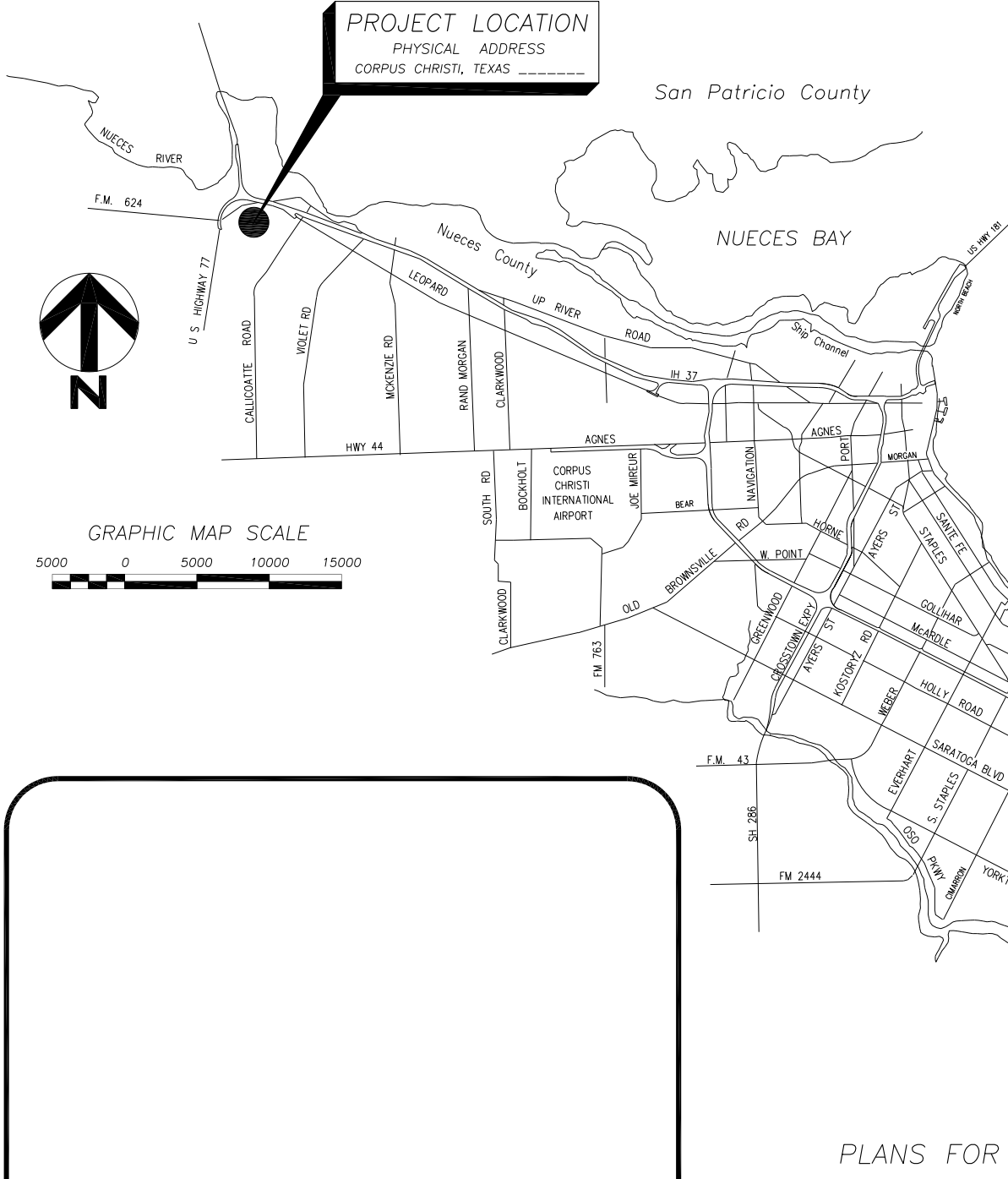




VICINITY MAP

PLANS FOR  
**PROJECT NAME**

PROJECT # \_\_\_\_\_

PREPARED BY \_\_\_\_\_

[ CONSULTANT'S NAME, ADDRESS, AND PHONE ]

CALL BEFORE YOU DIG!



PARTICIPANTS REQUEST  
48 HOURS NOTICE BEFORE YOU DIG,  
DRILL, OR BLAST - STOP AND CALL  
811

THE LONE STAR  
NOTIFICATION COMPANY  
AT 1-800-669-8344

CONTACT CITY OF CORPUS CHRISTI  
TRAFFIC ENGINEERING (361-826-3547)  
48 HOURS PRIOR TO ANY EXCAVATION

| SHEET NO. | INDEX DESCRIPTION |
|-----------|-------------------|
| 1.        | TITLE SHEET       |

CONSULTANT'S SHEET No.

DESCRIPTION



CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

DESCRIPTION

BY

DATE

REVISION NO.

CITY OF CORPUS CHRISTI  
TITLE SHEET

SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_

RELEASED FOR  
CONSTRUCTION:

Director of Engineering Services

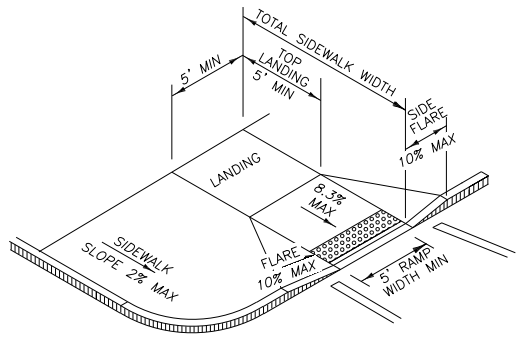
Date

## TESTING SCHEDULE

| DESCRIPTION                                             | RATE                       | EST. QUANTITY |
|---------------------------------------------------------|----------------------------|---------------|
| SOILS:                                                  |                            |               |
| STANDARD PROCTOR – TRENCH BACKFILL                      | PER MATERIAL SOURCE        | -             |
| STANDARD PROCTOR – SUBGRADE                             | PER STREET/MATERIAL        | -             |
| DENSITIES – TRENCH BACKFILL                             | PER 200 LF TRENCH/LIFT     | -             |
| DENSITIES – SUBGRADE (ASPHALT STREET)                   | PER 100 LF/LANE/LIFT       | -             |
| DENSITIES – SUBGRADE (CONCRETE STREET)                  | PER 200 LF/LANE/LIFT       | -             |
| DENSITIES – SUBGRADE (DRIVEWAYS)                        | PER 2 DRIVEWAYS            | -             |
| DENSITIES – SUBGRADE (SIDEWALKS)                        | PER 5000 SF                | -             |
| DENSITIES – SUBGRADE (BENEATH & BEHIND CURB AND GUTTER) | PER 200 LF                 | -             |
| FLEXIBLE BASE:                                          |                            |               |
| SIEVE ANALYSIS                                          | PER 3000 CY                | -             |
| ATTERBURG LIMITS                                        | PER 3000 CY                | -             |
| MODIFIED PROCTOR                                        | PER 3000 CY                | -             |
| L.A. ABRASION                                           | PER 3000 CY                | -             |
| CBR (STANDARD)                                          | PER MATERIAL SOURCE        | -             |
| WET BALL MILL TEST                                      | PER MATERIAL SOURCE        | -             |
| TRIAxIAL TEST                                           | PER MATERIAL SOURCE        | -             |
| DENSITIES OF COMPACTED BASE (ASPHALT STREET)            | PER 100 LF/LANE/LIFT       | -             |
| DENSITIES OF COMPACTED BASE (CONCRETE STREET)           | PER 200 LF/LANE/LIFT       | -             |
| DENSITIES OF COMPACTED BASE (C&G)                       | PER 200 LF C&G             | -             |
| HOT-MIX ASPHALT (HMA):                                  |                            |               |
| EXTRACTION, SIEVE ANALYSIS                              | PER 500 TONS OR DAY        | -             |
| LAB DENSITY & STABILITY                                 | PER 500 TONS OR DAY        | -             |
| THEORETICAL DENSITY (RICE METHOD)                       | PER 500 TONS OR DAY        | -             |
| TEMPERATURE – DURING LAY-DOWN                           | CONTINUOUS AS NEEDED       | -             |
| THICKNESS – IN PLACE (CORE)                             | PER 1000 LF STREET         | -             |
| % AIR VOIDS – IN PLACE (CORE)                           | PER 1000 LF STREET         | -             |
| % THEORETICAL DENSITY – IN PLACE (CORE)                 | PER 1000 LF STREET         | -             |
| CONCRETE:                                               |                            |               |
| (UNCONFINED COMPRESSION, 7, 14, & 28 DAY)               |                            |               |
| CURB & GUTTER / CURB                                    | PER 500 LF C&G / CURB      | -             |
| SIDEWALKS AND CURB RAMPS                                | PER 4000 SF                | -             |
| DRIVEWAYS                                               | PER 2500 SF                | -             |
| CURB, POST & GRATE INLETS                               | PER 6 EACH                 | -             |
| BOX CULVERTS (CAST-IN-PLACE)                            | PER 100 LF                 | -             |
| WINGWALLS                                               | PER EACH                   | -             |
| STORM MANHOLES (CAST-IN-PLACE)                          | PER 2 EACH                 | -             |
| RIPRAP, APRONS & S.E.T.s                                | PER 4000 SF                | -             |
| MANHOLE BASE/FOOTING                                    | PER 10 EACH                | -             |
| RIGID CONCRETE PAVEMENT:                                |                            |               |
| COMPRESSION STRENGTH (7 & 28 DAY)                       | PER 2500 SY, OR MIN. 1/DAY | -             |
| FLEXURAL (BEAM) STRENGTH (7 & 28 DAY)                   | PER 2500 SY, OR MIN. 1/DAY | -             |
| AIR CONTENT                                             | PER 2500 SY, OR MIN. 1/DAY | -             |
| SLUMP                                                   | PER 2500 SY, OR MIN. 1/DAY | -             |

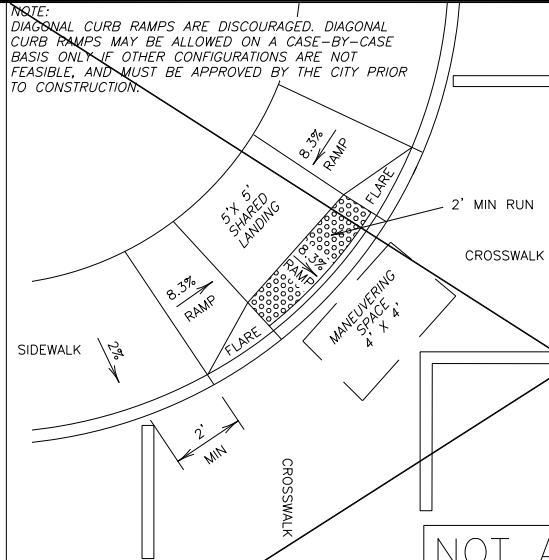
1. THE ABOVE TESTING RATES ARE ONLY ANTICIPATED GUIDELINES, THE ENGINEER RESERVES THE RIGHT TO CONDUCT ADDITIONAL TESTING AT THE O.A.R.'S DISCRETION. RE-TEST FOR FAILURES ARE NOT INCLUDED.
2. MOISTURE CONTENTS TO BE INCLUDED WITH DENSITY TEST.
3. IN THE EVENT OF FAILURES, ADDITIONAL TESTS WILL BE REQUIRED. IF EXCESSIVE RAIN OR DRY PERIOD OCCURS ON A PREVIOUSLY TESTED SECTION, THE CITY MAY ORDER RE-TESTS AS NECESSARY. CONTRACTOR IS RESPONSIBLE FOR COST OF RE-TESTS DUE TO FAILURES.





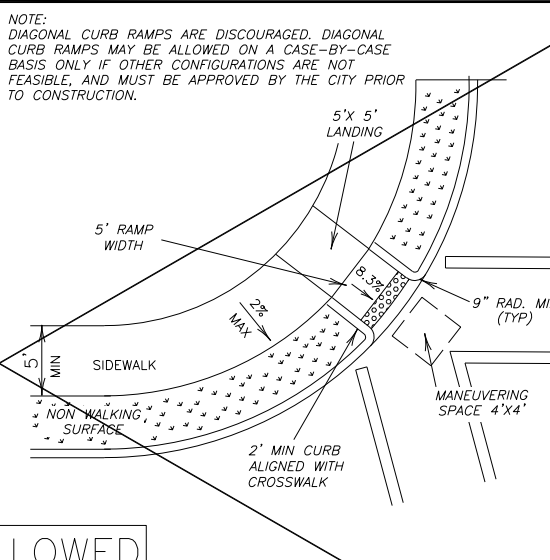
TYPE 1

PERPENDICULAR CURB RAMP  
(SIDEWALK ADJACENT TO CURB)



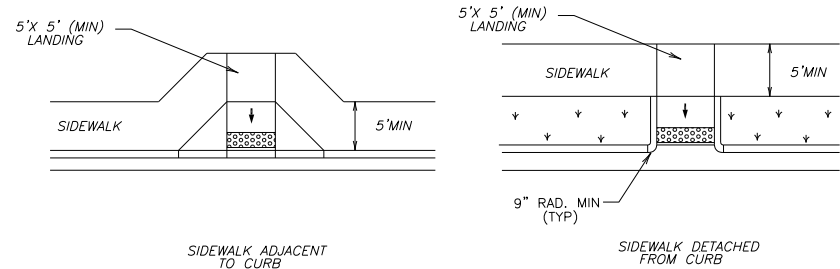
TYPE 4

DIAGONAL COMBINATION CURB RAMP  
PERPENDICULAR TO THE TANGENT OF THE CURB  
RADIUS AND CONTAINED IN CROSSWALK



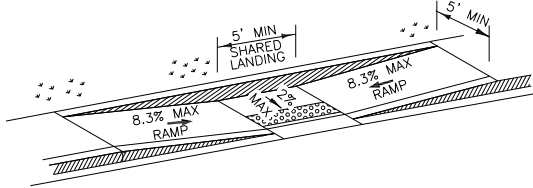
TYPE 7

DIAGONAL CURB RAMP  
(RETURNED CURB)



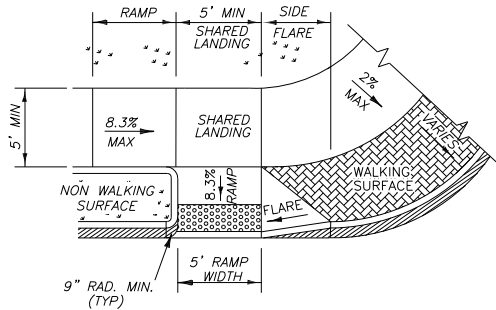
TYPE 10

CURB RAMP MID-BLOCK PLACEMENT  
PERPENDICULAR RAMPS



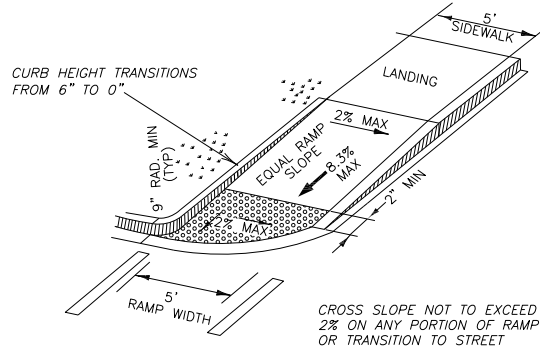
TYPE 2

PARALLEL CURB RAMP WITH  
SIDEWALK ADJACENT TO CURB  
(USE ONLY WHERE WATER WILL NOT POND IN THE LANDING)



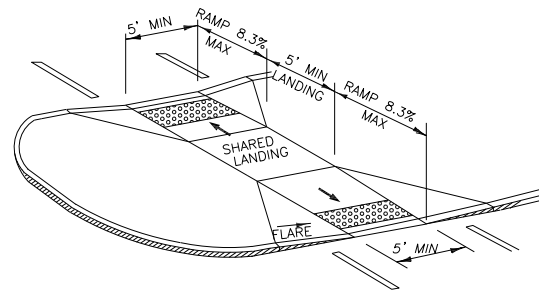
TYPE 5

COMBINATION CURB RAMP



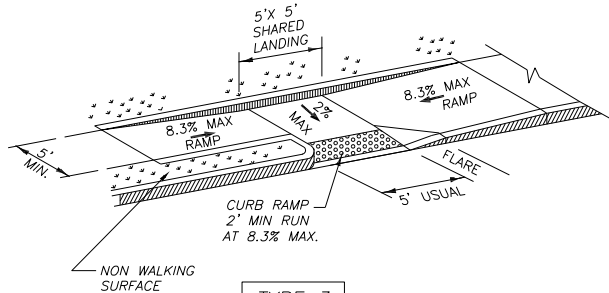
TYPE 8

DIRECTIONAL RAMP WITHIN RADIUS  
(SIDEWALK ADJACENT TO CURB)



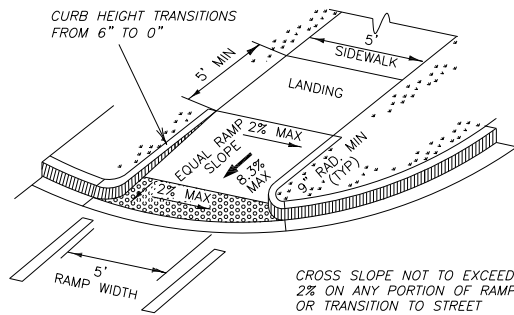
TYPE 11

CURB RAMPS AT MEDIAN ISLAND



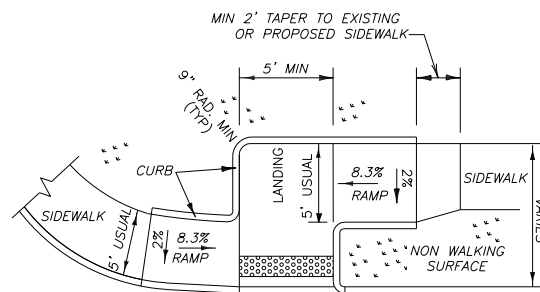
TYPE 3

PARALLEL CURB RAMP



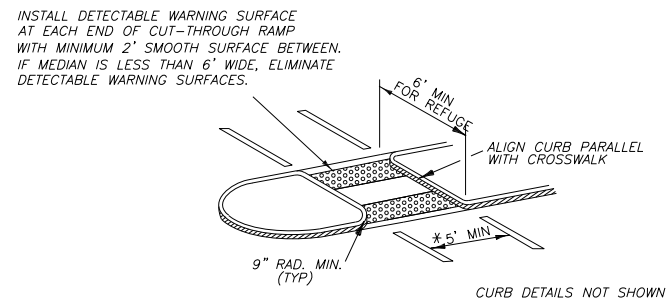
TYPE 6

DIRECTIONAL RAMP WITHIN RADIUS  
(SIDEWALK SET BACK FROM CURB)



TYPE 9

OFFSET PARALLEL CURB RAMP



TYPE 12

FLUSH CURB RAMP AT MEDIAN ISLAND OPENING

THIS CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT AFFIRMS THAT THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED OTHER THAN TO FILL IN THE PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK.

CONSULTANT'S SHEET  
PROJECT NO.

CITY OF CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

DESCRIPTION

BY

DATE

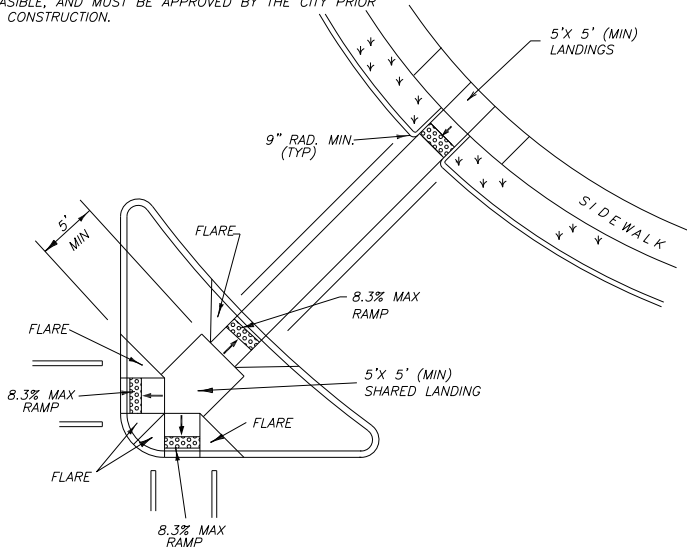
REVISION NO.

CITY OF CORPUS CHRISTI  
PEDESTRIAN CURB RAMP STANDARDS  
1 OF 4

SHEET \_\_\_\_ of \_\_\_\_  
RECORD DRAWING NO.

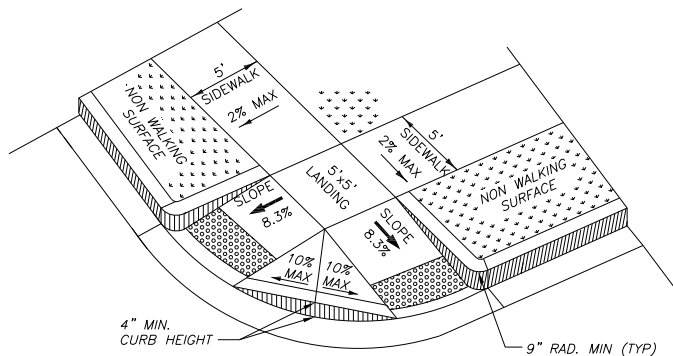
CITY PROJECT #

NOTE:  
DIAGONAL CURB RAMPS ARE DISCOURAGED. DIAGONAL CURB RAMPS MAY BE ALLOWED ON A CASE-BY-CASE BASIS ONLY IF OTHER CONFIGURATIONS ARE NOT FEASIBLE, AND MUST BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.



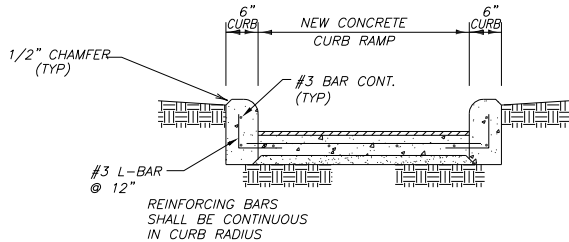
TYPE 13

AT INTERSECTION W/FREE RIGHT TURN & ISLAND  
COMBINATION ISLAND RAMPS



TYPE 14

PERPENDICULAR CURB RAMPS (BI-DIRECTIONAL)  
(SIDEWALK SET BACK FROM CURB)



HEADER CURBS AT CURB RAMP

SUBGRADE PREPARATION:

- SUBGRADE UNDER CONCRETE SIDEWALKS AND CURB RAMPS SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.

SIDEWALK NOTES:

- THE MINIMUM SIDEWALK WIDTH FOR ALL ARTERIAL AND COLLECTOR STREETS IS 5'. WHERE A 5' SIDEWALK CAN NOT BE PROVIDED DUE TO SITE CONSTRAINTS, A MINIMUM 4' SIDEWALK MAY BE PROVIDED. 5'X5' PASSING AREAS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 200' FOR ALL SIDEWALKS LESS THAN 5' IN WIDTH.
- MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK SURFACE IS 2%.
- ALL EXPANSION JOINTS TO BE 3/4" THICK WOOD FIBER ASPHALT-IMPREGNATED EXPANSION BOARD, UNLESS OTHERWISE NOTED.
- ALL CONCRETE TO BE CLASS 'A' f'c=3,000 PSI. ALL REINFORCING STEEL TO BE GRADE 60, fy=60,000 PSI.
- SIDEWALKS SHALL BE AT LEAST 4" THICK CONCRETE.
- CONCRETE SURFACE TO RECEIVE BROOM FINISH.
- TRANSVERSE CONTRACTION JOINTS 1/8" WIDE BY 1/2" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (MAXIMUM).
- PROVIDE PEDESTRIAN ACCESSIBLE ROUTE WITH DETECTABLE WARNING SURFACE FOR SIDEWALKS THAT INTERSECT CONTROLLED DRIVEWAYS. DETECTABLE WARNING SURFACE SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE ACCESSIBLE ROUTE WHERE IT INTERSECTS THE CONTROLLED DRIVEWAY.

CURB RAMP NOTES:

- PROVIDE CURB RAMPS WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
- SLOPE CRITERIA:

RAMPS AND LANDING AREAS

|                               | MAX SLOPE (V:H, %, IN PER FT) |
|-------------------------------|-------------------------------|
| RAMP IN DIRECTION OF TRAVEL   | 1:12 / 8.03% / 1" PER FT      |
| SIDE SLOPE OF RAMP (FLARE)    | 1:10 / 10% / 1.2" PER FT      |
| CROSS SLOPE OF RAMP           | 1:50 / 2% / 0.24" PER FT      |
| LANDING AREA (ALL DIRECTIONS) | 1:50 / 2% / 0.24" PER FT      |

ADJOINING AREAS

|                                 |                          |
|---------------------------------|--------------------------|
| SIDEWALK IN DIRECTION OF TRAVEL | 1:20 / 5% / 0.60" PER FT |
| SIDEWALK CROSS SLOPE            | 1:50 / 2% / 0.24" PER FT |
| GUTTER IN DIRECTION OF TRAVEL   | 1:20 / 5% / 0.60" PER FT |

A SMOOTH TRANSITION (S≤1:50) IN DIRECTION OF TRAVEL IS REQUIRED WHERE RAMPS TRANSITION TO THE STREET

- 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.
- LANDINGS SHALL BE 5'X5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
- CURB RAMP MUST BE WHOLLY CONTAINED WITHIN CROSSWALK MARKINGS, EXCLUDING SIDE FLARES.

CURB RAMP NOTES (CONTINUED):

- CURB RAMPS, FLARES AND LANDINGS SHALL BE AT LEAST 5" THICK CONCRETE AND EXPANSION JOINTS SHALL TYPICALLY BE USED AT MATCHLINE WITH ADJOINING AREAS.
- MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4'X4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
- LAYBACK CURB AND GUTTER MAY BE CONSTRUCTED MONOLITHICALLY WITH CURB RAMPS. PROVIDE NO. 4 X 12" LONG SMOOTH DOWELS @ 12" ON CENTERS IF NOT PLACED MONOLITHICALLY.
- PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET. 5% MAXIMUM SLOPE IN GUTTER.
- ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC §68.102.
- DIAGONAL CURB RAMPS ARE DISCOURAGED. DIAGONAL CURB RAMPS MAY BE ALLOWED ON A CASE-BY-CASE BASIS ONLY IF OTHER CONFIGURATIONS ARE NOT FEASIBLE, AND MUST BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
- FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CONTRACTOR PROVIDING THE CITY WITH A FINAL INSPECTION REPORT FROM A CERTIFIED REGISTERED ACCESSIBILITY SPECIALIST (RAS) PER 16 TAC §68.52 STATING THAT ALL LANDSCAP IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) FOR ELIMINATION OF ARCHITECTURAL BARRIERS PER TEXAS GOVERNMENT CODE CHAPTER 469.

DETECTABLE WARNING SURFACE NOTES:

- CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TAS. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES INCLUDING SIDE FLARES.
- DETECTABLE WARNING SURFACE FOR RAMPS SHALL BE ADA SOLUTIONS, INC. PART NO. 2460REP CAST-IN-PLACE REPLACEABLE TACTILE WARNING SURFACE TILES TRUNCATED DOME, OR APPROVED EQUIVALENT, IN "BRICK RED" COLOR.
- ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
- DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" 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.
- DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES TO BE CURVED ALONG THE CORNER RADIUS.

THIS CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT HAS REVIEWED THIS SHEET AND CONFIRMS THAT THE PROJECT INFORMATION IN THE TITLE BLOCK IS CORRECT.

CONSULTANT'S SHEET  
PROJECT NO.



CITY of CORPUS CHRISTI  
TEXAS

Department of Engineering Services

CITY OF CORPUS CHRISTI

PEDESTRIAN CURB RAMP STANDARDS

2 OF 4

REVISION NO.

DATE

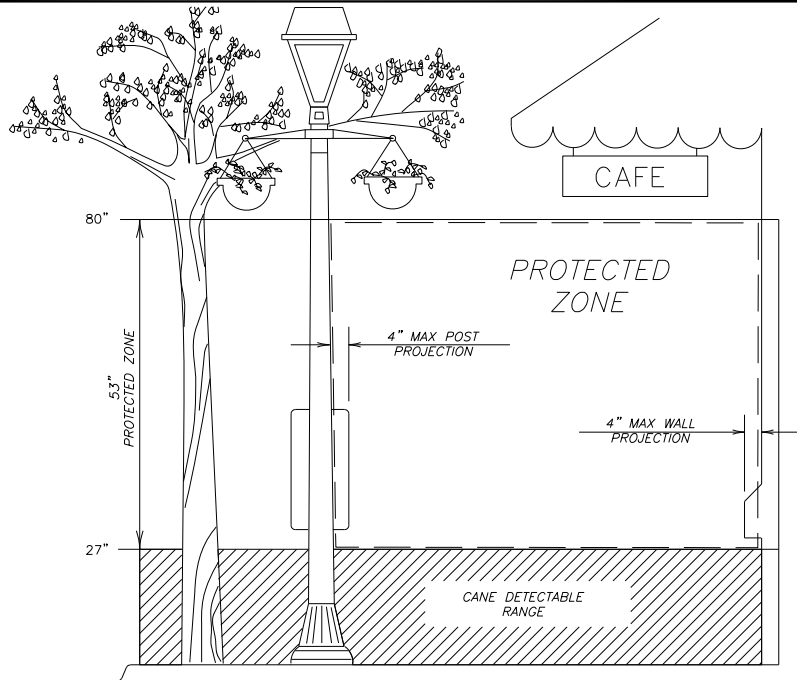
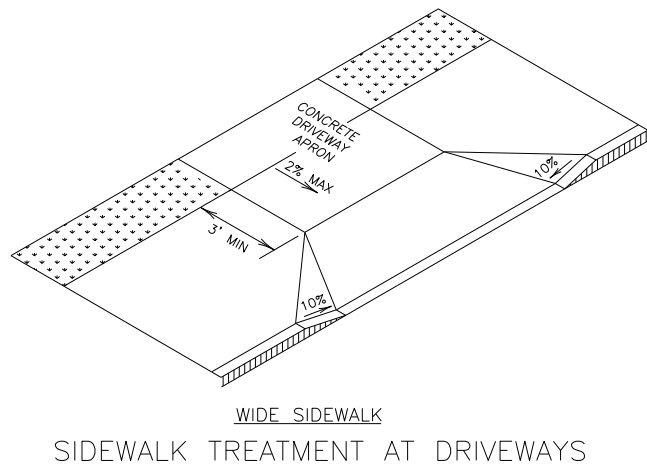
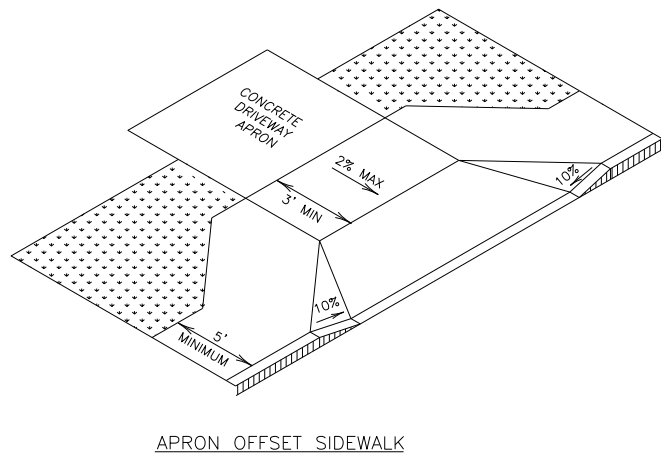
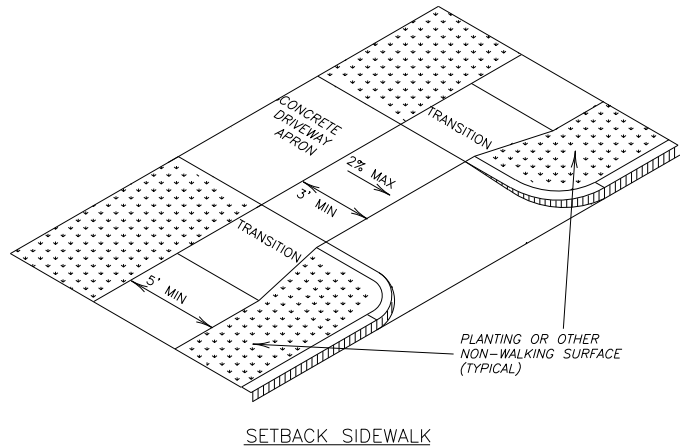
BY

DESCRIPTION

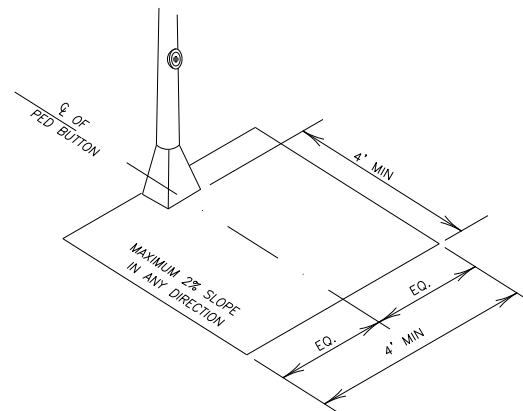
SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_

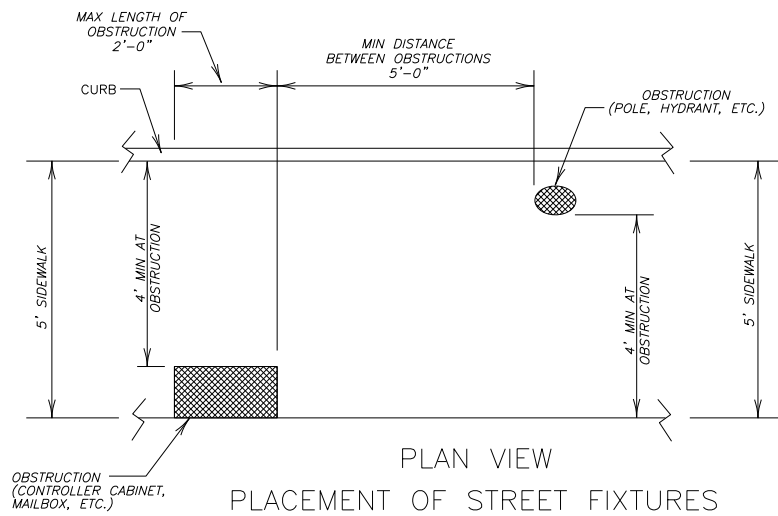
REV. 10/2019



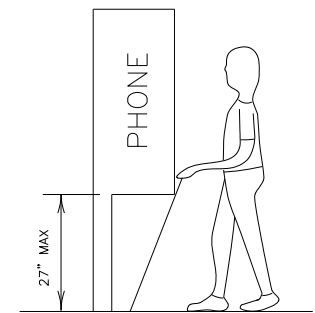
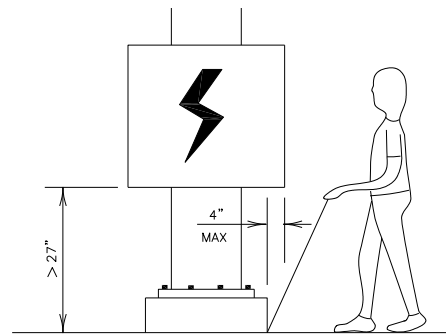
PROTECTED ZONE  
IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



CLEAR GROUND SPACE CENTERED AT PEDESTRIAN PUSH BUTTON



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.



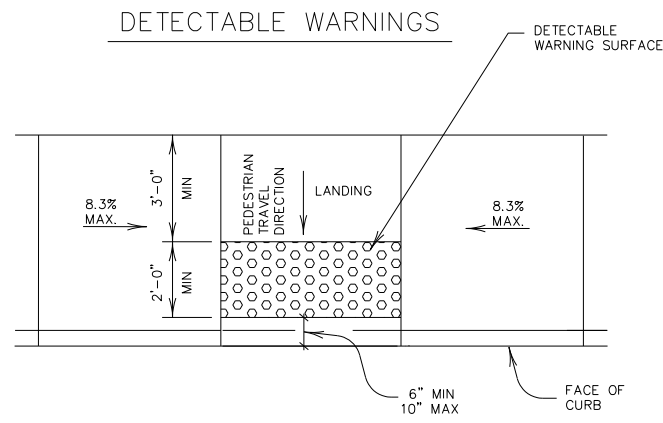
PROTRUDING OBJECTS OF A HEIGHT < 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

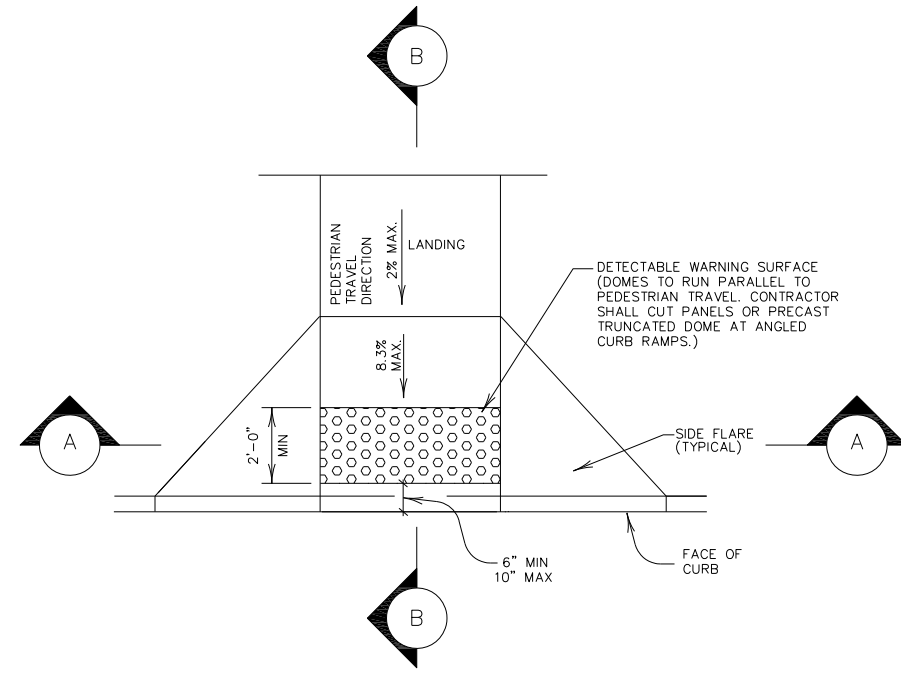
- GENERAL NOTES**
- ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED.
  - PLACE TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SO AS NOT TO OBSTRUCT THE ACCESSIBLE ROUTE OR CLEAR GROUND SPACE.
  - THE MAXIMUM ALLOWABLE SIDEWALK CROSS SLOPE EQUALS 2%.
  - STREET GRADES AND CROSS SLOPES SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
  - EXISTING FEATURES THAT COMPLY WITH TAS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
  - CHANGES IN LEVEL GREATER THAN 1/4 INCH ARE NOT PERMITTED.
  - 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 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE ON ONE OR BOTH SIDES OF THE SIDEWALK TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS. IF PROVIDED, HANDRAILS MUST COMPLY WITH TAS 4.8.5.
  - HANDRAIL EXTENSIONS SHALL NOT PROTRUDE INTO THE USABLE LANDING AREA OR INTO INTERSECTING PEDESTRIAN ROUTES.
  - SIDEWALK DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

|                                                                                                                                                                                                                                                                                                                                               |      |    |             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----|-------------|
| THIS CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT AFFIRMS THAT THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED OTHER THAN TO FILL IN THE PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK. |      |    |             |
| CONSULTANT'S SHEET<br>PROJECT NO.                                                                                                                                                                                                                                                                                                             |      |    |             |
| CITY of CORPUS CHRISTI<br>TEXAS<br>Department of Engineering Services                                                                                                                                                                                                                                                                         |      |    |             |
| PEDESTRIAN CURB RAMP STANDARDS                                                                                                                                                                                                                                                                                                                |      |    |             |
| SHEET _____ of _____<br>RECORD DRAWING NO.                                                                                                                                                                                                                                                                                                    |      |    |             |
| CITY PROJECT # _____                                                                                                                                                                                                                                                                                                                          |      |    |             |
| REVISION NO.                                                                                                                                                                                                                                                                                                                                  | DATE | BY | DESCRIPTION |

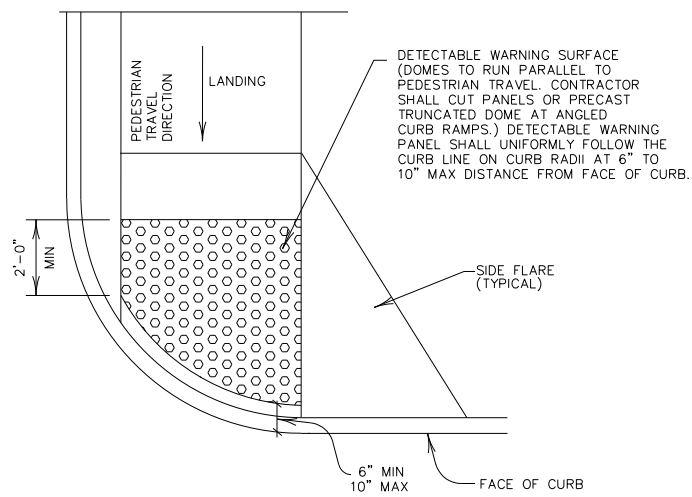




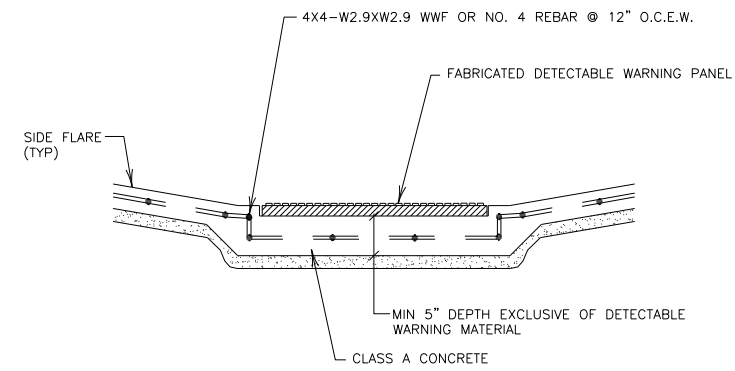
PARALLEL CURB RAMP  
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE



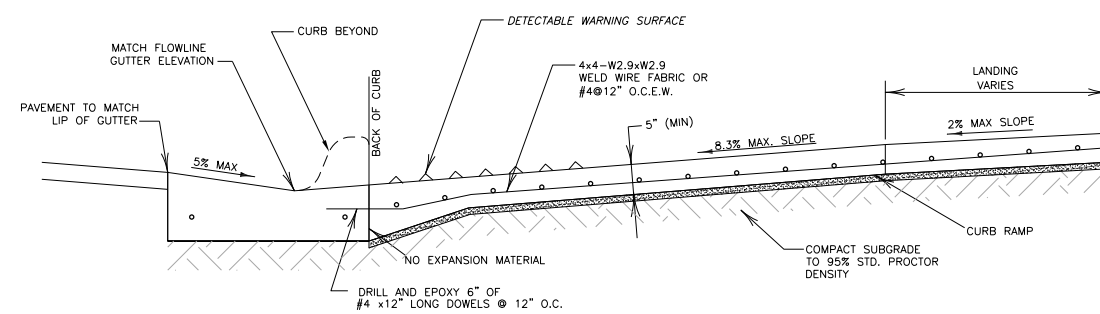
PERPENDICULAR CURB RAMP  
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN



DIRECTIONAL CURB RAMP  
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN AT A RADIUS



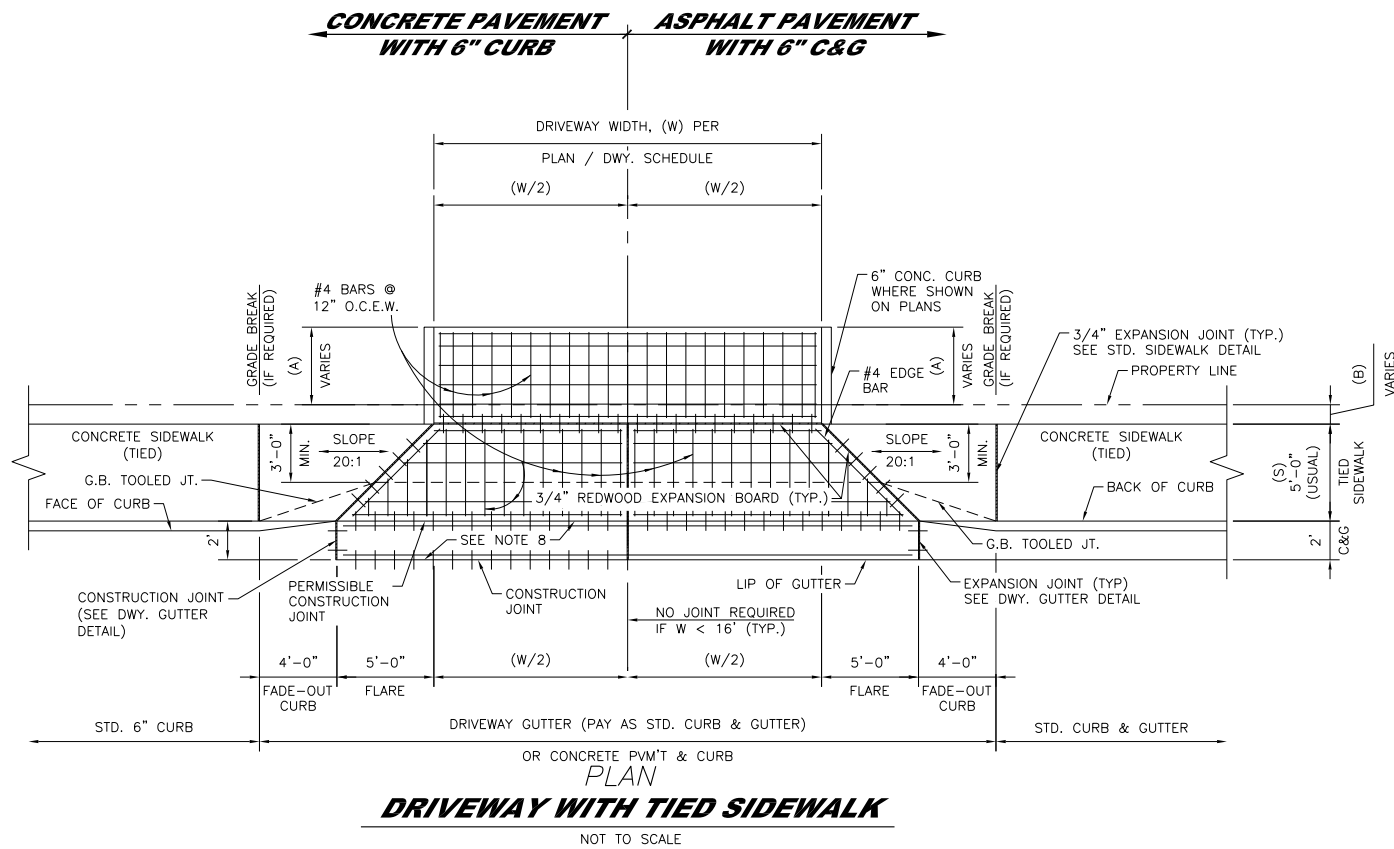
SECTION A-A  
TYPICAL SECTION THROUGH CURB RAMP



SECTION B-B  
CURB RAMP PROFILE

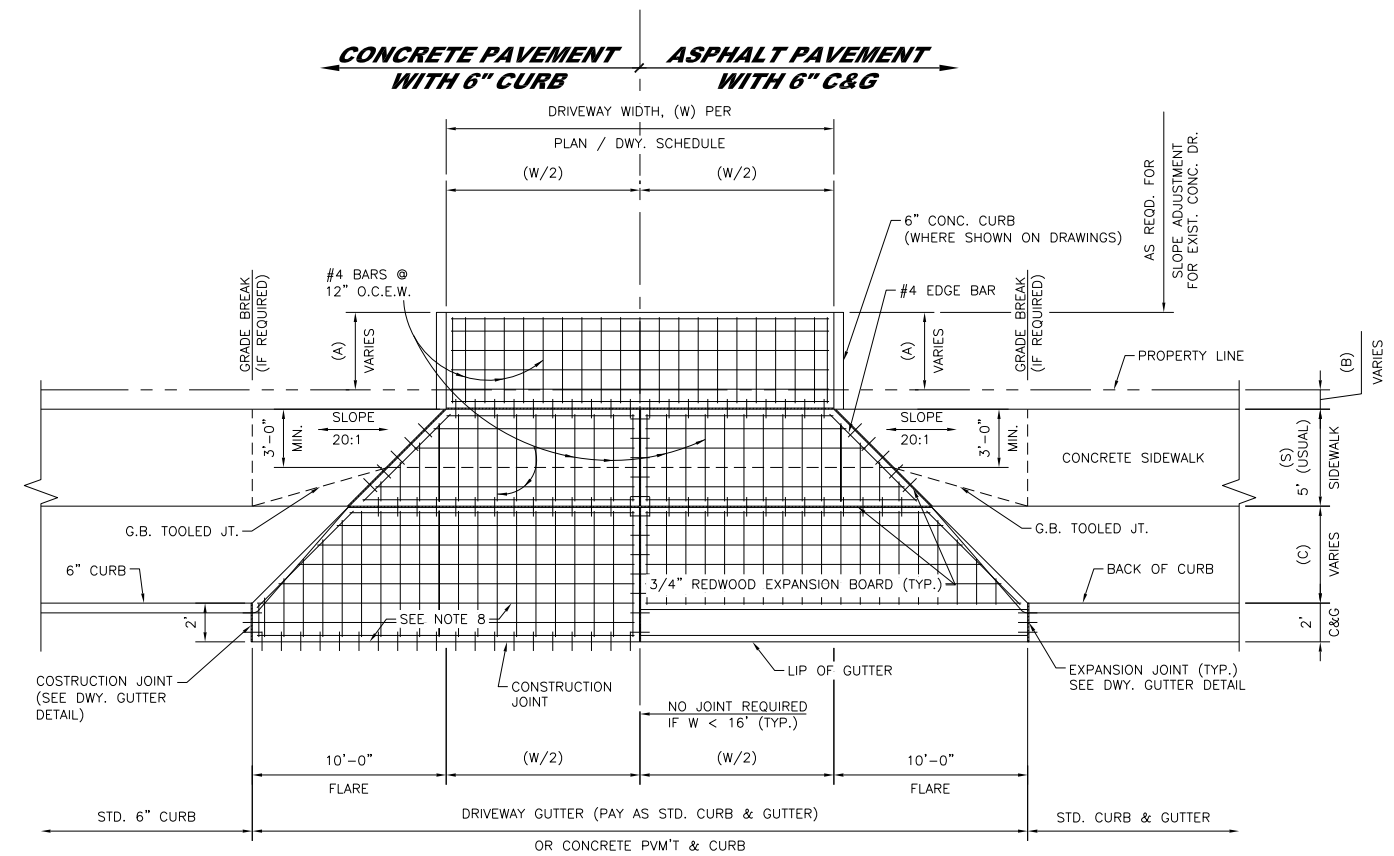
THIS CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT SHALL BE RESPONSIBLE FOR THE DESIGN OF THE PROJECT. THIS SHEET HAS BEEN REVIEWED AND APPROVED FOR PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK.

|                                                                       |      |
|-----------------------------------------------------------------------|------|
| CONSULTANT'S SHEET<br>PROJECT NO.                                     |      |
| CITY of CORPUS CHRISTI<br>TEXAS<br>Department of Engineering Services |      |
| CITY OF CORPUS CHRISTI<br>PEDESTRIAN CURB RAMP STANDARDS<br>4 OF 4    |      |
| REVISION NO.                                                          | DATE |
| BY                                                                    | DATE |
| SHEET ____ of ____<br>RECORD DRAWING NO.                              |      |
| CITY PROJECT #                                                        |      |



***DRIVEWAY WITH TIED SIDEWALK***

NOT TO SCALE



PLAN  
**DRIVEWAY WITH DETACHED SIDEWALK**

| SUMMARY OF CONCRETE DRIVEWAYS |                    |                        |                        |                        |                        |                                |                                          |
|-------------------------------|--------------------|------------------------|------------------------|------------------------|------------------------|--------------------------------|------------------------------------------|
| STATION                       | WIDTH 'W'<br>(FT.) | DIMENSION 'C'<br>(FT.) | DIMENSION 'S'<br>(FT.) | DIMENSION 'B'<br>(FT.) | DIMENSION 'A'<br>(FT.) | DRIVEWAY<br>(CONCRETE)<br>(SF) | DRIVEWAY<br>(CONCRETE)<br>(PRIVATE) (SF) |
|                               |                    |                        |                        |                        |                        |                                |                                          |
|                               |                    |                        |                        |                        |                        |                                |                                          |
|                               |                    |                        |                        |                        |                        |                                |                                          |
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|                               |                    |                        |                        |                        |                        |                                |                                          |
| TOTALS                        |                    |                        |                        |                        |                        |                                |                                          |

DRIVEWAY NOTES:

1. GRADES FOR WALKWAY AREAS WITHIN DRIVEWAYS SHALL NOT EXCEED 20:1 ALONG THE DIRECTION OF PEDESTRIAN TRAVEL, LONGITUDINAL, EITHER WITHIN THE DRIVEWAY OR AT THE SIDEWALK APPROACHES ABUTTING THE DRIVEWAY. CROSS-SLOPE, TRANSVERSE SLOPE, OF WALKWAY SHALL NOT EXCEED 50:1.
2. DRIVEWAY SLOPE SHALL NOT EXCEED 10:1, EXCEPT UNDER SPECIAL CIRCUMSTANCES, IF AUTHORIZED BY THE ENGINEER.
3. CONCRETE FOR DRIVEWAYS SHALL BE CLASS "A" AND HAVE A MINIMUM THICKNESS OF 6 INCHES.
4. RE-BAR SHALL BE GRADE 60, WITH A MAXIMUM SPACING OF 12" C-C AND ADDITIONAL DIAGONAL BARS AS SHOWN.
5. EXPANSION JOINTS SHALL BE OF 3/4" REDWOOD EXPANSION BOARD AND DOWELS SHALL BE GREASED, 12 INCHES LONG, SMOOTH #4 BARS WITH ONE END BEING FELT WRAPPED. CONTINUOUS BARS SHALL NOT EXTEND THROUGH THE EXPANSION JOINT, BUT SHALL TYPICALLY STOP 3 INCHES CLEAR OF EXPANSION JOINT.
6. MIDDLE EXPANSION JOINT SHALL BE USED IF THE DRIVEWAY WIDTH, W, IS 16 FEET OR WIDER. THE EXPANSION JOINT SHALL EXTEND FROM THE BACK OF WALKWAY TO THE LIP OF CURB. CENTER EXPANSION JOINT MAY BE OMITTED FROM THE DRIVEWAY AND GUTTER IF DRIVEWAY WIDTH IS LESS THAN 16'.
7. FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CONTRACTOR PROVIDING THE CITY WITH A CERTIFICATION LETTER FROM THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR), POLICY AND STANDARDS DIVISION, ARCHITECTURAL BARRIERS SECTION, THAT ALL ADA (AMERICANS WITH DISABILITIES ACT) HANDICAP IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT ARTICLE 9102, TEXAS CIVIL STATUTES.
8. THE 2' C/TOUT DOES NOT APPLY TO NEW DRIVEWAYS CONSTRUCTED ON EXISTING CONCRETE ROADWAYS. CONTRACTOR SHALL DRILL AND EPOXY #4 x 12" DOWELS @ 12" O.C. TO CONNECT DRIVEWAY TO EXISTING CONCRETE ROADWAY.

**SPECIAL NOTE:**

THE EXACT TYPE OF DRIVEWAY TO BE DETERMINED BY  
THE ENGINEER, BASED ON EXIST. CONDITIONS.

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CONSULTANT'S SHEET No.



CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

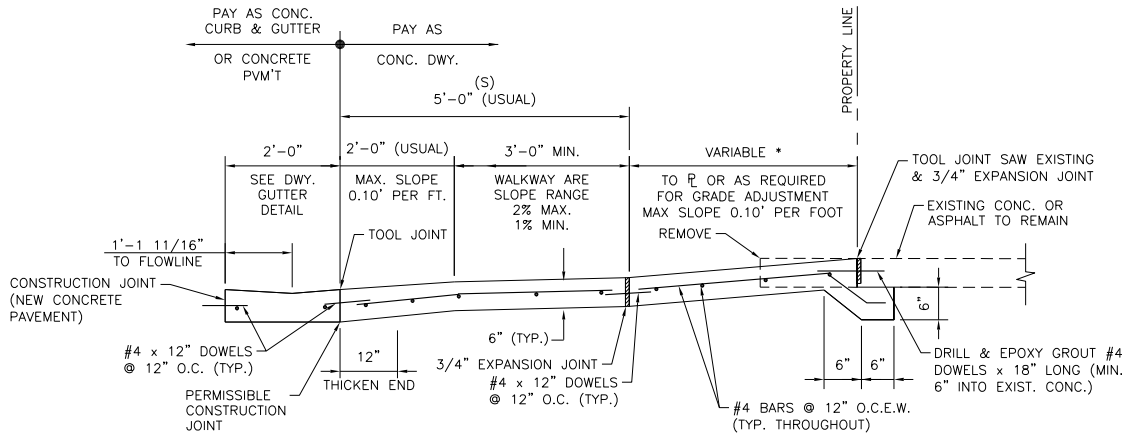
CITY OF CORPUS CHRISTI  
DRIVEWAY STANDARD DETAILS

1 OF 3

DATE \_\_\_\_\_ SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO. \_\_\_\_\_

CITY PROJECT # \_\_\_\_\_

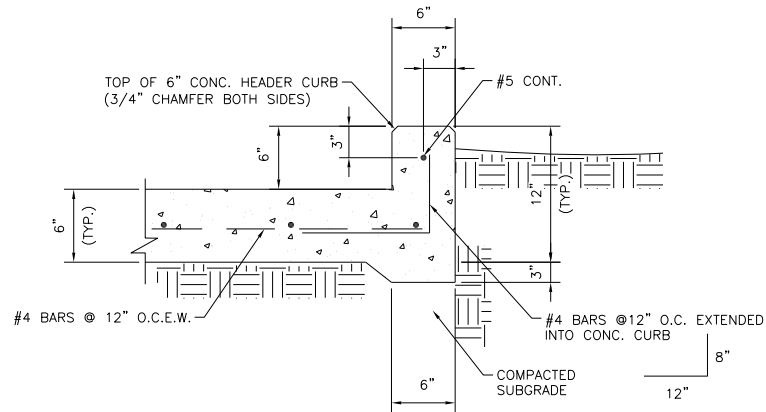




SECTION  
**DRIVEWAY WITH TIED SIDEWALK**

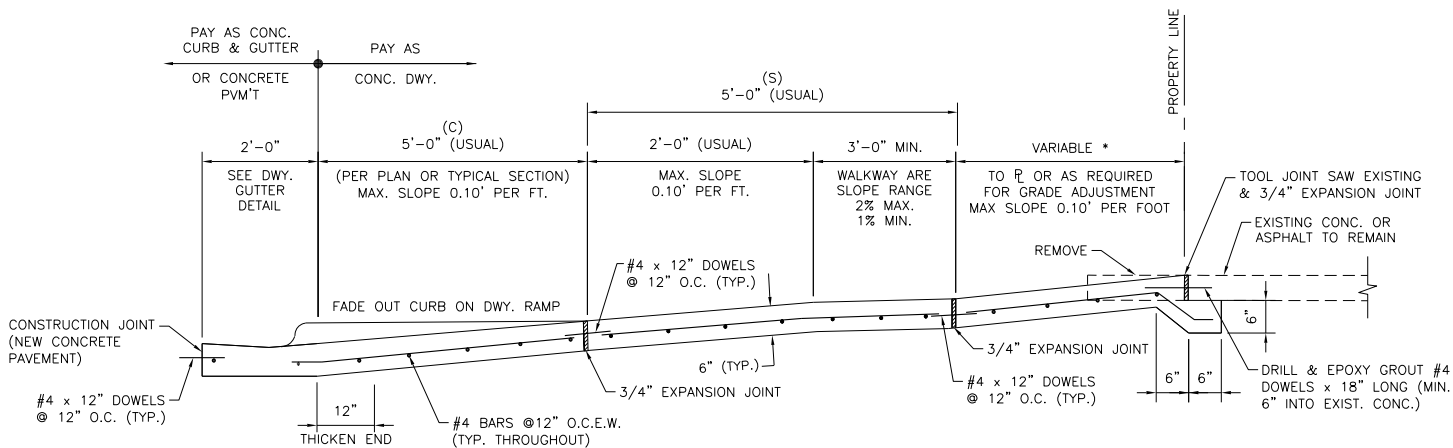
NOT TO SCALE

\* DRIVEWAY IMPROVEMENTS MAY NEED TO EXTEND INTO PRIVATE PROPERTY TO ACHIEVE 10% MAXIMUM SLOPE.



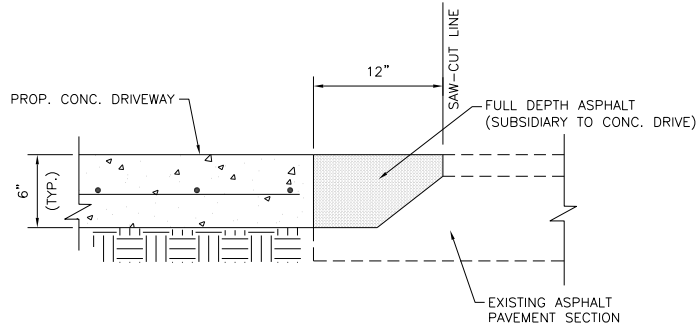
**TYP. DRIVEWAY HEADER CURB DETAIL**

NOT TO SCALE



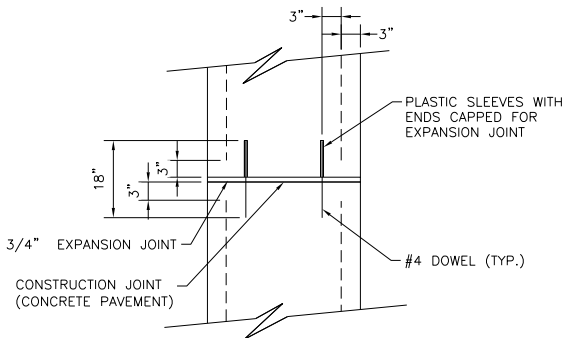
SECTION  
**DRIVEWAY WITH DETACHED SIDEWALK**

NOT TO SCALE



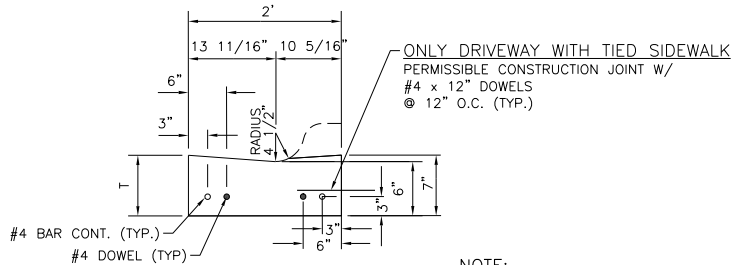
**CONC. DRIVEWAY TO ASPHALT PAVEMENT TIE-IN DETAIL**

NOT TO SCALE



PLAN  
**DRIVEWAY GUTTER**

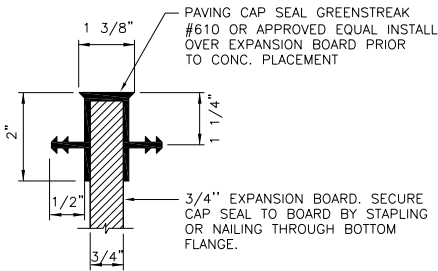
NOT TO SCALE



SECTION  
**DRIVEWAY GUTTER**

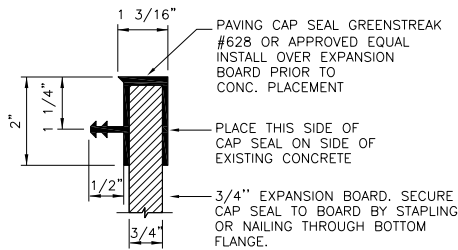
NOT TO SCALE

NOTE:  
T = THICKNESS OF CONCRETE PAVEMENT OR CONCRETE CURB & GUTTER



**CAP SEAL DETAIL NEW CONC. TO NEW CONC.**

NOT TO SCALE



**CAP SEAL DETAIL NEW CONC. TO EXIST. CONC.**

NOT TO SCALE

NOTE:  
DO NOT TOOL CAP SEAL JOINT. INADEQUATE STANDING-EXPANSION BOARDS THAT BOW OR TWIST DURING CONCRETE PLACEMENT WILL RESULT IN IMPROPERLY ALIGNED CAP SEAL.

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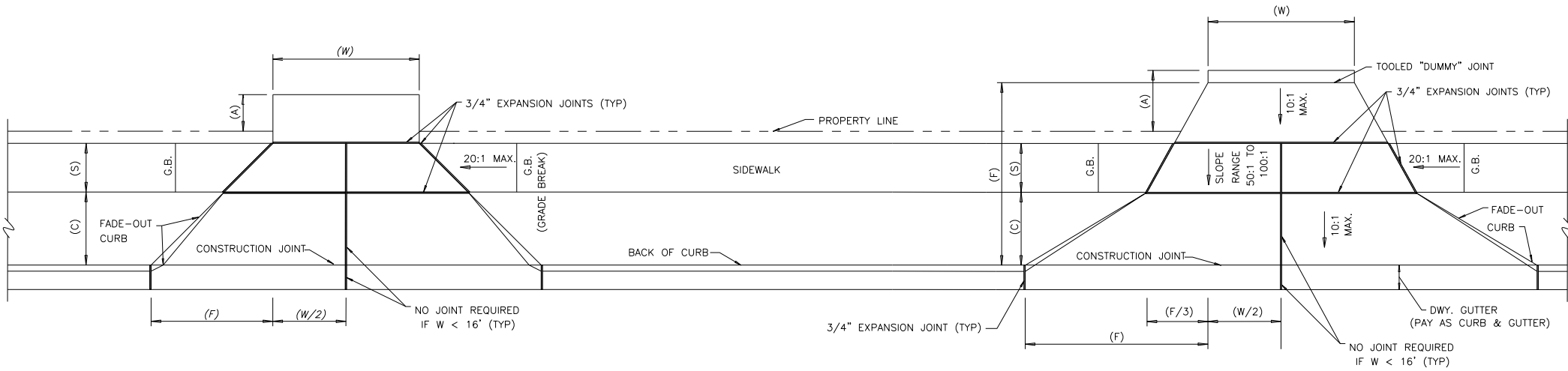
  
**CITY of CORPUS CHRISTI TEXAS**  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
DRIVEWAY STANDARD DETAILS

2 OF 3

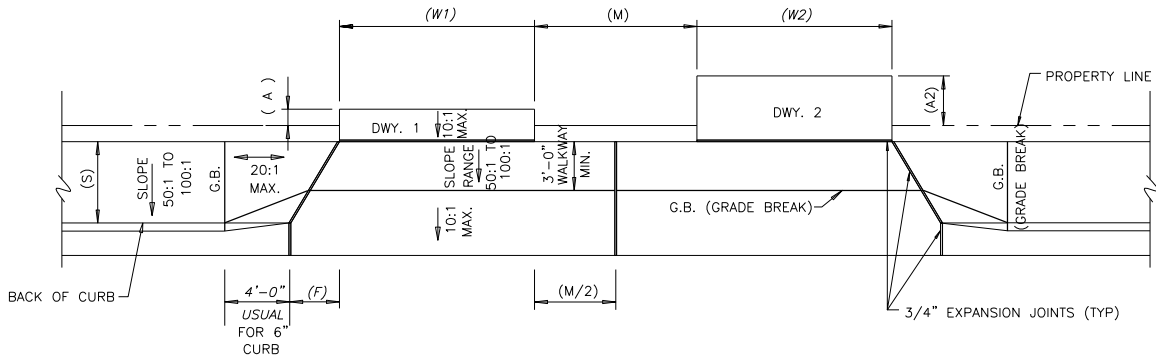
SHEET \_\_\_\_ of \_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_

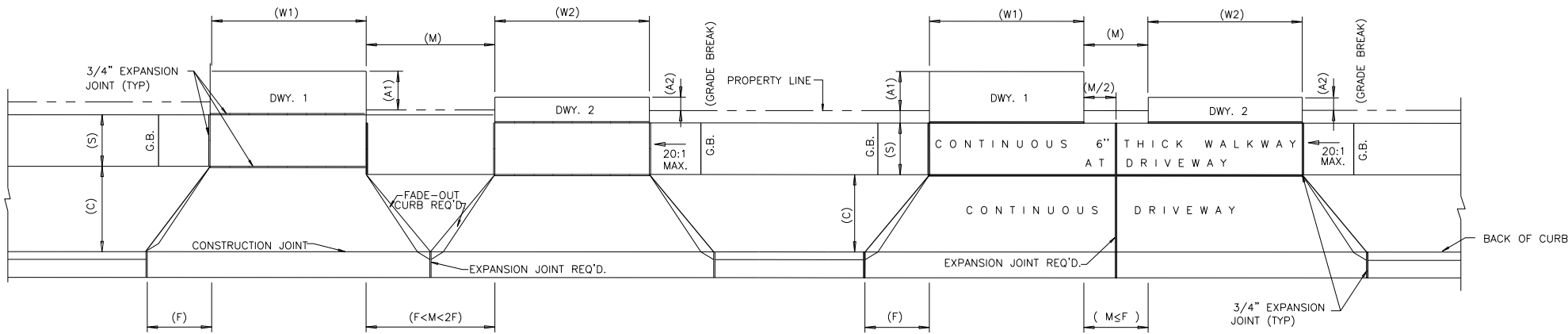


**TYPE (C) DRIVEWAY**  
NOT TO SCALE

**TYPE (S) DRIVEWAY**  
NOT TO SCALE



**TYPES (TMR) & (TMS) DRIVEWAY**  
NOT TO SCALE



**TYPES (MRA) & (MCA) DRIVEWAY**  
NOT TO SCALE

**TYPES (MRB) & (MCB) DRIVEWAY**  
NOT TO SCALE

| STANDARD DRIVEWAY DIMENSION |                         |                         |            |
|-----------------------------|-------------------------|-------------------------|------------|
| DWY. TYPE                   | F <sup>a</sup><br>(FT.) | W <sup>b</sup><br>(FT.) | M<br>(FT.) |
| R                           | 5                       | 10-30                   |            |
| C                           | 10                      | 16-35                   |            |
| S                           | 15                      |                         |            |
| MRA                         | 5                       | 10-30                   | 5-10       |
| MRB                         | 5                       | 10-30                   | <5         |
| MCA                         | 10                      | 16-35                   | 10-20      |
| MCB                         | 10                      | 16-35                   | <10        |
| TR                          | 3                       | 10-30                   |            |
| TS                          | 5                       | <16                     |            |
| TMR                         | 3                       | 10-30                   | <6         |
| TMS                         | 5                       | <16                     | <10        |

<sup>a</sup> VALUE OF F MAY BE CHANGED BY ENG.  
<sup>b</sup> RANGE OF NORMALLY ACCEPTABLE VALUES.

| LEGEND (DRIVE TYPE) |                                                      |
|---------------------|------------------------------------------------------|
| R                   | = RESIDENTIAL DRIVEWAY                               |
| C                   | = COMMERCIAL DRIVEWAY                                |
| S                   | = SPECIAL DRIVEWAY                                   |
| MRA                 | = MULTIPLE RESIDENTIAL DRIVEWAY WITH DIVIDER CURB    |
| MRB                 | = MULTIPLE RESIDENTIAL DRIVEWAY WITH NO DIVIDER CURB |
| MCA                 | = MULTIPLE COMMERCIAL DRIVEWAY WITH DIVIDER CURB     |
| MCB                 | = MULTIPLE COMMERCIAL DRIVEWAY WITH NO DIVIDER CURB  |
| TR                  | = TIED RESIDENTIAL DRIVEWAY                          |
| TS                  | = TIED SPECIAL DRIVEWAY                              |
| TMR                 | = TIED MULTIPLE RESIDENTIAL DRIVEWAY                 |
| TMS                 | = TIED MULTIPLE SPECIAL DRIVEWAY                     |

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CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

REVISION NO. DATE BY DESCRIPTION

CITY OF CORPUS CHRISTI  
DRIVEWAY STANDARD DETAILS

3 OF 3

SHEET \_\_\_\_ of \_\_\_\_  
RECORD DRAWING NO. \_\_\_\_\_  
CITY PROJECT # \_\_\_\_\_



### PLAN OF STANDARD CURB INLET

NOT TO SCALE

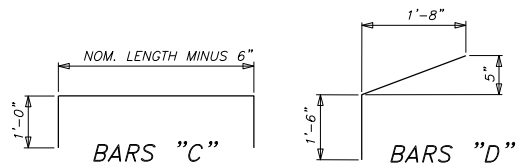
1. CONTRACTOR TO PROVIDE #4 x 12" DOWELS @ 12" O.C. WHERE PROP. SIDEWALK ABUTS INLET. (NO SEPARATE PAYMENT)
2. FOR CURB INLET THROAT EXTENSION DETAILS REFER TO STORM WATER STANDARD DETAIL SHEET 3 OF 3.

**SECTION A-A**

NOT TO SCALE

**FLOWLINE TRANSITION AT INLET FOR  
4" OR 6" STD. CURB AND GUTTER**

NOT TO SCALE



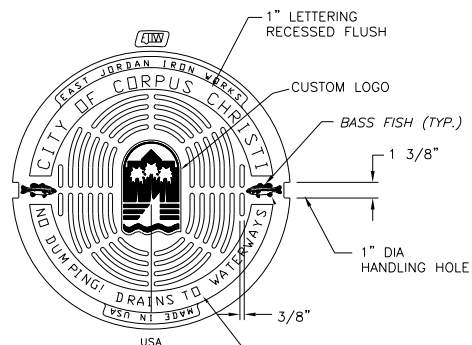
\*\* THROAT OPENINGS SHALL HAVE A 6" X 6" CONCRETE SUPPORT PLACED AT MID-THROAT

\* NOMINAL LENGTH OF INLET SHALL BE DESIGNATED AS THE CLEAR WIDTH OPENING.

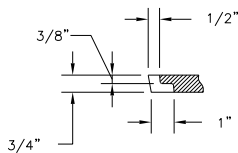
| STANDARD CURB INLET STEEL SCHEDULE |                   |          |          |          |          |
|------------------------------------|-------------------|----------|----------|----------|----------|
| ALL BARS No. 4 PREFORMED           |                   |          |          |          |          |
| INLET SIZE<br>(Nom. Length)        | NO. REQ'D./LENGTH |          |          |          |          |
|                                    | "A" BARS          | "B" BARS | "C" BARS | "D" BARS | "E" BARS |
| 4'                                 | 2/o               | 4/1'-10" | 2/5'-6"  | 4/3'-2"  | 2/4'-6"  |
| 5'                                 | 2/o               | 4/3'-2"  | 2/6'-6"  | 4/3'-2"  | 2/5'-6"  |
| 6'                                 | 4/o               | 4/4'-0"  | 2/7'-6"  | 6/3'-2"  | 2/6'-6"  |
| • • 8'                             | 4/o               | 4/4'-0"  | 2/9'-6"  | 6/3'-2"  | 2/8'-6"  |
| • • 10'                            | 6/o               | 4/4'-0"  | 2/11'-6" | 7/3'-2"  | 2/10'-6" |
| BENDING                            | STRAIGHT          | STRAIGHT | SEE DET. | SEE DET. | STRAIGHT |

$a = O.D. + 8", 2'-8" MIN.$

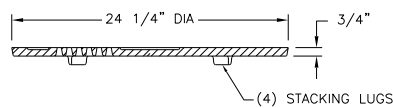
MAX. PIPE I.D. = 48 INCHES



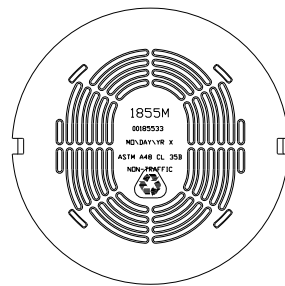
PLAN VIEW



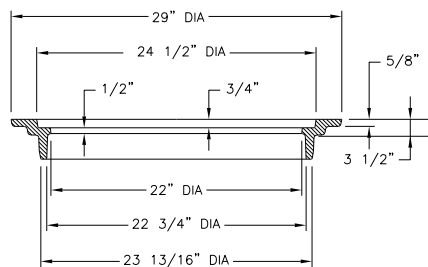
### PICKSLOT DETAIL



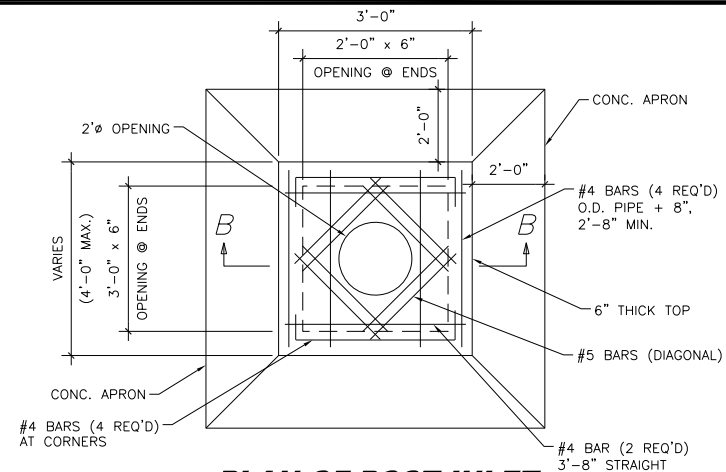
GRATE SECTION



GRATE BLOCK

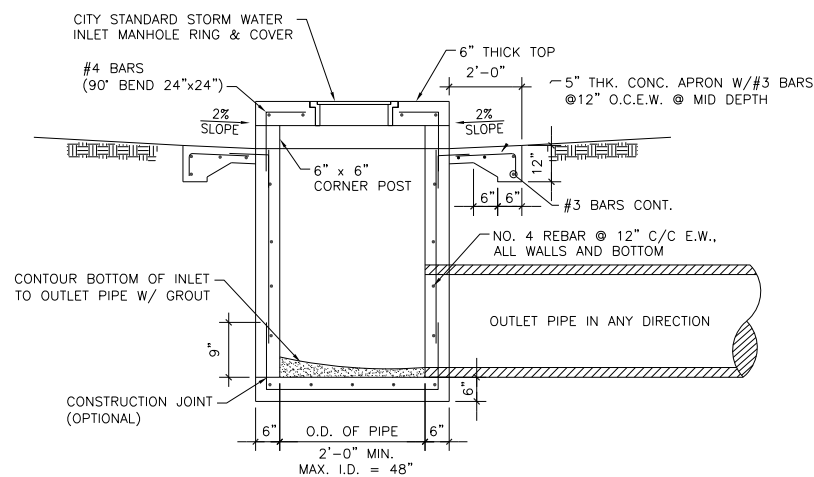


RING SECTION



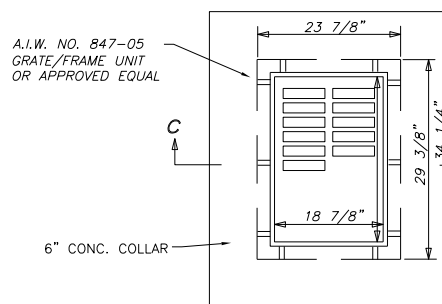
### ***PLAN OF POST INLET***

NOT TO SCALE



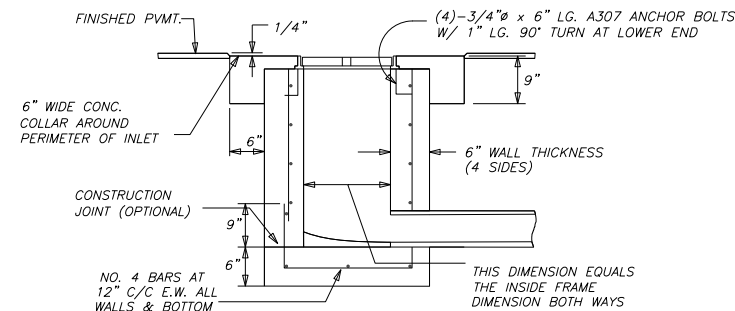
***SECTION B-B***

NOT TO SCALE



### PLAN OF STANDARD GRATE INLET

NOT TO SCALE



***SECTION C-C***

NOT TO SCALE

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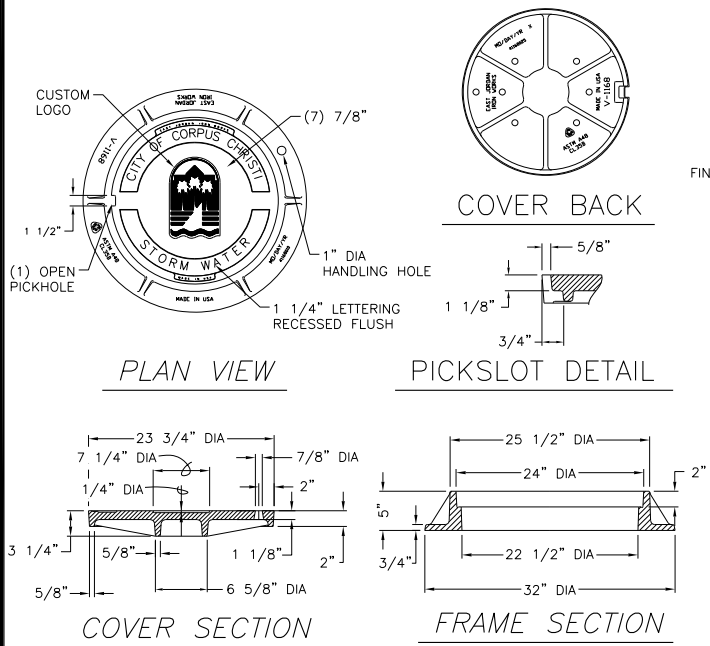
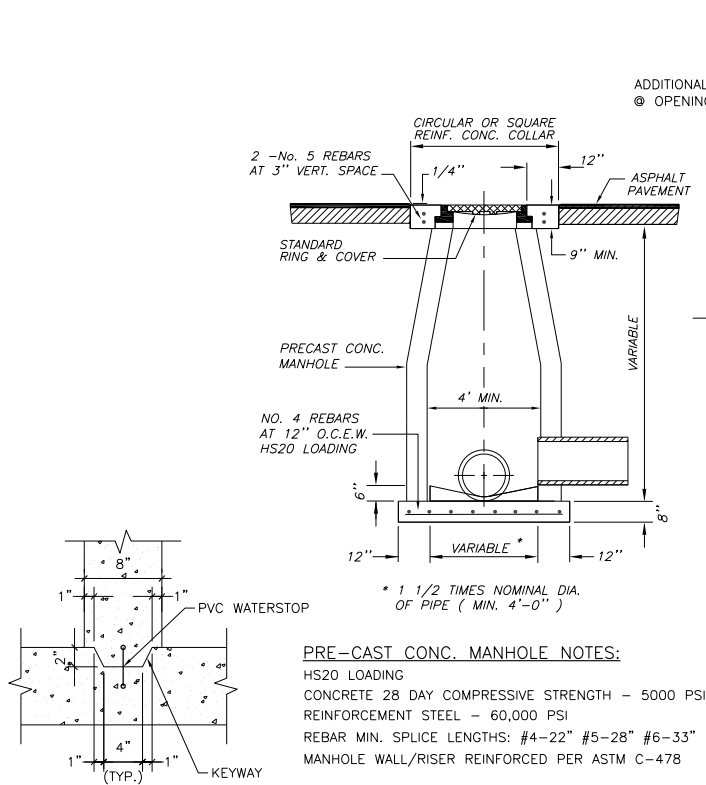


CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
STORM WATER STANDARD DETAILS

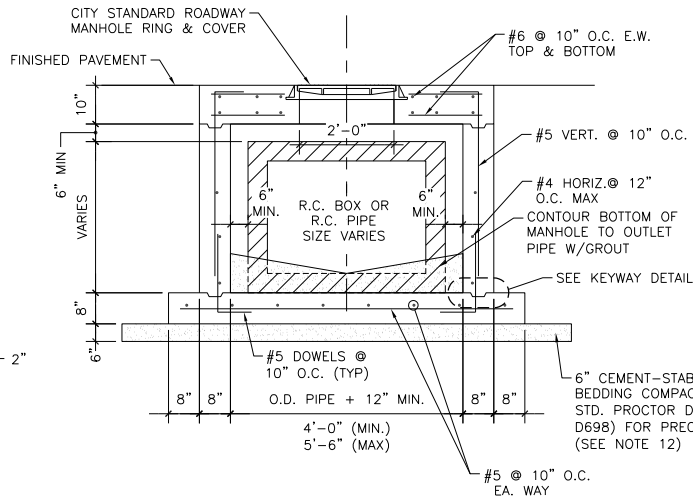
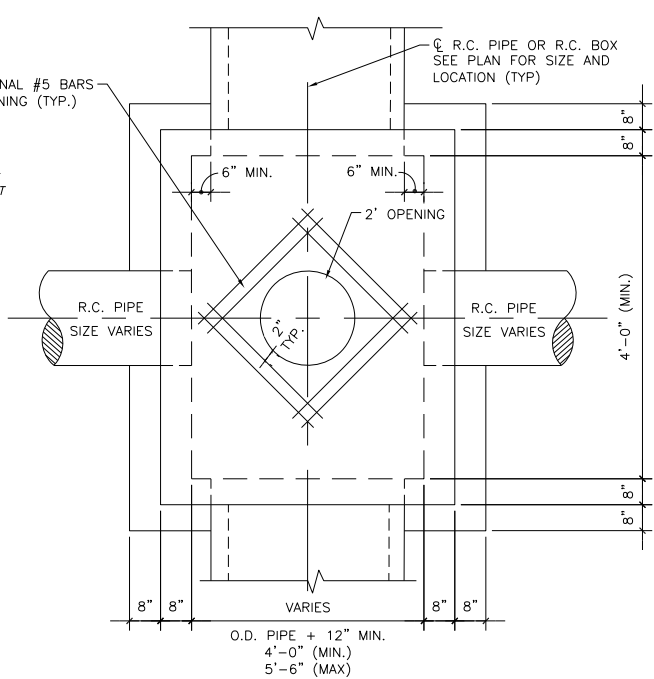
SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT #

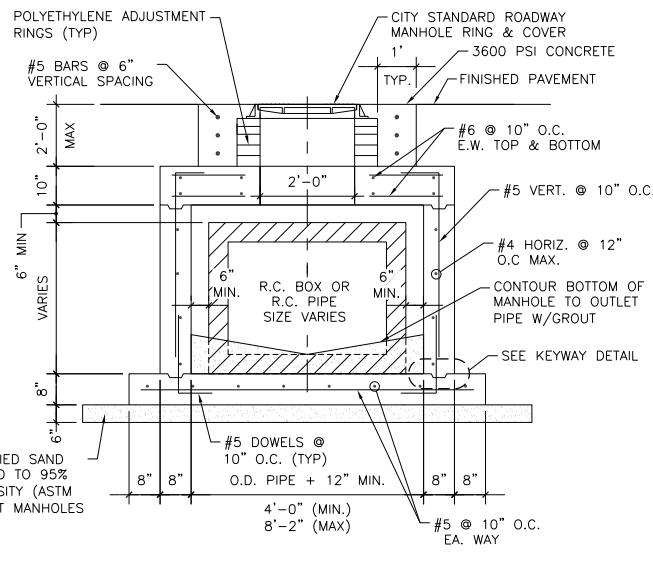
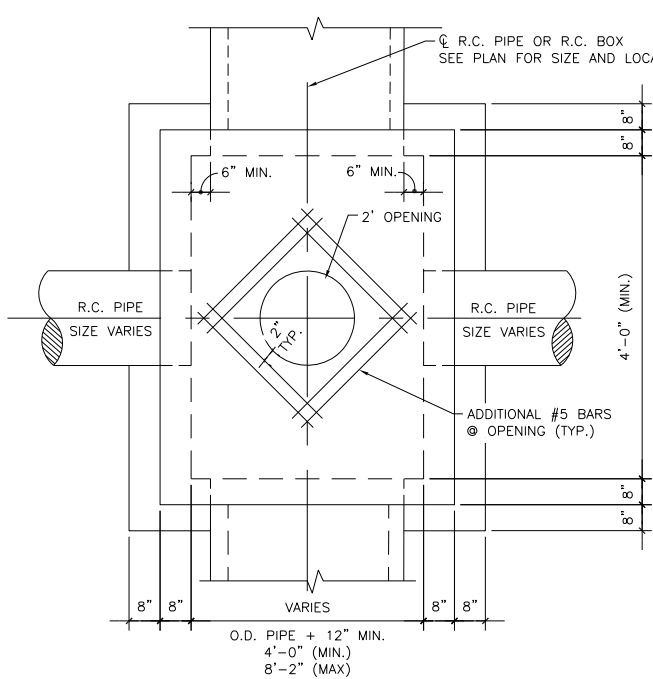


**ROADWAY MANHOLE RING & COVER NOTES**

- MANHOLE RING & COVER SHALL BE EAST JORDAN V 1168 ASSEMBLY AND FOR SCHOOL ZONE SHALL BE EAST JORDAN BOLTED-IN 1168 ASSEMBLY LOAD RATING HEAVY DUTY.
- THESE DETAILS SHOW GREY-IRON CASTINGS, FILLETED AT ANGLES WITH SHARP AND PERFECT ARISES.
- CASTING SHALL BE TRUE TO PATTERN, FORM, AND DIMENSIONS, FREE FROM CRACKS, SPONGINESS AND BLOWHOLES.
- MACHINE SURFACES TO YIELD FIT WHICH WILL NOT RATTLE WITH PASSING TRAFFIC LOAD.
- TRAFFIC SHALL BE RESTRICTED FROM M.H. FOR 36 HOURS AFTER PLACEMENT OF RING.
- OTHER CASTING PATTERNS FOR RING & COVERS MAY BE SUBMITTED FOR APPROVAL PROVIDED THE PLAN PATTERN OF COVER IS THE SAME AS SHOWN ON THIS SHEET AND PROVIDED OTHER CASTINGS SHALL BE COMPLETELY INTERCHANGEABLE, I.E., THE COVERS OF THIS SHEET SHALL FIT PROPERLY, THE RINGS OF OTHER CASTING DETAILS AND THE COVERS OF OTHER CASTINGS SHALL FIT THE RINGS OF THIS SHEET.
- MINIMUM WEIGHTS OF FINISHED CASTINGS : THE COVER = 154 POUNDS, THE RING = 175 POUNDS.
- HDPE MANHOLE ADJUSTMENT RINGS SHALL BE DESIGNED TO SUPPORT HS 20 TRAFFIC LOADING.

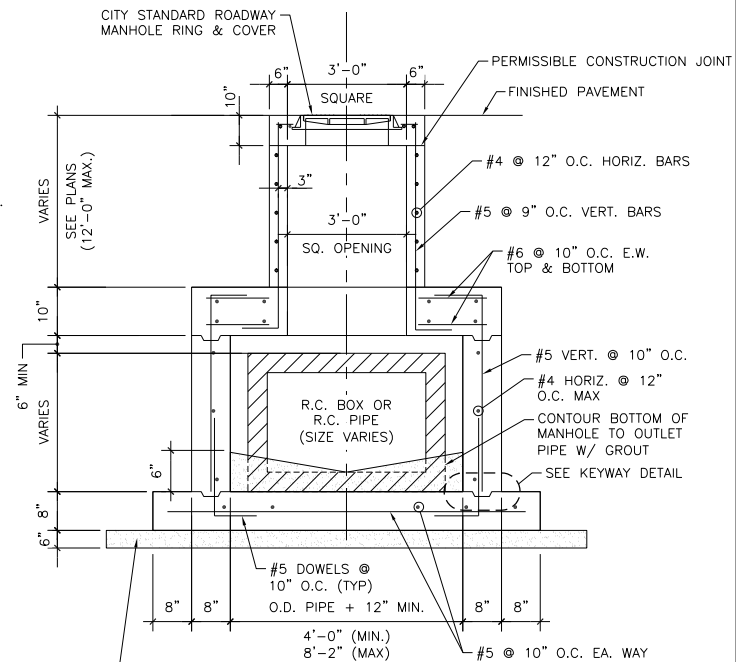
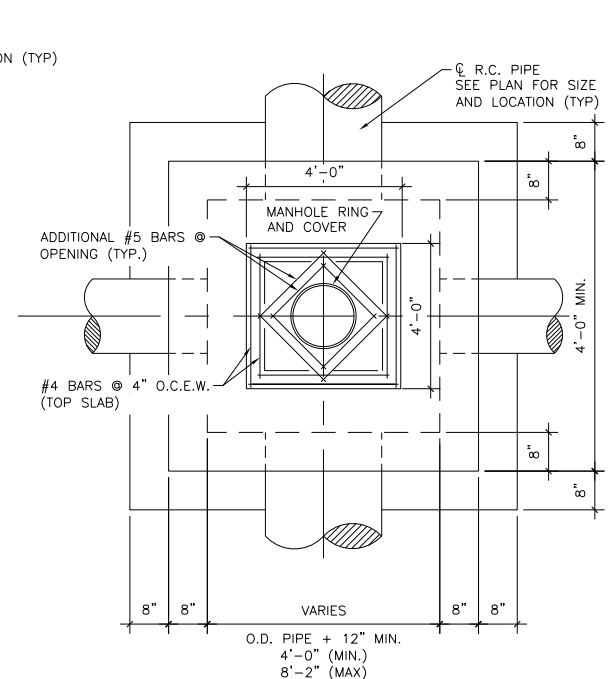


**NOTE:**  
LATERAL PIPES NOT SHOWN FOR CLARITY



**NOTE:**  
LATERAL PIPES NOT SHOWN FOR CLARITY

**SECTION TYPE 'C' MANHOLE**  
NOT TO SCALE



**NOTE:**  
LATERAL PIPES NOT SHOWN FOR CLARITY

**GENERAL NOTES FOR CONCRETE DRAINAGE STRUCTURES:**

- ALL CONCRETE SHALL BE CLASS "C" (3600 PSI) EXCEPT CITY STANDARD CURB INLETS AND CONCRETE COLLARS MAY BE CLASS "A".
- ALL REINFORCING STEEL SHALL BE GRADE 60.
- DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTERS OF BARS.
- VERTICAL STEEL MAY BE SPLICED (15" MIN. LAP) IN THE LOWER ONE-HALF OF ALL INLET WALLS.
- IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, PIPES AND MANHOLE FRAME, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.
- CHAMFER ALL EXPOSED EDGES 3/4".
- PROVIDE CITY STANDARD SIDEWALK MANHOLE RING AND COVER FOR CITY STANDARD CURB INLET. PROVIDE CITY STANDARD ROADWAY STORM WATER MANHOLE RING AND COVER FOR SPECIAL CURB INLET.
- THE CONTRACTOR MAY PROPOSE ALTERNATE PROCEDURES FOR THE CONSTRUCTION OF INLETS AND MANHOLES, INCLUDING PRECAST UNITS. PLANS FOR SUCH PROPOSED ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL BEFORE CONSTRUCTION. PRECAST MANHOLE WITHIN THE ROADWAY SHALL BE DESIGNED TO SUPPORT HS 20 TRAFFIC LOADING AND SEALED BY A LICENSED ENGINEER.
- ALL INLET WALLS SHALL BE FORMED EXCEPT WHERE THE NATURE OF THE SURROUNDING MATERIAL IS SUCH THAT IT CAN BE TRIMMED TO A SMOOTH VERTICAL FACE. WHEN INLET WALLS ARE PLACED TO NEAT EXCAVATION LINES THE WALL THICKNESS SHALL NOT EXCEED 10 INCHES. PAYMENT FOR INLET AT THE CONTRACT PRICE SHALL INCLUDE THE TRANSITION CURB.
- INVERT OF INLET SHALL BE SLOPED 1:20 WITH GROUT.
- NO SPLICING OF REINFORCING STEEL SHALL BE PERMITTED EXCEPT WHERE OTHERWISE NOTED ON THE PLANS OR PERMITTED IN WRITING BY THE ENGINEER.
- IN DEEP EXCAVATIONS (> 20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF CONCRETE COARSE AGGREGATE: TxDOT ITEM 421; GRADE 2, 3, OR 4.

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CONSULTANT'S SHEET No.

CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

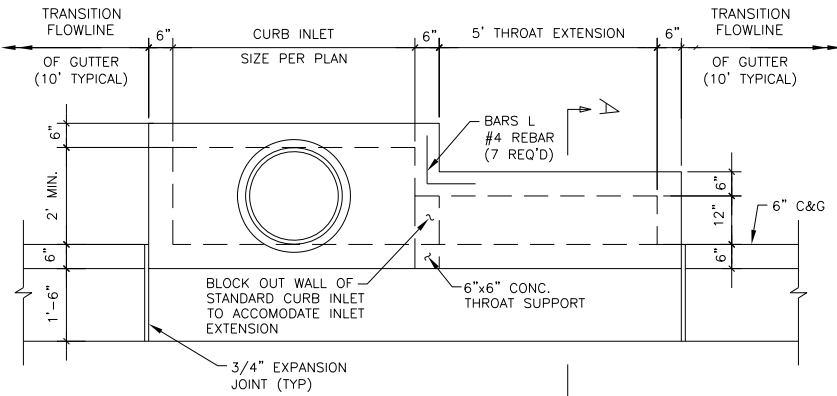
CITY OF CORPUS CHRISTI  
STORM WATER STANDARD DETAILS

2 of 3

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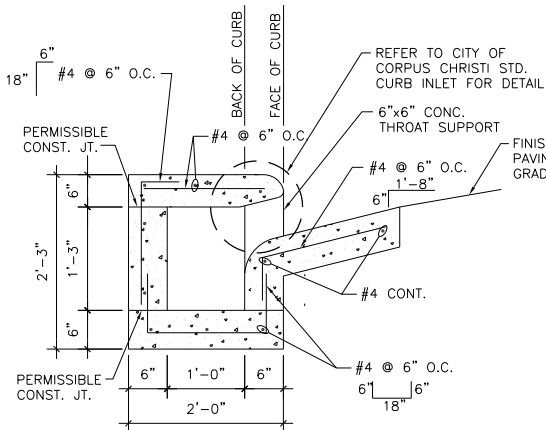
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CITY PROJECT # \_\_\_\_\_



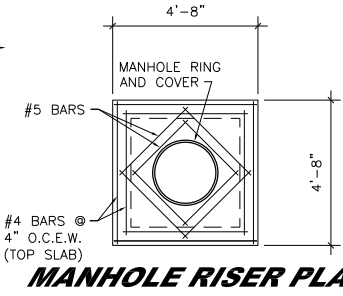
**CURB INLET THROAT EXTENSION PLAN**

NOT TO SCALE



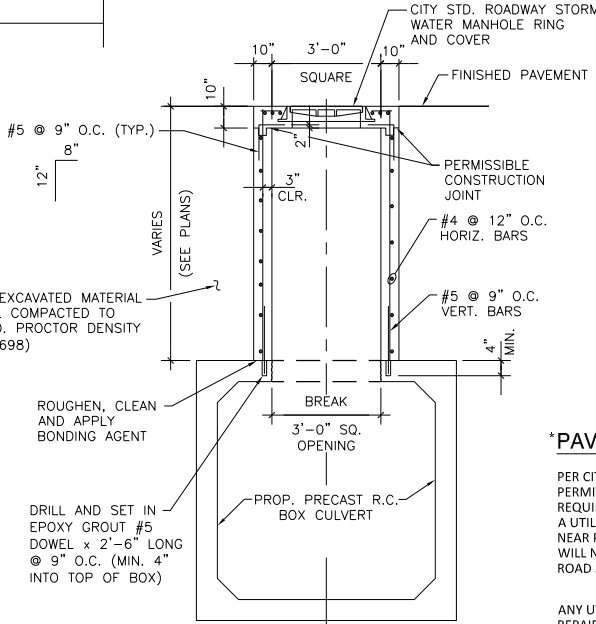
**SECTION A-A**

NOT TO SCALE



**MANHOLE RISER PLAN**

NOT TO SCALE



**SECTION**

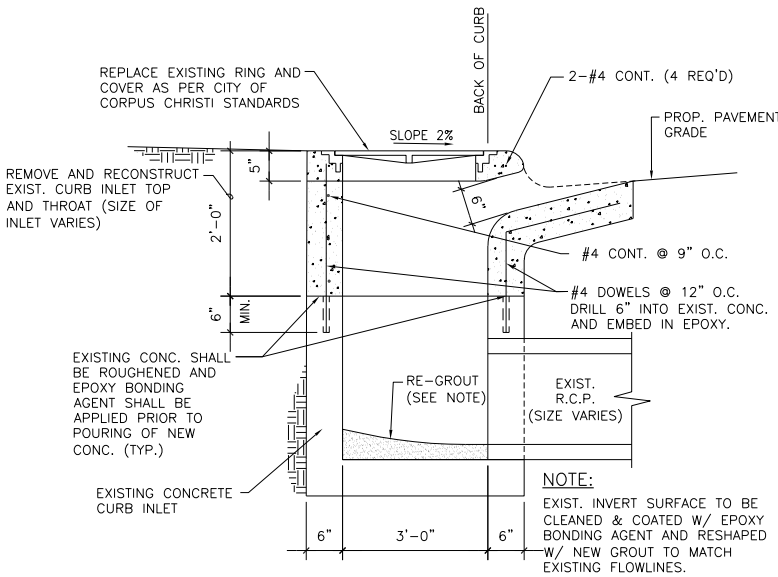
**MANHOLE RISER DETAIL**

NOT TO SCALE

**\*PAVEMENT REPAIR NOTE:**

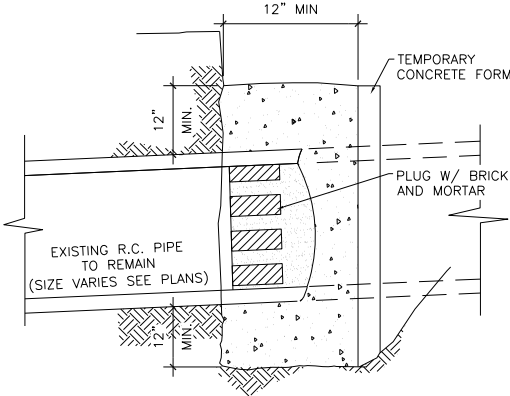
PER CITY ORD. 030040 ARTICLE III CUTS AND EXCAVATIONS, A PERMIT FROM CITY DEVELOPMENT SERVICES DEPARTMENT IS REQUIRED FOR ALL UTILITY STREET CUTS. THE INSTALLATION OF A UTILITY THAT CROSSES THE ROW AT A PERPENDICULAR OR NEAR PERPENDICULAR ANGLE AND HAS AN O.D. OF 6" OR LESS WILL NOT BE PERMITTED TO BE INSTALLED BY CUTTING THE ROAD SECTION.

ANY UTILITY RELATED STREET EXCAVATION/CUT SHALL INCLUDE REPAIR OF NOT ONLY THE IMPACTED TRENCH, BUT ALSO A FULL LANE PAVEMENT SURFACE REPAIR FOR PARALLEL CUTS OR 12' WIDE FOR PERPENDICULAR CUTS ON ASPHALT STREETS, AND FULL PANEL REPLACEMENT ON CONCRETE STREETS. A SITE SPECIFIC PAVEMENT CUT AND RESTORATION PLAN THAT INDICATES THE GENERAL NATURE OF THE PAVEMENT AND ROADWAY TO BE CUT AND RESTORED, THE EXISTING PAVEMENT SECTION (IF KNOWN), THE LOCATION AND APPROXIMATE AREA OF THE EXCAVATION/PAVEMENT REPAIR, INCLUDING THE APPROXIMATE LENGTH AND WIDTH OF THE PAVEMENT REPAIR IN RELATION TO THE ROADWAY TRAVEL LANE(S), MUST BE INCLUDED IN THE DRAWINGS/PERMIT APPLICATION.



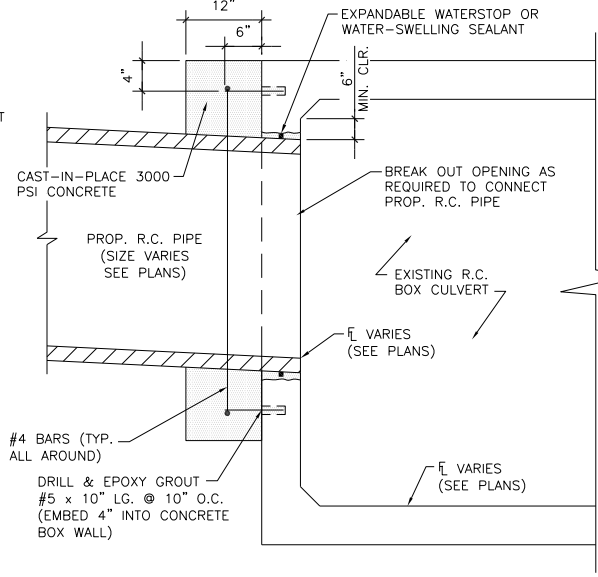
**REMOVE AND REPLACE TOP OF EXISTING CURB INLET DETAIL**

NOT TO SCALE



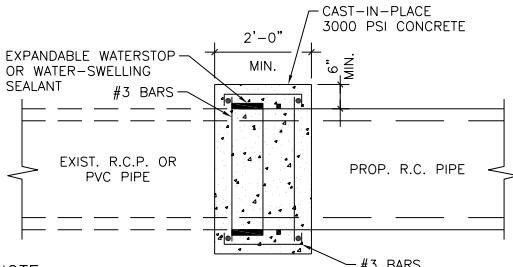
**EXISTING R.C. PIPE PLUG**

NOT TO SCALE



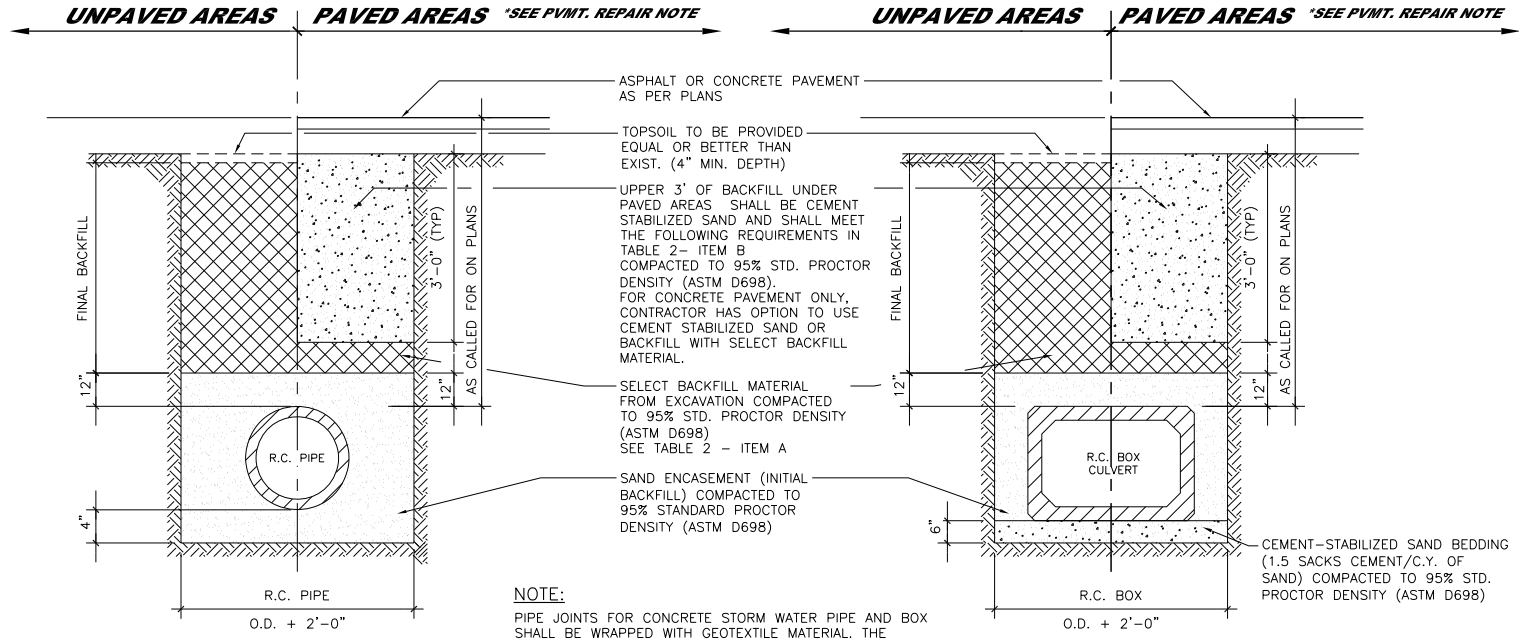
**PROP. PIPE TO EXISTING R.C. BOX CONNECTION DETAIL**

NOT TO SCALE



**CONCRETE COLLAR DETAIL**

NOT TO SCALE



**TRENCH BACKFILL FOR STORM WATER PIPES**

NOT TO SCALE

**TRENCH BACKFILL FOR STORM WATER R.C. BOX CULVERTS**

NOT TO SCALE

**GENERAL NOTES FOR BACKFILL**

| TABLE 1<br>BEDDING AND INITIAL BACKFILL<br>(BELOW PIPE TO 12" ABOVE PIPE)                                                                                                                        |  | TABLE 2<br>FINAL BACKFILL<br>(GREATER THAN 12" ABOVE PIPE)                                                                                                                                                                                      |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| UNPAVED AREAS                                                                                                                                                                                    |  | PAVED AREAS**                                                                                                                                                                                                                                   |  |
| ALL BEDDING AND INITIAL BACKFILL SHALL CONSIST OF GRANULAR MATERIAL CONSISTING OF EITHER NATURAL SAND OR SANDY GRAVEL, OR MATERIAL PRODUCED BY CRUSHING OF NATURAL STONE OR GRAVEL. SEWER LINES: |  | A. FOR 12" ABOVE PIPE TO BOTTOM OF TOPSOIL: BACKFILL SHALL BE APPROVED SELECT MATERIAL FROM THE EXCAVATION; OR IMPORTED MATERIAL; ALL TO BE FREE OF ROCKS, DEBRIS, OR ANY CLUMPS GREATER THAN 2" IN DIAMETER; LOOSE LIFTS TO BE PLACED 10" MAX. |  |
| MEETING REQUIREMENTS OF ASTM D2487 FOR:                                                                                                                                                          |  | LL<35<br>PI 8-20<br>NO CLUMPS > 2" DIA.<br>MOISTURE 0 TO +3%<br>COMPACT 95% D698 STD PROCTOR                                                                                                                                                    |  |
| AND IN ADDITION:                                                                                                                                                                                 |  | LOOSE LIFTS OF 10" MAX OR IF SELECT MATERIAL FROM EXCAVATION DOES NOT MEET REQUIREMENTS, THEN USE CEMENT STABILIZED SAND SEE TABLE 2-ITEM B                                                                                                     |  |
| PASSING 1/2" SIEVE - 100%<br>PASSING #4 SIEVE - 30% MINIMUM<br>PLASTICITY INDEX (PI) - NP TO 10 MAX.                                                                                             |  | B. FOR 3' BELOW BOTTOM OF ROAD BASE TO BOTTOM OF ROAD BASE:                                                                                                                                                                                     |  |
| 2. IN DEEP EXCAVATIONS (>20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF:                                                                                    |  | BACKFILL SHALL BE UNIFORMLY MOISTENED AND MIXED CEMENT STABILIZED SAND AND SHALL MEET THE FOLLOWING REQUIREMENTS:                                                                                                                               |  |
| A. CONCRETE COARSE AGGREGATE OR CRUSHED LIMESTONE; TxDOT ITEM 421; GRADE 2, 3, OR 4.                                                                                                             |  | SAND GRADATION:<br>% PASSING                                                                                                                                                                                                                    |  |
| FOR ALL UTILITIES:                                                                                                                                                                               |  | 1/2" 100%<br>#4 55-100<br>#10 40-100<br>#40 25-100<br>#200 10-20<br>PI NP-10                                                                                                                                                                    |  |
| 1. FOR PIPE DIAMETER EQUAL TO OR SMALLER THAN 16", USE 4" MINIMUM BEDDING UNDER PIPE.                                                                                                            |  | 1.5 SACKS CEMENT/C.Y. OF SAND.                                                                                                                                                                                                                  |  |
| 2. FOR PIPE DIAMETER GREATER THAN 16", USE 6" MINIMUM BEDDING UNDER PIPE.                                                                                                                        |  | COMPACT TO 95% OF D698. MOISTURE TO BE ADJUSTED TO (+/-2%) OF OPTIMUM.                                                                                                                                                                          |  |

\*\* APPLIES IF ANY PORTION OF THE TRENCH FALLS WITHIN 1' OF THE BACK OF CURB.

THE CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT AFFIRMS THAT THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED OTHER THAN IN THE PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK

CONSULTANT'S SHEET No.



CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
STORM WATER STANDARD DETAILS

3 of 3

SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO. \_\_\_\_\_

CITY PROJECT # \_\_\_\_\_

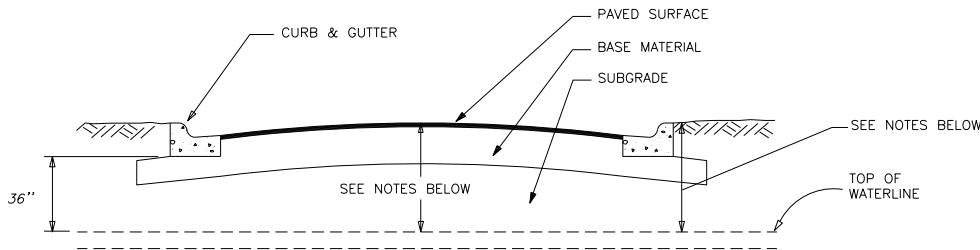


- PROPOSED WATER DISTRIBUTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH CITY OF CORPUS CHRISTI WATER DIVISION DISTRIBUTION SYSTEM STANDARDS.
2. THE CITY RESERVES THE RIGHT TO ACCEPT THE SYSTEM FOR OPERATION AT ANY TIME, BUT THE DATE OF OFFICIAL ACCEPTANCE OF THE SYSTEM WILL BE UPON COMPLETION OF THE PROJECT AND SATISFACTORY TEST RESULTS.
3. THE EXISTING SYSTEM SHALL REMAIN IN SERVICE UNTIL THE PROPOSED SYSTEM IS PUT INTO SERVICE. THE CONTRACTOR SHALL PROTECT THE EXISTING SYSTEM UNTIL IT IS TAKEN OUT OF SERVICE.
4. THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT REQUIRED TO INSTALL THE PROPOSED SYSTEM.
5. TESTING OF LINES (STERILIZATION AND PRESSURED) SHALL BE DONE BY THE CONTRACTOR UNDER THE SUPERVISION OF THE WATER DIVISION. WATER FOR FILLING THE NEW WATER LINE AND PERFORMING TESTS WILL BE FURNISHED TO THE CONTRACTOR BY THE CITY OF CORPUS CHRISTI THROUGH A STANDARD WATER CONSTRUCTION METER CONNECTION. STANDARD WATER CONSTRUCTION METER AND GAUGE WILL BE SUPPLIED BY THE CITY AFTER THE CONTRACTOR HAS PAID ALL APPLICABLE FEES FOR THE WATER CONSTRUCTION METER. ALL WATER DISCHARGE MUST BE DECHLORINATED IN ACCORDANCE WITH TNRCC & NPDES REGULATIONS.
6. THE CONTRACTOR SHALL RECOVER AND STOCK-PILE AT A LOCATION DESIGNATED BY THE WATER DIVISION INSPECTOR, ALL FIRE HYDRANTS, VALVES, AND FITTINGS THAT ARE TAKEN OUT OF SERVICE. THESE MATERIALS MAY BE SALVAGED BY THE CITY. HOWEVER, ALL ITEMS NOT CLAIMED BY THE CITY PRIOR TO THE FINAL INSPECTION SHALL BE DISPOSED OF BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL BEAR ALL COST ASSOCIATED WITH WATERLINE REPAIRS (WHICH RESULT FROM DAMAGE CAUSED BY THE CONTRACTOR) UPON COMPLETION OF PROJECTS. ALL WATER LINES SHALL BE FREE OF ALL PATCHES AND SPLICES.
8. ALL PHYSICAL TIES OF THE PROPOSED SYSTEM INTO THE EXISTING WATERLINE SHALL BE RECONNECTED AND BE MADE UNDER SUPERVISION OF THE WATER DIVISION INSPECTOR. THE CONTRACTOR SHALL FURNISH ALL MATERIALS AND ALL EQUIPMENT THAT IS REQUIRED TO MAKE TIE-INS. CITY WATER DIVISION CREWS WILL MAKE TAPS ON CITY MAINS ARRANGED THROUGH WATER DIVISION INSPECTOR (72 HOUR NOTIFICATION).
9. ALL EXISTING SERVICE CONNECTIONS TIED ONTO THE EXISTING WATERLINE SHALL BE RECONNECTED BY THE CONTRACTOR, INCLUDING RELOCATING EXISTING WATER METERS. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO NOTIFY AND COORDINATE WITH THE WATER DIVISION INSPECTOR SAID RECONNECTIONS / RELOCATIONS IN ADVANCE OF CONSTRUCTION TO AVOID DELAYS. (NO SEPARATE COSTS)
10. MINOR LENGTH OF DUCTILE IRON PIPE ADJACENT TO FITTINGS MAY BE REQUIRED AS DIRECTED BY THE WATER DIVISION INSPECTOR BASED ON CONDITIONS ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL USE D.I.P. AS DIRECTED AND SHALL BE PAID AT THE UNIT PRICE BID FOR THE APPROPRIATE SIZE WATERLINE. A MINOR LENGTH IS DEFINED AS A SINGLE LOCATION REQUIRING THE USE OF TWO JOINTS OR LESS.
11. MINOR ADJUSTMENTS IN THE LOCATIONS OF FITTINGS, VALVES, FIRE HYDRANTS, ETC. CAN BE ANTICIPATED. THE CONTRACTOR SHALL MAKE SAID MINOR ADJUSTMENTS AS DIRECTED BY THE ENGINEER AND/OR WATER DIVISION INSPECTOR AT NO INCREASE OF CONTRACT PRICE. WATER DIVISION WILL BE NOTIFIED PRIOR TO ALL CHANGES.
12. ALL NIPPLES BETWEEN FITTINGS AND VALVES ALONG MAINS SHALL BE DUCTILE IRON.
13. ALL DUCTILE IRON PIPES, VALVES, AND FITTINGS SHALL BE WRAPPED WITH (2) THICKNESSES OF 8 MIL. POLYETHYLENE AND SHALL BE RESTRAINED WITH "MEGALUG", MECHANICAL JOINT RESTRAINT OR ENGINEER APPROVED EQUAL AT ALL FITTINGS. CONCRETE THRUST BLOCKS SHALL BE PLACED BEHIND ALL FITTINGS EXCEPT WHERE LOCKING OR SWIVEL FITTINGS ARE UTILIZED, UNLESS OTHERWISE SPECIFIED BY THE WATER DIVISION ENGINEER.
14. ALL OFFSETS ARE TO BE DUCTILE IRON PIPE ASSEMBLIES LOCKED TOGETHER BY RETAINER GLANDS. DUCTILE IRON BENDS SHALL BE UTILIZED FOR ANY CHANGES IN ALIGNMENT OR GRADE.
15. IF A WATER LINE IS TO BE ABANDONED, THE CONTRACTOR WILL FILL WITH CONTROLLED LOW STRENGTH MATERIAL, "DARAFILL" BRAND OR ENGINEER APPROVED EQUAL, VALVES WILL BE REMOVED OR FILLED AS REQUIRED BY WATER DIVISION INSPECTOR.
16. CONTRACTOR SHALL COORDINATE WITH WATER DIVISION INSPECTOR AND NOTIFY ALL AFFECTED CUSTOMERS 24 HOURS PRIOR TO KILLOUT OF EXISTING WATER SYSTEM.
17. WATER DISTRIBUTION SYSTEM STANDARDS CALL FOR MAXIMUM 48" COVER ON WATERLINES. WHEN DEPTHS EXCEED 48" COVER TO AVOID OBSTRUCTION, THE USES OF BENDS COULD BE REQUIRED.
18. CONTRACTOR SHALL KEEP ALL EXISTING VALVES ACCESSIBLE DURING ALL PHASES OF CONSTRUCTION.
19. ALL NEW WATER MAINS SHALL BE INSTALLED SO THAT PIPE IDENTIFICATION MARKINGS ARE LOCATED ON THE TOP OF THE PIPE.
20. ALL SERVICE LINES UNDER PAVEMENT SHALL BE ONE INCH, INSIDE DIAMETER, MINIMUM.
21. THRUST BLOCK SHALL ONLY BE USED ON TRANSMISSION MAINS, AS DETERMINED BY THE ENGINEER. ALL THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER. MATERIAL FOR THRUST BLOCKS SHALL BE DESIGNED BY THE ENGINEER AND SHALL BE PLACED BETWEEN UNDISTURBED SOIL AND THE PIPES AND FITTINGS BEING ANCHORED. THE BLOCKING SHALL BE PLACED, SO THAT THE PIPE AND FITTINGS SHALL BE ACCESSIBLE FOR REPAIR.

ENGINEER SHALL CONTACT THE UTILITY DEPARTMENT  
FOR WATER VAULT DESIGN COORDINATION.

1. THE SEPARATION OF WATER AND WASTEWATER LINES AND THE MATERIAL USED SHALL BE IN ACCORDANCE WITH THE "RULES & REGULATIONS FOR PUBLIC WATER SYSTEMS" OF TEXAS NATURAL RESOURCE CONSERVATION COMMISSION AND THE CITY WATER DETAILS .
2. WHENEVER WATER & WASTEWATER LINES CROSS, ONE JOINT OF C900 PVC WATER LINE SHALL BE CENTERED OVER THE WASTEWATER LINE IN ADDITION TO ANY REQUIREMENTS AS DICTATED BY ITEM 1 ABOVE .

CONTRACTOR MAY BE REQUIRED BY THE WATER DIVISION INSPECTOR  
TO INSTALL CENTERED JOINTS OF DUCTILE IRON PIPE AT WATERLINE  
CROSSINGS OF EXISTING HAZARDOUS PRODUCT FLOWLINES.



NOT TO SCALE

1. ALL MAINS IN THE STREET SHALL HAVE A MINIMUM OF 36" OF COVER AND BE 12" MINIMUM BELOW SUBGRADE AT ALL POINTS AND HAVE VALVE CLEARANCES IN ACCORDANCE WITH THE VALVE DETAIL.
2. ALL MAINS (12" DIAMETER & ABOVE) IN THE STREET SHALL HAVE 48" OF COVER AT ALL POINTS.
3. ALL MAINS NOT UNDER THE STREET SHALL HAVE A MINIMUM OF 36" OF COVER AT ALL POINTS.

Diagram illustrating the required backfill and bedding for a pipe, showing two cases based on pipe diameter (D).

**Case 1: D = 3'-0" MIN. FOR PIPES < 12" DIA. / D = 4'-0" MIN. FOR PIPES ≥ 12" DIA.**

- TOPSOIL TO BE PROVIDED EQUAL OR BETTER THAN EXIST. (4" MIN. DEPTH)**
- ASPHALT OR CONCRETE PAVEMENT SECTION**
- SELECT BACKFILL MATERIAL FROM EXCAVATION COMPACTED TO 95% STD. PROCTOR DENSITY (ASTM D698) SEE TABLE 2 - ITEM A**
- CEMENT-STABILIZED SAND (1.5 SACKS CEMENT/C.Y. OF SAND) COMPACTED TO 95% STD. PROCTOR DENSITY (ASTM D698) SEE TABLE 2 - ITEM B**
- DEPTH VARIES (SEE PLANS) (FOR PIPE UNDER PAVEMENT)**
- 3'-0" MIN**
- 12"**
- FINAL BACKFILL**
- DETECTABLE WARNING TAPE 12" ABOVE PIPE**
- PIPE**
- SAND ENCASE**
- WATERLINE**
- X**
- X**

**Case 2: X = 8" MIN. FOR PIPES < 16" DIA. / X = 12" MIN. FOR PIPES ≥ 16" DIA.**

NOT TO SCALE

NOTE: (CONCRETE PAVEMENT ONLY)  
CONTRACTOR HAS OPTION TO USE CEMENT  
STABILIZED SAND OR BACKFILL WITH SELECT  
BACKFILL MATERIAL

TABLE 1  
BEDDING AND INITIAL BACKFILL  
(BELOW PIPE TO 12" ABOVE PIPE)

ALL BEDDING AND INITIAL BACKFILL SHALL CONSIST OF THE FOLLOWING OR REFER TO DESIGN ENGINEER REQUIREMENTS:  
GRANULAR BACKFILL CONSISTING OF EITHER NATURAL SAND OR SANDY GRAVEL, OR MATERIAL PRODUCED BY CRUSHING OF NATURAL STONE OR GRAVEL.

WATER LINES:

1. EXCAVATIONS <20FT. DEEP AND ABOVE WATER TABLE, USE MATERIAL MEETING THE FOLLOWING CRITERIA.

MEETING REQUIREMENTS OF ASTM D2487 FOR:

SPGP

SWGW

SP-SMGP-GM

SW-SMGW-GM

AND IN ADDITION:

PASSING 1/2" SIEVE - 100%

PASSING #4 SIEVE - 30% MINIMUM

PLASTICITY INDEX (PI) - NP TO 10 MAX.

2. IN DEEP EXCAVATIONS (>20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF:

A. CONCRETE COARSE AGGREGATE OR CRUSHED LIMESTONE; TxDOT ITEM 421; GRADE 2, 3, OR 4.

A. FOR 12" ABOVE PIPE TO BOTTOM OF TOPSOIL BACKFILL SHALL BE APPROVED SELECT MATERIAL FROM THE EXCAVATION; OR IMPORTED MATERIAL; ALL TO BE FREE OF ROCKS, DEBRIS, OR ANY CLUMPS GREATER THAN 2" IN DIAMETER; LOOSE LIFTS TO BE PLACED 10" MAX.

COMPACT MATERIAL TO 95% STD. PROCTOR (D698).

MOISTURE TO BE ADJUSTED TO ± 3% OF OPTIMUM.

B. TOPSOIL TO BE PROVIDED EQUAL OR BETTER THAN EXISTING; AND MATCH EXISTING TOPSOIL DEPTH. COMPACT TO FIX CONFLICT TO EXISTING ADJACENT TOPSOIL. (CONSTRUCTION TO BE PERFORMED BY "DOUBLE DITCH" METHOD TOP SOIL SALVAGED TO BE PLACED ON TOP)

A. FOR 12" ABOVE PIPE TO 3' BELOW BOTTOM OF ROAD BASE; BACKFILL SHALL BE SELECT MATERIAL FROM EXCAVATION OR TO BE IMPORTED MATERIAL IN EITHER CASE, ALL MATERIAL SHALL MEET THE FOLLOWING:

LL<35

PI 8-20

NO CLUMPS > 2" DIA.

MOISTURE 0 TO +3%

COMPACT 95% D698 STD PROCTOR

LOOSE LIFTS OF 10" MAX OR IF SELECT MATERIAL FROM EXCAVATION DOES NOT MEET REQUIREMENTS, THEN USE CEMENT STABILIZED SAND SEE TABLE 2-ITEM B BELOW (OR PER DESIGN ENGINEER)

B. FOR 3' BELOW BOTTOM OF ROAD BASE TO BOTTOM OF ROAD BASE:

BACKFILL SHALL BE UNIFORMLY MOISTENED AND MIXED CEMENT STABILIZED SAND (1.5 SK/C.Y.) AND SHALL MEET THE FOLLOWING REQUIREMENTS:

SAND GRADATION:

% PASSING

#455-100

#1040-100

#4025-100

#20010-20

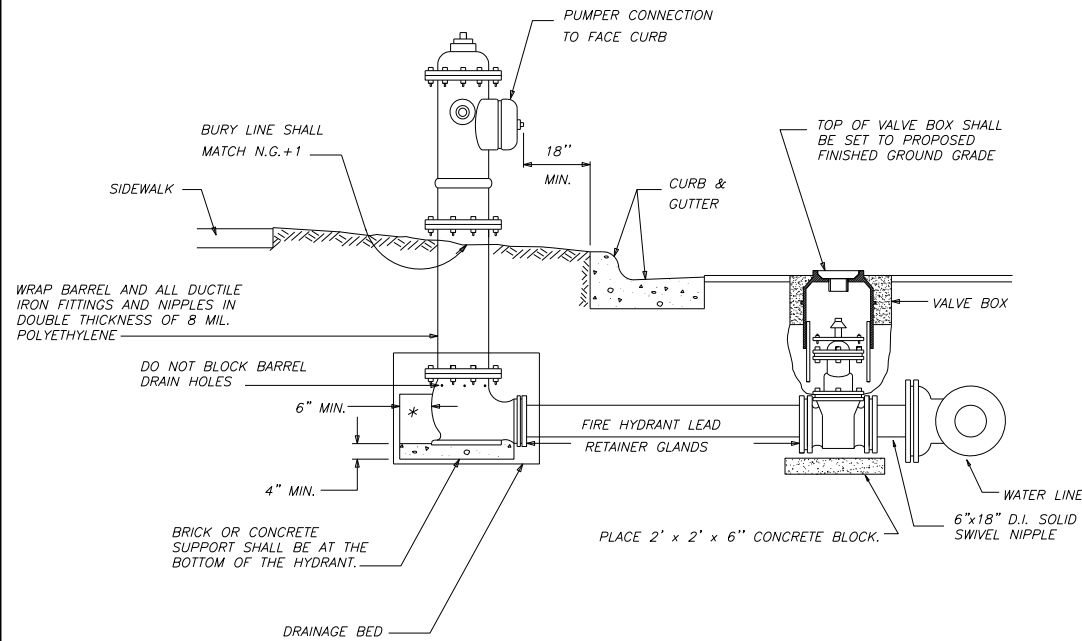
PINP-10

(OR AS PER DESIGN ENGINEER)

COMPACT TO 95% OF D698. MOISTURE TO BE ADJUSTED TO (+/-2%) OF OPTIMUM.

\*\* APPLIES IF ANY PORTION OF THE TRENCH FALLS WITHIN 1' OF THE BACK OF CURB.



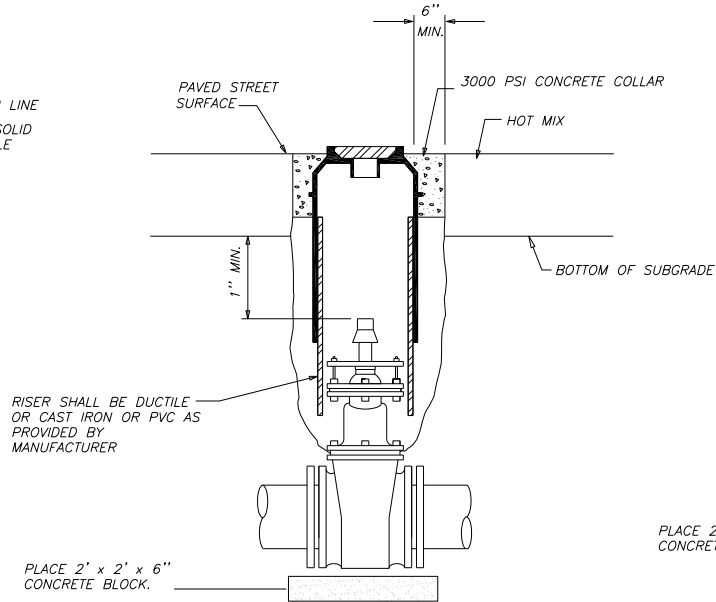


- \* **NOTE:**
1. ANYTHING LESS THAT 20' WILL BE DUCTILE IRON LOCKED TO THE VALVE.
  2. ANYTHING MORE THAN 20' SHALL REQUIRE CONCRETE THRUST BLOCK BEHIND HYDRANT AGAINST UNDISTURBED SOIL.

**FIRE HYDRANT ASSEMBLY DETAIL (TYPE 1)**

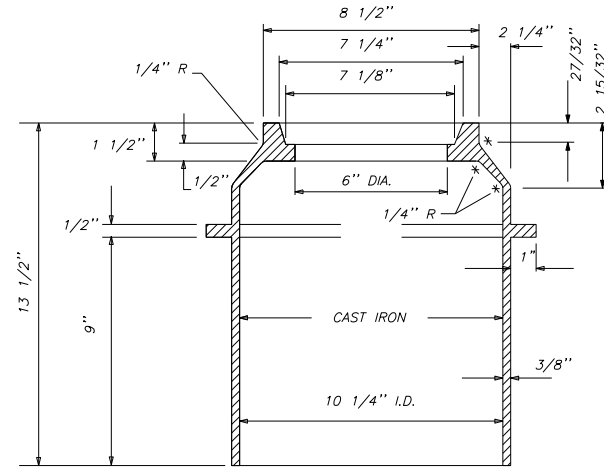
NOT TO SCALE

- FIRE HYDRANTS:**
1. DRAINAGE BED SHALL CONSIST OF CRUSHED STONE OR COARSE GRAVEL W/ COARSE SAND, MIN. VOLUME 7 CU. FT., DRAIN BED SHALL EXTEND A MIN. 6" ABOVE DRAIN OUTLET.
  2. ALL FIRE HYDRANT FITTINGS SHALL BE LOCKED TOGETHER BY LOCKING RETAINER GLANDS.
  3. FIRE HYDRANT TO BE BLOCKED AGAINST FIRM SOIL AS SHOWN.
  4. ALL HYDRANTS SHALL BE INSTALLED **PLUMB**.
  5. LARGE NOZZLE FACES ROAD, UNLESS OTHERWISE NOTED. ROTATE BARREL AS REQUIRED.
  6. HYDRANT SHOULD NOT BE SET CLOSER THAN 4' TO OBSTRUCTIONS THAT ARE IN LINE WITH NOZZLE.
  7. FIRE HYDRANT SHALL BE SET TO MANUFACTURER'S BURY LINE AT PROPOSED/EXISTING GRADE PLUS 1".
  8. **NO TAPS ARE TO BE MADE ON FIRE HYDRANT LEAD.**
  9. ON STRIPED, UNDIVIDED, AND DIVIDED STREETS TYPE II-B-B (BLUE REFLECTORS) SHALL BE INSTALLED ON OUTSIDE LANES OF TRAFFIC IN FRONT OF ALL FIRE HYDRANTS WITHIN PROJECT LIMITS, SUBSIDIARY TO FIRE HYDRANT ASSEMBLIES UNLESS NOTED OTHERWISE. THE BLUE REFLECTORS SHALL BE INSTALLED 6" TO THE SIDE OF THE TRAFFIC LANE STRIPING CLOSEST TO THE FIRE HYDRANT. ON UNSTRIPED STREETS, TYPE II-B-B (BLUE REFLECTORS) RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN THE CENTER OF THE STREET.



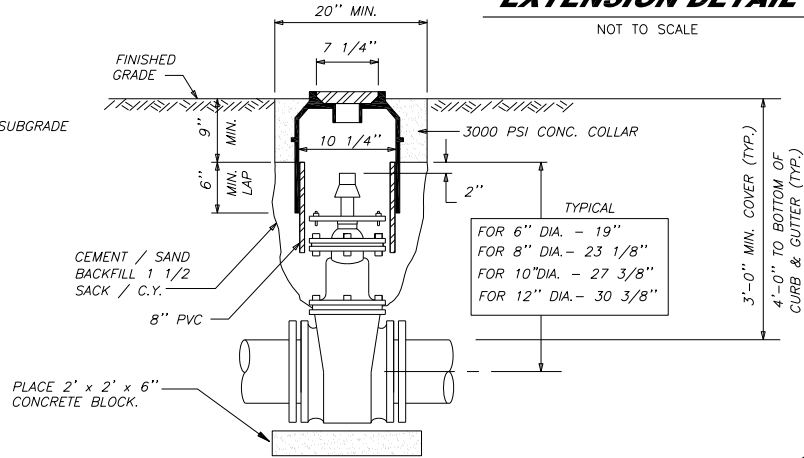
**VALVE BOX DETAIL @ PAVEMENT**

NOT TO SCALE



**EXTENSION DETAIL**

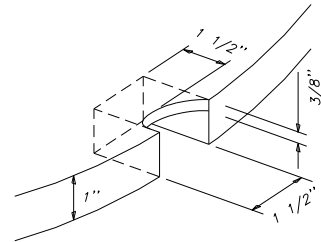
NOT TO SCALE



**VALVE BOX DETAIL @ NATURAL GROUND**

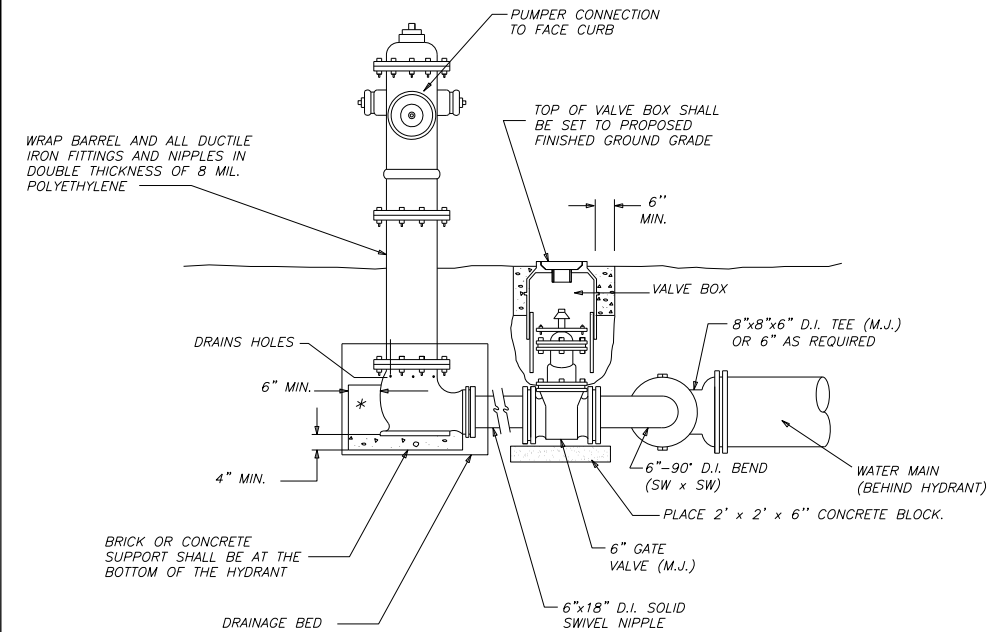
NOT TO SCALE

ALL VALVES SHALL BE HOUSED IN APPROVED VALVE BOXES



**PICK NOTCH**

NOT TO SCALE

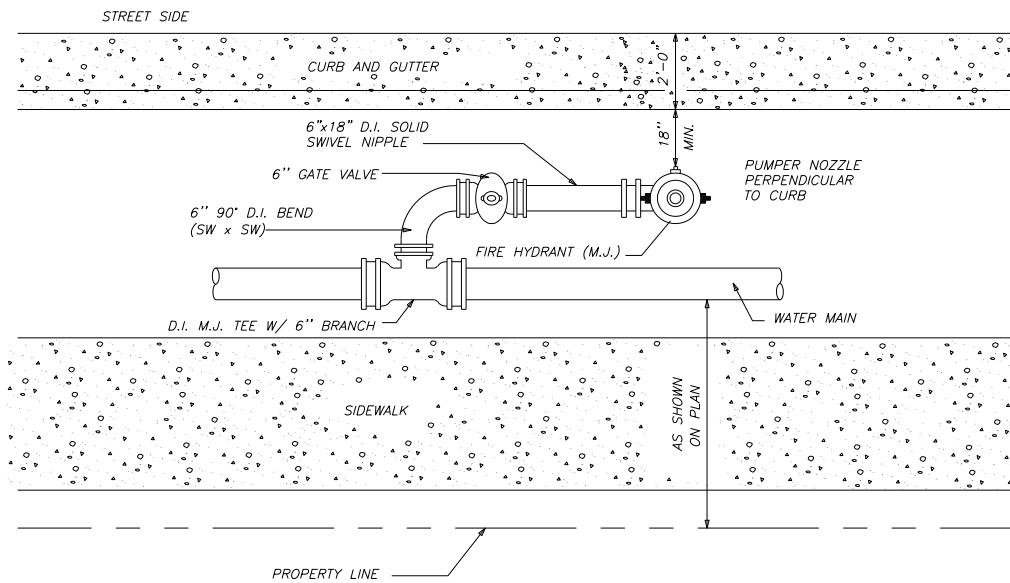


- \* **NOTE:**
1. ANYTHING LESS THAT 20' WILL BE DUCTILE IRON LOCKED TO THE VALVE.
  2. ANYTHING MORE THAN 20' SHALL REQUIRE CONCRETE THRUST BLOCK BEHIND HYDRANT AGAINST UNDISTURBED SOIL.

**FIRE HYDRANT ASSEMBLY DETAIL (TYPE 2)**

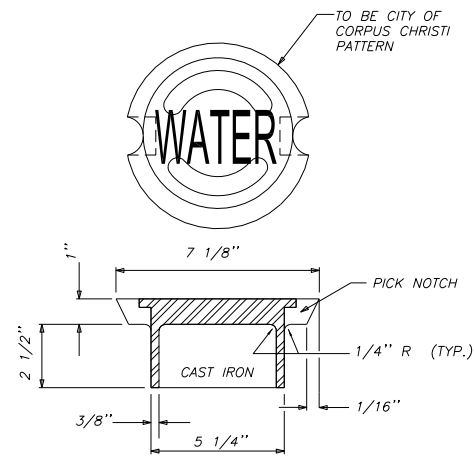
WATER LINE BEHIND CURB

NOT TO SCALE



**FIRE HYDRANT ASSEMBLY DETAIL (TYPE 2)**

NOT TO SCALE



**LID DETAIL**

NOT TO SCALE

THE CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT AFFIRMS THAT THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED OTHER THAN TO FILL IN THE PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK

CONSULTANT'S SHEET No.

**CITY of CORPUS CHRISTI  
TEXAS**  
Department of Engineering Services

DESCRIPTION

CITY OF CORPUS CHRISTI  
**WATER STANDARD DETAILS**  
FIRE HYDRANT, VALVE BOX AND LID

2 OF 4

BY

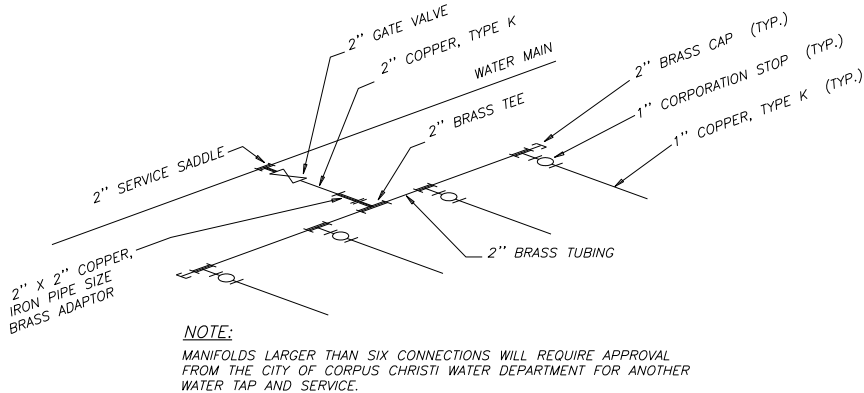
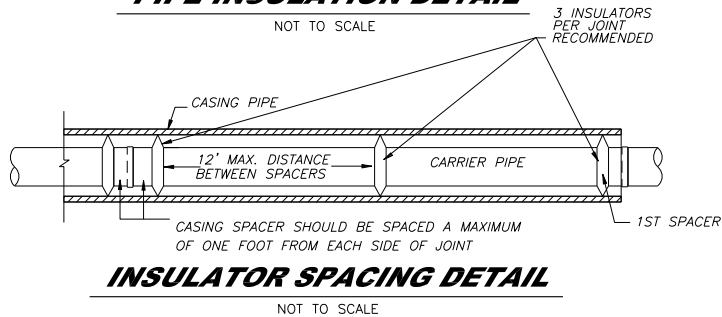
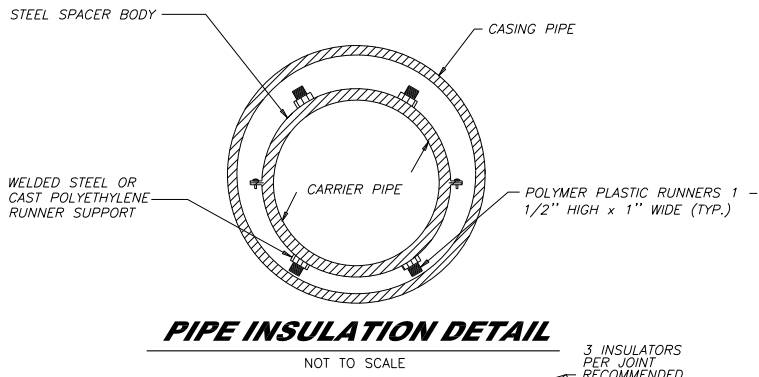
DATE

REVISION NO.

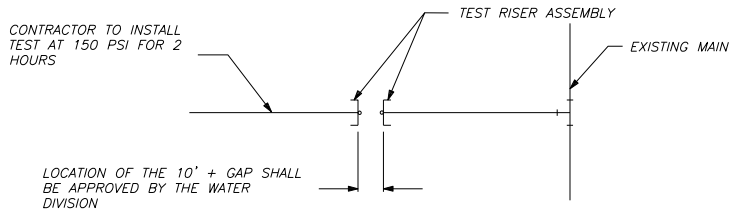
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RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_





**THREE TO SIX WATER CONNECTIONS**  
NOT TO SCALE

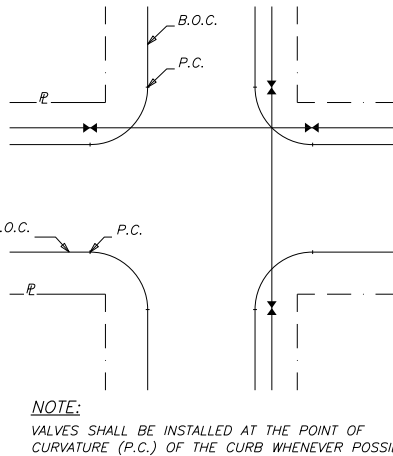


1. HYDROSTATIC TEST: WATER FOR FILLING THE NEW WATER LINE AND PERFORMING TESTS WILL BE FURNISHED TO THE CONTRACTOR BY THE CITY OF CORPUS CHRISTI THROUGH A STANDARD WATER CONSTRUCTION METER CONNECTION. STANDARD WATER CONSTRUCTION METER AND GAUGE WILL BE SUPPLIED BY THE CITY AFTER THE CONTRACTOR HAS PAID ALL APPLICABLE FEES FOR THE WATER CONSTRUCTION METER. THE TEST PUMP WITH APPROPRIATE CONNECTION POINTS AS APPROVED BY THE WATER SUPERINTENDENT FOR THE INSTALLATION OF METER AND GAUGE SHALL BE FURNISHED BY THE CONTRACTOR. THE METER SHALL BE DIRECTLY CONNECTED TO THE MAIN OR PIPE BEING TESTED BY THE USE OF COPPER TUBING OR AN APPROVED REINFORCED HOSE. THE METER SHALL BE PROTECTED AGAINST EXTREME PRESSURES BY THE USE OF A ONE (1") INCH SAFETY RELIEF VALVE SET AT THE TEST PRESSURE PLUS TEN POUNDS PER SQUARE INCH AND FURNISHED BY THE CITY (48 HOURS NOTIFICATION).
2. BACTERIOLOGICAL TEST: CONTRACTOR SHALL FURNISH AND INSTALL TEST RISER ASSEMBLY. AFTER BACTERIOLOGICAL SAMPLE PASSES TEST, CONTRACTOR SHALL REMOVE TEST RISER ASSEMBLIES AND TIE NEW SYSTEM TO EXISTING UNDER THE SUPERVISION OF THE WATER DIVISION INSPECTOR. CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT THAT IS REQUIRED TO MAKE TIE / CONNECTION. CONTRACTOR WILL SCHEDULE & COORDINATE WITH WATER DIVISION INSPECTOR ON DATE & TIME OF TIE-IN. (24 HOURS NOTIFICATION)
3. CONTRACTOR SHALL FURNISH AND INSTALL TAPPING SLEEVE OR SADDLE AND TAPPING GATE VALVE AND VALVE BOX COMPLETE. CITY TO MAKE TAP (72 HOURS NOTIFICATION)

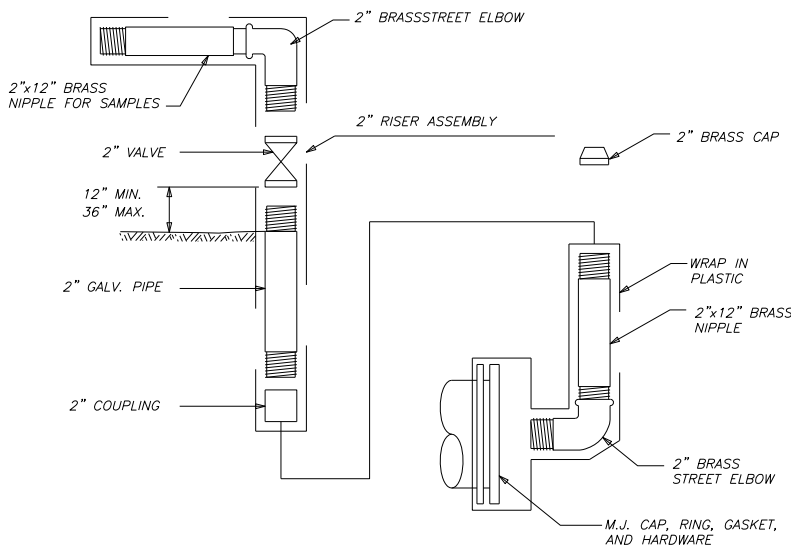
**DETAIL "A"**  
**TEST RISER ASSEMBLY CONNECTION**  
NOT TO SCALE

### CASING SPACERS

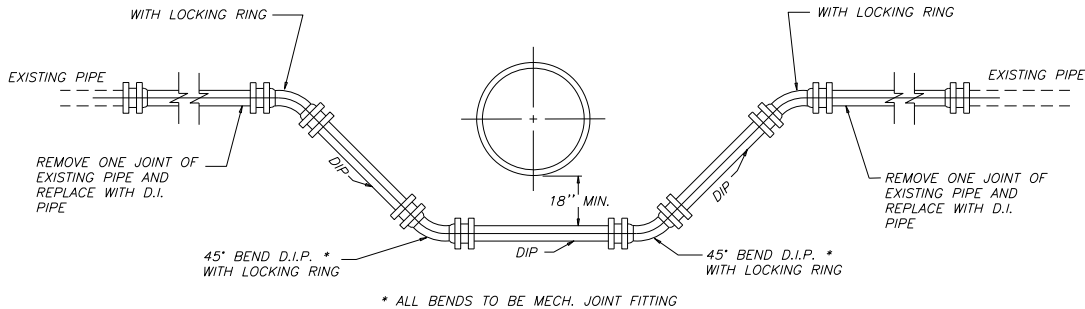
- A. ALL CARRIER PIPE IN CASING INSTALLED BY JACKING OR BORING SHALL BE SUPPORTED BY BOLT-ON STYLE CASING SPACERS, AS MANUFACTURED BY ADVANCE PRODUCTS INC. OR ENGINEER APPROVED EQUAL.
- B. CASING SPACERS FOR PIPE INSTALLED IN CASING SHALL HAVE A FUSION BONDED EPOXY CARBON STEEL BODY, NEOPRENE OR PVC LINER. STEEL SUPPORTS AND U.H.M.W. POLYETHYLENE RUNNERS.
- C. CASING SPACERS SHALL BE SIZED TO SECURELY FASTEN ON TO THE CARRIER PIPE BARRIER O.D. AND SHALL BE FURNISHED WITH A MINIMUM RUNNER HEIGHT TO PREVENT THE PIPE FROM RESTING OR SLIDING ON ITS JOINTS DURING THE INSTALLATION.
  1. POSITIONING OF SPACERS SHOULD ENSURE THAT THE CARRIER PIPE IS ADEQUATELY SUPPORTED THROUGHOUT ITS LENGTH.
  2. SPACERS AT EACH END SHALL NOT BE FURTHER THAN 6" FROM THE END OF CASING REGARDLESS OF SIZE OF CASING AND CARRIER PIPE OR TYPE OF SPACER USED.
- D. FOR PIPE WITH MECHANICAL JOINTS, FLANGES OR BELL AND SPIGOT JOINTS, CASING SPACERS SHALL BE INSTALLED WITHIN ONE FOOT ON EACH SIDE OF THE BELL OR FLANGE AND ONE IN THE CENTER OF THE JOINT WHEN 18 TO 20 FOOT LONG JOINTS ARE USED. MAXIMUM SPACING FOR SPACERS IS 12 FEET.



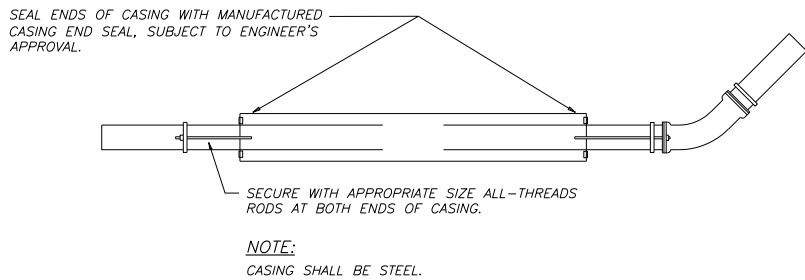
**TYPICAL VALVE INSTALLATION AT INTERSECTIONS**  
NOT TO SCALE



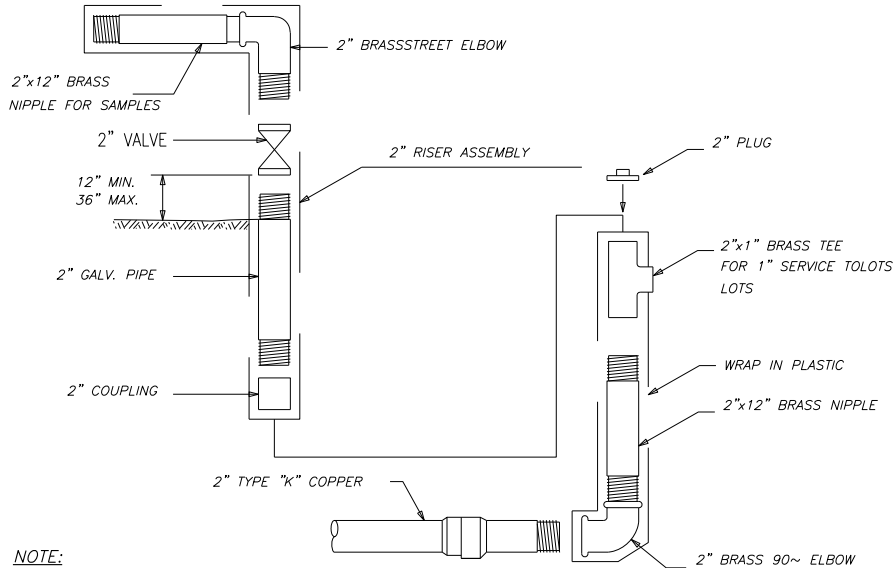
**DETAIL "B"**  
**TEST RISER ASSEMBLY**  
NOT TO SCALE  
FURNISHED AND INSTALLED BY CONTRACTOR



**WATERLINE ADJUSTMENT DETAIL**  
NOT TO SCALE



**TYPICAL CASING DETAIL**  
NOT TO SCALE



**DETAIL "C"**  
**TEST RISER ASSEMBLY**  
NOT TO SCALE  
FURNISHED AND INSTALLED BY CONTRACTOR

THE CITY OF CORPUS CHRISTI STANDARD DETAIL SHEET IS AUTHORIZED FOR USE AS APPLICABLE TO THIS PROJECT BY THE ENGINEER OR ARCHITECT WHO'S SEAL APPEARS ON THIS SHEET. THE ENGINEER/ARCHITECT AFFIRMS THAT THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED OTHER THAN TO FILL IN THE PROJECT SPECIFIC INFORMATION IN THE TITLE BLOCK

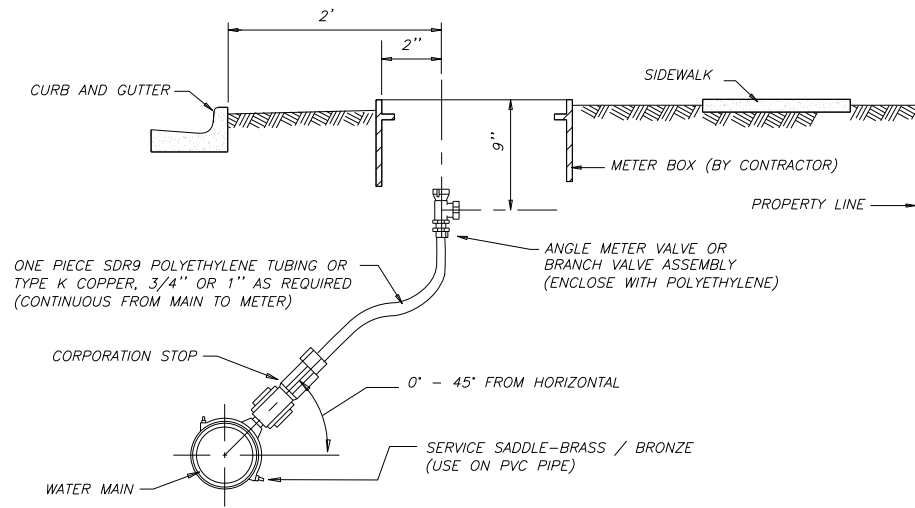
CONSULTANT'S SHEET No.

**CITY of CORPUS CHRISTI TEXAS**  
Department of Engineering Services

**CITY OF CORPUS CHRISTI**  
**WATER STANDARD DETAILS**  
ADJUSTMENTS, CASING DETAILS, RISER DETAILS & TYP. VALVE LAYOUT

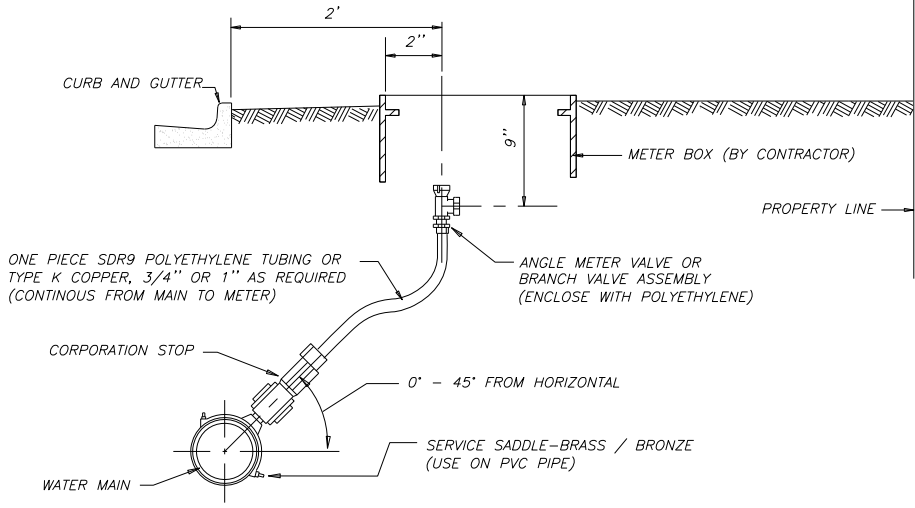
SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_



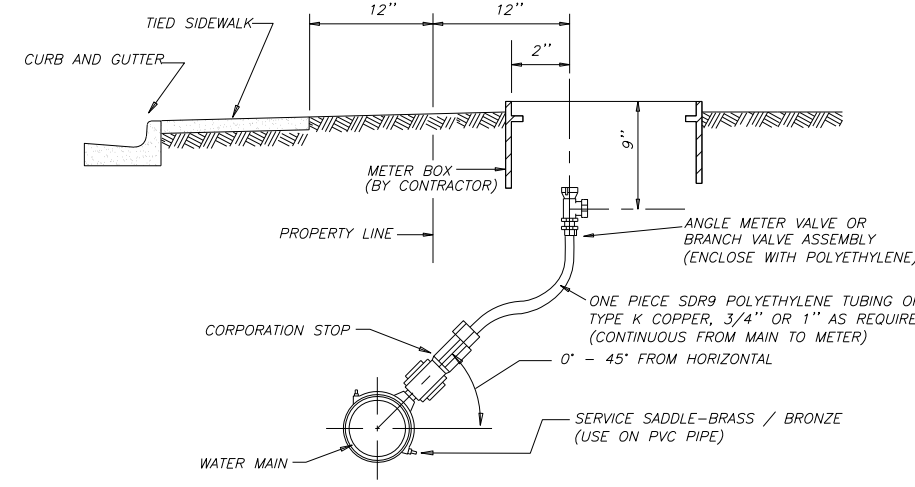
### SERVICE WITH SIDEWALK

NOT TO SCALE



### SERVICE WITHOUT SIDEWALK

NOT TO SCALE

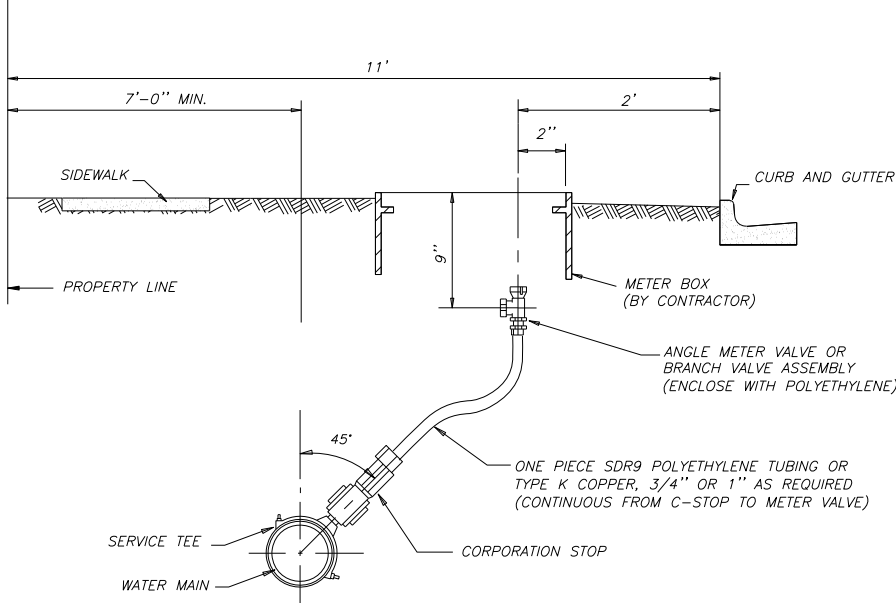


### SERVICE WITH SIDEWALK TIED TO CURB

NOT TO SCALE

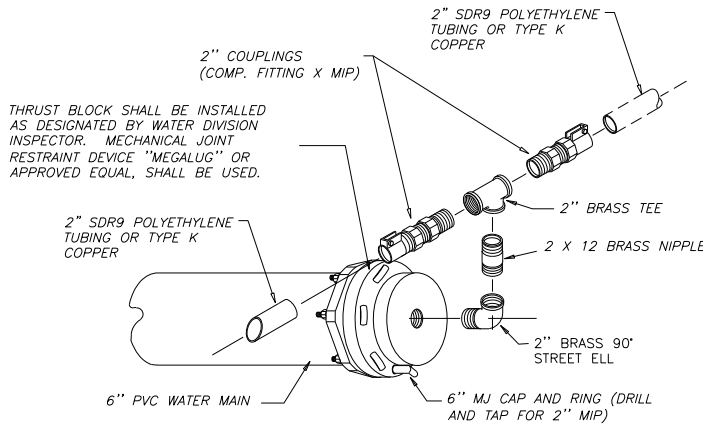
#### NOTES:

1. IF THERE IS LESS THAN 2' FROM BACK OF SIDEWALK TO PROPERTY LINE, THE METER BOX SHALL BE PLACED 1' BEHIND PROPERTY LINE AND UTILITY EASEMENT WILL BE REQUIRED.
2. IF THERE IS MORE THAN 2' FROM BACK OF SIDEWALK TO PROPERTY LINE, THE METER BOX SHALL BE PLACED BEHIND SIDEWALK.
3. THE WATER DIVISION WILL APPROVE ANY PLACEMENT OF A SERVICE LINE IN A TIEDSIDEWALK SITUATION.



### TYPICAL CUL-DE-SAC SERVICE

NOT TO SCALE

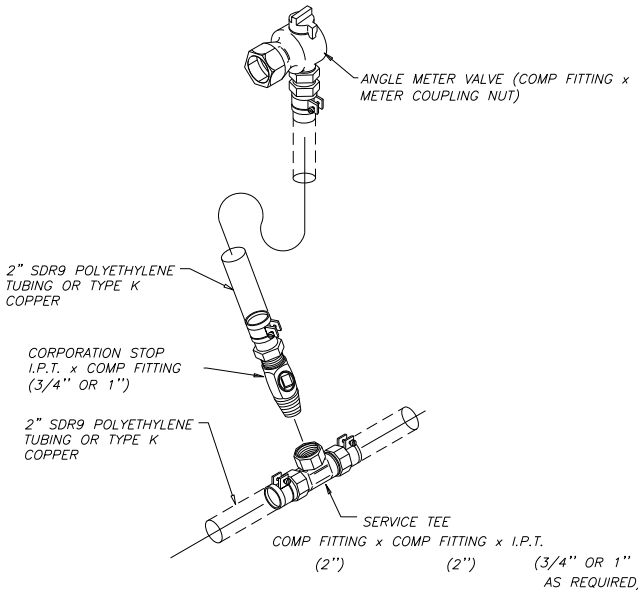


#### NOTE:

NO MORE THAN 3 LOTS SHALL BE SERVED PER LEG.

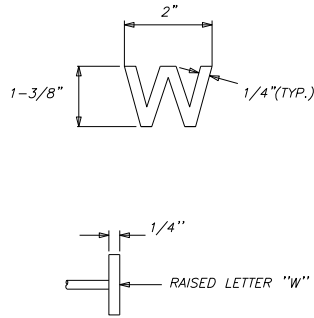
### TYPICAL CONNECTION DETAIL

NOT TO SCALE

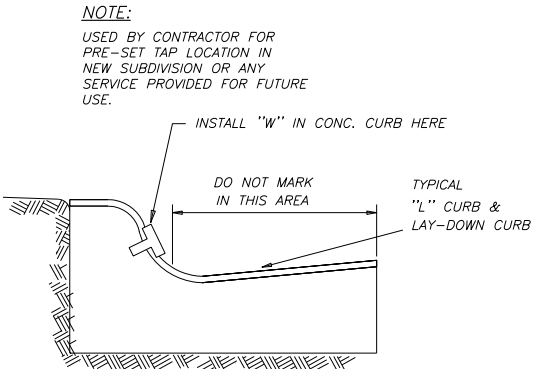


### TYPICAL CONNECTION DETAIL

NOT TO SCALE



### BRASS "W" DETAIL



### MARKER LOCATION

### PRE-SET SERVICE LINE MARKER DETAILS

NOT TO SCALE

### SERVICE LINE MATERIALS

#### SERVICE CLAMPS

FOR 3/4", 1", 1 1/2" I.P. THREAD TAPS FOR 6" MAINS; 2" I.P. THREAD CLAMP TAP CONNECTION ALLOWED FOR 8" AND LARGER MAINS.

#### CORPORATION STOPS

3/4", 1", 1 1/2", AND 2" REQUIRED WITH I.P. THREAD INLET BY COPPER COMPRESSION OUTLET WITH CLAMP - CORPORATION STOP REQUIRED AT ALL SERVICE TAPS.

#### ONE PIECE SDR9 POLYETHYLENE TUBING OR TYPE K COPPER

REQUIRED FOR ALL SERVICE LINES BETWEEN MAIN TO METER - SIZES REQUIRED 3/4", 1", 1 1/2", AND 2" (NO SPLICES ALLOWED)

#### ANGLE METER STOP

REQUIRED AT ALL METERS - SIZES 3/4" & 1" - INSTALL 3/4" UNLESS DIRECTED OTHERWISE - COPPER COMPRESSION W/ CLAMP INLET BY METER COUPLING NUT OUTLET.

#### METER (BY OTHERS)

#### METER ADAPTER AND CHECK VALVE (BY OTHERS)

REQUIRED AT ALL METERS - SIZES 3/4" & 1" - INSTALL 3/4" UNLESS DIRECTED OTHERWISE - METER NUT INLET BY 3/4" MALE I.P. OUTLET.

#### ADAPTER COUPLING (BY OTHERS)

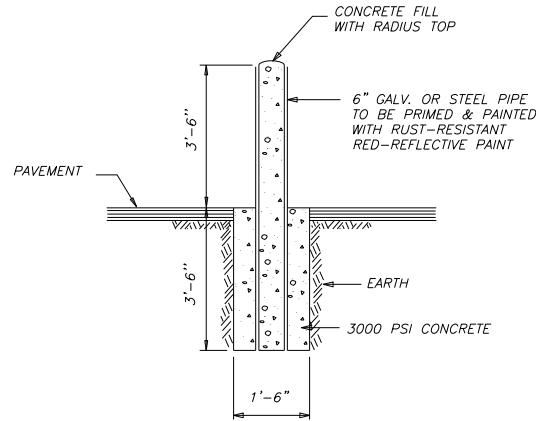
REQUIRED AT ALL METERS - 3/4" & 1" - FEMALE I.P. BY PVC COMPRESSION.

#### METER BOX (BY CONTRACTOR)

THE METER BOX AND LID ARE TO BE PROVIDED AND INSTALLED BY THE CONTRACTOR (DEVELOPER). METER BOX SHALL BE SIP INDUSTRIES (6401) OR SIGMA CORPORATION (MBP 166). THE METER BOX LID SHALL BE DFW PLASTICS (1017-1-LID)

#### BRASS FITTINGS

BRASS FITTINGS SHALL COMPLY WITH A.W.W.A. C800-66 AND BE WRAPPED IN POLYETHYLENE.



#### NOTE:

DO NOT PLACE BOLLARD IN FRONT OF HOSE OUTLETS

### BOLLARD DETAIL

NOT TO SCALE

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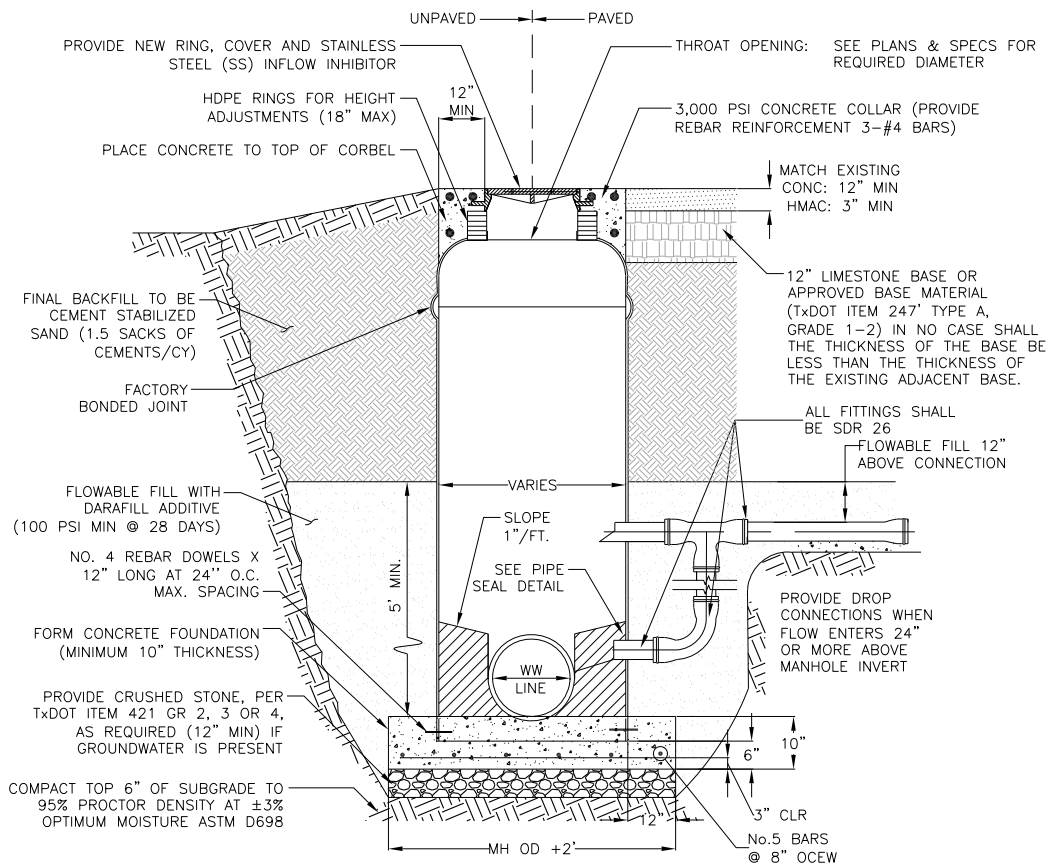
CONSULTANT'S SHEET No.

CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
WATER STANDARD DETAILS  
MAIN TO SERVICE DETAILS AND OTHERS  
4 OF 4

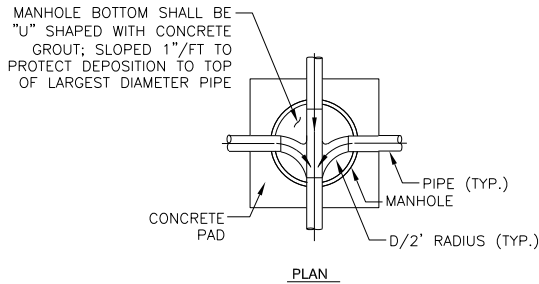
SHEET \_\_\_\_\_ of \_\_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_



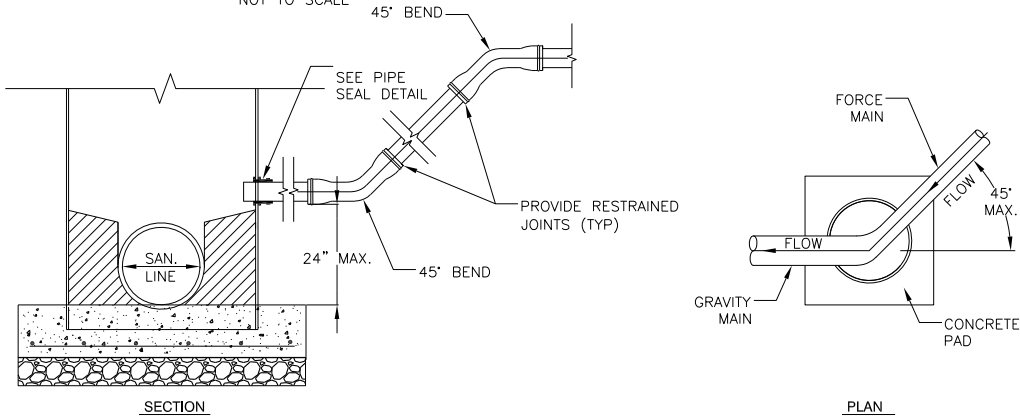
### FIBERGLASS MANHOLE

NOT TO SCALE



### WASTEWATER MANHOLE (BOTTOM)

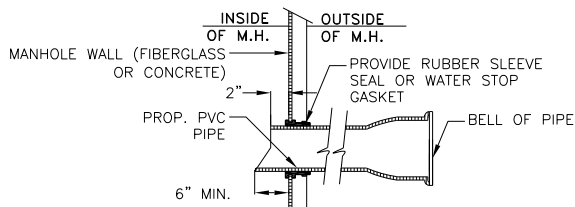
NOT TO SCALE



- NOTES:
- ALL BENDS SHALL BE DUCTILE IRON WITH RESTRAINED JOINTS.
  - INFLUENT FORCE MAIN MUST BE NO MORE THAN 45' FROM PARALLEL WITH DOWNSTREAM FLOW DIRECTION.

### FORCE MAIN DISCHARGE MANHOLE DETAIL

NOT TO SCALE



- NOTES:
- INSTALL SEAL IN ACCORDANCE WITH MFGS. SPECS.
  - USE RUBBER SEAL ASSEMBLY APPROVED BY UTILITY DEPARTMENT. (TPSMHA OR PIPECONX OR INSERT A TEE)

### PIPE SEAL DETAIL

NOT TO SCALE

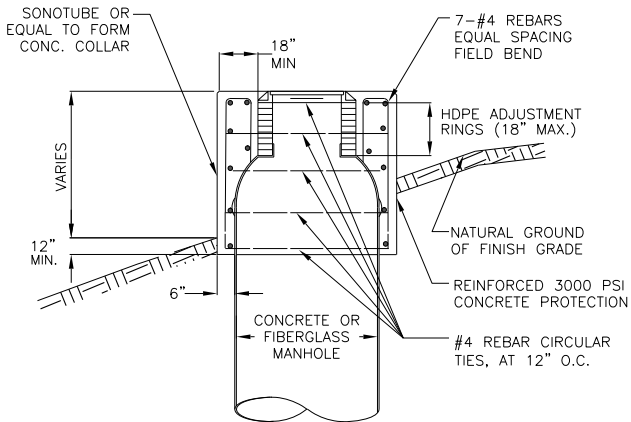
### GENERAL WASTEWATER CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND EXAMINE LOCAL CONDITIONS TO BE ENCOUNTERED, IMPROVEMENTS TO BE PROTECTED, AND PERMITS AND FEES TO BE REQUIRED, ALONG WITH OTHER RESEARCH THAT IS NECESSARY TO ENSURE THAT THE CONTRACTOR THOROUGHLY UNDERSTANDS THE PROJECT AND IS FULLY AWARE OF ALL THE CONDITIONS AND CONSTRAINTS THAT MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO ALL TCEQ REGULATIONS PER 30 TAC CHAPTER 217 AND TRENCH SAFETY FOR EXCAVATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL AND MUST ADHERE TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL FIBERGLASS MANHOLES SHALL BE MONOLITHIC WITH 0.50\"/>
- THE MANHOLE WALL PENETRATIONS FOR PIPE (8\"/>
- FOR FIBERGLASS MANHOLES, THE MANHOLE FOUNDATION MAY BE PRECAST ON GROUND SURFACE. (PROCEDURE MUST BE SUBMITTED TO THE ENGINEERING SERVICES CONSTRUCTION ENGINEER FOR APPROVAL.)
- THE CONTRACTOR SHALL PROVIDE PROTECTIVE COATING ON ALL EXPOSED CONCRETE SURFACES, INCLUDING CORBEL AREA, MANHOLE WALLS AND MANHOLE BENCH.
- FOR FIBERGLASS MANHOLES WITH WATERTIGHT BOTTOM, ADHERE TO ALL MANUFACTURER REQUIREMENTS. FIBERGLASS BOTTOM AND BENCH MUST ALSO BE FACTORY INSTALLED.

| MANHOLE REQUIREMENTS |                  |
|----------------------|------------------|
| PIPE DIAMETER        | MANHOLE DIAMETER |
| ≤18"                 | 4'               |
| 18"< TO ≤36"         | 5'               |
| 36"< TO ≤42"         | 6'               |

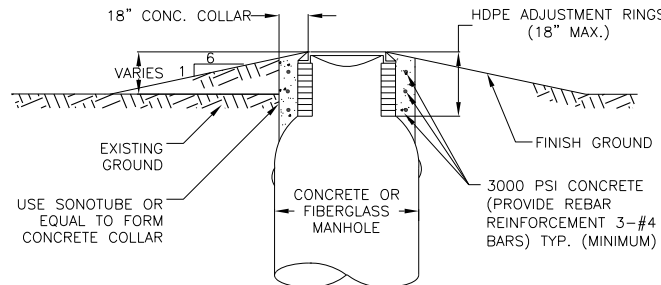
| APPROVED COATINGS TABLE |                |
|-------------------------|----------------|
| MANUFACTURER            | MODEL NAME     |
| JEFFCOAT                | JEFFCOAT 326   |
| RAVEN LINING SYSTEM     | RAVEN 405      |
| SHERWIN WILLIAMS        | DURAPLATE 5800 |
| CARBOLINE               | PHENOLINE 309  |

NOTE:  
COAT ALL CONCRETE SURFACES INCLUDING BENCH & WALLS.



### MANHOLE PROTECTION IN UNPAVED AREAS (CULTIVATED/SPECIAL)

NOT TO SCALE



### MANHOLE PROTECTION IN UNPAVED AREAS (RESIDENTIAL)

NOT TO SCALE

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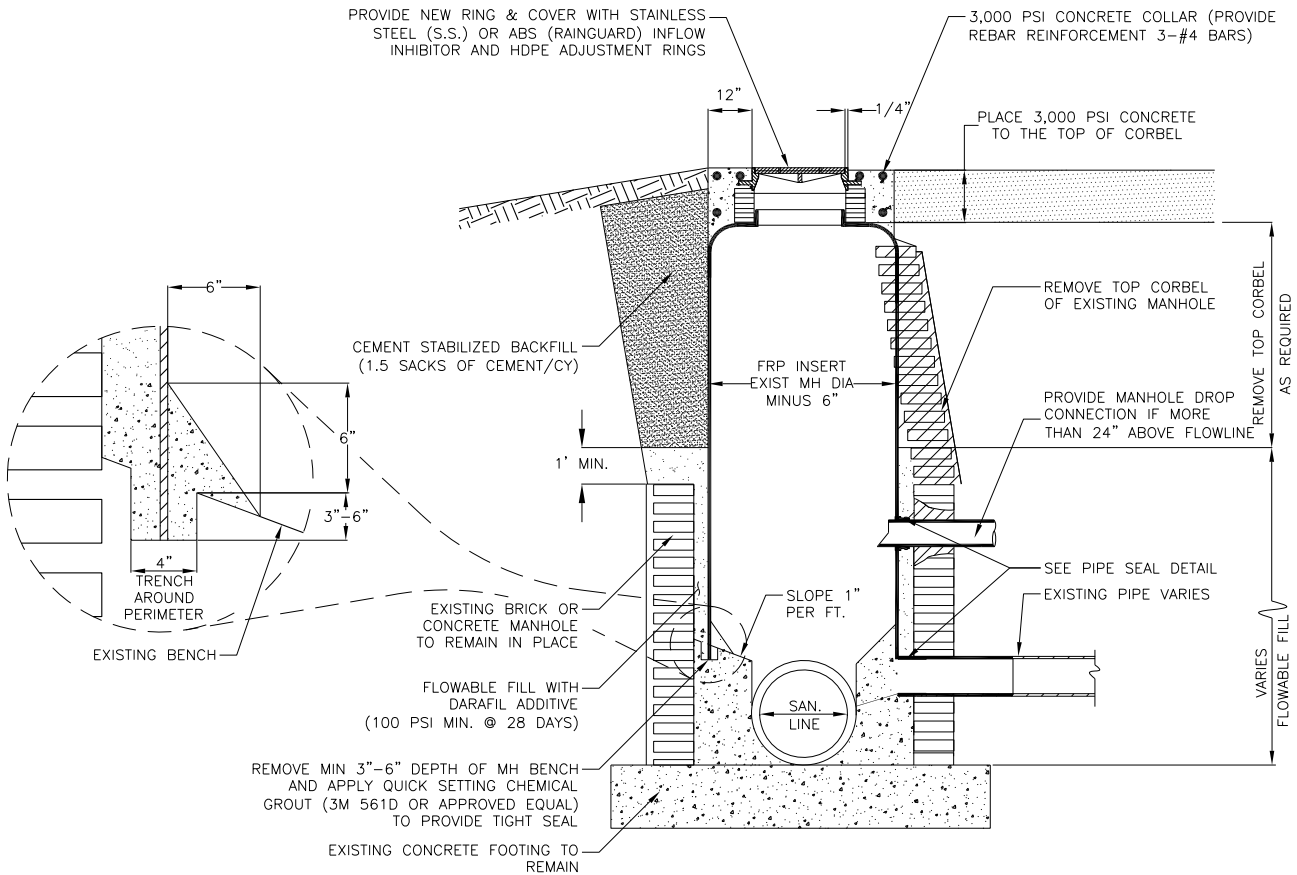
**CITY OF CORPUS CHRISTI**  
TEXAS  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
WASTEWATER STANDARD DETAILS  
MANHOLE INSTALLATION

1 OF 4

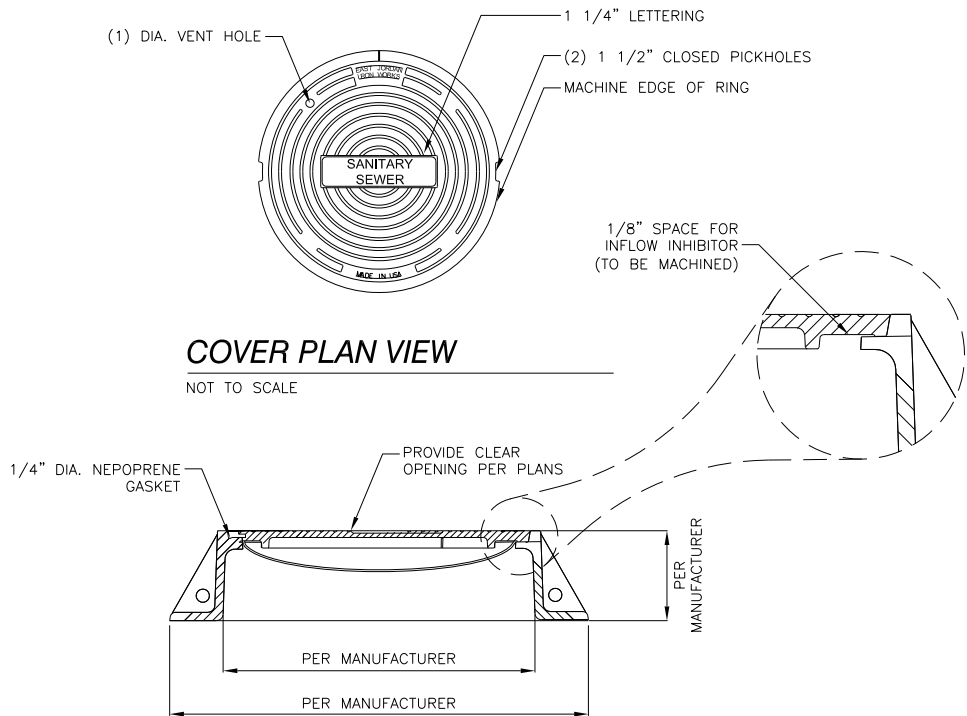
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RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_



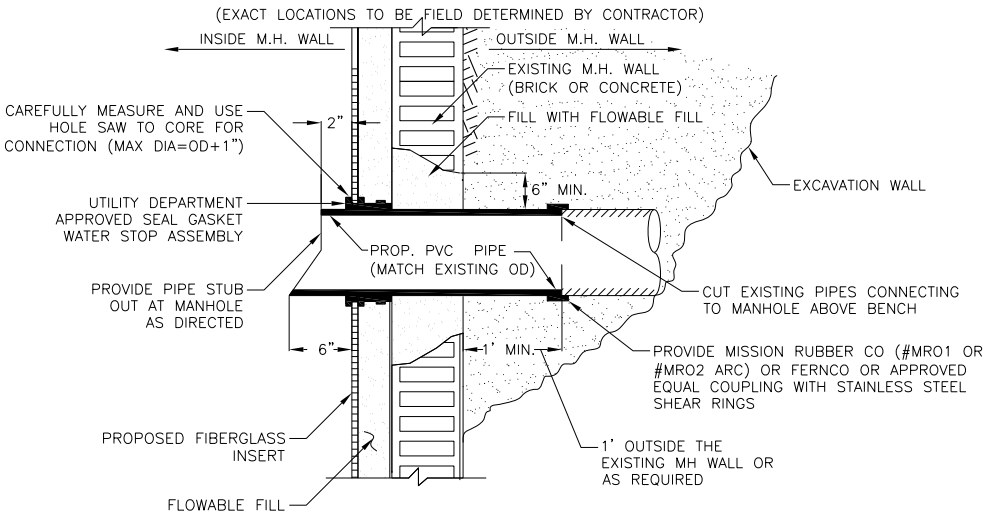
FRP INSERT REHABILITATION OF EXISTING MANHOLE

NOT TO SCALE



FRP INSERT REHABILITATION OF EXISTING MANHOLE NOTES:

1. THE CONTRACTOR SHALL FIELD-VERIFY THE EXISTING MANHOLE DIAMETER, FLOW LINE, RIM ELEVATION, NUMBER OF LATERALS, LOCATIONS, SIZES, AND OTHER INFORMATION NEEDED TO REHABILITATE EACH MANHOLE.
2. PRIOR TO INSTALLING CONTROL OF FLOW OR INITIATING MANHOLE REPAIRS, THE CONTRACTOR SHALL PLACE BARRICADES AND SIGNS TO DIVERT TRAFFIC AND PEDESTRIANS PER THE APPROVED TRAFFIC CONTROL PLAN, AS REQUIRED.
3. THE CONTRACTOR SHALL PREPARE THE INTERIOR OF THE EXISTING FOUNDATION STRUCTURE BY REMOVING ALL DEFECTIVE GROUT AND DEBRIS/BLOCKAGES, MECHANICALLY ROUGHEN THE ENTIRE INVERT, AND CLEAN THE INTERIOR WITH A HIGH-PRESSURE WATER JET.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF THE RESULTING SLUDGE AND DEBRIS AT AN APPROVED SITE, ACCORDING TO ALL PERTINENT WASTE DISPOSAL REGULATIONS.
5. THE CONTRACTOR SHALL USE QUICK-SETTING, NON-SHRINK CONCRETE GROUT TO SEAL AND RESHAPE THE BOTTOM. SUBMIT PROPOSED MATERIALS TO BE USED TO THE ENGINEER FOR APPROVAL.
6. PROVIDE COATING TO EXPOSED CONCRETE SURFACES WITH APPROVED SYSTEM TO PREVENT CORROSION.
7. FRP INSERT SHALL COMPLY WITH ASTM D3753 WITH SINGLE PIECE MONOLITHIC BARREL AND CORBEL CONSTRUCTION WITHOUT SEAMS, JOINTS OR SECTIONS. WALL THICKNESS SHALL PROVIDE AN AASHTO H-20 LOAD RATING AND WALL STIFFNESS OF 36 PSI MIN.
8. CUT BOTTOM OF FRP INSERT TO FIT EVENLY ON BENCHES OR CHIP BENCHES OUT TO EVENLY SUPPORT INSERT.
9. SEAL ANNULAR SPACE AROUND EXIST LINES WITH JUTE ROPE AND CHEMICAL GROUT.



FRP INSERT PIPE SEAL DETAIL

NOT TO SCALE

ROADWAY MANHOLE RING AND COVER:

1. THE CONTRACTOR SHALL PROVIDE STAINLESS STEEL (S.S.) INFLOW INHIBITOR WITH SS TETHER SECURED TO MANHOLE WALL, SUCH THAT THE INNER LID IS FLUSH WITH THE OUTER LID.
2. TRAFFIC SHALL BE RESTRICTED FROM MANHOLE FOR 48 HOURS AFTER THE PLACEMENT OF CONCRETE, AND COLLAR SHALL PROVIDE A SUFFICIENT, CLEAR OPENING TO ACCOMMODATE THE SPECIFIED MANHOLE COVER.
3. AASHTO-M-306 (LATEST REVISION) PROOF LOAD TESTING IS REQUIRED (40,000 LBS) AND MUST BE INSPECTED. PRIOR TO INSTALLATION, THE RESULTS OF THE TEST SHALL BE SUBMITTED TO THE CITY.
4. THE MANUFACTURING FACILITIES FOR ALL PROVIDED RING AND COVER ASSEMBLIES SHALL MEET OR EXCEED ALL EPA ENVIRONMENTAL STANDARDS AND OSHA SAFETY STANDARDS. THE CASTINGS SHALL BE MANUFACTURED FROM RECYCLED MATERIALS. THE CONTRACTOR SHALL PROVIDE CERTIFICATION.
5. GRAPHITE COATING SHALL BE APPLIED TO ALL WASTEWATER MANHOLE RING AND COVERS.

| CLEAR OPENING | MANUFACTURER (1)       | MODEL NUMBER*                      | INFLOW INHIBITOR                                      |
|---------------|------------------------|------------------------------------|-------------------------------------------------------|
| 30"           | EAST JORDAN IRON WORKS | COVER- V1430<br>FRAME- V1420       | REQUIRED ON ALL INSTALLATIONS PER CITY SPECIFICATIONS |
|               | U.S. FOUNDRY           | COVER- #9210048<br>FRAME- #8021361 |                                                       |
|               | NEENAH FOUNDRY         | DF-1274                            |                                                       |

(1) OR APPROVED EQUAL (MADE IN THE USA)

RING & COVER APPROVED LIST

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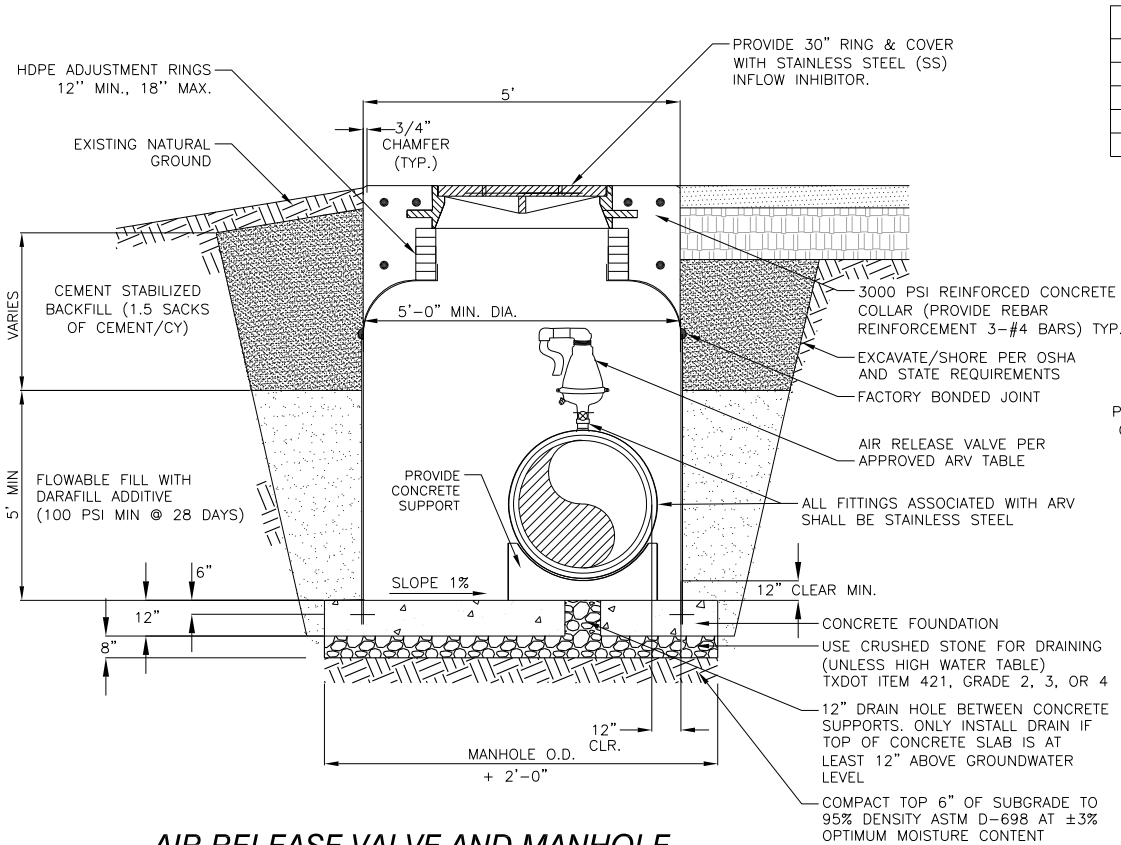
CITY OF CORPUS CHRISTI  
TEXAS  
Department of Engineering Services



CITY OF CORPUS CHRISTI  
WASTEWATER STANDARD DETAILS  
REHABILITATION OF EXISTING MANHOLE & MANHOLE RING AND COVER DETAILS  
2 OF 4

SHEET \_\_\_\_ of \_\_\_\_  
RECORD DRAWING NO.

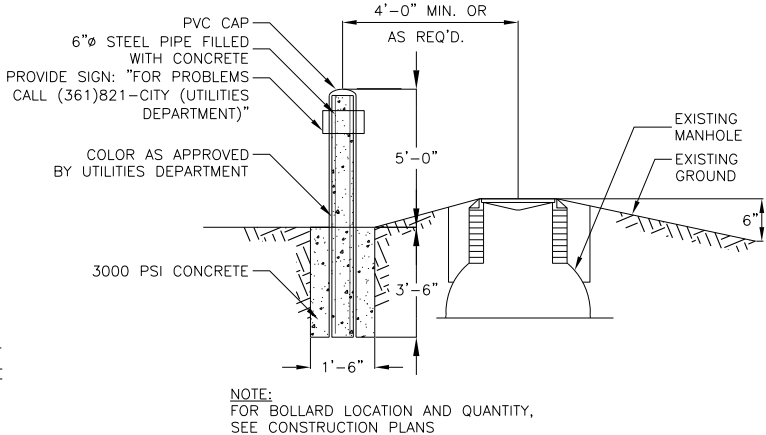
CITY PROJECT #



AIR RELEASE VALVE AND MANHOLE

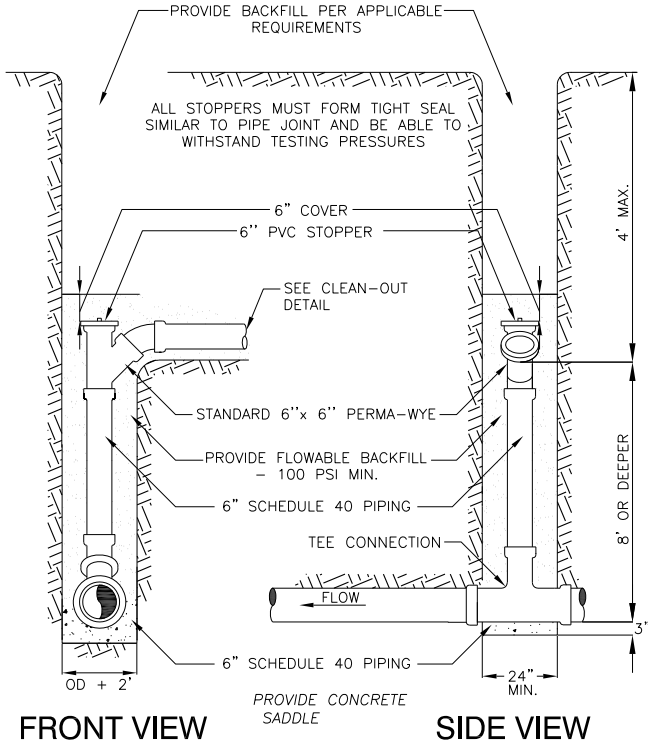
NOT TO SCALE

| APPROVED ARVs |                         |          |
|---------------|-------------------------|----------|
| MANUFACTURER  | MODEL NAME              | MATERIAL |
| A.R.I.        | D-025 OR D-025 SHORT    | 316 SS   |
| H-TEC         | MODEL 986 (SS) AND 988  |          |
| VENT OMAT     | MODEL RGXII (ST. STEEL) |          |
| VALMATIC      | VM 48AS OR VM 49AS      |          |



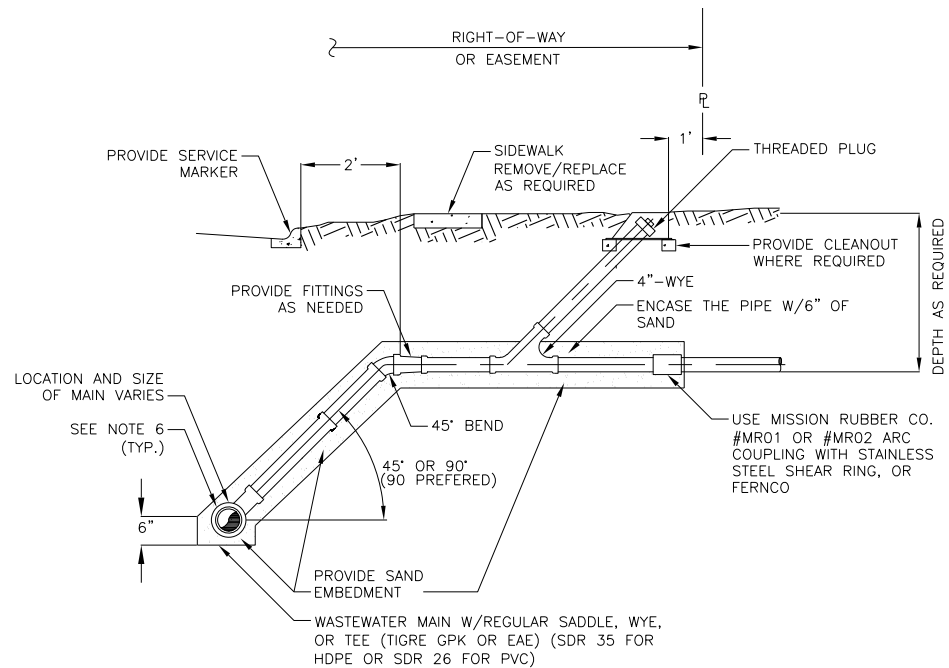
BOLLARD DETAIL

NOT TO SCALE



DEEP CUT SERVICE CONNECTION

NOT TO SCALE

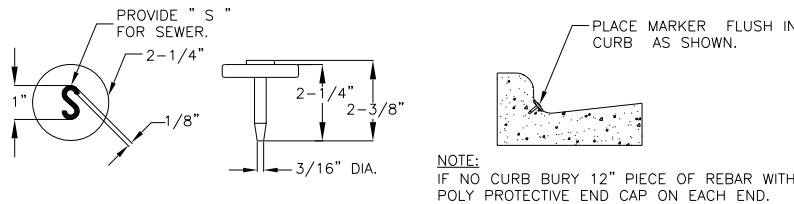


SERVICE CONNECTION DETAILS

NOT TO SCALE

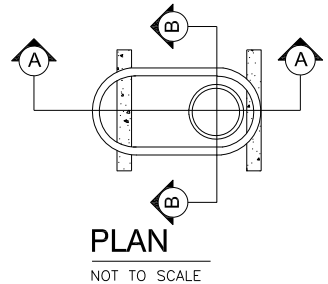
SERVICE CONNECTION NOTES:

- CONTRACTOR TO PROVIDE SERVICE CONNECTION TAP TO THE R.O.W. LINE & CONNECT EXIST. SERVICE LINE OUTSIDE EASEMENT AS SHOWN AND REQUIRED.
- ALL SERVICE PIPE AND FITTINGS TO BE SOLVENT WELD SCH 40 PVC UNLESS SHOWN OTHERWISE IN THE PLANS.
- FOR EXISTING MAIN PIPE MATERIAL - PVC AND/OR VCP USE UTILITY DEPARTMENT APPROVED CONNECTOR.
- FOR NEW PVC MAIN AND SERVICE, USE PVC WYE OR TEE AS DIRECTED AT SERVICE CONNECTION.
- IF PIPE LENGTH, ON SERVICE LINE, IS GREATER THAN 50', USE 6" PVC SCH 40 FROM CLEANOUT WYE TO THE MAIN LINE.



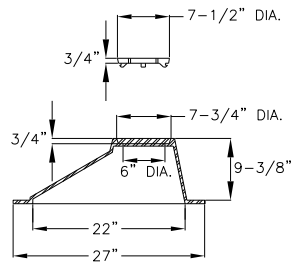
STANDARD SERVICE MARKER

BRASS - ONE REQUIRED EACH SERVICE TAP IN NEW SUBDIVISIONS OR ANY SERVICE PROVIDED FOR FUTURE USE  
NOT TO SCALE



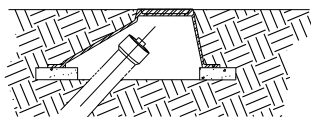
PLAN

NOT TO SCALE



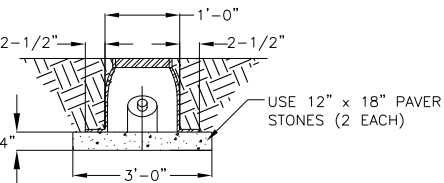
CLEAN-OUT BOOT

NOT TO SCALE



SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE

TYPICAL CAST IRON CLEAN-OUT BOOT

NOT TO SCALE

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CONSULTANT'S SHEET NO.



CITY OF CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

DESCRIPTION

CITY OF CORPUS CHRISTI  
WASTEWATER STANDARD DETAILS  
AIR RELEASE VALVE, BOLLARD AND SERVICE CONNECTION DETAILS 3 OF 4

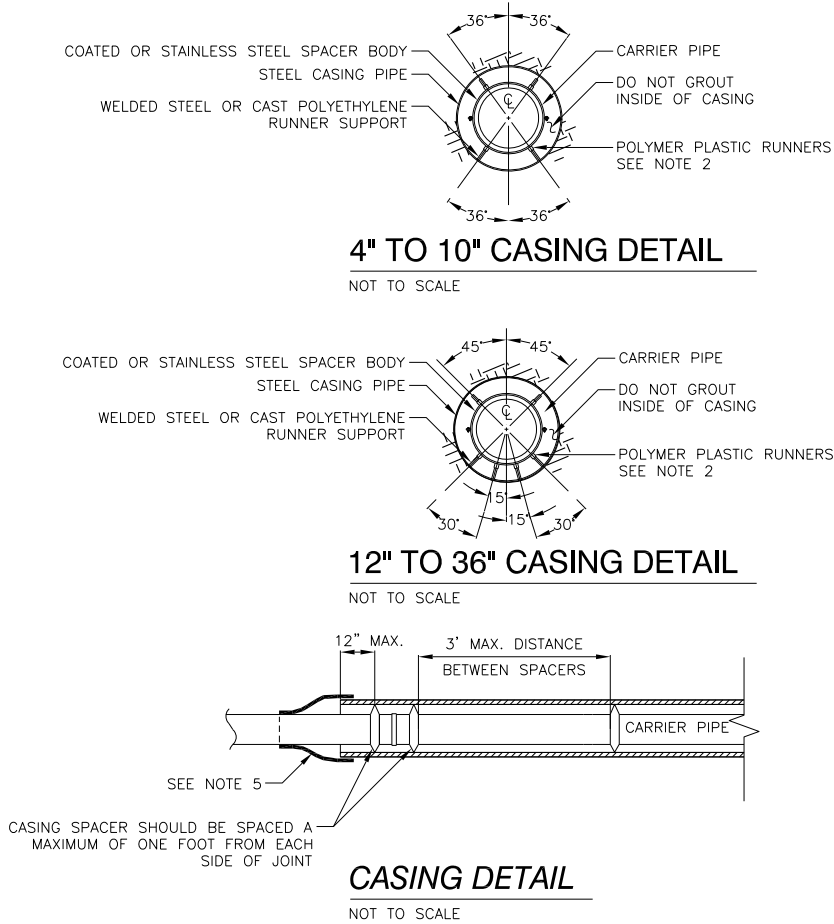
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DATE

REVISION NO.

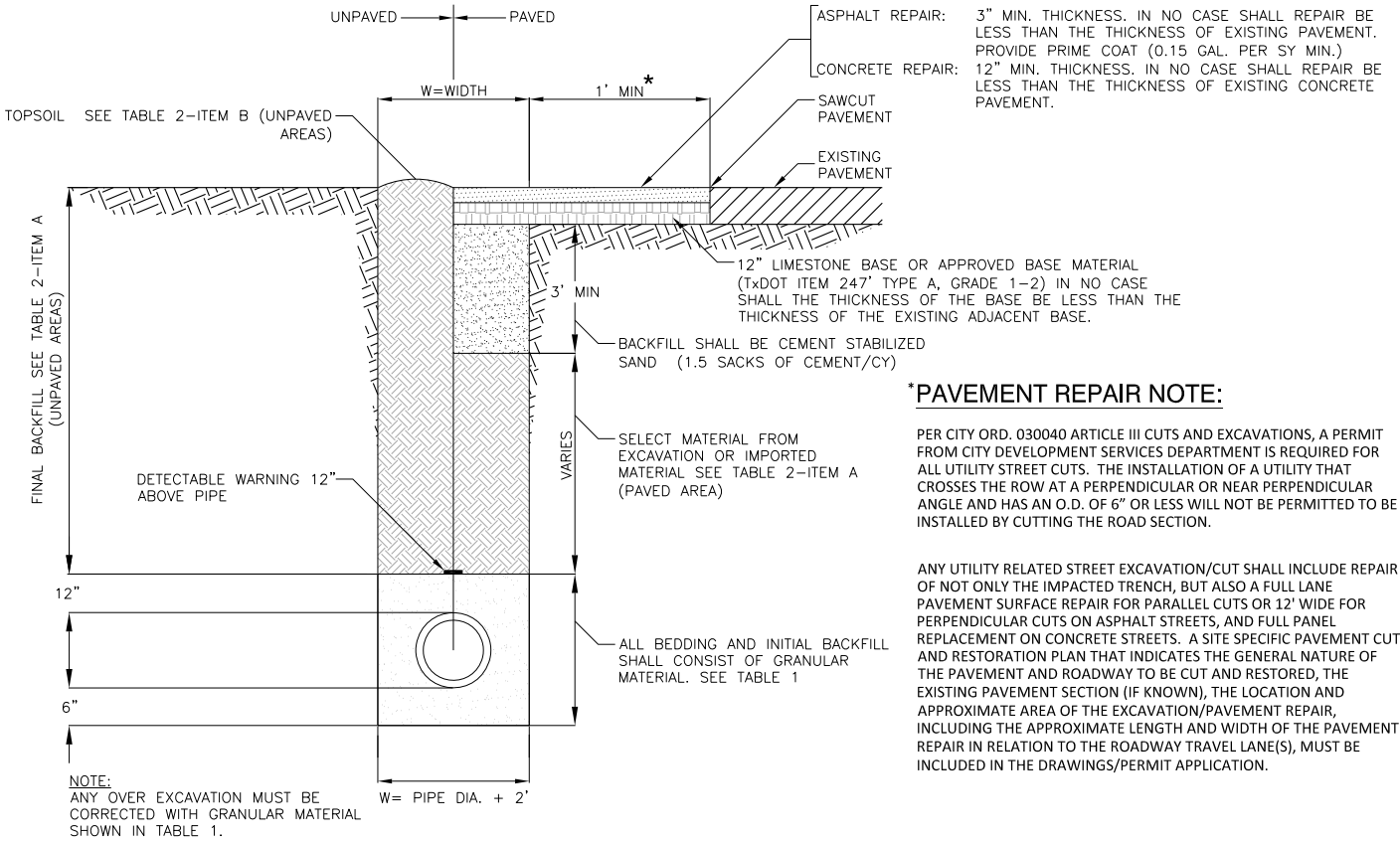
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CITY PROJECT # \_\_\_\_\_



CASING NOTES:

1. CASING DIAMETER, LENGTH, LOCATION, AND WALL THICKNESS SHALL BE PER PROJECT SPECIFIC REQUIREMENTS. (MINIMUM SCHEDULE 40)
2. ALL CARRIER PIPES IN INSTALLED CASINGS SHALL BE SUPPORTED BY BOLT-ON STYLE CASING SPACERS ("ADVANCED PRODUCTS" OR APPROVED EQUAL).
3. THE CONTRACTOR SHALL PROVIDE MECHANICALLY RESTRAINED JOINTS FOR FORCE MAINS ONLY ON CARRIER PIPES. "MEGALUG" TYPE JOINT RESTRAINTS OR APPROVED EQUAL SHALL BE USED.
4. CASING SPACERS SHALL BE SIZED TO SECURELY FASTEN TO THE CARRIER PIPE O.D. AND SHALL BE FURNISHED WITH A MINIMUM RUNNER HEIGHT TO MAINTAIN SEPARATION BETWEEN THE MAXIMUM O.D. OF THE CARRIER PIPE AND THE CASING WALL.
  - A. POSITIONING OF THE SPACERS SHALL ENSURE THAT THE CARRIER PIPE IS ADEQUATELY SUPPORTED THROUGHOUT ITS LENGTH.
  - B. SPACERS AT EACH END SHALL NOT BE FURTHER THAN 12" FROM THE END OF THE CASING.
  - C. CASING SPACERS SHALL BE INSTALLED IN THE CENTER OF THE PIPE SECTION. THE MAXIMUM SPACING OF THE CASING SPACERS SHALL BE 3 FEET.
5. THE TWO ENDS OF THE CASING PIPE SHALL BE SEALED WATERTIGHT WITH AN ADVANCED PRODUCTS SYSTEM, INC. MODEL AZ – ZIPPER, PSI MODEL C END SEAL, OR AN APPROVED EQUAL.



TRENCH BACKFILL FOR WASTEWATER LINES AND PAVEMENT REPAIR FOR UTILITIES

NOT TO SCALE

GENERAL NOTES FOR BACKFILL

| TABLE 1<br>BEDDING AND INITIAL BACKFILL<br>(BELOW PIPE TO 12" ABOVE PIPE)                                                                                                                                                                                                                                                     |  | TABLE 2<br>FINAL BACKFILL<br>(GREATER THAN 12" ABOVE PIPE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
|                                                                                                                                                                                                                                                                                                                               |  | UNPAVED AREAS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | PAVED AREAS** |
| ALL BEDDING AND INITIAL BACKFILL SHALL CONSIST OF THE FOLLOWING OR REFER TO DESIGN ENGINEER REQUIREMENTS: GRANULAR BACKFILL CONSISTING OF EITHER NATURAL SAND OR SANDY GRAVEL, OR MATERIAL PRODUCED BY CRUSHING OF NATURAL STONE OR GRAVEL:                                                                                   |  | A. FROM 12" ABOVE PIPE TO BOTTOM OF TOPSOIL BACKFILL SHALL BE APPROVED SELECT MATERIAL FROM THE EXCAVATION; OR IMPORTED MATERIAL; ALL TO BE FREE OF ROCKS, DEBRIS, OR ANY CLUMPS GREATER THAN 2" IN DIAMETER; LOOSE LIFTS TO BE PLACED 10" MAX.<br><br>COMPACT MATERIAL TO 95% STD. PROCTOR (D698).<br><br>MOISTURE TO BE ADJUSTED TO ± 3% OF OPTIMUM.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |
| ① EXCAVATIONS <20 FT. DEEP AND ABOVE WATER TABLE, USE MATERIAL MEETING THE FOLLOWING CRITERIA.<br><br>MEETING REQUIREMENTS OF ASTM D2487 FOR:<br>SP GP<br>SW GW<br>SP-SM GP-GM<br>SW-SM GW-GM<br><br>AND IN ADDITION:<br>PASSING 1/2" SIEVE – 100%<br>PASSING #4 SIEVE – 30% MINIMUM<br>PLASTICITY INDEX (PI) – NP TO 10 MAX. |  | B. TOPSOIL TO BE PROVIDED EQUAL OR BETTER THAN EXISTING; AND MATCH EXISTING TOPSOIL DEPTH. COMPACT TO EXISTING ADJACENT TOP-SOIL THICKNESS. (CONSTRUCTION TO BE PERFORMED BY "DOUBLE DITCH" METHOD-TOP SOIL SALVAGED TO BE PLACED ON TOP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |
| ② IN DEEP EXCAVATIONS (>20') OR BELOW WATER TABLE, USE CRUSHED STONE OR CRUSHED GRAVEL MEETING GRADATION OF:<br><br>A. CONCRETE COARSE AGGREGATE OR CRUSHED LIMESTONE; TxDOT ITEM 421; GRADE 2, 3, OR 4.                                                                                                                      |  | A. FROM 12" ABOVE PIPE TO 3' BELOW BOTTOM OF ROAD BASE: BACKFILL SHALL BE SELECT MATERIAL FROM EXCAVATION OR IMPORTED MATERIAL. IN EITHER CASE, ALL MATERIAL SHALL MEET THE FOLLOWING:<br><br>LL<35<br>PI 8-20<br>NO CLUMPS > 2" DIA.<br>MOISTURE – 1 TO +3%<br>COMPACT 95% D698 STD PROCTOR<br><br>LOOSE LIFTS OF 10" MAX OR IF SELECT MATERIAL FROM EXCAVATION DOES NOT MEET REQUIREMENTS, THEN USE CEMENT STABILIZED SAND. SEE TABLE 2-ITEM B BELOW.<br><br>B. FROM 3' BELOW BOTTOM OF ROAD BASE TO BOTTOM OF ROAD BASE:<br><br>BACKFILL SHALL BE UNIFORMLY MOISTENED AND MIXED CEMENT STABILIZED SAND (1.5 SK/C.Y.) AND SHALL MEET THE FOLLOWING REQUIREMENTS:<br><br>SAND GRADATION:<br>% PASSING<br>#4 55-100<br>#10 40-100<br>#40 25-100<br>#200 10-20<br>PI NP-10<br><br>COMPACT TO 95% OF D698. MOISTURE TO BE ADJUSTED TO (+/-2%) OF OPTIMUM. |               |

\*\* APPLIES IF ANY PORTION OF THE TRENCH FALLS WITHIN 1' OF THE BACK OF CURB.

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| CITY PROJECT # _____                       |      |    |             |

CITY OF CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

WASTEWATER STANDARD DETAILS  
PAVEMENT REPAIR/BACKFILL/GENERAL NOTES/CASING DETAILS

4 OF 4

CONSULTANT'S SHEET NO.



[illegible]

Stormwater Pollution Prevention – Clean Water Act Section 402

TPDES TXR 150000: Stormwater Discharge Permit or Construction General Permit required for projects with 1 or more acres distrubed soil. Projects with any disturbed soil must protect for erosion and sedimentation.

☐ No Action Required ☐ Required Action

Action No.

1. Prevent stormwater pollution by controlling erosion and sedimentation in accordance with TPDES Permit TXR 150000
2. Comply with the SW3P and revise when necessary to control pollution or required by the Engineer.
3. Post Construction Site Notice, (CSN) with SW3P information on or near the site, accessible to the public and TCEQ, EPA or other inspectors.
4. When Contractor project specific locations (PSL's) increase disturbed soil area to 5 acres or more, submit NOI to TCEQ and the Engineer.

Work in or near Streams, Waterbodies and Wetlands Clean Water Act Sections 401 & 404

USACE Permit required for filling, dredging, excavating or other work in any water bodies, rivers, creeks, streams, wetlands or wet areas.

The Contractor must adhere to all of the terms and conditions associated with the following permit(s):

- ☐ No Permit Required
- ☐ Nationwide Permit 14 – PCN not Required (less than 1/10th acre waters or wetlands affected)
- ☐ Nationwide Permit 14 – PCN Required (1/10 to <1/2 acre, 1/3 in tidal waters)
- ☐ Individual 404 Permit Required
- ☐ Other Nationwide Permit Required: NWP# \_\_\_\_\_

Required Actions: List waters of the US permit applies to, location in project and check Best Management Practices planned to control erosion, sedimentation and post–project TSS.

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4.

Best Management Practices:

Erosion

- ☐ Temporary Vegetation
- ☐ Blankets/Matting
- ☐ Mulch
- ☐ Sodding
- ☐ Interceptor Swale
- ☐ Diversion Dike
- ☐ Erosion Control Compost
- ☐ Mulch Filter Berm and Socks
- ☐ Compost Filter Berm and Socks

Sedimentation

- ☐ Silt Fence
- ☐ Rock Berm
- ☐ Triangular Filter Dike
- ☐ Sand Bag Berm
- ☐ Straw Bale Dike
- ☐ Brush Berms
- ☐ Erosion Control Compost
- ☐ Mulch Filter Berm and Socks
- ☐ Compost Filter Berm and Socks
- ☐ Stone Outlet Sediment Traps
- ☐ Sediment Basins

Post–Construction TSS

- ☐ Vegetative Filter Strips
- ☐ Retention/Irrigation Systems
- ☐ Extended Detention Basin
- ☐ Constructed Wetlands
- ☐ Wet Basin
- ☐ Erosion Control Compost
- ☐ Mulch Filter Berm and Socks
- ☐ Compost Filter Berm and Socks
- ☐ Vegetation Lined Ditches
- ☐ Sand Filter Systems

III. Cultural Resources

In the event historical issues or archeological artifacts (bones, burnt rock, flint, pottery, etc.) are found during construction, cease work in the immediate area and contact the Engineer immediately.

☐ No Action Required ☐ Required Action

Action No.

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IV. Vegetation Resources

Preserve native vegetation to the extent practical.

☐ No Action Required ☐ Required Action

Action No.

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V. Federal Listed, and Proposed Threatened and Endangered Species, Critical Habitat, State Listed Species, Candidate Species and Migratory Birds.

☐ No Action Required ☐ Required Action

Action No.

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If any of the listed species are observed, cease work in the immediate area, do not disturb species or habitat and contact the Engineer immediately. The work may not remove active nests from bridges and other structures during nesting season of the birds associated with the nests. If caves or sinkholes are discovered, cease work in the immediated area, and contact the Engineer immediately.

VI. Hazardous Materials or Contamination Issues

General (applies to all projects):

Comply with the Hazard Communication Act (the Act) for personnel who will be working with hazardous materials by conducting safety meetings prior to beginning construction and making workers aware of potential hazards in the workplace. Ensure that all workers are provided with personal protective equipment appropriate for any hazardous materials used.

Obtain and keep on–site Material Safety Data Sheets, (MSDS) for all hazardous products used on the project, which may include, but are not limited to the following categories: Paints, acids, solvents, asphalt products, chemical additives, fuels and concrete curing compounds or additives. Provide protected storage, off bare ground and covered, for products which may be hazardous. Maintain product labelling as required by the Act.

Maintain an adequate supply of on–site spill response materials, as indicated in the MSDS. In the event of a spill, take actions to mitigate the spill as indicated in the MSDS, in accordance with safe work practices, and contact the District Spill Coordinator immediately. The Contractor shall be responsible for the proper containment and cleanup of all product spills.

Contact the Engineer if any of the follwing are detected:

- Dead or distressed vegetation (not identified as normal)
- Trash piles, drums, canister, barrels, etc.
- Undesirable smells or odors
- Evidence of leaching or seepage of substances

Any other evidence indicating possible hazardous materials or contamination discoverd on site.

Hazardous Materials or Contamination Issues Specific to this Project:

☐ No Action Required ☐ Required Action

Action No.

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4.

VII. Other Environmental Issues

(Include applicable regional or site specific enviromental issues.)

☐ No Action Required ☐ Required Action

Action No.

1.

2.

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4.

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CONSULTANT'S SHEET No.

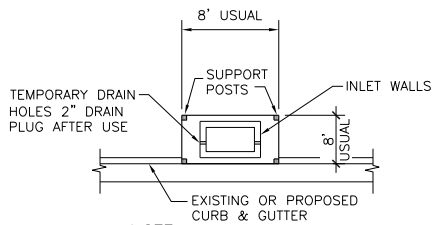
  
**CITY of CORPUS CHRISTI TEXAS**  
*Department of Engineering Services*

CITY OF CORPUS CHRISTI  
STORM WATER ENVIRONMENTAL PERMITS  
ISSUED AND COMMENTS (EPIC) 2 of 3

SHEET \_\_\_\_\_ of \_\_\_\_\_  
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CITY PROJECT # \_\_\_\_\_

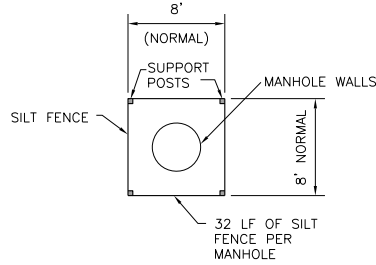




NOTE:  
TYPICAL SILT FENCE INSTALLATION AT CURB INLET PRIOR TO PLACEMENT OF CURB AND INLET TOP.

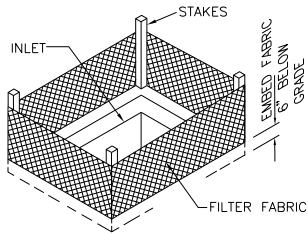
### CURB INLET - PLAN

NOT TO SCALE



### MANHOLE - PLAN

NOT TO SCALE

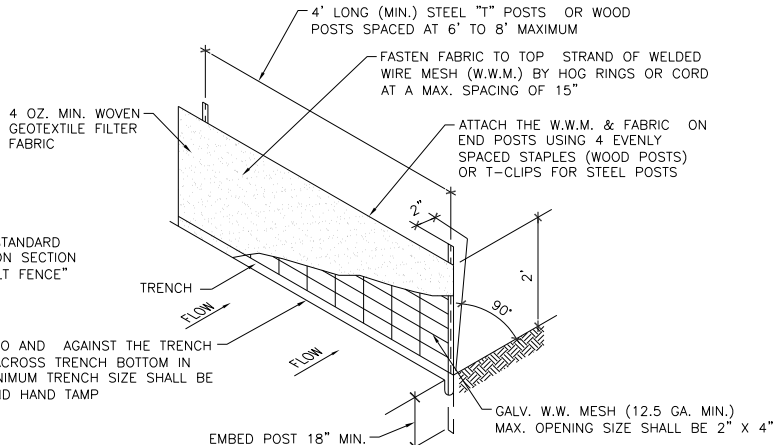


### TEMPORARY FILTER FABRIC INLET PROTECTION DETAIL

NOT TO SCALE

#### NOTES:

1. FILTER FABRIC INLET PROTECTION SHALL BE USED DURING CONSTRUCTION TO CONTROL SEDIMENTATION.
2. PERIMETER SILT FENCING AROUND INLET LOCATIONS SHALL BE INSTALLED AFTER PIPE IS PLACED.
3. FABRIC MATERIAL SHALL BE A NET-REINFORCED FENCE, USING WOVEN GEOTEXTILE FABRIC.
4. FENCE SHOULD BE REMOVED UPON COMPLETION OF CONSTRUCTION.



NOTE:  
REFER TO STANDARD SPECIFICATION SECTION 022420 "SILT FENCE"

PLACE 6" OF FABRIC INTO AND AGAINST THE TRENCH WALL AND APPROX. 2" ACROSS TRENCH BOTTOM IN UPSTREAM DIRECTION MINIMUM TRENCH SIZE SHALL BE 6" SQUARE. BACKFILL AND HAND TAMP

### TEMPORARY SEDIMENT CONTROL FENCE DETAIL

NOT TO SCALE

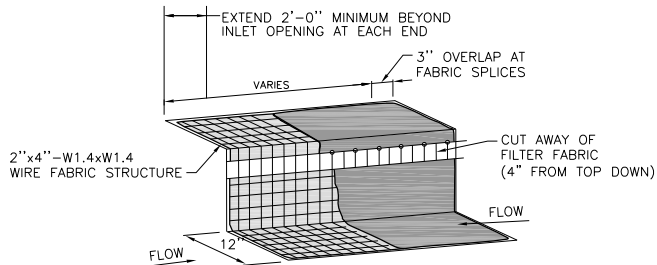
#### SEDIMENT CONTROL FENCE USAGE GUIDELINES:

SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED.  
SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 100 GPM/FT. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE LARGER THEN 2 ACRES.

\* THE GUIDELINES SHOWN HERE ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

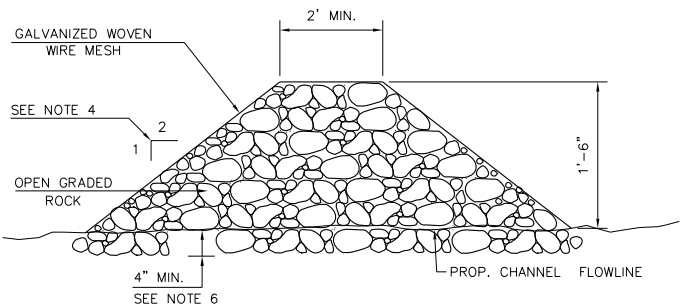
#### NOTES:

1. INSTALL ALL EROSION CONTROLS AT EXISTING GRATE INLETS PRIOR TO COMMENCING CONSTRUCTION.
2. PERIMETER SILT FENCING AROUND INLET LOCATIONS SHALL BE INSTALLED AFTER PIPE IS PLACED.
3. CONTRACTOR IS RESPONSIBLE FOR TAKING MEASURES TO PREVENT CONSTRUCTION MATERIALS FROM ENTERING CORPUS CHRISTI BAY.
4. DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2".
5. CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY CLEAN THE INLET PROTECTION IF EXCESSIVE PONDING OCCURS.
6. INLET PROTECTION SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.



### ROCK FILTER DAM AT EARTHEN BOTTOM CHANNEL

NOT TO SCALE

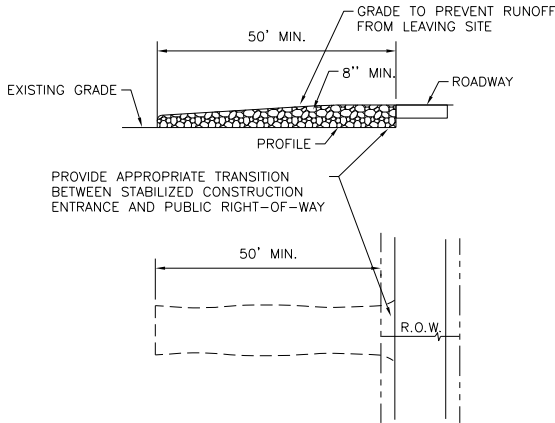


### SECTION A-A

NOT TO SCALE

#### ROCK FILTER DAM NOTES:

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND/OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATIONS FOR "ROCK FILTER DAMS FOR EROSION AND SEDIMENT CONTROL."
3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE PLANS.
4. SIDE SLOPES SHOULD BE 2:1 OR FLATTER.
5. ROCK FILTER DAM SHALL BE A MINIMUM OF TWO FEET IN THICKNESS AT TOP OF DAM.
6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO EXISTING GROUND.
7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
8. ROCK FILTER DAM SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT & SLOPE SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
9. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.)
10. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



### PLAN STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

#### CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE: 3-5" OPEN GRADED ROCK.
2. LENGTH: AS EFFECTIVE BUT NOT LESS THAN 50'.
3. THICKNESS: NOT LESS THAN 8".
4. WIDTH: NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS/EGRESS.
5. WASHING: WHEN NECESSARY, VEHICLE WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE AS CONDITIONS DEMAND, AS WELL AS REPAIR AND CLEAN OUT OF ANY MEASURE DEVICES USED TO TRAP SEDIMENT. ALL SEDIMENTS THAT IS SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.
7. DRAINAGE: ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

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CITY of CORPUS CHRISTI  
TEXAS  
Department of Engineering Services

CITY OF CORPUS CHRISTI  
STORM WATER POLLUTION PREVENTION  
STANDARD DETAILS  
3 OF 3

SHEET \_\_\_\_ of \_\_\_\_  
RECORD DRAWING NO.

CITY PROJECT # \_\_\_\_\_

DESCRIPTION

BY

DATE

REVISION NO.