

# FORT BEND COUNTY CONSTRUCTION DETAILS

OCTOBER 1, 2024

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- 4. TRAFFIC SIGNAL GENERAL NOTES

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## STORM WATER POLLUTION PREVENTION AND STORM WATER QUALITY

- 60. STORM WATER POLLUTION PREVENTION PLAN DETAILS

- 1. DO NOT INCLUDE THIS SHEET IN YOUR PLAN SETS.
- 2. TO BE USED WHEN OUTSIDE CITY EXTRATERRITORIAL JURISDICAITON OR IF THE CITY DOES NOT HAVE ITS OWN DETAIL.
- 3. FOR BRIDGES, BRIDGE RAILS, OR TRAFFIC SIGNALS, USE TXDOT STANDARDS.
- 4. CHOSEN STANDARDS ARE TO BE IDENTIFIED AND SIGNED BY THE DESIGN ENGINEER ON THE INDEX SHEET AS DESCRIBED IN CHAPTER 12.4 OF THE FBC DESIGN MANUAL.

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FORT BEND COUNTY ENGINEERING DEPARTMENT

PROJECT NAME  
PROJECT LIMITS

PROJECT NO. \_\_\_\_\_

XX% SUBMITTAL

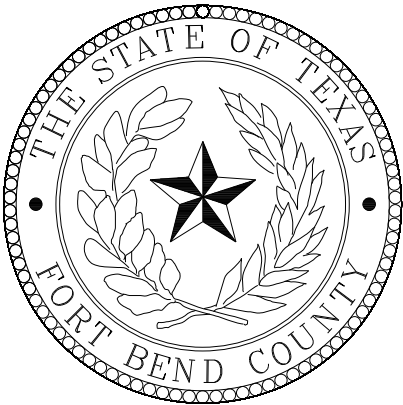
VINCENT M. MORALES, JR.  
COMMISSIONER PRECINCT 1

GRADY PRESTAGE  
COMMISSIONER PRECINCT 2

KP GEORGE  
COUNTY JUDGE

ANDY MEYERS  
COMMISSIONER PRECINCT 3

DEXTER L. McCOY  
COMMISSIONER PRECINCT 4








APPROVED: \_\_\_\_\_ DATE \_\_\_\_\_  
COUNTY ENGINEER  
J. STACY SLAWINSKI, P.E.

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CONSTRUCTION

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@FBCTX.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 AMENDED.
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 5½ 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 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.
10. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.
11. 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.
12. ALL R1-1 STOP SIGNS SHALL BE A MINIMUM OF 36"x36" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
13. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.
14. A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF OF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.
15. 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.
16. STABILIZED SUBGRADE: DETERMINE THE THICKNESS OF THE STABILIZED SUBGRADE AFTER CURING AND COMPACTION. IF THE SUBGRADE DEPTH IS GREATER THAN THE PROPOSED THICKNESS BY 20% OR MORE, THE CMT LAB MUST PROVIDE VERIFICATION THE PERCENTAGE OF MATERIAL BEING USED TO STABILIZE THE SUBGRADE MEETS OR EXCEEDS PROJECT REQUIREMENTS. TEST RESULTS REQUIRED.
17. CONTRACTOR TO PROVIDE MONTHLY SCHEDULE UPDATES AND WEEKLY LOOK AHEAD
18. ALL DRAINAGE AND DETENTION CAPACITY MUST BE IN PLACE PRIOR TO BEGINNING ANY PAVING ACTIVITIES
19. ALL TURN LANES AND MEDIAN OPENINGS SHALL HAVE THE SAME SURFACE AS THE EXISTING STREET. FROM THE ROW, ALL STREET AND DRIVEWAY CONNECTIONS SHALL HAVE THE SAME SURFACE AS THE EXISTING OR PROPOSED STREET.
20. MINIMUM DEPTH FOR BORES/UTILITIES SHALL BE AS FOLLOWS:  
OPEN DITCH – 3' MIN. BELOW FLOWLINE; 5' MIN. BELOW TOP OF PAVEMENT  
CURBED STREETS – 5' MIN. BELOW TOP OF PAVEMENT

NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.

NO.	REVISIONS	DATE	NAME
	ORIGINAL STANDARD ISSUED	3-1-22	RJS
	ADDED NOTE 17	3-1-23	RJS
	ADDED NOTE 18, 19, & 20	10-1-24	RJS
			
			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY:	SHEET DESCRIPTION: CONSTRUCTION GENERAL NOTES		FBCE STANDARD  02
CK'D BY:			
SCALE:	APPROVED BY:		SHEET NO:  /
DATE:			
10-1-24			

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GENERAL

1.

THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS BEFORE BEGINNING CONSTRUCTION.
2.

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SECURITY TO PROTECT THE PROJECT SITE, CONTRACTOR PROPERTY, EQUIPMENT, AND WORK.
3.

THE CONTRACTOR IS RESPONSIBLE FOR CLEANING STREETS OF CONSTRUCTION DIRT AND DEBRIS AT CLOSE OF EACH WORK DAY.
4.

THE CONDITION OF THE ROAD AND/OR RIGHT-OF-WAY, UPON COMPLETION OF THE JOB SHALL BE AS GOOD AS OR BETTER THAN PRIOR TO STARTING WORK.
5.

PRIOR TO CONSTRUCTION, THE CONTRACTOR, ALONG WITH CONCURRENCE FROM THE FIELD ENGINEER, SHALL DETERMINE HIS/HER LAY-DOWN AND/OR STAGING AREA LOCATIONS.
6.

THE CONTRACTOR SHALL NOTIFY ALL PROPERTY OWNERS A MINIMUM OF 24 HOURS PRIOR TO BLOCKING DRIVEWAYS OR ENTERING UTILITY EASEMENTS.
7.

TRAFFIC INGRESS AND EGRESS FOR DRIVEWAYS AND PEDESTRIAN ACCESS FACILITIES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION WITH ALL WEATHER SURFACES.
8.

THE CONTRACTOR SHALL REMOVE ANY FENCES, POSTS, MAILBOXES, PLANTERS, PERMANENT TRASH CONTAINERS, CULVERTS, ETC. OR SECTIONS THEREOF, THAT ENCROACH WITHIN THE COUNTY’S RIGHT-OF-WAY. NOTE: PRIOR TO CONSTRUCTION, THE PROPERTY OWNER WAS PAID TO RELOCATE OR REPLACE THESE ITEMS OUTSIDE OF THE COUNTY’S RIGHT-OF-WAY. IF THE OWNER HAS FAILED TO DO SO, THE CONTRACTOR WILL REPLACE THEM WITH THE MINIMUM LEVEL OF QUALITY NEEDED TO SECURE THE PROPERTY AND/OR MAINTAIN MAIL DELIVERY. IN THAT CASE, PAYMENT FOR THESE INSTALLATIONS WILL BE INCLUDED AS EXTRA WORK ITEMS OR AS OVERRUNS TO EXISTING PAY ITEMS.
- ANY DAMAGE CAUSED BY THE CONTRACTOR TO SUCH ITEMS LOCATED OUTSIDE OF THE COUNTY’S RIGHT-OF-WAY, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR’S EXPENSE.
- ALSO, IF THESE ITEMS ARE LOCATED WITHIN THE PROJECT RIGHT-OF-WAY AND ARE DESIGNATED TO REMAIN, ANY DAMAGE CAUSED BY THE CONTRACTOR TO SUCH ITEMS, SHALL BE REPLACED WITH LIKE-KIND OR BETTER AT THE CONTRACTOR’S EXPENSE.
- TREES, BUSHES, SHRUBBERY AND OTHER DAMAGED PLANTINGS DESIGNATED TO REMAIN SHALL BE REPLACED WITHIN 72 HOURS OF REMOVAL AND ARE TO BE THOROUGHLY WATERED-IN. NO SEPARATE PAY.
9.

PAVED SURFACES, PAVEMENT MARKERS AND MARKINGS SHALL BE PROTECTED FROM DAMAGE BY TRACKED EQUIPMENT.
10.

IRON RODS DISTURBED DURING CONSTRUCTION ARE TO BE REPLACED BY A REGISTERED PROFESSIONAL LAND SURVEYOR FOR THE ORIGINAL PROPERTY OWNER AT NO SEPARATE PAY.
11.

CONSTRUCTION STAKING WILL BE PROVIDED BY THE CONTRACTOR. TWO COPIES OF STAKING NOTES TO BE PROVIDED TO THE ENGINEER PRIOR TO CONSTRUCTION.
12.

THE COUNTY OR THE COUNTY’S SURVEYOR SHALL PROVIDE A BENCHMARK OR TEMPORARY BENCHMARK AND SURVEY CONTROLS.
13.

THE CONTRACTOR SHALL MAINTAIN UPDATED RED-LINED RECORD DRAWINGS ON SITE FOR INSPECTION BY THE ENGINEER.
14.

MOWING, MAINTENANCE, AND CLEAN-UP OF THE PROJECT SHALL MEET THE REQUIREMENT OF SPECIFICATION ITEM 560 (NO SEPARATE PAY). MOWING, MAINTENANCE, AND CLEAN-UP IS REQUIRED FOR THE PROJECT LIMITS AND DURATION, REGARDLESS OF THE CONTRACTOR’S SCOPE OF ACTIVITIES WITHIN THE PROJECT LIMITS.
15.

THE REMOVAL OF ANY ABANDONED UTILITIES REQUIRED TO COMPLETE THE WORK SHALL BE INCIDENTAL AND NO SEPARATE PAYMENT SHALL BE MADE.
16.

IT IS THE CONTRACTOR’S RESPONSIBILITY TO STOCKPILE NECESSARY MATERIAL ON-SITE OR AT A SECURED OFF-SITE LOCATION AT NO ADDITIONAL EXPENSE TO FORT BEND COUNTY. ANY SUITABLE EXCAVATED MATERIAL ON THE PROJECT WHICH IS AVAILABLE AT THE TIME OF NEED; WHETHER FROM STORM SEWER, ROADWAY, AND/OR CHANNEL EXCAVATION, SHALL BE USED BEFORE BORROW IS BROUGHT ON-SITE.
17.

MANHOLES, JUNCTION BOXES, INLETS, AND RISERS ARE TO BE PRE-CAST OR CAST IN PLACE.
18.

THE FOLLOWING DETAILS ARE MINIMUM REQUIREMENTS AND MAY BE SUPERSEDED BY GEOTECHNICAL ENGINEER RECOMMENDATIONS OR MORE STRINGENT REQUIREMENTS FROM THE CITY’S ETJ PROJECT IS WITHIN.
19.

POP UP DRAINS ARE NOT ALLOWED IN FORT BEND COUNTY RIGHT OF WAY.

TRAFFIC SIGNAL

1.

ALL ITEMS RELATING TO THE CONSTRUCTION OF TRAFFIC SIGNAL INSTALLATIONS, EXCEPT FOR PUNCHLIST ITEMS, SHALL BE COMPLETED PRIOR TO THE ACTIVATION OF THE SIGNAL SYSTEM(S), UNLESS OTHERWISE REQUIRED BY THE CONTRACT.
2.

THE CONTRACTOR SHALL MEET WITH THE FORT BEND COUNTY TRAFFIC SIGNAL MAINTENANCE GROUPS FIELD INSPECTOR, HEREAFTER REFERRED TO AS THE TRAFFIC INSPECTOR, ONE-WEEK PRIOR TO THE DESIRED ACTIVATION OF ANY NEW TRAFFIC SIGNALS. THE CONTRACTOR SHALL OBTAIN VERBAL CONCURRENCE FROM THE TRAFFIC INSPECTOR THAT ADEQUATE PROGRESS HAS BEEN ACHIEVED AND THAT ADEQUATE PREPARATIONS ARE IN PLACE TO SCHEDULE A PRE-“TURN ON” WALK-THROUGH INSPECTION MEETING. IF IN THE OPINION OF THE TRAFFIC INSPECTOR, REQUIRED PROGRESS AND ADEQUATE PREPARATIONS ARE NOT COMPLETE, THE PRE-“TURN ON” WALK-THROUGH INSPECTION MEETING WILL BE POSTPONED TO ALLOW ADEQUATE TIME FOR INCOMPLETE CONSTRUCTION ITEMS AND PREPARATIONS TO BE COMPLETED. AFTER THE CONTRACTOR HAS COMPLETED ALL INCOMPLETE ITEMS AND PREPARATIONS, THE CONTRACTOR SHALL REQUEST THE TRAFFIC INSPECTOR REVIEW AND APPROVE ITEMS PREVIOUSLY IDENTIFIED. IF, IN THE OPINION OF THE TRAFFIC INSPECTOR, ALL ITEMS HAVE BEEN ADDRESSED SATISFACTORILY, THE DATE OF THE PRE-“TURN ON” WALK-THROUGH INSPECTION SHALL BE ESTABLISHED. TIME EXTENSIONS TO THE CONTRACT TIME WILL NOT BE GRANTED FOR DELAYS CAUSED BY INCOMPLETE CONSTRUCTION OR INADEQUATE CONTRACTOR PREPARATIONS REQUIRED TO COMPLETE TRAFFIC SIGNAL SYSTEM WITHIN THE TIMEFRAME SET FORTH IN THE CONTRACT.
3.

PRIOR TO ACTIVATING A NEW TRAFFIC SIGNAL, THE CONTRACTOR SHALL REQUEST A PRE-TURN ON WALK-THROUGH INSPECTION MEETING, IN ACCORDANCE WITH ITEM 2. THE PURPOSE OF THE MEETING WILL BE TO ESTABLISH THAT THE TRAFFIC SIGNAL SYSTEM HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT, AND IN A MANNER THAT DOES NOT ADVERSELY IMPACT PUBLIC SAFETY. THIS MEETING SHALL BE ATTENDED BY THE TRAFFIC INSPECTOR, THE ENGINEER OF RECORD, AND THE CONTRACTOR. AS A MINIMUM, ANY DEFICIENCIES THAT ADVERSELY IMPACT PUBLIC SAFETY WILL BE IDENTIFIED FOR CORRECTION PRIOR TO ESTABLISHING THE “TURN ON” DATE FOR THE TRAFFIC SIGNAL SYSTEM. ITEMS THAT HAVE AN IMPACT ON PUBLIC SAFETY INCLUDE, BUT ARE NOT LIMITED TO: PAVEMENT MARKINGS AND SIGNAGE, PROPER AND ACCEPTABLE BONDING OF EARTH GROUNDS, PROPERLY ALIGNED TRAFFIC SIGNALS, FULLY OPERATIONAL VEHICULAR AND PEDESTRIAN DETECTION, COMPLETED CABINET-TO-FIELD WIRING, AND PROPERLY TERMINATED ELECTRICAL SERVICE CONDUCTORS. FAILURE TO ADDRESS THE PUNCHLIST ITEMS IDENTIFIED AS BEING CRITICAL TO PUBLIC SAFETY PRIOR TO THE PRE-TURN ON WALK-THROUGH MEETING WILL RESULT IN THE “TURN ON” BEING POSTPONED TO ALLOW ADEQUATE TIME FOR THE INCOMPLETE ITEMS TO BE COMPLETED. AT SUCH TIME AS MEETING ATTENDEES AGREE THAT THE TRAFFIC SIGNAL HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT, AND THAT THE TRAFFIC SIGNAL, AS IT EXISTS, IS NOT A THREAT TO PUBLIC SAFETY, A “TURN ON” DATE WILL BE ESTABLISHED.
4.

THE CONTRACTOR SHALL HAVE 10 DAYS FROM THE DATE THE TRAFFIC SIGNAL SYSTEM IS TURNED ON TO COMPLETE ANY PUNCHLIST ITEMS IDENTIFIED AT THE PRE-“TURN ON” WALK-THROUGH MEETING OR AT THE TIME THE SIGNAL SYSTEM IS ACTIVATED THAT ARE NOT OTHERWISE ADDRESSED PRIOR TO ACTIVATION OF THE TRAFFIC SIGNAL SYSTEM.
5.

THE CONTRACTOR’S ATTENTION IS DIRECTED TO TXDOT STANDARD SPECIFICATION ITEM 680, TRAFFIC SIGNAL INSTALLATION AND MODIFICATION, WHICH INCLUDES PROCEDURES AND REQUIREMENTS REGARDING ACTIVATION OF TRAFFIC SIGNAL CONTROL SYSTEMS. THE PROJECT MANUAL MAY INCLUDE SPECIAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS RELATED TO PROPOSED TRAFFIC CONTROL SIGNAL SYSTEM INSTALLATION(S) AND MODIFICATION(S) REQUIRING THE CONTRACTOR’S ADHERENCE TO DEFINED CHECKLISTS, PROCEDURES AND/OR REPORTS AT NO ADDITIONAL COST TO THE COUNTY BEYOND THE ESTABLISHED BID ITEMS OF THE CONTRACT.
6.

ALL SIGNAL ALTERATIONS MUST BE APPROVED AND COORDINATED THROUGH FBC ENGINEERING AND ROAD & BRIDGE.

TRAFFIC CONTROL

1.

THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE MOST RECENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE APPROVED TRAFFIC CONTROL PLAN.
2.

THE CONTRACTOR SHALL MAINTAIN AT LEAST ONE LANE OF TRAFFIC IN EACH DIRECTION DURING WORKING HOURS EXCEPT DURING FLAGGING OPERATION
3.

LANE CLOSURES SHALL BE DURING OFF-PEAK HOURS ONLY (MONDAY THROUGH FRIDAY 9 A.M. TO 4 P.M.) UNIFORMED PEACE OFFICERS OR FLAGGERS IN RADIO CONTACT ARE REQUIRED TO DIRECT TRAFFIC DURING LANE CLOSURES.
4.

DETOURS REQUIRE PRIOR APPROVAL OF THE FIELD ENGINEER AND PRECINCT. DETOUR PLANS, IF ALLOWED, MUST INCLUDE APPROPRIATE DETOUR SIGNAGE, PUBLIC NOTICE VIA SIGNAGE TWO WEEKS IN ADVANCE STATING THE DATES OF THE AGREED UPON DATE OF CLOSURE AND DATE THE ROAD WILL RE-OPEN TO TRAFFIC. CONTRACTOR TO USE (WITH PRIOR APPROVAL OF THE FIELD ENGINEER) HIGH EARLY STRENGTH CONCRETE AND OTHER RELATED CONSTRUCTION METHODS TO MINIMIZE THE DURATION OF THE DETOUR AND TO ENSURE THAT THE ROADWAY IS OPEN ON, OR PRIOR TO, THE AGREED UPON DATE.
5.

ONE DAY PRIOR TO THE IMPLEMENTATION OF A TRAFFIC CONTROL PLAN PHASE OR STEP, OR THE IMPLEMENTATION OF AN ADDITIONAL, REVISED, OR NEW TRAFFIC CONTROL ELEMENT, THE CONTRACTOR SHALL MEET WITH THE ENGINEER TO GIVE A DETAILED DESCRIPTION OF THE CONTRACTOR’S PLAN AND PREPARATIONS. THE CONTRACTOR SHALL OBTAIN WRITTEN CONCURRENCE FROM THE ENGINEER THAT ADEQUATE PROJECT PROGRESS HAS BEEN ACHIEVED AND THAT ADEQUATE PREPARATIONS ARE IN PLACE PRIOR TO SWITCHING TRAFFIC. IF, IN THE OPINION OF THE ENGINEER, REQUIRED PROGRESS AND ADEQUATE PREPARATIONS ARE NOT COMPLETE, THE CONTRACTOR SHALL NOT IMPLEMENT THE NEXT PHASE, STEP, OR ELEMENT OF TRAFFIC CONTROL UNTIL INCOMPLETE CONSTRUCTION ITEMS OR PREPARATIONS ARE COMPLETED. TIME EXTENSIONS WILL NOT BE GRANTED FOR DELAYS CAUSED BY THE INCOMPLETE CONSTRUCTION ITEMS OR INADEQUATE CONTRACTOR PREPARATIONS REQUIRED TO IMPLEMENT TRAFFIC CONTROL.
6.

TRAFFIC CONTROL PER THE CONTRACT IS REQUIRED FOR THE ENTIRE DURATION OF THE PROJECT, INCLUDING THE PUNCHLIST PERIOD. PAYMENT FOR TRAFFIC CONTROL THAT IS PROPERLY INSTALLED FOR LESS THAN A FULL MONTH SHALL BE BASED ON A PERCENTAGE BASIS OF THE TIME INSTALLED. TRAFFIC CONTROL PAYMENTS TO THE CONTRACTOR SHALL END 10 DAYS AFTER SUBSTANTIAL COMPLETION, ALTHOUGH PROPER TRAFFIC CONTROL MUST BE MAINTAINED UNTIL PUNCHLIST COMPLETION.
7.

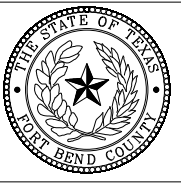
THE PURPOSE OF THE CONSTRUCTION SEQUENCE AND TRAFFIC HANDLING OUTLINED HEREIN IS TO DOCUMENT A VIABLE TCP THAT CAN BE UTILIZED TO CONSTRUCT THE PROJECT. IT IS THE BASIS OF ESTIMATION FOR THE TRAFFIC CONTROL BID ITEMS, AND IS TO BE UTILIZED AND IMPLEMENTED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT TCP, HE/SHE SHALL PREPARE AND SUBMIT THE ALTERNATIVE TCP TO THE COUNTY FOR APPROVAL NO LESS THAN 10 WORKING DAYS PRIOR TO THE PROPOSED IMPLEMENTATION DATE. THE TCP SHALL BE DRAWN TO SCALE AND SIGNED & SEALED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS. UPON APPROVAL BY FORT BEND COUNTY, THE ALTERNATIVE PLAN SHALL BECOME THE BASIS FOR A “CHANGE IN CONTRACT” TO REVISE THE TRAFFIC CONTROL BID ITEMS ACCORDINGLY AND BECOME PART OF THE CONTRACT DOCUMENTS.
8.

ALL TEMPORARY PAVEMENT MARKINGS ON PERMANENT PAVEMENT SHOULD BE RPMS OR TABS.
9.

TRAFFIC PATTERN CHANGES REQUIRE CHANGEABLE MESSAGE BOARDS PLACED AT LEAST 2 WEEKS IN ADVANCE OF PROPOSED CHANGE. QUANTITY, PLACEMENT AND WORDING TBD BY FBC.

NO.	REVISIONS	DATE	NAME
	ORIGINAL STANDARD ISSUED	3-1-22	RJS
	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT








PROJECT TITLE:			
DRAWN BY: INIT			FBCD STANDARD  03
CK'D BY: INIT	SHEET DESCRIPTION: PUBLIC WORKS AND SUBDIVISION		
SCALE: NONE	GENERAL NOTES		SHEET NO:  /
DATE: 10-1-24	APPROVED BY:		



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TRAFFIC SIGNAL

1. INSTALL SIGNS AND SIGNALS HORIZONTALLY ON MAST ARM 17 FT-6 IN MINIMUM ABOVE THE ROADWAY.
2. FURNISH BLACK HOUSING FOR VEHICLE SIGNALS WITH 12-IN LENS AND REFLECTIVE BACKPLATES.
3. TRAFFIC SIGNAL STRAIN POLES AND MAST ARMS SHALL BE STANDARD GALVANIZED. (SIGNAL POLES AND MAST ARMS SHALL BE POWDER-COATED IN BLACK POLES UNLESS OTHER ENTITY IS PAYING FOR UPGRADES.)
4. FURNISH VEHICLE AND COUNTDOWN PEDESTRIAN SIGNALS WITH LIGHT EMITTING DIODE (LED) SIGNAL LAMP UNITS.
5. SYMBOLIC PEDESTRIAN SIGNAL HEAD SHALL BE LED AUDIBLE PEDESTRIAN AND 12-IN COUNTDOWN.
6. USE DIAMOND GRADE RETROREFLECTIVE SHEETING FOR SIGNS MOUNTED UNDER OR ADJACENT TO THE SIGNAL HEADS.
7. FURNISH SYMBOL TYPE PEDESTRIAN COUNTDOWN SIGNALS. INSTALL USING MOUNTING HEIGHT IN ACCORDANCE WITH THE LATEST "TEXAS MANUAL ON UNIFORM CONTROL DEVICES."
8. FURNISH MATERIALS NECESSARY TO INSTALL ACCESSIBLE PEDESTRIAN UNITS (SEE FBC APPROVED TRAFFIC SIGNAL EQUIPMENT LIST) AS SHOWN IN THE PLANS. INSTALL PUSH BUTTON AT 3 FT-6 IN. TO 4 FT.-0 IN ABOVE THE SIDEWALK OR CONCRETE WALKWAY.
9. ROUTE CABLE FOR LUMINAIRES (4/C NO. 12 TRAY CABLE) TO THE SERVICE ENCLOSURE. SEE ELECTRICAL DETAILS SHEET.
10. INSTALL FULL-ACTUATED, ETHERNET-CAPABLE CONTROLLER WITH INTERNAL TIME BASED COORDINATION UNIT AND COMMUNICATION IN A BASE MOUNTED CABINET. SEE FBC APPROVED TRAFFIC SIGNAL EQUIPMENT LIST.
11. LOCATE CONTROLLERS, STEEL POLES, DETECTION ZONES AS APPROVED BY FORT BEND COUNTY IN THE FIELD.
12. REPAIR OR REPLACE PAVEMENT AND SIDEWALKS DAMAGED BY THE CONTRACTOR'S FORCES DURING CONSTRUCTION AT NO COST TO THE COUNTY.
13. FURNISH AND INSTALL DUCT SEAL TO ENCLOSE THE ENDS OF EACH CONDUIT CONTAINING SIGNAL CABLE.
14. THE CONTRACTOR SHALL INSTALL A CLOSED NIPPLE WITH LOCK NUT AND BUSHING (SIZE AS REQUIRED) TO PREVENT ABRASION TO SIGNAL CABLE WHERE THE CABLE ENTERS THE UPPER PORTION OF THE SIGNAL POLE.
15. DO NOT PLACE SIGNAL HEADS OVER THE ROADWAY UNTIL ALL NECESSARY MATERIALS ARE ON HAND AS APPROVED.
16. INSTALL TWO SET SCREWS ON ALL VEHICLE SIGNAL HEAD MOUNTING HARDWARE FITTINGS.
17. WRAP SIGNAL HEADS WITH DARK PLASTIC OR SUITABLE MATERIAL TO CONCEAL THE SIGNAL FACES FROM THE ITEM OF INSTALLATION UNTIL PLACING INTO OPERATION. DO NOT USE BURLAP.
18. INSTALL A 5/8-IN (MINIMUM) EYE BOLT FOR THE POINT OF ATTACHMENT BELOW THE SERVICE ENTRANCE WEATHERHEAD FOR THE SERVICE DROP (120/240 VOLT SERVICE) TO STEEL POLE.
19. LUMINAIRES MOUNTED ON TRAFFIC SIGNAL POLES SHALL BE IN COMPLIANCE WITH TXDOT STANDARDS.
20. PROVIDE LIGHT-EMITTING DIODE (LED) LUMINAIRES EQUIVALENT TO "250 WATT HIGH PRESSURE SODIUM" LUMINAIRES, OPERATING AT 240 VOLTS.
21. GROUND STEEL MAST ARM POLE ASSEMBLIES IN ACCORDANCE WITH REQUIREMENTS SHOWN ON THE LATEST TXDOT TRAFFIC SIGNAL POLE FOUNDATION STANDARD. USE THE GROUNDING LUG ON THE POLE TO GROUND THE POLE TO THE GROUND CONDUCTORS FROM THE CONDUITS.
22. VERIFY THE CORRECT MAST ARM POLE LENGTHS FOR THE ULTIMATE CONFIGURATION OF THIS SIGNALIZED INTERSECTION PRIOR TO ORDERING THE EQUIPMENT.
23. ELECTRICAL POWER TO OPERATE THE TRAFFIC SIGNAL INSTALLATION WILL BE PLACED IN THE COUNTY'S NAME. THIS INCLUDES ALL POWER TO OPERATE THE SIGNAL DURING THE VARIOUS PHASES OF CONSTRUCTION AND DURING THE TEST PERIOD PRIOR TO ACCEPTANCE OF THE WORK BY FORT BEND COUNTY.
24. INSTALL PEDESTRIAN SIGNAL POLES WITH SCREW-IN ANCHOR FOUNDATION.
25. THE ENGINEER WILL PROVIDE PHASING AND TIMINGS FOR TEMPORARY AND PERMANENT TRAFFIC SIGNALS.
26. EXISTING STOP SIGNS AND SCHOOL CROSSING ASSEMBLIES AT THE INTERSECTION SHALL BE REMOVED AND RETURNED TO FORT BEND COUNTY.
27. ALL EXISTING EQUIPMENT THAT WILL NOT BE INSTALLED ON THE SIGNAL POLES AND/OR MAST ARMS SHALL BE RETURNED TO FORT BEND COUNTY.
28. ALL TRAFFIC SIGNAL POLE FOUNDATION LOCATIONS SHALL BE APPROVED BY THE ENGINEER OR REPRESENTATIVE IN THE FIELD PRIOR TO DRILLING.
29. FURNISH VIDEO IMAGING VEHICLE DETECTION SYSTEM (VIVDS) CABLE RECOMMENDED BY MANUFACTURER OR PURCHASE CABLE FROM THE SAME MANUFACTURER THAT SUPPLIED/PROVIDED THE VIVDS EQUIPMENT.
30. THE LOCATION OF THE VIVDS DETECTION ZONE IS APPROXIMATE. THE EXACT LOCATION WILL BE DETERMINED BY THE ENGINEER AND/OR FORT BEND COUNTY ROAD AND BRIDGE SIGNAL TECHNICIANS.
31. THE VENDORS' REPRESENTATIVES OF THE VIVDS EQUIPMENT SUPPLIED FOR THIS PROJECT MUST SUPERVISE THE INSTALLATION, SETUP AND TESTING. THE REPRESENTATIVE MUST BE ON SITE DURING THIS TIME. ANY EQUIPMENT REQUIRED FOR SETUP AND OPERATION OF THE VIVDS DEVICES MUST BE PROVIDED TO THE COUNTY UPON COMPLETION.

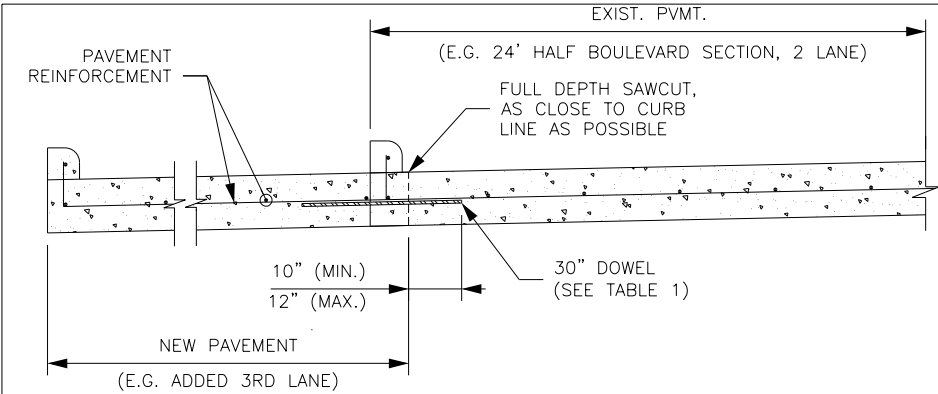
NO.	REVISIONS	DATE	NAME
	ORIGINAL STANDARD ISSUED	3-1-22	RJS
	UPDATED NOTE 2	10-1-24	RJS
			
			
			

FORT BEND COUNTY  
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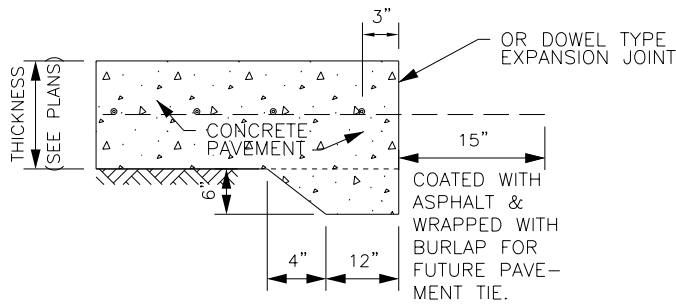
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DATE:	10-1-24		

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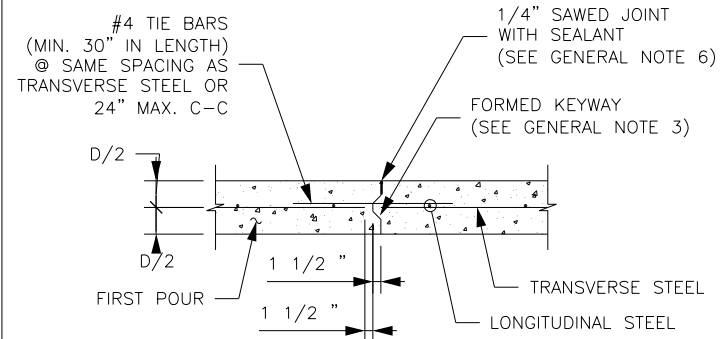


TYPICAL CONCRETE ROADWAY  
WIDENING DETAIL  
SCALE: 1" = 1'-6"

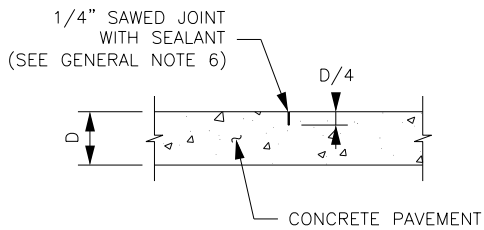
TABLE 1 (CONSTRUCTION JOINT DOWELS)	
DOWEL SIZE	PAVEMENT DEPTH
#4 BAR	< 6"
#5 BAR	6" ≤ D < 9"
#6 BAR	≥ 9"
DOWEL SHALL BE DRILLED INTO EXISTING PAVEMENT (MIN. 10", MAX. 12") AND EPOXIED. (SEE HC ITEM 361.3).	



PAVEMENT HEADER  
REQUIRES FBC APPROVAL



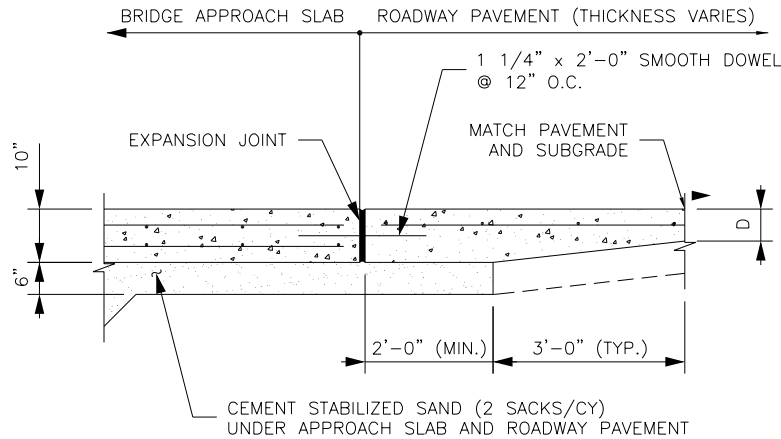
LONGITUDINAL CONSTRUCTION JOINT  
SCALE: 1" = 1'-6"



CONTRACTION JOINT (SAWED)  
SCALE: 1" = 1'-6"

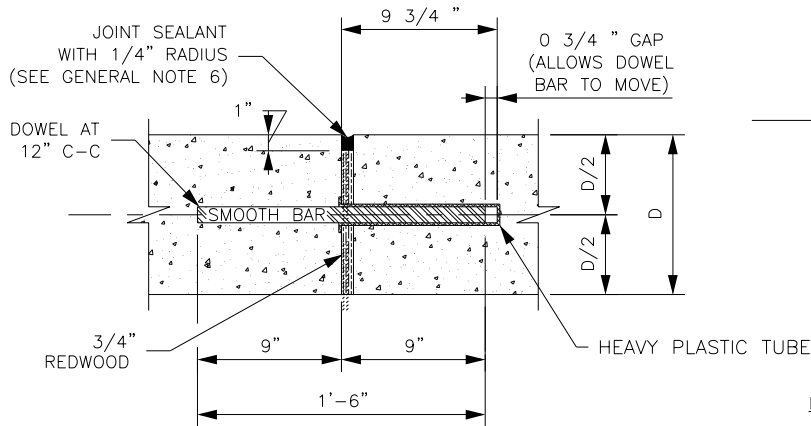
NOTE FOR CONTRACTION JOINT:

- 20'-0" MAXIMUM SPACING BETWEEN JOINTS.



TYPICAL SECTION  
PAVING TIE-IN TO BRIDGE APPROACH SLAB  
SCALE: 1" = 1'-6"

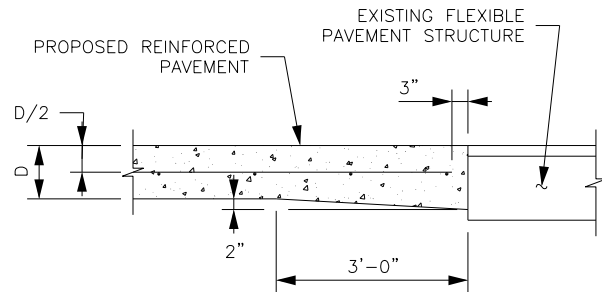
EXPANSION JOINT DOWELS 12" O.C.	
PAVEMENT THICKNESS (D)	DOWEL DIA.
6"	3/4"
7"	1"
8"	1"
9" & 10"	1 1/4"



DOWEL TYPE EXPANSION JOINT  
SCALE: 1" = 6"

NOTES FOR DOWEL EXPANSION JOINT:

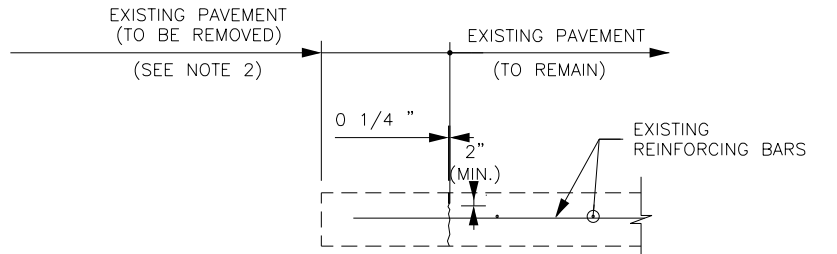
- EXPANSION JOINT SHALL BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 60 FEET.
- CENTER DOWEL HORIZONTALLY ON JOINT.
- EXPANSION JOINT BARS SHALL BE HELD PARALLEL TO THE FINISHED CONCRETE SURFACE.



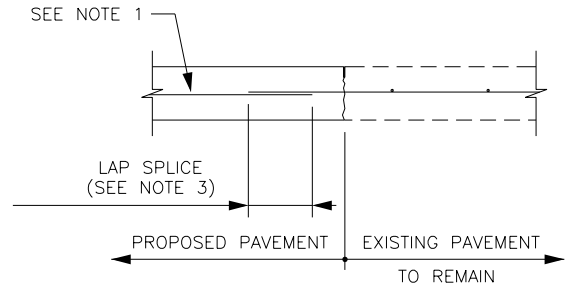
TYPICAL PAVING HEADER  
SCALE: 1" = 1'-6"

NOTES FOR PAVING HEADER:

- ADDITIONAL CONCRETE FOR PAVING HEADER SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAVING BID ITEMS.
- DISTURBED MATERIAL IN THE FLEXIBLE PAVEMENT WILL BE BACKFILLED WITH ASPHALT CONCRETE PAVEMENT (ACP). THE ACP WILL BE CONSIDERED INCIDENTAL TO VARIOUS PAVING BID ITEMS.



STEP 1 DEMOLITION OF EXISTING PAVEMENT



STEP 2 CONSTRUCTION OF NEW PAVEMENT

CONCRETE TO CONCRETE  
STANDARD PAVEMENT TIE-IN  
SCALE: 1" = 1'-6"

NOTES FOR STANDARD PAVEMENT TIE-IN:

- REINFORCING CENTERED IN PROPOSED PAVEMENT, 3" CLEAR AT EDGES.
- ONLY FULL DEPTH SAWCUTS WILL BE ALLOWED
- USE FULL DEPTH SAWCUT WITH DRILLED IN DOWELS (AS SHOWN IN THE "TYPICAL CONCRETE ROADWAY WIDENING DETAIL" ON THIS SHEET. THE SAWCUTTING AND DOWELS WILL BE AT CONTRACTOR'S EXPENSE.
- ALL PAVEMENT CONCRETE SHALL BE 5½ SACK PER CY, 3500, PSI AT 28 DAYS
- SIZE OF DOWEL BARS SHALL CONFORM TO TABLE 1. DOWELS SHALL BE PLACED 24" CENTER TO CENTER OR MATCH EXISTING, IF CLOSER

GENERAL NOTES:

- FOR FURTHER INFORMATION REGARDING THE PLACEMENT OF CONCRETE AND REINFORCING, REFER TO HC ITEM 360 HARRIS COUNTY SPECIFICATIONS
- THE CHAIRS USED TO SUPPORT THE BAR MATS SHALL BE OF SUFFICIENT STRUCTURAL QUALITY AND NUMBER TO HOLD THE MAT WITHIN THE PLACEMENT HEIGHT, AND SHALL BE OF A TYPE APPROVED BY THE ENGINEER. SPACING OF BAR SUPPORT CHAIRS SHALL BE 3'-0" MAXIMUM.
- SAWED CONTRACTION JOINTS SHALL BE USED FOR LONGITUDINAL JOINTS WHEREVER MORE THAN ONE LANE WIDTH IS PLACED IN A SINGLE POUR. KEYED CONSTRUCTION JOINTS SHALL BE USED AT ALL OTHER JOINTS.
- ALL SAW CUTTING SHOWN ON THIS DETAIL SHALL BE INCIDENTAL TO HC ITEM 360 "CONCRETE PAVEMENT".
- D = THICKNESS OF CONCRETE PAVEMENT.
  - FOR DEVELOPMENT PROJECTS SEE REGULATIONS OF FORT BEND COUNTY, TEXAS FOR THE APPROVAL AND ACCEPTANCE OF INFRASTRUCTURE.
- ALL CONSTRUCTION JOINTS SHALL BE SEALED. JOINT SEALANT SHALL CONFORM TO THE REQUIREMENTS OF HC ITEM 360
- NO TRAFFIC ON CONCRETE PAVEMENT UNTIL 7 DAYS CURE TIME AND 3,500 PSI HAS BEEN REACHED.
- MEMBRANE CURING HC ITEM 802.

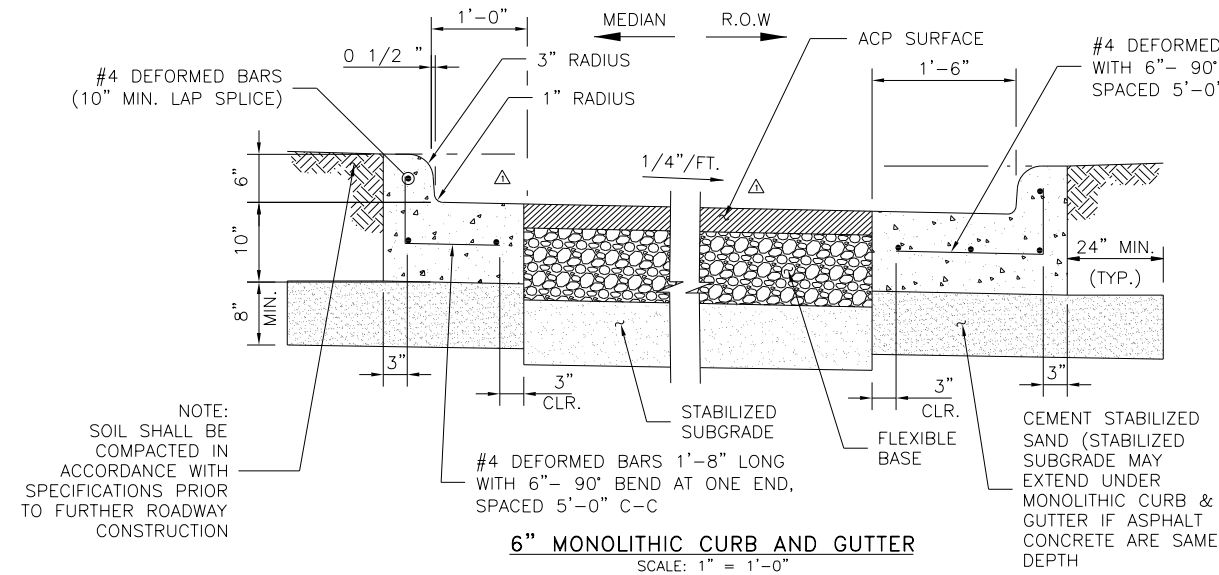
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	REMOVED UNDERCUT DETAIL, ADDED NOTE 8	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



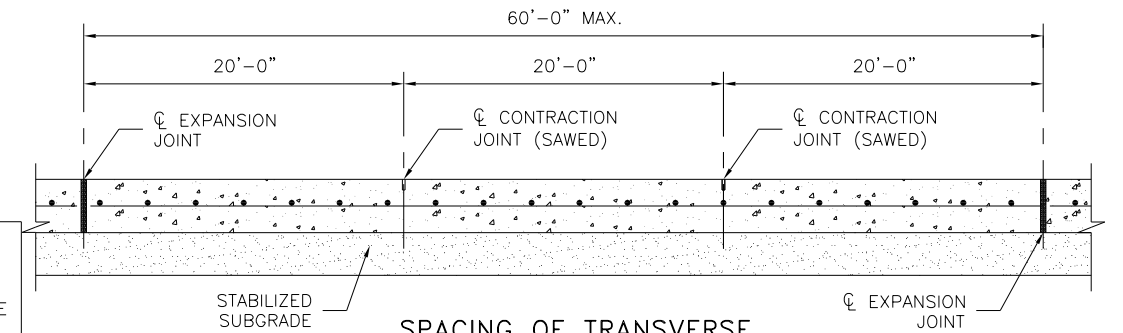
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CK'D BY: INIT		05
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DATE: 10-1-24		
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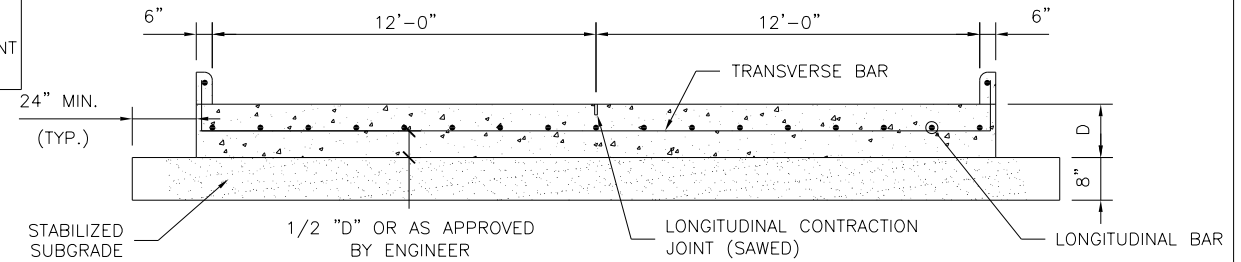
**SLAB AND REBAR NOTES:**

1. TYPICAL SLAB THICKNESS D=8"
2. TYPICAL REBAR SIZE AND SPACING ARE:  
a. #4 BAR @ 18" C-C LONGITUDINAL  
b. #4 BAR @ 18" C-C TRANSVERSE
3. REBAR SIZE FOR PAVEMENT LESS THAN 8" THICK  
a. #4 BAR @ 24" C-C LONGITUDINAL  
b. #4 BAR @ 24" C-C TRANSVERSE
4. REBAR SHALL NOT BE PLACED WITHIN 3" FROM THE EDGE OF PAVEMENT.
5. TYPICAL STABILIZED SUBGRADE THICKNESS IS 8 INCHES.
6. FOR HEAVY INDUSTRIAL TRAFFIC, SLAB THICKNESS AND REBAR SIZE AND SPACING WILL BE AS PER GEOTECHNICAL RECOMMENDATION.
7. ALL BENT BARS SHALL BE GRADE 40 STEEL, ALL OTHER SHALL BE GRADE 60.
8. MINIMUM LAP SPLICE 16".
9. LAP SPLICES SHOULD BE ON ALTERNATING BARS, ADJACENT LAP SPLICES ARE NOT ACCEPTABLE.



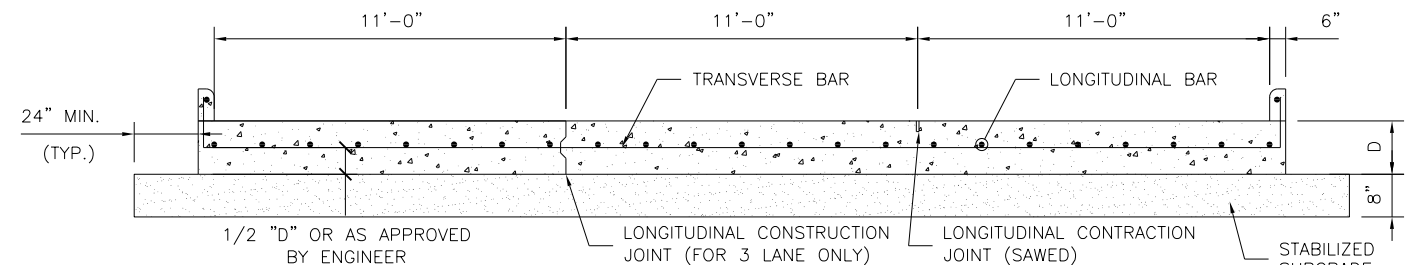
**SPACING OF TRANSVERSE EXPANSION AND CONTRACTION JOINTS**

HORIZONTAL SCALE: 1" = 6'-0"  
VERTICAL SCALE: 1" = 1'-6"



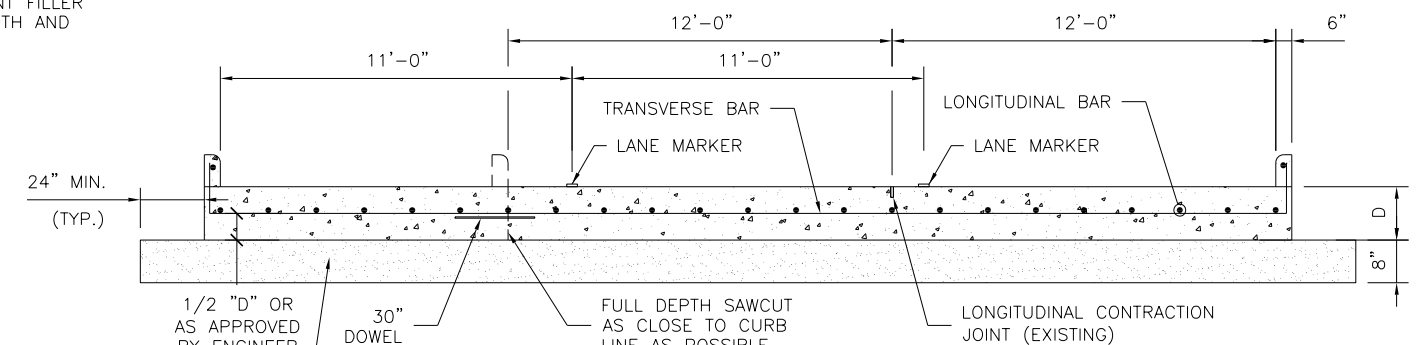
**TYPICAL STEEL REBAR REPLACEMENT AND SPACING OF LONGITUDINAL JOINTS (NEW CONSTRUCTION FOR A 4 LANE HALF BOULEVARD)**

HORIZONTAL SCALE: 1" = 3'-0"  
VERTICAL SCALE: 1" = 1'-6"



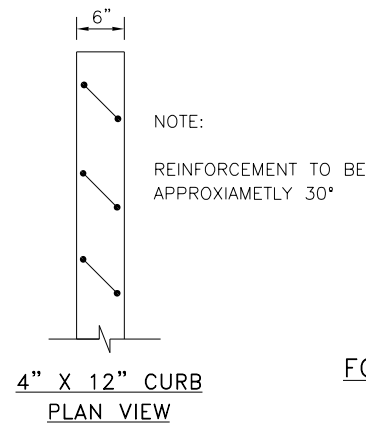
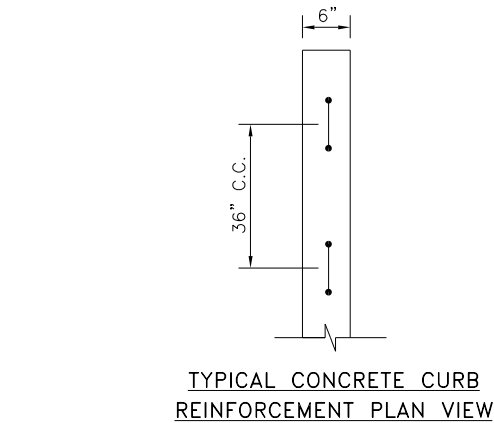
**TYPICAL STEEL REBAR REPLACEMENT AND SPACING OF LONGITUDINAL JOINTS (NEW CONSTRUCTION FOR A 6 LANE HALF BOULEVARD)**

HORIZONTAL SCALE: 1" = 3'-0"  
VERTICAL SCALE: 1" = 1'-6"



**SPACING OF LONGITUDINAL JOINTS (WIDENING)**

HORIZONTAL SCALE: 1" = 3'-0"  
VERTICAL SCALE: 1" = 1'-6"

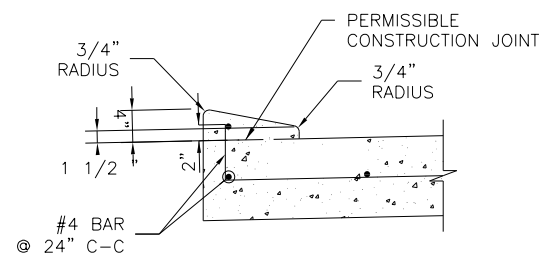
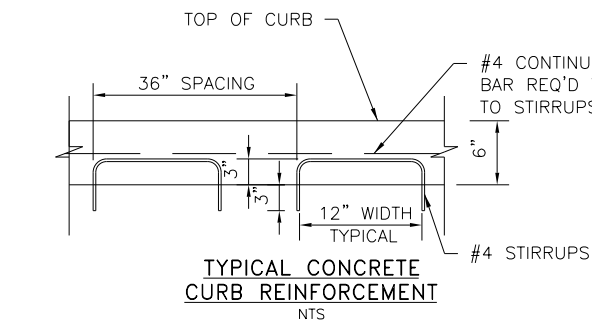


**CONCRETE DOWELED ON CURB FOR CONCRETE OR ASPHALT PAVEMENT**

SCALE: 1" = 1'-0"

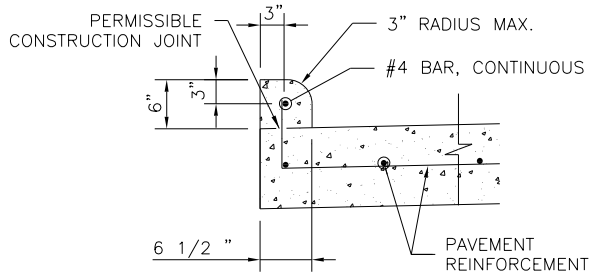
**NOTES FOR CURB:**

1. AT EACH PAVEMENT CONTRACTION JOINT, PROVIDE A 1/4" THICK PRE-MOLDED EXPANSION JOINT AT THE FULL WIDTH AND HEIGHT OF THE CURB.
2. FOR EACH PAVEMENT EXPANSION JOINT, THE PRE-MOLDED EXPANSION JOINT FILLER MATERIAL SHALL BE THE FULL WIDTH AND HEIGHT OF THE CURB.



**4 inch X 12 inch CURB (MONOLITHIC OR DOWEL)**

SCALE: 1" = 1'-0"



**TYPICAL CONCRETE CURB REINFORCING DETAILS**

SCALE: 1" = 1'-0"

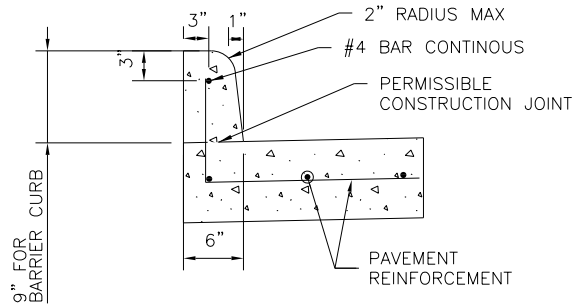
NO.	REVISIONS	DATE	NAME
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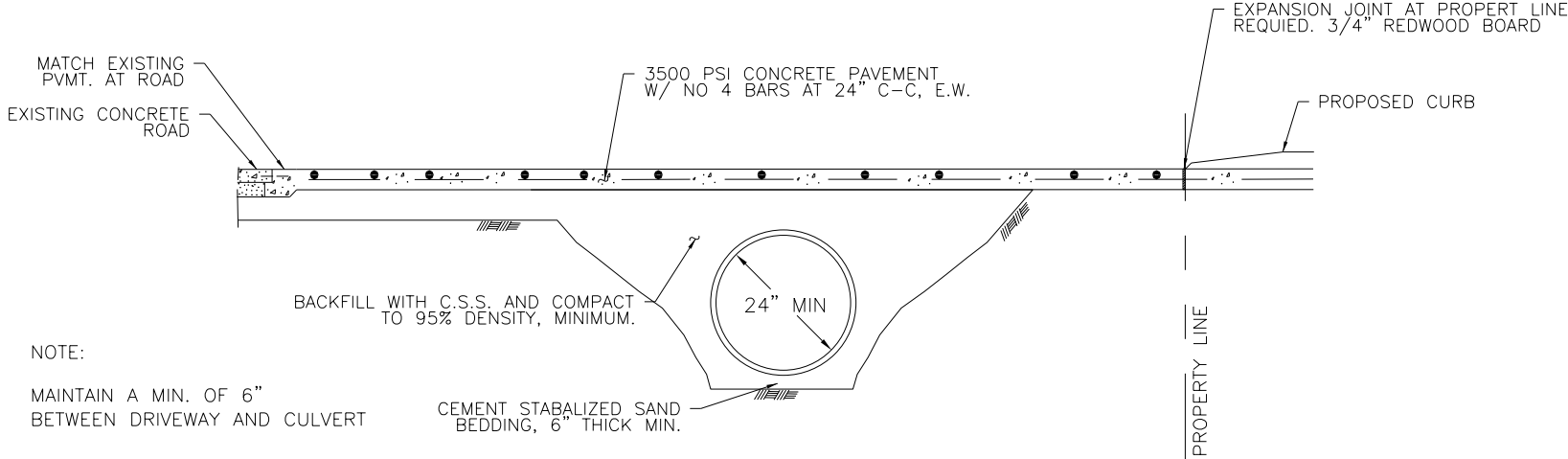


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CK'D BY: INIT		06
SCALE: AS NOTED	SHEET 2 OF 3	SHEET NO:
DATE: 3-1-22		
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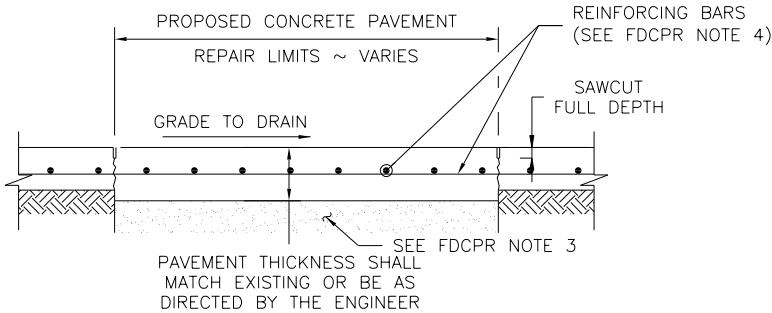
9" BARRIER CURB



NOTE:

MAINTAIN A MIN. OF 6" BETWEEN DRIVEWAY AND CULVERT

CONCRETE APRON DETAIL – DRIVEWAY PROFILE FOR CULVERT DRAINAGE



FULL DEPTH CONCRETE PAVEMENT REPAIR

HORIZONTAL SCALE: 1" = 3'-0"  
VERTICAL SCALE: 1" = 1'-6"

FULL DEPTH CONCRETE PAVEMENT REPAIR (FDCPR) NOTES:

1. ONLY FULL DEPTH SAWCUTS WILL BE ALLOWED
2. EXISTING CONCRETE VERTICAL FACES SHALL BE CLEANED OF ALL DELETERIOUS LOOSE MATERIAL PRIOR TO CONCRETE PLACEMENT.
3. FOR REPAIR/REPLACE AREAS, A 8" DEPTH BASE SHALL BE REMOVED AND REPLACED WITH CEMENT STABILIZED SAND PER ITEM 400 HARRIS COUNTY SPECIFICATIONS.
4. REINFORCEMENT OF 9"-10" THICK CONCRETE PAVEMENT SHALL BE NO. 5 BARS AT 18" SPACING IN EACH DIRECTION. REFER TO TABLE ON CONCRETE PAVEMENT SHEET 2 OF 2
5. REFER TO FBC STREET ACCEPTANCE GUIDELINES

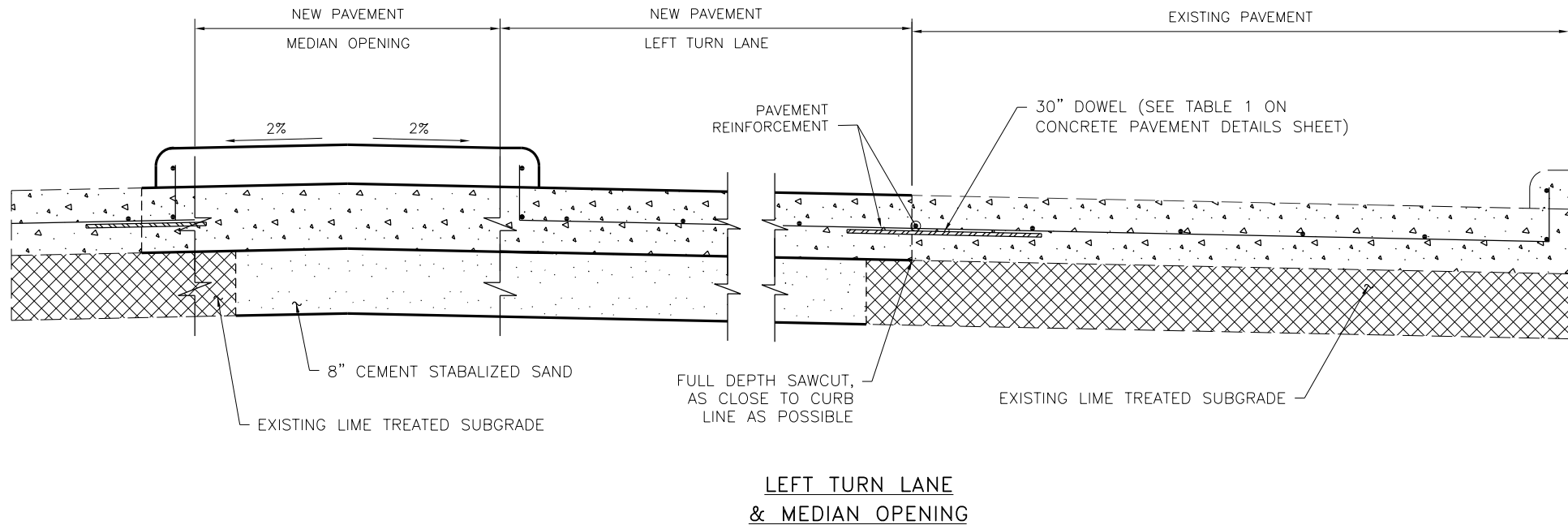
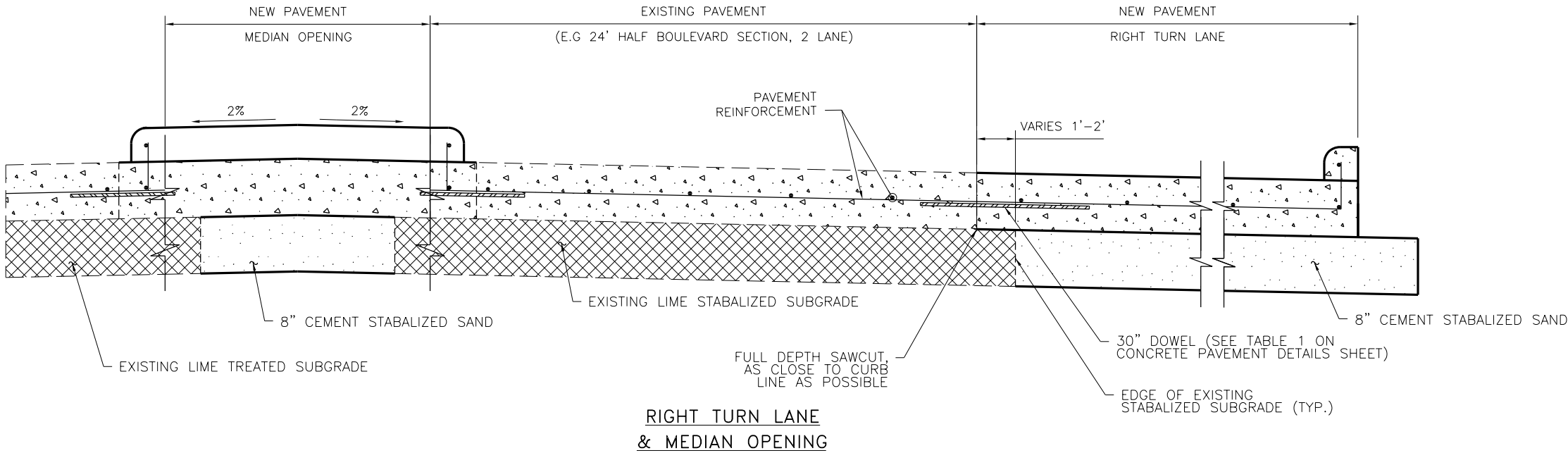
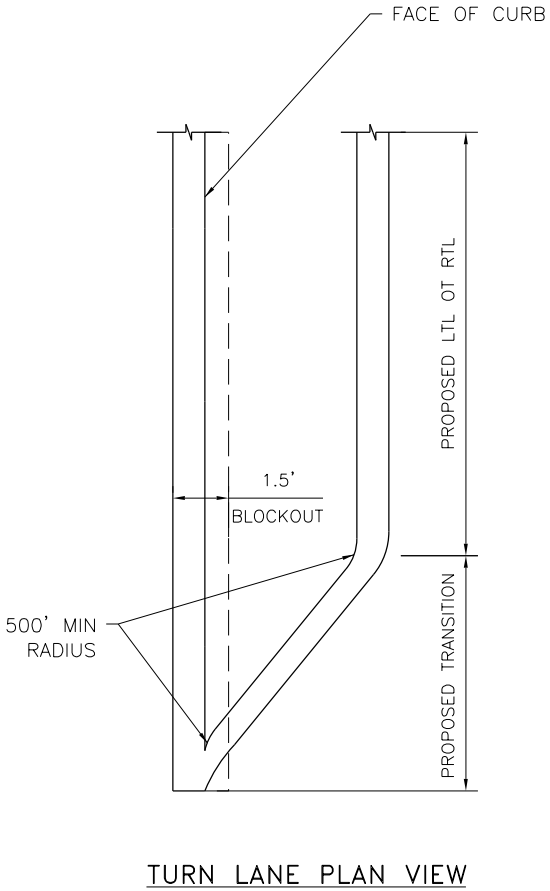
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED HC SPEC ITEM REFERENCE (NOTE 3)	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY: INIT	SHEET DESCRIPTION: CONCRETE PAVEMENT DETAILS		FBCE STANDARD
CK'D BY: INIT			07
SCALE: AS NOTED	SHEET 3 OF 3		SHEET NO:  /
DATE: 10-1-24	APPROVED BY:		

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NOTES

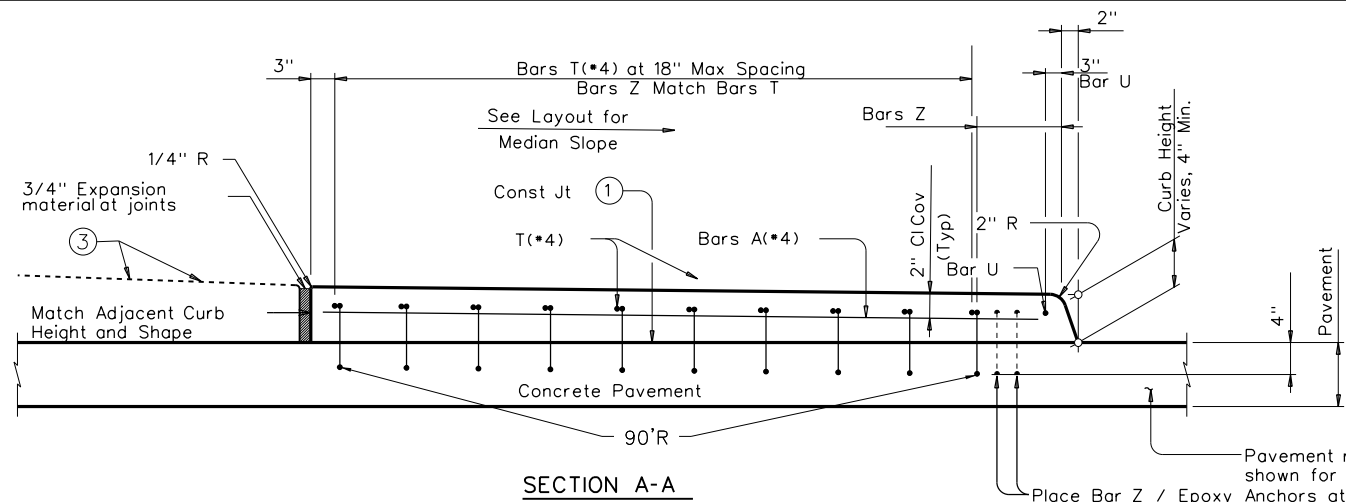
- FOR CONCRETE PAVEMENT REINFORCEMENT AND JOINT DETAILS, SEE CONCRETE PAVEMENT DETAILS SHEET
- ALL TURN LANE AND MEDIAN OPENINGS SHALL HAVE THE SAME SURFACE AS THE EXISTING STREET.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED NOTE 2	10-1-24	RJS

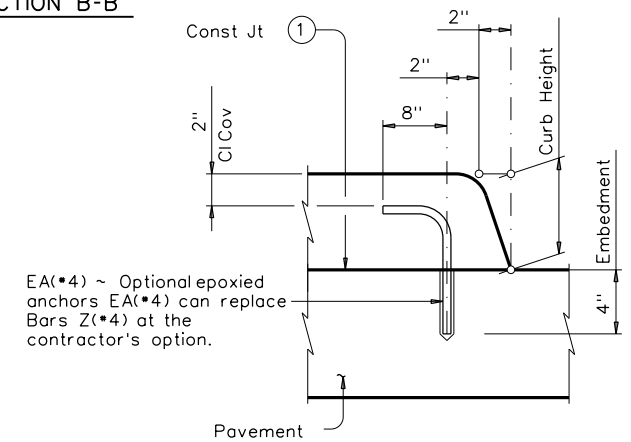
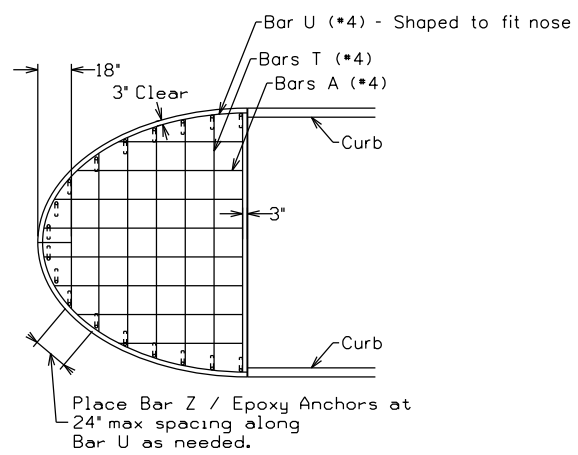
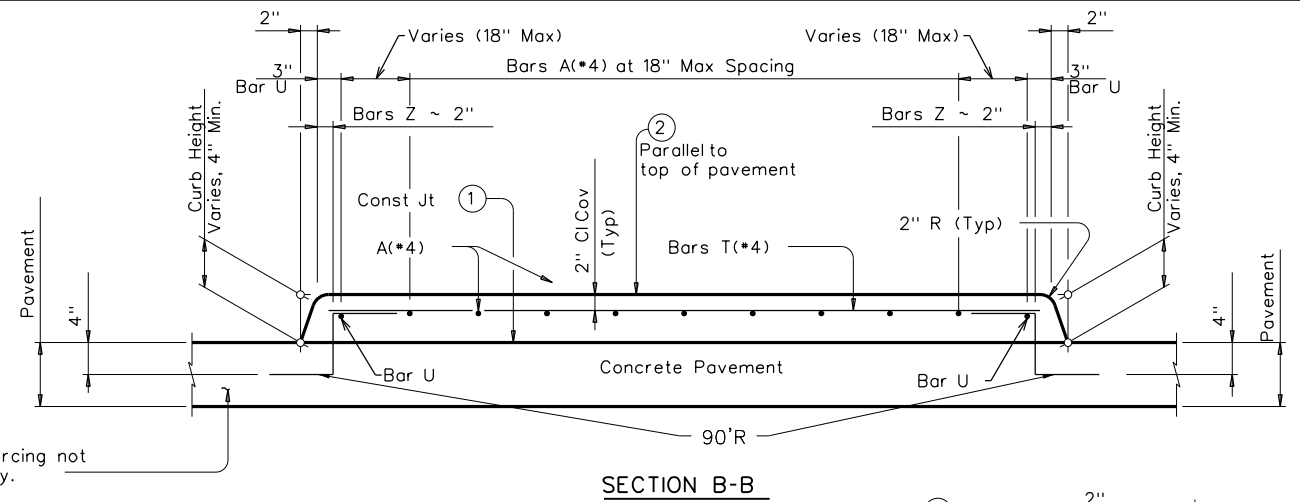
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
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CK'D BY: INIT		SHEET NO: /
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DATE: 10-1-24		

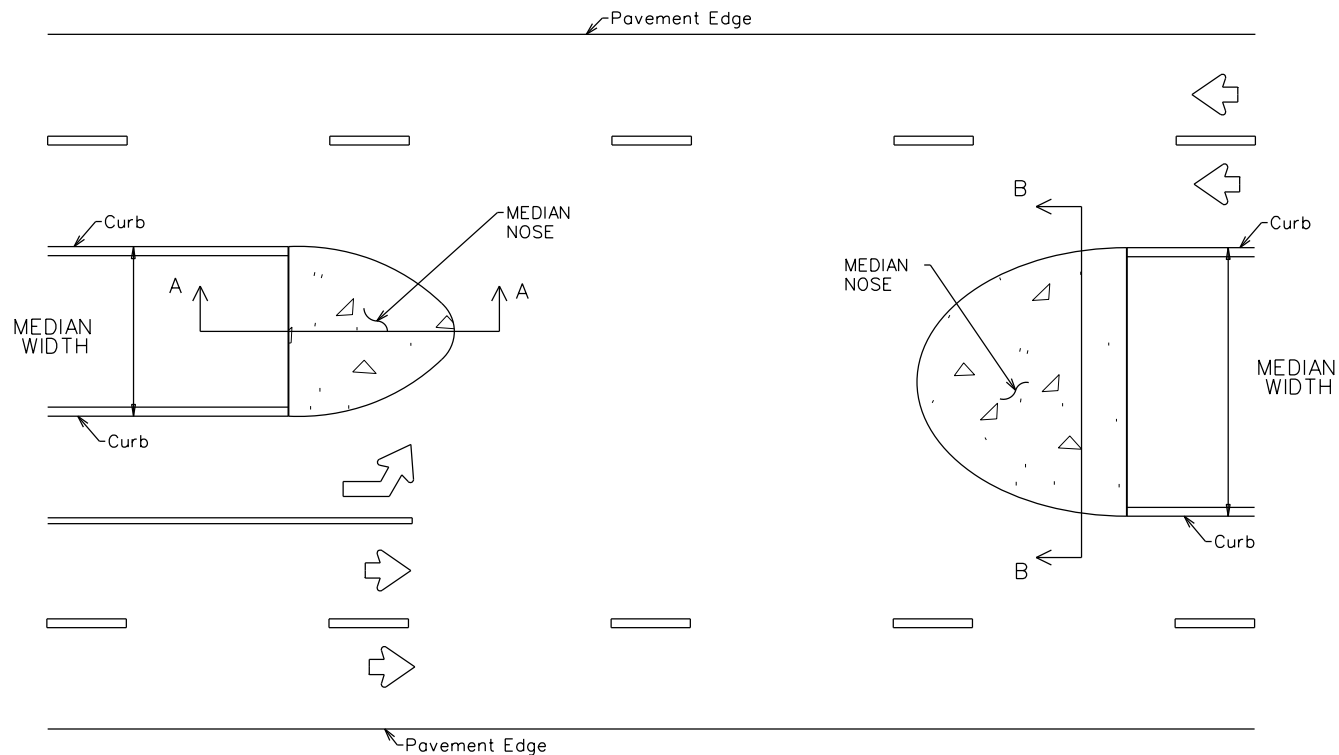


- ① Provide broom finish to top of pavement where raised median area is defined.
- ② Unless noted otherwise on the pavement details.
- ③ Unless otherwise directed, place concrete riprap over pavement or base.  
If not over pavement or base, place sod or seed.

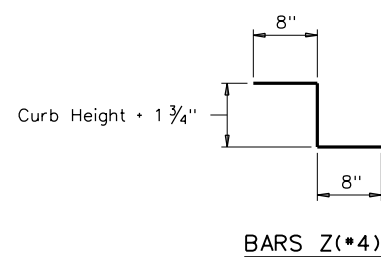


### OPTIONAL EPOXY ANCHORS

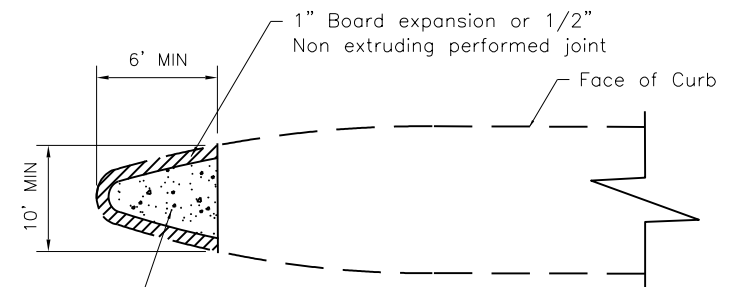
Embed EA(\*4) bar into concrete with a Type III (Class C) epoxy meeting the requirements of DMS-6100, "Epoxyes and Adhesives". Follow manufacturer's directions for installing the epoxied anchor bars.



## REINFORCING



6" Reinforced concrete walk colored  
black on concrete pavement  
(uncolored on asphalt surface)

ESPLANADE NOSE

MATERIAL NOTES:

Provide Grade 60 reinforcement. Welded wire reinforcement (WWR) meeting ASTM A497 of equivalent size and spacing may be substituted for Bars A and Bars T.

Epoxy coat reinforcement if pavement reinforcement is required to be epoxy coated.

## DESIGNER NOTES:

Provide Median Slope in Design Layouts.

GENERAL NOTES:

1. Medians with widths less than 6' back to back, and the first 6' from median nose, shall be paved colored black.
2. For medians with bullet nose configuration, paint curb with yellow reflectorized paint around the esplanade nose to the PT of the 90' radius. For medians without bullet nose configurations, paint curb from PC to PT and 30' back of PC/PT.
3. Median noses shall be governed by HC item 528 "Colored Concrete for Median Noses".

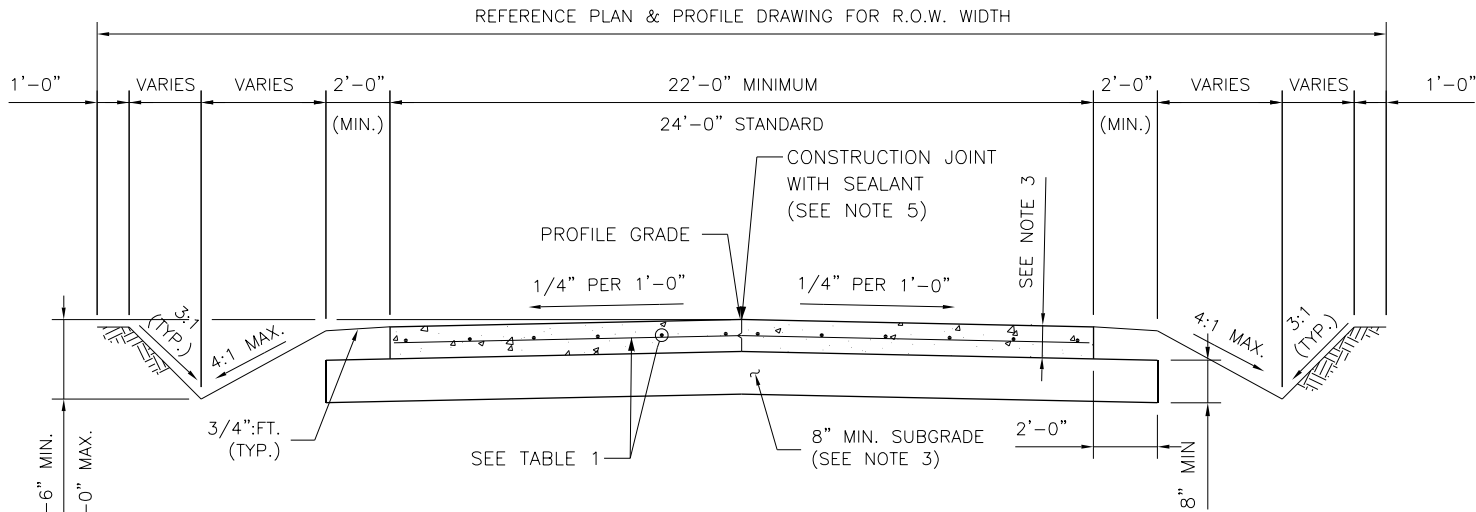
NO.	REVISIONS	DATE	NAME
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT

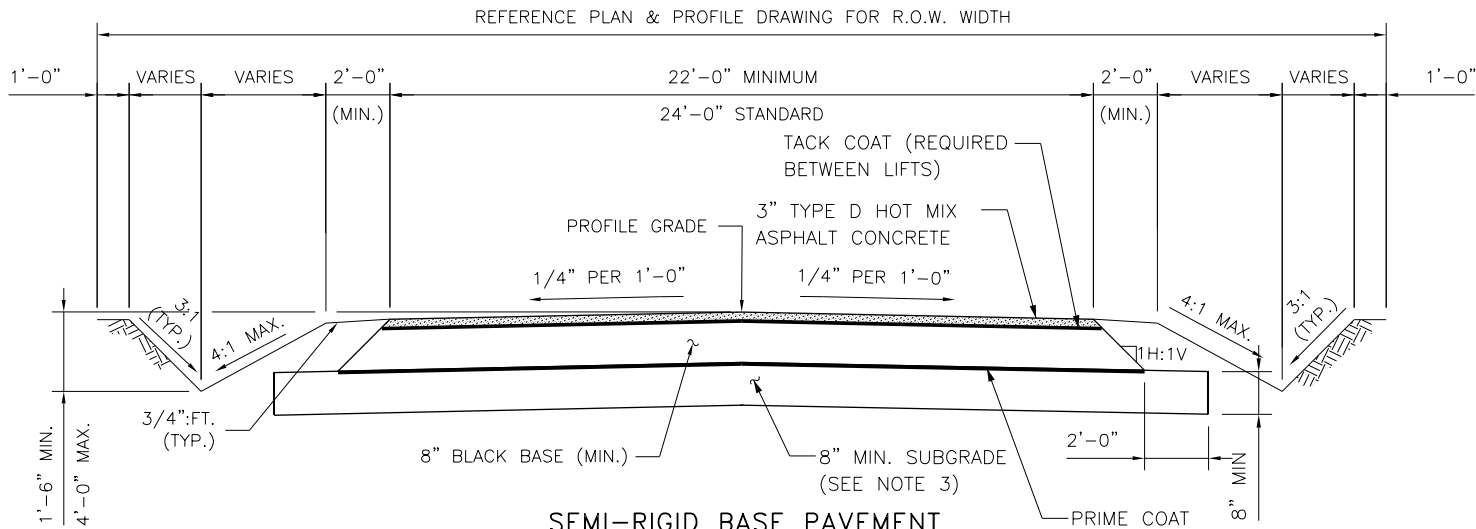


PROJECT TITLE:		
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SCALE: AS NOTED		SHEET NO:
DATE: 10-1-24	APPROVED BY:	/

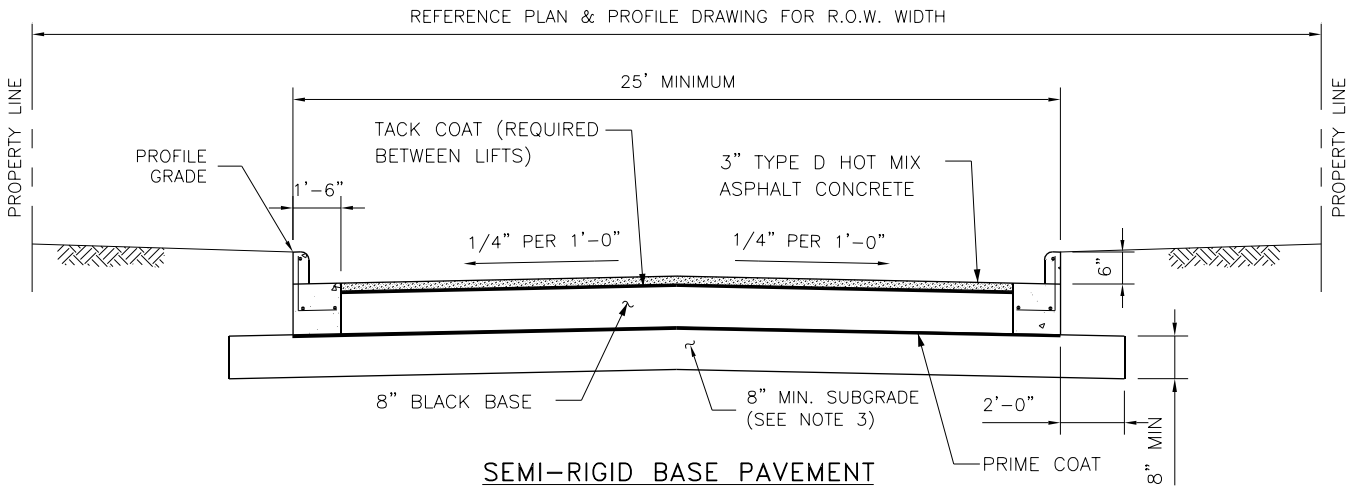
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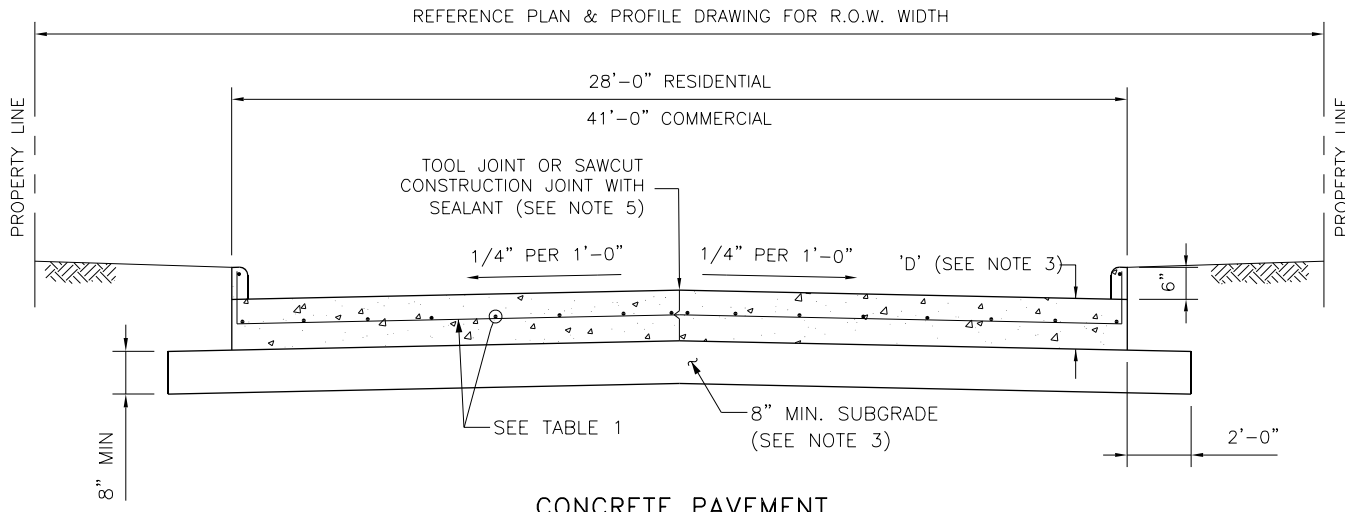
CONCRETE PAVEMENT  
DITCH SECTION



SEMI-RIGID BASE PAVEMENT  
DITCH SECTION



SEMI-RIGID BASE PAVEMENT  
CURB & GUTTER SECTION



CONCRETE PAVEMENT  
CURB & GUTTER SECTION  
(PARABOLIC CROWN IS AN ACCEPTABLE OPTION)

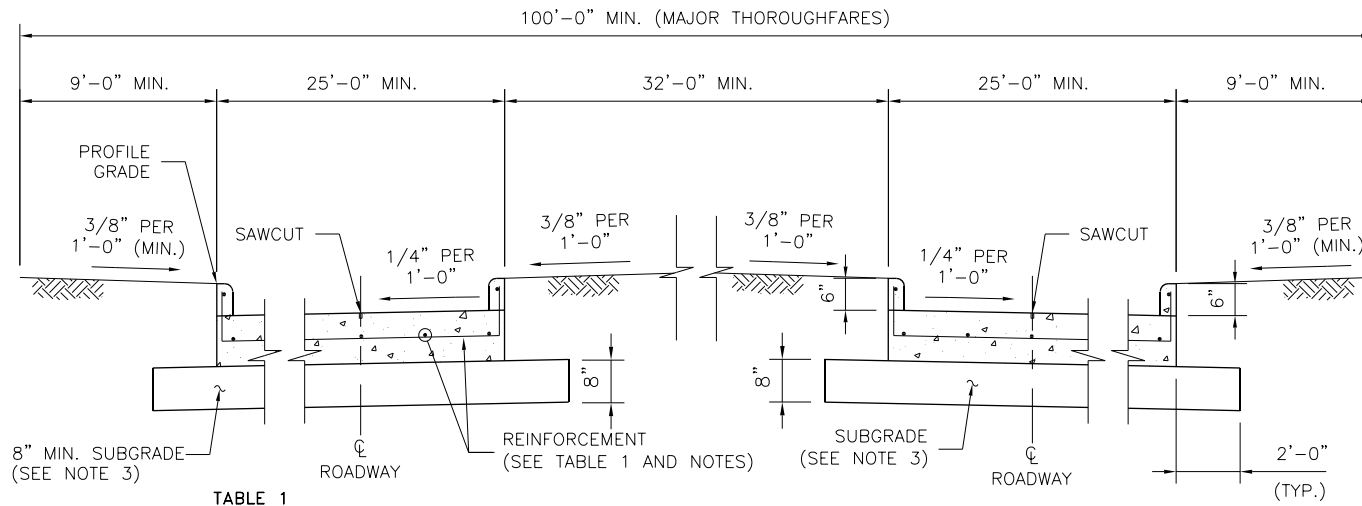


TABLE 1  
(CONSTRUCTION JOINT DOWELS)

DOWEL SIZE	PAVEMENT DEPTH
#4 BAR	< 6"
#5 BAR	6" ≤ D < 9"
#6 BAR	≥ 9"

DOWEL SHALL BE DRILLED INTO EXISTING PAVEMENT (MIN. 10", MAX. 12") AND EPOXIED. (SEE HC ITEM 361.3).

TYPICAL SECTIONS FOR  
MAJOR THOROUGHFARES

HORIZONTAL SCALE: 1"=3'-0"  
VERTICAL SCALE: 1"=1'-6"

SLAB AND REBAR NOTES:

- TYPICAL SLAB THICKNESS D=8"
- TYPICAL REBAR SIZE AND SPACING ARE:
  - #4 BAR @ 18" C-C LONGITUDINAL
  - #4 BAR @ 18" C-C TRANSVERSE
- REBAR SIZE FOR PAVEMENT LESS THAN 8" THICK
  - #4 BAR @ 24" C-C LONGITUDINAL
  - #4 BAR @ 24" C-C TRANSVERSE
- REBAR SHALL NOT BE PLACED WITHIN 3" FROM THE EDGE OF PAVEMENT.
- TYPICAL STABILIZED SUBGRADE THICKNESS IS 8 INCHES.
- FOR HEAVY INDUSTRIAL TRAFFIC, SLAB THICKNESS AND REBAR SIZE AND SPACING WILL BE AS PER GEOTECHNICAL RECOMMENDATION.
- ALL BENT BARS SHALL BE GRADE 40 STEEL, ALL OTHER SHALL BE GRADE 60.
- MINIMUM LAP SPLICE 16".
- LAP SPLICES SHOULD BE ON ALTERNATING BARS, ADJACENT LAP SPLICES ARE NOT ACCEPTABLE.

NOTES:

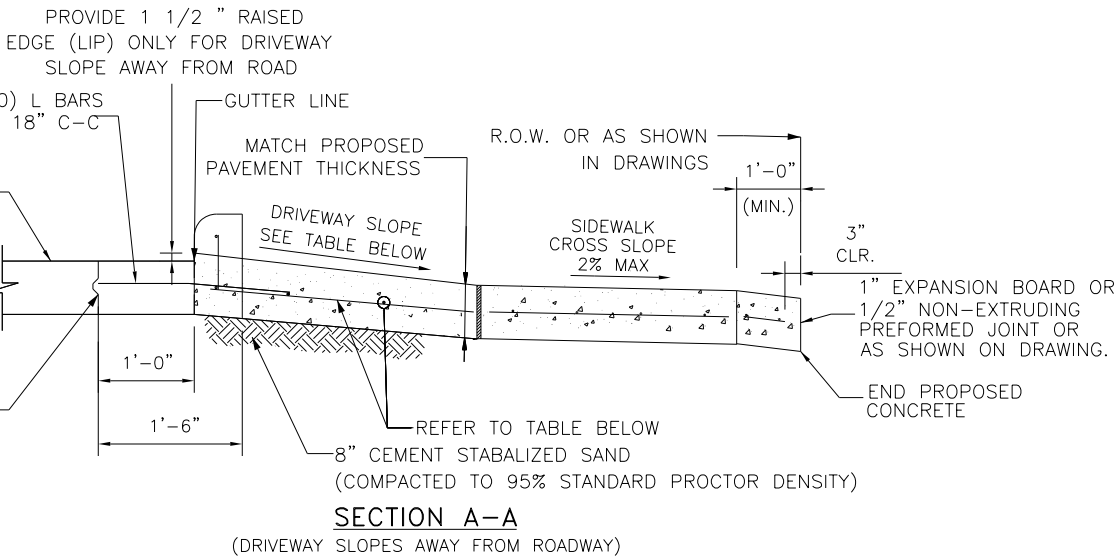
- PAVEMENT SECTIONS SHOWN ARE INTENDED FOR DEVELOPMENT PROJECTS AND NOT FOR PUBLIC PROJECTS, WHERE WIDTH OF R.O.W. MAY VARY.
- PAVEMENT SECTIONS SHALL BE LOCATED IN CENTER OF R.O.W.
- SUBGRADE TREATMENT AND PAVEMENT THICKNESS AS DESIGNATED IN PLANS
- REFERENCE CONSTRUCTION JOINT DETAIL ON THE STANDARD CIVIL DRAWING "CONCRETE PAVEMENT DETAILS - SHEET 1 OF 2" FOR JOINT AND SEALANT REQUIREMENTS.
- NO TRAFFIC ON CONCRETE PAVEMENT FOR 7 DAYS AND COMPRESSIVE STRENGTH OF 3,500 psi HAS BEEN REACHED.
- ALL CONSTRUCTION JOINTS SHALL BE SEALED
- MINIMUM DEPTH FOR BORES/UTILITIES SHALL BE AS FOLLOWS:  
OPEN DITCH - 3' MIN. BELOW FLOWLINE; 5' MIN. BELOW TOP OF PAVEMENT  
CURBED STREETS - 5' MIN. BELOW TOP OF PAVEMENT

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED NOTE 7	10-1-24	RJS
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPICAL PAVEMENT SECTIONS	FBCE STANDARD
CK'D BY: INIT		10
SCALE: AS NOTED	FOR DEVELOPMENT PROJECTS	SHEET NO:
DATE: 10-1-24	APPROVED BY:	



	DRIVEWAY WIDTHS	
	MINIMUM	MAXIMUM
RESIDENTIAL	10'	25'
COMMERCIAL	20'	40'

	PAVEMENT THICKNESS	COLLECTOR/MAJOR	RESIDENTIAL (MAJOR THOROUGHFARE)	RESIDENTIAL (COLLECTORS AND LOCAL STREETS)
REINFORCEMENT	6"	#4 @ 24" O.C.E.W.	N/A	#4 @ 24" O.C.E.W.
	7"	#4 @ 24" O.C.E.W.	#4 @ 24" O.C.E.W.	#4 @ 24" O.C.E.W.
	8"	#4 @ 18" O.C.E.W.	#4 @ 18" O.C.E.W.	#4 @ 18" O.C.E.W.
	9"-10"	#5 @ 18" O.C.E.W.	#5 @ 18" O.C.E.W.	#5 @ 18" O.C.E.W.
EXPANSION DOWEL JOINT	6"	3/4" DIA. SMOOTH BAR	3/4" DIA. SMOOTH BAR	3/4" DIA. SMOOTH BAR
	7"	1" DIA. SMOOTH BAR	1" DIA. SMOOTH BAR	1" DIA. SMOOTH BAR
	8"	1" DIA. SMOOTH BAR	1" DIA. SMOOTH BAR	1" DIA. SMOOTH BAR
	9"-10"	1 1/4" DIA. SMOOTH BAR	1 1/4" DIA. SMOOTH BAR	1 1/4" DIA. SMOOTH BAR
CONSTRUCTION JOINT DOWEL	ALL	#5 REBAR	#5 REBAR	#5 REBAR
SUBGRADE	ALL	8" CEMENT-STABILIZED SAND	2" BANK SAND (DEVELOPER/PRIVATE) 8" CEMENT STABILIZED SAND (MOBILITY)	2" BANK SAND (DEVELOPER/PRIVATE) 8" CEMENT STABILIZED SAND (MOBILITY)
DRIVEWAY SLOPE	ALL	2% TO 4%	2% TO 6%	2% TO 10%*

\*10% ALLOWABLE ON PRIVATELY  
CONSTRUCTED PROJECTS  
6% MAX ON PUBLIC PROJECTS



PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: DRIVEWAY DETAILS FOR	11
SCALE: 1"=1'-6"	MAJOR ROADWAY CONSTRUCTION	
DATE: 10-1-24	APPROVED BY:	SHEET NO: /



[illegible][illegible]

10"

1'-0"

4"

1'-0"

1

SEE TABLE

DRIVEWAY SLOPE  
SEE TABLE

5' (MIN.) SEE NOTE 13

SIDEWALK

CROSS SLOPE  
2% MAX. (SEE NOTE 11)

3" CLR.  
(TYP.)

DOWEL EXPANSION (SEE DETAIL)

MATCH PROPOSED PAVEMENT THICKNESS

SEE NOTE 4

EXISTING PAVEMENT  
(DEPTH VARIES)

**SECTION B-B**

SCALE: 1" = 1'-6"

JOINT SEALANT  
WITH 1/4" RADIUS  
(SEE GENERAL NOTE 6)

9 3/4"

1 1/2" GAP  
(ALLOWS DOWEL  
BAR TO MOVE)

1"

DOWEL AT  
12" C-C

SMOOTH BAR

D/2

D

D/2

3/4"  
REDWOOD

9"

9"

1'-6"

HEAVY PLASTIC TUBE

DOWEL TYPE EXPANSION JOINT

SCALE: 1" = 12"

EXISTING SIDEWALK

PROPOSED 4 1/2" SIDEWALK (TYP.)

1:20 MAX. (SEE NOTE 11)

PROPOSED DRIVEWAY (WIDTH VARIES)

1:20 MAX. (SEE NOTE 11)

DOWELED EXPANSION JOINT (DRILL AND GROUT IF DRIVEWAY IS EXISTING) OR 1/2" NON-EXTRUDING PREFORMED JOINT (TYP.)

2" COMPACTED SAND BEDDING (TYP.)

SEE NOTE 4

**SECTION C-C**

SCALE: 1" = 1'-6"

REINFORCING
EXPANSION JOINT
CONSTRUCTION JOINT
SUBGRADE

\*10% ALLOWABLE ON PRIVATELY  
CONSTRUCTED PROJECTS  
6% MAX ON PUBLIC PROJECTS

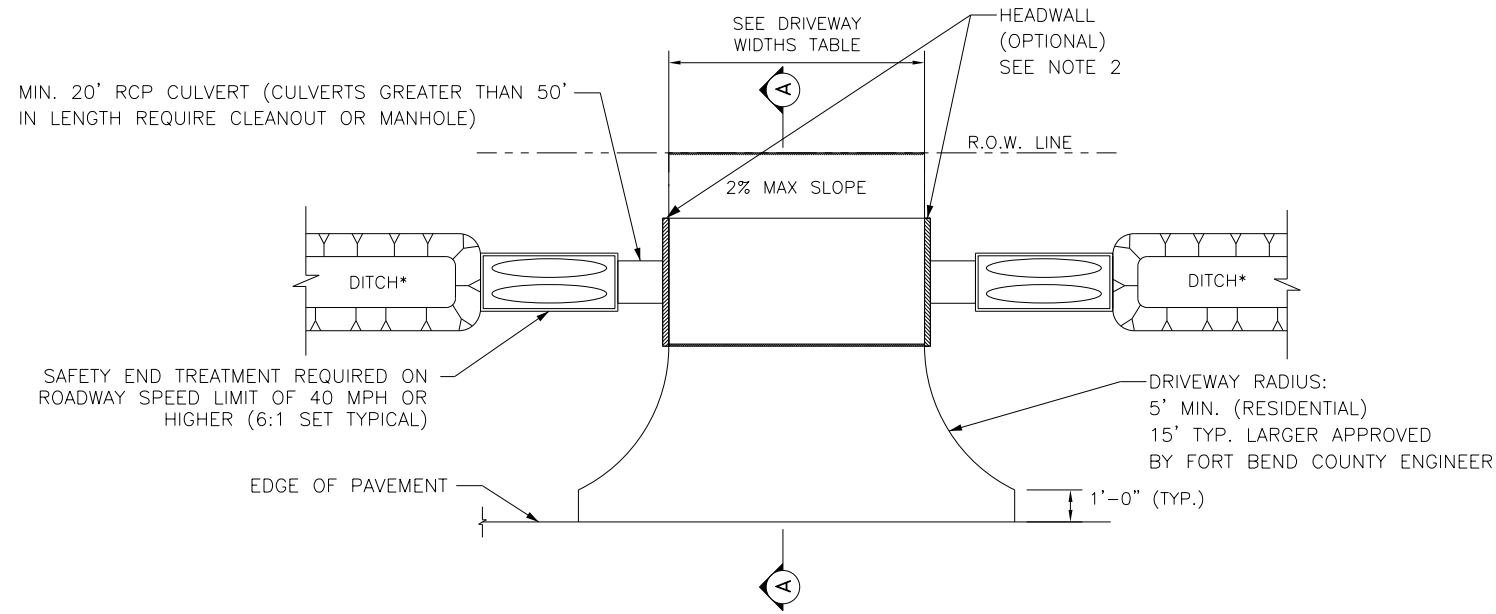
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED NOTE 16 & REVISED NOTE 2	3-1-23	RJS
3	ADDED NOTE 17 & UPDATED TABLE	10-1-24	RJS
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: DRIVEWAY DETAILS FOR	12
SCALE: AS NOTED	RESIDENTIAL DRIVEWAYS	SHEET NO:
DATE: 10-1-24	APPROVED BY:	/

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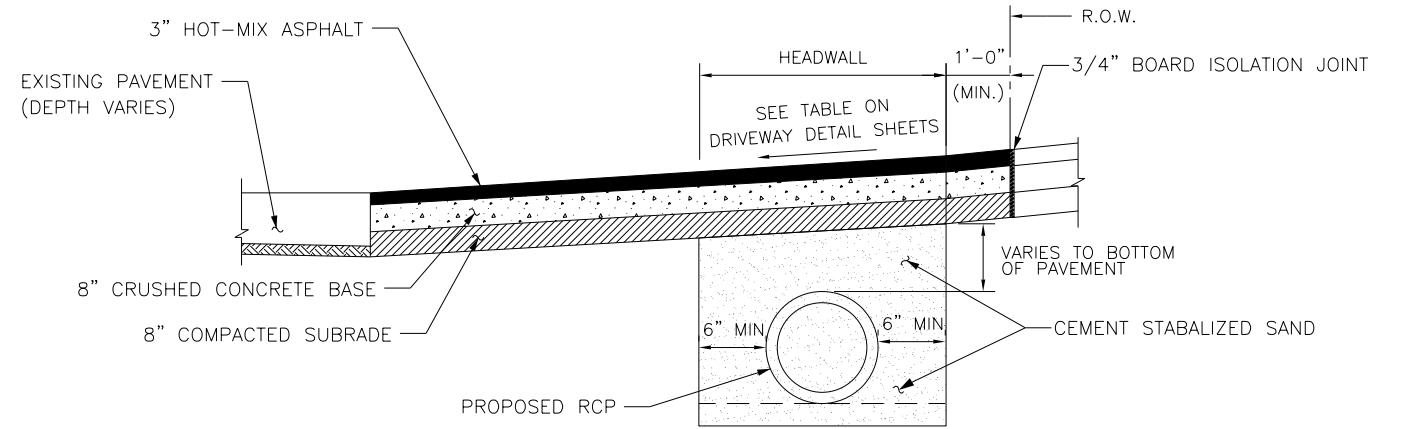


OPEN DITCH DRIVEWAY

\*DITCH IS TO HAVE 4:1 SLOPE

MINIMUM RADII REQUIREMENTS - DRIVEWAYS

	LOCAL	COLLECTOR	MAJOR
RESIDENTIAL	5'	5'	-
COMMERCIAL	10'	10'	25'



SECTION A-A FOR RESIDENTIAL DRIVEWAYS

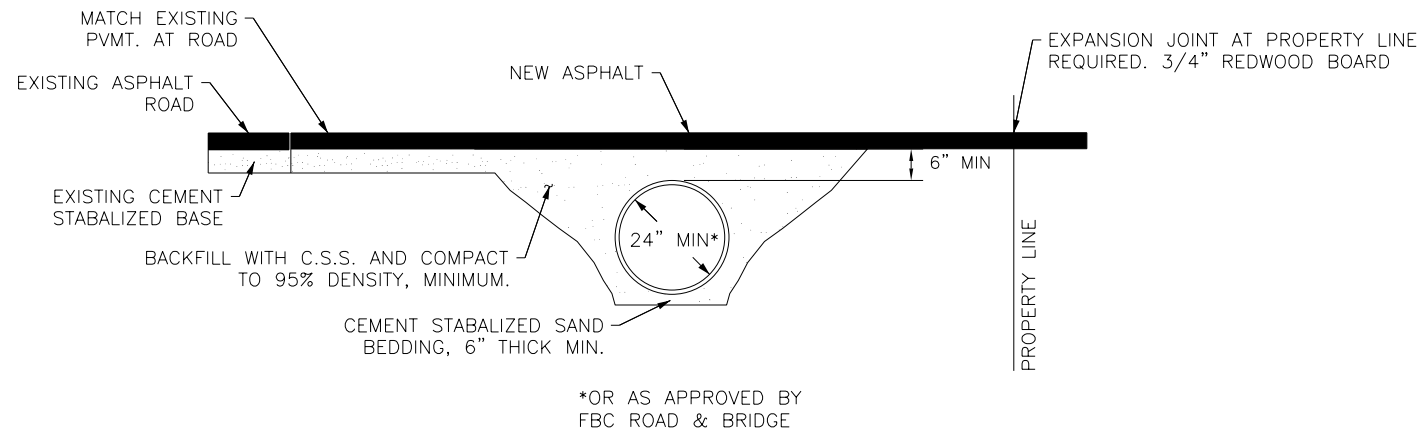
NOTES:

1. MAINTAIN A MIN. OF 6" BETWEEN DRIVEWAY AND CULVERT
2. HEADWALLS ARE ONLY ALLOWED ON ROADWAYS WITH POSTED SPEED LIMITS OF 35 MPH OR LESS
3. ALL DRIVEWAY CONNECTIONS SHALL HAVE THE SAME SURFACE AS THE EXISTING OR PROPOSED STREET.

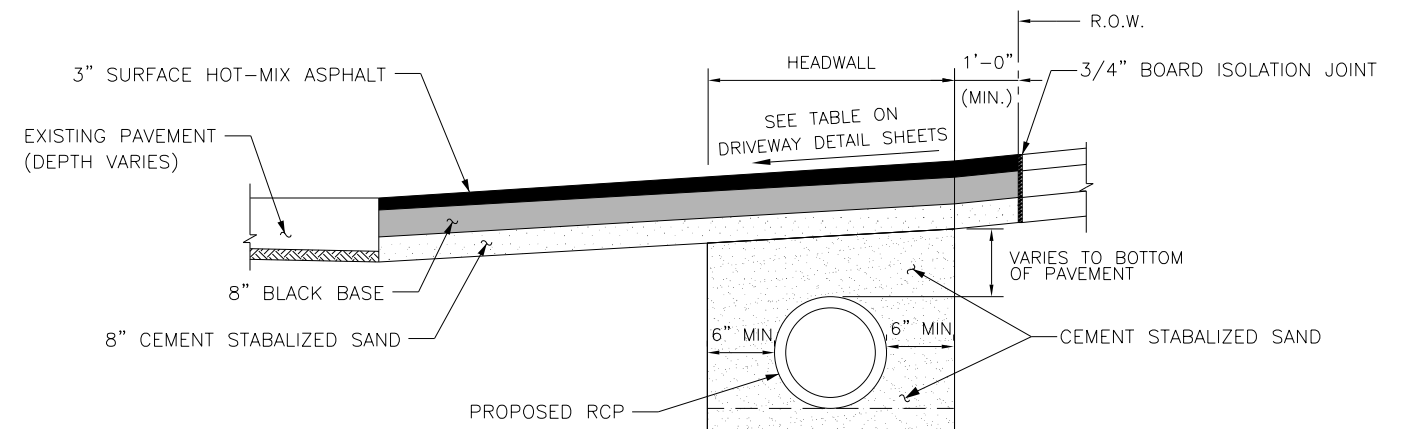
DRIVEWAY WIDTHS\*

	MINIMUM	MAXIMUM
RESIDENTIAL	10'	25'
COMMERCIAL	20'	40'

\*DRIVEWAY WIDTHS ARE MEASURED AT THE ROW LINE



ASPHALT APRON DETAIL - DRIVEWAY PROFILE  
FOR CULVERT DRAINAGE



SECTION A-A FOR COMMERCIAL DRIVEWAYS

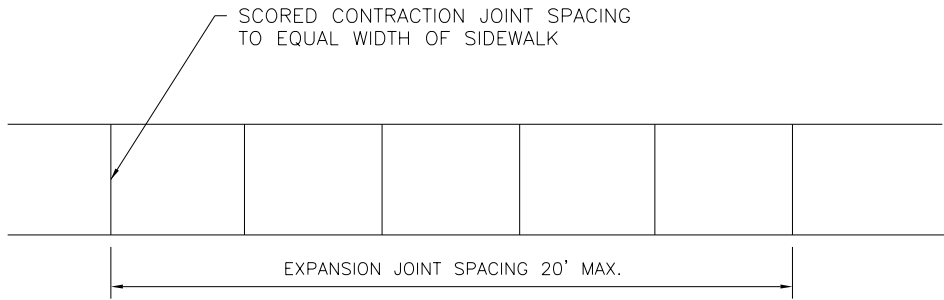
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED SECTION DETS. & NOTES 2 & 3	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

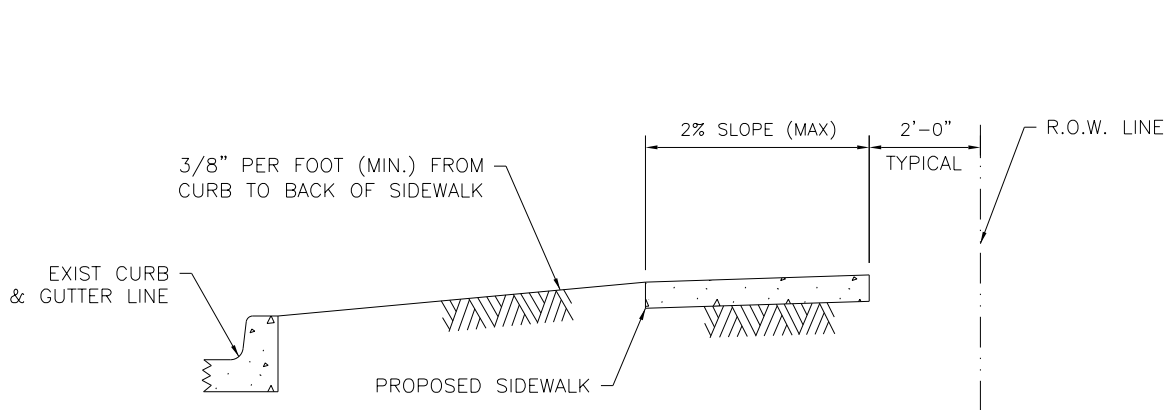


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: ASPHALT DRIVEWAY DETAILS	FBCD STANDARD 13
CK'D BY: INIT		
SCALE: AS NOTED	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		

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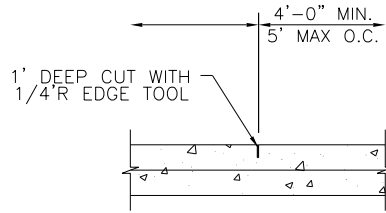


SIDEWALK JOINT DETAILS

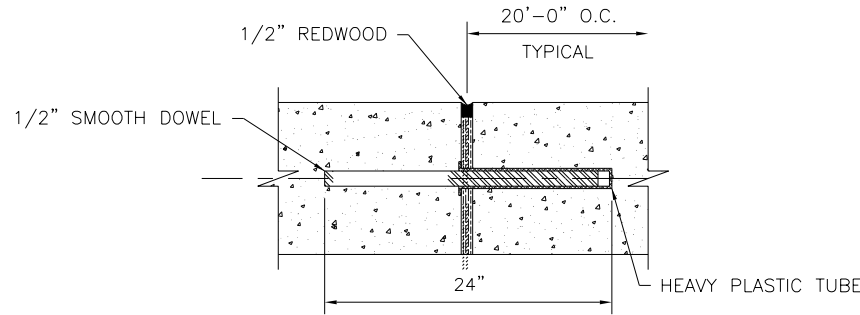


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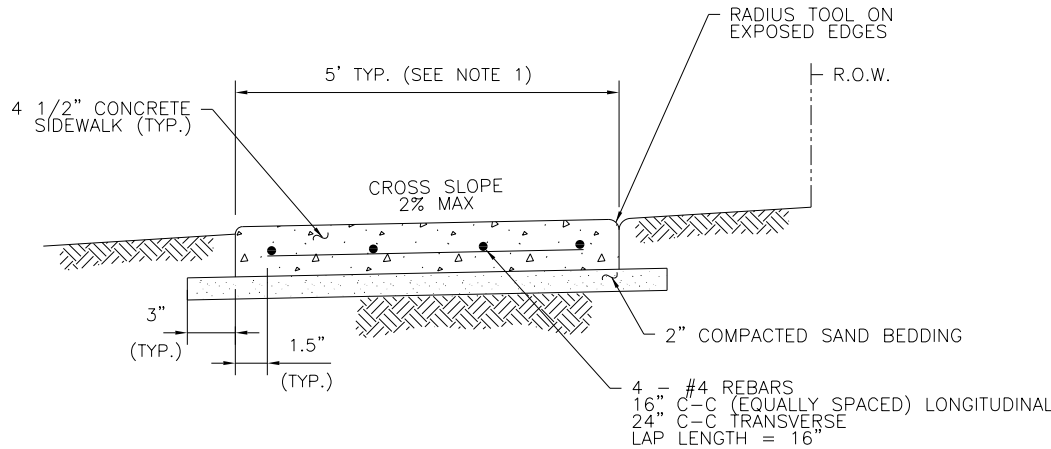
1. TYPICAL SIDEWALK WIDTH IS 5'. SIDEWALKS OF 4' WIDTH ARE ALLOWED IN FRONT OF SINGLE FAMILY HOMES IF ALL DRIVEWAYS PROVIDE A 5' AREA FOR PASSING. SIDEWALKS OF 4' WITH 5' X 5' PASSING ZONES MUST BE SPECIFICALLY APPROVED BY FORT BEND COUNTY
2. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0"
3. EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD WITH DOWELS
4. SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO SIDEWALK WIDTH
5. ALL EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS.
6. SIDEWALKS ARE TO BE REINFORCED CONCRETE (3500 PSI) WITH #4 BARS, 16" C-C LONGITUDINAL AND 18" C-C TRANSVERSE. SIDEWALKS NOT 5' IN WIDTH SHALL BE CONSTRUCTED AS DIRECTED BY THE ENGINEER OF RECORD.
7. USE RADIUS TOOL ON ALL EXPOSED EDGES.
8. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 802 IN THE HARRIS COUNTY STANDARD SPECIFICATIONS FOR CONSTRUCTION
9. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS
10. 6' SIDEWALK TO BE USED WHEN SIDEWALK RUNS ALONG THE BACK OF CURB AS DESCRIBES IN THE FBC DESIGN MANUAL



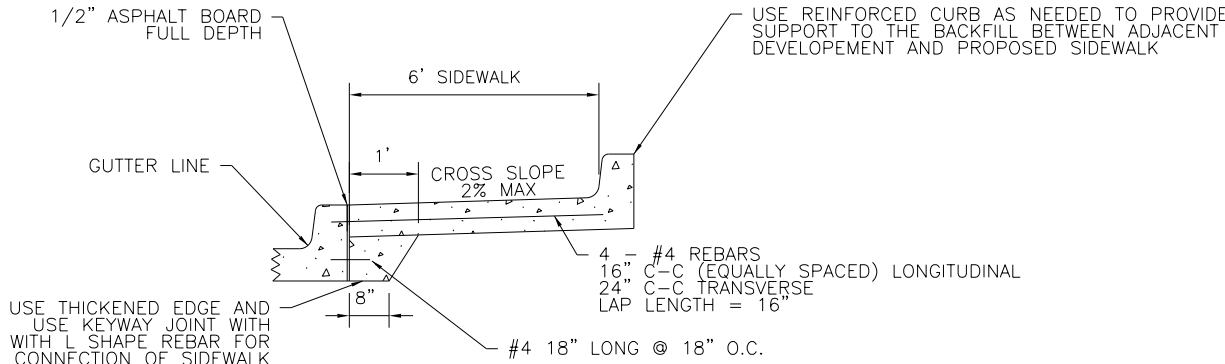
CONTRACTION JOINT SEAL



EXPANSION JOINT



SIDEWALK CROSS SECTION



6' SIDEWALK DETAIL\*

\*REQUIRES PRIOR COUNTY APPROVAL

NOTE:

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

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	REVISED NOTE 6, 8, & CROSS SECTION DET.	3-1-23	RJS
3	ADD 6' SIDEWALK & REVISED SECT. DETS.	10-1-24	RJS
4			
5			

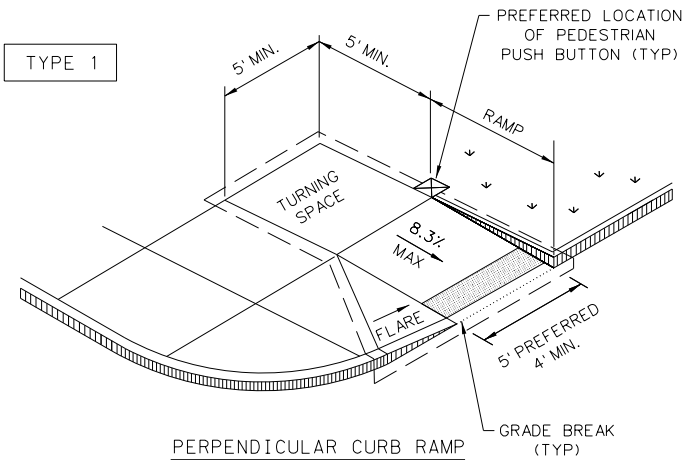
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: SIDEWALK DETAILS	FBCD STANDARD
CK'D BY: INIT		14
SCALE: AS NOTED	APPROVED BY:	SHEET NO:
DATE: 10-1-24		/

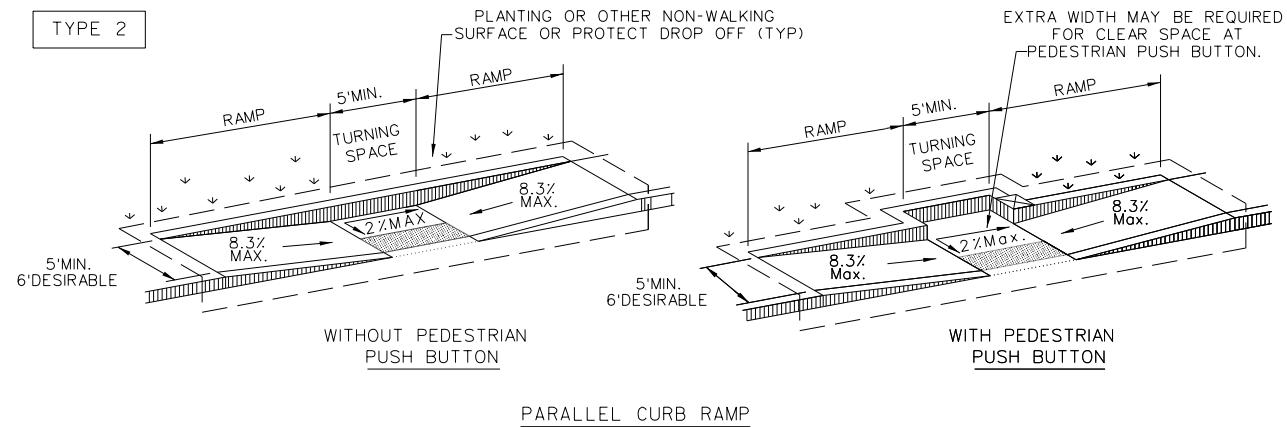
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TYPE 1



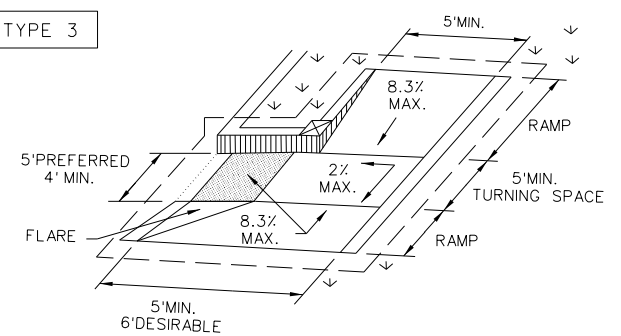
PERPENDICULAR CURB RAMP

TYPE 2

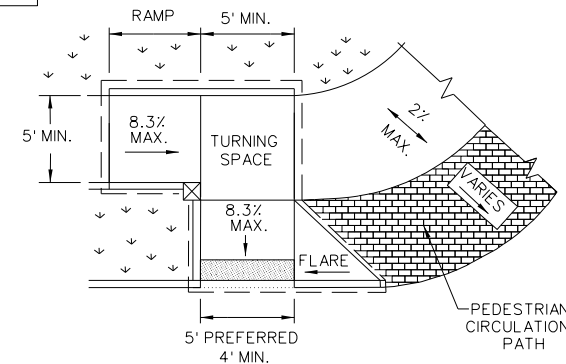


PARALLEL CURB RAMP

TYPE 3

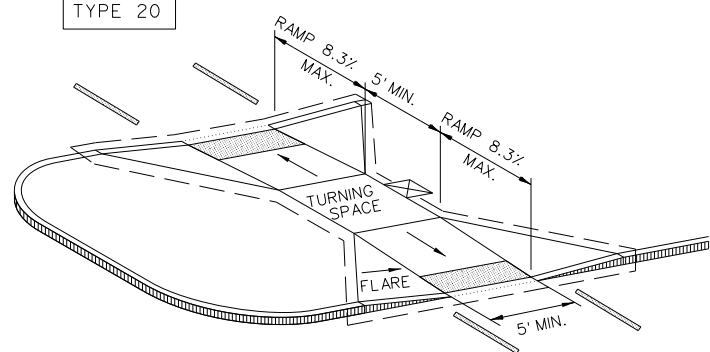


TYPE 6



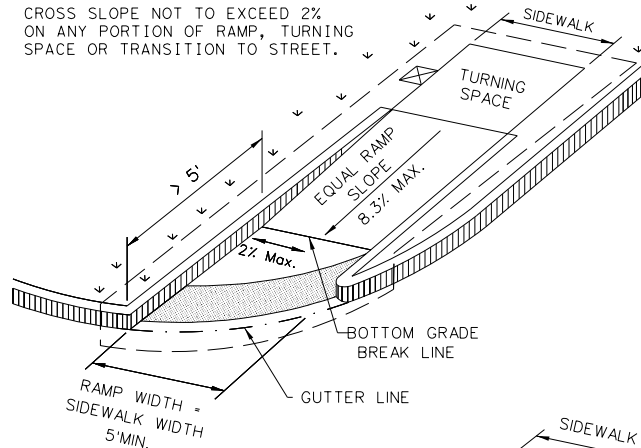
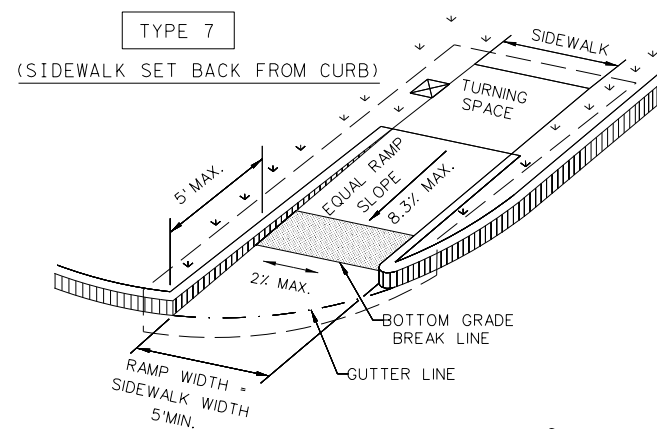
COMBINATION CURB RAMPS

TYPE 20

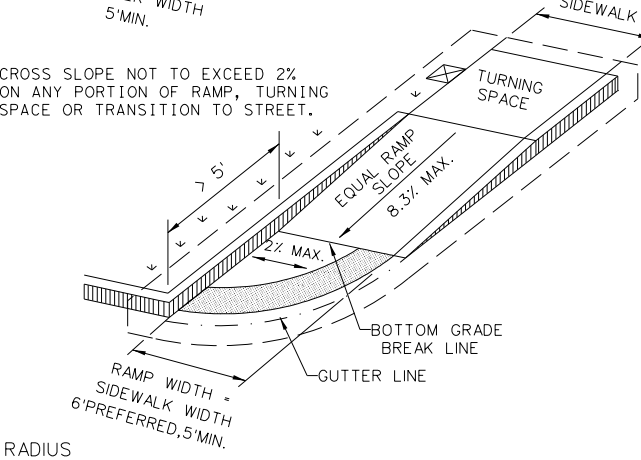
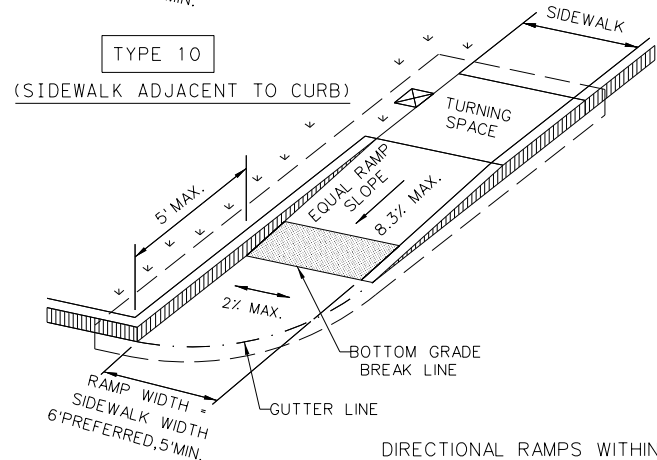


CURB RAMPS AT MEDIAN ISLANDS

TYPE 7

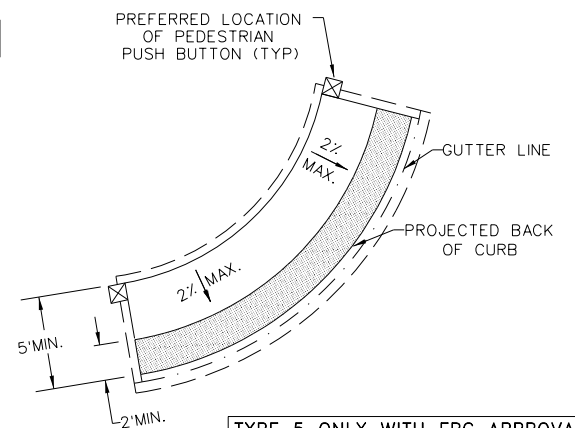


TYPE 10



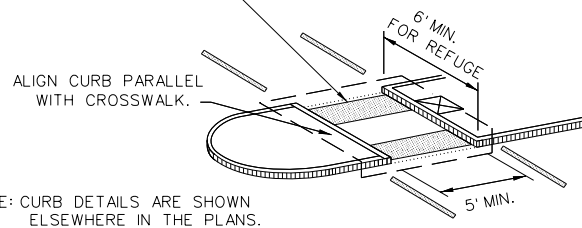
DIRECTIONAL RAMPS WITHIN RADIUS

TYPE 5



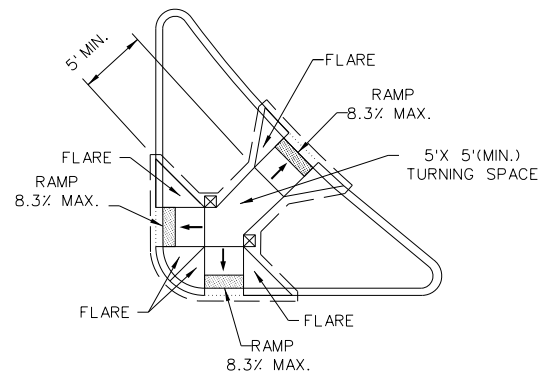
TYPE 5 ONLY WITH FBC APPROVAL

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.



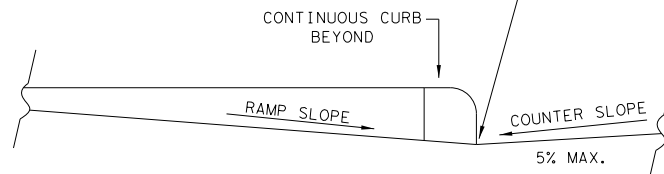
TYPE 21

TYPE 22



COMBINATION ISLAND RAMPS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

#### NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.



GUTTER LINE



DETECTABLE WARNING SURFACE



GRADE BREAK



DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.



RAMP LIMITS OF PAYMENT



NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: PED-18 RAMP DETAILS	FBCD STANDARD 15
CK'D BY: INIT	SHEET 1 OF 4	SHEET NO: /
SCALE: 1" = 1'	APPROVED BY:	
DATE: 3-1-22		

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GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with HC Item 530 "Concrete Curb, Concrete Curb and Gutter, Sidewalks and Driveways".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

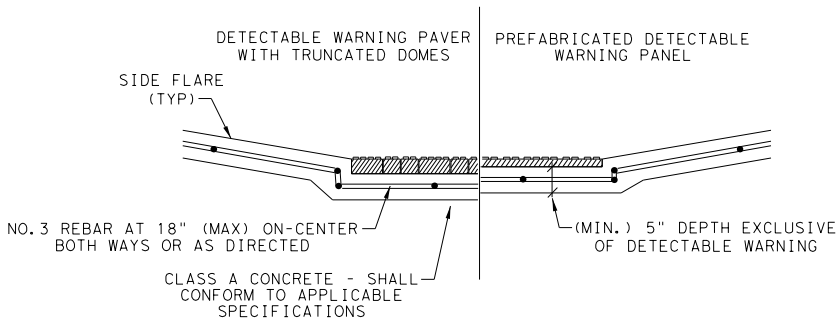
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cost-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

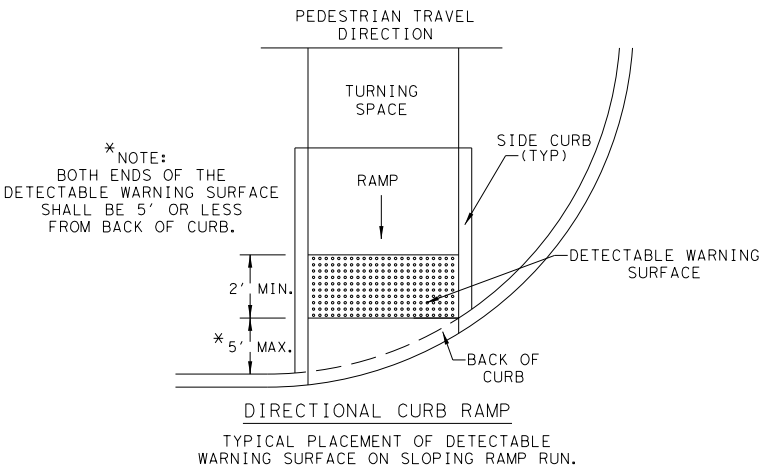
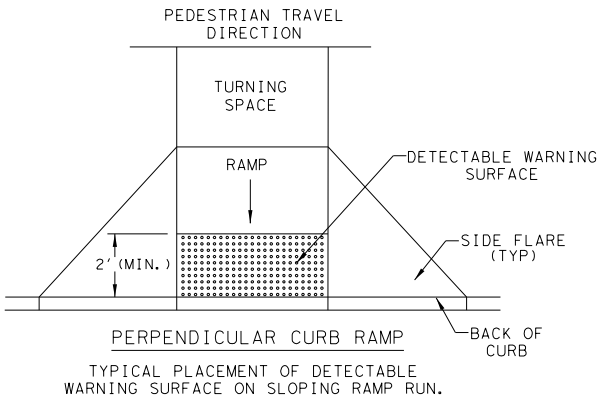
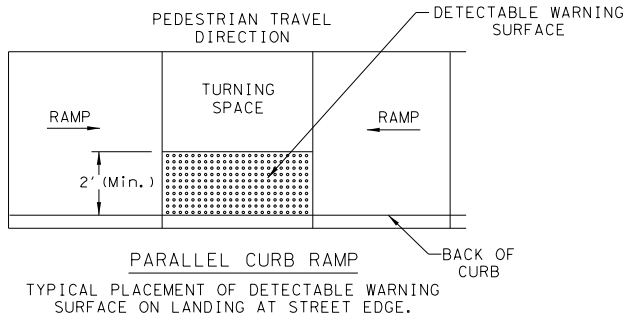
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Sidewalks, driveways, and turnouts, shall be constructed and paid for in accordance with Item, "Concrete Curb, Concrete Curb and Gutter, Sidewalks, and Driveways".
34. Sidewalk details are shown elsewhere in the plans.



SECTION VIEW DETAIL  
CURB RAMP AT DETECTIBLE WARNINGS

DETECTABLE WARNING SURFACE DETAILS



NO.	REVISIONS	DATE	NAME
	ORIGINAL STANDARD ISSUED	3-1-22	RJS
	UPDATED BID ITEM SPECS	10-1-24	RJS

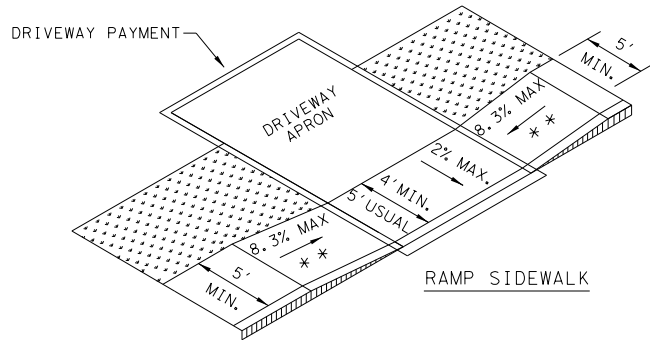
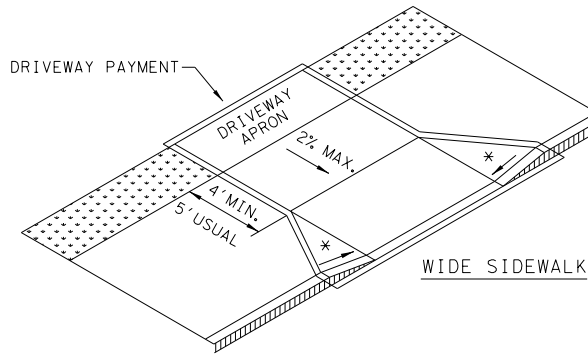
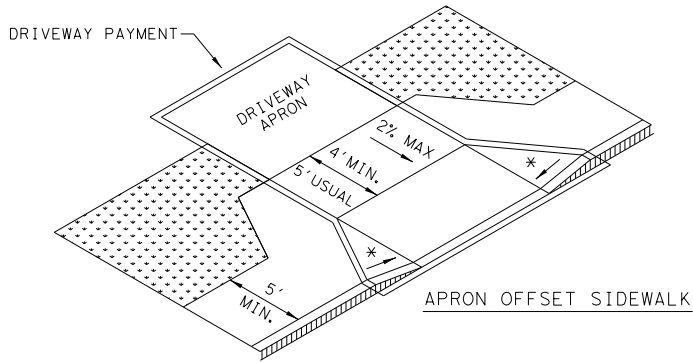
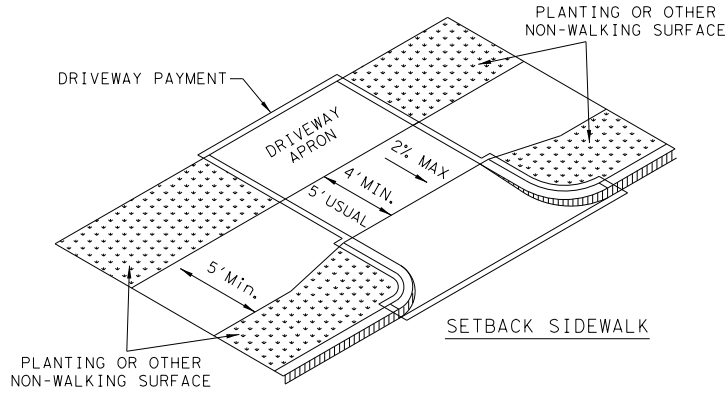
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



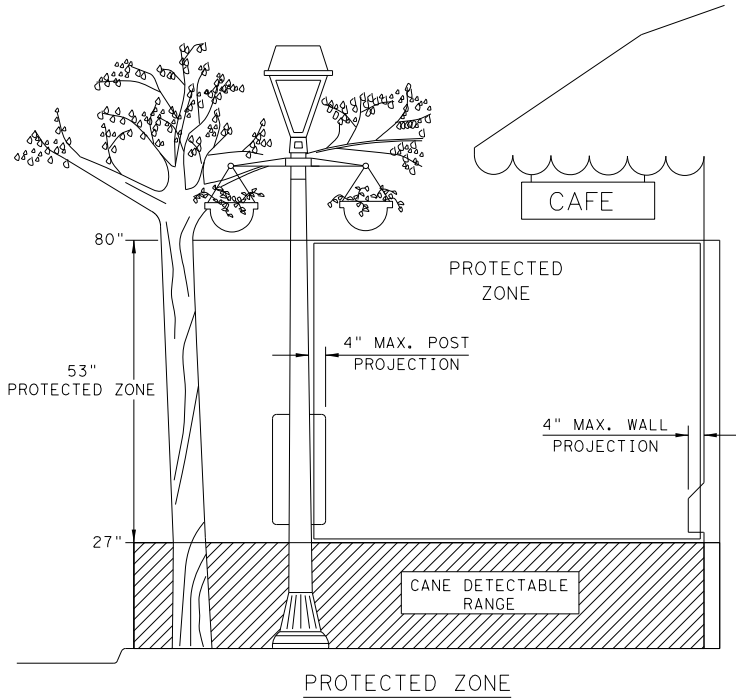
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DRAWN BY: INIT	SHEET DESCRIPTION: PED-18 RAMP DETAILS		FBCD STANDARD
CK'D BY: INIT			16
SCALE: 1" = 1'	SHEET 2 OF 4		SHEET NO:  /
DATE: 10-1-24	APPROVED BY:		

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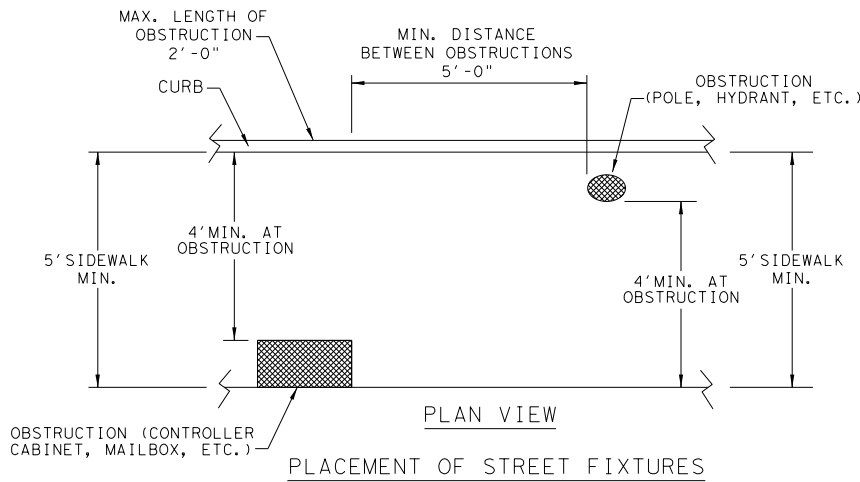
SIDEWALK TREATMENT AT DRIVEWAYS



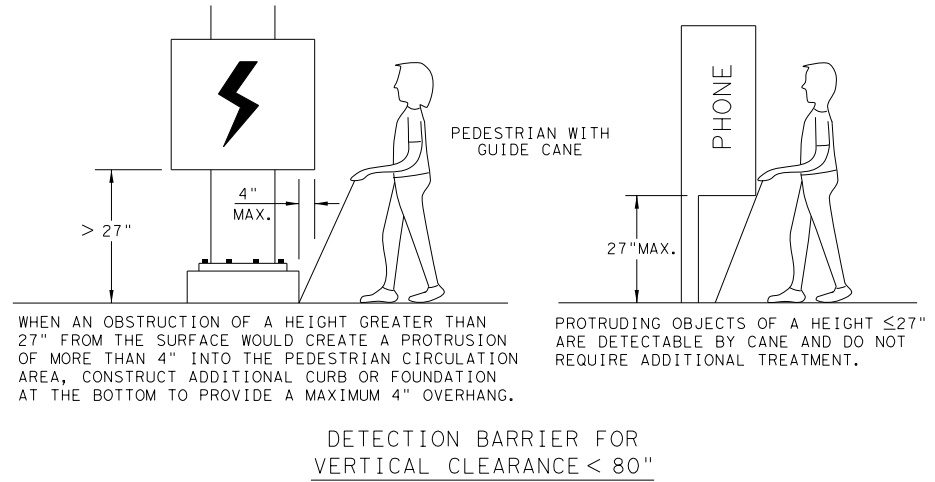
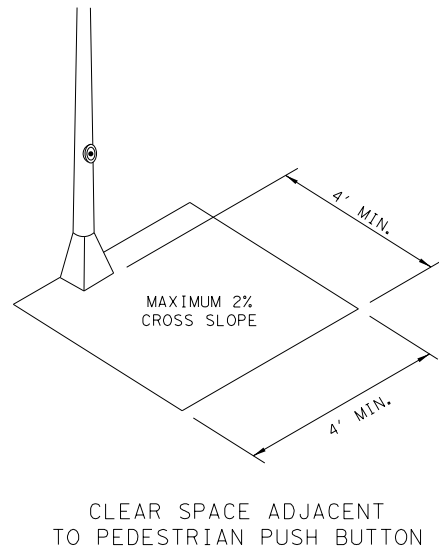
- NOTES:
- \* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.
  - \* \* IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			
5			

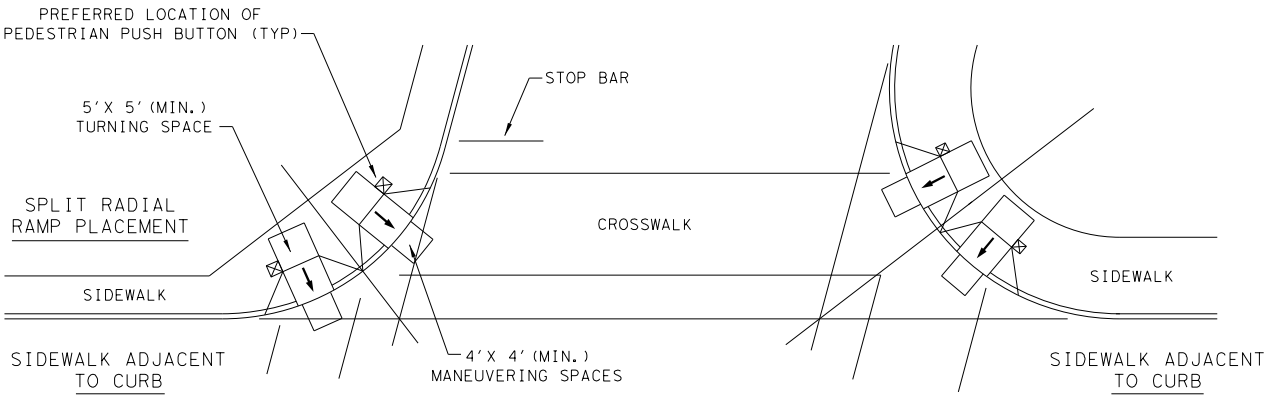
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



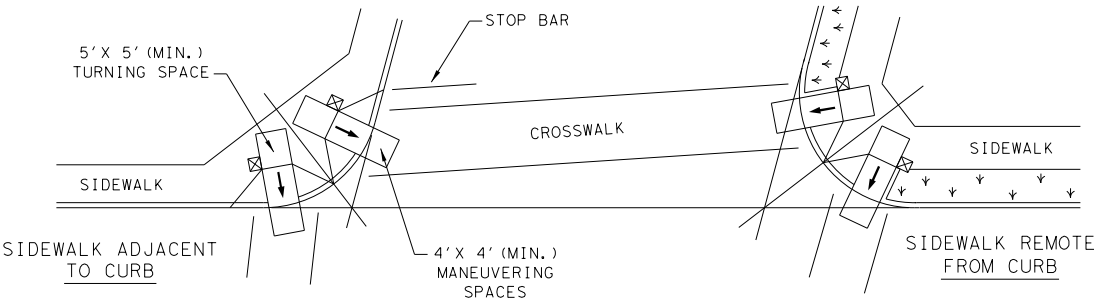
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CK'D BY: INIT		17
SCALE: 1" = 1'	SHEET 3 OF 4	SHEET NO:  /
DATE: 3-1-22		

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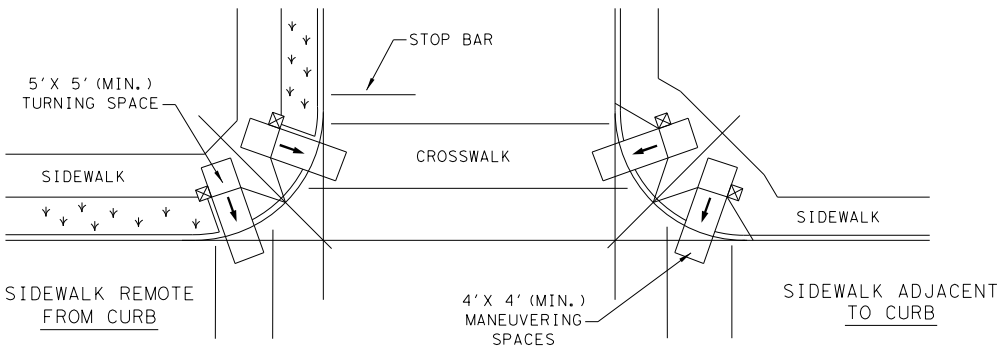
TYPICAL CROSSING LAYOUTS  
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



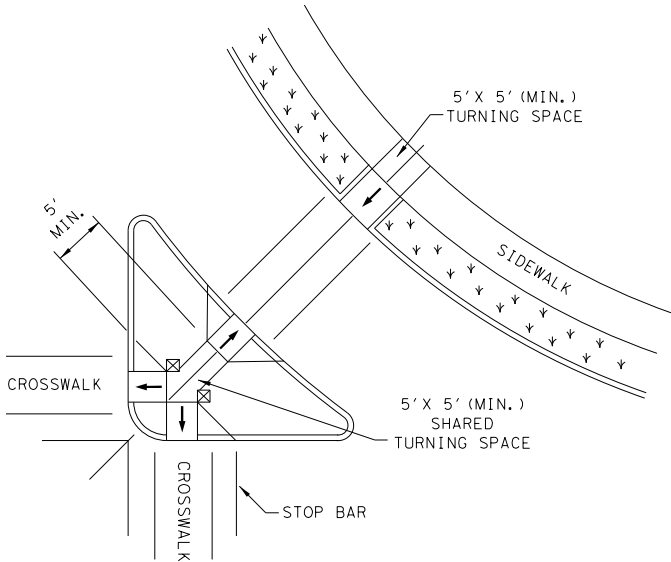
SKEWED INTERSECTION WITH "LARGE" RADIUS  
REQUIRES FBC APPROVAL



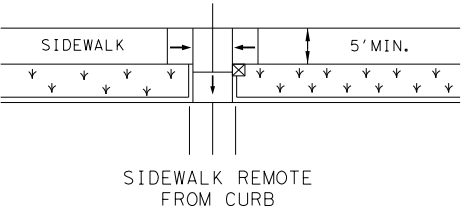
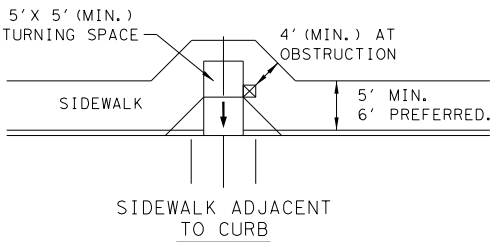
SKEWED INTERSECTION WITH "SMALL" RADIUS  
REQUIRES FBC APPROVAL



NORMAL INTERSECTION WITH "SMALL" RADIUS  
REQUIRES FBC APPROVAL



AT INTERSECTION  
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT  
PERPENDICULAR RAMP

LEGEND:

SHOWS DOWNWARD SLOPE.



DENOTES PREFERRED LOCATION OF PEDESTRIAN  
PUSH BUTTON (IF APPLICABLE).



DENOTES PLANTING OR NON-WALKING SURFACE  
NOT PART OF PEDESTRIAN CIRCULATION PATH.



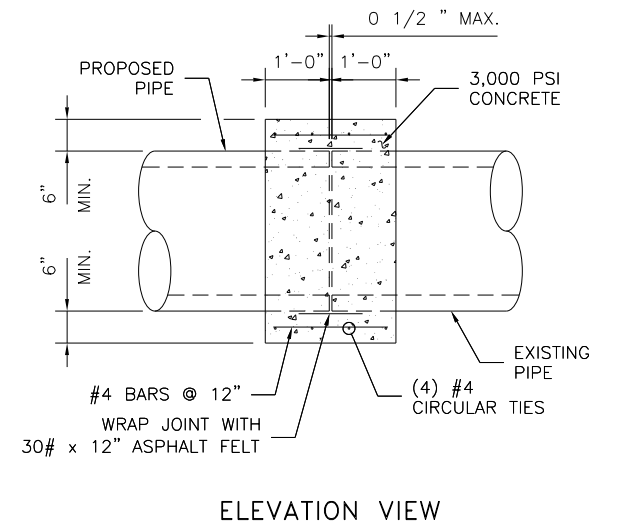
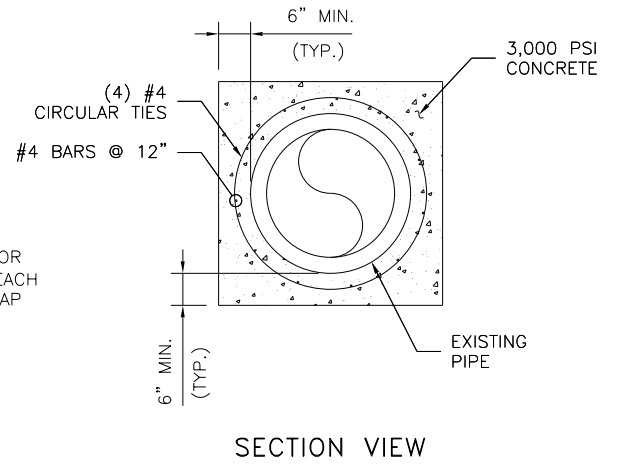
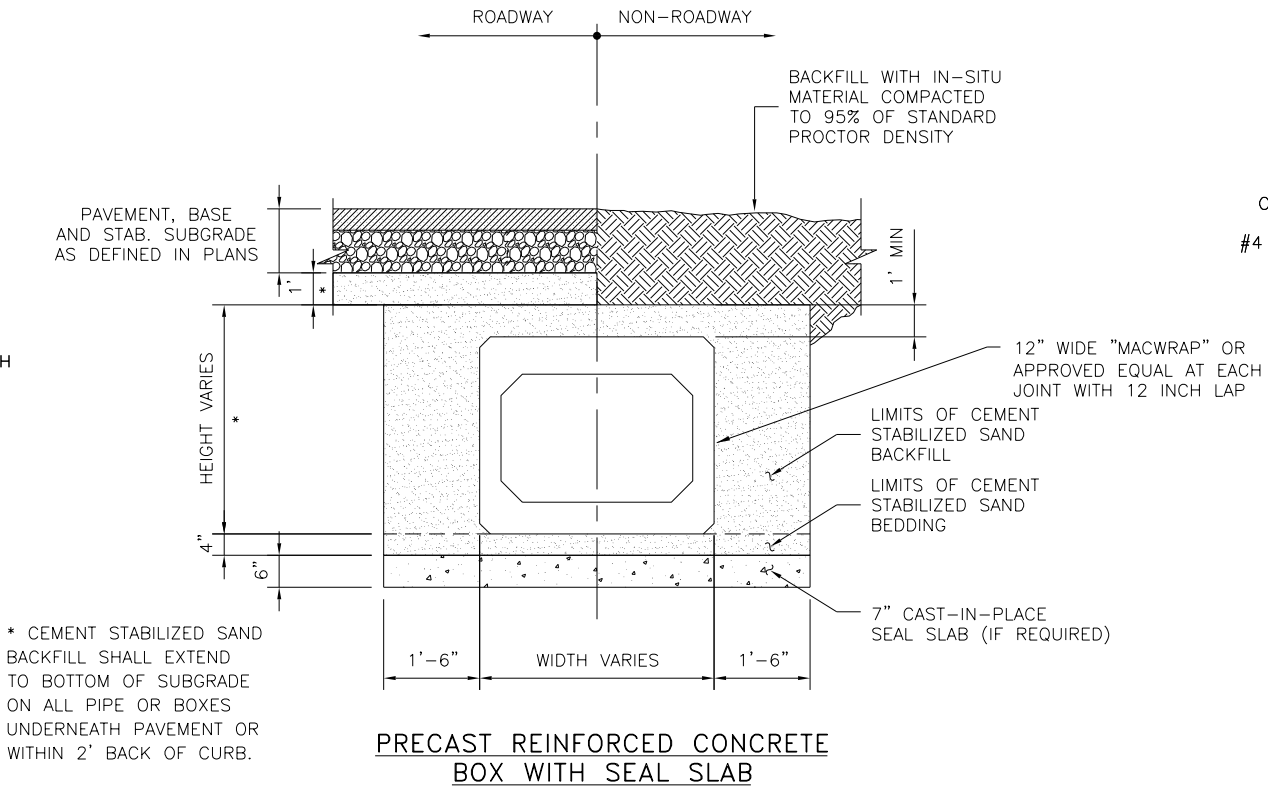
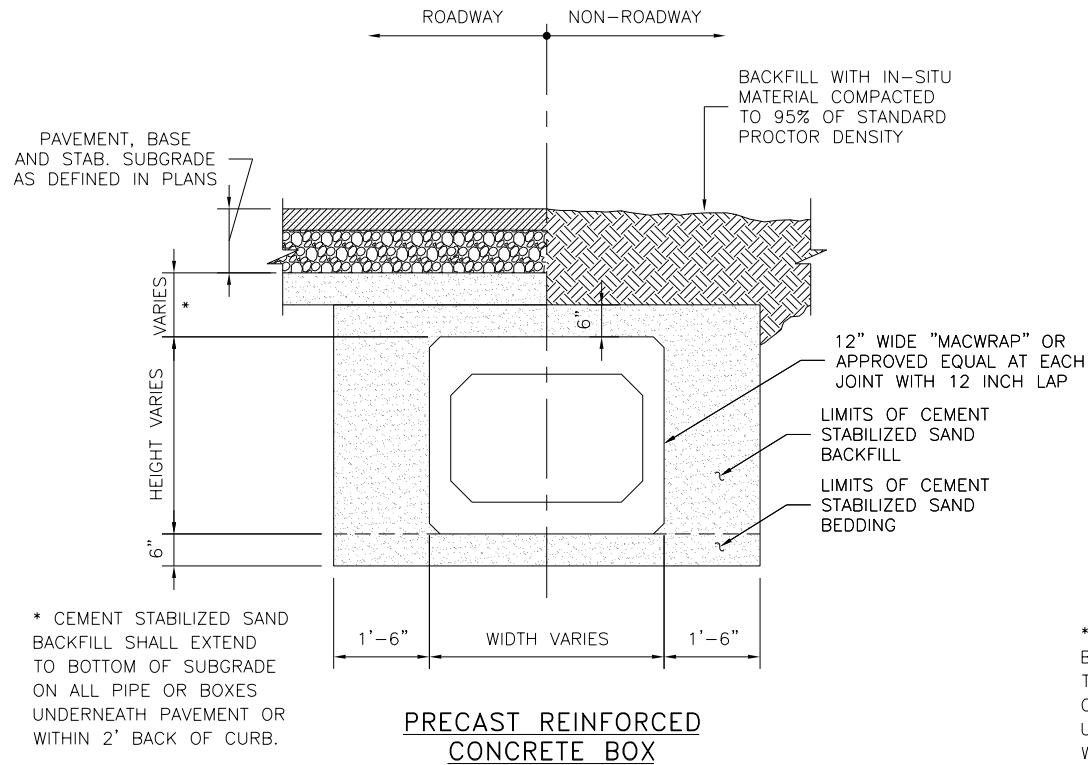
NO.	REVISIONS	DATE	NAME
▲	ORIGINAL STANDARD ISSUED	3-1-22	RJS
▲			
▲			
▲			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: PED-18 RAMP DETAILS	FBCD STANDARD
CK'D BY: INIT		18
SCALE: 1" = 1'	SHEET 4 OF 4	SHEET NO:  /
DATE: 3-1-22		

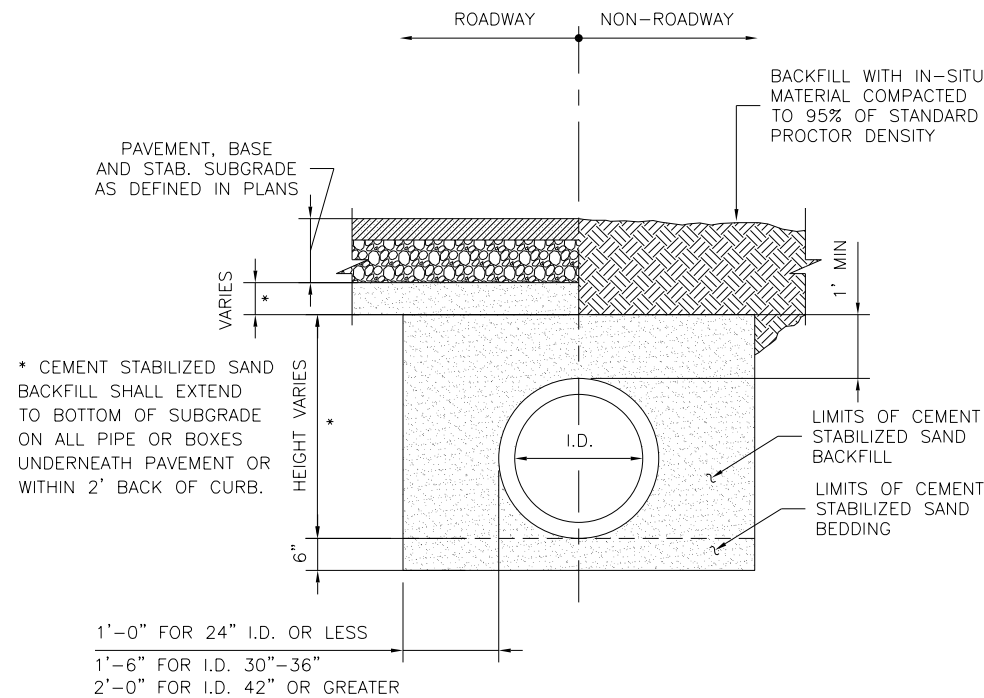
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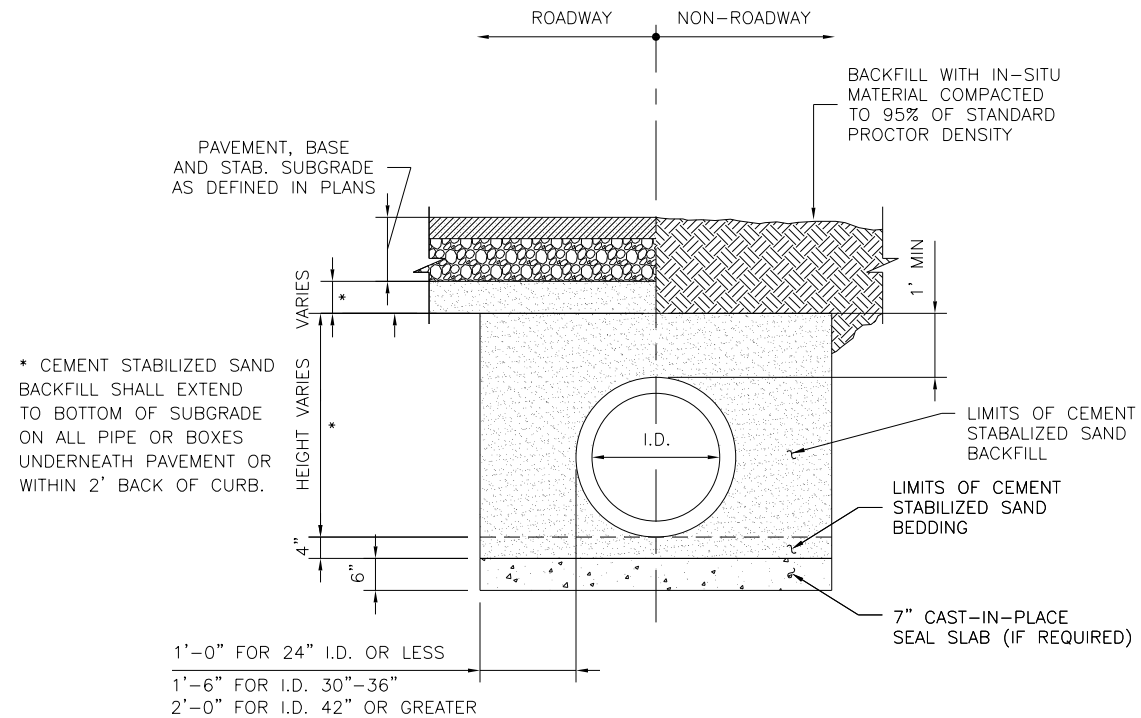
**TYPICAL CONCRETE COLLAR FOR 36" & SMALLER RCP**

**GENERAL NOTES:**

- FOR RCP LARGER THAN 36" DIAMETER, CONCRETE COLLARS MUST BE DESIGNED BY THE ENGINEER OF RECORD.
- ALL TRENCHES IN ROW SHALL BE BACKFILLED WITH 2 SACKS/CY CEMENT STABILIZED SAND (HC ITEM 400) TO SUBGRADE. COMPACTED TO 95% STANDARD PROCTOR DENSITY BOTTOM OF SUBGRADE
- CEMENT STABILIZED SAND IS INCIDENTAL TO INSTALLATION
- USE OF POLYPROPYLENE PIPE SHALL FOLLOW HC SPEC ITEM 482 AND MUST ALSO BE APPROVED BY THE AGENCY THAT WILL MAINTAIN IT. ALL JOINTS SHALL BE WATER TIGHT AND BEDDING REQUIREMENTS SHALL FOLLOW HC ITEM SPEC ITEM 400.
- ALL OUTFALLS INTO FBC MAINTAINED DRAINAGE FACILITIES SHALL BE POLYMER COATED CMP, RCP, OR RCB, AS APPLICABLE.



SEE NOTE 4



**REINFORCED CONCRETE PIPE WITH SEAL SLAB**

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED NOTE 3, 4, 5, & REV. DETAILS	10-1-24	RJS

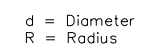
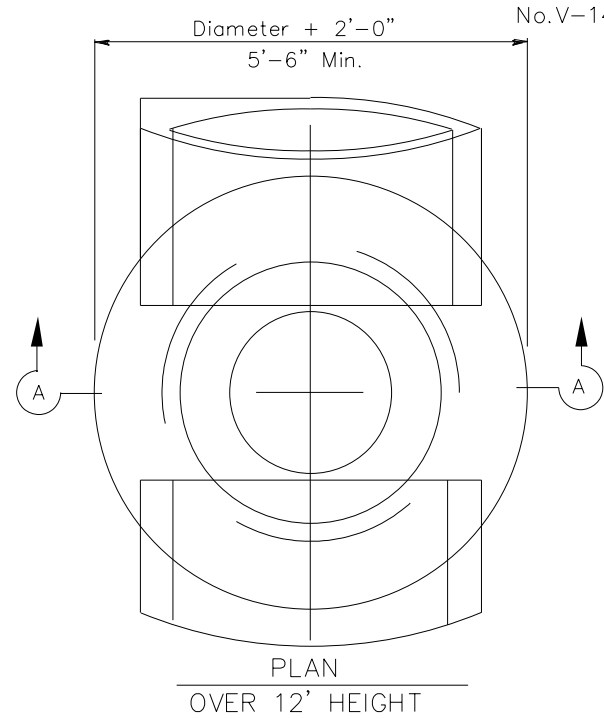
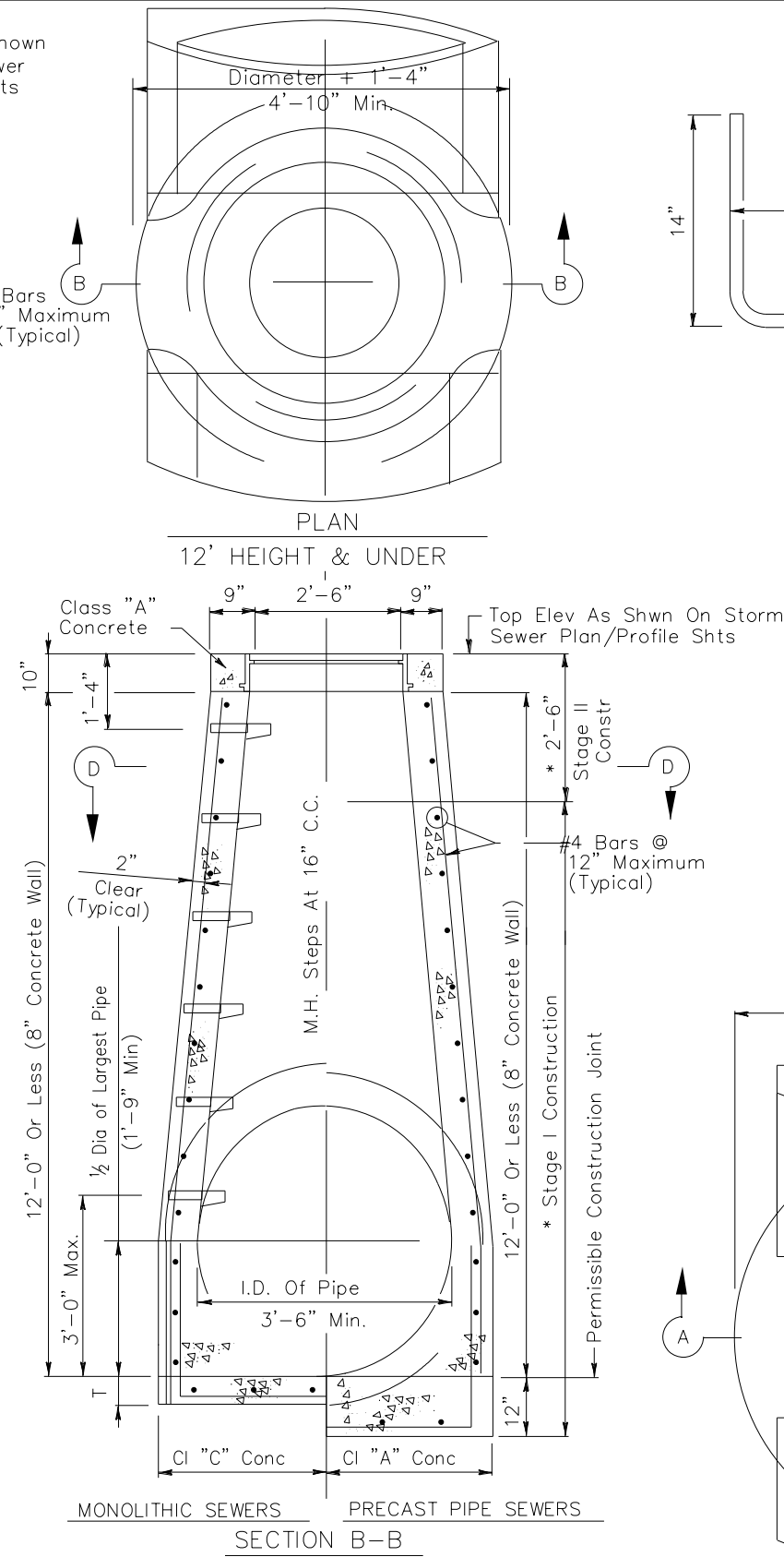
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
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CK'D BY:	INIT		
SCALE:	1"=1'-6"	DETAILS	SHEET NO: /
DATE:	10-1-24		
		APPROVED BY:	

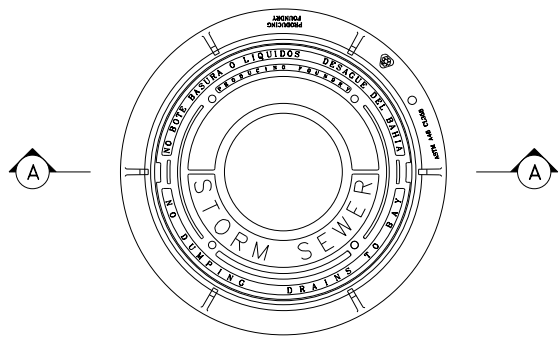


FORT BEND COUNTY  
ENGINEERING DEPARTMENT



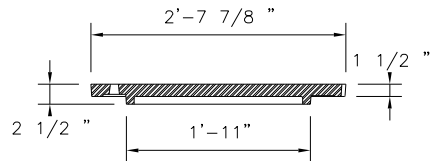
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DRAWN BY: INIT			FBCE STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CAST-IN-PLACE CONCRETE		20
SCALE: AS NOTED	STORM SEWER MANHOLE DETAILS		SHEET NO:
DATE: 3-1-22	APPROVED BY:		/

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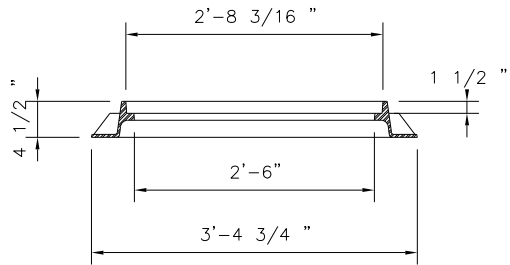


PLAN VIEW  
FRAME AND COVER  
SCALE: 1" = 1'-0"

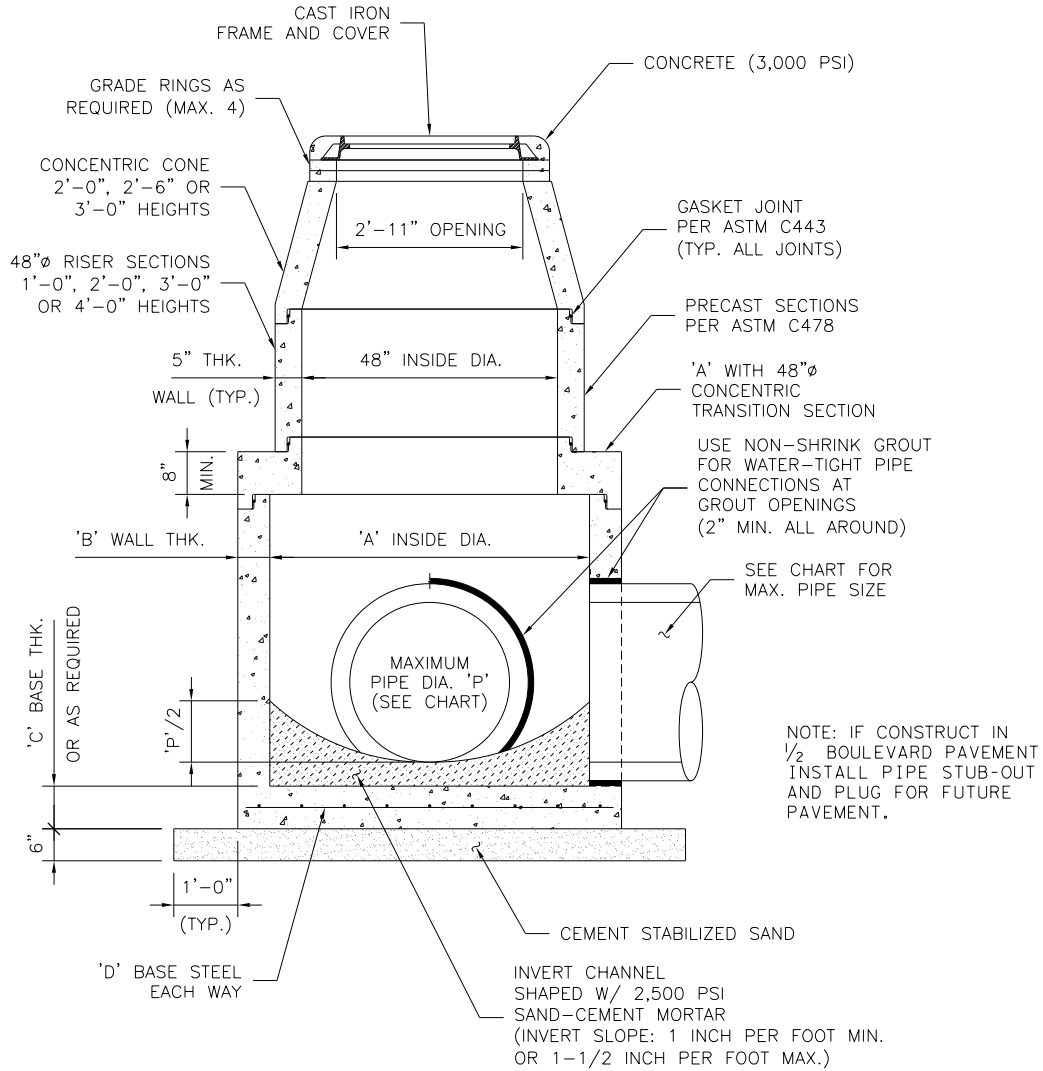
NOTE: IF PROJECT IS WITHIN A CITY ETJ OR CITY LIMITS, USE CITY'S STD MANHOLE COVER



COVER SECTION A-A  
SCALE: 1" = 1'-0"

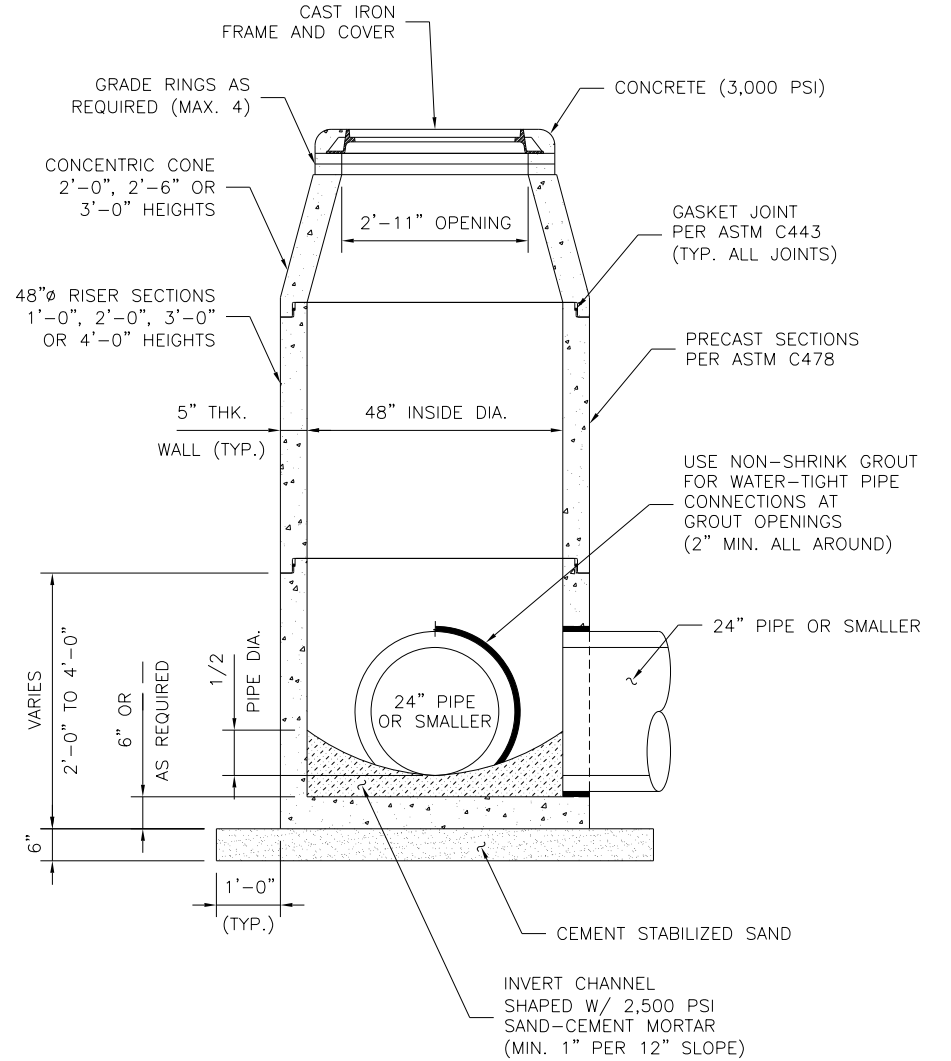


FRAME SECTION A-A  
SCALE: 1" = 1'-0"



PRECAST CONCENTRIC MANHOLE  
FOR PIPE SIZES GREATER THAN 24"  
SCALE: 1" = 1'-6"

MAXIMUM PIPE DIA. 'P'	INSIDE DIA. 'A'	WALL THICKNESS 'B'	BASE THICKNESS 'C'	BASE STEEL 'D'
30"	5'-0"	6"	8"	#5 @ 8"
42"	6'-0"	7"	8"	#5 @ 8"
54"	7'-0"	8"	10"	#6 @ 12" (2 LAYERS)
60"	8'-0"	9"	10"	#6 @ 12" (2 LAYERS)



48"Ø PRECAST CONCENTRIC MANHOLE  
FOR PIPE SIZES 24" OR SMALLER  
SCALE: 1" = 1'-6"

GENERAL NOTES:

- CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 465 "CONCRETE MANHOLES AND JUNCTION BOXES".
- CONCRETE FOR MANHOLE: MINIMUM 4,000 PSI IN 28 DAYS
- HS-20 LOADING; MANHOLE DESIGN SHALL MEET OR EXCEED ASTM C478 REQUIREMENTS.
- GASKET JOINT: PER ASTM C443
- FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS MODEL V-1420 OR APPROVED EQUAL.
- SHOP DRAWINGS WITH MANUFACTURER'S CERTIFICATION SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

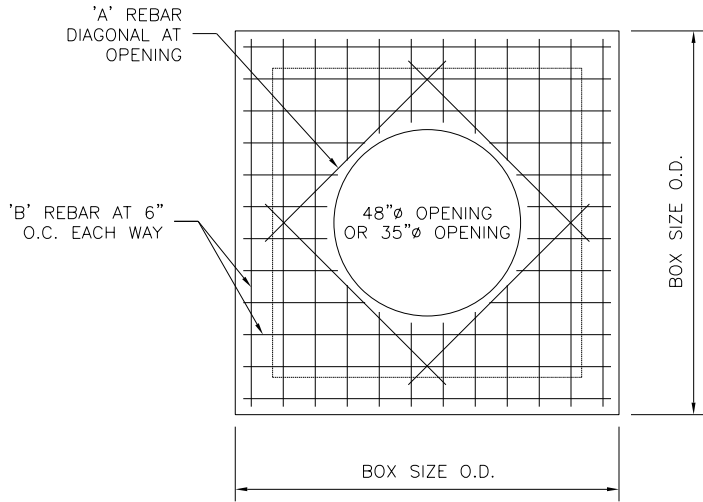


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SCALE: AS NOTED	MANHOLE DETAILS		SHEET NO: /
DATE: 10-1-24	APPROVED BY:		

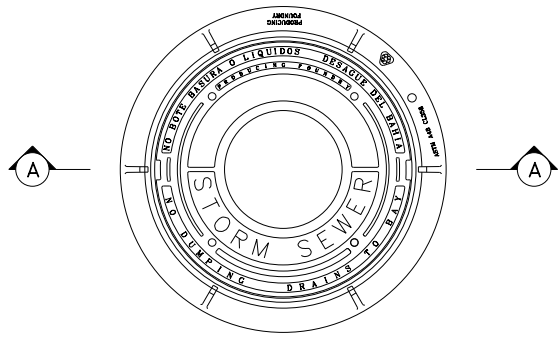
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BOX SIZE I.D.	MAX. OPENING SIZE	FLAT SLAB THK.	WALL THK.	BASE THK.	BAR 'A'	BAR 'B'	BAR 'C'	*BAR 'D'
4'X4'	48"	8"	6"	6"	#4	#4	#4	#4
5'X5'	60"	10"	6"	8"	#5	#5	#4	#4
6'X6'	72"	10"	8"	8"	#5	#5	#5	#5
7'X7'	84"	10"	8"	8"	#5	#5	#5	#5
8'X8'	96"	10"	8"	8"	#5	#5	#5	#5

\* FOR 7'X7' AND 8'X8' BOX SIZE: TWO LAYERS OF STEEL REQUIRED.  
(FOR DEPTHS GREATER THAN 15')

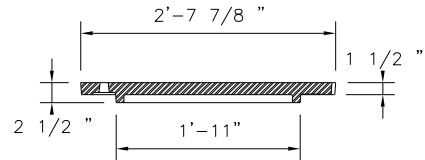


PLAN VIEW  
FLAT SLAB WITH OPENING  
SCALE: 1"=1'-6"

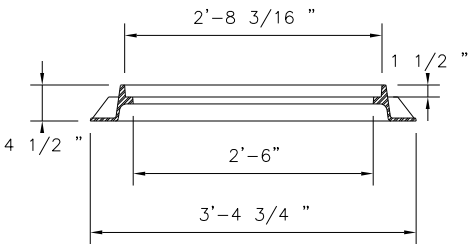


PLAN VIEW  
FRAME AND COVER  
SCALE: 1"=1'-0"

NOTE: IF PROJECT IS WITHIN A CITY ETJ  
USE CITY'S STD MANHOLE COVER

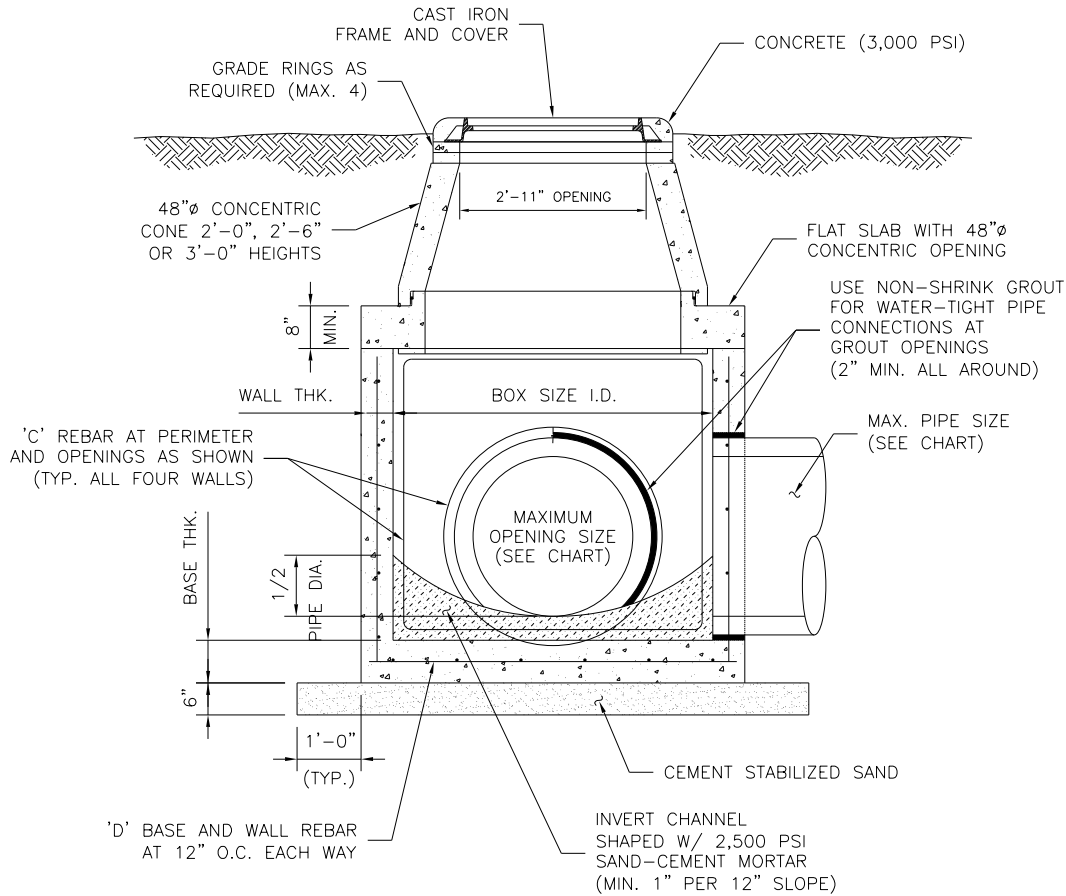


COVER SECTION A-A  
SCALE: 1"=1'-0"

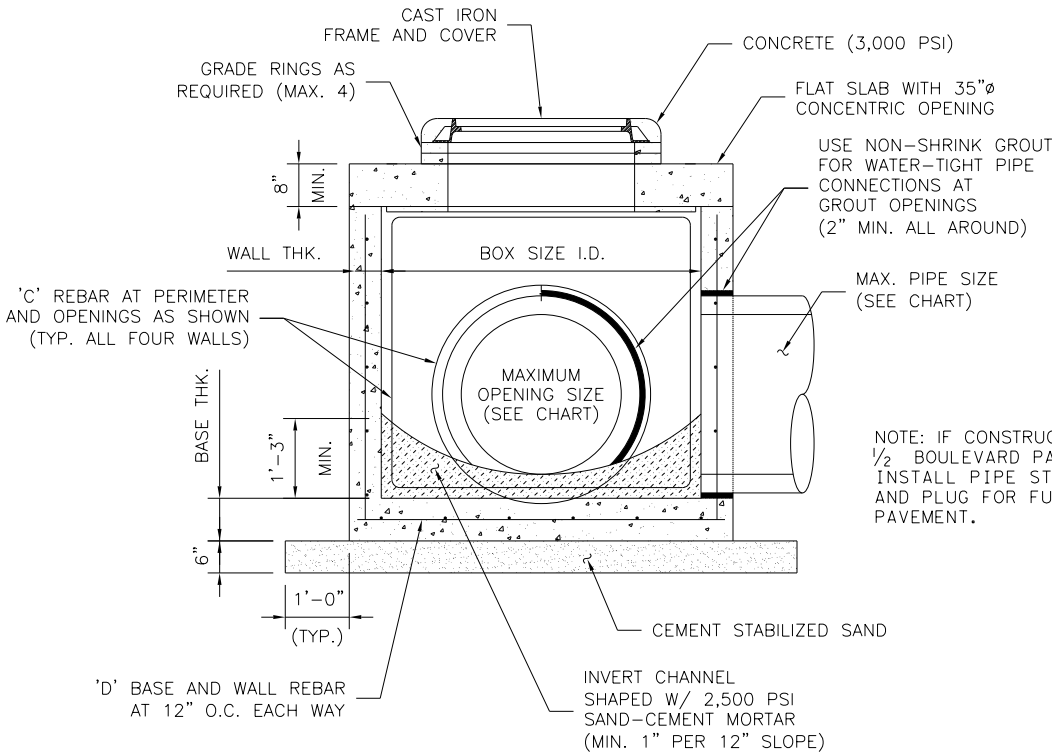


FRAME SECTION A-A  
SCALE: 1"=1'-0"

NOTE: IF CONSTRUCT IN  
1/2 BOULEVARD PAVEMENT  
INSTALL PIPE STUB-OUT  
AND PLUG FOR FUTURE  
PAVEMENT.



JUNCTION BOX/MANHOLE  
WITH CONCENTRIC CONE  
SCALE: 1"=1'-6"



JUNCTION BOX/MANHOLE  
WITH FLAT SLAB  
SCALE: 1"=1'-6"

GENERAL NOTES:

- CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 465 "CONCRETE MANHOLES AND JUNCTION BOXES".
- CONCRETE FOR JUNCTION BOX: MINIMUM 4,000 PSI IN 28 DAYS
- HS-20 LOADING; MANHOLE DESIGN SHALL MEET OR EXCEED ASTM C478 AND ASTM C913 REQUIREMENTS.
- JOINT SEALANT: RAM-NEK GASKET MATERIAL
- FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS MODEL V-1420 OR APPROVED EQUAL.
- SHOP DRAWINGS WITH MANUFACTURER'S CERTIFICATION SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL.

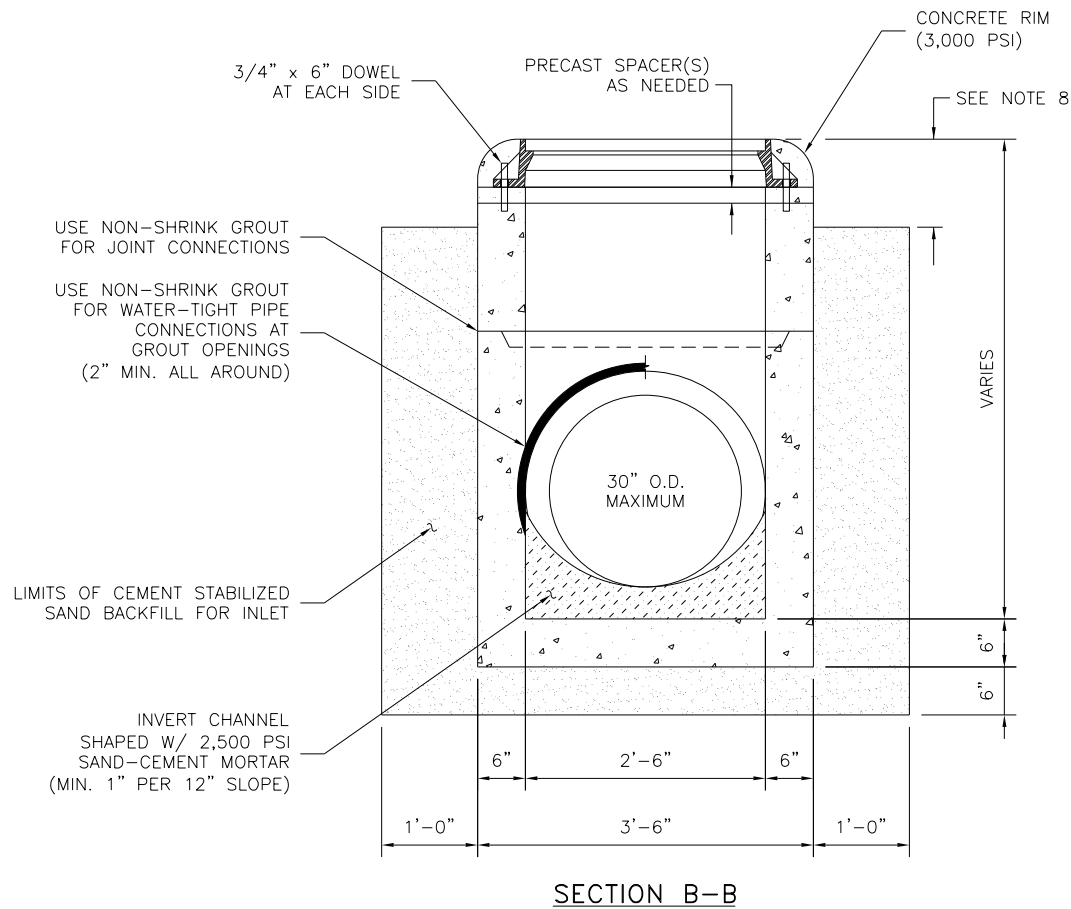
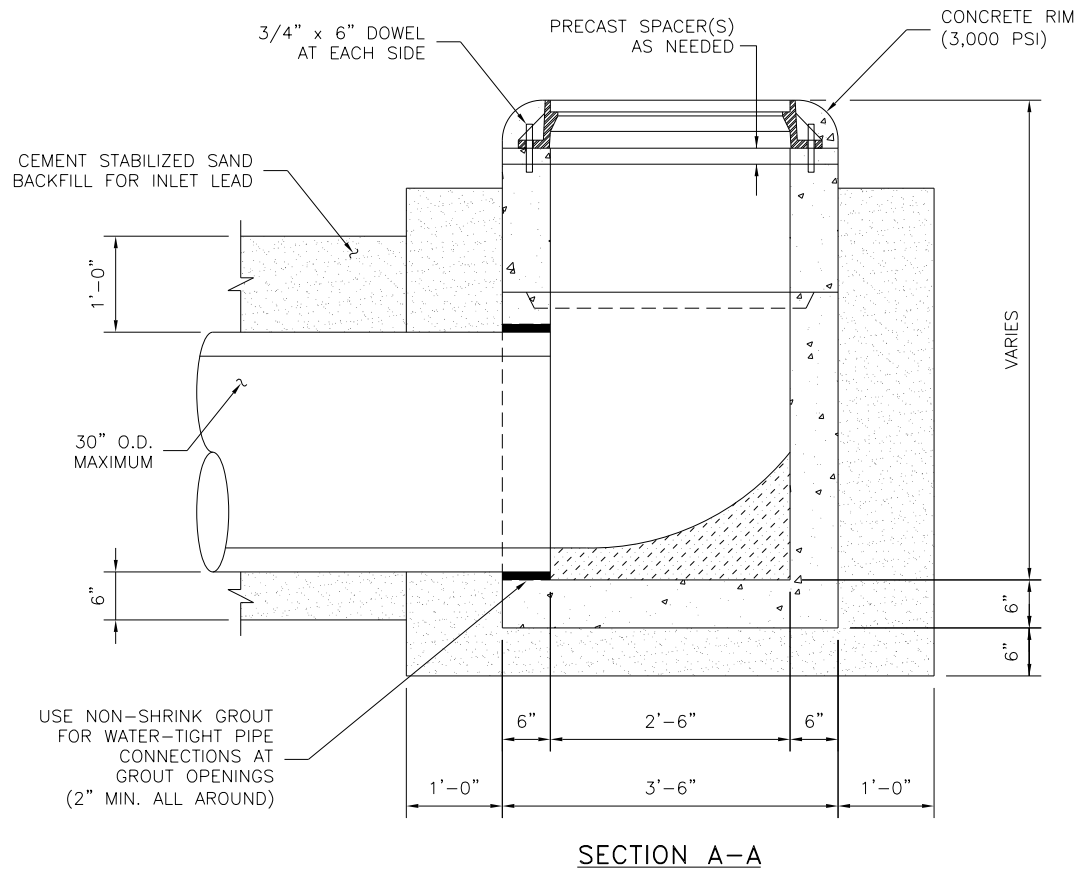
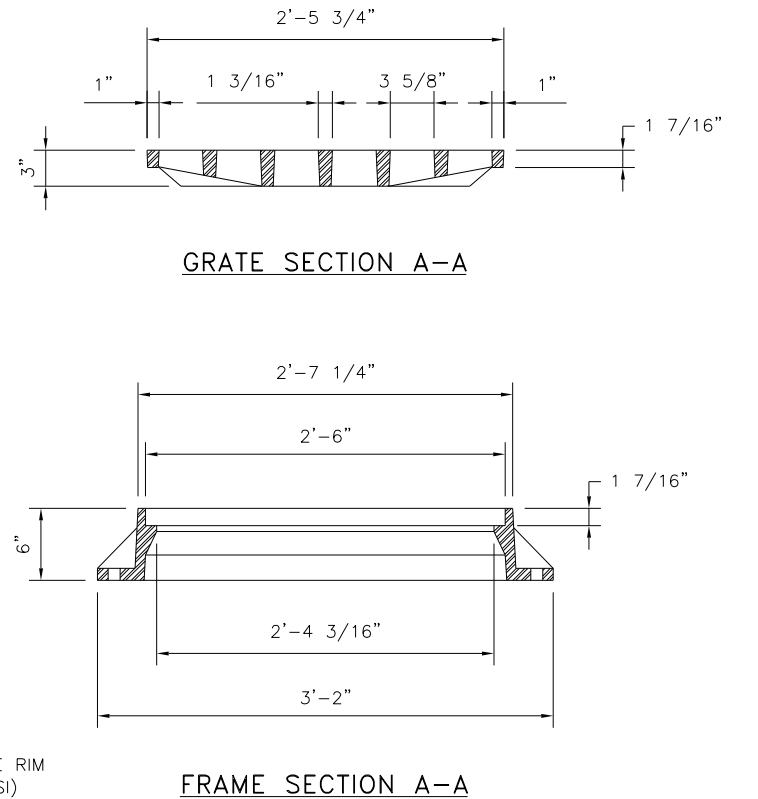
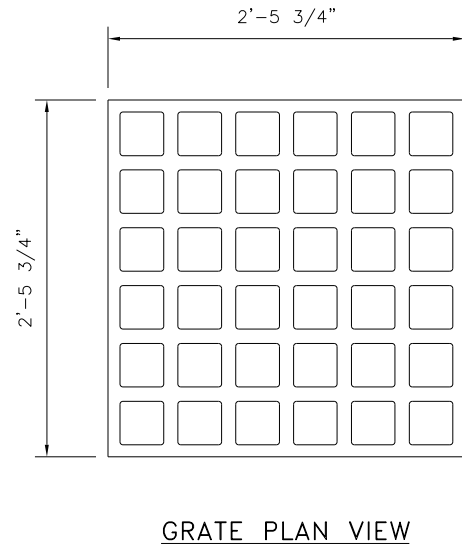
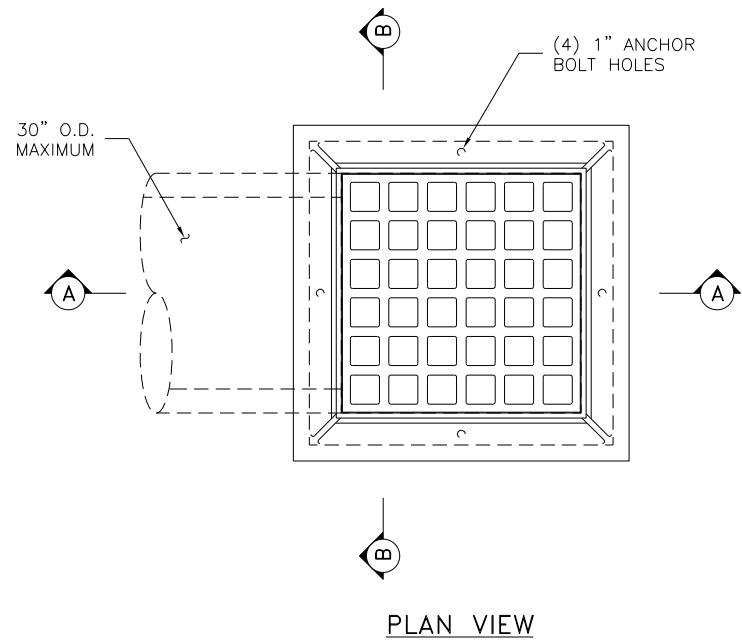
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: JUNCTION BOX/ MANHOLE	FBCE STANDARD
CK'D BY: INIT		22
SCALE: AS NOTED	DETAILS	SHEET NO:
DATE: 10-1-24		
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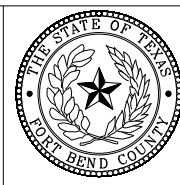
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- GENERAL NOTES:**
1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 466 "INLETS".
  2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS
  3. PRECAST STRUCTURE TO MEET ASTM C913
  4. FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4880-1 (OPEN AREA 473 SQ. IN.) OR APPROVED EQUAL.
  5. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
  6. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
  7. KNOCK-OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
  8. CEMENT STABILIZED SAND SHALL EXTEND TO THE BOTTOM OF PAVEMENT OR SLOPE PAVING, OR 12 INCHES BELOW THE SURFACE IF INLET IS LOCATED IN AN UNPAVED AREA.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



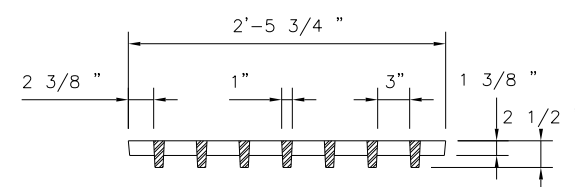
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CK'D BY: INIT		23
SCALE: 1"=1'-0"		SHEET NO:
DATE: 10-1-24		
APPROVED BY:		

2'-5 3/4"

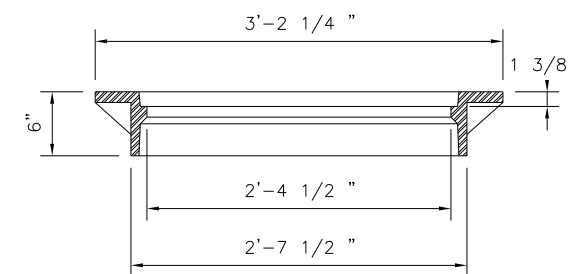
2'-1 3/4"

(4) BOLT SLOTS  
(SEE SLOT DETAIL)

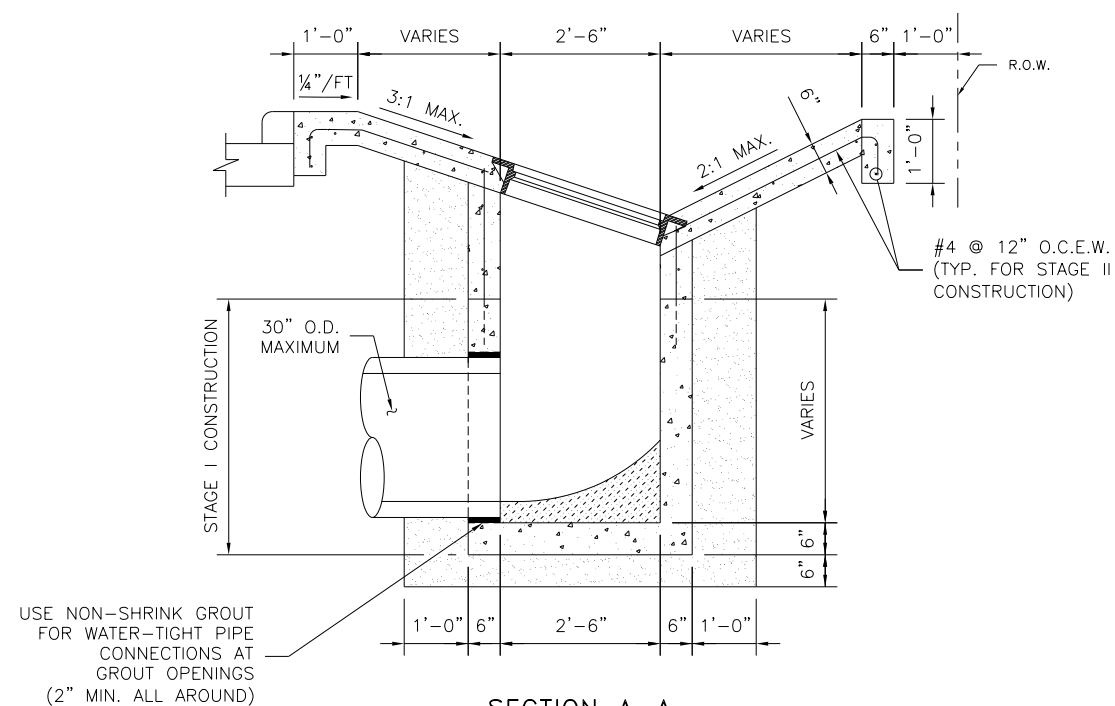
### SLOT DETAIL



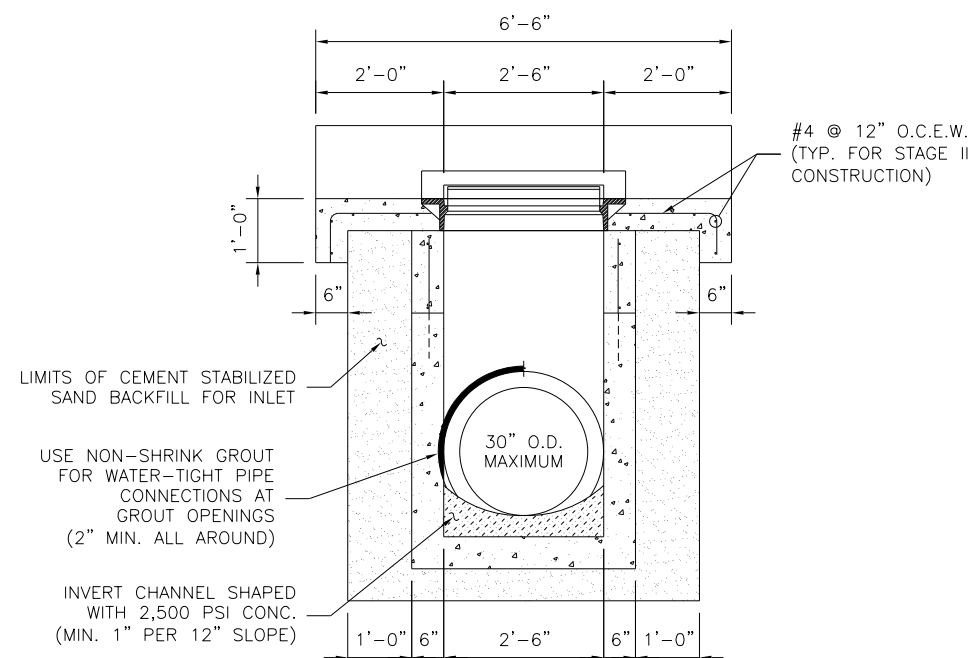
GRATE SECTION A-A



FRAME SECTION A-A



SECTION A-A



SECTION B-B

GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 466 "INLETS".
2. CONCRETE: MINIMUM 4,000 PSI IN 28 DAYS
3. PRECAST STRUCTURE TO MEET ASTM C913.
4. FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4882-3 FRAME AND V-4880-2 GRATE WITH (4) BOLT SLOT GRATE OR APPROVED EQUAL.
5. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET; HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
6. USE PRECAST UNITS FOR STAGE I CONSTRUCTION. CAST IN PLACE MAY BE REQUIRED DURING STAGE II CONSTRUCTION. SHOP DRAWINGS WILL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
7. KNOCK-OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
8. CONCRETE SLOPE PAVING SHALL CONFORM TO ITEM 432 "RIPRAP", BUT IS INCIDENTAL TO THE INLET.
9. STAGE I OF THE INLET SHALL BE PRECAST. STAGE II SHALL BE CAST-IN-PLACE.
10. MINIMUM CLEARANCE FOR REINFORCING STEEL IN SLOPE PAVING SHALL BE TWO INCHES.

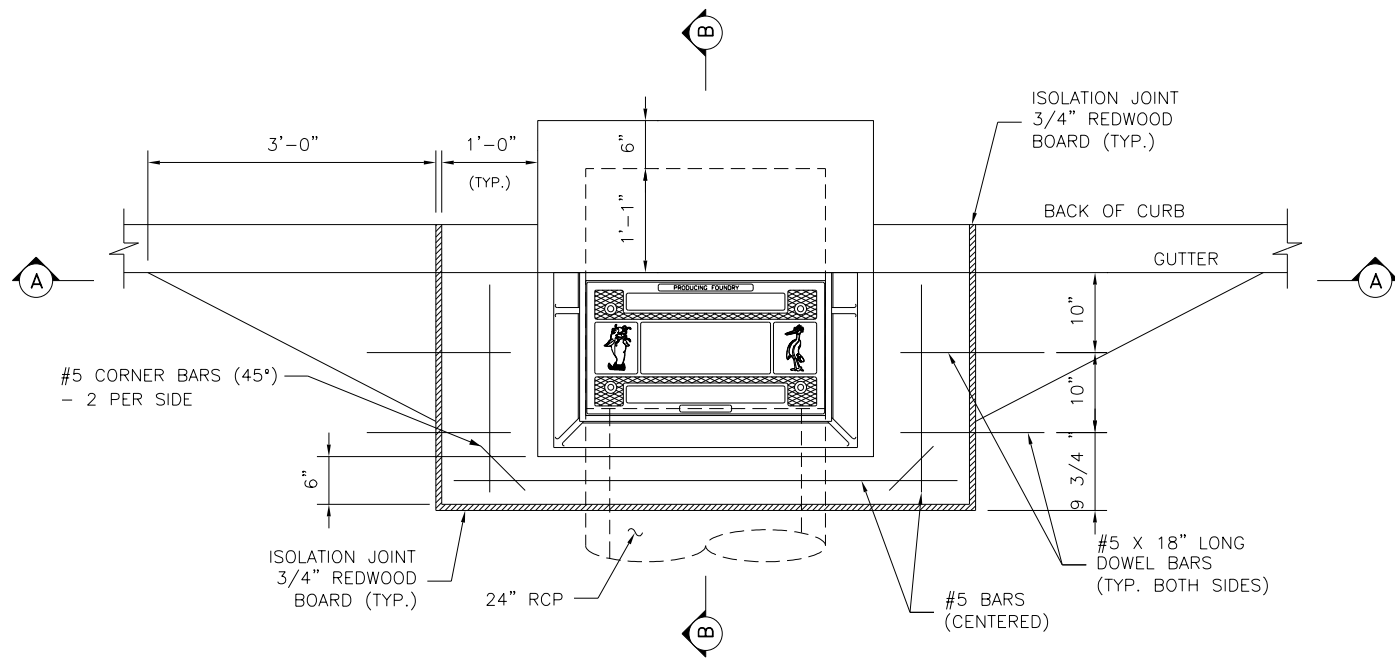
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
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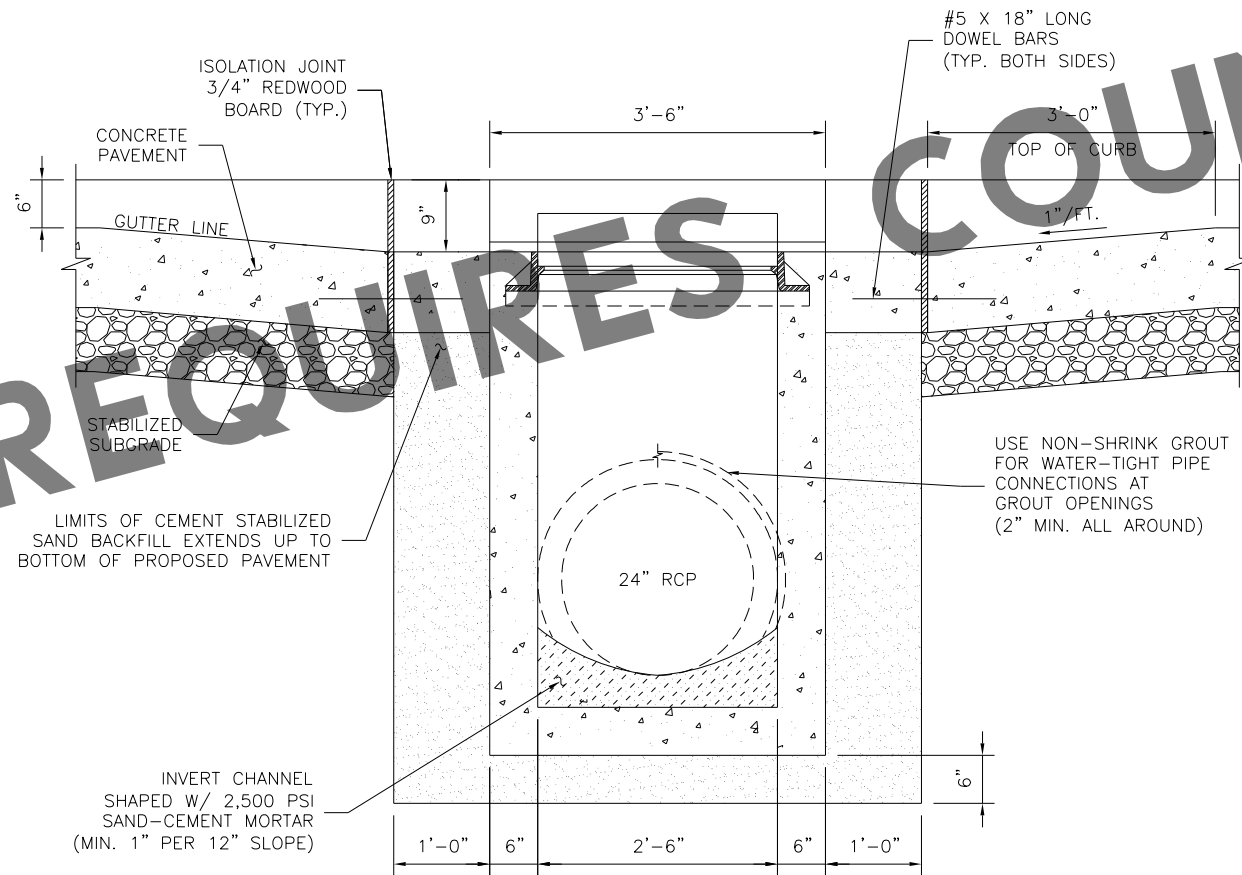


PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: MODIFIED TYPE "A" INLET DETAILS	24
SCALE: 1"=1'-6"	FOR BEHIND CURB SWALES	
DATE: 10-1-24	APPROVED BY:	SHEET NO: /

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PLAN VIEW



SECTION A-A

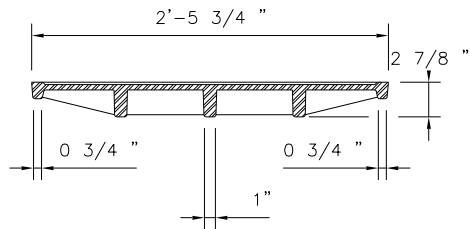
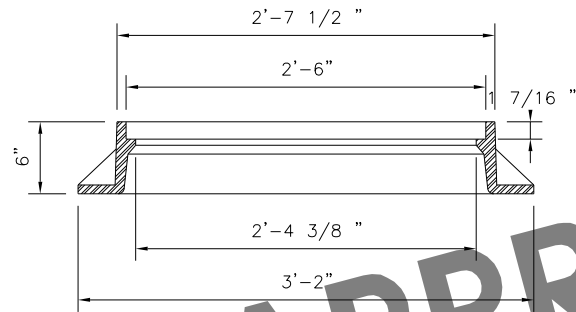
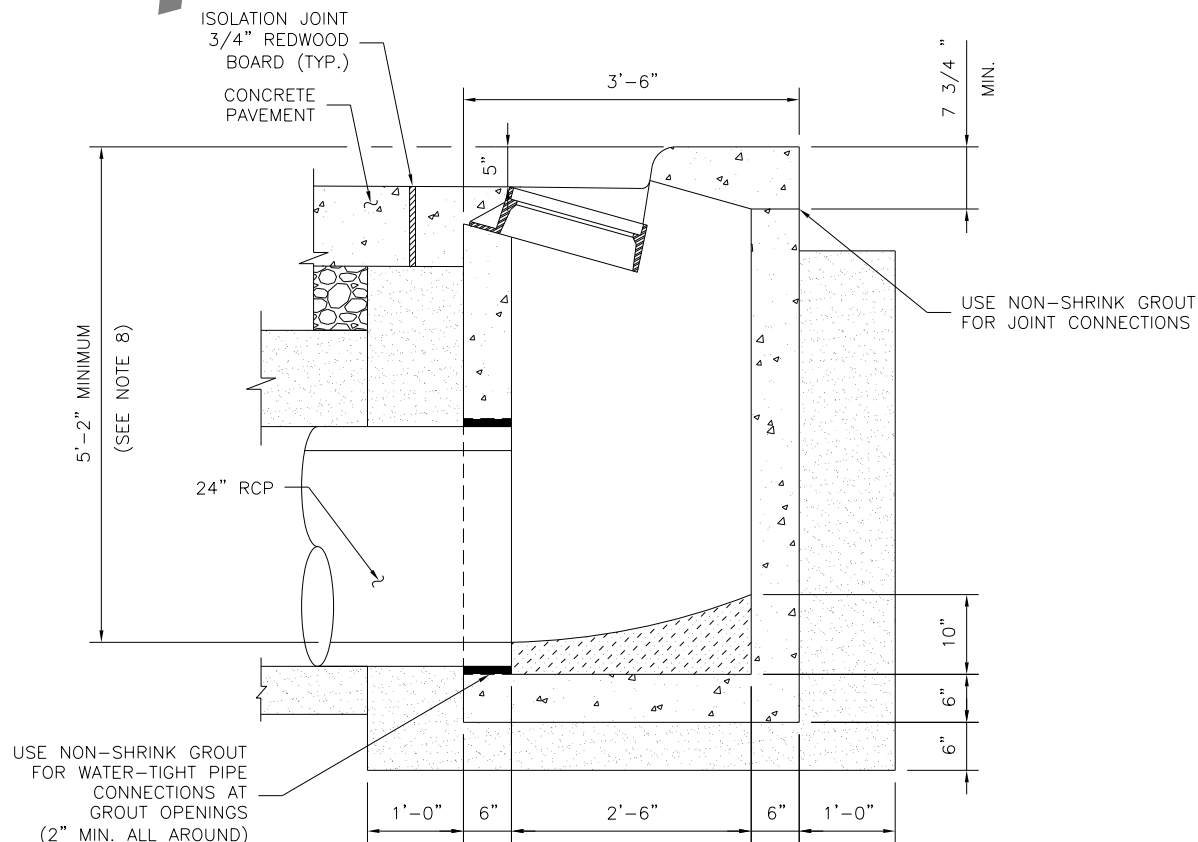


PLATE SECTION A-A



FRAME SECTION A-A



SECTION B-B

GENERAL NOTES:

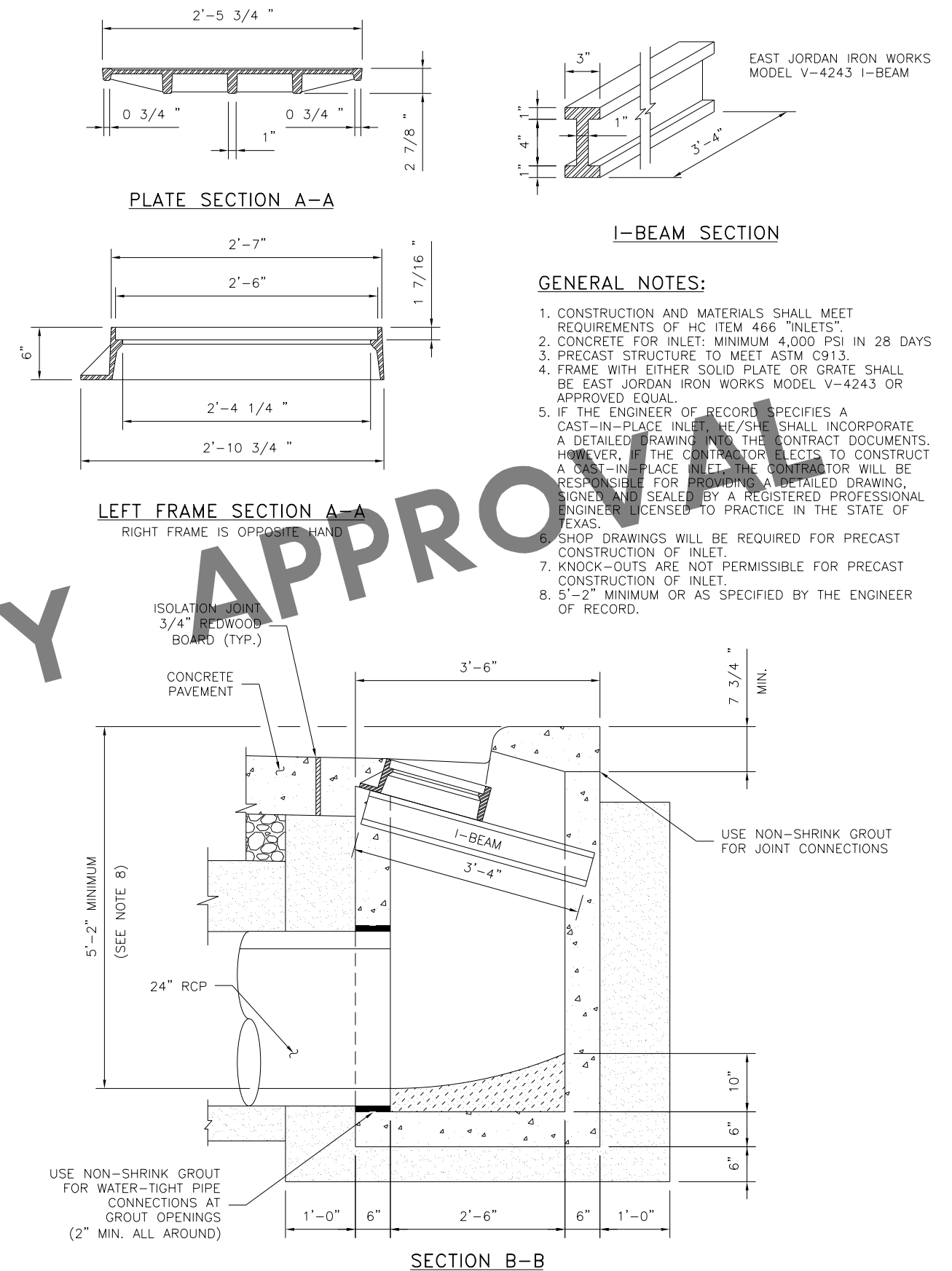
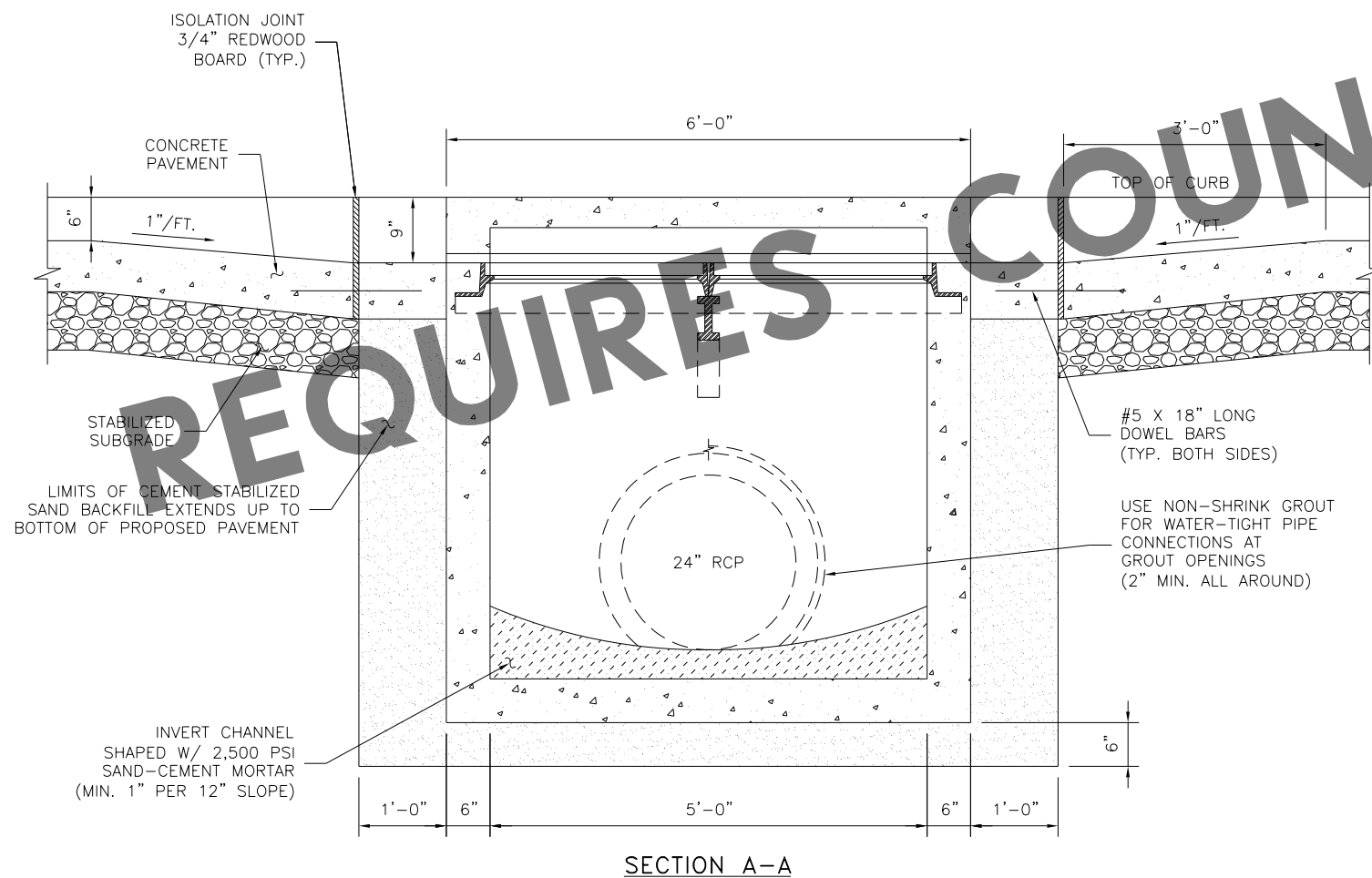
1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 466 "INLETS".
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS
3. PRECAST STRUCTURE TO MEET ASTM C913.
4. FRAME WITH EITHER SOLID PLATE OR GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4241 OR APPROVED EQUAL.
5. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
6. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
7. KNOCK-OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
8. 5'-2" MINIMUM OR AS SPECIFIED BY THE ENGINEER OF RECORD.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE "B" INLET DETAILS	FBCE STANDARD 25
CK'D BY: INIT		
SCALE: 1"=1'-0"	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		



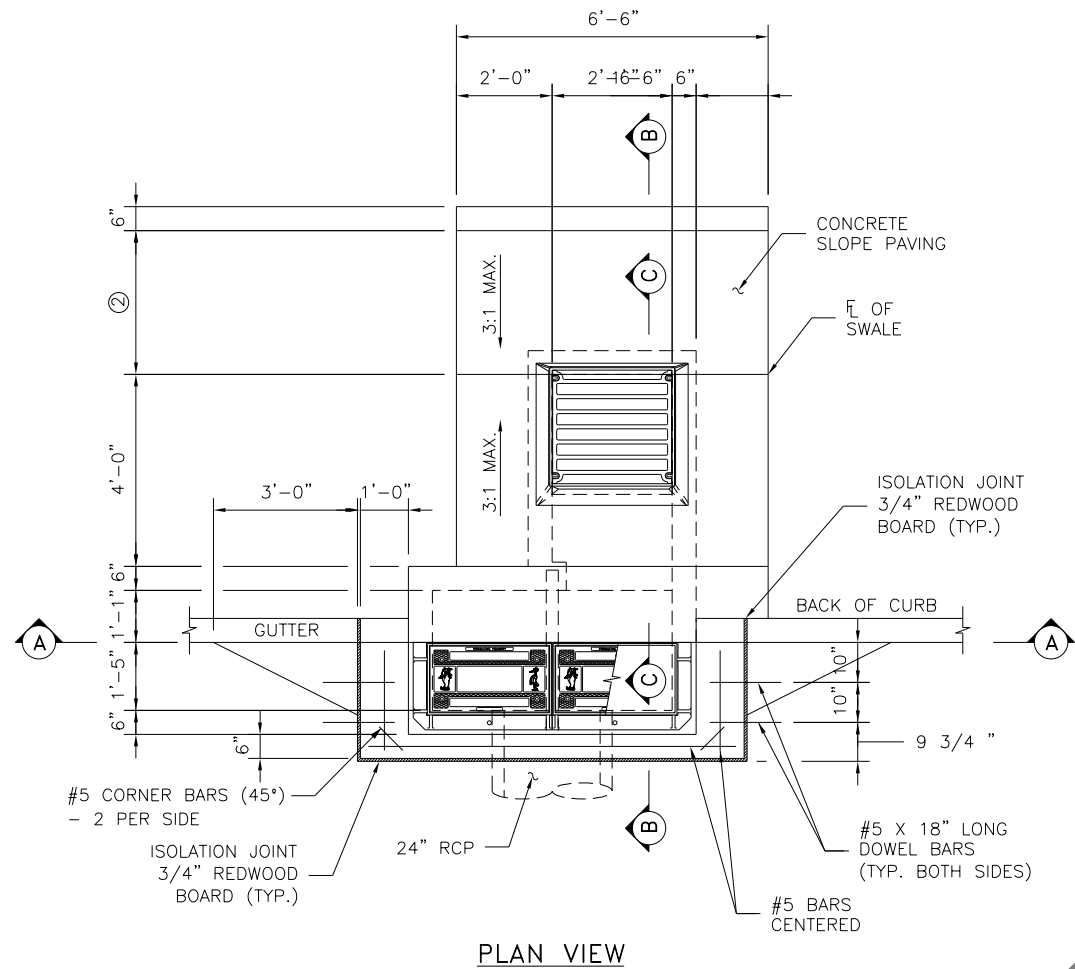
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

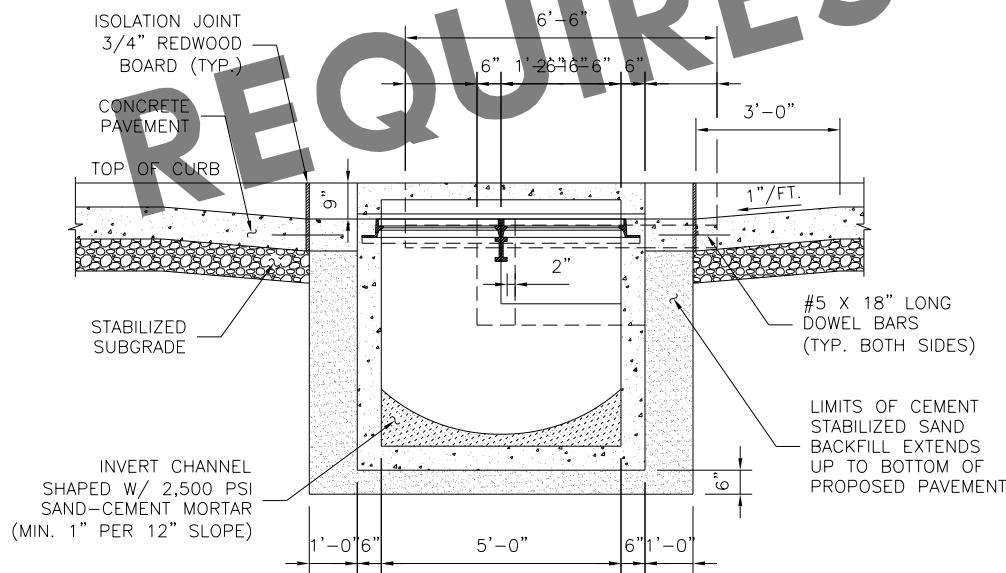


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DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: TYPE "B-B" INLET DETAILS	26
SCALE: 1"=1'-0"		SHEET NO:
DATE: 10-1-24	APPROVED BY:	/

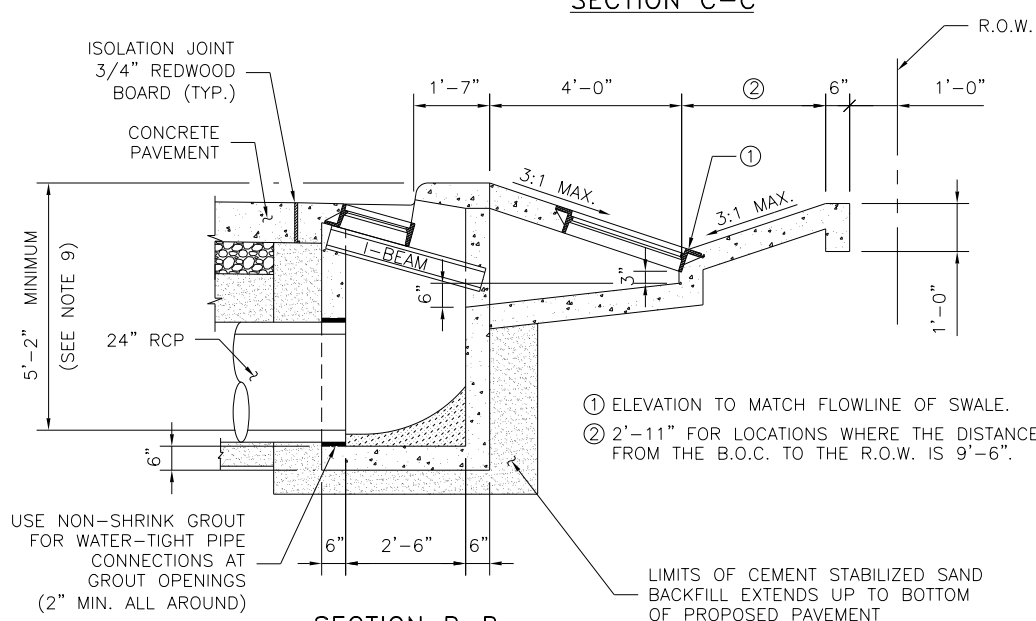
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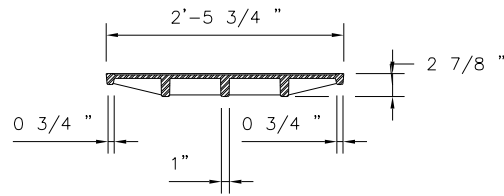
PLAN VIEW



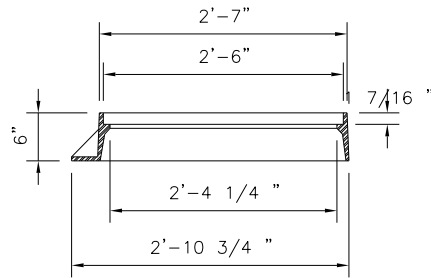
SECTION A-A



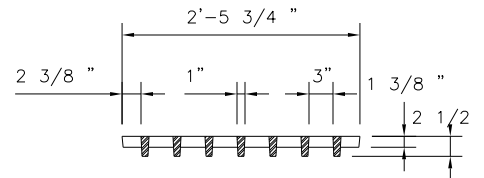
SECTION B-B



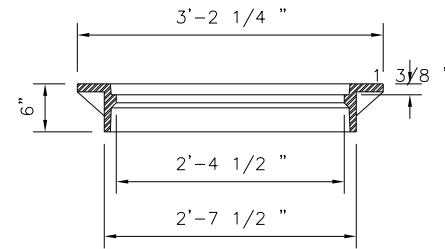
FRONT OF CURB: PLATE  
SECTION A-A



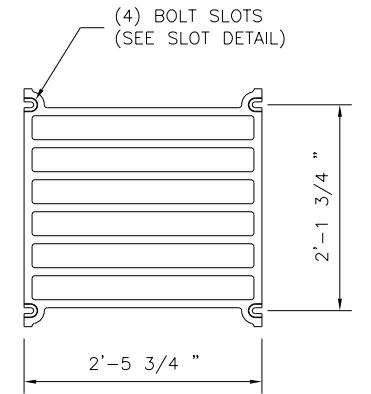
FRONT OF CURB: LEFT FRAME  
SECTION A-A  
RIGHT FRAME IS OPPOSITE HAND



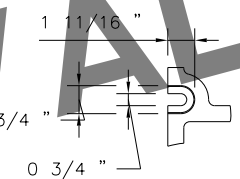
BACK OF CURB: GRATE  
SECTION B-B



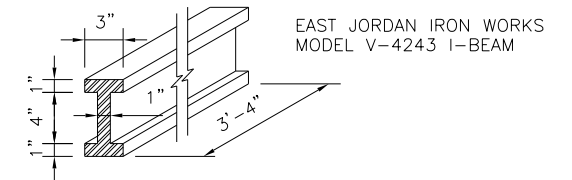
BACK OF CURB: FRAME  
SECTION A-A



BACK OF CURB: GRATE  
PLAN VIEW



SLOT DETAIL



I-BEAM SECTION

GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 466 "INLETS".
2. SLOPE PAVING SHALL CONFORM TO THE REQUIREMENTS OF HC ITEM 432 "RIPRAP" AND PAYMENT SHALL BE INCLUDED IN THE COST OF THE INLET
3. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS
4. PRECAST STRUCTURE TO MEET ASTM C913.
5. FRONT OF CURB: FRAME WITH EITHER SOLID PLATE OR GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4243 OR APPROVED EQUAL. BACK OF CURB: SHALL BE EAST JORDAN IRON WORKS FRAME MODEL V-4882-3 AND GRATE MODEL V-4880-2 WITH (4) BOLT SLOT GRATE OR APPROVED EQUAL.
6. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SEALED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
7. USE PRECAST UNITS FOR STAGE I CONSTRUCTION. CAST-IN-PLACE MAY BE REQUIRED DURING STAGE II CONSTRUCTION. SHOP DRAWINGS WILL BE REQUIRED FOR THE PRECAST SECTION OF INLET.
8. KNOCK-OUTS ARE NOT PERMISSIBLE FOR THE PRECAST SECTION OF INLET.
9. 5'-2" MINIMUM OR AS SPECIFIED BY THE ENGINEER OF RECORD.
10. TOP OF CURB ELEVATION, DITCH AND STORM SEWER FLOWLINES ARE SHOWN ON THE PLAN AND PROFILE SHEETS.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

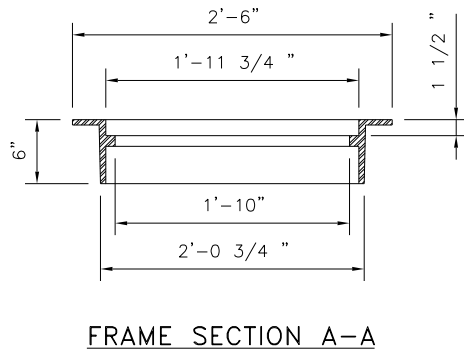
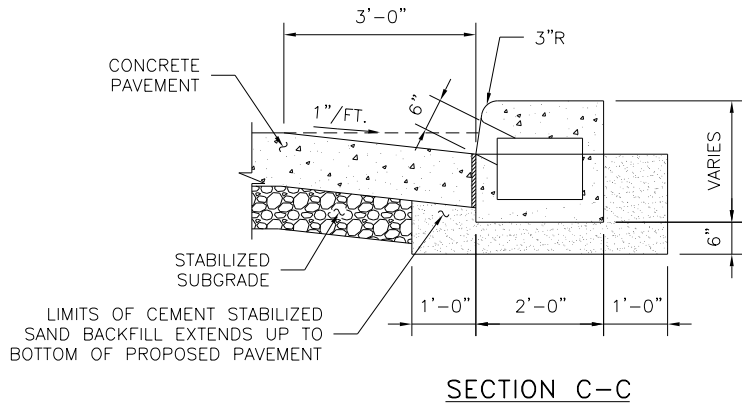
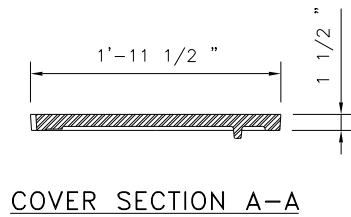
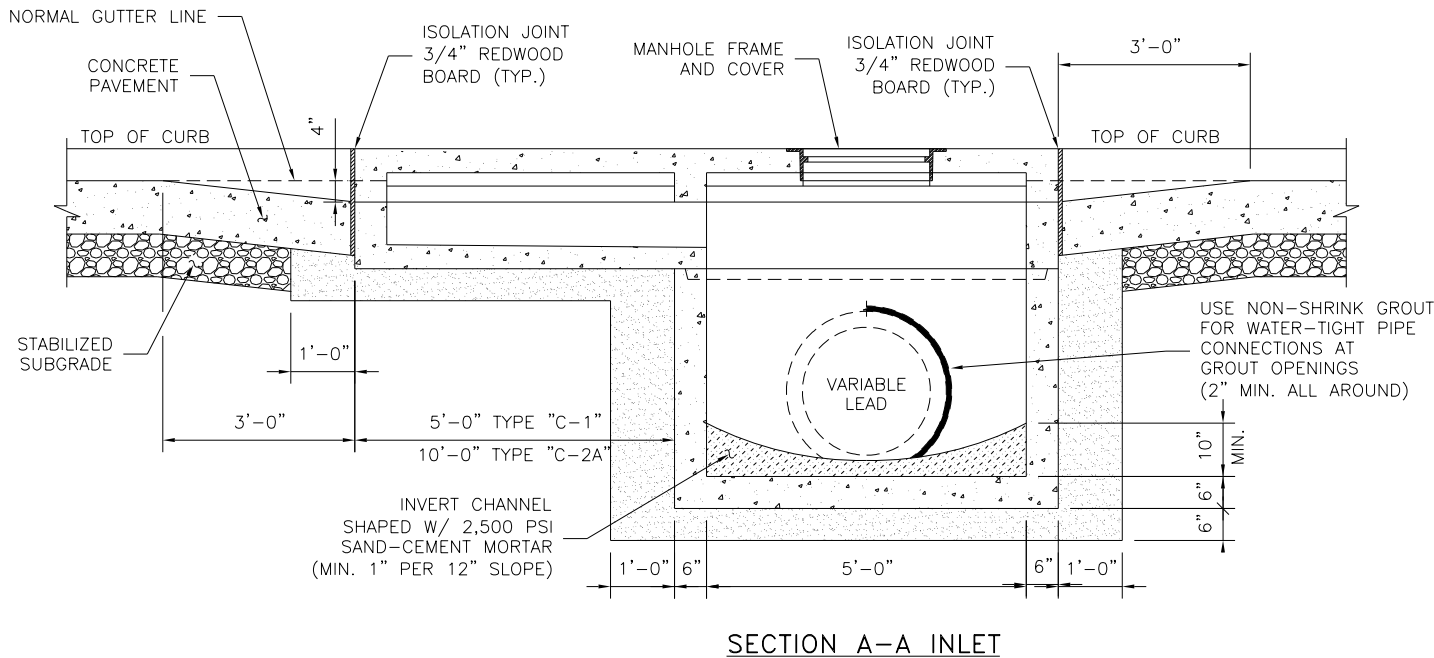
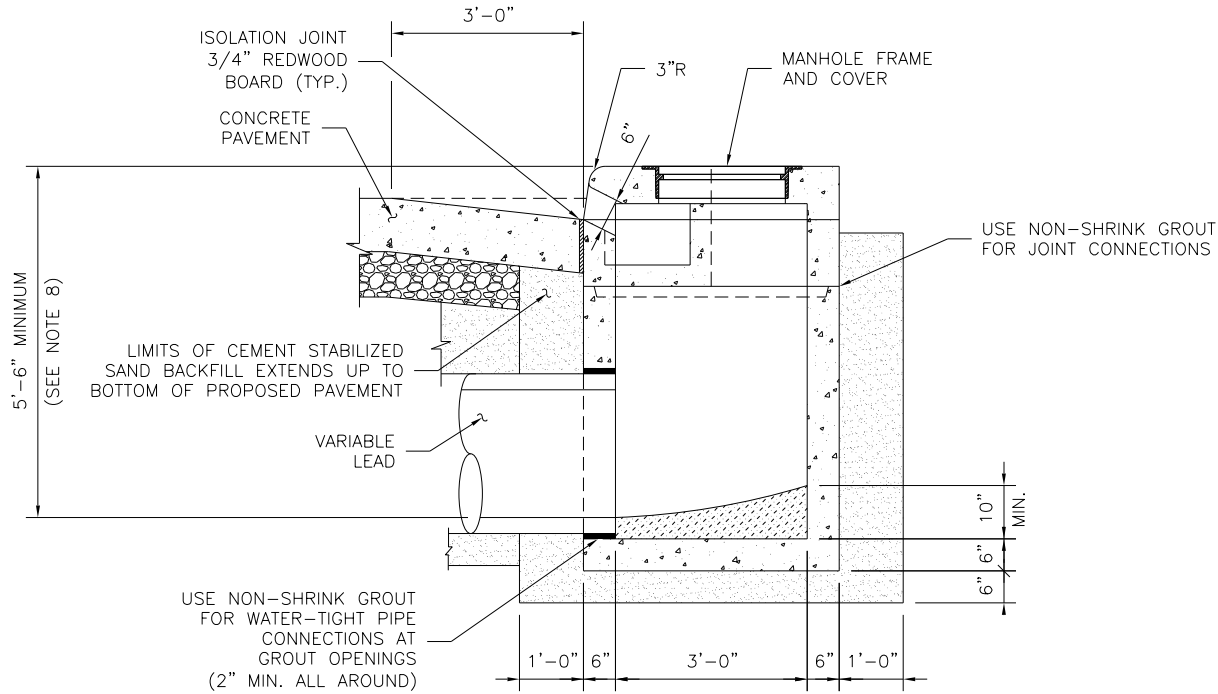
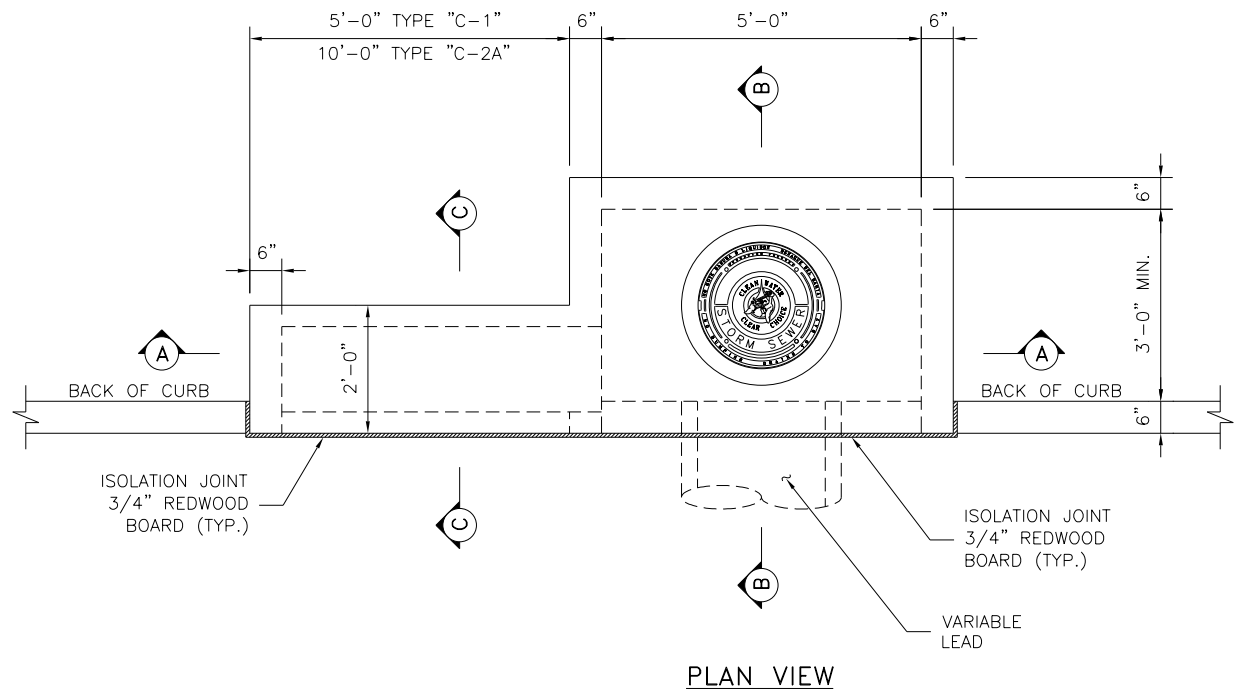
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: MODIFIED TYPE B-B INLET DETAILS	FBCE STANDARD
CK'D BY: INIT		27
SCALE: 1"=2'-0"	FOR BACK OF CURB GRATE	SHEET NO:
DATE: 10-1-24		
		/



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#### INLET NOTES:

- TYPE "C": INLET ONLY - NO EXTENSION  
TYPE "C-1": INLET WITH ONE EXTENSION (5'-0" LONG)  
TYPE "C-2": INLET WITH ONE EXTENSION (5'-0" LONG) ON EACH SIDE  
TYPE "C-2A": INLET WITH ONE DOUBLE EXTENSION (10'-0" LONG) ON ONE SIDE  
\* FOR TYPE "C-2A" INLETS, PROVIDE A CENTER 6"x6" COLUMN IN THE CURB LINE BETWEEN ALL EXTENSIONS.

#### GENERAL NOTES:

- CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC ITEM 466 "INLETS".
- CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS
- PRECAST STRUCTURE TO MEET ASTM C913.
- FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS MODEL V-1814 FRAME AND V-1418 COVER OR APPROVED EQUAL.
- IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
- SHOP DRAWINGS WILL BE REQUIRED FOR THE PRECAST SECTION OF INLET.
- KNOCK-OUTS ARE NOT PERMISSIBLE FOR THE PRECAST SECTION OF INLET.
- 5'-6" MINIMUM OR AS SPECIFIED BY THE ENGINEER OF RECORD.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

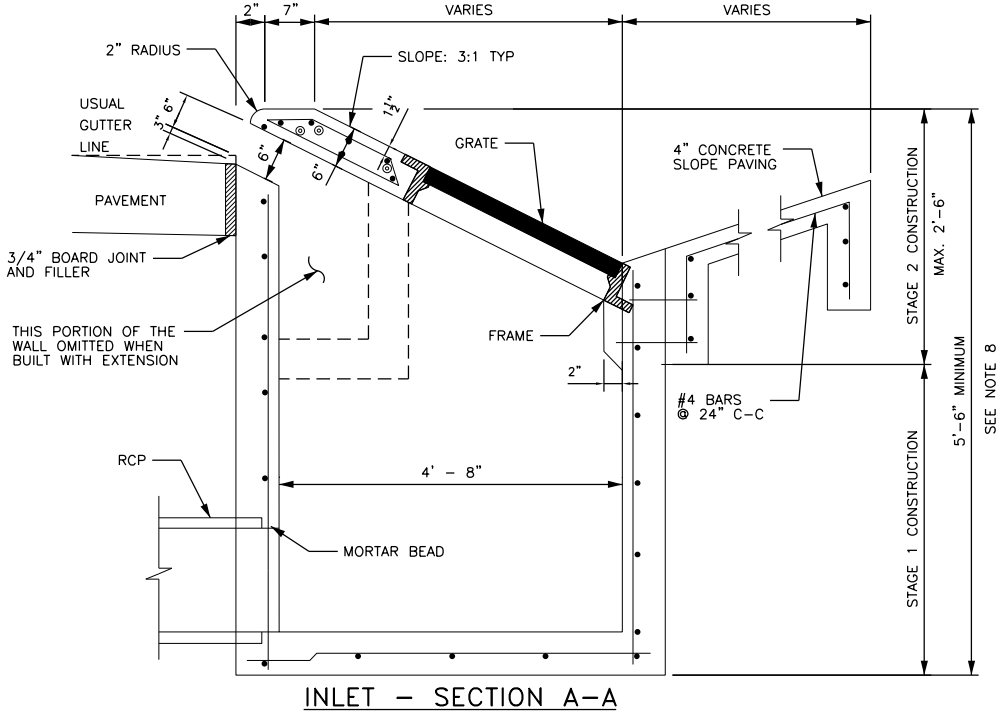
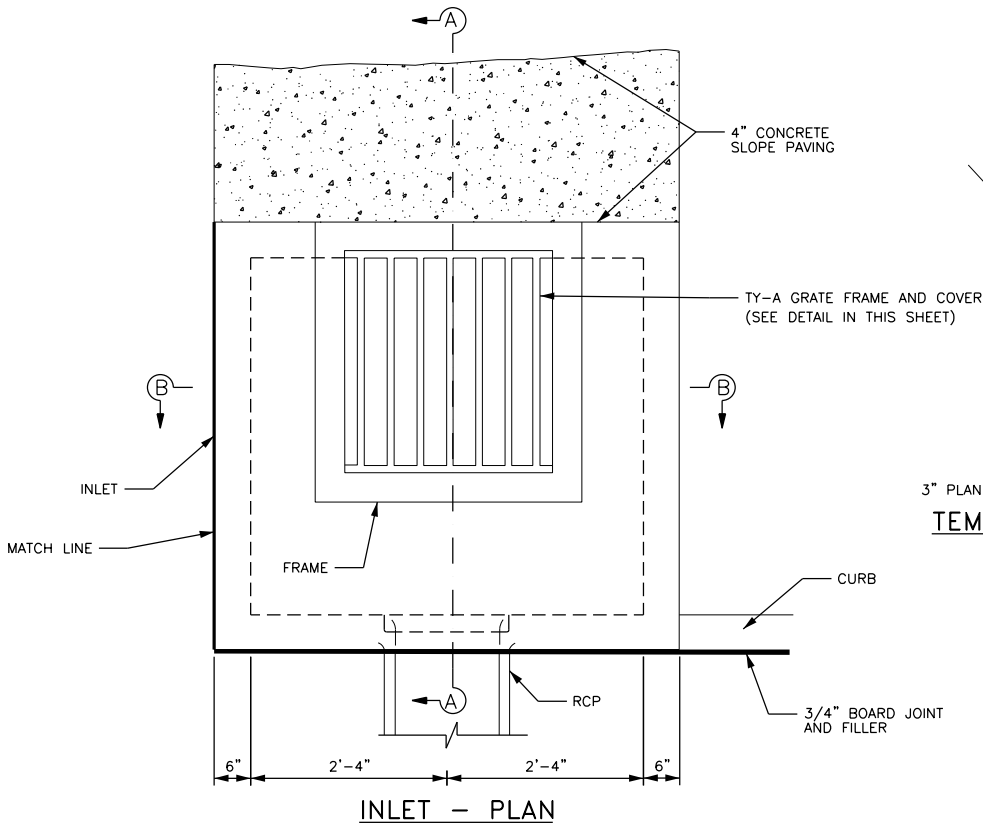
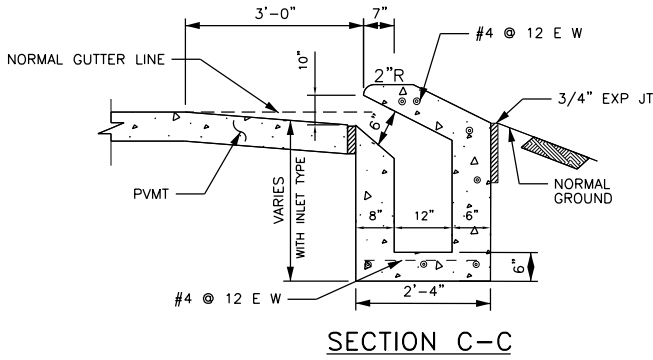
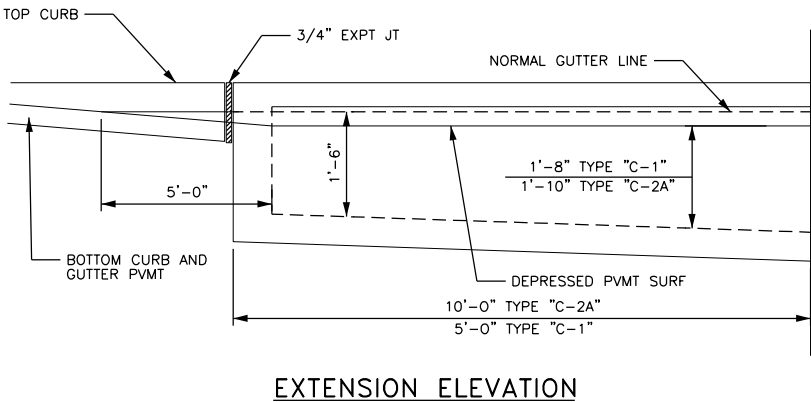
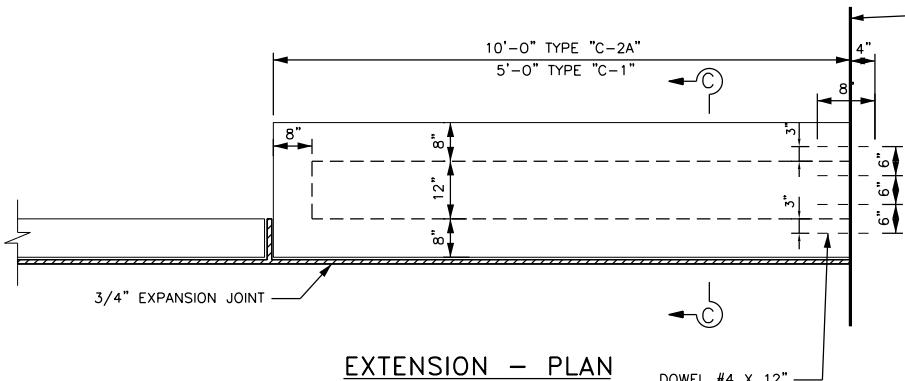


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE "C", "C-1", "C-2" AND "C-2A" INLET DETAILS	FBCD STANDARD 28
CK'D BY: INIT		
SCALE: 1"=1'-6"	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		

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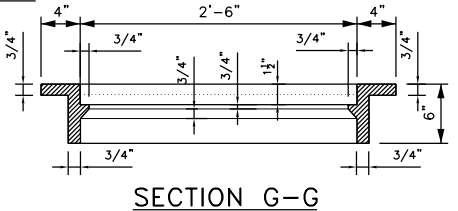
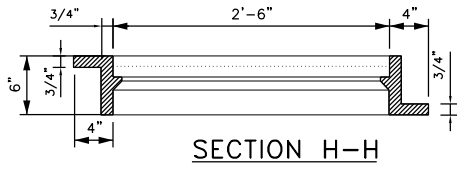
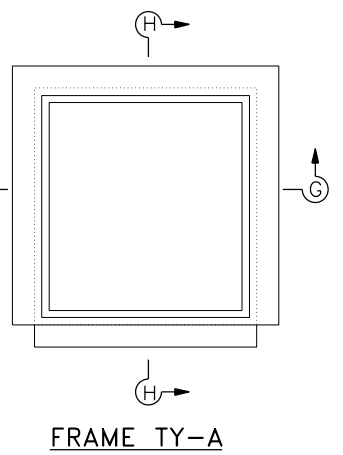
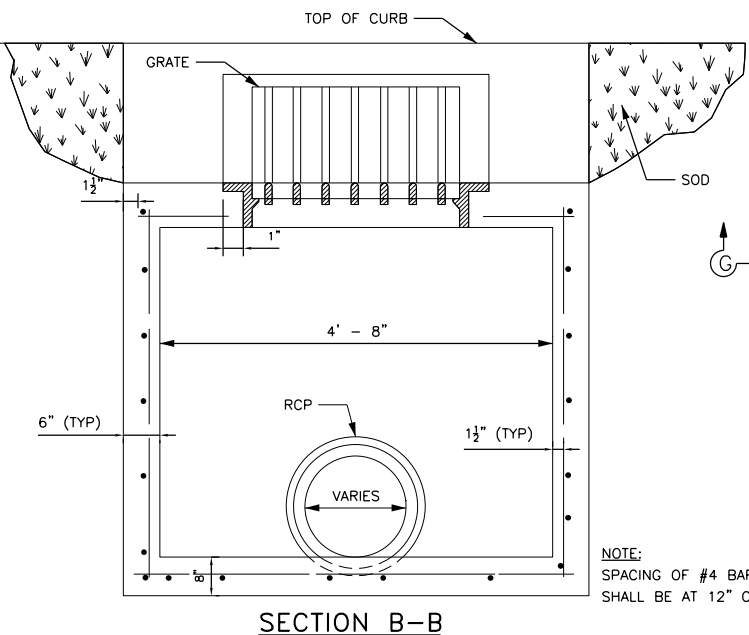
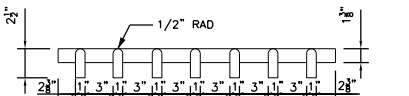
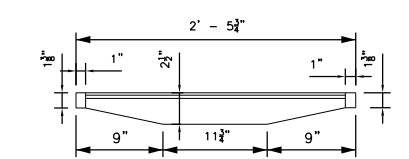
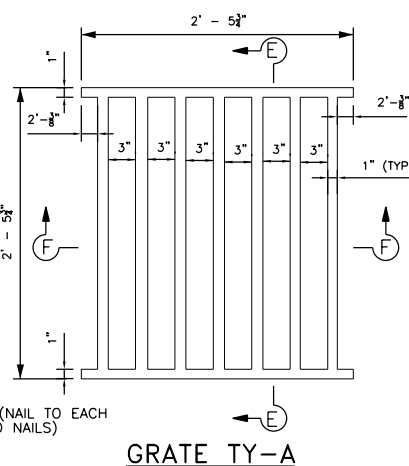
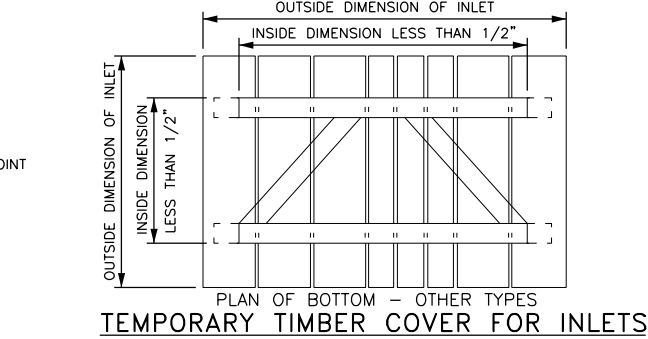
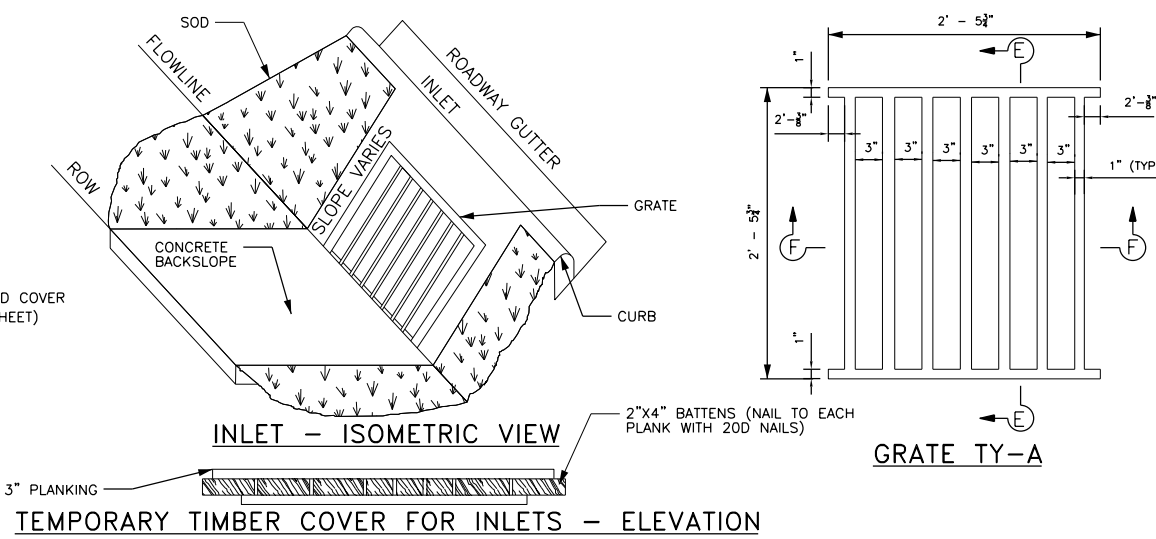
GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF HC BID ITEM 466 "INLETS"
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS
3. PRECAST STRUCTURE TO MEET ASTM
4. FRAME AND COVER SHALL BE JORDAN IRON WORKS MODEL V-1814 FRAME AND V-1418 COVER OR APPROVED EQUAL.
5. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE COTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILS DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
6. SHOP DRAWINGS WILL BE REQUIRED FOR THE PRECAST SECTION OF INLET.
7. KNOCK-OUTS ARE NOT PERMISSABLE FOE THE PRECAST SECTION OF INLET.
8. 5'-6" MINIMUM OR AS SPECIFIED BY THE ENGINEER OF RECORD



INLET NOTES:

- TYPE "C": INLET ONLY - NO EXTENSION
- TYPE "C-1": INLET WITH ONE EXTENSION (5'-0" LONG)
- TYPE "C-2": INLET WITH ONE EXTENSION (5'-0" LONG) ON EACH SIDE
- TYPE "C-2A": INLET WITH ONE DOUBLE EXTENSION (10'-0" LONG) ON ONE SIDE
- \* FOR TYPE "C-2A" INLETS, PROVIDE A CENTER 6"x6" COLUMN IN THE CURB LINE BETWEEN ALL EXTENSIONS.



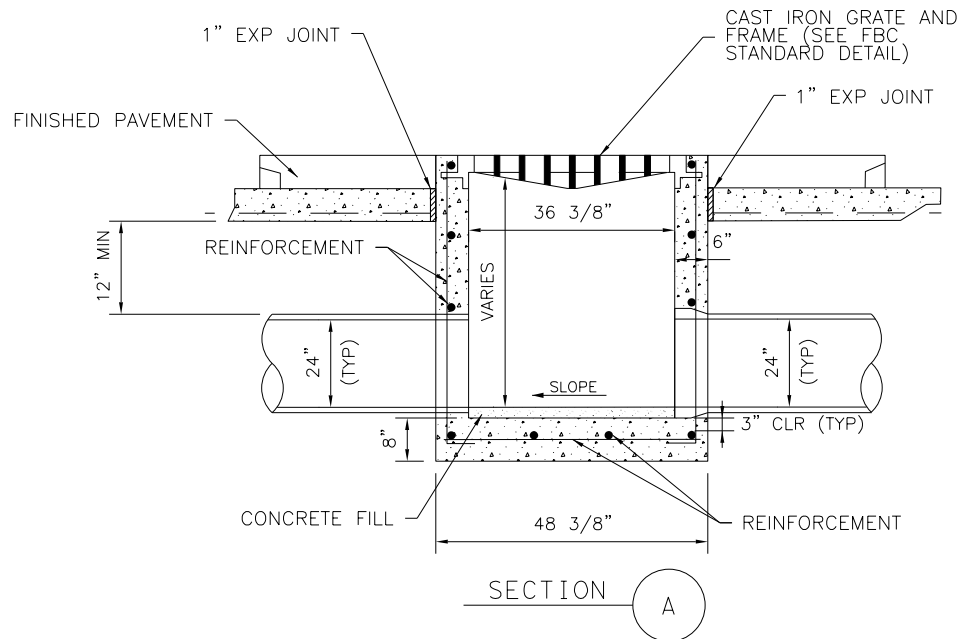
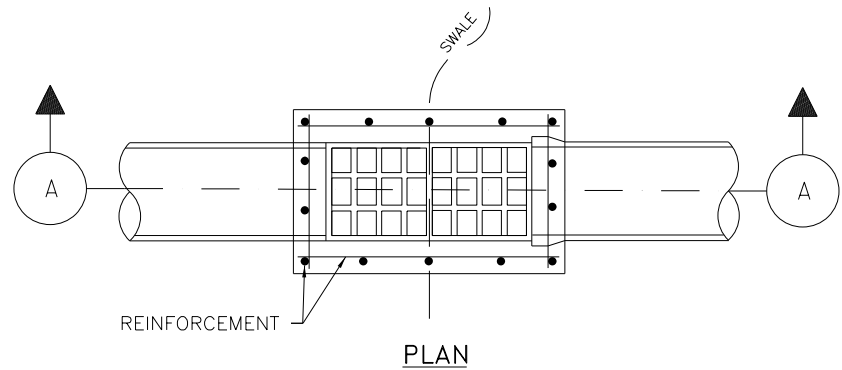
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED BID ITEM SPECS	10-1-24	RJS
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

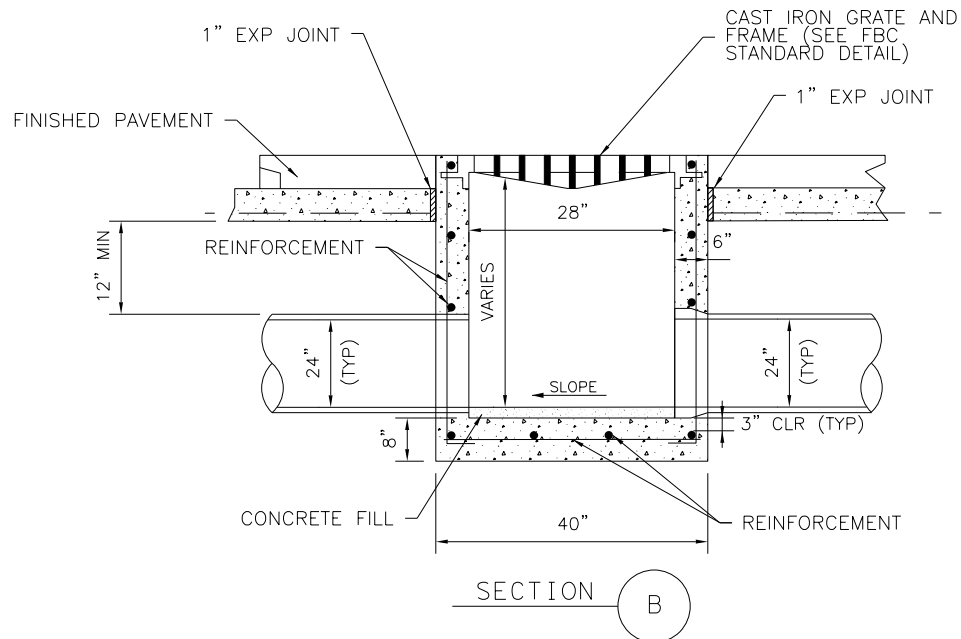
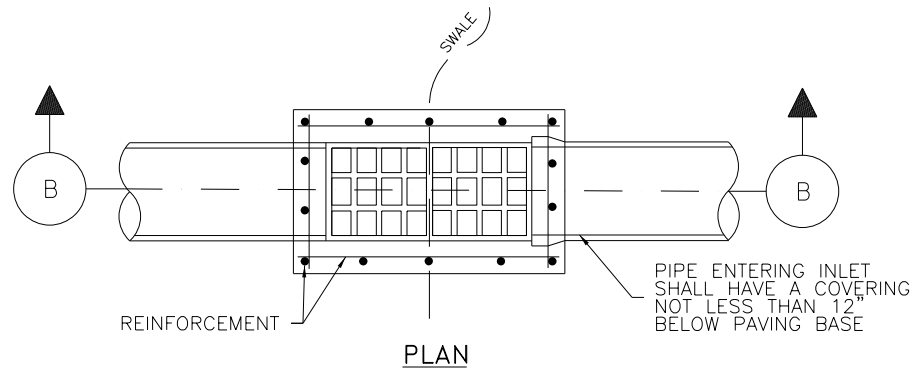


PROJECT TITLE:	
DRAWN BY: INIT	FBCD STANDARD
CK'D BY: INIT	29
SCALE: AS NOTED	SHEET NO:
DATE: 10-1-24	APPROVED BY:

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STORM SEWER TYPE "D" INLET



STORM SEWER TYPE "D-1" INLET

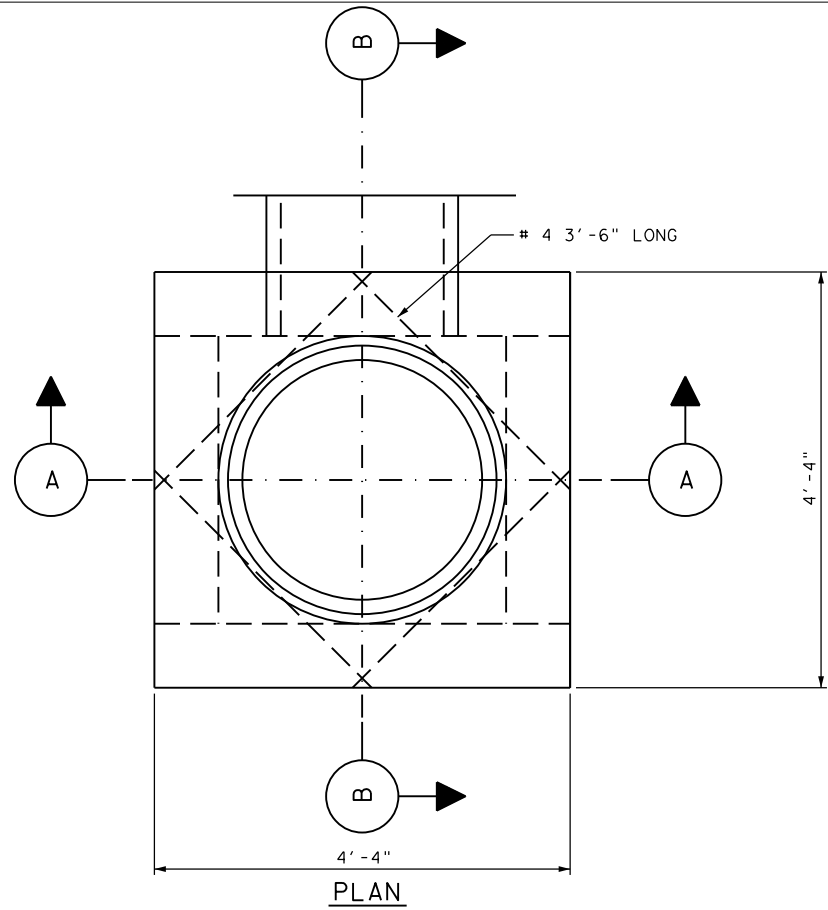
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

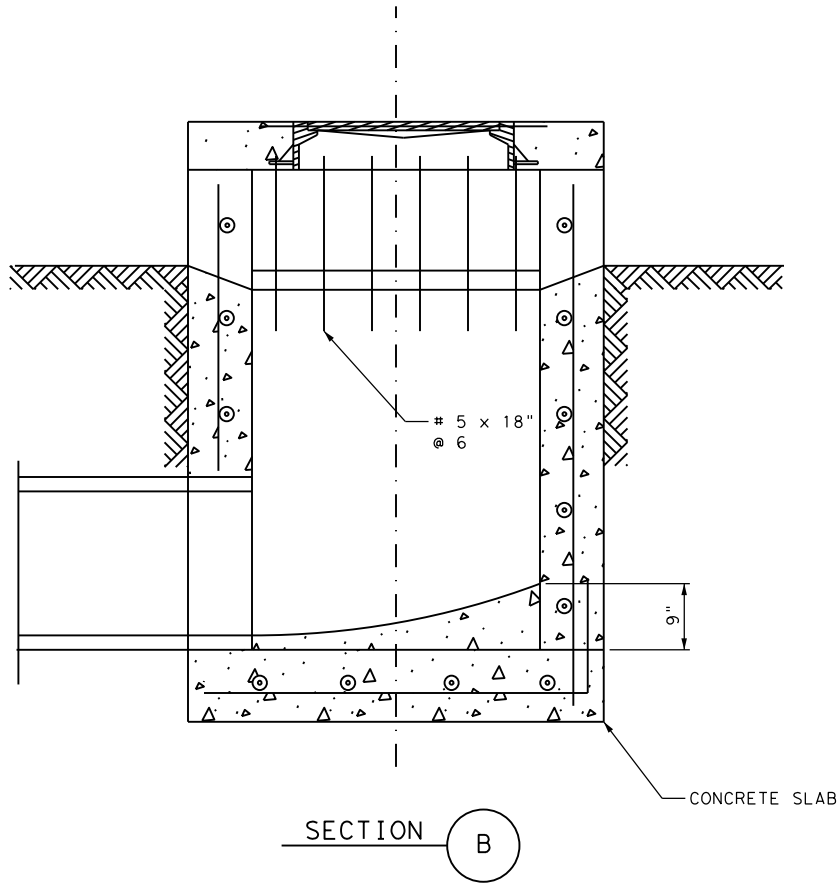
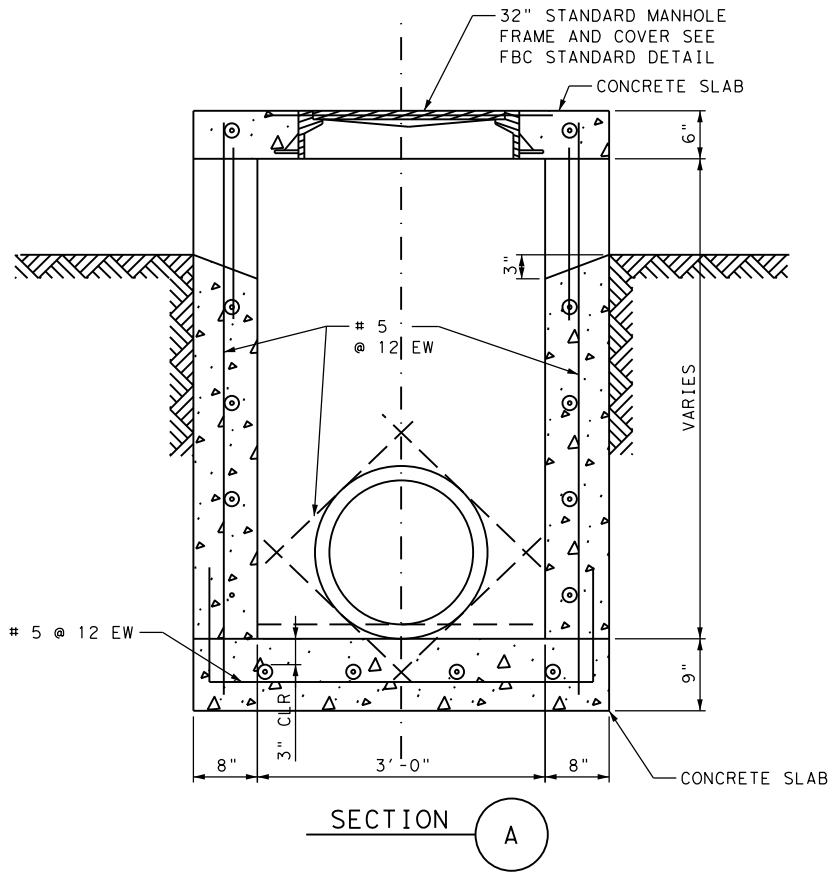


PROJECT TITLE:		
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CK'D BY: INIT		
SCALE: AS NOTED	APPROVED BY:	SHEET NO: /
DATE: 3-1-22		

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NOTE:  
1. TYPE "E" INLET TOP CAN BE CONSTRUCTED  
ON A STANDARD "C" MANHOLE.



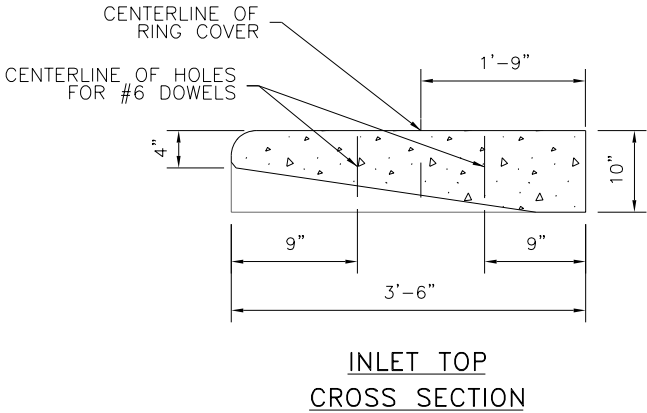
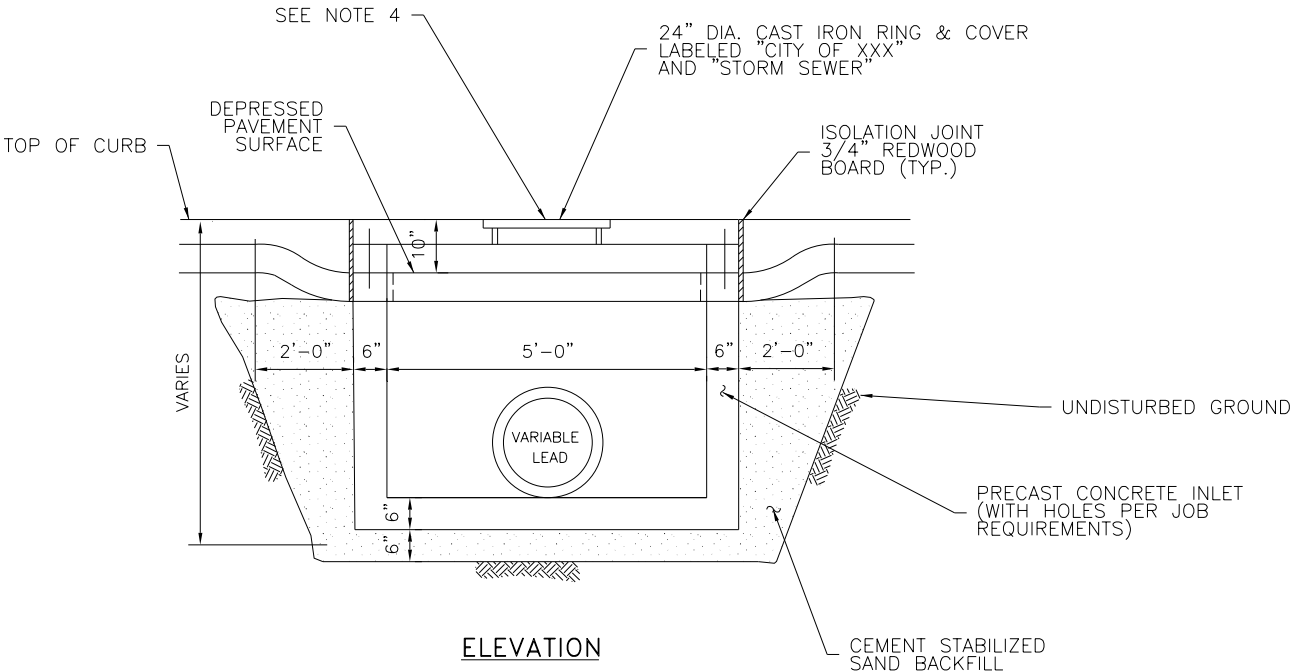
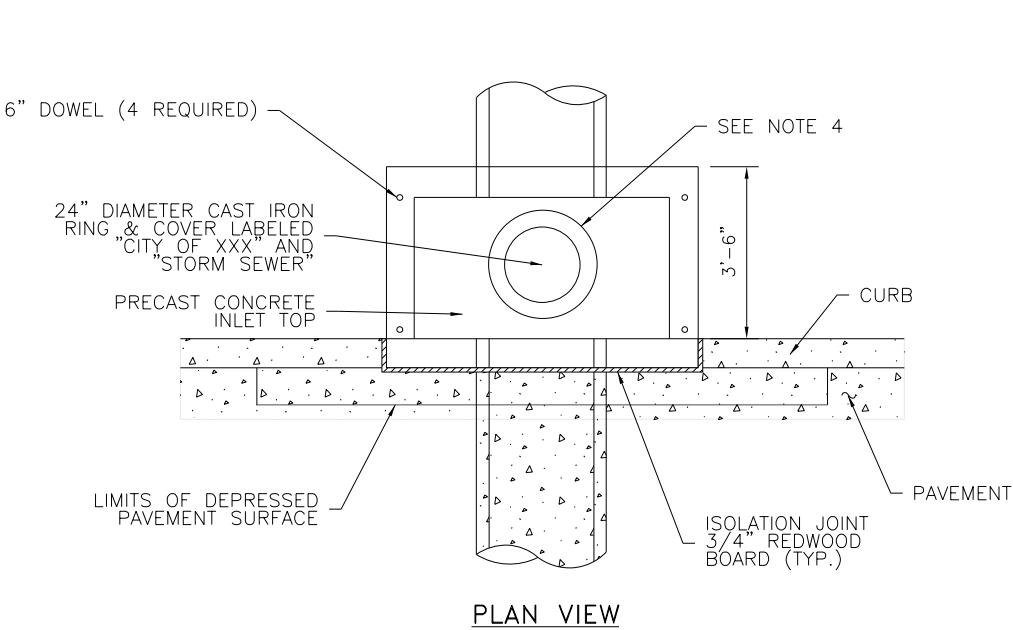
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE "E" INLET DETAILS	FBCE STANDARD 31
CK'D BY: INIT		
SCALE: 1" = 4'	APPROVED BY:	SHEET NO: /
DATE: 3-1-22		

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- NOTES:**
1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
  2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL
  3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF FIRST STAGE
  4. ALL STORM SEWER COVERS SHALL COMPLY WITH LOCAL CITY/ETJ REQUIREMENTS

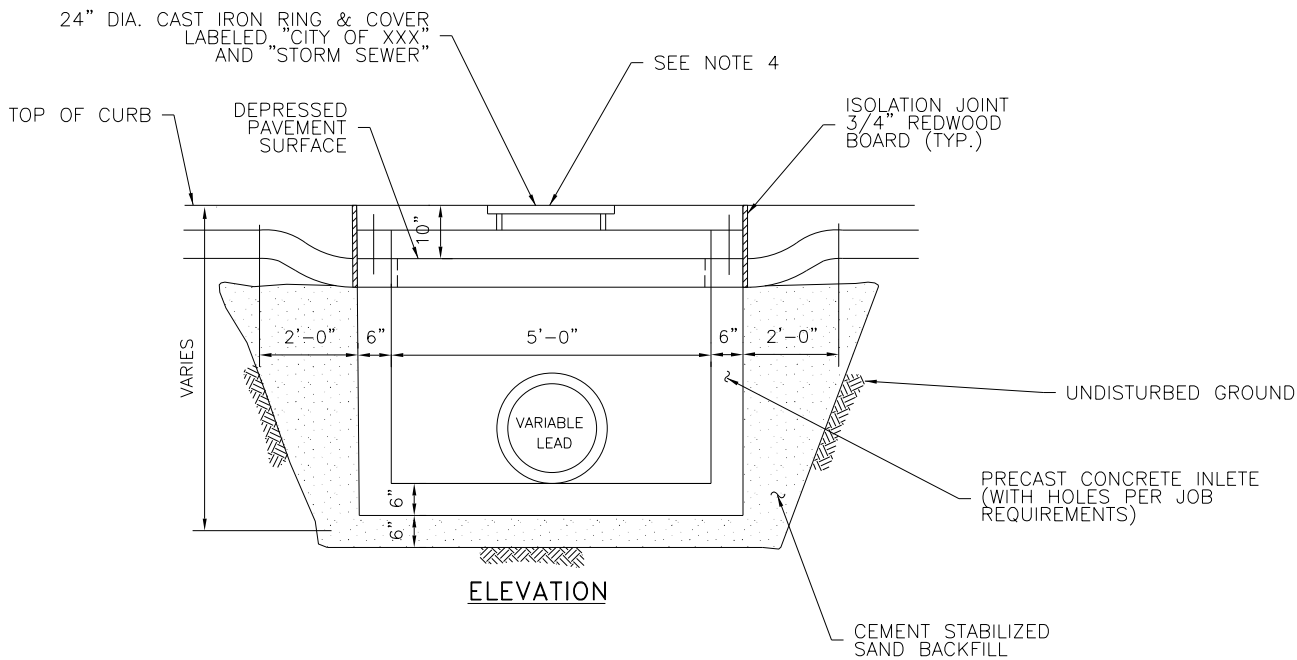
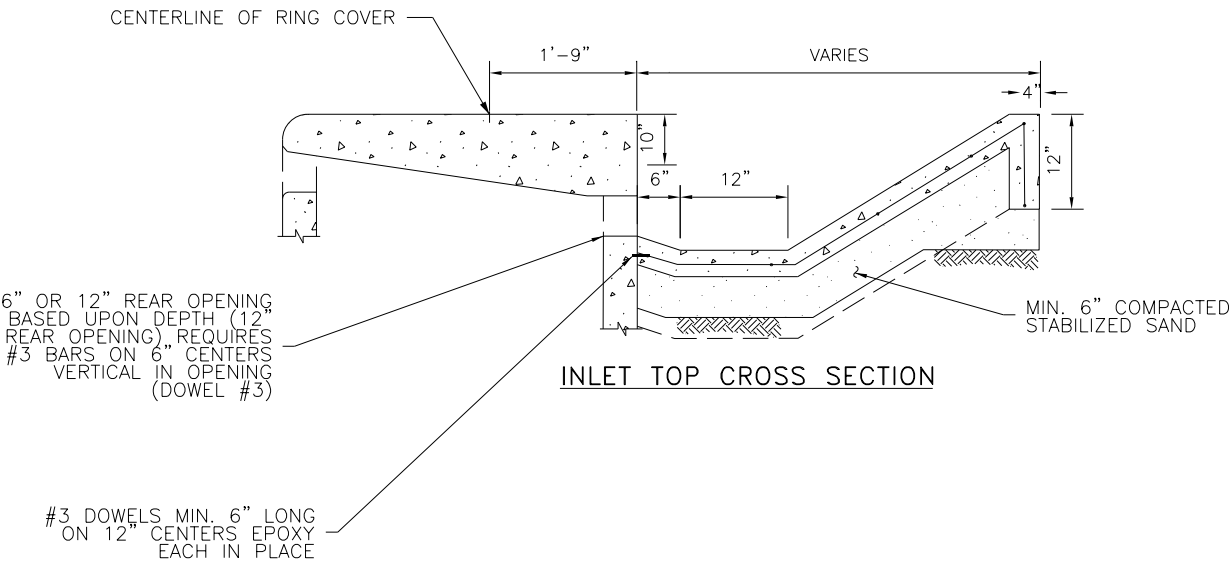
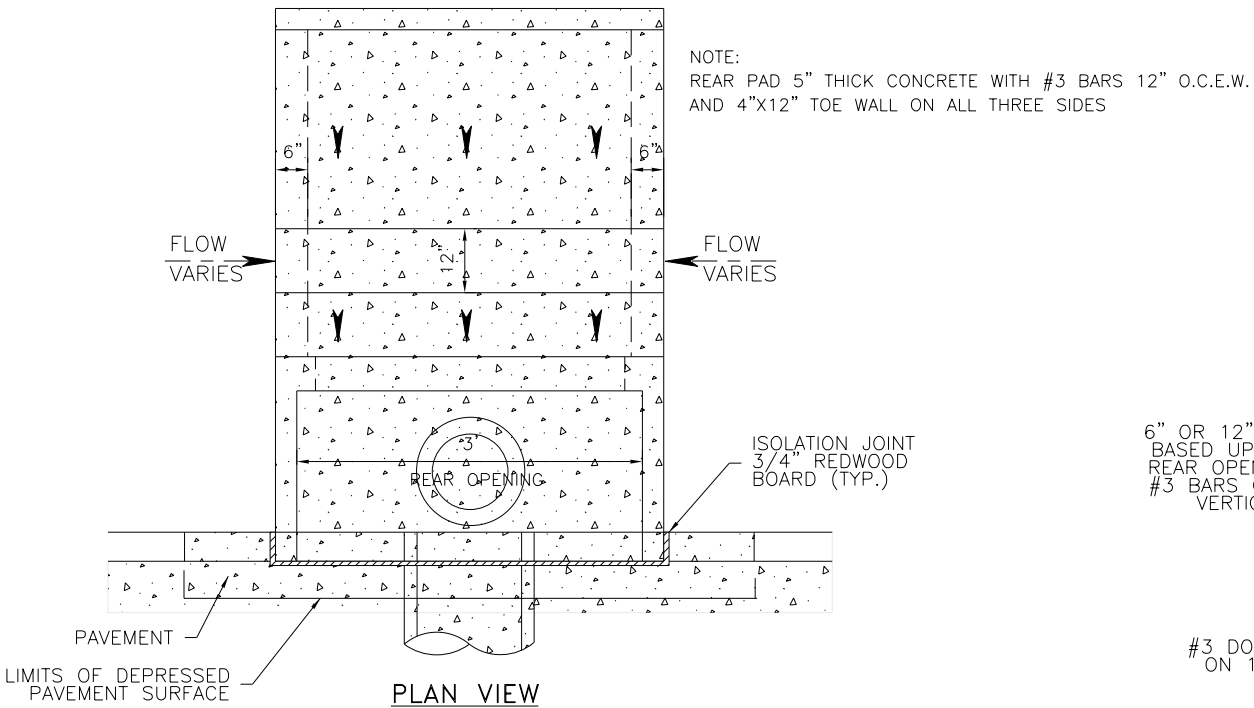
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ISOLATION JOINT ADDED TO DETAILS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE H-2 INLET DETAILS	FBCE STANDARD 32
CK'D BY: INIT		
SCALE: AS NOTED	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		

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- NOTES:**
1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
  2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL
  3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF FIRST STAGE
  4. ALL STORM SEWER COVERS SHALL COMPLY WITH LOCAL CITY/ETJ REQUIREMENTS

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ISOLATION JOINT ADDED TO DETAILS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE H-2 MODIFIED INLET DETAILS	FBCD STANDARD 33
CK'D BY: INIT		
SCALE: AS NOTED	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		



NO.	REVISIONS	DATE	NAME
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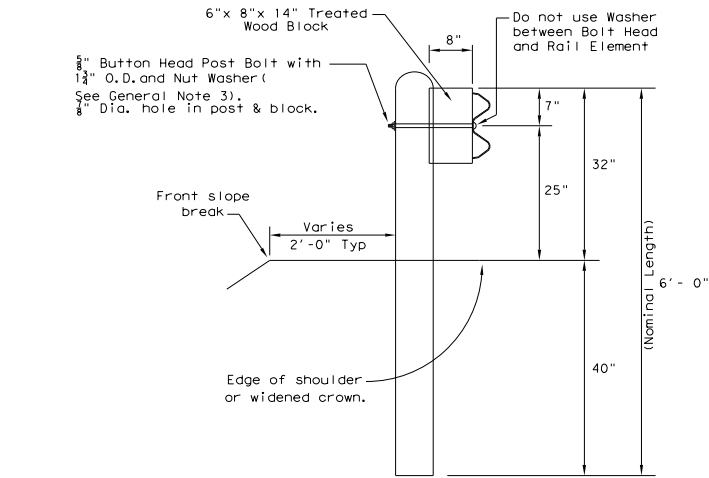
FORT BEND COUNTY  
ENGINEERING DEPARTMENT

PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: SINGLE GUARDRAIL TERMINAL	34
SCALE: AS NOTED	SHEET 1 OF 1	SHEET NO:
DATE: 3-1-22	APPROVED BY:	/

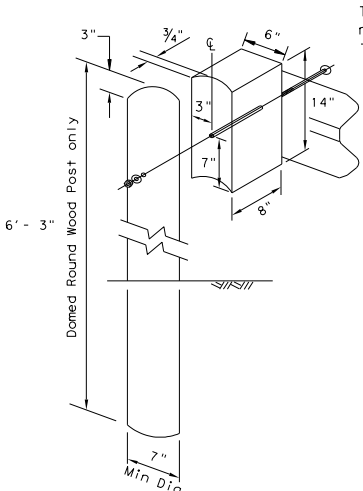
J:\1704\1601\Fort Bend County Standards\Fort Bend County STD\FBC FLEX BEAM GUARDRAIL DETAILS-2of2.dwg

GENERAL NOTES

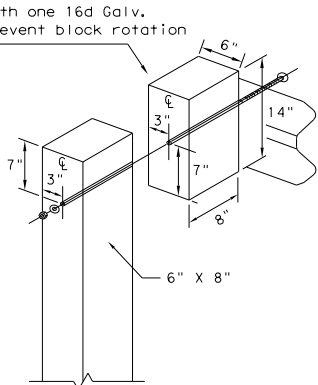
- The type of post (round wood post, rectangular wood post, or steel post) will be as shown in the plans. The exact position of MBGF shall be shown in the plans or as directed by the Engineer. Steel posts to be galvanized in accordance with TxDOT Item 445, "Galvanizing."
- Rail element shall meet the requirements of TxDOT Item 540, "Metal Beam Guard Fence" except as modified in the plans. The Contractor may furnish rail elements of 25'-0", or 12'-6" (nom.) lengths. Rail elements may have slotted holes at 3'-1 1/2" C-C or 6'-3" C-C. A special length of rail may be manufactured to accommodate the downstream anchor terminal (DAT) and the transition sections of guardrail.
- Button head "post" bolts (ASTM A307) shall be of sufficient length to extend through the full thickness of the nut (ASTM A563) and 3/8" washer and not more than 1" beyond it. Button head "splice" bolts (ASTM A307) are 3/8" x 1 1/4" (or 2" long at triple rail splices) with a 3/8" double recessed nut (ASTM A563). Thrie beam "connection" 7/8" dia. (ASTM A325) hex bolts shall be of sufficient length to extend through the full thickness of the rail, washers, and nuts.
- Fittings (bolts, nuts, and washers) shall be galvanized in accordance with TxDOT Item 445, "Galvanizing." Fittings shall be subsidiary to the bid item.
- Crown shall be widened to accommodate the Metal Beam Guard Fence.
- The lateral approach to the guard fence, shall have a maximum slope of 1V:10H.
- If shown elsewhere in the plans or as directed by the Engineer, the guard fence may be flared at a rate of 25:1 or flatter.
- Unless otherwise shown in the plans, guard fence placed in the vicinity of curbs shall be positioned so that the face of curb is located directly below or behind the face of the rail. Rail placed over curbs shall be installed so that the post bolt is located approximately 25 inches above the gutter pan or edge of shoulder.
- If solid rock is encountered within 0 to 18" of the finished grade, drill a 22" dia. hole, or drill two 12" dia. front to back overlapping holes, 24" into the rock. If solid rock is encountered below 18", drill a 12" dia. hole, 12" into the rock or to the standard embedment depth, whichever maybe less. Any excess post length, after meeting these depths, may be field cut to ensure proper guardrail mounting height. Backfill with a cohesionless material.
- Posts shall not be set in concrete, of any depth.
- Special fabrication will be required at installations having a curvature of less than 150 ft. radius.
- Unless otherwise shown in the plans, a composite material post and/or block that meets the requirements of DMS-7210, "Composite Material Posts and Blocks for Metal Beam Guard Fence" may be substituted for posts and/or blocks of similar dimensions. The Construction Division, TxDOT maintains a Material Producer List (MPL) for producers of materials conforming to DMS-7210. Only producers on the MPL may furnish composite material posts and/or blocks.
- For posts located partially or wholly between precast box culvert units, the use of a cast-in-place concrete closure between boxes is required. See Detail "A" on TxDOT Bridge Standards SCP-MD.



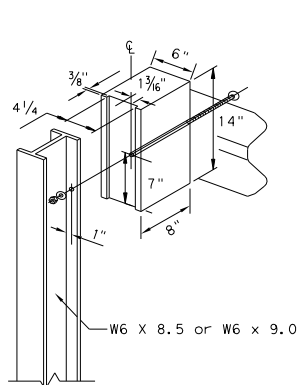
TYPICAL POST



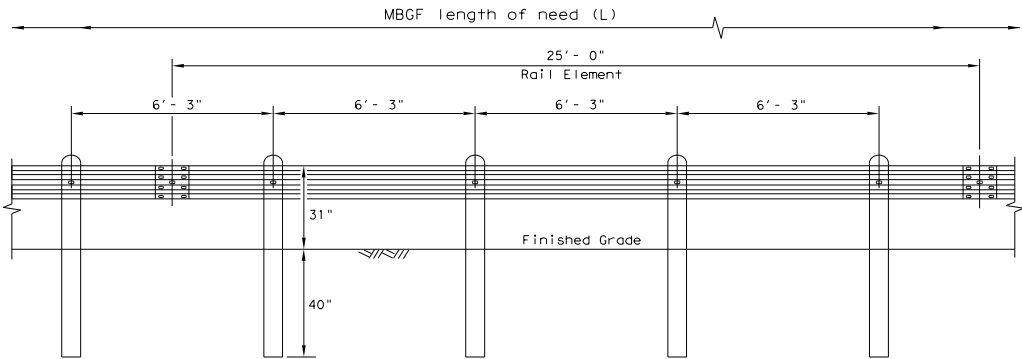
WOOD BLOCK TO ROUND WOOD POST



WOOD BLOCK TO RECTANGULAR WOOD POST



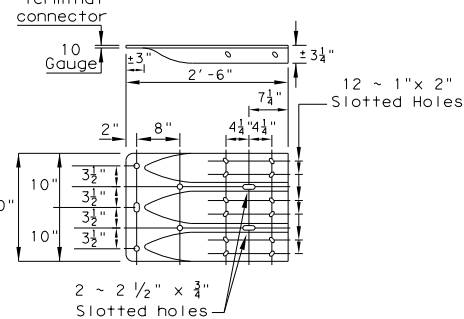
WOOD BLOCK TO STEEL POST



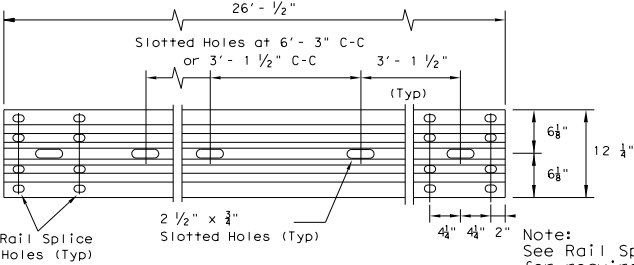
ELEVATION MID-SPAN RAIL SPLICE

Direction of Traffic

Showing a 25'-0" section of W-Beam rail, 12'-6" rail sections may also be supplied (See General Note 2)

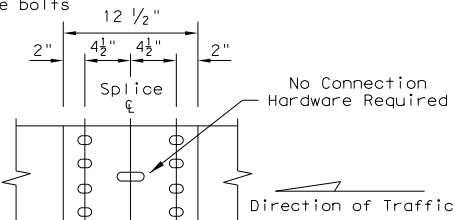
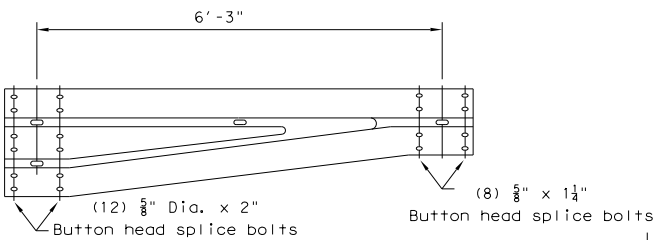


THRIE-BEAM TERMINAL CONNECTION (SEE GENERAL NOTES 9 FOR REQUIRED HARDWARE)

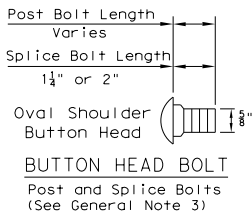


ELEVATION 25'-0" (NOM.) W-BEAM SECTION 12'-6" RAIL SECTIONS MAY ALSO BE SUPPLIED (SEE GENERAL NOTE 2)

NON-SYMMETRICAL TRANSITION TO W-BEAM (10 Gauge)



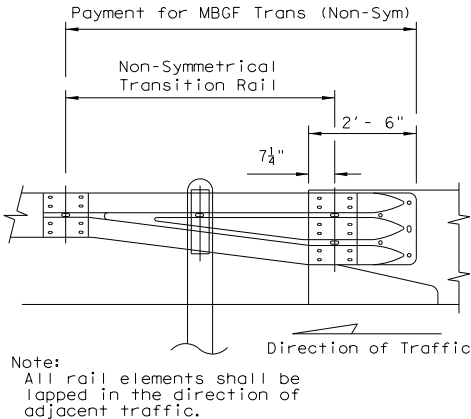
MID-SPAN RAIL SPLICE DETAIL



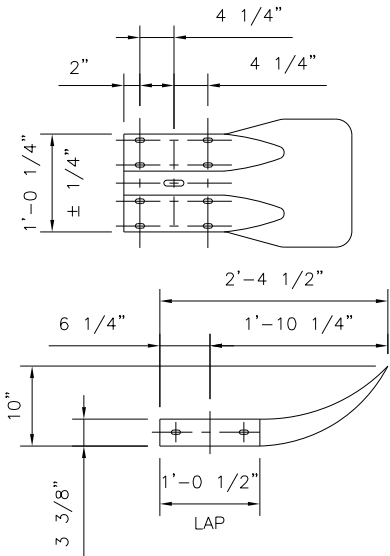
BUTTON HEAD BOLT

LOW FILL CULVERT POST

Culverts of 25 ft. or less, see TxDOT GF(31)LS standard for "Long Span" option.



DOWNSTREAM RAIL ATTACHMENT



TERMINAL SECTION

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			
5			

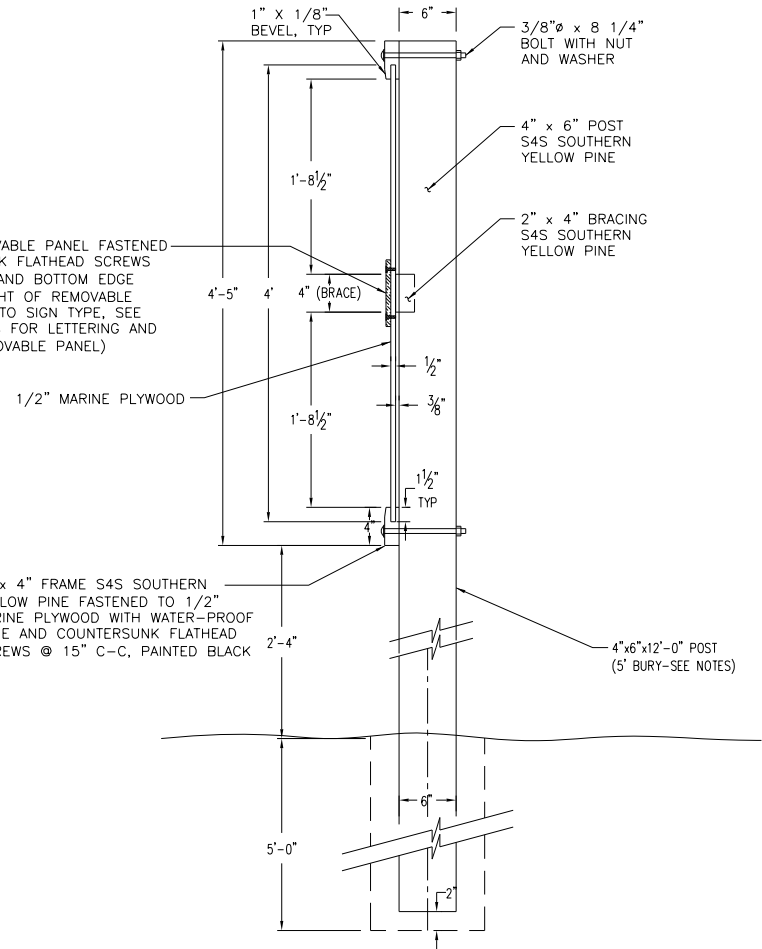
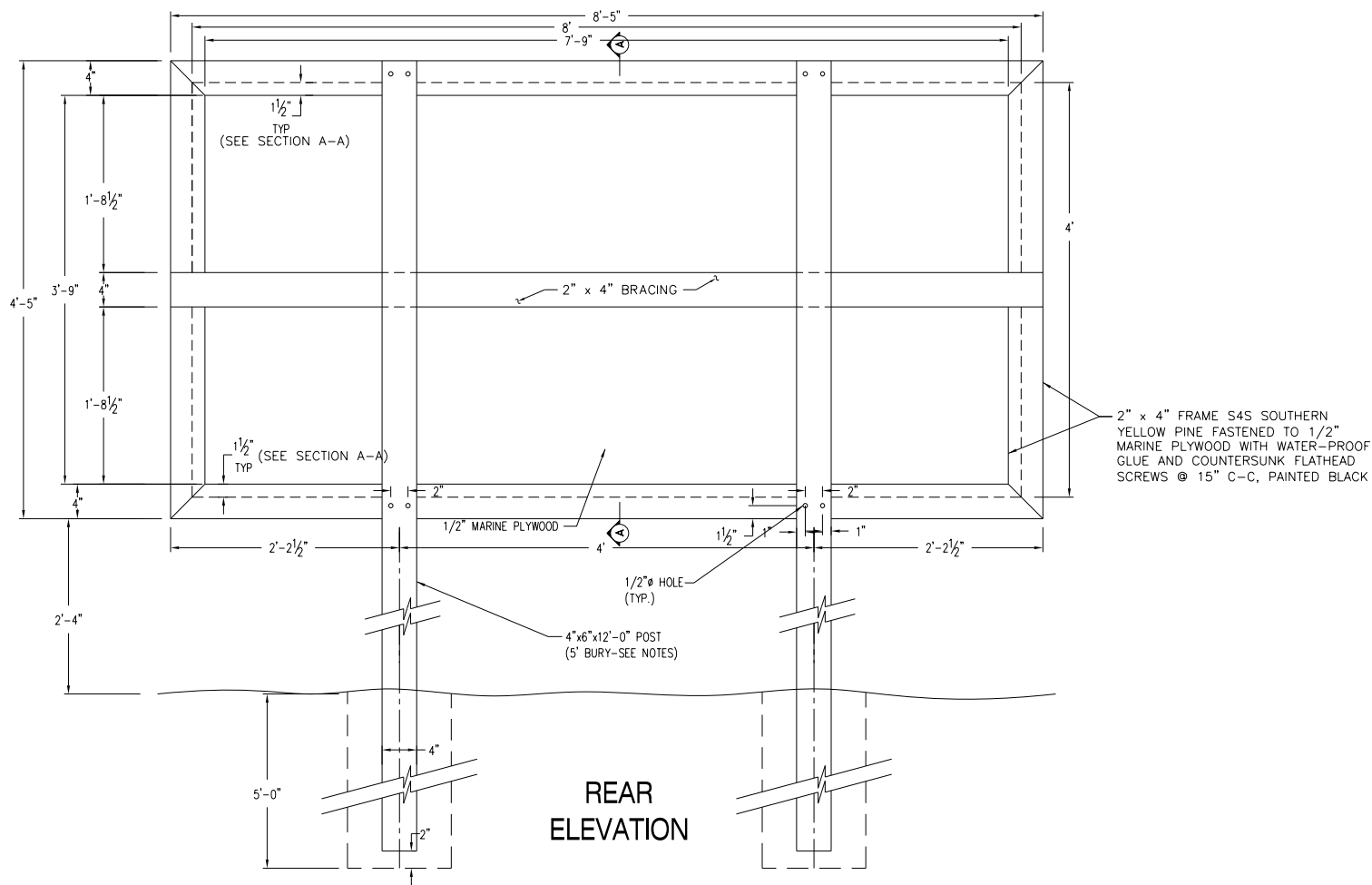
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: METAL BEAM GUARD FENCE	FBCE STANDARD
CK'D BY: INIT		35
SCALE: NONE	SHEET 1 OF 1	SHEET NO:  /
DATE: 3-1-22		



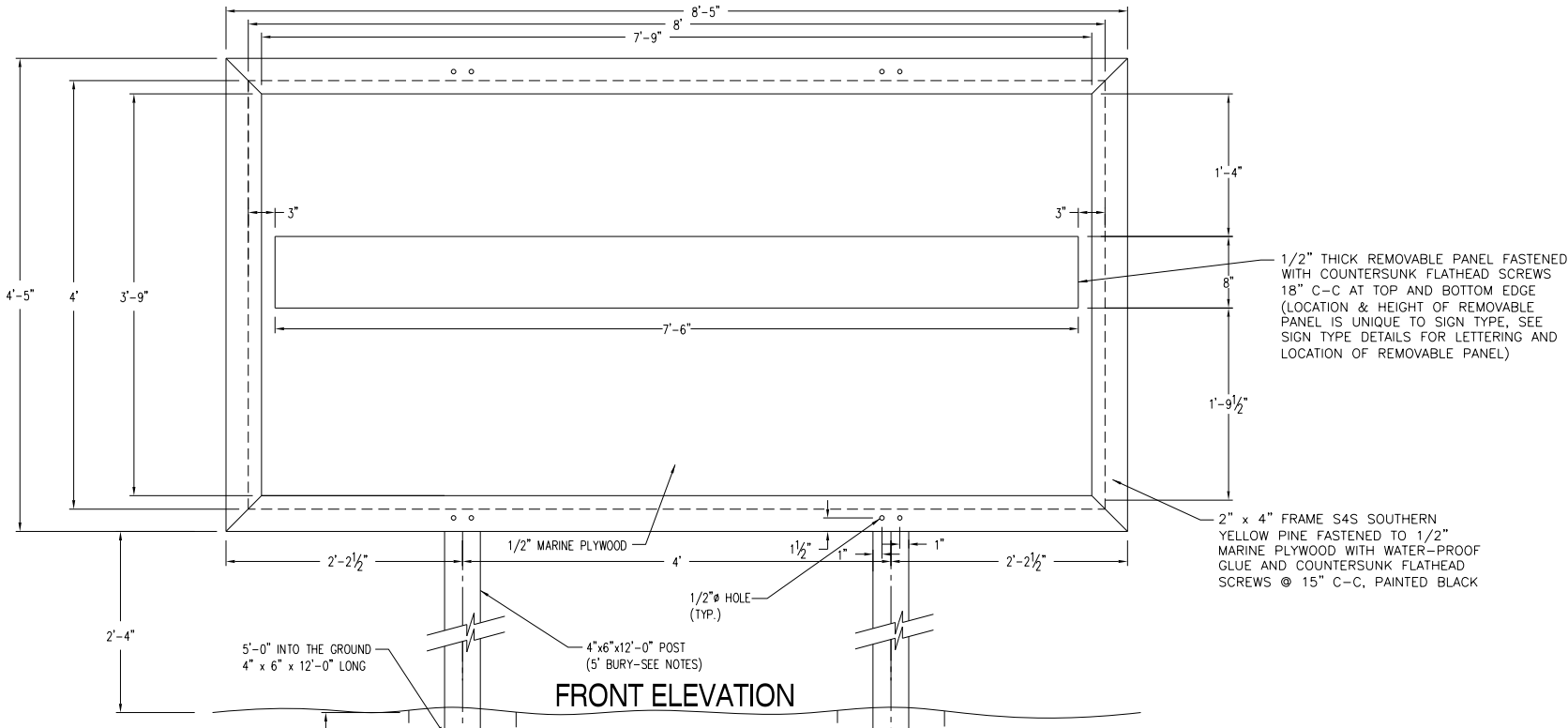
J:\1704\1703\Standard Sheets\18 FBC PROJECT SIGN DETAILS\Fort Bend County Project Sign Details\_REV 04-26-2017.dwg



SECTION A-A

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA FONT.
3. SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
4. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.



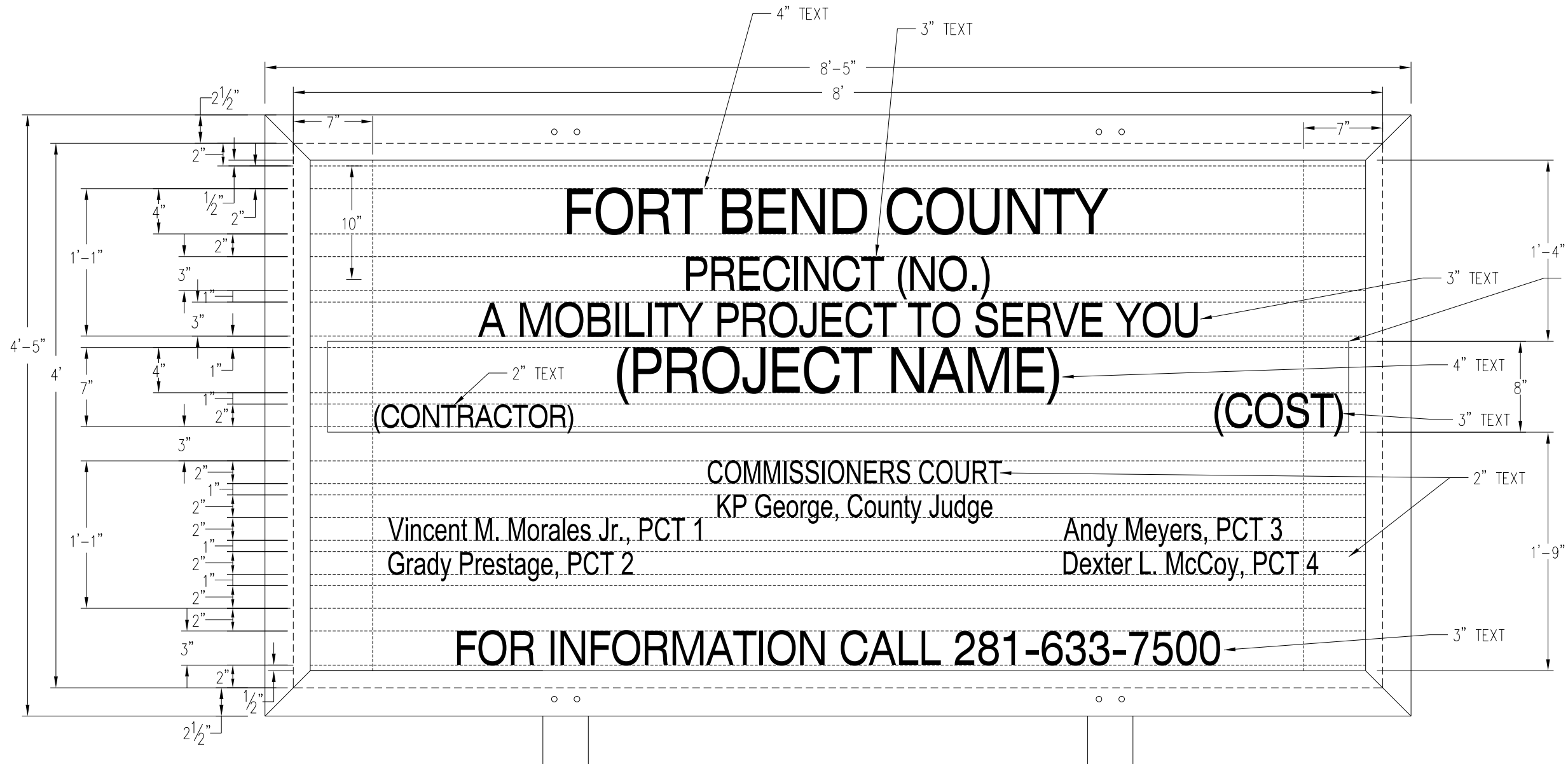
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: PROJECT SIGN DETAILS	FBCD STANDARD
CK'D BY: INIT		36
SCALE: NONE	SHEET 1 OF 5	SHEET NO:  /
DATE: 3-1-22		

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1/2" THICK REMOVABLE PANEL  
FASTENED WITH COUNTERSUNK  
FLATHEAD SCREWS 18" C-C AT TOP  
AND BOTTOM EDGE (LOCATION &  
HEIGHT OF REMOVABLE PANEL IS  
UNIQUE TO SIGN TYPE, SEE SIGN TYF  
DETAILS FOR LETTERING AND LOCATIO  
OF REMOVABLE PANEL)

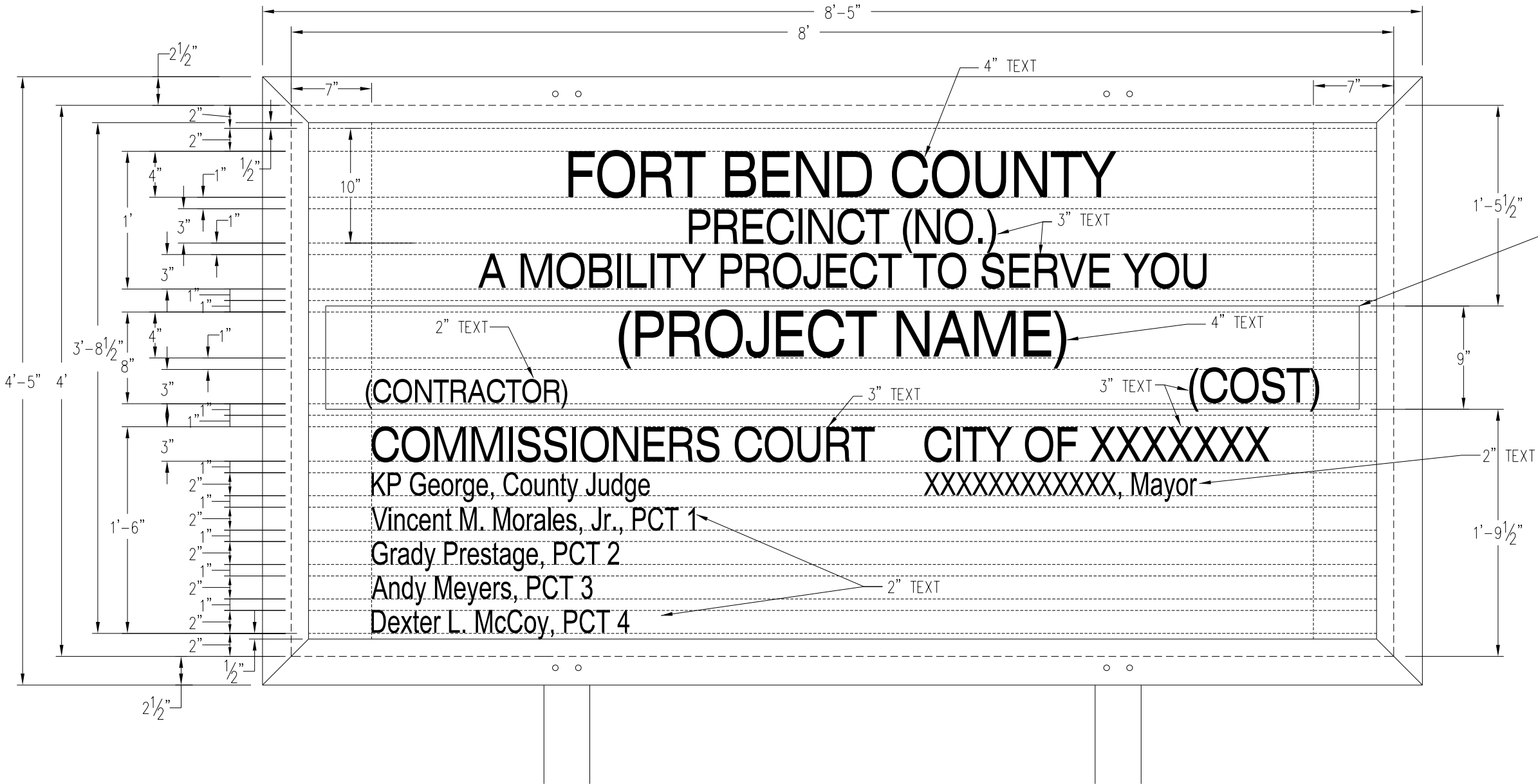
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED PCT. 4 COMMISSIONER	1-1-23	RJS
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY:	INIT	SHEET DESCRIPTION: COUNTY FUNDED PROJECT SIGN (FOR PCNT. 1, 2) SHEET 2 OF 5	FBCD STANDARD 37
CK'D BY:	INIT		
SCALE:	NONE	APPROVED BY:	SHEET NO: /
DATE:	1-1-23		

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1/2" THICK REMOVABLE PANEL  
FASTENED WITH COUNTERSUNK  
FLATHEAD SCREWS 18" C-C AT TOP  
AND BOTTOM EDGE (LOCATION &  
HEIGHT OF REMOVABLE PANEL IS  
UNIQUE TO SIGN TYPE, SEE SIGN TYPE  
DETAILS FOR LETTERING AND LOCATION  
OF REMOVABLE PANEL)

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA FONT.
3. SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
4. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.

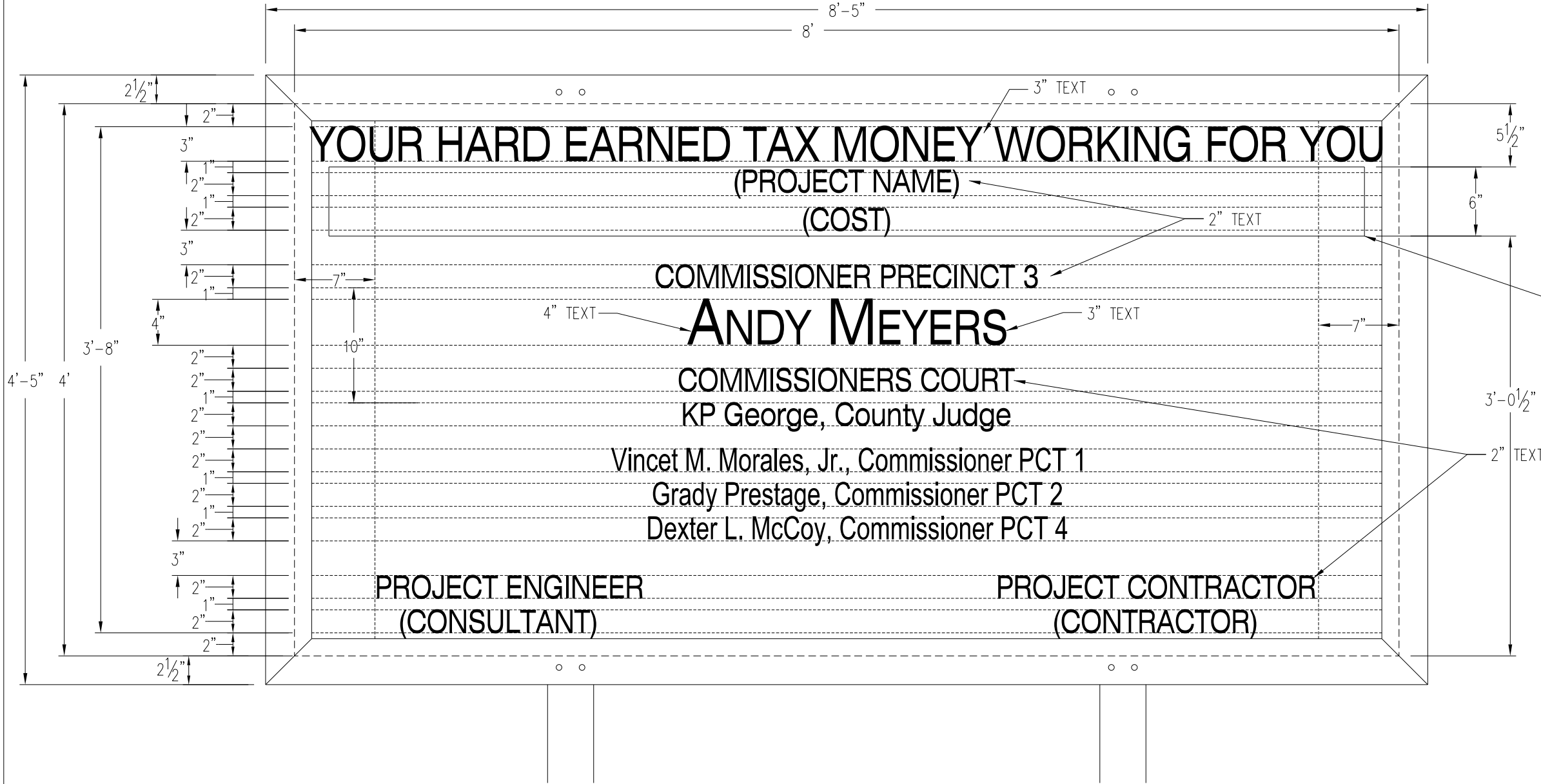
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED PCT. 4 COMMISSIONER	1-1-23	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY:		FBCD STANDARD 38
CK'D BY:	SHEET DESCRIPTION: COUNTY FUNDED PROJECT SIGN	
SCALE:	SHEET 3 OF 5	SHEET NO: /
DATE:	APPROVED BY:	
1-1-23		

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GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA FONT.
3. SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
4. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.

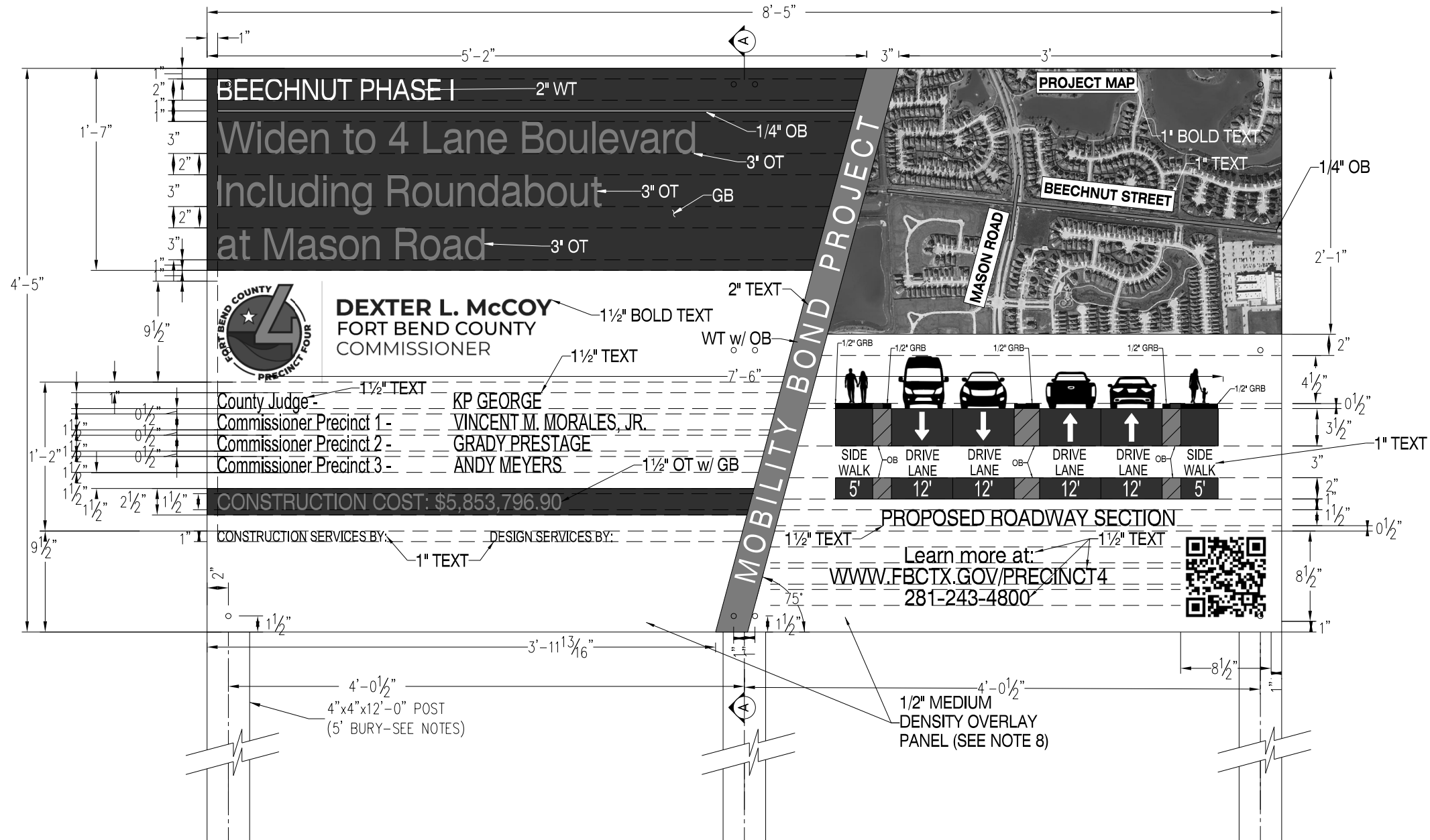
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	UPDATED PCT. 4 COMMISSIONER	1-1-23	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY: INIT			FBCD STANDARD  39
CK'D BY: INIT	SHEET DESCRIPTION: COUNTY FUNDED PROJECT SIGN		
SCALE:	(FOR PCNT. 3) SHEET 4 OF 5		SHEET NO:  /
DATE: 1-1-23	APPROVED BY:		

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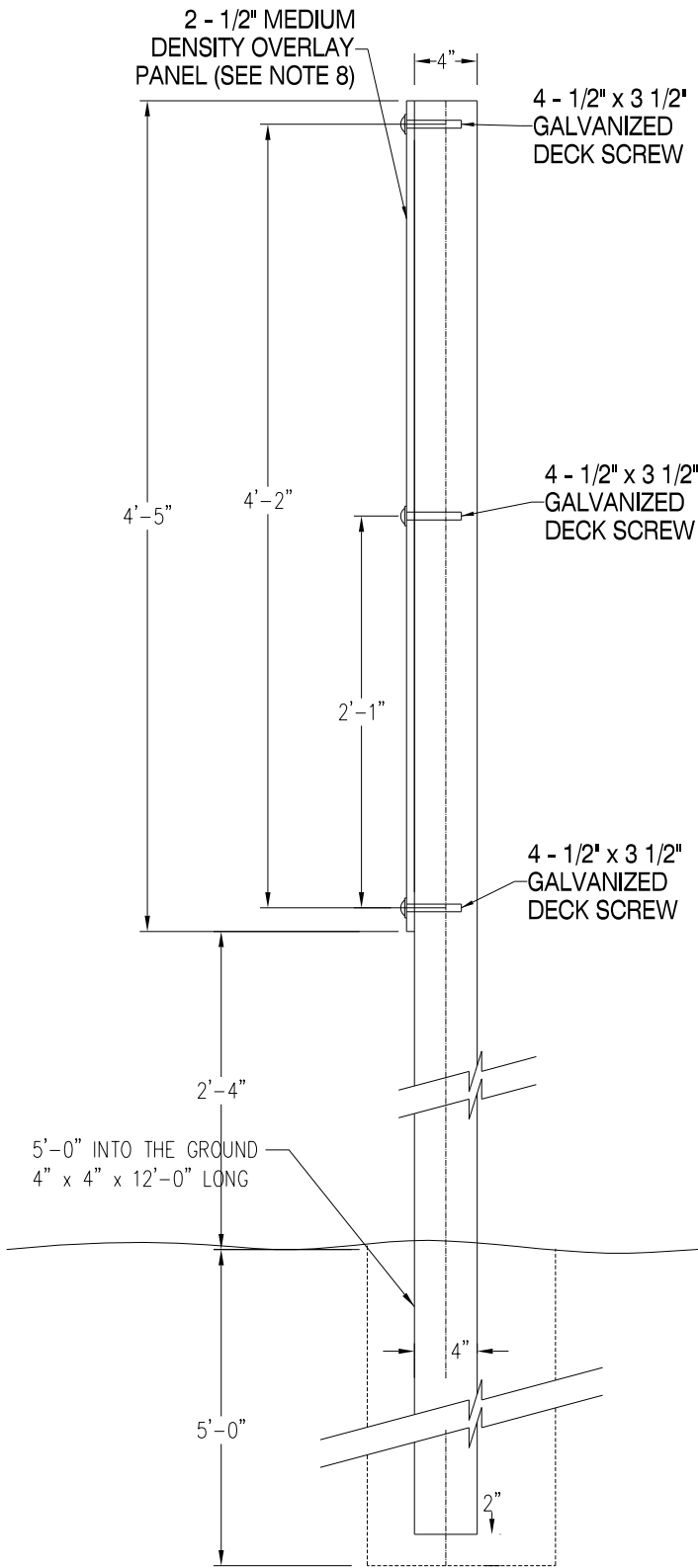


GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND, UNLESS OTHERWISE NOTED.
2. PROPOSED ROADWAY SECTION TO HAVE WHITE TEXT WITH GREEN BACKGROUND, UNLESS OTHERWISE NOTED.
3. ALL LETTERING SHALL BE IN HELVETICA OR ARIAL FONT.
4. SIGN SHALL BE MOUNTED ON 4" x 4" POSTS AND LOCATED BY THE ENGINEER.
5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE GALVANIZED OR CADMIUM PLATED.
6. 4" x 4" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.
7. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.
8. THE MDO PANEL IS A PAINTABLE SURFACE MADE OF PLYWOOD WITH A WEATHER-RESISTANT OVERLAY BONDED TO THE WOOD BY HEAT AND PRESSURE. THE OVERLAY PANEL IS TO CONTAIN AT LEAST 27% RESIN CONTENT.
9. THE ENGINEER IS TO PROVIDE A REVISED SIGN DRAWING WITH THE CORRESPONDING PROJECT.

COLOR DESCRIPTIONS:

	RGB:
GB - GREEN BACKGROUND	17 64 52
OB - ORANGE BACKGROUND	223 92 22
WB - WHITE BACKGROUND	
GRB - GRAY BACKGROUND	128 128 128
WT - WHITE TEXT	
OT - ORANGE TEXT	223 92 22
BB - BLACK BACKGROUND	



SECTION A-A

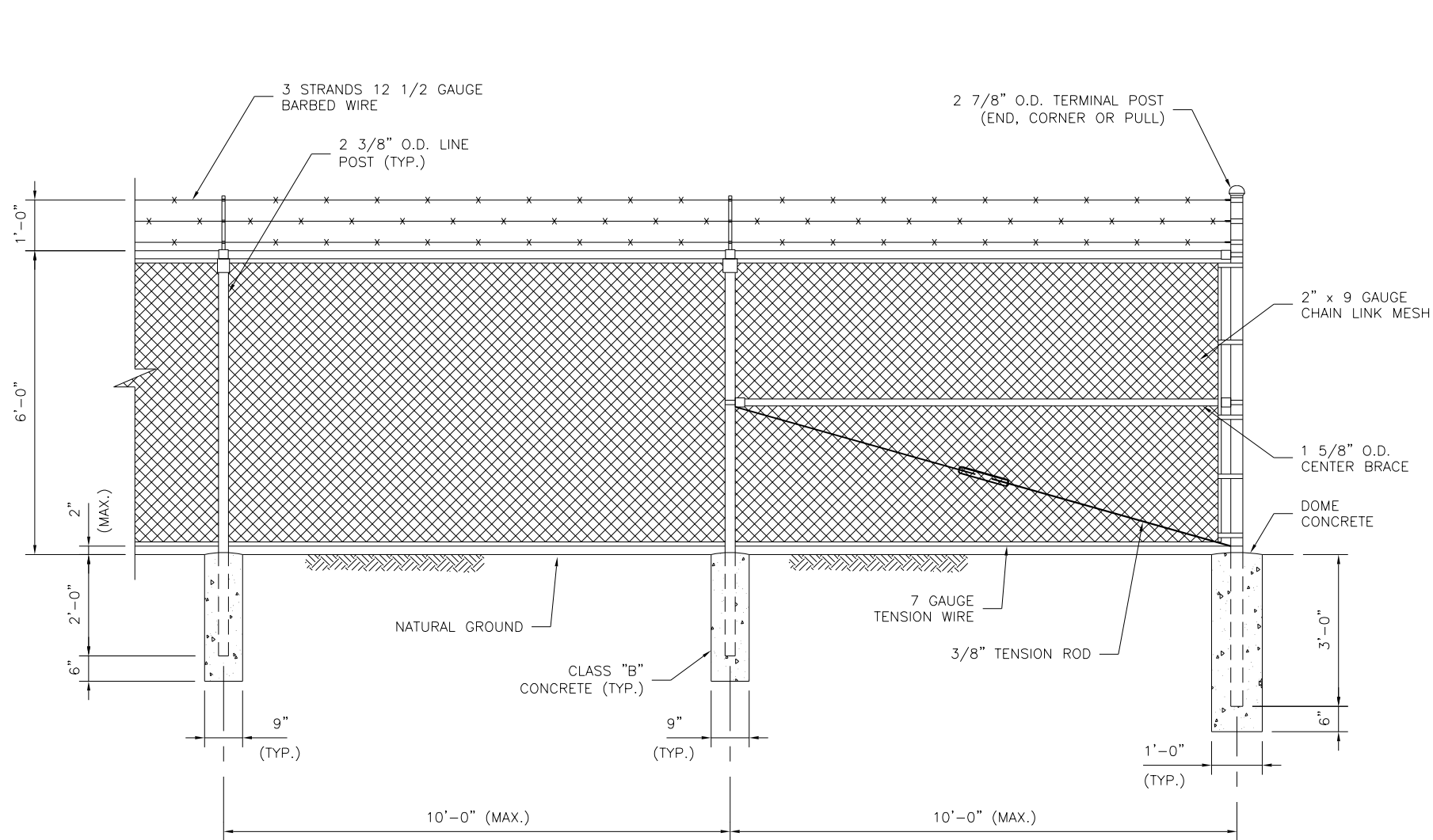
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	10-1-24	RJS
2			
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

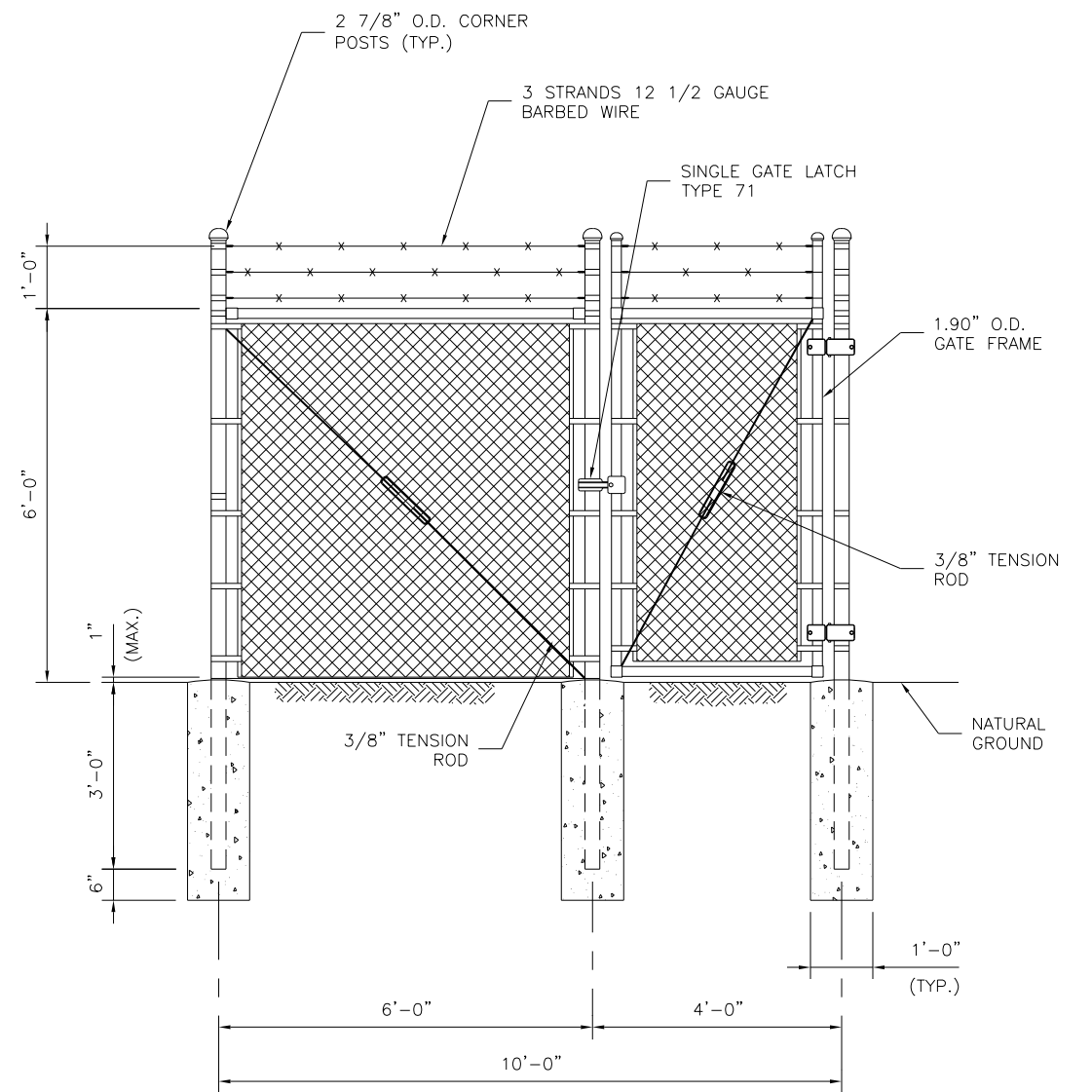


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: COUNTY FUNDED PROJECT SIGN (FOR PCNT. 4) SHEET 5 OF 5	FBCD STANDARD 40
CK'D BY: INIT		
SCALE: NONE	APPROVED BY:	SHEET NO: /
DATE: 10-1-24		

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ELEVATION WITH CORNER POST



SECURITY FENCE AND GATE  
FOR ELECTRICAL PANEL BOARD

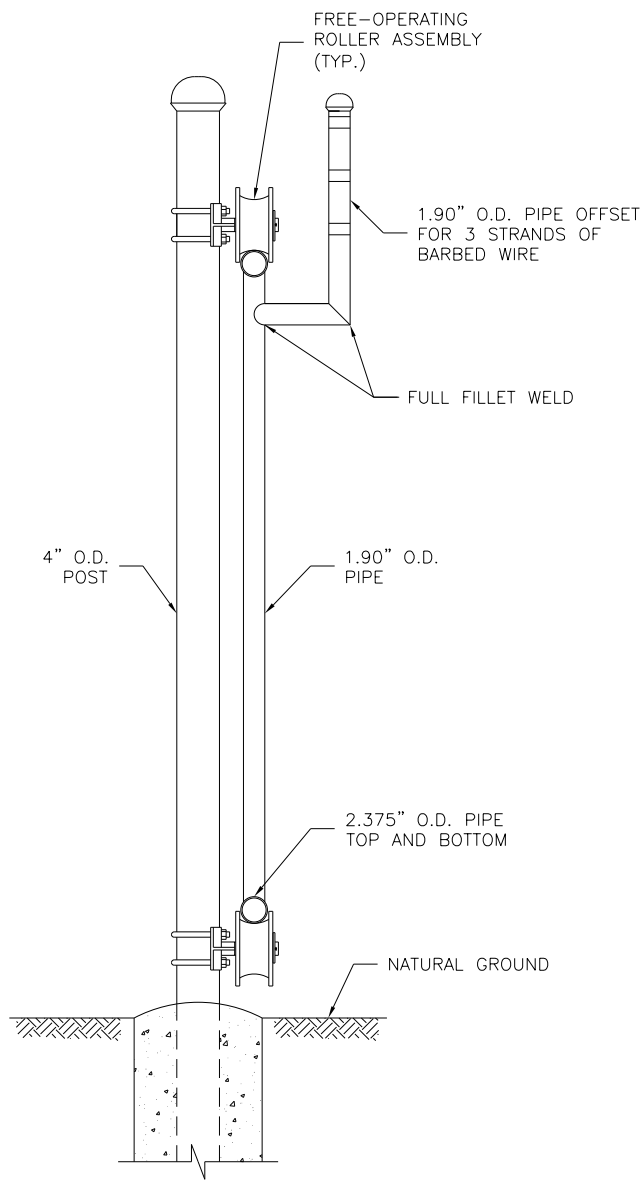
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

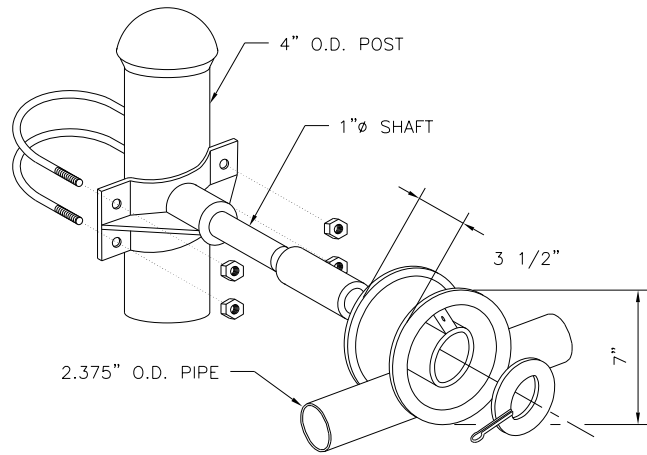


PROJECT TITLE:		
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CK'D BY:	INIT	
SCALE:	NONE	SHEET NO: /
DATE:	3-1-22	

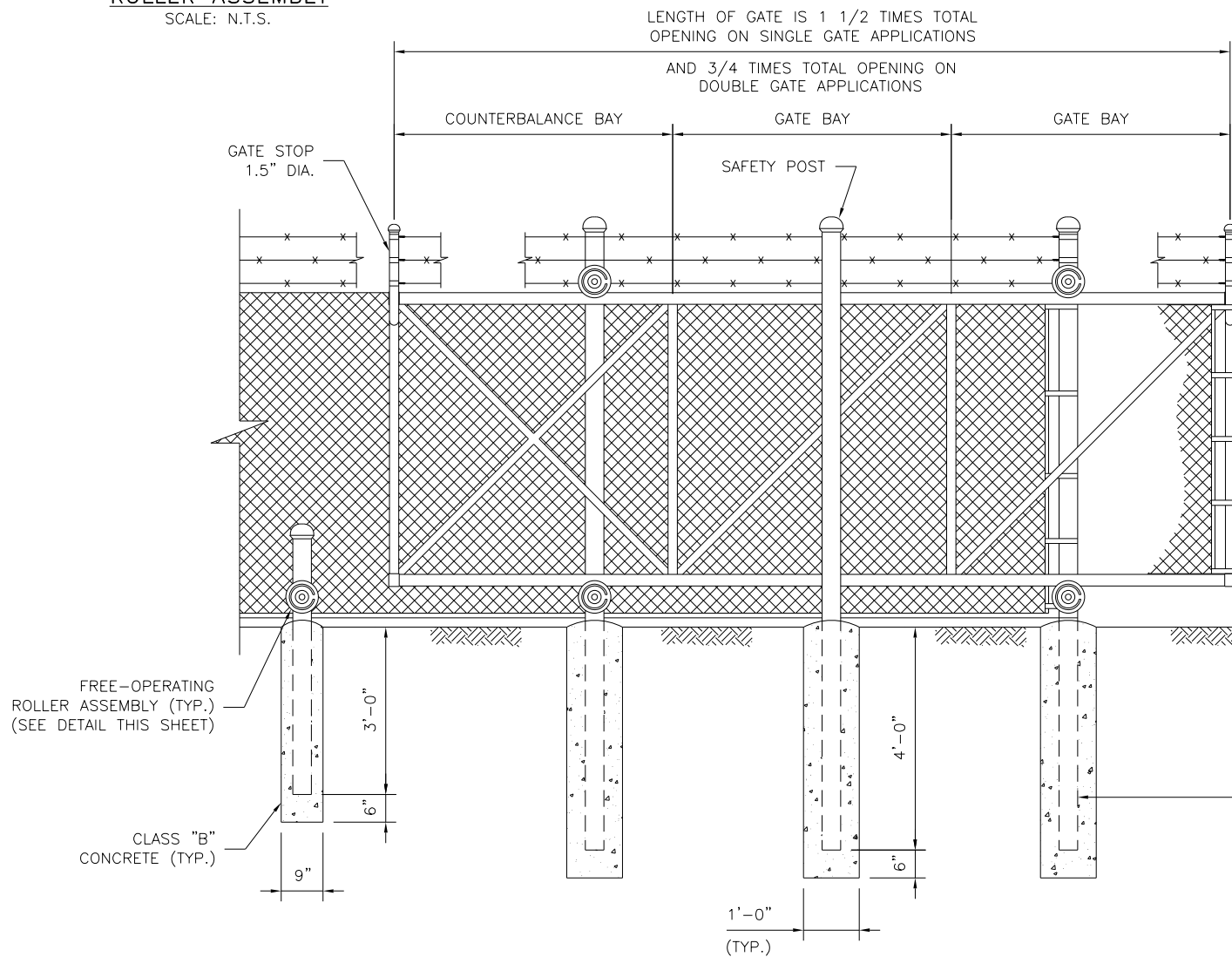
J:\1704\1601\Fort Bend County Standards\Fort Bend County Standards\FBC ROLLING GATE FENCING DETAILS\ROLLING\_GATE\_FENCING\_DETAILS.dwg



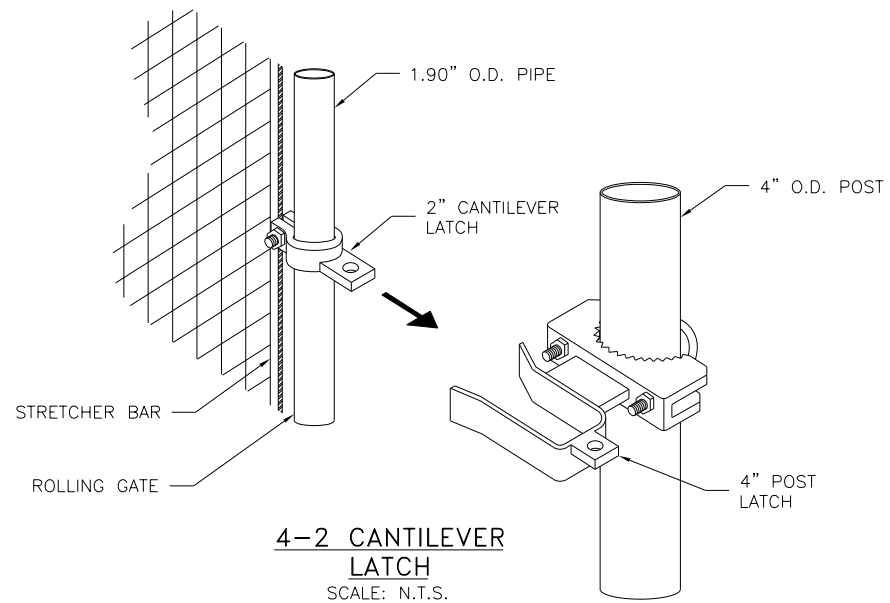
**TYPICAL ROLLING  
GATE DETAIL**  
SCALE: 1" = 9"



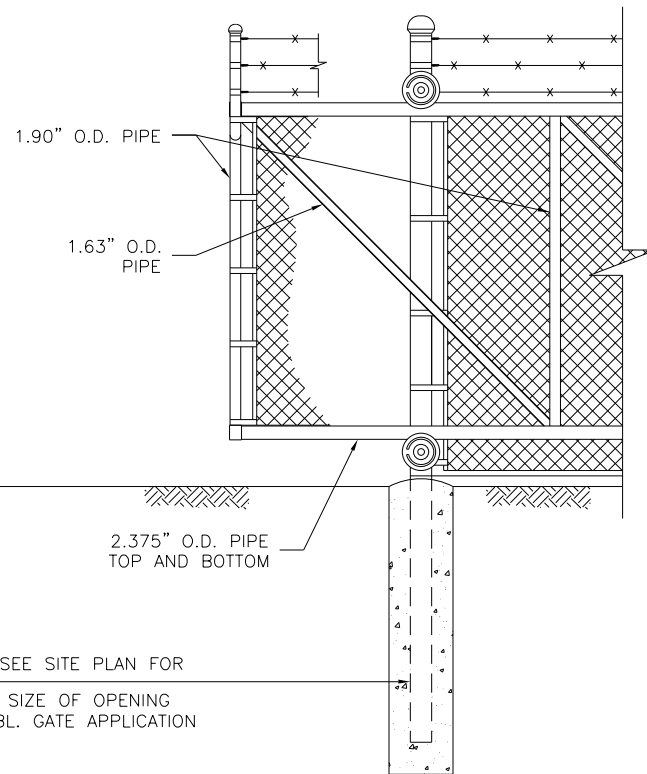
**TYPICAL  
FREE-OPERATING  
ROLLER ASSEMBLY**  
SCALE: N.T.S.



**ELEVATION**  
SCALE: 1" = 1'-6"



**4-2 CANTILEVER  
LATCH**  
SCALE: N.T.S.



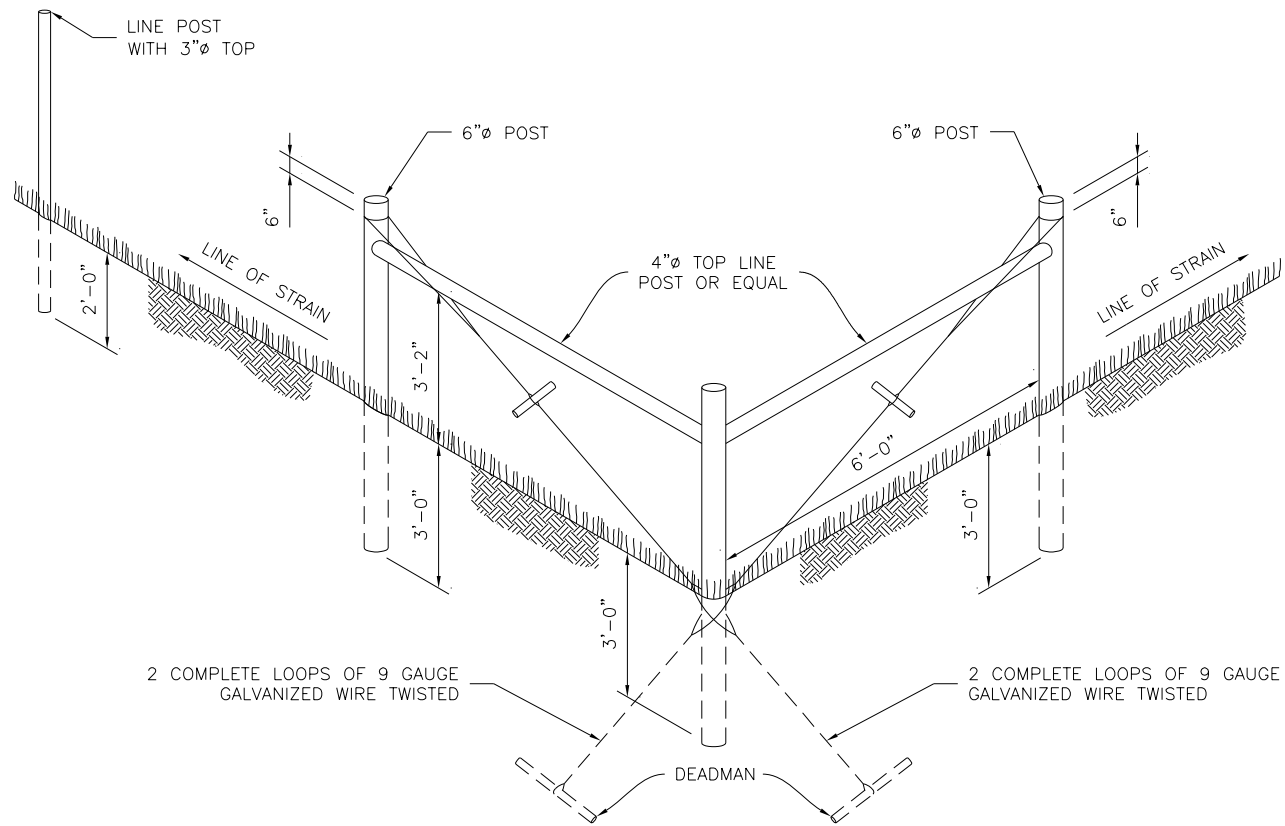
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

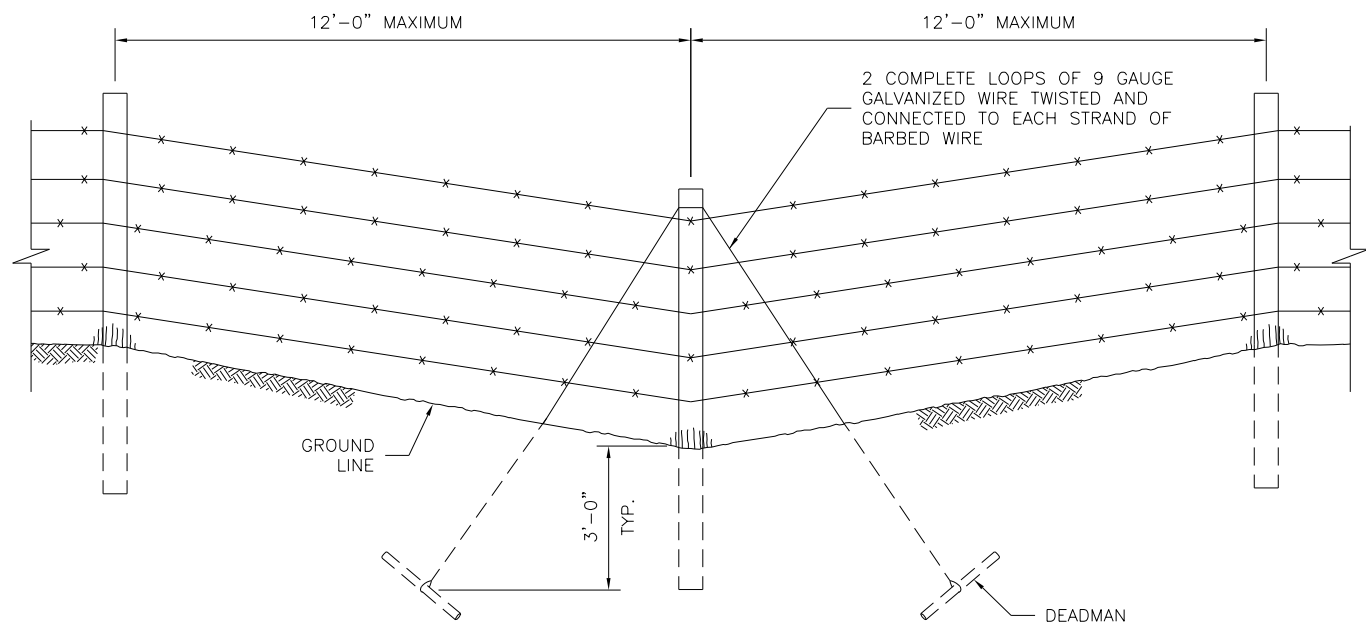


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: CHAIN LINK FENCING	FBCD STANDARD
CK'D BY: INIT		42
SCALE: AS NOTED	ROLLING GATE DETAILS	SHEET NO:
DATE: 3-1-22		
		/

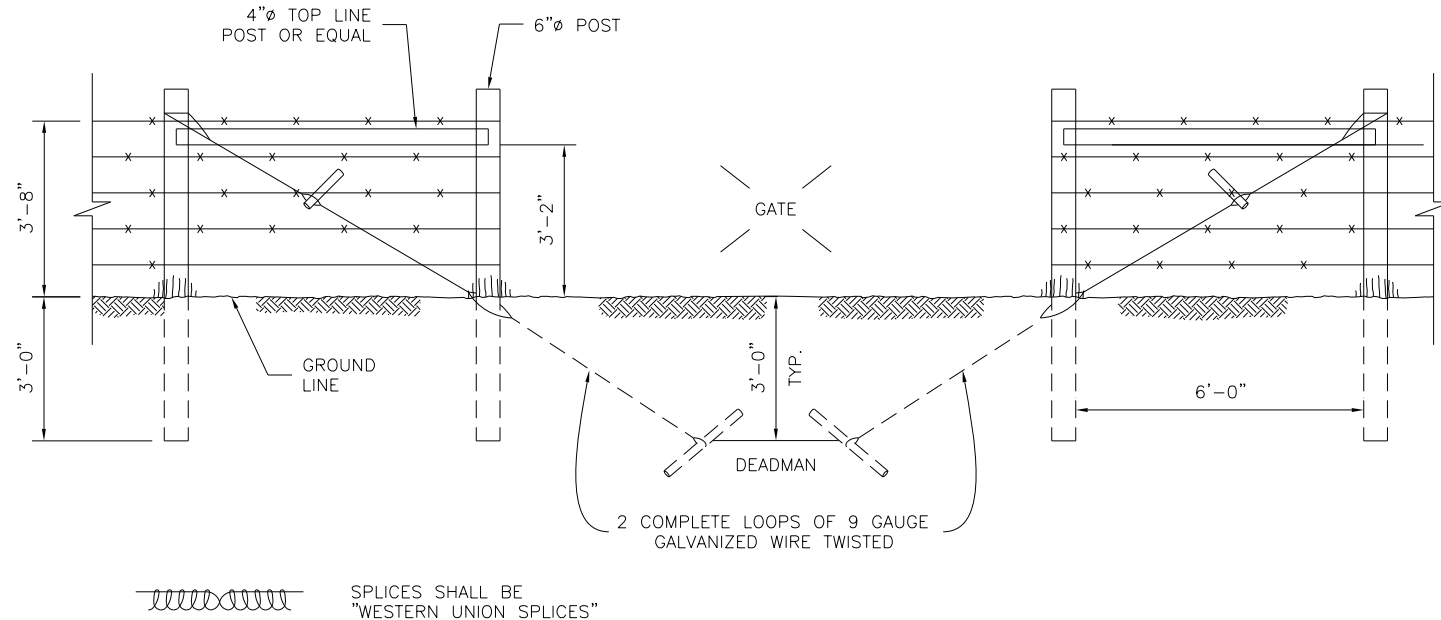
J:\1704\1601\Fort Bend County Standards\Fort Bend County STD\DONE\FBC BARBED WIRE FENCING DETAILS\BARBED\_WIRE\_FENCING\_DETAILS.dwg



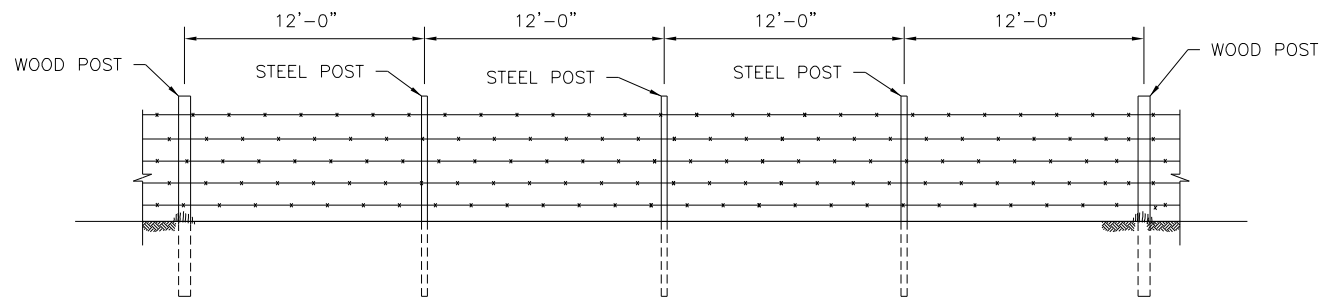
**ISOMETRIC VIEW  
AT CORNER ELEVATION**  
NOTE: ALL DIMENSIONS ARE MINIMUM



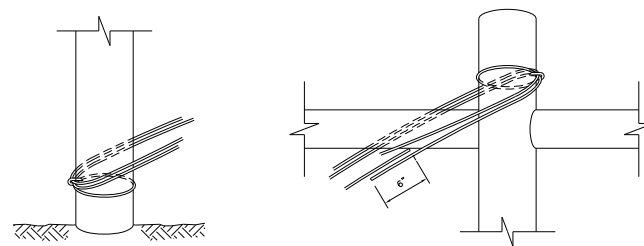
**GRADE DEPRESSION DETAIL**



**ELEVATION AT GATE OPENING**  
NOTE: ALL DIMENSIONS ARE MINIMUM



**TYPICAL FENCE ELEVATION**



**FASTENING DETAILS**  
FOR WIRE BRACE, TIE IN WOOD CORNER,  
OR END POST ASSEMBLY

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

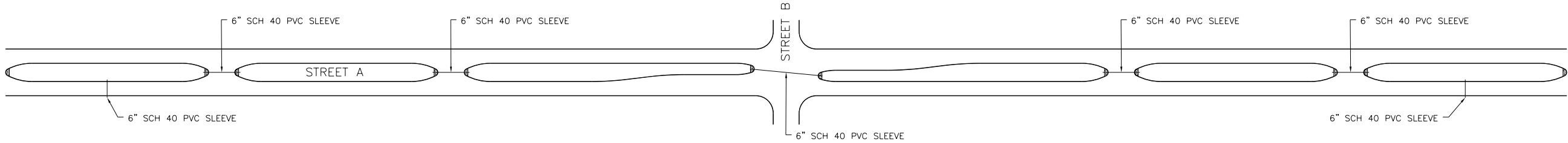
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



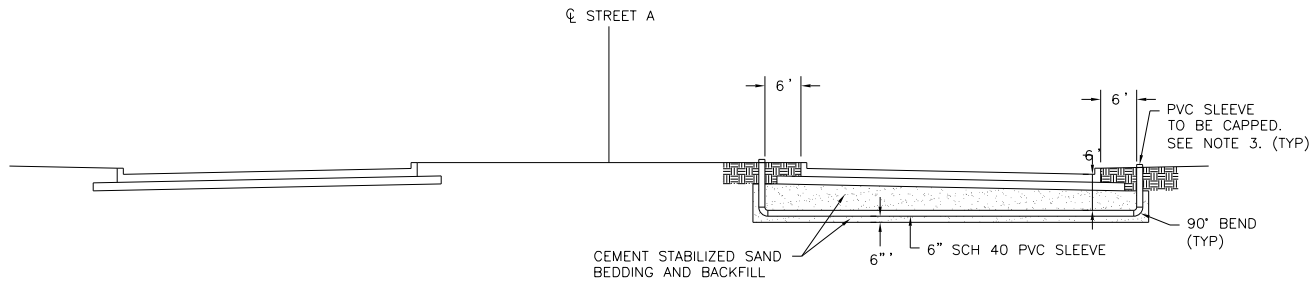
PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: BARBED WIRE FENCING DETAILS	FBCE STANDARD 43
CK'D BY: INIT		
SCALE: NONE	APPROVED BY:	SHEET NO: /
DATE: 3-1-22		



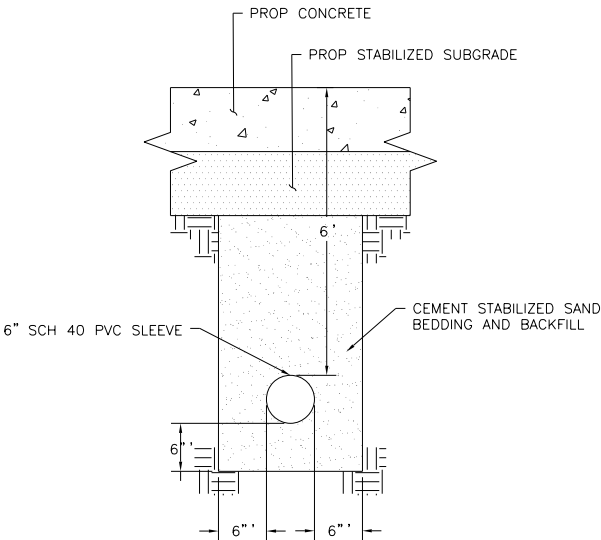
J:\1704\1601\Fort Bend County Standards\Fort Bend County STD\DONE\FBC BARBED WIRE FENCING DETAILS\BARBED\_WIRE\_FENCING\_DETAILS.dwg



PLAN VIEW



TYPICAL SECTION  
STREET A



TYPICAL TRENCH DETAIL

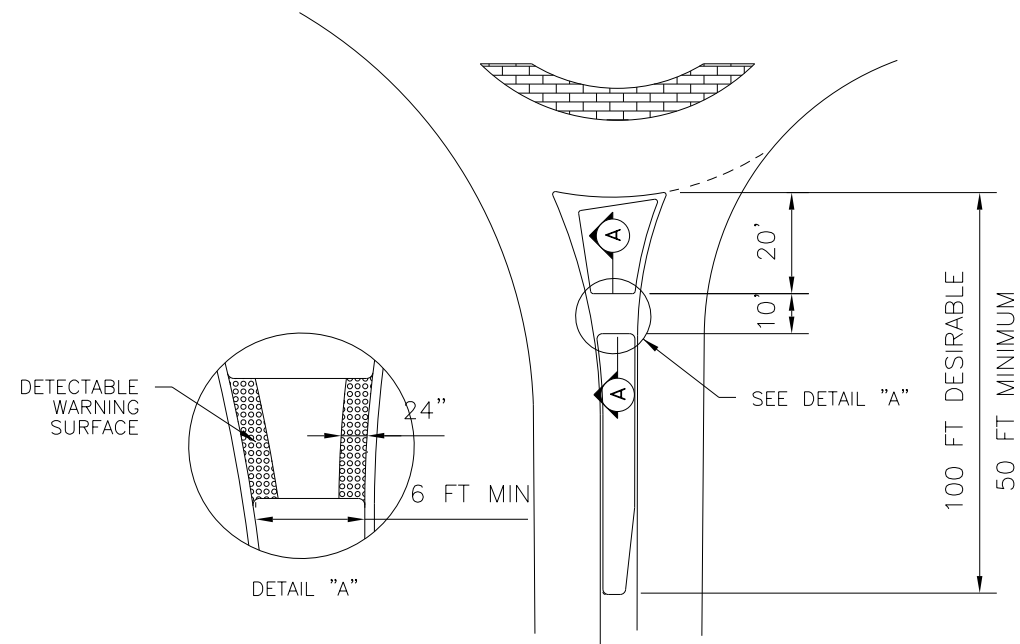
- NOTES:
1. CONSTRUCT A 6 INCH DIAMETER SCHEDULE 40 PVC SLEEVE ACROSS EACH MEDIAN OPENING AND INTERSECTIONS. IN ADDITION, CONSTRUCT A 6 INCH DIAMETER SCHEDULE 40 PVC SLEEVE UNDER THE ROADWAY AT THE FIRST AND LAST MEDIAN IN THE PROJECT.
  2. THE EXACT LOCATION OF THE SLEEVES WILL BE DETERMINED DURING CONSTRUCTION.
  3. INCLUDE CAPPED RISER AT EACH END OF SLEEVES, WHICH COST IS INCIDENTAL TO THE SLEEVES LINEAR FEET QUANTITY.
  4. SEE FBCEC STANDARD SHEET 46 FOR MORE DETAILS PVC SLEEVES

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	10-1-24	RJS
2			
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

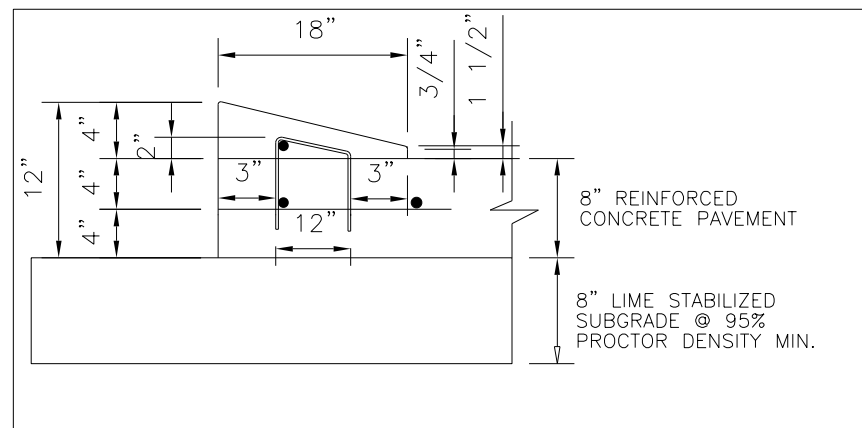


PROJECT TITLE:		
DRAWN BY:	INIT	FBCEC STANDARD 44
CK'D BY:	INIT	
SCALE:	NONE	SHEET NO: /
DATE:	10-1-24	
APPROVED BY:		
AT MEDIANS DETAIL		



### SPLITTER ISLAND DIMENSIONS

N.T.S.

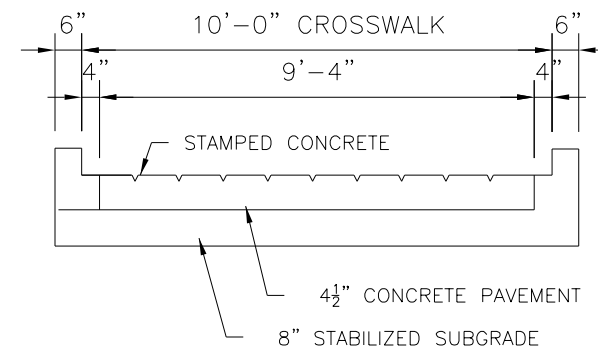


4"x18" MOUNTABLE CURB DETAIL

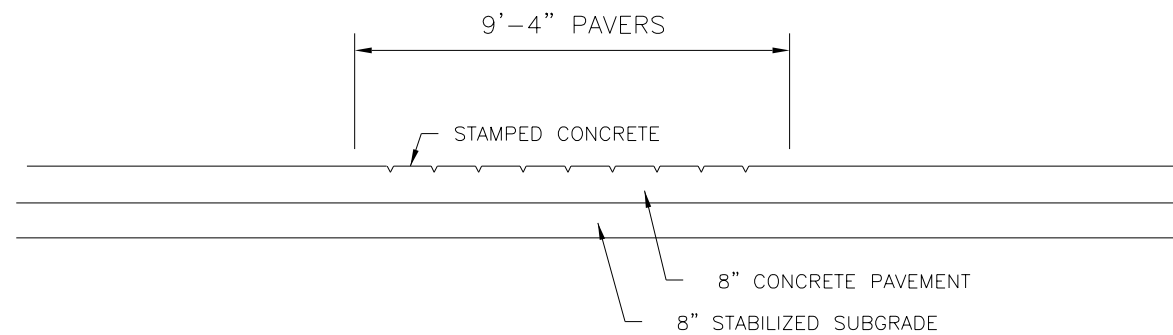
N.T.S.

## NOTES

1. 1.0 LBS. OF APPROVED NON- METALLIC FIBER MESH PER C/Y ON 4"X18" CURBS.
2. #4 RE-BAR STIRRUPS TO BE PLACED AT INTERVALS OF 2' (FT) C-C.
3. #4 RE-BAR LONGITUDINAL SHALL BE TIED TO EACH STIRRUP.

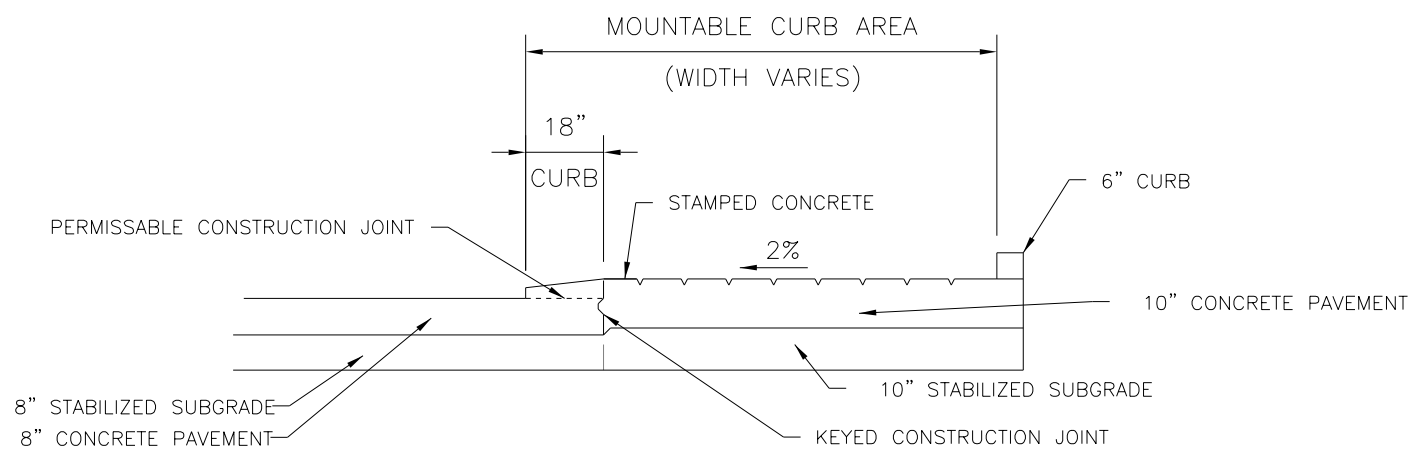


CROSS SECTION A-A  
SPLITTER ISLAND CUT THROUGH



CROSS SECTION OF CROSS WALK WITH STAMPED CONCRETE

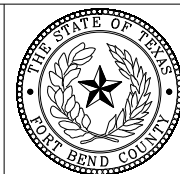
(SEE NOTE 2)



CROSS SECTION OF TRUCK APRON

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	NOTE 2 FOR STAMPED CONC. CROSSWALK	3-1-23	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD 45
CK'D BY: INIT	SHEET DESCRIPTION: ROUNDOABOUT CONSTRUCTION DET I	
SCALE: AS NOTED	SHEET 1 OF 4	SHEET NO:  /
DATE: 3-1-23	APPROVED BY:	

The diagram illustrates a roundabout intersection with a central circular island. Traffic flows clockwise around the island. Key features include:

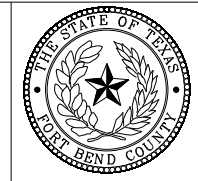
- Williams Trace**: Approaching from the top right, turning left into the roundabout.
- Sugar Lakes Dr**: Approaching from the bottom right, turning left into the roundabout.
- 2-6" SCH 40 PVC SLEEVES WITH RISERS/CAPS (TYP)**: Indicated at the curb locations for the approaching roads.
- Signage**:
  - ONE WAY** signs (R6-1 and R6-2) with arrows indicating the direction of travel.
  - YIELD** signs (inverted triangles) for the approaching roads.
  - Pedestrian crossing** signs (diamonds with a walking figure) and **checkmark** signs.
  - Roundabout** signs (diamonds with a circular arrow).
- Mounting**: Signs are to be mounted 4' above the gutter line.
- Other**: A note states "OMIT IF ROAD IS DIVIDED" with an arrow pointing to a specific location on the approach road.

NOTES:

1. SIGNS ARE SHOWN FOR ONE APPROACH ONLY.
2. SEE FBCED STANDARD 44 FOR PVC SLEEVE CONSTRUCTION DETAILS.
3. INSTALL STREET LIGHTS AS SHOWN IN PLANS. DESIGN ENGINEER SHALL PROVIDE A MINIMUM OF 4 STREET LIGHTS TO ILLUMINATE THE ROUNDABOUT.

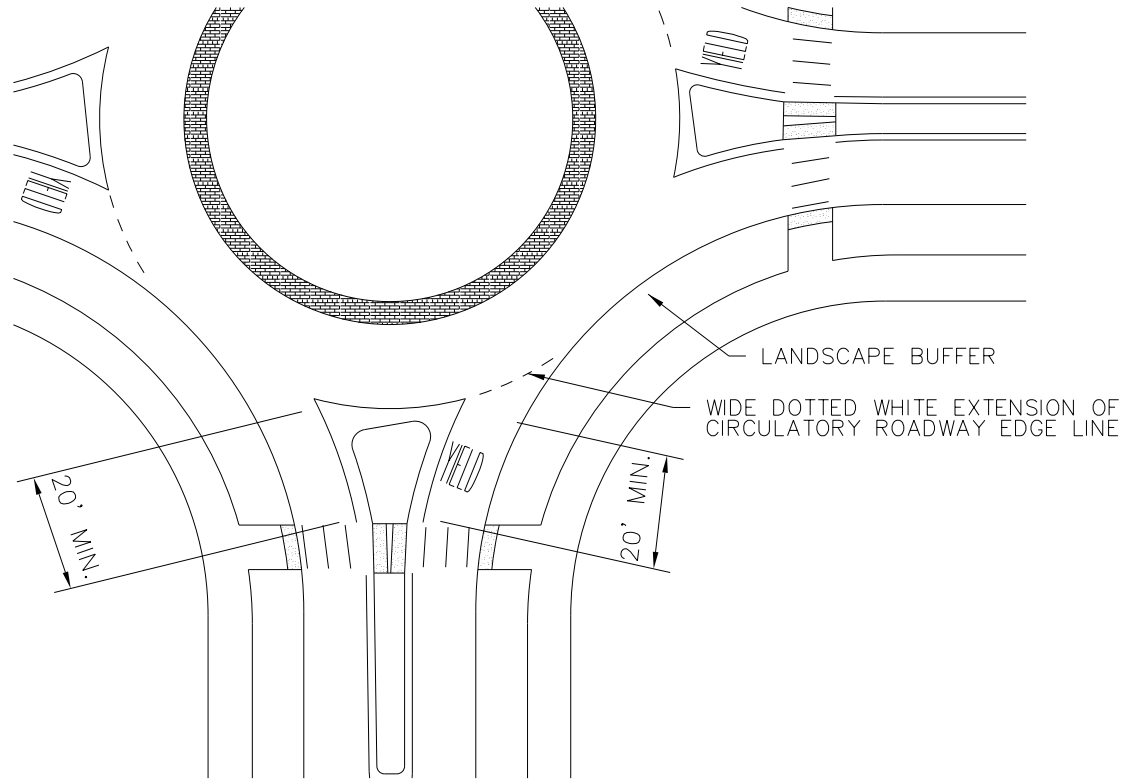
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED PVC SLEEVES, NOTE 3, & REM. R6-4	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD  46
CK'D BY: INIT	SHEET DESCRIPTION: ROUNDABOUT CONSTRUCTION DET II	
SCALE: AS NOTED	SHEET 2 OF 4	SHEET NO:  /
DATE: 10-1-24	APPROVED BY:	

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PAVEMENT MARKINGS FOR  
SINGLE LANE ROUNDABOUT  
N.T.S.

NOTES

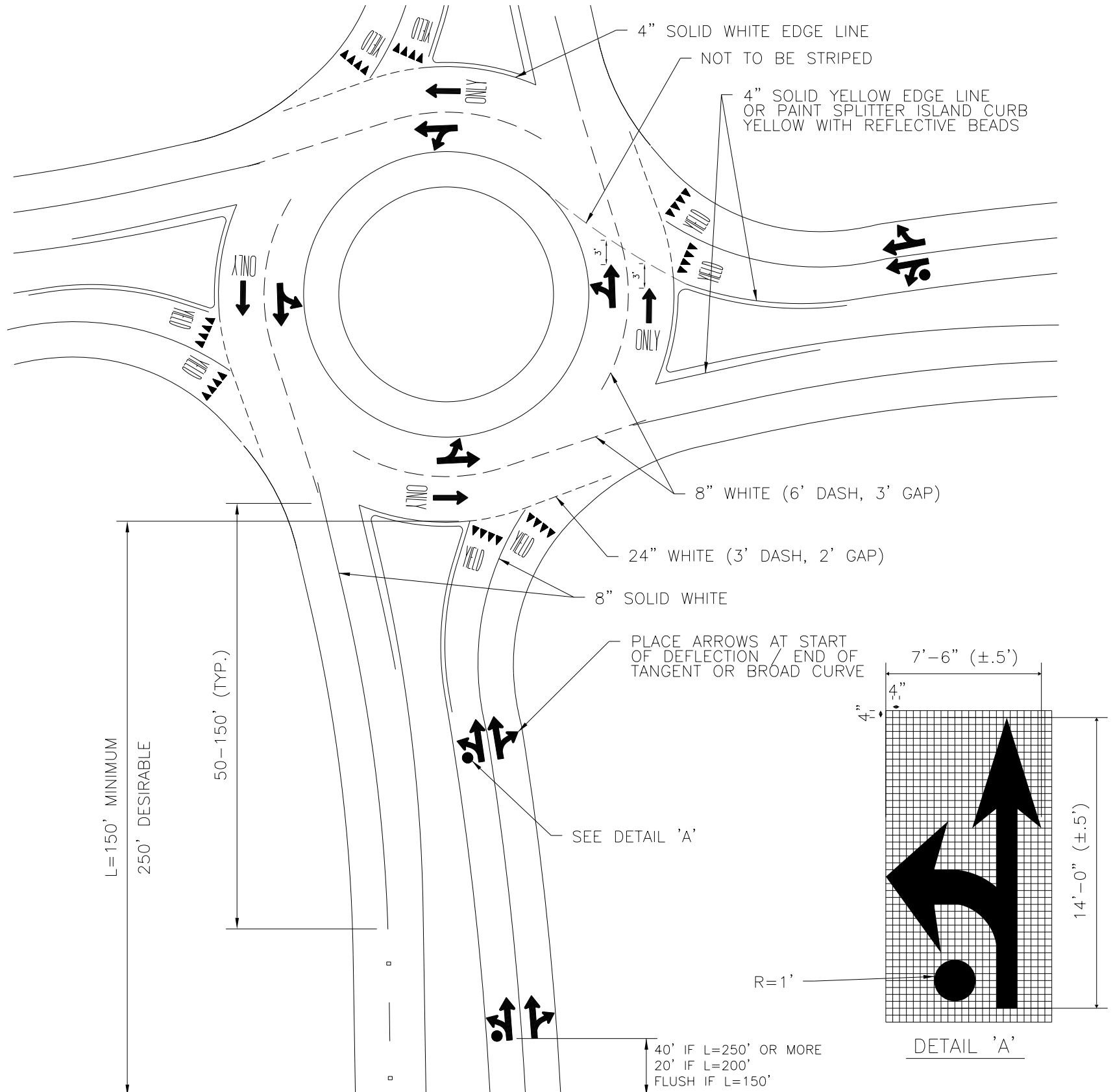
1. USE STANDARD (NON FISHHOOK) ARROWS ON ROUNDABOUT APPROACHES AND IN CIRCULATORY ROADWAY.
2. PLACE "SHARKS'S TEETH" YIELD MARKINGS PERPENDICULAR TO LEFT LANE LINE OR CURB FOR EACH LANE.
3. CROSSWALK OMITTED FROM TWO-LANE DETAIL FOR CLARITY. MINIMUM CROSSWALK DIMENSIONS FOR SINGLE -LANE ROUNDABOUT ALSO APPLY TO MULTI -LANE.
4. PAVEMENT MARKING MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS.
5. PAVEMENT SURFACE AREAS PRIOR TO PLACEMENT OF PAVEMENT MARKINGS AND/OR RAISED PAVEMENT MARKERS SHALL BE CLEANING IN ACCORDANCE WITH COUNTY STANDARDS. CONCRETE SURFACES SHALL BE CLEANED BY ABRASIVE BLASTING MEDIUM. ASPHALT PAVEMENT SURFACE SHALL BE

CLEANED BY BRUSHING WASHING, COMPRESSED AIR, AND/OR HIGH -PRESSURE WATER. AREAS MUST BE FREE OF CURING MEMBRANCE, DIRT, GREASE, LOOSE AND/OR FLAKING EXISTING MARKERS, AND FORMS OF DEBRIS.

6. ALL STREET CROSSING SHALL COMPLY WITH T.A.S. AND A.D.A. SEE HANDICAP CROSS DETAIL.

7. ALL PAVEMENT MARKING AND/OR RAISED PAVEMENT MARKERS SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, A.D.A, T.A.S., AND COUNTY STANDARDS AND ALL REVISIONS THEREOF.

8. PAVEMENT MAKINGS PLACED THAT ARE NOT IN ALIGNMENT OR SEQUENCE AS SHOWN ON THE PLANS OR STATED IN THE PROJECT SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.



PAVEMENT MARKINGS FOR 2- LANE ROUNDABOUT  
N.T.S.

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	ADDED DETAIL A	10-1-24	RJS
3			
4			
5			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

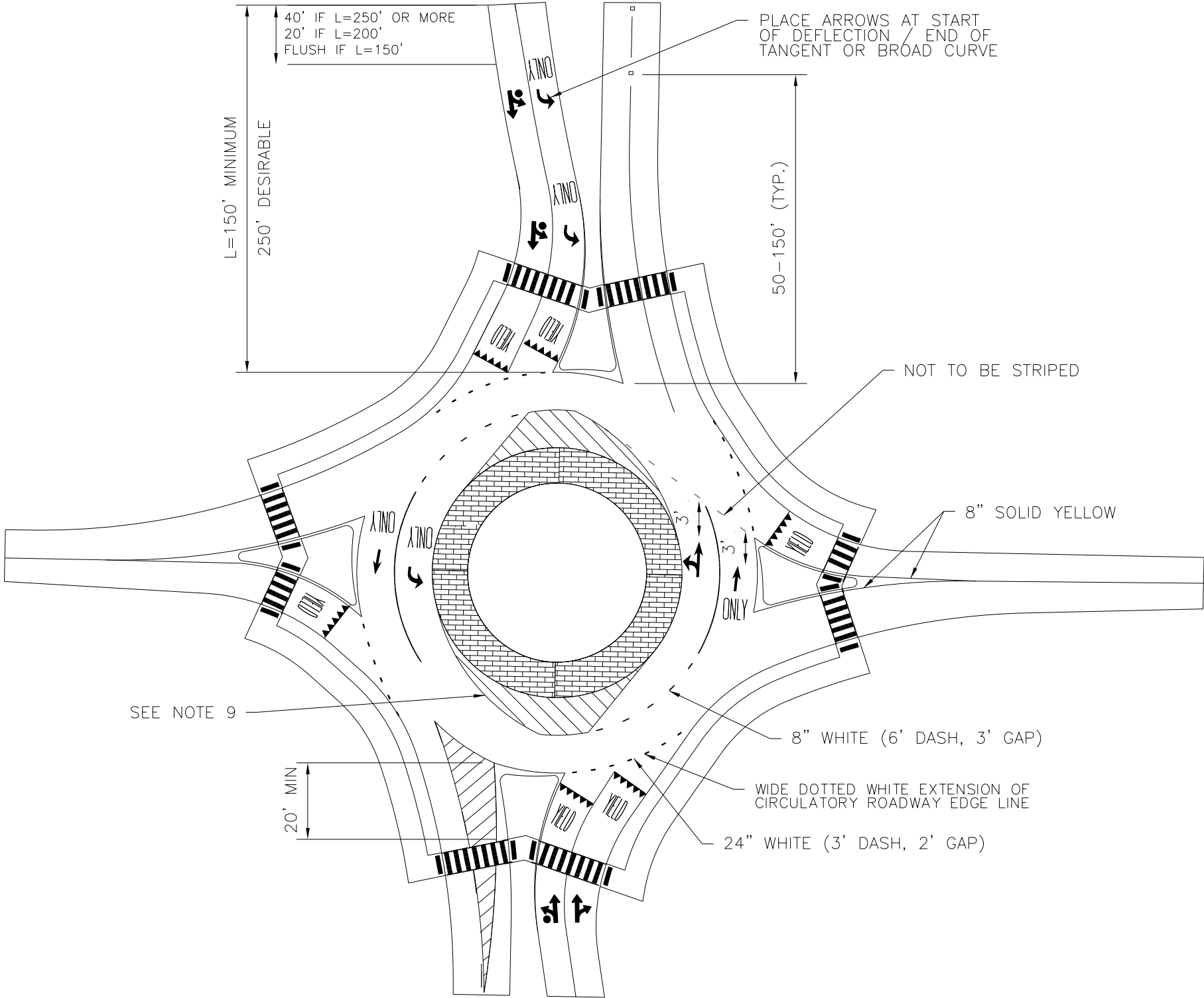


PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: ROUNDABOUT CONSTRUCTION DET III	47
SCALE: AS NOTED	SHEET 3 OF 4	SHEET NO:  /
DATE: 10-1-24	APPROVED BY:	

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NOTES

1. USE STANDARD (NON FISHHOOK) ARROWS ON ROUNDABOUT APPROACHES AND IN CIRCULATORY ROADWAY.
2. PLACE "SHARKS'S TEETH" YIELD MARKINGS PERPENDICULAR TO LEFT LANE LINE OR CURB FOR EACH LANE.
3. CROSSWALK OMITTED FROM TWO-LANE DETAIL FOR CLARITY. MINIMUM CROSSWALK DIMENSIONS FOR SINGLE -LANE ROUNDABOUT ALSO APPLY TO MULTI -LANE.
4. PAVEMENT MARKING MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS.
5. PAVEMENT SURFACE AREAS PRIOR TO PLACEMENT OF PAVEMENT MARKINGS AND/OR RAISED PAVEMENT MARKERS SHALL BE CLEANING IN ACCORDANCE WITH COUNTY STANDARDS. CONCRETE SURFACES SHALL BE CLEANED BY ABRASIVE BLASTING MEDIUM. ASPHALT PAVEMENT SURFACE SHALL BE CLEANED BY BRUSHING WASHING, COMPRESSED AIR, AND/OR HIGH -PRESSURE WATER. AREAS MUST BE FREE OF CURING MEMBRANCE, DIRT, GREASE, LOOSE AND/OR FLAKING EXISTING MARKERS, AND FORMS OF DEBRIS.
6. ALL STREET CROSSING SHALL COMPLY WITH T.A.S. AND A.D.A. SEE HANDICAP CROSS DETAIL.
7. ALL PAVEMENT MARKING AND/OR RAISED PAVEMENT MARKERS SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, A.D.A, T.A.S., AMD COUNTY STANDARDS AND ALL REVISIONS THEREOF.
8. PAVEMENT MAKINGS PLACED THAT ARE NOT IN ALIGNMENT OR SEQUENCE AS SHOWN ON THE PLANS OR STATED IN THE PROJECT SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
9. HATCHING TO BE EITHER STRIPING OR MOUNTABLE CURB. DESIGN CONSULTANT TO COORDINATE WITH FBC ENGINEERING AND GET FINAL APPROVAL ON DESIGN.



PAVEMENT MARKINGS FOR MULTILANE  
ROUNDABOUT WITH 1-LANE APPROACH  
OR RECIEVING ROADWAY

N.T.S.

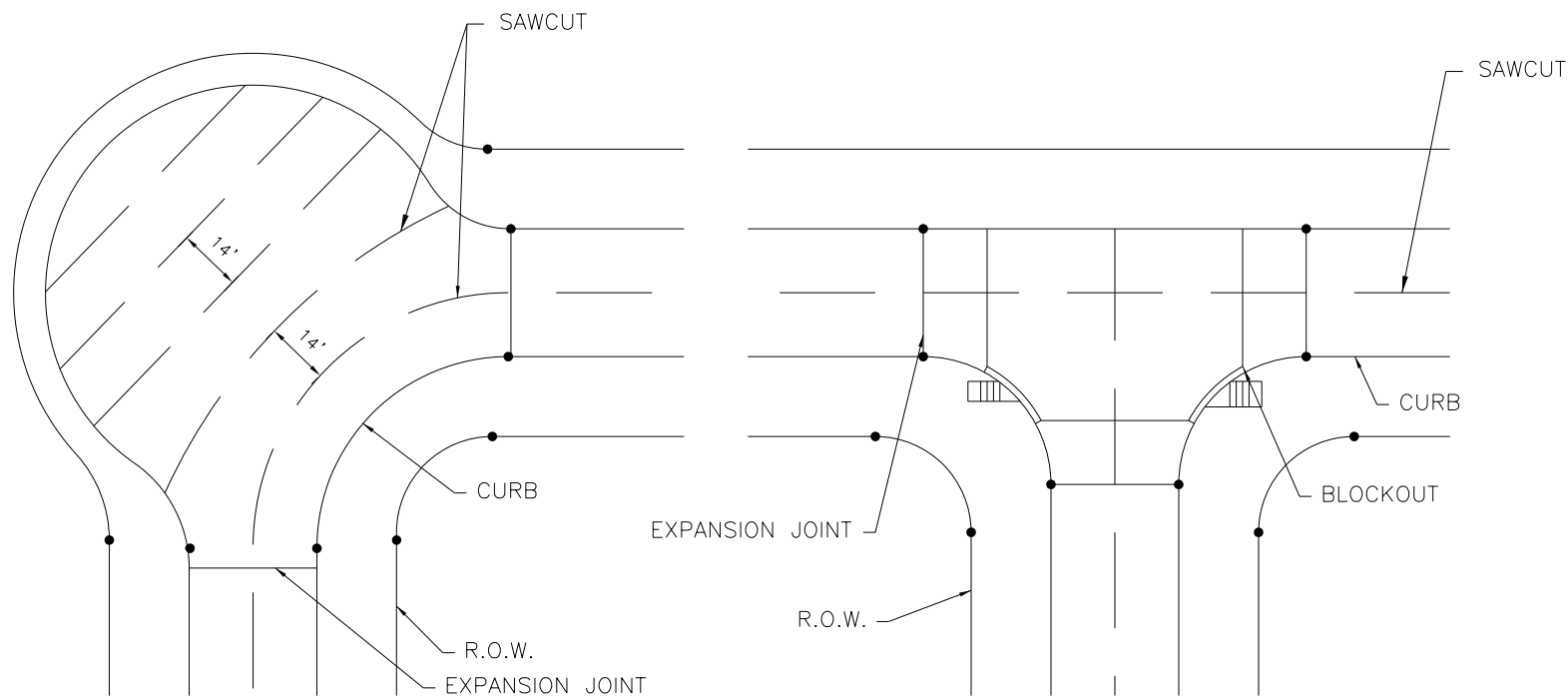
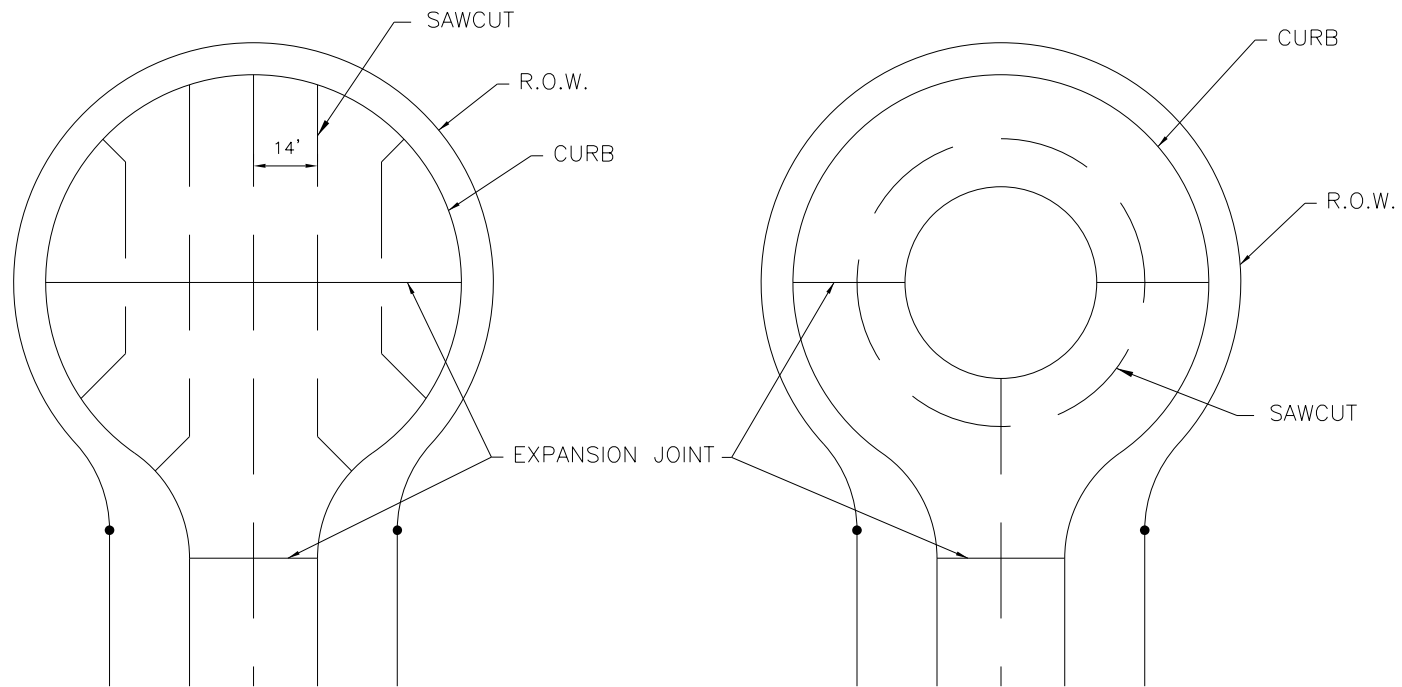
NO.	REVISIONS	DATE	NAME
▲	ORIGINAL STANDARD ISSUED	10-1-24	RJS
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT

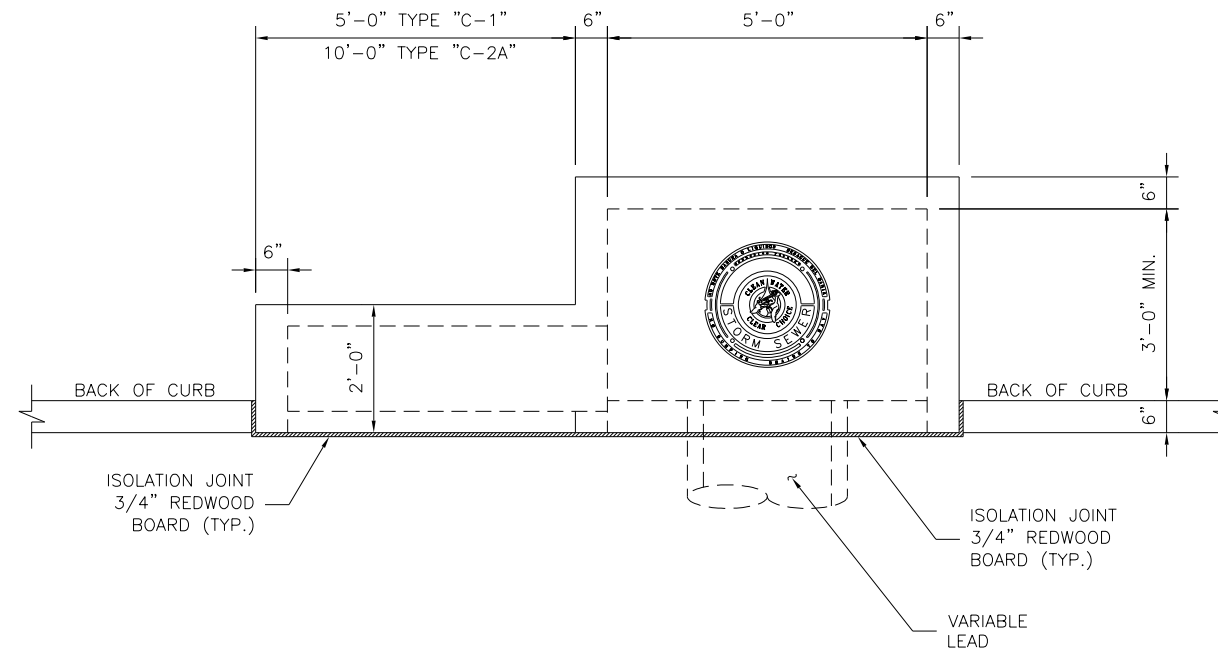


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: ROUNDABOUT CONSTRUCTION DET IV	FBCD STANDARD
CK'D BY: INIT		48
SCALE: AS NOTED	SHEET 4 OF 4	SHEET NO:
DATE: 10-1-24		
		/

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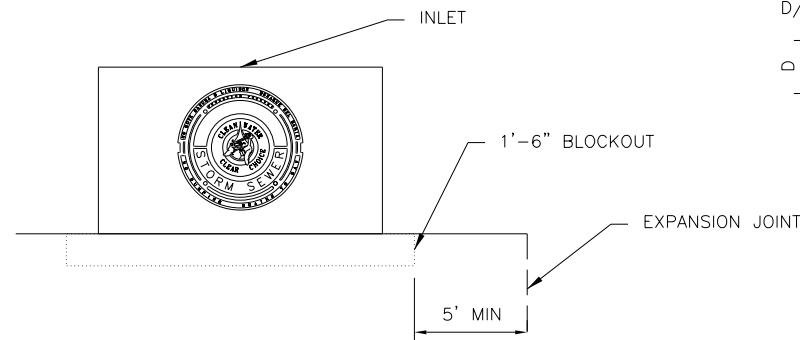


TYPICAL LOCATION OF EXPANSION JOINTS AND SAWCUTS  
N.T.S.

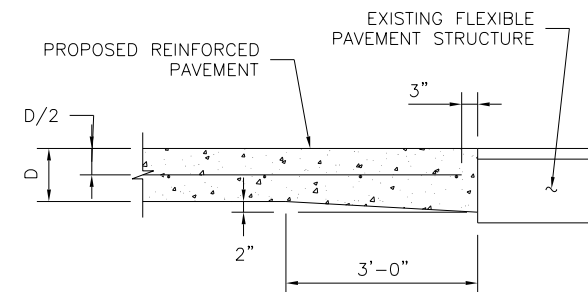


PLAN VIEW

**INLET NOTES:**  
TYPE "C": INLET ONLY - NO EXTENSION  
TYPE "C-1": INLET WITH ONE EXTENSION (5'-0" LONG)  
TYPE "C-2": INLET WITH ONE EXTENSION (5'-0" LONG) ON EACH SIDE  
TYPE "C-2A": INLET WITH ONE DOUBLE EXTENSION (10'-0" LONG) ON ONE SIDE  
\* FOR TYPE "C-2A" INLETS, PROVIDE A CENTER 6"x6" COLUMN IN THE CURB LINE BETWEEN ALL EXTENSIONS.



HEADER SPACING FROM CURB INLETS



TYPICAL PAVING HEADER

**NOTE:**  
PAVEMENT EXPANSION JOINTS (LOAD TRANSFER DEVICE) SHALL NOT BE PLACED WITHIN THE PAVEMENT DEPRESSION OF AN EXISTING OR PROPOSED STORM SEWER INLET. A MINIMUM DISTANCE OF 5' MUST BE PROVIDED BETWEEN THE INLET BLOCKOUT AND THE EXPANSION JOINT.

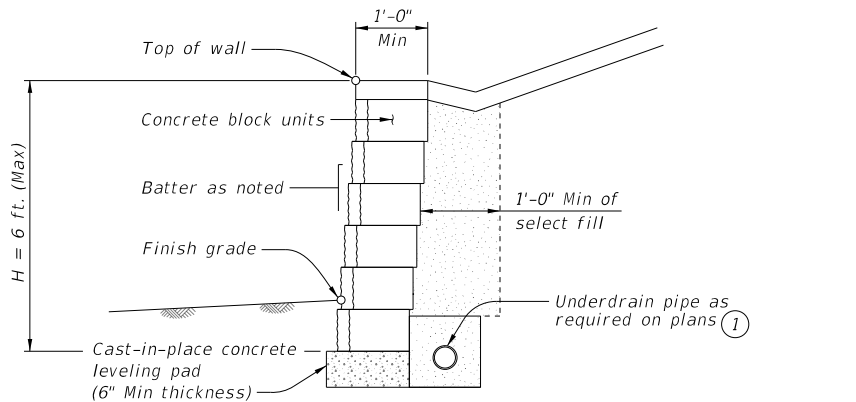
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT		FBCE STANDARD 49
CK'D BY: INIT	SHEET DESCRIPTION: EXPANSION JOINTS AND SAWCUTS	
SCALE: AS NOTED		SHEET NO: /
DATE: 3-1-22	APPROVED BY:	

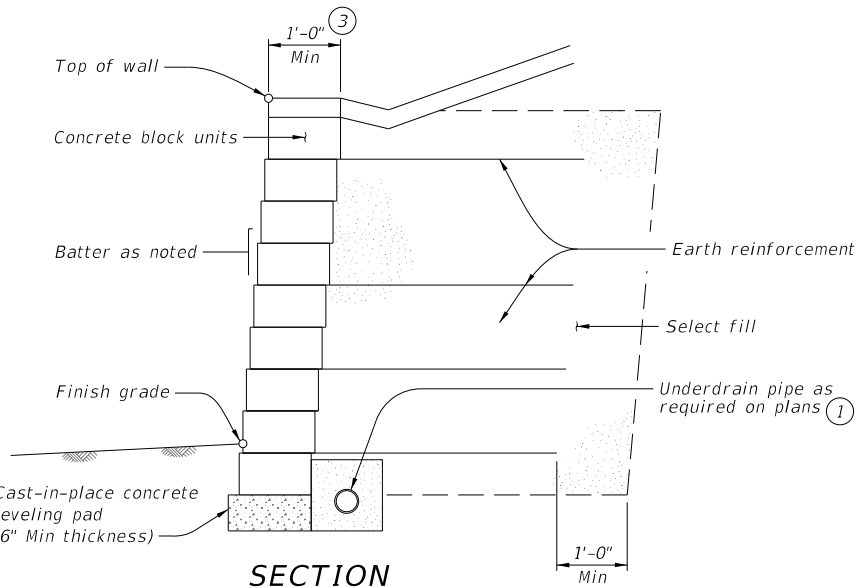
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**SECTION**  
(No earth reinforcement) ②

**NOTE:**

FENCE OR UTILITIES WITHIN THE LIMITS OF THE EARTH REINFORCEMENT REQUIRES SPECIAL DETAILS.



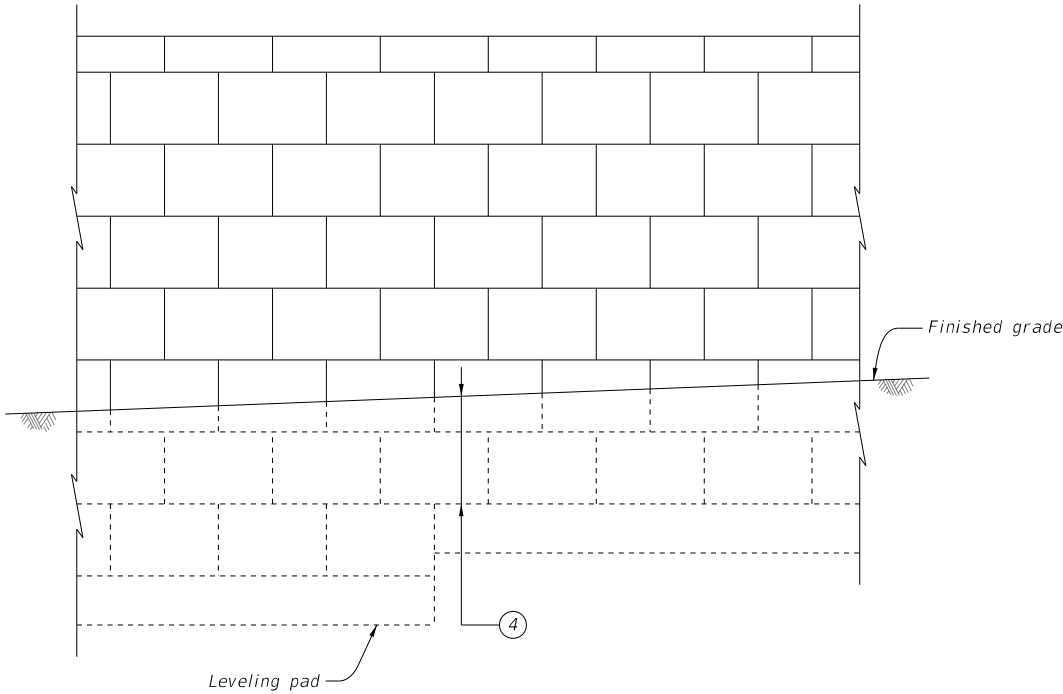
**SECTION**  
(With earth reinforcement)

① Provide underdrain pipe and filter material in accordance with TxDOT Item 556, "Pipe Underdrains."

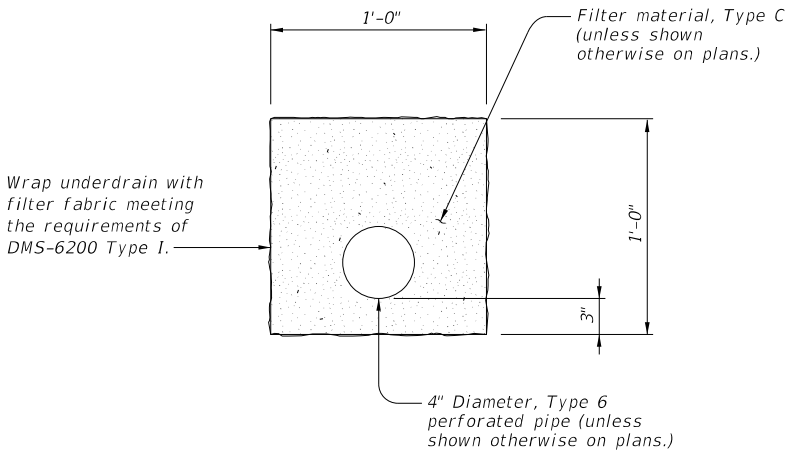
② For walls which are designated as landscape walls and are less than 6 feet tall, the following modifications to the design criteria will be allowed:

Factor of safety in sliding > 1.2.  
Factor of safety in overturning > 1.5.  
Connection strength factor of safety of 1.0 at 3/4" strain.  
Walls may be constructed without earth reinforcement if all stability criteria are met with the blocks alone. If all stability criteria are not satisfied, provide earth reinforcement with a 4-foot minimum length.

The above modified criteria does not apply to walls over 6 feet tall regardless of designation.



**TYPICAL ELEVATION**



**UNDERDRAIN DETAIL** ①

③ For systems utilizing continuous structural pins passing through a minimum of 3 block layers, use a minimum block depth of 8 inches. Provide 24-inch maximum vertical spacing of primary reinforcement on these systems. Intermediate reinforcement will not be required.

④ Minimum embedment conforming to values given on the Concrete Block Retaining Wall Design Data (RW[CB]DD) standard.

⑤ Base soil design parameters on long term soil strength. List design parameters on the RW(CB)DD standard sheet.

**DESIGN CRITERIA NOTES:**

Design Parameters:  
Base design of retaining walls on the following design parameters unless stated elsewhere in the plans:

Retained Soil	Unit Weight = 125 pcf $\phi = ⑤$ C = 0 psf
Foundation Soil	$\phi = ⑤$ C = 0 psf
Select Backfill	Unit Weight = See Table ⑥ $\phi = 34^\circ$ C = 0 psf
Cement Stabilized Select Backfill	Unit Weight = 125 pcf $\phi = 45^\circ$ C = 0 psf

Stability Criteria:  
Base design on the following factors of safety: ②

Sliding along the base of the structure	Factor of Safety $\geq 1.5$
Overturning	Factor of Safety $\geq 2.0$

Design the wall such that the base pressure resultant falls within the middle third of the retaining wall.

**EARTH REINFORCEMENT:**

Calculate the long term design strength (LTDS) of earth reinforcement in accordance with current AASHTO Standard Specifications for Highway Bridges and Interim Specifications.

Determine soil-geogrid pullout coefficient values in accordance with Geosynthetics Research Institute (GRI) Method GG-5, "Guidelines for Evaluating Geogrid Pullout."

Provide connection strength data for the combination of concrete block and geogrid chosen. Limit the allowable connection load to the connection strength developed at 3/4" displacement, divided by a 1.5 safety factor. ②

Assume the failure plane originates at the back of the concrete blocks for internal stability calculations.

Determine the factor of safety against pullout of the earth reinforcement from test data evaluated at 3/4" strain.

Space the primary earth reinforcement layers at a maximum vertical spacing of 40 inches. ③

The minimum length of primary earth reinforcement for structural walls (non-landscaped) is 8 feet or 70% of the wall height, measured from the front of the blocks as shown on the Concrete Block Retaining Wall Design Data (RW[CB]DD) standard. ②

Provide a layer of intermediate reinforcement between primary reinforcement when the spacing between primary layers exceeds twice the horizontal depth of the concrete block unit. Provide a minimum intermediate reinforcement length of 4 feet to provide local stability for the concrete block units. ③

Extend select backfill (including unit fill) a minimum of 1 foot horizontally beyond the end of the earth reinforcement from the back of the blocks.

**GENERAL NOTES:**

Sections and typical elevation shown are for informational purposes only. Determine specific geometry based on wall layouts and other plan information.

Limit wall batter to a maximum of 3 inches per foot unless otherwise shown in the plans. Place blocks horizontally and provide a positive means of obtaining batter such as pins, keyways, or concrete lips.

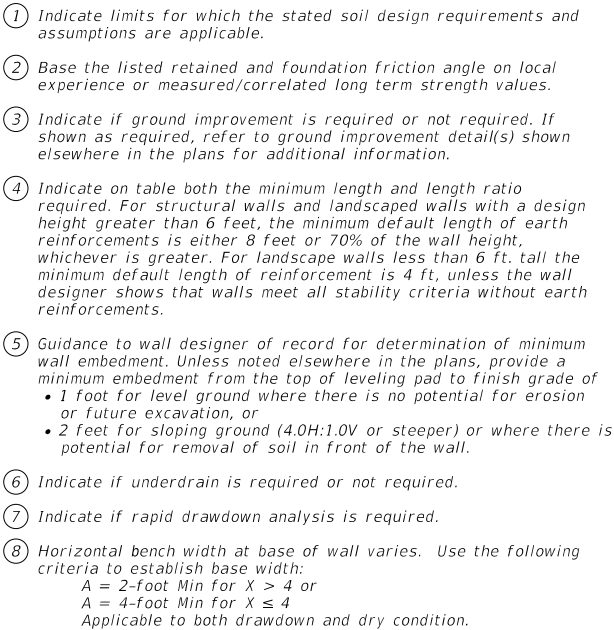
SELECT BACKFILL UNIT WEIGHT			
Type AS, BS & DS	Unit Weight	Internal Stability	External Stability
	105 pcf	Pullout	Sliding, Overturning, Eccentricity
	125 pcf	Rupture	Bearing

NO.	REVISIONS	DATE	NAME
▲	ORIGINAL STANDARD ISSUED	10-1-24	RJS
▲			
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY:	INIT	SHEET DESCRIPTION: CONCRETE BLOCK RETAINING WALL	FBCE STANDARD
CK'D BY:	INIT		50
SCALE:	AS NOTED	DETAILS	SHEET NO:
DATE:			
10-1-24	APPROVED BY:	/	



**SPECIAL NOTES:**  
*This sheet is to be filled out by the wall designer of record at time of plan preparation to provide soil strength parameters for the design of the specified walls.*  
*The completed sheet must be signed, sealed, and dated by a licensed Professional Engineer.*

NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	10-1-24	RJS

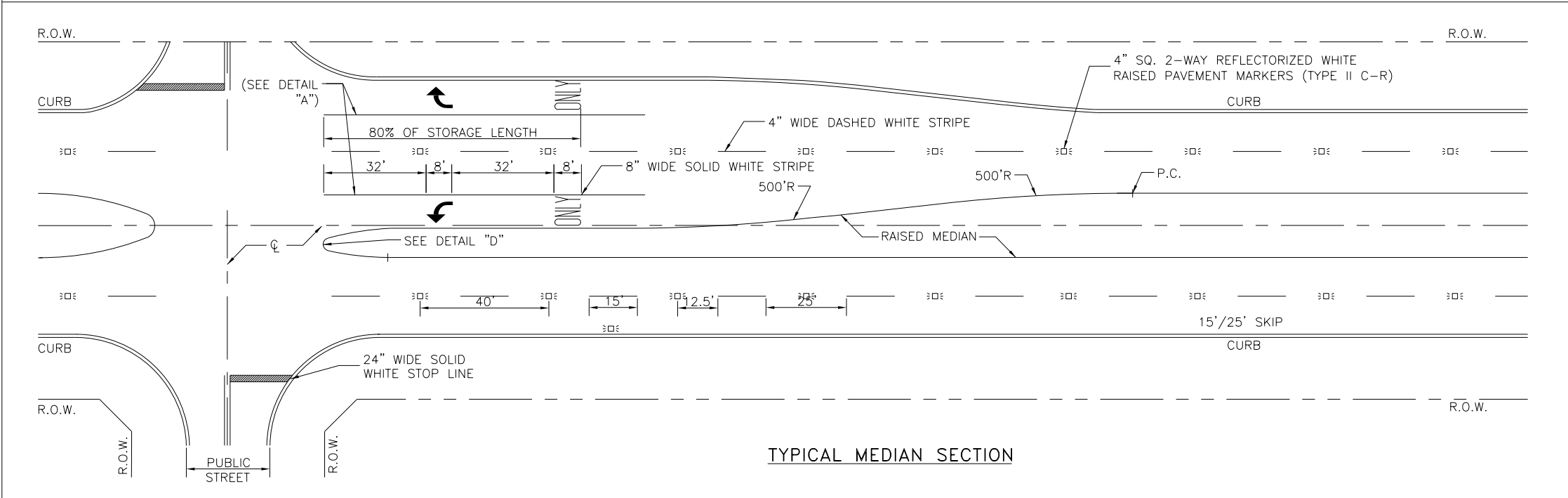
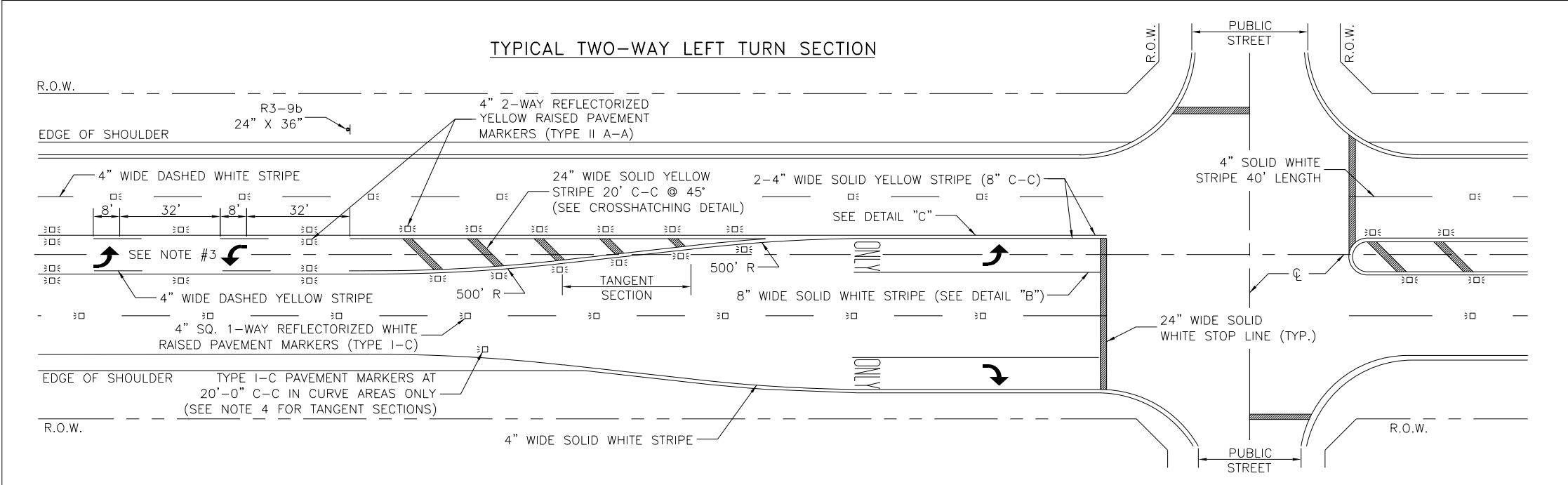
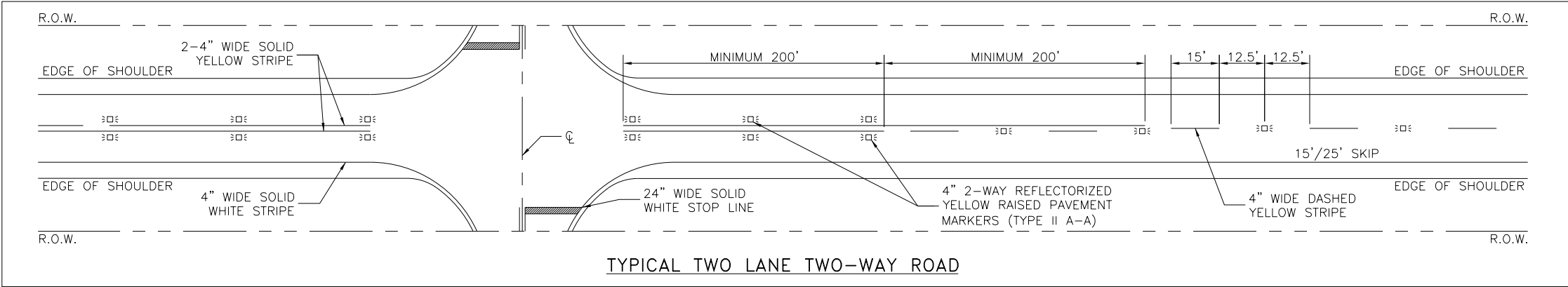
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT		FBCD STANDARD
CK'D BY: INIT	SHEET DESCRIPTION: CONCRETE BLOCK RETAINING WALL	51
SCALE: NONE	DESIGN DATA DETAILS	
DATE: 10-1-24	APPROVED BY:	SHEET NO: /



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NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

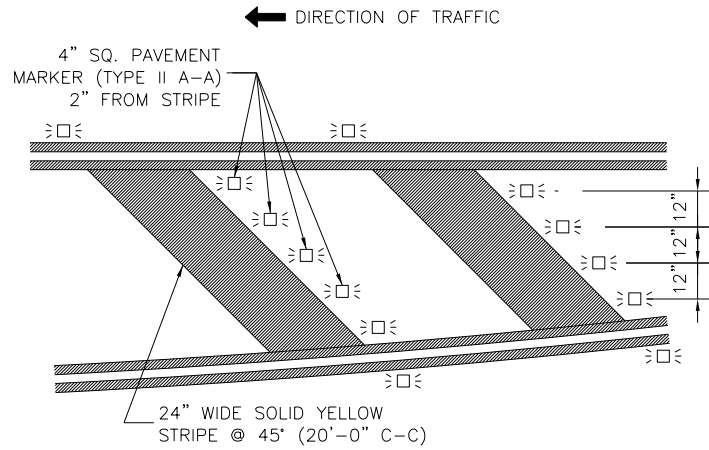
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



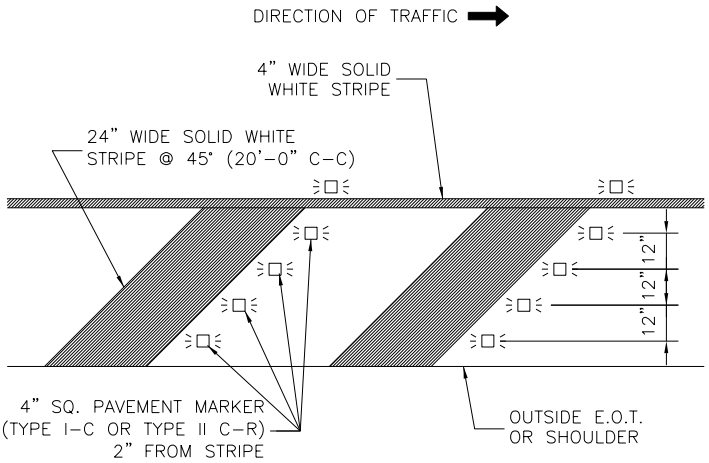
#### NOTES:

- ALL PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (TMUTCD).
- ALL TRAFFIC BUTTONS AND MARKERS SHALL BE INSTALLED ADJACENT TO STRIPES (APPROXIMATELY 2").
- REPEAT ARROWS AT APPROXIMATELY 1000' INTERVALS WITHIN TWO-WAY LEFT TURN SECTION.
- WITHIN A TANGENT SECTION THE TYPE I-C PAVEMENT MARKERS SHALL BE PLACED AT 40' C-C ON ROADWAYS WITHOUT CURB AND GUTTERS.
- WHEN PAVEMENT MARKINGS EXTEND INTO OR CONTINUE THROUGH AN INTERSECTION AREA, THEY SHALL BE THE SAME COLOR AND AT LEAST THE SAME WIDTH AS THE LINE MARKINGS THEY EXTEND.
- WHEN CROSSWALK MARKINGS ARE USED WITHIN AN ESTABLISHED SCHOOL ZONE, MID-BLOCK, OR AT UNCONTROLLED INTERSECTIONS, CROSSWALK SHALL BE CONTINENTAL STYLE.
- ADDITIONAL SET OF "WORD" AND "ARROW" PAVEMENT MARKINGS SHALL BE USED WHEN TURN LANE STORAGE LENGTH IS 160 FEET OR GREATER.

#### CROSSHATCHING DETAIL

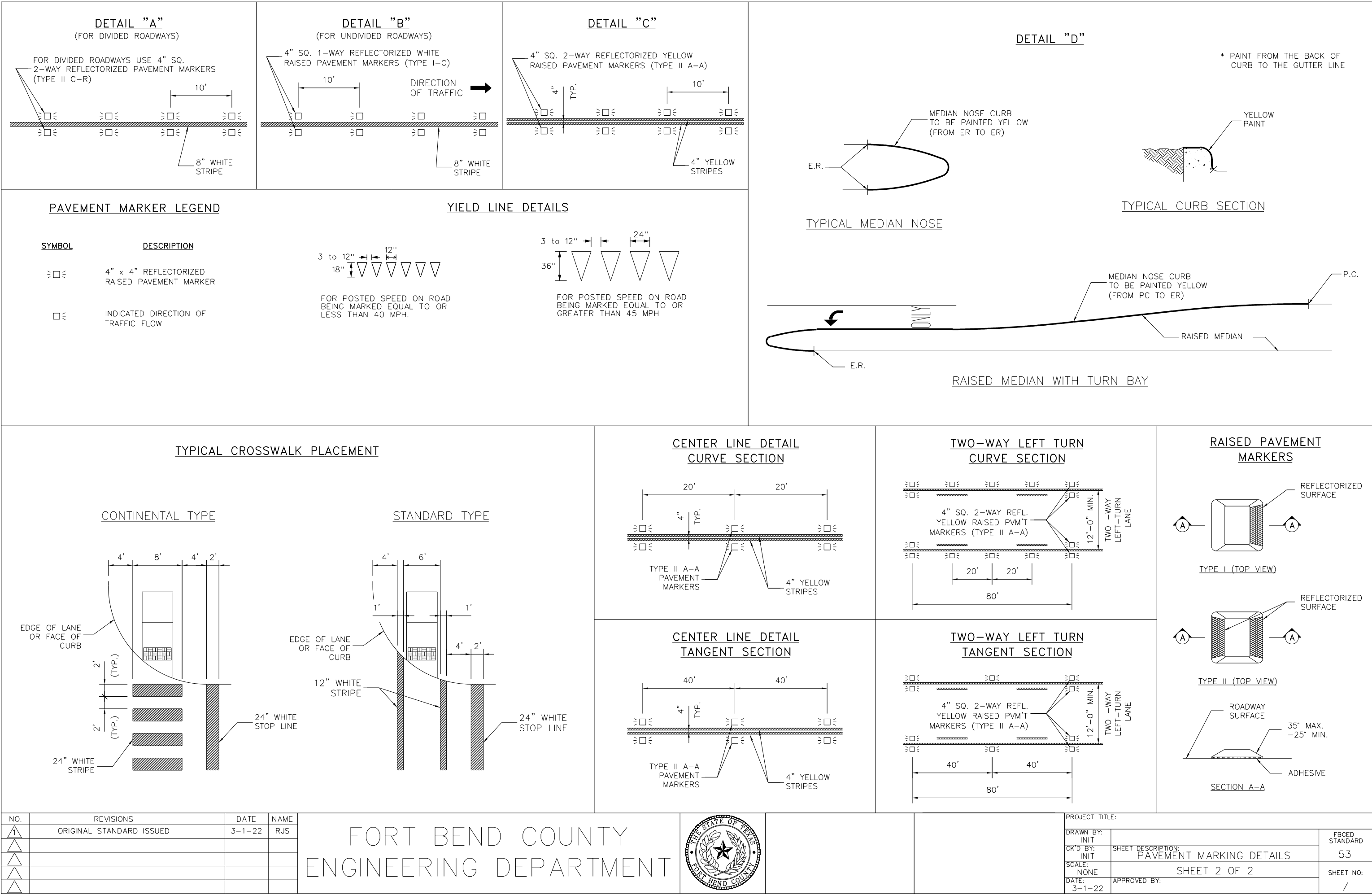


#### OUTSIDE EDGE CROSSHATCHING DETAIL

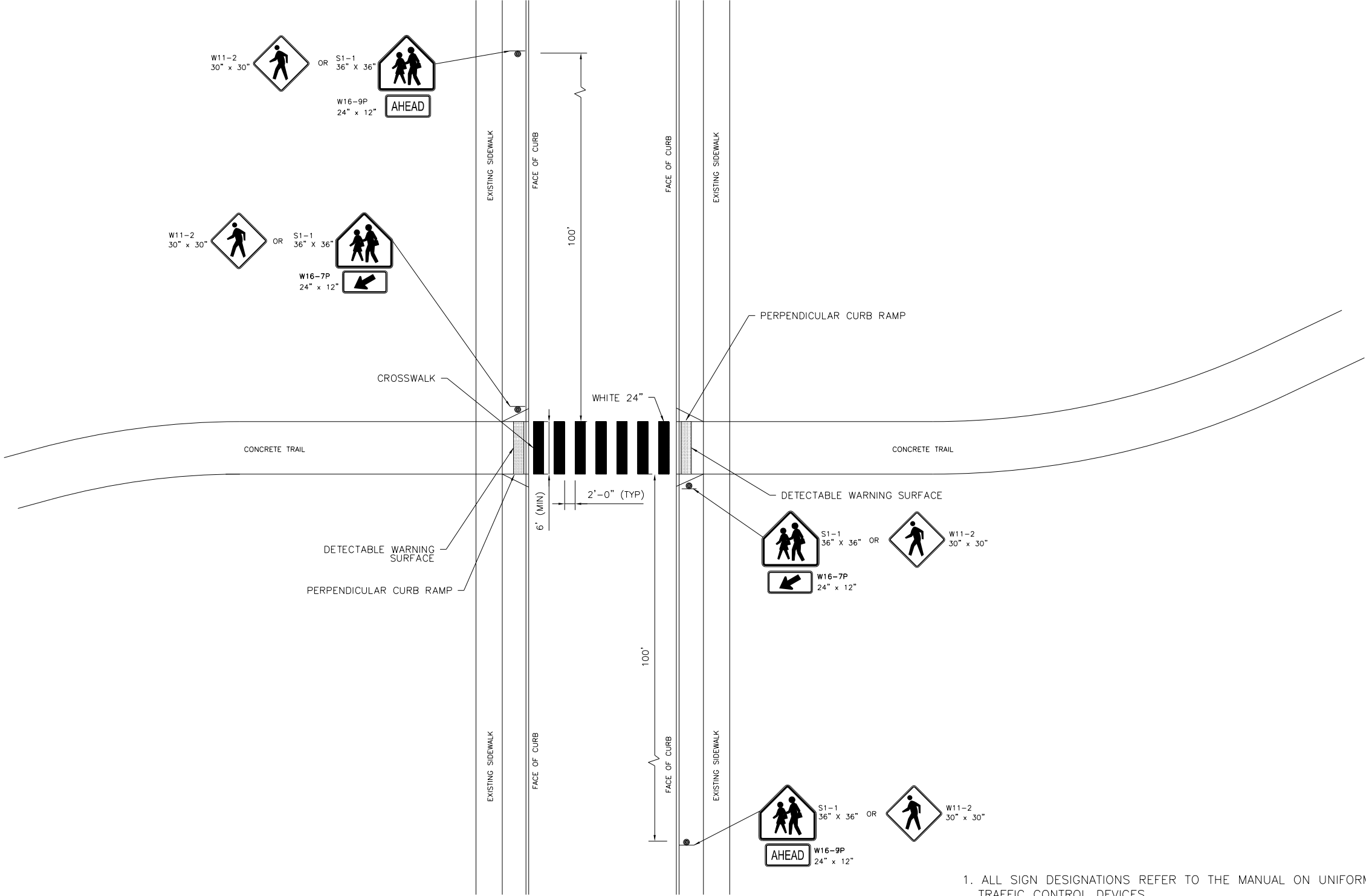


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: PAVEMENT MARKING DETAILS	FBCD STANDARD
CK'D BY: INIT		52
SCALE: NONE	SHEET 1 OF 2	SHEET NO:  /
DATE: 3-1-22		

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1. ALL SIGN DESIGNATIONS REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC APPLIED PER TXDOT SPEC.
3. S1-1 SIGNS ARE USED IN SCHOOL ZONES

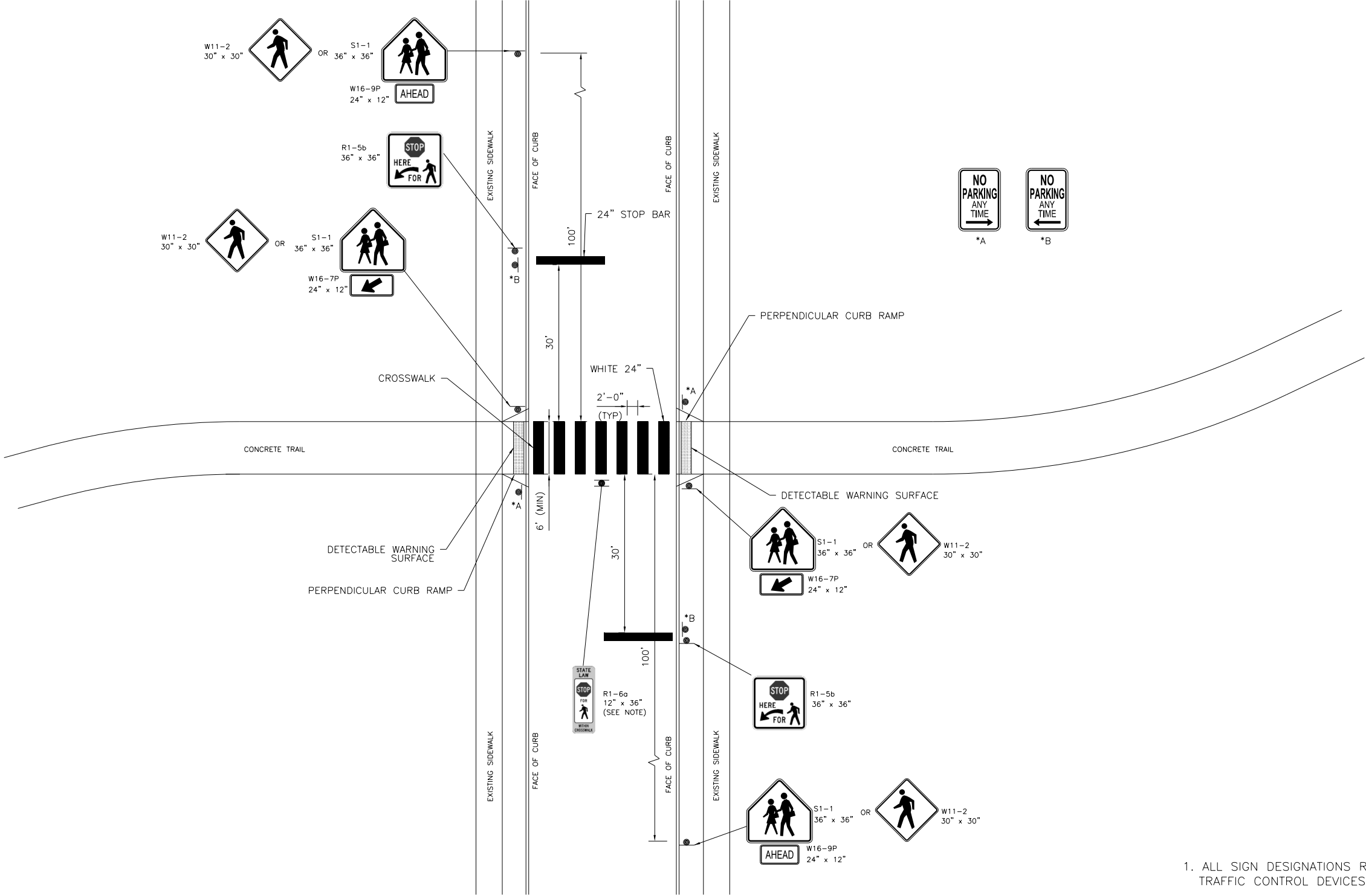
NO.	REVISIONS	DATE	NAME
△	ORIGINAL STANDARD ISSUED	3-1-22	RJS
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: MID-BLOCK CROSSING STREET WITH RESIDENTIAL FRONTAGE	FBCD STANDARD 54
CK'D BY: INIT		
SCALE: AS NOTED	APPROVED BY:	SHEET NO: /
DATE: 3-1-22		

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- 1. ALL SIGN DESIGNATIONS REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 2. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC APPLIED PER TXDOT SPEC.
- 3. R1-6a SIGN TO BE MOUNTED TO PAVEMENT WITH TRAFFIC-RATED MOUNTING SYSTEM.
- 4. S1-1 SIGNS USED IN SCHOOL ZONES

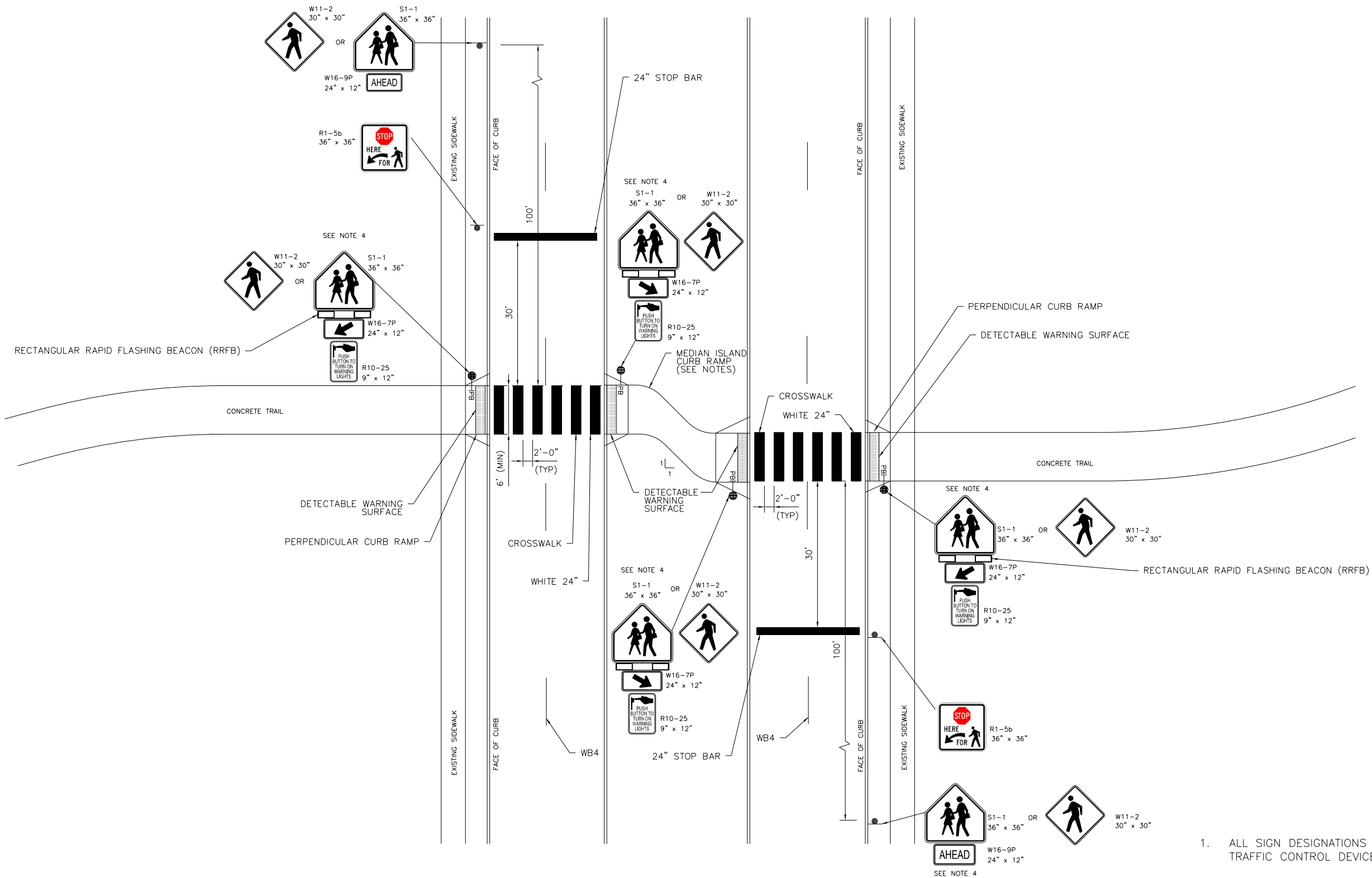
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	CHANGED YIELD SIGNS TO STOP SIGNS	10-1-24	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: MID-BLOCK CROSSING STREET	FBCE STANDARD
CK'D BY: INIT		55
SCALE: AS NOTED	WITHOUT RESIDENTIAL FRONTAGE	SHEET NO:
DATE: 10-1-24	APPROVED BY:	

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1. ALL SIGN DESIGNATIONS REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. PROVIDE AT-GRADE CHANNEL IN MEDIAN AT AN ANGLE (45-DEGREE ANGLE PREFERRED) TOWARD ADVANCING TRAFFIC.
3. INSTALL SOLAR POWERED RECTANGULAR RAPID FLASHING BEACON ASSEMBLY. SHALL BE INSTALLED FOR CONDITIONS OF FHWA IA-21.
4. S1-1 USED IN SCHOOL ZONES

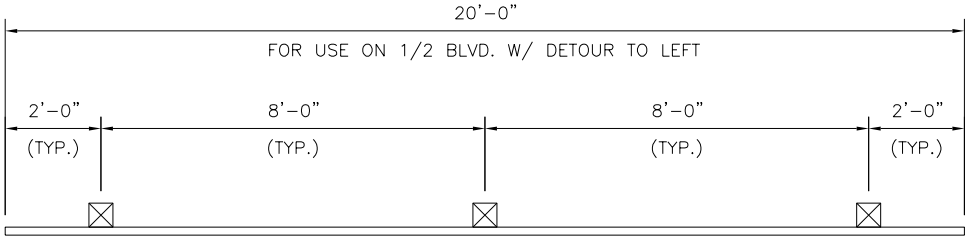
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2	CHANGED YIELD SIGNS TO STOP SIGNS	10-1-24	RJS
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT

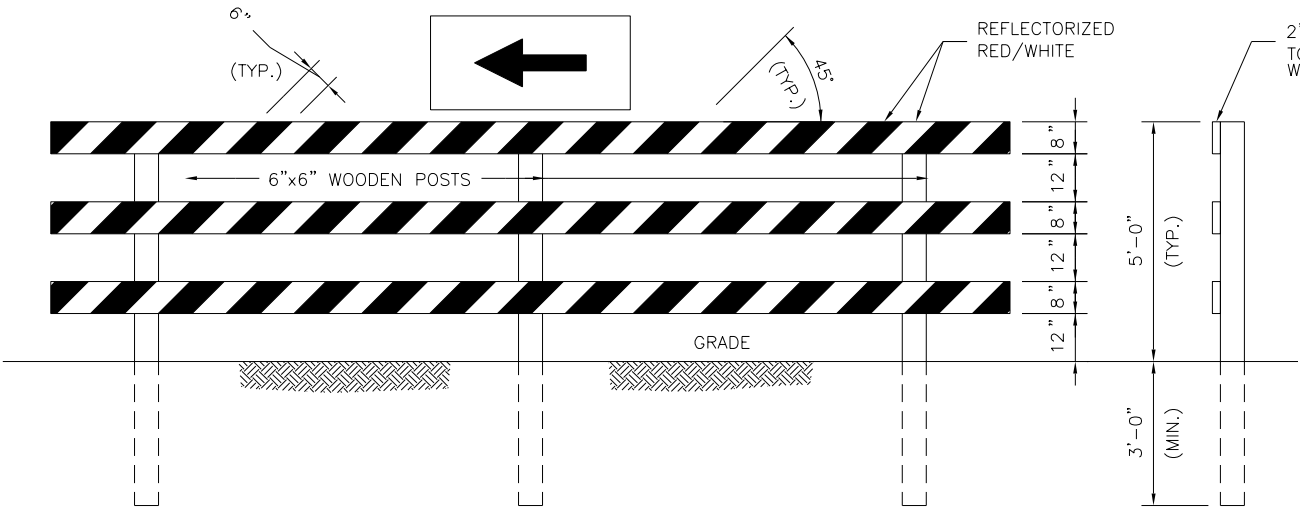


PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: MID-BLOCK CROSSING STREET	FBCD STANDARD
CK'D BY: INIT		56
SCALE: AS NOTED	FOR FOUR LANE BOULEVARD	SHEET NO:  /
DATE: 10-1-24	APPROVED BY:	

J:\1704\1601\Fort Bend County Standards\Fort Bend County STD\DONE\FBC TYPE III BARRICADE DETAILS\TYPE\_III\_BARRICADE\_DETAILS.dwg



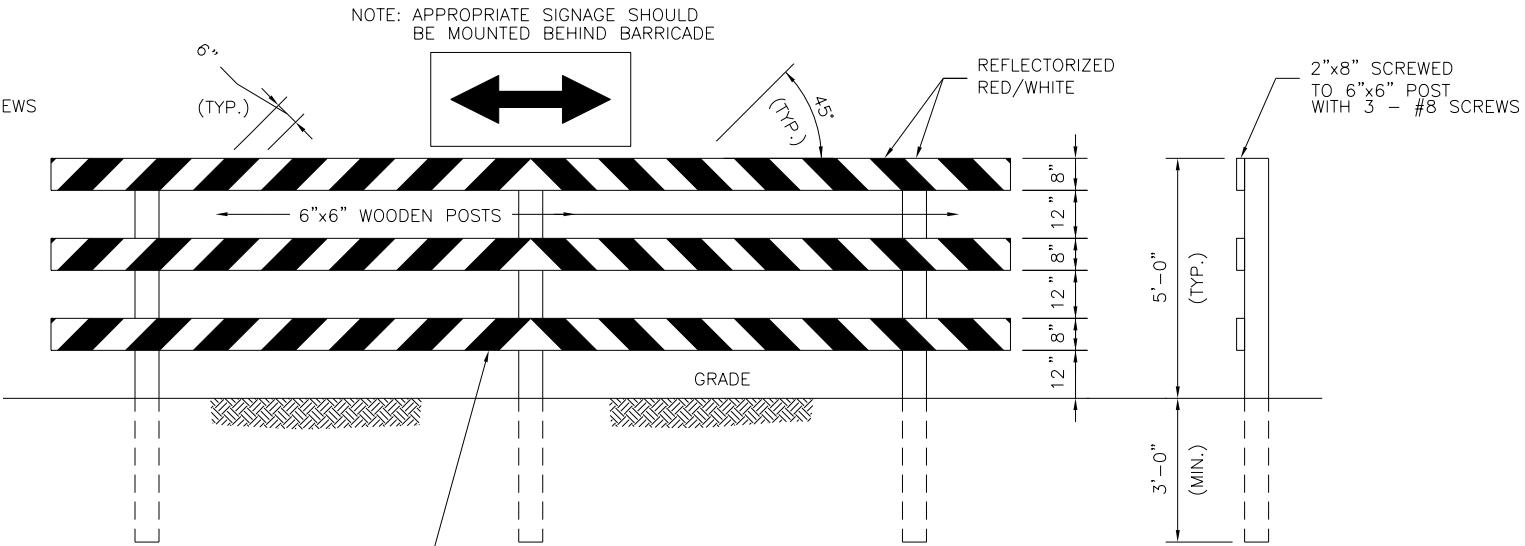
PLAN VIEW



FRONT VIEW

DETOUR ROUTE

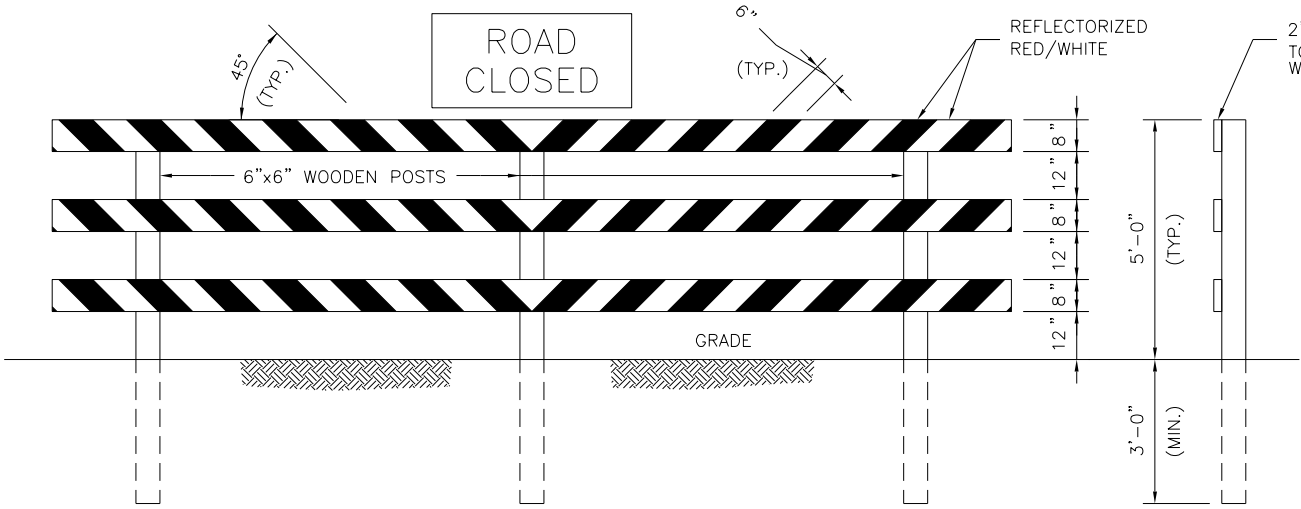
SIDE VIEW



FRONT VIEW

T-INTERSECTION

SIDE VIEW



FRONT VIEW

ROAD CLOSED - NO OUTLET

SIDE VIEW

APPLICATION: PERMANENT AND SEMI-PERMANENT CLOSURE OF ROADWAY OR ROADWAY TERMINATION

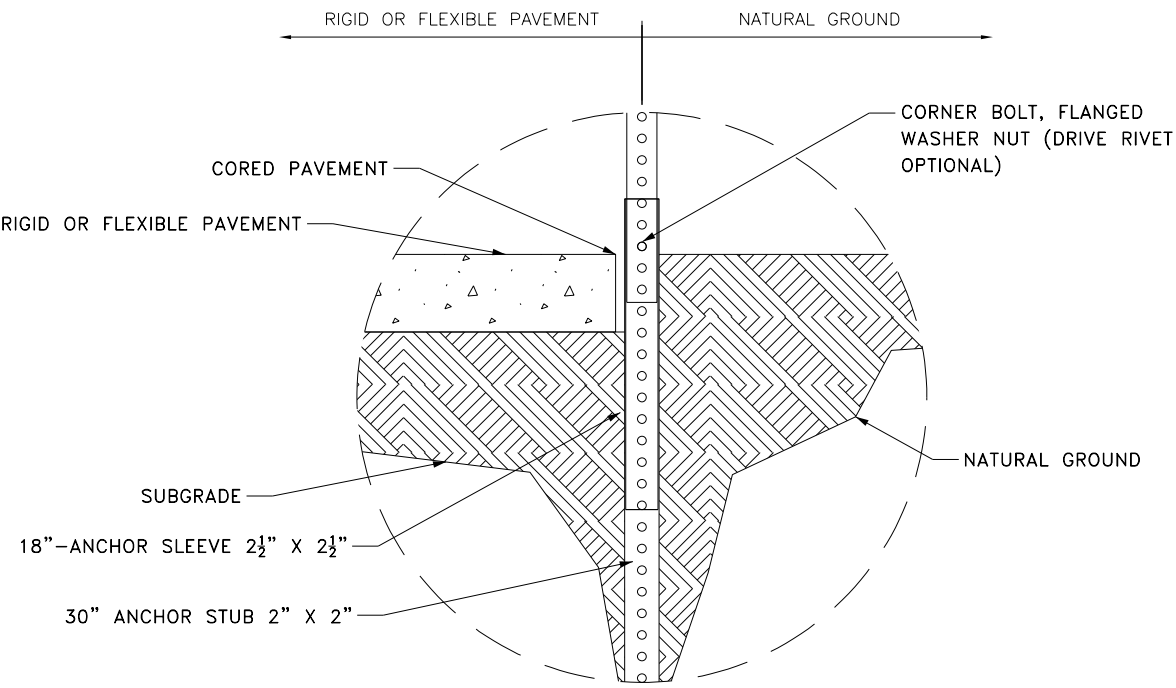
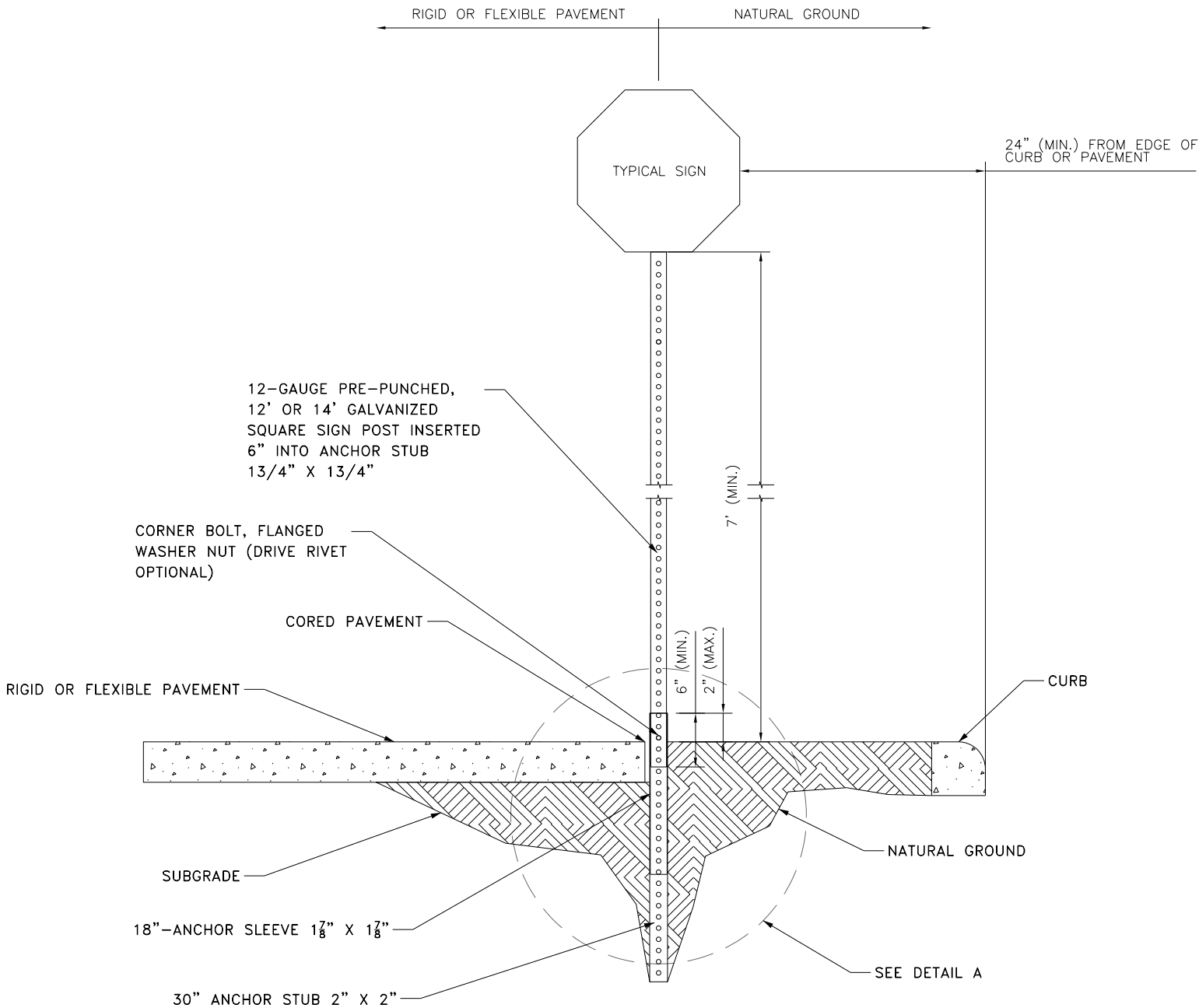
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
2			
3			
4			

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY: INIT	SHEET DESCRIPTION: TYPE III BARRICADE DETAILS	FBCD STANDARD 57
CK'D BY: INIT		
SCALE: 1"=2'-0"	APPROVED BY:	SHEET NO: /
DATE: 3-1-22		

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TYPICAL GROUND SIGN INSTALLATION  
DETAIL A

- NOTES:**
1. THE CROSS SECTION OF ALL MEMBERS SHALL BE SQUARE TUBE FORMED OF 12 GAUGE AND MANUFACTURED FROM HOT-GALVANIZED STEEL
  2. THE TELESCOPE BREAKAWAY SYSTEM OR "SYSTEM" IS DEFINED AS FOLLOW:
    - A MINIMUM 30" ANCHOR STUB;
    - 18" ANCHOR SLEEVE.
  3. DRIVE THE SYSTEM TOGETHER MAKING SURE THE HOLES ARE ALIGNED.
  4. THE SYSTEM IS TO BE DRIVEN INTO NATURAL GROUND EXPOSED SUBGRADE UNTIL ONLY 1 TO 2 INCHES ARE LEFT EXPOSED.
  5. ATTACH THE SIGN TO AN 1 3/4" SQUARE POST AT THE DESIRED HEIGHT, SUCH THAT IT MEETS THE MINIMUM VERTICAL CLEARANCE.
  6. SIGNS ARE FASTENED TO THE POST BY USING DRIVE RIVETS OR BOLTS.
  7. INSERT THE SIGN POST APPROXIMATELY 6 TO 8 INCHES INTO THE ANCHOR BASE.
  8. BOLT THE SIGN POST TO THE ANCHOR ASSEMBLY WITH A CORNER BOLT.
  9. WHEN INSTALLING IN RIGID OR FLEXIBLE PAVEMENT, USE A CORING MACHINE TO EXPOSE THE SUBGRADE MATERIAL AND INSTALL THE SYSTEM.

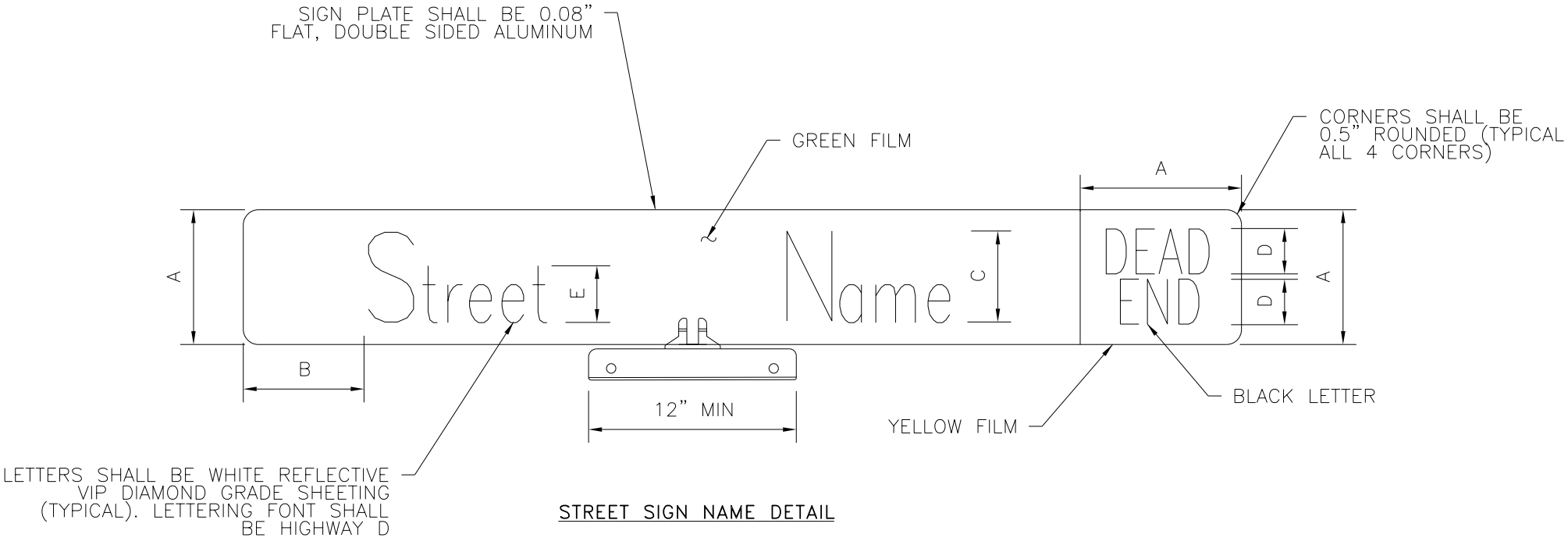
NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS

FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY:	INIT	FBCE STANDARD 58
CK'D BY:	INIT	
SCALE:	AS NOTED	SHEET NO: /
DATE:	3-1-22	
APPROVED BY:		

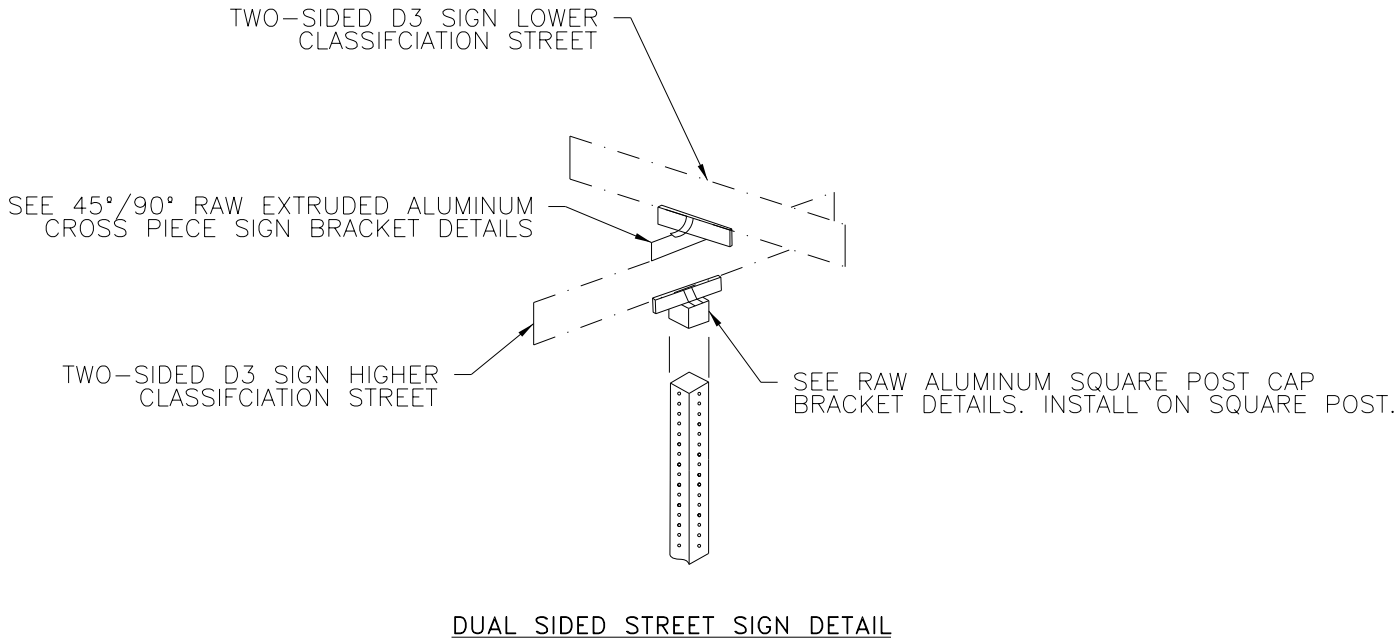
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DIMENSION SCHEDULE

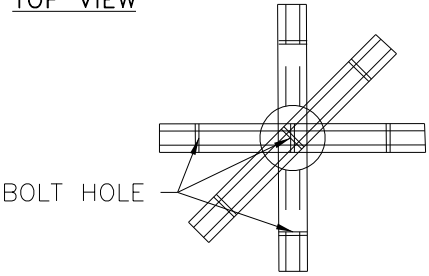
9" SIGN		
'A'	9"	
'B'	2"	
'C'	6"	
'D'	3.5"	
'E'	4.5"	

NOTES:  
ALL STREET BLADES SHALL BE 9" IN HEIGHT

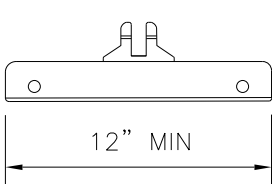


45°/90° RAW EXTRUDED ALUMINUM CROSS PIECE SIGN BRACKET DETAILS

TOP VIEW

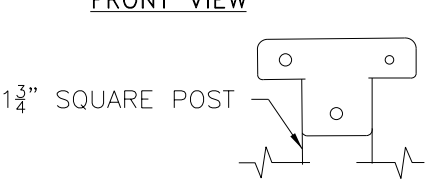


SIDE VIEW

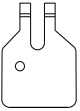


RAW ALUMINUM SQUARE POST CAP BRACKET DETAILS

FRONT VIEW



SIDE VIEW



NO.	REVISIONS	DATE	NAME
△	ORIGINAL STANDARD ISSUED	3-1-22	RJS
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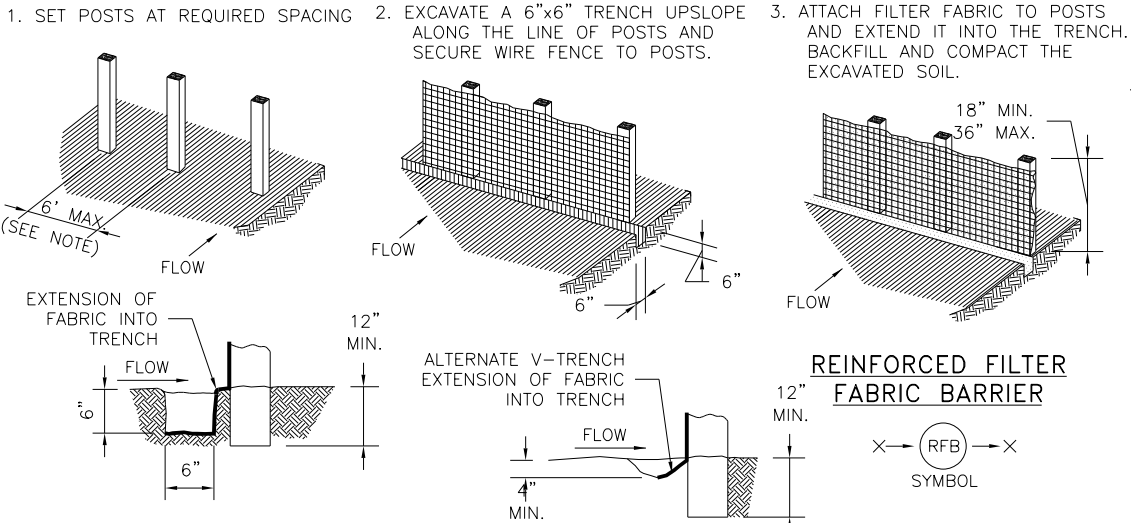
FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:			
DRAWN BY: INIT			FBCD STANDARD  59
CK'D BY: INIT	SHEET DESCRIPTION: STREET SIGN NAME DETAILS		
SCALE: AS NOTED			SHEET NO:  /
DATE: 3-1-22	APPROVED BY:		

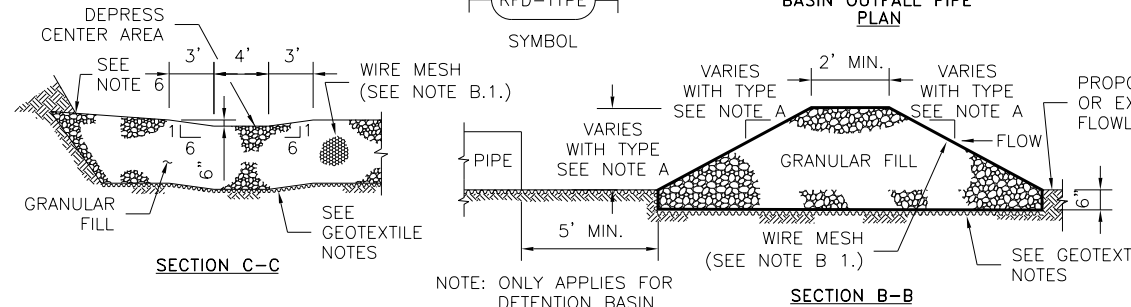
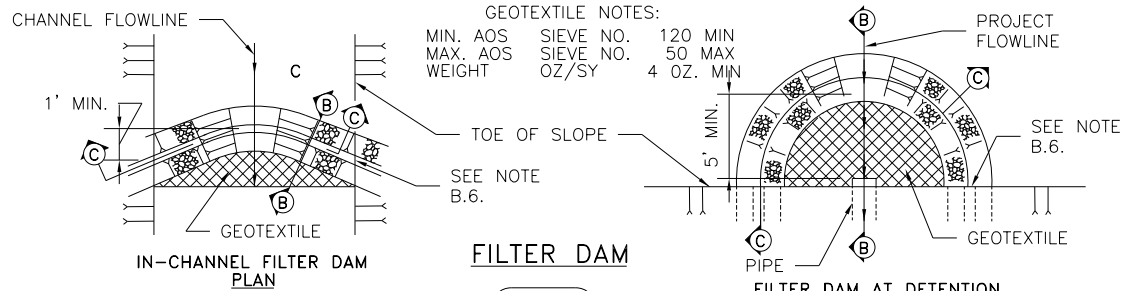


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**GENERAL NOTES:**

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.
5. SILT FENCE MINIMUM 2' BEHIND CURB.

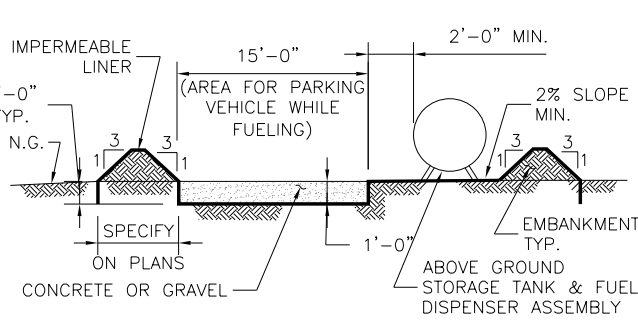


**A. TYPES OF FILTER DAMS**

1. TYPE 1 (NON-REINFORCED)
  - a. HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
  - b. TOP WIDTH - 2 FEET (MINIMUM)
  - c. SLOPES - 2:1 (MAXIMUM).
2. TYPE 2 (REINFORCED).
  - a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
  - b. TOP WIDTH - 2 FEET (MINIMUM).
  - c. SLOPES - 2:1 (MAXIMUM).
3. TYPE 3 (REINFORCED)
  - a. HEIGHT - 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
  - b. TOP WIDTH - 2 FEET (MINIMUM).
  - c. SLOPES - 3:1 (MAXIMUM).
4. TYPE 4 (GABION)
  - a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
  - b. TOP WIDTH - 2 FEET (MINIMUM).
5. TYPE 5. AS SHOWN ON THE PLANS.

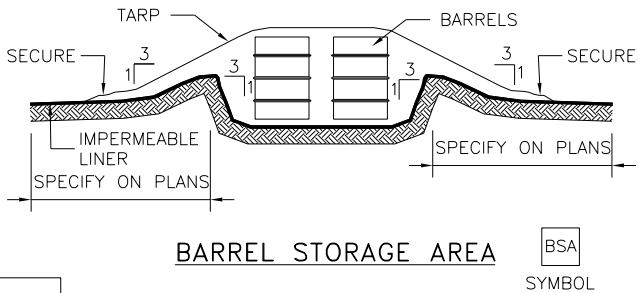
**B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.**

1. TYPE 2 AND 3 FILTER DAMS: SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
2. PLACE GRANULAR FILL ON THE WIRE MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
  - a. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1, 2 AND 4.
  - b. 4-8 INCHES FOR ROCK FILTER DAM TYPE REFER TO GRANULAR FILL IN SPECIFICATION SECTION No. 02378 RIPRAP AND GRANULAR FILL.
3. FOLD WIRE MESH AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
5. SEE HCFCF SPECIFICATION SECTION NO. 02364-FILTER DAMS.
6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



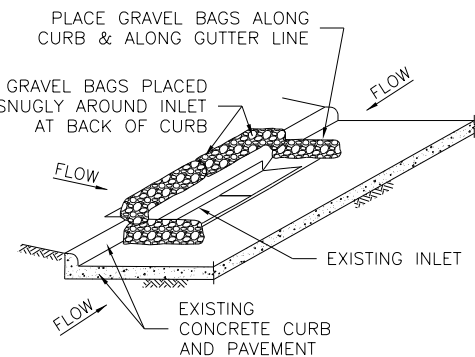
**GENERAL NOTES:**

1. THE SIZE OF TANK FOUNDATION AREA DEPENDS ON THE SIZE OF ABOVE GROUND STORAGE TANK AND DISPENSER ASSEMBLY.
2. PROVIDE A MINIMUM SLOPE OF 2 % TOWARD THE SUMP PIT.
3. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS.



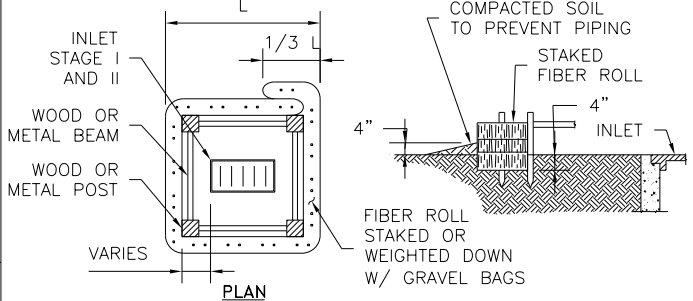
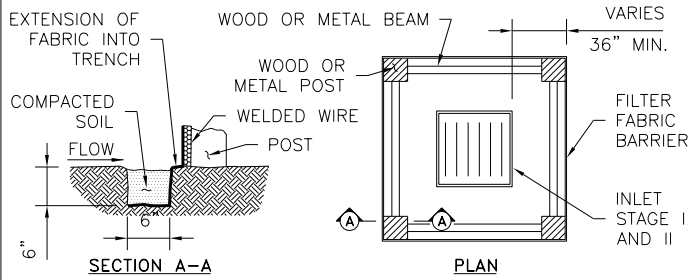
**GENERAL NOTES:**

1. ALTERNATIVELY, STORE BARRELS IN AN ENCLOSED BUILDING OR SHED.
2. INSTALL IMPERMEABLE LINER AS PER MANUFACTURER'S RECOMMENDATIONS. 60 mil MINIMUM.
3. CONSTRUCT BERMED AREA WITH VOLUME GREATER THAN OR EQUAL TO 110% VOLUME OF BARRELS.



**GENERAL NOTES:**

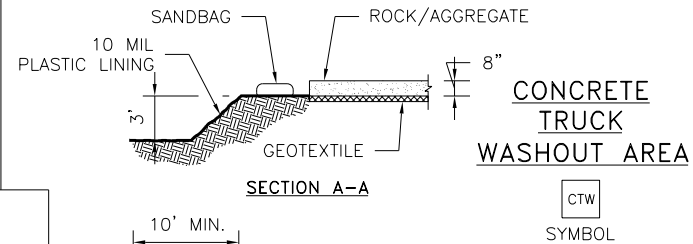
1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.



**GENERAL NOTES:**

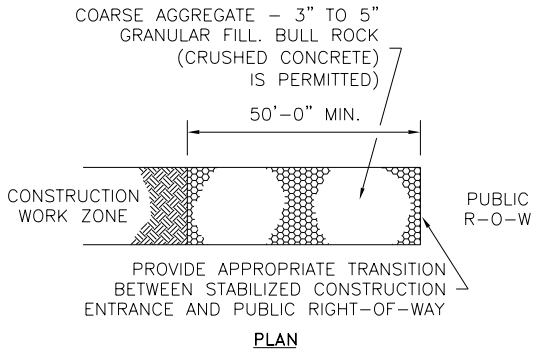
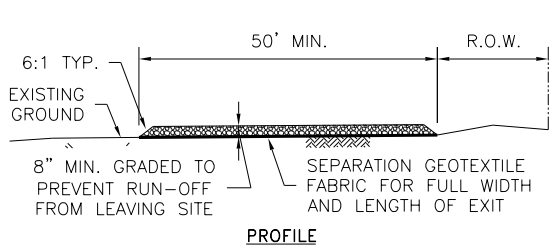
1. FIBER ROLLS WILL BE UTILIZED ONLY WHEN SITE CONDITIONS DO NOT PERMIT THE USE OF FILTER FABRIC BARRIER, AND AS APPROVED BY THE ENGINEER.

**INLET PROTECTION BARRIERS FOR STAGE I INLETS**



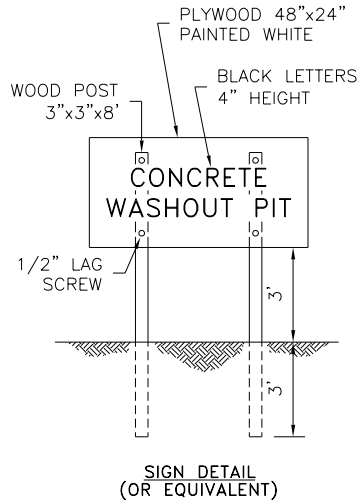
**GENERAL NOTES:**

1. POST A SIGN READING "CONCRETE WASHOUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASHOUT THEIR TRUCKS IN THE PIT AND NOWHERE 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 WASHOUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN-SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASHOUT 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.



**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. MINIMUM 14' WIDTH FOR ONE WAY TRAFFIC AND 20' WIDTH FOR TWO WAY TRAFFIC.



NO.	REVISIONS	DATE	NAME
1	ORIGINAL STANDARD ISSUED	3-1-22	RJS
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FORT BEND COUNTY  
ENGINEERING DEPARTMENT



PROJECT TITLE:		
DRAWN BY:	INIT	FBCD STANDARD 60
CK'D BY:	INIT	
SCALE:	NONE	SHEET NO: /
DATE:	3-1-22	
APPROVED BY:		