

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

Χ	Right of Way Permit						
	Commercial Driveway Permi						
Perr	nit No: 2017-16468						

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 Bond No: Amount: \$50,000.00 posted. Performance bond submitted. Bond No: Amount: Cashier's Check Check No: Amount: (3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE): **Drainage District Approval** Date We have reviewed this project and agree it meets minimum requirements. Charly O. A 10/27/2017 Permit Administrator Date



REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

Fort Bend County Engineering Department 301 Jackson Suite 401

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X	Right of Way Permit
	Commercial Driveway Permit
Perr	nit No: 2017-16468

Permit No: 2017-16468									
Anni	icant: Allgoo	d Construction Company	no.						
	Applicant: Allgood Construction Company, Inc. Job Location Site: Bellaire Boulevard at Mason Road, Houston, TX 77407								
Bond	d No.	Date of Bond:	7/27/2015	_Amount:	\$50,000.00				
Layin Road Comi Texa:	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 inconsistant with Chapter 181, Vernon's Texas Statutes and Codes Annoted.								
Note 1. 2.	grounds for job shutdown. 2. Written notices are required: a. 48 hours in advance of construction start up, and b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.								
Comi	On this 7th day of November, 2017, 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.								
Signa	ature		Prese	ented to Comm	issioners Court and approv	ved.			
Ву:	Charly O		Date	Recorded	Comm. Court No				
By:	N/A		Clerk By:	of Commission	ners Court				
,-	Drainage Distri	ct Engineer/Manager		Deputy					

CONSTRUCTION

OF

WATER, SANITARY & DRAINAGE FACILITIES

BELLAIRE BLVD UTILITY EXTENSION & DETENTION

FOR

GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2

FORT BEND COUNTY, TEXAS

These plans were prepared to meet or exceed the specifications and requirements of City of Houston and Fort Bend County as currently amended.

Approval by Fort Bend County will be deemed void if construction has not begun within one year of approval date.

Construction shall not begin before the plat of this section is filed in the Fort Bend County Map Records.

Construction will be monitored under the supervision of a licensed professional engineer of JONESICARTER, INC.

Contractor shall notify the Fort Bend County Engineering Department at least 48 hours prior to commencement at construction@fortbendcountytx.gov.

9-7-17

PLAN & PROFILE

GENERAL CONSTRUCTION LAYOUT - PAVING & DRAINAGE

GENERAL CONSTRUCTION LAYOUT - DETENTION PLAN

GENERAL CONSTRUCTION LAYOUT - WATER AND SANITARY SEWER

GENERAL CONSTRUCTION LAYOUT - SIGNING & PAVEMENT MARKING PLAN

INDEX OF DRAWINGS

COVER SHEET & INDEX

CONSTRUCTION NOTES

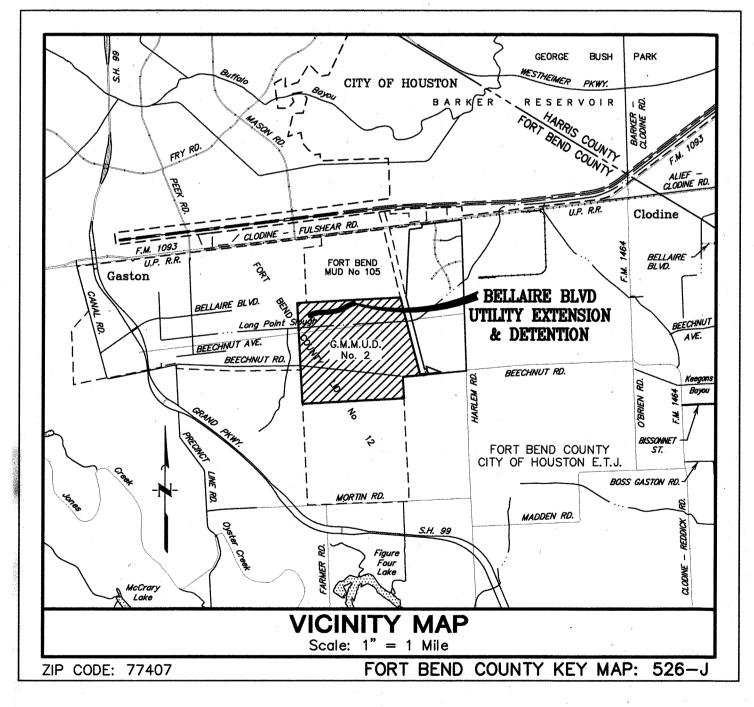
SHEET No.

	STREET NAME	STATION
7	BELLAIRE BOULEVARD - PLAN VIEW	7+00.00 TO 12+00.00
8	BELLAIRE BOULEVARD - PROFILE VIEW	
9	BELLAIRE BOULEVARD - PLAN VIEW	12+00.0 TO 17+00.00
10	BELLAIRE BOULEVARD - PROFILE VIEW	
11	BELLAIRE BOULEVARD - PLAN VIEW	17+00.00 TO 22+00.00
12	BELLAIRE BOULEVARD - PROFILE VIEW	
13	BELLAIRE BOULEVARD - PLAN VIEW	22+00.00 TO 27+00.00
14	BELLAIRE BOULEVARD - PROFILE VIEW	
15	BELLAIRE BOULEVARD - PLAN VIEW	27+00.00 TO 32+00.00
16 .	BELLAIRE BOULEVARD - PROFILE VIEW	
17	DETENTION POND - BASELINE A & BASE	LINE B

DETAILS

18	MISCELLANEOUS DETAILS
19	GRADING
20	STORM WATER POLLUTION PREVENTION PLAN
21	STORM WATER POLLUTION PREVENTION PLAN DET
22	DRAINAGE DETAILS

APPROVED FOR CONSTRUCTION



SEPTEMBER 2017



Contractor shall notify the City of Houston, Department of Public Works and Engineering, office of the City Engineer, 48 hours before starting work on this project. Telephone No. 832—394—9098

FORT BEND COUNTY ENGINEER

THESE SIGNATURES ARE VOID IF CONSTRUCTION

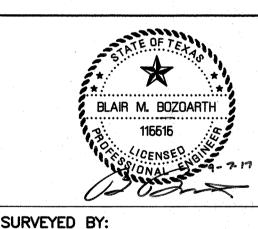
HAS NOT COMMENCED IN ONE (1) YEAR FROM

DATE OF APPROVAL.

TEXAS811 NOTIFICATION SYSTEM CALL BEFORE YOU DIG!!! www.texas811.org/ 1-800-344-8377

See email dated 9/7/17 from Blair M. Bozsafth, DE, District sugineer for GMMUD No-2, concerning dedication for unlecorded easements for this project.

> ILMS No. 17068700 C.O.H. LOG No. 17-1130



NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY

TRAFFIC & TRANSPORTATION

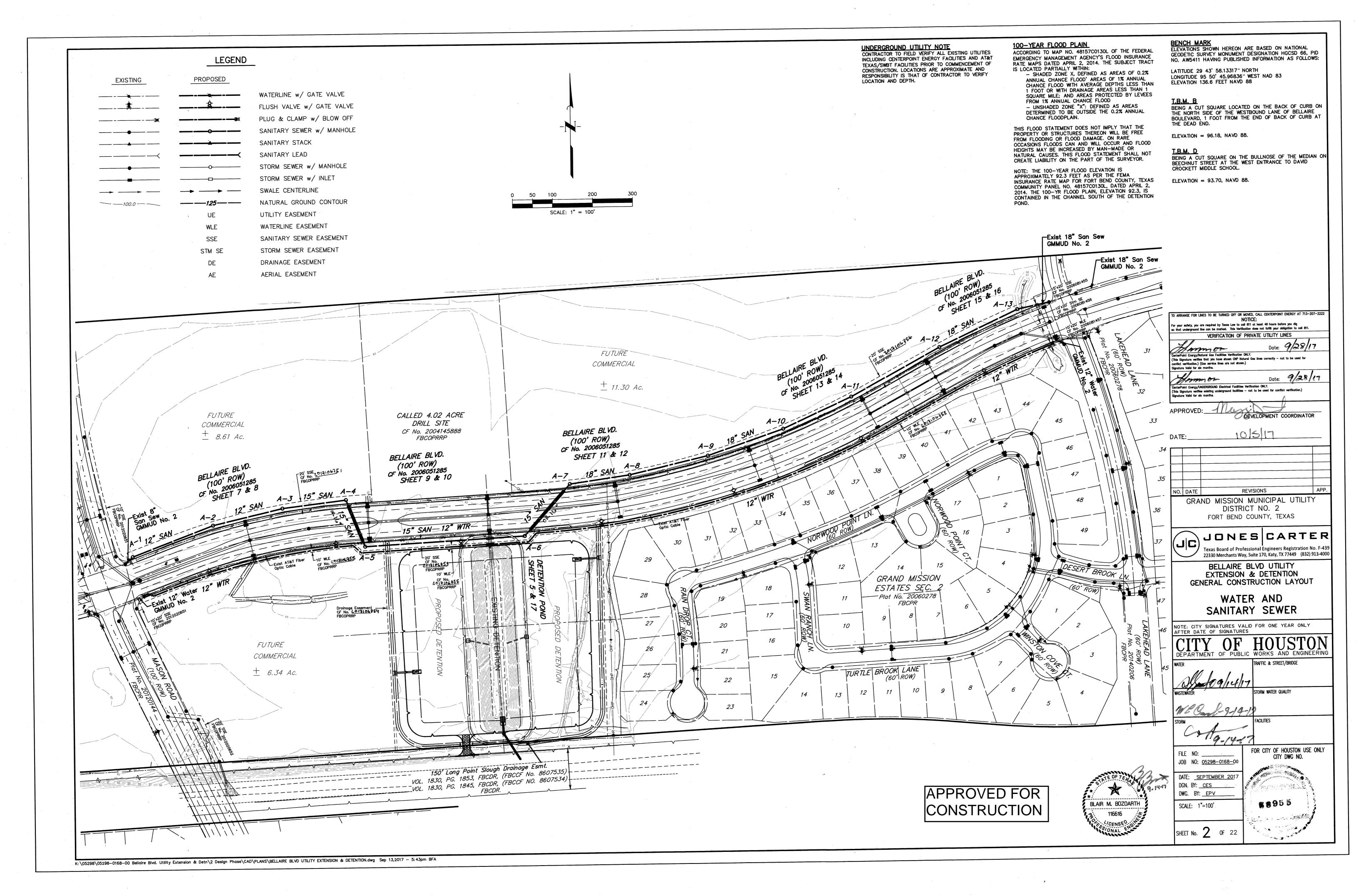
STORM WATER QUALITY STREET & BRIDGE

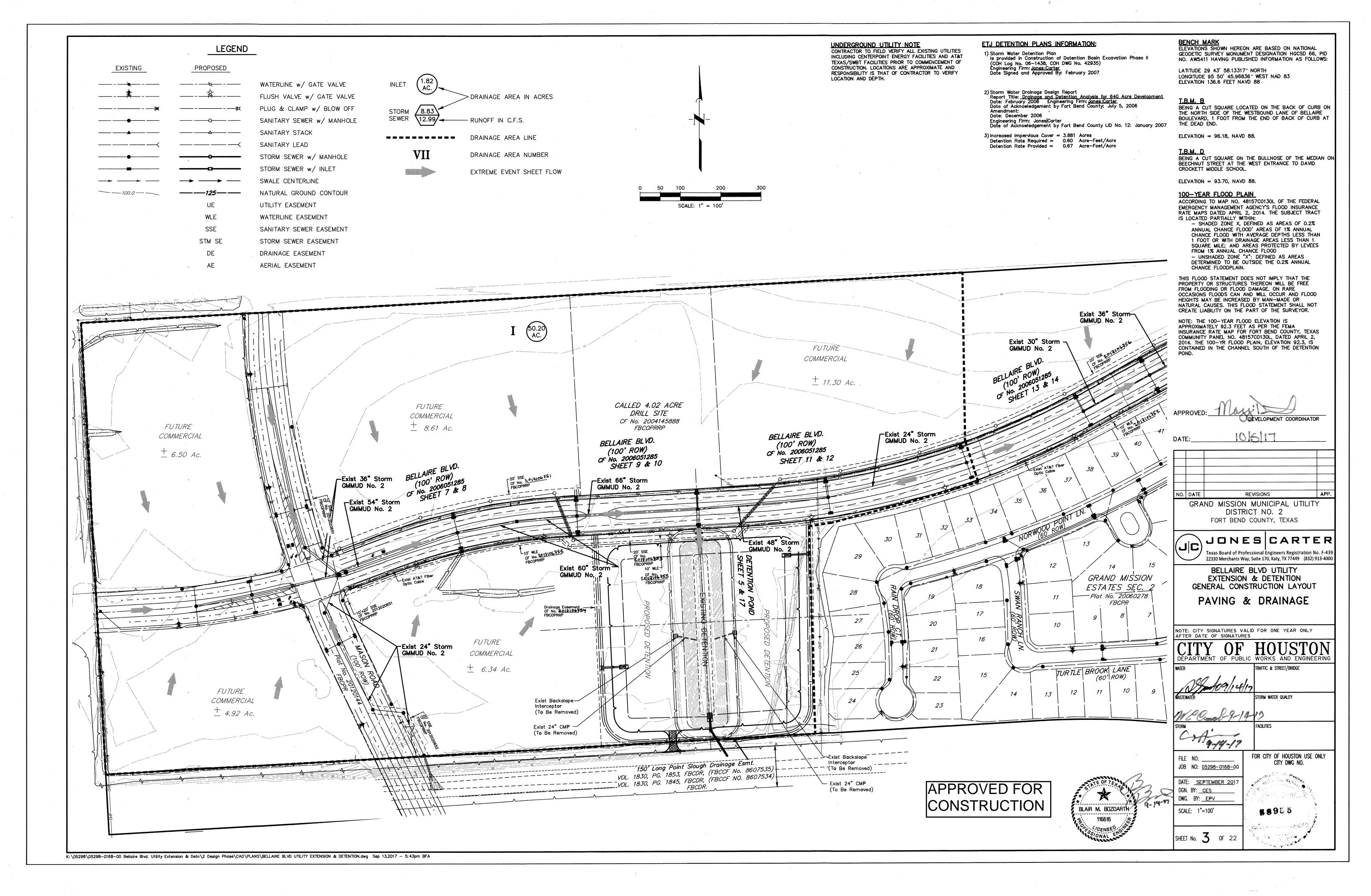
CITY ENGINEER FOR CITY OF HOUSTON USE ONLY

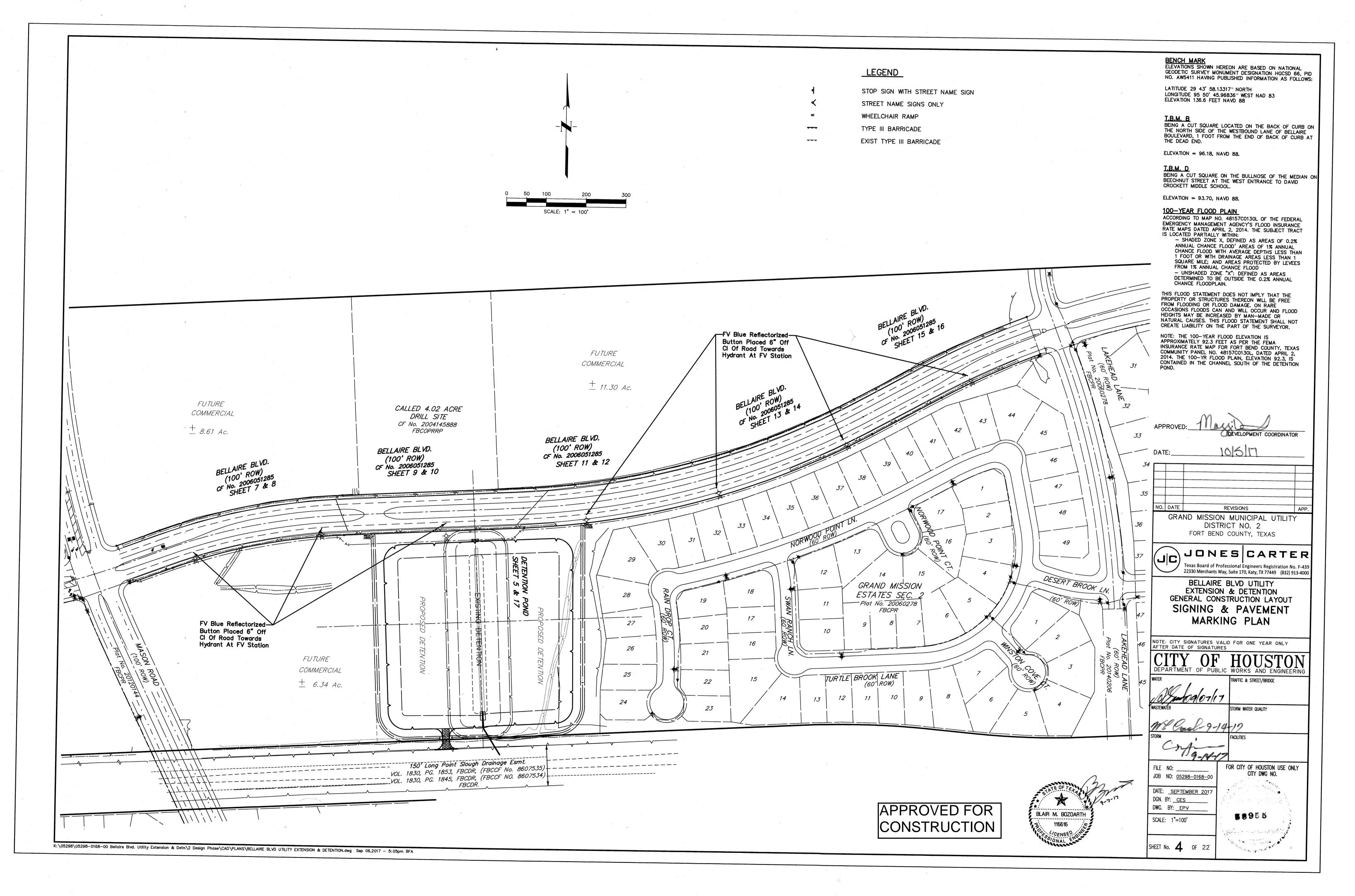
DIRECTOR OF PUBLIC WORKS

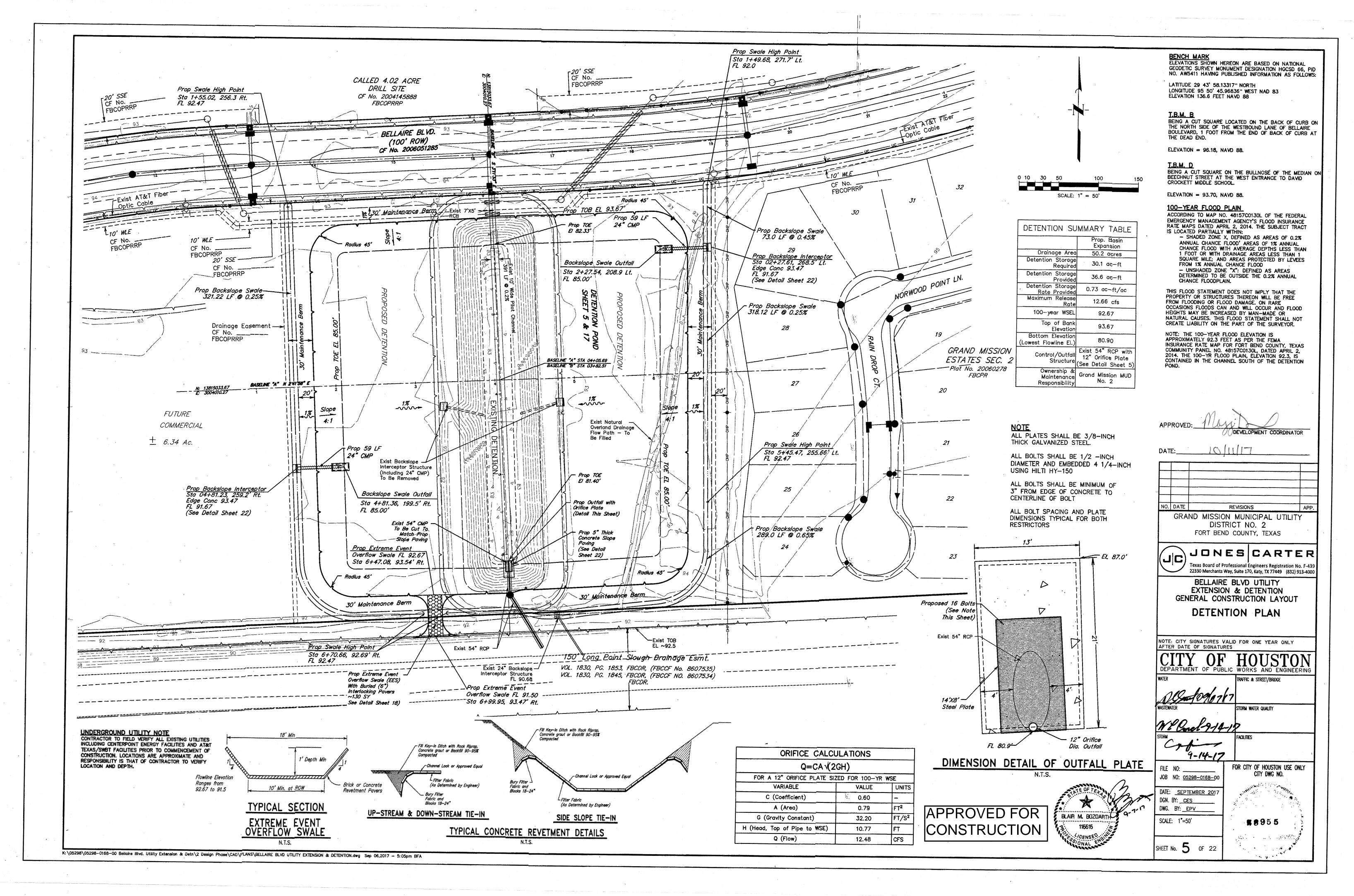
FB NO.:

K: \05298\05298-0168-00 Beliaire Bivd. Utility Extension & Detn\2 Design Phase\CAD\PLANS\BELLAIRE BLVD UTILITY EXTENSION & DETENTION.dwg Sep 06,2017 - 5:05pm BFA









GENERAL CONSTRUCTION NOTES

- WASTEWATER COLLECTION SYSTEMS, WATER, PAVING, TRAFFIC SIGNALS AND DRAINAGE SYSTEMS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING CITY DOCUMENTS. THESE DOCUMENTS ARE "STANDARD CONSTRUCTION SPECIFICATIONS (MOST RECENT ISSUE DECEMBER 2014) AND "STANDARD CONSTRUCTION DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING" (MOST RECENT ISSUE DECEMBER 2014) WITH ALL SUBSEQUENT AMENDMENTS ADDED THERETO UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS. THE DESIGN MUST AGREE WITH THE MINIMUM STANDARDS ESTABLISHED IN THE LATEST ISSUE OF THE "INFRASTRUCTURE DESIGN MANUAL" (MOST RECENT ISSUE JULY 2016). NOTE THAT PLAN SIGNATURES AND LETTERS OF CAPACITY AVAILABILITY FOR STORM, WASTEWATER AND WATER EXPIRE AFTER ONE YEAR AND THE LATEST EDITIONS OF DESIGN RULES, SPECIFICATIONS, STANDARD DETAILS AND MANUALS SHALL GOVERN AS OF THE DATES FOR RESIGNING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT HE/SHE HAS THE MOST RECENT EDITIONS. THESE DOCUMENTS MAY BE OBTAINED FROM THE CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS, 611 WALKER.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO PAVING, WATER LINES, WASTEWATER COLLECTION SYSTEMS, STORM SEWER AND TRAFFIC SIGNALS DURING CONSTRUCTION. ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH CURRENT EDITION OF CITY OF HOUSTON STANDARD CONSTRUCTION SPECIFICATIONS, DESIGN DETAILS AND DESIGN MANUALS. REPAIRS SHALL BE AT NO COST TO THE CITY OF HOUSTON.
- ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT
- PLACEMENT OF UTILITIES IN EASEMENTS SHALL BE GOVERNED BY THE "STANDARD 10-FOOT AND 14-FOOT EASEMENTS" AS ADOPTED BY THE UTILITY COORDINATING COMMITTEE FOR THE HOUSTON METROPOLITAN AREA.
- THE APPROXIMATE LOCATION OF EXISTING UTILITIES ARE GIVEN FOR REFERENCE ONLY. BEFORE COMMENCING THE WORK ON THIS CONTRACT, THE CONTRACTOR SHALL VERIFY BY FIELD INVESTIGATION THE ACTUAL LOCATIONS OF ALL UTILITY FACILITIES WITHIN AND ADJACENT TO THE LIMITS OF THE WORK THAT MAY BE AFFECTED BY THE WORK. CONFLICTS WHICH RESULT DUE TO NEGLIGENCE BY THE CONTRACTOR TO LOCATE, HORIZONTALLY AND VERTICALLY, EXISTING UTILITIES WHICH ARE SHOWN ON THE CONSTRUCTION DRAWINGS, OR WHICH THE CONTRACTOR HAS BEEN GIVEN NOTICE OR HAS KNOWLEDGE, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF REMEDIAL WORK, REMOVAL OF PORTIONS OF THE WORK OR EXTENSIVE DESIGN CHANGES OCCASIONED BY THE FAILURE OF THE CONTRACTOR TO VERIFY THE LOCATION OF EXISTING UTILITIES AS DESCRIBED ABOVE SHALL BE BORNE BY THE CONTRACTOR.
- CONTRACTOR IS TO CONTACT TEXAS811 OR 1(800)344-8377 FOR LOCATION OF EXISTING FACILITIES MAY NOT BE SHOWN THAT MAY NOT BE SHOWN ON THE PLANS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION
- CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF FORT BEND COUNTY, TEXAS, FOR FLOOD PLAIN
- CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN FORT BEND COUNTY ROAD RIGHTS-OF-WAY.
- CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND TEXAS STATE LAW CONCERNING TRENCH SAFETY SYSTEMS.
- CONTRACTOR TO FOLLOW CONSTRUCTION DETAILS IF DRAWINGS DEVIATE FROM CITY OF HOUSTON STANDARDS.
- THE CONTRACTOR SHALL RETURN ALL EXISTING FACILITIES TO EXISTING OR BETTER CONDITION UNLESS OTHERWISE NOTED AT NO ADDITIONAL COST TO THE OWNER.
- 12. NOTE: "AUTHORIZATION NOTICE ISSUED BY FORT BEND COUNTY PUBLIC INFRASTRUCTURE ENGINEERING DEPARTMENT PERMIT OFFICE REQUIRED PRIOR TO CONSTRUCTION OF UTILITIES OR LEFT TURN LANES WITHIN FORT BEND COUNTY RIGHT-OF-WAY." CONTACT FORT BEND COUNTY PERMIT OFFICE (281-633-7502).
- 13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING RED LINE RECORD DRAWINGS (INCLUDING MEASUREMENTS FROM TWO FIXED OBJECTS TO ENDS OF SANITARY SEWER SERVICES) AT THE COMPLETION OF THIS JOB. PRIOR TO FINAL PAYMENT.
- 4. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SITE DRAINAGE AT ALL TIMES AT NO ADDITIONAL COST TO THE OWNER WHETHER BY GRADING OR PUMPING.

WATERLINE CONSTRUCTION NOTES

- ALL FOUR (4) INCH THROUGH TWELVE (12) WATERLINES TO BE CLASS 150 (DR-18), PVC (AWWA C-900), OR DUCTILE IRON AS SPECIFIED. ASBESTOS CEMENT WATERLINE WILL NOT BE APPROVED FOR THIS PROJECT.
- TWELVE (12) INCH OR SMALLER WATERLINES SHALL HAVE A MINIMUM COVER OF FOUR (4) FEET BELOW TOP OF CURB. THE CONTRACTOR SHALL UNIFORMLY VARY THE ELEVATION OF THE WATERLINE FROM THE DEPTH SHOWN ON THE PLANS TO FACILITATE CONFLICT AVOIDANCE AND MAINTAIN MINIMUM CLEARANCES. MAXIMUM DEFLECTION OF JOINTS SHALL NOT EXCEED THE PIPE MANUFACTURER'S RECOMMENDATIONS.
- WATERLINE FITTINGS SHALL BE CAST OR DUCTILE IRON UNLESS OTHERWISE NOTED.
- WATERLINES SHALL BE CONSTRUCTED SO THAT ALL CROSSES AND TEES WILL NOT BE LOCATED UNDER PROPOSED OR FUTURE PAVING.
- VALVES SHALL BE LOCATED OPPOSITE PROPERTY CORNERS EXCEPT AS SHOWN ON THE PLANS,
- . MAINTAIN 12-INCH MINIMUM CLEARANCE BETWEEN ALL WATERLINES, STORM SEWERS, AND CULVERTS UNLESS OTHERWISE
- FOR SPECIAL WATERLINE / SANITARY SEWER CLEARANCES, SEE SANITARY SEWER CONSTRUCTION NOTES.
- WATERLINES SHALL BE BANK SAND-BEDDED AND BACKFILLED IN ACCORDANCE WITH THE LATEST EDITION OF CITY OF HOUSTON SPECIFICATIONS AND DETAILS.
- SANITARY PRECAUTIONS MUST BE TAKEN DURING WATERLINE CONSTRUCTION, AS CALLED FOR BY AWWA STANDARDS. PRECAUTIONS INCLUDE KEEPING 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.
- O. ALL NEWLY INSTALLED PIPES, COATINGS, AND RELATED PRODUCTS SHALL CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE / NATIONAL SANITATION FOUNDATION (ANSI / NSF) STANDARDS AND MUST BE CERTIFIED BY AN ORGANIZATION
- 1. DO NOT INCLUDE SERVICE CONNECTIONS IN THIS CONTRACT. HOWEVER, WHEN CONSTRUCTED, THEY WILL BE IN ACCORDANCE WITH THE LATEST EDITION OF CITY OF HOUSTON SPECIFICATIONS.
- 12. ALL FLUSHING VALVES AND VALVE BOXES SHALL BE ADJUSTED TO FINISH GRADE AFTER PAVING IS COMPLETE. FLUSHING VALVES SHALL BE TURNED TO FACE STREET.
- 13. PROVIDE GATE VALVE EXTENSION STEM PER CITY OF HOUSTON AND/OR AS DIRECTED BY THE ENGINEER.

SANITARY SEWER CONSTRUCTION NOTES

- 1. ALL PROPOSED 8-INCH TO 12-INCH GRAVITY SANITARY SEWER LINES WILL BE DUCTILE IRON OR SDR 26 PVC PIPE ASTM D-3034, UNLESS OTHERWISE NOTED ON PLANS. 15 INCH GRAVITY LINES WILL BE SDR-35PVC, ASTMD-3034, AND 18-INCH TO 27 INCH GRAVITY LINES WILL BE SDR-35 PVC, ASTM F-679, UNLESS OTHERWISE NOTED ON PLANS. NON-PRESSURE PVC MAY NOT BE SUBSTITUTED FOR DIP OR C-900 PVC, (DR 18 ONLY).
- 2. ALL TYPES OF SANITARY SEWER PIPE SHALL BE CEMENT SAND BEDDED AND BACKFILLED AS NOTED ON CITY OF HOUSTON DWG. 02317-03 FOR DRY STABLE TRENCH (NO SEPARATE PAY).
- 3. MAINTAIN 12-INCH MINIMUM CLEARANCE BETWEEN ALL SANITARY SEWERS, STORM SEWERS AND CULVERTS UNLESS
- 4. SEWER TRENCHES UNDER OR WITHIN ONE (1) FOOT OF PROPOSED OR FUTURE PAVEMENT TO BE BACKFILLED WITH CEMENT-SAND BACKFILL AS SPECIFIED, TO WITHIN ONE (1) FOOT OF SUBGRADE. INCLUDE COST OF BACKFILL IN UNIT PRICE BID PER LINEAR FOOT OF PIPE.
- 5. ALL SEWER LINES SHALL BE AIR-TESTED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
- 6. FOR ALL PVC PIPE, USE MANHOLE WATERSTOP GASKET AND CLAMP ASSEMBLY AT MANHOLE CONNECTIONS (NO SEPARATE
- 7. SANITARY SEWER MANHOLES SHALL BE STANDARD PRECAST CITY OF HOUSTON, UNLESS OTHERWISE NOTED. ALL SANITARY MANHOLES WITHIN THE 100-YEAR FLOOD HAVE THE TOP SET AT LEAST TWELVE (12) INCHES ABOVE THE BASE FLOOD ELEVATION OR SEALED AND VENTED.
- 8. ALL MANHOLES SHALL BE SET SO THAT THE TOP OF THE CONE IS NO HIGHER THAN THE ADJACENT TOP OF CURB ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE FINISH RIM ELEVATION SHALL BE MET WITH PRE—CAST
- 9. ALL FAR SIDE LEADS SHALL BE SIX (6) INCHES OR EIGHT (8) INCHES AT 0.70% MINIMUM SLOPE AND SHALL BE PVC, DR 26, 160 PSI PRESSURE PIPE CONFORMING TO ASTM D-2241. STUBS AND FAR-SIDE LEADS WILL BE AWWA C-900, DR 18, WHERE THERE IS LESS THAN THREE (3) FOOT COVER TO TOP OF CURBS.
- 10. LEADS SERVING TWO LOTS SHALL HAVE A SERVICE "WYE" WITH PLUGS (NO SEPARATE PAY). THE "WYE" SHALL BE LOCATED WITHIN THE STREET RIGHT-OF-WAY OR ADJOINING UTILITY EASEMENT.
- 11. ALL DUCTILE IRON PIPE SHALL BE 150 PSI WITH EIGHT (8) MIL, BLACK VIRGIN POLYETHYLENE WRAP AS SPECIFIED IN
- 12. ALL D.I.P. SHALL BE LINED WITH VIRGIN POLYETHYLENE CONFORMING TO ASTM D-1248; 40 MIL THICKNESS (NOMINAL), 35 MILS (MINIMUM). LINER TO BE POLYCIZE, POLYBOND, OR EQUAL. AT ANY POINT WHERE D.I.P. CAN NOT BE WRAPPED IN POLYETHYLENE TUBING, COAT THE EXTERIOR WITH POLYBOND OR APPROVED EQUAL.
- 13. MANHOLE RIMS ARE TO BE SET AT THE ELEVATIONS SHOWN ON THE PLANS INITIALLY. AFTER PAVING AND GRADING IS COMPLETED, RIMS ARE TO BE ADJUSTED TO THREE (3) TO SIX (6) INCHES ABOVE FINAL GRADE AND BACK-DRESSED WITH DIRT TO PROVIDE DRAINAGE AWAY FROM THE MANHOLÉ.
- 14. ALL PVC PIPE (ALL TYPES AND SDR/DR WALL THICKNESS TO BE USED) SHALL HAVE RUBBER GASKET EQUIPPED BELL AND SPIGOT JOINTS CONFORMING TO ASTM D-3212. THE GASKET MATERIAL SHALL CONFORM TO ASTM F-477. SOLVENT WELDED JOINTS WILL NOT BE APPROVED FOR THIS PROJECT.
- 15. IF WET SAND IS ENCOUNTERED IN THE FIELD, USE SPECIAL BEDDING PER CITY OF HOUSTON DWG 02317-01, 02317-02
- 16. WATER AND SANITARY SEWER SEPARATION DISTANCES SHALL BE IN ACCORDANCE WITH THE PROTECTION REQUIREMENTS TABLE SHOWN ON THIS SHEET, AND THE REQUIREMENTS LISTED IN 30 TAC \$290.44, WHICHEVER IS MORE STRINGENT.
- 17. ALL SANITARY SEWER FACILITIES AND POTABLE WATERLINES MUST BE INSTALLED SO AS TO PROVIDE A MINIMUM OF NINE FEET OF HORIZONTAL CLEARANCE BETWEEN THEM. WHERE THE NINE FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, FOLLOW THE SPECIAL PROCEDURES IN THE PROTECTION REQUIREMENTS TABLE SHOWN ON THIS SHEET AND THE PROCEDURES LISTED IN 30 TAC \$290.44.
- 18. ALL PENETRATIONS INTO A SANITARY SEWER MANHOLE, INCLUDING SERVICE LEADS, SHALL BE SERVED BY AN INVERT. ALL INVERTS SHALL EXTEND ALL THE WAY TO THE WALLS OF THE MANHOLE.

STORM SEWER CONSTRUCTION NOTES

- STORM SEWER SHALL BE REINFORCED CONCRETE PIPE (C-76, CLASS III), AND SHALL BE INSTALLED, BEDDED, AND BACK FILLED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. 02317-02, 02317-05, 02317-06, AND 02317-07 (OCT. 2002) AS APPLICABLE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- 2. ALL STORM SEWER CONSTRUCTED IN SIDE LOT EASEMENT SHALL BE R.C.P (C-76, CLASS III) AND SHALL BE EMBEDDED IN ACCORDANCE WITH THE CITY OF HOUSTON STANDARD DETAILS DRAWING NOS. 02317-02, 02317-03, 02317-05, 02317-06, AND 02317-07 AS APPLICABLE
- 3. ALL SEWER UNDER PROPOSED OR FUTURE PAVEMENT AND TO A POINT ONE (1) FOOT BACK OF ALL PROPOSED OR FUTURE CURBS SHALL BE BACKFILLED WITH 1-1/2 SACK CEMENT/C.Y STABLIZED SAND TO WITHIN ONE (1) FOOT OF SUBGRADE. THE REMAINING DEPTH OF TRENCH SHALL BE BACKFILLED WITH SUITABLE EARTH MATERIAL.
- 4. ALL TRENCH BACKFILL SHALL BE IN 8" LIFTS, WITH TESTS TAKEN AT 100 FOOT INTERVALS IN 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
- 5. CIRCULAR AND ELLIPTICAL REINFORCED CONCRETE PIPE SHALL BE INSTALLED USING RUBBER GASKET JOINT CONFORMING TO ASTM C443 AND ASTM C877 RESPECTIVELY.
- 6. ALL STORM SEWER PIPES AND INLET LEADS SHALL BE 24"AND LARGER R.C.P. (C-76, CLASSIII).
- 7. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES AND INLET LEADS ARE TO BE PLUGGED WITH 8"BRICK WALLS UNLESS OTHERWISE NOTED.
- 8. CONTRACTOR SHALL PROVIDE 6" MINIMUM VERTICLE CLEARANCE AT STORM SEWER AND WATER
- 9. ADJUST MANHOLE COVERS TO GRADE CONFORMING TO REQUIREMENTS OF SECTION 02086-ADJUSTING MANHOLES, INLETS, AND VALVE BOXES TO GRADE.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACK SLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
- 11. ALL DITCHES SHALL BE GRADED TO PROPOSED ELEVATIONS TO ENSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE PROPERLY BACKFILLED AND COMPACTED. ALL DISTURBED AREA SHALL BE REGRADED, SEEDED, AND FERTILIZED.
- 12. ALL DRIVEWAYS SHALL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURE.
- 13. THE CONTRACTOR(S) SHALL NOTIFY FORT BEND COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT-ENGINEERING DIVISION-PERMIT OFFICE, TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT (281)633-7514 AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION.
- 14. ALL MANHOLES SHALL BE SET SO THAT THE TOP OF THE CONE IS NO HIGHER THAN THE ADJACENT TOP OF CURB ELEVATION, UNLESS DIRECTED OTHERWISE BY THE ENGINEER. THE FINISH TOP ELEVATION SHALL BE MET WITH PRE-CAST RINGS.
- 15. ALL MANHOLES SHALL BE ADJUSTED TO FINISHED GRADE AFTER PAVING IS COMPLETE

PAVING CONSTRUCTION NOTES

- 1. PAVEMENT SHALL BE IN ACCORDANCE WITH THE "REGULATIONS OF FORT BEND COUNTY, TEXAS FOR THE APPROVAL AND
- ACCEPTANCE OF INFRASTRUCTURE" AND/OR AMENDMENTS OF SAME. 2. THE CONTRACTOR(S) SHALL NOTIFY FORT BEND COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT— ENGINEERING DIVISION— PERMIT OFFICE, TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT

EMAIL: CONSTRUCTION OFFORTBENDCOUNTYTX.GOV AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF

- 3. ALL RETURNS SHALL HAVE A 25-FOOT RADIUS AT FACE OF CURB UNLESS OTHERWISE NOTED.ALL ROAD WIDTHS, CURB RADII AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.
- 4. GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- 5. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS IN ACCORDANCE WITH THE GOVERNOR'S OFFICE OF TRAFFIC SAFETY MEMORANDUM DATED MAY 6, 1976. (HIGHWAY SAFETY ACT - 1973 SECTION 288). SEE TXDOT PED-05 SHEET. WHEELCHAIR RAMPS SHALL COMPLY WITH CURRENT "THE AMERICANS WITH DISABILITIES ACT" (A.D.A..) SPECIFICATIONS. RAMPS TO BE COLORED WITH A COLOR TO BE DETERMINED BY THE ENGINEER CONFORMING TO ASTM-C979.
- 6. ALL FILL IN EXISTING OR PROPOSED FORT BEND COUNTY RIGHT-OF-WAY, INCLUDING BACKDRESSING BEHIND THE CURB, SHALL BE PLACED IN MAXIMUM LOOSE LIFTS OF EIGHT INCHES (8") OR LESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AT -3% TO +5% MOISTURE CONTENT AS DETERMINED BY AASHTO TEST METHOD T-99.
- ALL CONCRETE PAVEMENT TO BE 28-FOOT B-B SIX (6) INCH REINFORCED CONCRETE WITH SIX (6) INCH REINFORCED CONCRETE CURBS, UNLESS OTHERWISE NOTED. ALL CONCRETE FOR PAVING TO BE 5 1/2 SACK, 3500 PSI - 28 DAYS.
- PAVEMENT REINFORCEMENT FOR 28-FOOT B-B SIX (6) INCH REINF. CONCRETE SHALL BE #4, GRADE 60 STEEL REBARS ON 20.5-INCH CENTERS FOR LONGITUDINAL STEEL AND ON 36-INCH CENTERS FOR TRANSVERSE STEEL. REINFORCEMENT SHALL BE PLACED ON CHAIRS SPACED 36" CENTER TO CENTER, BENT BARS SHALL BE GRADE 40.
- 9. REFER TO THE LATEST FORT BEND COUNTY PAVEMENT MARKING DETAILS AND FORT BEND COUNTY SUBDIVISION STANDARD PAVING DETAILS. DATE NOVEMBER 15, 2005.
- 10. SIDEWALK BULLNOSES CONSTRUCTED IN ESPLANADES SHALL BE SIX INCHES (6") THICK WITH SURFACE COLORED BLACK, WHEN CURBS ARE TEN FEET (10') AND LESS IN WIDTH FROM FACE-TO-FACE OF CURBS. FOR CONCRETE ROADWAYS,
- SURFACE SHALL BE COLORED BLACK. FOR ASPHALT ROADWAYS, SURFACE SHALL BE UNCOLORED. 11. WHEEL CHAIR RAMPS SHALL BE TYPE '7' RAMPS. SEE TXDOT PED-12A DETAIL SHEET.

FORT BEND COUNTY 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 OF ORTBEND COUNTYTX.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 WAYS.
- 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
- 5. ALL ROAD WIDTHS, CURB RADII 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 PAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60
- 8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
- 9. 4" X 12" 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 7 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
- 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. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION - BOTH DAY AND NIGHT.
- 14. ALL R1-1 STOP SIGNS SHALL BE 30"X30" 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 W/ REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
- 16. BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE OF THE HYDRANT.
- 17. 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.

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

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

<u>UTILITY NOTES</u>

CAUTION: OVERHEAD POWER LINES

VERHEAD LINES MAY EXIST ON THE PROPERTY. THE LOCATION OF OVERHEAD LINES HAS NOT BEEN SHOWN ON THESE DRAWINGS AS THE LINES ARE CLEARLY VISIBLE, BUT YOU SHOULD LOCATE THEM PRIOR TO BEGINNING ANY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH & SAFETY CODE FORBIDS ACTIVITIES THAT OCCUR IN CLOSE PROXIMITY TO HIGH VOLTAGE LINES, SPECIFICALLY:

- ANY ACTIVITY WHERE PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES; AND - OPERATING A CRANE, DERRICK, POWER SHOVEL, DRILLING RIG, PILE DRIVER, HOISTING EQUIPMENT, OR SIMILAR APPARATUS WITHIN TEN (10) FEET OF LIVE OVERHEAD HIGH VOLTAGE LINES.

PARTIES RESPONSIBLE FOR THE WORK INCLUDING CONTRACTORS, ARE LEGALLY RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OFF OR REMOVED CALL CENTERPOINT ENERGY AT (713) 207-2222.

ACTIVITIES ON OR ACROSS CENTERPOINT ENERGY FEE OR EASEMENT PROPERTY

NO APPROVAL TO USE, CROSS OR OCCUPY CENTERPOINT FEE OR EASEMENT PROPERTY IS GIVEN. IF YOU NEED TO USE CENTERPOINT PROPERTY, PLEASE CONTACT CENTERPOINT SURVEYING & RIGHT OF WAY DIVISION AT (713) 207-6348 OR (713) 207-5769.

CAUTION: UNDERGROUND ELECTRICAL FACILITIES NDERGROUND ELECTRICAL FACILITIES EXIST IN THE AREA OF THIS PROJECT. DO NOT BEGIN CONSTRUCTION UNTIL THESE FACILITIES HAVE

BEEN LOCATED AND STAKED. TO HAVE THESE UNDERGROUND FACILITIES STAKED, CALL THE UTILITY COORDINATING COMMITTEE AT (713) 223-4567, OR TOLL FREE AT 1-800-669-8344, AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION.

CAUTION: UNDERGROUND GAS FACILITIES

LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CENTERPOINT ENERGY, INTRASTATE PIPELINE LLC. WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN. OUR SIGNATURE ON THESE PLANS ONLY INDICATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION. IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTOR SHALL CONTACT THE UTILITY COORDINATING COMMITTEE AT 1-800-545-6005, OR 811 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.

--WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL (713) 945-8036 OR (713) 945-8037 (7:00 AM TO 4:30 PM) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.

-WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTER POINT ENERGY FACILITIES, ALL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.

-WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

-FOR EMERGENCIES REGARDING GAS LINES CALL (713) 656-3552 OR (713) 207-4200.

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

AT&T TEXAS/SWBT FACILITIES

1. THE LOCATIONS OF AT&T TEXAS/SWBT FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

2. THE CONTRACTOR SHALL CALL 1-800-344-8377 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.

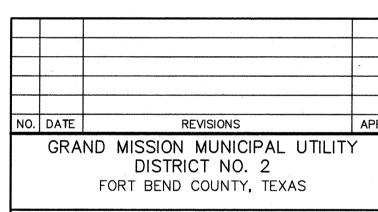
3. WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF AT&T TEXAS/SWBT FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES. WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE AT&T

4. WHEN AT&T TEXAS/SWBT FACILITIES ARE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DAMAGE TO THE CONDUIT DUCTS OR CABLES. WHEN EXCAVATING NEAR TELEPHONE POLES, THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.

5. THE PRESENCE OR ABSENCE OF AT&T TEXAS/SWBT 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. AT (713) 567-4552 OR E-MAIL HIM AT

RL7259@ATT.COM, IF THERE ARE QUESTIONS ABOUT BORING OR EXCAVATING NEAR OUR AT&T TEXAS/SWBT FACILITIES.

AT&T TEXAS/SWBT Approved for underground conduit facilities only.



APPROVED FOR CONSTRUCTION

JONES|CARTER exas Board of Professional Engineers Registration No. F-43 22330 Merchants Way, Suite 170, Katy, TX 77449 (832) 913-4000 BELLAIRE BLVD UTILITY EXTENSION & DETENTION

GENERAL CONSTRUCTION LAYOUT

CONSTRUCTION NOTES

Homo

Signature Valid for six months.

Mmm or

CenterPoint Energy/Natural Gas Facilities Verification ONLY.

interPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY.

conflict verification.) (Gas service lines are not shown.)

(This Signature verifies that you have shown CNP Natural Gas lines correctly - not to be used for

(This Signature verifies existing underground facilities — not to be used for conflict verification.

NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

DEPARTMENT OF PUBLIC WORKS AND ENGINEERIN

BLAIR M. BOZOARTH 115515 TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222

For your safety, you are required by Texas Law to call 811 at least 48 hours before you dia so that underground line can be marked. This Verification does not fulfill your obligation to call 811. VERIFICATION OF PRIVATE UTILITY LINES

JOB NO: <u>05298-0168-0</u> DATE: SEPTEMBER 2017 DGN. BY: CES Date: 9/28/m DWG. BY: EPV SCALE: N.T.S. Date: 9 20 17

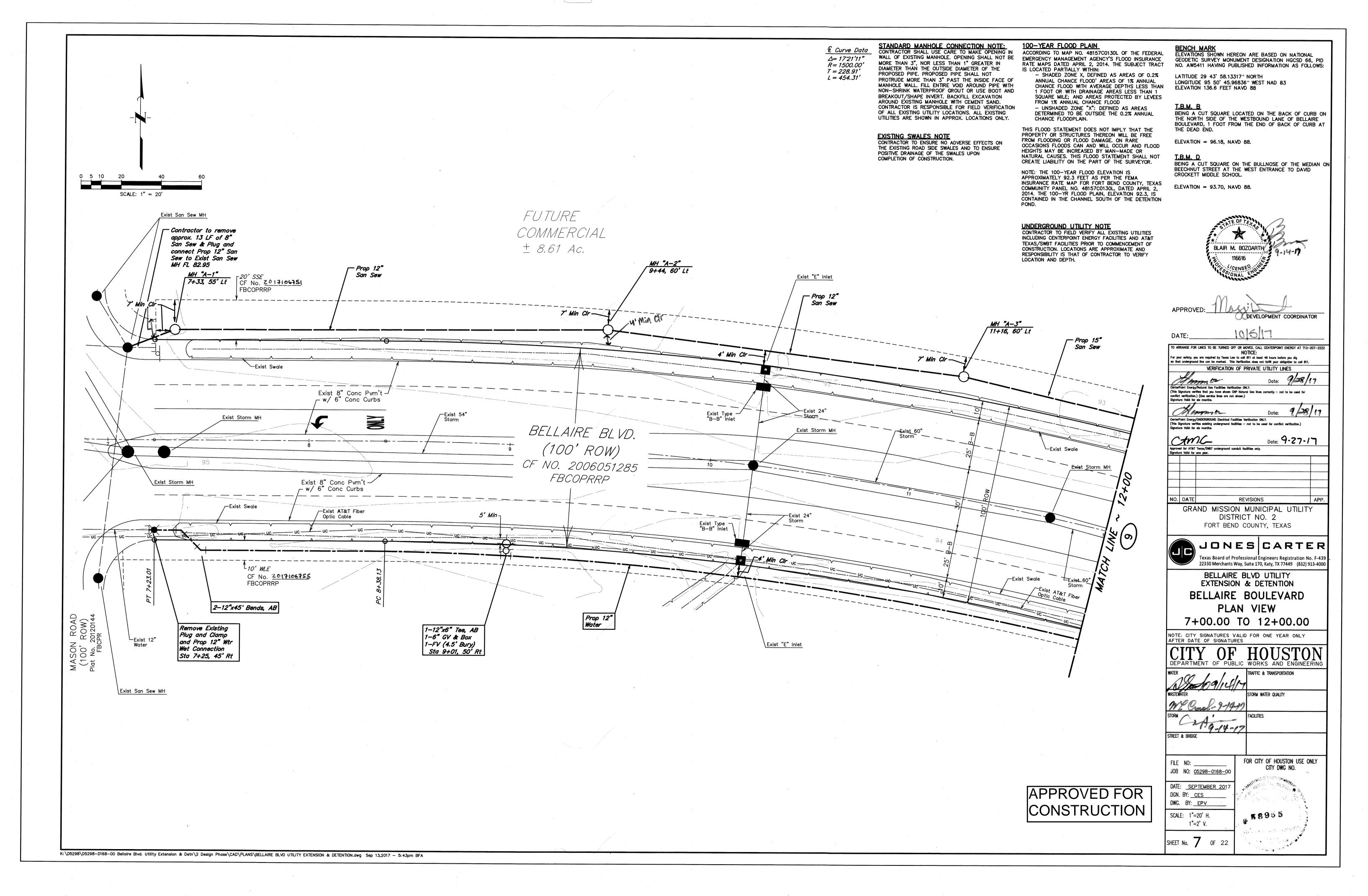
SHEET No. OF 22

and the same that the same

FOR CITY OF HOUSTON USE ONLY

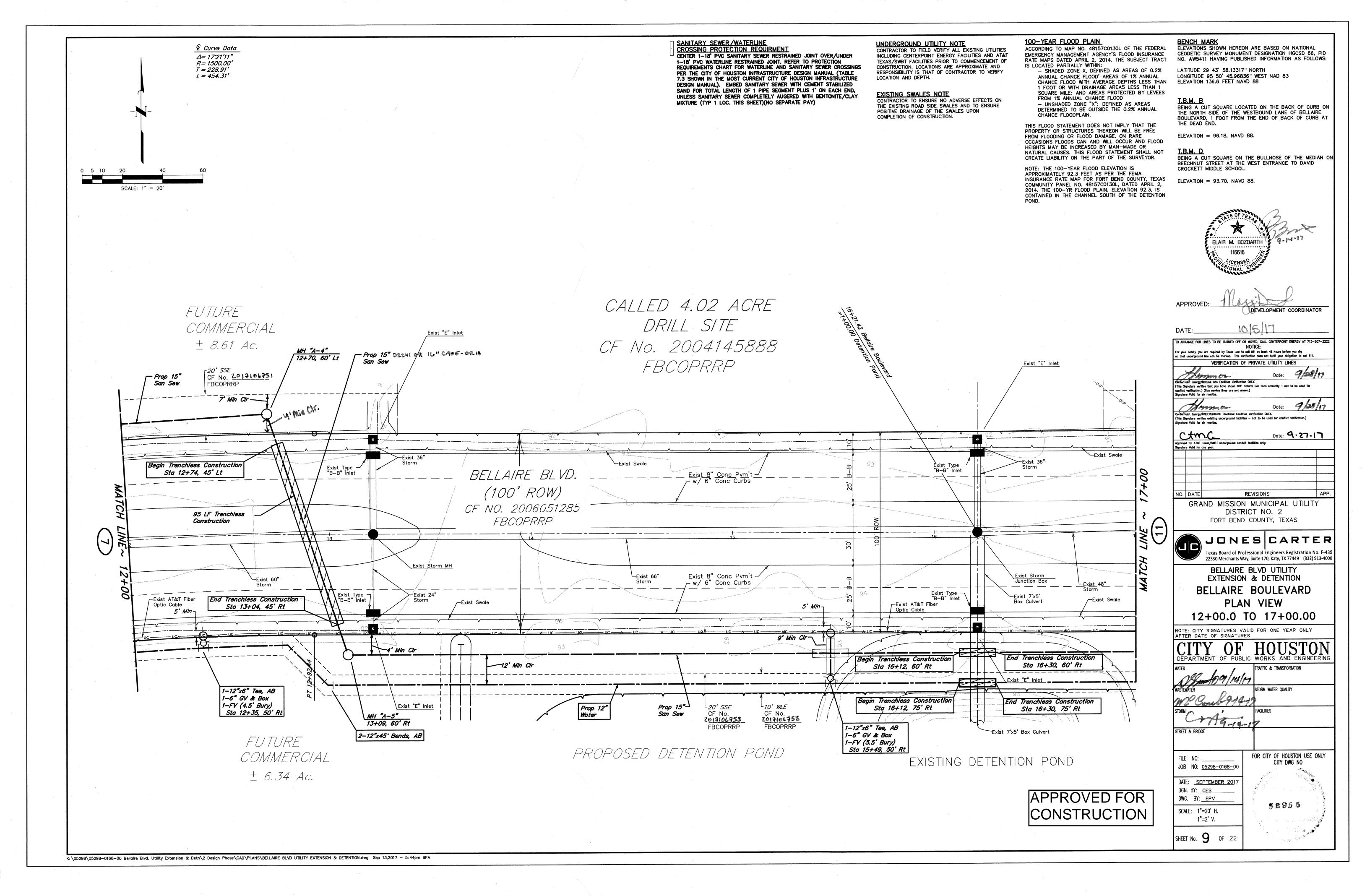
CITY DWG NO.

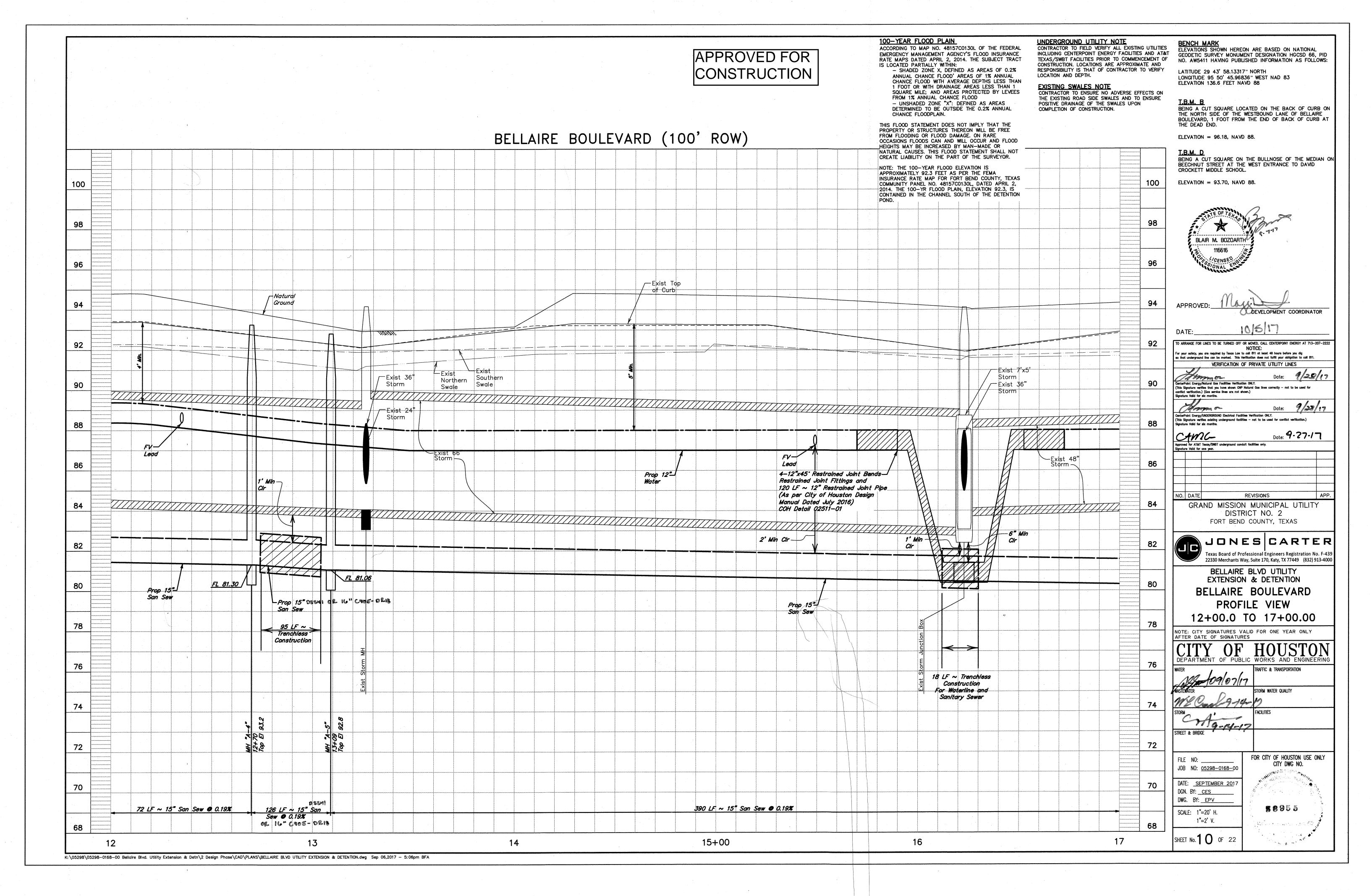
K: \05298\05298-0168-00 Bellaire Blvd. Utility Extension & Detn\2 Design Phase\CAD\PLANS\BELLAIRE BLVD UTILITY EXTENSION & DETENTION.dwg Sep 06,2017 - 5:05pm BFA

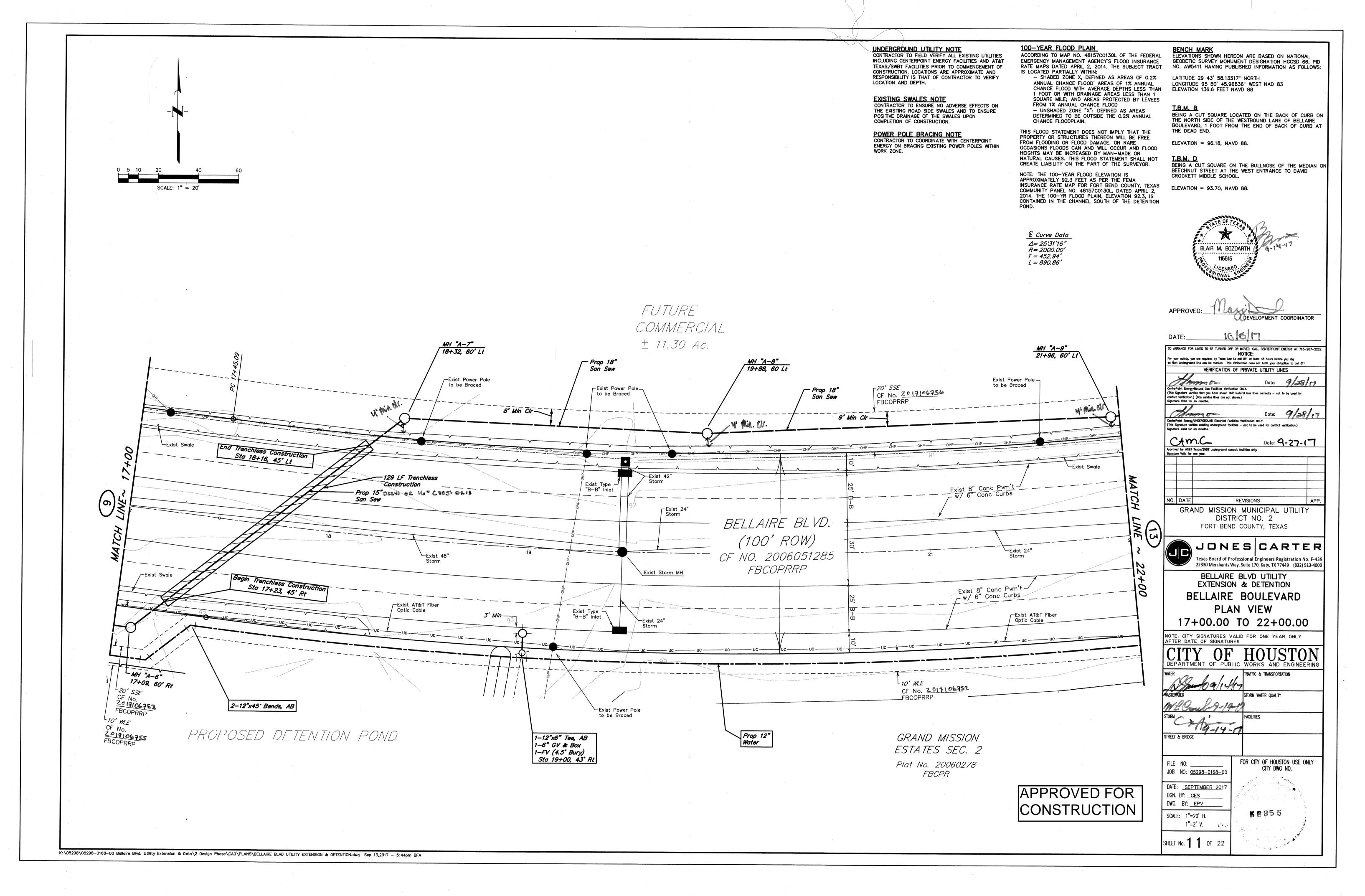


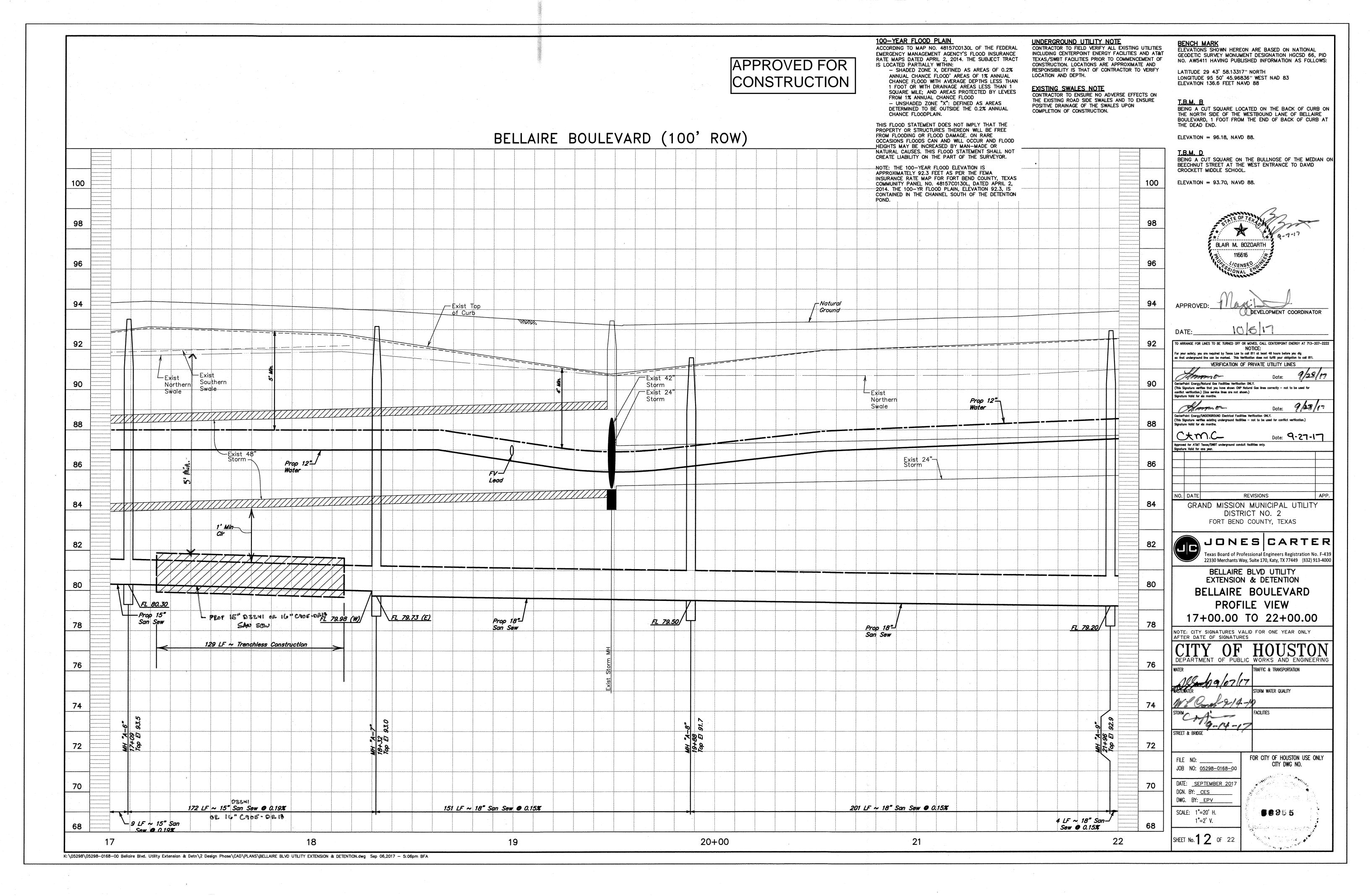
STANDARD MANHOLE CONNECTION NOTE: CONTRACTOR SHALL USE CARE TO MAKE OPENING IN BENCH MARK
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL
GEODETIC SURVEY MONUMENT DESIGNATION HGCSD 66, PID UNDERGROUND UTILITY NOTE 100-YEAR FLOOD PLAIN CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES ACCORDING TO MAP NO. 48157C0130L OF THE FEDERAL APPROVED FOR WALL OF EXISTING MANHOLE. OPENING SHALL NOT BE INCLUDING CENTERPOINT ENERGY FACILITIES AND AT&T EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE TEXAS/SWBT FACILITIES PRIOR TO COMMENCEMENT OF MORE THAN 3", NOR LESS THAN 1" GREATER IN NO. AW5411 HAVING PUBLISHED INFORMATION AS FOLLOWS: RATE MAPS DATED APRIL 2, 2014. THE SUBJECT TRACT CONSTRUCTION, LOCATIONS ARE APPROXIMATE AND DIAMETER THAN THE OUTSIDE DIAMETER OF THE IS LOCATED PARTIALLY WITHIN: RESPONSIBILITY IS THAT OF CONTRACTOR TO VERIFY PROPOSED PIPE. PROPOSED PIPE SHALL NOT LATITUDE 29 43' 58.13317" NORTH - SHADED ZONE X, DEFINED AS AREAS OF 0.2% LOCATION AND DEPTH. PROTRUDE MORE THAN 3" PAST THE INSIDE FACE OF ANNUAL CHANCE FLOOD' AREAS OF 1% ANNUAL LONGITUDE 95 50' 45.96836" WEST NAD 83 MANHOLE WALL. FILL ENTIRE VOID AROUND PIPE WITH CHANCE FLOOD WITH AVERAGE DEPTHS LESS THAN ELEVATION 136.6 FEET NAVD 88 EXISTING SWALES NOTE
CONTRACTOR TO ENSURE NO ADVERSE EFFECTS ON NON-SHRINK WATERPROOF GROUT OR USE BOOT AND 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 BREAKOUT/SHAPE INVERT. BACKFILL EXCAVATION SQUARE MILE; AND AREAS PROTECTED BY LEVEES AROUND EXISTING MANHOLE WITH CEMENT SAND. THE EXISTING ROAD SIDE SWALES AND TO ENSURE FROM 1% ANNUAL CHANCE FLOOD CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION - UNSHADED ZONE "X": DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL POSITIVE DRAINAGE OF THE SWALES UPON BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE OF ALL EXISTING UTILITY LOCATIONS. ALL EXISTING COMPLETION OF CONSTRUCTION. UTILITIES ARE SHOWN IN APPROX. LOCATIONS ONLY. CHANCE FLOODPLAIN. BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT THE DEAD END. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE BELLAIRE BOULEVARD (100' ROW) ELEVATION = 96.18, NAVD 88. FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR. BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON 100 BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA CROCKETT MIDDLE SCHOOL. INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS ELEVATION = 93.70, NAVD 88. COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL SOUTH OF THE DETENTION BLAIR M. BOZOARTH √Exist Top Ground of Curb 94 DEVELOPMENT COORDINATOR −Exist 12" 92 92 Southern Northern Swale O ARRANGE FOR LINES TO BE TURNED OFF OR MOVED, CALL CENTERPOINT ENERGY AT 713-207-2222 Swale -Exist Southern Northern or your safety, you are required by Texas Law to call 811 at least 48 hours before you dig Swale so that underground line con be marked. This Verification does not fulfill your obligation to call 811. Swale VERIFICATION OF PRIVATE UTILITY LINES 90 90 __Exist 36" AterPoint Energy/Notural Gas Facilities Verification ONLY. Date: 9/28/17 Storm (This Signature verifies that you have shown CNP Natural Gas lines correctly — not to be used for conflict verification.) (Gas service lines are not shown.)

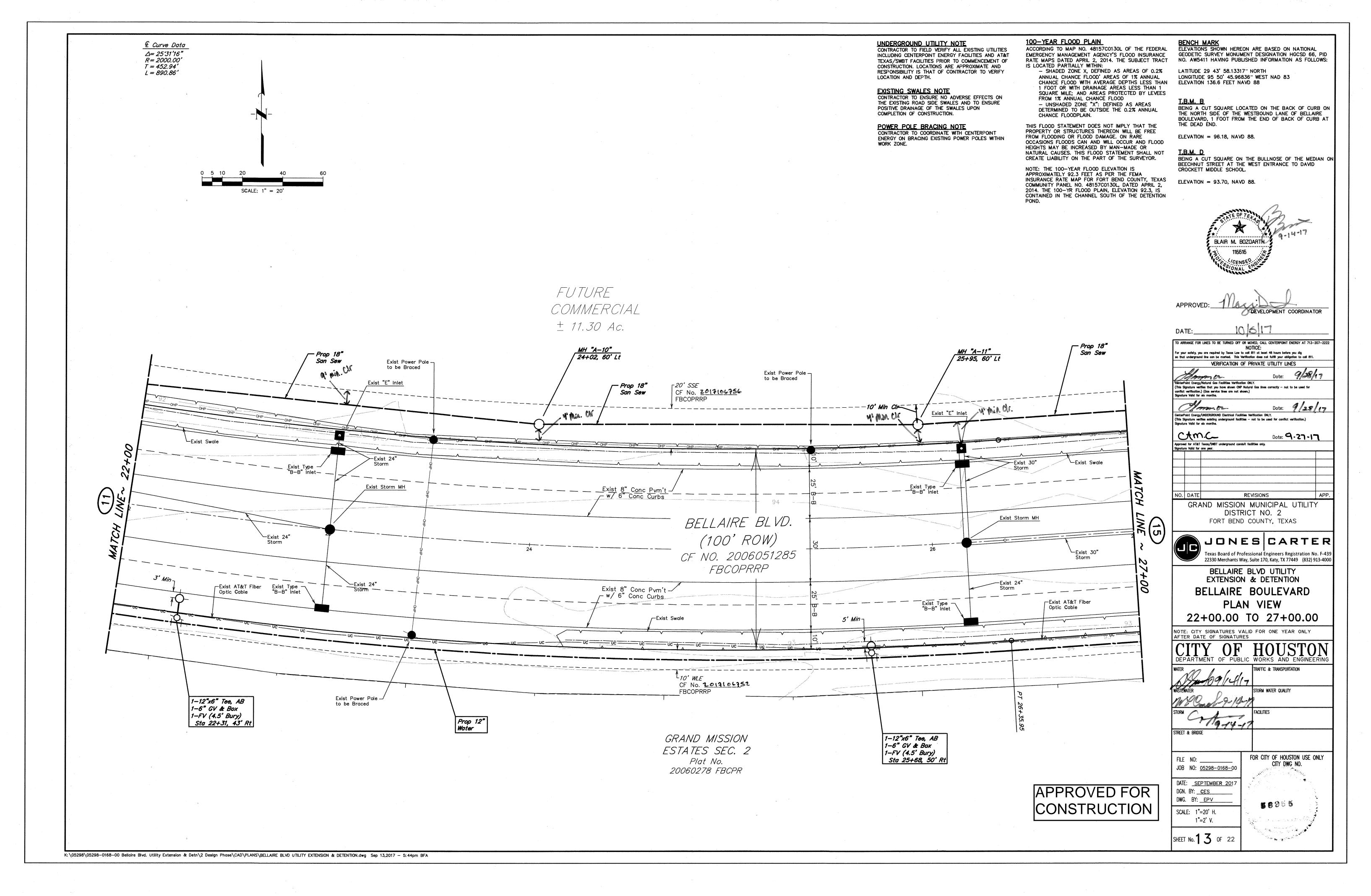
Signature Valid for six months. / Exist 24" Storm -Remove 12* 88 Plug and Connect Hommer -Exist 54" Prop 12" Water CenterPoint Energy/UNDERGROUND Electrical Facilities Verification ONLY. Prop 12" (This Signature verifies existing underground facilities — not to be used for conflict verification.) Prop 12" Lead Wet Connection Date: 9-27-17 proved for AT&T Texas/SWBT underground conduit facilities only. Signoture Valid for one year. NO. DATE GRAND MISSION MUNICIPAL UTILITY DISTRICT NO. 2 FORT BEND COUNTY, TEXAS Remove 13 LF of 8" JONES CARTER San Sew & Piug and Connect 12" San Sew Texas Board of Professional Engineers Registration No. F-43 FL 82.32 To Exist San Sew MH 22330 Merchants Way, Suite 170, Katy, TX 77449 (832) 913-4000 - Prop 12" FL 82,95 Contractor to verify FL of FL 81.86 (W) Prop 15" BELLAIRE BLVD UTILITY San Sew FL 81.61 (E) Existing San Sew prior to EXTENSION & DETENTION commencement of BELLAIRE BOULEVARD construction. Contractor to core into Existing PROFILE VIEW 78 Manhole per Note on This 7+00.00 TO 12+00.00 NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES 76 74 STORM WATER QUALITY FOR CITY OF HOUSTON USE ONLY FILE NO: CITY DWG NO. 70 JOB NO: <u>05298-0168-</u>00 DATE: <u>SEPTEMBER 201</u>7 88 LF ~ 15" San Sew @ 0.19% 178 LF ~ 12" San Sew @ 0.26% 229 LF ~ 12" San Sew @ 0.26% DGN. BY: <u>CES</u> DWG. BY: <u>EPV</u> 0.70% -14 LF ~ 12" San 68 56955 SCALE: 1"=20' H. 0.80% 1"=2' V. SHEET No. 8 OF 22 12 10+00 11 K: \05298\05298-0168-00 Bellaire Blvd. Utility Extension & Detn\2 Design Phase\CAD\PLANS\BELLAIRE BLVD UTILITY EXTENSION & DETENTION.dwg Sep 06,2017 - 5:06pm BFA

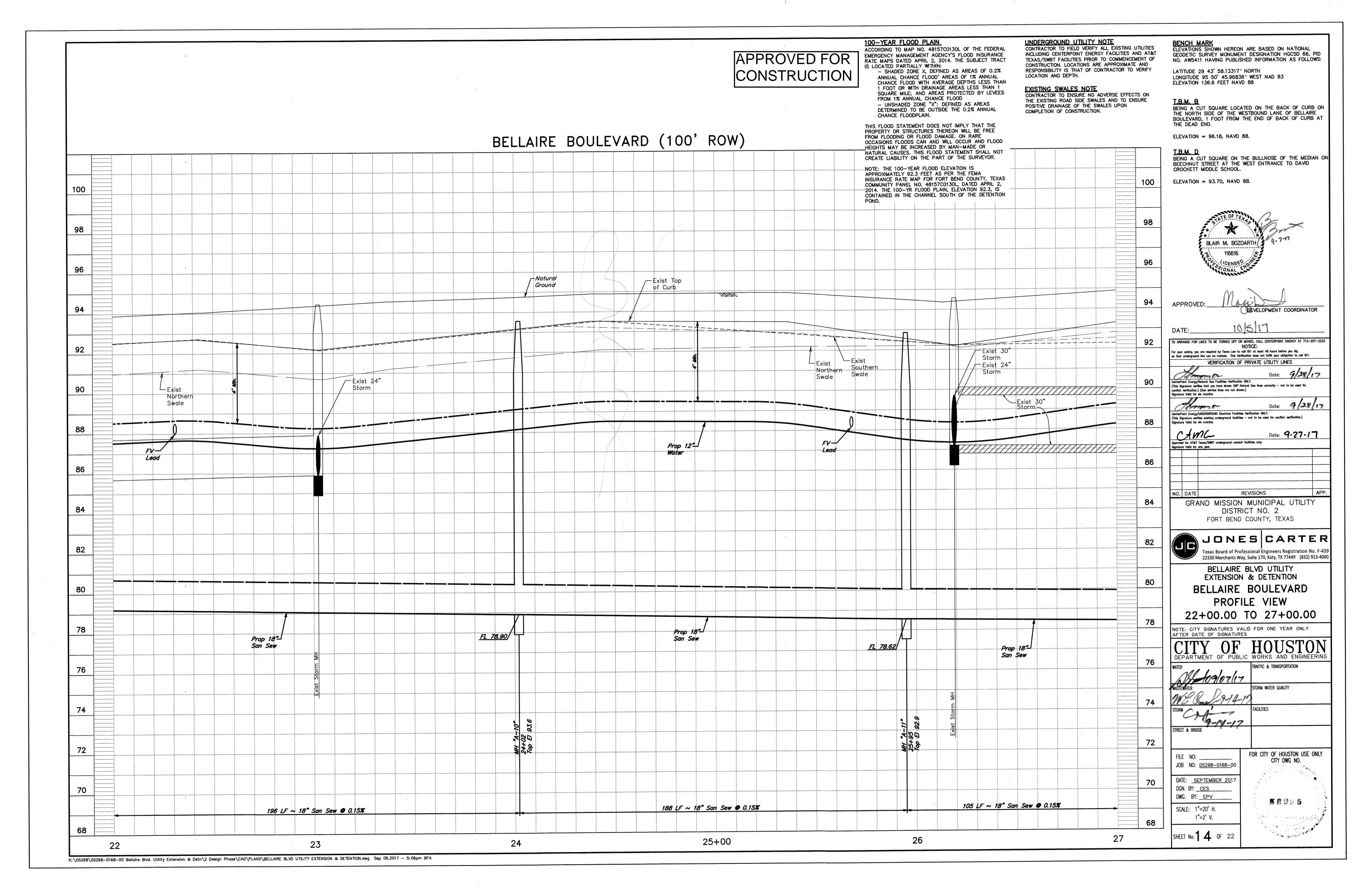


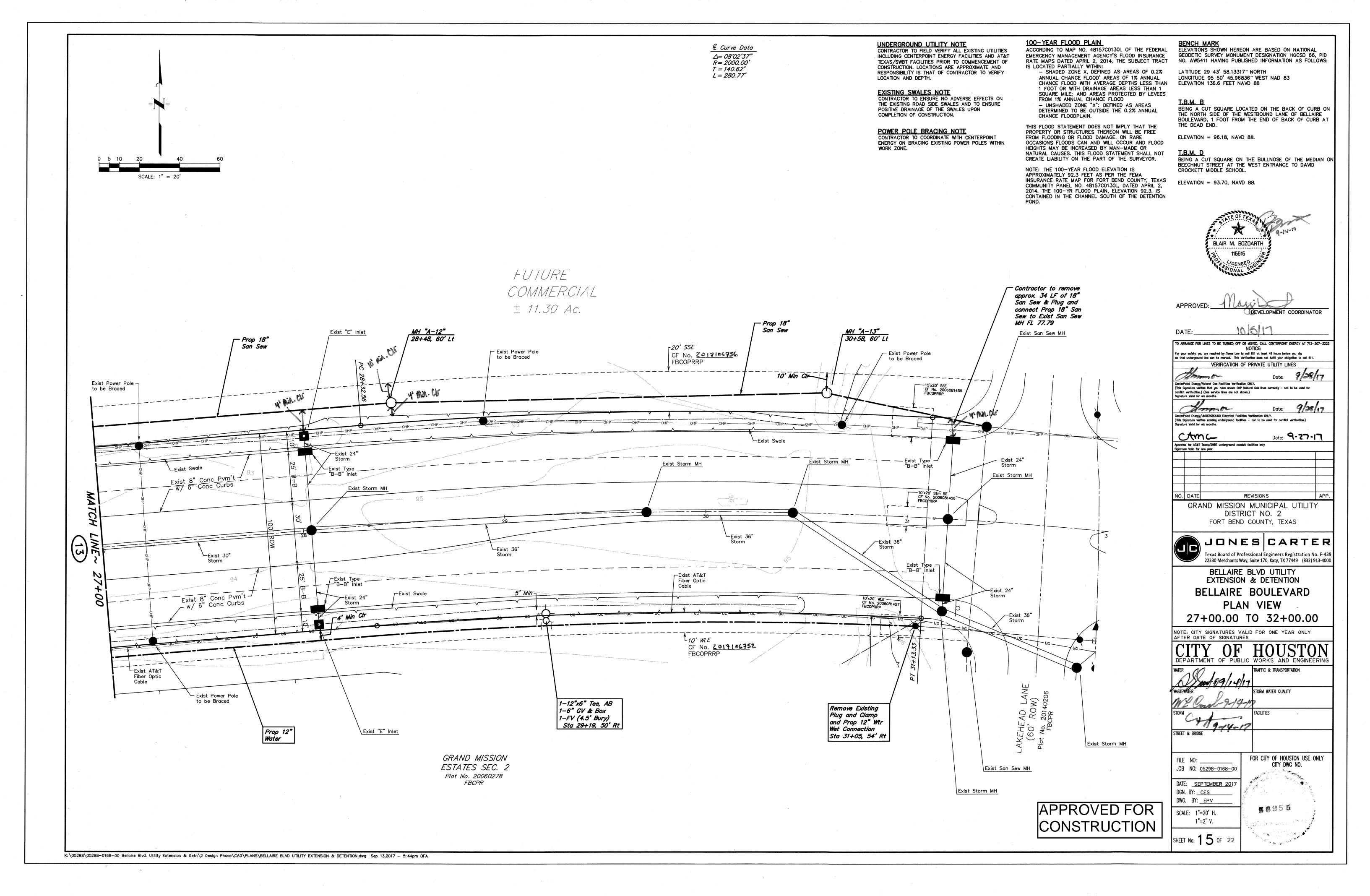


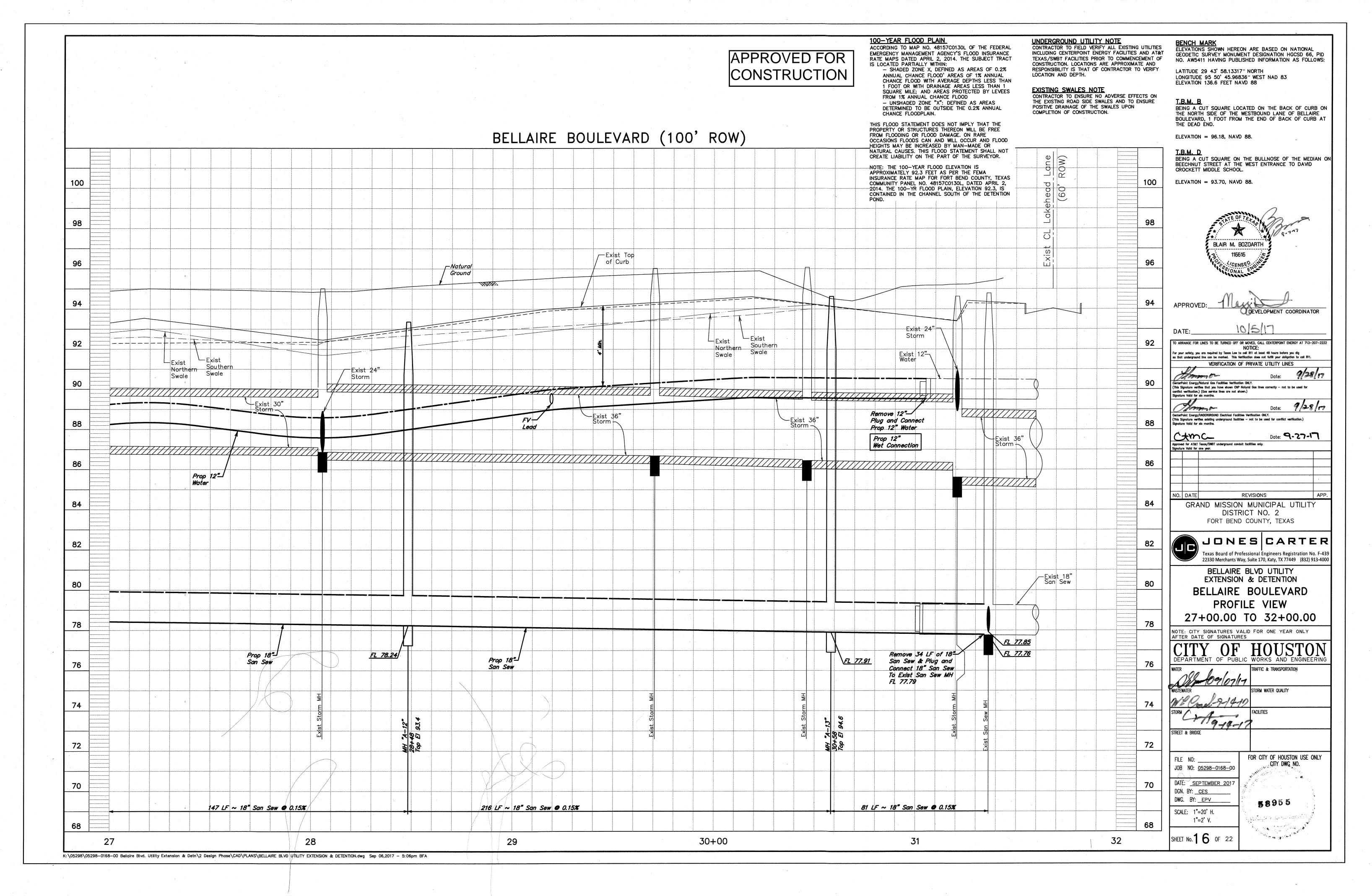


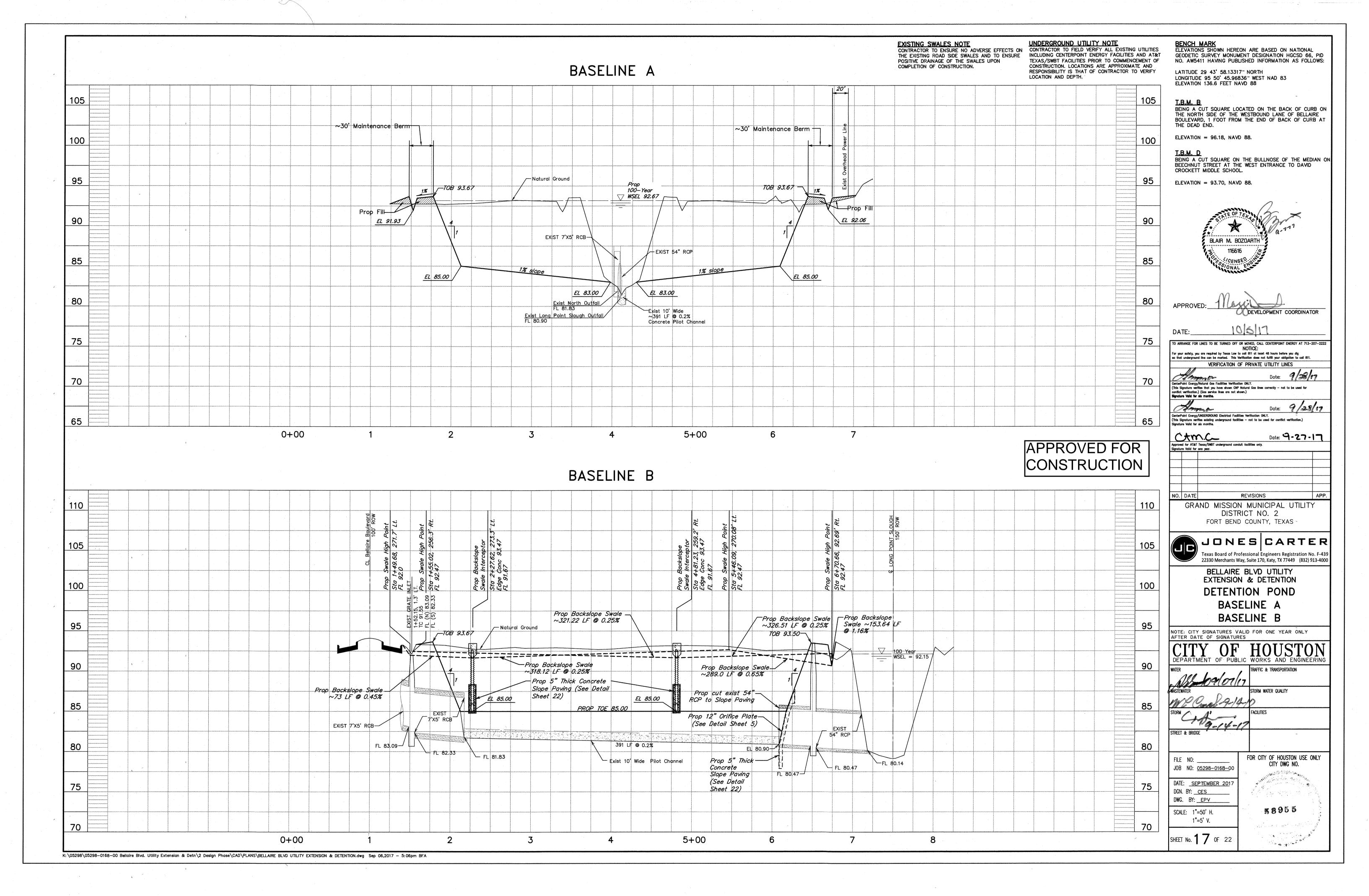


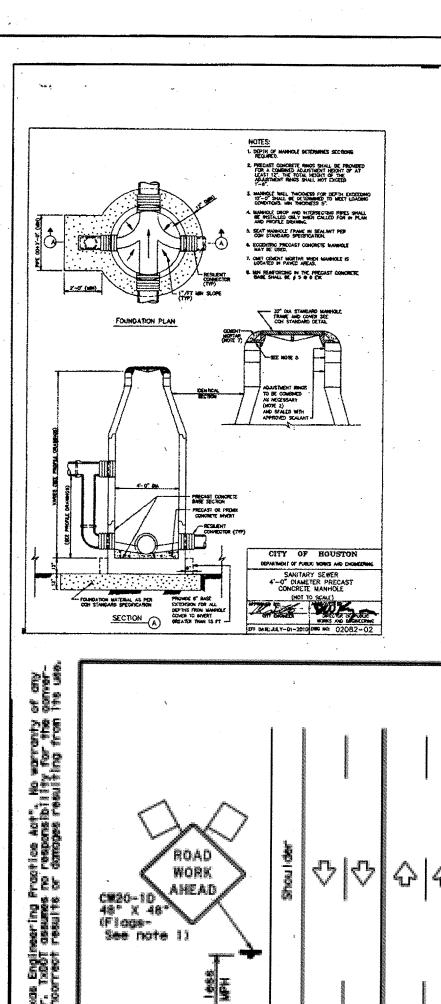


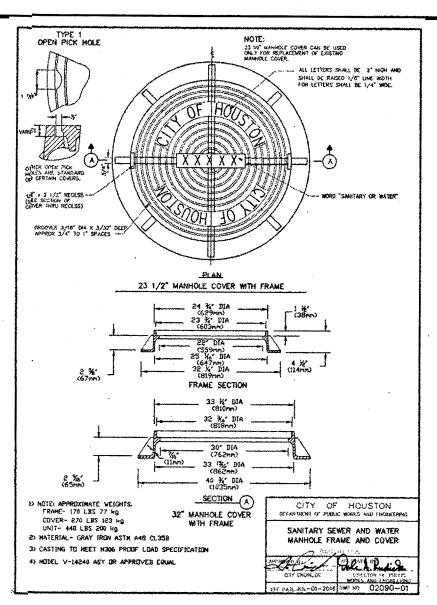


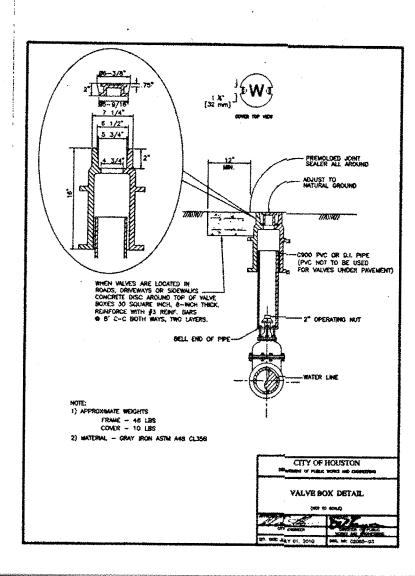


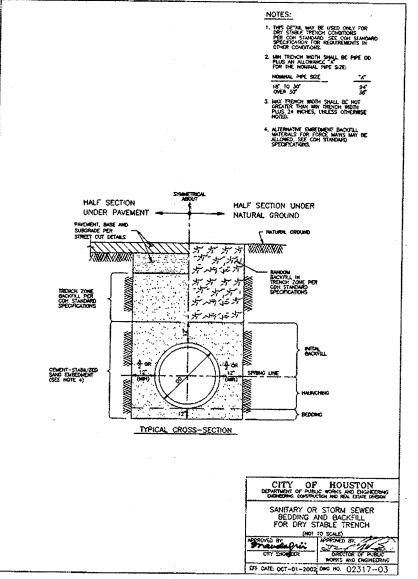


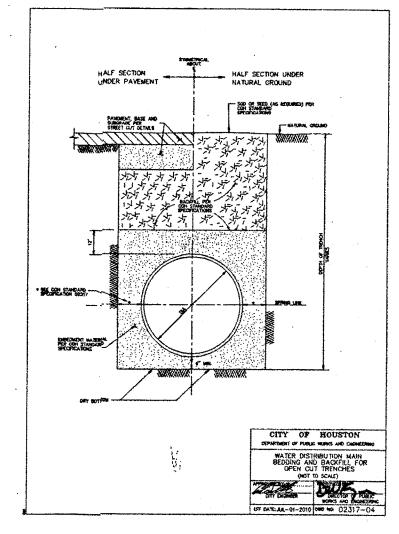








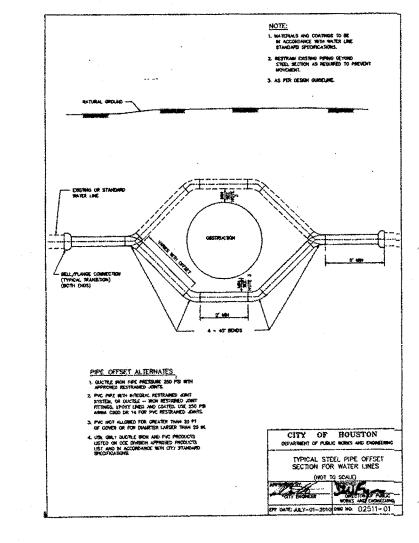


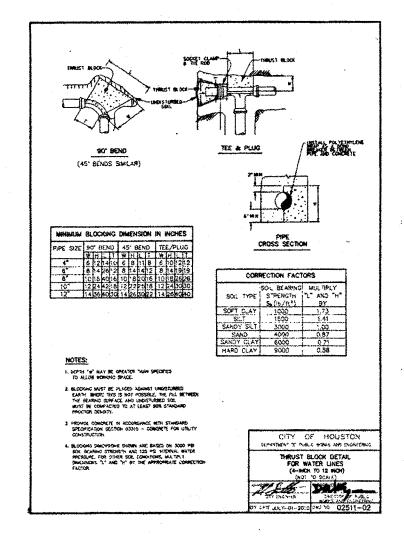


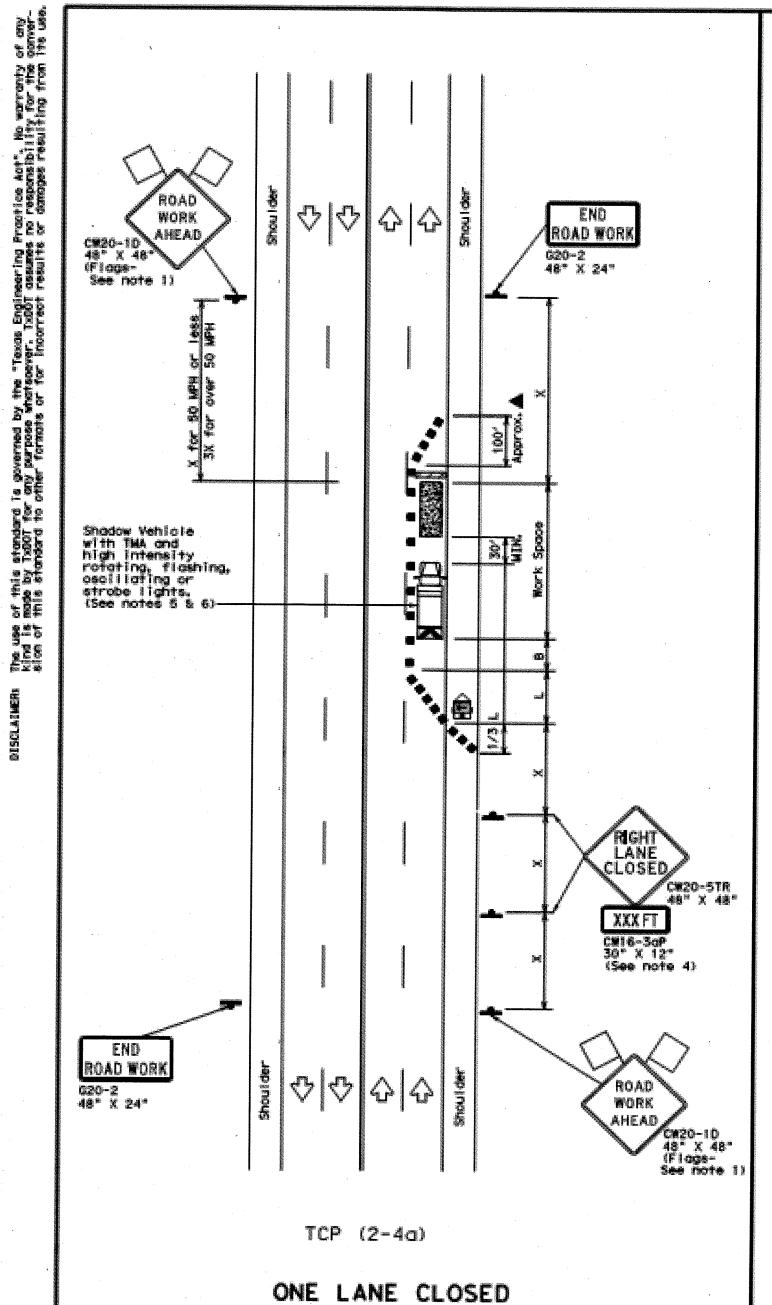
MM Channelizing Devices

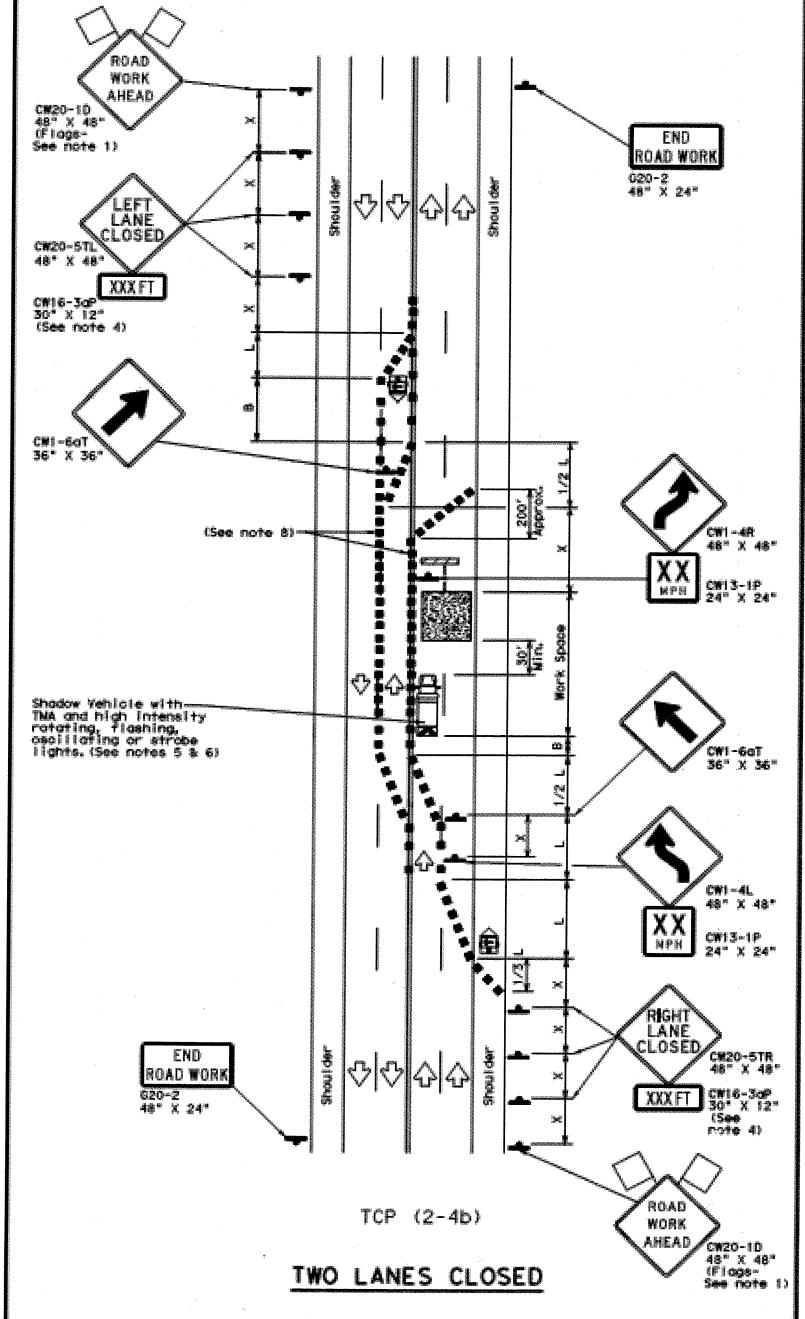
600"

Truck Mounted
Attenuator (TMA)









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		Sign				l Traff	To Flow	
	\Diamond	Filaşı) Figgs		
Footes Speed	Fernaul		Minimu Jesirot Jeriyan Jeja	le l	Spoci Charre	d Maximum ng of 1/2/ng 1/00%	Windows Sign Spacing	Suggested Langitudinal Suffer Space
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30		, 150"	165	1801	3 07	60'	120	907
35	<u> </u>	300.00	2251	2451	55°	70"	1601	1201
4,0		265	295	320°	40'	80*	240′	155
45		4501	495"	5401	45	90.	3201	195
50		500'	550'	6001	50"	1001	4001	240′
55	L=WS	550"	605	6601	55"	110'	500'	2951
60	45	600"	660"	720	60,	120"	600"	350'
65		6507	TIE!	TAN!		1707	THIS	3157

LEGEND

750' 825' 900' 75' 150' 900' 540'

Type 3 Barricade

Heavy Work Vehicle

** Toper lengths have been rounded off.

L-Length of Taper (FT) W-Width of Offset (FT) S-Posted Speed (NPH)

700' 770' 840' 70' 140'

		Manager Control of the Control of th		
		TYPICAL U	ISAGE	•
WAILE	SHORT DURATION	SHORT TERM STATICHARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
		7		

ENERAL NOTES

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75

. Flags attached to signs where shown, are REGUIRED. . All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be amitted when stated elsewhere in the plans.

or for routine maintenance work, when approved by the Engineer. The downstream taper is optional. When used, it should be 100 feet minimum

. For short term applications, when post nounted signs are not used, the distance legend may be shown on the sign face rather than on a CMI6-3aP supplemental . A Shadow Vehicle with a TMA should be used anytime it can be positioned

30 to 100 feet in advance of the area of area exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shodow Verticle and TWA.

Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

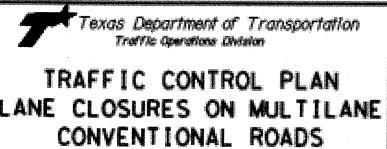
CP (2-40)

7. If this TCP is used for a left lane closure, CM20-5TL "LEFT LANE CLOSED" signs shall be used and charmelizing devices shall be placed on the centerline to protect the work space from apposing traffic with the arrow board placed in the closed lane near the end of the merging taper.

CP (2-4b)

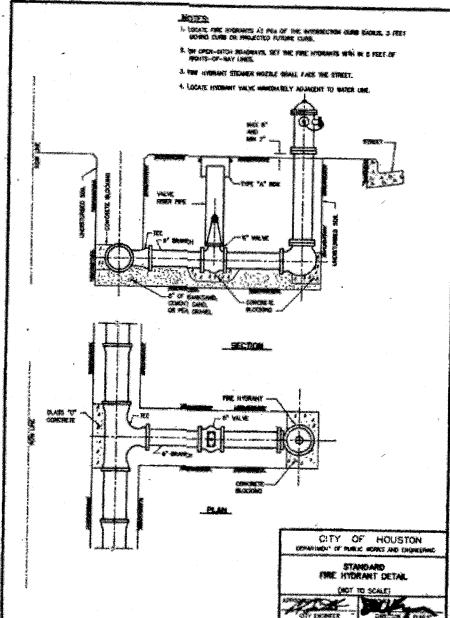
8. For shorter durations where traffic is directed over a yellow centerline, channellizing devices which separate two-way traffic should be spaced on tagers at 20° or 15° if posted speeds are 35 mph or slower, and for tangent sections, at 1/2(5) where S is the speed in mph. This tighter devices spacing is intended for the area of conflicting markings, not the entire work zone.

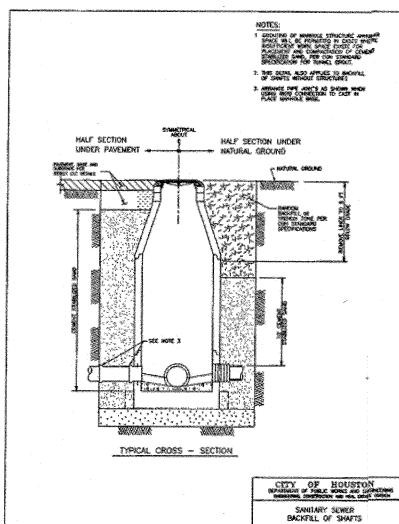
For construction or maintenance contract work, specific project requirements for shodow wehleles con be found in the project GENERAL NOTES for Item 802, Barriaades, Signs and Traffic Handling.



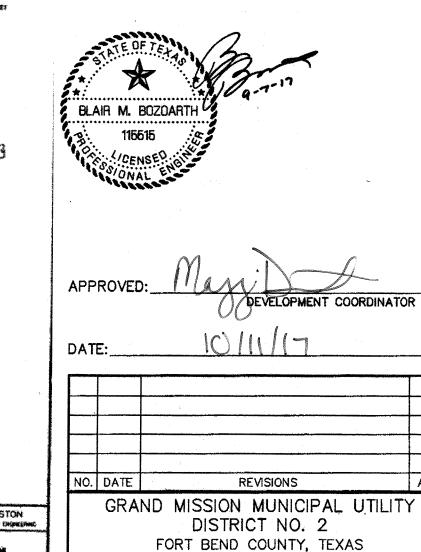
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APPROVED FOR CONSTRUCTION



DETAILS MOTE CITY SIGNATURES VALID FOR ONE YEAR ONLY

JONES CARTER

Texas Board of Professional Engineers Registration No. F-439 22330 Merchants Way, Suite 170, Katy, TX 77449 (832) 913-4000

BELLAIRE BLVD UTILITY

EXTENSION & DETENTION

MISCELLANEOUS

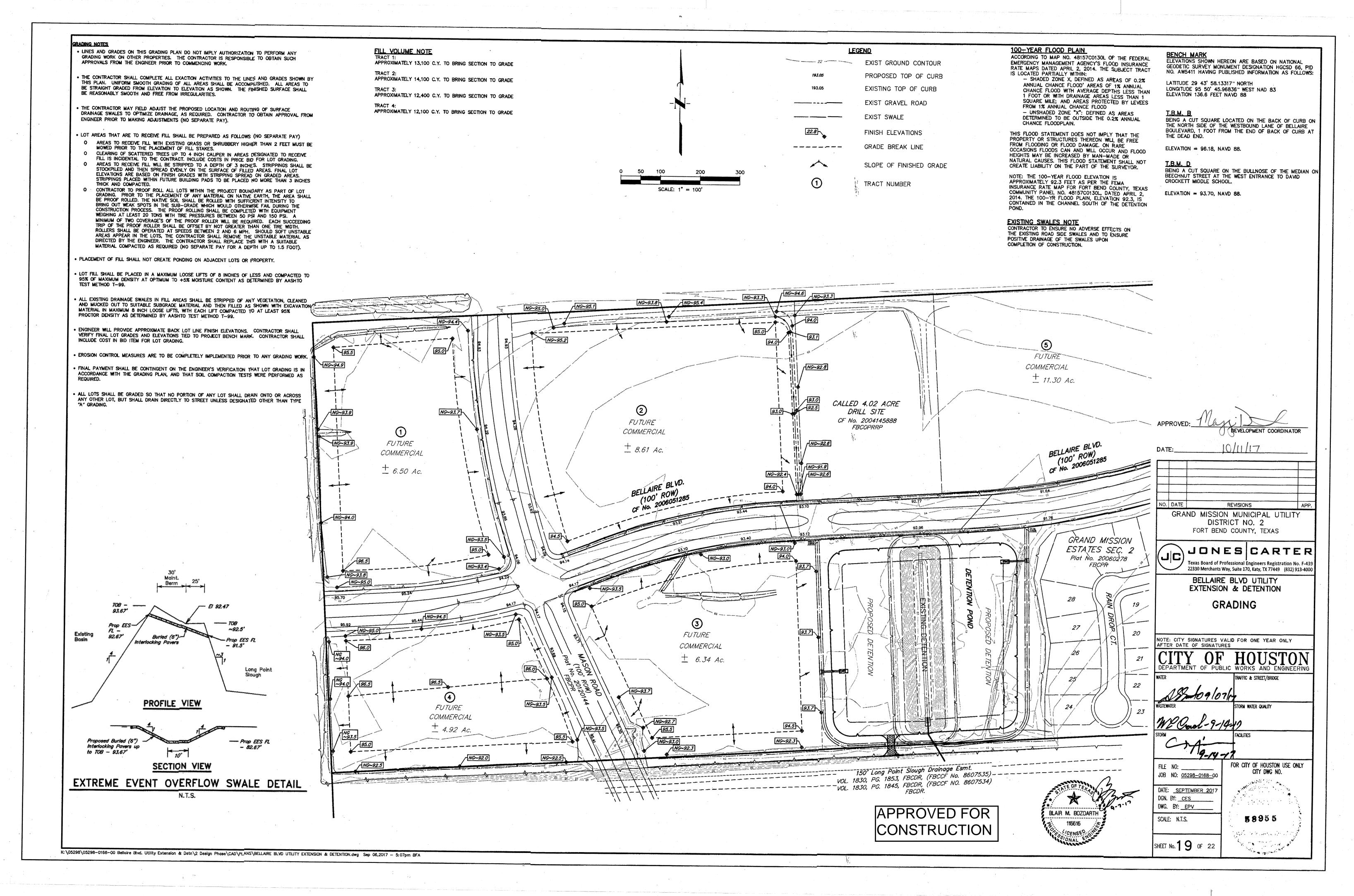
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SHEET No. 18 OF 22

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K:\05298\05298-0168-00 Belloire Blvd. Utility Extension & Detn\2 Design Phose\CAD\PLANS\BELLAIRE BLVD UTILITY EXTENSION & DETENTION.dwg Sep 06,2017 - 5:06pm BFA



MANHOLE / INLET PROTECTION NOTES

- I. INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVEYING STORM WATER FLOWS ARE TO BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE PROPOSED OR EXISTING STORM SEWER SYSTEM.
- 2. PROTECTION SHALL CONSIST OF ONE LAYER OF 3x12-INCH OAK TIMBERS, ONE (1) INCH APART, COVERED WITH ONE LAYER OF WOVEN POLYPROPYLENE OR POLYESTER FILTER FABRIC (EXXON GTF 100s, PHILLIPS SUPAC 4WS[UV] OR APPROVED EQUAL) HELD IN PLACE WITH 1/2" STAPLES.
 TIMBERS SHALL BE HELD IN PLACE WITH TWO (2) 2x4's
 NAILED SECURELY TO EACH TIMBER OVER THE FILTER FABRIC. THE FILTER FABRIC SHALL EXTEND BEYOND THE PERIMETER OF THE OAK TIMBERS AS TO ENSURE ONE (1) FOOT OF BURY BETWEEN THE MANHOLE OR INLET AND THE SURROUNDING
- 3. FILTER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE
- 4. CONTRACTOR MAY SUBMIT PLANS FOR ALTERNATE METHODS OF PROTECTION. THESE ALTERNATE METHODS MUST BE APPROVED PRIOR TO USE IN THE FIELD.
- 5. NO SEPARATE PAYMENT SHALL BE MADE FOR INLET AND MANHOLE PROTECTION. INCLUDE THE COST IN THE UNIT PRICE FOR THE INLETS AND MANHOLES.

EROSION AND SEDIMENTATION CONTROL NOTES

- 1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
- 2. CONTRACTOR SHALL INSPECT ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS SPECIFIED HEREIN, AT A MINIMUM OF ONCE EVERY CALENDAR DAY.
- 3. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE CONTRACT. (NO SEPARATE PAY).
- 4. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
- CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE SILT FENCING, HAY BALES, OR BERMS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
- CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
- CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE
- 8. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
- 9. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
- 10. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
- 11. IF EROSION AND SEDIMENTATION CONTROL SYSTEM IS EXISTING FROM PRIOR CONTRACTS, OWNER AND/OR OWNER'S REPRESENTATIVES WITH THE CONTRACTOR SHALL EXAMINE THE EXISTING EROSION AND SEDIMENTATION CONTROL SYSTEM FOR DAMAGE PRIOR TO CONTRACTOR STARTING CONSTRUCTION OF THE CONTRACT. ANY DAMAGE NOTED AT THIS TIME SHALL BE REPAIRED AT OWNER'S EXPENSE.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS

INSTALLATION SEQUENCE

UTILITY CONTRACTOR:

- 1. Instail (SC)— at start of construction.
- 2. Install IPB for Stage II Inlets.
- 3. Install x——(RFB)—— x along back of curb, and as directed by Engineer.
- 4. Area within ROW and Adjacent Easements Disturbed during Construction of Utilities to be Hydro-Mulch Seeded upon completion of Utilities.

Utility Contractor to follow all protection requirements and complete all forms as listed in bound SWPPP.

EXISTING SWALES NOTE

CONTRACTOR TO ENSURE NO ADVERSE EFFECTS ON THE EXISTING ROAD SIDE SWALES AND TO ENSURE POSITIVE DRAINAGE OF THE SWALES UPON COMPLETION OF CONSTRUCTION.

100-YEAR FLOOD PLAIN ACCORDING TO MAP NO. 48157C0130L OF THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE

RATE MAPS DATED APRIL 2, 2014. THE SUBJECT TRACT IS LOCATED PARTIALLY WITHIN:

- SHADED ZONE X, DEFINED AS AREAS OF 0.2% ANNUAL CHANCE FLOOD' AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD

- UNSHADED ZONE "X": DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. THIS FLOOD STATEMENT DOES NOT IMPLY THAT THE PROPERTY OR STRUCTURES THEREON WILL BE FREE

FROM FLOODING OR FLOOD DAMAGE. ON RARE OCCASIONS FLOODS CAN AND WILL OCCUR AND FLOOD HEIGHTS MAY BE INCREASED BY MAN-MADE OR NATURAL CAUSES. THIS FLOOD STATEMENT SHALL NOT CREATE LIABILITY ON THE PART OF THE SURVEYOR.

NOTE: THE 100-YEAR FLOOD ELEVATION IS APPROXIMATELY 92.3 FEET AS PER THE FEMA INSURANCE RATE MAP FOR FORT BEND COUNTY, TEXAS COMMUNITY PANEL NO. 48157C0130L, DATED APRIL 2, 2014. THE 100-YR FLOOD PLAIN, ELEVATION 92.3, IS CONTAINED IN THE CHANNEL SOUTH OF THE DETENTION

BENCH MARK
ELEVATIONS SHOWN HEREON ARE BASED ON NATIONAL GEODETIC SURVEY MONUMENT DESIGNATION HGCSD 66, PID NO. AW5411 HAVING PUBLISHED INFORMATION AS FOLLOWS:

LATITUDE 29 43' 58.13317" NORTH LONGITUDE 95 50' 45.96836" WEST NAD 83

BEING A CUT SQUARE LOCATED ON THE BACK OF CURB ON THE NORTH SIDE OF THE WESTBOUND LANE OF BELLAIRE BOULEVARD, 1 FOOT FROM THE END OF BACK OF CURB AT

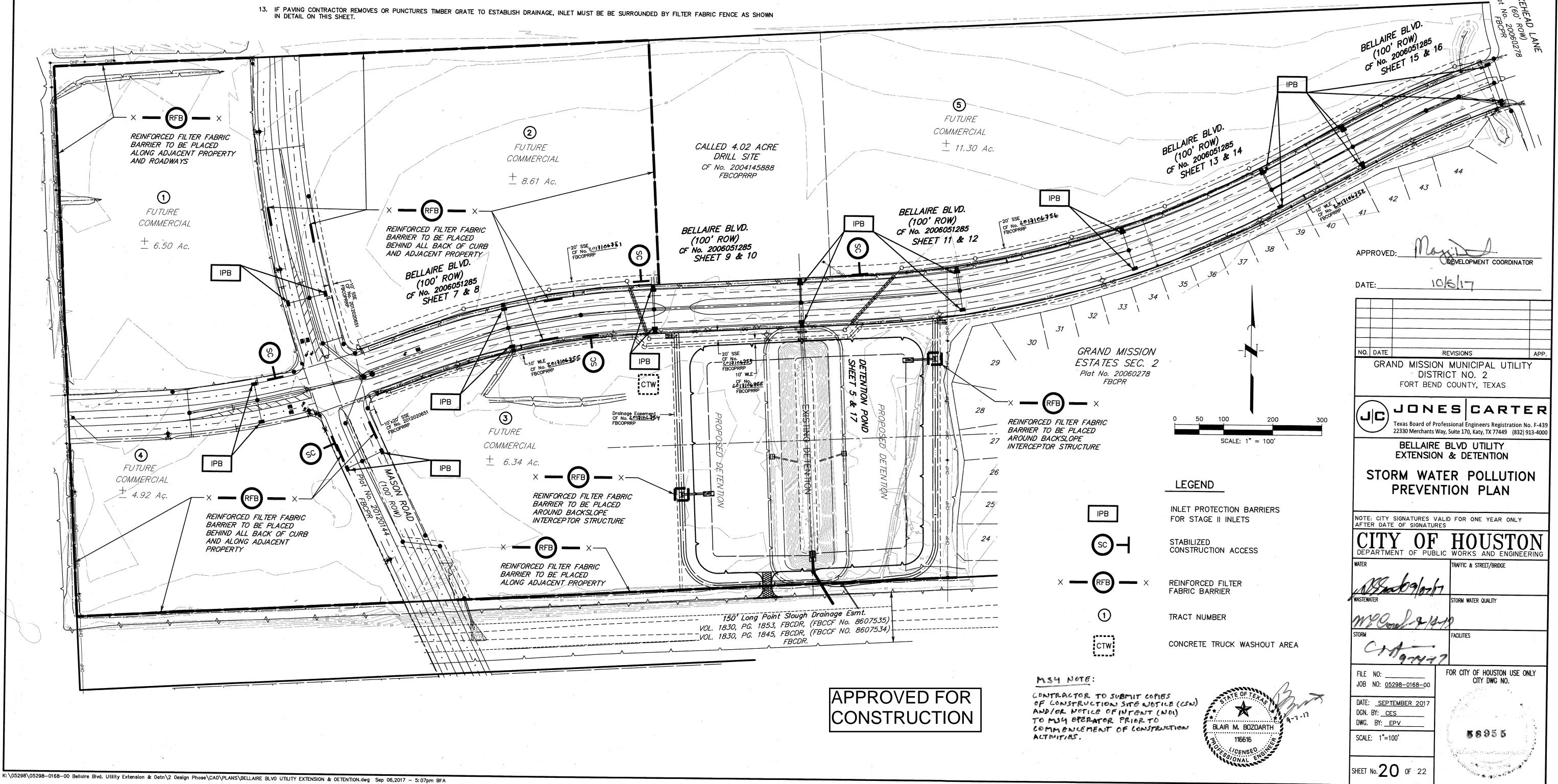
ELEVATION = 96.18, NAVD 88.

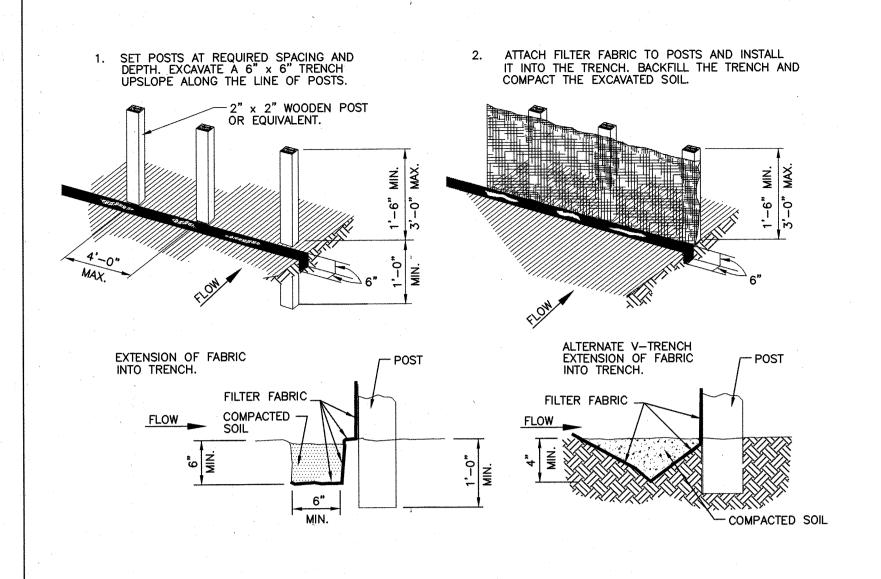
ELEVATION 136.6 FEET NAVD 88

T.B.M. D

BEING A CUT SQUARE ON THE BULLNOSE OF THE MEDIAN ON BEECHNUT STREET AT THE WEST ENTRANCE TO DAVID CROCKETT MIDDLE SCHOOL.

ELEVATION = 93.70, NAVD 88.

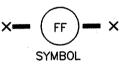




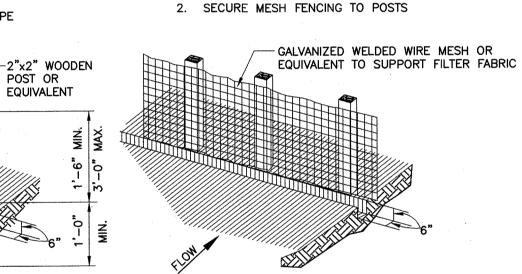
GENERAL NOTES:

- 1. SET POSTS AT 4-FEET MAXIMUM SPACING. IF FACTORY PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAXIMUM.
- 2. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT THE POST, FOLD TOGETHER, AND ATTACH TO
- 3. REMOVE SEDIMENT DEPOSITS WHEN SILT DEPTH REACHES ONE-THIRD OF THE HEIGHT OF THE FENCE.

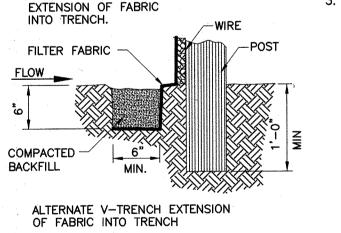
FILTER FABRIC FENCE



1. SET POSTS AT REQUIRED SPACING AND DEPTH. EXCAVATE 6" x 6" TRENCH UPSLOPE



ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL.



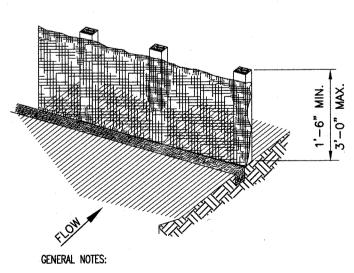
COMPACTED

CHANGED TITLE BLOCK

ADDED CONTINENTAL CROSSWALK

JONES CARTER

Texas Board of Professional Engineers Registration No. F-439 22330 Merchants Way, Suite 170, Katy, TX 77449 (832) 913-4000



REINFORCED

FILTER FABRIC BARRIER

X—(RFB)—X

SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.

7/21/98

8/3/98

2. SECURELY FASTEN FILTER FABRIC TO MESH FENCING. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6 INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A

4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE—THIRD OF THE HEIGHT OF THE FENCE IN DEPTH.

INLET PROTECTION BARRIERS FOR STAGE I INLETS

SYMBOL

WIRE MESH STRUCTURE

1. PLACE BARRIER IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BARRIER.

6. THE BARRIER STRUCTURE SHALL BE WELDED WIRE MESH, 18 INCHES ON EACH SIDE.

SEE REINFORCED FILTER FABRIC BARRIER DETAIL

FOR REINFORCED FILTER FABRIC BARRIER REQUIREMENTS

USING 18-INCH BY 3/8 INCH REBARS (T-ENDS, J-HOOKS).

*CONSTRUCTION OPTION

WIRE MESH STRUCTUR

GENERAL NOTES:

THE UPSTREAM SIDE.

RINGS OR EQUIVALENT.

WOOD OR METAL POST

STAKE WATTLE OR WEIGH DOWN

WITH SANDBAGS

TYPICALLY STRAW BALES ARE NOT RECOMMENDED FOR INLET PROTECTION BARRIERS.

SECTION A-A

EXTENSION OF FILTER FABRIC

INTO TRENCH.

COMPACTED SOIL

MECHANICALLY COMPACTED MATERIAL.

WEIGHTED

USING ONE CONTINUOUS SECTION OF FILTER FABRIC, WRAP FABRIC AROUND WIRE MESH AND EXTEND FABRIC TO FORM SKIRT ON

WEIGHT SKIRT WITH A CONTINUOUS LAYER OF 3-INCH TO 5-INCH OPEN GRADED ROCK, OR TOE IN SKIRT WITH SIX INCHES WITH

4. SECURELY ANCHOR BARRIER AND SKIRT IN PLACE USING 6-INCH WIRE STAPLES ON 2-FOOT CENTERS ON BOTH EDGES, OR STAKE

5. FILTER FABRIC SHALL BE LAPPED OVER ENDS 6 INCHES TO COVER SEGMENT JOINTS. FASTEN JOINTS WITH GALVANIZED SHOAT

TRIANGULAR

FILTER FABRIC FENCE

INLET

APPROVED FOR CONSTRUCTION

TRENCHED

WIRE TIES OR SHOAT RINGS EVERY 2 Ft. TOP AND MIDSECTION

- FILTER FABRIC

REINFORCED FILTER FABRIC

BARRIER

VARIABLE DISTANCE

-- WOOD OR

L VARIES

WATTLE STAKED WITH 2 STAKES PER

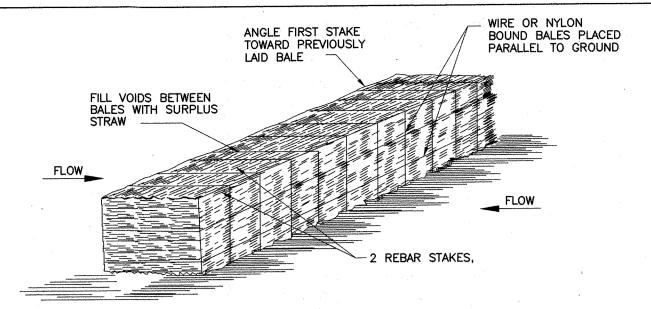
BALE OR WEIGHTED

WITH SANDBAGS -

1/3 L

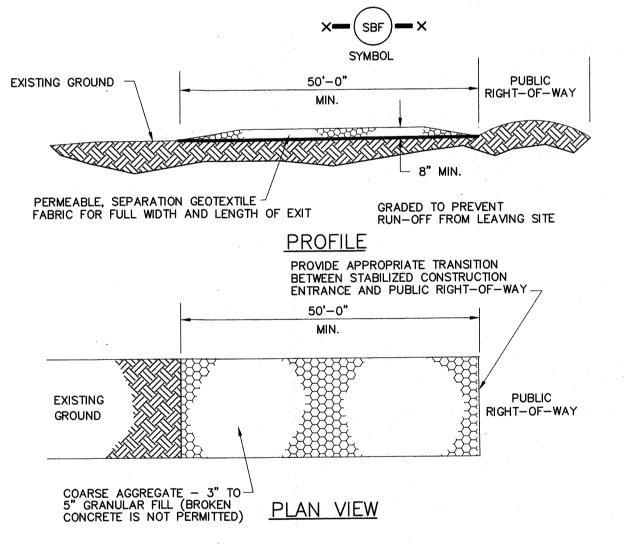
36 INCHES MINIMUM

6" STAPLE OR 3/8"
REBAR ANCHORS (J HOOKS, T-ENDS)
EVERY 2 FT.



STRAW BALE FENCE COMPACTED EARTH 4" VERTICAL FACE GENERAL NOTES:

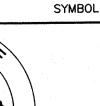
- 1. LIMIT USE TO ONSITE SWALES FOR PURPOSES OF LOW FLOW VELOCITY DISSIPATION FOR EROSION CONTROL. USE STRAW BALE FENCES TO TREAT OVERLAND FLOW ONLY. DO NOT USE STRAW BALE FENCES TO TREAT FLOW IN CHANNELS.
- 2. PLACE BALES IN A ROW WITH ENDS TIGHTLY ABUTTING ADJACENT BALES. FILL THE VOIDS BETWEEN BALES WITH SURPLUS STRAW. PLACE BALES WITH BINDING PARALLEL TO GROUND SURFACE.
- 3. IMBED EACH BALE AT LEAST 4 INCHES IN THE SOIL
- 4. SECURELY ANCHOR BALES IN PLACE BY REBAR STAKES. DRIVE STAKES THROUGH THE BALES AND AT LEAST 18 INCHES INTO THE GROUND. ANGLE THE STAKE IN EACH BALE TOWARD THE PREVIOUS BALE TO FORCE THE BALES TOGETHER.
- 5. BIND BALES WITH WIRE OR NYLON ROPE TIED ACROSS THE STRAW BALES.
- REPLACE WITH NEW STRAW BALE FENCE EVERY TWO MONTHS.
- 7. WATTLES STAKED INTO THE GROUND ARE A PREFERRED SUBSTITUTE FOR STRAW BALE FENCES.

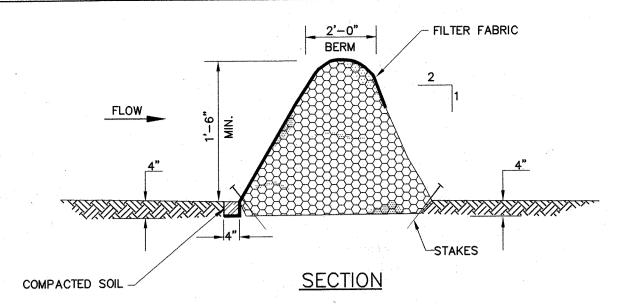


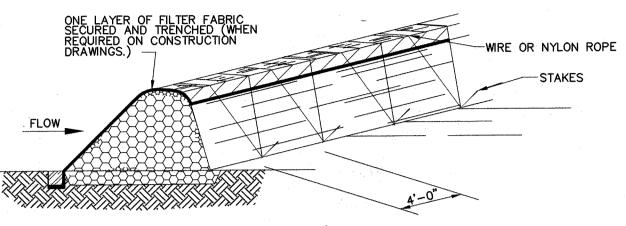
GENERAL NOTES:

- 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.
- UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT.
- WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET
- 5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH
- PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE
- . ALTERNATIVE METHODS OF CONSTRUCTION INCLUDE -CEMENT STABILIZED SOIL: COMPACTED CEMENT STABILIZED SOIL, LIMESTONE AGGREGATE, OR OTHER FILL MATERIAL IN AN APPLICATION OF THICKNESS -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



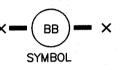


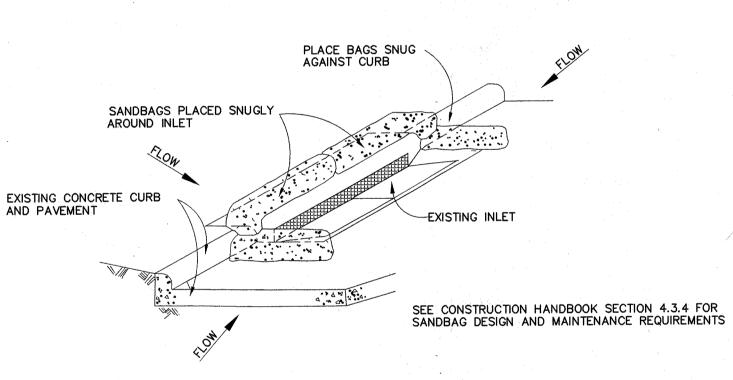


GENERAL NOTES:

- LIMIT USE TO ONSITE SWALES FOR PURPOSES OF LOW FLOW VELOCITY DISSIPATION FOR EROSION CONTROL. USE BRUSH BERMS TO TREAT OVERLAND FLOW ONLY. DO NOT USE BRUSH BERMS TO TREAT FLOW IN CHANNELS.
- 2. PLACE WOODY BRUSH AND BRANCHES HAVING A DIAMETER OF LESS THAN 2 INCHES WITH A 6-INCH OVERLAP. AVOID INCORPORATION OF ANNUAL WEEDS AND SOIL INTO BRUSH BERM.
- MINIMUM HEIGHT OF THE BRUSH BERM IS 18 INCHES, MEASURED FROM THE TOP OF THE EXISTING GROUND AT THE UPSLOPE TOE
- 4. HAND PLACE BRUSH BERMS ALONG CONTOUR LINES. MACHINE PLACEMENT OF BRUSH BERMS IS NOT PERMITTED.
- 5. IMBED BRUSH BERM AT LEAST 4 INCHES INTO THE SOIL
- 6. ANCHOR BRUSH BERMS USING WIRE OR NYLON ROPE ACROSS THE BERM WITH A MINIMUM TENSION OF 50 POUNDS.
- 7. SECURELY TIE ROPE TO 18-INCH REBAR STAKES DRIVEN INTO THE GROUND ON 4-FOOT CENTERS ON BOTH SIDES OF THE BERM.
- PERFORM MAINTENANCE AS NEEDED.

BRUSH BERM

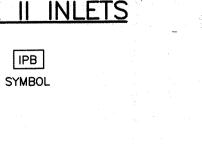




GENERAL NOTES:

- 1. BAGS OR WATTLES CAN BE USED FOR THIS APPLICATION.
- 2. PROVIDE WOVEN OR UNWOVEN GEOTEXTILE FILTER FABRIC FOR BAGS.
- 3. PROVIDE COARSE SAND AND AGGREGATE MIX FOR FILL MATERIAL FOR BAGS. USE ONLY PARTICLES CONSISTING OF CLEAN, HARD, DURABLE MATERIALS FREE FROM ADHERENT COATINGS, SALT, ALKALI, DIRT, CLAY, LOAM, SHALE, SOFT OR FLAKY MATERIALS, OR
- 4. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.

INLET PROTECTION BARRIERS FOR STAGE II INLETS





CONSTRUCTION HANDBOOK= STORM WATER MANAGEMENT HANDBOOK
FOR CONSTRUCTION ACTIVITIES PREPARED BY
CITY OF HOUSTON, HARRIS COUNTY, AND HARRIS COUNTY FLOOD CONTROL DISTRICT, 2001 EDITION.

FORT BEND COUNTY ENGINEERING DEPARTMENT

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			DRAWN BY: R.L.S.	STORM WATE	ER POLLUTION	05298-0168-
\$			CK'D BY:	PREVENTION	PLAN DETAILS	PMDETL FILE NO.:
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