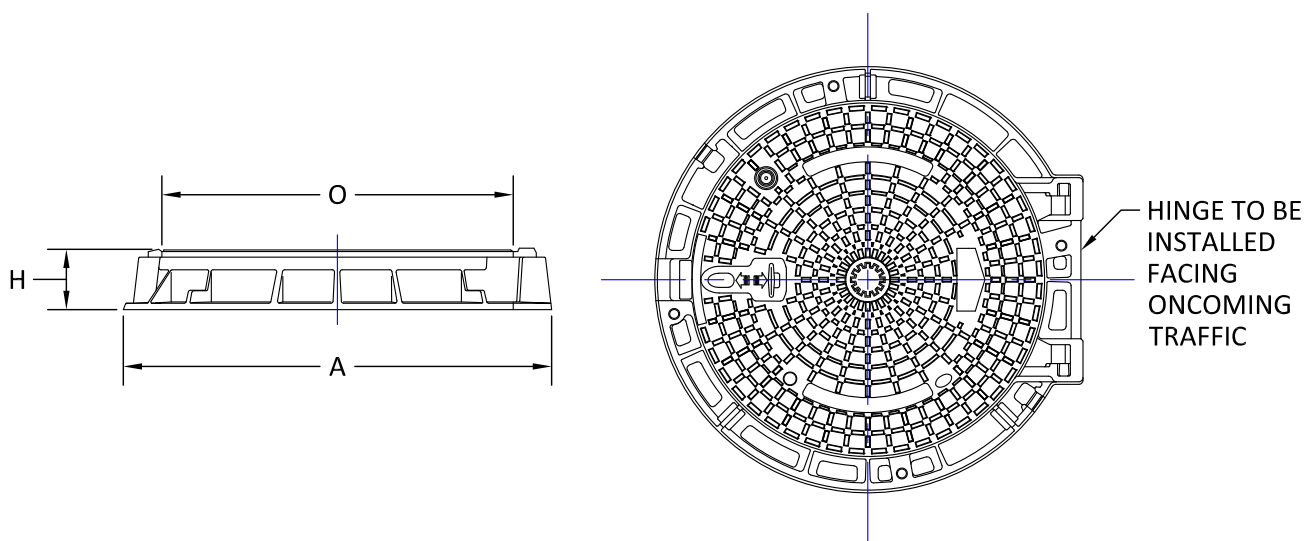




CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
HALTOM CITY, TX 76117

SD 001 - PAMREX MANHOLE COVER AND FRAME



NOTES:

1. MANHOLE COVER AND FRAME SHALL BE PAMREX OR APPROVED EQUAL. COVER AND FRAME SHALL BE MANUFACTURED FROM DUCTILE IRON.
2. COVERS SHALL BE DUALY HINGED AND INCORPORATE A 90 DEGREE BLOCKING SYSTEM TO PREVENT ACCIDENTAL CLOSURE. COVERS SHALL BE ONE MAN OPERABLE USING STANDARD TOOLS AND SHALL BE CAPABLE OF WITHSTANDING A TEST LOAD OF 80,000 LBS.
3. FRAMES SHALL BE CIRCULAR, INCORPORATE A SEATING RING AND A FITTED PLUG IN EACH HINGE HOUSING, AND BE AVAILABLE IN A 32 INCH CLEAR OPENING. THE FRAME DEPTH SHALL NOT EXCEED 5 INCHES, AND THE FLANGE SHALL INCORPORATE BEDDING SLOTS, BOLT HOLES, AND LIFTING EYES.
4. ALL COMPONENTS SHALL BE BLACK COATED.
5. "PAMREX" COVER AND FRAME IS AVAILABLE FROM JIM COX SALES, INC. (800) 838-7377.

PAMREX	DIMENSIONS (IN)			WEIGHT (LBS)		REFERENCE
	A	O	H	COVER + FRAME	COVER ONLY	
800	42	32	5	269	162	RE 80 R8 FD
400	33	24	4	155	71	REPLACEMENT COVER

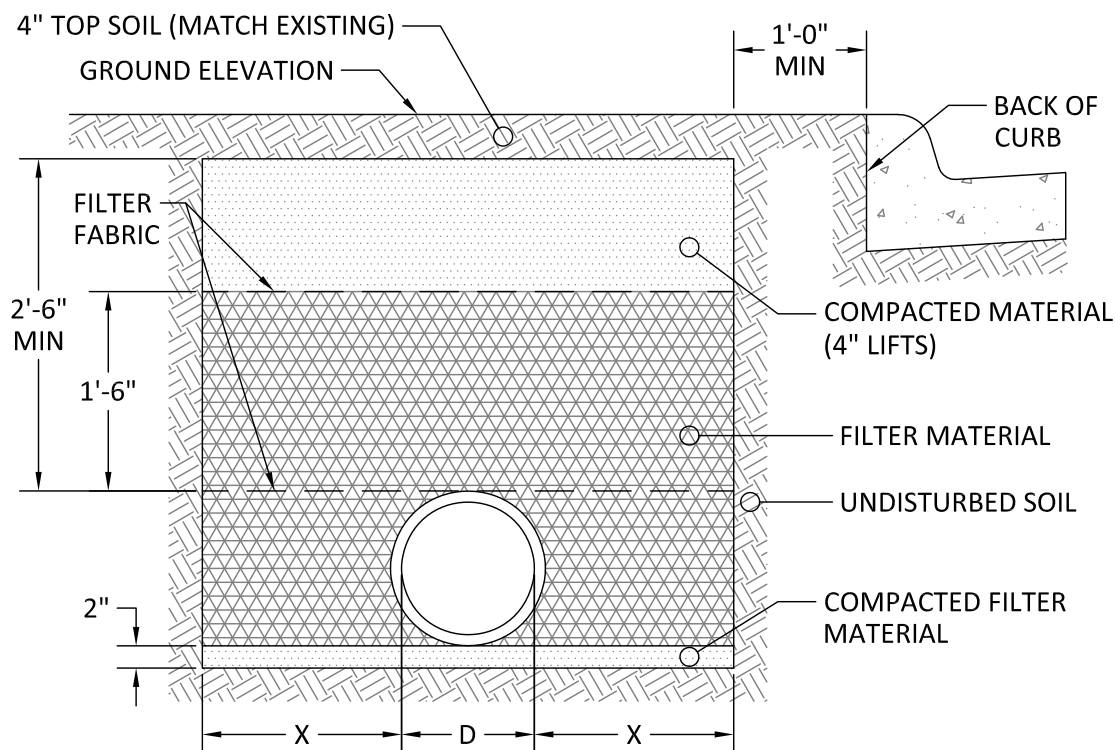
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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
HALTOM CITY, TX 76117

SD 002 - SUB DRAIN BEHIND CURB



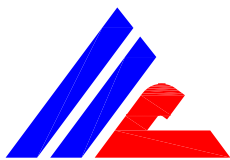
NOTES:

1. FILTER FABRIC MATERIAL SHALL BE D-9-6200 OR APPROVED EQUAL, SHALL BE PLACED AROUND FILTER MATERIAL, AND SHALL BE INCLUDED IN THE PRICE OF THE PIPE
2. PIPE MATERIALS APPROVED FOR USE AS A SUB DRAIN (ONLY ONE TYPE IS TO BE USED):
 - 2.1. PERFORATED CORRUGATED STEEL PIPE (ASPHALT COATED)
 - 2.2. SMOOTH-WALL PERFORATED POLYVINYL CHLORIDE PIPE (PVC)
 - 2.3. PERFORATED HIGH DENSITY POLYETHYLENE PIPE (HDPE) [SHALL BE USED IN PARKWAY]
3. DITCH PROTECTION IS REQUIRED IF DITCH IS OVER 5'-0" IN DEPTH

MIN DIMENSIONS OF EXCAVATION		
PIPE		WIDTH OF TRENCH BEYOND PIPE (X)
DIAMETER (D)	MIN SLOPE	
0'-4"	0.0100	1'-0"
0'-6"	0.0060	1'-0"
0'-8"	0.0040	1'-0"
1'-0"	0.0022	1'-6"
1'-6"	0.0012	2'-0"
2'-0"	0.0008	2'-6"

FILTER MATERIAL SPECIFICATIONS		
SIEVE SIZE	PERCENT RETAINED ON SIEVE	
	TYPE B (D=4"-12")	TYPE C (D>12")
1 1/2	-	0 - 10
3/4	0 - 10	20 - 40
1/2	15 - 35	-
No. 4	35 - 55	40 - 60
20	35 - 65	
50	75 - 100	

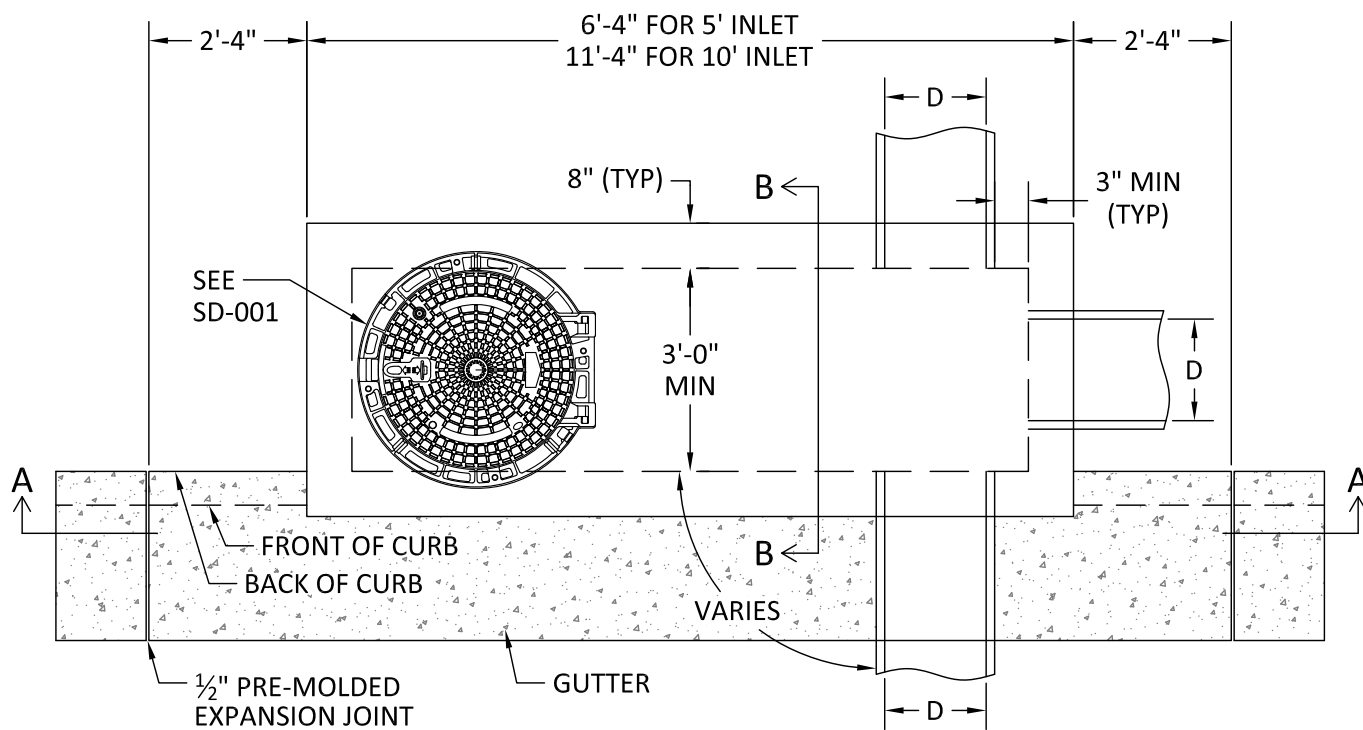
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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
HALTOM CITY, TX 76117

SD 003 - CURB INLET



PLAN VIEW

NOTES:

1. INLETS GREATER THAN 10'-0" SHALL HAVE TWO (2) MANHOLE COVERS.
2. SEE PLANS FOR PIPE DIAMETER (D) AND OUTLET LOCATION.
3. SEE SHEET SD-004 FOR SECTION A-A AND SECTION B-B

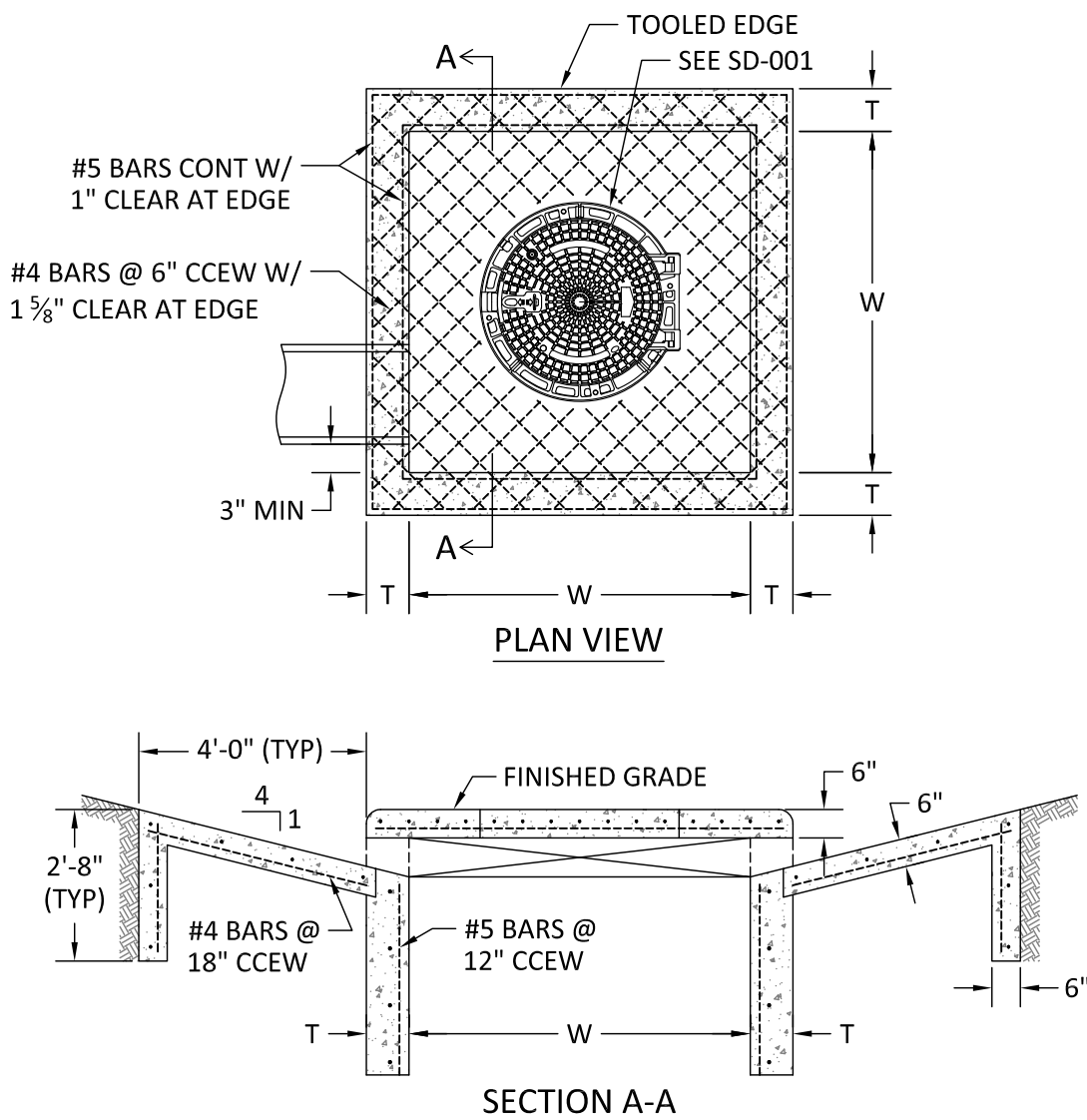
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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
HALTOM CITY, TX 76117

SD 005 - AREA INLET



NOTES:

1. REINFORCED STEEL SHALL HAVE 1 1/2" COVER UNLESS NOTED OTHERWISE
2. DEPTH OF DROP INLET FROM FINISHED GRADE TO FLOW LINE OF INLET VARIES. SEE PLANS FOR DEPTH OF INLET.
3. BASE SHALL BE 8" THICK WITH #4 BARS AT 12" ON CENTER EACH WAY WITH 2" CLEAR.

INLET SIZE	INLET CAPACITY (CFS)	WALL THICKNESS (T)	OPENING WIDTH (W)
2' SQ	8.50	0'-7"	2'-0"
4' SQ	10.00	0'-7"	4'-0"
5' SQ	21.00	0'-8"	5'-0"
6' SQ	25.50	0'-9"	6'-0"
7' SQ	30.00	0'-9"	7'-0"
8' SQ	34.00	0'-9"	8'-0"

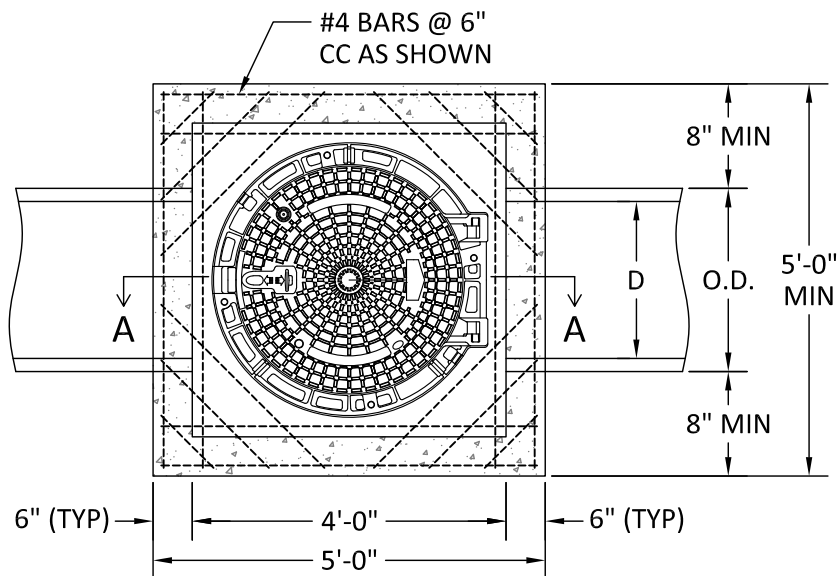
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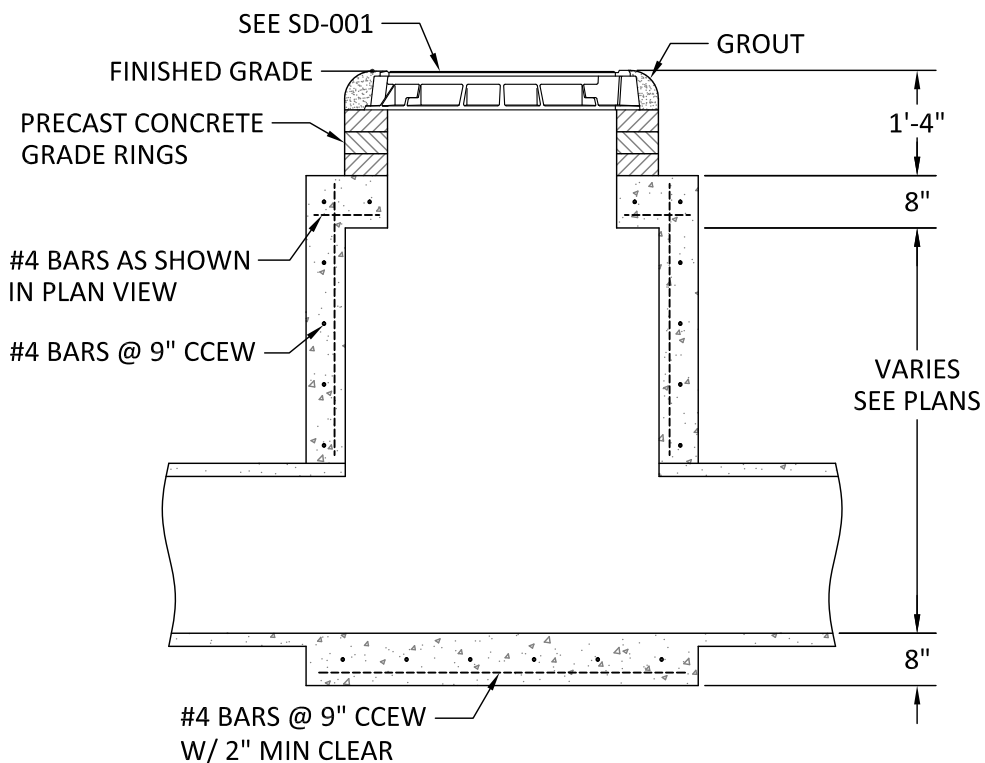
CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
HALTOM CITY, TX 76117

SD 006 - SQUARE MANHOLE

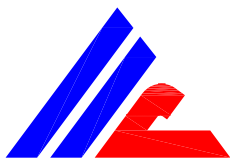


PLAN VIEW



SECTION A-A

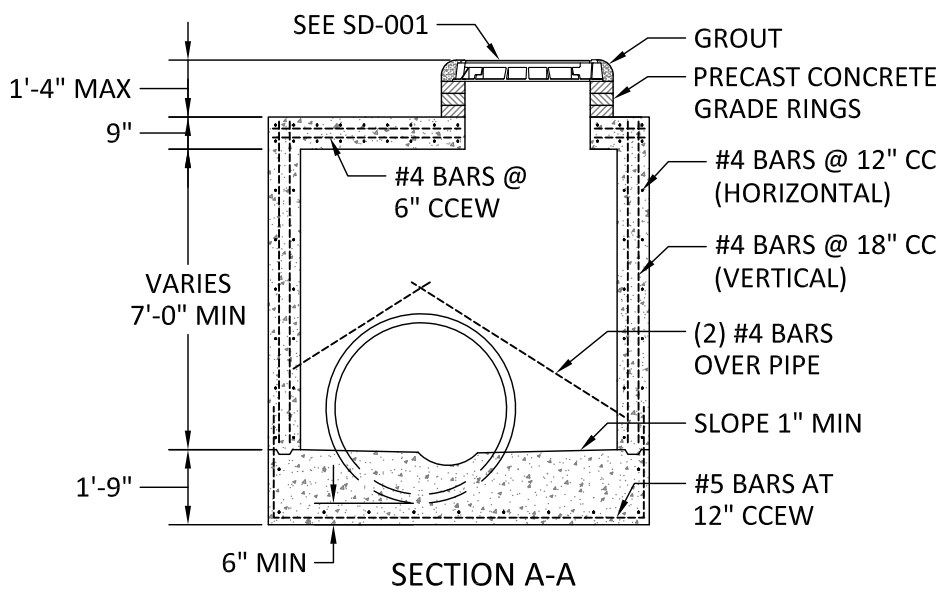
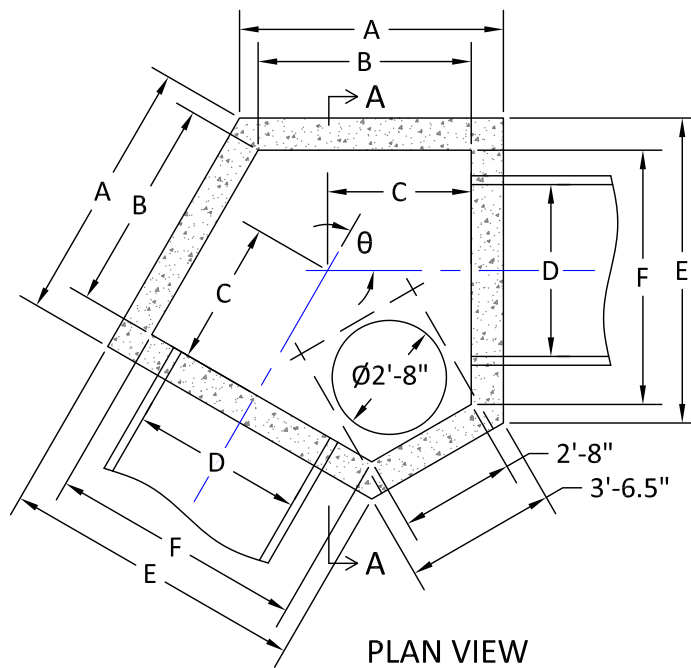
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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
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HALTOM CITY, TX 76117

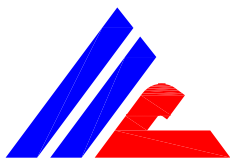
SD 007 - 4' TO 7' SQUARE MANHOLE



NOTES:

1. SEE SD-011 FOR TABLE OF DIMENSIONS "MANHOLE DIMENSIONS" FOR A, B, C, E, AND F.
2. SEE PLANS FOR "θ" AND PIPE DIAMETER "D".
3. USE STEEL REBAR SPACERS IF WALL HEIGHT EXCEEDS 6'-0".
4. #4 BARS AT 8" ON CENTER IS ACCEPTABLE IN LIEU OF KEYWAY.

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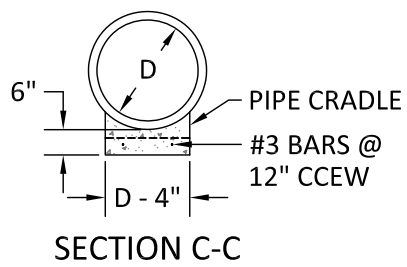
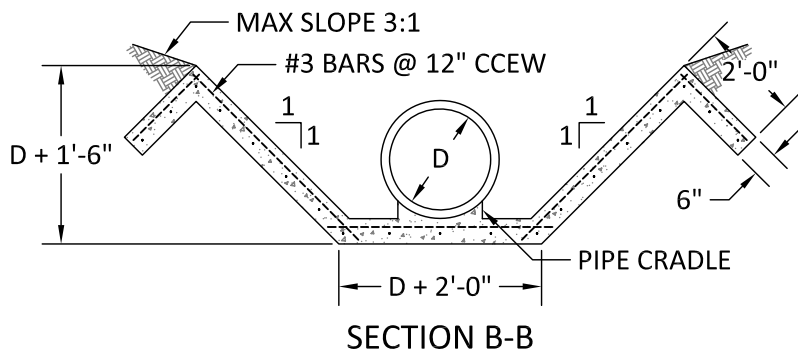
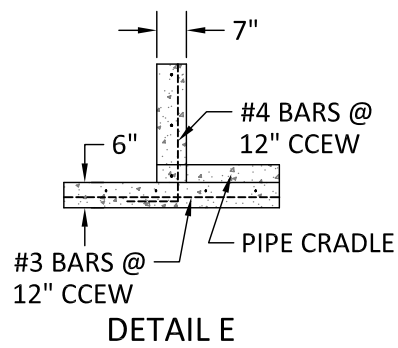
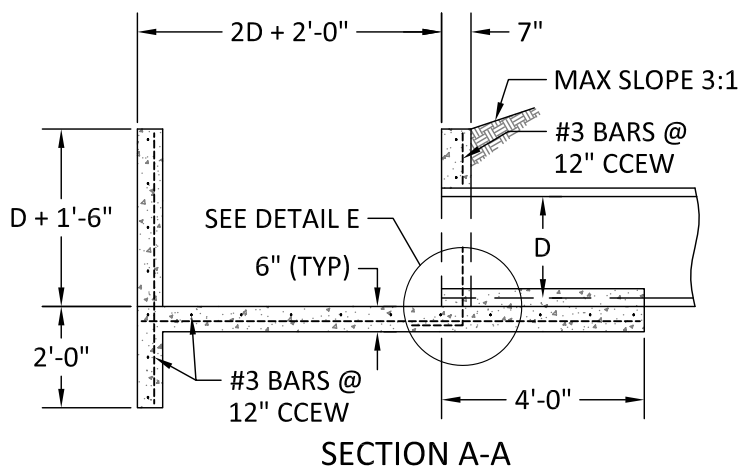
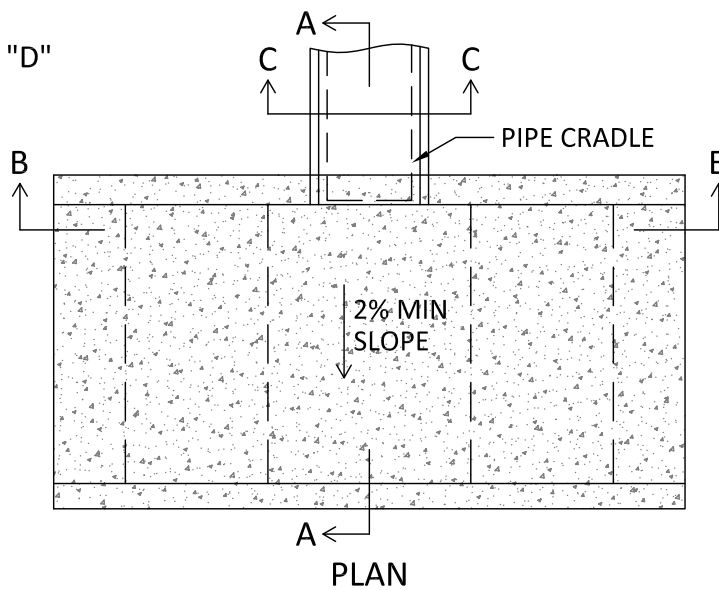


CITY OF HALTOM CITY STORM DRAINAGE

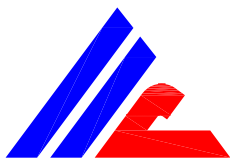
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SD 008 - VERTICAL HEADWALL AND APRON

NOTE: SEE PLANS FOR
PIPE DIAMETER "D"



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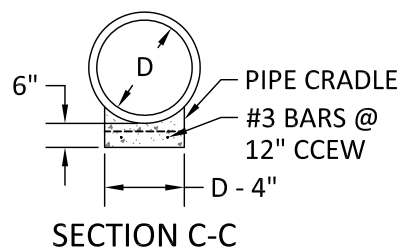
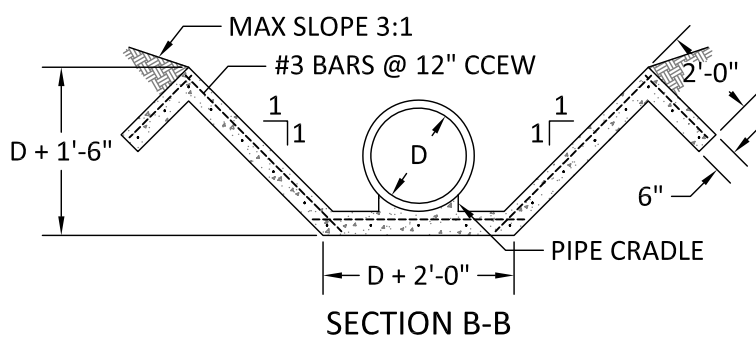
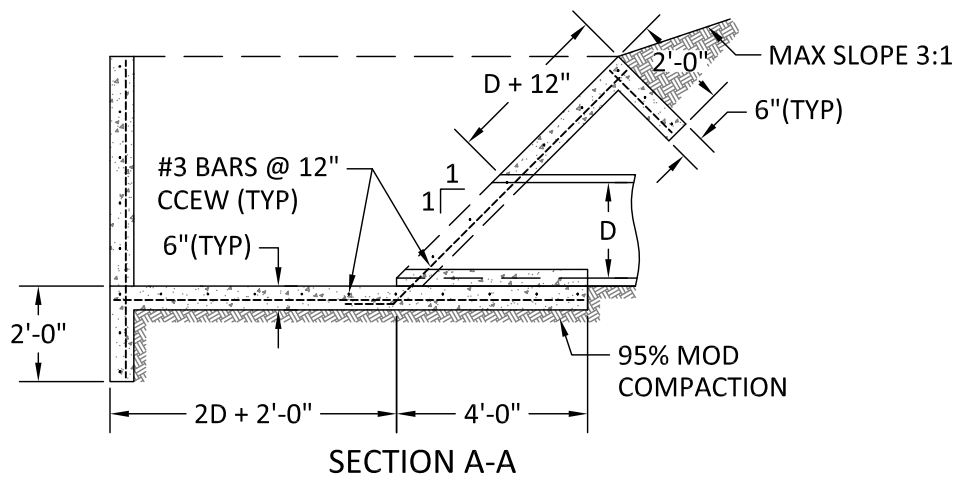
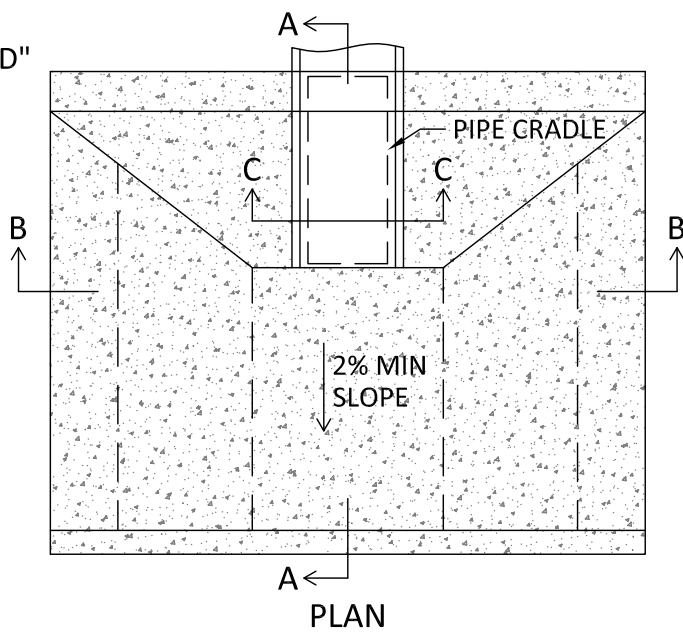


CITY OF HALTOM CITY STORM DRAINAGE

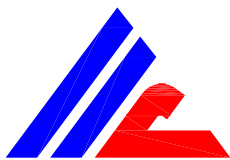
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PO BOX 14246
HALTOM CITY, TX 76117

SD 009 - SLOPING HEADWALL AND APRON

NOTE: SEE PLANS FOR
PIPE DIAMETER "D"



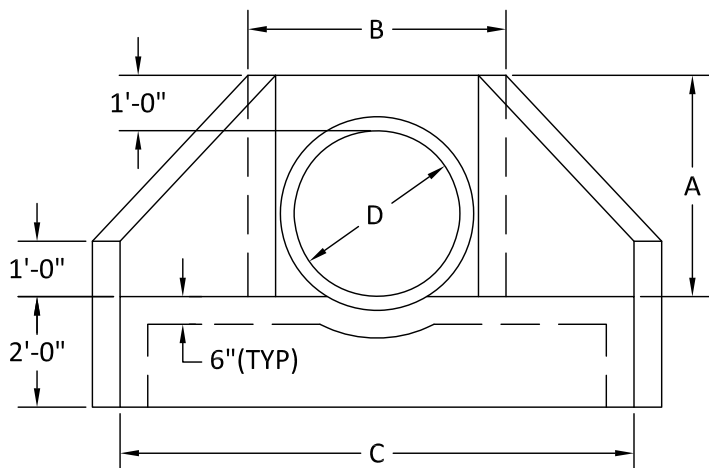
LAST REVISED: FEBRUARY 2004



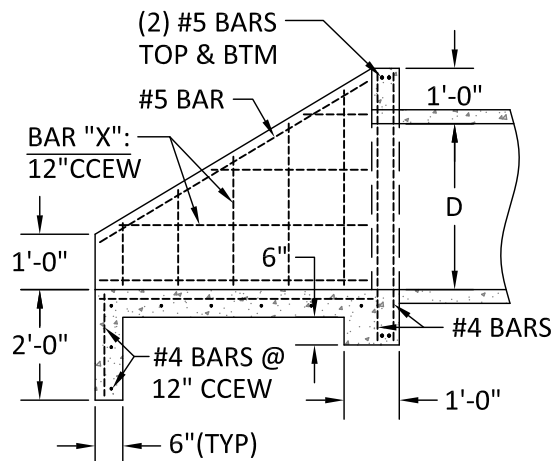
CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
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HALTOM CITY, TX 76117

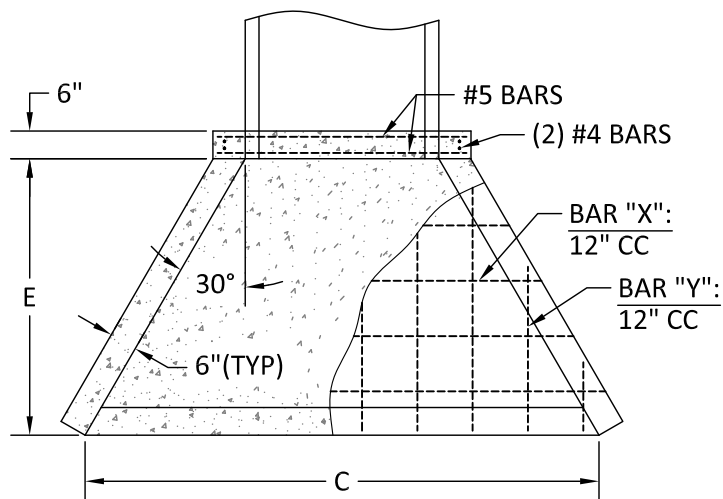
SD 010 - CONCRETE HEADWALL



ELEVATION



SECTION



PLAN

BAR "X" (#4 BAR)

$$X = C - 4.5"$$

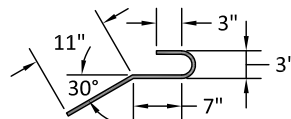
REDUCE DIMENSION BY 12"
FOR EACH SUCCESSIVE BAR

BAR "Y" (#4 BAR)

$$Y = E + 2"$$

REDUCE HORIZONTAL DIMENSION
BY 27" FOR EACH SUCCESSIVE BAR

BAR "Z" (#4 BAR)



NOTES:

1. CONCRETE SHALL BE 3000 PSI
2. SEE SHEET SD-011 FOR TABLE OF DIMENSIONS A, B, C, AND E
3. SEE PLANS FOR PIPE DIAMETER "D"
4. EXPOSED CORNERS SHALL BE CHAMFERED $\frac{3}{4}"$
5. ALL REINFORCING STEEL SHALL HAVE 2" COVER MIN.

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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
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SD 011 - TABLE OF DIMENSIONS

CONCRETE HEADWALL DIMENSIONS

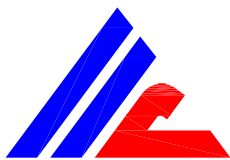
HEADWALL SIZE	A	B	C	D	E
1'-6"	2'-6"	2'-11"	4'-0 7/8"	1'-6"	2'-0"
2'-0"	3'-0"	3'-6"	5'-9 3/4"	2'-0"	3'-0"
2'-6"	3'-6"	4'-1"	7'-6 5/8"	2'-6"	4'-0"
3'-0"	4'-0"	4'-8"	9'-3 1/2"	3'-0"	5'-0"
3'-3"	4'-3"	5'-0"	10'-2"	3'-3"	5'-6"
3'-6"	4'-6"	5'-3"	11'-0 1/4"	3'-6"	6'-0"
4'-0"	5'-3"	5'-10"	12'-9 1/8"	4'-0"	7'-0"
4'-6"	5'-9"	6'-5"	14'-6"	4'-6"	8'-0"
5'-0"	6'-3"	7'-0"	16'-2 7/8"	5'-0"	9'-0"
5'-6"	6'-9"	7'-7"	17'-11 3/4"	5'-6"	10'-0"
6'-0"	7'-3"	8'-2"	19'-8 5/8"	6'-0"	11'-0"

MANHOLE DIMENSIONS (TYPE 1-7)

MANHOLE TYPE	PIPE DIAMETER (D)	A	B	C	E	F
1	18" - 24"	4'-5 1/2"	3'-3 5/16"	2'-5"	4'-2"	3'-0"
2	27" - 33"	4'-11 5/8"	3'-9 3/8"	2'-8"	5'-1"	3'-10 1/2"
3	36" - 42"	5'-5 5/8"	4'-3 7/16"	2'-11"	5'-11 1/4"	4'-9"
4	48" - 54"	6'-1 3/4"	4'-11 1/2"	3'-3"	7'-1 1/4"	5'-11"
5	60" - 66"	6'-9 7/8"	5'-7 5/8"	3'-7"	8'-3 1/4"	7'-1"
6	72" - 78"	7'-6"	6'-3 3/4"	3'-11"	9'-5 1/4"	8'-3"
7	84" - 96"	8'-6 1/8"	7'-3 7/8"	4'-5 1/8"	11'-2 1/4"	10'-0"

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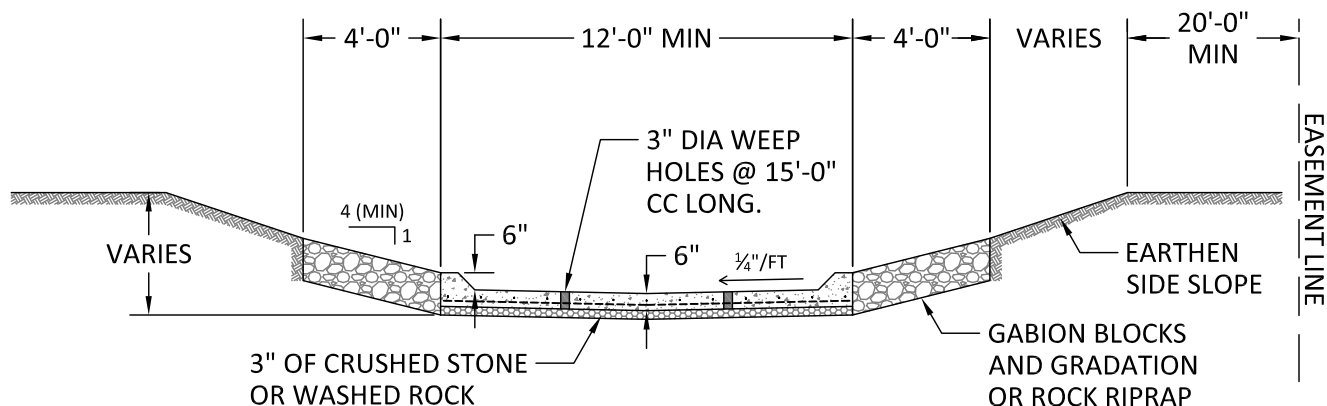
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CITY OF HALTOM CITY STORM DRAINAGE

5024 BROADWAY AVENUE
PO BOX 14246
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SD 013 - CONCRETE SWALE BOTTOM



NOTES:

1. CONCRETE SHALL BE CLASS "A" 3,000 PSI CONCRETE
2. EASEMENT SHALL EXTEND A MINIMUM OF TWENTY FEET (20'-0") BEYOND THE TOP OF BANK ON BOTH SIDES
3. GEOTEXTILE MATERIAL IS TO BE PLACED BETWEEN ROCK AND NATIVE MATERIAL
4. SLOPE BEYOND GABION BLOCKS IS TO BE DETERMINED BY THE ENGINEER. EARTHEN SIDE SLOPES ARE TO BE FREE OF ROCKS WITH ESTABLISHED PLANTS
5. CHANNEL DEPTH IS TO BE DETERMINED BY THE ENGINEER AND BASED ON FLOW
6. GABION BLOCKS AND GRADATION (OR ROCK RIPRAP) SIZE TO BE DETERMINED BY THE ENGINEER AND BASED ON VELOCITY
7. CHANNEL SHALL BE FENCED IN ACCORDANCE WITH THE CITY OF HALTOM CITY STANDARDS

LAST REVISED: FEBRUARY 2004

LAST REVISED: OCTOBER 2006