/17

[Signature]
9/6/2017

STATE OF TEXAS
BRIAN D. GEROULD
108604
LICENSED PROFESSIONAL ENGINEER

13430 NW. Freeway Suite 700
Houston, TX 77040
713.462.3178
TBPE F-002726
TBPLS 10110700

IDS Engineering Group

APPROVED: B.D.G. DATE: JUNE 2017
DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1594 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE 5.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 493.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHEAST OF A FENCE, 8.9 FT. SOUTHEAST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
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(This signature verifies existing underground facilities - not to be used for conflict verification.)
Signature Valid for six months.

Date: _____
Approved for AT&T Texas/SWB underground conduit facilities only.
Signature valid for one year.

WALNUT CREEK SEC. 14

WATER LINE DETAILS

CITY OF ROSENBERG

[City Seal]
FOUNDED 1883

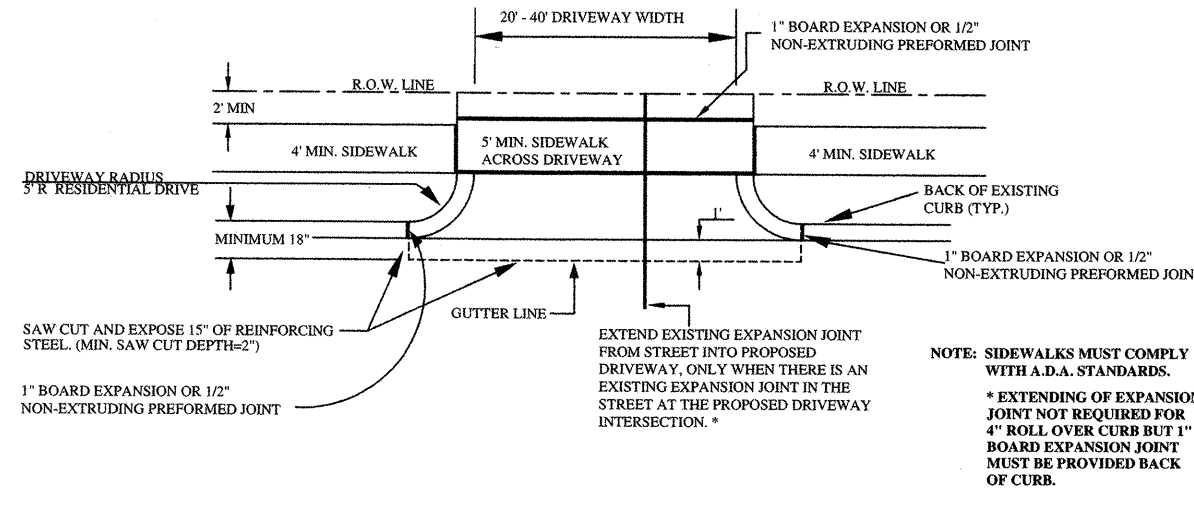
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HORIZ: N/A

SHEET
18 OF **24** SHEETS

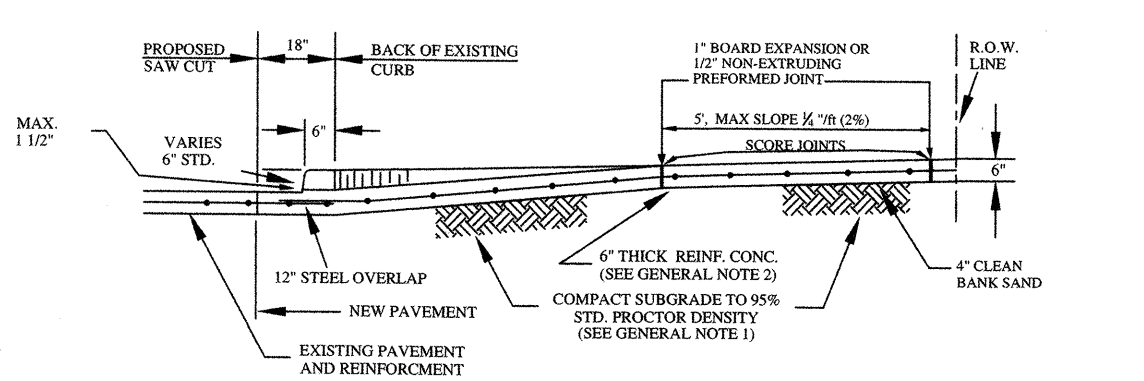
IDS Drawing No. _____

WHEN A RESIDENTIAL SIDEWALK, DRIVEWAY, CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY. FOR USE WITH CONCRETE OR ASPHALT CURB TYPE STREETS, USE SECTIONS APPLICABLE.

A. USE FOR ALL PROPOSED EXISTING CURB REMOVAL FOR DRIVEWAYS (PLAN VIEW NOT TO SCALE)



B. USE FOR ALL PROPOSED DRIVES ON CURBED TYPE STREETS



GENERAL NOTES:

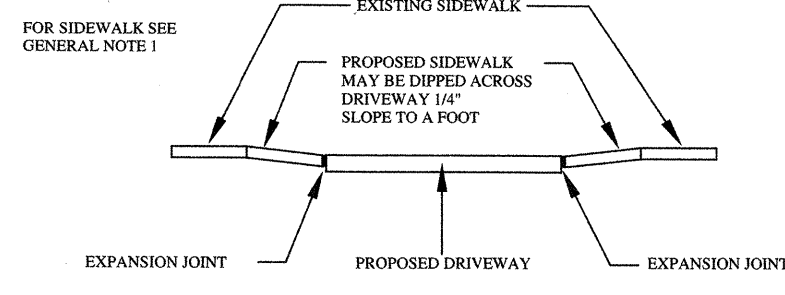
1. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO R.O.W. LINE. COMPACT TO 95% OF STANDARD PROCTOR DENSITY (4.2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
2. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615, GRADE 60, UNLESS NOTED) SPACED AT 24" C.C. EACH WAY, WITH 12" MINIMUM LAP FROM PROPOSED SAW CUT TO R.O.W. LINE.
3. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4" THICK, FROM PROPOSED SAW CUT TO R.O.W. LINE.
4. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4" THICK.

SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS RESIDENTIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: R. GOMEZ DATE REVISED: 11-1-05
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-010A

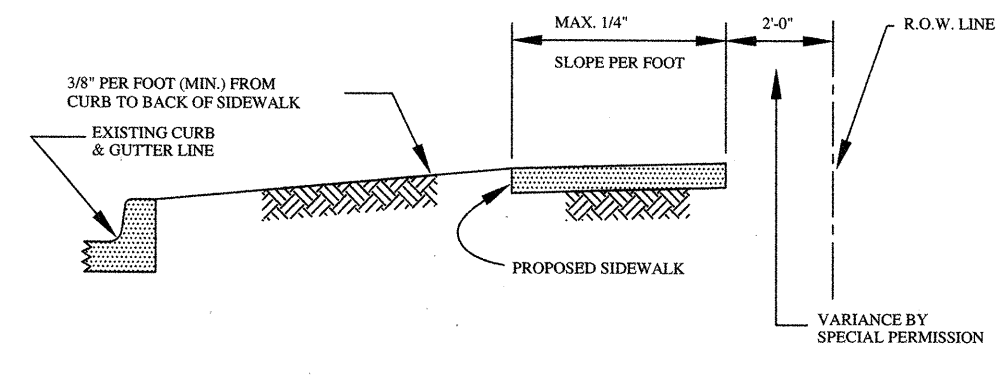
FORT BEND COUNTY ENGINEERING DEPARTMENT

WHEN A RESIDENTIAL SIDEWALK, DRIVEWAY, CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY. FOR USE WITH CONCRETE OR ASPHALT CURBED TYPE STREETS, USE SECTIONS APPLICABLE.

C. USE WHEN PROPOSED DRIVEWAY IS TO BE BUILT WITH EXISTING SIDEWALKS WITH EXCESSIVE GRADE:



D. USE WHEN SIDEWALK TO BE BUILT OTHER THAN DRIVEWAY:



GENERAL NOTES:

1. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4" THICK AND MINIMUM 4" WIDTH.

SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS RESIDENTIAL AREA	DRAWN BY: L. BRDECKA DATE DRAWN: 2-1-94	REVISED BY: R. GOMEZ DATE REVISED: 11-1-05
	APPROVED BY: L. HOOD DATE: 2-1-94	DRAWING NO. FBC-010B

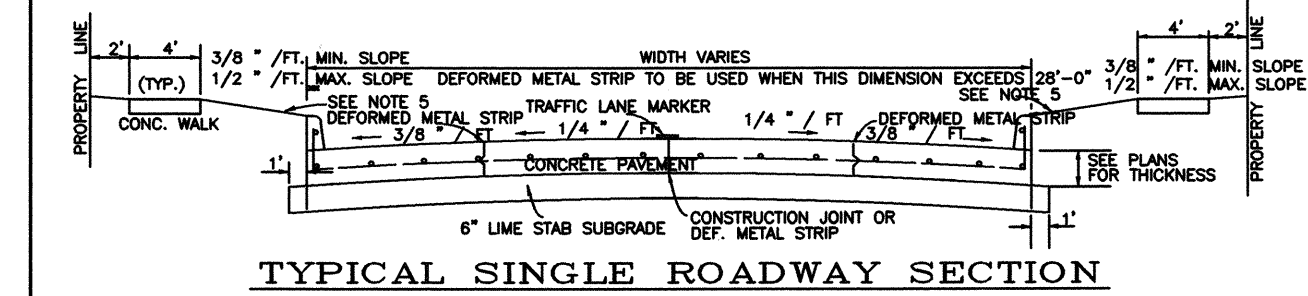
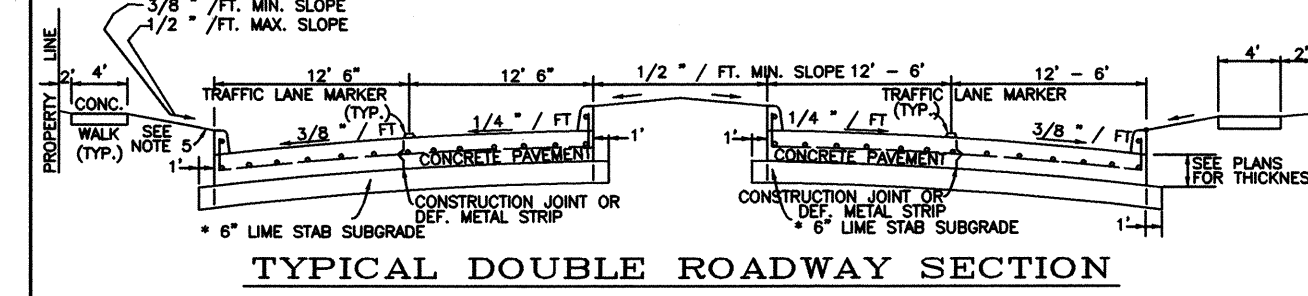
FORT BEND COUNTY ENGINEERING DEPARTMENT

GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

1. PROPOSED DRIVEWAY, SIDEWALK, CURB, GUTTER LINE AND GRADE SHALL MATCH EXISTING STREET.
2. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT, CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH.
3. PROPOSED DRIVEWAY AND CURB SHALL BE BUILT WITH PORTLAND CEMENT CONCRETE, CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301), 8 INCHES THICK, FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE AND TO BE REINFORCED WITH #4 DEFORMED REINFORCING BARS (MINIMUM ASTM A615 GRADE 60, UNLESS NOTED) SPACED AT 24 INCHES O.C., EACH WAY, WITH 10 INCHES MINIMUM LAP.
4. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM 12 INCHES LAP.
5. PROPOSED GUTTER LINE IS TO BE MAINTAINED AT FACE OF EXISTING CURB.
6. SAW CUT EXISTING CURB AT EACH END OF PROPOSED DRIVEWAY AND KNOCK OUT EXISTING CURB.
7. SAW CUT EXISTING PAVEMENT MINIMUM 2 INCHES AND BREAK OUT TO EXPOSE EXISTING REINFORCING STEEL AT LEAST 12 INCHES AT PROPOSED DRIVEWAY INTERSECTION. FULL DEPTH CUT IS ACCEPTABLE PROVIDED 18" LONG DRILL IN BOWLS ARE INSTALLED AT A SPACING TO MATCH EXISTING WITH A MIN. 6" EMBEDMENT.
8. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTOR DENSITY (4.2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS IF HE DEEMS THEM NECESSARY.
9. PLACE AND COMPACT 4 INCH CLEAN BANK SAND.
10. PROPOSED AREA FROM BACK OF CURB TO SIDEWALK AND FROM SIDEWALK TO RIGHT-OF-WAY LINE MAY BE CONCRETE OR DIRT (ROADWAYS WITH CURBS AND SIDEWALKS).
11. IF MORE THAN ONE PROPOSED DRIVEWAY IS BUILT ON THE SAME PROPERTY, SAID DRIVEWAYS SHALL BE SEPARATED BY A MINIMUM DISTANCE OF AT LEAST 20 FEET (ROADWAYS WITH CURBS AND SIDEWALKS).
12. SIDEWALKS SHALL HAVE 3/4 INCH REDWOOD BOARD EXPANSION JOINTS EVERY 20 FEET ON CENTER.
13. PLACE ONE-INCH BOARD EXPANSION JOINT AT RIGHT-OF-WAY LINE.
14. EXPANSION JOINT FILLER SHALL BE FINE FORMED CONFORMING TO ASTM M-33 OR M-213 BETWEEN SIDEWALK AND CURB, AROUND FIRE HYDRANTS AND UTILITY POLES.

CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS RESIDENTIAL AREA	APPROVED BY: LOUIS E. HOOD, P.E. DATE DRAWN: 10-4-95 REVISED: 4-7-09	DRAWN BY: L. BRDECKA DATE: 2-1-94 DRAWING NO.: FBC-010C
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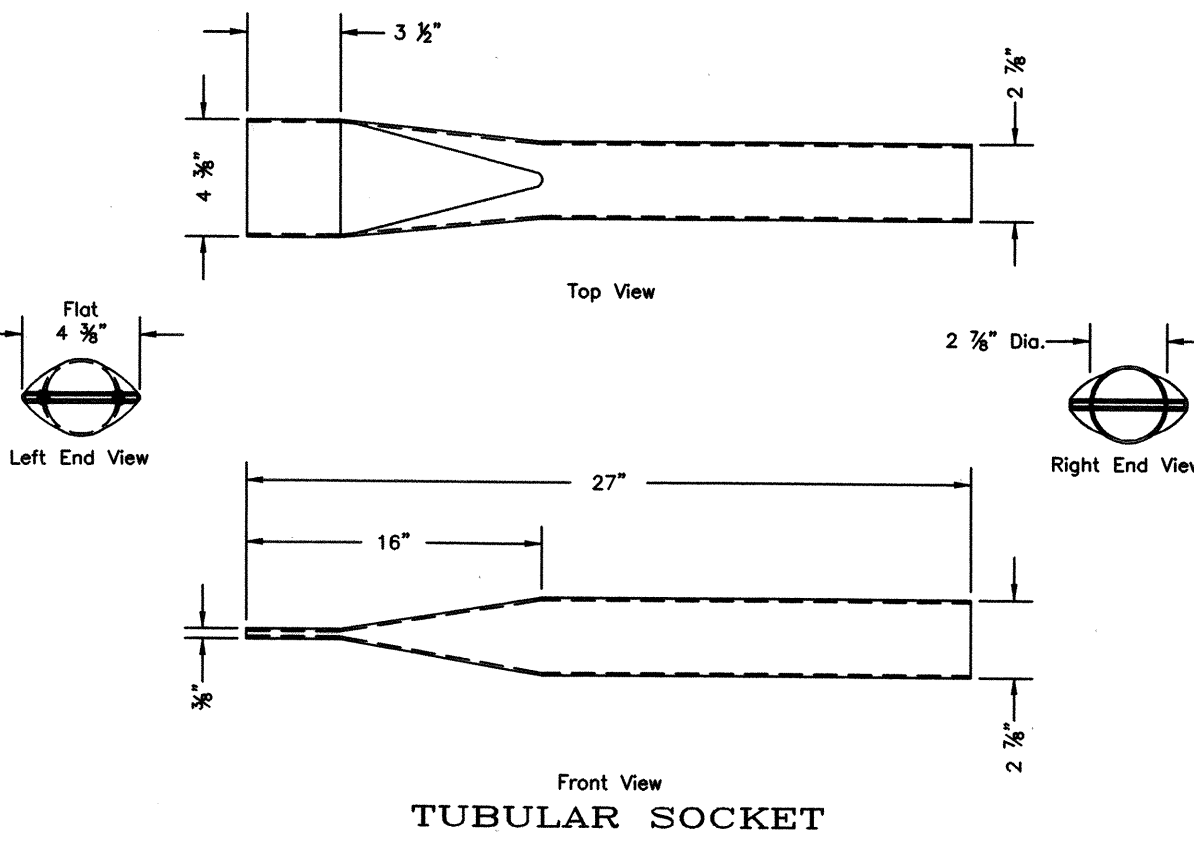
FORT BEND COUNTY ENGINEERING DEPARTMENT



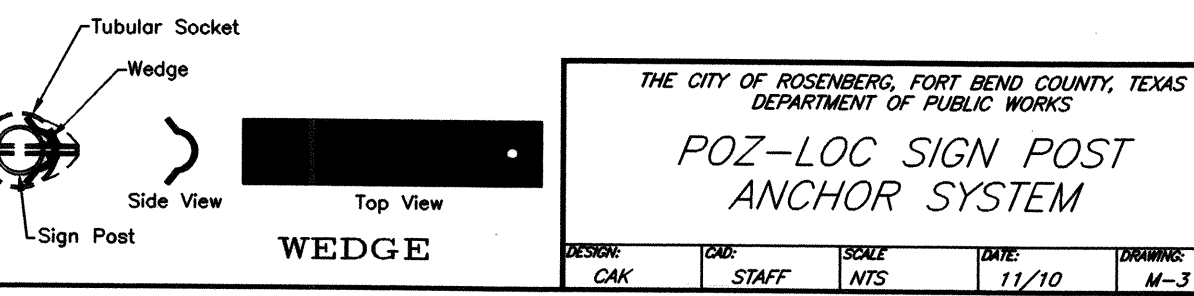
- MINIMUM REINFORCEMENT SCHEDULE
Six (6) inch pavement ~ # 4 - 24" O.C.E.W.
Seven (7) inch pavement ~ # 4 - 18" O.C.E.W.
- NOTES:
1. All reinforcing steel shall conform to ASTM A-615, current grade 40. Minimum lap at splices shall be 10'.
 2. Concrete shall be a minimum of five (5) 1/2 sacks of cement per cubic yard of concrete, compressive strength 3500 psi at 28 days.
 3. The location of construction joints and deformed metal strips may be varied, with the approval of the Department of Community Services, to suit the proposed construction methods of the Contractor. The minimum width between longitudinal joints shall not exceed 14'-0".
 4. 6" lime stabilized subgrade shall be a minimum of 6% lime, unless specifically approved by the Department of Community Services.
 5. The slope behind pavement may be increased, with approval of the Public Works.
 6. Maximum expansion joint spacing shall not exceed 60'.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS DEPARTMENT OF PUBLIC WORKS ROADWAY CROSS-SECTION				
DESIGNER: CAK	CHECKER: STAFF	SCALE: NTS	DATE: 12/10	DRAWING: P-108

FORT BEND COUNTY ENGINEERING DEPARTMENT

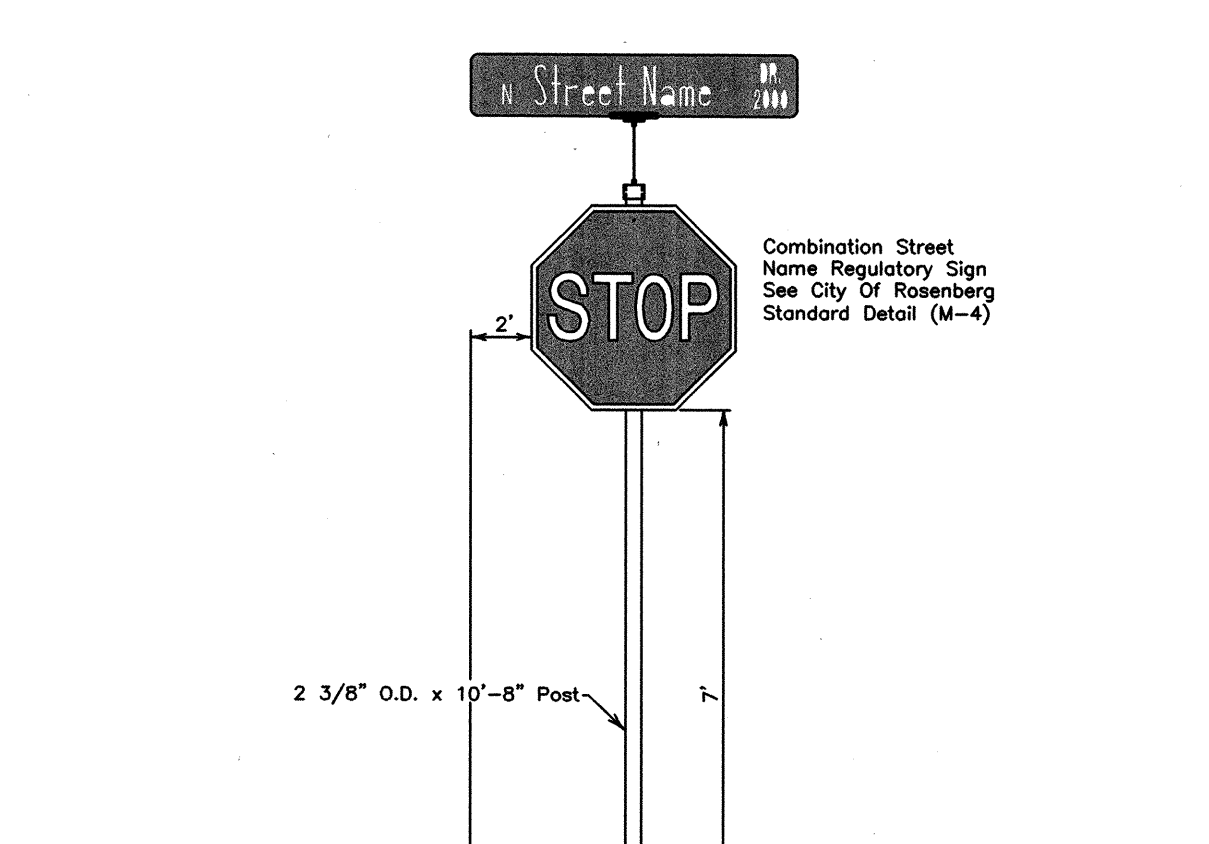


- NOTE:
1. POZ-LOC Sign Post Anchor System consists of a Galvanized Traffic Post (2 3/8" O.D.) that may be ordered with Sign Brackets or with Pre-Punched 15 Hole Pattern, Tubular Socket (2 7/8" O.D. x 27" Long 12 Ga. Wall Thickness), Wedge (Locks Traffic Post into Tubular Socket)
 2. POZ-LOC Anchor System Tools needed to install or remove are Socket Driver, Drive Cap, and Wedge Puller.
 3. To Install POZ-LOC Anchor System, with Drive Cap in place on end of Drive Socket drive the Tubular Socket into ground (orient flat end of socket parallel to sign face) using the Socket Driver (or mechanical hammer). Insert Sign Post into Tubular Socket and orient sign to roadway. Insert POZ-LOC Wedge with hole up, between Traffic Post and the Tubular Socket interior and drive the Wedge until the bottom of the hole is within 4" (four inches) of the Tubular Socket Rim. The Wedge Puller can be used if the Wedge needs to be removed by inserting it between Sign Post and Tubular Socket and driving it out.

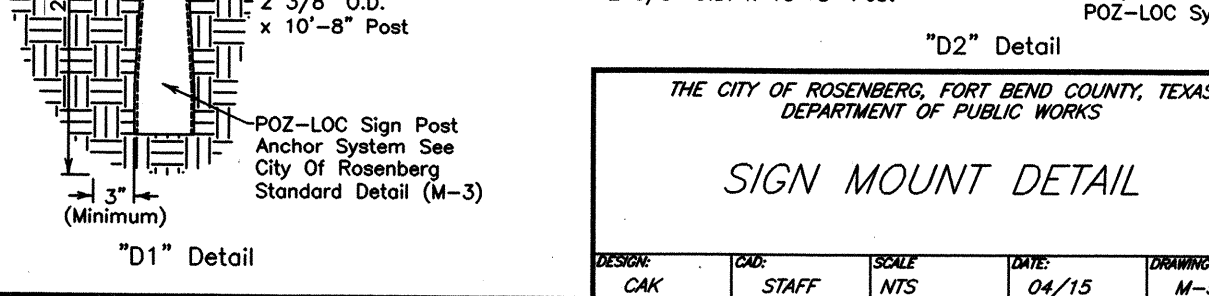


THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS DEPARTMENT OF PUBLIC WORKS POZ-LOC SIGN POST ANCHOR SYSTEM				
DESIGNER: CAK	CHECKER: STAFF	SCALE: NTS	DATE: 11/10	DRAWING: M-3

FORT BEND COUNTY ENGINEERING DEPARTMENT

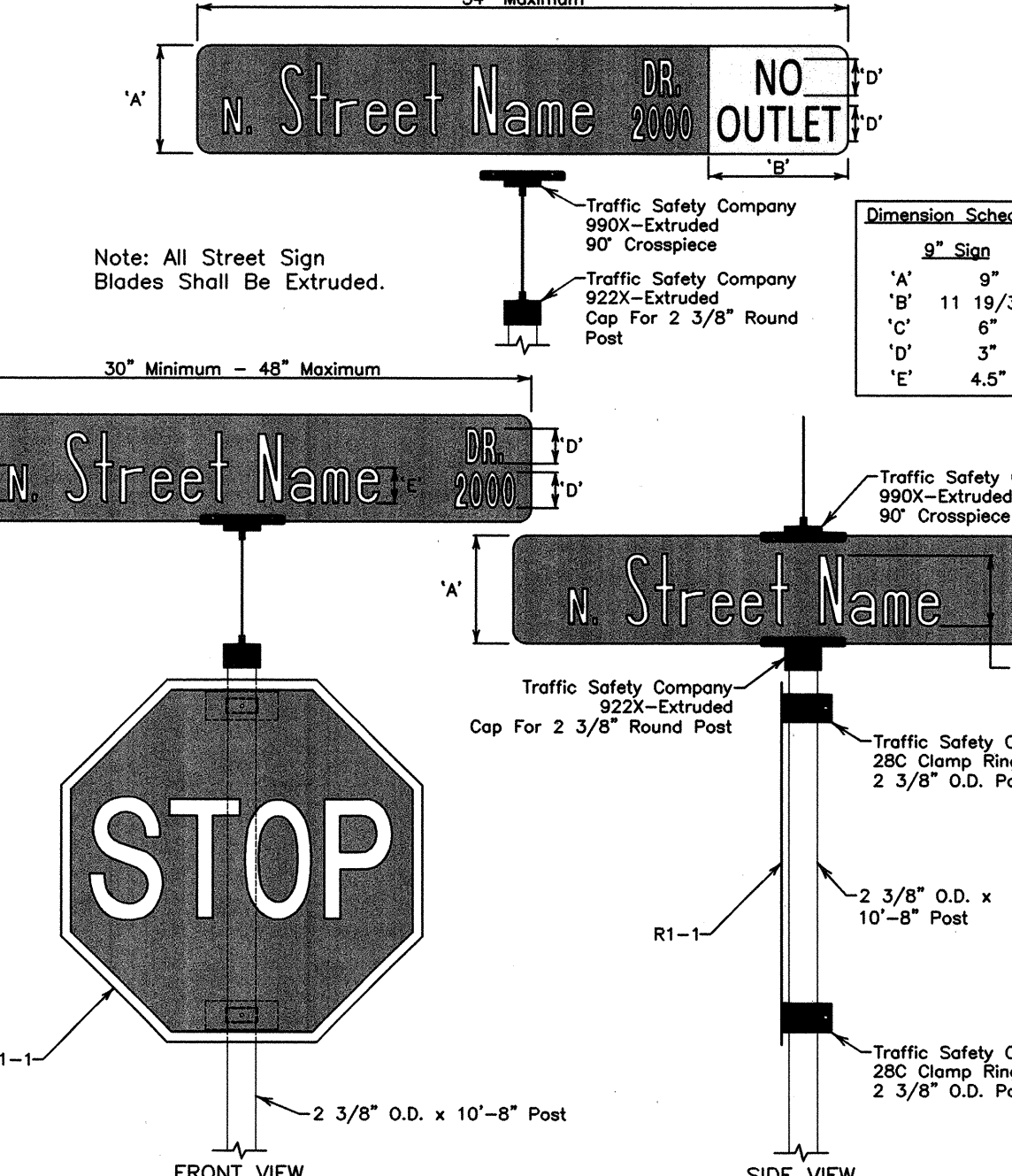


- NOTE:
Concrete Shall Be Placed 8" Around POZ-LOC Sign Post Anchor System At A Minimum of 12" Thick.



THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS DEPARTMENT OF PUBLIC WORKS SIGN MOUNT DETAIL				
DESIGNER: CAK	CHECKER: STAFF	SCALE: NTS	DATE: 04/15	DRAWING: M-5

FORT BEND COUNTY ENGINEERING DEPARTMENT

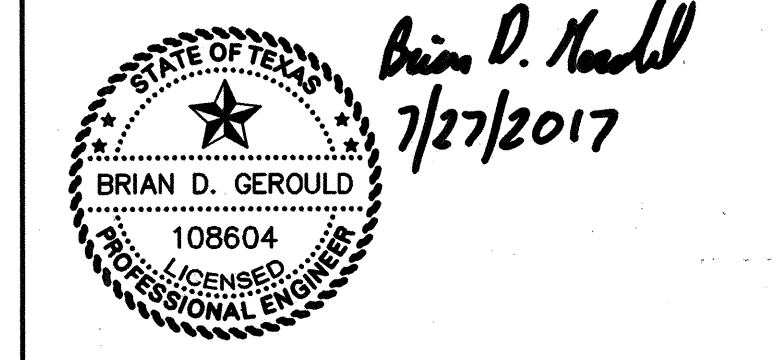


- NOTE:
1. All Signs Shall Be Aluminum in Accordance With Design Standards.
 2. Street Name Sign Showing Shall Be Scotelite or Approved Equal, Color Being Green, Electrolite Film #1177.
 3. All Street Signs Shall Be Nine (9) Inches in Height. Minimum Sign Length Shall Be Thirty (30) Inches.
 4. Maximum Sign Length Shall Be Forty Eight (48) Inches.
 5. When "NO OUTLET" is Included, the Maximum Sign Length Shall Be Fifty Four (54) Inches.
 6. Abbreviated Road Classification and Hundred Block Letters and Numbers Shall Be Three (3) Inch Block on Yellow Background.
 7. "NO OUTLET" Shall Be Three (3) Inch Block on Yellow Background.
 8. Street Names Shall Be Upper & Lower Case Letters of White Six (6) Inches Helvetica Medium Font Style With 1 1/4" Stroke Width. To Accommodate Longer Street Names, Alternative Stroke Widths May Be Used.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS DEPARTMENT OF PUBLIC WORKS COMBINATION STREET NAME REGULATORY SIGN DETAIL				
DESIGNER: CAK	CHECKER: STAFF	SCALE: NTS	DATE: 07/15	DRAWING: M-4

FORT BEND COUNTY ENGINEERING DEPARTMENT

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: *Maxi*
DEVELOPMENT COORDINATOR
DATE: 10/27/17



IDS Engineering Group
13430 NW. Freeway Suite 700
Houston, TX 77040
713.462.3178
TBP# F-002726
TBP#S 10110700

APPROVED: B.D.G.	DATE: JUNE 2017
DESIGNED BY: B.A.S.	DRAWN BY: M.E.E.
JOB NO.: 1278-029-00	

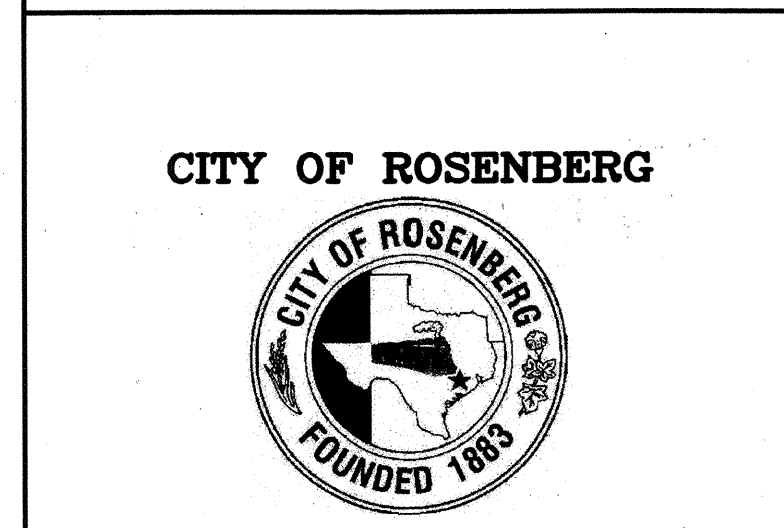
VERIFICATION OF PRIVATE UTILITY LINES

CenterPoint Energy/Natural Gas Facilities Verification ONLY.
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Signature Valid for six months.

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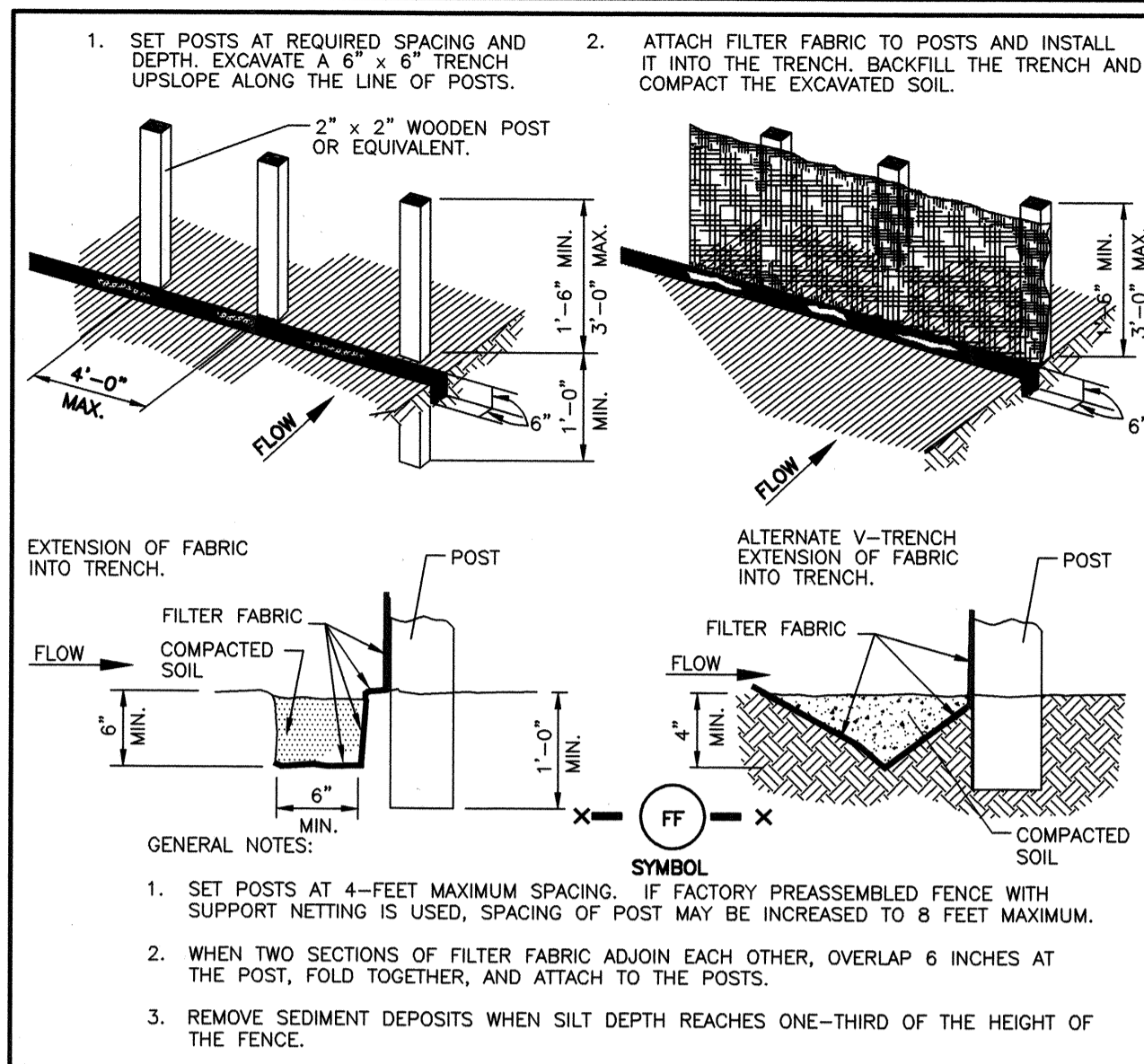
Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year

WALNUT CREEK SEC. 14
PAVING DETAILS 2

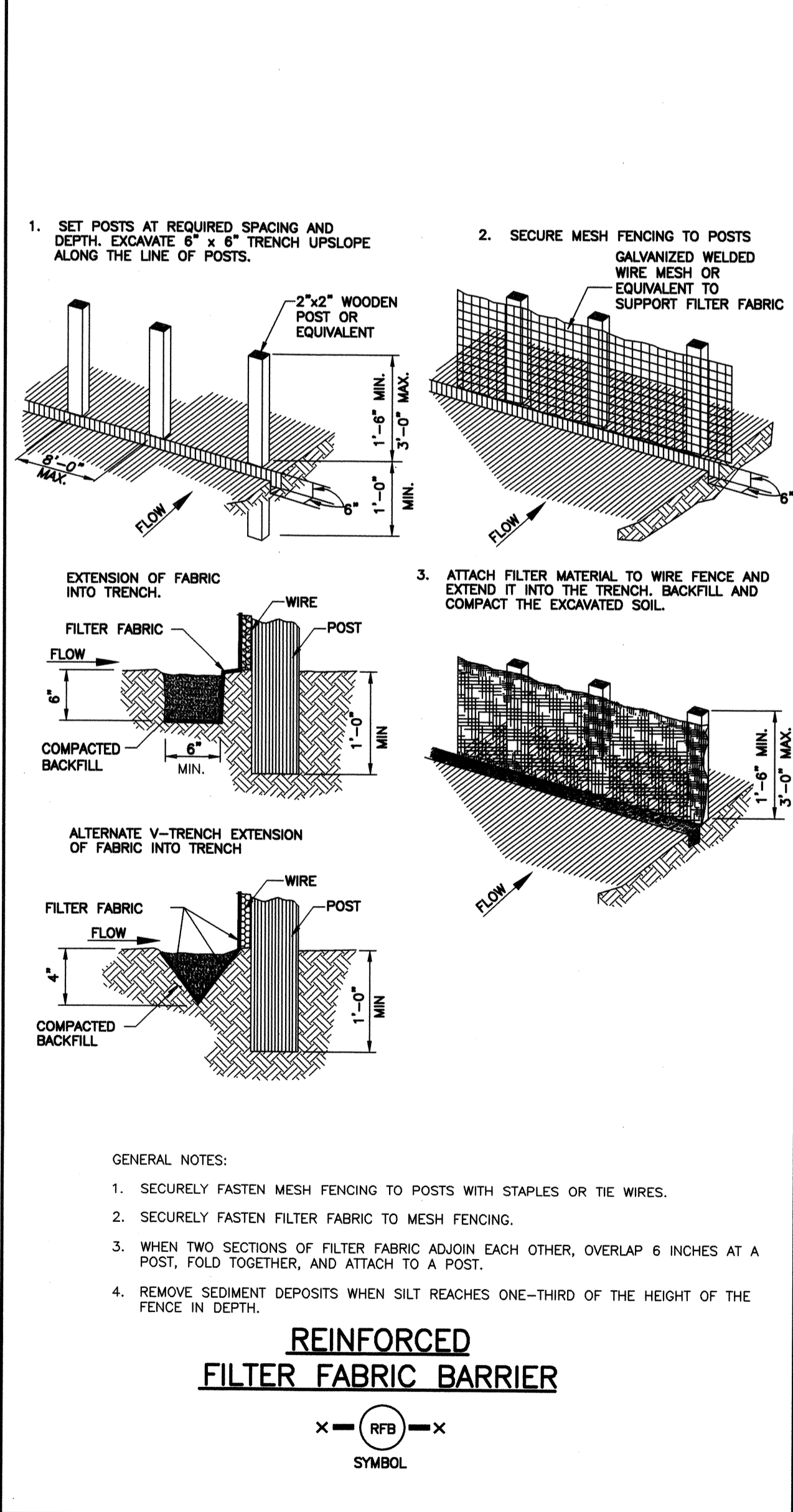


VERT: N/A
HORIZ: N/A
SHEET 20 OF 24 SHEETS

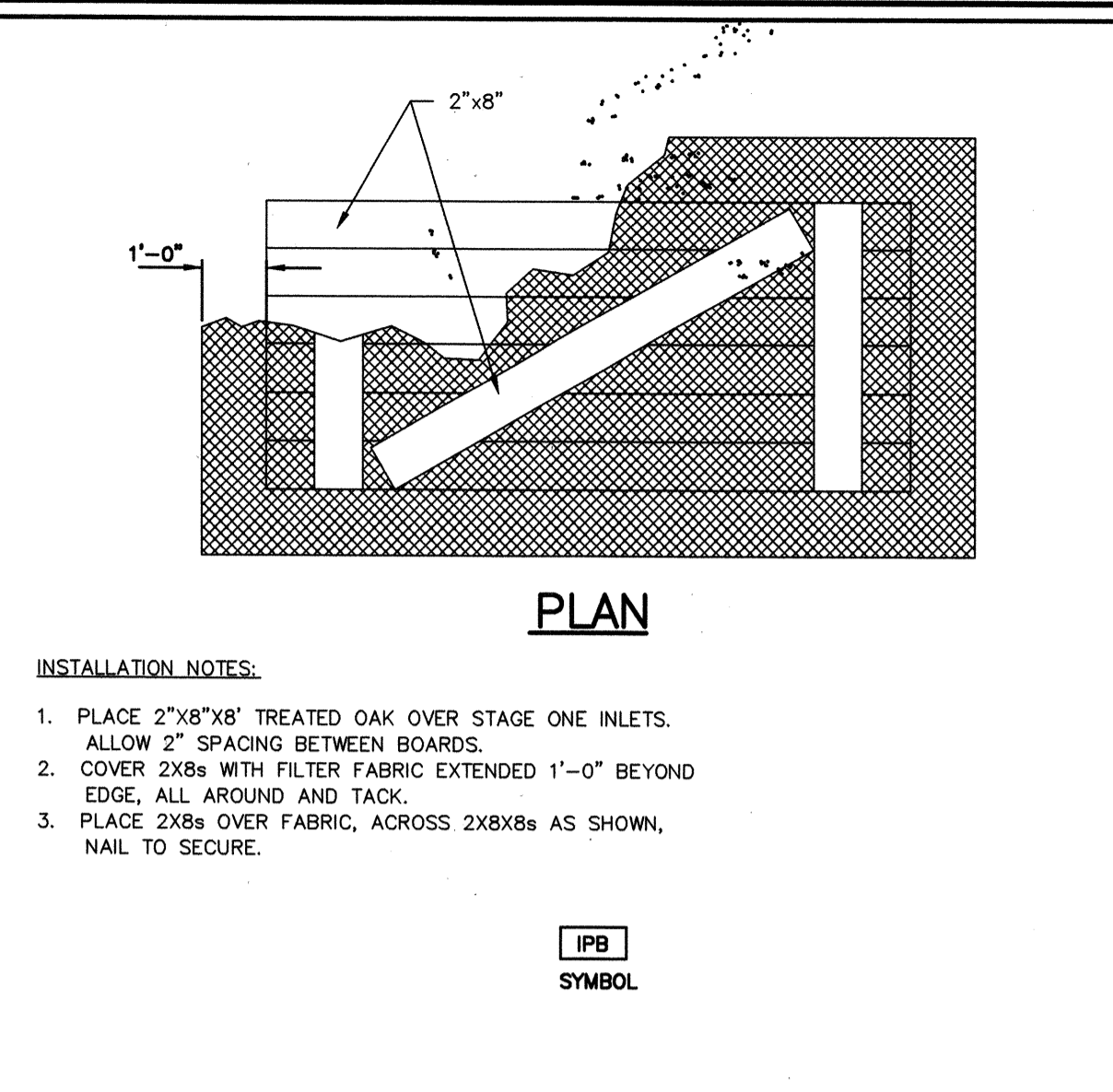
IDS Drawing No.



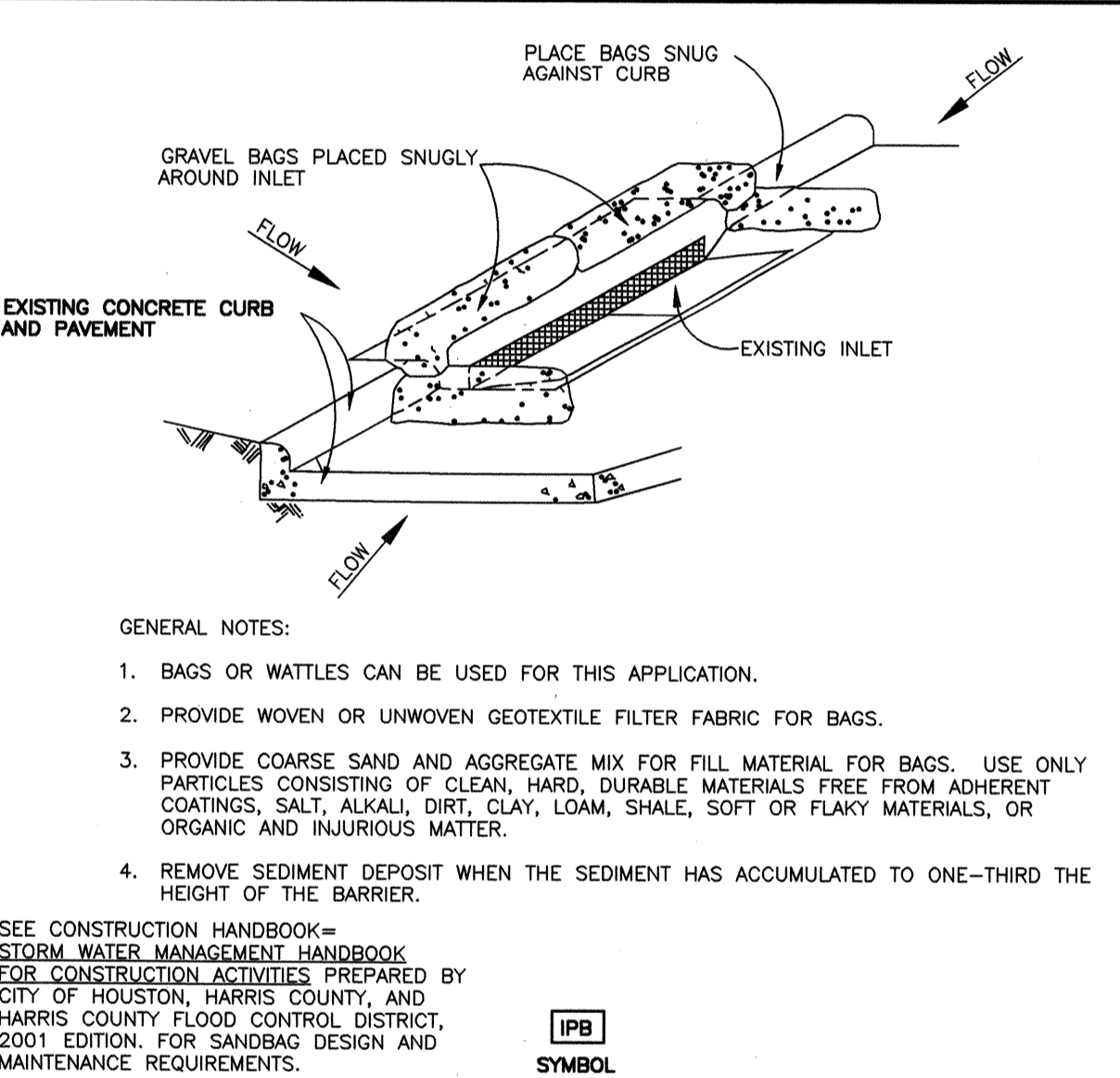
FILTER FABRIC FENCE



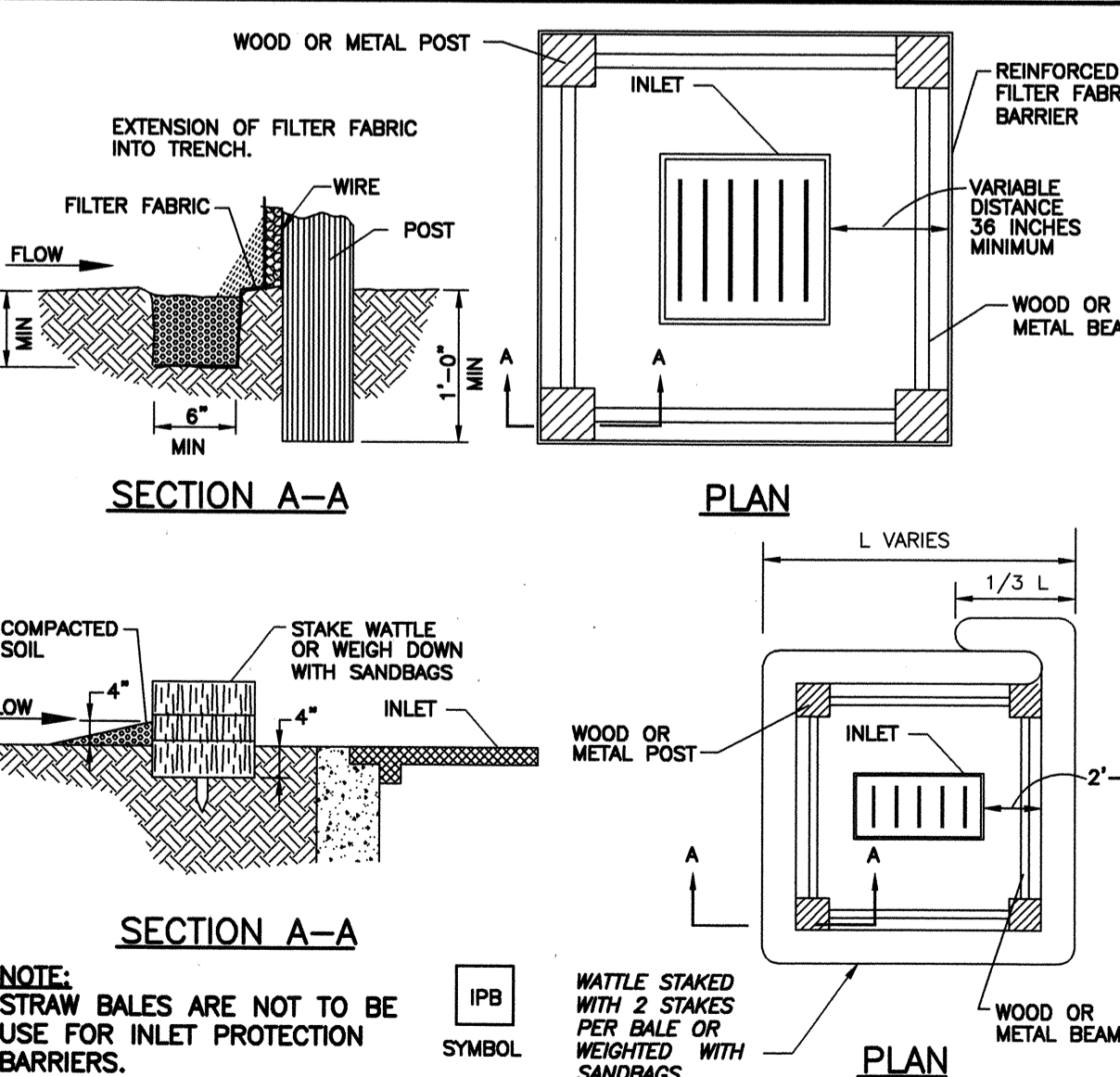
REINFORCED FILTER FABRIC BARRIER



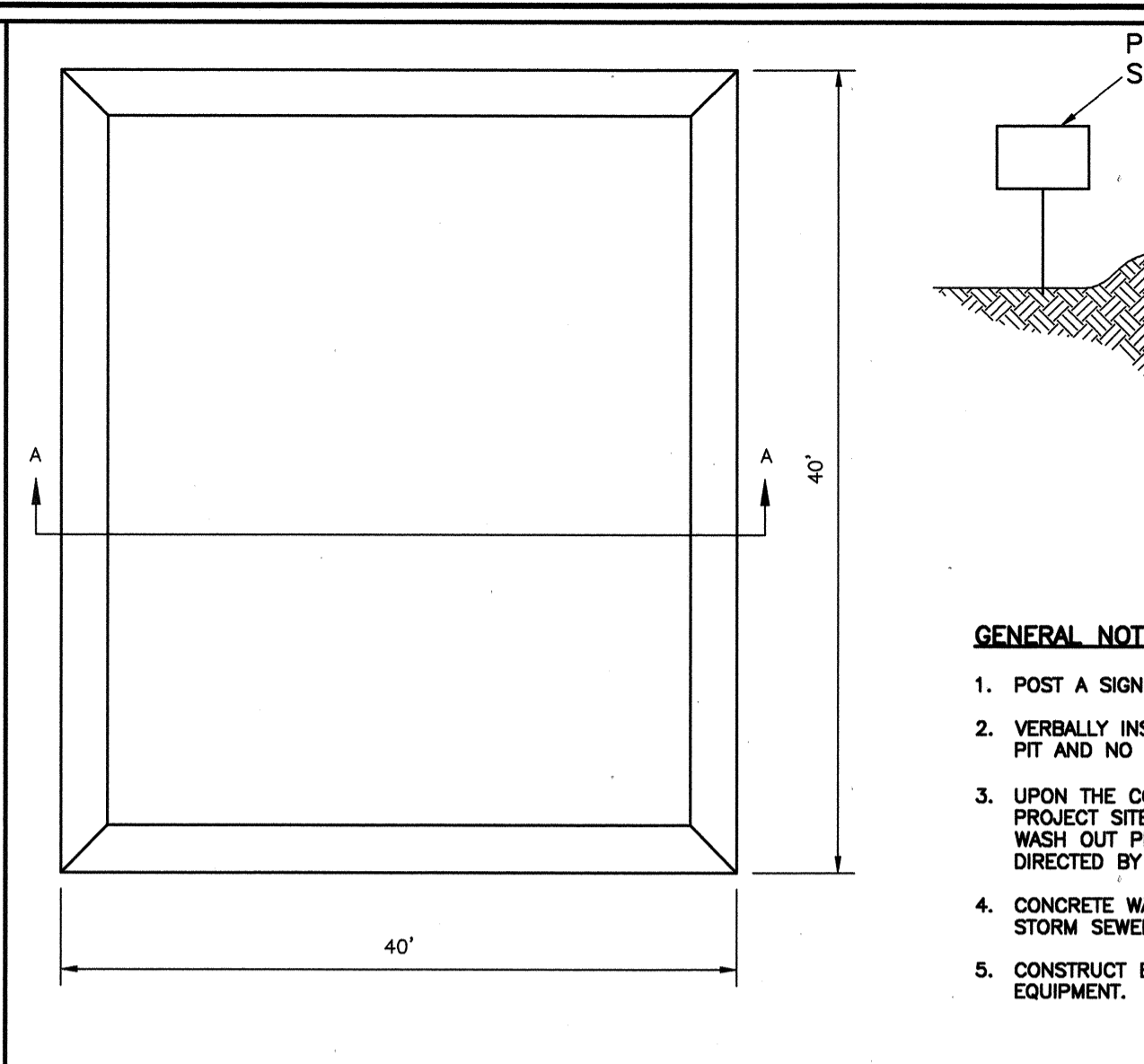
PROTECTION BARRIER FOR STAGE I CURB INLETS



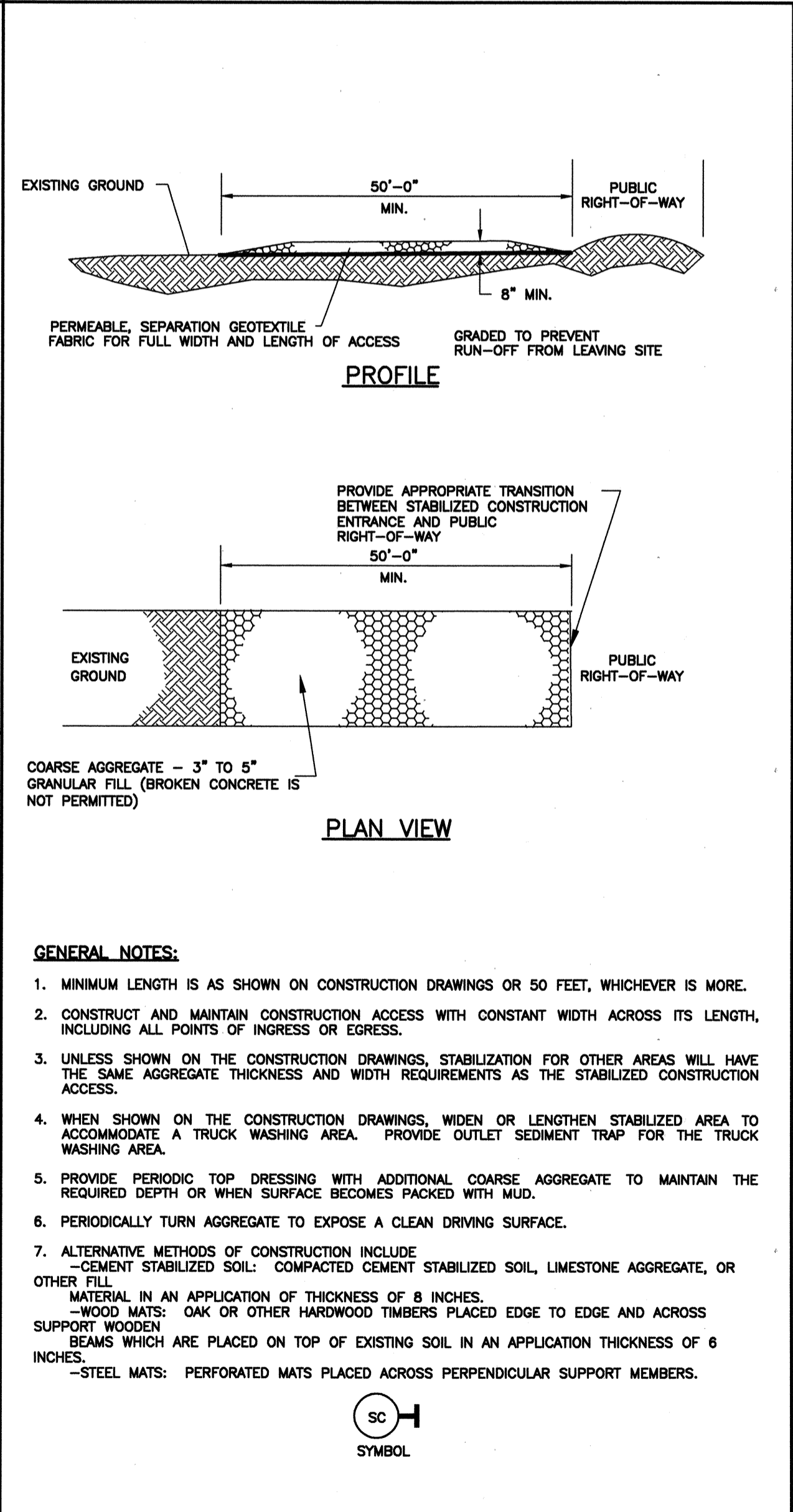
INLET PROTECTION BARRIERS FOR STAGE II INLETS



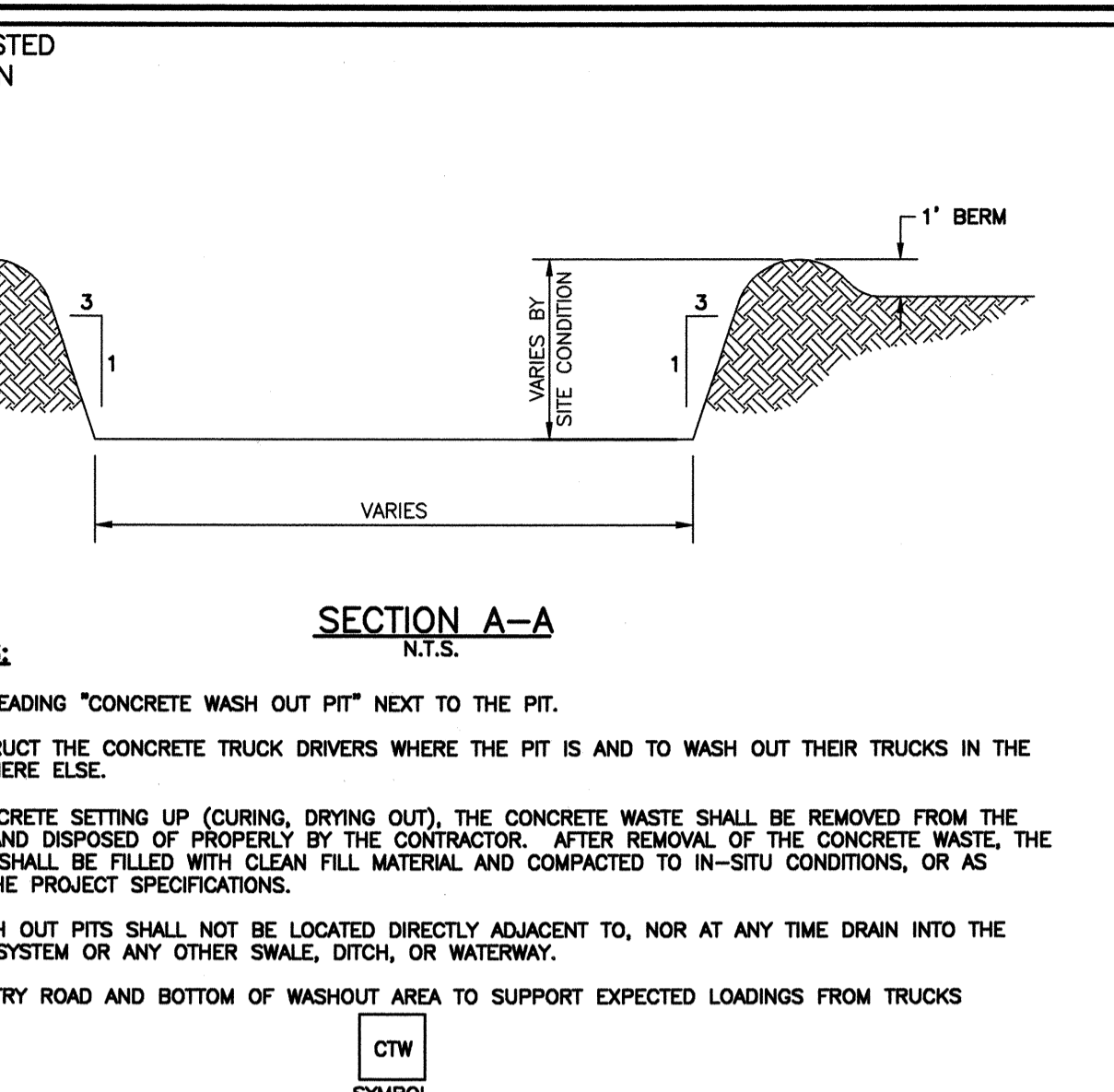
REINFORCED FILTER FABRIC INLET PROTECTION BARRIER



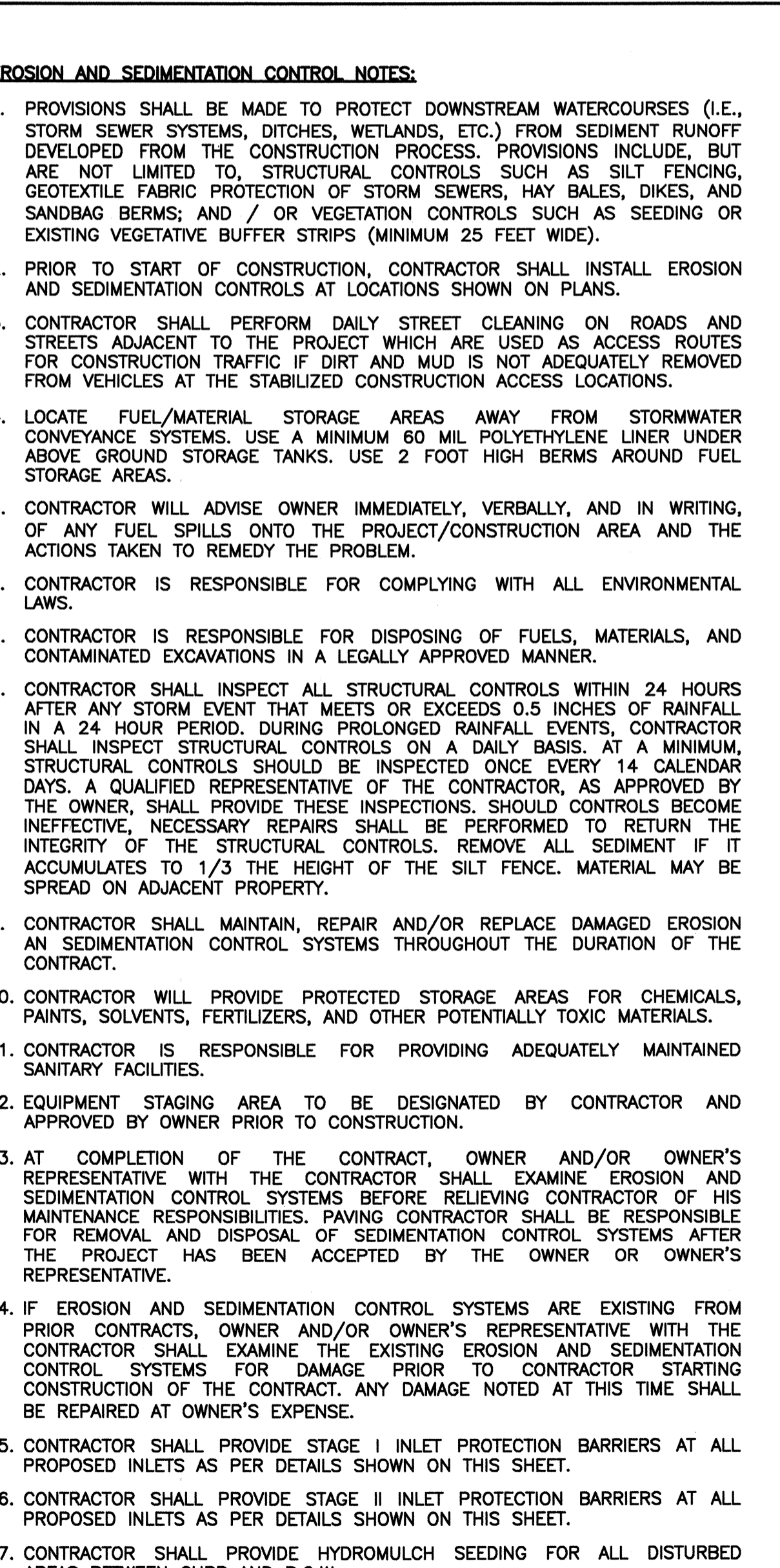
CONCRETE TRUCK WASHOUT AREA



STABILIZED CONSTRUCTION ACCESS



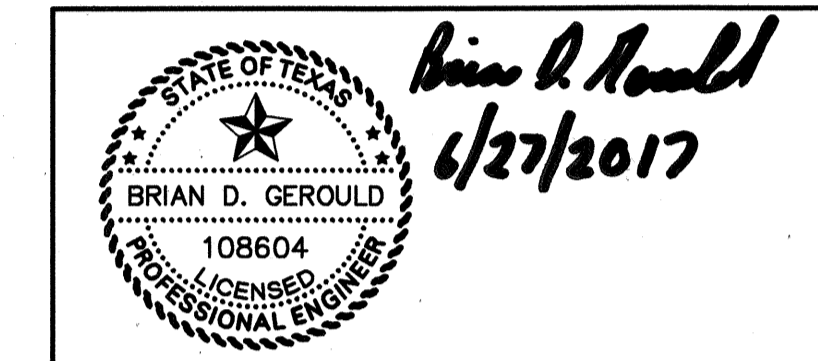
EROSION AND SEDIMENTATION CONTROL NOTES



STABILIZED CONSTRUCTION ACCESS

NO.	DATE	REVISIONS

FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *Mandi*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17



IDS Engineering Group
 13430 NW Freeway Suite 700
 Houston, TX 77040
 713.462.3178
 T895 F-002726
 T895 J0110700

APPROVED: B.D.G. DATE: JUNE 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00
 BENCHMARK: AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.65 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S. 25 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHWEST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHWEST OF A JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHWEST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
 NAVD 88 (2011 ADJ.) ELEVATION = 75.10

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 NOTICE: For your safety, you are required by Texas Law to call 811 at least 48 hours before you dig so that underground line can be marked. This Verification does not fulfill your obligation to call 811.

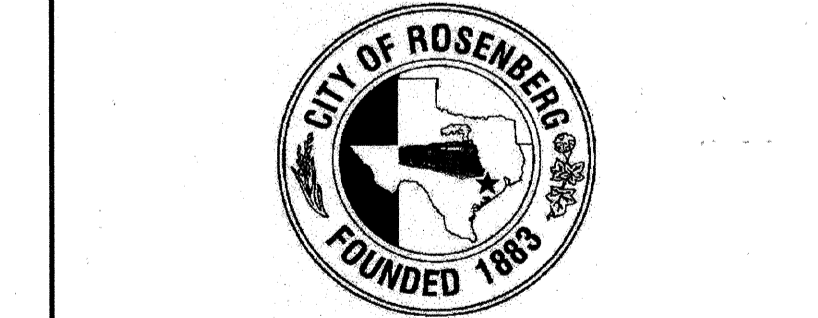
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 Date: _____
 Approved for AT&T Texas/SWB underground conduit facilities only.
 Signature valid for one year

WALNUT CREEK SEC. 14

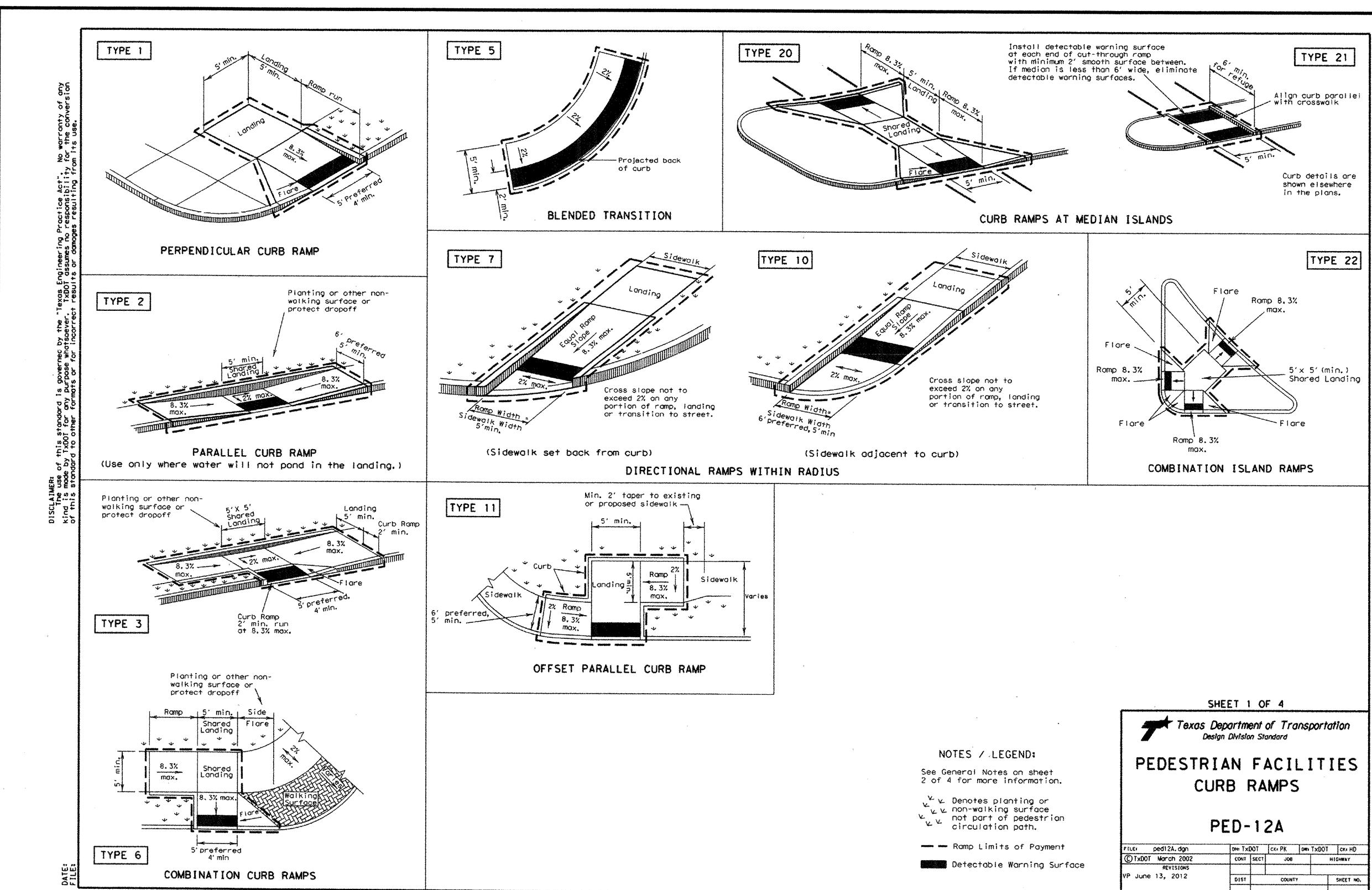
POLLUTION PREVENTION DETAILS AND NOTES

CITY OF ROSENBERG



VERT: N/A
 HORIZ: N/A
 SHEET: 21 OF 24 SHEETS

APP.	
REV.	
DATE	
NO.	



SHEET 1 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE	DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	DATE
	06/13/12								

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

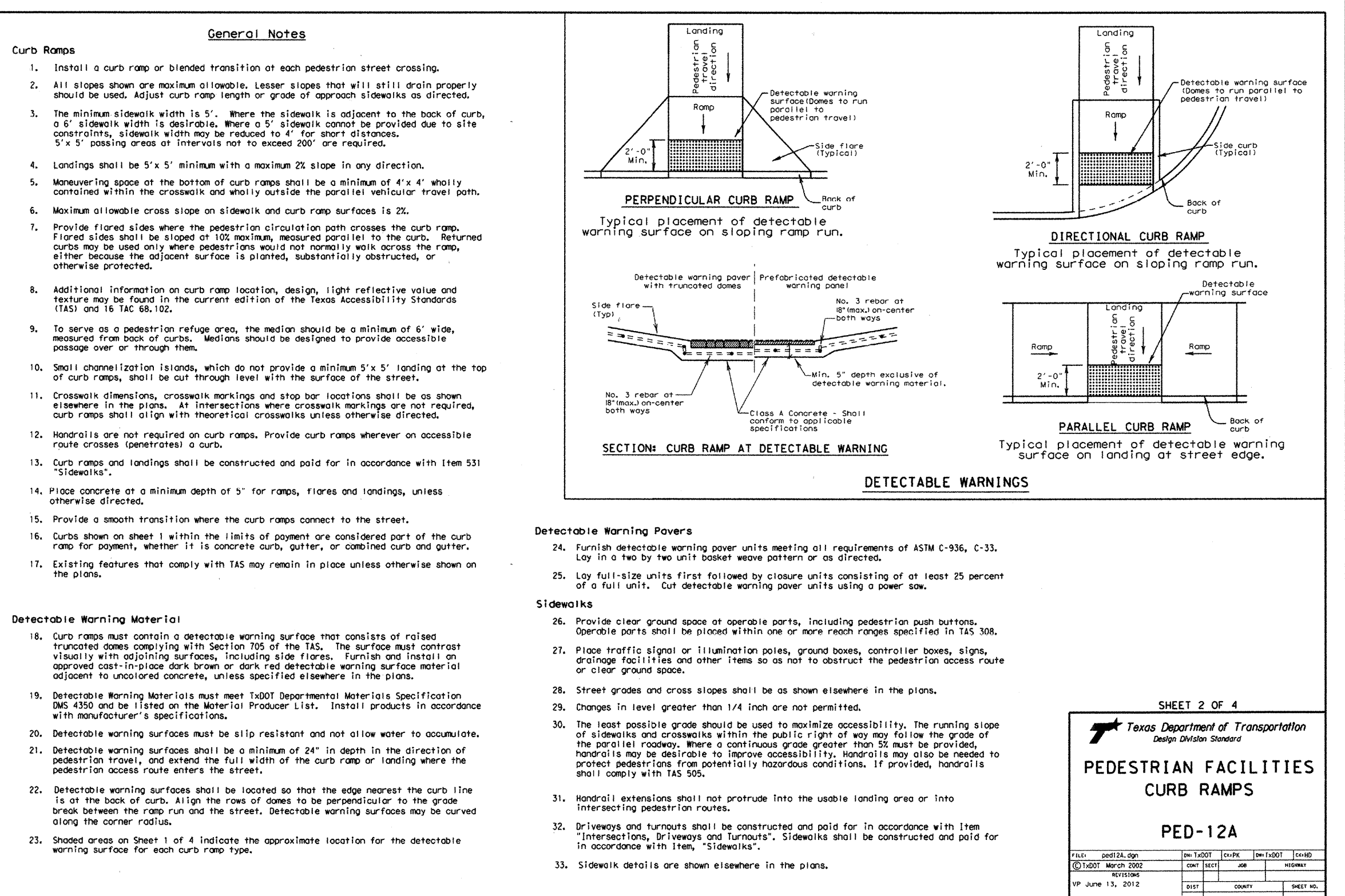
Planting or other non-walking surface or protect support

5' x 5' (min.) Shared Landings

8.33 max. Ramp Slope

5' preferred min. Ramp Limits of Payment

Detectable Warning Surface



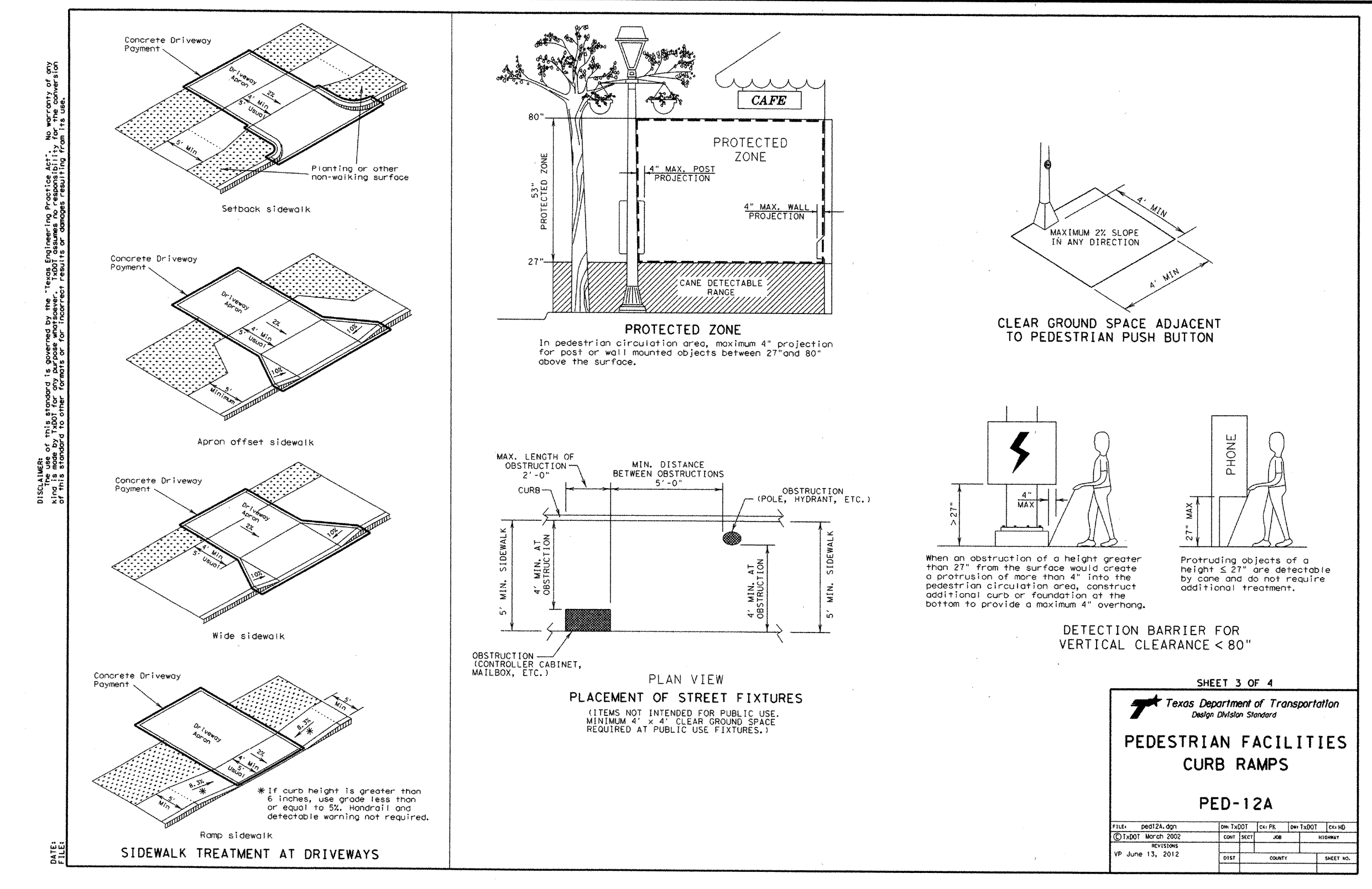
SHEET 2 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE	DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	DATE
	06/13/12								



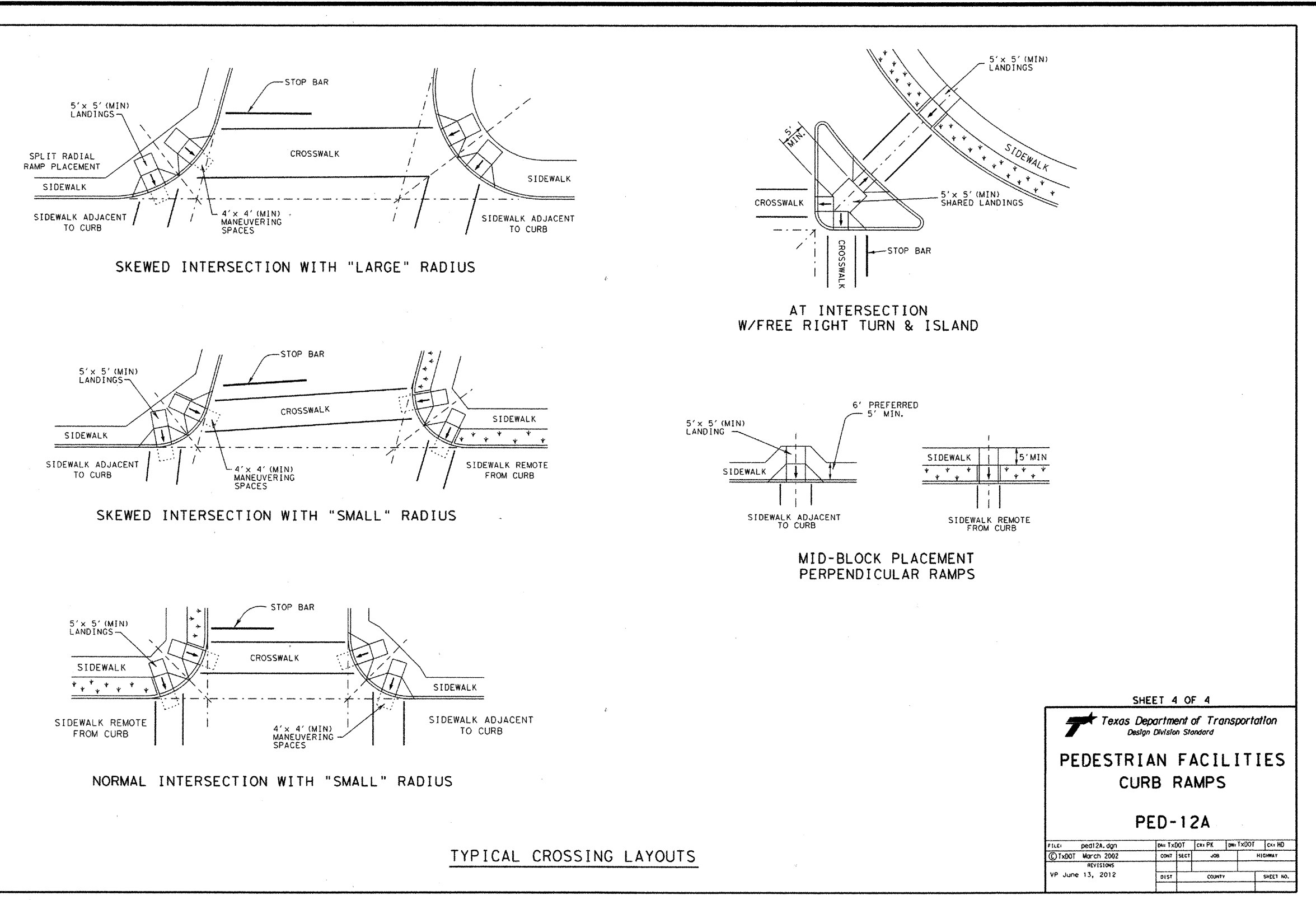
SHEET 3 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE	DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	DATE
	06/13/12								



SHEET 4 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE	DATE	BY	CHKD	APPD	DATE	BY	CHKD	APPD	DATE
	06/13/12								

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *Maxine*
DEVELOPMENT COORDINATOR

DATE: 10/27/17

Brian D. Gerould
6/27/2017

IDS
Engineering Group

13430 NW Freeway
Suite 700
Houston, TX 77040
713.462.3178
TMR# 002728
TBR# 10110700

APPROVED: **B.D.G.** DATE: **JUNE 2017**

DESIGNED BY: **B.A.S.** DRAWN BY: **M.E.E.** JOB NO.: **1278-029-00**

BENCHMARK:
AN NGS DISC STAMPED W 811 1943, LOCATED 13.00 MILES NORTHEAST FROM GUY, TX, AS FOLLOWS: 7.85 MILES NORTHEAST ALONG FARM ROAD 1994 FROM THE JUNCTION WITH STATE HIGHWAY 36 IN GUY, THENCE S.35 MILES NORTHEAST ALONG FARM ROAD 762, AT THE JUNCTION OF SMITHERS LAKE ROAD 49.5 FT. SOUTHEAST OF THE CENTERLINE OF FARM ROAD 762, 42.0 FT. SOUTHWEST OF THE CENTERLINE OF SMITHERS LAKE ROAD, 11.5 FT. EAST-SOUTHEAST OF A T JUNCTION TELEPHONE POLE WITH A METAL BOX AND GUY WIRE, 10.0 FT. SOUTHEAST OF A FENCE CORNER POST, 3.0 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A FENCE, 8.9 FT. SOUTHWEST OF A WITNESS POST, ABOUT LEVEL WITH THE ROAD, AND SET IN THE TOP OF A CONCRETE POST PROJECTING 0.2 FT. ABOVE THE GROUND.
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Signature valid for one year

WALNUT CREEK SEC. 14

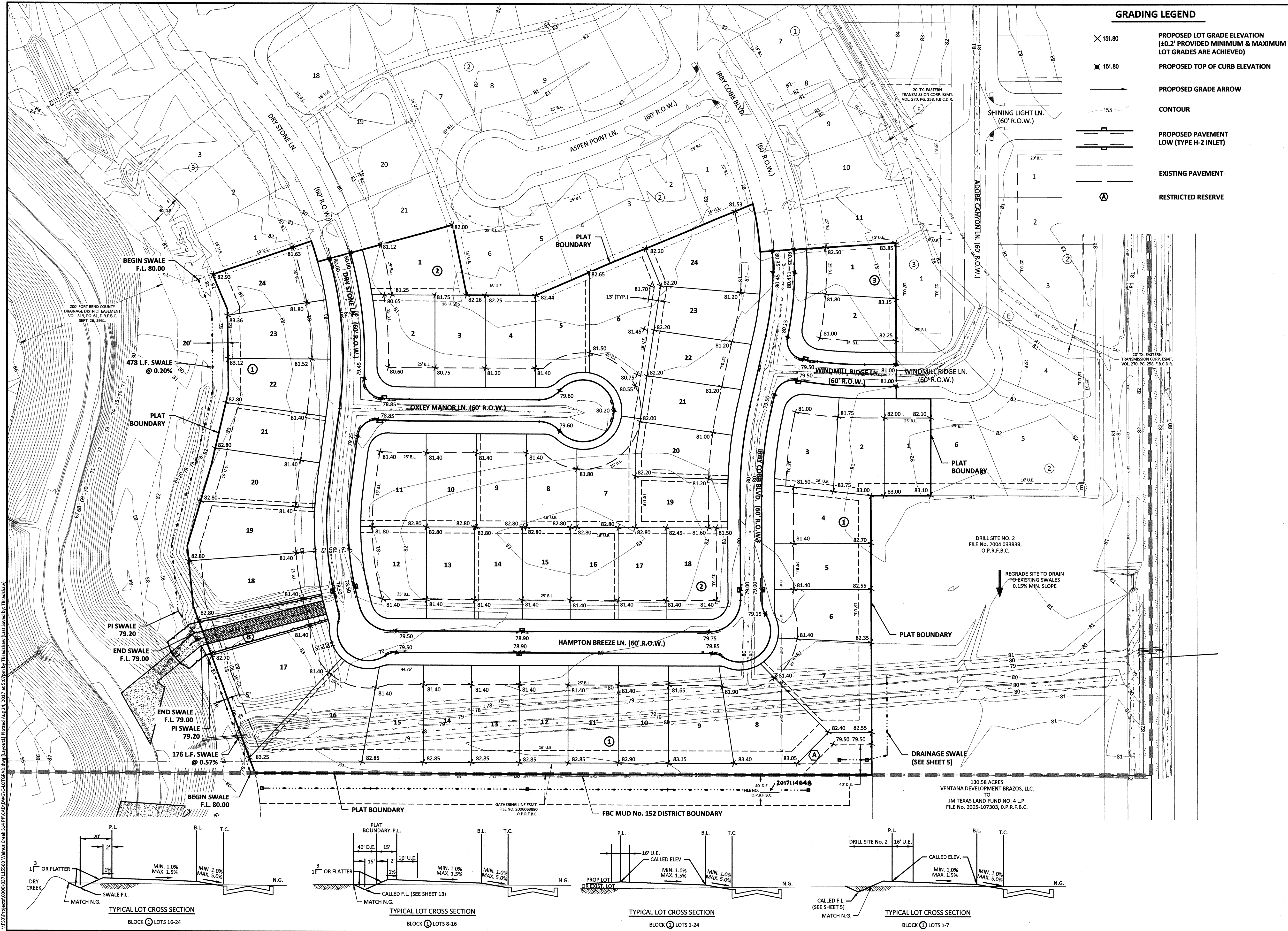
TXDOT DETAILS - PEDESTRIAN FACILITIES - CURB RAMPS

CITY OF ROSENBERG

VERT: N/A

HORIZ: N/A

SHEET 22 OF 24 SHEETS



GRADING LEGEND

- ✕ 151.80 PROPOSED LOT GRADE ELEVATION (±0.2' PROVIDED MINIMUM & MAXIMUM LOT GRADES ARE ACHIEVED)
- ✕ 151.80 PROPOSED TOP OF CURB ELEVATION
- PROPOSED GRADE ARROW
- 153 CONTOUR
- PROPOSED PAVEMENT LOW (TYPE H-2 INLET)
- EXISTING PAVEMENT
- RESTRICTED RESERVE

60' 0' 60'

SCALE 1"=60'

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR

DATE: 10/27/17

Brian D. Gerould
108604
LICENSED PROFESSIONAL ENGINEER

IDS Engineering Group

13430 NW Freeway
Suite 700
Houston, TX 77040
713-462-3178
T895-6-02178
T895-10110700

APPROVED: B.D.G. DATE: JUNE 2017

DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

BENCHMARK:
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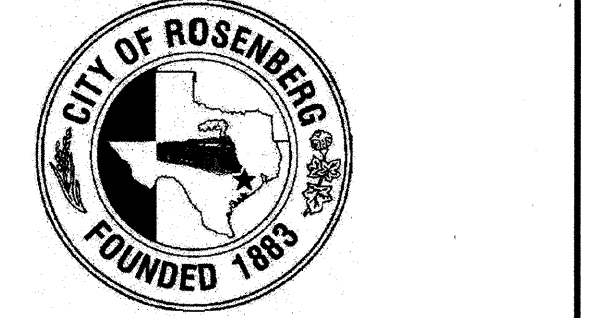
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Date: _____
Approved for AT&T Texas/SWBT underground conduit facilities only.
Signature valid for one year.

WALNUT CREEK SEC. 14

LOT GRADING PLAN

CITY OF ROSENBERG

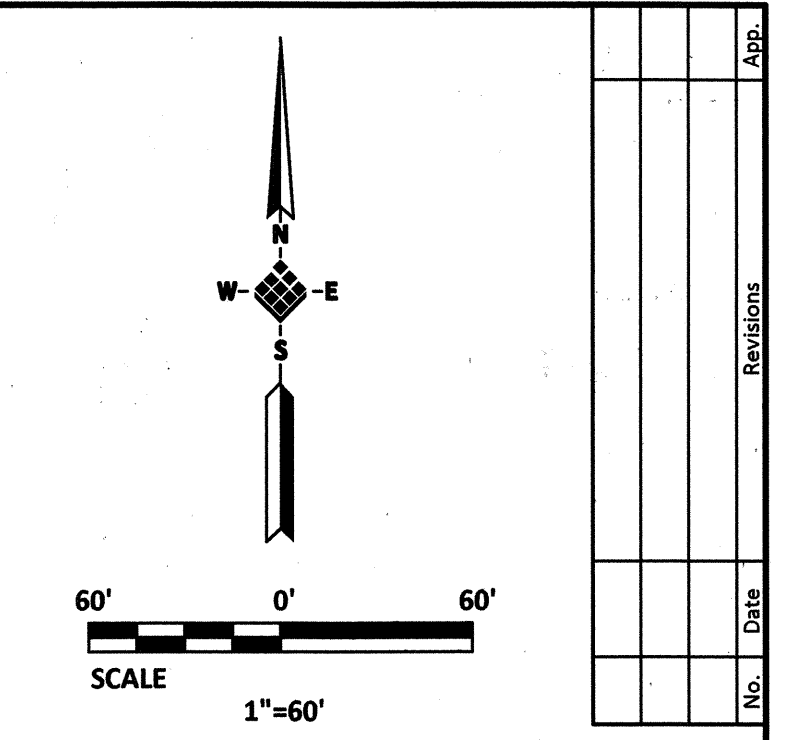
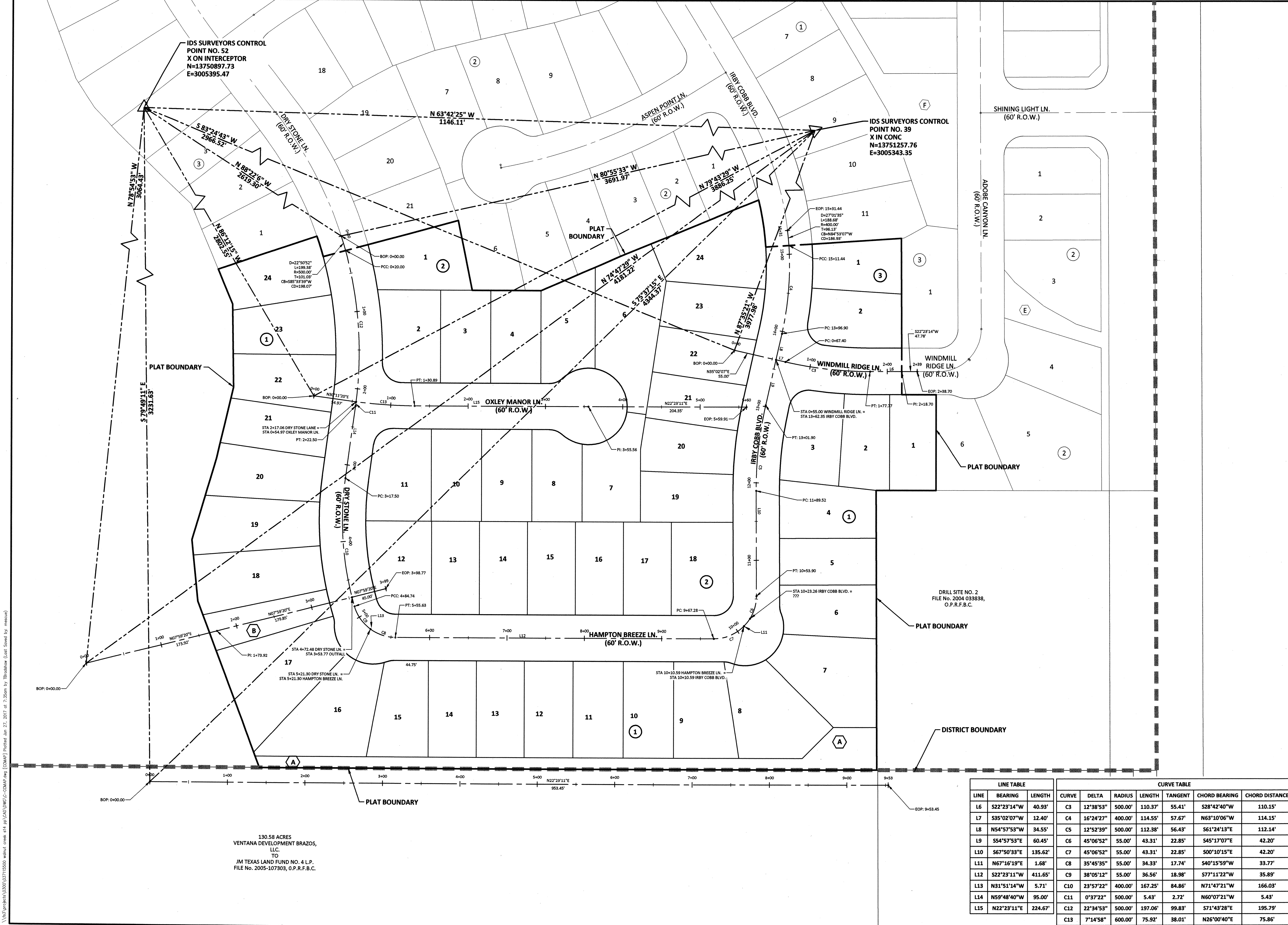


VERT: 1"=60'

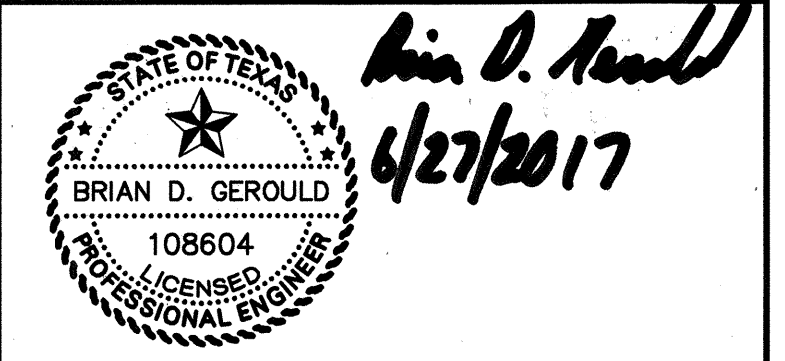
HORIZ: 1"=60'

SHEET 23 OF 24 SHEETS

V:\ES Projects\0300\0311\ES00 Walnut Creek S14 P1 CAD\DWG\LOT GRADING\LOT GRADING.dwg (Last Saved by: Theashaw) Printed: Aug 24, 2017 14:50:20 by Theashaw (Last Saved by: Theashaw)



FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED: *[Signature]*
 DEVELOPMENT COORDINATOR
 DATE: 10/27/17



IDS Engineering Group
 13430 NW, Freeway Suite 700
 Houston, TX 77040
 713.462.3178
 TYPE F-002726
 TBPIS 10.10700

APPROVED: B.D.G. DATE: JUNE 2017
 DESIGNED BY: B.A.S. DRAWN BY: M.E.E. JOB NO.: 1278-029-00

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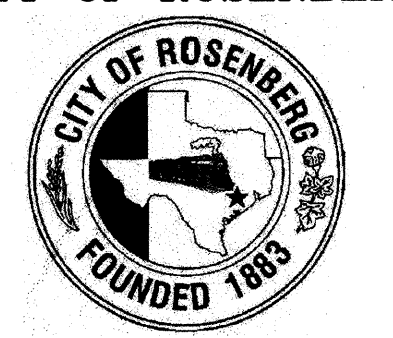
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 Date: _____
 Approved for AT&T Texas/SWBT underground conduit facilities only.
 Signature valid for one year

WALNUT CREEK SEC. 14

CONSTRUCTION CONTROL MAP

CITY OF ROSENBERG



LINE TABLE			CURVE TABLE						
LINE	BEARING	LENGTH	CURVE	DELTA	RADIUS	LENGTH	TANGENT	CHORD BEARING	CHORD DISTANCE
L6	S22°23'14"W	40.93'	C3	12°38'53"	500.00'	110.37'	55.41'	S28°42'40"W	110.15'
L7	S35°02'07"W	12.40'	C4	16°24'27"	400.00'	114.55'	57.67'	N63°10'06"W	114.15'
L8	N54°57'53"W	34.55'	C5	12°52'39"	500.00'	112.38'	56.43'	S61°24'13"E	112.14'
L9	S54°57'53"E	60.45'	C6	45°06'52"	55.00'	43.31'	22.85'	S45°17'07"E	42.20'
L10	S67°50'33"E	135.62'	C7	45°06'52"	55.00'	43.31'	22.85'	S00°10'15"E	42.20'
L11	N67°16'19"E	1.68'	C8	35°45'35"	55.00'	34.33'	17.74'	S40°15'59"W	33.77'
L12	S22°23'11"W	411.65'	C9	38°05'12"	55.00'	36.56'	18.98'	S77°11'22"W	35.89'
L13	N31°51'14"W	5.71'	C10	23°57'22"	400.00'	167.25'	84.86'	N71°47'21"W	166.03'
L14	N59°48'40"W	95.00'	C11	0°37'22"	500.00'	5.43'	2.72'	N60°07'21"W	5.43'
L15	N22°23'11"E	224.67'	C12	22°34'53"	500.00'	197.06'	99.83'	S71°43'28"E	195.79'
L16	N22°23'11"E	224.67'	C13	7°14'58"	600.00'	75.92'	38.01'	N26°00'40"E	75.86'

130.58 ACRES
 VENTANA DEVELOPMENT BRAZOS, LLC.
 JM TEXAS LAND FUND NO. 4 L.P.
 FILE NO. 2005-107303, O.P.R.F.B.C.

VERT: 1"=60'
 HORIZ: 1"=60'
 SHEET: 24 OF 24 SHEETS

\Users\pennell\OneDrive\Documents\12715550\walmart_creek_sec_14\02\dwg\cc-map.dwg [COMPTON] Plotted: Sun, 27, 2017 at 7:36am by: [Theodore] (User: Stored by: rmmcc)