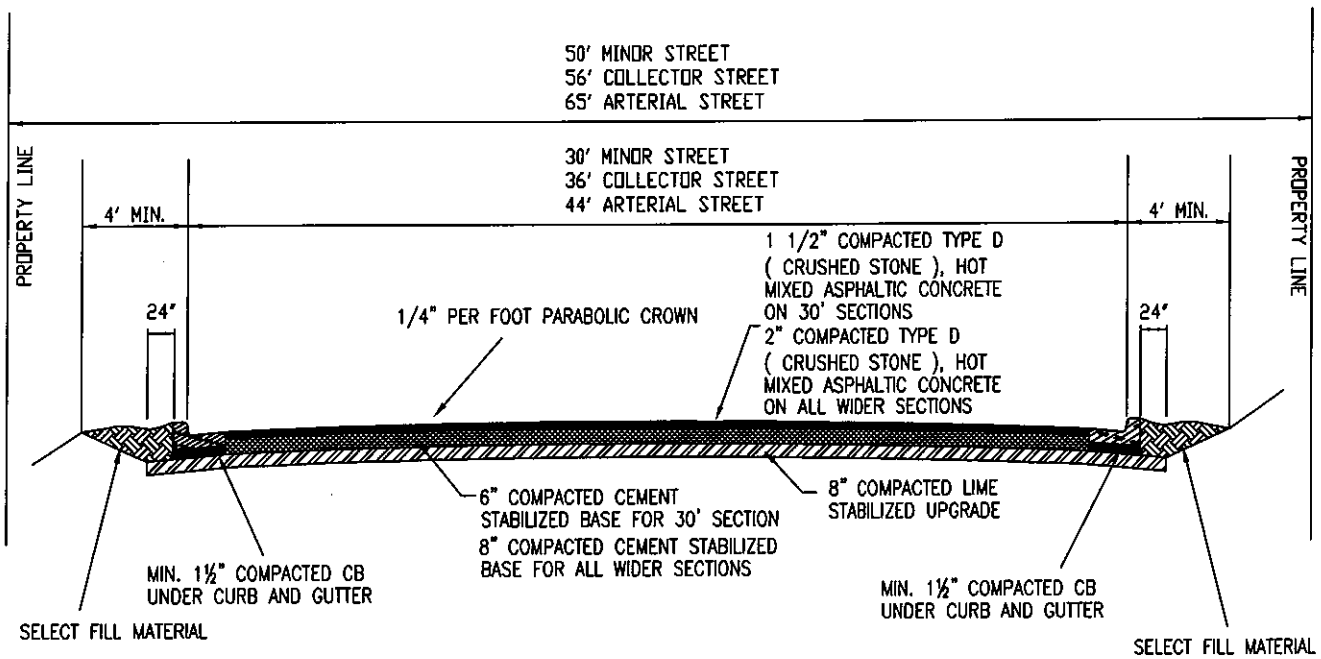
HEWITT
TEXAS

Part III

Specifications and Design Standards

Streets and Drainage Standards



NOTES:

1. ALL BASE AND UPGRADE IS TO BE COMPACTED TO 95% ASTM D689 DENSITY
2. ALL CEMENT STABILIZED BASE (CSB) SHALL BE PLANT MIXED

STREET AND ROADWAY DESIGN CRITERIA

STREET CLASSIFICATION	TOTAL EQUIVALENT 18K AXLE LOAD APPLICATIONS (20 YEAR FLEXIBLE DESIGN)
LOCAL	20,000
COLLECTORS	80,000
ARTERIALS	1,020,000

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TYPICAL STREET SECTION FOR H.M.A.C. SURFACED STREETS

REVISION NOTE:

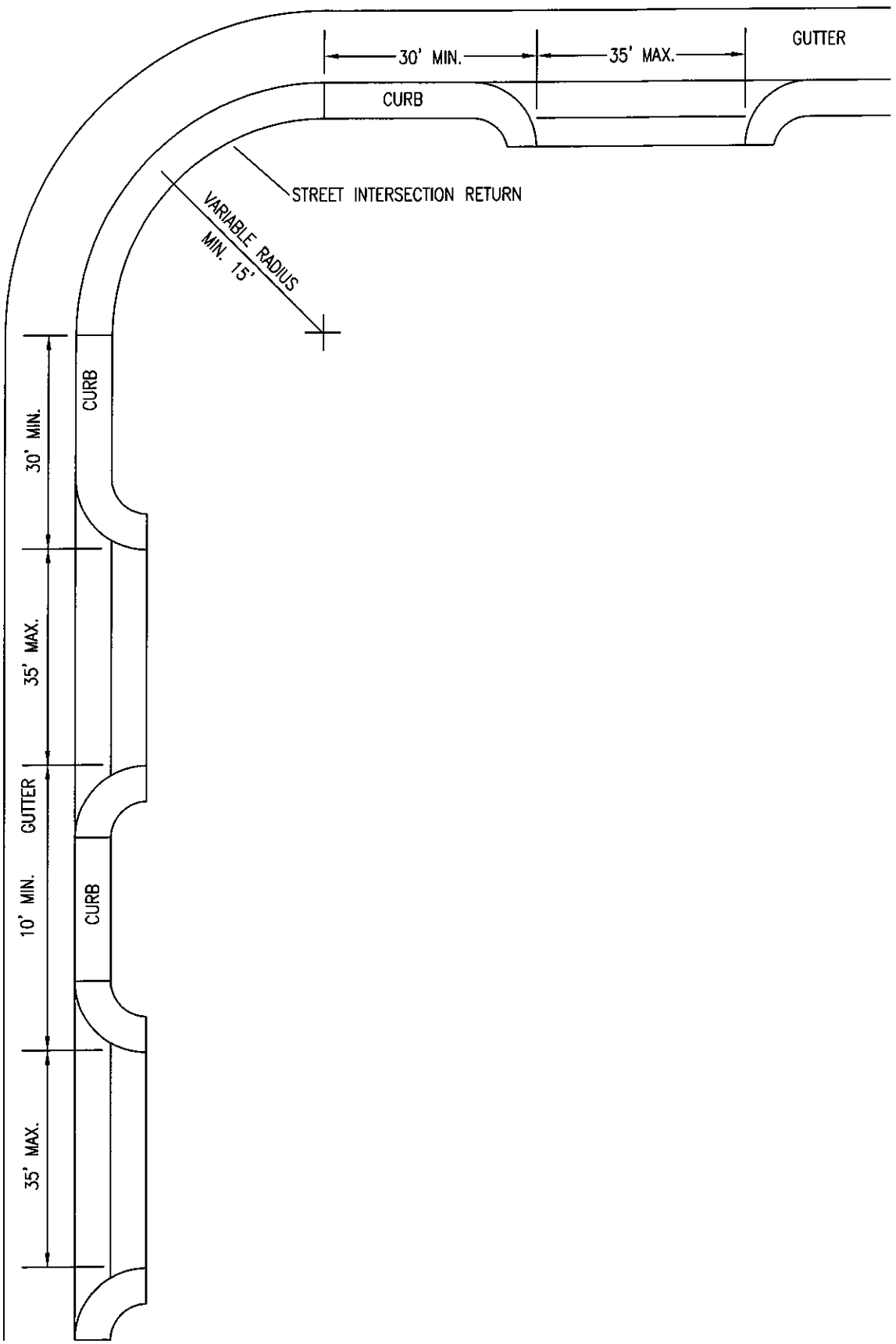
DRAWING NAME: SD01

SCALE: N.T.S.

DATE: 1/25/13

DRAWN BY: M.W.W.

APPROVED BY: W.E.A.

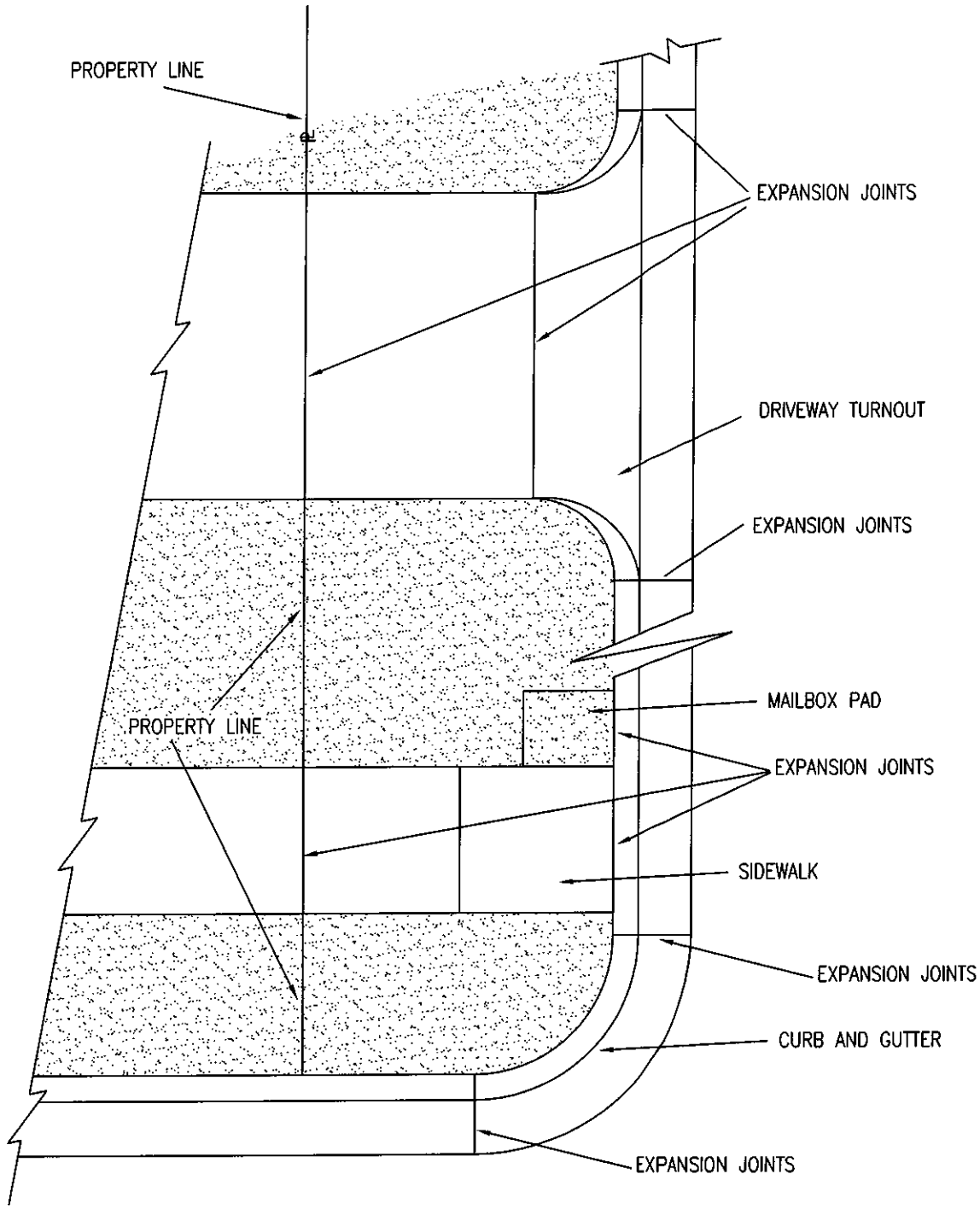


HEWITT
TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TYPICAL ACCESS LAYOUT FOR COMMERCIAL PROPERTY

REVISION NOTE:	
DRAWING NAME:	SD02
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

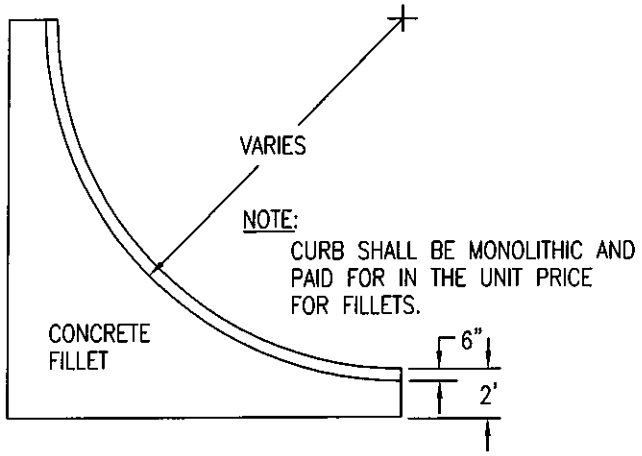


HEWITT TEXAS

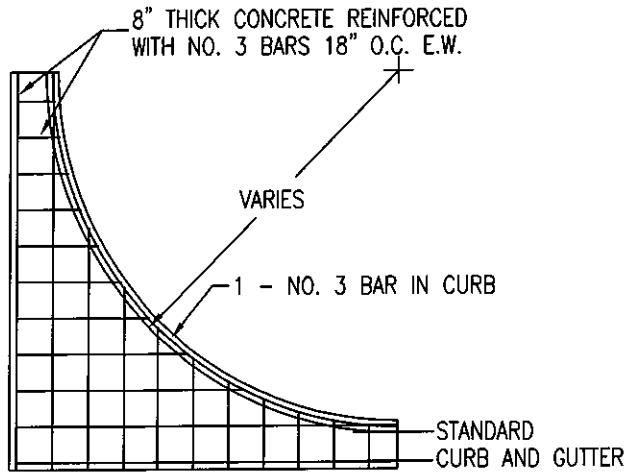
CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

EXPANSION JOINT DETAIL

REVISION NOTE:	
DRAWING NAME:	SD03
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



PLAN OF STREET INTERSECTION AND END CURB RETURN

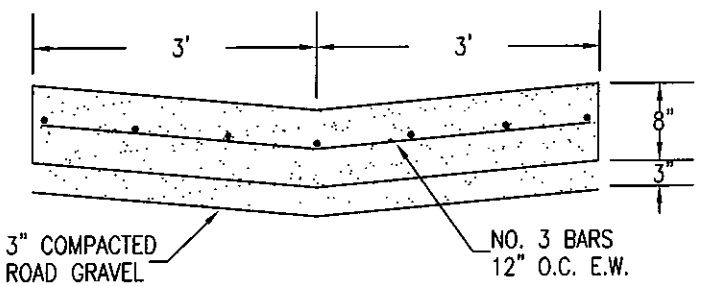


MONOLITHIC CONCRETE CURB AND GUTTER FILLET

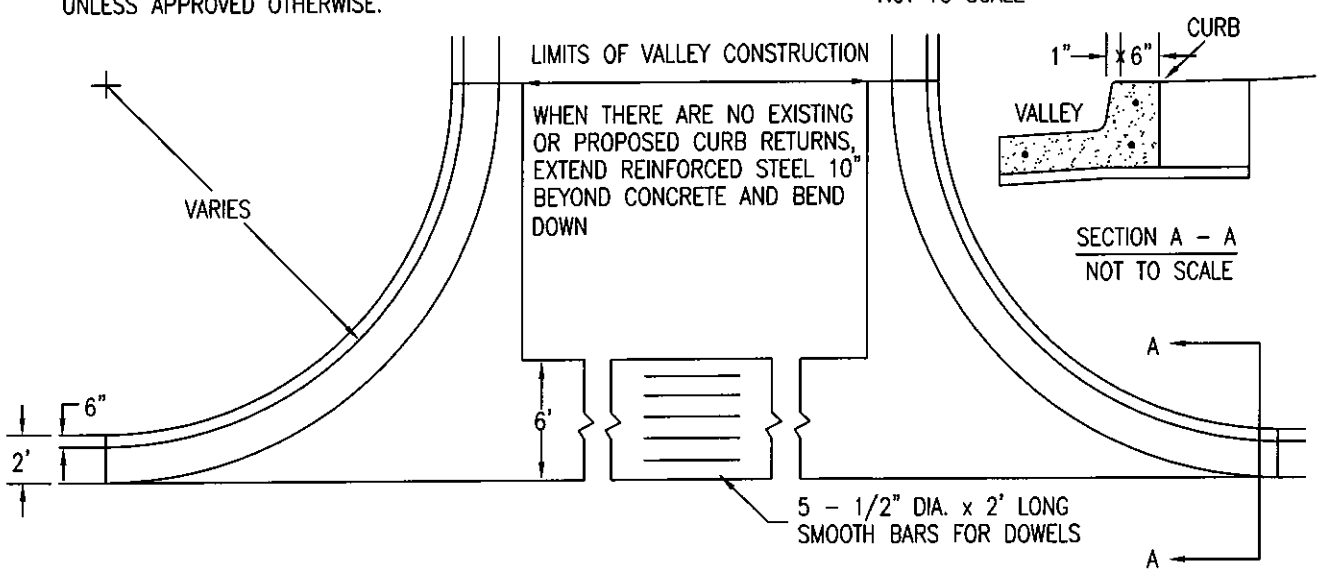
FILLET DETAIL
NOT TO SCALE

NOTE:

1. WHERE EXISTING CURB RETURN IS TO REMAIN IN PLACE, VALLEY SHALL BE CONSTRUCTED AS SHOWN WITH 5/8" SMOOTH DOWEL BARS 12" LONG, MINIMUM OF 5 FOR 15' RADIUS RETURN
2. IF CURB RETURNS ARE NOT EXISTING, VALLEY AND RETURNS SHALL BE MONOLITHIC WHEN WHEN CURB AND GUTTER ARE CALLED FOR.
3. UPSTREAM RETURN IN VALLEY SHALL HAVE INDIRECT FLOW.
4. VALLEY TO BE PLACED IN TWO 1/2 SECTIONS UNLESS APPROVED OTHERWISE.



VALLEY CROSS SECTION
NOT TO SCALE



SECTION A - A
NOT TO SCALE

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

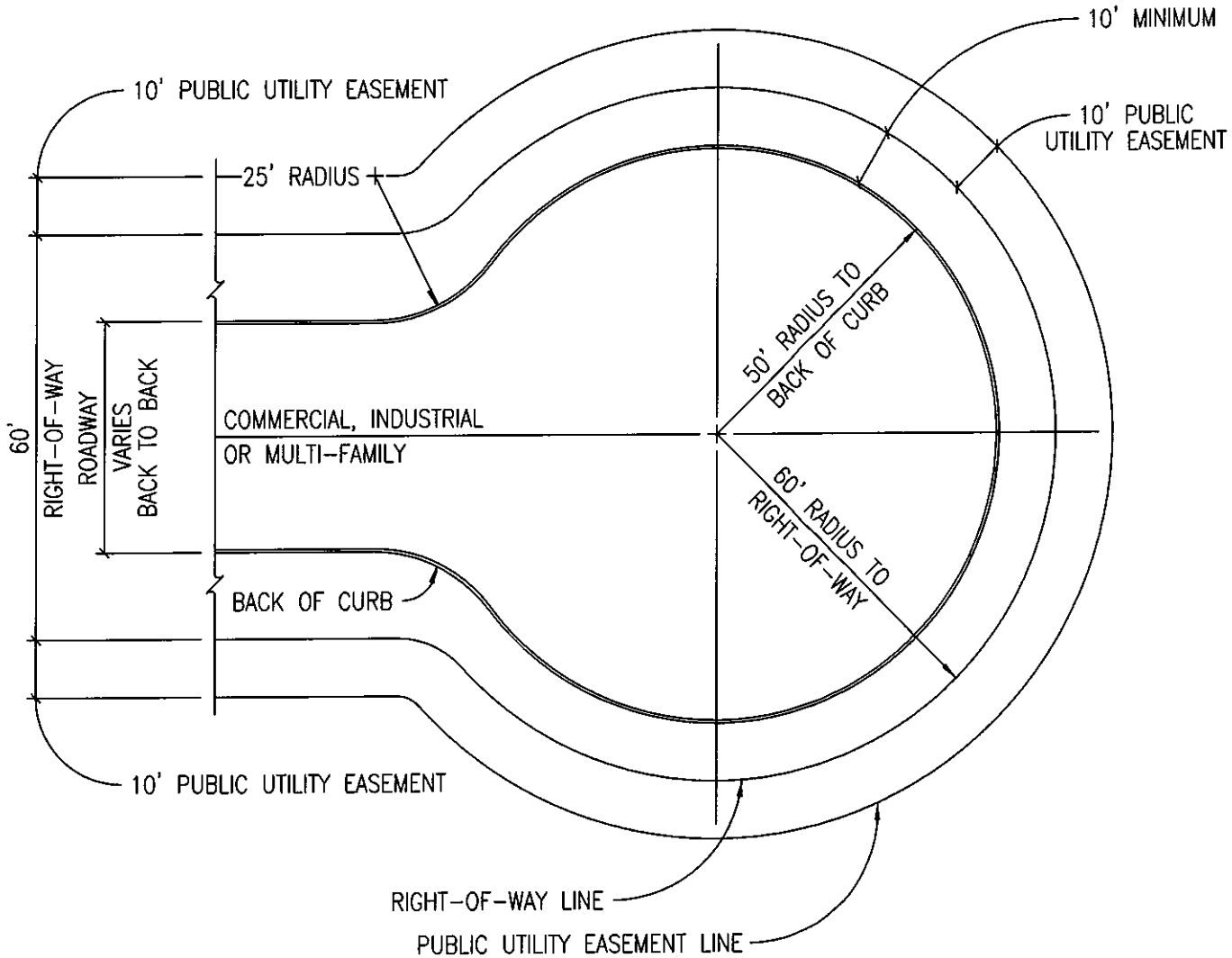
REINFORCED CONCRETE VALLEY DETAIL

REVISION NOTE:

DRAWING NAME: SD04

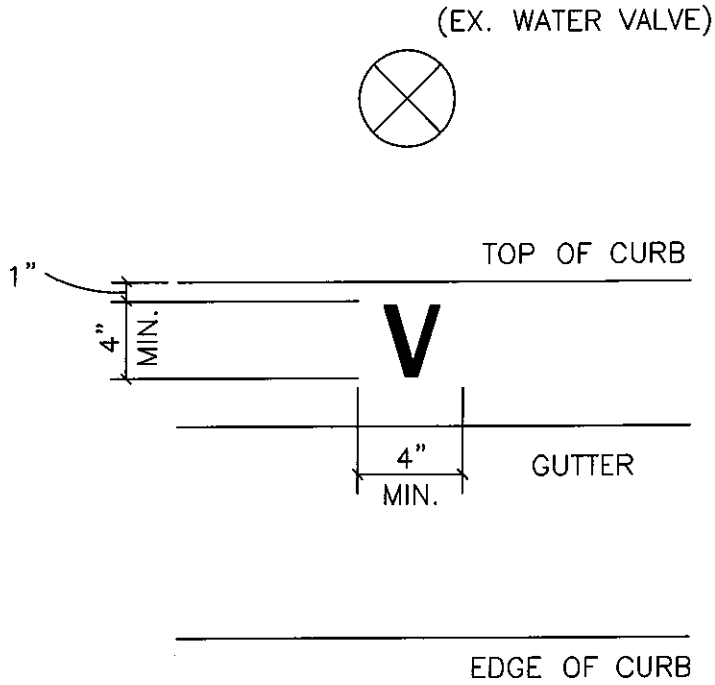
SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



NOTE:
1. CUL-DE-SAC SHALL BE CONSTRUCTED WITH A 9-INCH CROWN, GIVING A 1.5% CROSS SLOPE.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD05
	TYPICAL "NON SINGLE FAMILY OR NON TWO FAMILY" CUL-DE-SAC PLAN	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



ELEVATION VIEW
(TYPICAL)

NOTES:

1. ALL WATER SERVICE, WASTE WATER SERVICE, VALVE LOCATIONS, ELECTRIC SERVICE, AND GAS SERVICE SHALL BE APPROXIMATELY MARKED ON FACE OR CURB AS FOLLOWS:

WATER SERVICE	"W"	TOP OF CURB
WASTE WATER SERVICE	"S"	TOP OF CURB
VALVE	"V"	TOP OF CURB
ELECTRIC SERVICE	"E"	TOP OF CURB
GAS SERVICE	"G"	TOP OF CURB

2. LETTERS SHALL BE STAMPED WITH TOOL AND HAVE A 1/2" MAX. WIDTH.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

CURB STAMP DETAIL

REVISION NOTE:

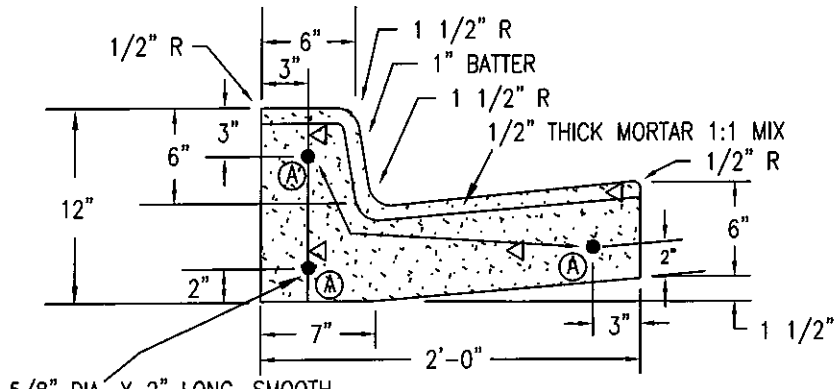
DRAWING NAME: SD06

SCALE: N.T.S.

DATE: 1/25/13

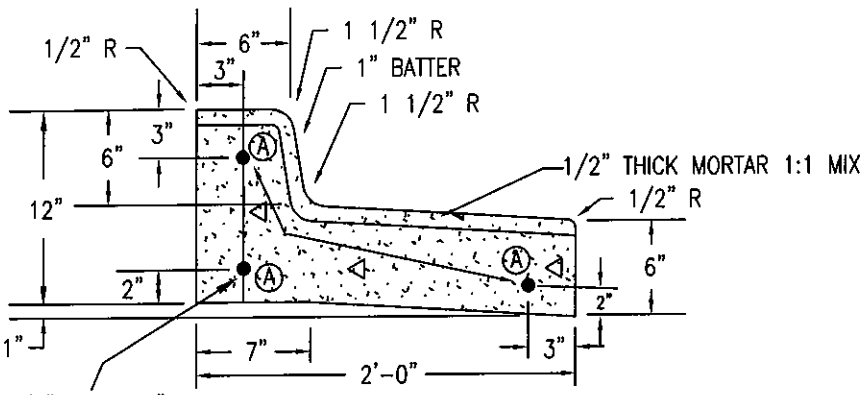
DRAWN BY: M.W.W.

APPROVED BY: W.E.A.



DIRECT FLOW

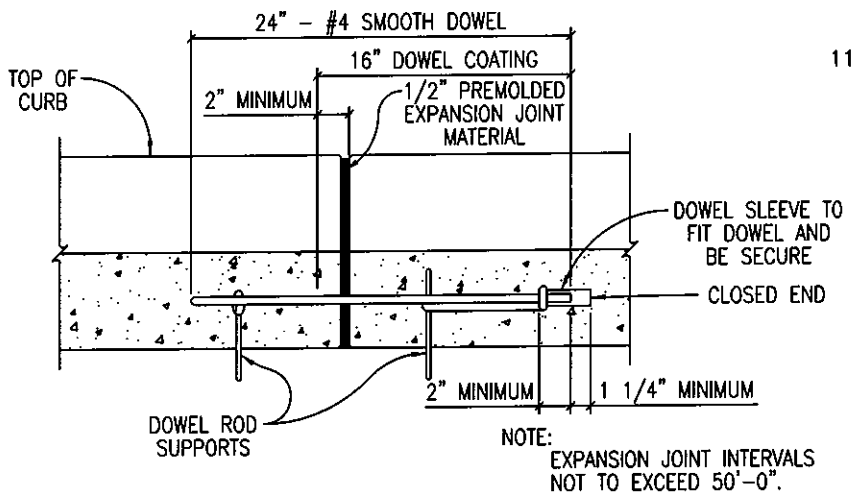
Ⓐ #3 BAR, CONTINUOUS, STOP 1½" FROM EXPANSION JOINT



INDIRECT FLOW

NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 20' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR THE CITY OF HEWITT.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. THE FOLLOWING SCHEME OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF HEWITT.
   A. ALL CURB AND CURB AND GUTTER (REINFORCED) SHALL HAVE THREE #3 LONGITUDINAL REINFORCING BARS.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.



CURB DOWEL DETAIL

HEWITT TEXAS

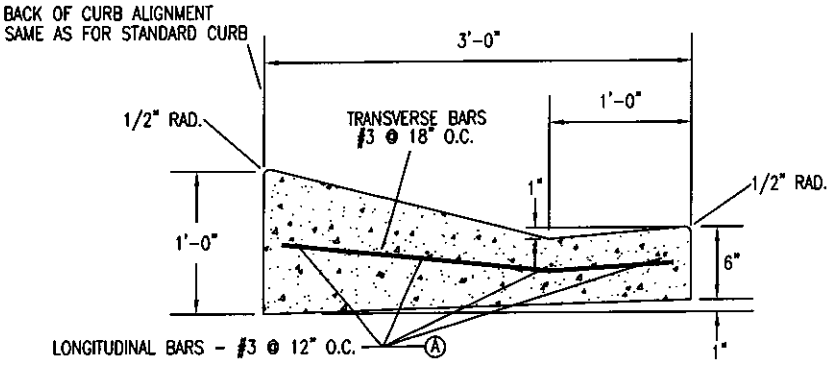
CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

CURB AND GUTTER DETAIL

REVISION NOTE:	
DRAWING NAME:	SD07
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

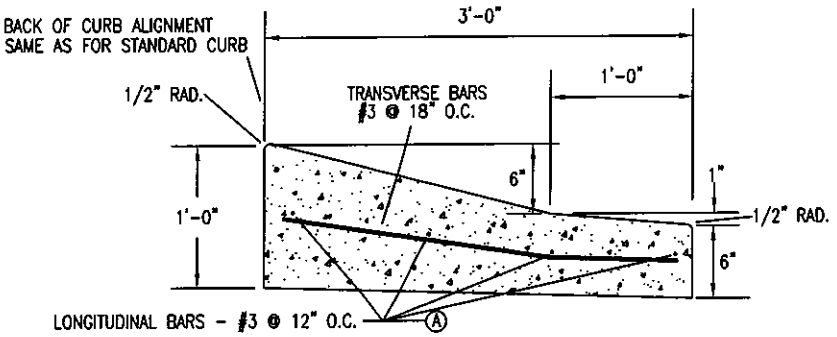
NOTES:

1. ALL WORK AND MATERIAL SHALL CONFORM TO ASTM A615, A615M, C309, AND D1752. BROOM FINISH EXPOSED SURFACE.
2. CONTRACTION JOINT SPACING 20' MAX.
3. EXPANSION JOINTS AS PER STD. ASTM D-1752.
4. 1/2" EXPANSION JOINT MATERIAL SHALL BE PROVIDED WHERE CURB IS ADJACENT TO SIDEWALK OR RIP-RAP.
5. TRANSITIONS BETWEEN CURBS OR DIFFERING CROSS SECTIONS SHALL OCCUR OVER A 20 FOOT LENGTH AS APPROVED BY THE ENGINEER OR THE CITY OF HEWITT.
6. ALL CONCRETE SHALL BE CLASS A, 3000 PSI.
7. ALL SURFACES THAT ARE CHIPPED OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED.
8. ONE OF THE FOLLOWING SCHEMES OF REINFORCEMENT SHALL BE REQUIRED. THE MANNER OF PLACEMENT AND LOCATION SHALL BE TO THE SATISFACTION OF THE ENGINEER OR THE CITY OF HEWITT.
   A. CURB AND GUTTER (REINFORCED) SHALL HAVE LONGITUDINAL REINFORCING BARS AS FOLLOWS: THREE #3,
   B. ALL TYPES OF CURB (REINFORCED) SHALL HAVE #3 BAR FOR LONGITUDINAL REINFORCEMENT.
9. REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 15 INCH.
10. REINFORCING BARS SHALL BE SUPPORTED WITH REBAR CHAIRS OR OTHER APPROVED METHODS.
11. REBAR SUPPORTS ARE NOT REQUIRED ON MACHINE PLACED CURB PROVIDED THAT REBAR IS PROPERLY GUIDED INTO THE CURB SECTION.
12. MOUNTABLE CURB AND GUTTER SHALL ONLY BE USED WHEN APPROVED BY THE CITY ON A CASE BY CASE BASIS



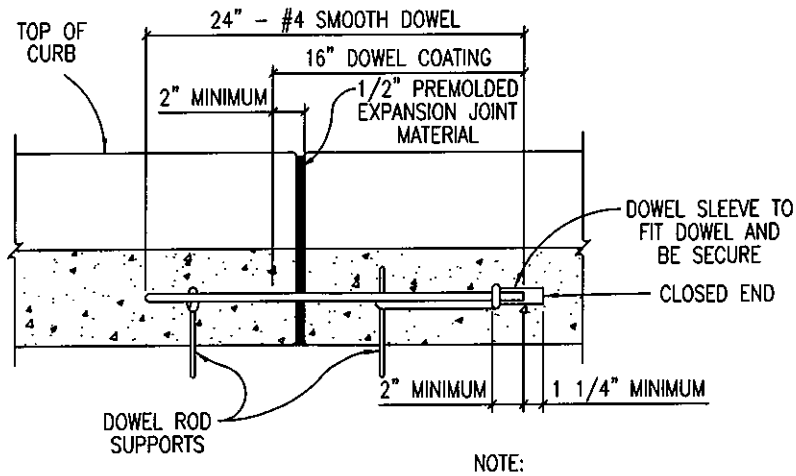
DIRECT FLOW

(A) #3 BAR, CONTINUOUS, STOP 1½" FROM EXPANSION JOINT



INDIRECT FLOW

MOUNTABLE CURB AND GUTTER

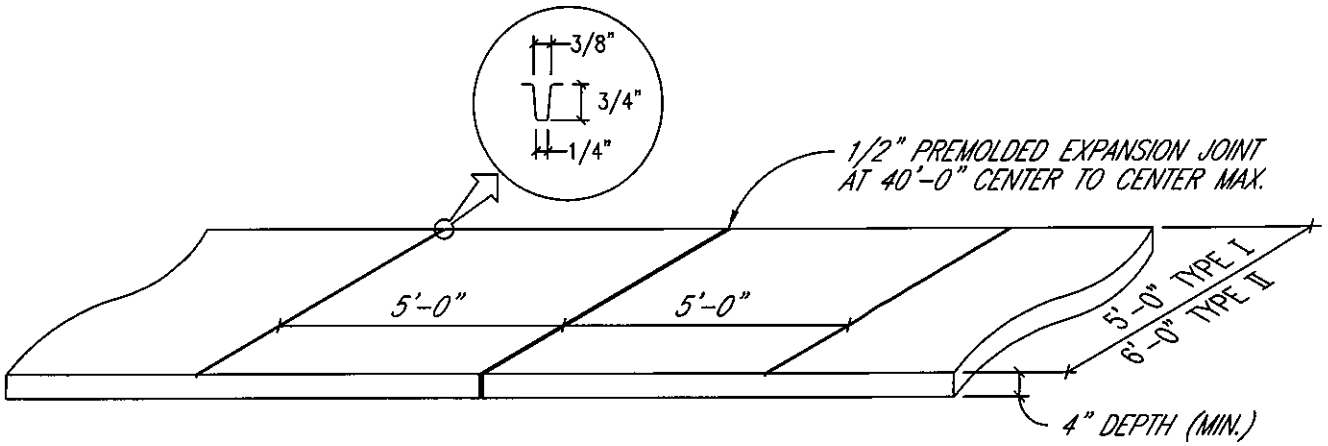


NOTE:

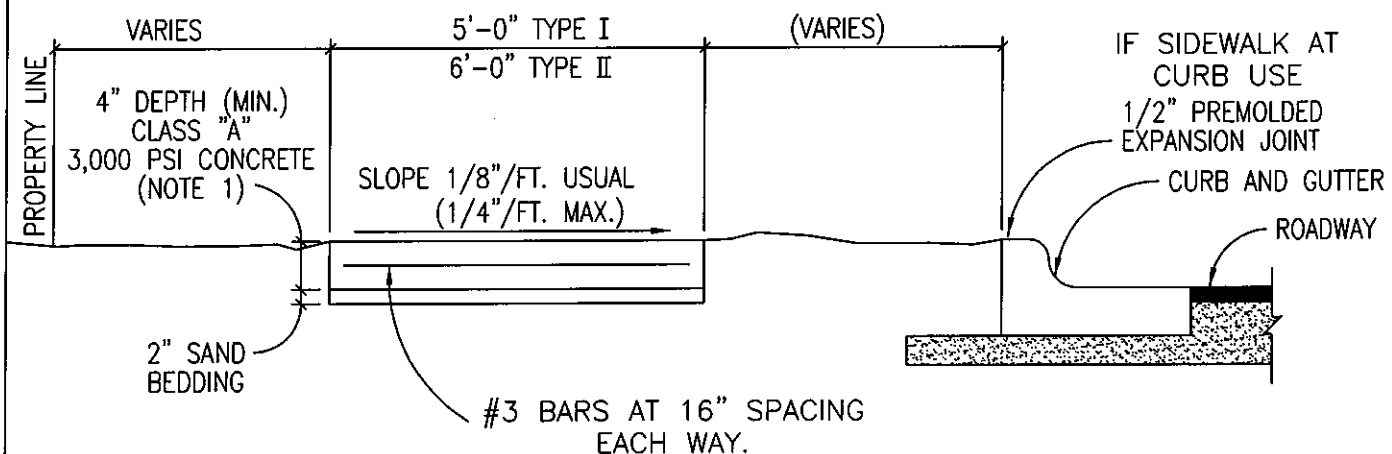
EXPANSION JOINT INTERVALS NOT TO EXCEED 40'-0".

CURB DOWEL DETAIL

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD08
	MOUNTABLE CURB AND GUTTER DETAIL	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



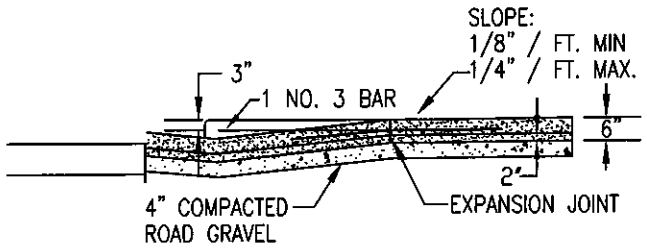
TYPE I – AS REQUIRED FOR SINGLE FAMILY, DUPLEXES AND TOWNHOUSES.
TYPE II – AS REQUIRED FOR APARTMENTS, OFFICE AND PARKING LOTS, COMMERCIAL AND INDUSTRIAL.



NOTES:

1. FOR ROLLER STAMPED SIDEWALK: MATCH TO SPECIFICATIONS.
2. STANDARD LOCATION OF SIDEWALK IS OFF BACK OF CURB. SPECIAL DESIGNS MAY BE APPROVED BY THE CITY, PRIOR TO FINAL DESIGN.
3. SIDEWALK SHALL CONFORM TO CURRENT AMERICANS WITH DISABILITIES ACT STANDARDS.
4. IF REQUIRED ALL SIDEWALKS SHALL BE SUBMITTED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION BY THE ENGINEER RECORD.
5. ANY VARIANCE IN TEXTURE, GRADE OR ALIGNMENT MUST BE APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION.

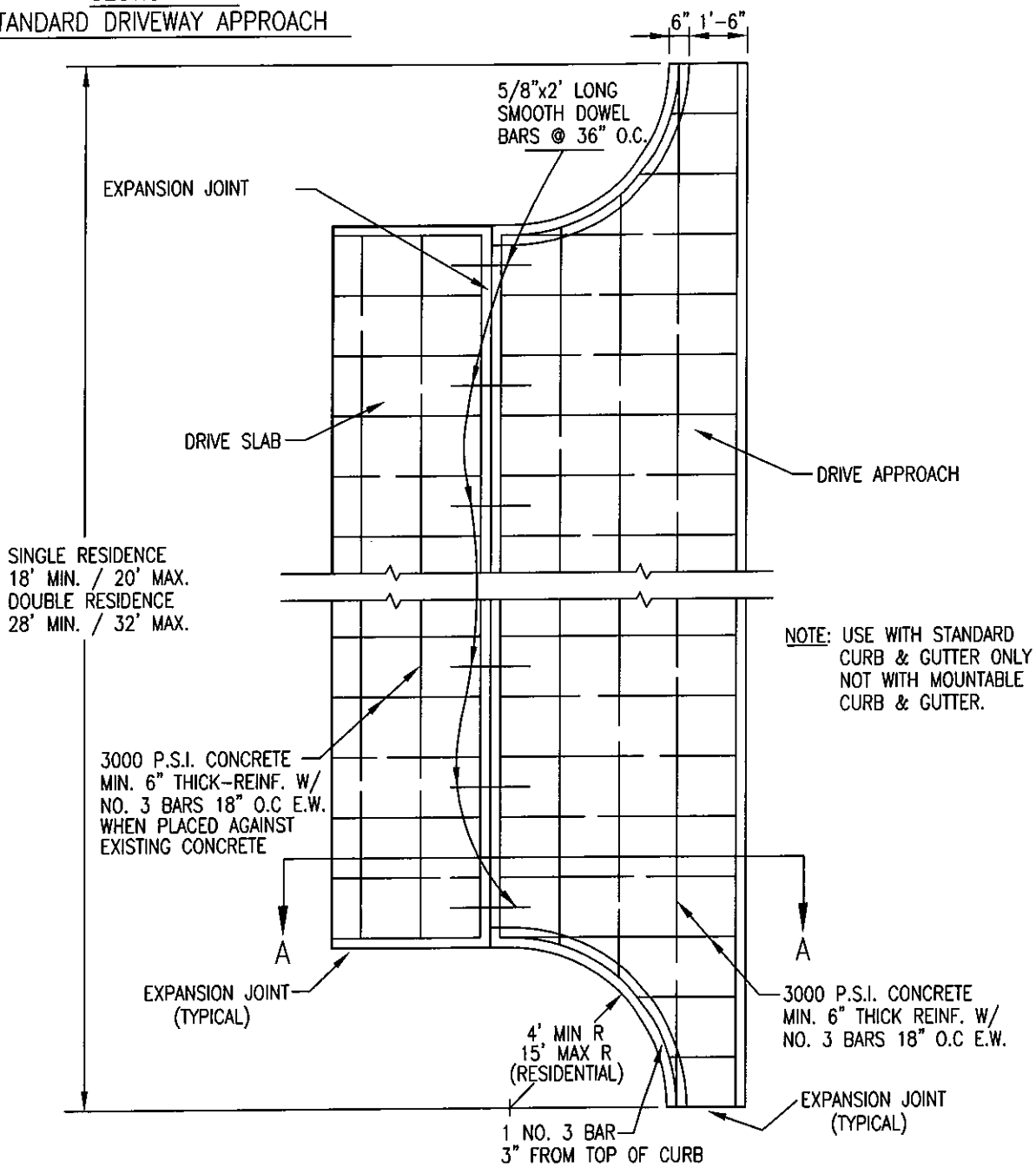
HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD09
	SIDEWALK SECTION AND JOINT DETAIL	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



DRIVE APPROACH
SLOPE: 1" : 1' MIN.

NOTE: EXPANSION JOINT MATERIAL SHALL BE 1/2" PRE-MOLDED EXPANSION JOINT MATERIAL.

SECTION A-A
STANDARD DRIVEWAY APPROACH



NOTE: USE WITH STANDARD CURB & GUTTER ONLY NOT WITH MOUNTABLE CURB & GUTTER.

HEWITT
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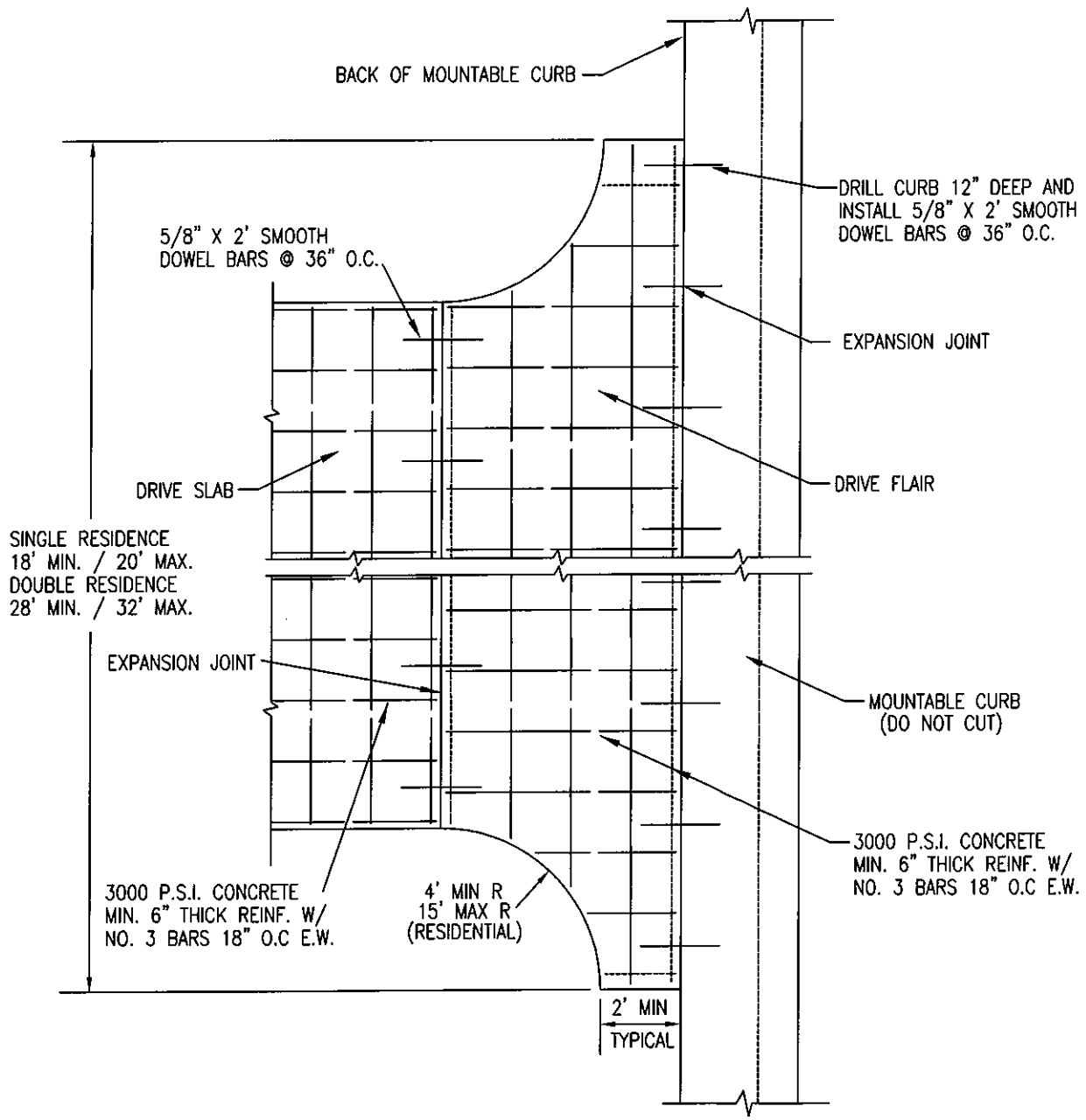
CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

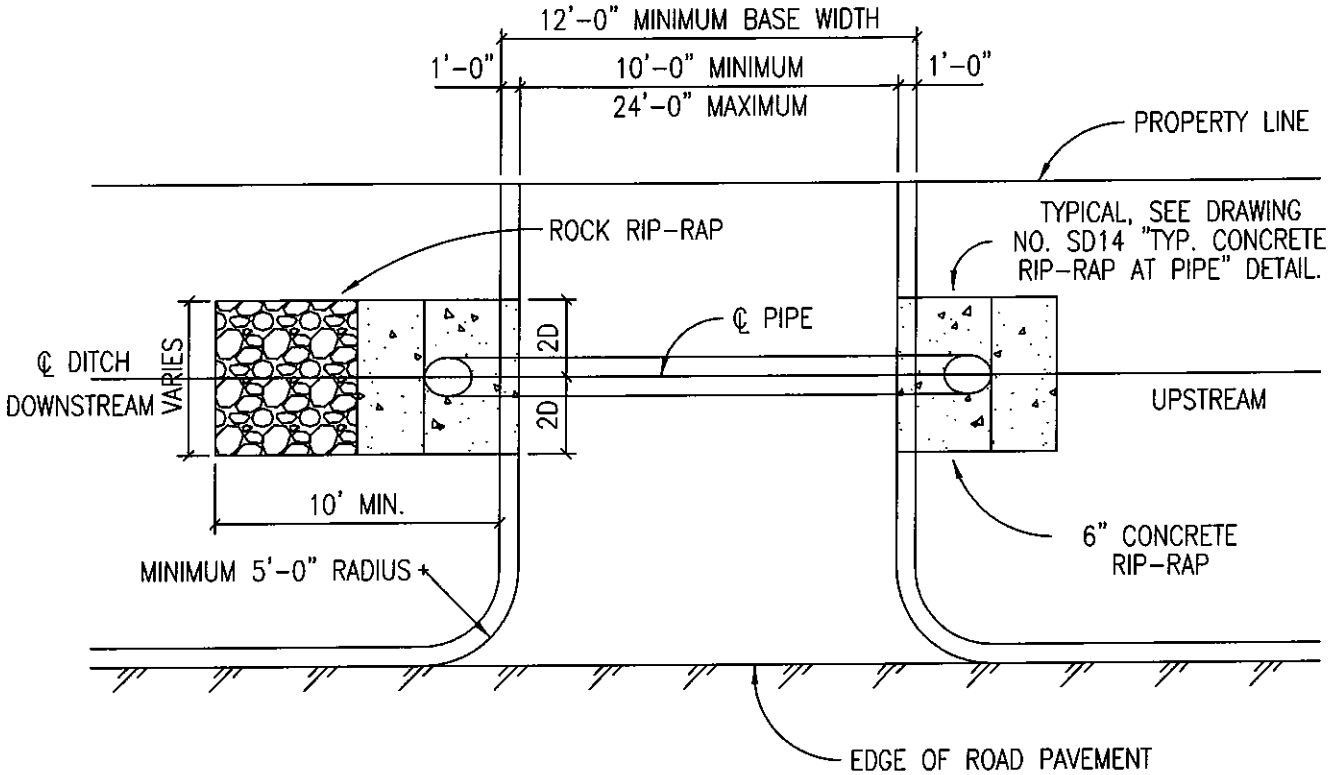
STANDARD DRIVEWAY APPROACH DETAIL

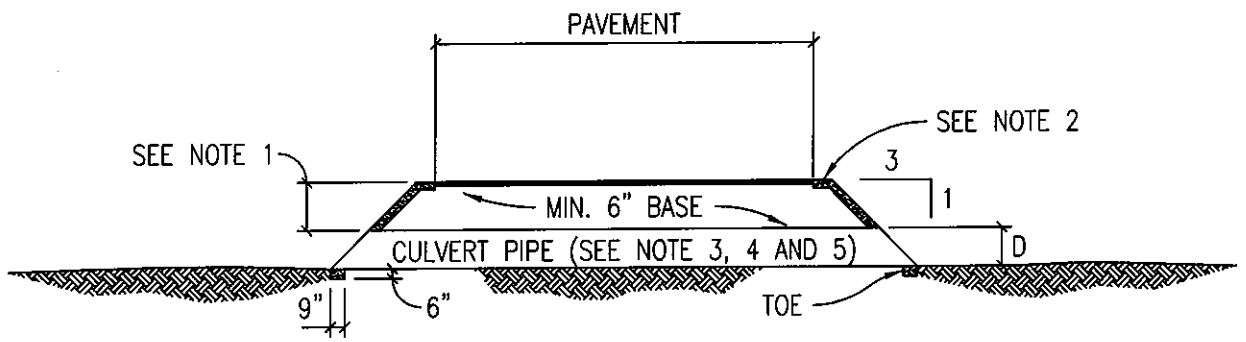
REVISION NOTE:	
DRAWING NAME:	SD10
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

NOTE: EXPANSION JOINT MATERIAL SHALL BE 1/2" PRE-MOLDED CLOSED CELL EXPANSION JOINT MATERIAL.



HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD11
	MOUNTABLE CURB DRIVEWAY FLAIR DETAILS	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.





NOTES:

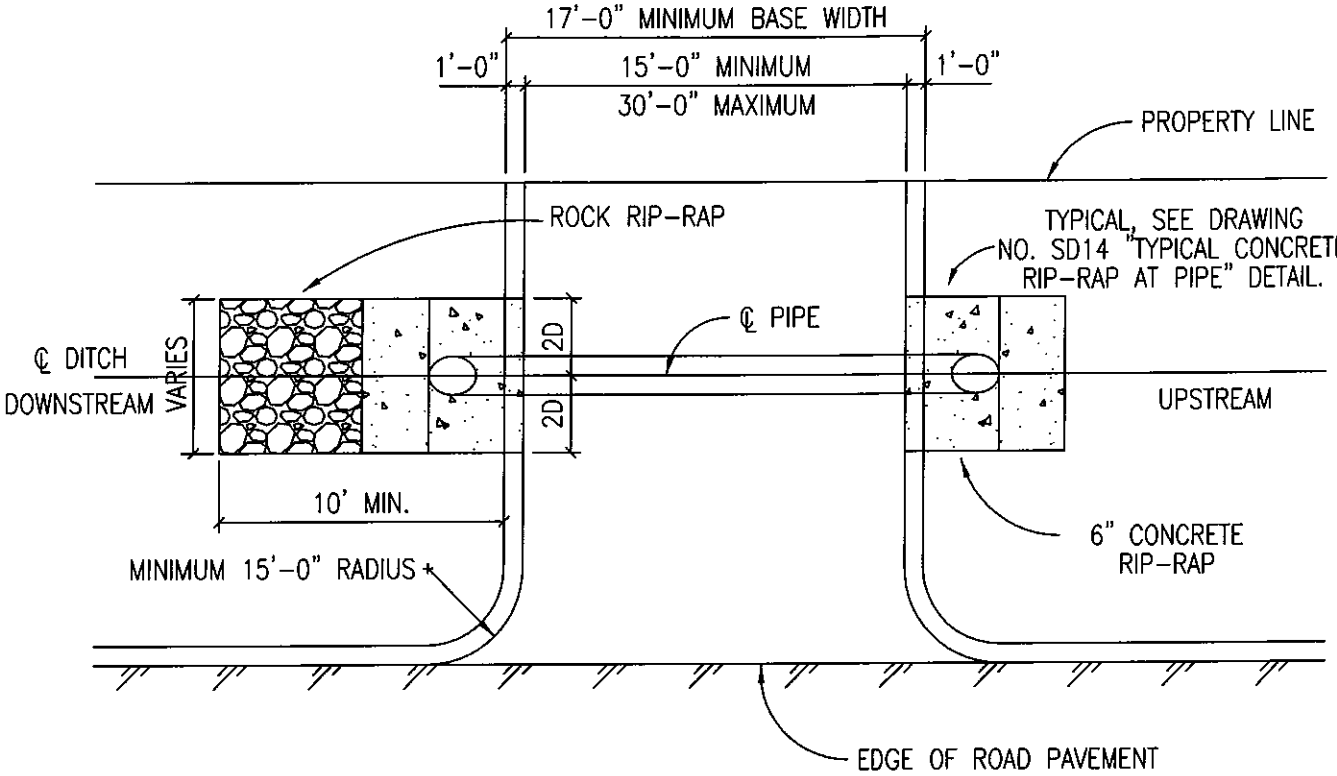
1. MINIMUM COVER OVER CULVERT PIPE SHALL BE 6" (SEE NOTE 5).
2. 5" CONCRETE RIP-RAP SHALL BE INSTALLED.
3. CULVERT PIPE TO BE MINIMUM OF 15" DIAMETER.
4. CULVERT PIPE MATERIAL TO BE R.C.P. (CLASS III), UNLESS PRIOR APPROVAL IS GRANTED BY THE CITY OF HEWITT.
5. MINIMUM COVER OVER CULVERT PIPE SHALL PROVIDE H20 LOADING.
6. BACKFILL AROUND CULVERT PIPE SHALL BE SELECT MATERIAL TO BE PLACED AND COMPACTED TO 95% DENSITY AS PER ASTM D689.
7. RIP-RAP SHALL EXTEND 10' FROM THE DOWN STREAM SIDE USING THE NOMINAL STONE SIZE DIA. OF 8" TO A DEPTH OF 16" (MINIMUM).
8. MINIMUM CHANNEL SIDE SLOPE SHALL BE 4:1.

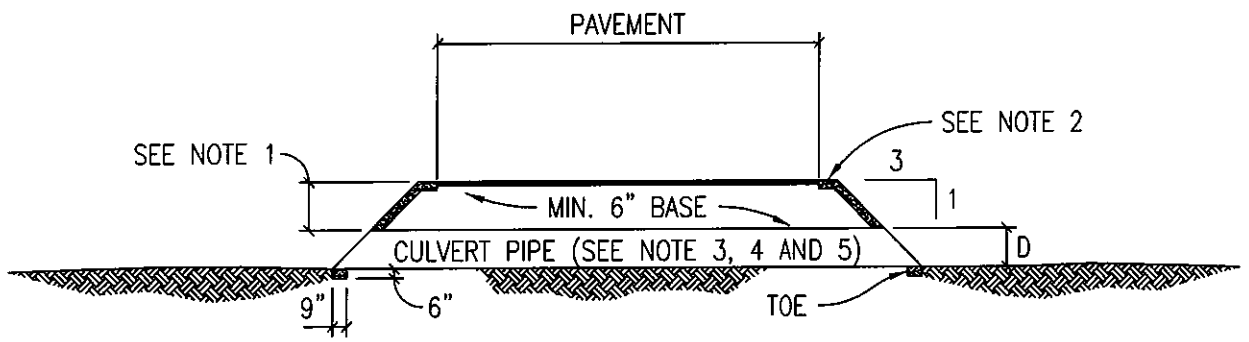
HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

RURAL RESIDENTIAL DRIVEWAY APPROACH WITH CULVERT PIPE

REVISION NOTE:	
DRAWING NAME:	SD12
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.





NOTES:

1. MINIMUM COVER OVER CULVERT PIPE SHALL BE 6" (SEE NOTE 5).
2. 5" CONCRETE RIP-RAP SHALL BE INSTALLED.
3. CULVERT PIPE TO BE MINIMUM OF 15" DIAMETER.
4. CULVERT PIPE MATERIAL TO BE R.C.P. (CLASS III), UNLESS PRIOR APPROVAL IS GRANTED BY THE CITY OF HEWITT.
5. MINIMUM COVER OVER CULVERT PIPE SHALL PROVIDE H20 LOADING.
6. BACKFILL AROUND CULVERT PIPE SHALL BE SELECT MATERIAL TO BE PLACED AND COMPACTED TO 95% DENSITY AS PER ASTM D689.
7. ROCK RIP-RAP SHALL SHALL EXTEND 10' FROM THE DOWN STREAM SIDE USING THE AVERAGE STONE SIZE DIA. OF 8" AT A DEPTH OF 16" (MINIMUM).
8. MINIMUM CHANNEL SIDE SLOPE SHALL BE 4:1.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

RURAL NON-RESIDENTIAL UNDIVIDED DRIVEWAY APPROACH WITH CULVERT PIPE

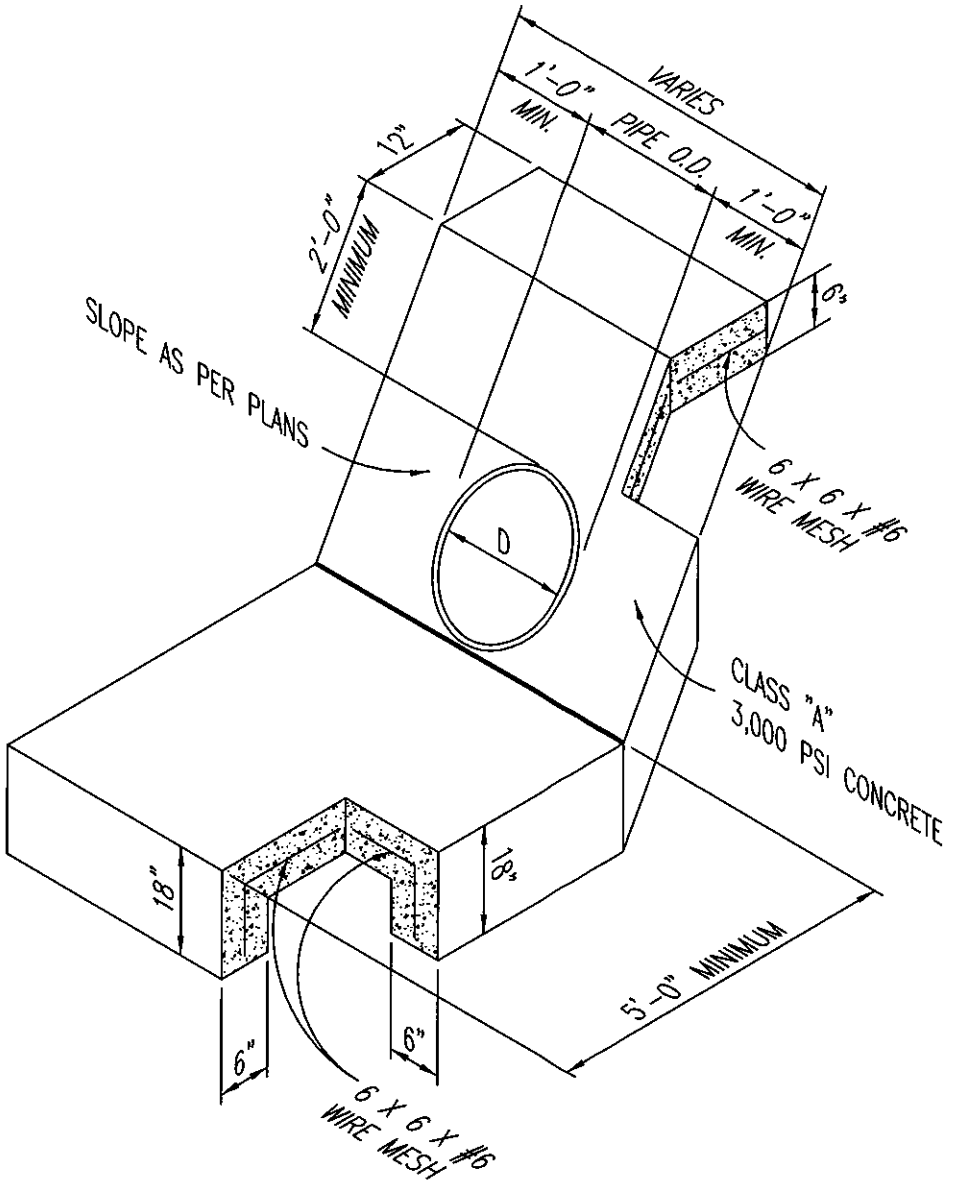
REVISION NOTE:

DRAWING NAME: SD13

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.

MINIMUM RIP-RAP QUANTITIES	
PIPE	SQ. YDS.
18"	6.2
24"	6.9
27"	7.8
30"	9.5
36"	10.4
42"	12.0
48"	14.3
54"	16.4



NOTES:

1. WHEN HEADWALLS AND WINGWALLS ARE REQUIRED, THEY SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARDS, OR AS DIRECTED BY THE CITY.
2. ENERGY DISSIPATERS SHALL BE REQUIRED IF PIPE VELOCITY IS GREATER THAN 5.0 F.P.S. OR AS DIRECTED BY THE CITY OF HEWITT.
3. SUPPORT REINFORCING WIRE MESH REQUIRED AS SUPPORT FOR APPROACH SLAB AND SHALL BE SUPPORTED BY REBAR CHAIRS OR OTHER APPROVED METHODS.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

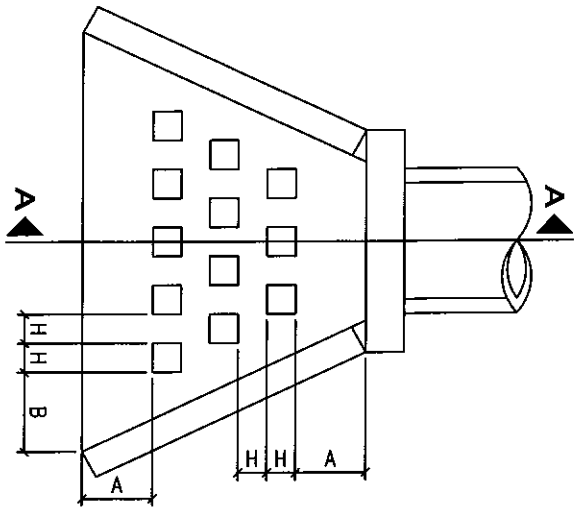
TYPICAL CONCRETE RIP-RAP AT PIPE

REVISION NOTE:

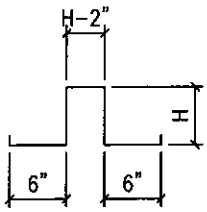
DRAWING NAME: SD14

SCALE: N.T.S. | DATE: 1/25/13

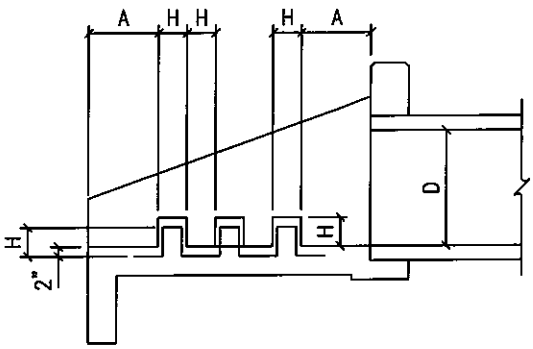
DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



PLAN VIEW



BARS



SECTION "A–A"

NOTES:

1. USE CLASS "A" CONCRETE, 3,000 PSI AT 28 DAYS, UNLESS NOTED.
2. REINFORCING STEEL – ASTM A615, GRADE 40, UNLESS NOTED.
3. LAP REINFORCING 30 BAR DIAMETERS MIN. AT SPLICES, UNLESS NOTED.
4. CHAMFER EXPOSED EDGES OF CONCRETE 3/4", UNLESS NOTED.
5. PLACE REINFORCING WITH THE CENTER OF THE OUTSIDE BARS 2 INCHES FROM THE SURFACE OF THE CONCRETE.

TABLE OF DIMENSIONS FOR ENERGY DISSIPATER DETAIL

D PIPE DIAMETER (INCHES)	NUMBER OF ROWS OF DISSIPATERS	NUMBER OF DISSIPATERS IN FRONT ROW	H (INCHES)	A (INCHES)	B (INCHES)
15	1	3	4	4	9.1875
18	2	4	4 1/2	9 1/2	15.5625
24	2	5	6	14 3/4	16 1/2
30	3	6	7 1/2	12 1/2	14 3/8
36	3	6	9	16 1/4	18 5/16
42	3	6	10 1/2	20	22 1/4
48	3	6	12	23 3/4	26 1/4
54	3	6	13 1/2	27 1/2	27 3/4
60	3	6	15	31 1/4	31 5/8

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

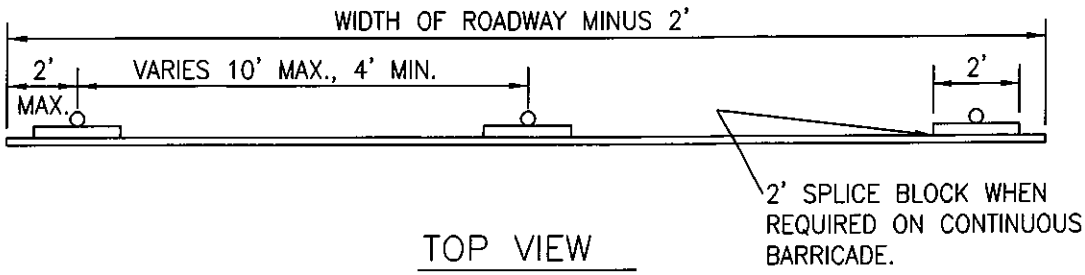
ENERGY DISSIPATER DETAIL

REVISION NOTE:

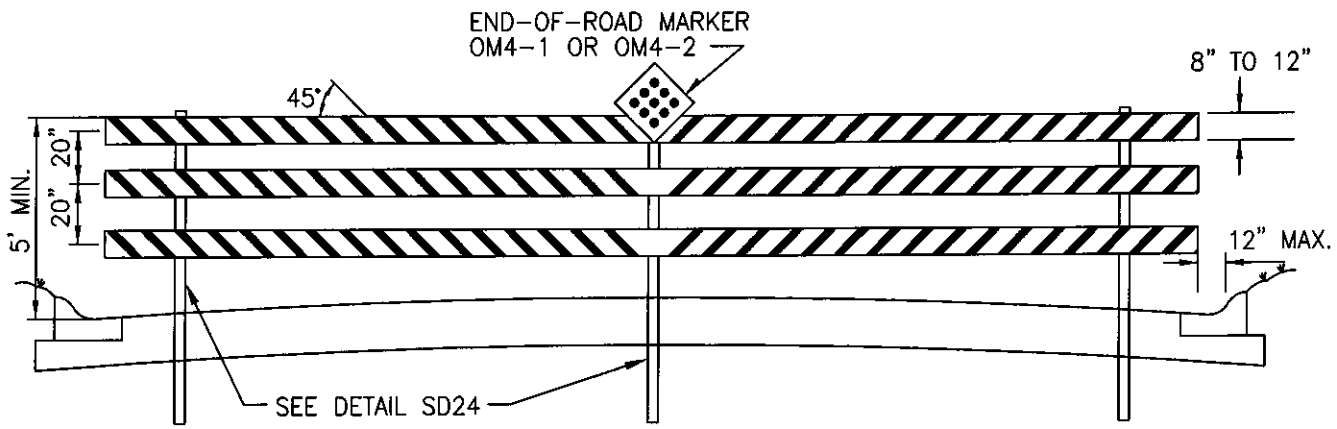
DRAWING NAME: SD15

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



TOP VIEW



FRONT VIEW

GENERAL NOTES FOR THIN WALL TUBE TYPE SIGN SUPPORT:

1. THE BASE SOCKET IS FORMED FROM 2 7/8 " O.D. X 12 GAUGE GALVANIZED PIPE.
2. THE WEDGE IS FORMED FROM 11 GAUGE STEEL GALVANIZED PER ASTM A525.
3. THE SIGN POST IS 2.375" O.D. X 0.095" THIN WALL STEEL TUBING.
4. STEEL SUPPORTS SHALL BE MADE FROM NEW MATERIAL AND SHALL BE CORROSION RESISTANT. STEEL SUPPORTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATIONS A123 OR A525 (G-90 OR BETTER).
5. SUPPORTS SHALL BE STRAIGHT WITHIN 1/4 " PER 5 FEET OF LENGTH AND SHALL HAVE A SMOOTH, UNIFORM FINISH FREE FROM DEFECTS AFFECTING STRENGTH OR APPEARANCE. ANY BOLT HOLES AND SHEARED ENDS SHALL BE FREE FROM BURRS. BASES OF MULTISECTION SUPPORTS SHALL NOT EXTEND MORE THAN 5 INCHES ABOVE GROUND WHEN INSTALLED.
6. BOLTS, NUTS, SCREWS, WASHERS AND OTHER MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE TO ASTM DESIGNATION: A153 CLASS C OR D, OR B695 CLASS 50.
7. BARRICADE SUPPORTS SYSTEMS USED ON THIS SHEET MAY BE SUITABLE FOR ONLY CERTAIN SOIL TYPES. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING THE APPROPRIATE SUPPORT SYSTEM FOR SOIL CONDITIONS ON EACH PROJECT.
8. ALL BARRICADES TO BE IN CONFORMANCE WITH THE CURRENT EDITION OF THE TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
9. RAIL-HIGH DENSITY POLYETHYLENE OR HOLLOW PROFILE PLASTIC LUMBER AND SHEETING SHALL BE RETROREFLECTIVE, INCLUDING SPLICE BLOCKS.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

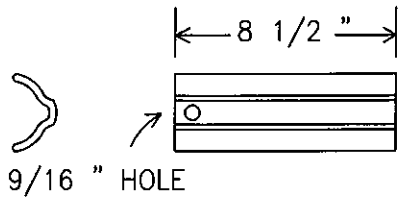
PERMANENT END-OF-ROAD BARRICADE

REVISION NOTE:

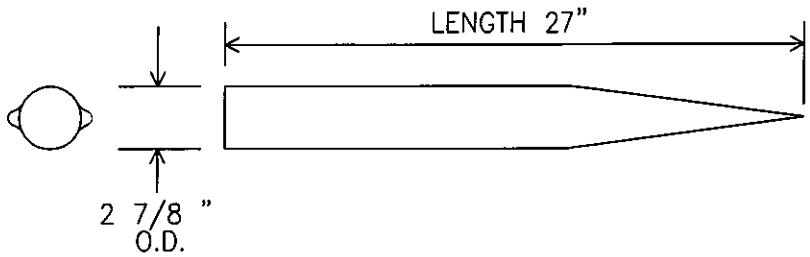
DRAWING NAME: SD16

SCALE: N.T.S. | DATE: 1/25/13

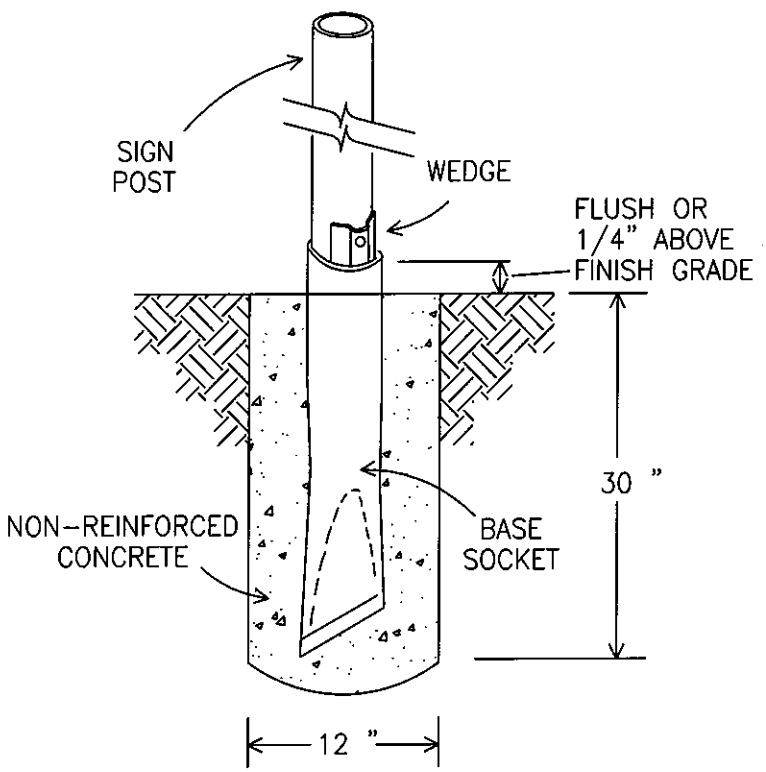
DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



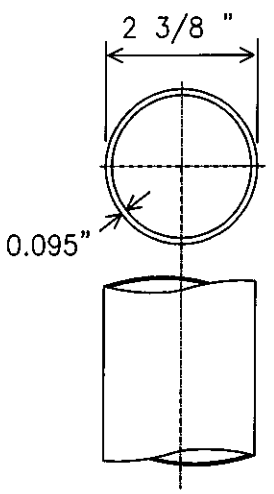
WEDGE



BASE SOCKET



TYPICAL ASSEMBLY



SIGN POST

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

BREAKAWAY FOUNDATION

REVISION NOTE:

DRAWING NAME: SD17

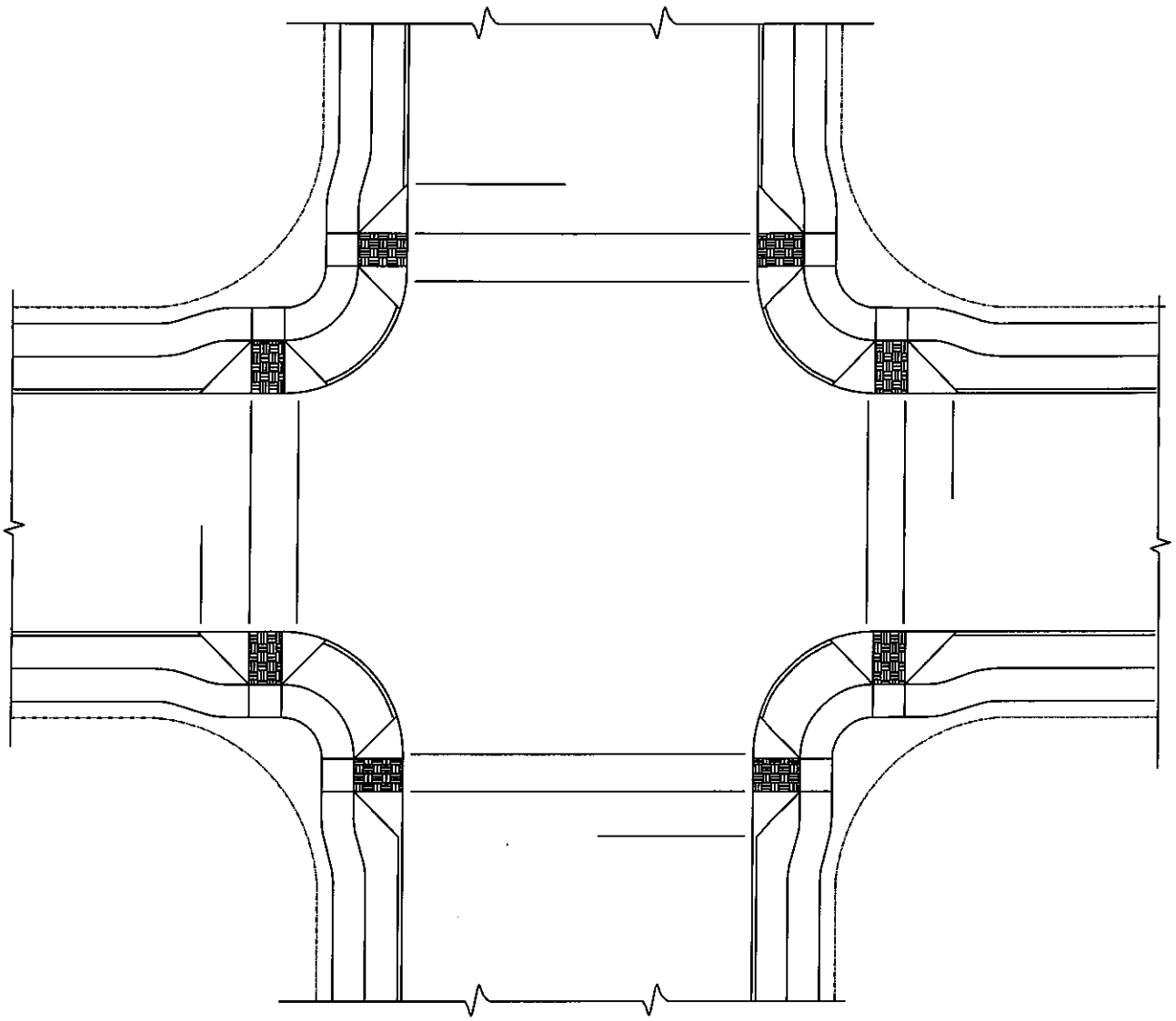
SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.

NOTES:

1. COMMERCIAL SIDEWALKS WIDTHS – 6'
   RESIDENTIAL SIDEWALKS WIDTHS – 5'
2. ALL SLOPES ARE MAXIMUM ALLOWABLE. FLATTER SLOPES THAT WILL STILL DRAIN PROPERLY ARE ENCOURAGED.
3. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
4. FOR PURPOSES OF WARNING, THE CURB RAMPS SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRASTS WITH THAT OF ADJOINING PEDESTRIAN ROUTES.
5. TEXTURES MAY CONSIST OF PAVERS WITH TRUNCATED DOMED SURFACES OR GROOVES. TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
6. COLOR CONTRAST, FOR EXAMPLE, CAN BE ACCOMPLISHED WITH COLORED CONCRETE PAVERS THAT HAVE TRUNCATED DOMES OR BY COLORED STAINED CONCRETE WITH GROOVES, EITHER OF WHICH WOULD PROVIDE A CONTRAST WITH TYPICALLY LIGHT COLORED CONCRETE.
7. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, VISIBILITY AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
8. RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS IF THEY ARE UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 4 FEET WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
9. ALL SIDEWALK PLANS AND DETAILS SHALL BE SUBMITTED AND APPROVED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
10. ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GRATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6 INCHES OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES. THE ONLY EXCEPTION IS AT CURB RAMPS. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. CURB RAMPS SHALL BE PROVIDED WHERE EVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB. CURB RAMPS ARE GENERALLY INTERPRETED AS ONLY THE PORTION TYING DIRECTLY INTO THE ROADWAY.
11. TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.
12. ALL SIDEWALKS WILL BE DOWELED INTO EXISTING SIDEWALKS, DRIVEWALKS, DRIVEWAYS, INLET BOXES, RETAINING WALLS, ETC.
13. ALL SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 1:50, UNLESS A VARIANCE IS PROVIDED BY TDLR.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:	
		DRAWING NAME:	SD18
	PEDESTRIAN RAMPS GENERAL NOTES	SCALE: N.T.S.	DATE: 1/25/13
		DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



OFFSET SIDEWALKS

NOTE: CURB RAMPS WITH RETURNED CURBS INSTEAD OF SIDE FLARES ARE PERMITTED WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

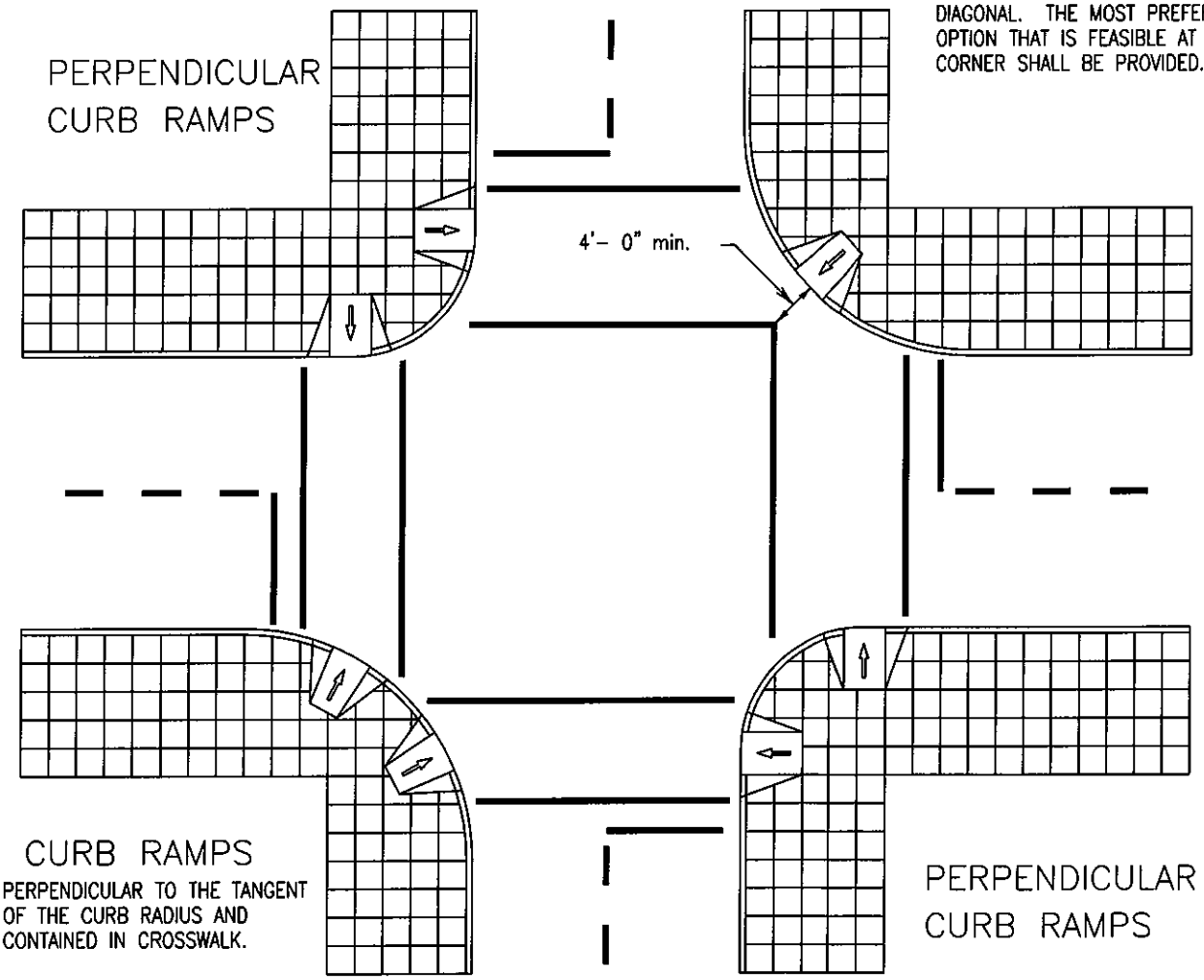
TYPICAL INTERSECTION LAYOUT

REVISION NOTE:	
DRAWING NAME:	SD19
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

SINGLE DIAGONAL CURB RAMP

FOR ON-SYSTEM NEW CONSTRUCTION, RECONSTRUCTION AND REHABILITATION PROJECTS WHERE PEDESTRIAN FACILITIES ARE NEWLY CONSTRUCTED OR SUBSTANTIALLY ALTERED, CONSTRUCTION OF SINGLE DIAGONAL RAMPS IS NOT PERMITTED.

FOR ON-SYSTEM PROJECTS SUCH AS RESTORATION, SEAL COAT AND OVERLAY PROJECTS, PLACEMENT OF CURB RAMPS SHOULD BE EVALUATED IN THE FOLLOWING ORDER OF PREFERENCE: PERPENDICULAR, PARALLEL OR COMBINATION, AND SINGLE DIAGONAL. THE MOST PREFERABLE OPTION THAT IS FEASIBLE AT EACH CORNER SHALL BE PROVIDED.

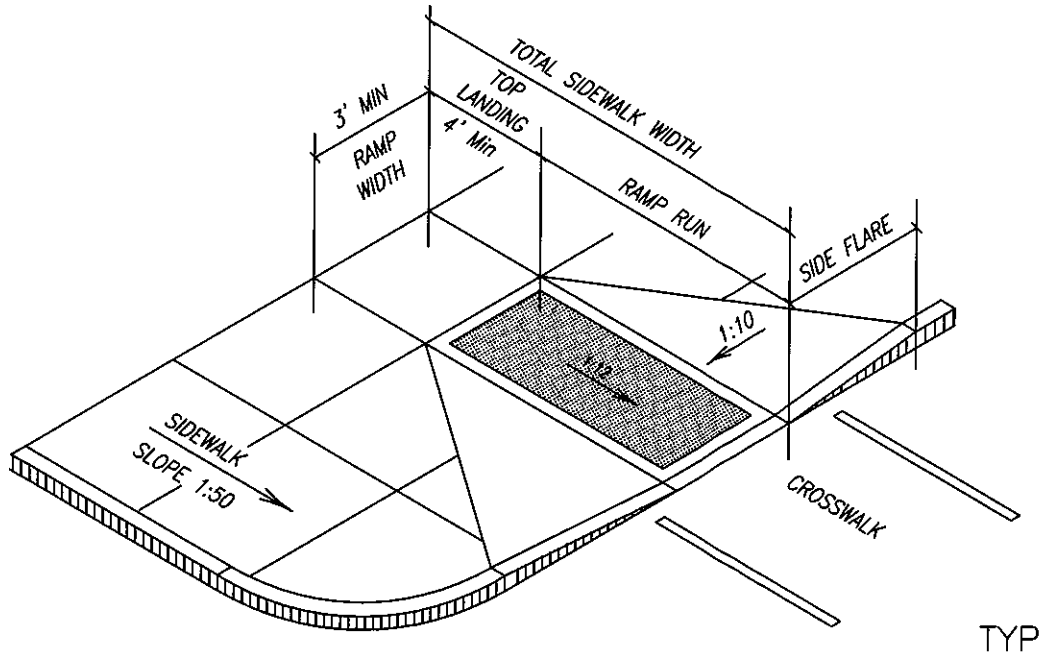


HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

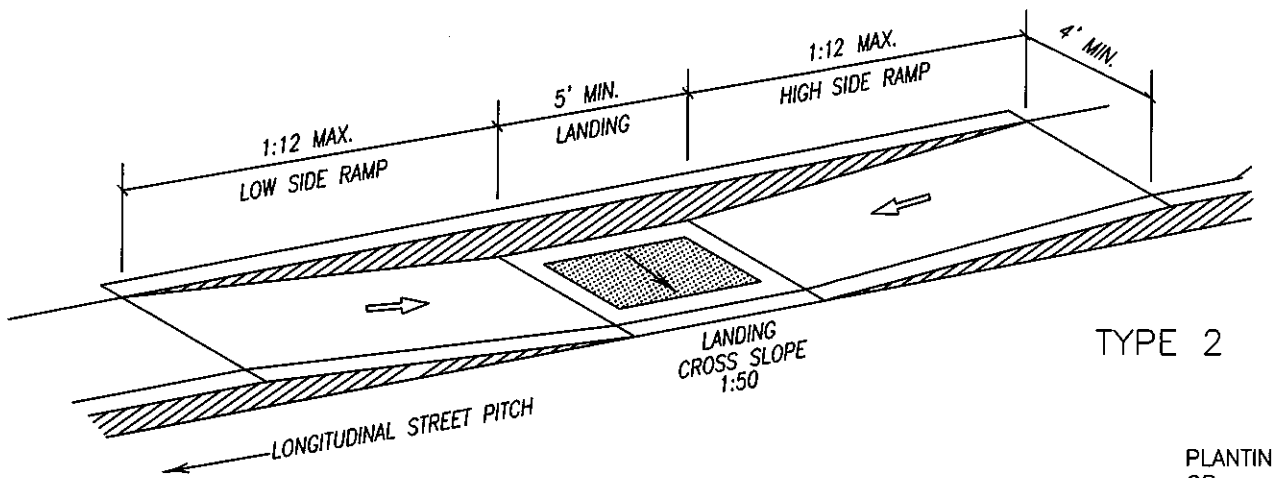
CURB RAP PLACEMENTS AT INTERSECTIONS

REVISION NOTE:	
DRAWING NAME:	SD20
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

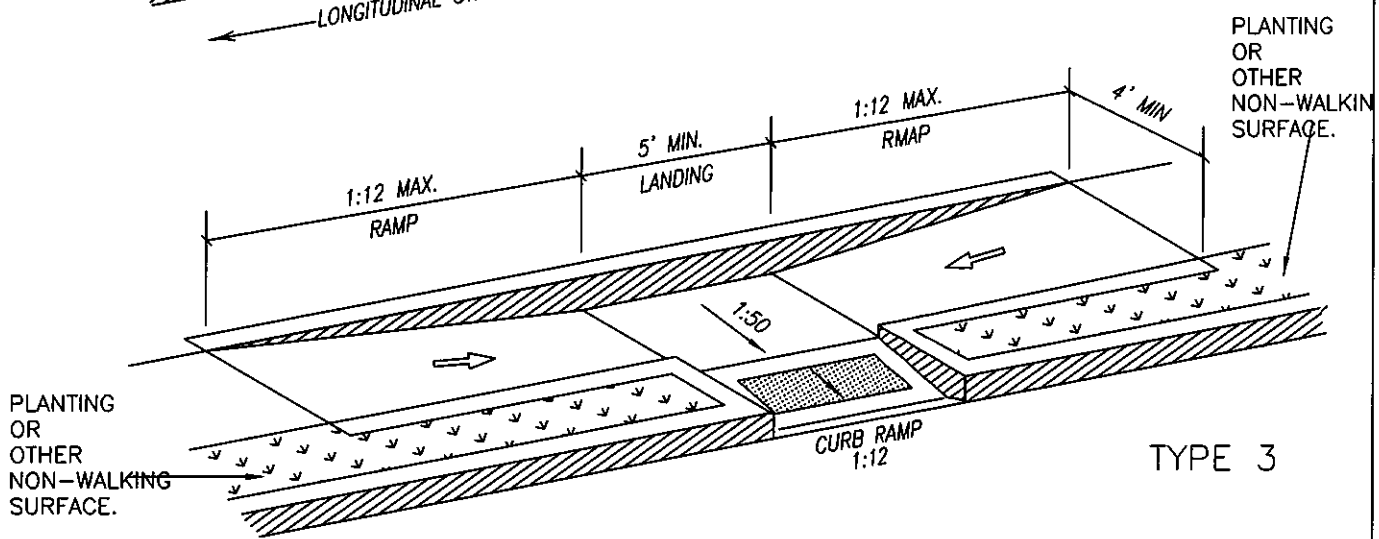


TYPE 1

PERPENDICULAR CURB RAMPS



TYPE 2



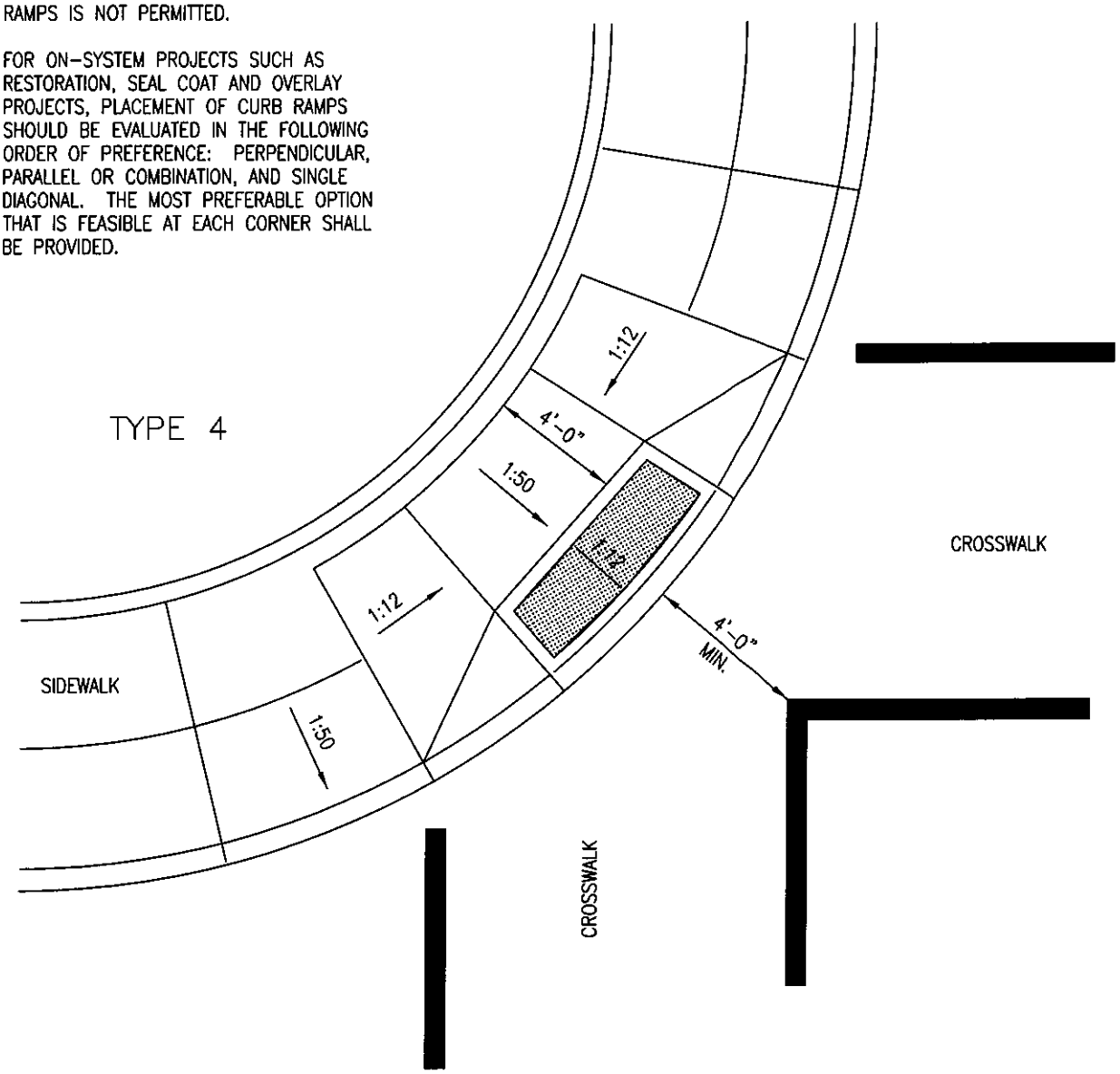
TYPE 3

PARALLEL CURB RAMPS

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:	
		DRAWING NAME:	SD21
	SIDEWALK RAMP DETAILS; TYPES 1, 2, & 3	SCALE: N.T.S.	DATE: 1/25/13
		DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

FOR ON-SYSTEM NEW CONSTRUCTION, RECONSTRUCTION AND REHABILITATION PROJECTS WHERE PEDESTRIAN FACILITIES ARE NEWLY CONSTRUCTED OR SUBSTANTIALLY ALTERED, CONSTRUCTION OF SINGLE DIAGONAL RAMPS IS NOT PERMITTED.

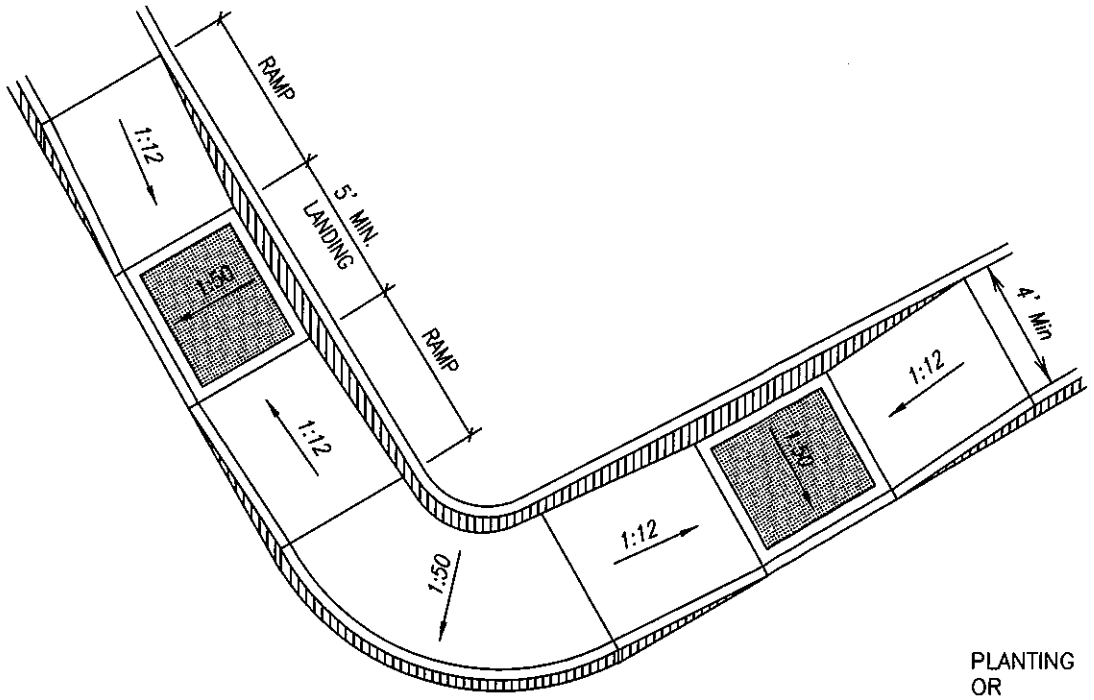
FOR ON-SYSTEM PROJECTS SUCH AS RESTORATION, SEAL COAT AND OVERLAY PROJECTS, PLACEMENT OF CURB RAMPS SHOULD BE EVALUATED IN THE FOLLOWING ORDER OF PREFERENCE: PERPENDICULAR, PARALLEL OR COMBINATION, AND SINGLE DIAGONAL. THE MOST PREFERABLE OPTION THAT IS FEASIBLE AT EACH CORNER SHALL BE PROVIDED.



SINGLE DIAGONAL CURB RAMP

PERPENDICULAR TO THE TANGENT OF THE CURB RADIUS AND CONTAINED IN CROSSWALK.

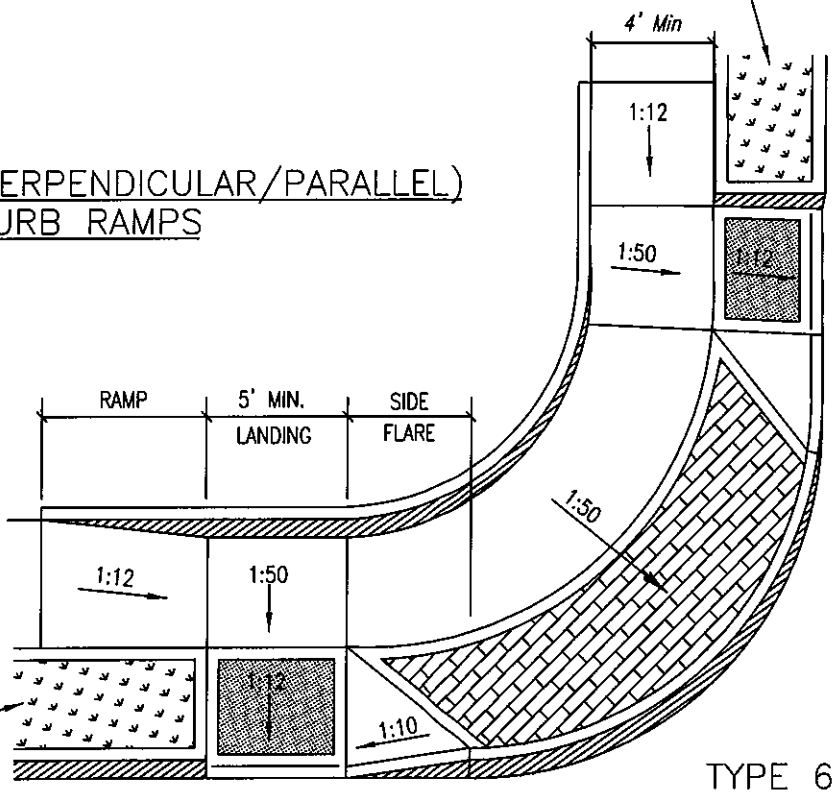
HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD22
	SIDEWALK RAMP DETAIL; TYPE 4	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



TYPE 5

PLANTING OR OTHER NON-WALKING SURFACE.

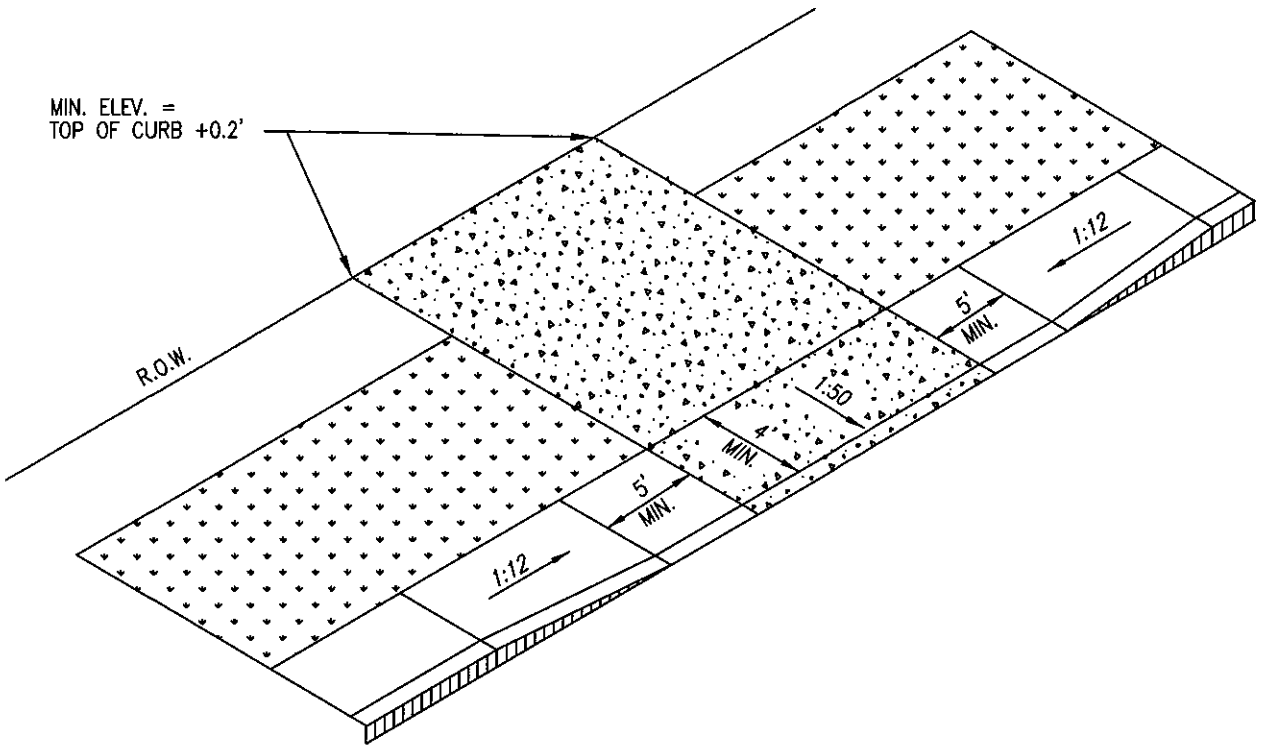
COMBINATION (PERPENDICULAR/PARALLEL) CURB RAMPS



PLANTING OR OTHER NON-WALKING SURFACE.

TYPE 6

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: SD23
	SIDEWALK RAMP DETAIL; TYPES 5 & 6	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



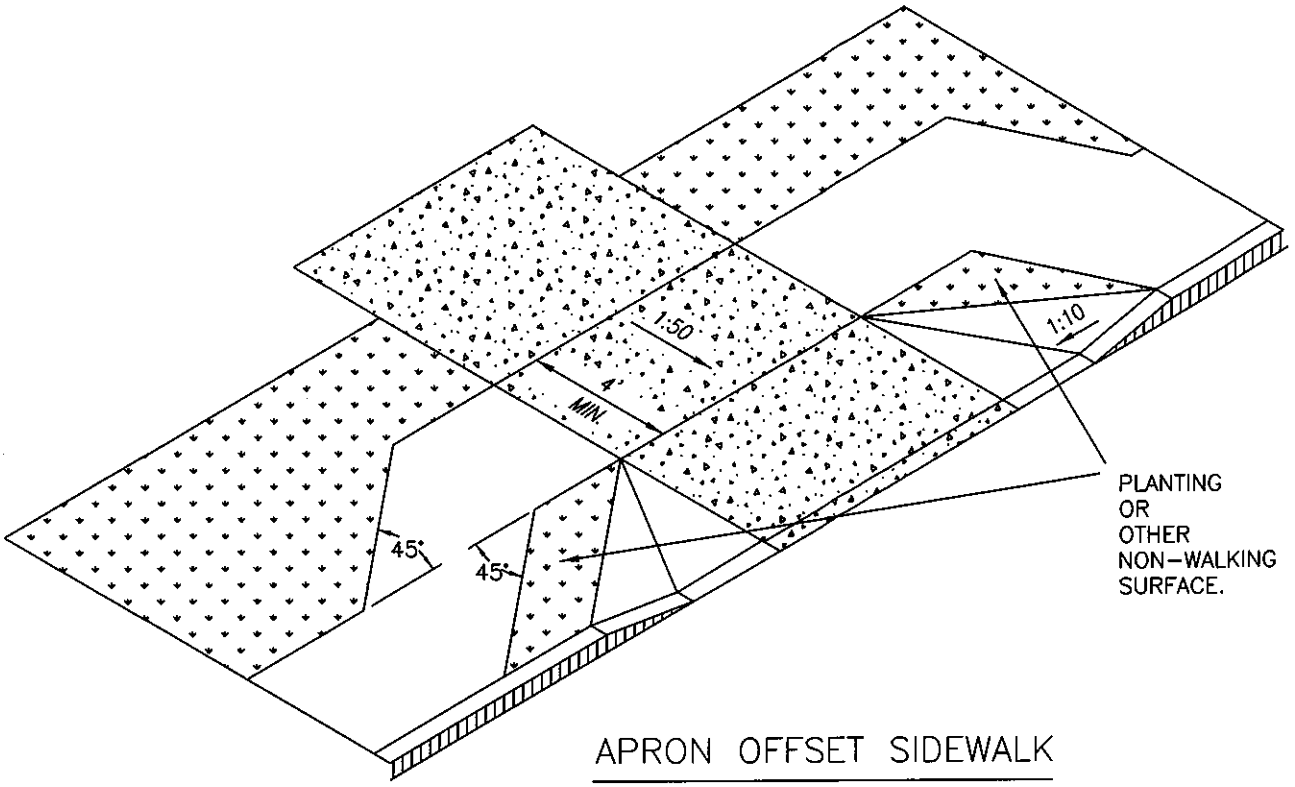
RAMP SIDEWALK
TYPE 10

HEWITT
TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

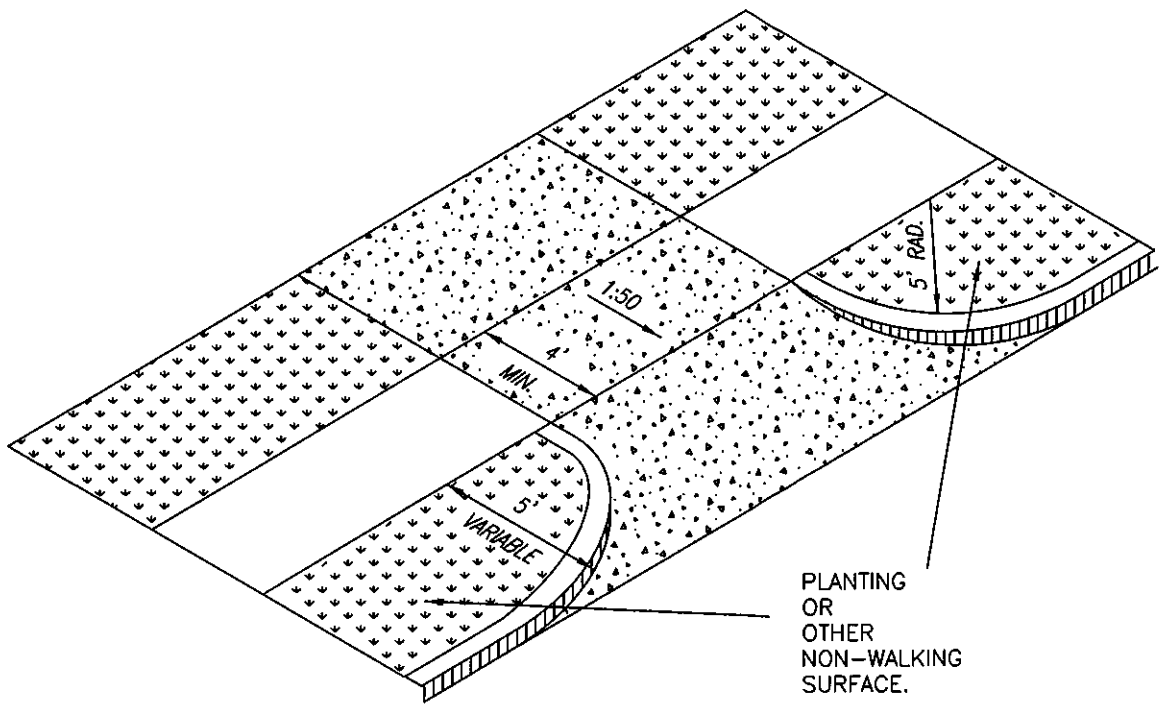
DRIVEWAY APRON TYPE 10

REVISION NOTE:	
DRAWING NAME:	SD24
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



APRON OFFSET SIDEWALK

TYPE 12



SETBACK SIDEWALK

TYPE 13

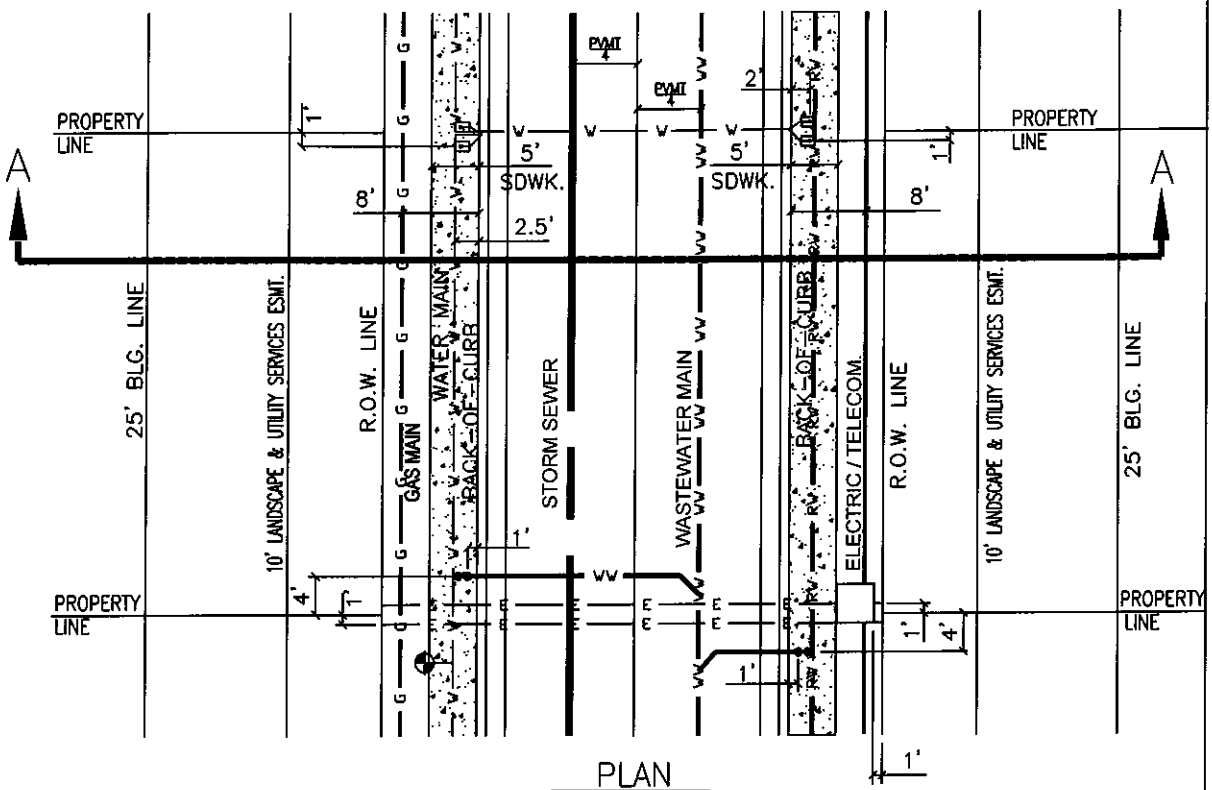
HEWITT
TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

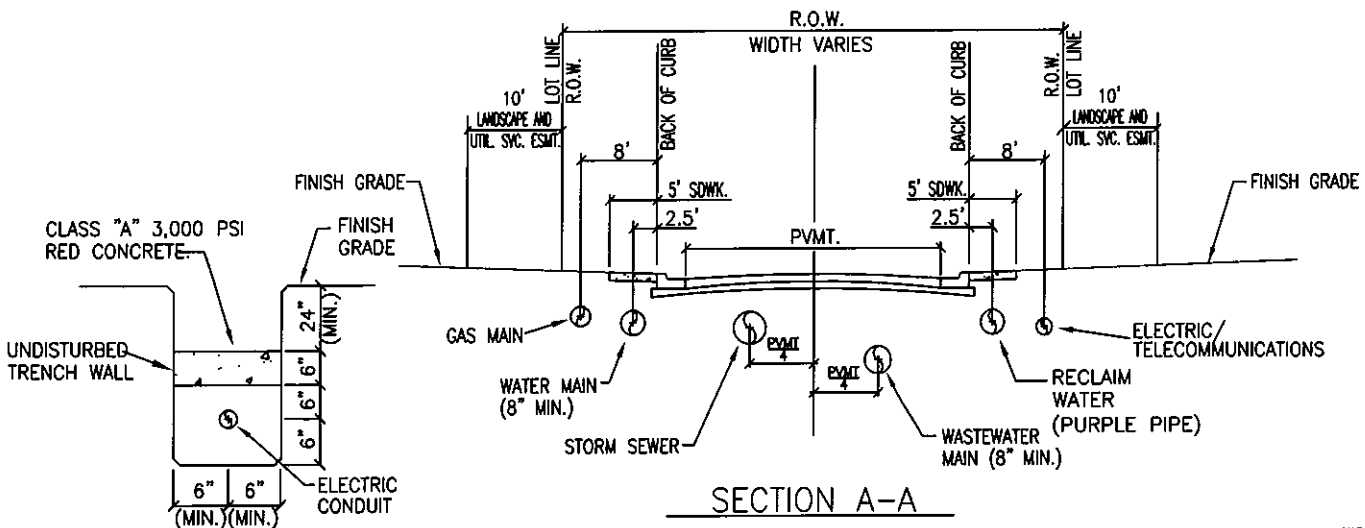
DRIVEWAY APRONS TYPES 12 & 13

REVISION NOTE:	
DRAWING NAME:	SD25
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

Water Standards



PLAN



SECTION A-A

NOTE: WHEN LOCATED WITH IN RIGHT OF WAY, THE ELECTRIC CONDUIT MUST BE CAPPED WITH 3,000 PSI RED CONCRETE.

ELECTRIC CONDUIT CONCRETE CAP DETAIL

CLASSIFICATION	ROW	B-B	PVMT.
MINOR STREET	50'	31	27'
COLLECTOR STREET	56'	37'	33'
ARTERIAL STREET	65'	45'	41'

MINIMUM COVER BELOW FINISH-GRADE *ALL UTILITIES UNDER ROADWAY - 36"*	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"
RECLAIM WATER	36"

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

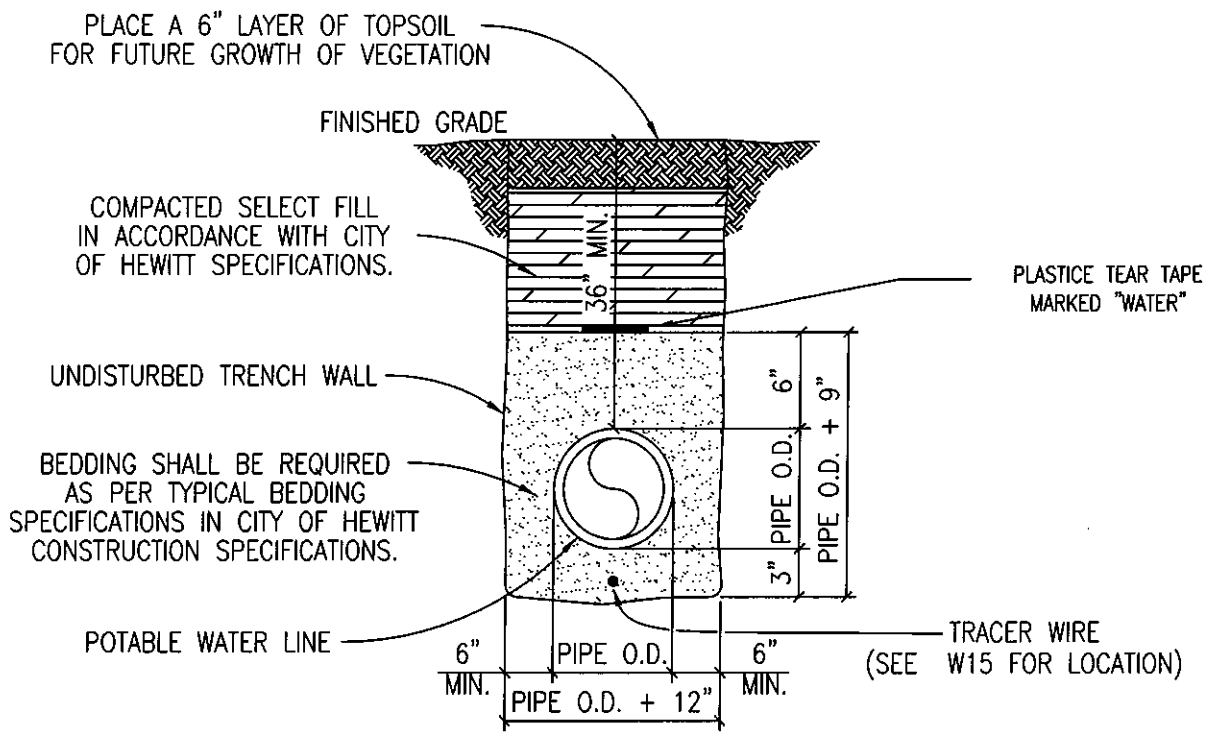
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS

REVISION NOTE:

DRAWING NAME: W01

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS

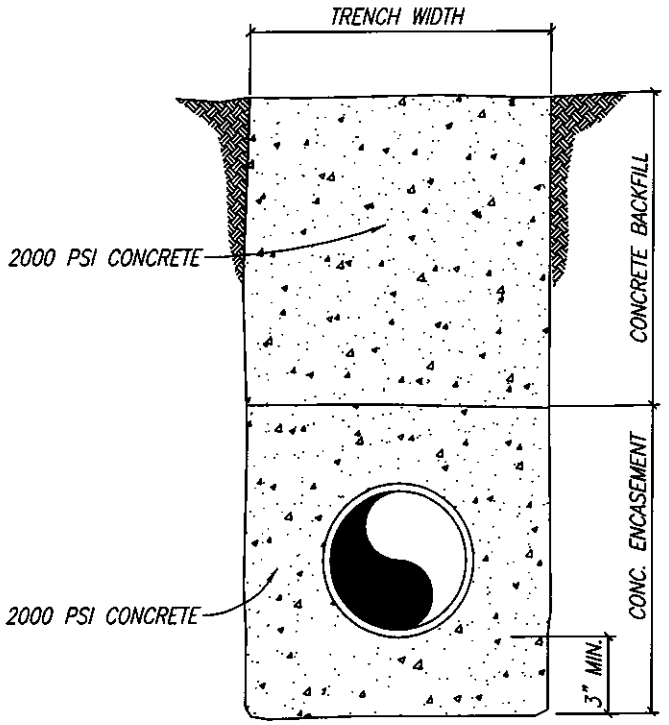
REVISION NOTE:

DRAWING NAME: W02

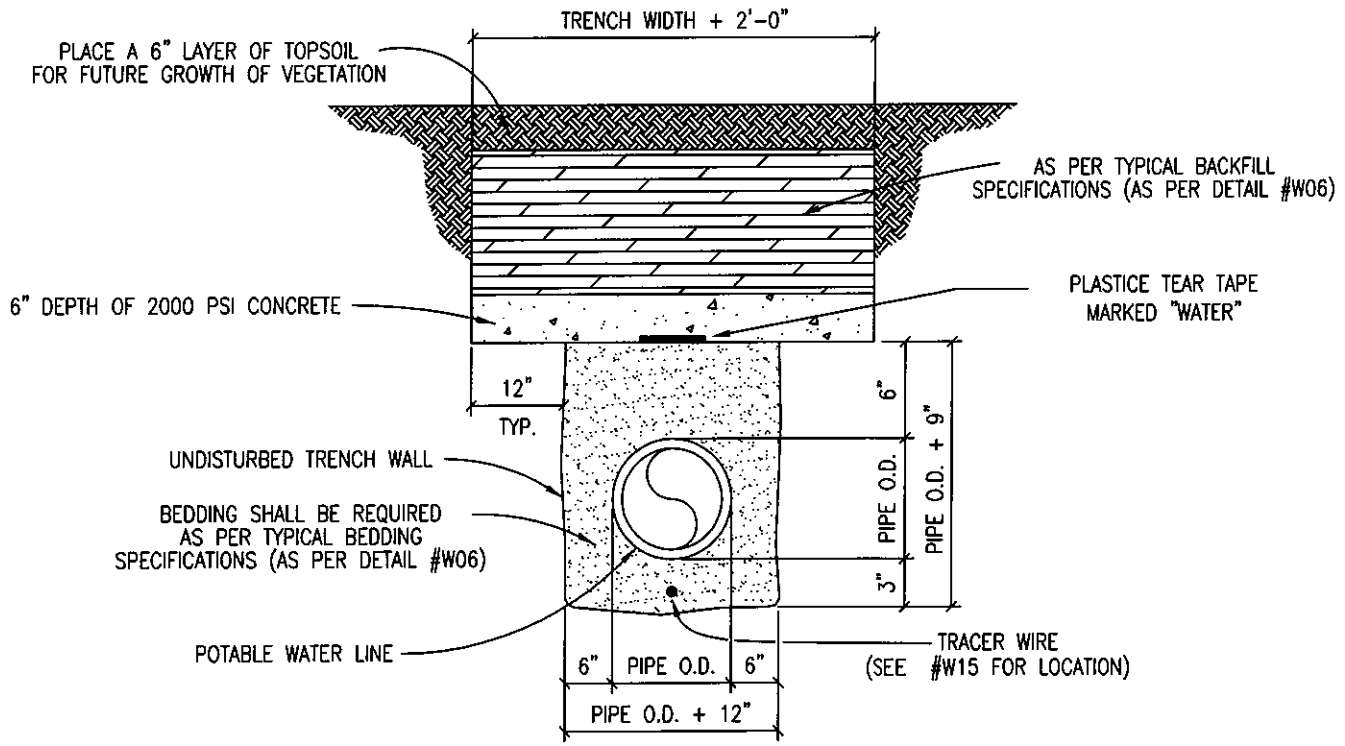
SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.

* WHERE 36" MINIMUM COVER CAN NOT BE OBTAINED OR DUE TO POTENTIAL SURFACE LOADING THE CITY MAY REQUIRE A CAP TO BE INSTALLED.



CONCRETE BACKFILL
AND CONCRETE ENCASEMENT

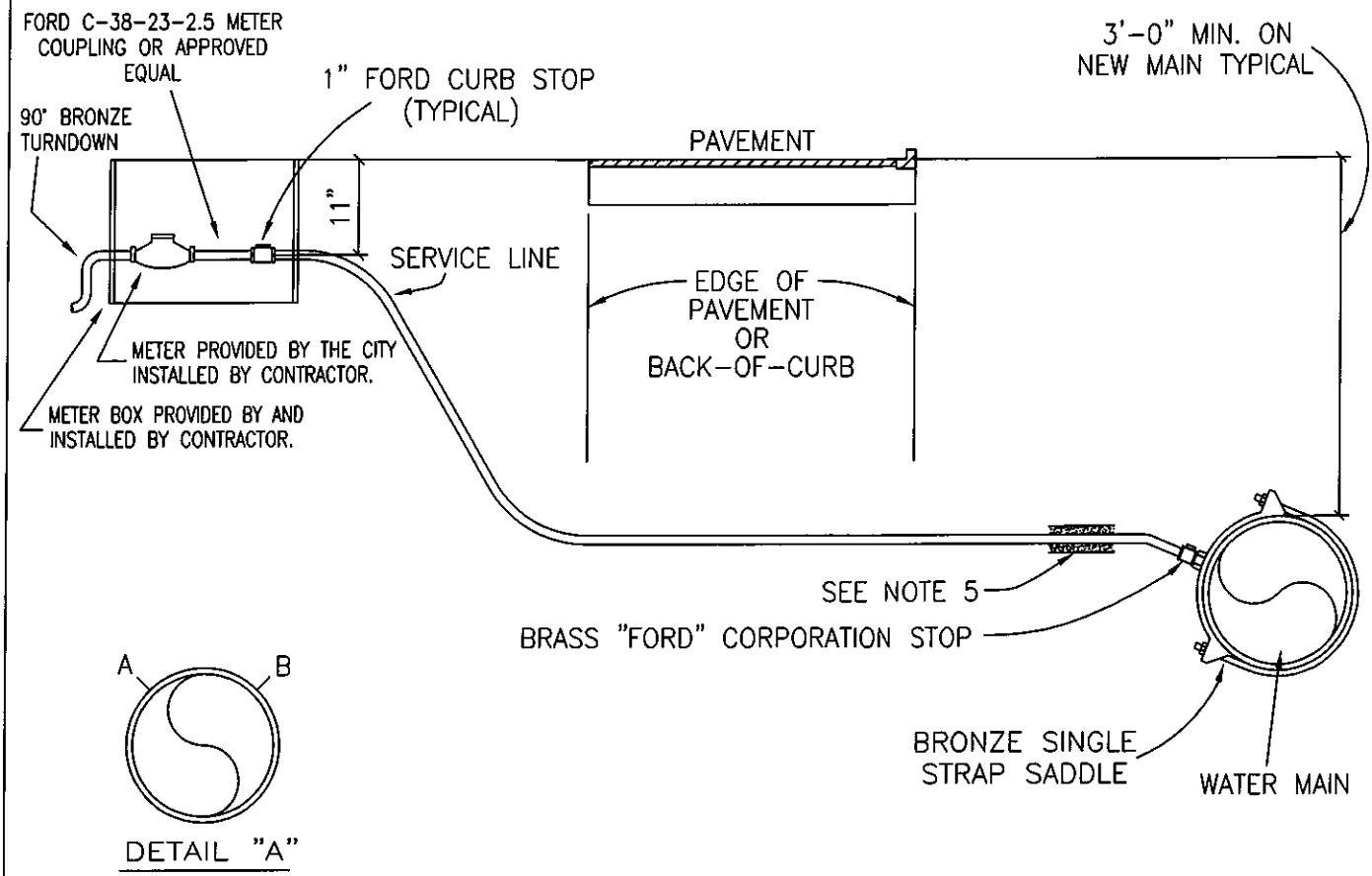


TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: W02A
	CONCRETE TRENCH CAP DETAIL	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



DETAIL "A"

NOTES:

1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AS SHOWN ON DETAIL "A".
2. WHERE NO SIDEWALK EXISTS, METER BOXES SHALL BE SET TO CONFORM TO FINISHED GRADE.
3. AUTHORIZED SERVICE LINE MATERIAL:
   A. COPPER TYPE "K" SOFT
4. SERVICE LINES SHALL BE CONTINUOUS FROM CORPORATION STOP TO CURB STOP WITH NO FITTINGS IN BETWEEN; EXCEPT ON DOUBLE SERVICES, THEN CONTINUOUS TO WYE.
5. BEDDING MATERIAL AS PER CITY OF HEWITT CONSTRUCTION SPECIFICATIONS.
6. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
7. METER BOX TO BE CAPABLE OF HOUSING "NEPTUNE" AUTOMATIC METER READING DEVICE. USE PRE-CAST CONCRETE METER BOX WITH CITY APPROVED COMPATIBLE METER READING LID.
8. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

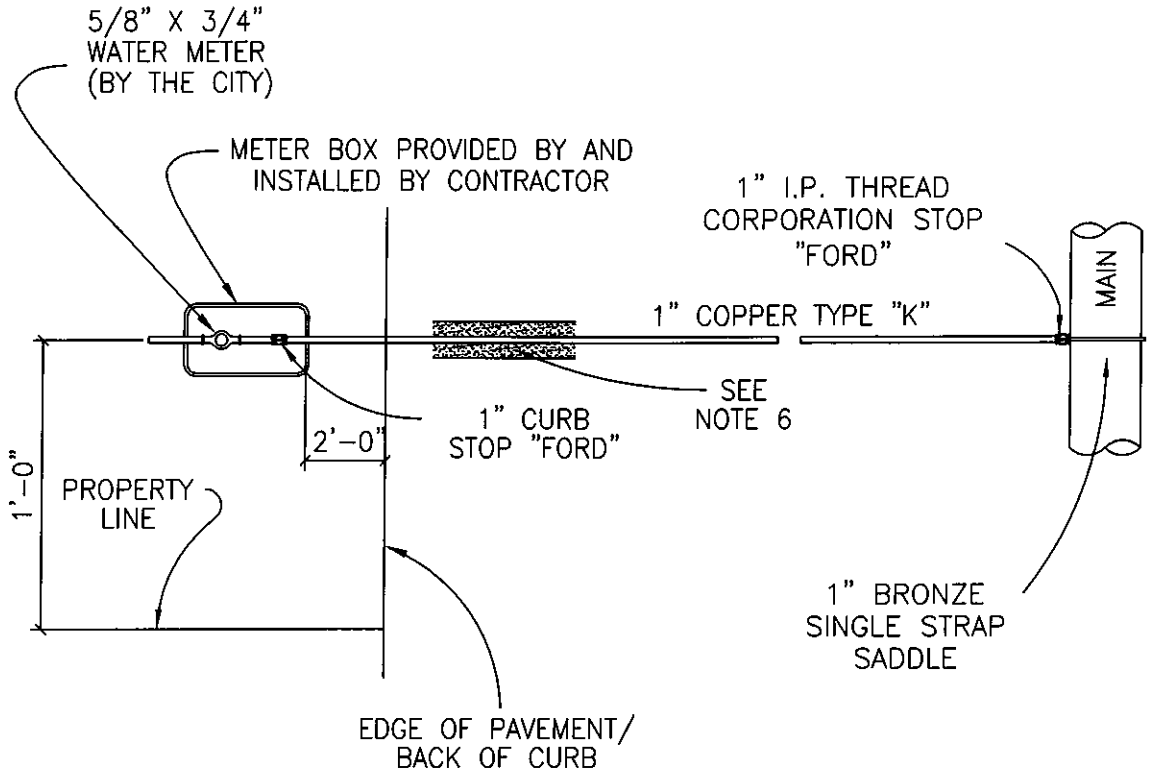
TYPICAL WATER SERVICE-ELEVATION

REVISION NOTE:

DRAWING NAME: W03

SCALE: N.T.S. | DATE: 1/25/13

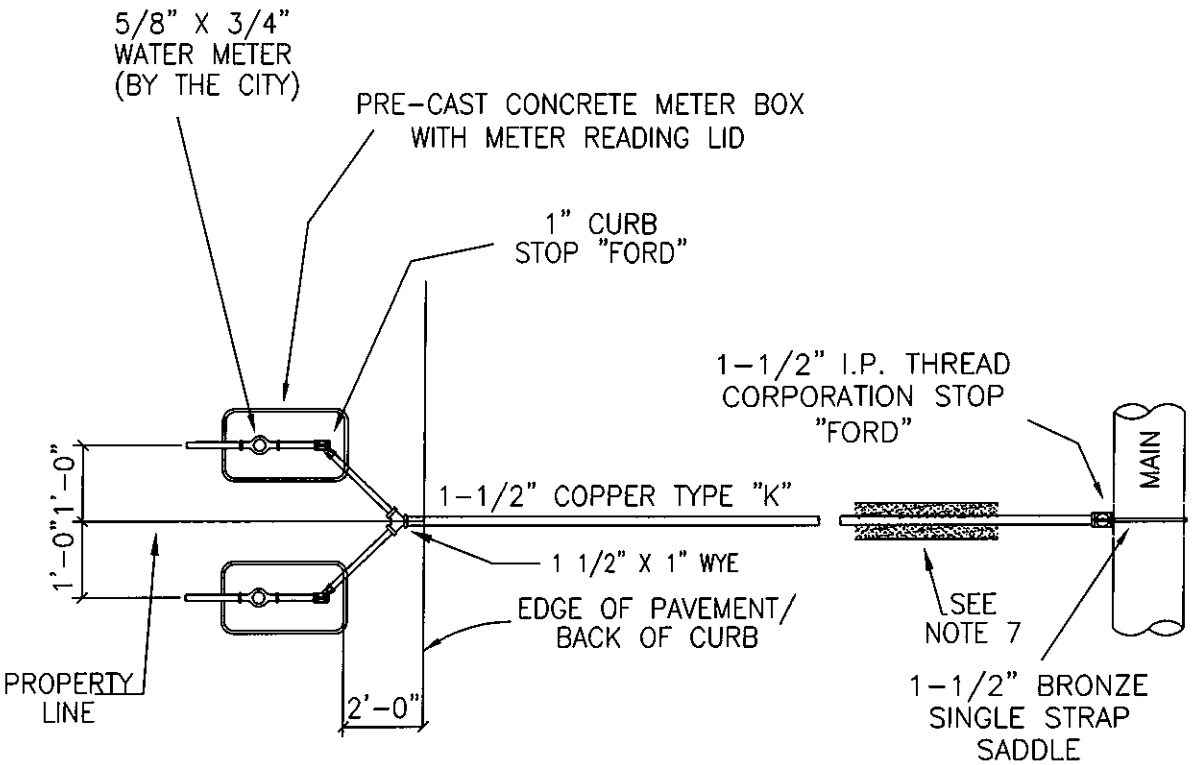
DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



NOTES:

1. AUTHORIZED SERVICE LINE MATERIAL:
   A. 1" COOPER TYPE "K"
2. CURB STOP SHALL BE 1" MINIMUM.
3. 1" CURB STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. ANGLE STOPS SHALL BE INSTALLED 11" BELOW FINISHED GRADE.
6. BEDDING MATERIAL AS PER DETAIL #W06
7. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
8. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: W04
	SINGLE WATER SERVICE PLAN	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



NOTES:

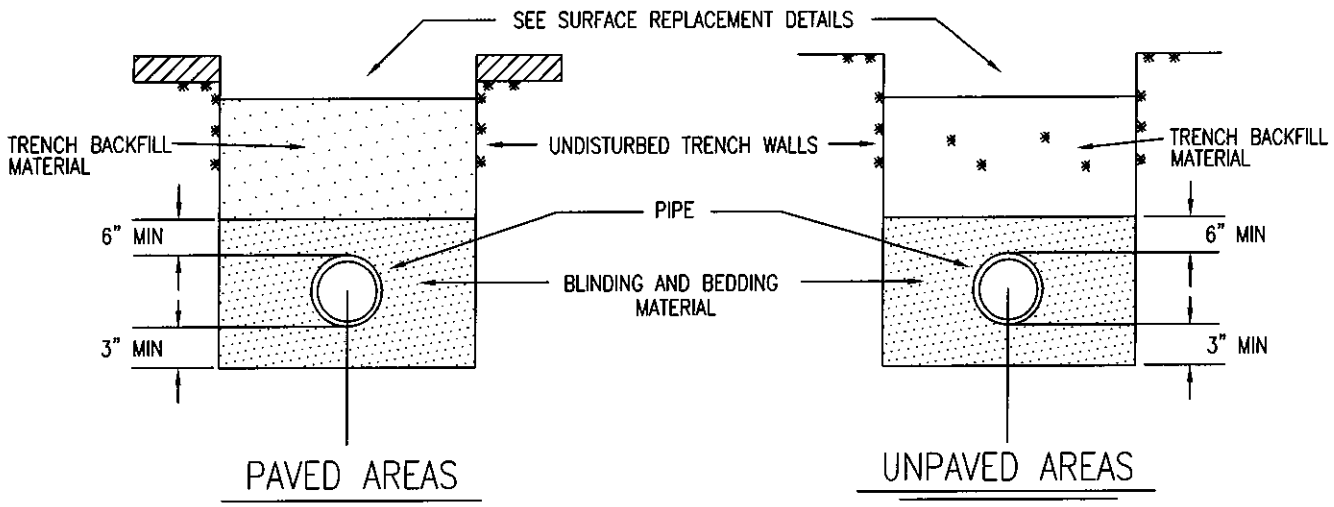
1. AUTHORIZED SERVICE LINE MATERIAL:
   A. 1-1/2" COOPER TYPE "K"
2. CURB STOP SHALL BE 1" MINIMUM.
3. 1" CURB STOPS WITH 3/4" VALVES SHALL NOT BE PERMITTED.
4. MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 2 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
5. CURB STOPS 1 1/2" AND 2" IN SIZE SHALL BE PROVIDED WITH BOTH A LOCKING CAP AND METER FLANGE.
6. CURB STOPS SHALL BE INSTALLED 8" BELOW FINISHED GRADE.
7. BEDDING MATERIAL AS PER DETAIL #W06
8. ANY VARIATIONS ON FITTINGS MUST BE APPROVED BY THE CITY ENGINEER.
9. ALL SERVICE LINES SHALL BE PLACED 90° PERPENDICULAR TO THE ROADWAY.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: W05
	DOUBLE WATER SERVICE PLAN	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.

BLINDING, BEDDING, AND BACKFILLING REQUIREMENTS

	BLINDING AND BEDDING		BACKFILL	
AREA	MATERIAL	COMPACTION	MATERIAL	COMPACTION
WATER – PAVED	(1) SAND	6" LIFTS	GRAVEL	6" LIFTS
WATER – UNPAVED	(1) SAND	6" LIFTS	SELECT EXCAVATION	6" LIFTS

(1) SAND – SAMPLE OF SAND TO BE USED SHALL BE SUBMITTED FOR APPROVAL BY CITY PRIOR TO CONSTRUCTION. "RED" BUILDERS SAND WILL NOT BE ACCEPTED.



BEDDING AND BACKFILLING DETAILS

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

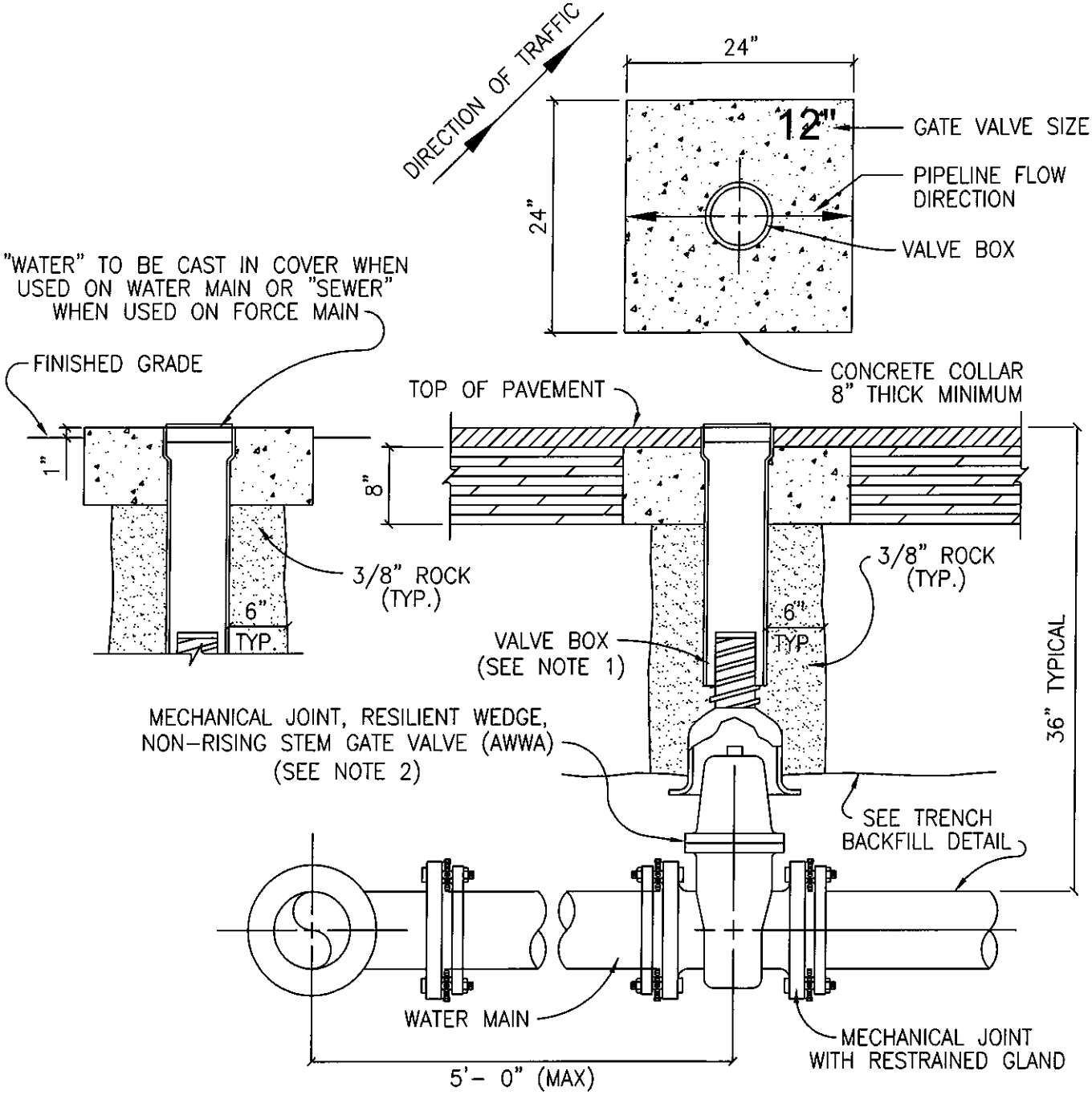
BEDDING AND BACKFILL DETAIL

REVISION NOTE:

DRAWING NAME: W06

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



NOTES:

1. VALVE BOX SHALL BE 5 1/4" CAST IRON ADJUSTABLE HAVING AN ADJUSTABLE RANGE OF + OR - 6 INCHES FROM INSTALLED FINISH GRADE.
2. ACCEPTABLE GATE VALVES ARE:
   A. AMERICAN FLOW CONTROL - SERIES 2500
   B. MUELLER - 2360 SERIES
   C. CLOW
3. VALVE SIZE AND FLOW DIRECTIONS ARE TO BE STAMPED IN CONCRETE COLLAR.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TYPICAL VALVE SETTING

REVISION NOTE:

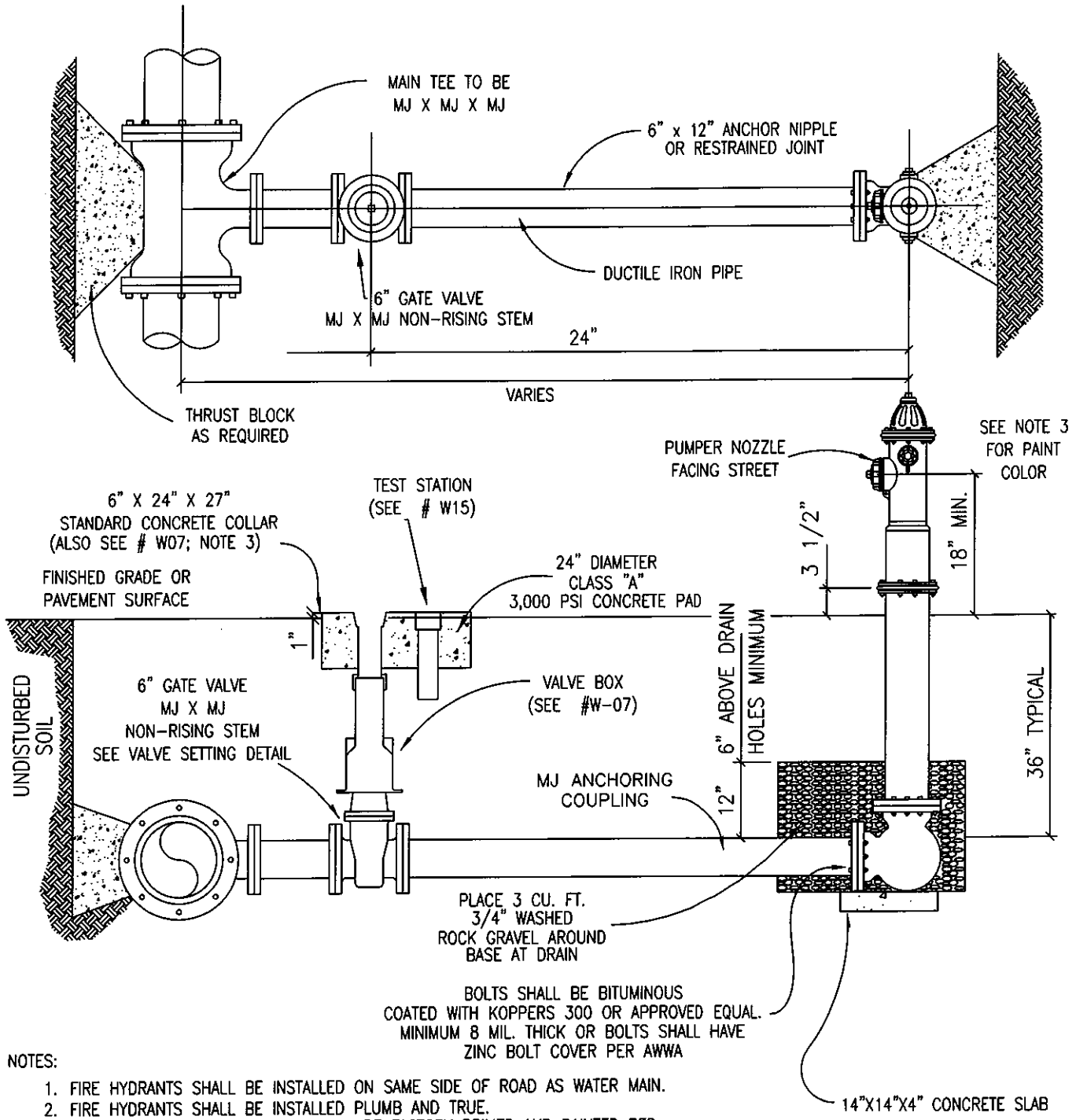
DRAWING NAME: W07

SCALE: N.T.S.

DATE: 1/25/13

DRAWN BY: M.W.W.

APPROVED BY: W.E.A.



NOTES:

1. FIRE HYDRANTS SHALL BE INSTALLED ON SAME SIDE OF ROAD AS WATER MAIN.
2. FIRE HYDRANTS SHALL BE INSTALLED PLUMB AND TRUE.
3. ALL FIRE HYDRANTS EXTERIORS SHALL BE FACTORY PRIMED AND PAINTED RED
4. ALL FIRE HYDRANTS SHALL TURN COUNTER-CLOCKWISE TO OPEN.
5. HEEL AND THRUST BLOCKS TO REST IN UNDISTURBED SOIL.
6. THE ONLY FIRE HYDRANT ACCEPTED IS:
   A. AMERICAN DARLING - B84B
7. DOUBLE BLUE REFLECTOR "HYE-LITES" BRAND, MANUFACTURED BY PAVEMENT MARKERS INC. TO BE INSTALLED AT CENTERLINE OF STREET PERPENDICULAR TO HYDRANT.
8. ALL FITTINGS SHALL BE WRAPPED WITH 8 MILL. POLYETHYLENE FILM.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TYPICAL FIRE HYDRANT INSTALLATION

REVISION NOTE:

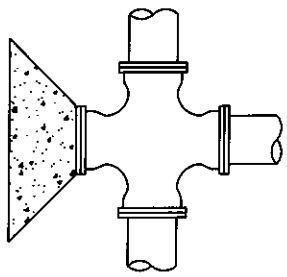
DRAWING NAME: W08

SCALE: N.T.S.

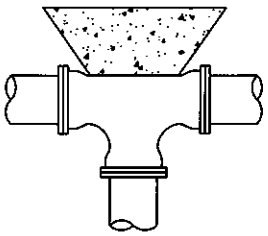
DATE: 1/25/13

DRAWN BY: M.W.W.

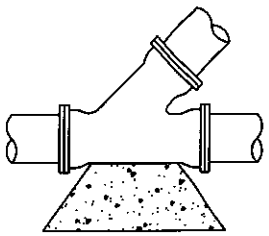
APPROVED BY: W.E.A.



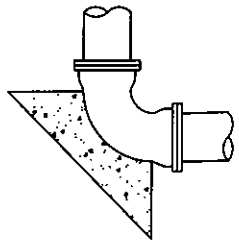
CROSS WITH PLUG



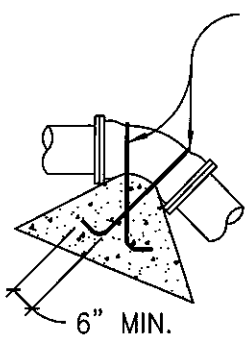
TEE



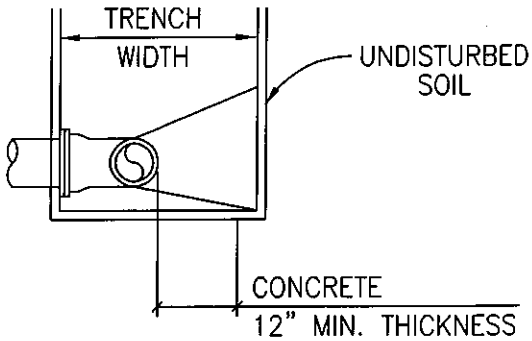
WYE



BEND



*DEADMAN



TYPICAL SECTION

ALL THRUST BLOCKS SHALL BE FORMED. LAID FORMS SHALL BE INSPECTED BY THE CITY OF HEWITT PRIOR TO THE PLACEMENT OF CONCRETE AND SHALL ALSO BE INSPECTED BY THE CITY OF HEWITT PRIOR TO COVERING. TYPICAL LOCATIONS WHICH REQUIRE CONCRETE REACTION (THRUST) BLOCKS, FOR PRESSURE MAINS FOUR INCHES (4") AND GREATER. CONCRETE SHALL HAVE 2,500 P.S.I. MINIMUM STRENGTH AT TWENTY EIGHT (28) DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS, AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, MAXIMUM PRESSURE IN PIPE, AND BEARING CAPACITY OF SOIL. PROTECT FITTINGS, BOLTS, ETC. BY COVERING WITH 8 MILL OF POLYETHYLENE. CONCRETE SHALL BE A MINIMUM OF TWELVE INCHES (12") THICK.
ALL 3" AND SMALLER CAPS, ELLS, TEES AND 45° BENDS SHALL BE HARCO PUSH-ON DUCTILE IRON FITTINGS WITH KNUCKLE JOINT RESTRAINT – CONCRETE THRUST BLOCKING AS SHOWN FOR 4" PIPE SIZE IN THE BELOW TABLE SHALL BE INSTALLED.

PIPE SIZE	THRUST BLOCK AREA REQUIRED	PIPE SIZE	THRUST BLOCK AREA REQUIRED	REMARKS
4"	2.0 SQ. FT.	18"	30.0 SQ. FT.	VALUES ARE FOR 90° BENDS, BASED ON 2000 P.S.F. SAFE BEARING LOAD AND PIPE PRESSURE OF 150 P.S.I. PLUS 33% SAFETY FACTOR FOR OTHER SOILS AND PRESSURES, THE AREA REQUIRED IS IN DIRECT PROPORTION.
6"	4.0 SQ. FT.	20"	37.0 SQ. FT.	
8"	6.6 SQ. FT.	24"	53.0 SQ. FT.	
10"	10.0 SQ. FT.	27"	80.0 SQ. FT.	
12"	14.0 SQ. FT.	30"	98.0 SQ. FT.	
14"	18.0 SQ. FT.	36"	127.0 SQ. FT.	
16"	24.0 SQ. FT.			

* OTHER THRUST BLOCKING DESIGNES ARE ACCEPTED IF DESIGNED BY LIECENCED ENGINEER

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

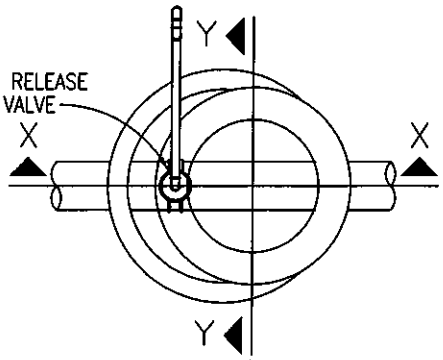
TYPICAL THRUST BLOCKS FOR WATER AND FORCE MAIN

REVISION NOTE:

DRAWING NAME: W09

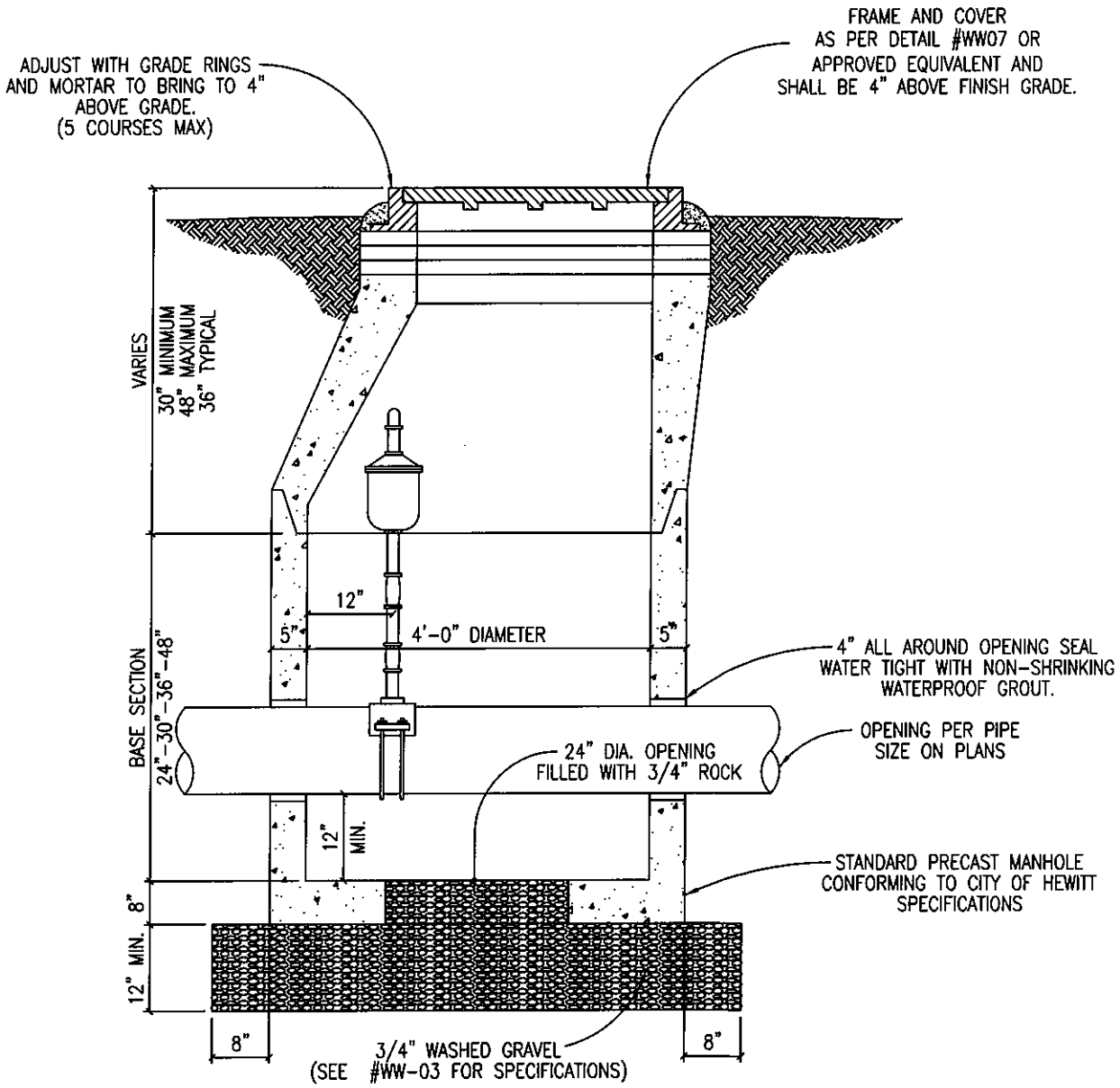
SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



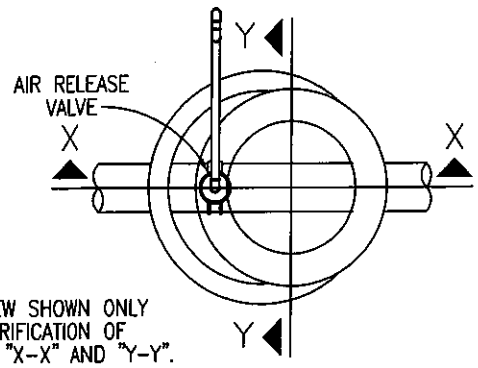
NOTE:
PLAN VIEW SHOWN ONLY FOR CLARIFICATION OF SECTION "X-X" AND "Y-Y".

PLAN



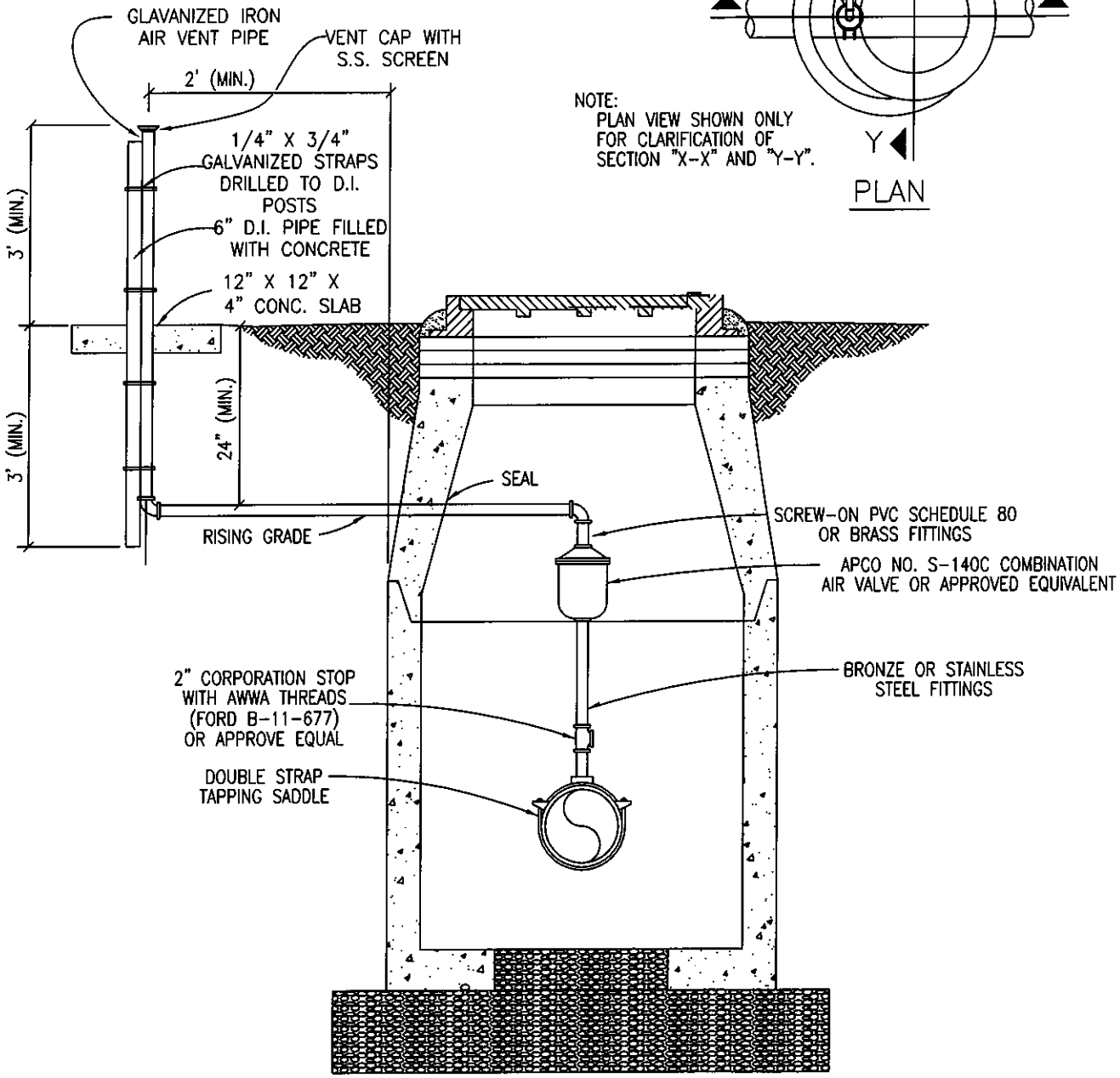
SECTION "X-X"

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE:
		DRAWING NAME: W10
	STANDARD AIR RELEASE VALVE FOR WATER MAINS	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



NOTE:
PLAN VIEW SHOWN ONLY FOR CLARIFICATION OF SECTION "X-X" AND "Y-Y".

PLAN



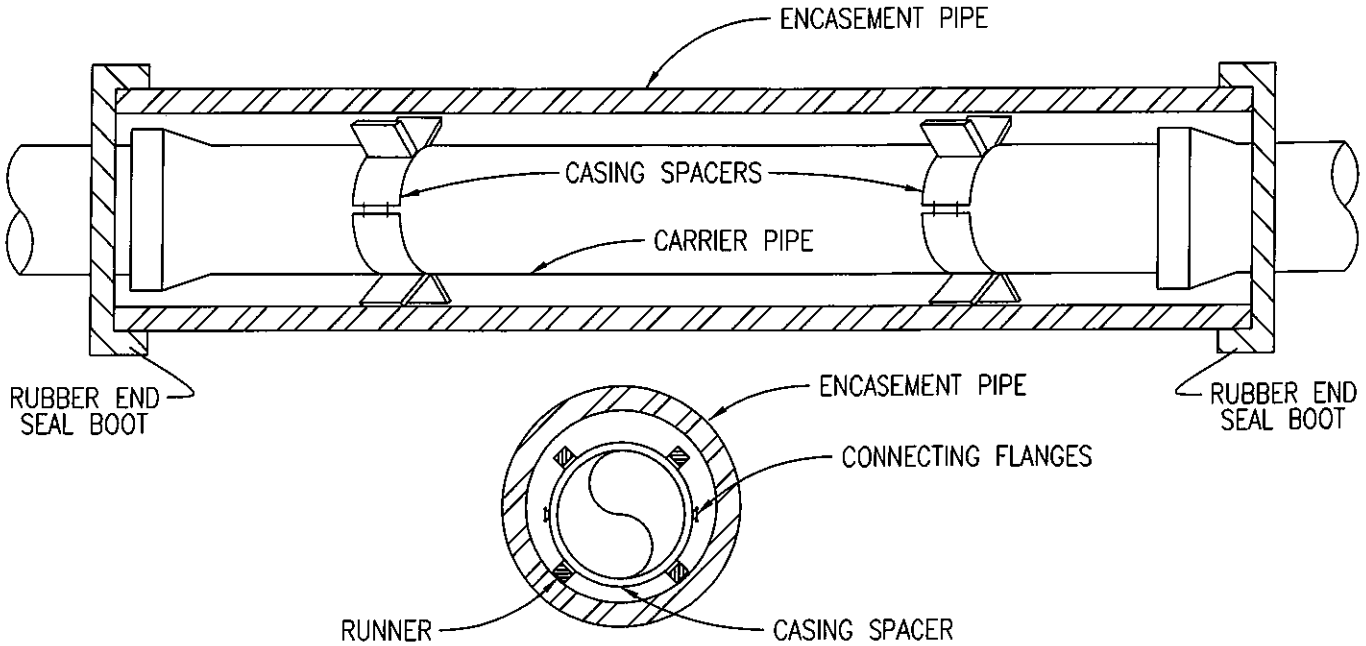
SECTION "Y-Y"

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

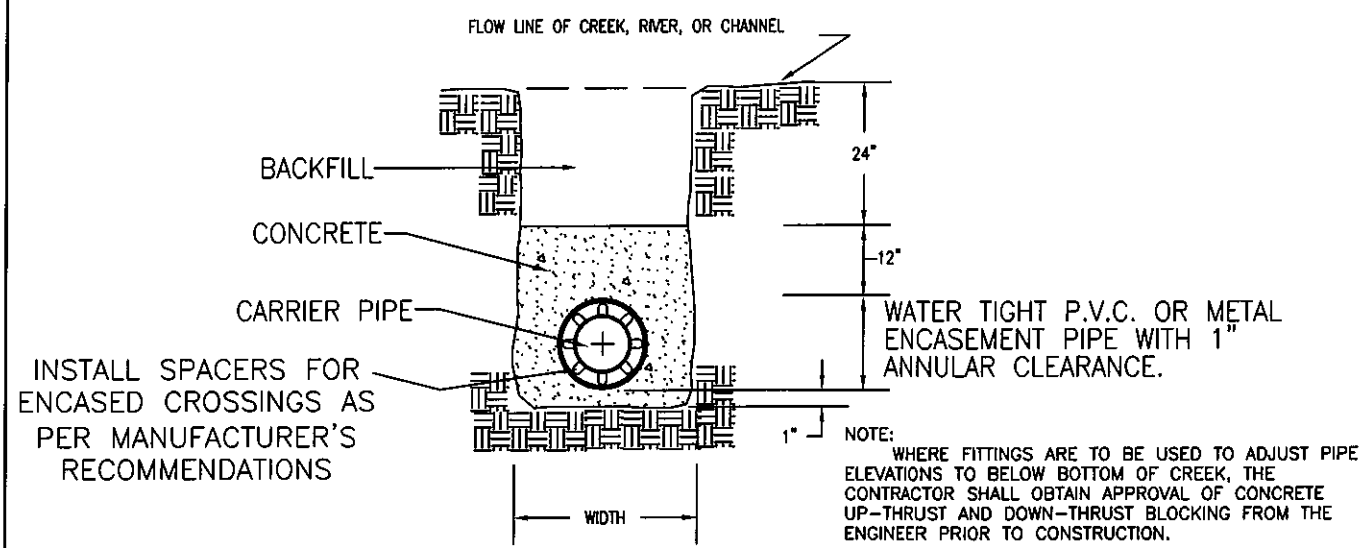
STANDARD AIR RELEASE VALVE FOR WATER MAIN

REVISION NOTE:	
DRAWING NAME:	W11
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



NOTES:

1. CASING SPACERS SHALL BE "RACI" OR APPROVED EQUAL
2. CASING SPACERS SHALL HAVE RUNNERS MADE OF ULTRA HIGH MOLECULAR WEIGHT POLYMER,
3. DO NOT USE WEDGES BETWEEN TOP OF PVC CARRIER PIPE AND INSIDE OF CASING TO KEEP PVC FROM MOVING.
4. PRIOR TO INSERTING PVC CARRIER PIPE, ANY WATER SHOULD BE PUMPED OUT OF THE CASING PIPE SO THAT NO MORE THAN A FEW INCHES OF WATER REMAINS.
5. SPACERS WILL BE REQUIRED WITHIN AT LEAST 3 FEET FROM BOTH ENDS OF THE ENCASEMENT PIPE AND SPACED NO GREATER THAN 6 FEET THROUGHOUT THE ENCASEMENT PIPE.
6. IF ENCASEMENT PIPE IS UNDER ROADWAYS IT SHALL MEET TxDOT SPECIFICATIONS; IF ENCASEMENT PIPE IS UNDER RAILWAY IT SHALL MEET RAILWAY'S SPECIFICATIONS.
7. ALL JOINTS SHALL BE RESTRAINED ON CARRIER PIPE.



CONCRETE ENCASED CREEK CROSSING

HEWITT TEXAS

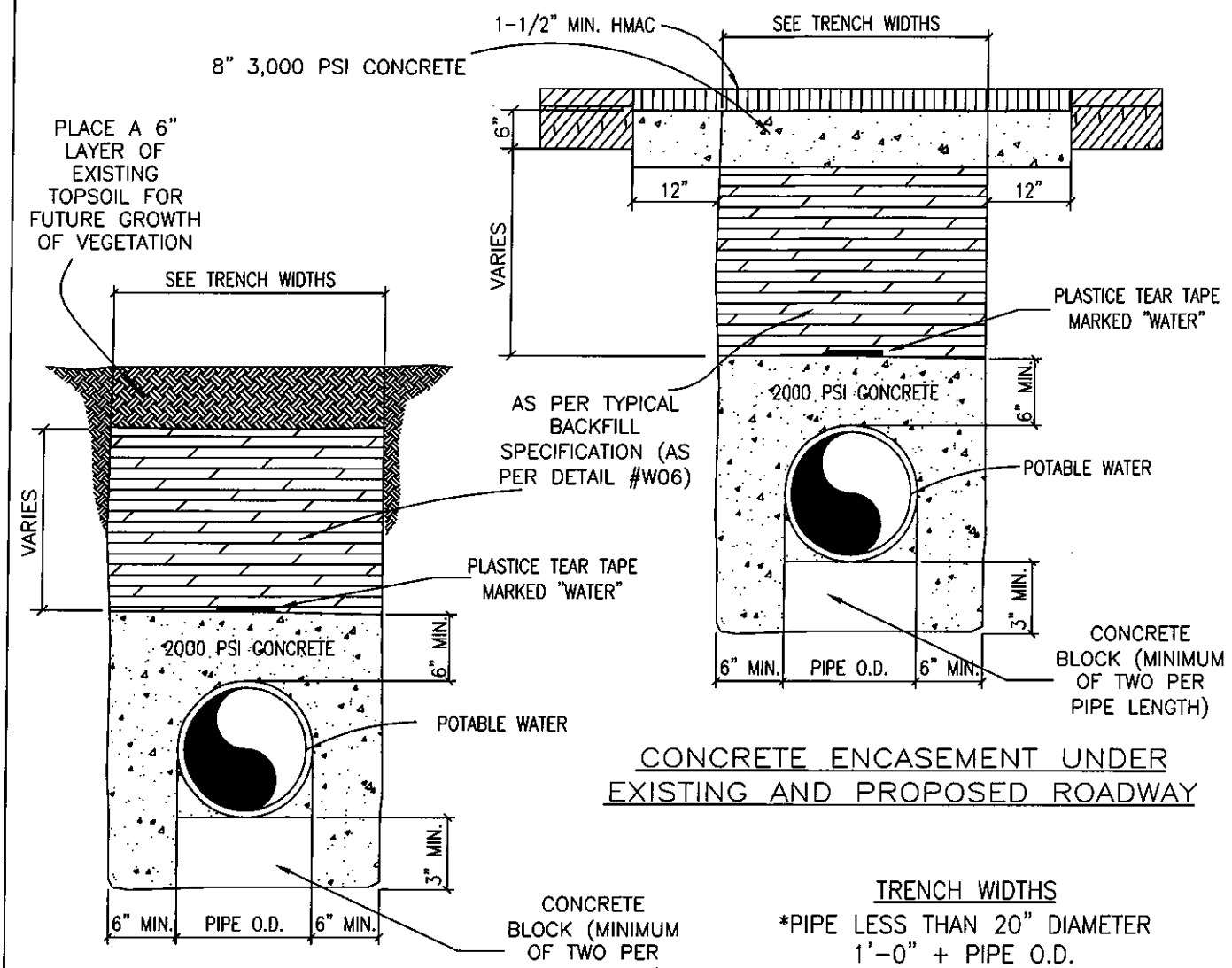
CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

INSTALLATION OF PIPE THROUGH CASING/CREEK CROSSING

REVISION NOTE:

DRAWING NAME: W12

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



CONCRETE ENCASEMENT UNDER EXISTING AND PROPOSED ROADWAY

CONCRETE ENCASEMENT UNDER NATURAL GROUND

TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:
1. ENCASEMENT TO BE CONSTRUCTED WHERE SEWER LINES PASS OVER OR UNDER A WATER MAIN WITH LESS THAN TWELVE INCHES (12") CLEAR DISTANCE.
2. AT CROSSINGS, ENCASEMENT SHALL EXTEND TEN FEET (10'-0") ON EITHER SIDE OF CROSSING.
3. BEGINNING AND ENDING OF ENCASEMENTS SHALL NOT BE MORE THAN SIX INCHES (6") FROM A PIPE JOINT.
4. WHERE WATER AND SEWER LINES PARALLEL WITH LESS THAN TEN FEET (10'-0") HORIZONTAL CLEAR DISTANCE, NO ENCASEMENT IS REQUIRED IF BOTH LINES ARE 150 PSI PRESSURE PIPE.
5. RAW WATER MAINS SHALL BE 150 PSI PRESSURE RATED WHEN PARALLELING POTABLE WATER MAINS WITH LESS THAN NINE FEET (9'-0") HORIZONTAL CLEARANCE.
6. WHERE MINIMUM COVER, THIRTY SIX INCHES (36") IS NOT AVAILABLE, ENCASEMENT WILL BE REQUIRED.
7. ALL CONCRETE ENCASEMENTS MUST BE INSPECTED BY THE CITY OF HEWITT INSPECTOR PRIOR TO PLACING CONCRETE AND BACKFILLING.
8. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL WITH WRITTEN PERMISSION FROM THE CITY OF HEWITT.

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

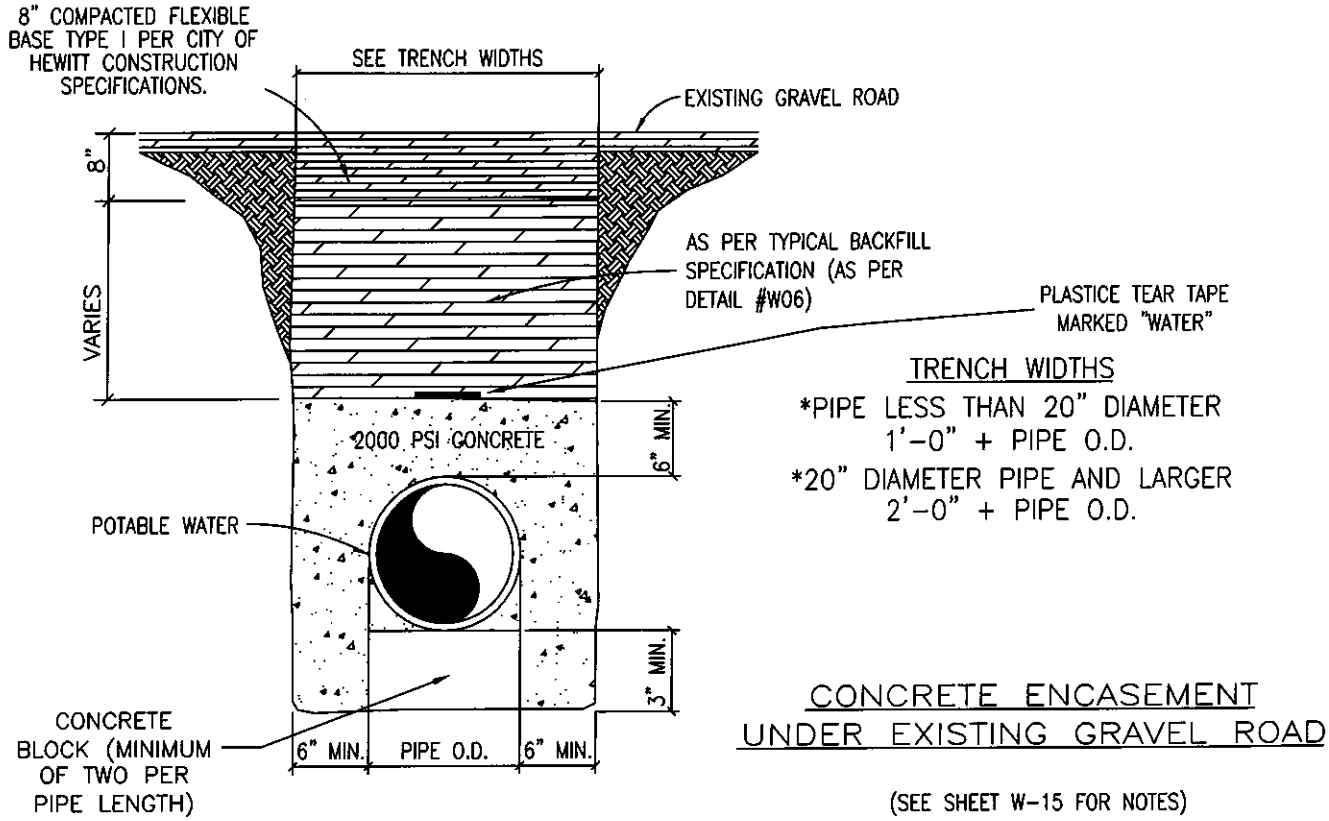
CONCRETE ENCASEMENT DETAIL

REVISION NOTE:

DRAWING NAME: W13

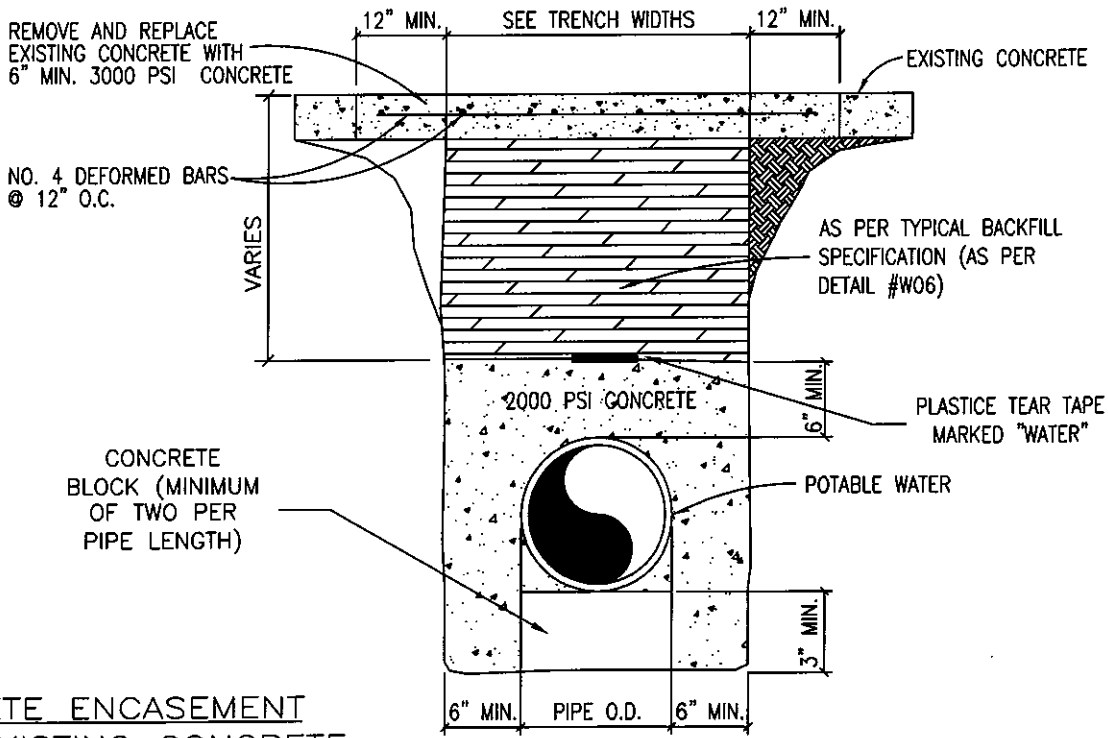
SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



CONCRETE ENCASEMENT UNDER EXISTING GRAVEL ROAD

(SEE SHEET W-15 FOR NOTES)



CONCRETE ENCASEMENT UNDER EXISTING CONCRETE

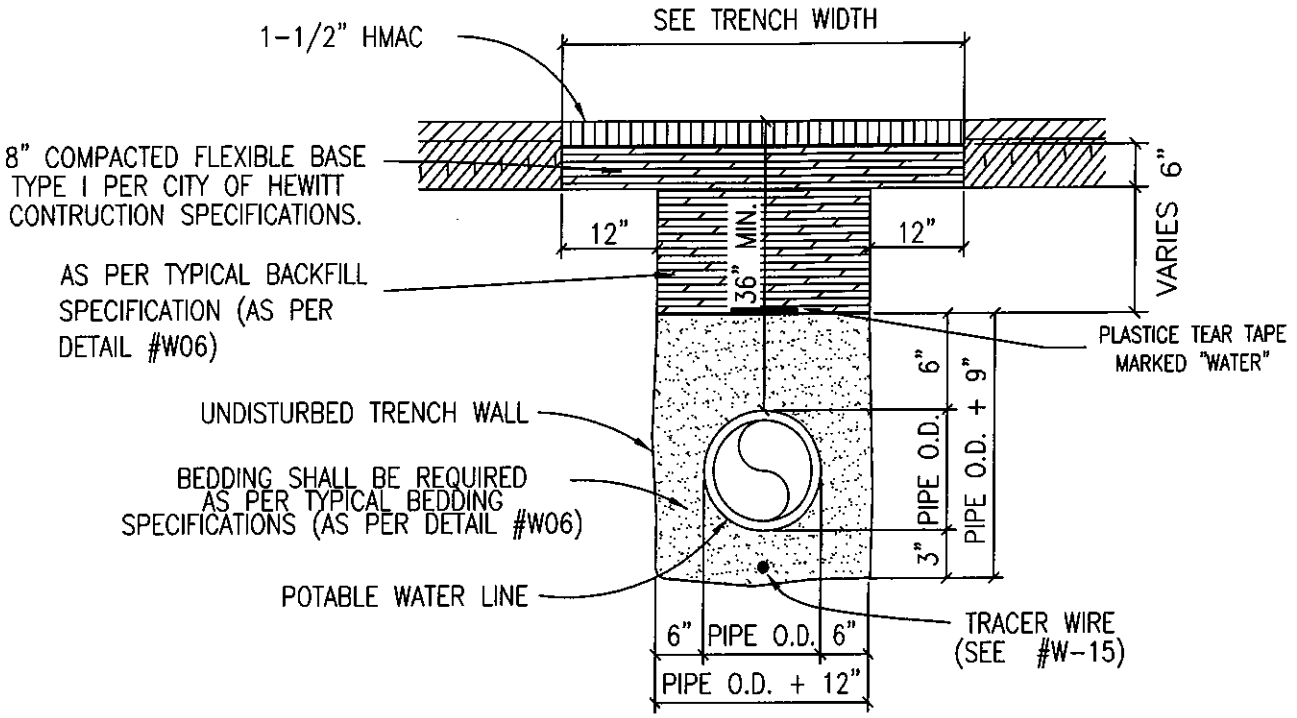
(SEE SHEET W-15 FOR NOTES)

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

CONCRETE ENCASEMENT DETAIL

REVISION NOTE:	
DRAWING NAME:	W13A
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:

REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
BASE MATERIAL SHALL BE IN LIFTS NOT TO EXCEED 6" AND EACH LIFT THOROUGHLY ROLLED OR TAMPED TO SPECIFIED MAXIMUM DENSITY.
ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF HEWITT CONSTRUCTION SPECIFICATIONS AND STANDARDS.
CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL WITH WRITTEN PERMISSION FROM THE CITY OF HEWITT.

HEWITT TEXAS

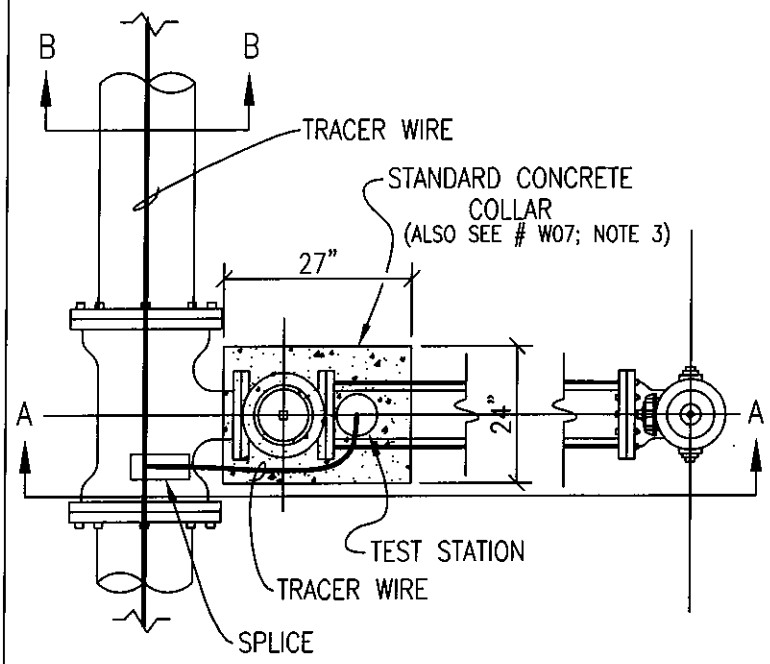
CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY

REVISION NOTE: REVISED TRACER WIRE NOTE (6/26/13)

DRAWING NAME: W14

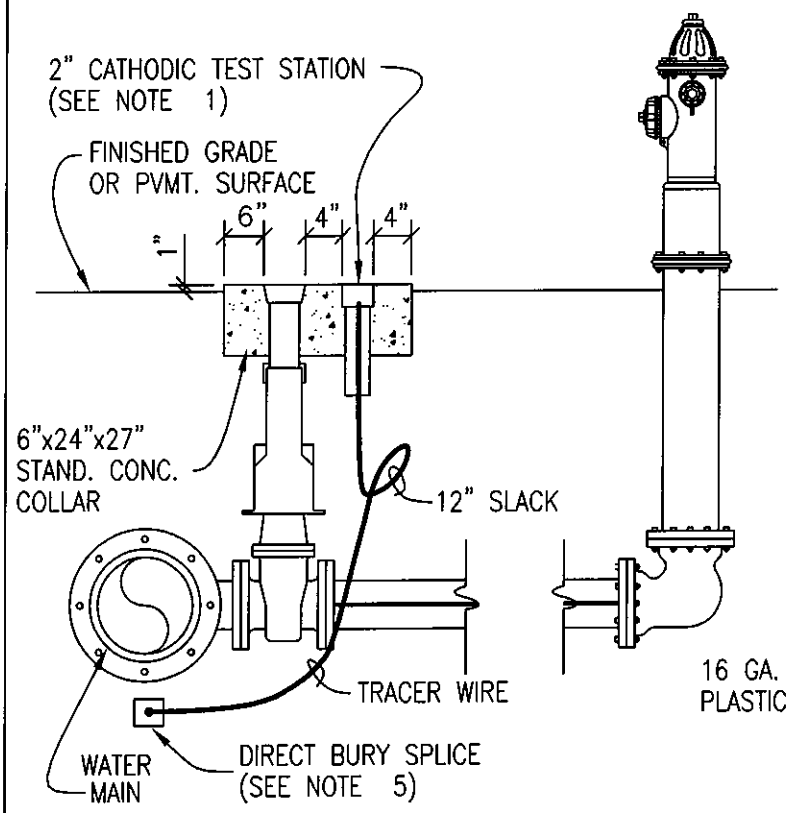
SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



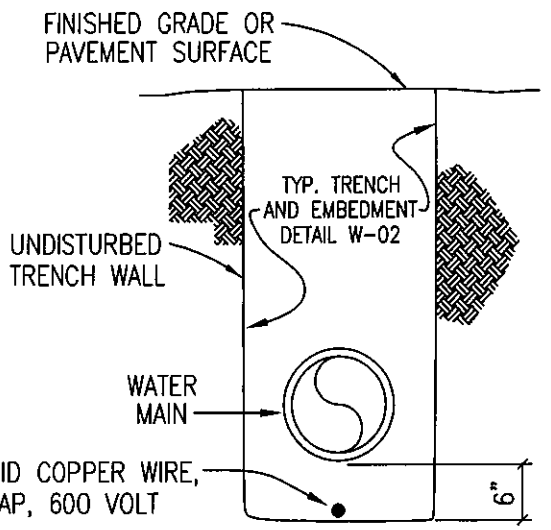
PLAN

NOTES:

1. TEST STATION SHALL BE HANDLEY INDUSTRIES INC. – 2 INCH CATHODIC TEST STATIONS OR APPROVED EQUAL.
2. THE 15" ABS PLASTIC BOX SHALL BE A FLANGED TOP FOR INSTALLATION AT GROUND LEVEL.
3. ALL TERMINALS ARE TO BE MADE OF SOLID BRASS.
4. PLASTIC LIDS SHALL BE COLOR BLUE AND MARKED "WATER".
5. BURY SPLICE SHALL BE 3M DIRECT BURY SPLICE (DBR) OR APPROVED EQUAL.
6. TEST STATIONS SHALL BE INSTALLED AT EACH FIRE HYDRANT LOCATION.



SECTION A–A



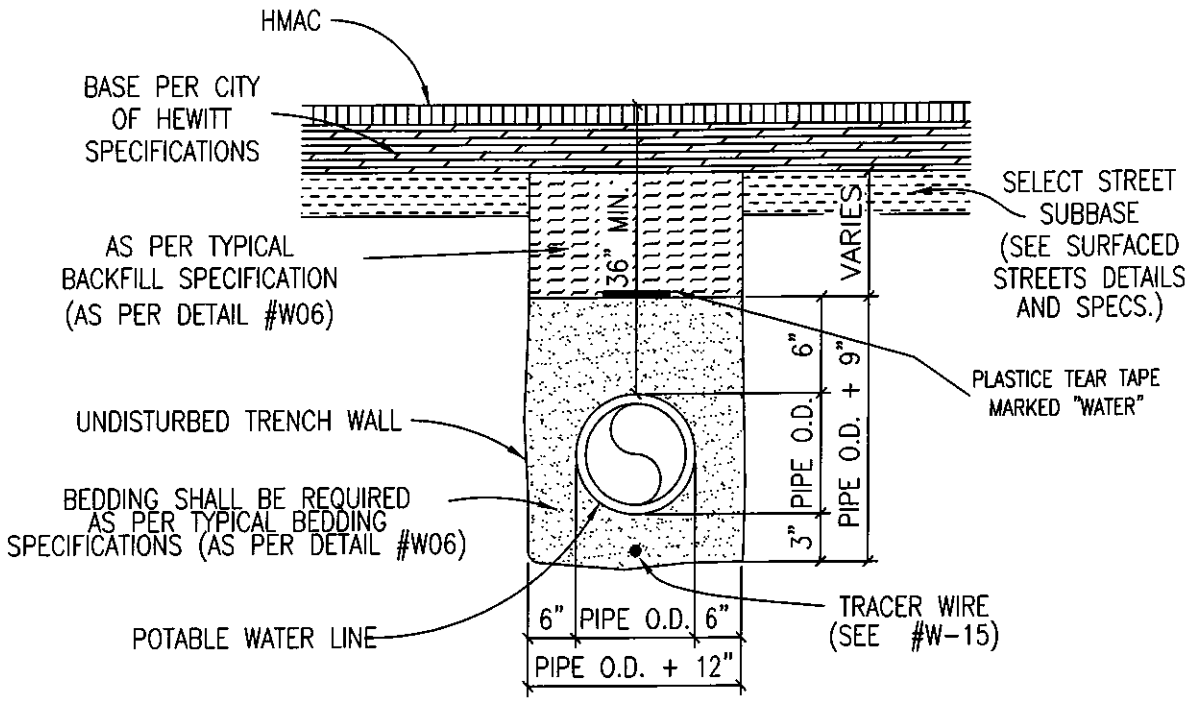
SECTION B–B

HEWITT TEXAS

CITY OF HEWITT
CONSTRUCTION STANDARDS AND DETAILS

TRACER WIRE INSTALLATION AND TEST STATION LOCATION

REVISION NOTE:		
DRAWING NAME:	W15	
SCALE: N.T.S.	DATE: 1/25/13	
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.	



TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:

1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH THE CITY OF HEWITT CONSTRUCTION SPECIFICATIONS AND STANDARDS.
2. CONTRACTOR OR ENGINEER MAY USE FLOWABLE BACKFILL AS AN ALTERNATE BACKFILL MATERIAL WITH WRITTEN PERMISSION FROM THE CITY OF HEWITT.

HEWITT TEXAS	CITY OF HEWITT CONSTRUCTION STANDARDS AND DETAILS	REVISION NOTE: REVISED TRACER WIRE NOTE (6/28/13)
		DRAWING NAME: W16
	TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY	SCALE: N.T.S. / DATE: 1/25/13
		M.W.W. / W.E.A.

Hydrostatic Testing

Hydrostatic testing described in this section shall be conducted with water.

General

The contractor shall provide measurement gauge, pump, pipe, connection, and other necessary apparatuses, unless otherwise specified. Prior to testing the contractor shall place sufficient backfill to prevent pipe movement. The contractor shall ensure that thrust-blocking or other types of restraint systems will provide adequate restraint prior to pressurizing the pipeline.

Test Duration

The duration of the hydrostatic test shall be 2 hours.

Test Pressure

The hydrostatic test pressure shall not be less than 1.25 times the maximum anticipated sustained working pressure at the highest point along the test section unless the pressure exceeds the design pressure limit for any pipe, thrust restraint, valve, fitting or other appurtenance of the test section. In no case shall the test pressure exceed the design pressure limit for any pipe, thrust restraint, valve, fittings, or other appurtenance of the test section.

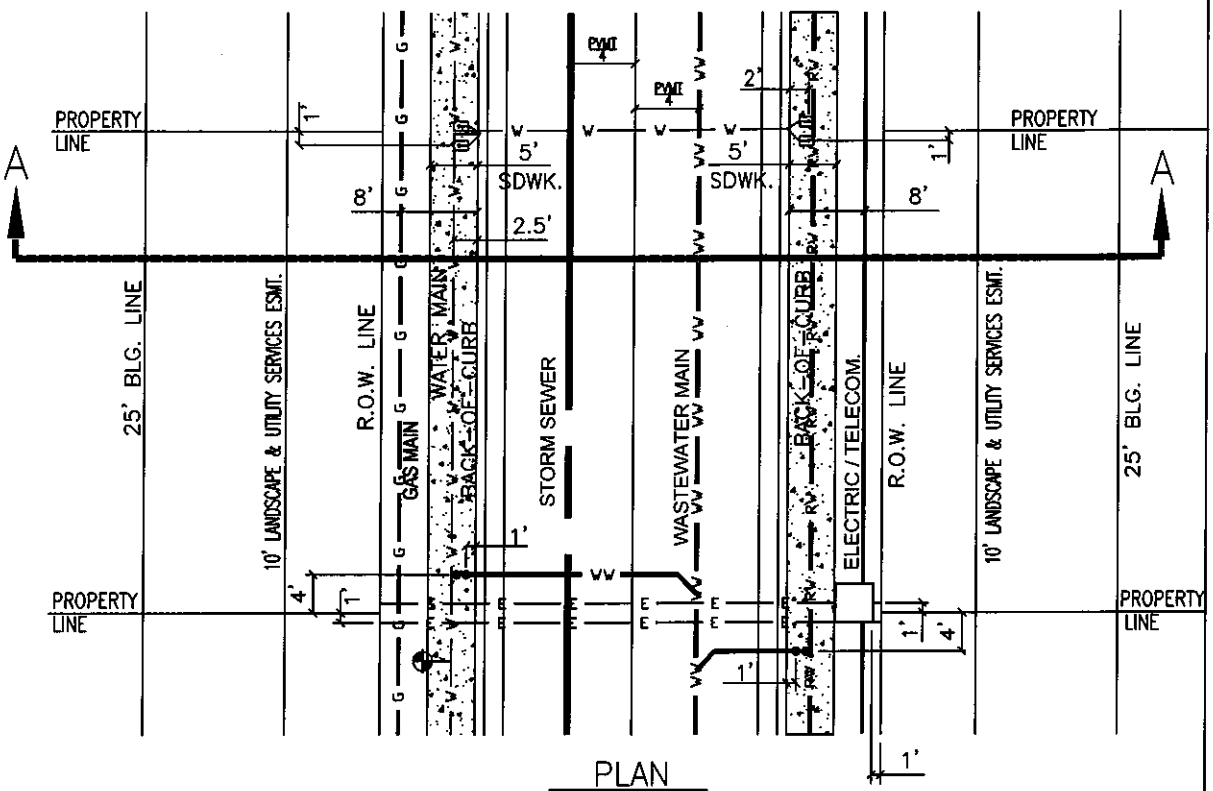
Test Allowance

The testing allowance shall be defined as the quantity of water that must be supplied to the pipe section being tested to maintain the pressure within 5 psi of the specified hydrostatic test pressure. The installation will not be accepted, by the City, if the quantity of the makeup water is greater than that determined by the formula below. All visible leaks are to be repair regardless of the amount of leakage.

$$Q=\frac{LxDx\sqrt{P}}{148000}$$

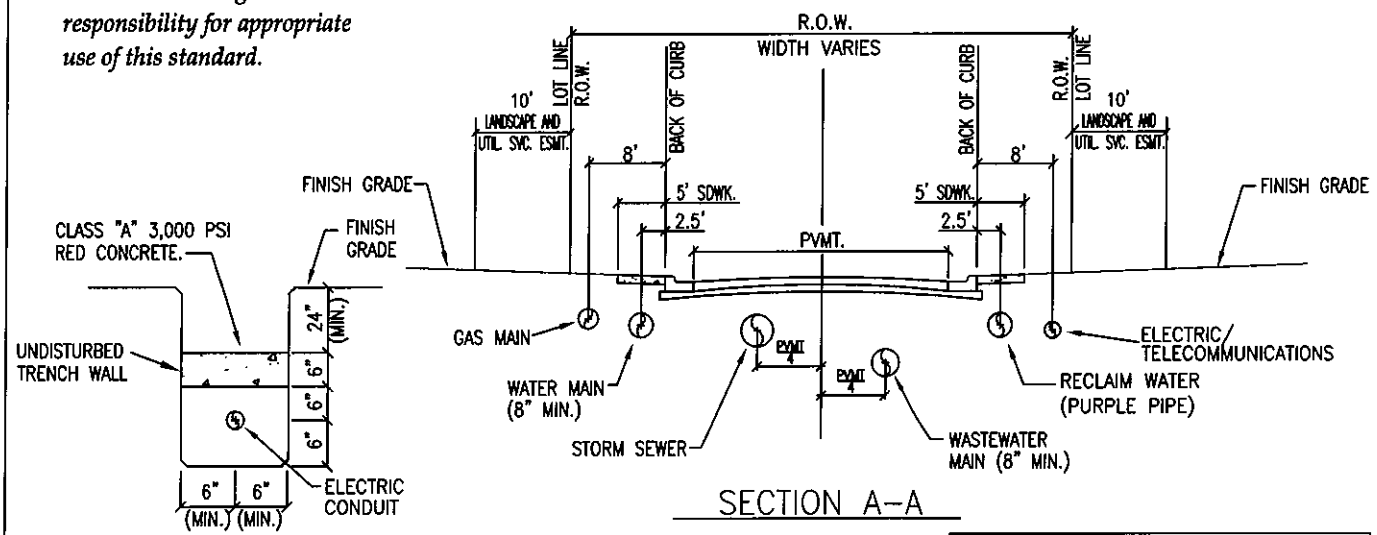
Q = quantity of makeup water in gallons per hour (gal./hr.)
L = length of pipe being tested in feet (ft.)
D = nominal diameter of pipe in inches (in.)
P = average test pressure during the hydrostatic test in pounds per square inch (psi)

Wastewater Standards



PLAN

The Architect/Engineer assumes responsibility for appropriate use of this standard.



SECTION A–A

NOTE: WHEN LOCATED WITH IN RIGHT OF WAY, THE ELECTRIC CONDUIT MUST BE CAPPED WITH 3,000 PSI RED CONCRETE.

ELECTRIC CONDUIT CONCRETE CAP DETAIL

CLASSIFICATION	ROW	B–B	PVMT.
MINOR STREET	50'	31	27'
COLLECTOR STREET	56'	37'	33'
ARTERIAL STREET	65'	45'	41'

MINIMUM COVER BELOW FINISH–GRADE *ALL UTILITIES UNDER ROADWAY – 36"*	
ELECTRIC PRIMARY	36"
ELECTRIC SECONDARY	24"
WATER	36"
WASTEWATER	48"
STORM SEWER	36"
GAS	36"
TELECOMMUNICATIONS	36"
RECLAIM WATER	36"

HEWITT TEXAS

CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

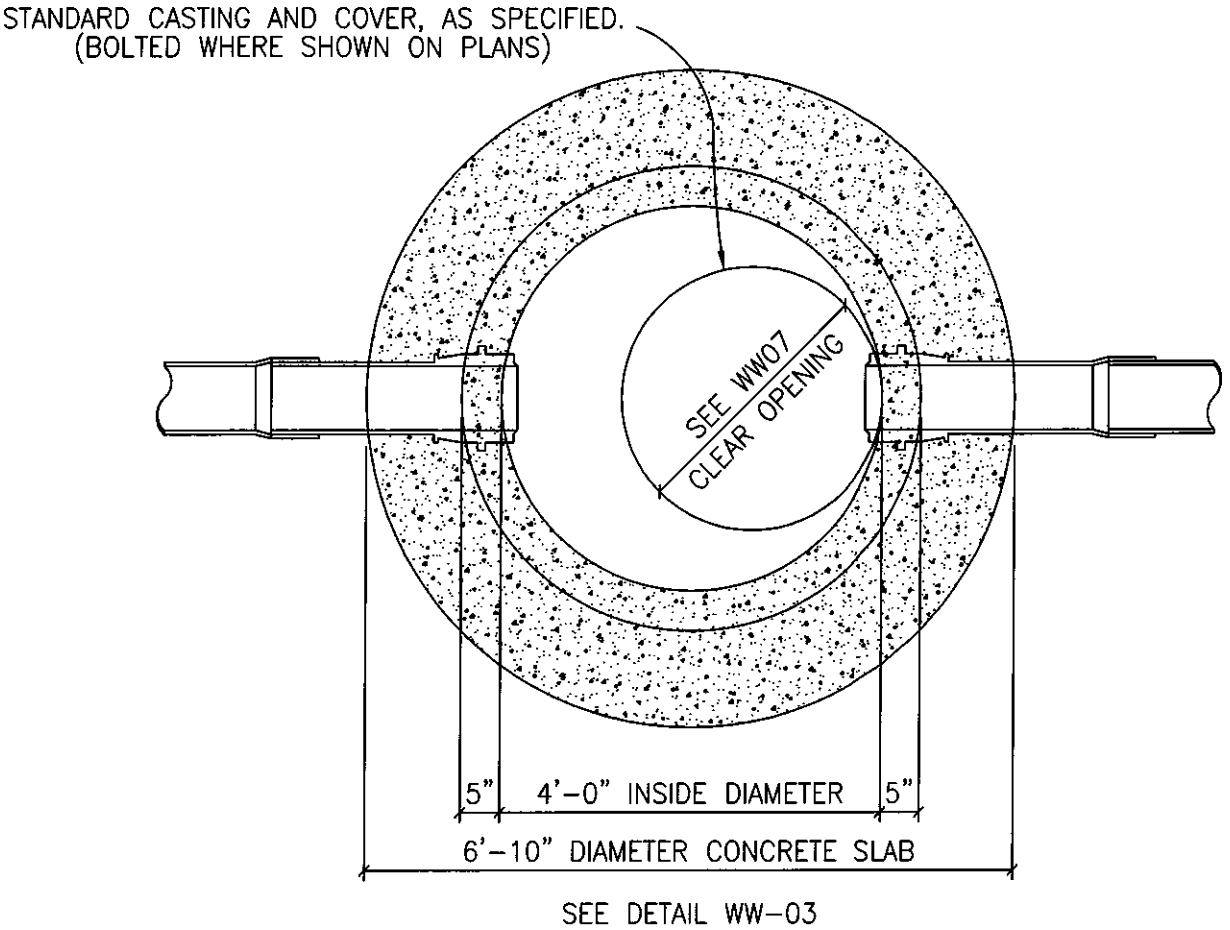
UTILITY ASSIGNMENTS FOR LOCAL STREETS, RESIDENTIAL COLLECTORS AND MAJOR COLLECTORS

REVISION NOTE:

DRAWING NAME: WW01

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



SEE DETAIL WW-03

MANHOLE PLAN

CITY OF HEWITT NOTES:

MANHOLE DETAILS SHALL REFLECT THE CITY'S MINIMUM SPECIFICATIONS, AS STATED BELOW:

A. ALL MANHOLES SHALL BE 48" I.D., R.C.P., CLASS III, WITH RUBBER PROFILE GASKET – SINGLE OFF-SET JOINT CONFORMING TO ASTM C478, C433 AND C76.

B. ALL MANHOLES SHALL HAVE FRAME AND COVER, AS MANUFACTURED BY PAMREX (AS PER DETAIL # WW07).

C. ALL MANHOLES SHALL BE CONCRETE WITH FRAME AND COVER.

D. ALL MANHOLES SHALL HAVE AN ECCENTRIC CONE.

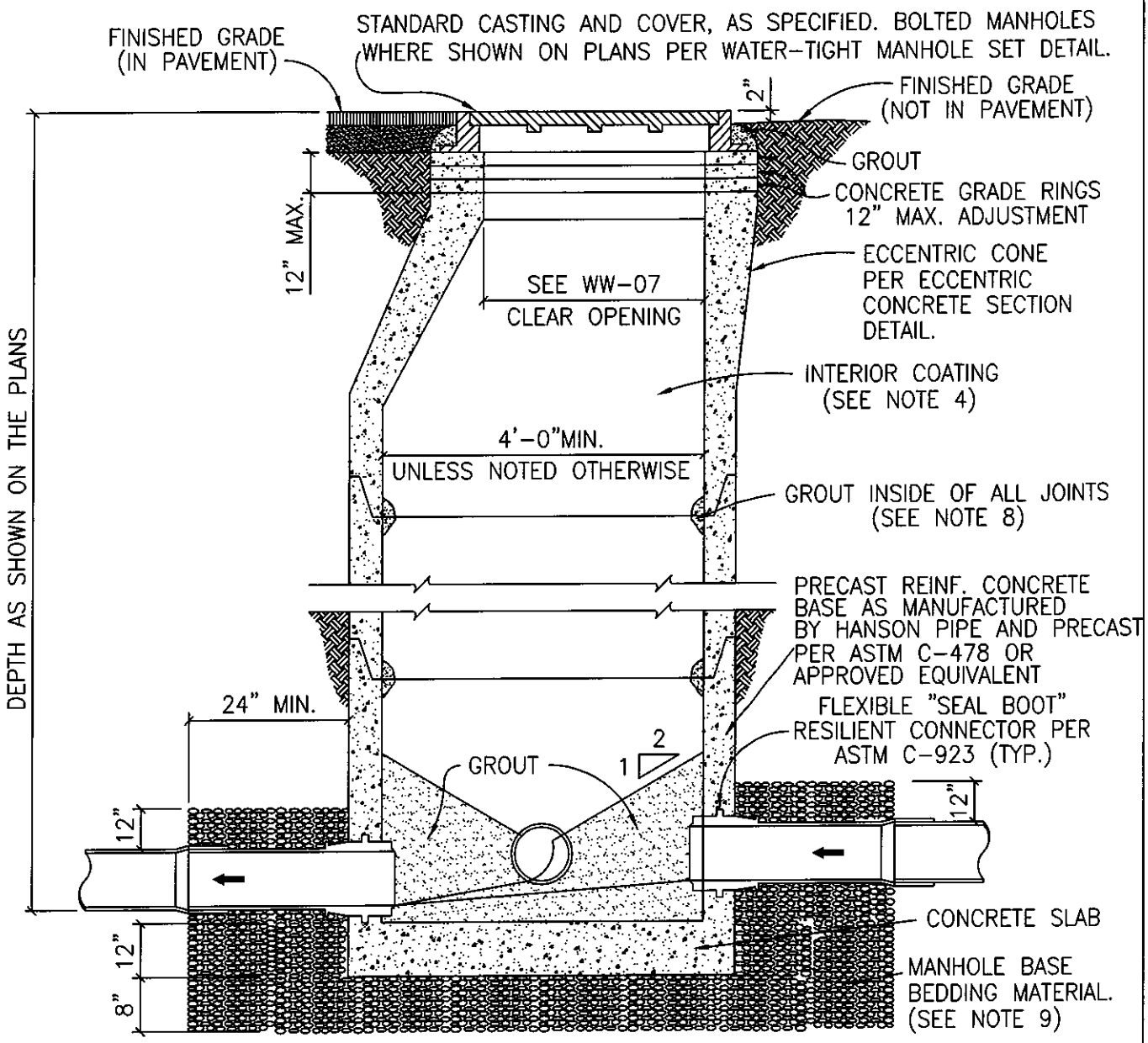
E. MANHOLES MAY HAVE A FLAT LID, IF APPROVED BY CITY OF HEWITT, BEING 12" THICK WITH A MINIMUM 30" OPENING, AS MANUFACTURED BY HANSON PIPE AND PRECAST OR APPROVED EQUAL M.F.G. CONFORMING TO ASTM C478, 5000 P.S.I. CONCRETE, TRAFFIC BEARING AND WITH PROFILE GASKET – SINGLE OFF-SET JOINT CONFORMING TO ASTM C443.

F. INVERTS AND FLEXIBLE SEAL BOOTS, PER ASTM C-923, SHALL BE CAST INTO BASE SECTION.

G. MINIMUM DROP BETWEEN INVERTS SHALL BE ONE-TENTH OF A FOOT (0.1').

H. GRADE RINGS WITH AN I.D. TO MATCH FRAMES CLEAR OPENING WITH A MAXIMUM ADJUSTMENT OF 12" ARE ALLOWED.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:	
		DRAWING NAME:	WW02
	STANDARD MANHOLE – PLAN	SCALE: N.T.S.	DATE: 1/25/13
		DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



NOTES:

1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET – SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. MANHOLES TO BE VENTED ARE TO BE IDENTIFIED ON PLAN SHEETS. REFERENCE MANHOLE VENT DETAIL.
6. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, MANHOLES ARE TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
7. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
8. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0
   SIEVE SIZE 1 1/2", % RETAINED 0-10
   SIEVE SIZE 1", % RETAINED 45-80
   SIEVE SIZE 3/4", % RETAINED 85-100
   SIEVE SIZE 3/8", % RETAINED 95-100

HEWITT TEXAS

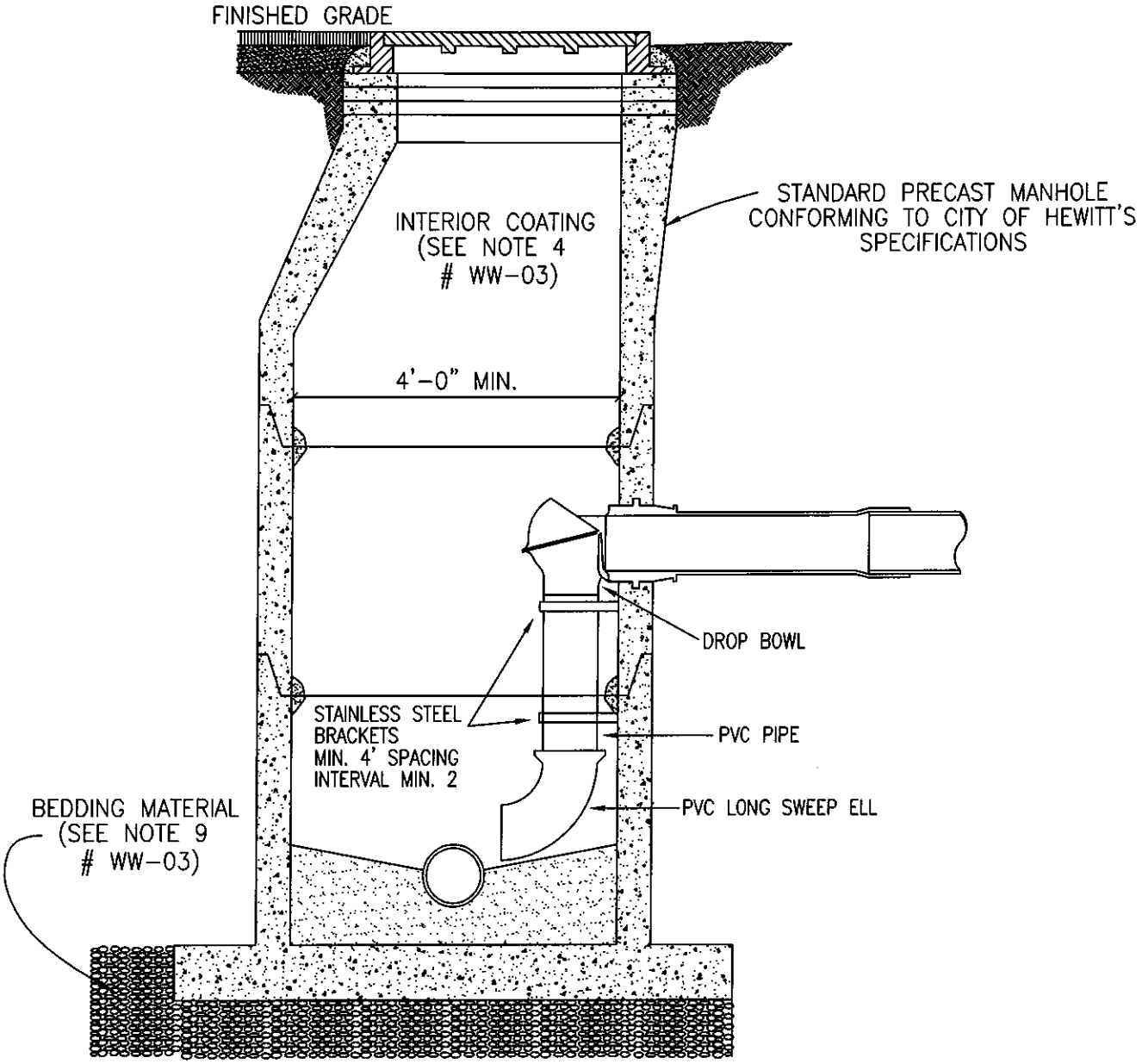
CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

STANDARD MANHOLE – SECTION

REVISION NOTE:

DRAWING NAME: WW03

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



NOTES:

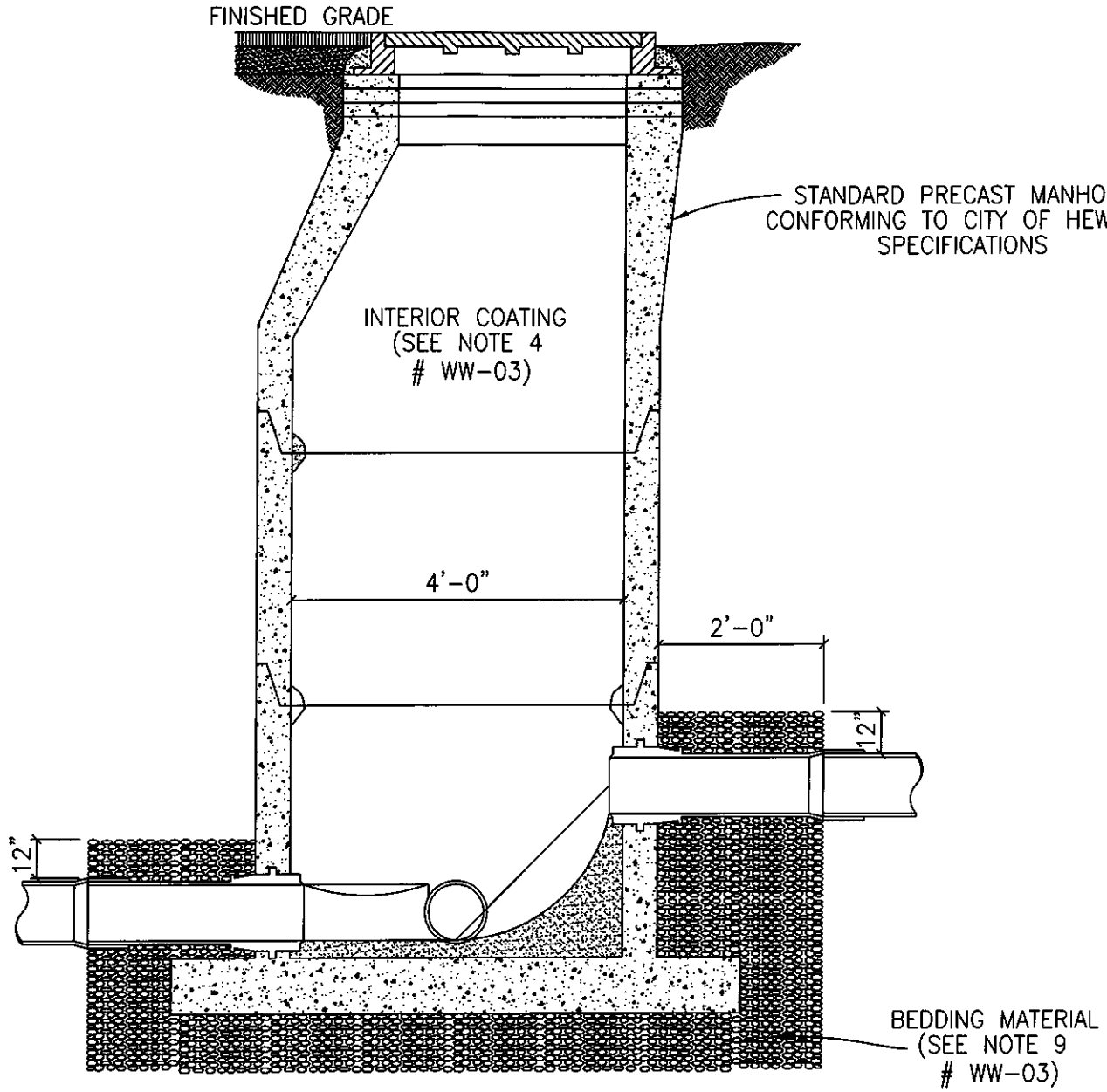
1. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO FEET (2') OR MORE ABOVE THE MAIN INVERT CHANNEL.
2. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
3. WHEN P.V.C. IS USED IN SANITARY SEWER LINES, SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.
4. MINIMUM PIPE SIZE FOR DROP IS EIGHT INCHES (8").
5. SEE STANDARD MANHOLE DETAIL (# WW03) FOR ADDITIONAL REQUIREMENTS.

HEWITT TEXAS

CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

DROP CONNECTION – PRECAST MANHOLE TYPE "A"

REVISION NOTE:	
DRAWING NAME:	WW04
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.

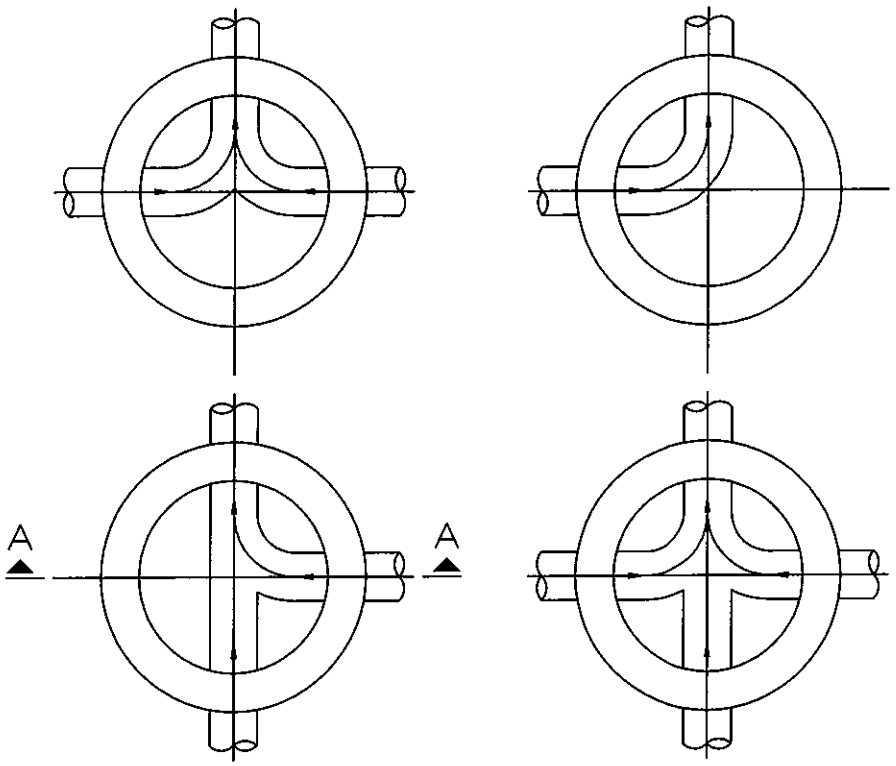


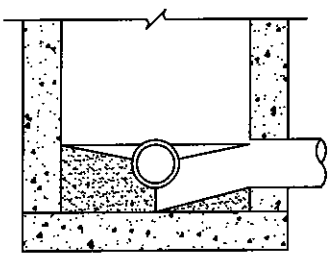
NOTES:

1. TO BE USED WHERE DROP IS SIX INCHES (6") TO TWO FEET (2'-0").
2. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
3. SEE STANDARD MANHOLE DETAIL (# WW03) FOR ADDITIONAL REQUIREMENTS.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:
		DRAWING NAME: WW05
	DROP CONNECTION – PRECAST MANHOLE TYPE "B"	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.

FLOW PATTERNS FOR INVERT CHANNELS



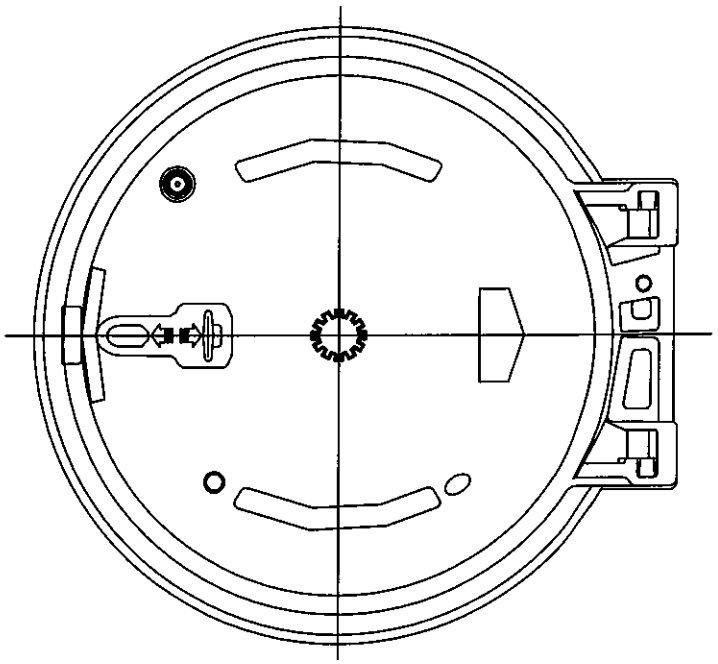


SECTION "A–A"

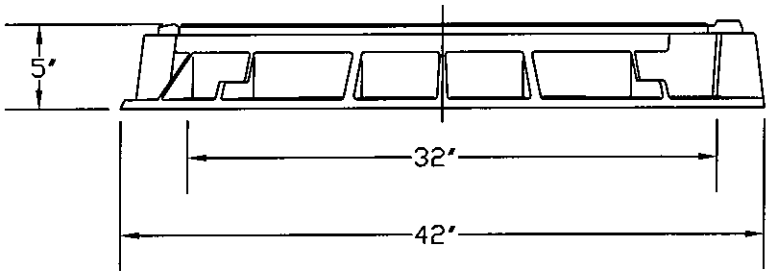
NOTES:

1. INVERT CHANNELS TO BE CONSTRUCTED FOR SMOOTH FLOW WITH NO OBSTRUCTIONS.
2. SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS PROVIDING FOR SMOOTH FLOW.
3. CHANNELS FOR FUTURE CONSTRUCTIONS (STUBS) SHALL BE CONSTRUCTED, FILLED WITH SAND, AND COVERED WITH 1" OF MORTAR.
4. SLOPE MANHOLE ITSELF WITH A 1:2 SLOPE FROM MANHOLE WALL TO CHANNEL.
5. INVERT SHALL BE A MINIMUM OF 1/2 THE DIAMETER OF THE LARGEST PIPE OR 4" DEEP.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:
		DRAWING NAME: WW06
	FLOW PATTERNS FOR INVERT CHANNELS	SCALE: N.T.S. / DATE: 1/25/13
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.



ELEVATION

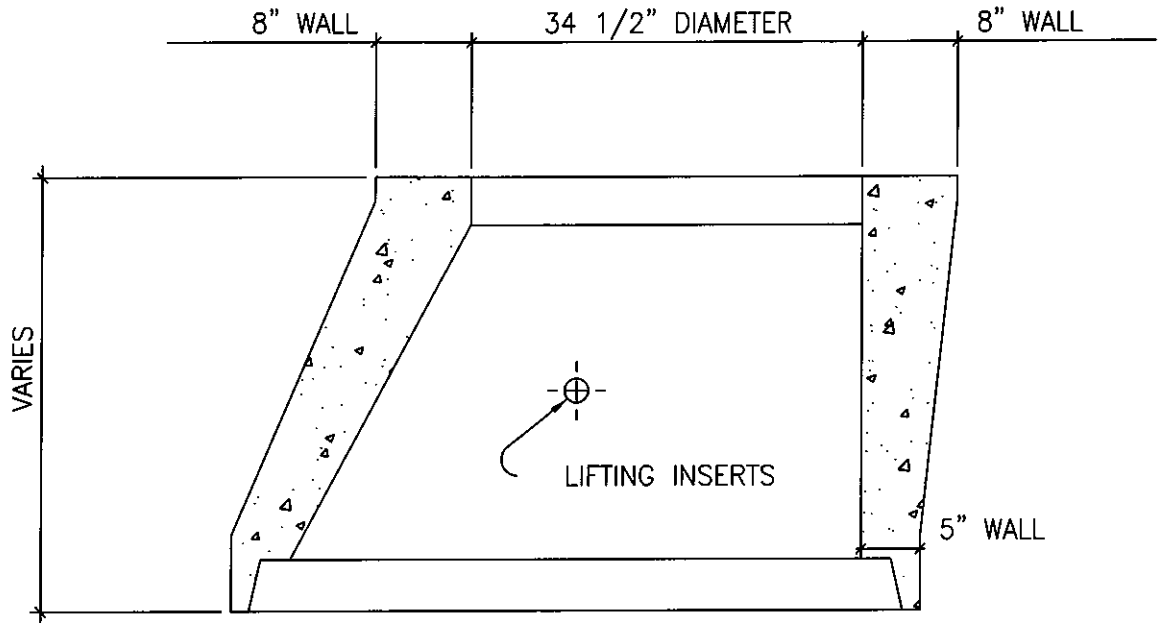


NOTE:

MANHOLE COVER LOCATED WITH IN TxDOT MAINTAINED ROADWAYS MUST BE EQUIPPED WITH PENTA LOCKING KIT, HANDLING KEYS ARE TO BE PROVIDED TO THE CITY OF HEWITT AT CONSTRUCTION COMPLETION.

PAMREX 32 INCH MANHOLE COVER AND FRAME

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:	
		DRAWING NAME:	WW07
	STANDARD WASTEWATER MANHOLE COVER SET	SCALE: N.T.S.	DATE: 1/25/13
		DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



HEWITT TEXAS

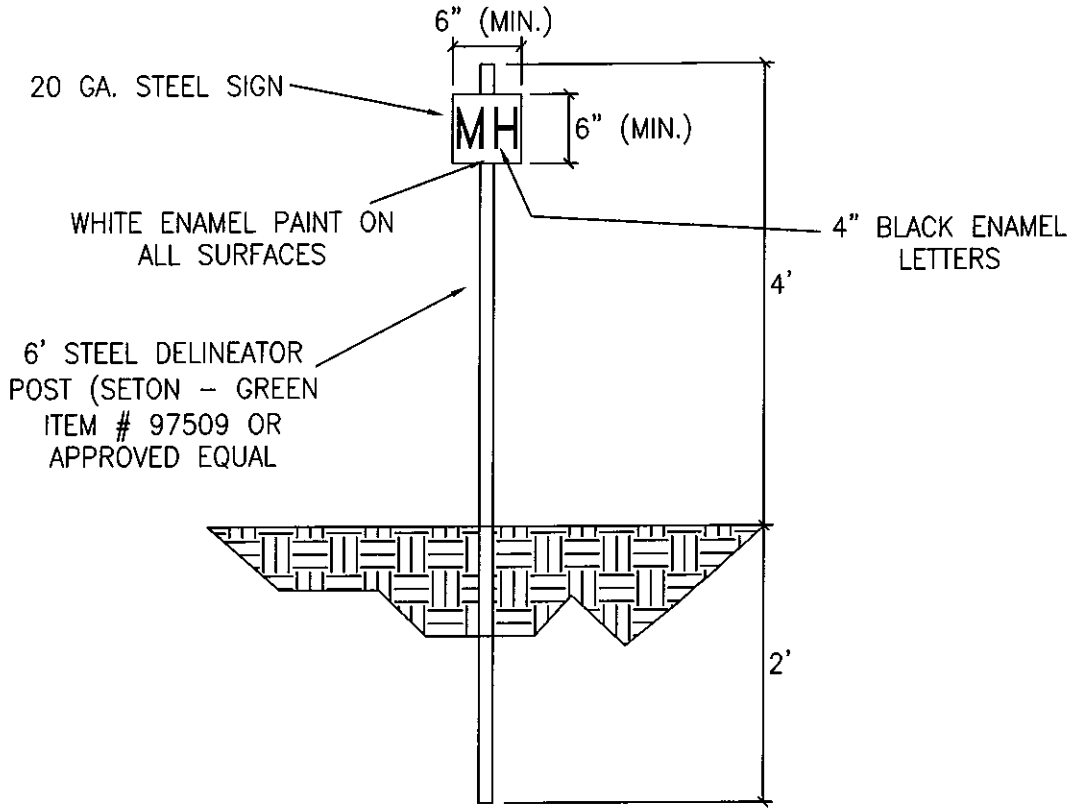
CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

48"X5" TO 33"X8"X36" TALL ECCENTRIC CONCRETE SECTION

REVISION NOTE:

DRAWING NAME: WW08

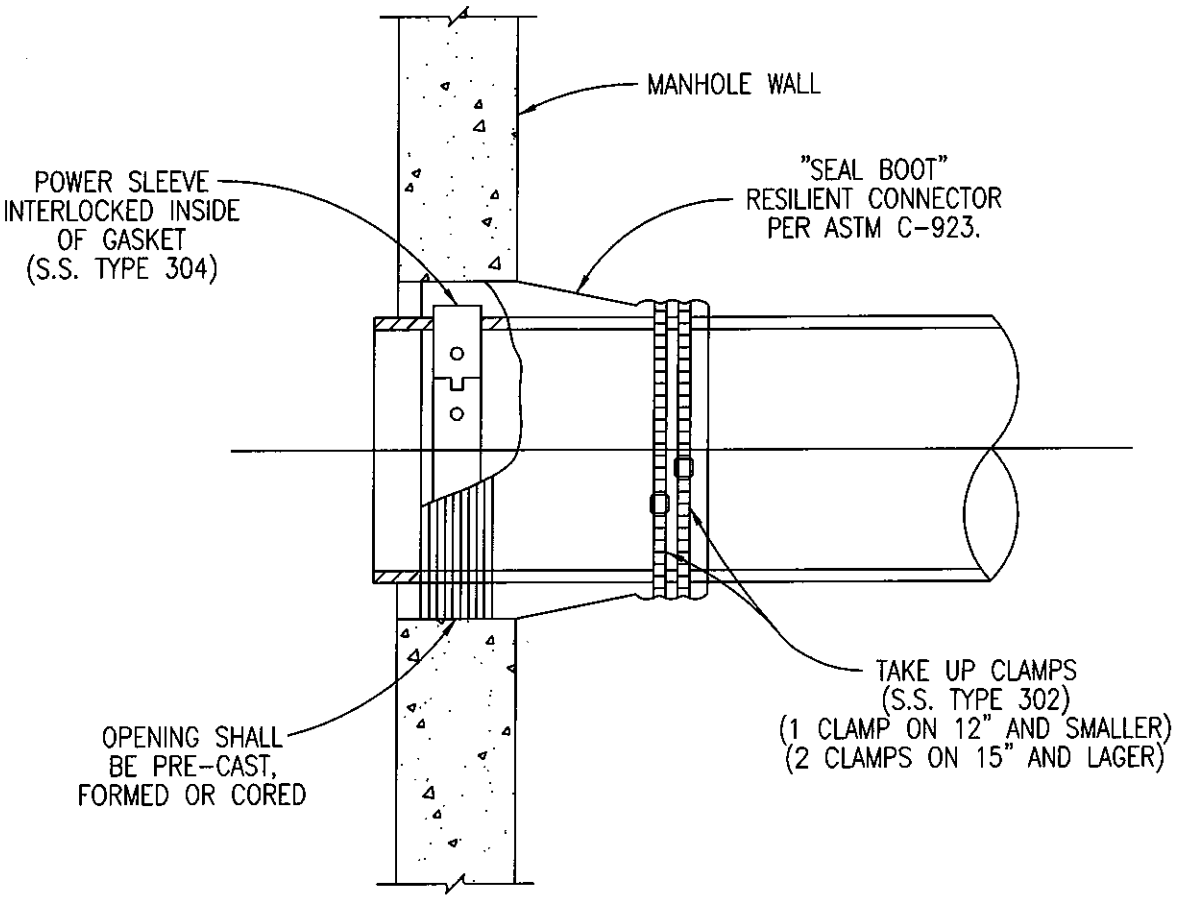
SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



NOTES:

1. INSTALL AT ALL CROSS COUNTRY MANHOLES AND/OR AS INDICATED ON PLAN SHEETS.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:	
		DRAWING NAME:	WW09
	MANHOLE LOCATION SIGN	SCALE: N.T.S. / DATE: 1/25/13	
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.	

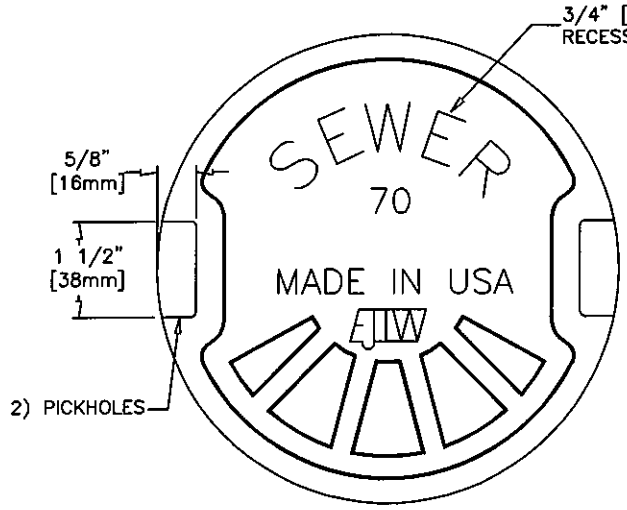


HEWITT TEXAS

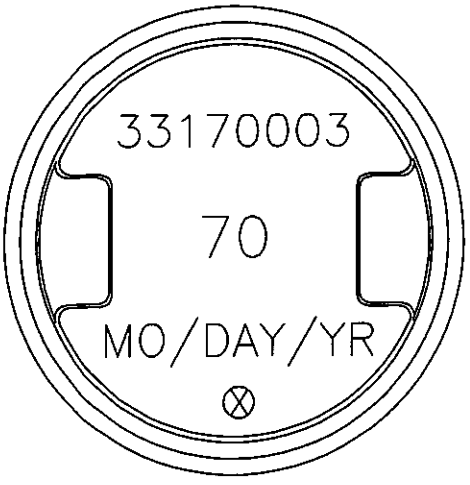
CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

FLEXIBLE "SEAL BOOT" CONNECTOR

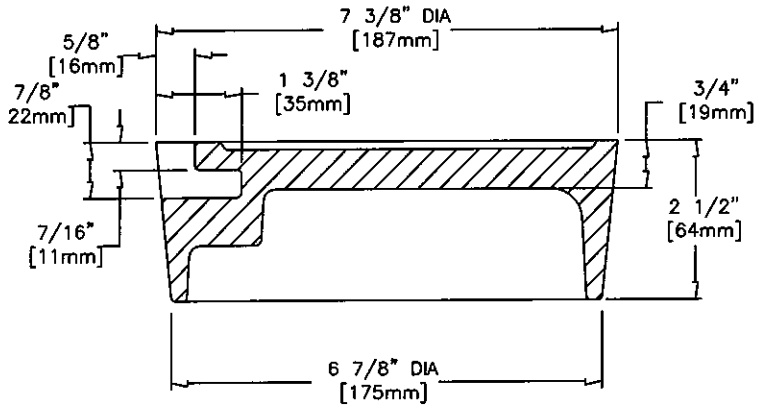
REVISION NOTE:	
DRAWING NAME:	WW10
SCALE: N.T.S.	DATE: 1/25/13
DRAWN BY: M.W.W.	APPROVED BY: W.E.A.



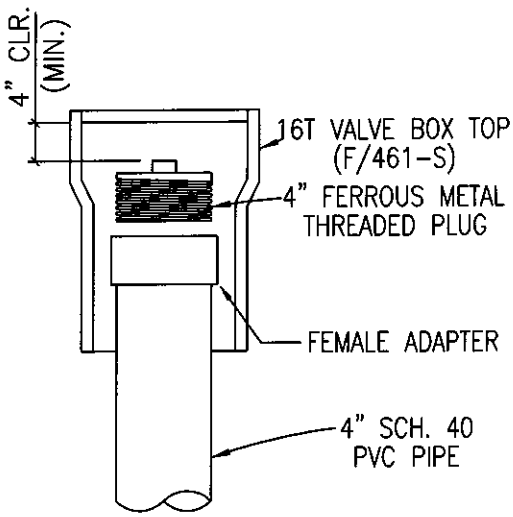
COVER TOP VIEW



COVER BACK VIEW



COVER SECTION



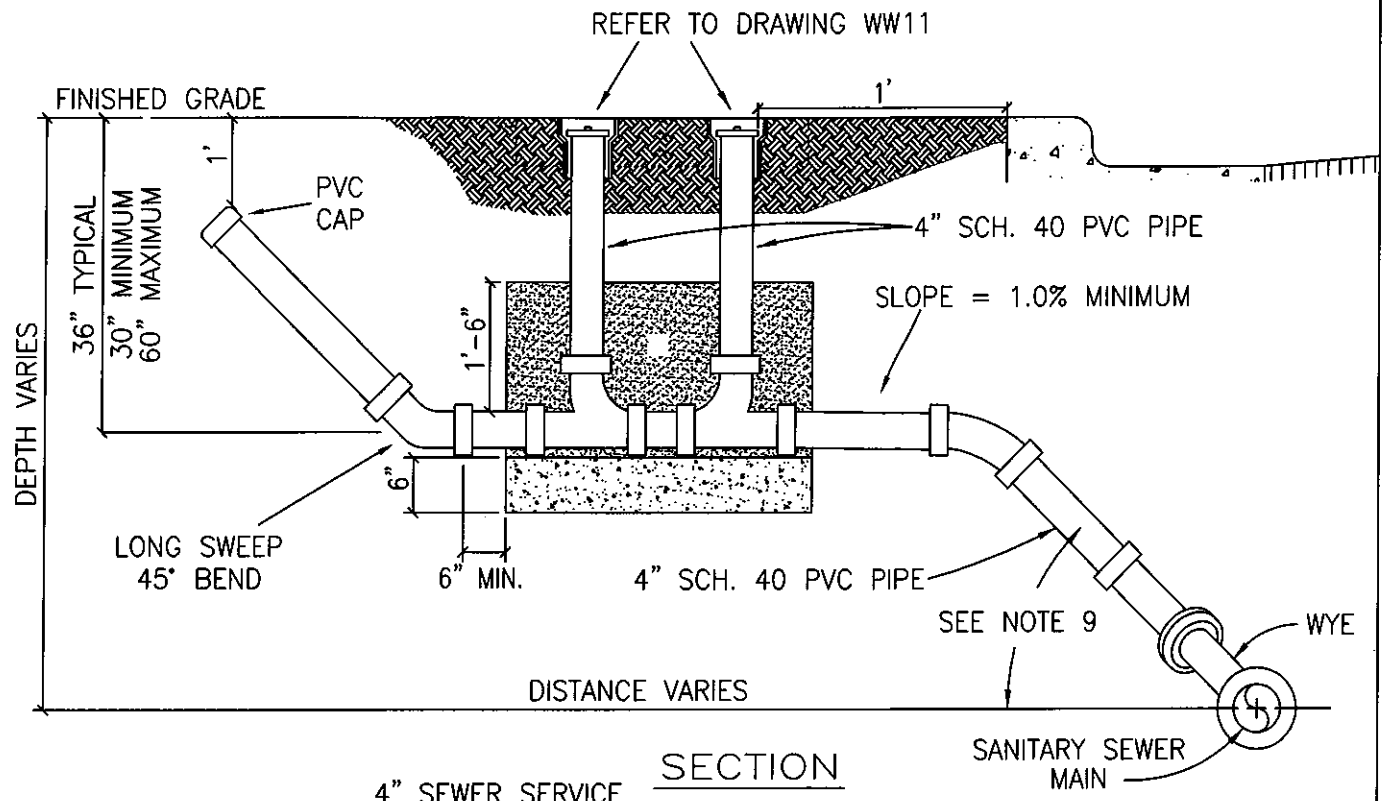
SEWER CLEAN-OUT

CITY OF HEWITT
(RESIDENTIAL SERVICE)

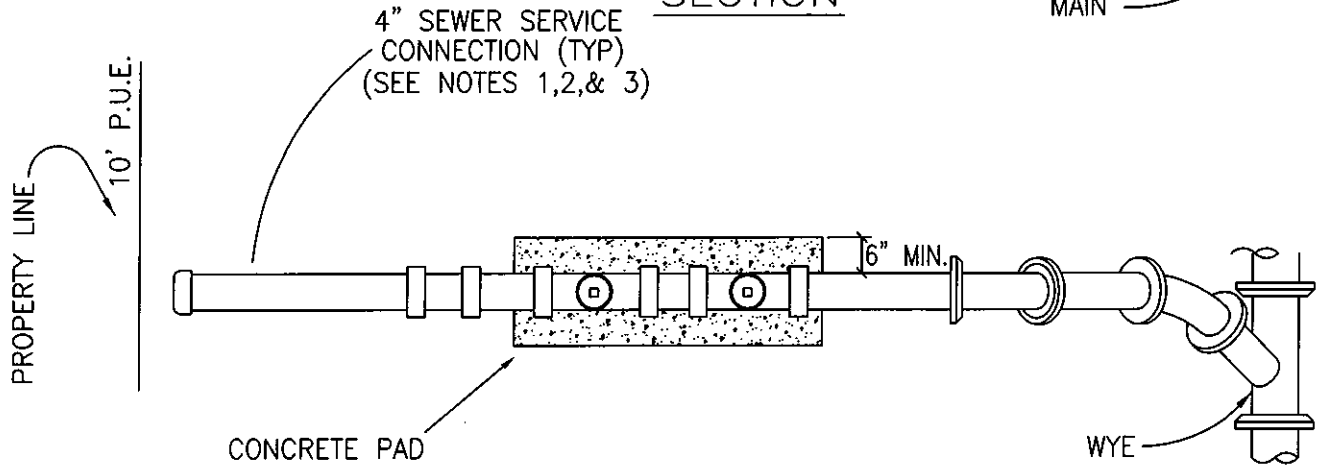
NOTES:

1. STANDARD WASTEWATER CLEANOUT SET TO BE EAST JORDAN IRON WORKS, INC. CATALOG NO. 70, COVER TO BE STAMPED WITH "SEWER".
2. FOR MORE DETAILED SPECIFICATIONS REFER TO EAST JORDAN IRON WORKS, INC. REFERENCE PRODUCT DRAWING 33170003.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	REVISION NOTE:	
		DRAWING NAME:	WW11
	SEWER CLEAN-OUT DETAIL	SCALE: N.T.S. / DATE: 1/25/13	
		DRAWN BY: M.W.W. / APPROVED BY: W.E.A.	



SECTION



PLAN

NOTES:

1. SERVICE CONNECTION RISERS SHALL BE LOCATED AS PER DIMENSIONS ON DRAWING WW01
2. THE END OF EACH SERVICE CONNECTION RISER SHALL BE EXTENDED 12" BELOW FINISH GRADE.
3. EACH SERVICE CONNECTION SHALL BE PLUGGED WATER-TIGHT WITH AN APPROVED CAP OR PLUG.
4. FOR P.V.C. INSTALLATIONS, CONNECT TO EXISTING "BELL END" AND CONNECT OPPOSITE END WITH P.V.C. TO P.V.C. KNOCK ON SLEEVE.
5. SOLIDLY TAMP BACKFILL AT LEAST ONE FOOT (1'-0") ABOVE TOP OF PIPE. SERVICES UNDER PAVED AREAS SHALL BE BACKFILLED TO THE SAME SPECIFICATIONS AS SHOWN ON PAVEMENT REPLACEMENT DETAIL.
6. CONTRACTOR SHALL MARK ON A CLEAN SET OF PLANS THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE TO EACH SERVICE LATERAL AND GIVE TO ENGINEER FOR RECORD DRAWING PURPOSES.
7. ANY DEVIATION FROM THESE METHODS MUST BE APPROVED BY CITY OF HEWITT
8. SERVICE LINE MATERIAL SHALL BE P.V.C., SCH. 40.
9. SEWER SERVICE SLOPE TO BE 45° OFF CENTERLINE OF MAIN.

HEWITT TEXAS

CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

SEWER SERVICE CONNECTIONS

REVISION NOTE:

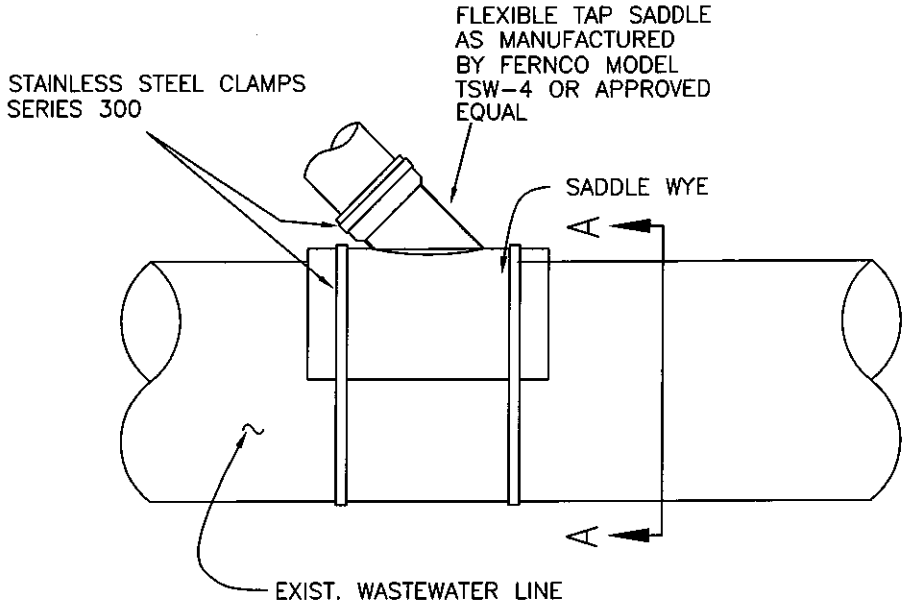
DRAWING NAME: WW12

SCALE: N.T.S.

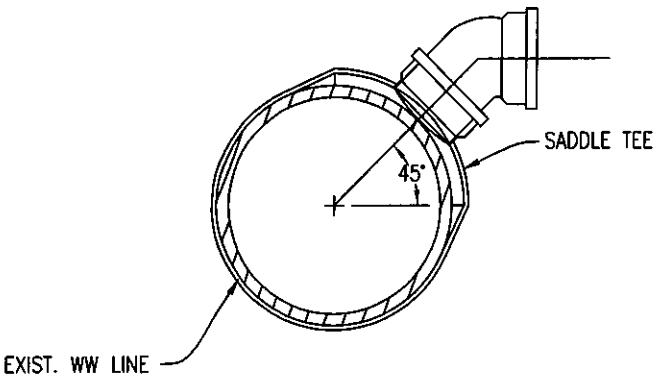
DATE: 1/25/13

DRAWN BY: M.W.W.

APPROVED BY: W.E.A.



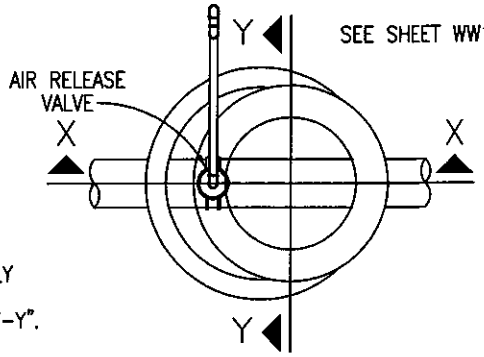
PLAN VIEW



SECTION A-A

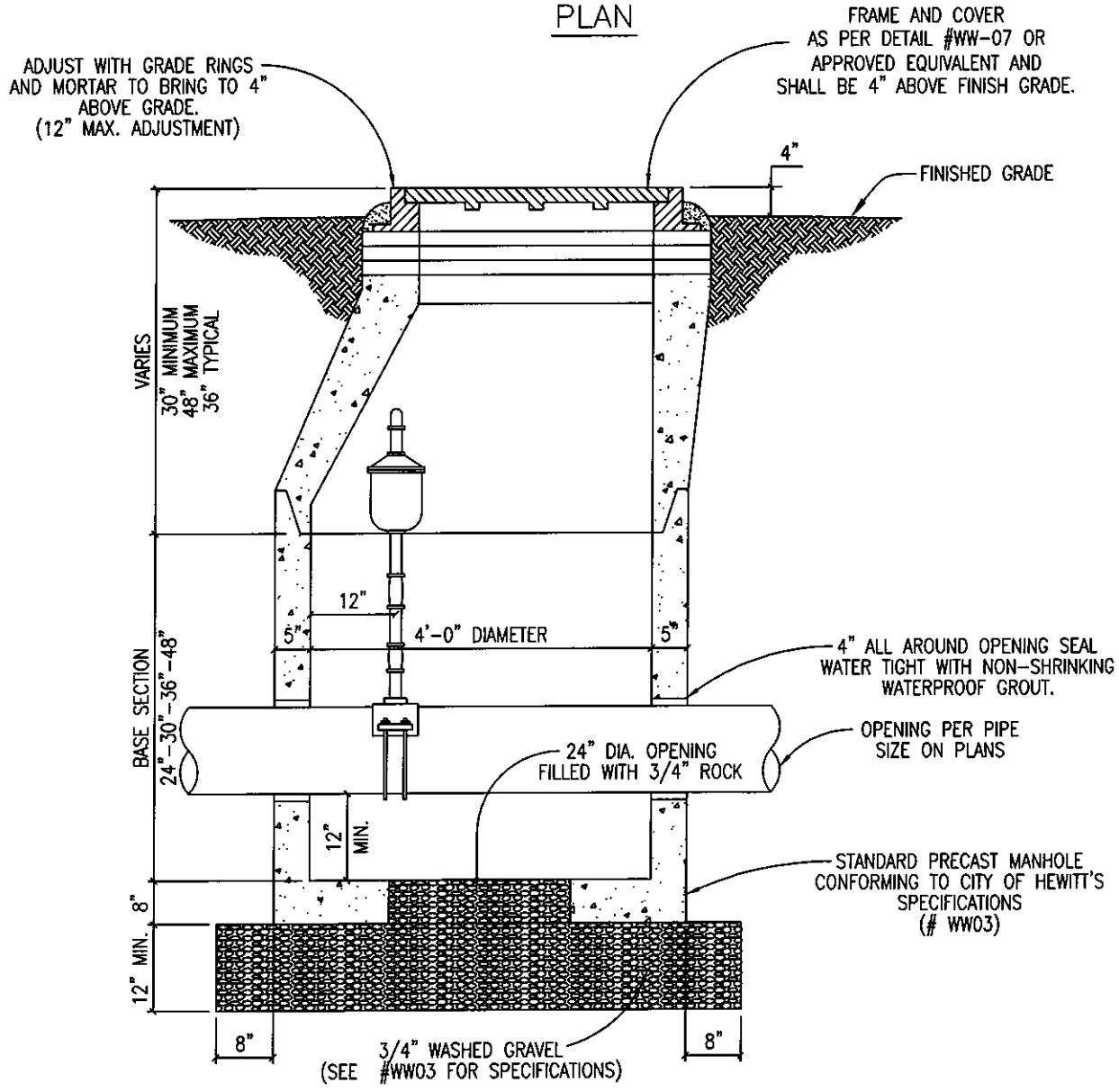
NOTES:
1. FLEXIBLE SADDLE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
2. SADDLE TEE SHALL BE ORIENTATED 45° TO MAIN. (SEE SEWER SERVICE CONNECTIONS DETAIL WW12)
3. REPLACE THE BEDDING AND BACKFILL IN ACCORDANCE WITH THE TRENCH EMBEDMENT DETAIL.
4. PLACE CONCRETE COLLOR TO ENCASE FLEXIBLE TAP SADDLE AND WASTEWATER LINE.

HEWITT TEXAS	CITY OF HEWITT SEWER CONSTRUCTION STANDARD DETAILS	WW12A
	FLEXIBLE TAP SADDLES FOR SEWER SERVICE CONNECTIONS TO EXISTING MAINS	SCALE: N.T.S. DATE: 1/25/13 DRAWN BY: M.W.W. APPROVED BY: W.E.A.



NOTE:
PLAN VIEW SHOWN ONLY FOR CLARIFICATION OF SECTION "X-X" AND "Y-Y".

PLAN



SECTION "X-X"

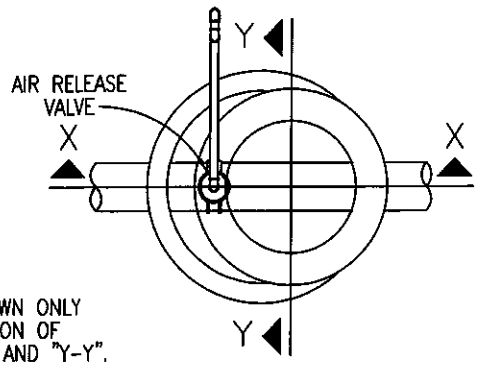
HEWITT TEXAS

CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

WW13

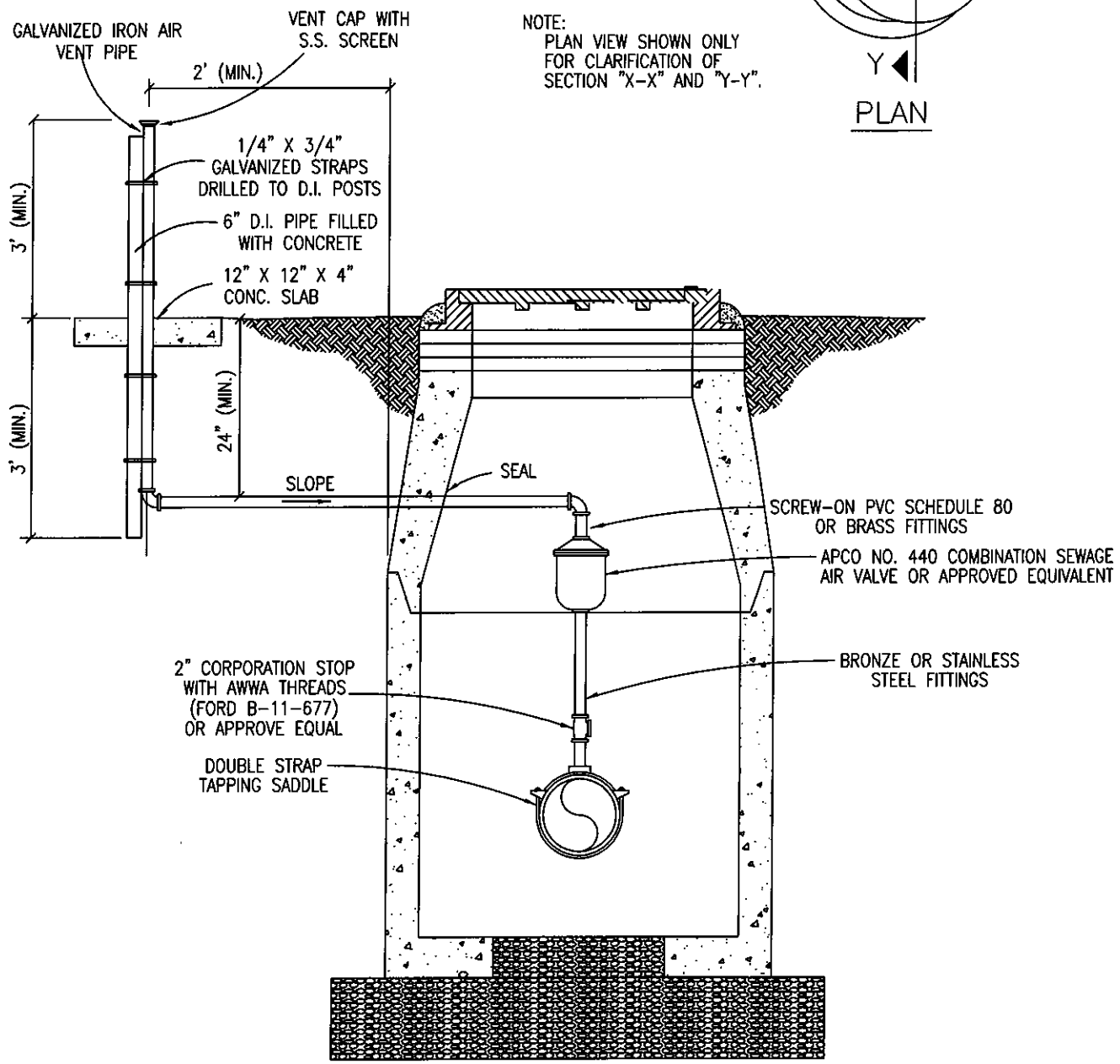
STANDARD AIR RELEASE VALVE FOR FORCE MAINS

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



PLAN

NOTE:
PLAN VIEW SHOWN ONLY FOR CLARIFICATION OF SECTION "X-X" AND "Y-Y".



SECTION "Y-Y"

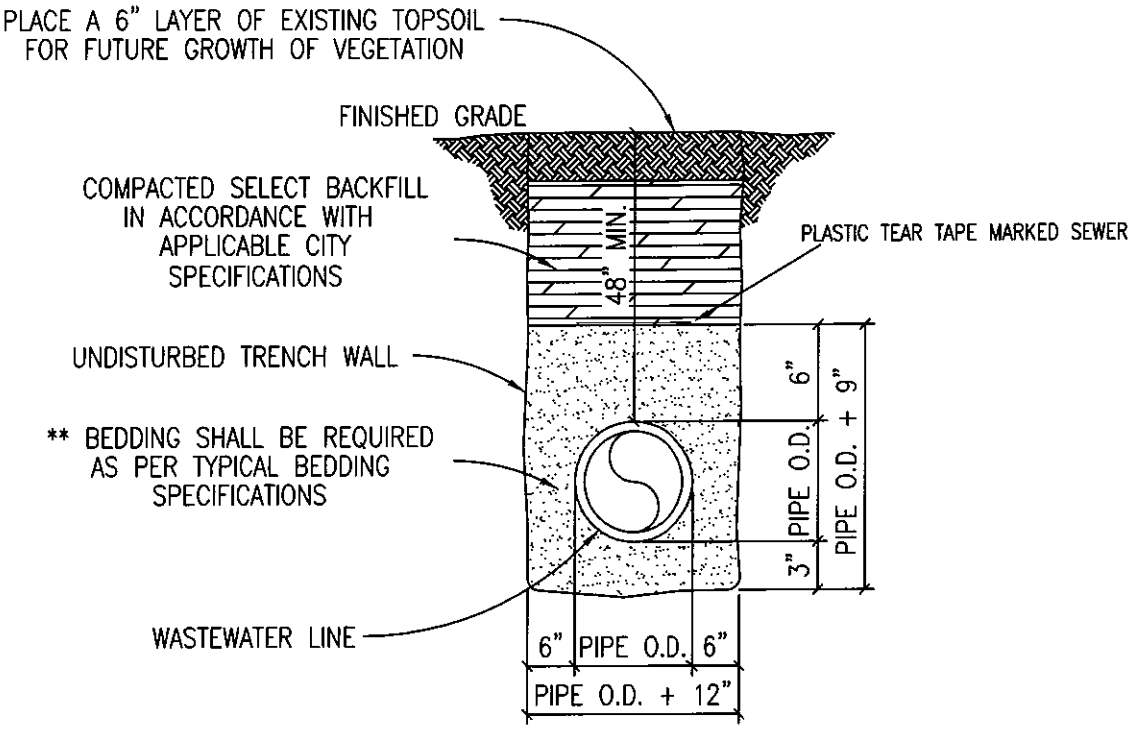
HEWITT TEXAS

CITY OF HEWITT
SEWER CONSTRUCTION STANDARD DETAILS

WW14

STANDARD AIR RELEASE VALVE FOR FORCE MAINS

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



** TYPICAL BEDDING SPECIFICATIONS:

TYPE	Percentage passing Sieve Sizes	
COURSE-GRAINED SOILS, CLEAN.	1-1/2" (40mm)	100%
DESCRIPTION		
WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURE; LITTLE OR NO FINES.	No. 4 (4.75 mm)	<50% of Course Fraction
	No. 200 (0.075mm)	<5%

TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

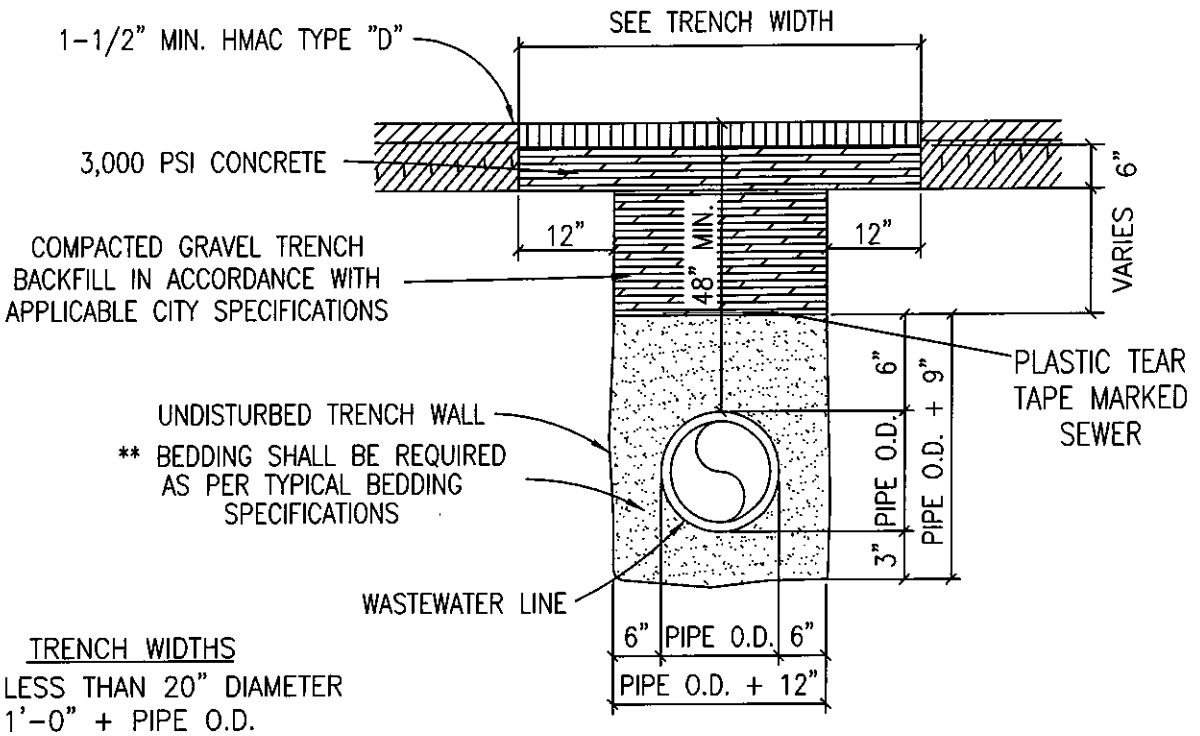
HEWITT TEXAS

SEWER CONSTRUCTION STANDARD DETAILS

WW15

TRENCH AND EMBEDMENT DETAIL UNDER NON-PAVED AREAS

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE.
2. BASE MATERIAL SHALL BE PLACED IN MULTIPLE LIFTS NOT TO EXCEED 6". EACH LAYER SHALL BE THOROUGHLY ROLLED OR TAMPED TO SPECIFIED MAXIMUM DENSITY.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.
5. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH APPLICABLE CITY CONSTRUCTION SPECIFICATIONS AND STANDARDS.

** TYPICAL BEDDING SPECIFICATIONS:

TYPE	Percentage passing Sieve Sizes	
COURSE-GRAINED SOILS, CLEAN.	1-1/2" (40mm)	100%
DESCRIPTION		
WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURE; LITTLE OR NO FINES.	No. 4 (4.75 mm)	<50% of Course Fraction
	No. 200 (0.075mm)	<5%

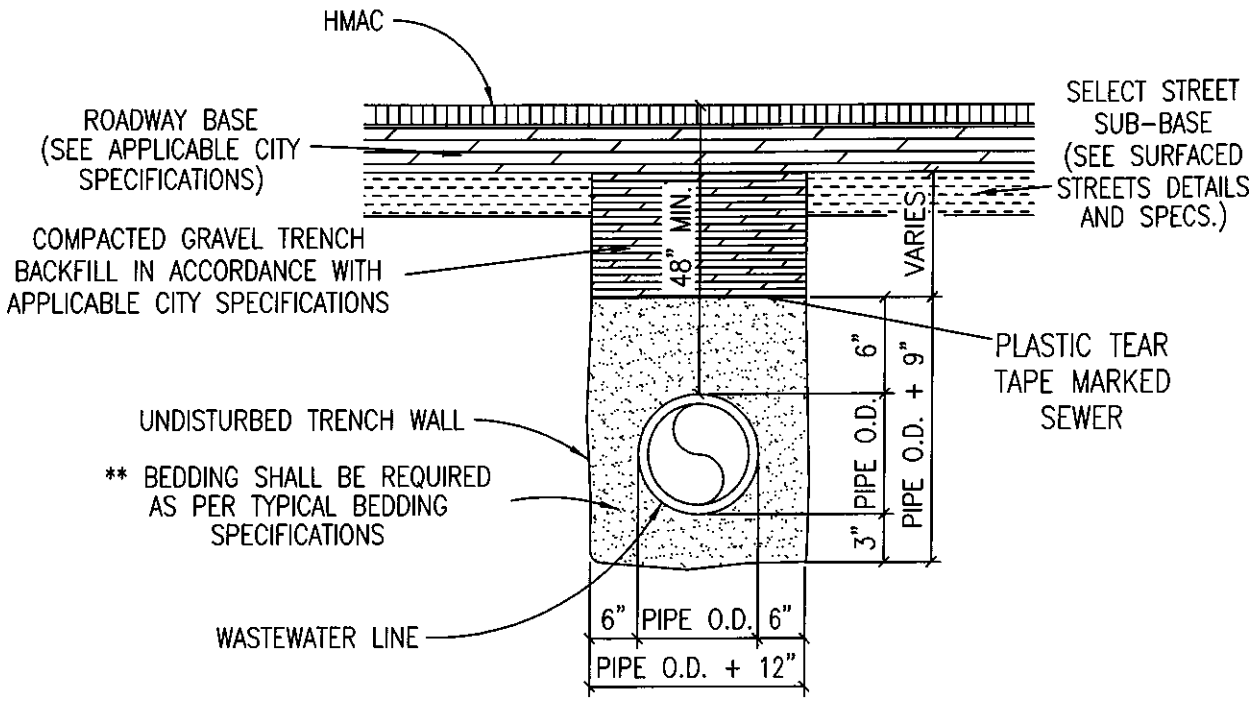
HEWITT TEXAS

SEWER CONSTRUCTION STANDARD DETAILS

WW16

TRENCH AND EMBEDMENT AND PAVEMENT REPLACEMENT DETAIL UNDER EXISTING ROADWAY

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



TRENCH WIDTHS

*PIPE LESS THAN 20" DIAMETER
1'-0" + PIPE O.D.

*20" DIAMETER PIPE AND LARGER
2'-0" + PIPE O.D.

NOTES:

1. DENSITY TESTS SHALL BE TAKEN IN ACCORDANCE WITH APPLICABLE CITY CONSTRUCTION SPECIFICATIONS AND STANDARDS.

** TYPICAL BEDDING SPECIFICATIONS:

TYPE	Percentage passing Sieve Sizes	
COURSE-GRAINED SOILS, CLEAN.	1-1/2" (40mm)	100%
DESCRIPTION		
WELL-GRADED GRAVELS AND GRAVEL-SAND MIXTURE; LITTLE OR NO FINES.	No. 4 (4.75 mm)	<50% of Course Fraction
	No. 200 (0.075mm)	<5%

HEWITT TEXAS

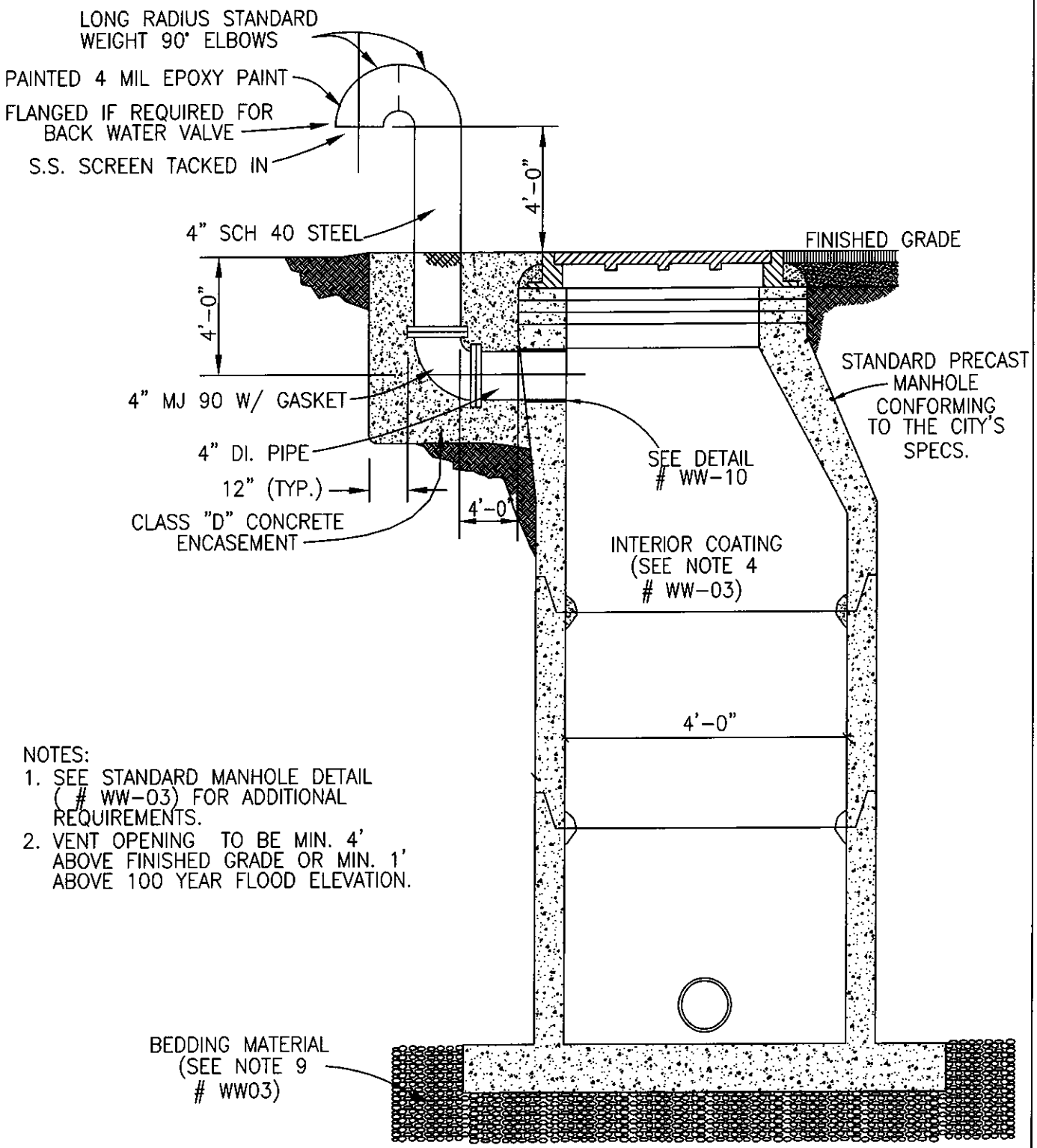
SEWER CONSTRUCTION STANDARD DETAILS

WW17

TRENCH AND EMBEDMENT DETAIL UNDER PROPOSED ROADWAY

SCALE: N.T.S. | DATE: 1/25/13

DRAWN BY: M.W.W. | APPROVED BY: W.E.A.



NOTES:
1. SEE STANDARD MANHOLE DETAIL (# WW-03) FOR ADDITIONAL REQUIREMENTS.
2. VENT OPENING TO BE MIN. 4' ABOVE FINISHED GRADE OR MIN. 1' ABOVE 100 YEAR FLOOD ELEVATION.

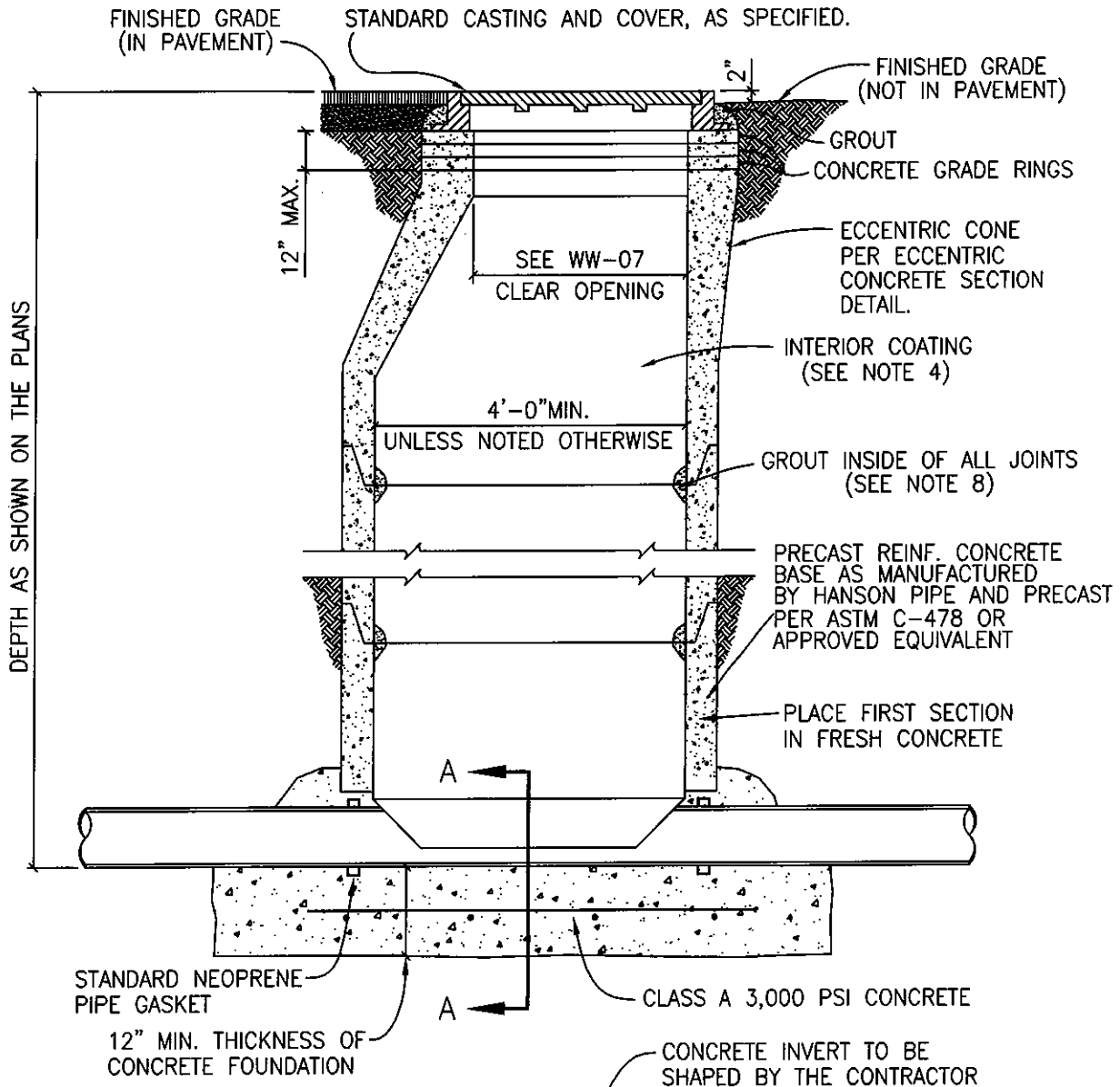
HEWITT TEXAS

SEWER CONSTRUCTION STANDARD DETAILS

WW18

TYPICAL MANHOLE WITH VENT

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



NOTES:

1. MANHOLES SHALL BE PRECAST ASTM C-478 BELL AND SPIGOT WITH PROFILE GASKET - SINGLE OFF-SET JOINTS.
2. SEE PLANS AND MANHOLE SCHEDULE, FOR MANHOLE SIZE, LOCATION, CONFIGURATION, TYPE OF TOP SECTION, VENTING REQUIREMENTS, PIPE SIZE AND TYPES.
3. SEE SPECIFICATIONS ON MATERIALS AND CONSTRUCTION.
4. AN 80 MIL. COAT OF RAVEN LINING SYSTEMS, RAVEN 405 ULTRA HIGH BUILD EPOXY COATING, OR SPRAY WALL EPOXY COATING, OR APPROVED EQUAL, TO BE APPLIED TO ENTIRE INTERIOR OF EACH WASTEWATER MANHOLE AND UNDERSIDE OF FLAT TOPS.
5. ALL MANHOLE COVERS SHALL BE BOLTED AND GASKETED WHEN SPECIFIED.
6. MANHOLES TO BE VENTED ARE IDENTIFIED ON PLAN SHEETS. REFERENCE MANHOLE VENT DETAIL.
7. MANHOLES ARE TO BE DESIGNED TO RESIST LATERAL AND VERTICAL SOIL FORCES RESULTING FROM MANHOLE DEPTH. ADDITIONALLY, ALL MANHOLES ARE TO BE DESIGNED FOR HS-20 TRAFFIC LOADS.
8. GROUT SHALL MEET THE REQUIREMENTS AS STATED BY THE COATING MANUFACTURER.
9. MANHOLE BASE BEDDING MATERIAL SPECS. FOR 3/4" WASHED GRAVEL:
   SIEVE SIZE 2", PERCENT (%) RETAINED 0 SIEVE SIZE 1 1/2", % RETAINED 0-10
   SIEVE SIZE 1", % RETAINED 45-80 SIEVE SIZE 3/4", % RETAINED 85-100
   SIEVE SIZE 3/8", % RETAINED 95-100
10. ALL PVC PIPE SHALL BE REMOVED FROM INVERT.

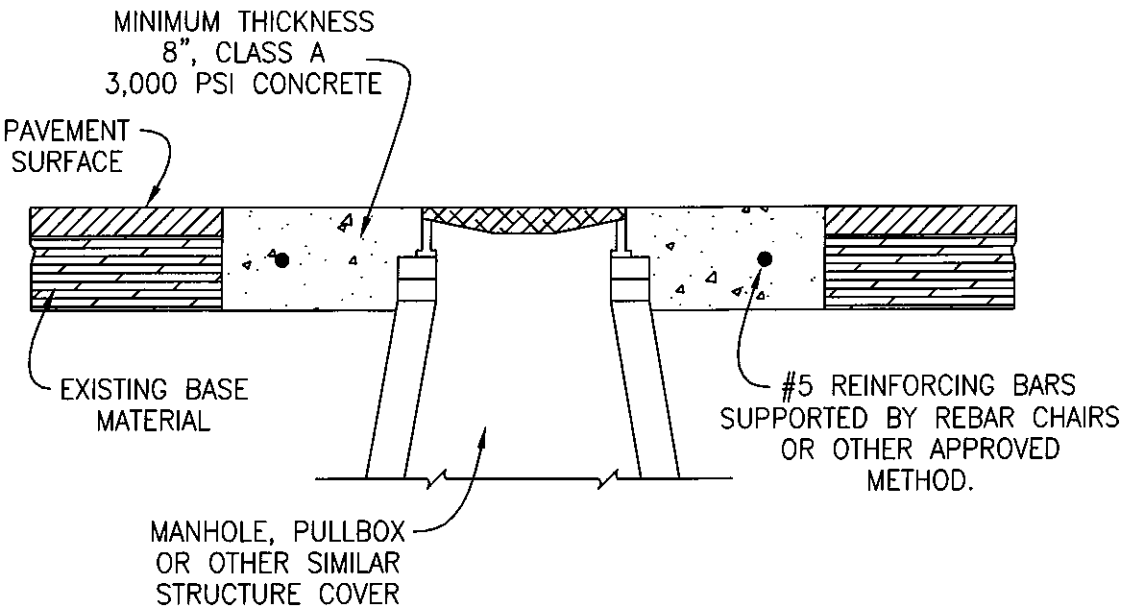
HEWITT TEXAS

SEWER CONSTRUCTION STANDARD DETAILS

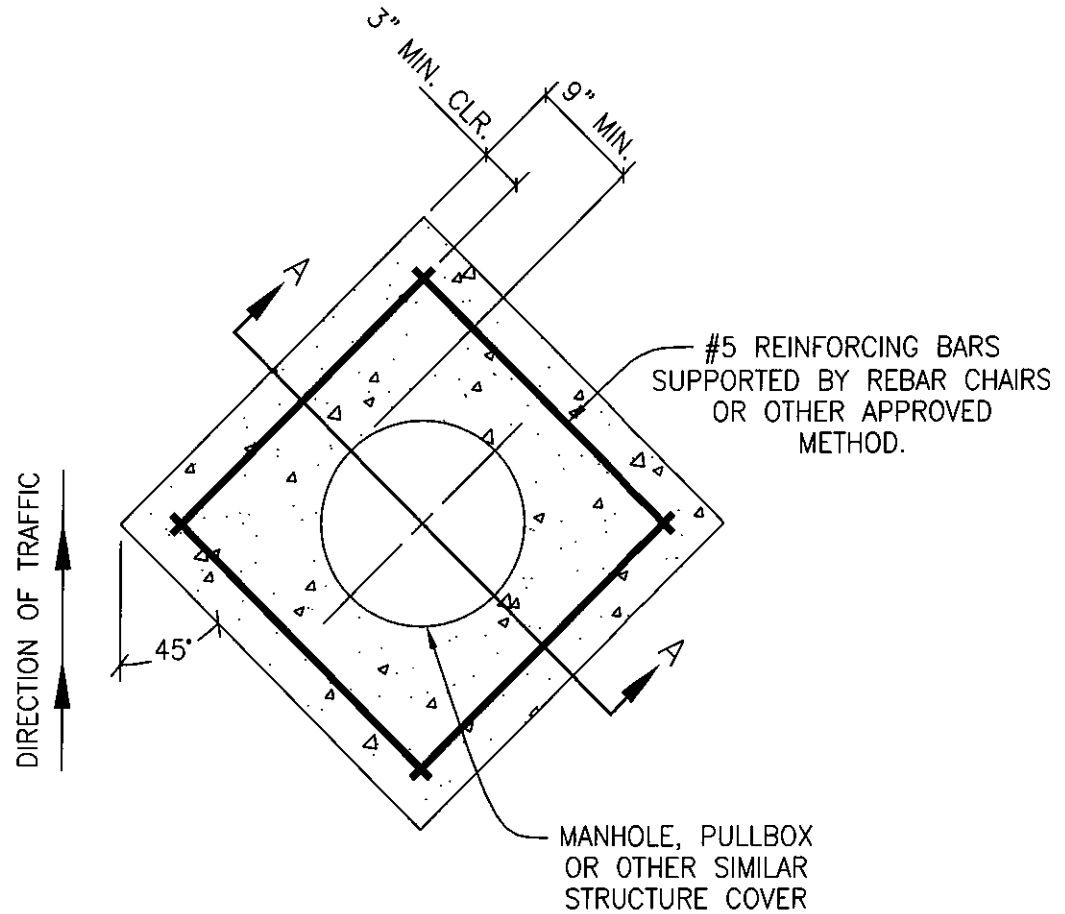
WW19

PRECAST MANHOLE ON CAST-IN-PLACE FOUNDATION

SCALE:	DATE:
N.T.S.	1/25/13
DRAWN BY:	APPROVED BY:
M.W.W.	W.E.A.



SECTION A–A



PLAN OF STRUCTURE IN ROADWAY

NOTE:

INSTALLATION OF THE CONCRETE CASTING IS REQUIRED FOR AND APPLIES TO ALL TYPES OF MANHOLES TO BE LOCATED IN THE ROADWAY, IF WORK OR REPAIRS ARE PERFORMED ON AN EXISTING MANHOLE WITHIN AN EXISTING ROADWAY.

HEWITT TEXAS	SEWER CONSTRUCTION STANDARD DETAILS	WW20
	CONCRETE CASTING MANHOLE DETAIL	SCALE: N.T.S. / DATE: 1/25/13 / DRAWN BY: M.W.W. / APPROVED BY: W.E.A.

Testing Requirements for Installation of Gravity Collection System Pipes.

Low Pressure Air Test.

(A) A low pressure air test must follow the procedures described in American Society For Testing And Materials (ASTM) C-828, ASTM C-924, or ASTM F-1417 or other procedure approved by the City's engineer, except as to testing times as required in Table C. or Equation C.

(B) For sections of collection system pipe less than 36 inch average inside diameter, the following procedure must apply.

(i) A pipe must be pressurized to 3.5 pounds per square inch (psi) greater than the pressure exerted by groundwater above the pipe.

(ii) Once the pressure is stabilized, the minimum time allowable for the pressure to drop from 3.5 psi gauge to 2.5 psi gauge is computed from the following equation:

Equation C.

$$T=\frac{(0.085xDxK)}{Q}$$

Where:

T = time for pressure to drop 1.0 pound per square inch gauge in seconds
K = 0.000419xDxL, but not less than 1.0
D = average inside pipe diameter in inches
L = length of same pipe size being tested, in feet
Q = rate of loss, 0.0015 cubic feet per minute per square foot internal surface

Table C. - Minimum Testing Time for Low-Pressure Air Test

Pipe Diameter (inches)	Minimum Time (seconds)	Minimum Length for Minimum Time (feet)	Time for Longer Length (seconds/foot)
6	340	398	0.855
8	454	298	1.520
10	567	239	2.374
12	680	199	3.419
15	850	159	5.342
18	1020	133	7.693
21	1190	114	10.471
24	1360	100	13.676
27	1530	88	17.309
30	1700	80	21.369
33	1870	72	25.856

(D) The test may stop if no pressure loss has occurred during the first 25% of the calculated testing time.

(E) If any pressure loss or leakage has occurred during the first 25% of a testing period, then the test must continue for the entire test duration as outlined above or until failure.

(F) Wastewater collection system pipes with a 27 inch or larger average inside diameter may be air tested at each joint instead of following the procedure outlined in this section.

(G) A testing procedure for pipe with an inside diameter greater than 33 inches must be approved by the City's engineer.

Deflection Testing.

If a gravity collection pipe is composed of flexible pipe, deflection testing is also required. The following procedures must be followed:

(1) For a collection pipe with inside diameter less than 27 inches, deflection measurement requires a rigid mandrel.

(A) Mandrel Sizing.

(i) A rigid mandrel must have an outside diameter (OD) not less than 95% of the base inside diameter (ID) or average ID of a pipe, as specified in the appropriate standard by the ASTM's, American Water Works Association, UNI-BELL, or American National Standards Institute, or any related appendix.

(ii) If a mandrel sizing diameter is not specified in the appropriate standard, the mandrel must have an OD equal to 95% of the ID of a pipe. In this case, the ID of the pipe, for the purpose of determining the OD of the mandrel, must equal the average outside diameter minus two minimum wall thicknesss for OD controlled pipe and the average inside diameter for ID controlled pipe.

(iii) All dimensions must meet the appropriate standard.

(B) Mandrel Design.

(i) A rigid mandrel must be constructed of a metal or a rigid plastic material that can withstand 200 psi without being deformed.

(ii) A mandrel must have nine or more odd number of runners or legs.

(iii) A barrel section length must equal at least 75% of the inside diameter of a pipe.

(iv) Each size mandrel must use a separate proving ring.

(C) Method Options.

(i) An adjustable or flexible mandrel is prohibited.

(ii) A test may not use television inspection as a substitute for a deflection test.

(iii) If requested, the City's engineer may approve the use of a deflectometer or a mandrel with removable legs or runners on a case-by-case basis.

(2) For a gravity collection system pipe with an inside diameter 27 inches and greater, other test methods may be used to determine vertical deflection.

(3) A deflection test method must be accurate to within plus or minus 0.2% deflection.

(4) The contractor shall not conduct a deflection test until at least 30 days after the final backfill.

(5) Gravity collection system pipe deflection must not exceed five percent (5%).

(6) If a pipe section fails a deflection test, the contractor shall correct the problem and conduct a second test after the final backfill has been in place at least 30 days.

(7) The contractor shall not use any mechanical pulling devices during testing.

(8) The contractor shall include a certification in the construction report or the notice of completion, that the wastewater collection system passed the deflection tests.

(9) The City or the City's representative must inspect the installation of the collection system during the construction and testing phases of the project.

Testing Requirements for Manholes.

(a) All manholes must pass a leakage test.

(b) Contractor is to test each manhole, after assembly (manholes of a depth less than 20' in depth may be tested after backfilling; manholes that are greater than 20' in depth are to be tested prior to backfilling), for leakage, separate and independent of the collection system pipes by vacuum testing or other method approved by the City's engineer.

(1) Vacuum Testing.

(A) To perform a vacuum test, the contractor shall plug all lift holes and exterior joints with a non-shrink grout and plug all pipes entering a manhole.

(B) No grout must be placed in horizontal joints before testing.

(C) Stub-outs, manhole boots, and pipe plugs must be secured to prevent movement while a vacuum is drawn.

(D) The contractor shall use a minimum 60 inch/lb torque wrench to tighten the external clamps that secure a test cover to the top of a manhole.

(E) A test head must be placed at the inside of the top of a cone section, and the seal inflated in accordance with the manufacturer's recommendations.

(F) There must be a vacuum of 10 inches of mercury inside a manhole to perform a valid test.

(G) A test does not begin until after the vacuum pump is off.

(H) A manhole passes the test if after 2.0 minutes and with all valves closed, the vacuum is at least 9.0 inches of mercury.