



**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](mailto:Permits@fortbendcountytx.gov)

- Right of Way Permit**  
 **Commercial Driveway Permit**

Permit No: 2018-18704

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: \_\_\_\_\_
- Cashier's Check      Check No: [REDACTED]      Amount: \$30,000.00

**(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

2/19/2018

\_\_\_\_\_  
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](mailto:Permits@fortbendcountytx.gov)

- Right of Way Permit**
- Commercial Driveway Permit**

Permit No: 2018-18704

**Applicant:** VMV Construction Group, LLC

**Job Location Site:** 25830 Westheimer Parkway, Katy, TX 77494

**Bond No.** [REDACTED] **Date of Bond:** 5/12/2018 **Amount:** \$30,000.00

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](http://MyGovernmentOnline.org) portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 27th day of February, 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. \_\_\_\_\_

By: N/A  
Drainage District Engineer/Manager

Clerk of Commissioners Court

By: \_\_\_\_\_  
Deputy

# MARCEL COMMONS WESTHEIMER II

WITHIN  
FORT BEND COUNTY, TEXAS

KATY TX 77494

CONSTRUCTION PLANS  
FOR PROPOSED

**WATER, SANITARY SEWER, PAVING & DRAINAGE PLANS**

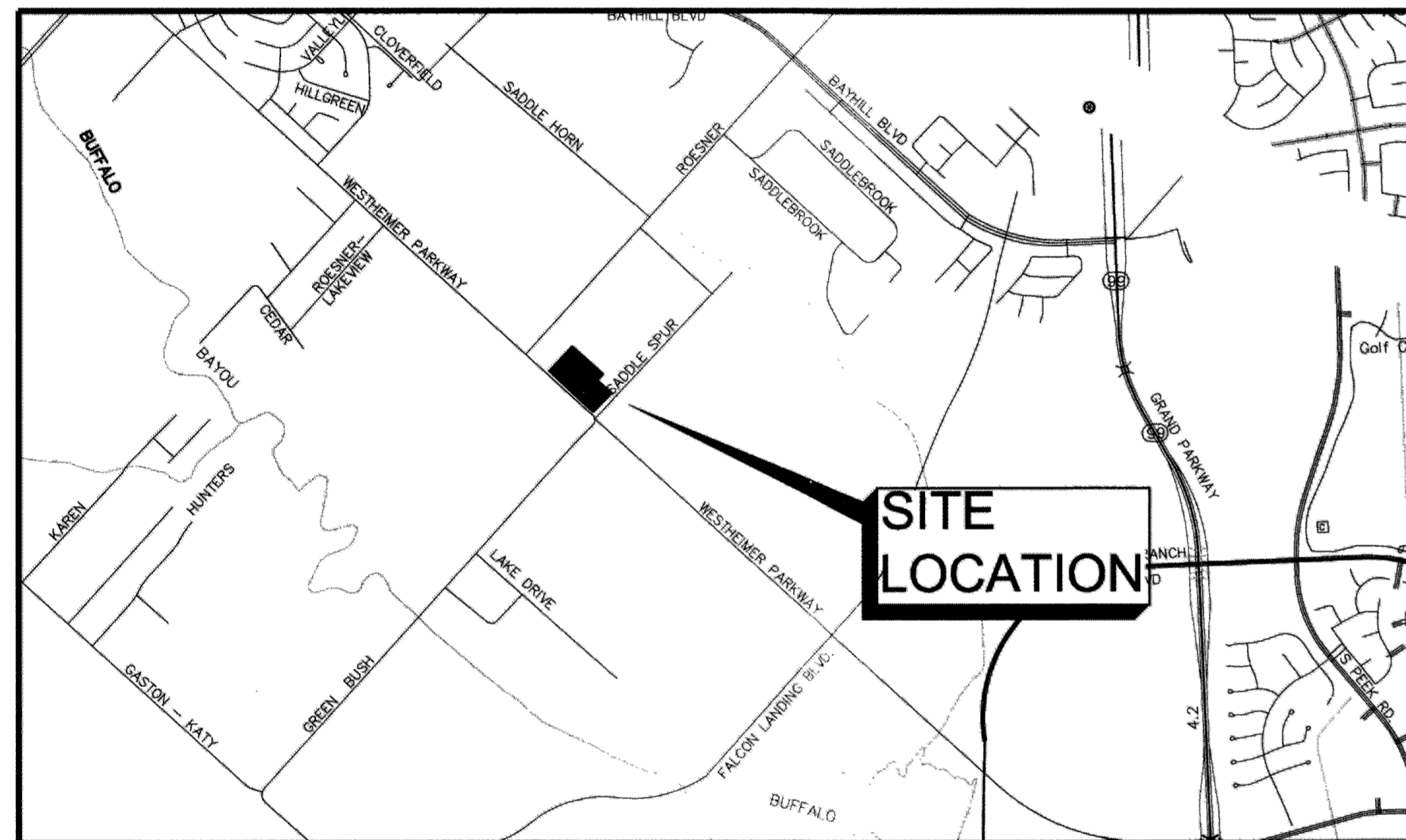
W, SS, P & D PLANS  
TO SERVE MARCEL COMMONS

## DRAWING INDEX

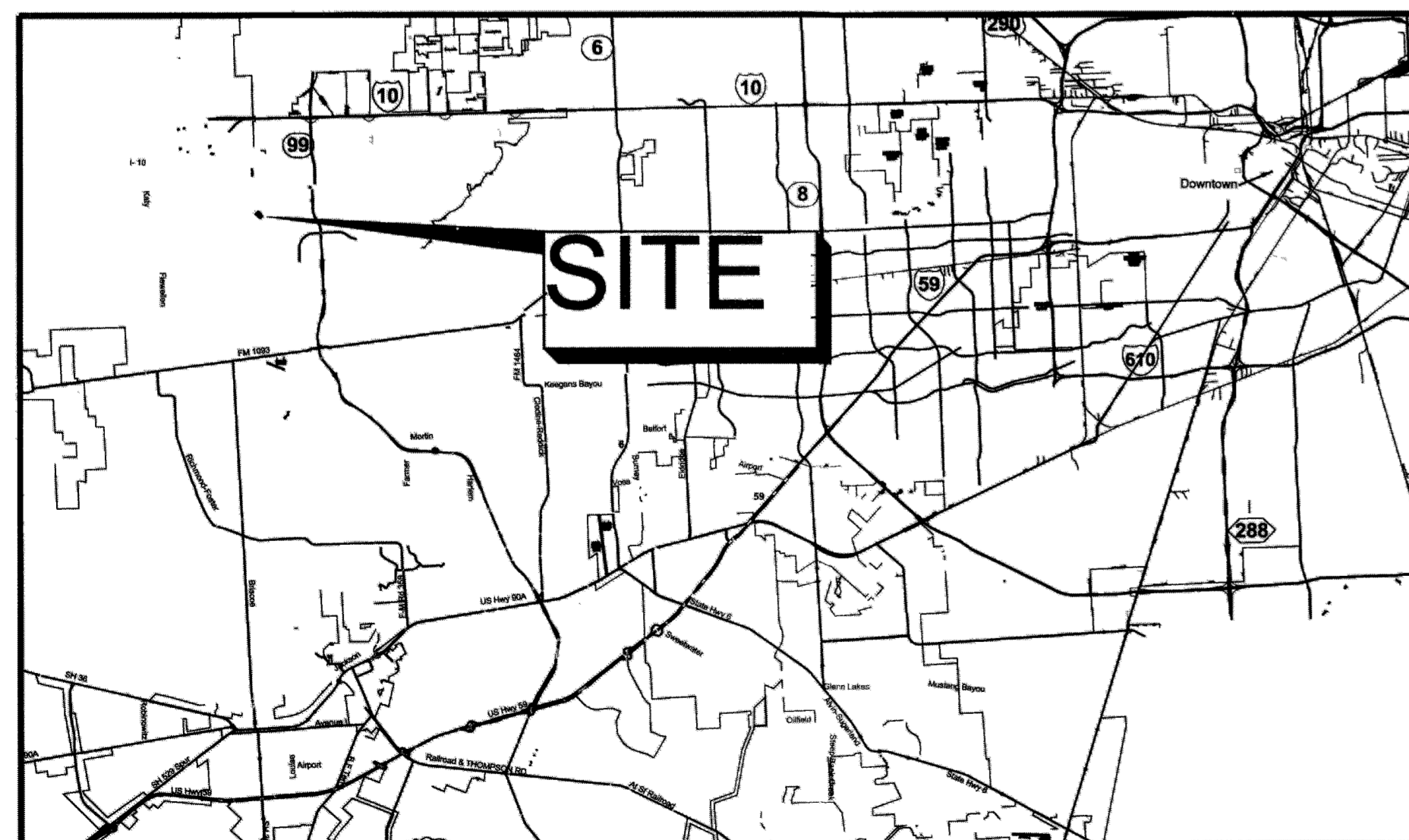
### CIVIL SHEET NO.

### TITLE

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C1.1	GENERAL NOTES
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C11.1	LIFT STATION DETAILS
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LOCATION MAP



VICINITY MAP

KEY MAP NO. 484M,R  
ZIP 77494

DESIGNED BY: MF, BB, MCE  
CHECKED BY: MF  
DRAWN BY: BB, MCE

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/16/2017

FORT BEND COUNTY ENGINEER  
ENGINEER: Paul J. Stagle, P.E.  
for RICHARD W. STOLZEIS, P.E.  
DATE: 1/8/18  
THESE SIGNATURES ARE VOID IF  
CONSTRUCTION HAS NOT COMMENCED IN (1)  
YEAR FROM DATE OF APPROVAL.  
APPROVED: [Signature]  
DEVELOPMENT COORDINATOR  
DATE: 1/31/18



**W|G|A**  
WARD, GETZ & ASSOCIATES, LLP  
CONSULTING ENGINEERS  
TEXAS REGISTERED ENGINEERING FIRM F-9756  
2500 Tanglewilde, Suite 120  
Houston, Texas 77063  
713.789.1900

MARCH 2017

WGA PROJECT No. 00362-001

ONE-CALL NOTIFICATION SYSTEM  
**CALL BEFORE YOU DIG!!!**  
(713) 223-4567 (in Houston)  
(New Statewide Number Outside Houston)  
1-800-545-6005

CONTRACTOR SHALL CONTACT THE DISTRICT'S OPERATOR MDS, BUILDER SERVICES DEPARTMENT (281-290-6503) OPTION 2, OR VIA EMAIL AT bldrservices@municipaldistrictservices.com 48-HOURS PRIOR TO CONSTRUCTION AND TO REQUEST INSPECTIONS. ALL SITE SANITARY AND WATER LINES SHALL BE INSPECTED PRIOR TO BACKFILL.



CONSTRUCTION - GENERAL NOTES

- 1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.
2. 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.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAY.
4. 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.
5. ALL ROAD WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.
7. ALL CONCRETE PAVEMENT SHALL BE 5 1/2" 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.
8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
9. 4" X 1/2" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
10. AT ALL INTERSECTION LOCATIONS, TYPE F RAMPS SHALL BE PLACED IN ACCORDANCE WITH TxDOT PED-12A 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.
11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.
13. GUIDELINES ARE SET FORTH IN THE TEXAS 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES', AS CURRENTLY AMENDED, SHALL BE OBSERVED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAG MEN, SIGNING, STRIPING, AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
14. ALL 1-1 STOP SIGNS SHALL BE 30" X 30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
15. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE WITH REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPER CASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
16. A BLUE DOUBLE REFLECTIVE BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF TO THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

INSPECTION. 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, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY 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.

GENERAL CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL VERIFY ALL EXISTING BENCHMARKS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION. IF NO VERIFICATION IS CONDUCTED CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY.
2. WATER LINES, WASTEWATER COLLECTIONS SYSTEMS AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING'S 'STANDARD CONSTRUCTION SPECIFICATIONS' DATED JULY 2016 AND 'STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING' DATED JULY 2016 WITH ALL SUBSEQUENT AMENDMENTS THERE TO UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN MUST AGREE WITH THE MINIMUM STANDARDS ESTABLISHED IN THE 'INFRASTRUCTURE DESIGN MANUAL' DATED JULY 2016. NOTE THAT PLAN SIGNATURES EXPIRE AFTER 1 YEAR AND THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS & MANUALS SHALL GOVERN AS OF THE RESIGNING.
3. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWATER COLLECTION SYSTEMS AND STORM SEWERS, DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING 'STANDARD CONSTRUCTION SPECIFICATIONS' WITH LATEST ADDENDA AND AMENDMENTS THERETO, WITH NO COST TO THE PUBLIC.
4. EXISTING UTILITY INFORMATION SHOWN IS NOT GUARANTEED TO BE ACCURATE AND ALL INCLUSIVE. ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES AND OTHER FACILITIES PRIOR TO CONSTRUCTION. ANY CONFLICT OR DISCREPANCY DISCOVERED MUST BE IMMEDIATELY BROUGHT TO THE ENGINEER'S ATTENTION.
5. THE CONTRACTOR SHALL NOTIFY THE FORT BEND COUNTY ENGINEERING DEPARTMENT, CENTERPOINT ENERGY AND ALL OTHER APPLICABLE AGENCIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK. NOTIFICATIONS SHALL BE FOLLOWED WITH A LETTER, COPIES OF WHICH SHALL BE SENT TO THE ENGINEER.
6. THE CONTRACTOR, ON BEHALF OF THE OWNER, IS TO OBTAIN ALL NECESSARY PERMITS REQUIRED BY FORT BEND COUNTY, PRIOR TO STARTING CONSTRUCTION.
7. GUIDELINES 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 FLAG MEN, SIGNING, STRIPING, AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
8. THE LOADING AND UNLOADING OF ALL PIPE, VALVES, HYDRANTS, MANHOLES, AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR THE MATERIALS AND EQUIPMENT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SHIPPING AND STORING OF ALL MATERIALS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE SUCH MATERIAL AT THE POINT OF DELIVERY AND TO REJECT ALL DEFECTIVE MATERIAL. ANY DEFECTIVE MATERIAL INCORPORATED INTO THE WORK SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE. THERE SHALL BE NO PAYMENT MADE FOR STORED MATERIAL.
10. ALL PIPE AND REINFORCING STEEL SHALL BE KEPT FREE OF DIRT AND OTHER DEBRIS. ANY DAMAGE TO THE COATING OF THE VARIOUS MATERIALS MUST BE REPAIRED.
11. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE OWNING AUTHORITY. ALL CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE FINAL DRAFT OF STORMWATER MANAGEMENT HANDBOOK FOR CONSTRUCTION ACTIVITIES AS PREPARED BY FORT BEND COUNTY/FBC/DO, AND THE CITY OF HOUSTON ALL IN COMPLIANCE WITH THE TEXAS POLLUTANT DISCHARGE ELIMINATION SYSTEM (TPDES) REQUIREMENTS.
12. ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
13. CONTRACTOR IS TO MAINTAIN A CLEAN PROJECT AREA, FREE FROM WORKMAN TRASH AND REFUSE, AT ALL TIMES.
14. THE CONTRACTOR IS REQUIRED TO FOLLOW ALL APPLICABLE OSHA RULES AND REGULATIONS. TRENCH SAFETY SHALL BE DONE IN ACCORDANCE WITH OSHA STANDARDS.
15. ALL STATIONS ARE CENTERLINE OF STREET RIGHT-OF-WAY UNLESS OTHERWISE NOTED.
16. ALL GEOTECHNICAL REPORTS (IF ANY) FOR THIS PROJECT ARE AVAILABLE FOR REFERENCE AT THE OFFICE OF THE ENGINEER.
17. SURFACE RESTORATION: AT THE END OF ALL CONSTRUCTION PROJECTS, THE CONTRACTOR SHALL RESTORE THE EXISTING FACILITIES, I.E. THE PROPERTY, EQUAL TO OR BETTER THAN EXISTING SITE CONDITIONS PRIOR TO THE CONSTRUCTION. ALL FINISHED GRADES SHALL VARY UNIFORMLY BETWEEN THE FINISHED ELEVATIONS SHOWN.

WATERLINE CONSTRUCTION NOTES

- 1. WATER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING STANDARD SPECIFICATIONS JULY 2016 AND STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING, JULY 2016.
2. 4" THRU 12" WATER LINES SHALL BE P.V.C. CLASS 150, DR-18, AWWA C-900, SMALLER THAN 4" WATER MAINS SHALL BE SCH. 40 P.V.C. PIPE.
3. ALL WATERLINES, AFTER INSTALLATION, SHALL BE THOROUGHLY DISINFECTED ACCORDING TO AWWA SPECIFICATION C-601 AND THEN FLUSHED BEFORE BEING PLACED INTO SERVICE. AT LEAST ONE WATER SAMPLE PER 100 FEET OF FINISHED LINE MUST BE COLLECTED AND SUBMITTED FOR BACTERIOLOGICAL ANALYSIS TO A LABORATORY CERTIFIED BY THE TEXAS DEPARTMENT OF HEALTH AND MUST MEET DEPARTMENT OF HEALTH AND CITY OF HOUSTON REQUIREMENTS PRIOR TO PLACING LINES INTO SERVICE.
4. HYDROSTATIC TESTING: ALL WATER PIPE SHALL BE TESTED FOR LEAKAGE IN ACCORDANCE WITH AWWA C-600 SECTION STANDARDS FOR A DURATION OF FOUR HOURS. LEAKAGE SHALL BE DEFINED AS THE QUANTITY OF WATER THAT MUST BE SUPPLIED INTO THE NEWLY LAID PIPE OR ANY VALVED SECTION THEREOF, TO MAINTAIN PRESSURE WITHIN 5 PSI OF THE SPECIFIED TEST PRESSURE AFTER THE PIPE HAS BEEN FILLED WITH WATER AND THE AIR HAS BEEN EXPELLED. THE TEST PRESSURE SHALL BE EITHER A MINIMUM OF 125 PSIG OR 1.5 TIMES THE MAXIMUM DESIGN PRESSURE, WHICHEVER IS LARGER. THE MAXIMUM LEAKAGE SHALL BE CALCULATED USING THE FORMULA AS FOLLOWS:
L = (S/D)^2 \* 127133.200
WHERE L = ALLOWABLE LEAKAGE IN GAL./HR.
S = LENGTH OF PIPE TESTED IN FEET
D = INSIDE DIAMETER OF PIPE IN INCHES
P = PRESSURE IN POUNDS PER SQUARE INCH (GAUGE)
5. CONCRETE THRUST BLOCKS SHALL BE PROVIDED AT ALL UNDERGROUND TEES BENDS AND LATERALS. THEY SHALL BE BUILT AS PER THE DETAILS PROVIDED TO PREVENT PIPE MOVEMENT.
6. ALL ABOVE GROUND DUCTILE IRON PIPE CONNECTIONS SHALL BE FLANGED. UNDERGROUND DUCTILE IRON PIPE CONNECTIONS SHALL BE BOLTLESS AND PUSH-ON AFTER THE FIRST PLANGED FITTING BELOW GRADE UNLESS NOTED OTHERWISE ON THE PLANS.
7. ALL FLANGES BELOW GRADE SHALL HAVE STAINLESS STEEL BOLTS AND NUTS AND SHALL BE INSULATED.
8. ALL WATER VALVES SHALL OPEN COUNTER CLOCKWISE. ALL WATER VALVES SHALL BE SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA C-500 AND SHALL BE OF THE RESILIENT SEAT TYPE.
9. ALL BELOW GRADE VALVES SHALL BE GASKETED, HUB-END GATE VALVES WITH A CAST IRON BOX, EXCEPT WHERE FLANGES ARE CALLED OUT ON THE PLANS.
10. MAINTAIN MINIMUM 5-FOOT HORIZONTAL CLEARANCE BETWEEN OUTSIDE OF SANITARY SEWER MANHOLE AND WATERLINE.
11. WATER LINES PARALLEL TO SANITARY LINES SHALL BE INSTALLED WITH AT LEAST A 4-FOOT CLEARANCE AND IN SEPARATE TRENCHES.
12. SANITARY PRECAUTIONS MUST BE TAKEN DURING WATERLINE CONSTRUCTION, PER AWWA STANDARDS. PRECAUTIONS INCLUDE KEEPING THE PIPE CLEAN AND CAPPING OR OTHERWISE EFFECTIVELY COVERING OPEN PIPE ENDS TO EXCLUDE INSECTS, ANIMALS OR OTHER SOURCES OF CONTAMINATION FROM UNFINISHED PIPE LINES AT TIMES WHEN CONSTRUCTION IS NOT IN PROGRESS.
13. CONTRACTOR SHALL PROVIDE FOR A MINIMUM OF 2 FEET CLEARANCE AT THE STORM SEWER AND WATER LINE CROSSINGS AND SANITARY SEWER AND WATER LINE CROSSINGS. THE WATER LINE SHALL BE LOCATED AT A HIGHER LEVEL THAN THE SANITARY SEWER WHENEVER POSSIBLE.
14. ALL WATER LINE FITTINGS SHALL BE DUCTILE IRON COMPACT FITTINGS PER AWWA 153, UNLESS OTHERWISE NOTED.
15. THE CENTER OF FIRE HYDRANTS ARE TO BE LOCATED 3'-0" BEHIND THE BACK OF CURBS UNLESS OTHERWISE SHOWN. THE STEAMER NOZZLE SHALL BE A MINIMUM OF 18" (AND A MAXIMUM OF 30") INCHES ABOVE FINISHED GRADE, AND SHALL FACE THE STREET PAVEMENT UNLESS OTHERWISE SHOWN. ALL FIRE HYDRANTS SHALL BE PAINTED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARDS.

PAVING CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL OBTAIN ENGINEERS OR OWNERS APPROVAL OF GRADES PRIOR TO PLACEMENT OF ANY PAVEMENT. IF APPROVAL IS NOT OBTAINED CONTRACTOR SHALL BE RESPONSIBLE FOR PAVEMENT PLACED.
2. ALL TEMPORARY AND PERMANENT SIGNAGE MUST COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, MOST RECENT EDITION WITH REVISIONS.
3. ALL PAVING WIDTHS, CURB RADI AND CURB ALIGNMENT SHOWN INDICATE FACE OF CURB. T.C. INDICATES TOP OF CURB. P.T. INDICATES TOP OF PAVEMENT ELEVATIONS.
4. THE CONTRACTOR SHALL PROTECT ALL UTILITIES, SIDEWALKS, PAVEMENT, ETC. AND SHALL REPAIR OR REPLACE AT HIS EXPENSE ANY FACILITIES DAMAGED DURING PAVING OR GRADING OPERATIONS.
5. DRIVEWAY CONNECTIONS IN STREET RIGHT-OF-WAY SHALL COMPLY WITH FORT BEND COUNTY DRAWING NO. FBC-026 AND DRIVEWAY DETAILS ON THESE PLANS.
6. AREAS TO BE FILLED SHALL BE SCARIFIED AND COMPACTED TO AT LEAST 85% OF MAXIMUM DENSITY (+3% OF OPTIMUM MOISTURE) PER ASTM D-698 TO A DEPTH OF 6" PRIOR TO FILL PLACEMENT. FILL MATERIAL SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS (MEASURED LOOSE) AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY (+3% OF OPTIMUM MOISTURE) PER ASTM D-698. FILL SHALL BE CLEAN EARTH AND BE FREE FROM TRASH, VEGETATION AND LARGE STONES. TEST REPORTS SHALL BE SUBMITTED PRIOR TO PLACEMENT OF PAVEMENT.
7. NECESSARY TESTING OF SUBGRADE AND PAVEMENT TO PROVE THAT THESE ITEMS MEET REQUIREMENTS SHALL BE DONE BY A COMMERCIAL TESTING LABORATORY ENGAGED BY THE CONTRACTOR.
8. WHERE PROPOSED PAVEMENT IS TO MEET EXISTING PAVEMENT, THE EXISTING REBAR OR DOWNES SHALL BE CLEANED AND TIED INTO THE PROPOSED PAVEMENT, USING A MINIMUM OF 30 BAR DIAMETERS LAPS, WHERE PROPOSED CONCRETE ENDS AT A CONSTRUCTION JOINT OR EXPANSION JOINT, THE REBAR SHALL BE EXTENDED A MINIMUM LENGTH OF 30 BAR DIAMETERS, COATED WITH ASPHALT AND WRAPPED WITH BURLAP.
9. ALL CONCRETE PAVEMENT SHALL BE OF SPECIFIED THICKNESS SHOWN. ALL CONCRETE SHALL BE A 5 SACK MIX WITH A MINIMUM 500 P.S.I. FLEXURAL STRENGTH AT 7 DAYS AND A MINIMUM 3500 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.
10. ALL CUL-DE-SAC ISLANDS AND MEDIANS SHALL HAVE STANDARD 6" CONCRETE CURBS.
11. SIDEWALKS SHALL BE BUILT IN ACCORDANCE WITH FORT BEND COUNTY DESIGN STANDARDS. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS, IN CONFORMANCE WITH THE GOVERNOR'S OFFICE OF TRAFFIC SAFETY MEMORANDUM DATED MAY 6, 1976 (HIGHWAY SAFETY ACT, 1973, SEC. 298). AMERICANS WITH DISABILITIES ACT (ADA) AND TEXAS ACCESSIBILITY STANDARDS (TAS) SHALL BE COMPLIED WITH IN ALL SIDEWALK CONSTRUCTION.
12. CONCRETE WASH-OUT AREAS ARE TO BE PROVIDED BY THE CONTRACTOR AT A LOCATION ACCEPTABLE TO THE OWNER UNDER NO CIRCUMSTANCES IS THE CONTRACTOR TO PERMIT CONCRETE TRUCKS TO WASH AT ANY AREA OTHER THAN THAT DESIGNATED.
13. STREET NAME SIGNS SHALL BE BUILT IN ACCORDANCE WITH FORT BEND COUNTY REQUIREMENTS AND SPECIFICATIONS, AND BEAR STREET NAMES AS PER RECORDED PLAN.
14. A DOUBLE-REFLECTORIZED BLUE TRAFFIC MARKER SHALL BE PLACED ON A ONE FOOT OFFSET OF THE PAVEMENT CENTERLINE AT ALL FIRE HYDRANT LOCATIONS BY EACH STREET. HYDRANTS LOCATED AT INTERSECTIONS SHALL HAVE A MARKER PLACED ON EACH STREET. THERE WILL BE NO SEPARATE PAYMENT FOR THESE MARKERS.

STORM SEWER CONSTRUCTION NOTES

- 1. ALL STORM SEWERS SHALL BE EITHER REINFORCED CONCRETE PIPE CONFORMING TO ASTM C-76, CLASS III WITH RUBBER GASKET JOINTS PER ASTM C-443, OR HIGH DENSITY POLYETHYLENE PIPE CONFORMING TO ASHTO M282 WITH ELASTOMERIC COMPOUND GASKET JOINTS PER ASTM D3212.
2. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINTS CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
3. ALL STORM SEWER MANHOLES SHALL BE STANDARD CITY OF HOUSTON TYPE "C" MANHOLES UNLESS OTHERWISE NOTED ON PLANS AND MUST INCLUDE THE WORDS "STORM SEWER".
4. ALL INLETS SHALL BE CITY OF HOUSTON TYPE B UNLESS OTHERWISE NOTED ON ALL THE PLANS DEPTH OF INLETS SHALL BE INCREASED BEGINNING AT 2'-6" AND AS NECESSARY TO ACCOMMODATE THE DIAMETER AND ANGLE OF THE EXIT PIPE.
5. ALL STORM SEWER PIPES AND INLET LEADS WITHIN PUBLIC R.O.W. SHALL BE 24-INCH AND LARGER R.C.P. (C-76, CLASS III).
6. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLETS ARE TO BE PLUGGED WITH 6" BRICK WALLS UNLESS OTHERWISE NOTED.
7. STORM SEWERS SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH THE CITY OF HOUSTON DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 (OCT 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
8. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED AND FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2" SACK CEMENT/CLAY STABILIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
9. CONTRACTOR SHALL PROVIDE 12" MINIMUM CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS.
10. ALL TRENCH BACKFILLS SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS ON EACH LIFT, AND MECHANICALLY COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST (ASTM D-698/ASTM 159).
11. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS AND VALVE BOXES TO GRADE.
12. ALL DITCHES SHALL BE REGRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF HIS WORK.
14. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.

SANITARY SEWER CONSTRUCTION NOTES

- 1. 8" AND LARGER SANITARY SEWER PIPE AND FITTINGS TO BE SDR-26 P.V.C. PIPE MEETING ASTM SPECIFICATION D3034 WITH RUBBER GASKET JOINTS UNLESS OTHERWISE NOTED. 6" AND SMALLER SANITARY SEWER PIPE TO BE SCH. 40 P.V.C. PIPE.
2. NO CONNECTION SHALL BE MADE TO THE EXISTING SANITARY SEWER LINES UNTIL ALL PROPOSED SEWER LINES HAVE BEEN THOROUGHLY CLEANED, TESTED AND APPROVED BY THE ENGINEER. THE ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO THE CONTRACTOR CONNECTING TO ANY EXISTING SEWER LINES.
3. DEFLECTION TESTS SHALL BE PERFORMED ON ALL FLEXIBLE AND SEMI-RIGID PIPE, EXCEPT SERVICE LEADS. THE TEST SHALL BE CONDUCTED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS. NO PIPE SHALL EXCEED A DEFLECTION OF 3%. THE TEST IS TO BE RUN USING A MANDREL HAVING AN OUTSIDE DIAMETER EQUAL TO 95% OF THE INSIDE DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
4. SANITARY LINES CROSSING WATER LINES ARE TO BE GREEN P.V.C. CLASS 150, DR-18, AWWA C-900 AND MUST HAVE A FULL LENGTH JOINT (2" NOMINAL) CENTERED AT THE CROSSING WITH A MINIMUM SEPARATION DISTANCE OF 2 FEET.
5. ALL SEWER LINES (INCLUDE SERVICE LEADS) ENTERING A MANHOLE AT A FLOWLINE HIGHER THAN 24-INCHES ABOVE THE MANHOLE INVERT MUST BE PROVIDED WITH A DROP PIPE AND HAVE THE INVERT FILLETED.
6. ALL SANITARY SEWER MANHOLES SHALL BE PRE-CAST TYPE ONLY AND SHALL INCLUDE THE WORD "SANITARY" ON THE COVER AND SHALL INCLUDE THE WORDS "CITY OF HOUSTON" ON THE COVER.
7. INFILTRATION/EXFILTRATION TEST: EITHER OF THE FOLLOWING INFILTRATION/EXFILTRATION TESTS SHALL BE PERFORMED WITHIN THE SPECIFIED TOLERANCES ON ALL GRAVITY SEWERS.
A. WATER TEST: TOTAL LEAKAGE SHALL NOT EXCEED 50 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOURS AT A MINIMUM TEST HEAD OF 2 FEET.
B. LOW - PRESSURE AIR TEST: PERFORM TEST ACCORDING TO UNI-8-8-9 OR OTHER APPROPRIATE PROCEDURES. MINIMUM ALLOWABLE TIME FOR PRESSURE DRIP FROM 3.5 PSIG TO 2.5 PSIG SHALL BE AS FOLLOWS:
8" - 530 SECONDS OR 1.778(5) FOR TEST LENGTHS GREATER THEN 208'.
10" - 664 SECONDS OR 2.176(2) FOR TEST LENGTHS GREATER THAN 287'.
12" - 785 SECONDS OR 2.986(1) FOR TEST LENGTHS GREATER THAN 199'.
8. PRIVATE SAN. SVRS. ARE TO BE PRIVATELY OWNED, OPERATED AND MAINTAINED BY SERVICED PROPERTY OWNER.
9. SANITARY SEWER LINES SHALL BE SDR 26 OR EQUIVALENT AND BEDDED, BACKFILLED WITH CEMENT STABILIZED SAND. 4" DIAMETER MANHOLES SHALL BE PER CITY OF HOUSTON STANDARDS.

STANDARD PERMIT NOTES

- A. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF FORT BEND COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT PRIOR TO STARTING CONSTRUCTION.
B. OWNER TO OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITY AND/OR CULVERTS WITHIN FORT BEND COUNTY ROAD RIGHT OF WAY.

PRIVATE UTILITY NOTES

CAUTION: OVERHEAD ELECTRICAL FACILITIES

OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 702, HEALTH & SAFETY CODE, FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:
1. ANY ACTIVITY WHERE PERSON OR THINGS MAY COME WITHIN SIX(6) FEET OF LINE OVERHEAD HIGH VOLTAGE LINES, AND
2. OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN 10 FEET OF LINE 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 MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222.

CAUTION: TELEPHONE FACILITIES

- 1. THE LOCATIONS OF TELEPHONE UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE A FIELD LOCATION LOCATED.
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWB/T FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING THE CONTRACTOR SHALL EXPOSE THE AT&T TEXAS/SWB/T FACILITIES.
4. WHEN TELEPHONE FACILITIES ARE EXPOSED, THE CONTRACTOR SHOULD PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES, WHEN EXCAVATING NEAR TELEPHONE POLES THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWB/T 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.
6. PLEASE CONTACT THE AT&T TEXAS DAMAGE PREVENTION MANAGER MR. ROOSEVELT LEE JR. (713)667-4502 OR E-MAIL HIM AT RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWB/T FACILITIES.

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 FIELD OFFICES 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 OR 1-800-869-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINE FIELD LOCATED.
WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713-867-8037 (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 ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.
THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

TRAFFIC NOTES

- 1. 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 WITH REVISIONS) DURING CONSTRUCTION.
2. PER FORT BEND COUNTY, GUIDELINES SET FORTH IN THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES' SHALL BE OBSERVED.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:30 PM MONDAY THROUGH FRIDAY.
4. OFF DUTY POLICE OFFICERS/FLAGGERS ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED.
5. CONTRACTOR SHALL COVER THE EXCAVATION WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOURS AND ALLOW NORMAL TRAFFIC FLOW. IF COVERING IS NOT FEASIBLE, USE TRANTEX FR 336 EPX 36" DELINEATOR OR APPROVED EQUAL WITH SHEETING AND BASE EPOXIED TO PAVEMENT NEXT TO EXCAVATION DURING NON-WORKING HOURS.
6. APPROVED COPIES OF "TRAFFIC CONTROL PLANS" SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES.
7. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF TRAFFIC CONTROL PLAN DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, SHE SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT ALTERNATE PLANS TO TRAFFIC SECTION OF HCPID FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION.
\* THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. PLANS WILL BECOME A PART OF THE CONTRACT DRAWINGS.

SWPPP CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL IMPLEMENT INLET PROTECTION DEVICES AND REINFORCED FILTER FABRIC BARRIER ALONG ROAD AND SIDE DITCHES AT LOCATIONS SHOWN ON THE TYPICAL STORM WATER POLLUTION PREVENTION (SWPPP) PLANS TO KEEP SILT AND EXCAVATED MATERIALS FROM ENTERING INTO THE STORM WATER INLETS AND DITCHES EVENTUALLY POLLUTING THE RECEIVING STORM.
2. DURING THE EXCAVATION PHASE OF THE PROJECT, CONTRACTOR SHALL SCHEDULE THE WORK IN SHORT SEGMENTS SO THAT EXCAVATED MATERIAL CAN BE QUICKLY HAULLED AWAY FROM THE SITE AND TO PREVENT IT FROM STAYING UNCOLLECTED ON THE EXISTING PAVEMENT. ANY LOOSE EXCAVATED MATERIAL WHICH FALL ON PAVEMENTS OR DRIVEWAYS SHALL BE SWEEP BACK INTO THE EXCAVATED AREA.
3. CONTRACTOR SHALL CLEAN UP THE EXISTING STREET INTERSECTIONS AND DRIVEWAYS DAILY, AS NECESSARY, TO REMOVE ANY EXCESS MUD, SILT OR ROCK TRACKED FROM THE EXCAVATED AREA.
4. CONTRACTOR SHALL FOLLOW GOOD HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. ALWAYS CLEANING UP DIRT AND LOOSE MATERIAL AS CONSTRUCTION PROGRESSES.
5. CONTRACTOR TO INSPECT AND MAINTAIN THE AREAS LISTED BELOW AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT OF 0.5 INCHES OR GREATER.
A) DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED.
B) AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION.
C) STRUCTURAL CONTROL MEASURES.
D) LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE.
6. CONTRACTOR TO BE RESPONSIBLE TO MAINTAIN EXISTING DITCHES AND/OR CULVERTS FOR UNOBSTRUCTED DRAINAGE AT ALL TIMES. WHERE SODDING IS DISTURBED BY EXCAVATION ON BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING OR SODDING. SLOPES 4:1 OR STEEPER SHALL BE REPLACED BY BLOCK SODDING.

NOTE:

- 1. THE OWNER AND/OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND APPROVALS PRIOR COMMENCING CONSTRUCTION. COPIES OF ANY APPLICABLE PERMITS AREA REQUIRED PRIOR SCHEDULING TAP AND METER INSTALLATION WITHIN COUNTY R.O.W.
2. THE OWNER OR HIS CONTRACTOR SHALL INSTALL APPROPRIATE BACKFLOW PREVENTION DEVICES ACCORDANCE WITH STATE PLUMBING CODES OR AS REQUIRED BY THE DISTRICT'S OPERATOR. BACKFLOW TEST REPORTS MUST BE AVAILABLE AT TIME OF INSPECTION. COPIES OF ANNUAL TEST REPORTS MUST BE FORWARDED TO THE DISTRICT.
3. NO PIPES, PIPE FITTINGS, PLUMBING FITTINGS, AND FIXTURES WHICH CONTAIN MORE THAN A WEIGHTED AVERAGE OF 0.25% LEAD WHEN USED WITH RESPECT TO WETTED SURFACES EXIST IN PRIVATE WATER DISTRIBUTION FACILITIES INSTALLED ON OR AFTER JANUARY 4, 2014.

APPROVED: [Signature] DEVELOPMENT COORDINATOR
DATE: 1/31/18

BENCHMARKS: ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 075 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 86)
TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTMEIER PARKWAY. (SHOWN HEREON)
TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTMEIER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRADE INLET. (SHOWN HEREON)

FLOOD PLAIN NOTE: THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 481570045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1985, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 481570010L.

SHEET NOTES:

Table with 3 columns: REV, DESCRIPTION, DATE. Contains two entries: ISSUE FOR PERMIT 10/28/2016 and ISSUE FOR PERMIT 06/16/2017.



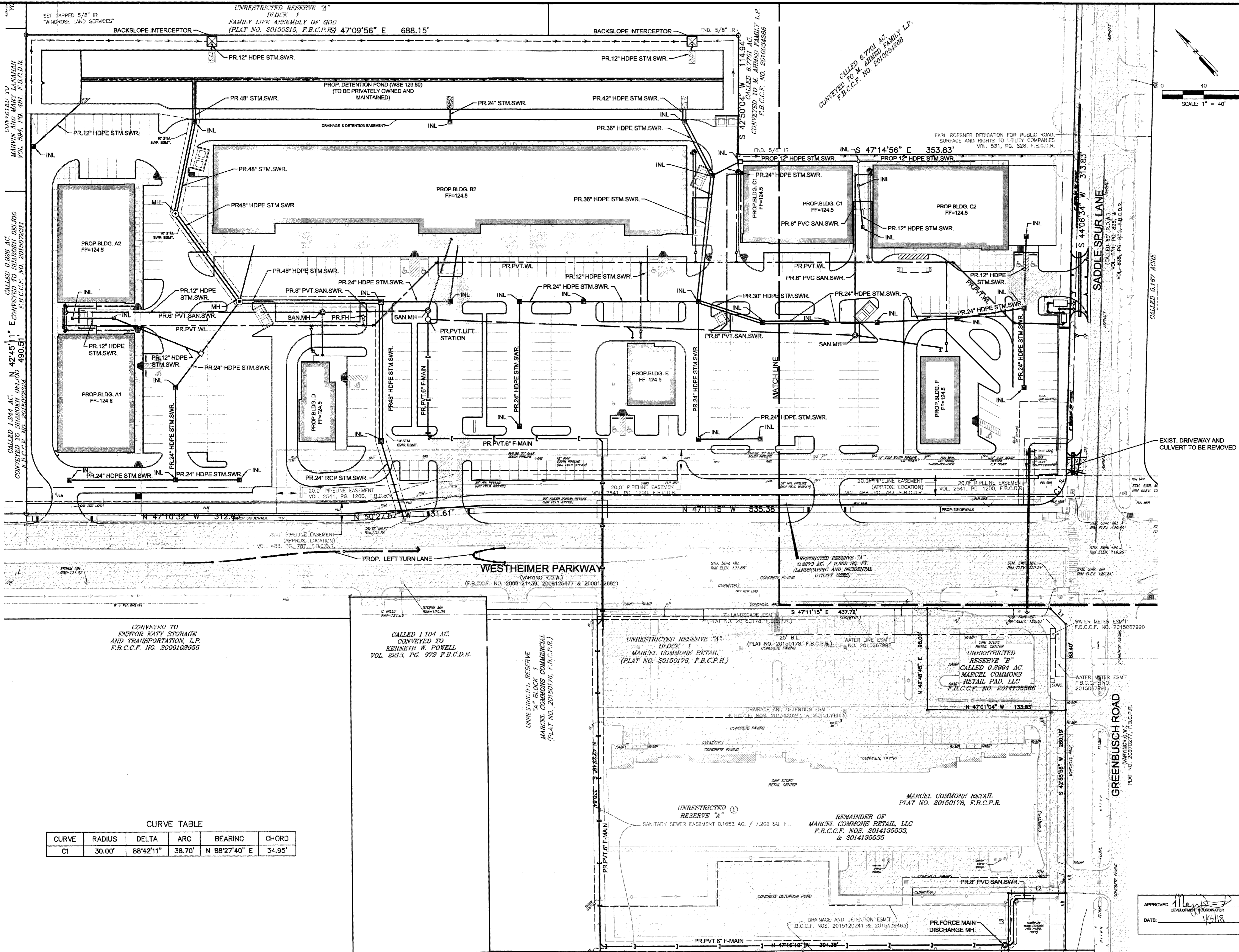
Table with 3 columns: REV, DESCRIPTION, DATE. Contains two entries: ISSUE FOR PERMIT 10/28/2016 and ISSUE FOR PERMIT 06/16/2017.

WGA WARD, GETZ & ASSOCIATES, L.L.P. CONSULTING ENGINEERS TEXAS REGISTERED ENGINEERING FIRM F-9756 2500 Tanglewilde, Suite 120 Houston, Texas 77063 713.789.1900

MARCEL COMMONS II

GENERAL NOTES

Table with 3 columns: SCALE N.T.S., DESIGN MF,BB,MCE,CAH, DRAWN MF,BB,MCE,CAH.



**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 867 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 4819700045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 4819700110L.

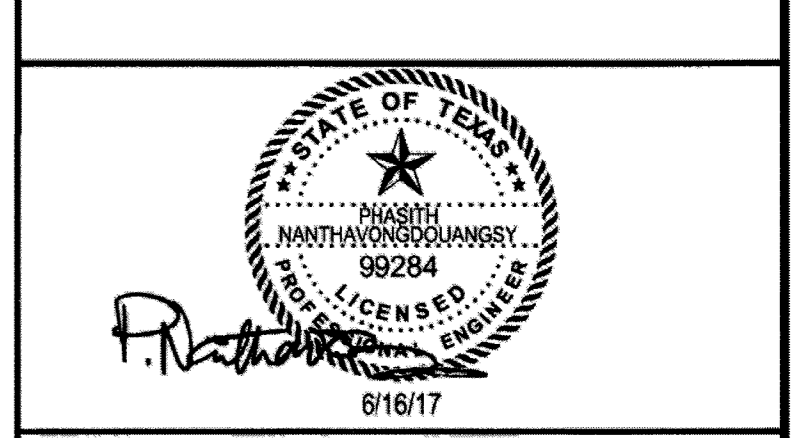
**SHEET NOTES:**

**LEGEND:**  
 EXISTING PAVEMENT  
 (CONCRETE/ASPHALT AS NOTED)

**OVERALL LAYOUT LEGEND:**

	PROPOSED STORM SEWERMANHOLE
	PROPOSED LARGE DIAMETER STORM SEWERMANHOLE
	PROPOSED STORM SEWER/CURB INLET
	PROPOSED SANITARY SEWERMANHOLE/STACK/CLEANOUT
	PROPOSED LARGE DIAMETER SANITARY SEWERMANHOLE
	PROPOSED WATER LINE/REDUCER/GATE VALVE/FIRE HYDRANT
	PROPOSED HIGHBANK FOR DETENTION POND/DITCH
	PROPOSED CURB
	PROPOSED FORCE MAIN

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017



**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77068  
 713.789.1900

**MARCEL COMMONS II**  
**OVERALL SITE PLAN**

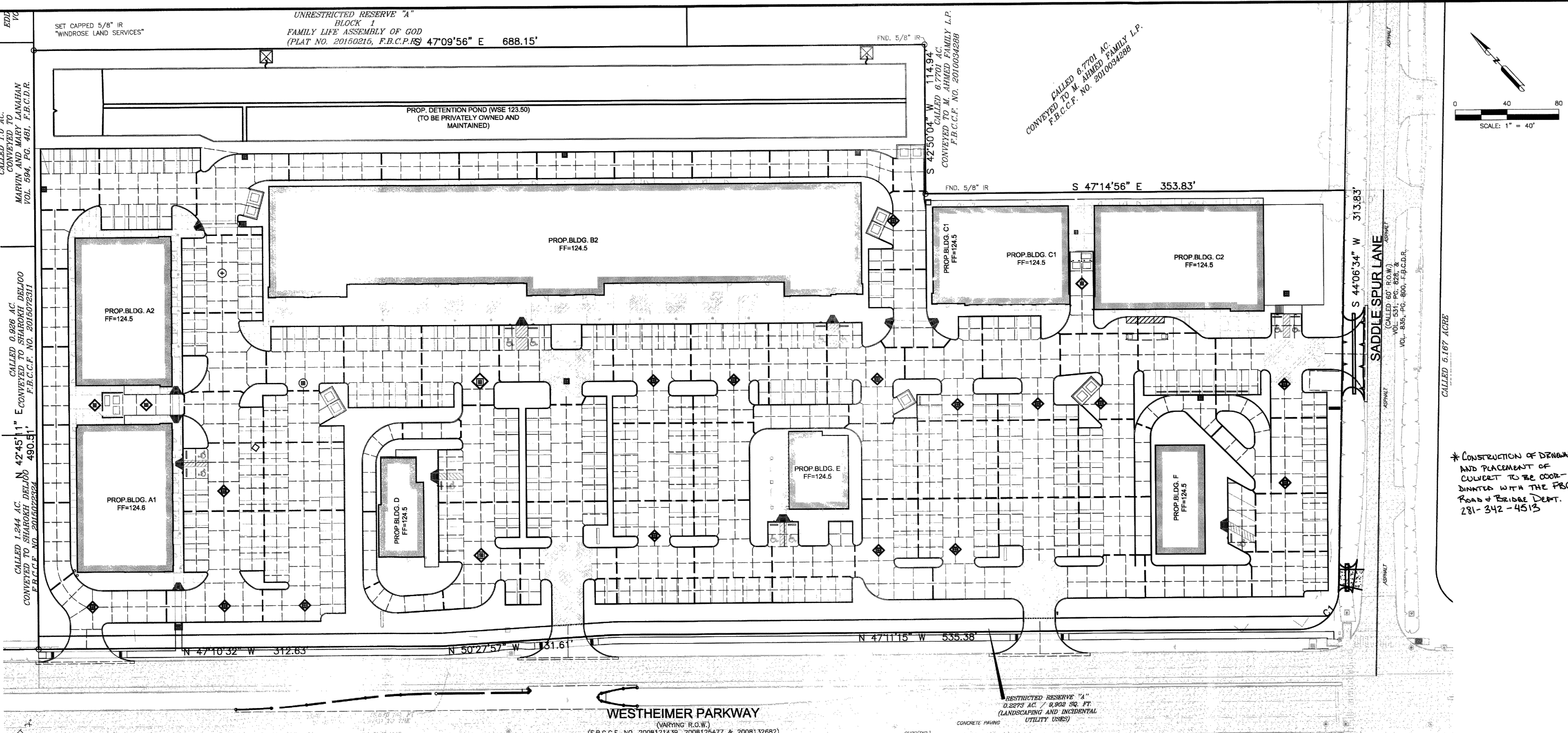
SCALE 1"=40'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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C1.2

**CURVE TABLE**

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	30.00'	88°42'11"	38.70'	N 88°27'40" E	34.95'

APPROVED: *[Signature]*  
 DATE: 1/3/18



**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
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**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014.  
 THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

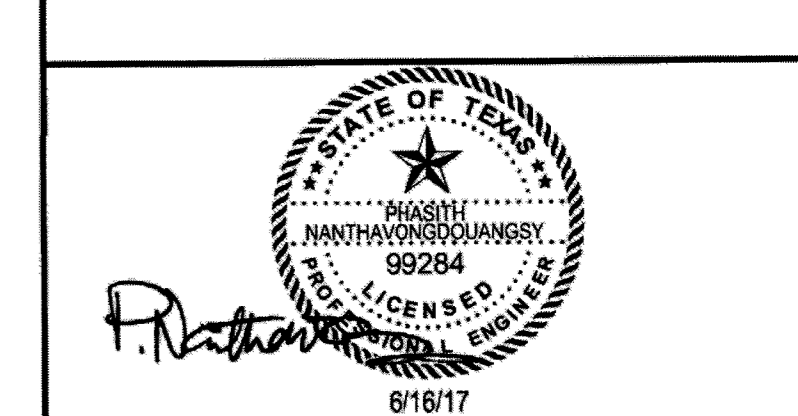
**SHEET NOTES:**  
**CONTROL JOINTS**  
 CONTROL JOINTS SHOULD BE SPACED A MAXIMUM TWELVE AND ONE HALF (12.5) FEET FOR FIVE (5) INCH THICK PAVEMENT AND A MAXIMUM CONTROL JOINT SPACING OF FIFTEEN (15) FEET FOR SIX (6) INCH OR THICKER PAVEMENT.  
 SAWCUT CONTROL JOINTS SHOULD BE CUT WITHIN SIX (6) TO TWELVE (12) HOURS OF CONCRETE PLACEMENT TO HELP CONTROL THE FORMATION OF PLASTIC SHRINKAGE CRACKS AS THE CONCRETE CURES. THE DEPTH OF THE JOINT SHOULD BE AT LEAST ONE QUARTER (1/4) OF THE SLAB DEPTH WHEN USING A CONVENTIONAL SAW OR ONE (1) INCH WHEN USING EARLY ENTRY SAWS. THE WIDTH OF THE CUT SHOULD BE IN ACCORDANCE WITH THE JOINT SEALANT MANUFACTURERS RECOMMENDATIONS.  
 THE INSTALLATION OF EXPANSION JOINTS IS OPTIONAL, BUT IF USED, THEY SHOULD HAVE A MAXIMUM SPACING OF SIXTY (60) FEET.  
 WHEN CONCRETE IS PLANNED TO BE PLACED AT DIFFERENT TIMES, WE RECOMMEND THE USE OF A CONSTRUCTION JOINT BETWEEN PAVING AREAS. THE CONSTRUCTION JOINT SHOULD CONSIST OF A BUTT JOINT, BUT NOT A KEYWAY JOINT.  
 DOWELS AT EXPANSION AND CONSTRUCTION JOINTS SHOULD CONSIST OF THREE QUARTER (3/4) INCH BARS, EIGHTEEN (18) INCHES IN LENGTH, WITH ONE (1) END TREATED TO SLIP, AND SPACED AT TWELVE (12) INCHES ON CENTER AT EACH JOINT.

**GENERAL CONSTRUCTION NOTES**  
 1. DIMENSION CONTROL PLAN PREPARED BY DAWSON VAN ORDEN ENGINEERS TO BE USED IN CONJUNCTION WITH THIS PLAN FOR LOCATING ALL IMPROVEMENTS.  
 2. ALL UNDERGROUND UTILITIES SHOWN ARE NOT GUARANTEED TO BE COMPLETE OR DEFINITE, BUT WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE.  
 3. CONTRACTOR TO VERIFY ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO CONSTRUCTION.  
 4. THE LOCATION OF ALL UTILITIES PRESENTED ON THESE DRAWINGS IS SHOWN IN AN APPROXIMATE MANNER. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.  
 5. CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS REQUIRED PRIOR TO STARTING CONSTRUCTION. CONTRACTOR TO VERIFY THAT ALL ADA AREAS COMPLY WITH MAXIMUM CROSS SLOPES OF 2% AND MAXIMUM RUN SLOPES OF 5%.

**LEGEND:**

	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
	CONSTRUCTION JOINT
	CONTROL/EXPANSION JOINT

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/18/2017



**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

**MARCEL COMMONS II**  
**PAVEMENT JOINT PLAN**

SCALE 1"=40'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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**C1.3**

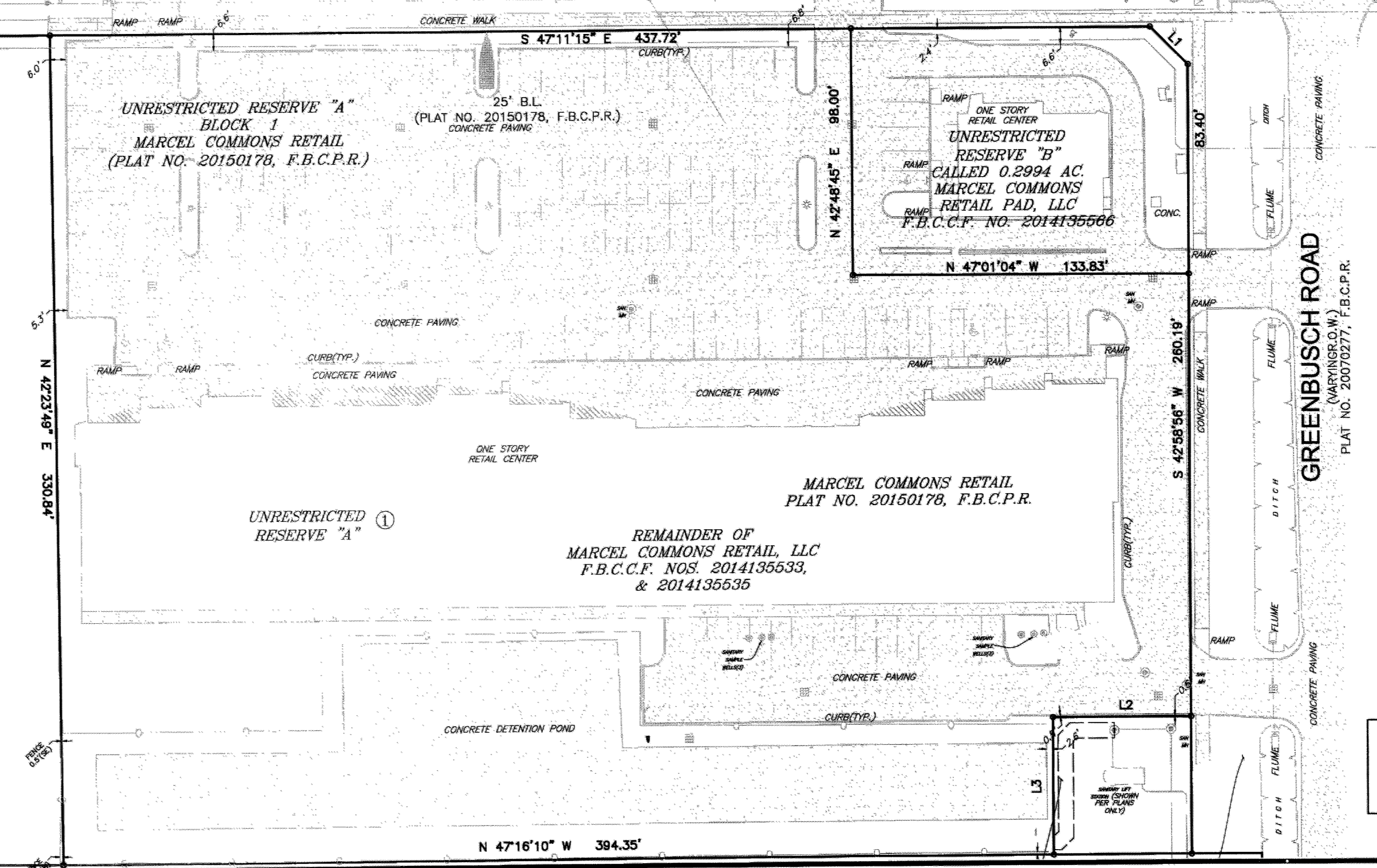
CONVEYED TO ENSTOR KATY STORAGE AND TRANSPORTATION, L.P. F.B.C.C.F. NO. 2006102656

CALLED 1.104 AC. CONVEYED TO KENNETH W. POWELL VOL. 2213, PG. 972 F.B.C.D.R.

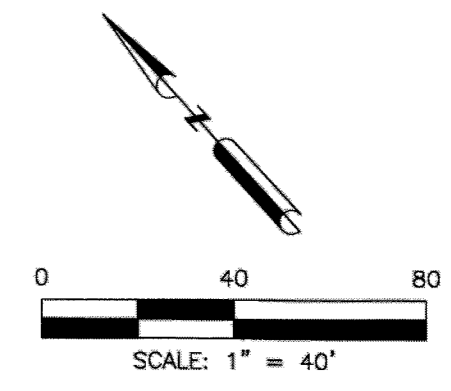
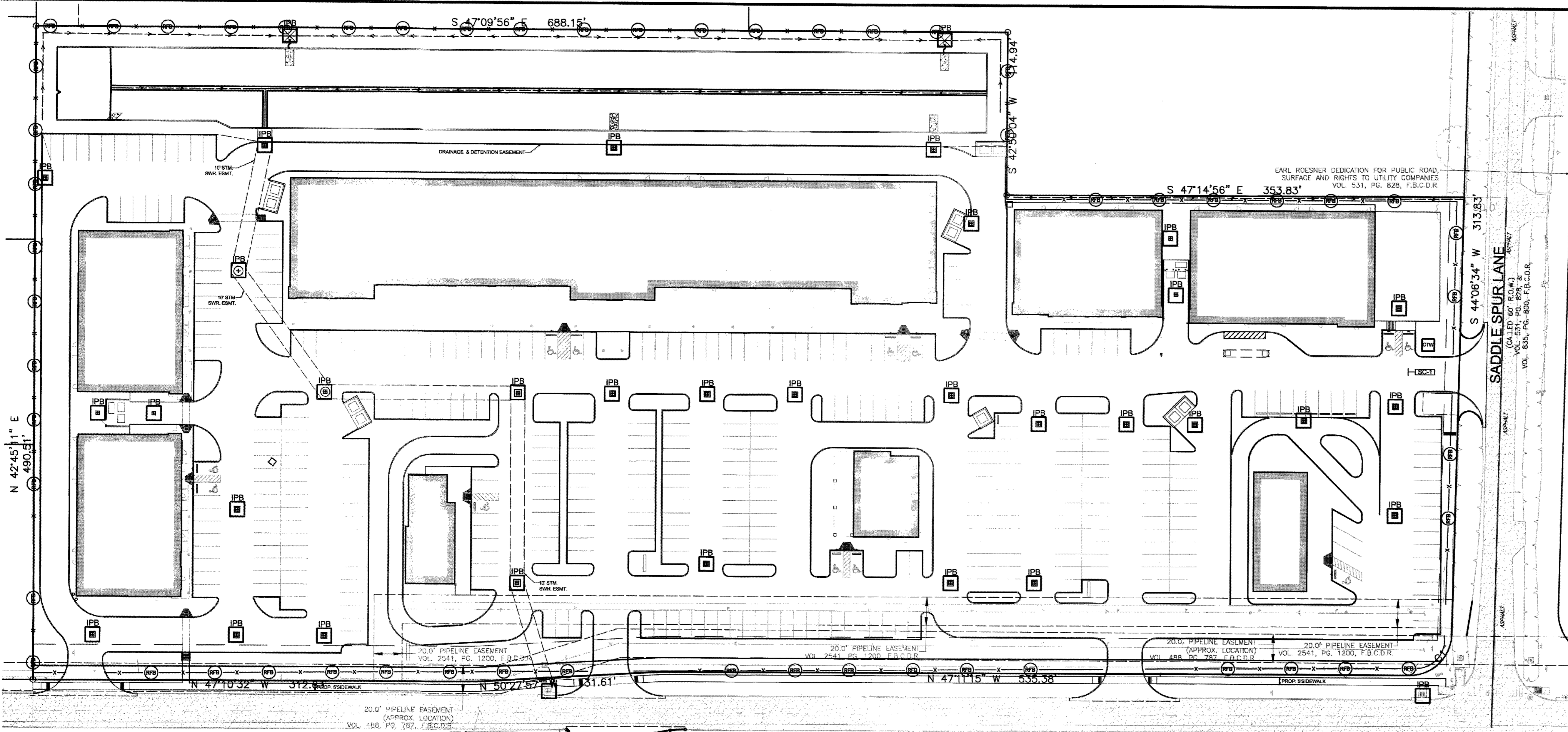
UNRESTRICTED RESERVE "A" BLOCK 1 MARCEL COMMONS COMMERCIAL (PLAT NO. 20150176, F.B.C.P.R.)

**CURVE TABLE**

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	30.00'	88°42'11"	38.70'	N 88°27'40" E	34.95'



APPROVED: *M. Powell*  
 DEVELOPMENT COORDINATOR  
 DATE: 11/3/18



**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
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**SHEET NOTES:**

**SWPPP NOTE:**  
 ANY OFF-SITE STAGING AREA UTILIZED BY THE OPERATOR OF THIS SITE MUST BE INCLUDED IN THE SWPPP NARRATIVE PLAN AND TO SWPPP SITE PLAN AS REQUIRED BY THE TPDES TEXAS GENERAL PERMIT DRY15000 (SECTION F). ANY SUCH AREA INCLUDED IN THE SWPPP WILL BE TREATED BY THE OPERATOR AS ANY OTHER PART OF THE CONSTRUCTION ACTIVITY FOR THE PURPOSES OF STORM WATER POLLUTION PREVENTION.

**LEGEND:**

EXISTING PAVEMENT  
 (CONCRETE/ASPHALT AS NOTED)

**EROSION CONTROL SCHEDULE AND SEQUENCING**

**I. ROUGH GRADING**  
 GRADING CONSTRUCTION ENTRANCE/EXIT, SILT FENCE PROTECTION, AND STONE OVERFLOW STRUCTURES SHALL BE INSTALLED PRIOR TO THE INITIATION OF ROUGH GRADING, AS NEEDED.

**II. UTILITY INSTALLATION**  
 ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING UTILITY INSTALLATION. INLET PROTECTION SHALL BE INSTALLED AS STORM DRAINAGE SYSTEM IS CONSTRUCTED.

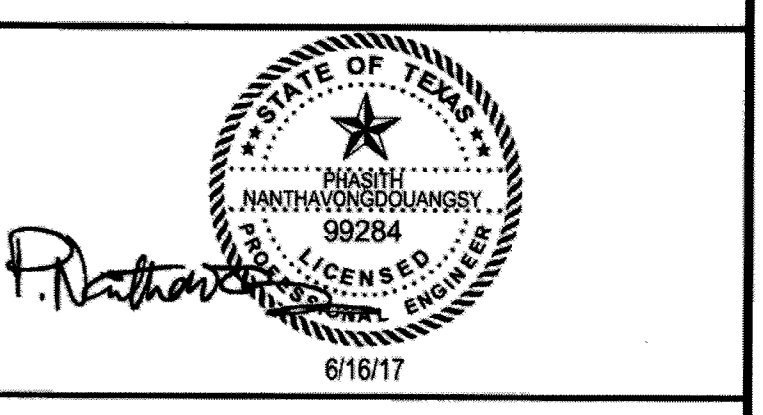
**III. PAVING**  
 ALL PRIOR EROSION CONTROL MEASURES INSTALLED ABOVE TO BE MAINTAINED AS NECESSARY DURING PAVING AND THROUGHOUT THE REMAINDER OF THE PROJECT.

**IV. FINAL GRADING/SOIL**  
 STABILIZATION ALL TEMPORARY EROSION CONTROL MEASURES TO BE REMOVED AT THE CONCLUSION OF THE PROJECT ONCE FINAL STABILIZATION HAS BEEN ACHIEVED.

**SWPPP LEGEND:**

STABILIZED CONSTRUCTION EXIT  
 REINFORCED FILTER FABRIC FENCE MIN. 2' BEHIND CURB  
 INLET PROTECTION BARRIER  
 CONCRETE TRUCK WASHOUT AREA

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017

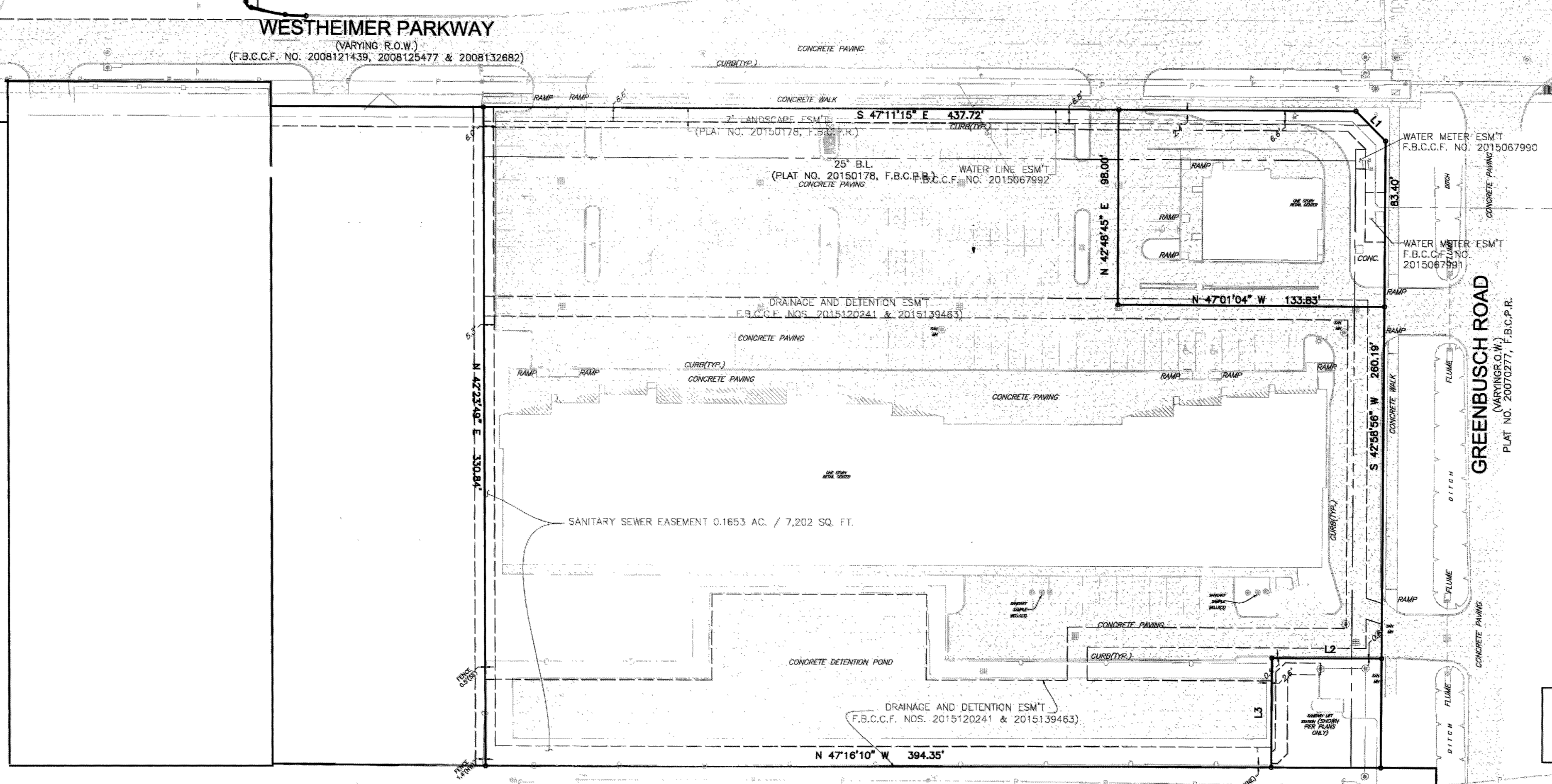


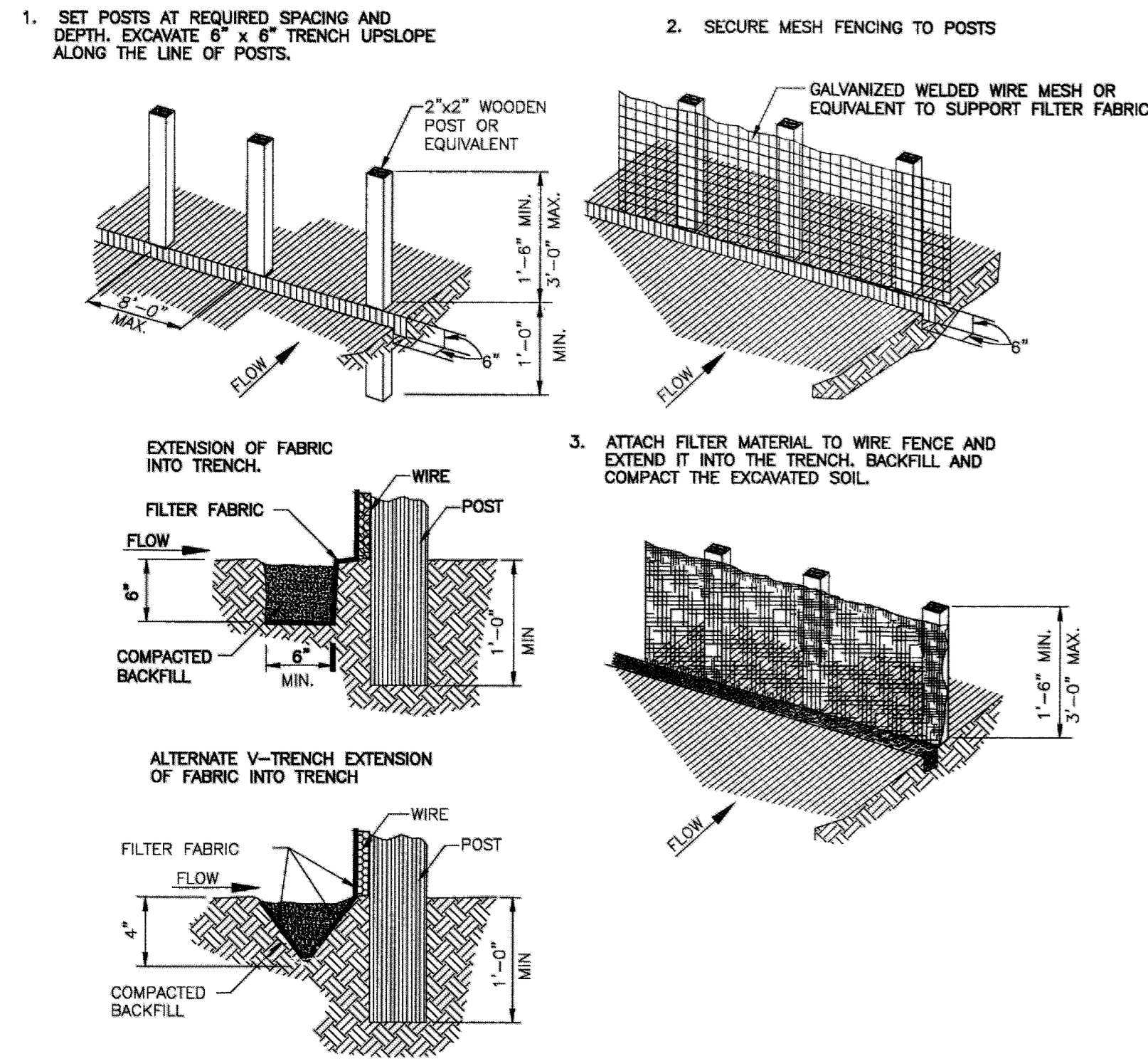
**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**  
**STORM WATER POLLUTION PREVENTION PLAN**

SCALE	DESIGN	DRAWN
1"=40'	MF, BB, MCE, CAH	MF, BB, MCE, CAH

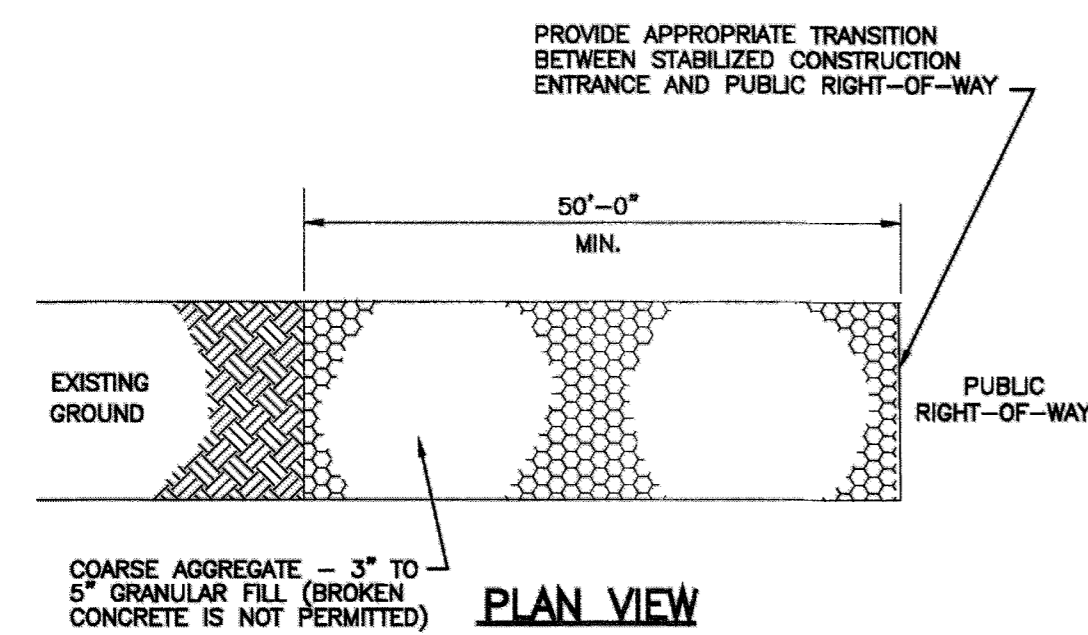
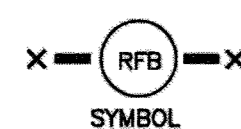
APPROVED: *Max*  
 DEVELOPMENT COORDINATOR  
 DATE: 1/3/18





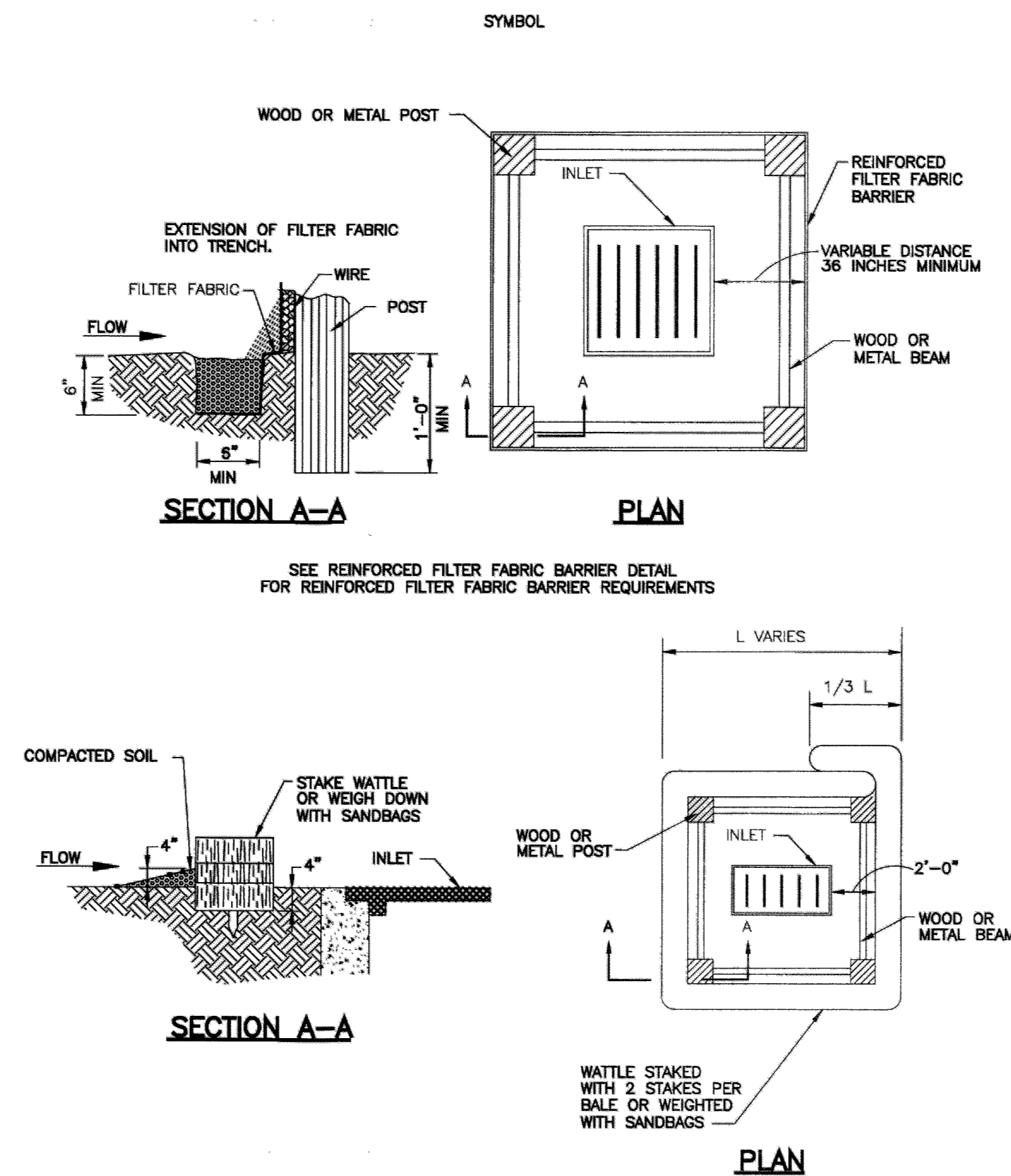
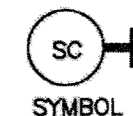
- GENERAL NOTES:**
1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
  2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING.
  3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
  4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

**REINFORCED FILTER FABRIC BARRIER**



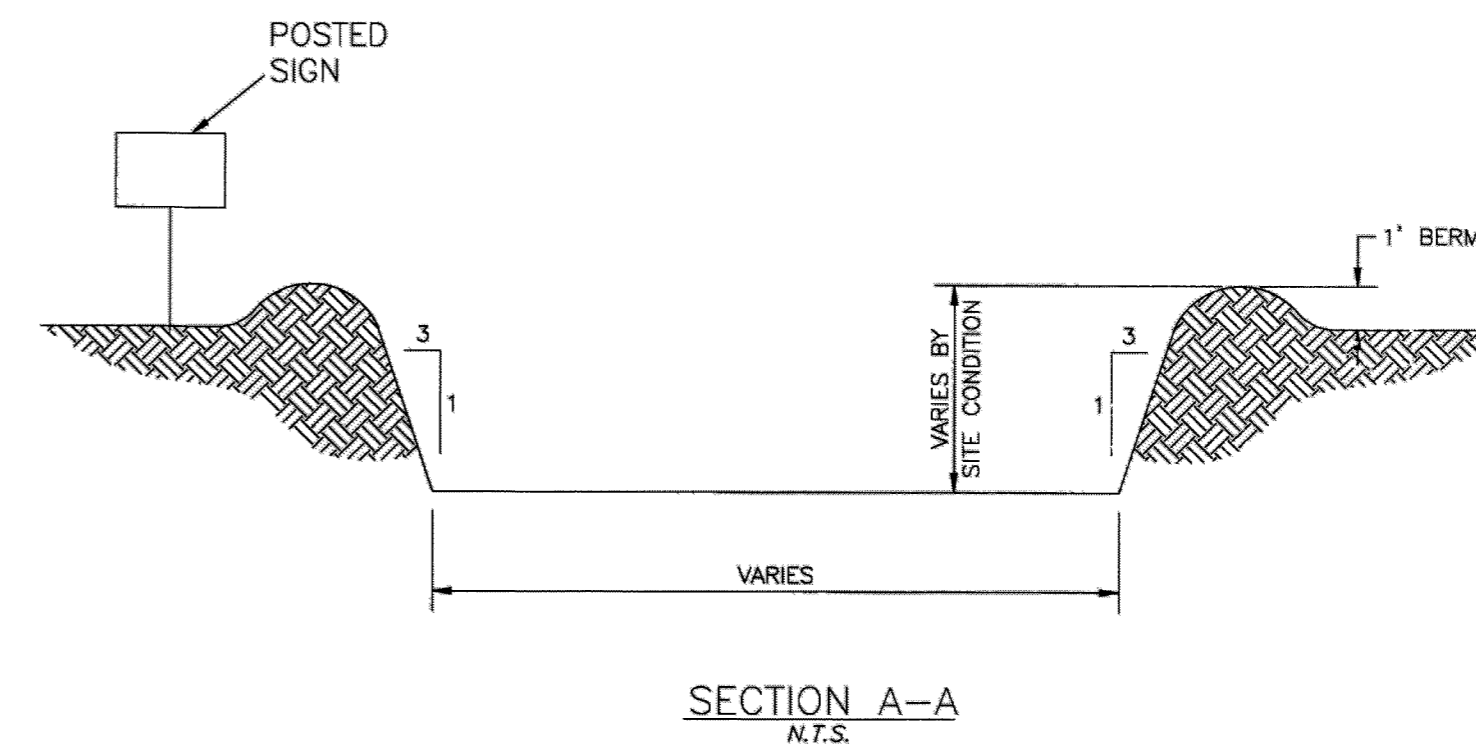
- GENERAL NOTES:**
1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
  2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
  3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
  4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
  5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
  6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
  7. ALTERNATIVE METHODS OF CONSTRUCTION INCLUDE:
    - CEMENT STABILIZED SOIL: COMPACTED CEMENT STABILIZED SOIL, LIMESTONE AGGREGATE, OR OTHER FILL MATERIAL IN AN APPLICATION OF THICKNESS OF 8 INCHES.
    - WOOD MATS: OAK OR OTHER HARDWOOD TIMBERS PLACED EDGE TO EDGE AND ACROSS SUPPORT WOODEN BEAMS WHICH ARE PLACED ON TOP OF EXISTING SOIL IN AN APPLICATION THICKNESS OF 6 INCHES.
    - STEEL MATS: PERFORATED MATS PLACED ACROSS PERPENDICULAR SUPPORT MEMBERS.

**STABILIZED CONSTRUCTION ACCESS**



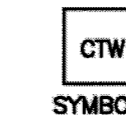
**NOTE:**  
TYPICALLY STRAW BALES ARE NOT RECOMMENDED FOR INLET PROTECTION BARRIERS.

**INLET PROTECTION BARRIERS FOR STAGE I INLETS**



- GENERAL NOTES:**
1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
  2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
  3. UPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
  4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
  5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCKS EQUIPMENT.

**CONCRETE TRUCK WASHOUT AREA**

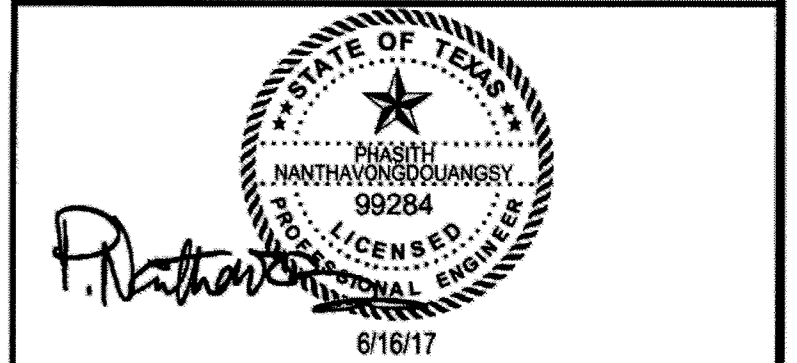


**BENCHMARKS:**  
ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 276 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAN NOTE:**  
THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 481570045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 4815702110L.

**SHEET NOTES:**

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/16/2017



**W|G|A**  
WARD, GETZ & ASSOCIATES, LLP  
CONSULTING ENGINEERS  
TEXAS REGISTERED ENGINEERING FIRM F-9756  
2500 Tanglewilde, Suite 120  
Houston, Texas 77065  
713.789.1900

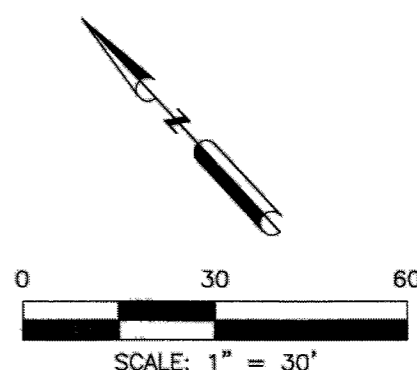
**MARCEL COMMONS II**  
**STORM WATER POLLUTION PREVENTION PLAN DETAILS**

APPROVED: *[Signature]*  
DEVELOPER/COORDINATOR  
DATE: 1/31/18

SCALE	DESIGN	DRAWN
N.T.S.	MF, BB, MCE, CAH	MF, BB, MCE, CAH

CURVE TABLE

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	30.00'	88°42'11"	38.70'	N 88°27'40" E	34.95'

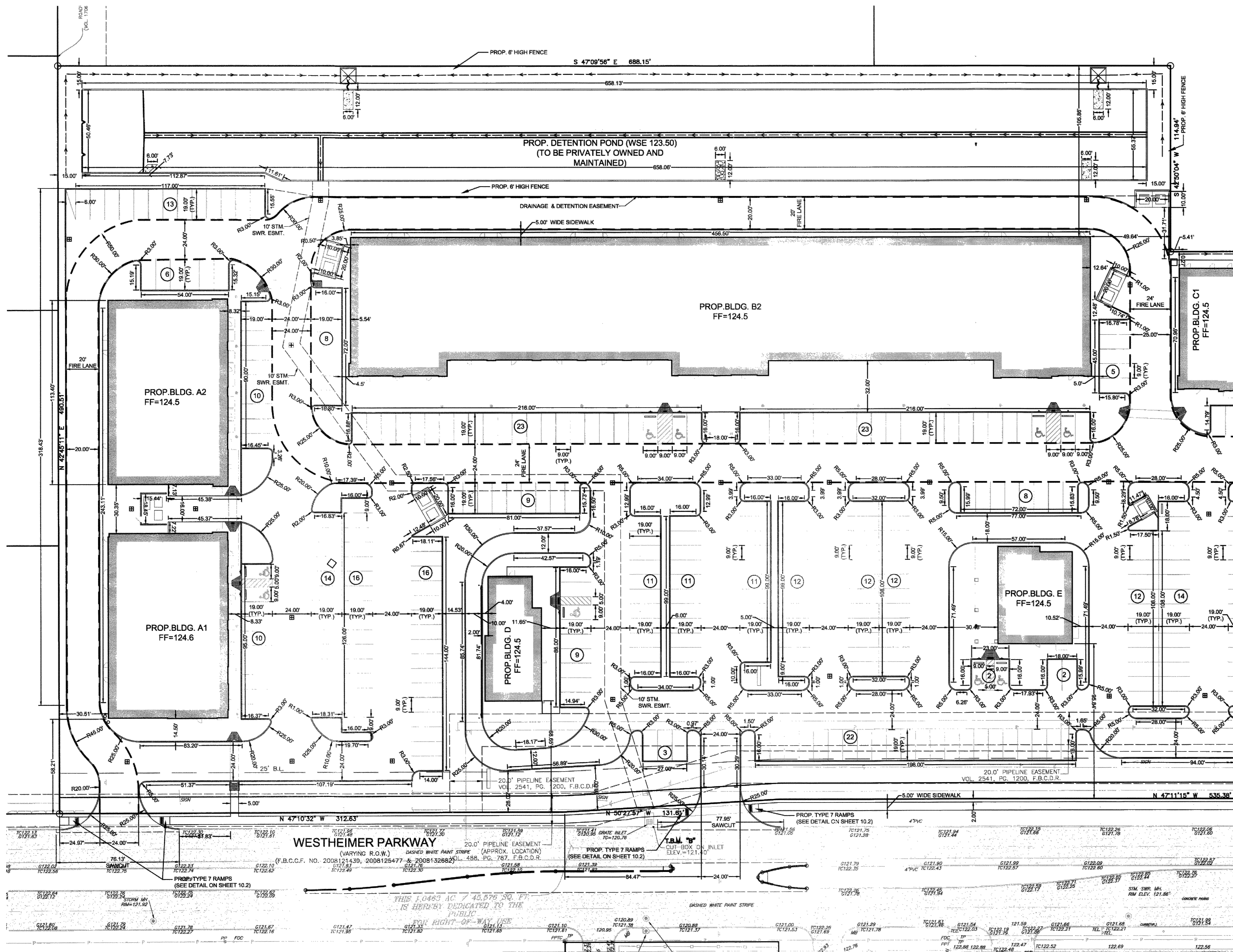


**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER-SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045-1, REVISED APRIL 2, 2014 AND THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**

**LEGEND:**  
 EXISTING PAVEMENT  
 (CONCRETE/ASPHALT AS NOTED)



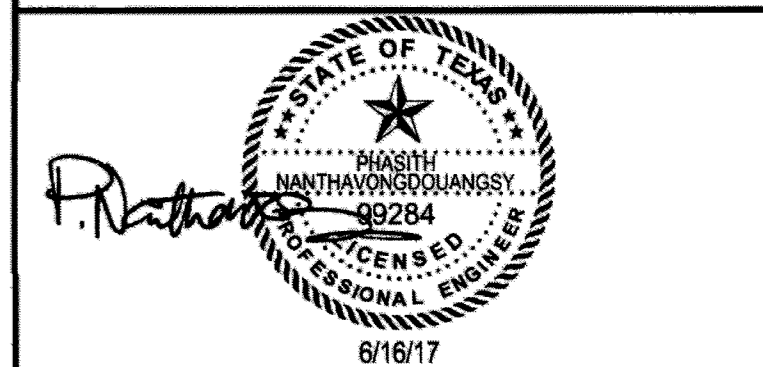
MATCHLINE  
(SEE SHEET C3.2)

**DIMENSION CONTROL LEGEND:**

	PROPOSED FIRE LANE
	PARKING SPACE COUNT

- SHEET NOTES:**
- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
  - REFERENCE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
  - CIVIL PROPOSED PARKING = 368 STANDARD SPACES AND 9 HANDICAP SPACE.
  - PROPOSED HANDICAP SIGN SEE PAVEMENT DETAILS.
  - PROPOSED SIGN REFERENCE LANDSCAPE ARCHITECT PLANS FOR DETAILS.
  - CONTRACTOR SHALL REFERENCE THE LANDSCAPE ARCHITECTURAL PLANS FOR ALL COURTYARD DETAILS.
  - EXISTING SURVEY WAS DONE BY WINDROSE LAND SERVICES, INC. WITH THEIR CONTACT INFORMATION AS FOLLOWS:  
 Windrose Land Services, Inc.  
 3200 Wilcrest, Suite 325 Houston, Texas 77042  
 Phone (713) 458-2281 Fax (713) 461-1151

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
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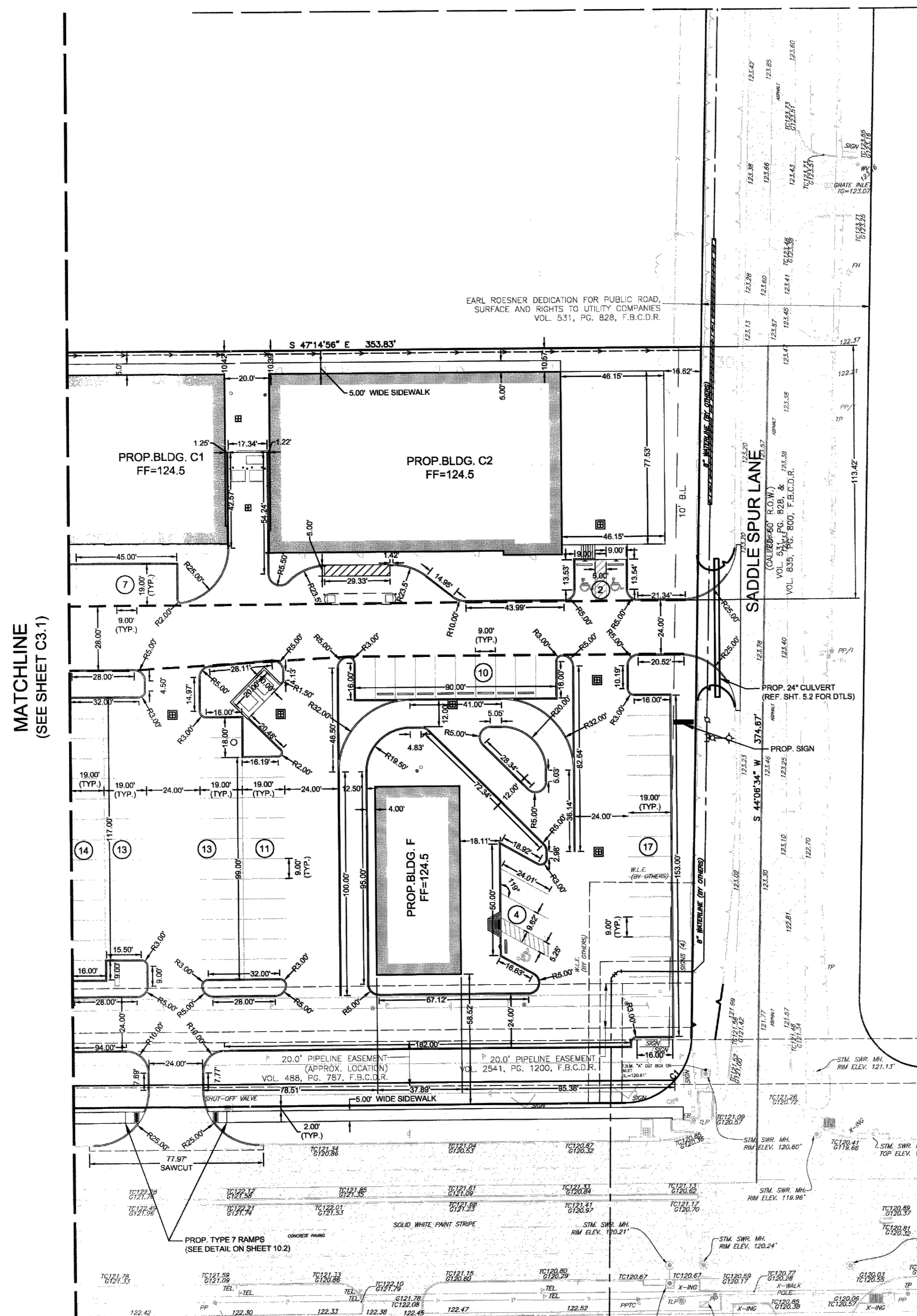


**W|G|A**  
 WARD, GETZ & ASSOCIATES, L.L.P.  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1900

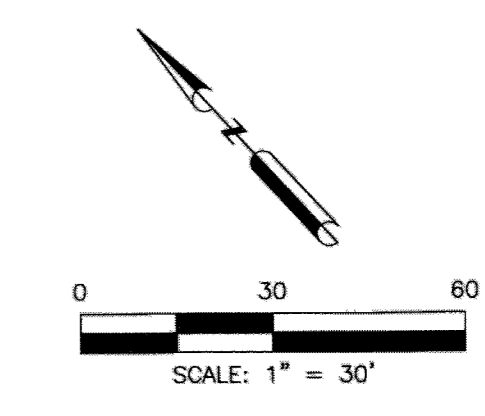
**MARCEL COMMONS II**  
**DIMENSION CONTROL PLAN**

SCALE 1"=30'	DESIGN MF,BB,MCE,CAH	DRAWN MF,BB,MCE,CAH
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APPROVED:   
 DEVELOPMENT COORDINATOR  
 DATE: 1/31/18



MATCHLINE  
(SEE SHEET C3.1)



**BENCHMARKS:**  
ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).

TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)

TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 807 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C010L.

**SHEET NOTES:**

**LEGEND:**

	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
--	--

**CURVE TABLE**

CURVE	RADIUS	DELTA	ARC	BEARING	CHORD
C1	30.00'	88°42'11"	38.70'	N 88°27'40" E	34.95'

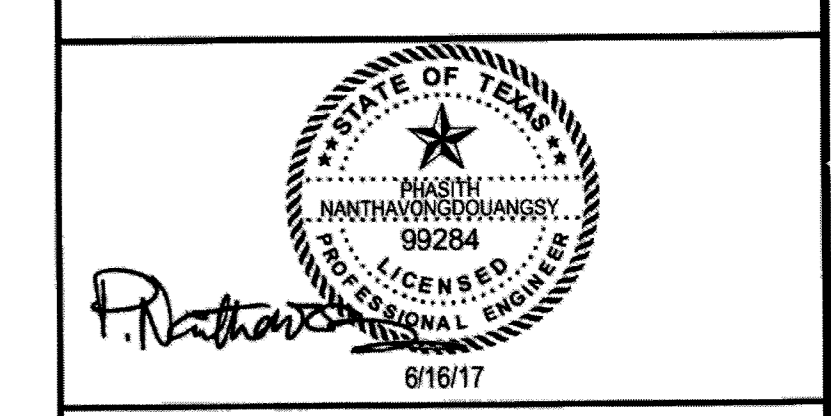
**DIMENSION CONTROL LEGEND:**

	PROPOSED FIRE LANE
	PARKING SPACE COUNT

**SHEET NOTES:**

- ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- REFERENCE ARCHITECTURAL PLANS FOR EXACT BUILDING DIMENSIONS.
- CIVIL PROPOSED PARKING = 368 STANDARD SPACES AND 9 HANDICAP SPACE.
- PROPOSED HANDICAP SIGN SEE PAVEMENT DETAILS.
- PROPOSED SIGN. REFERENCE LANDSCAPE ARCHITECT PLANS FOR DETAILS.
- CONTRACTOR SHALL REFERENCE THE LANDSCAPE ARCHITECTURAL PLANS FOR ALL COURTYARD DETAILS.
- EXISTING DRIVEWAY AND CULVERT TO BE REMOVED. CONTRACTOR TO REGRADE EXISTING DITCH TO ENSURE POSITIVE DRAINAGE.
- EXISTING SURVEY WAS DONE BY WINDROSE LAND SERVICES, INC. WITH THEIR CONTACT INFORMATION AS FOLLOW:  
Windrose Land Services, Inc.  
3200 Wilcrest, Suite 325 Houston, Texas 77042  
Phone (713) 458-2281 Fax (713) 461-1151

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
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**WGA**  
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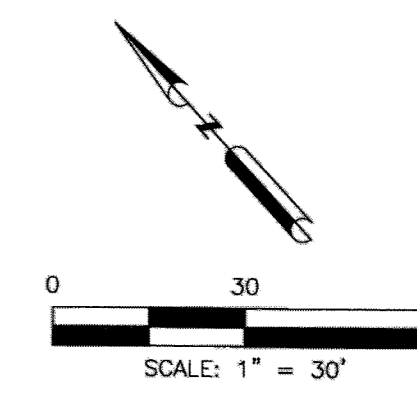
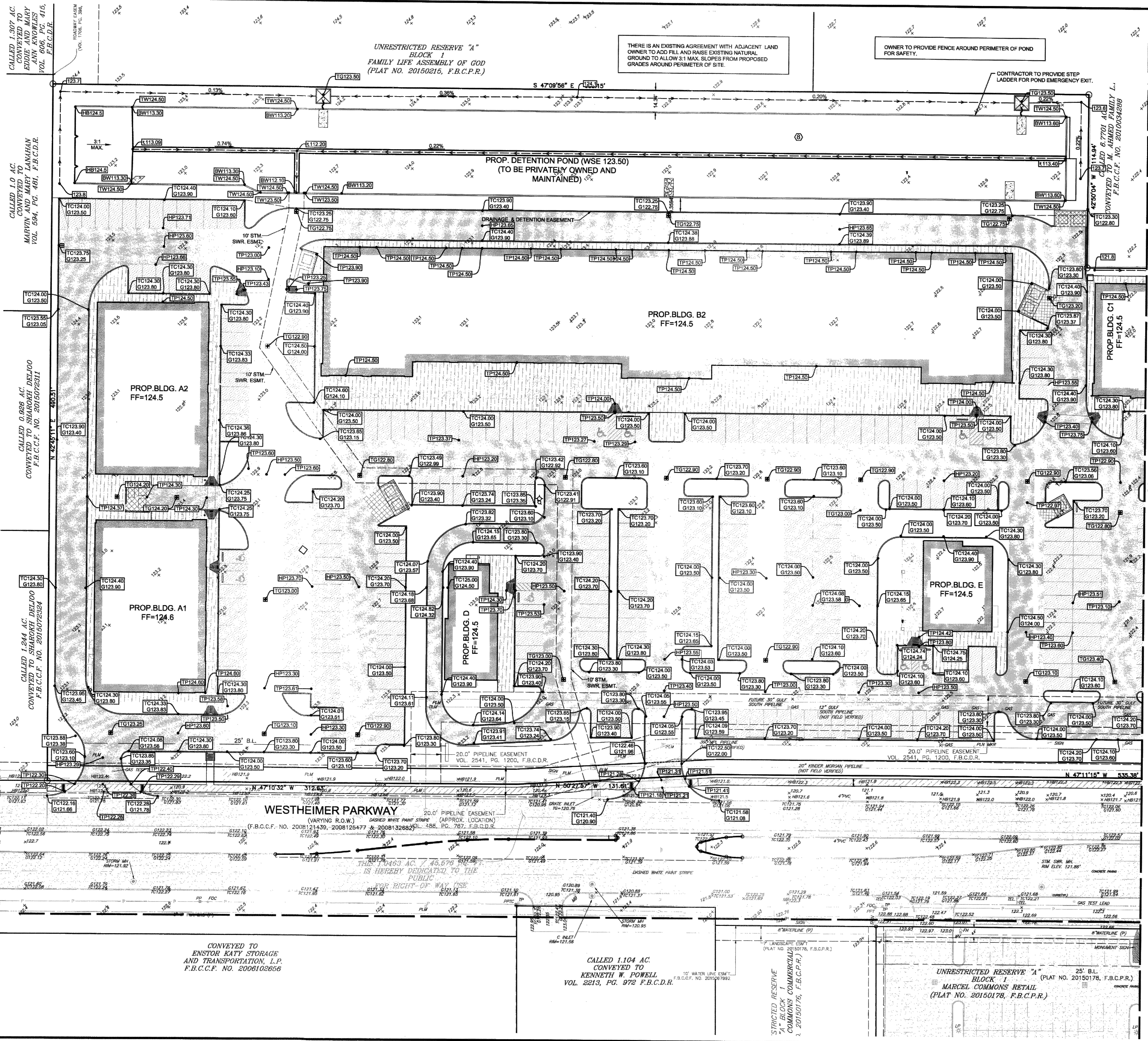
**MARCEL COMMONS II**

**DIMENSION CONTROL PLAN**

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED:   
DEVELOPMENT SUPERVISOR  
DATE: 1/3/18

C3.2



**BENCHMARKS:**  
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**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "C", (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C010L.

**SHEET NOTES:**

- CONTROL JOINTS NOTES**
- CONTROL JOINTS SHOULD BE SPACED A MAXIMUM TWELVE AND ONE HALF (12.5) FEET FOR FIVE (5) INCH THICK PAVEMENT AND A MAXIMUM CONTROL JOINT SPACING OF FIFTEEN (15) FEET FOR SIX (6) INCH OR THICKER PAVEMENT.
  - SAWCUT CONTROL JOINTS SHOULD BE CUT WITHIN SIX (6) TO TWELVE (12) HOURS OF CONCRETE PLACEMENT TO HELP CONTROL THE FORMATION OF PLASTIC SHRINKAGE CRACKS AS THE CONCRETE CURES. THE DEPTH OF THE JOINT SHOULD BE AT LEAST ONE QUARTER (1/4) OF THE SLAB DEPTH WHEN USING A CONVENTIONAL SAW OR ONE (1) INCH WHEN USING EARLY ENTRY SAWS. THE WIDTH OF THE CUT SHOULD BE IN ACCORDANCE WITH THE JOINT SEALANT MANUFACTURERS RECOMMENDATIONS.
  - THE INSTALLATION OF EXPANSION JOINTS IS OPTIONAL, BUT IF USED, THEY SHOULD HAVE A MAXIMUM SPACING OF SIXTY (60) FEET.
  - WHEN CONCRETE IS PLANNED TO BE PLACED AT DIFFERENT TIMES, WE RECOMMEND THE USE OF A CONSTRUCTION JOINT BETWEEN PAVING AREAS. THE CONSTRUCTION JOINT SHOULD CONSIST OF A BUTT JOINT, BUT NOT A KEYWAY JOINT.
  - DOWNELS AT EXPANSION AND CONSTRUCTION JOINTS SHOULD CONSIST OF A MINIMUM OF THREE (3) INCH BARS, EIGHTEEN (18) INCHES IN LENGTH, WITH ONE (1) END TREATED TO SLIP, AND SPACED AT TWELVE (12) INCHES ON CENTER AT EACH JOINT.

**LEGEND:**

	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
	PROPOSED 4" CONCRETE PAVEMENT (SIDEWALK)
	PROPOSED 6" CONCRETE PAVEMENT
	PROPOSED 7" CONCRETE PAVEMENT
	PROPOSED BUILDING

**GRADING LEGEND:**

79.50	EXISTING GRADE
TC79.50	TOP OF CURB
G79.50	GUTTER
TP79.50	TOP OF PAVEMENT
TG79.50	TOP OF GRATE
79.50	PROPOSED NATURAL GROUND
ME79.50	MATCH EXISTING
HP79.50	HIGH POINT
TW79.50	TOP OF WALL
BW79.50	BASE OF WALL
TS79.50	TOP OF STAIR
BS79.50	BOTTOM OF STAIR
(1)	TRANSITION CURB 0" - 6" WITHIN 5 FEET
	SHOULDER
	SWALE
1.30	EXISTING CONTOUR
130	PROPOSED CONTOUR

- GRADING NOTES:**
- ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  - ALL SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSWALKS, SHALL CONFORM TO ALL APPLICABLE AMERICANS WITH DISABILITIES ACT STANDARDS AND THE TEXAS ACCESSIBILITY STANDARDS. IF ANY DISCREPANCY IS DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO POURING ANY PAVEMENT.
  - ALL SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSWALKS, SHALL NOT EXCEED A RUNNING SLOPE OF 5% (1:20) WITHOUT A RAMP, AND SHALL NOT EXCEED A 2% CROSS SLOPE (1:50).
  - THE ACCESSIBLE PARKING AND PASSENGER LOADING AREAS SHALL NOT EXCEED A SLOPE OF 2% (1:50) IN ANY DIRECTION.
  - ALL EXISTING APPURTENANCES ON SITE SHALL BE ADJUSTED TO PROPOSED GRADE AS APPLICABLE.
  - CONTRACTOR SHALL REFERENCE GEOTECHNICAL REPORT AND ALL ADDENDA FOR BUILDING PAD LIMITS AND PREPARATION REQUIREMENTS.
  - CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDS IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT UTILITIES.
  - CONTRACTOR TO PROVIDE EMERGENCY ESCAPE LADDER ON EAST END OF POND AS SECONDARY ESCAPE AND PROVIDE FENCE AROUND DETENTION POND TO PREVENT ACCIDENTAL FALL.

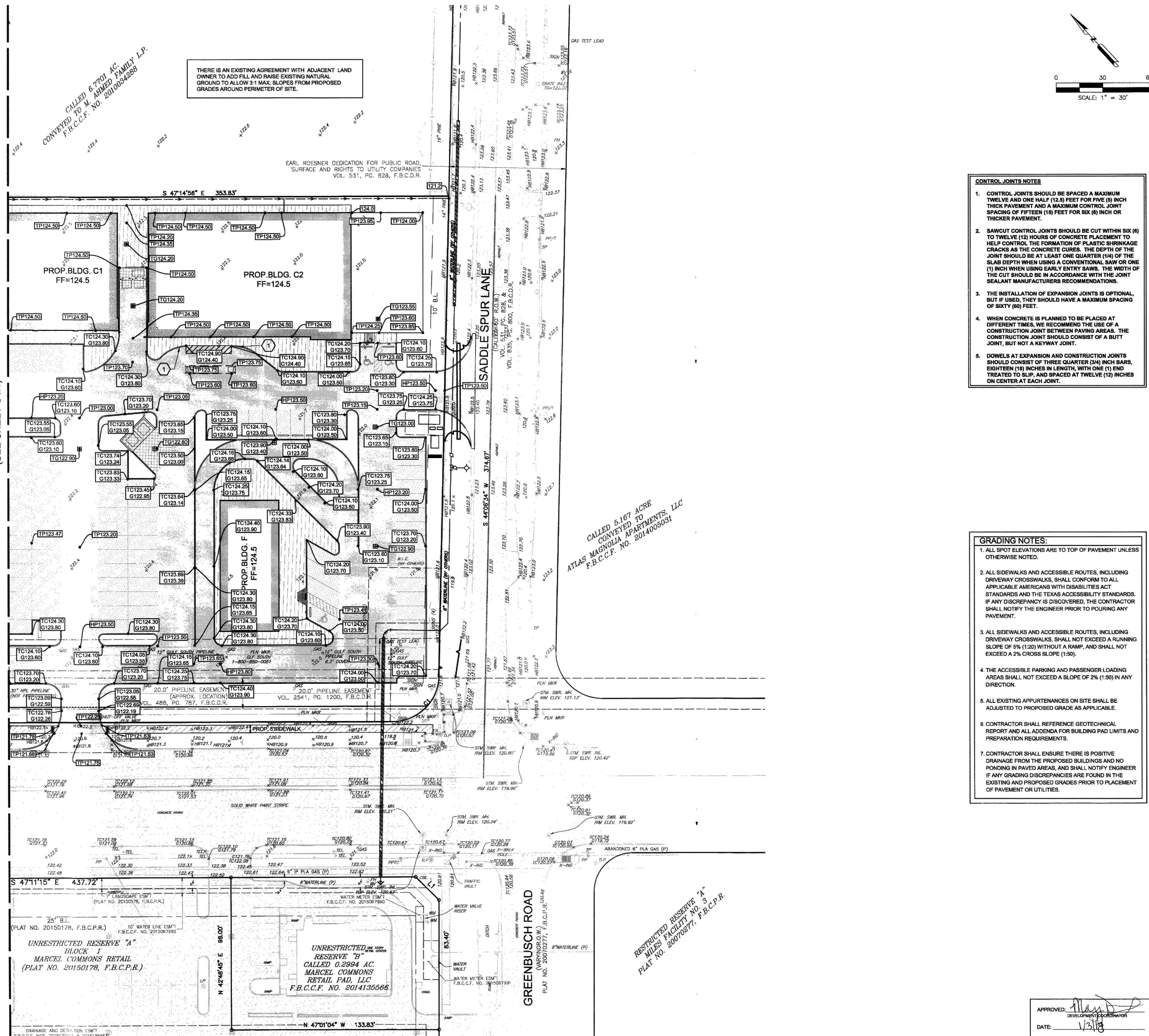
REV	DESCRIPTION	DATE
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**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM P-9756  
 2500 Tanglewilde, Suite 180  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**  
**GRADING PLAN**

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED:   
 DEVELOPER/COORDINATOR  
 DATE: 11/18

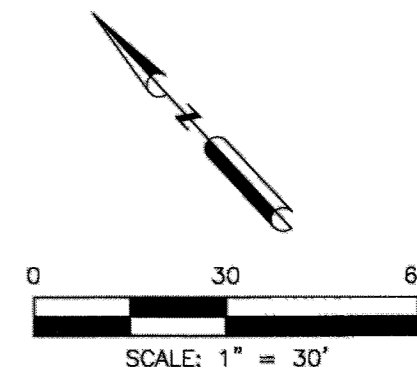


THERE IS AN EXISTING AGREEMENT WITH ADJACENT LAND OWNER TO ADD FILL AND RAISE EXISTING NATURAL GROUND TO ALLOW 3:1 MAX. SLOPES FROM PROPOSED GRADES AROUND PERIMETER OF SITE.

EARL ROESSNER DEDICATION FOR PUBLIC ROAD, SURFACE AND RIGHTS TO UTILITY COMPANIES VOL. 531, PG. 628, F.B.C.D.R.

CALLED 6.167 ACRE CONVEYED TO ATLAS MAGNOLIA APARTMENTS, LLC F.B.C.C.F. NO. 2014005031

RESTRICTED RESERVE "A" MILESS FACILITY NO. 3 PLAT NO. 20070277, F.B.C.P.R.



- CONTROL JOINTS NOTES**
- CONTROL JOINTS SHOULD BE SPACED A MAXIMUM TWELVE AND ONE HALF (12.5) FEET FOR FIVE (5) INCH THICK PAVEMENT AND A MAXIMUM CONTROL JOINT SPACING OF FIFTEEN (15) FEET FOR SIX (6) INCH OR THICKER PAVEMENT.
  - SAWCUT CONTROL JOINTS SHOULD BE CUT WITHIN SIX (6) TO TWELVE (12) HOURS OF CONCRETE PLACEMENT TO HELP CONTROL THE FORMATION OF PLASTIC SHRINKAGE CRACKS AS THE CONCRETE CURES. THE DEPTH OF THE JOINT SHOULD BE AT LEAST ONE QUARTER (1/4) OF THE SLAB DEPTH WHEN USING A CONVENTIONAL SAW OR ONE (1) INCH WHEN USING EARLY ENTRY SAWS. THE WIDTH OF THE CUT SHOULD BE IN ACCORDANCE WITH THE JOINT SEALANT MANUFACTURERS RECOMMENDATIONS.
  - THE INSTALLATION OF EXPANSION JOINTS IS OPTIONAL, BUT IF USED, THEY SHOULD HAVE A MAXIMUM SPACING OF SIXTY (60) FEET.
  - WHEN CONCRETE IS PLANNED TO BE PLACED AT DIFFERENT TIMES, WE RECOMMEND THE USE OF A CONSTRUCTION JOINT BETWEEN PAVING AREAS. THE CONSTRUCTION JOINT SHOULD CONSIST OF A BUTT JOINT, BUT NOT A KEYWAY JOINT.
  - DOWELS AT EXPANSION AND CONSTRUCTION JOINTS SHOULD CONSIST OF THREE QUARTER (3/4) INCH BARS, EIGHTEEN (18) INCHES IN LENGTH, WITH ONE (1) END TREATED TO SLP, AND SPACED AT TWELVE (12) INCHES ON CENTER AT EACH JOINT.

**LEGEND:**

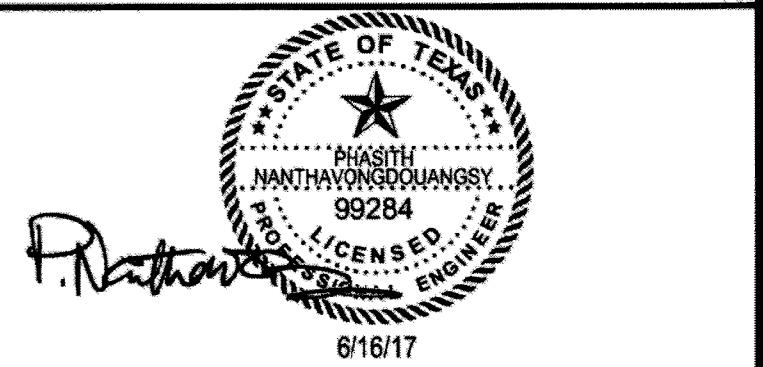
	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
	PROPOSED 4 1/2" CONCRETE PAVEMENT (SIDEWALK)
	PROPOSED 6" CONCRETE PAVEMENT
	PROPOSED 7" CONCRETE PAVEMENT
	PROPOSED BUILDING

**GRADING LEGEND:**

79.50	EXISTING GRADE
TC79.50	TOP OF CURB
G79.50	GUTTER
TP79.50	TOP OF PAVEMENT
TC79.50	TOP OF GRATE
79.50	PROPOSED NATURAL GROUND
ME79.50	MATCH EXISTING
HP79.50	HIGH POINT
TW79.50	TOP OF WALL
BW79.50	BASE OF WALL
TS79.50	TOP OF STAIR
BS79.50	BOTTOM OF STAIR
(1)	TRANSITION CURB 0" - 6" WITHIN 5 FEET
(S)	SWALE
(H)	HIGH POINT
130	EXISTING CONTOUR
130	PROPOSED CONTOUR

- GRADING NOTES:**
- ALL SPOT ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE NOTED.
  - ALL SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSWALKS, SHALL CONFORM TO ALL APPLICABLE AMERICANS WITH DISABILITIES ACT STANDARDS AND THE TEXAS ACCESSIBILITY STANDARDS. IF ANY DISCREPANCY IS DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO POURING ANY PAVEMENT.
  - ALL SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING DRIVEWAY CROSSWALKS, SHALL NOT EXCEED A RUNNING SLOPE OF 5% (1:20) WITHOUT A RAMP, AND SHALL NOT EXCEED A 2% CROSS SLOPE (1:50).
  - THE ACCESSIBLE PARKING AND PASSENGER LOADING AREAS SHALL NOT EXCEED A SLOPE OF 2% (1:50) IN ANY DIRECTION.
  - ALL EXISTING APPURTENANCES ON SITE SHALL BE ADJUSTED TO PROPOSED GRADE AS APPLICABLE.
  - CONTRACTOR SHALL REFERENCE GEOTECHNICAL REPORT AND ALL ADDENDA FOR BUILDING PAD LIMITS AND PREPARATION REQUIREMENTS.
  - CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS, AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017

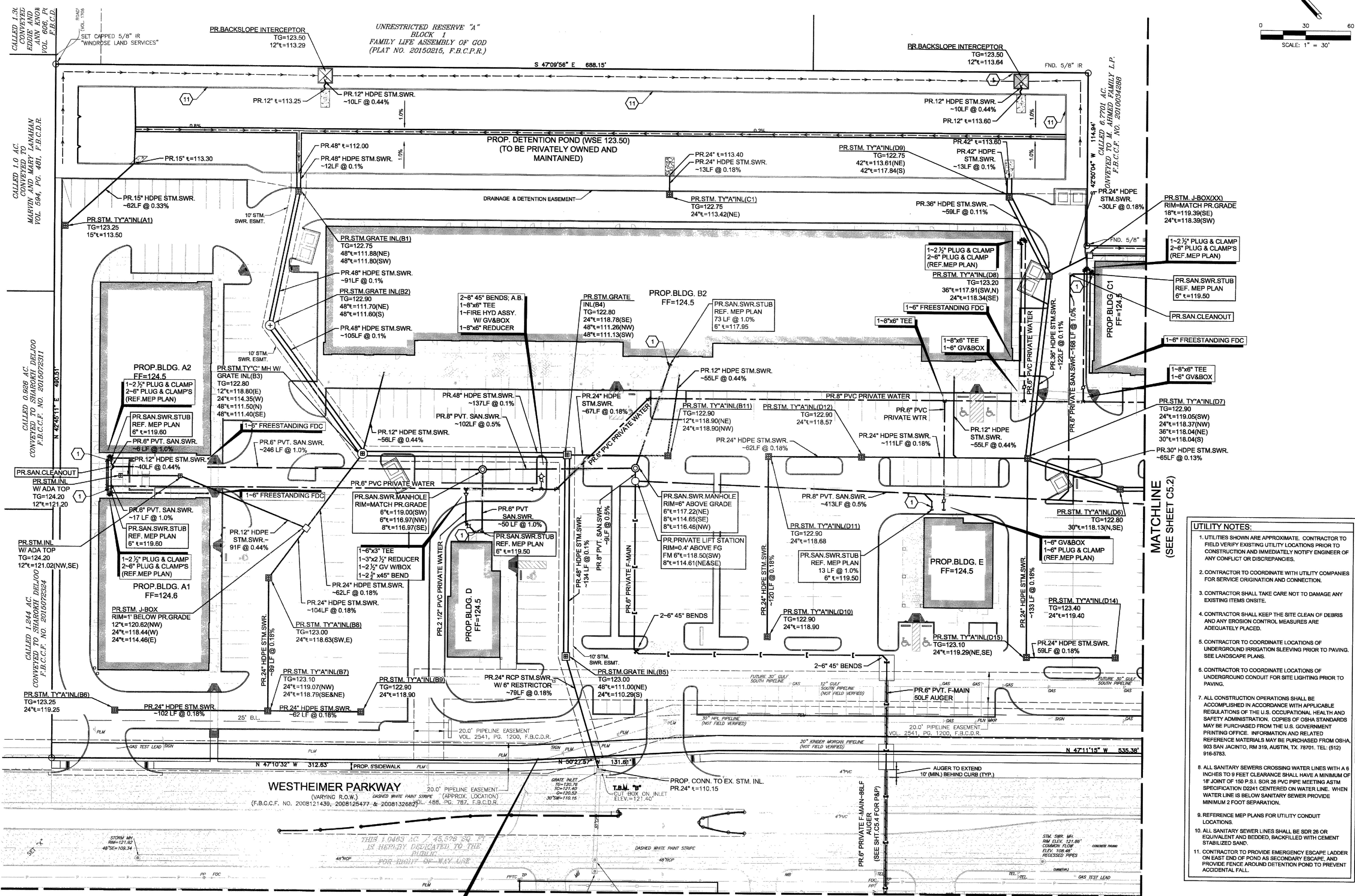


**WGA**  
WARD, GETZ & ASSOCIATES, LLP  
CONSULTING ENGINEERS  
TEXAS REGISTERED ENGINEERING FIRM F-9756  
2500 Tanglewilde, Suite 130  
Houston, Texas 77065  
713.789.1900

**MARCEL COMMONS II**  
**GRADING PLAN**

APPROVED: *[Signature]*  
DATE: 1/3/18

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 85).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON).  
 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERN SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRADE INLET. (SHOWN HEREON).

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "C". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1985, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0100.

**SHEET NOTES:**

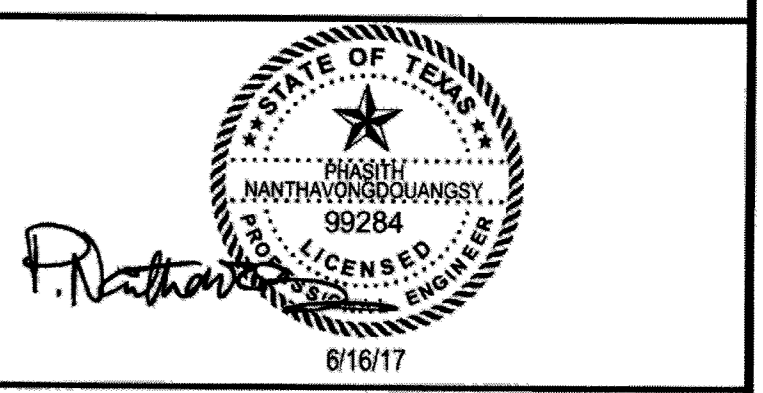
**LEGEND:**

- EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
- PROPOSED WATER LINE PROTECTION
- PROPOSED SAMPLE WELL

**UTILITY NOTES:**

- UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ENGINEER OF ANY CONFLICT OR DISCREPANCIES.
- CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR SERVICE ORIGIN AND CONNECTION.
- CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING ITEMS ON SITE.
- CONTRACTOR SHALL KEEP THE SITE CLEAN OF DEBRIS AND ANY EROSION CONTROL MEASURES ARE ADEQUATELY PLACED.
- CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND IRRIGATION SLEEVING PRIOR TO PAVING. SEE LANDSCAPE PLANS.
- CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
- ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 903 SAN JACINTO, RM 319, AUSTIN, TX. 78701. TEL: (512) 918-9783.
- ALL SANITARY SEWERS CROSSING WATER LINES WITH A 6 INCHES TO 9 FEET CLEARANCE SHALL HAVE A MINIMUM OF 18" Joints of 150 P.S.I. SDR 26 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
- REFERENCE MEP PLANS FOR UTILITY CONDUIT LOCATIONS.
- ALL SANITARY SEWER LINES SHALL BE SDR 26 OR EQUIVALENT AND BEDDED, BACKFILLED WITH CEMENT STABILIZED SAND.
- CONTRACTOR TO PROVIDE EMERGENCY ESCAPE LADDER ON EAST END OF POND AS SECONDARY ESCAPE, AND PROVIDE FENCE AROUND DETENTION POND TO PREVENT ACCIDENTAL FALL.

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**WGA**  
 WARD, GETZ & ASSOCIATES, L.P.  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM P-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

**MARCEL COMMONS II**

**UTILITY PLAN**

SCALE: 1"=30'  
 DESIGN: MF, BB, MCE, CAH  
 DRAWN: MF, BB, MCE, CAH

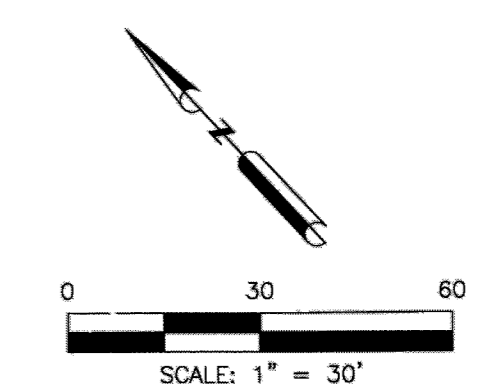
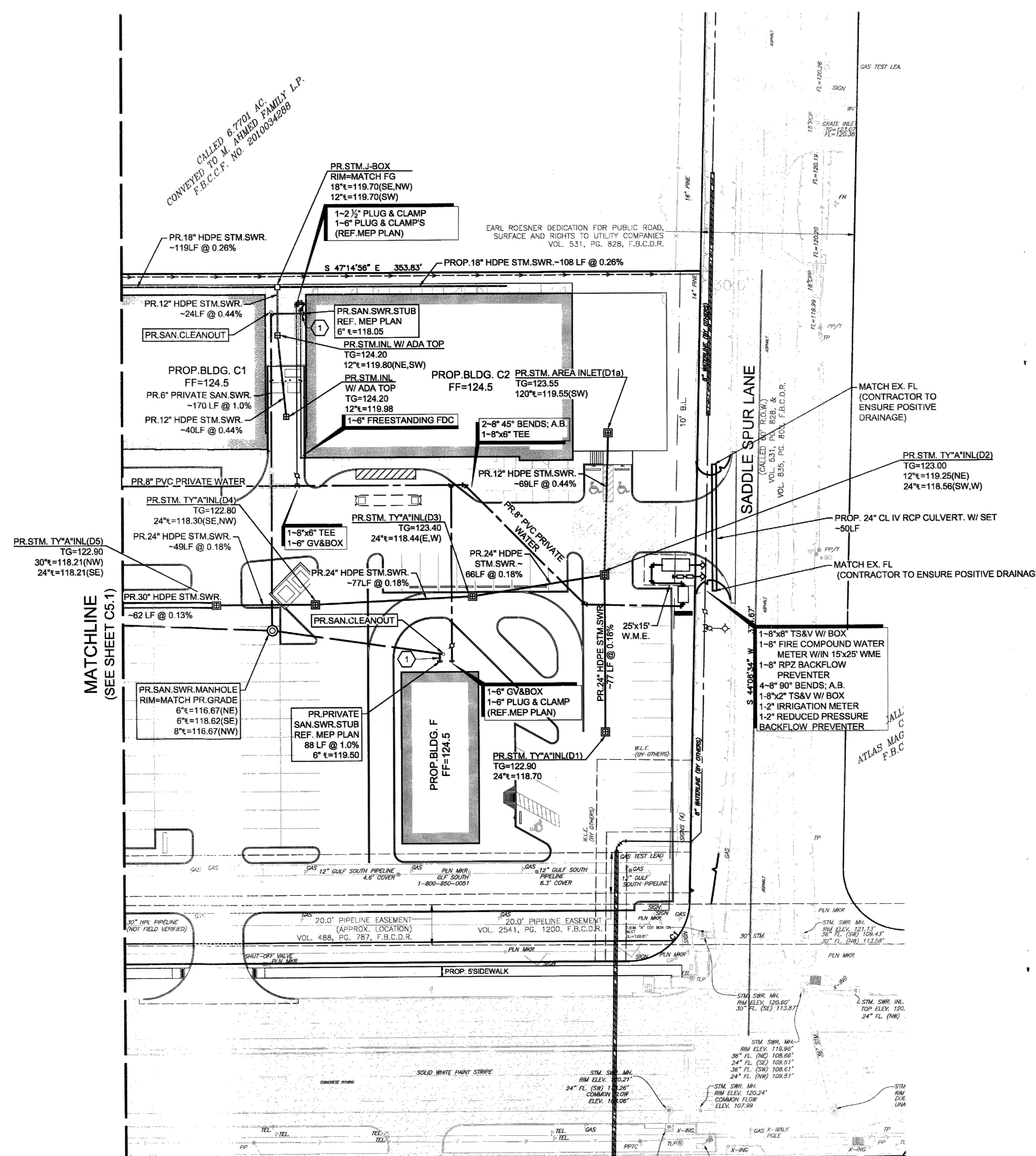
**CAUTION! UNDERGROUND CENTERPOINT 2" STL GAS LINE**

**MATCHLINE (SEE SHEET C5.2)**

**MATCHLINE (SEE SHEET C5.3)**

APPROVED: [Signature]  
 DATE: 1/31/18

C5.1



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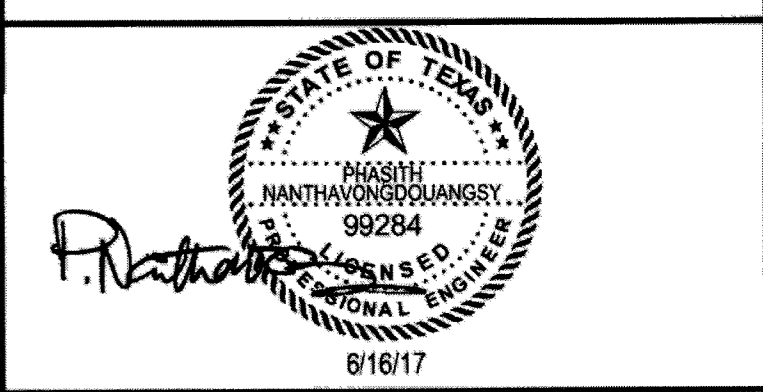
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  - CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR SERVICE ORIGIN AND CONNECTION.
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  - CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
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  - ALL SANITARY SEWERS CROSSING WATER LINES WITH A 6 INCHES TO 9 FEET CLEARANCE SHALL HAVE A MINIMUM OF 18" JOINT OF 150 P.S.I. SDR 26 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
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- SHEET NOTES:**
- EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
  - PROPOSED WATER LINE PROTECTION
  - PROPOSED SAMPLE WELL

**LEGEND:**

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**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
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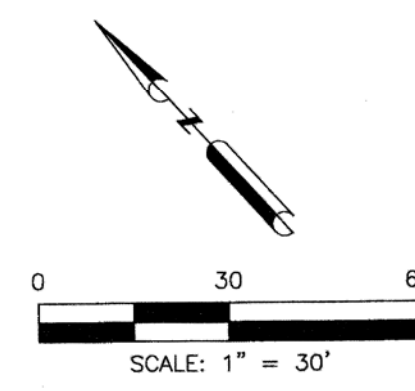
**MARCEL COMMONS II**

**UTILITY PLAN**

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED: *[Signature]*  
 DEVELOPER/ENGINEER  
 DATE: 1/3/18

C5.2



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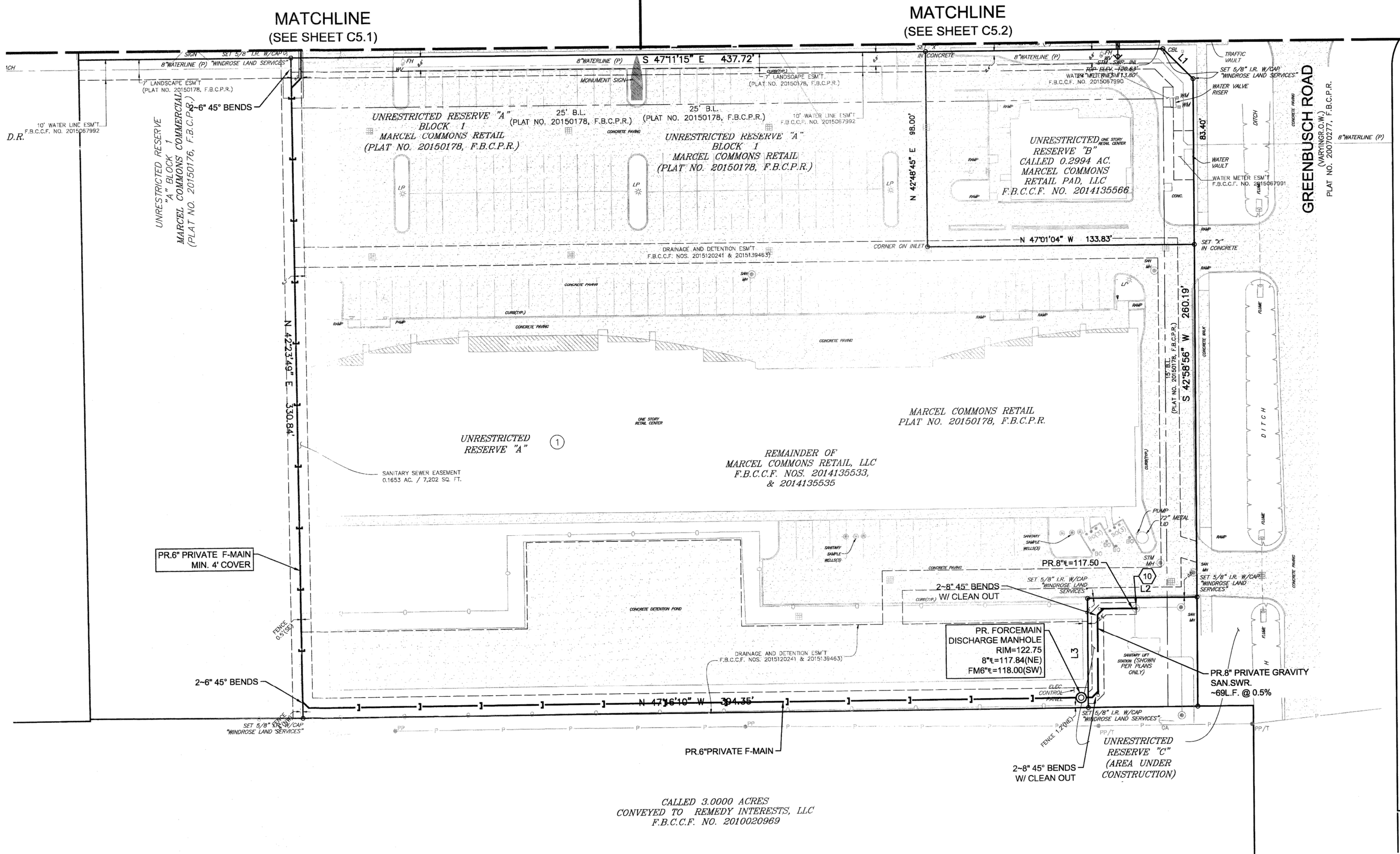
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**SHEET NOTES:**

**LEGEND:**

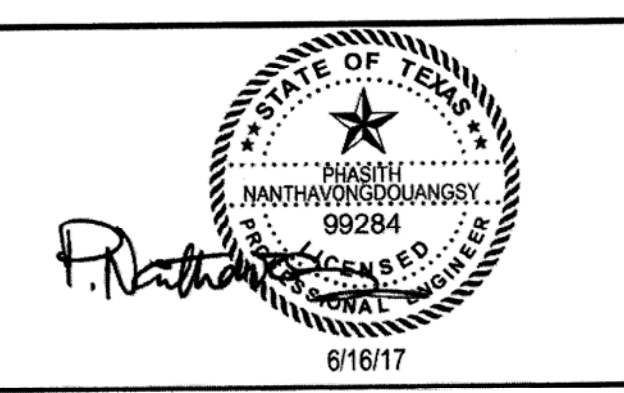
	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
	PROPOSED WATER LINE PROTECTION

- UTILITY NOTES:**
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  - CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
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  - REFERENCE MEP PLANS FOR UTILITY CONDUIT LOCATIONS.
  - CONNECTION TO EXISTING SANITARY SEWER MANHOLE TO BE CORED, GROUTED AND THE PIPE CUT FLUSH WITH THE MANHOLE.



CALLED 3.0000 ACRES  
 CONVEYED TO REMEDY INTERESTS, LLC  
 F.B.C.C.F. NO. 2010020969

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
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**W|G|A**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

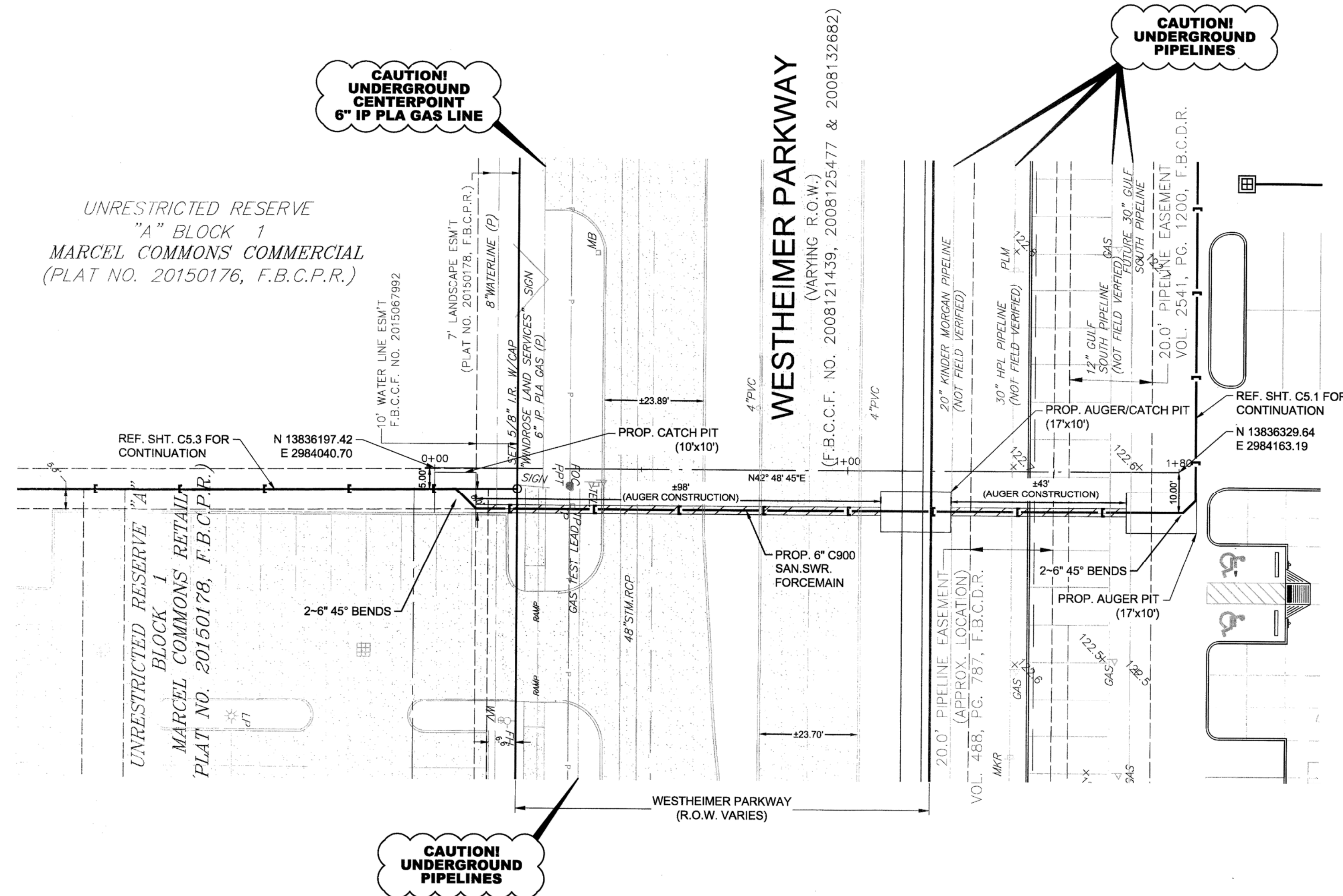
**MARCEL COMMONS II**

**UTILITY PLAN**

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED:   
 DEVELOPMENT COORDINATOR  
 DATE: 1/31/18

**C5.3**



**ENERGY TRANSFER/HOUSTON PIPE LINE COMPANY NOTES:**

1. NOTIFICATION

a. THE PARTY REQUESTING SUCH CROSSING SHALL USE ITS BEST EFFORTS TO PROVIDE HPL WITH ITS FINALIZED PLANS AND PROFILE DRAWINGS AT LEAST THIRTY DAYS (30) PRIOR TO ANY RELATED CONSTRUCTION OR MAINTENANCE ACTIVITY. THE PIPELINE FACILITY SHALL INCLUDE, BUT NOT LIMITED TO, RIGHTS-OF-WAY, FEE PROPERTIES, EASEMENTS, PIPELINES, METER AND REGULATOR BUILDINGS, AND VALVE SITES ("HPL PIPELINE FACILITY" OR "FACILITIES"). UNLESS OTHERWISE AGREED TO BY HPL IN WRITING, NO EQUIPMENT SHALL ENTER ONTO HPL'S PIPELINE FACILITY UNLESS AN HPL REPRESENTATIVE IS ON LOCATION.

b. NO EXCAVATION SHALL OCCUR IN THE VICINITY OF HPL'S PIPELINE FACILITY UNTIL:

1) IN ACCORDANCE WITH STATE APPROVED NOTIFICATION CENTERS, HPL SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION OR MAINTENANCE ACTIVITY. HPL CURRENTLY UTILIZES THE TEXAS EXCAVATION SAFETY SYSTEM (TESS) AS ITS NOTIFICATION YOU MUST CONTACT THE TESS NOTIFICATION CENTER AT 811 OR 1-800-364-8377, IN ADDITION TO CONTACTING HPL'S FIELD REPRESENTATIVE RAMON GARCIA AT (713) 458-8626, BEFORE COMMENCING ANY CROSSING AT OR NEAR HPL'S PIPELINE FACILITY; AND

2) UNLESS OTHERWISE AGREED TO BY HPL IN WRITING, AN HPL INSPECTOR IS ON SITE TO MONITOR THE EXCAVATION ACTIVITIES.

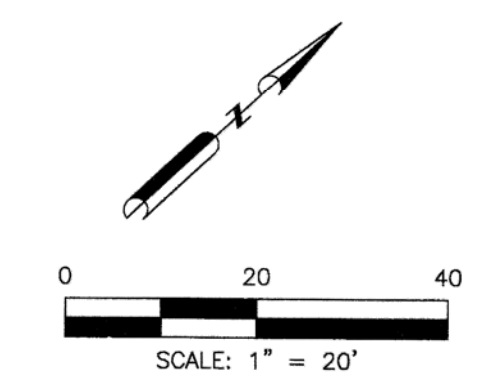
2. ANY WATER OR SEWER UTILITY CROSSING SHALL HAVE 2' SEPARATION OR MORE FROM HOUSTON PIPE LINE COMPANY.

**UTILITY NOTES:**

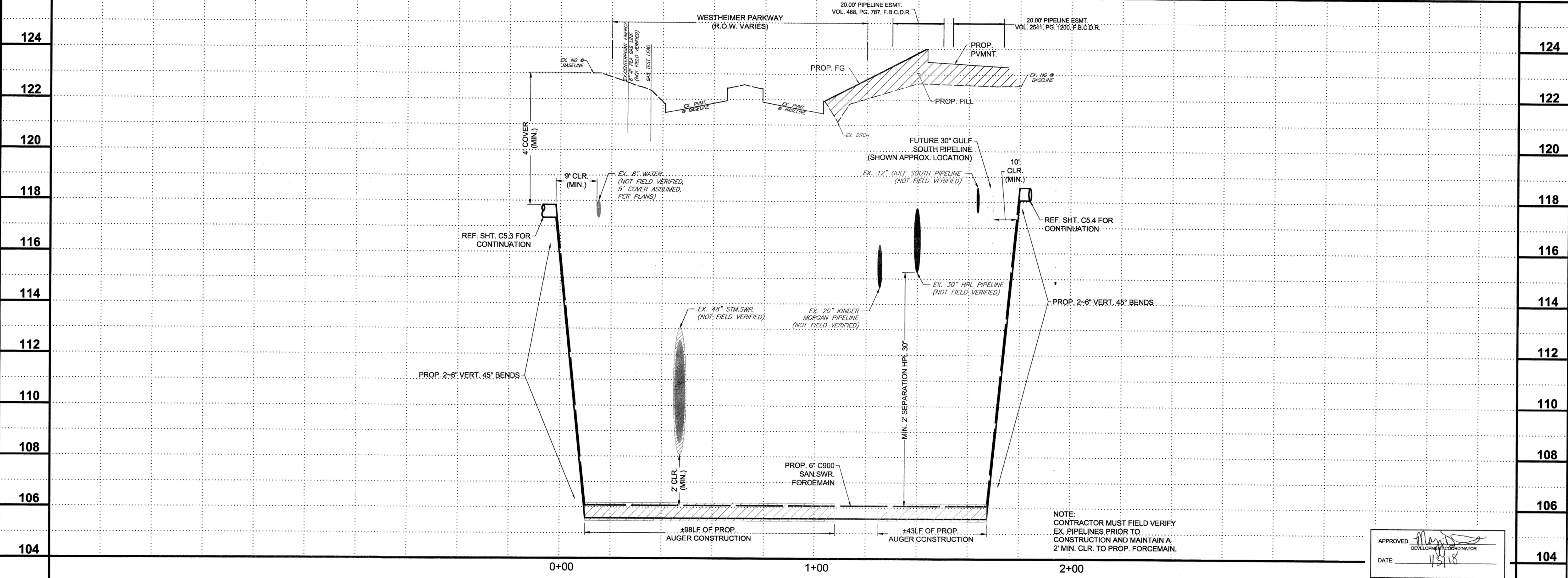
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- REFERENCE MEP PLANS FOR UTILITY CONDUIT LOCATIONS.

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**PROFILE - 6" SANITARY FORCEMAIN**



REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017

STATE OF TEXAS  
 NORTH SHERIDAN  
 LICENSED PROFESSIONAL ENGINEER  
 99284  
 P. Routh  
 8/16/17

**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM E-9756  
 2500 Tangletwile, Suite 120  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**

**PLAN & PROFILE - 6" SANITARY SEWER FORCEMAIN**

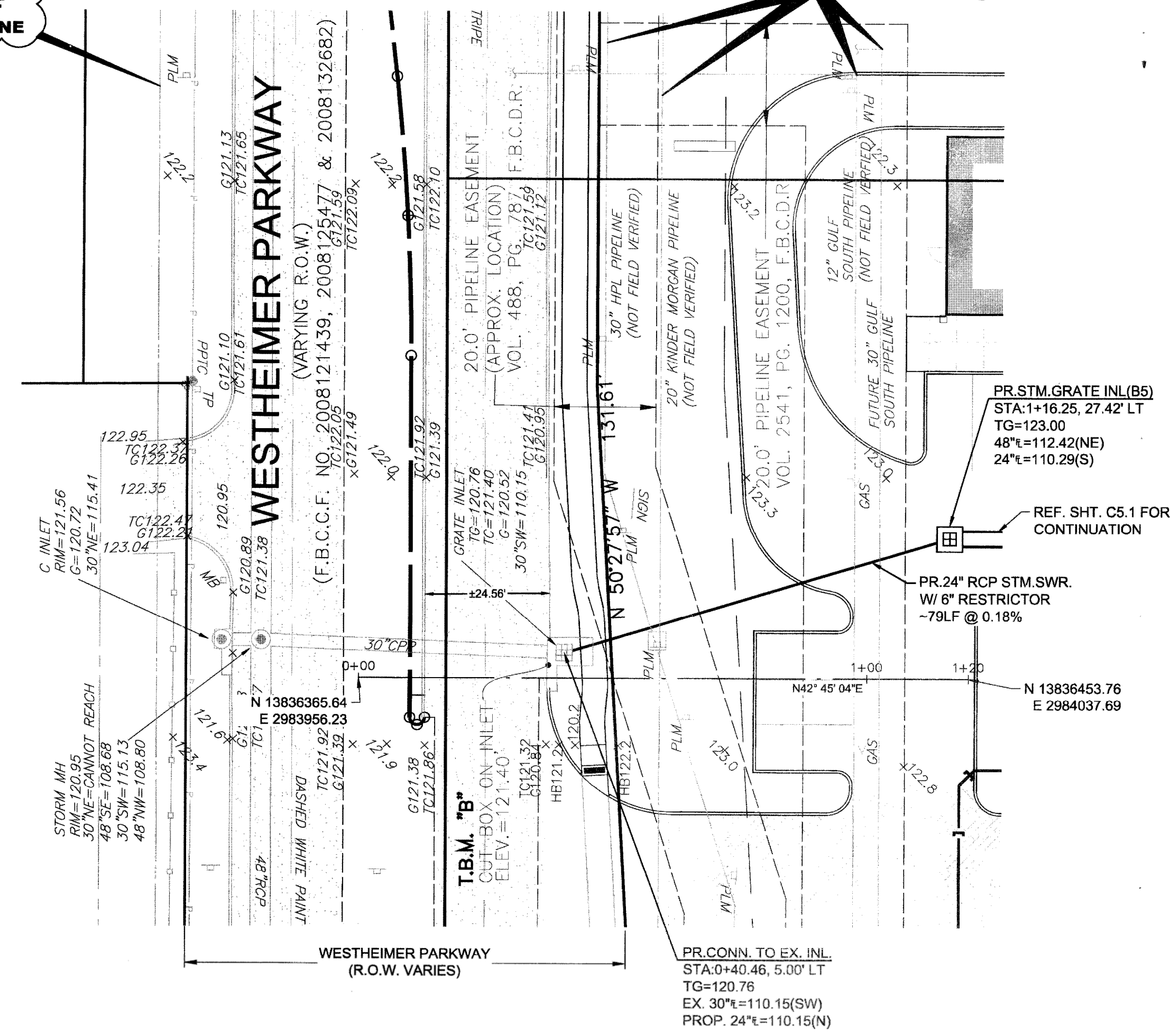
SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED: [Signature]  
 DEVELOPER/PROFESSIONAL ENGINEER  
 DATE: 11/21/18

**C5.4**

**CAUTION!**  
UNDERGROUND  
CENTERPOINT  
6" IP FLA GAS LINE

**CAUTION!**  
UNDERGROUND  
PIPELINES



**ENERGY TRANSFER/HOUSTON PIPE LINE COMPANY NOTES:**

ENERGY TRANSFER/HOUSTON PIPE LINE COMPANY NOTES:

- NOTIFICATION
  - THE PARTY REQUESTING SUCH CROSSING SHALL USE ITS BEST EFFORTS TO PROVIDE HPL WITH ITS FINALIZED PLANS AND PROFILE DRAWINGS AT LEAST THIRTY DAYS (30) PRIOR TO ANY RELATED CONSTRUCTION OR MAINTENANCE ACTIVITY. THE PIPELINE FACILITY SHALL INCLUDE, BUT NOT LIMITED TO, RIGHTS-OF-WAY, FEE PROPERTIES, EASEMENTS, PIPELINES, METER AND REGULATOR BUILDINGS, AND VALVE SITES ("HPL PIPELINE FACILITY" OR "FACILITIES") UNLESS OTHERWISE AGREED TO BY HPL IN WRITING. NO EQUIPMENT SHALL ENTER ONTO HPL'S PIPELINE FACILITY UNLESS AN HPL REPRESENTATIVE IS ON LOCATION.
  - NO EXCAVATION SHALL OCCUR IN THE VICINITY OF HPL'S PIPELINE FACILITY UNTIL:
    - IN ACCORDANCE WITH STATE APPROVED NOTIFICATION CENTERS, HPL SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION OR MAINTENANCE ACTIVITY. HPL CURRENTLY UTILIZES THE TEXAS EXCAVATION SAFETY SYSTEM (TESS) AS ITS NOTIFICATION YOU MUST CONTACT THE TESS NOTIFICATION CENTER AT 811 OR 1-800-344-6377. IN ADDITION TO CONTACTING HPL'S FIELD REPRESENTATIVE RAMON GARCIA AT (713) 458-8626, BEFORE COMMENCING ANY CROSSING AT OR NEAR HPL'S PIPELINE FACILITY; AND
    - UNLESS OTHERWISE AGREED TO BY HPL IN WRITING, AN HPL INSPECTOR IS ON SITE TO MONITOR THE EXCAVATION ACTIVITIES.
- ANY WATER OR SEWER UTILITY CROSSING SHALL HAVE 2" SEPARATION OR MORE FROM HOUSTON PIPE LINE COMPANY.

**UTILITY NOTES:**

- UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ENGINEER OF ANY CONFLICT OR DISCREPANCIES.
- CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR SERVICE ORIGIN AND CONNECTION.
- CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING ITEMS ON SITE.
- CONTRACTOR SHALL KEEP THE SITE CLEAN OF DEBRIS AND ANY EROSION CONTROL MEASURES ARE ADEQUATELY PLACED.
- CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND IRRIGATION SLEEVING PRIOR TO PAVING. SEE LANDSCAPE PLANS.
- CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
- ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 903 SAN JACINTO, RM 319, AUSTIN, TX. 78701. TEL: (512) 916-5783.
- ALL SANITARY SEWERS CROSSING WATER LINES WITH A 6 INCHES TO 9 FEET CLEARANCE SHALL HAVE A MINIMUM OF 18" JOINT OF 150 P.S.I. SDR 26 PVC PIPE MEETING ASTM SPECIFICATION D2241 CENTERED ON WATER LINE. WHEN WATER LINE IS BELOW SANITARY SEWER PROVIDE MINIMUM 2 FOOT SEPARATION.
- REFERENCE MEP PLANS FOR UTILITY CONDUIT LOCATIONS.

**BENCHMARKS:**  
ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON).  
TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 867 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON).

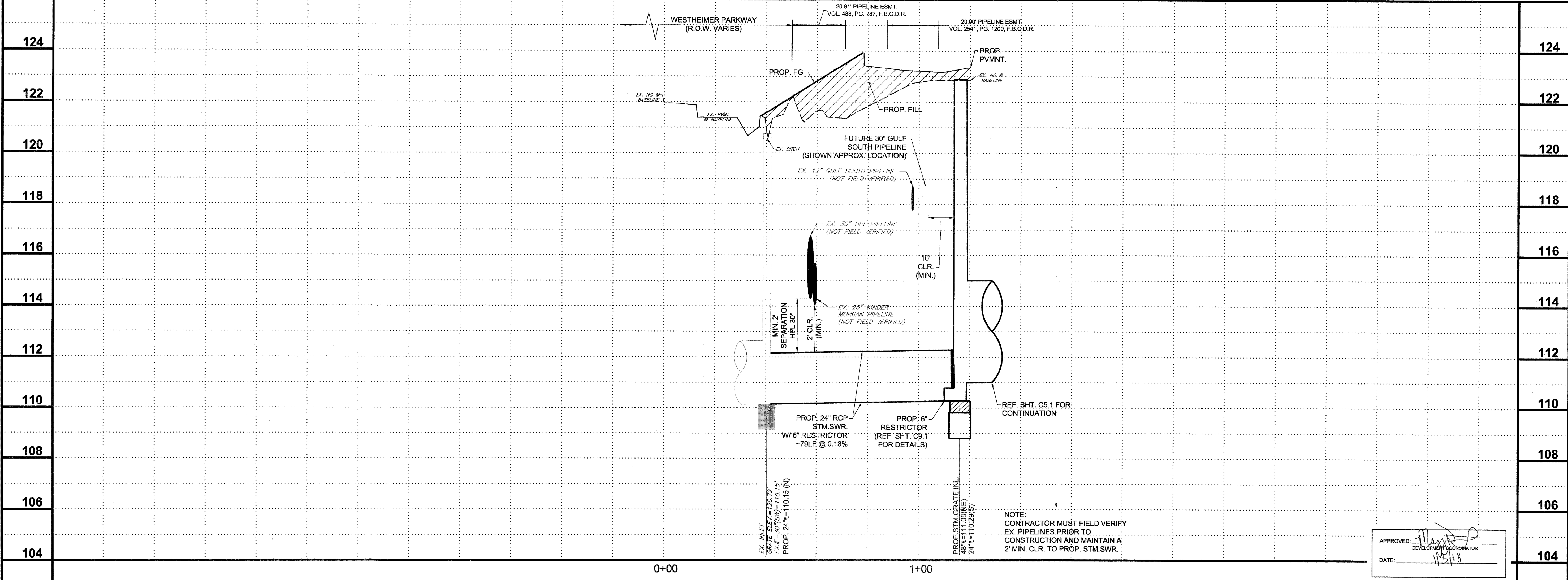
**FLOOD PLAIN NOTE:**  
THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**

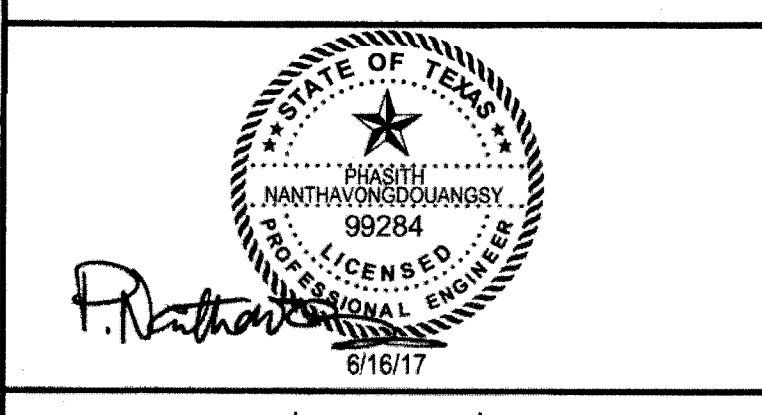
**LEGEND:**

	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
--	--

**PROFILE - 24" STORM SEWER**



REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017



**WGA**  
WARD, GETZ & ASSOCIATES, LLP  
CONSULTING ENGINEERS  
TEXAS REGISTERED ENGINEERING FIRM F-9756  
2500 Tanglewilde, Suite 120  
Houston, Texas 77068  
713.789.1900

**MARCEL COMMONS II**

**PLAN & PROFILE - 24" STORM SEWER**

SCALE 1"=30'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED:   
DEVELOPMENT COORDINATOR  
DATE: 11/5/18

**C5.5**



# STORM SEWER CALCULATIONS

## FORT BEND COUNTY

\\wgaf11.wg.local\shared\00362 (Marcel Group)\001 (Marcel Commons II)\ENGI\Minna (Changed TC.EJ) - Marcel Storm Sewer Calcs - Fort Bend County.xlsx\Storm Sewer Calculations

Project: Marcel Commons II Job No: 00362-001 PM: MF	Date: June 16, 2017 Land Use Category: Business Districts (Neighborhood Areas) Rainfall Frequency (years): 2 yr	b = 70 d = 7.9 e = 0.804
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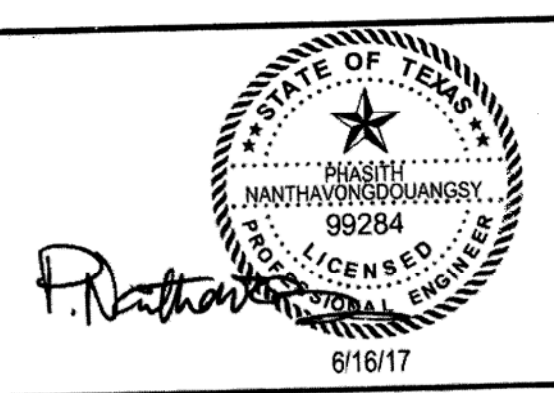
DRAINAGE AREA CALCULATIONS										PIPE					DESIGN				HYDRAULIC GRADE LINE					STORM FLOWLINES							
From MH	To MH	Sub Area Acres	Total Area Acres	Sub Runoff Coeff. C	Cf	C'Cf	C'Cf'A	Time of Conc. min.	Intensity I (In / Hr.)	Sum of Flows cfs Q	PIPE or BOX	Storm Sewer Material	Reach Length Feet	PIPE Dia (in)	PIPE AREA (sq ft)	# of Pipes/Boxes	Slope %	Mannings "n"	Capacity cfs	Velocity fps	Actual Velocity fps	Hydraulic Gradient %	Change in Head Ft.	Elev. Up Stream	Elev. Down Stream	Gutter Elevation Upstream	Gutter Elevation Downstream	drop at downstream	flowline upstream	flowline downstream	(downstream) top of pipe
A1	A-OUT	0.54	0.54	0.75	1.00	0.75	0.41	10.00	6.88	2.79	PIPE	HDPE	62	15 in	1.23	1	0.33	0.012	4.02	3.28	3.53	0.159	0.098	100.12	100.02	124.50	123.75		113.50	113.30	92.39
DET	B1	1.11	6.23	0.75	1.00	0.75	4.67	10.00	6.88	32.16	PIPE	HDPE	12	48 in	12.57	1	0.10	0.012	49.21	3.92	4.15	0.043	0.005	116.90	116.89	124.50	122.78		112.90	112.89	116.89
B1	B2	0.46	6.69	0.75	1.00	0.75	5.02	10.05	6.87	34.46	PIPE	HDPE	91	48 in	12.57	1	0.10	0.012	49.21	3.92	4.22	0.049	0.045	116.85	116.81	122.78	122.90		112.90	112.81	116.81
B2	B3	0.20	6.89	0.75	1.00	0.75	5.17	10.44	6.75	34.88	PIPE	HDPE	105	48 in	12.57	1	0.10	0.012	49.21	3.92	4.24	0.050	0.053	116.75	116.70	122.90	122.80		112.81	112.70	116.70
B3	B4	0.33	8.02	0.75	1.00	0.75	6.02	10.96	6.60	39.70	PIPE	HDPE	137	48 in	12.57	1	0.10	0.012	49.21	3.92	4.36	0.065	0.089	116.65	116.56	122.80	122.80		112.70	112.56	116.56
B4	B5	0.37	8.67	0.75	1.00	0.75	6.50	11.54	6.44	41.88	PIPE	HDPE	134	48 in	12.57	1	0.10	0.012	49.21	3.92	4.38	0.072	0.097	116.53	116.43	122.80	123.00		112.56	112.43	116.43
B5	B-OUT	0.28	8.95	0.75	1.00	0.75	6.71	12.12	6.29	42.24	PIPE	RCP	79	24 in	3.14	1	0.18	0.012	10.40	3.31	13.44	2.970	2.346	115.90	113.55	123.00	123.00		110.29	110.15	112.15
B6	B7	0.25	0.25	0.75	1.00	0.75	0.19	10.00	6.88	1.29	PIPE	HDPE	102	24 in	3.14	1	0.18	0.012	10.40	3.31	2.21	0.003	0.003	121.07	121.07	123.25	123.10		119.25	119.07	121.07
B7	B8	0.08	0.51	0.75	1.00	0.75	0.38	10.51	6.73	2.57	PIPE	HDPE	89	24 in	3.14	1	0.18	0.012	10.40	3.31	2.70	0.011	0.010	120.64	120.63	123.10	123.00		118.79	118.63	120.63
B8	B3	0.24	0.75	0.75	1.00	0.75	0.56	10.96	6.60	3.71	PIPE	HDPE	104	24 in	3.14	1	0.18	0.012	10.40	3.31	3.02	0.023	0.024	120.46	120.44	123.00	122.80		118.63	118.44	120.44
B9	B7	0.18	0.18	0.75	1.00	0.75	0.14	10.00	6.88	0.93	PIPE	HDPE	62	24 in	3.14	2	0.18	0.012	20.80	3.31	1.64	0.001	0.001	120.79	120.79	122.90	123.00	0.01	117.50	112.56	113.56
B10	B3	0.05	0.05	0.75	1.00	0.75	0.04	10.00	6.88	0.26	PIPE	HDPE	162	12 in	0.79	1	0.44	0.012	2.56	3.26	2.06	0.004	0.007	113.57	113.56	124.25	123.25		118.90	118.78	120.78
B11	B4	0.28	0.28	0.75	1.00	0.75	0.21	10.00	6.88	1.45	PIPE	HDPE	67	24 in	3.14	1	0.18	0.012	10.40	3.31	2.32	0.003	0.002	120.78	120.78	122.90	123.00		113.42	113.40	115.40
C1	C-OUT	0.62	0.62	0.75	1.00	0.75	0.47	10.00	6.88	3.20	PIPE	HDPE	13	24 in	3.14	1	0.18	0.012	10.40	3.31	2.91	0.017	0.002	115.40	115.40	124.50	122.75		113.42	113.40	115.40
D1	D2	0.31	0.31	0.75	1.00	0.75	0.23	10.00	6.88	1.60	PIPE	HDPE	77	24 in	3.14	1	0.18	0.012	10.40	3.31	2.37	0.004	0.003	121.04	121.04	122.90	123.00		118.70	118.56	120.56
D2	D3	0.19	0.60	0.75	1.00	0.75	0.45	10.39	6.77	3.04	PIPE	HDPE	66	24 in	3.14	1	0.18	0.012	10.40	3.31	2.87	0.015	0.010	121.04	121.03	123.00	123.40	0.01	118.56	118.44	120.44
D3	D4	0.12	0.72	0.75	1.00	0.75	0.54	10.72	6.67	3.60	PIPE	HDPE	77	24 in	3.14	1	0.18	0.012	10.40	3.31	2.99	0.022	0.017	121.03	121.01	123.40	122.80		118.43	118.30	120.30
D4	D5	0.36	1.08	0.75	1.00	0.75	0.81	11.11	6.56	5.31	PIPE	HDPE	49	24 in	3.14	1	0.18	0.012	10.40	3.31	3.31	0.047	0.023	121.01	120.99	122.80	122.90		118.21	118.13	120.63
D5	D6	0.29	1.37	0.75	1.00	0.75	1.03	11.35	6.49	6.67	PIPE	HDPE	62	30 in	4.91	1	0.13	0.012	16.02	3.26	3.08	0.023	0.014	120.99	120.97	122.90	122.80		118.13	118.04	120.54
D6	D7	0.19	1.56	0.75	1.00	0.75	1.17	11.67	6.41	7.50	PIPE	HDPE	65	30 in	4.91	1	0.13	0.012	16.02	3.26	3.21	0.028	0.018	120.97	120.96	122.80	122.90		118.04	117.91	120.91
D7	D8	0.31	3.04	0.75	1.00	0.75	2.28	11.99	6.32	14.42	PIPE	HDPE	122	36 in	7.07	1	0.11	0.012	23.96	3.39	3.52	0.040	0.049	120.96	120.91	122.90	123.20		118.04	117.91	120.84
D8	D9	0.08	3.59	0.75	1.00	0.75	2.69	12.32	6.24	16.80	PIPE	HDPE	59	36 in	7.07	1	0.11	0.012	23.96	3.39	3.66	0.054	0.032	120.87	120.84	123.20	122.75		117.91	117.84	120.84
D9	D-OUT	0.37	3.96	0.75	1.00	0.75	2.97	12.61	6.17	18.32	PIPE	HDPE	13	42 in	9.62	1	0.10	0.012	34.47	3.58	3.61	0.028	0.004	100.00	100.00	122.75	124.50	4.23	113.61	113.60	117.10
D1a	D2	0.10	0.10	0.75	1.00	0.75	0.08	10.00	6.88	0.52	PIPE	HDPE	69	12 in	0.79	1	0.44	0.012	2.56	3.26	2.53	0.018	0.012	120.26	120.25	123.55	123.00		119.55	119.25	120.25
D10	D11	0.35	0.35	0.75	1.00	0.75	0.26	10.00	6.88	1.81	PIPE	HDPE	120	24 in	3.14	1	0.18	0.012	10.40	3.31	2.47	0.005	0.007	120.69	120.68	122.90	122.90		118.90	118.68	120.68
D11	D12	0.21	0.56	0.75	1.00	0.75	0.42	10.60	6.70	2.81	PIPE	HDPE	62	24 in	3.14	1	0.18	0.012	10.40	3.31	2.79	0.013	0.008	120.58	120.57	122.90	122.90		118.68	118.57	120.57
D12	D7	0.32	0.88	0.75	1.00	0.75	0.66	10.92	6.61	4.36	PIPE	HDPE	111	24 in	3.14	1	0.18	0.012	10.40	3.31	3.16	0.032	0.035	120.41	120.37	122.90	123.10		118.57	118.37	120.37
D14	D15	0.11	0.11	0.75	1.00	0.75	0.08	10.00	6.88	0.57	PIPE	HDPE	59	24 in	3.14	1	0.18	0.012	10.40	3.31	1.71	0.001	0.000	121.29	121.29	123.40	123.10		119.40	119.29	121.29
D15	D7	0.18	0.29	0.75	1.00	0.75	0.22	10.30	6.79	1.48	PIPE	HDPE	133	24 in	3.14	1	0.18	0.012	10.40	3.31	2.32	0.004	0.005	121.05	121.05	123.10	122.90		119.29	119.05	121.05
D16	D8	0.47	0.47	0.75	1.00	0.75	0.35	10.00	6.88	2.43	PIPE	HDPE	64	12 in	0.79	1	0.44	0.012	2.56	3.26	3.71	0.395	0.253	120.95	120.70	124.00	124.50		119.98	119.70	120.70

**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON).  
 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON).

**FLOOD PLAN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0245 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/16/2017



WGA

WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
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 Houston, Texas 77063  
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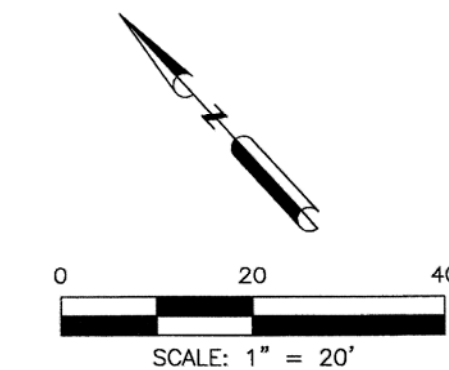
MARCEL COMMONS II

DRAINAGE CALCULATIONS

SCALE 1"=40'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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APPROVED: *Minna*  
 DEVELOPMENT COORDINATOR  
 DATE: 6/16/17

C6.2



**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
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**SHEET NOTES:**

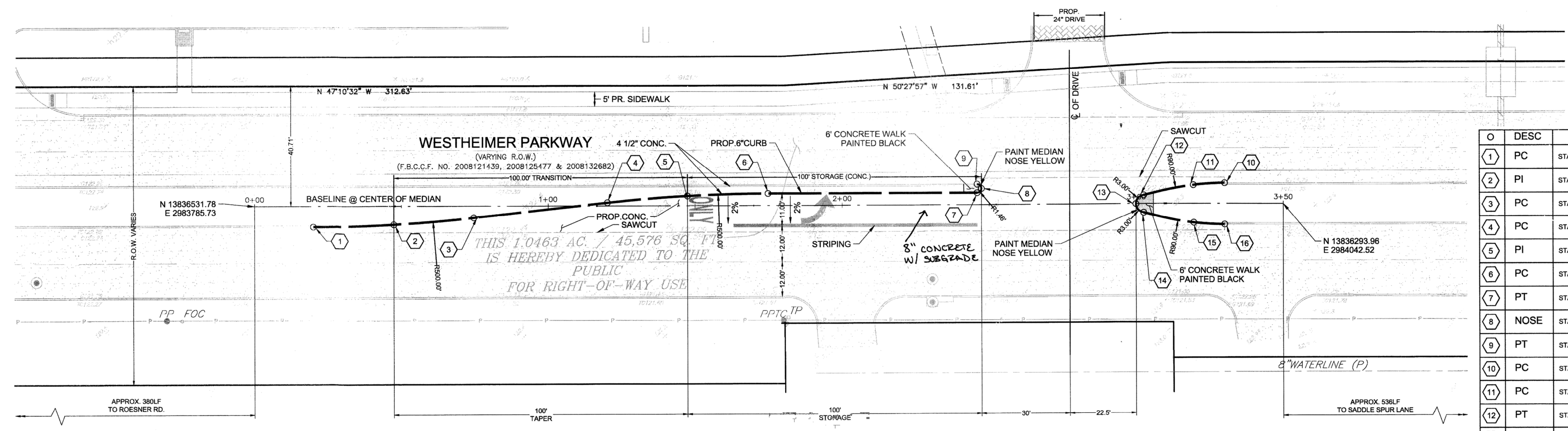
**CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES**

**LEGEND:**

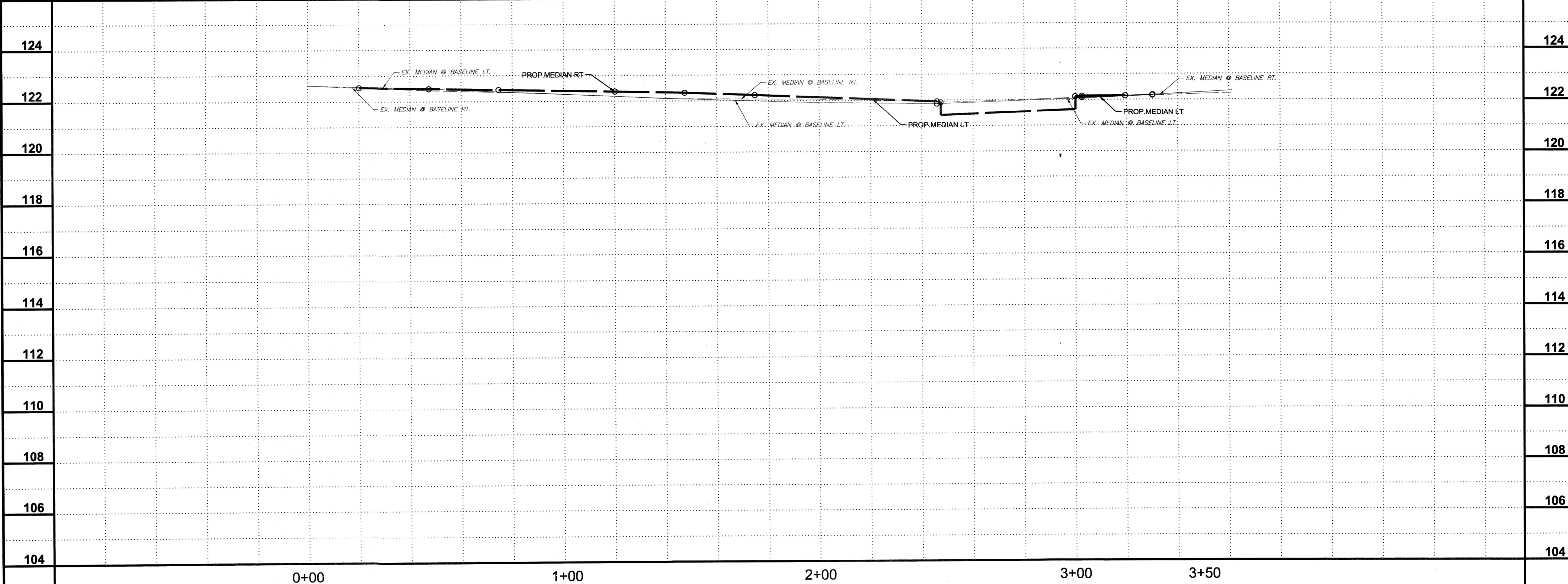
	EXISTING PAVEMENT (CONCRETE/ASPHALT AS NOTED)
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0	DESC	STA. CALLOUTS:
1	PC	STA:0+20.13,6.92' R TC=122.57ME±
2	PI	STA:0+47.40,6.30' R TC=122.45
3	PC	STA:0+74.65,4.00' R TC=122.40
4	PC	STA:1+20.16, 1.11' L TC=122.36
5	PI	STA:1+47.41, 3.36' L TC=122.32
6	PC	STA:1+74.83, 4.11' L TC=122.22
7	PT	STA:2+45.92, 4.07' L TC=121.95
8	NOSE	STA:2+47.38, 5.54' L TC=121.91
9	PT	STA:2+45.92, 7.00' L TC=121.86
10	PC	STA:3+30.00, 6.99' L TC=122.18ME±
11	PC	STA:3+19.40,6.37' L TC=122.15
12	PT	STA:3+02.54,2.94' L TC=122.08
13	NOSE	STA:2+99.91,0.04' R TC=122.12
14	PT	STA:3+02.54,3.02' R TC=122.14
15	PC	STA:3+19.56,6.48' R TC=122.15
16	PC	STA:3+30.09,7.10' R TC=122.20ME±

APPROVED: *[Signature]*  
 DEVELOPMENT COORDINATOR  
 DATE: 1/31/18



**WESTHEIMER PARKWAY  
 LEFT TURN LANE & MEDIAN MODIFICATION**



REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	06/16/2017

**W|G|A**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

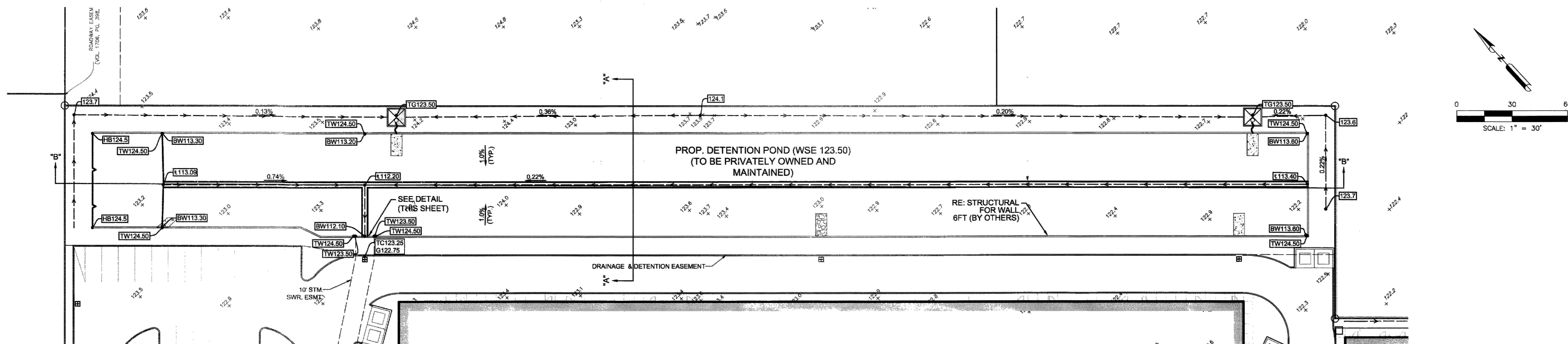
**MARCEL COMMONS II**

**LEFT TURN LANE**

SCALE HORIZ: 1"=20' VERT: 1"=2'	DESIGN MF, BB, MCE, CAH	DRAWN MF, BB, MCE, CAH
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**C7.1**





**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
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**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**

**LEGEND:**  
 EXISTING PAVEMENT  
 (CONCRETE/ASPHALT AS NOTED)

**DETENTION POND CALCULATIONS**

**DETENTION CALCULATIONS SUMMARY:**

TOTAL SERVICE AREA = 423,188 SQ.FT. = 9.7145 AC  
 PROPOSED IMPERVIOUS COVER = 371,568 SQ.FT. = 8.53 AC  
 PERCENT OF IMPERVIOUS COVER = 88%  
 CALCULATED DETENTION RATE = 0.932  
 REQUIRED DETENTION VOLUME = TOTAL SERVICE AREA X DETENTION RATE = 394,388 CU.FT. = 9.05 AC-FT

REQUIRED DETENTION VOLUME = 394,388 CU.FT. = 9.05 AC-FT  
 PROVIDED DETENTION VOLUME IN POND AND PAVEMENT = 391,189 CU.FT. = 8.89 AC-FT  
 PROVIDED DETENTION VOLUME IN STORM PIPES = 12,747 CU.FT. = 0.28 AC-FT  
 PROVIDED TOTAL DETENTION VOLUME = 400,316 CU.FT. = 9.27 AC-FT

**DETENTION POND OUTFALL**

ALLOWABLE RELEASE RATE = 0.125 CFS/AC  
 CALCULATED ALLOWABLE RELEASE RATE = 0.125 CFS/AC X 9.7145 AC = 1.21 CFS

**RESTRICTOR CALCULATIONS**

ALLOWABLE OUTFLOW RELEASE RATE = 0.125 CFS/AC  
 $Q_{ALLOWABLE} = (0.125 \text{ CFS/AC}) \times (9.7145 \text{ AC}) = 1.21 \text{ CFS}$

100% DETENTION POND DEPTH = 123.50 FT  
 TOP ELEVATION OF OUTFALL PIPE = 115.40 FT  
 $H = 123.50 - 114.15 = 9.35 \text{ FT}$

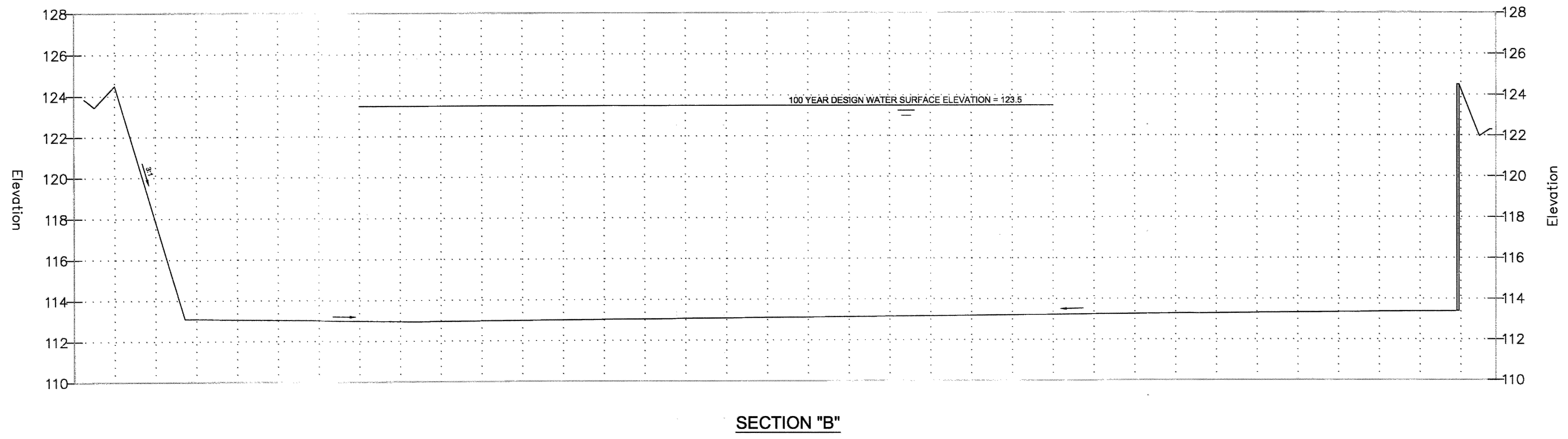
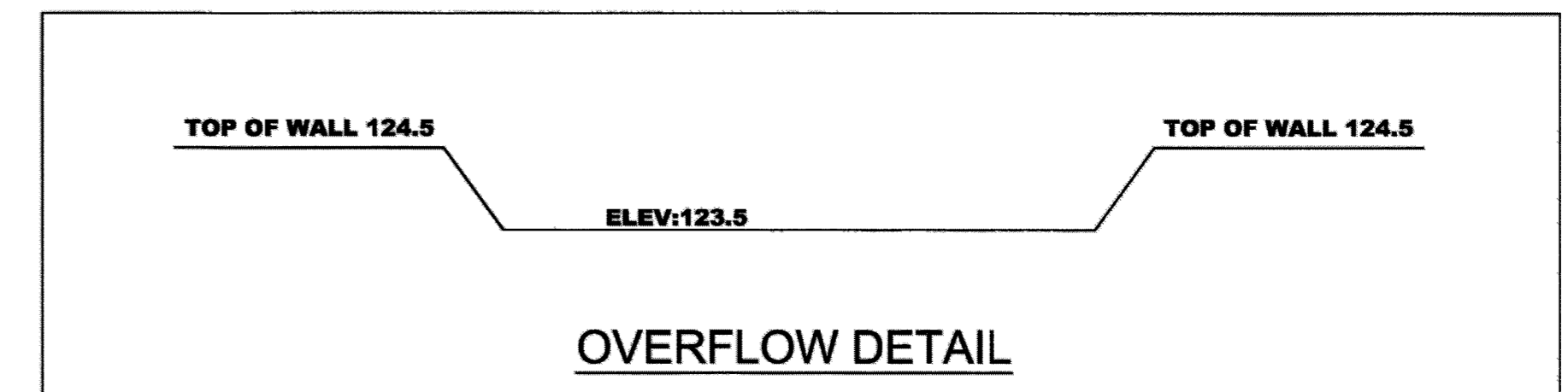
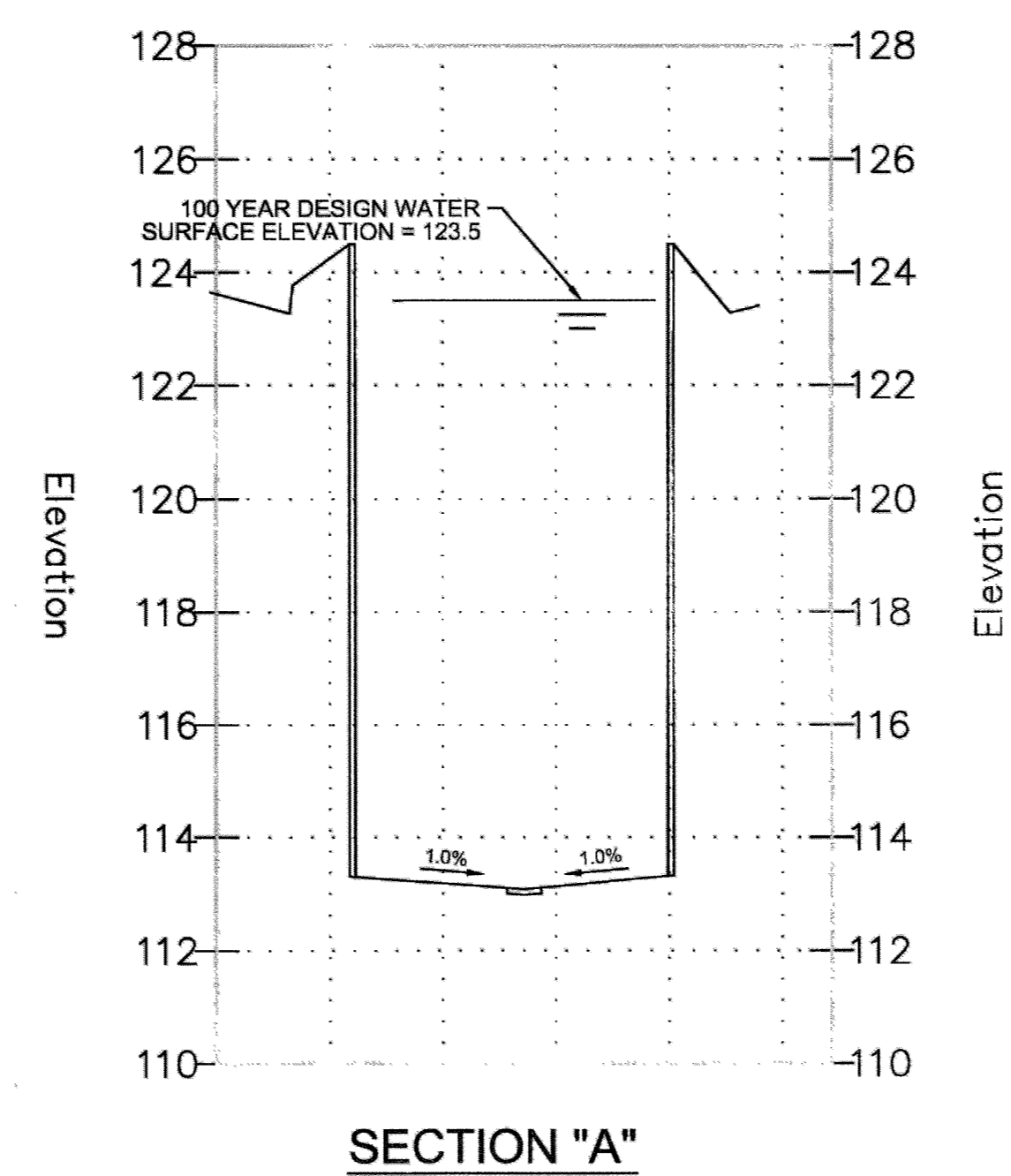
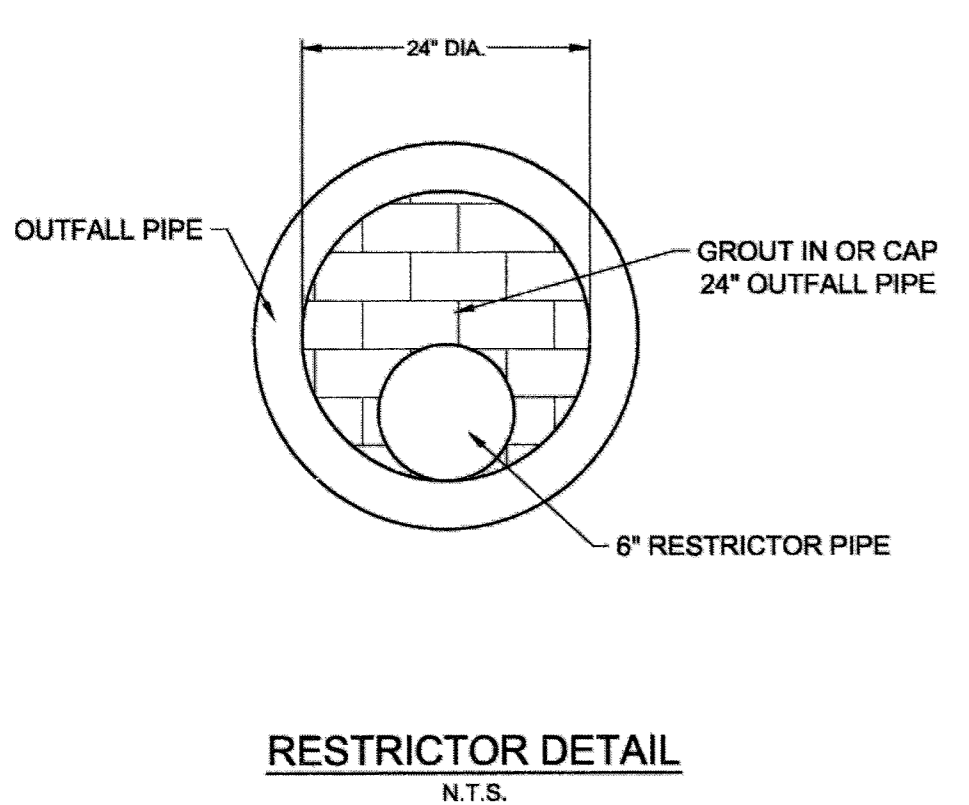
$Q = CA\sqrt{2GH}$   
 $D = \frac{Q}{2.25\sqrt{H}}$   
 $D = \frac{1.21}{2.25\sqrt{9.35}}$   
 $D = 0.31' = 3.72"$   
 USE 6" RESTRICTOR.

ACTUAL OUTFALL RATE  
 $Q = CA\sqrt{2GH}$   
 $Q = (0.8)(1.68)(1.4)\sqrt{(2)(32.2)(9.35)}$   
 $Q = 3.85 \text{ CFS}$

**EXISTING CAPACITY**

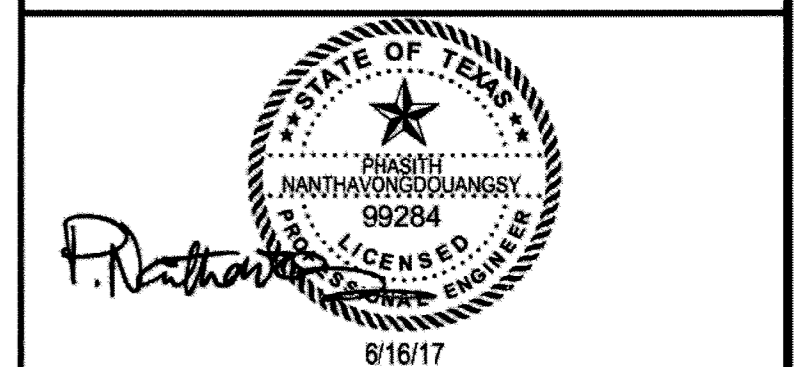
PER APPROVED DRAINAGE REPORT TITLED GREENBUSH ROAD ROADWAY IMPROVEMENT PROJECT, PREPARED BY COBB FENDLEY ENGINEERS, DATED 06/15/2009 (ATTACHED):  
 DRAINAGE AREA C11 SERVES 11.42 AC, HAS CAPACITY FOR 16.13 CFS (3-YR FREQUENCY)  
 THEREFORE DRAINAGE AREA C11 CAPACITY: 16.13 CFS/11.42 AC = 1.41 CFS/AC

SUBJECT TRACT AREA: (9.7145 AC) X (1.41 CFS/AC) = 13.70 CFS ALLOCATED  
 ACTUAL OUTFALL RATE: 3.85 CFS < ALLOCATED CAPACITY: 13.70 CFS



APPROVED: *[Signature]*  
 DEVELOPMENT COORDINATOR  
 DATE: 1/31/18

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/18/2017



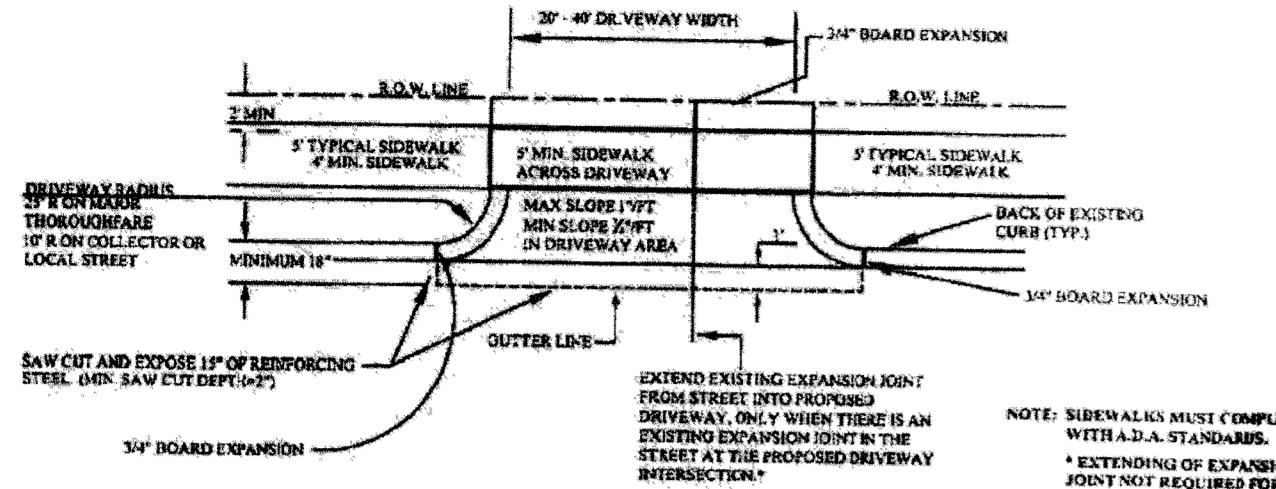
**W|G|A**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

**MARCEL COMMONS II**  
**DETENTION POND LAYOUT AND SECTIONS**

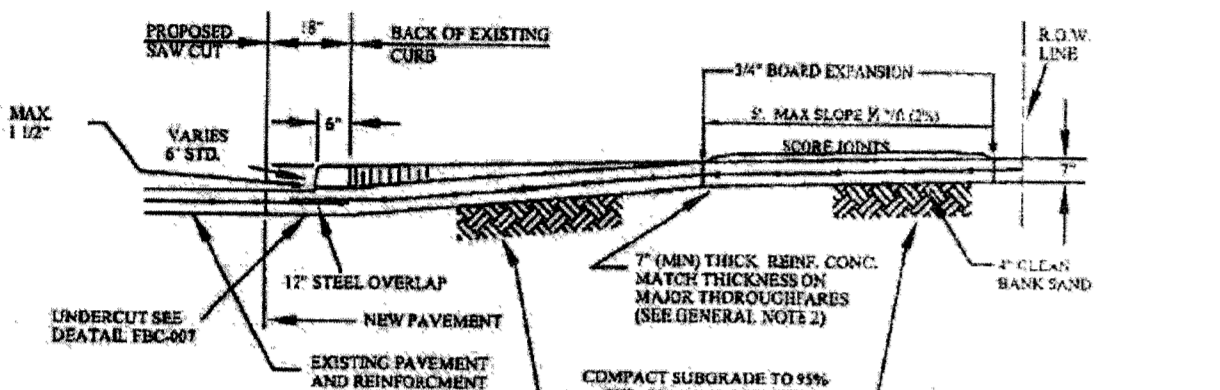
SCALE	DESIGN	DRAWN
1"=30'	MF, BB, MCE, CAH	MF, BB, MCE, CAH

WHEN A COMMERCIAL 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)

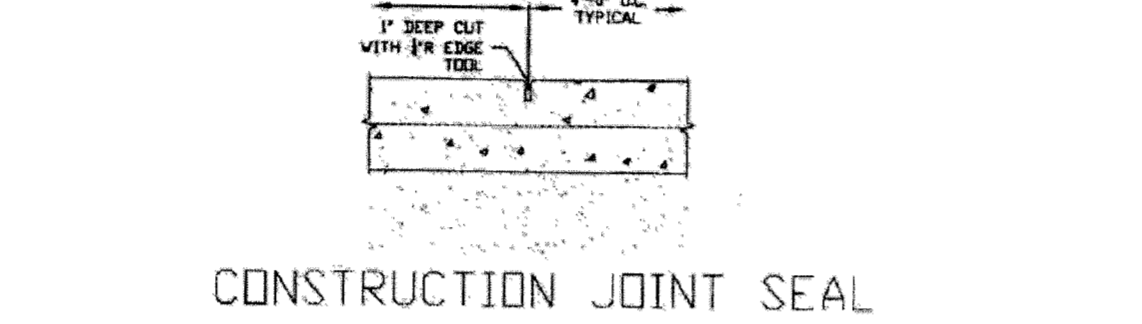
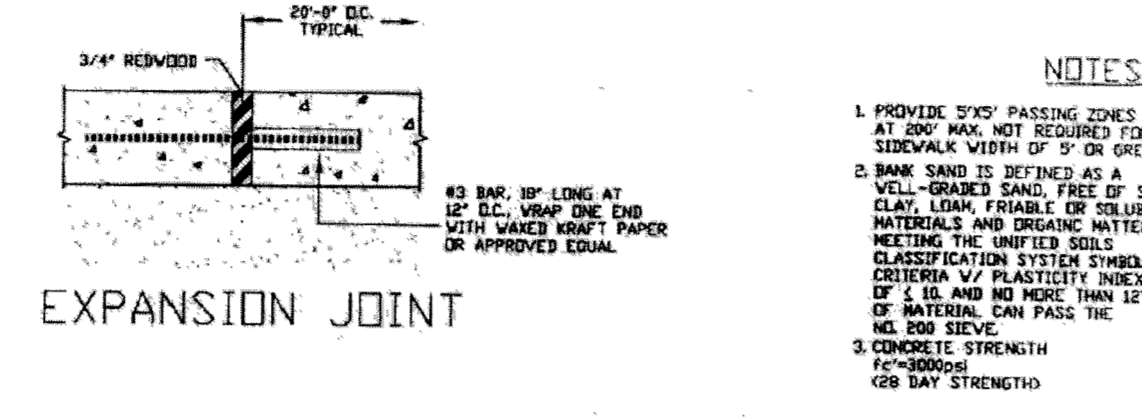
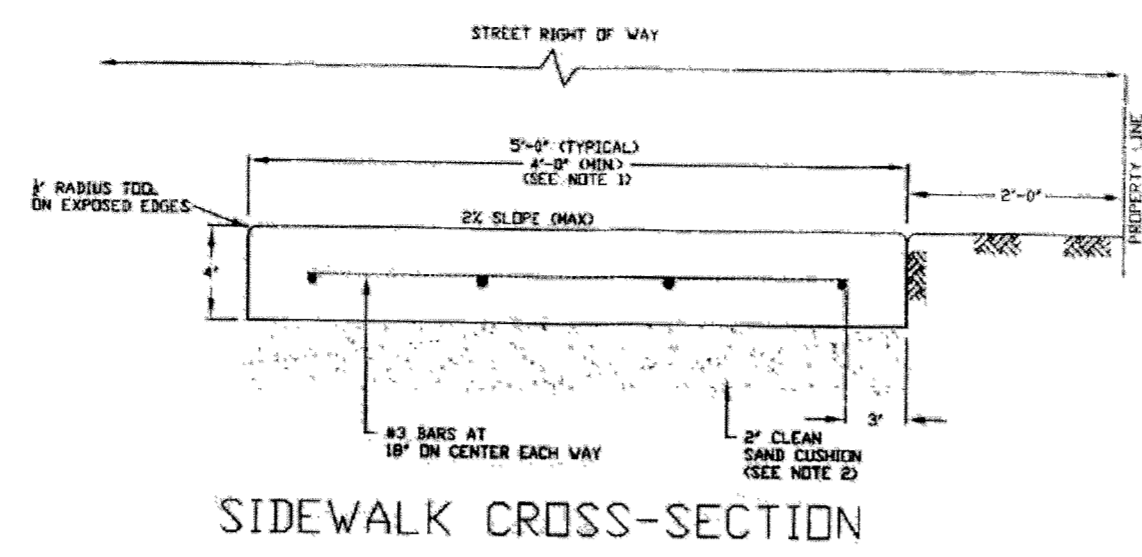


B. USE FOR ALL PROPOSED DRIVES ON CURBED TYPE STREETS



**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 (+/- 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 REINFORCING BARS (ASTM A631) MAX. GRADE 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 CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC-24A FOR ADDITIONAL INFORMATION AND DETAILS.  
 4. PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC-24A FOR ADDITIONAL INFORMATION AND DETAILS.  
 5. FOR TYPICAL SIDEWALK DETAILS SEE FBC-411.

**SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS COMMERCIAL AREA**  
 DRAWN BY: L. BRDECKA  
 DATE DRAWN: 2-1-94  
 REVISIONS BY: J. NETARDUS  
 DATE REVISIONS: 4-7-08  
 APPROVED BY: L. HOOD  
 DATE: 2-1-94  
 DRAWING NO. FBC-025A  
**FORT BEND COUNTY ENGINEERING DEPARTMENT**

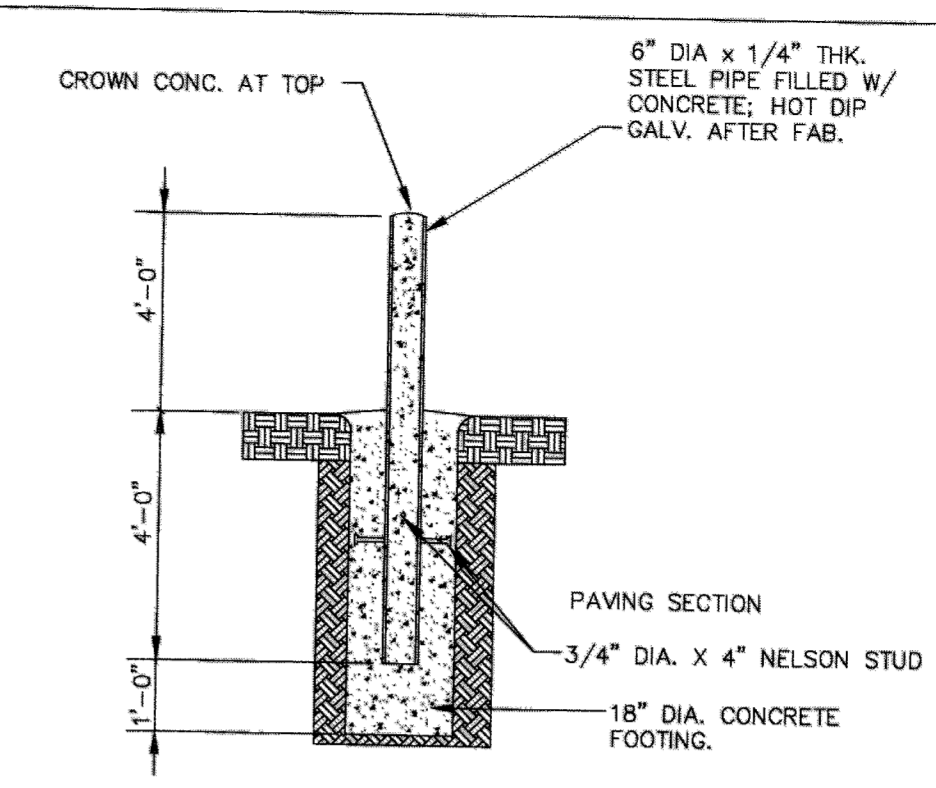


**CONCRETE SIDEWALK**  
 APPROVED BY: LDJIS HOOD  
 DATE DRAWN: 2-1-94  
 REVISIONS: 3-31-2009  
 DRAWN BY: L. BRDECKA  
 DRAWING NO. FBC-011  
**FORT BEND COUNTY ENGINEERING DEPARTMENT**

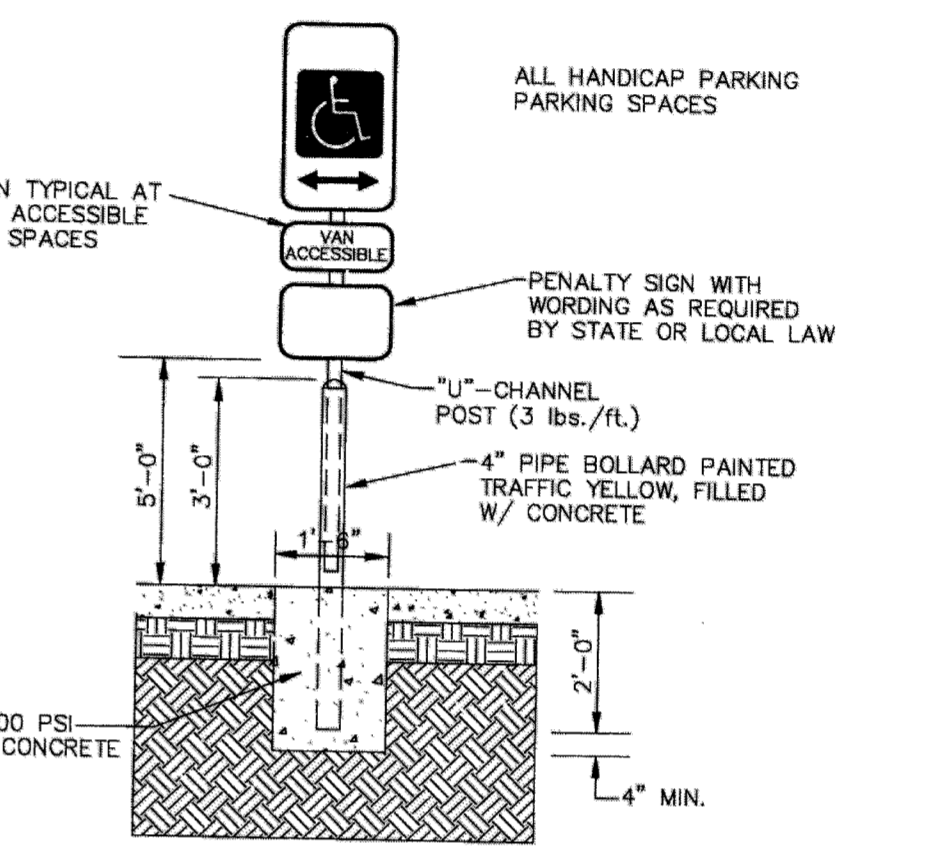
**GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS**

- SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
- SAW CUT EXISTING PAVEMENT A MINIMUM OF 18" INCHES AWAY FROM BACK OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCEMENT STEEL.
- 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 (+/- 2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
- PLACE AND COMPACT 4" CLEAN BANK SAND.
- MAINTAIN GUTTER LINE WITH FACE OF EXISTING CURB.
- PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM LAP OF 12 INCHES.
- PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A631) GRADE 80, UNLESS NOTED) SPACED AT 24 INCHES C.C. EACH WAY WITH 12 INCHES MINIMUM LAP (6" x 6" W6 x W6 AS ALTERNATE) FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE.
- PROPOSED DRIVEWAY, CURB, GUTTER LINE, AND GRADE SHALL MATCH EXISTING STREET.
- PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 7 INCHES THICK, FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE (PROPERTY LINE).
- PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC-24A FOR ADDITIONAL INFORMATION AND DETAILS.

**CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS COMMERCIAL AREA**  
 DRAWN BY: L. BRDECKA  
 DATE DRAWN: 2-1-94  
 REVISIONS BY: L. BRDECKA  
 DATE REVISIONS: 3-10-06  
 APPROVED BY: L. HOOD  
 DATE: 2-1-94  
 DRAWING NO. FBC-025B  
**FORT BEND COUNTY ENGINEERING DEPARTMENT**



**BOLLARD DETAIL**  
N.T.S.

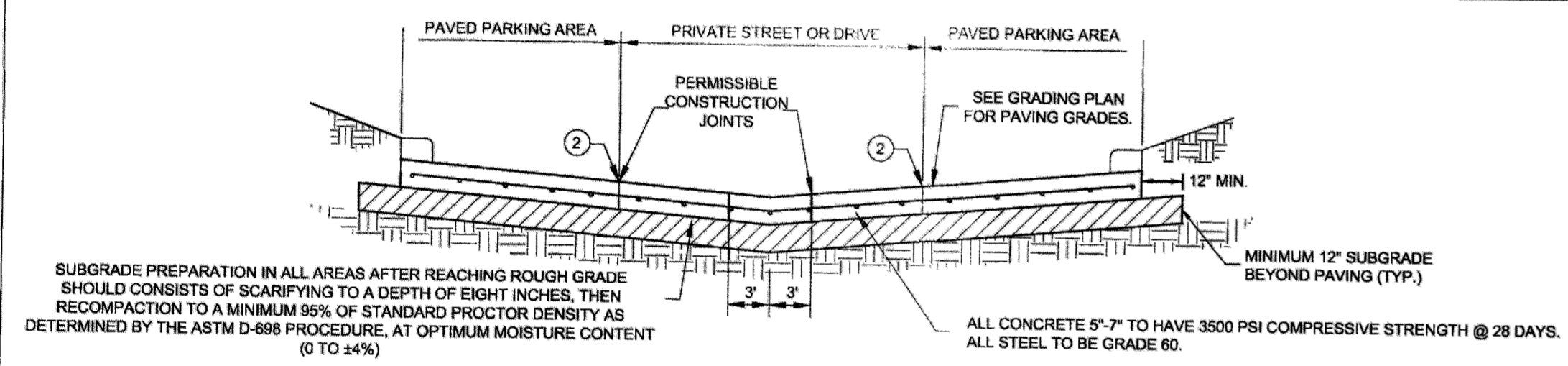


**HANDICAP SIGN DETAIL**  
N.T.S.

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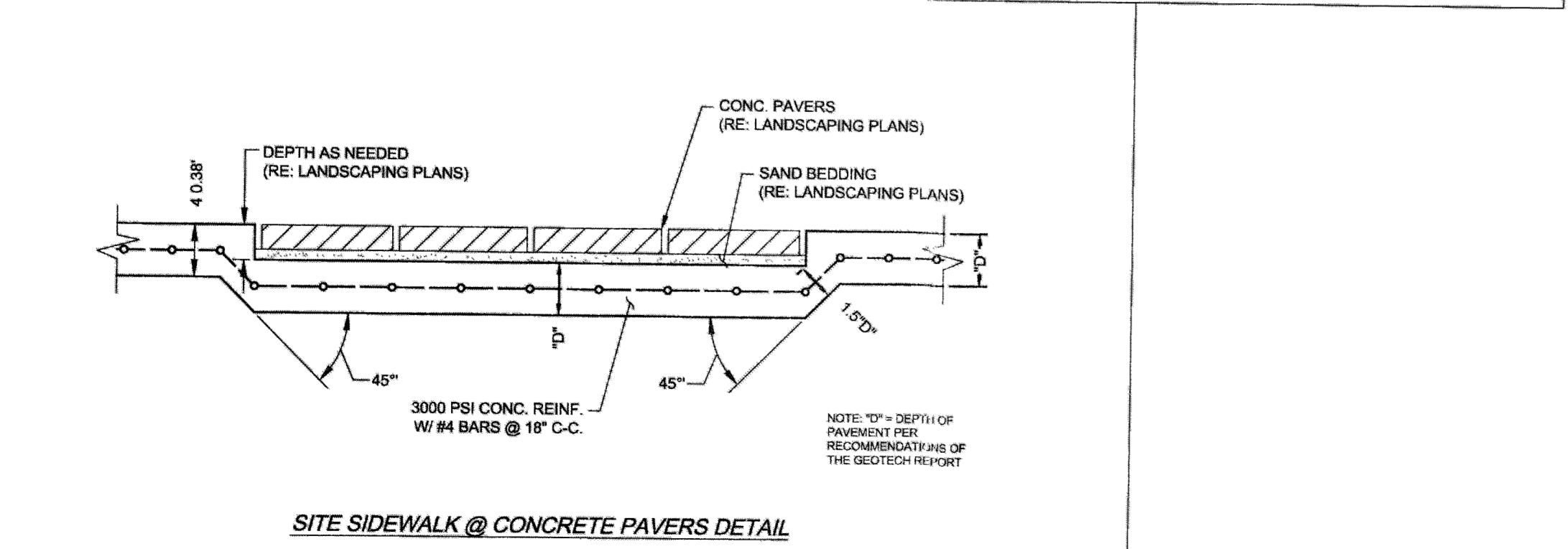
**SHEET NOTES:**



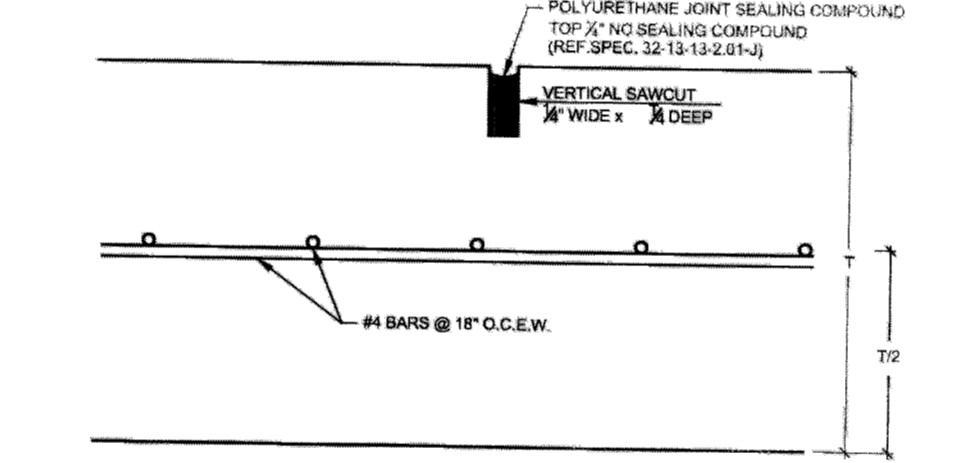
SUBGRADE PREPARATION IN ALL AREAS AFTER REACHING ROUGH GRADE SHOULD CONSIST OF SCARIFYING TO A DEPTH OF EIGHT INCHES, THEN RECOMPACTION TO A MINIMUM 95% OF STANDARD PROCTOR DENSITY AS DETERMINED BY THE ASTM D-888 PROCEDURE, AT OPTIMUM MOISTURE CONTENT (0 TO 24%).  
 IF WET CONDITIONS EXISTS AT TIME OF CONSTRUCTION, AND STABILIZATION IS REQUIRED, IT SHOULD BE PERFORMED USING LIME-FLY ASH STABILIZATION.  
 IT IS RECOMMENDED THAT THE UPPER 8 INCHES OF CLAY SUBGRADE BE STABILIZED WITH 6 PERCENT HYDRATED LIME, BY DRY UNIT WEIGHT.

- 1. REINFORCING STEEL:**  
 5" THICK CONCRETE PAVEMENT TO HAVE #3 BARS SPACED AT 18" C-C EACH WAY  
 6" THICK CONCRETE PAVEMENT TO HAVE #3 BARS SPACED AT 12" C-C EACH WAY  
 7" THICK CONCRETE PAVEMENT TO HAVE #4 BARS SPACED AT 18" C-C EACH WAY
- 2. CONTROL JOINT SPACING:**  
 5" PAVING MAXIMUM OF 12' 1/2" AND 6" & 7" PAVING MAXIMUM OF 15'
- 3. EXPANSION JOINT:**  
 1. DOWELS AT EXPANSION JOINTS:  
 5" THICK CONCRETE PAVEMENT TO HAVE 5/8" DIAMETER AT 12' LONG SPACED AT 12' C-C  
 6" THICK CONCRETE PAVEMENT TO HAVE 3/4" DIAMETER AT 14' LONG SPACED AT 12' C-C  
 7" THICK CONCRETE PAVEMENT TO HAVE 7/8" DIAMETER AT 14' LONG SPACED AT 12' C-C

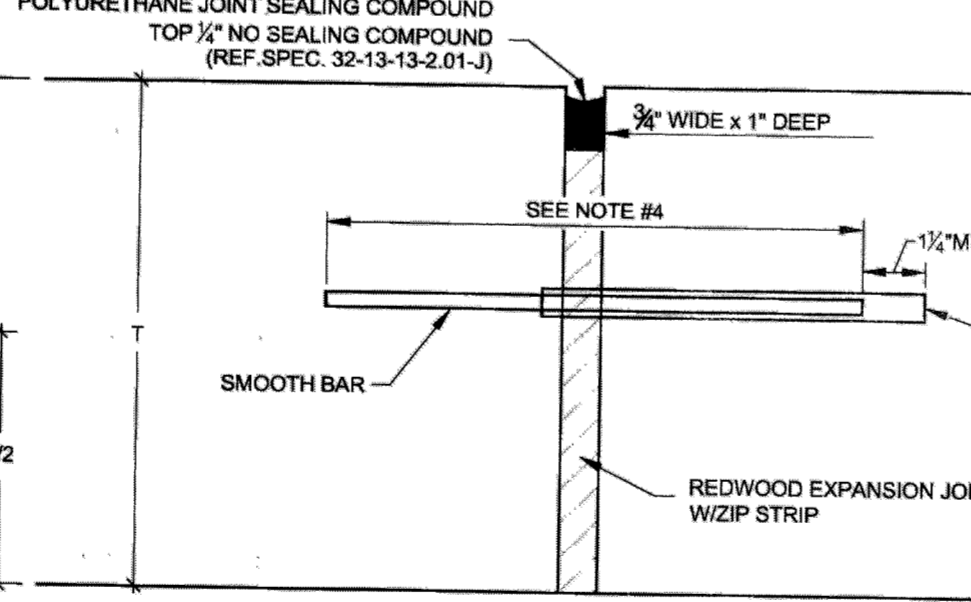
\*CONTROL JOINTS CUT WITHIN 6-12 HOURS OF CONCRETE PLACEMENT  
**A TYPICAL CONCRETE PAVEMENT SECTION**  
 N.T.S.  
 SEE GEOTECHNICAL ENGINEERING REPORT BY LITCHFIELD MEMORIAL PARTNERS, L.P. (PROJECT NO. 14G11057, DATED JUNE 2014)



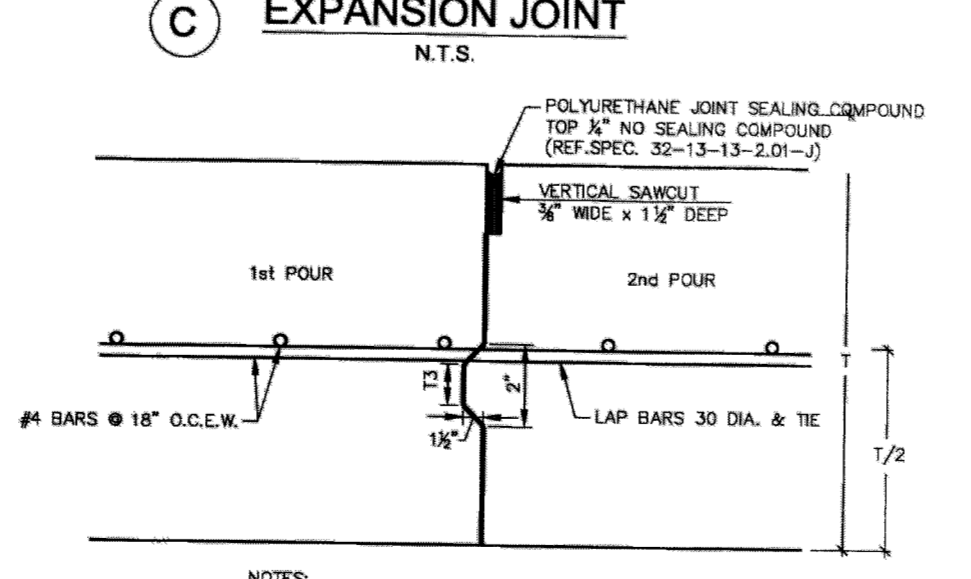
**SITE SIDEWALK @ CONCRETE PAVERS DETAIL**



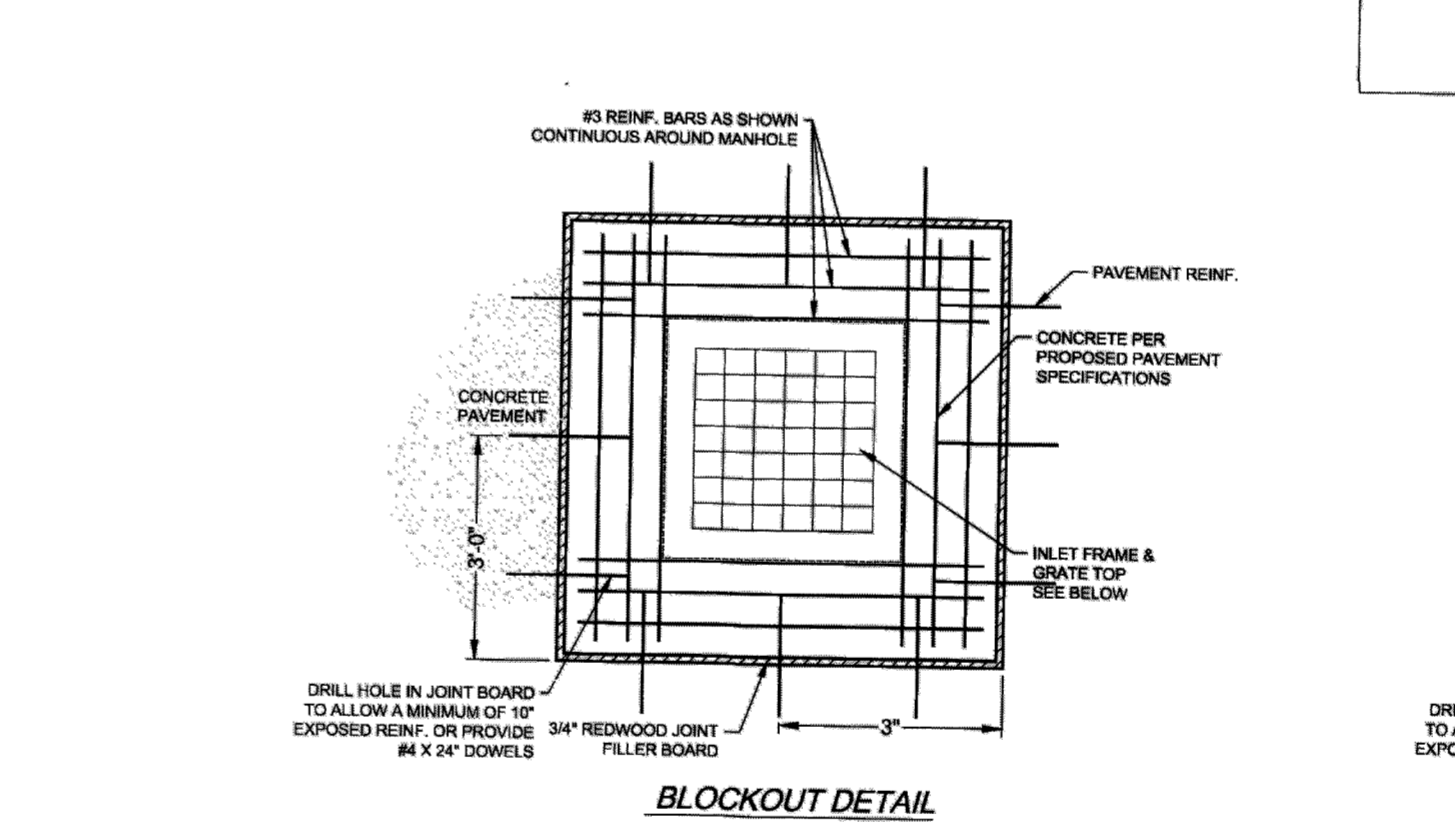
**SAWED DUMMY (CONTROL) JOINT**  
N.T.S.



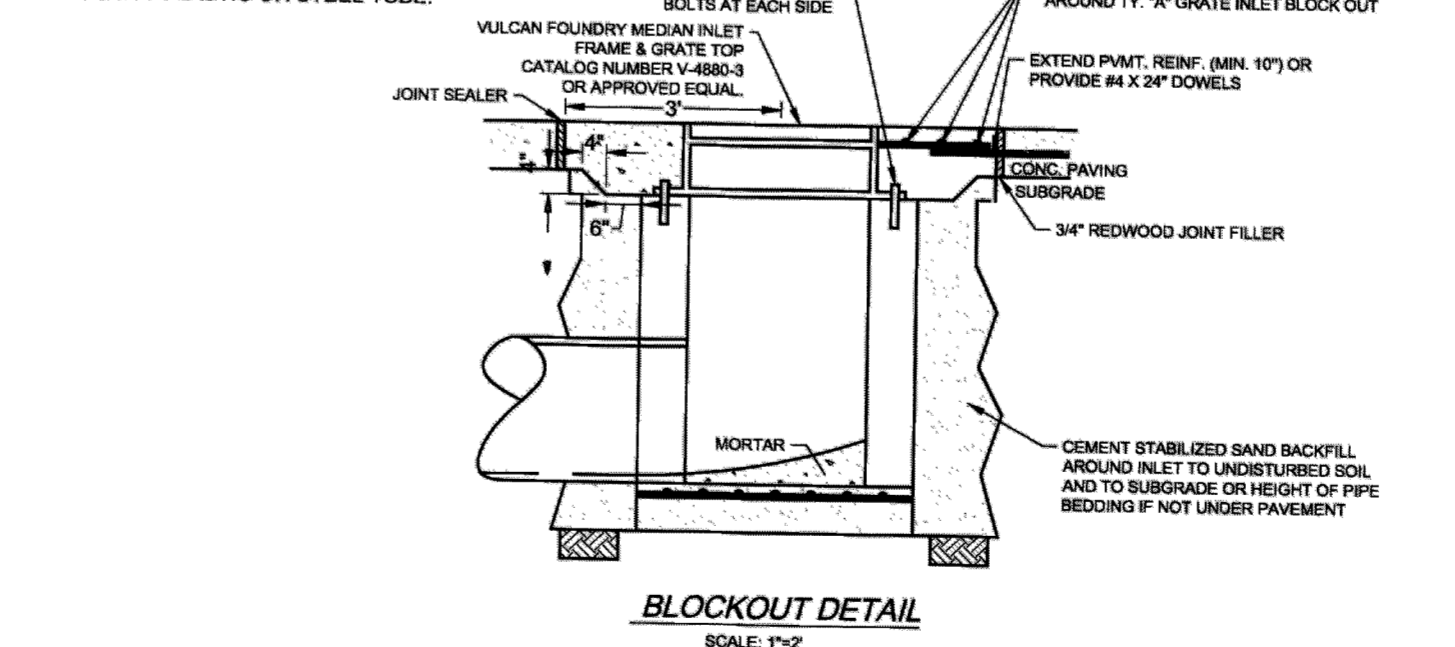
**EXPANSION JOINT**  
N.T.S.



**CONSTRUCTION JOINT**  
N.T.S.

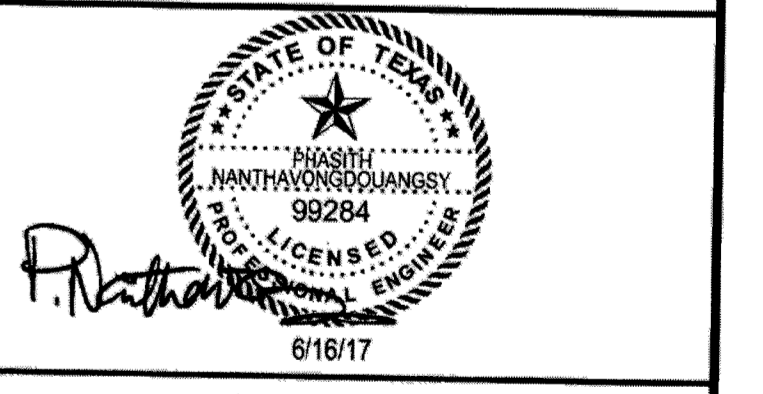


**MANHOLE BLOCKOUT DETAIL**



**MANHOLE BLOCKOUT DETAIL**

REV	DESCRIPTION	DATE
ISSUE FOR PERMIT		10/28/2016
ISSUE FOR PERMIT		06/16/2017



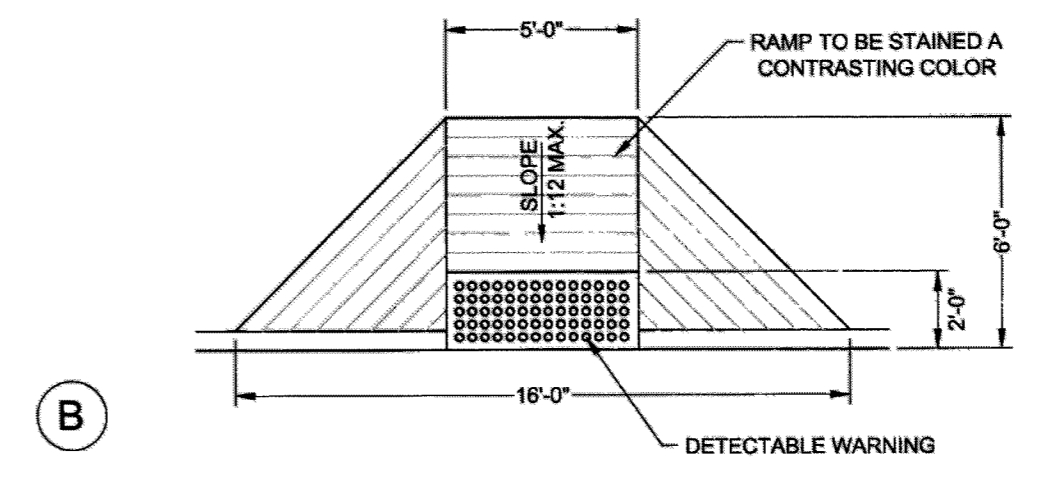
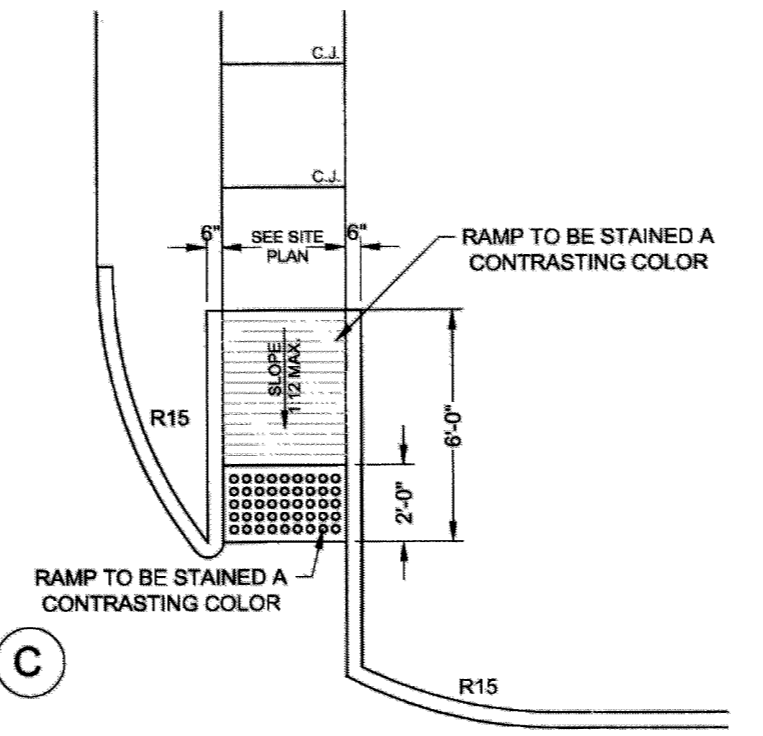
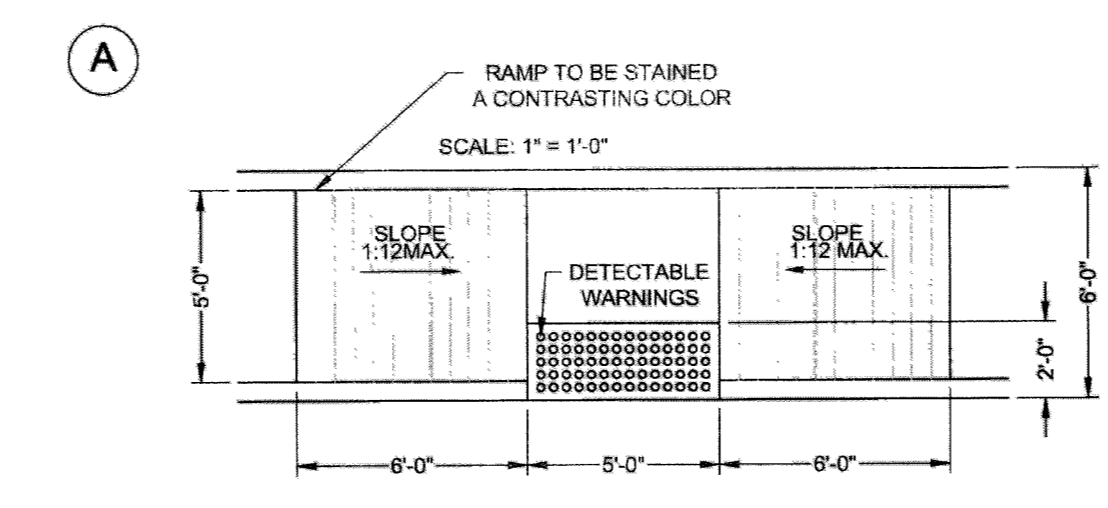
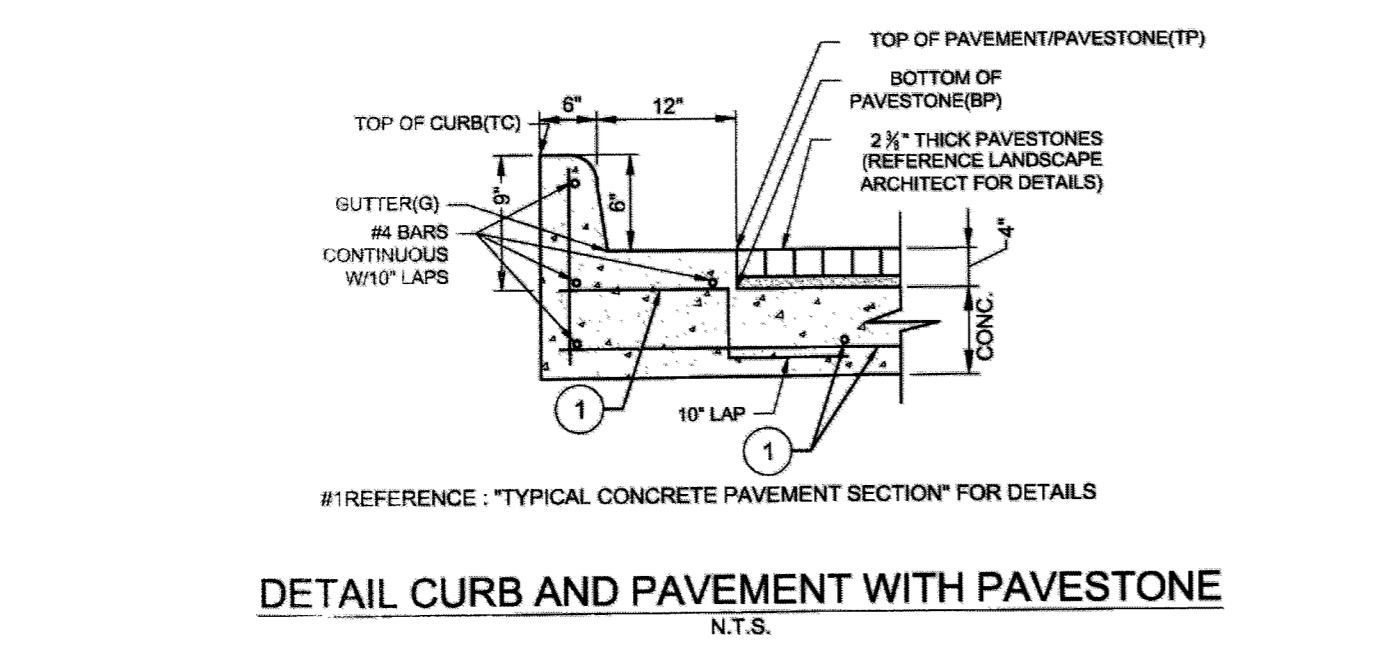
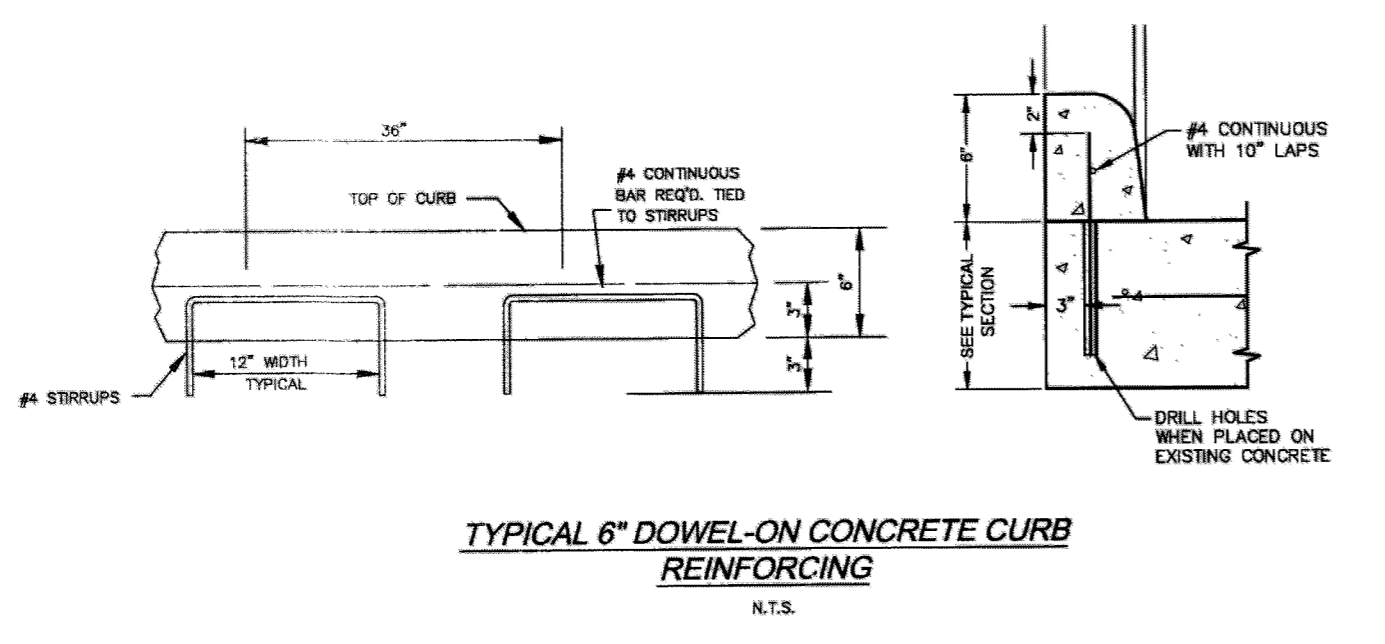
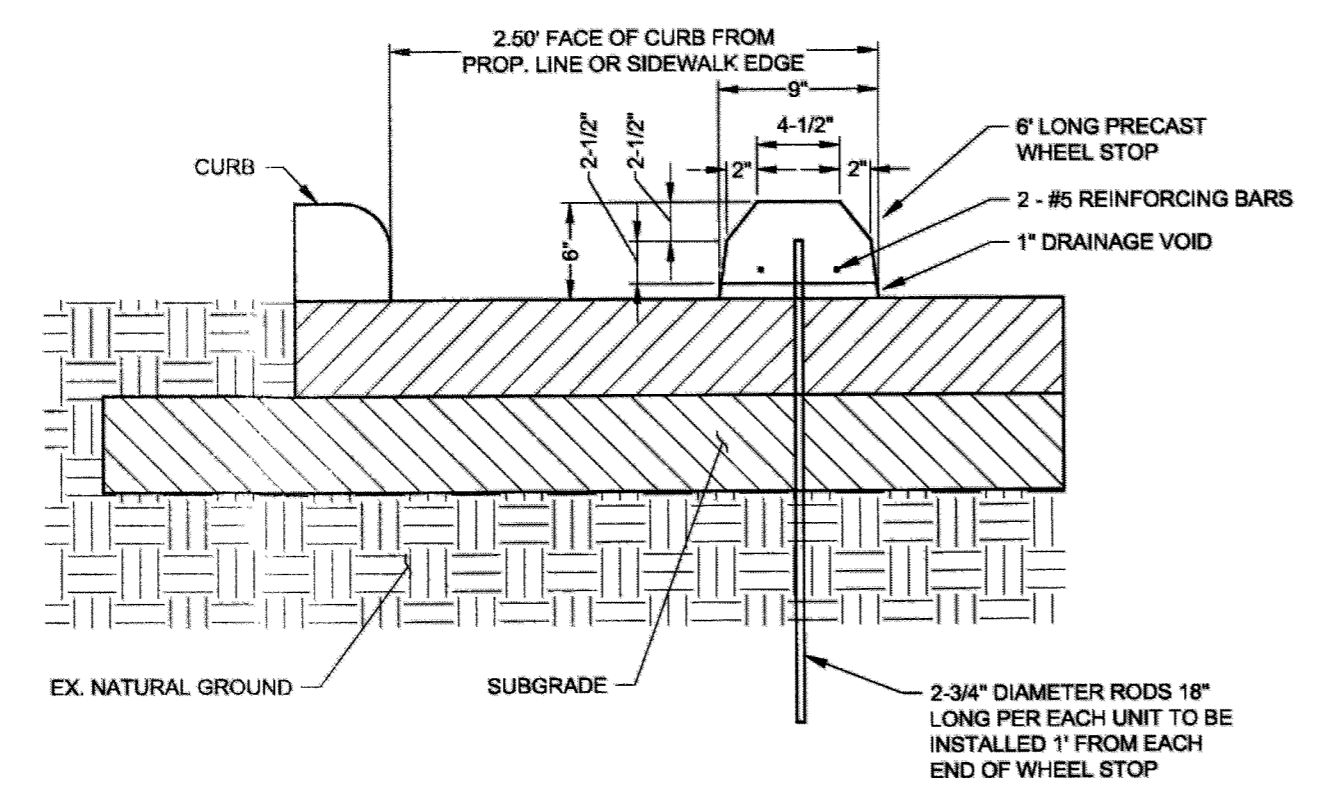
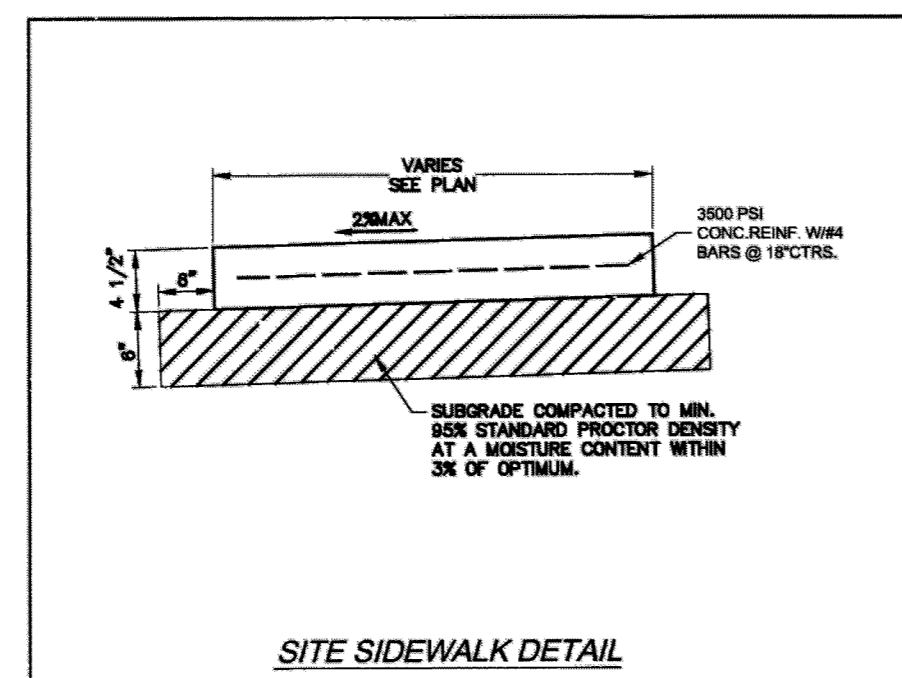
**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 8500 Tanglewilde, Suite 120  
 Houston, Texas 77063  
 713.789.1900

**MARCEL COMMONS II**

**MISCELLANEOUS DETAILS**

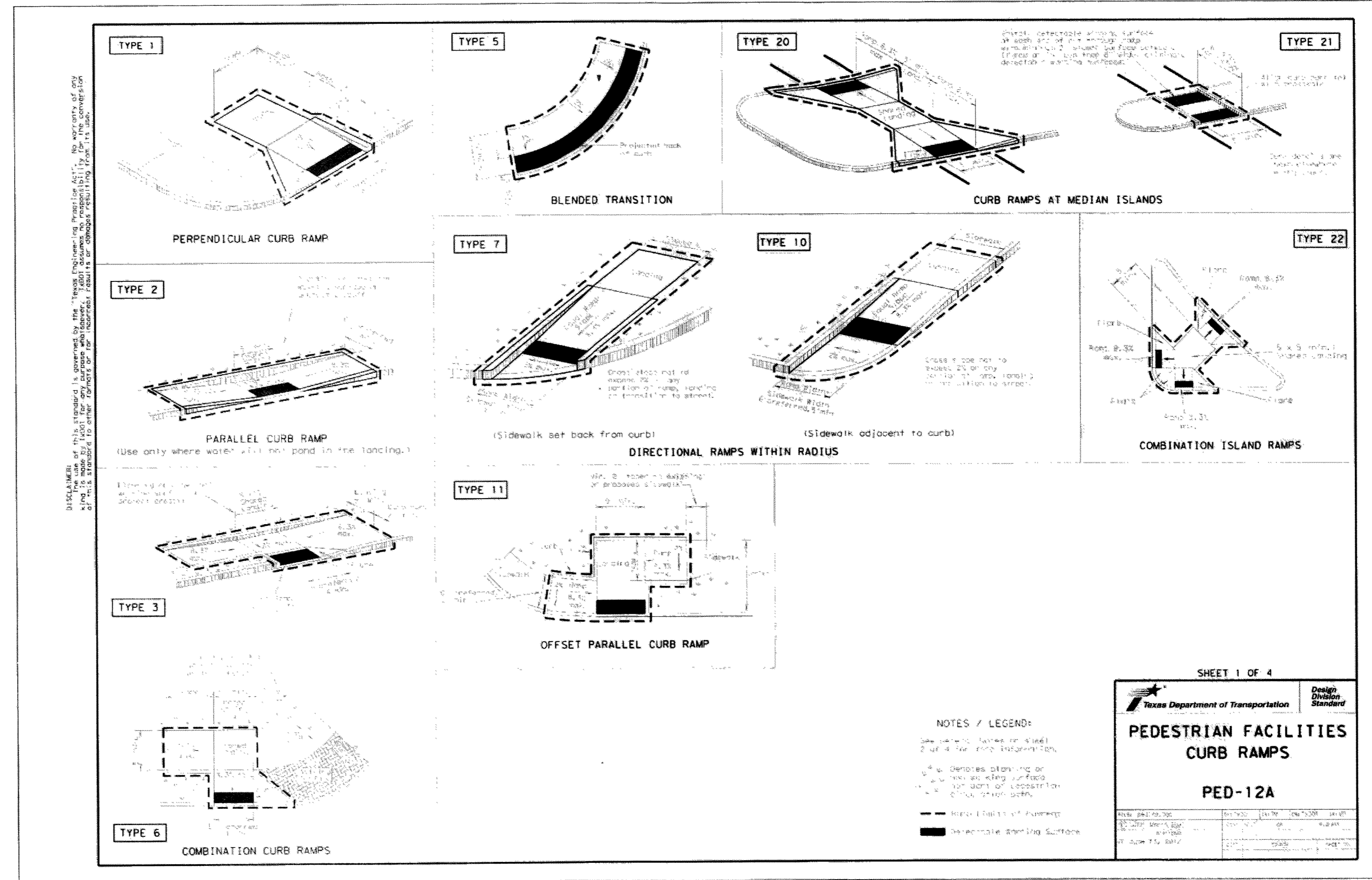
SCALE	DESIGN	DRAWN
	MF, BB, MCE, CAH	MF, BB, MCE, CAH

APPROVED: [Signature]  
 DEVELOPMENT COORDINATOR  
 DATE: 1/3/18



**NOTE:**  
 1. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9", A HEIGHT OF NOMINAL 0.2" AND A CENTER TO CENTER SPACING OF NOMINAL 2.35" AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.  
 2. THE SURFACE OF A WHEEL CHAIR RAMP IS BE GROVED LATERALLY WITH 1/2" WIDE BY 3/8" DEEP GROOVES, SPACED 2-1/4" C-C, AND ROUGHENED NO LESS THAN A BROOM FINISH TO PREVENT SLIPPING, AND TO DIFFERENTIATE TEXTURE FROM THAT OF STANDARD SIDEWALK.

**CONCRETE PEDESTRIAN RAMP**  
N.T.S.



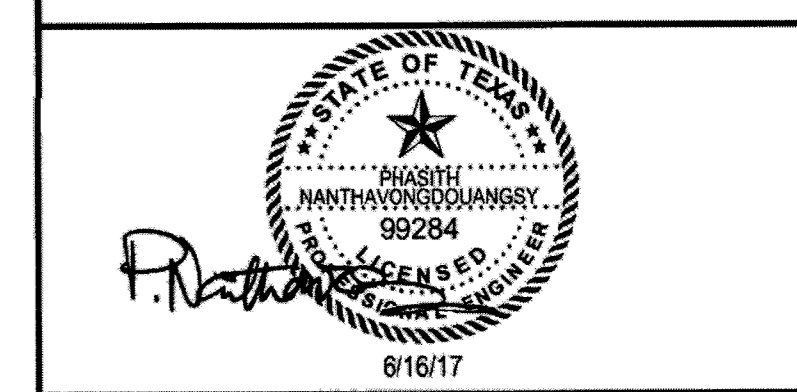
SHEET 1 OF 4  
 Texas Department of Transportation  
**PEDESTRIAN FACILITIES CURB RAMPS**  
 PED-12A  
 DATE: 08/16/17  
 DESIGN: MF, BB, MCE, CAH  
 DRAWN: MF, BB, MCE, CAH

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**SHEET NOTES:**

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	08/16/2017

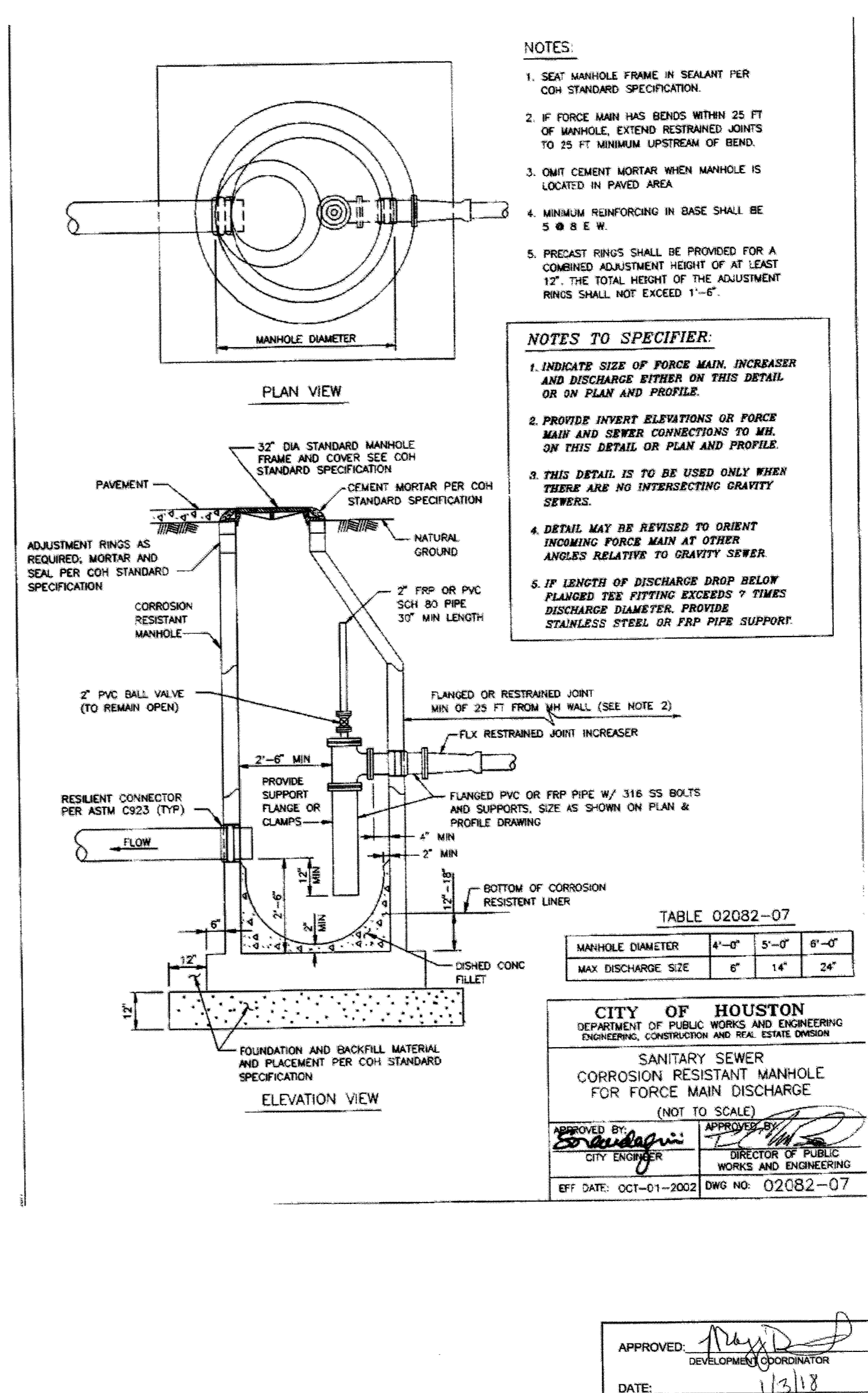
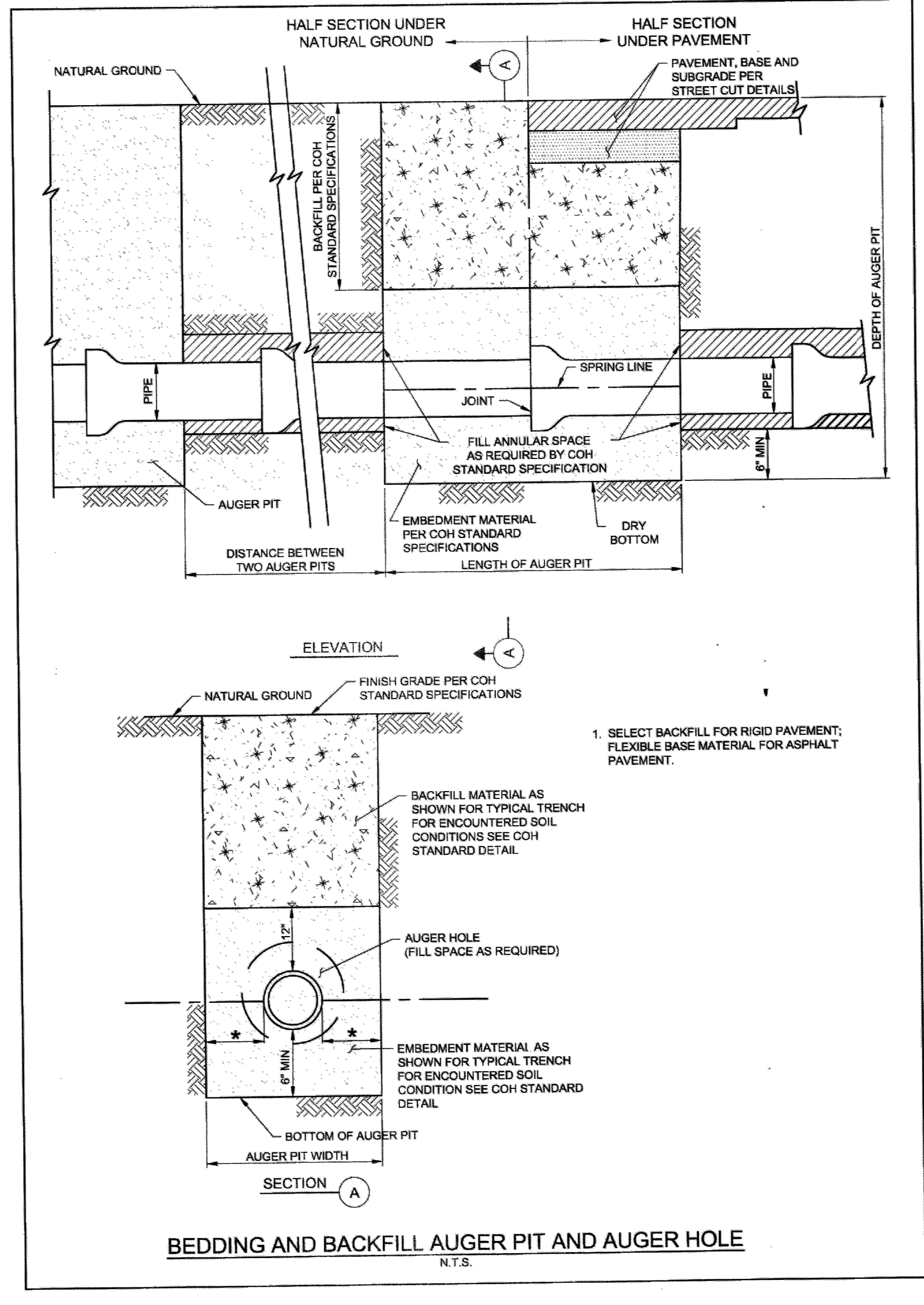
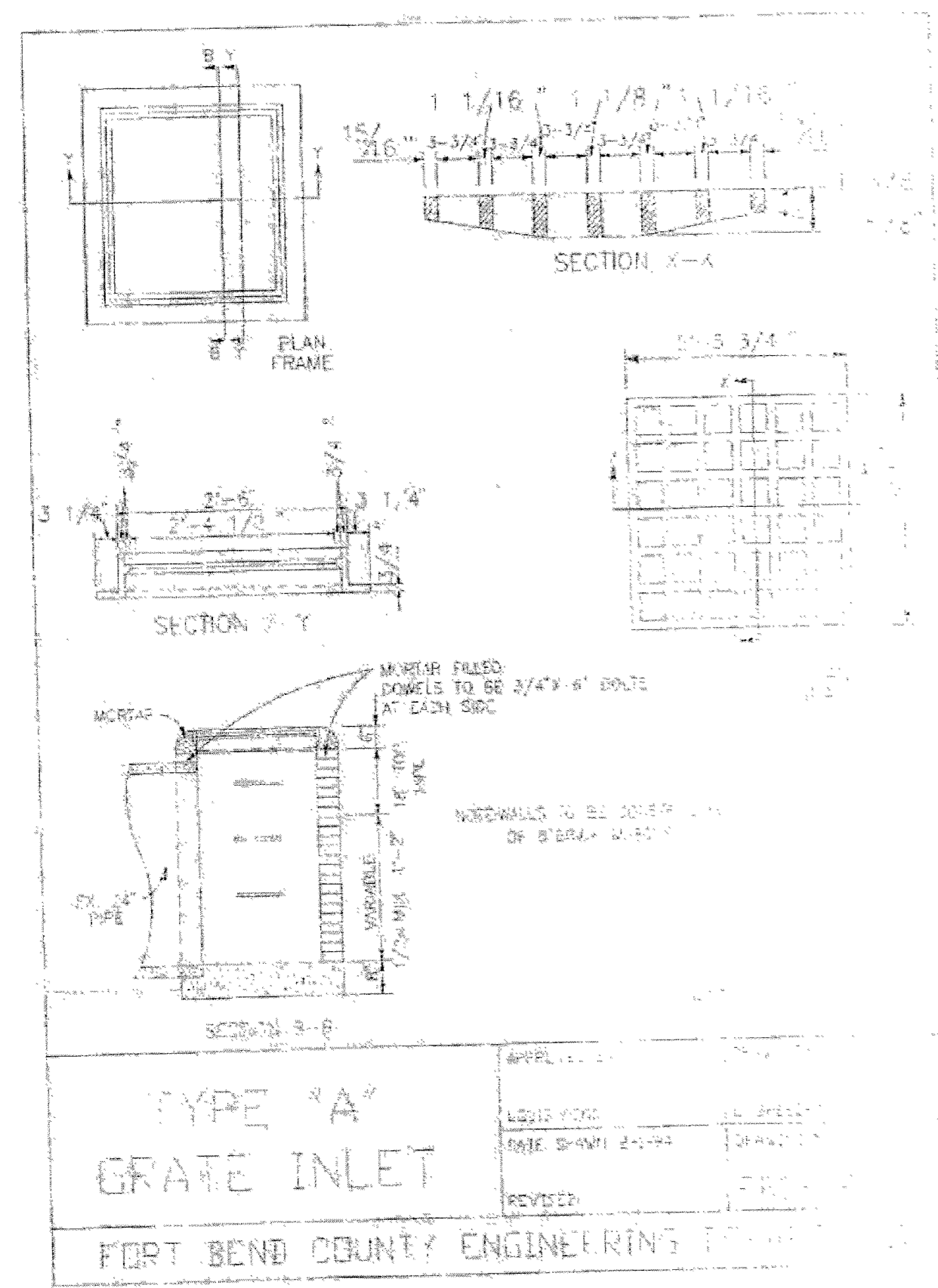
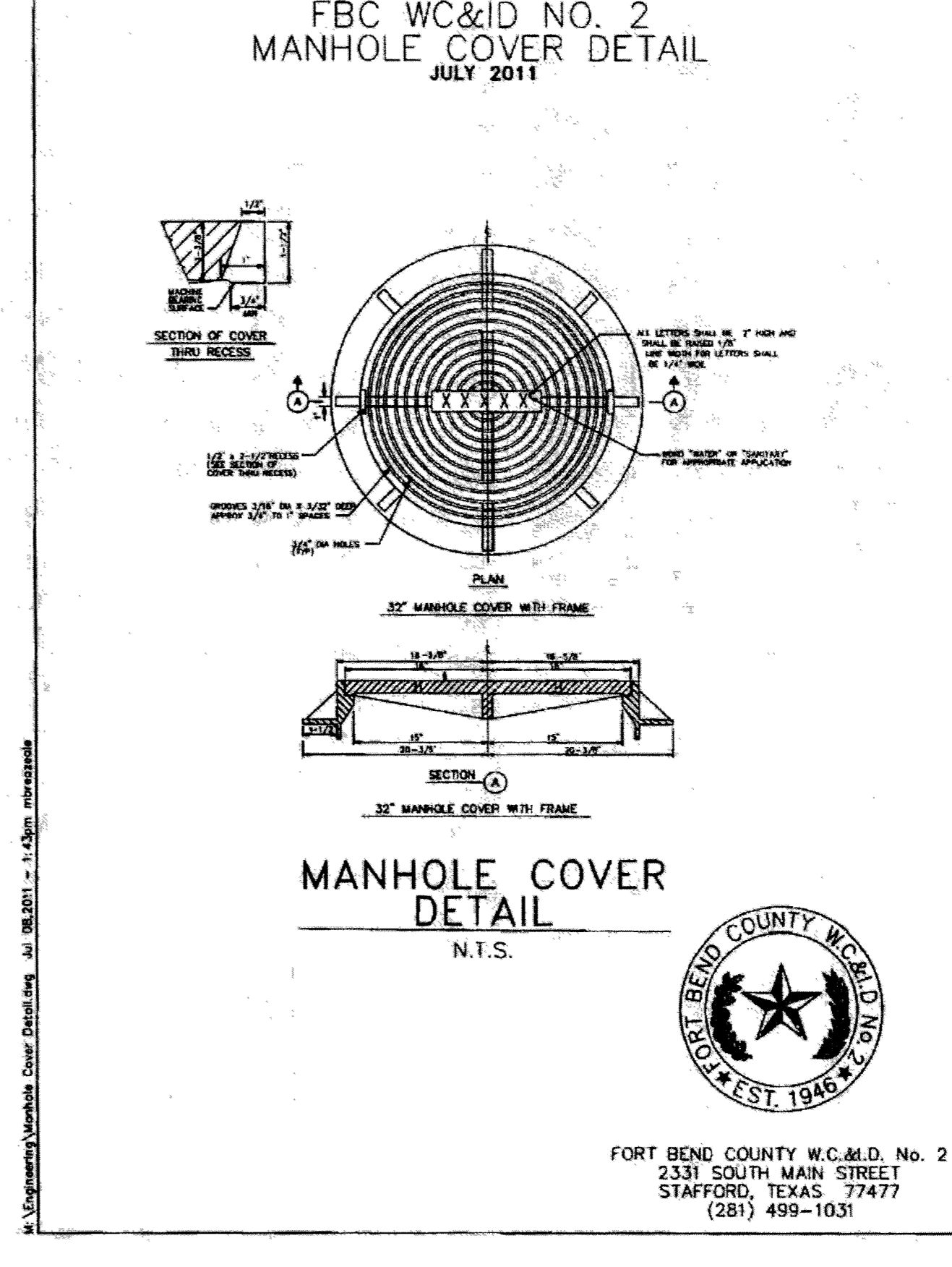
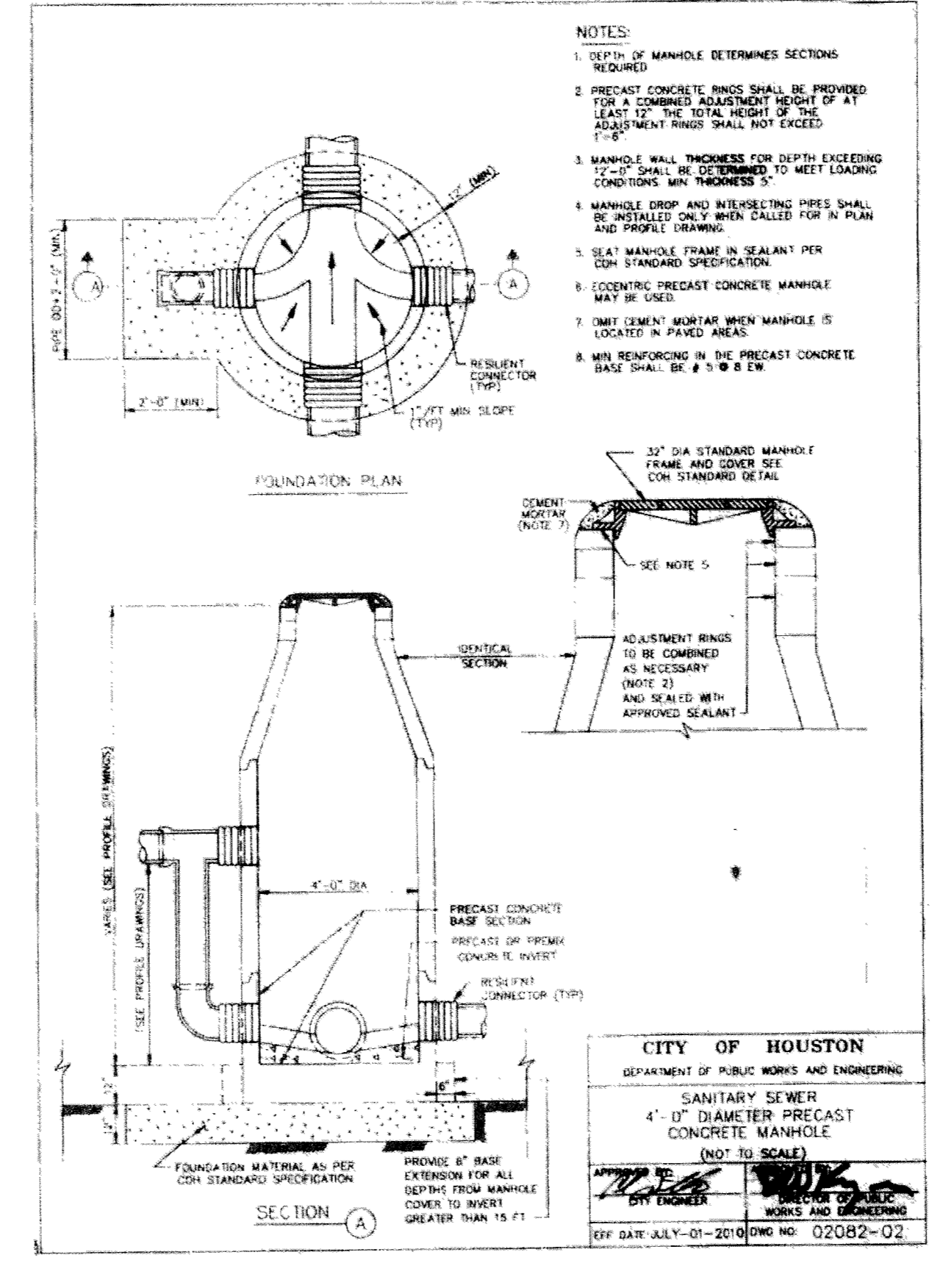
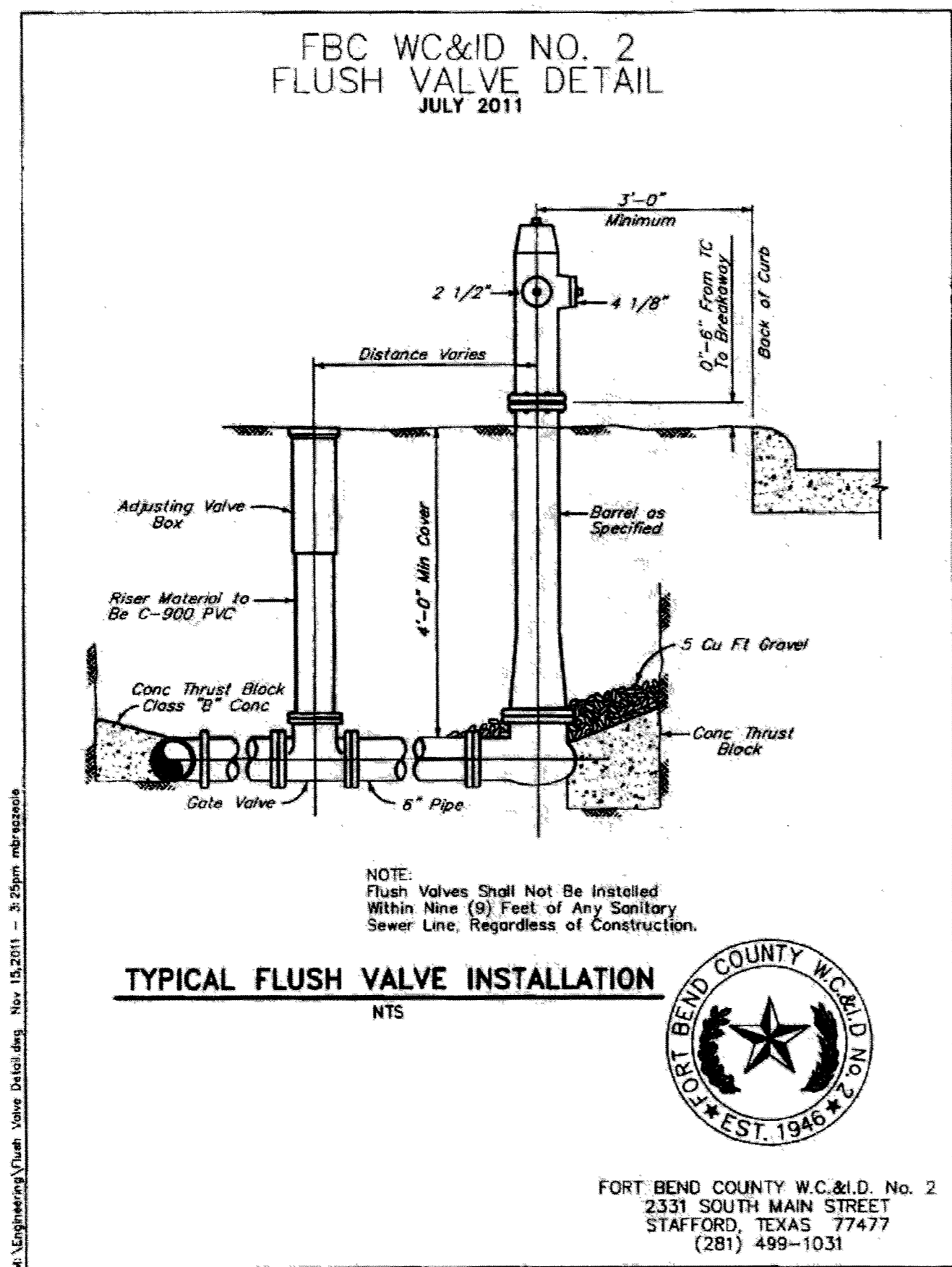
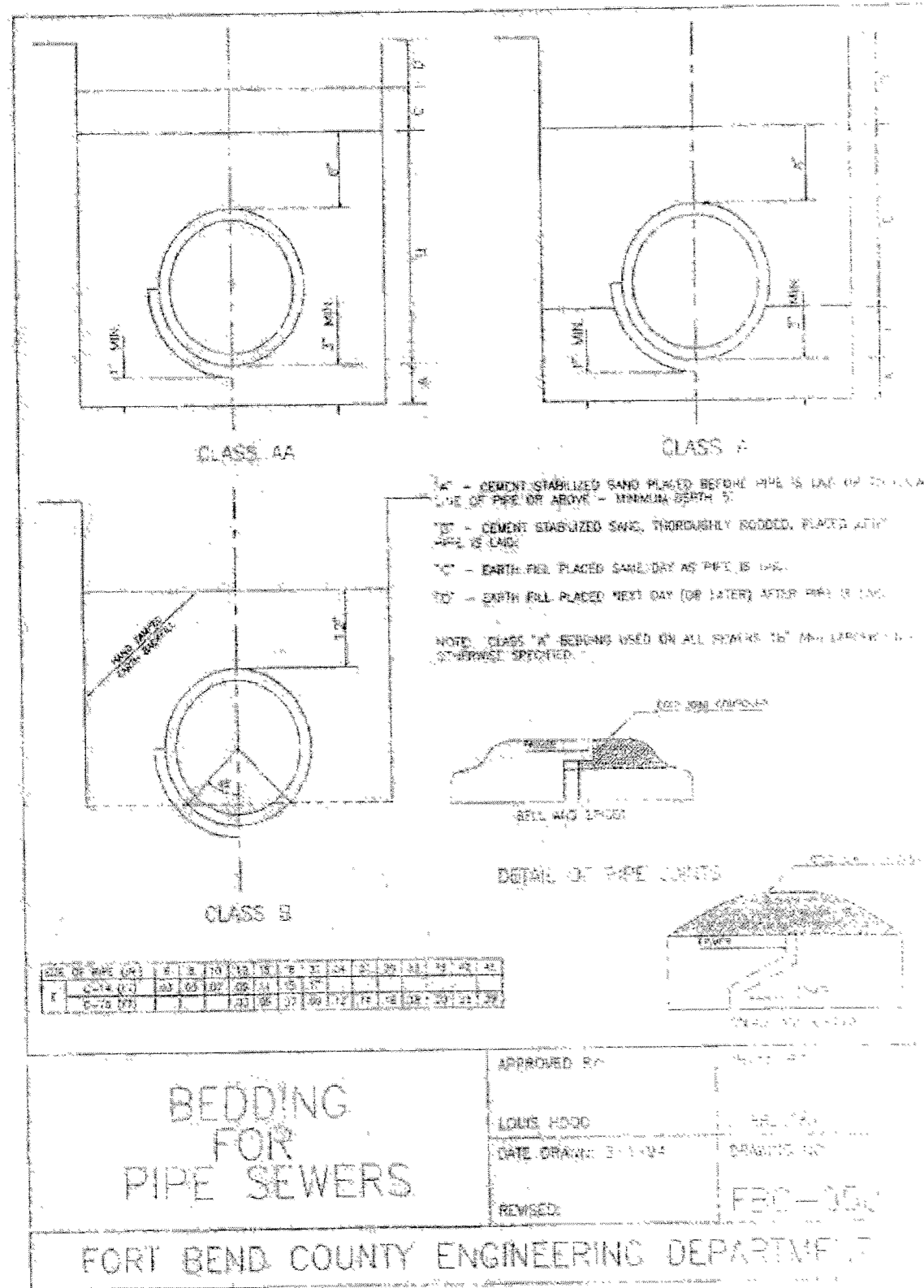


**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**  
**MISCELLANEOUS DETAILS**

SCALE	DESIGN	DRAWN
	MF, BB, MCE, CAH	MF, BB, MCE, CAH

APPROVED: [Signature]  
 DEVELOPMENT COORDINATOR  
 DATE: 1/3/18



**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).

**TEMPORARY BENCHMARK "A",** BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)

**TEMPORARY BENCHMARK "B",** BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 867 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0046 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**

REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	08/16/2017

STATE OF TEXAS  
 COUNTY OF HARRIS  
 ENGINEER  
 02284  
 6/16/17

**W|G|A**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 1200  
 Houston, Texas 77065  
 713.786.1900

**MARCEL COMMONS II**

**MISCELLANEOUS DETAILS**

SCALE	DESIGN	DRAWN
	MF, BB, MCE, CAH	MF, BB, MCE, CAH

10.3

MODEL NO.	RPBP SIZE	PAD DIMENSIONS		
		FL	PW	PT
RPBP-3	3"	7'-10"	4'-4"	8"
RPBP-4	4"	7'-10"	4'-4"	8"
RPBP-6	6"	7'-10"	4'-4"	8"
RPBP-8	8"	10'-0"	4'-0"	8"
RPBP-10	10"	10'-0"	4'-0"	8"

**Specifications**  
**CONCRETE:** Class I concrete with design strength of 4500 PSI at 28 days.  
**REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

**Typical Applications**  
 RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospital facilities, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

**Engineering Data**  
 Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. Pipe, valves and fittings of the assembly are approved by one or more of the following associations:

**PROJECT:**  
**CUSTOMER:**  
**ARCHITECT:**  
**ENGINEER:**  
**ORDER #:**  
**DATE:**

**PARK** EQUIPMENT COMPANY  
 TEL: (713) 837-7802  
 FAX: (713) 837-4254  
 WATS: (800) 256-8041

"Expect the Best"  
**REDUCED PRESSURE BACKFLOW PREVENTER ON PRECAST CONCRETE PAD**  
 SCALE: NONE DWG. NO. RPBP-1 REV. A  
 DATE: 08-2009

**Specifications**  
**CONCRETE:** Class II concrete with design strength of 4500 PSI at 28 days.  
**REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.

**Typical Applications**  
 RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospital facilities, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feed, water lines and other installations requiring maximum protection.

**Engineering Data**  
 The backflow assembly shall be factory assembled on pad & hydrostatically tested prior to delivery. Field excavation & preparation shall be completed prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

**PROJECT:**  
**CUSTOMER:**  
**ARCHITECT:**  
**ENGINEER:**  
**ORDER #:**  
**DATE:**

**PARK** EQUIPMENT COMPANY  
 888-611-PARK  
 www.park-usa.com

"Expect the Best"  
**REDUCED PRESSURE BACKFLOW PREVENTER ON PRECAST CONCRETE PAD**  
 MODEL RPE - 3/4" THRU 2"  
 SCALE: NONE DWG. NO. RPE-1 REV. A  
 DATE: 2010

**Specifications**  
**CONCRETE:** Class II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor and first stage of wall with sectional clear to required depth.  
**REINFORCEMENT:** Grade 60 reinforced. Steel rebar conforming to ASTM A615 on required centers or equal.  
**STEEL COVER:** 1/4" steel skin-resistant floor plate welded to 3" angle frame with (2) 3/8"x1/2" beam supports (300 PSF).  
**HATCHWAY:** 1/4" Aluminum diamond plate cover with extruded aluminum frame. Hatch to be furnished with 316 stainless steel snap lock & brass hinges.

**Engineering Data**  
 The backflow assembly shall be factory assembled in vault & hydrostatically tested prior to delivery. Field excavation & preparation shall be completed prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

**PROJECT:**  
**CUSTOMER:**  
**ARCHITECT:**  
**ENGINEER:**  
**ORDER #:**  
**DATE:**

**PARK** EQUIPMENT COMPANY  
 888-611-PARK  
 www.park-usa.com

"Expect the Best"  
**FIRE & DOMESTIC COMBINATION WATER METER ASSEMBLY**  
 MODEL FMC - 4" THRU 10"  
 SCALE: NONE DWG. NO. FMC-AL-SL REV. A  
 DATE: 2010

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		TEES			PLUGS				
	A	B	A	B	A	B	A	B	C	D	A	B	C	D
2 1/2"	12"	7"	8"	7"	8"	8"	7"	8"	8"	8"	14"			
4"	14"	8"	7"	8"	8"	8"	8"	11"	8"	18"				
6"	16"	10"	9"	10"	8"	8"	10"	12"	10"	21"				
8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"				
12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"				
16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"				

**NOTE:**  
 1. THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 1.0 SQ. FOOT AND THE LEAST DIMENSION SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER, BUT NOT LESS THAN 1.0 FEET.  
 2. ALL CONCRETE TO BE POURED AGAINST FIRM, UNDISTURBED SOIL AND SHALL BE MIN. 6SK, 3000 P.S.I.

**THRUST BLOCK DETAIL**  
 N.T.S.

**VALVE BOX**  
 N.T.S.

**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 WATER DISTRIBUTION MAIN BEDDING AND BACKFILL FOR OPEN CUT TRENCHES  
 (NOT TO SCALE)  
 DATE: JUL-01-2010 DWG NO: 02317-04

**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 "TEMPORARY BENCHMARK 'A', BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
 TEMPORARY BENCHMARK 'B', BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE 'C'. (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 481570004 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48167C010L.

**SHEET NOTES:**

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/16/2017

**WARD, GETZ & ASSOCIATES, LLP**  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2800 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1300

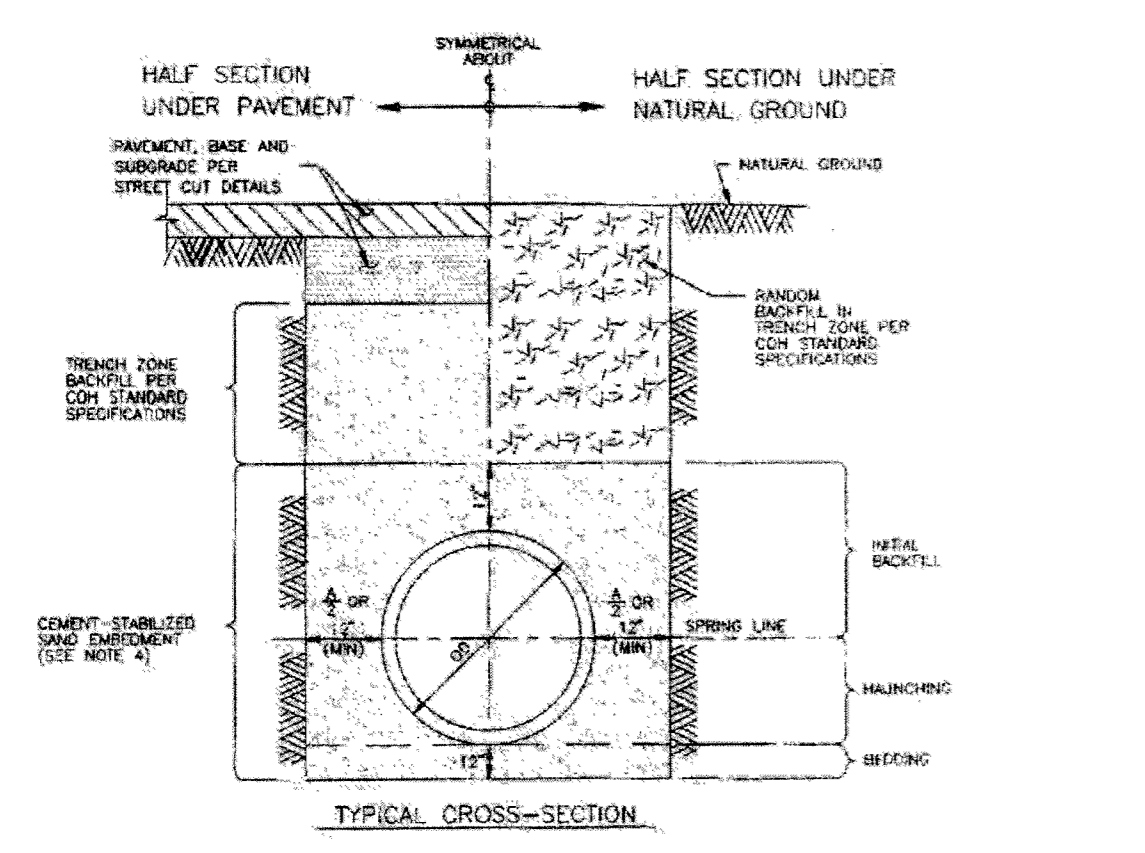
**MARCEL COMMONS II**

**MISCELLANEOUS DETAILS**

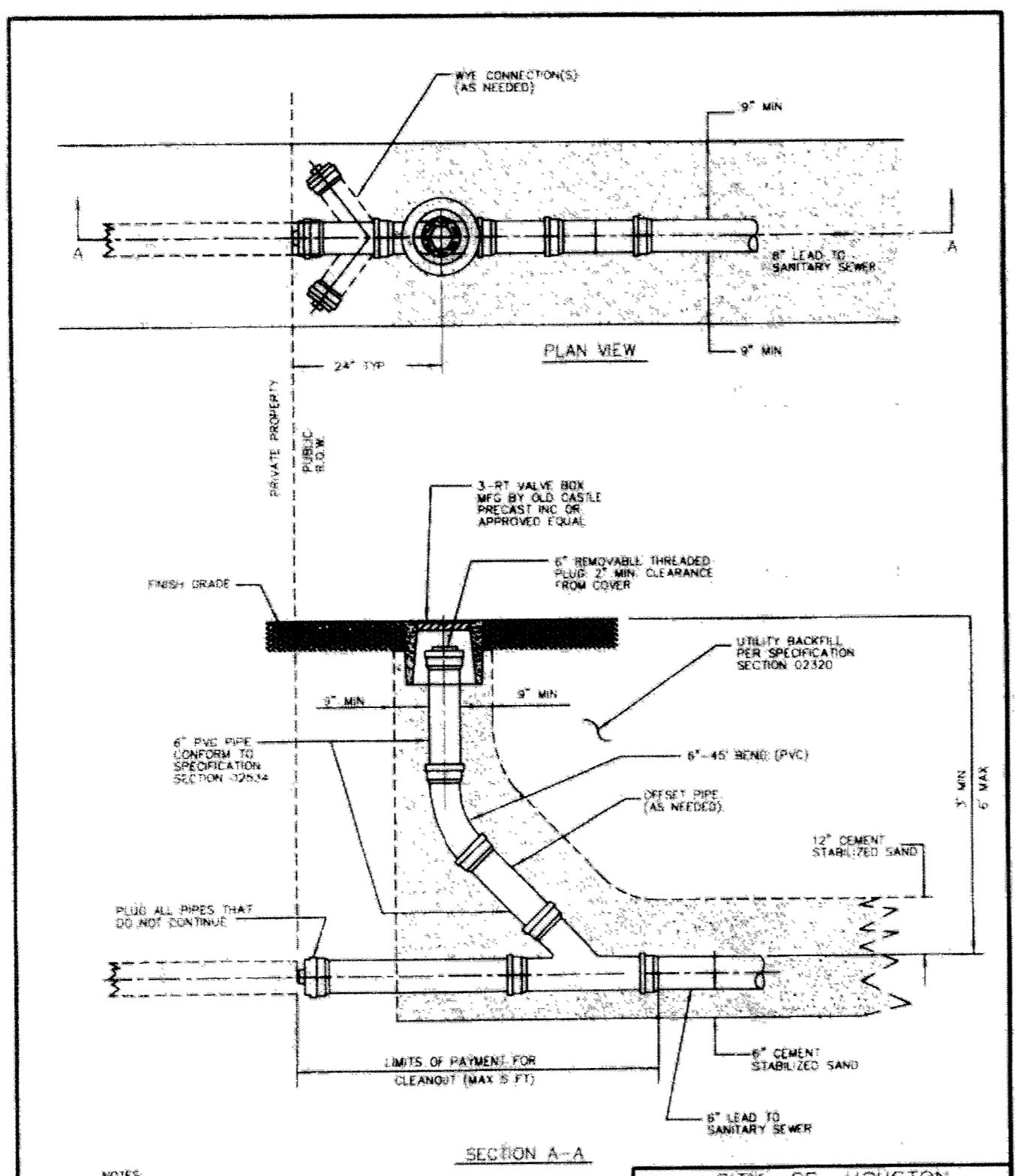
SCALE: DESIGN: DRAWN:  
 MF,BB,MCE,CAH MF,BB,MCE,CAH

APPROVED: *Manoj*  
 DEVELOPMENT COORDINATOR  
 DATE: 11/3/18

- NOTES:**
1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONSTRUCTION PER CODE STANDARD. SEE CODE STANDARD SPECIFICATIONS FOR REQUIREMENTS IN OTHER CONDITIONS.
  2. MAIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE.
  3. MAIN TRENCH WIDTH SHALL BE NOT GREATER THAN MAIN TRENCH WIDTH PLUS "A" WORKS, UNLESS OTHERWISE NOTED.
  4. ALTERNATIVE IMPROVED BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED, SEE CODE STANDARD SPECIFICATIONS.

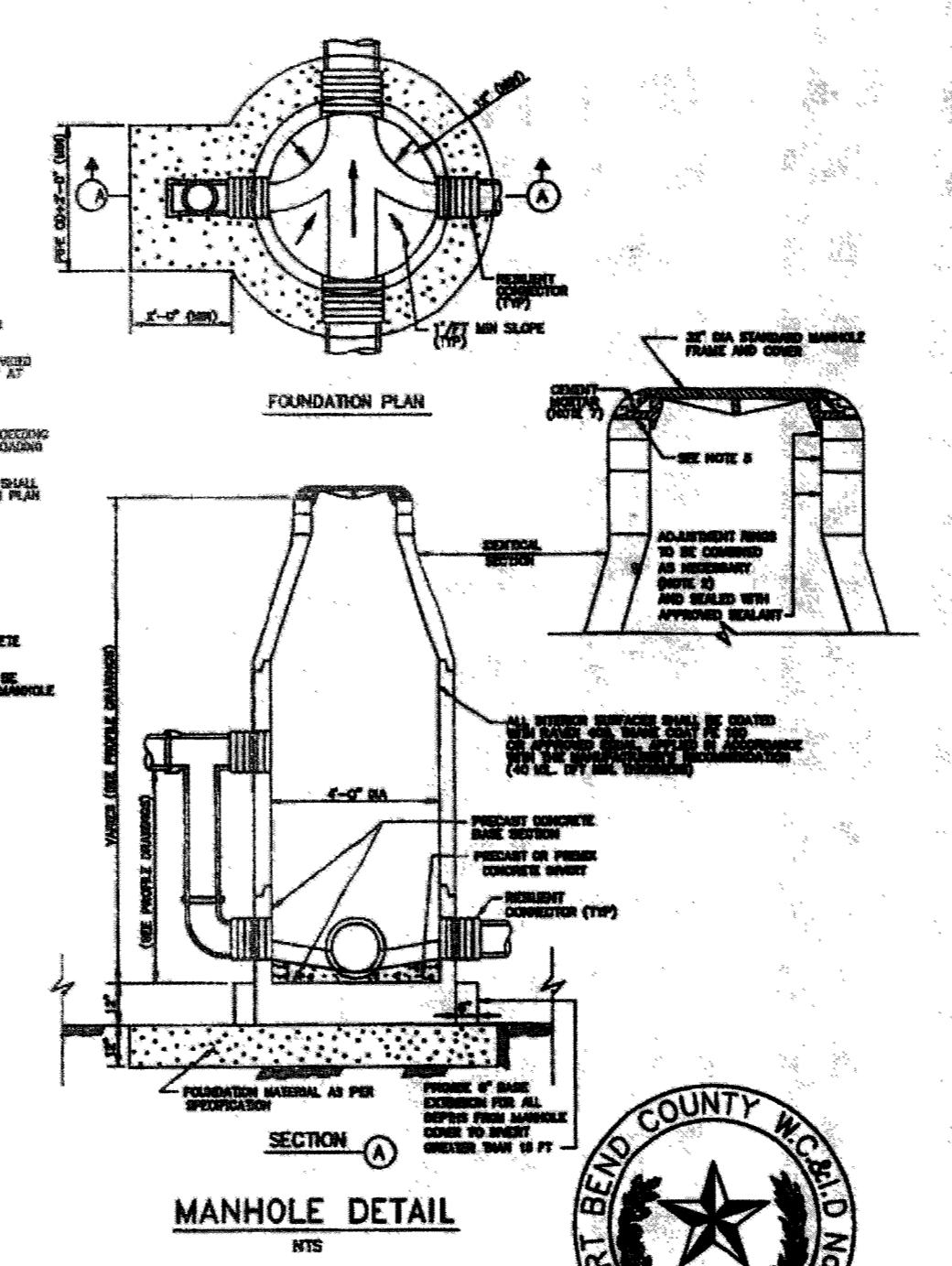


**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
 ENGINEERING, CONSTRUCTION AND PUBLIC UTILITY DIVISION  
**SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH**  
 (NOT TO SCALE)  
 APPROVED BY: [Signature]  
 CITY ENGINEER  
 EFF. DATE: OCT. 01, 2002 DWG NO: 025317-02



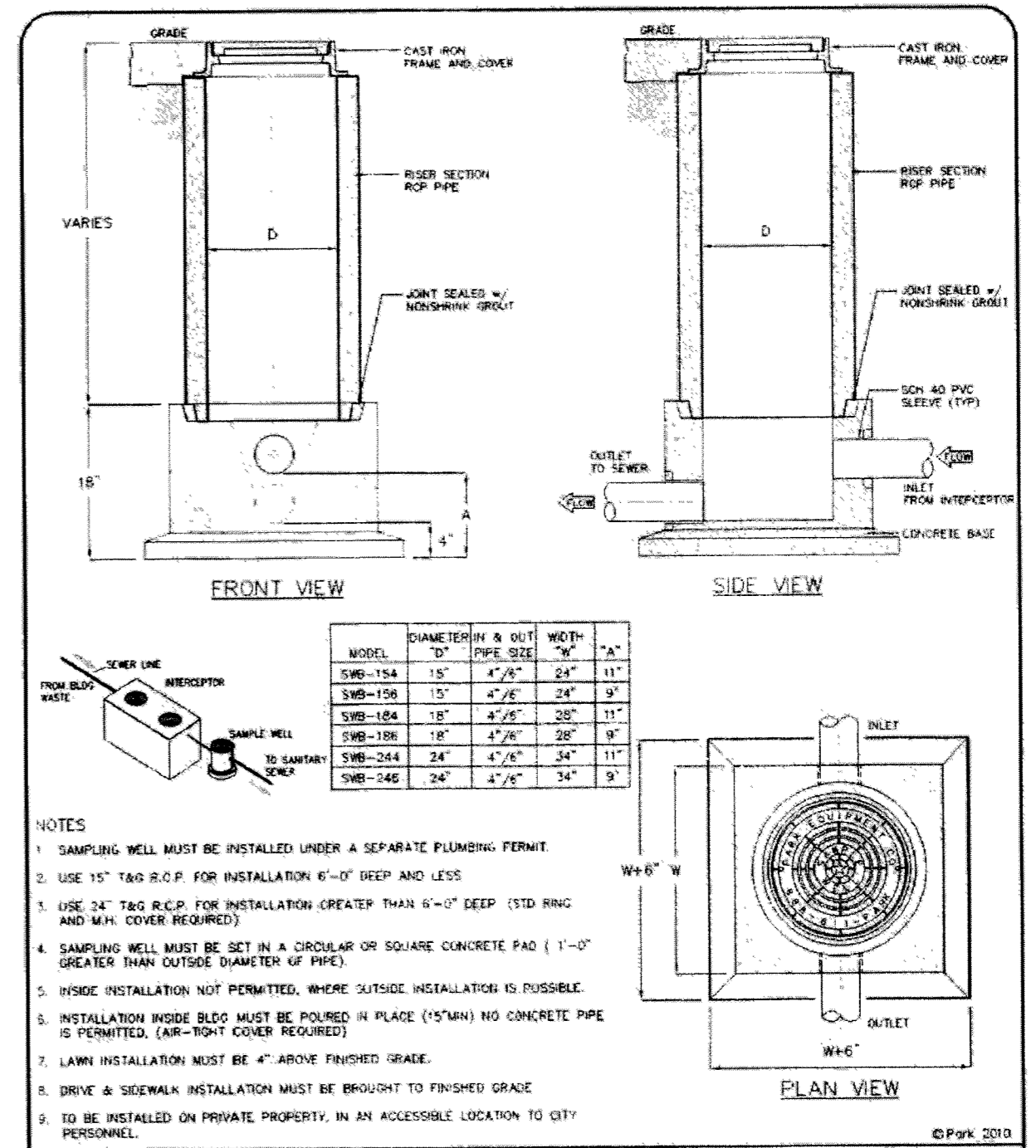
**CITY OF HOUSTON**  
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
**STANDARD CLEANOUT DETAIL ON SERVICE LEAD**  
 (NOT TO SCALE)  
 APPROVED BY: [Signature]  
 CITY ENGINEER  
 EFF. DATE: JULY-01-2010 DWG NO: 02534-05

**FBC WC&ID NO. 2  
 MANHOLE DETAIL  
 JANUARY 2011**



- NOTES:**
1. TYPE OF MANHOLE DETERMINES SECTION.
  2. PRECAST CONCRETE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  3. MANHOLE SHALL BE PROVIDED FOR DEPTH EXCEEDING 10'-0" WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  4. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  5. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  6. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  7. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  8. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.
  9. MANHOLE SHALL BE PROVIDED WITH 10% OVERLAP WITH ADJACENT SECTIONS. JOINTS SHALL BE SEALED WITH GROUT.

**FORT BEND COUNTY W.C.&I.D. No. 2**  
 2331 SOUTH MAIN STREET  
 STAFFORD, TEXAS 77477  
 (281) 499-1031

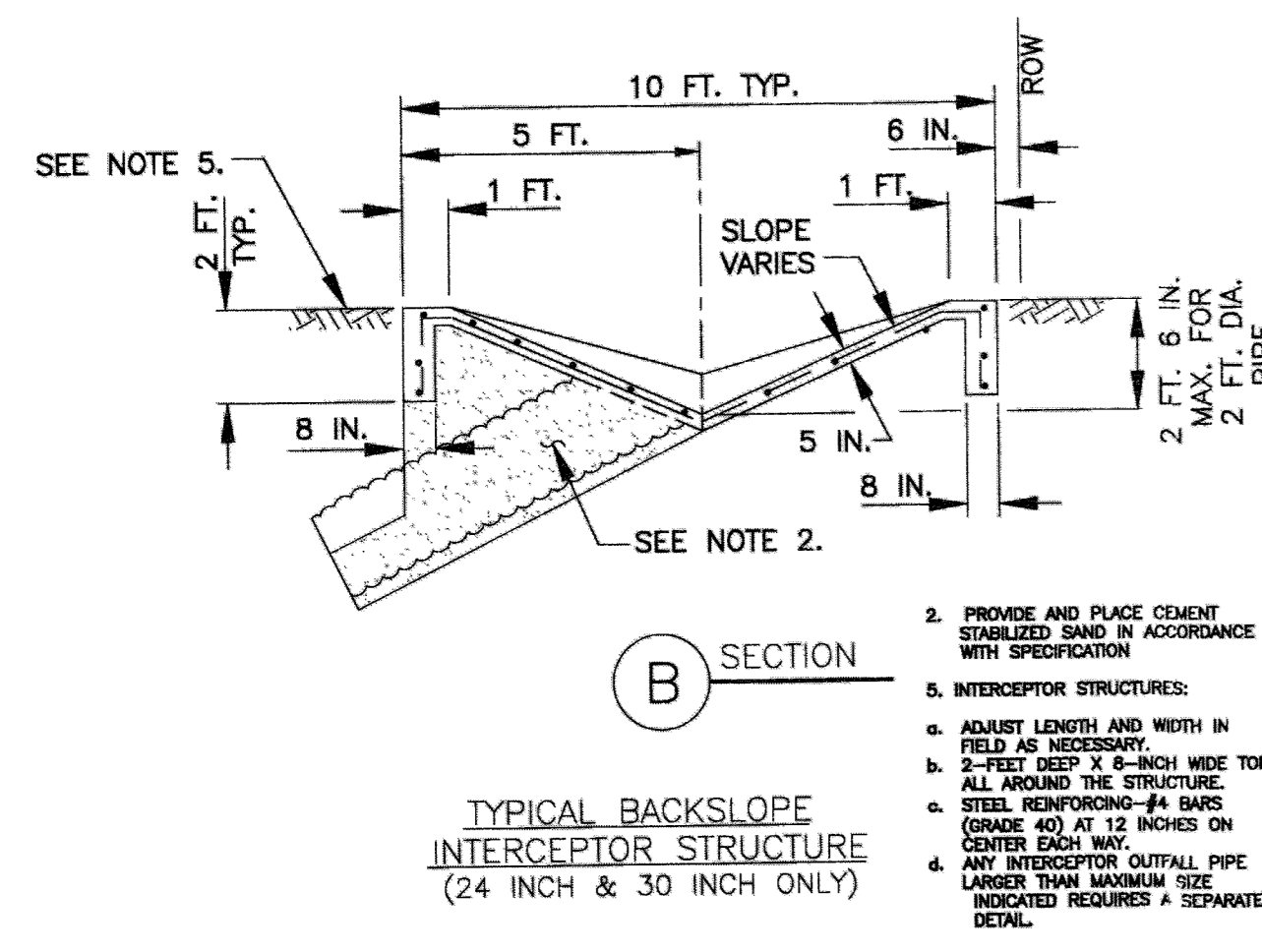
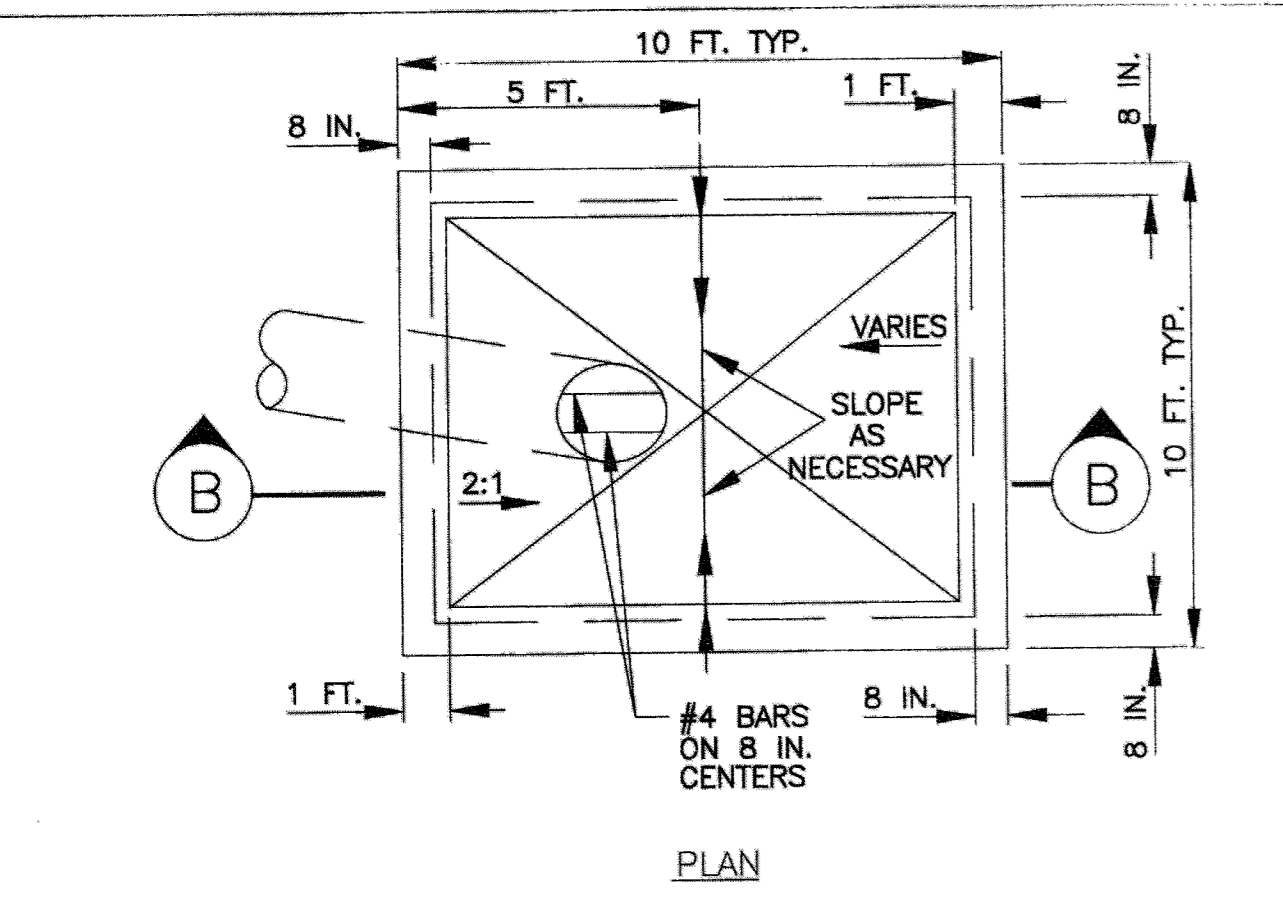


**PARK**  
 888-611-PARK  
 www.park-usa.com  
**"Expect the Best"**  
**SAMPLE WELL BASIN**  
 SCALE: NONE  
 DATE: 2010  
 REV: A

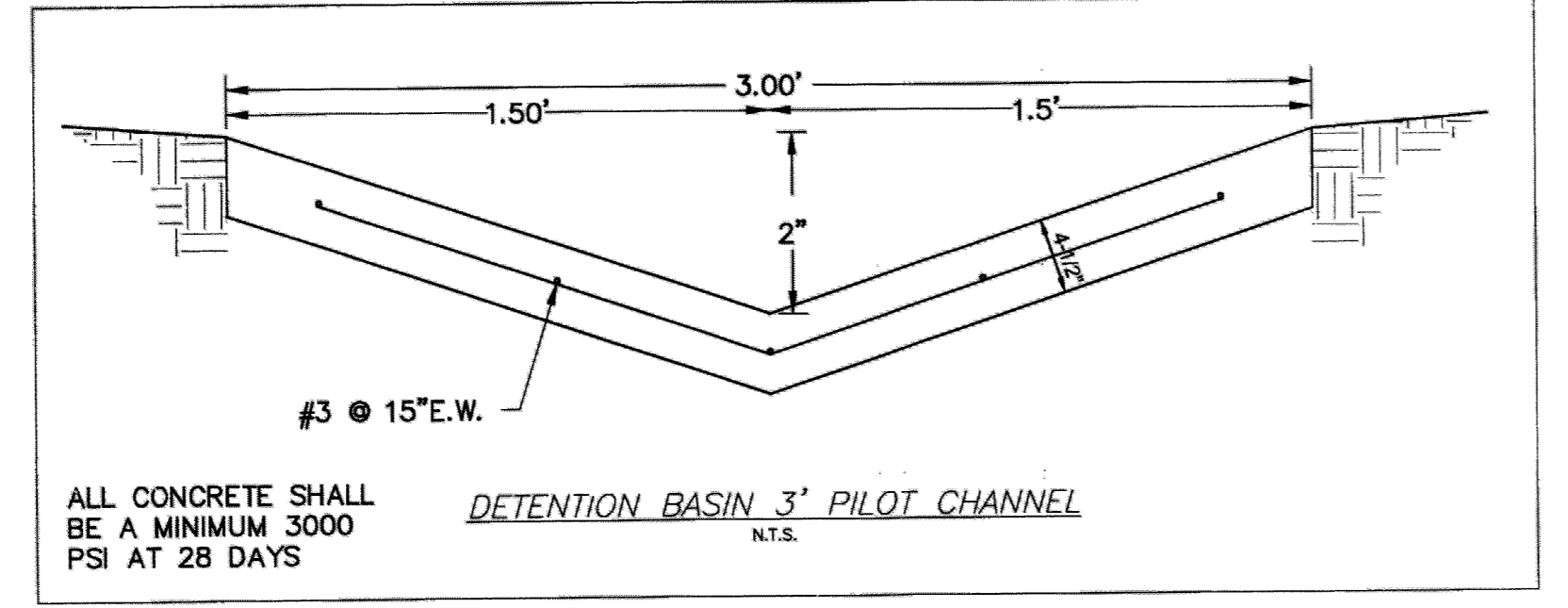
**BENCHMARKS:**  
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 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERN SIDE OF WESTHEIMER PARKWAY, APPROX. 867 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X" (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

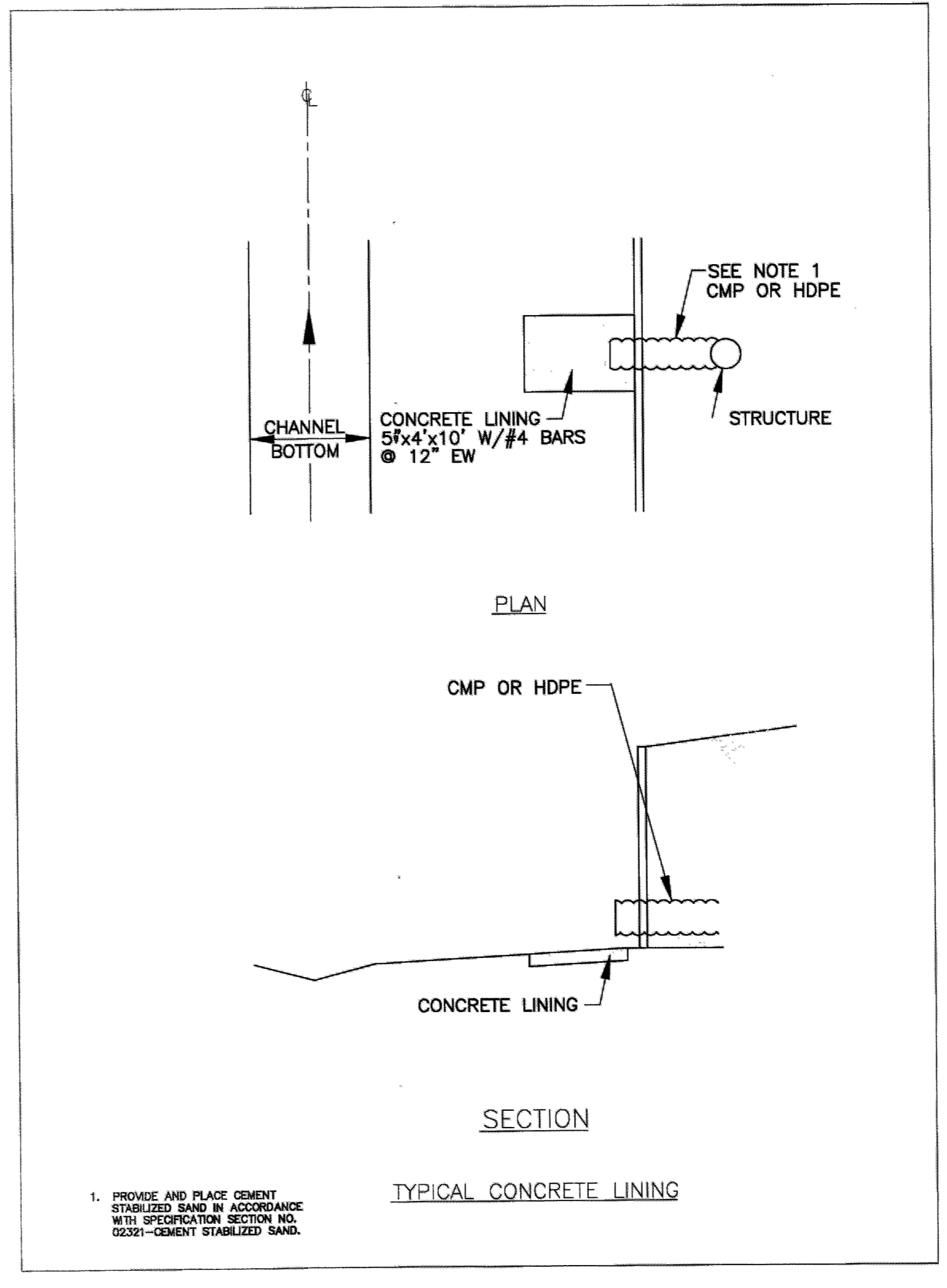
**SHEET NOTES:**



1. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION.
2. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION.
3. INTERCEPTOR STRUCTURES:
  - a. ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
  - b. 3'-FEET DEEP X 6-INCH WIDE TOE ALL AROUND THE STRUCTURE.
  - c. STEEL REINFORCING-#4 BARS (GRADE 40) AT 12 INCHES ON CENTER EACH WAY.
  - d. ANY INTERCEPTOR OUTLET PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.



ALL CONCRETE SHALL BE A MINIMUM 3000 PSI AT 28 DAYS



1. PROVIDE AND PLACE CEMENT STABILIZED SAND IN ACCORDANCE WITH SPECIFICATION SECTION NO. 025321-CEMENT STABILIZED SAND.

APPROVED: [Signature]  
 DEVELOPMENT COORDINATOR  
 DATE: 11/3/18

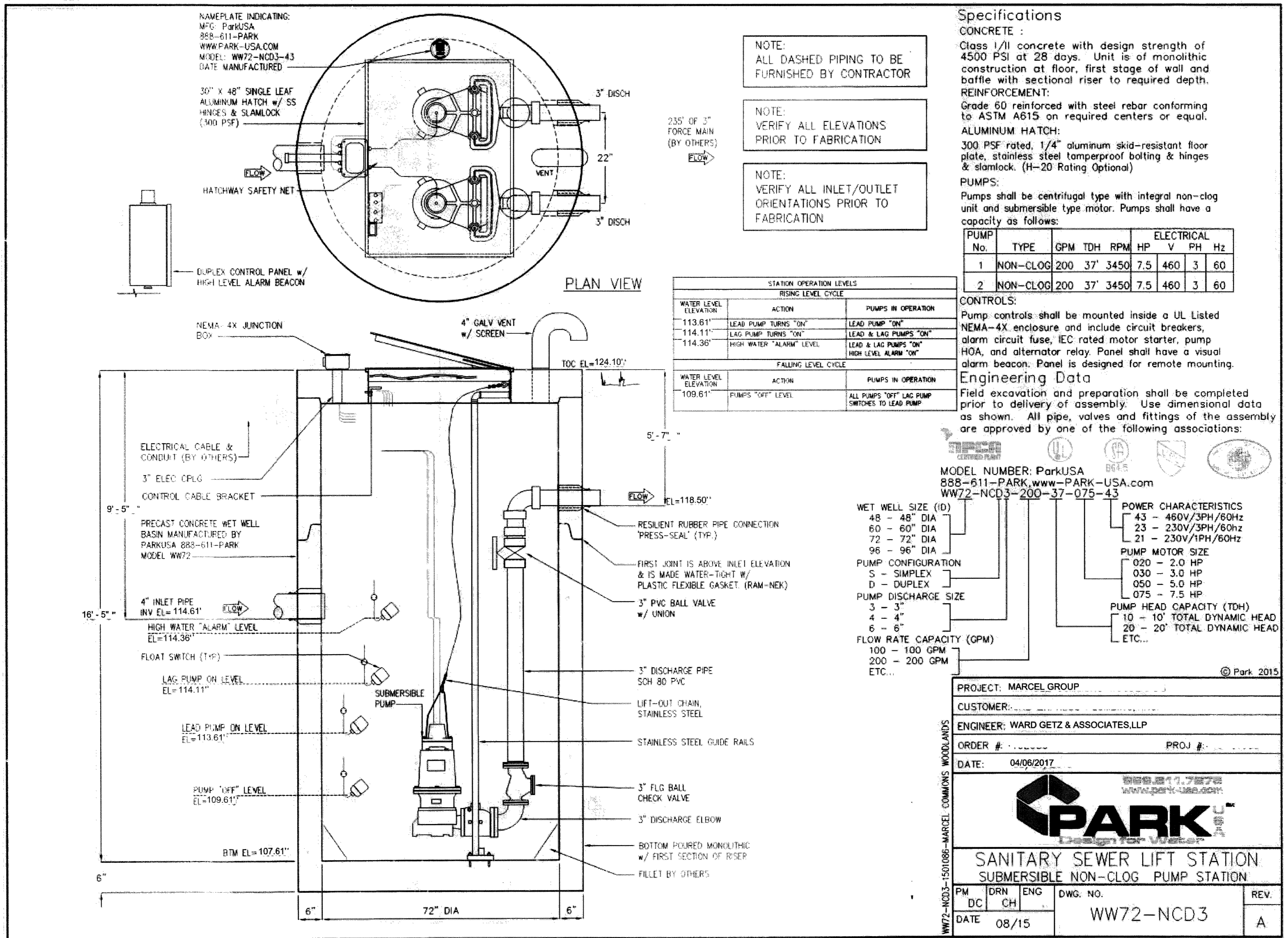
REV	DESCRIPTION	DATE
1	ISSUE FOR PERMIT	10/28/2016
2	ISSUE FOR PERMIT	08/16/2017

STATE OF TEXAS  
 NANTHONY QUANSTRASSI  
 99284  
 LICENSED PROFESSIONAL ENGINEER  
 8/18/17

**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**  
**MISCELLANEOUS DETAILS**

SCALE	DESIGN	DRAWN
	MF, BB, MCE, CAH	MF, BB, MCE, CAH



NAMEPLATE INDICATING:  
MFG: ParkUSA  
888-611-PARK  
WWW.PARK-USA.COM  
MODEL: WW72-NCD3-43  
DATE MANUFACTURED

30" X 48" SINGLE LEAF  
ALUMINUM HATCH w/ SS  
HINGES & SLAMLOCK  
(300 PSF)

HATCHWAY SAFETY NET

DUPLEX CONTROL PANEL w/  
HIGH LEVEL ALARM BEACON

NEMA-4X JUNCTION  
BOX

ELECTRICAL CABLE &  
CONDUIT (BY OTHERS)

3" ELEC CPLG

CONTROL CABLE BRACKET

PRECAST CONCRETE WET WELL  
BASIN MANUFACTURED BY  
PARKUSA 888-611-PARK  
MODEL WW72

4" INLET PIPE  
INV EL=114.61'

HIGH WATER "ALARM" LEVEL  
EL=114.36'

FLOAT SWITCH (TYP)

LAG PUMP ON LEVEL  
EL=114.11'

LEAD PUMP ON LEVEL  
EL=113.61'

PUMP "OFF" LEVEL  
EL=109.61'

BTM EL=107.61'

NOTE:  
ALL DASHED PIPING TO BE  
FURNISHED BY CONTRACTOR

NOTE:  
VERIFY ALL ELEVATIONS  
PRIOR TO FABRICATION

NOTE:  
VERIFY ALL INLET/OUTLET  
ORIENTATIONS PRIOR TO  
FABRICATION

**Specifications**

**CONCRETE :**  
Class 1/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

**REINFORCEMENT:**  
Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

**ALUMINUM HATCH:**  
300 PSF rated, 1/4" aluminum skid-resistant floor plate, stainless steel tamperproof bolting & hinges & slamlock. (H-20 Rating Optional)

**PUMPS:**  
Pumps shall be centrifugal type with integral non-clog unit and submersible type motor. Pumps shall have a capacity as follows:

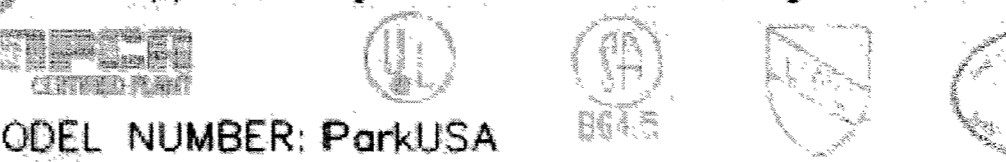
PUMP No.	TYPE	GPM	TDH	RPM	ELECTRICAL		
					HP	V	PH Hz
1	NON-CLOG	200	37'	3450	7.5	460	3 60
2	NON-CLOG	200	37'	3450	7.5	460	3 60

**CONTROLS:**

Pump controls shall be mounted inside a UL Listed NEMA-4X enclosure and include circuit breakers, alarm circuit fuse, IEC rated motor starter, pump HOA, and alternator relay. Panel shall have a visual alarm beacon. Panel is designed for remote mounting.

**Engineering Data**

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. All pipe, valves and fittings of the assembly are approved by one of the following associations:



MODEL NUMBER: ParkUSA  
888-611-PARK, www.PARK-USA.com  
WW72-NCD3-200-37-075-43

<b>WET WELL SIZE (ID)</b>	48 - 48" DIA 60 - 60" DIA 72 - 72" DIA 96 - 96" DIA	<b>POWER CHARACTERISTICS</b>	43 - 450V/3PH/60hz 23 - 230V/3PH/60hz 21 - 230V/1PH/60hz
<b>PUMP CONFIGURATION</b>	S - SIMPLEX D - DUPLEX	<b>PUMP MOTOR SIZE</b>	020 - 2.0 HP 030 - 3.0 HP 050 - 5.0 HP 075 - 7.5 HP
<b>PUMP DISCHARGE SIZE</b>	3 - 3" 4 - 4" 6 - 6"	<b>PUMP HEAD CAPACITY (TDH)</b>	10 - 10' TOTAL DYNAMIC HEAD 20 - 20' TOTAL DYNAMIC HEAD ETC...
<b>FLOW RATE CAPACITY (GPM)</b>	100 - 100 GPM 200 - 200 GPM ETC...		

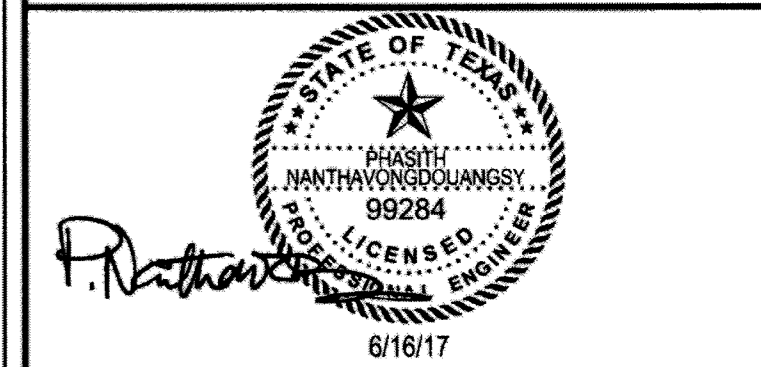
PROJECT: MARCEL GROUP  
CUSTOMER:  
ENGINEER: WARD GETZ & ASSOCIATES,LLP  
ORDER # : PROJ # :  
DATE: 04/06/2017

**PARK**  
Design for Water

SANITARY SEWER LIFT STATION  
SUBMERSIBLE NON-CLOG PUMP STATION

PM	DRN	ENG	DWG. NO.	REV.
DC	CH		WW72-NCD3	A
DATE	08/15			

REV	DESCRIPTION	DATE
	ISSUE FOR PERMIT	10/28/2016
	ISSUE FOR PERMIT	06/16/2017

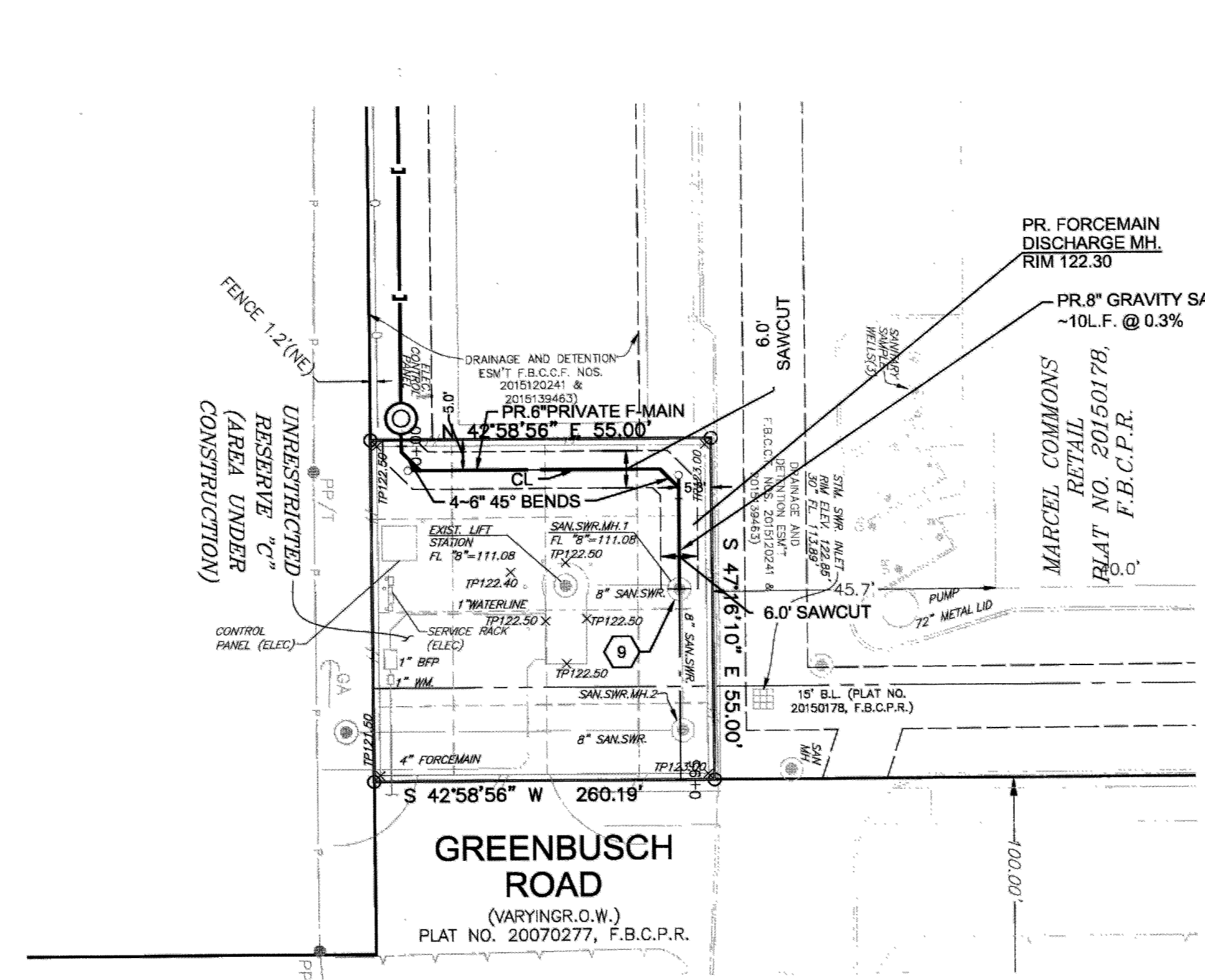


**W|G|A**  
WARD, GETZ & ASSOCIATES, LLP  
CONSULTING ENGINEERS  
TEXAS REGISTERED ENGINEERING FIRM F-9756  
2500 Tangleville, Suite 120  
Houston, Texas 77063  
713.789.1900

MARCEL COMMONS II  
**LIFT STATION DETAILS**

SCALE	DESIGN	DRAWN
	MF,BB,MCE,CAH	MF,BB,MCE,CAH

APPROVED: *Mexico*  
DEVELOPER/COORDINATOR  
DATE: 1/3/18



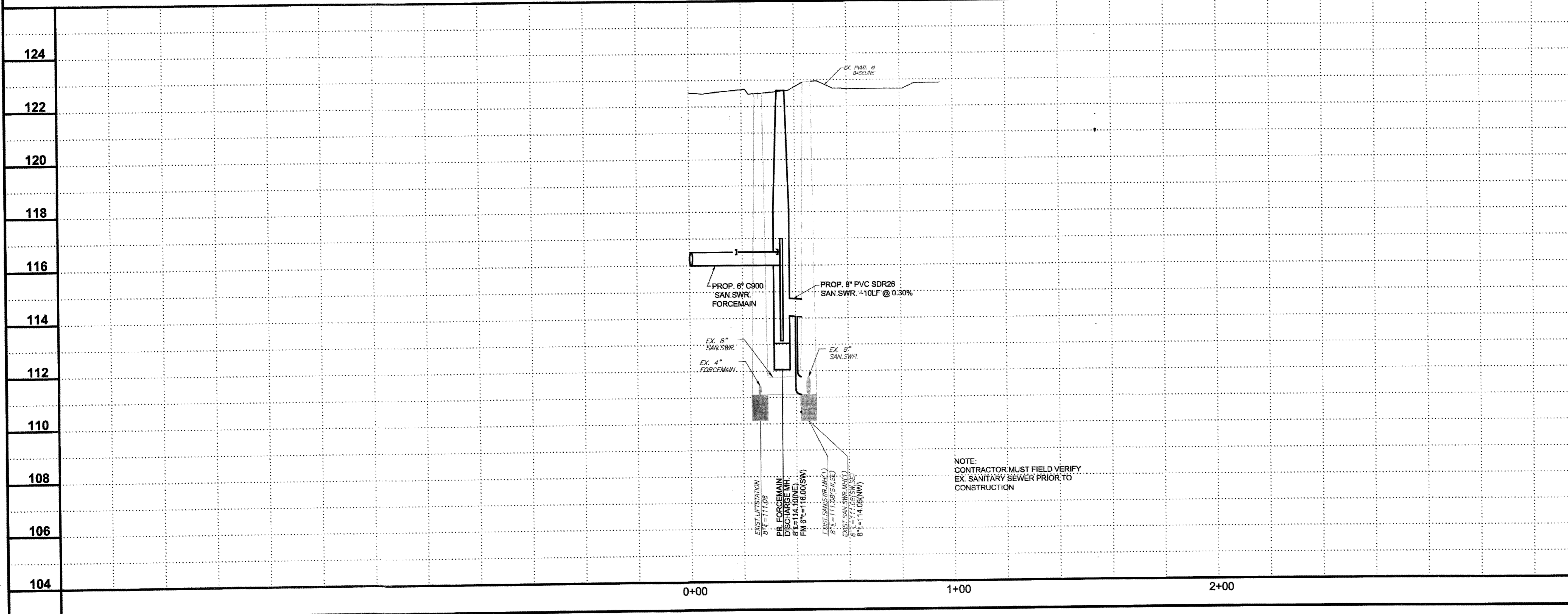
- UTILITY NOTES:**
- UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND IMMEDIATELY NOTIFY ENGINEER OF ANY CONFLICT OR DISCREPANCIES.
  - CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR SERVICE ORIGIN AND CONNECTION.
  - CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE ANY EXISTING ITEMS ONSITE.
  - CONTRACTOR SHALL KEEP THE SITE CLEAN OF DEBRIS AND ANY EROSION CONTROL MEASURES ARE ADEQUATELY PLACED.
  - CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND IRRIGATION SLEEVING PRIOR TO PAVING. SEE LANDSCAPE PLANS.
  - CONTRACTOR TO COORDINATE LOCATIONS OF UNDERGROUND CONDUIT FOR SITE LIGHTING PRIOR TO PAVING.
  - ALL CONSTRUCTION OPERATIONS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE U.S. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION. COPIES OF OSHA STANDARDS MAY BE PURCHASED FROM THE U.S. GOVERNMENT PRINTING OFFICE. INFORMATION AND RELATED REFERENCE MATERIALS MAY BE PURCHASED FROM OSHA, 933 SAN JACINTO, RM 515, AUSTIN, TX 78701. TEL: (512) 916-6783.
  - ALL SANITARY SEWERS CROSSING WATER LINES WITH A 6 INCHES TO 9 FEET CLEARANCE SHALL HAVE A MINIMUM OF 18\"/>
  - CONNECTION TO EXISTING SANITARY SEWER MANHOLE TO BE CORED, GROUTED AND THE PIPE CUT FLUSH WITH THE MANHOLE.

APPROVED: *[Signature]*  
 DEVELOPMENT COORDINATOR  
 DATE: 1/31/19

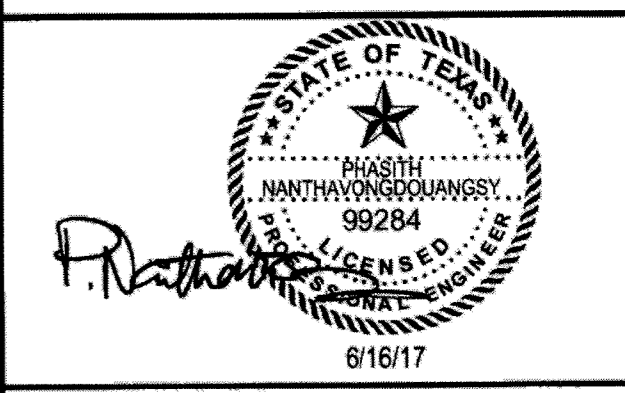
**BENCHMARKS:**  
 ELEVATIONS SHOWN HEREON ARE BASED ON FORT BEND COUNTY SURVEY MARKER NO. 275 BEING A COUNTER SUNK BRASS DISC IN CONCRETE, HAVING A PUBLISHED ELEVATION = 122.28 FT. (NAVD 88).  
 TEMPORARY BENCHMARK "A", BEING A CUT BOX ON A STORM INLET LOCATED IN THE NORTH CORNER OF THE INTERSECTION OF SADDLE SPUR LANE AND WESTHEIMER PARKWAY. (SHOWN HEREON)  
 TEMPORARY BENCHMARK "B", BEING A CUT BOX ON A STORM INLET LOCATED ALONG THE NORTHEASTERLY SIDE OF WESTHEIMER PARKWAY, APPROX. 667 FEET NORTHWEST OF SADDLE SPUR LANE AND 4.0 FEET SOUTH OF A GRATE INLET. (SHOWN HEREON)

**FLOOD PLAIN NOTE:**  
 THIS SUBJECT TRACT LIES IN UNSHADED ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN AS DELINEATED ON THE FLOOD INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS AND INCORPORATED AREAS, MAP NO. 48157C0045 L, REVISED APRIL 2, 2014. THE NEAREST AND HIGHEST MOST CURRENTLY KNOWN AND RELEVANT 1% ANNUAL CHANCE FLOOD ELEVATION APPEARS TO BE 122 (NAVD 1988, 2001 ADJUSTMENT) IN WILLOW FORK BUFFALO BAYOU T100-00-00, AS PER FIRM PANEL 48157C0110L.

**SHEET NOTES:**



REV	DESCRIPTION	DATE
124		
122		
120	ISSUE FOR PERMIT	10/28/2016
118	ISSUE FOR PERMIT	06/16/2017
116		
114		
112		
110		
108		
106		
104		



**WGA**  
 WARD, GETZ & ASSOCIATES, LLP  
 CONSULTING ENGINEERS  
 TEXAS REGISTERED ENGINEERING FIRM F-9756  
 2500 Tanglewilde, Suite 120  
 Houston, Texas 77065  
 713.789.1900

**MARCEL COMMONS II**  
**PLAN & PROFILE- 6" SAN. SWR. FORCEMAIN CONNECTION TO EXIST. LIFTSTATION**

SCALE: HORIZ: 1"=20' VERT: 1"=2'  
 DESIGN: MF, BB, MCE, CAH  
 DRAWN: MF, BB, MCE, CAH

C12.1