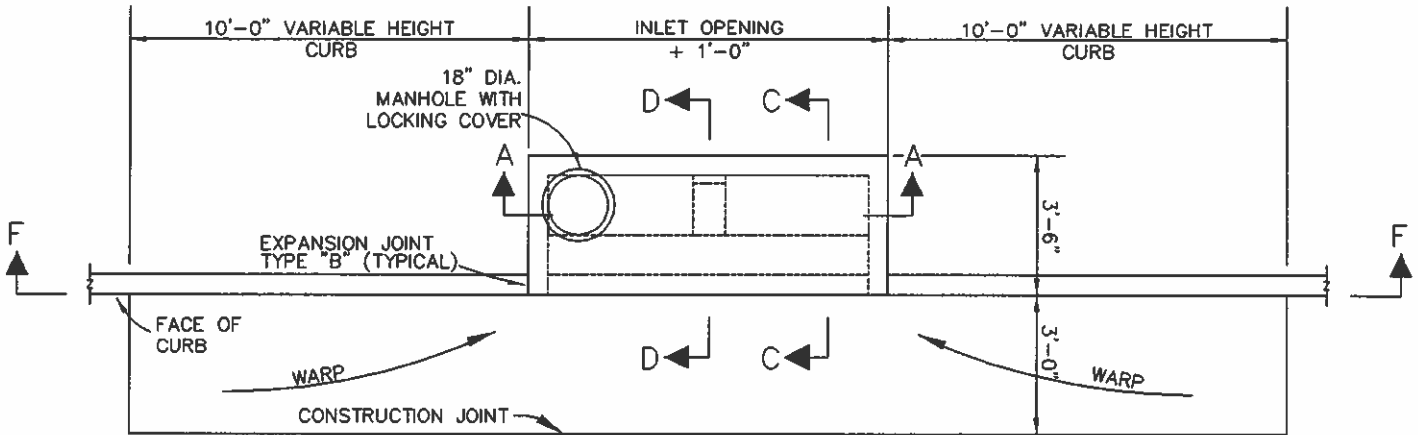
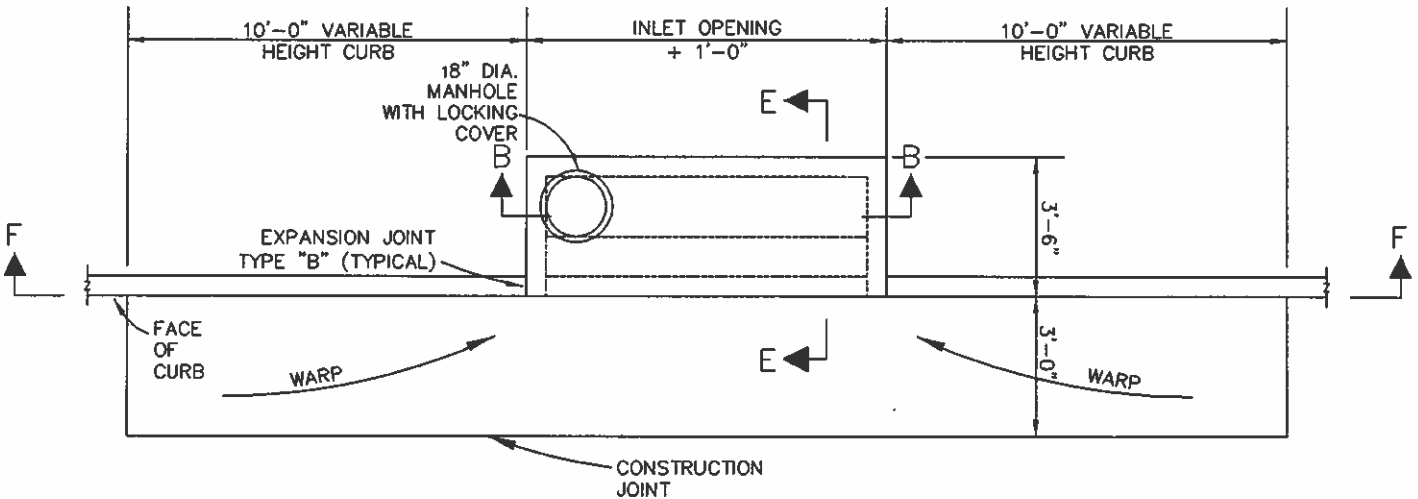


GENERAL NOTES:

1. OUTLET PIPE MAY BE LOCATED IN ANY WALL BUT SHALL NOT BE LOCATED AT ANY CORNER OR PILASTER.
2. MANHOLE RING WITH LOCKING COVER SHALL BE PLACED OVER THE OUTLET PIPE, REINFORCING BARS ARE TO BE ADJUSTED ACCORDINGLY. RING & COVER SHALL BE BASS & HAYS INLET #184L OR EQUAL.
3. INLETS OVER 4' DEEP SHALL CONTAIN STEPS SPACED AT 12" O.C. STARTING 18" ABOVE THE BOTTOM OF THE INLET. STEPS SHALL BE OF THE POURED IN TYPE AND ARE TO BE RUBBER OR PLASTIC COATED (NEENAH R-1981-1 OR EQUAL).
4. ALL INLETS SHALL BE 4000 P.S.I. CONCRETE.



12 AND 14 FOOT CURB LINE INLET
N.T.S.



8 AND 10 FOOT CURB LINE INLET
N.T.S.

GENERAL DESIGN STANDARDS
DRAINAGE DETAILS

SCALE: NTS DATE: 01/2007
SHEET 1 OF 6

CURB LINE INLET VIEW

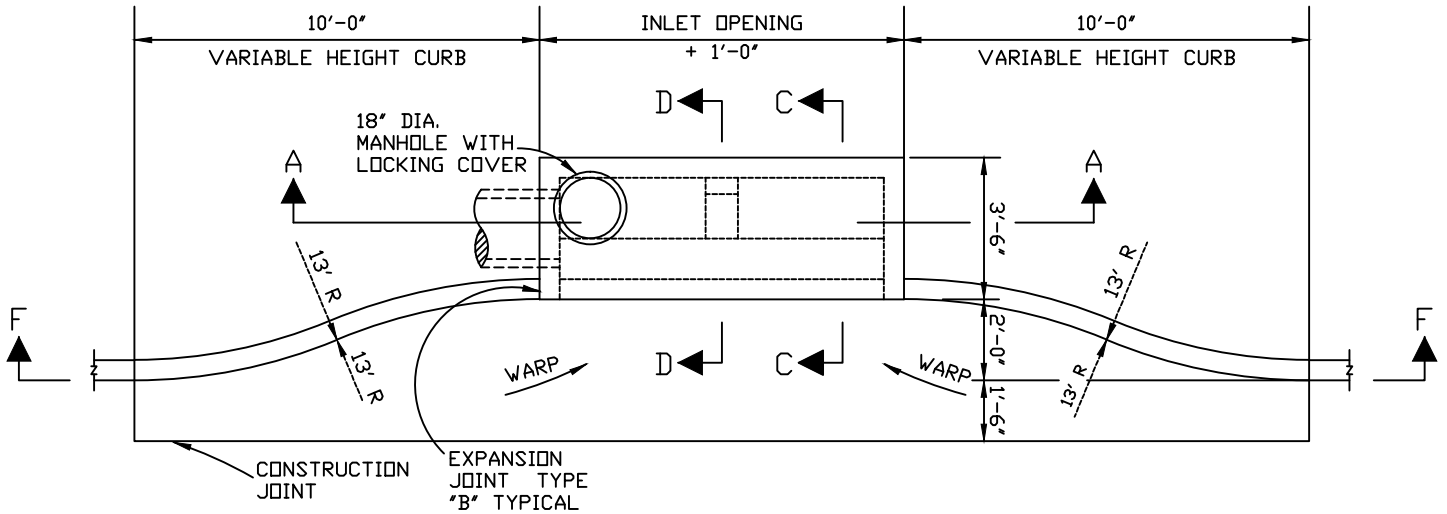


D-1
ENGINEERING
DEPARTMENT

FILENAME: D-1_1-6.dwg

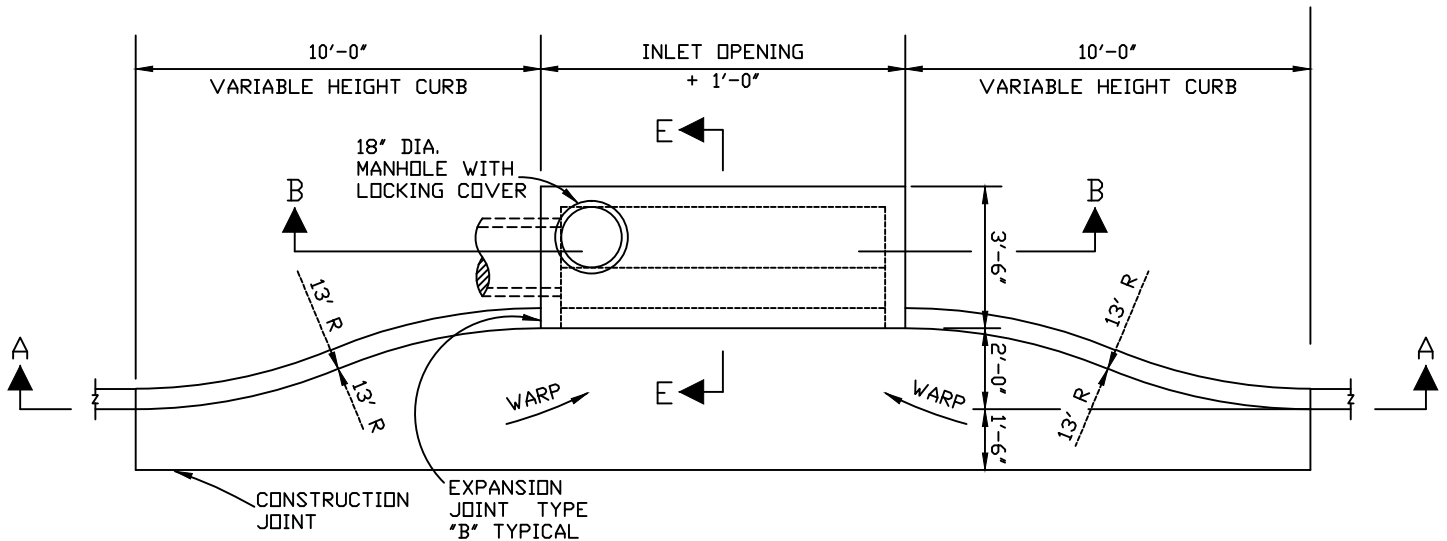
GENERAL NOTES:

1. OUTLET PIPE MAY BE LOCATED IN ANY WALL BUT SHALL NOT BE LOCATED AT ANY CORNER AT THE PILASTER.
2. MANHOLE RING WITH LOCKING COVER SHALL BE PLACED OVER THE OUTLET PIPE, REINFORCING BARS ARE TO BE ADJUSTED ACCORDINGLY.
3. INLETS OVER 4' DEEP SHALL CONTAIN STEPS SPACED AT 12" O.C. STARTING 18" ABOVE THE BOTTOM OF THE INLET. STEPS SHALL BE OF THE POURED IN TYPE AND ARE TO BE RUBBER OR PLASTIC COATED (NEENAH R-1981-1 OR EQUAL).



12' AND 14' RECESSED INLET

N.T.S.



8' AND 10' RECESSED INLET

N.T.S.

GENERAL DESIGN STANDARDS
DRAINAGE DETAILS

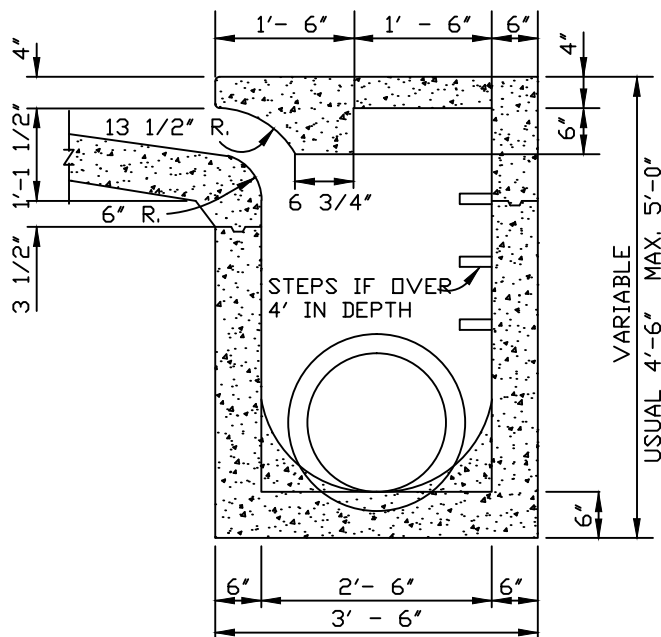
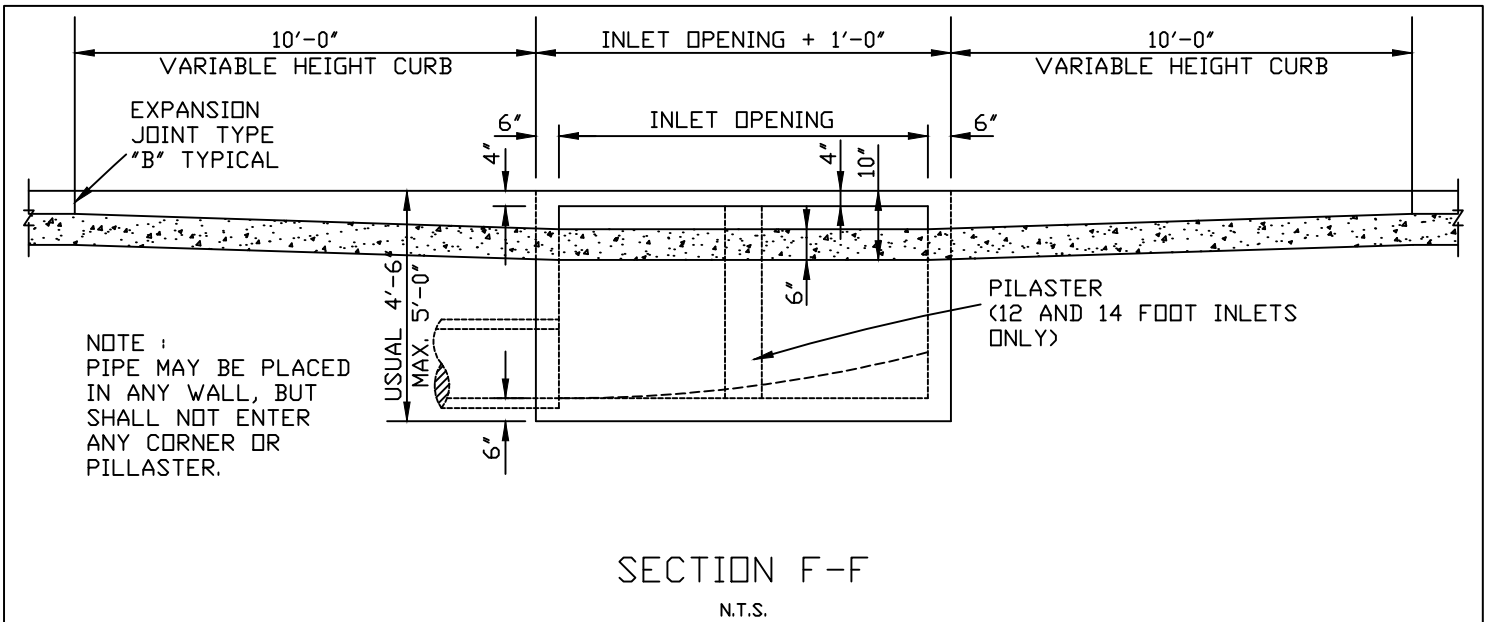
SCALE: NTS DATE: 01/2006
SHEET 2 OF 6

CURB LINE INLET PLAN VIEW



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ENGINEERING
DEPARTMENT



**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

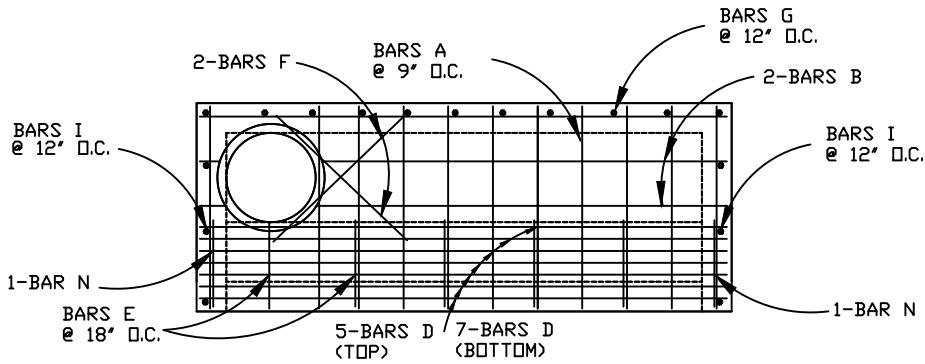
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SHEET 3 OF 6

CURB LINE INLET CROSS SECTIONS

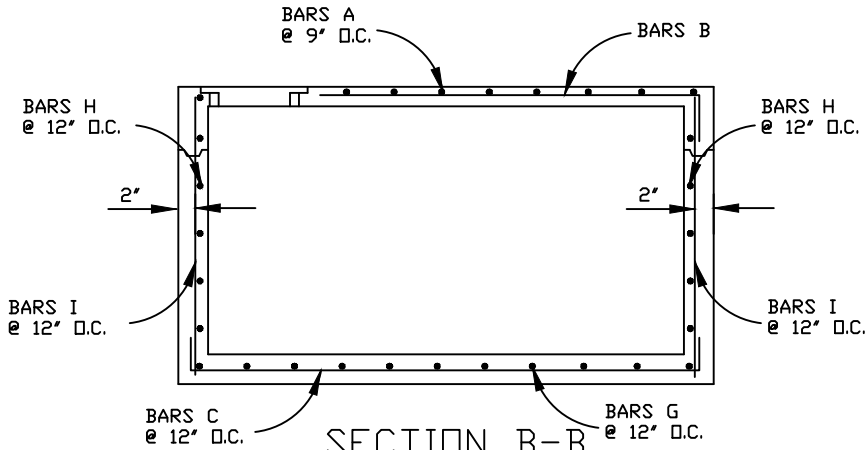


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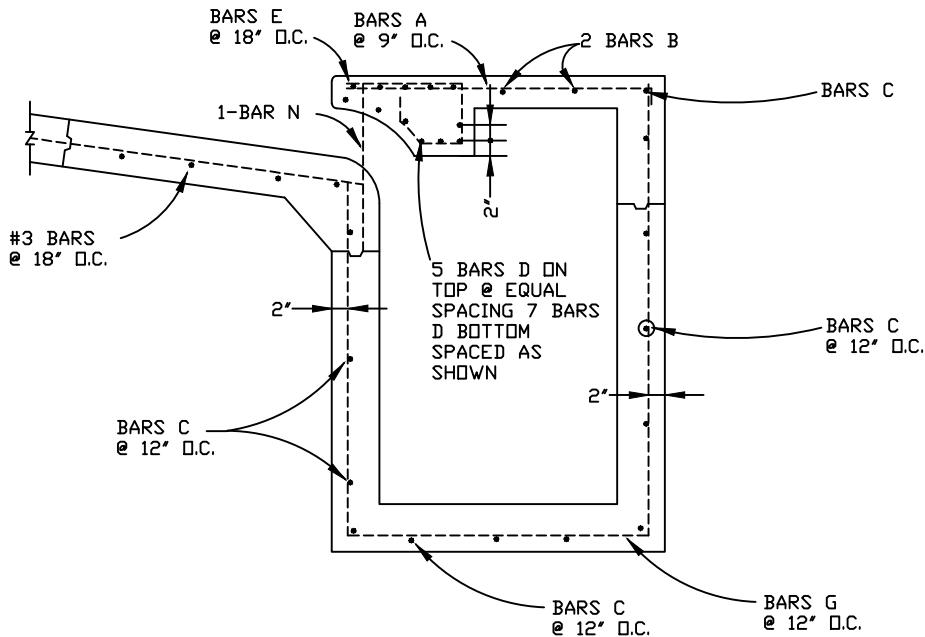
ENGINEERING
DEPARTMENT



PLAN VIEW (8 AND 10 FOOT INLET)
N.T.S.



SECTION B-B
N.T.S.



SECTION E-E
N.T.S.

**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

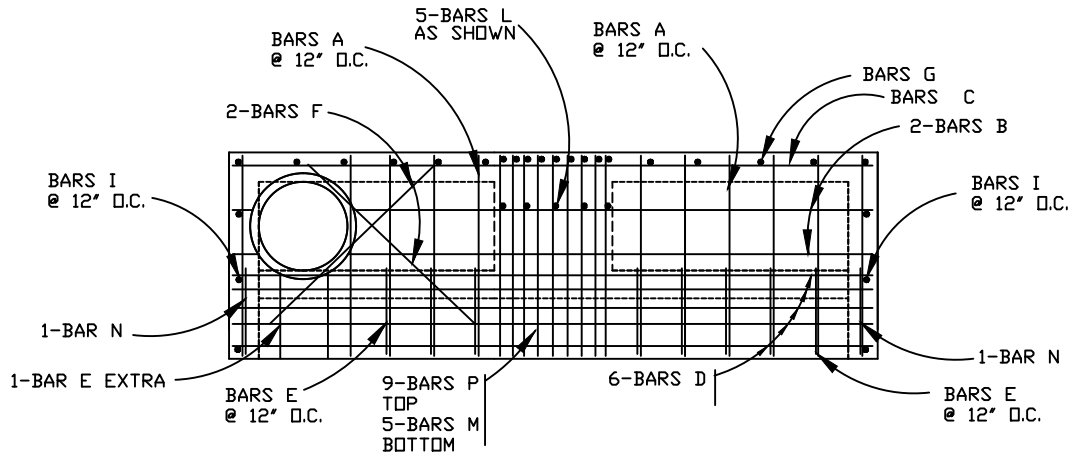
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SHEET 4 OF 6

CURB LINE INLET REINFORCING

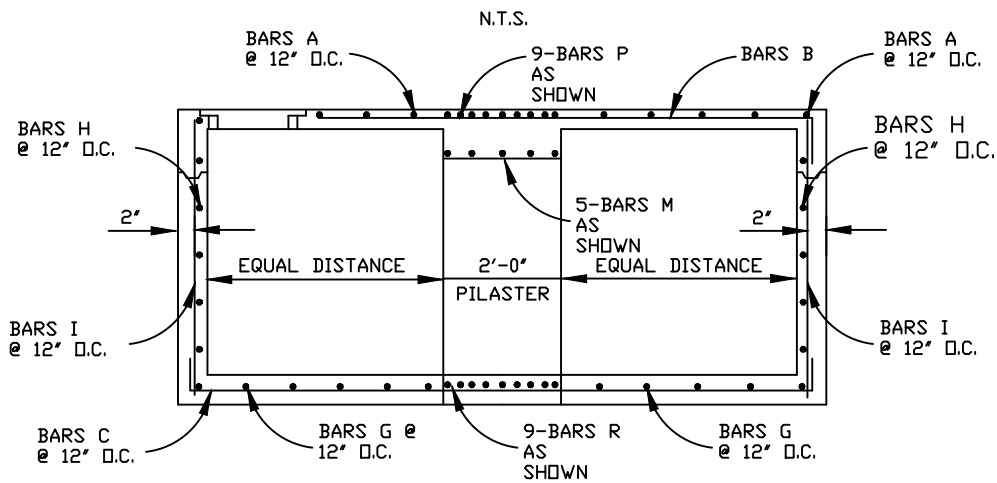


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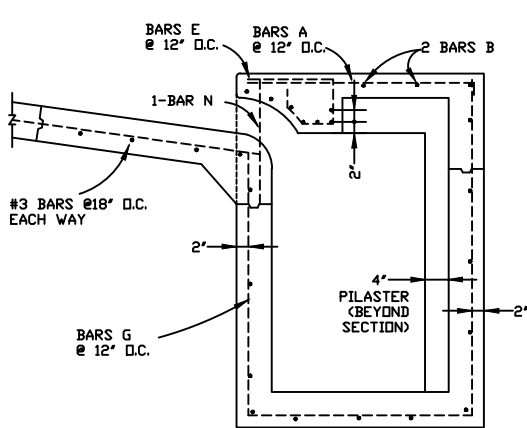
ENGINEERING
DEPARTMENT



PLAN VIEW (12 AND 14 FOOT INLET)

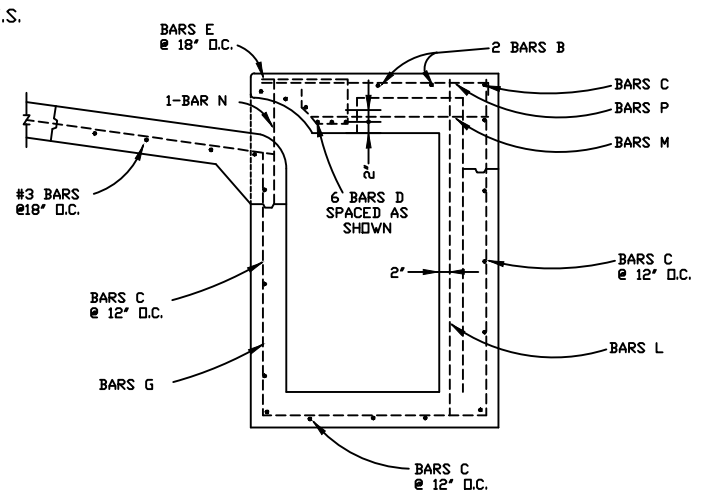


SECTION A-A



SECTION C-C

N.T.S.



SECTION D-D

N.T.S.

GENERAL DESIGN STANDARDS
DRAINAGE DETAILS

CURB INLET REINFORCING

SCALE: NTS DATE: 01/2004
SHEET 5 OF 6

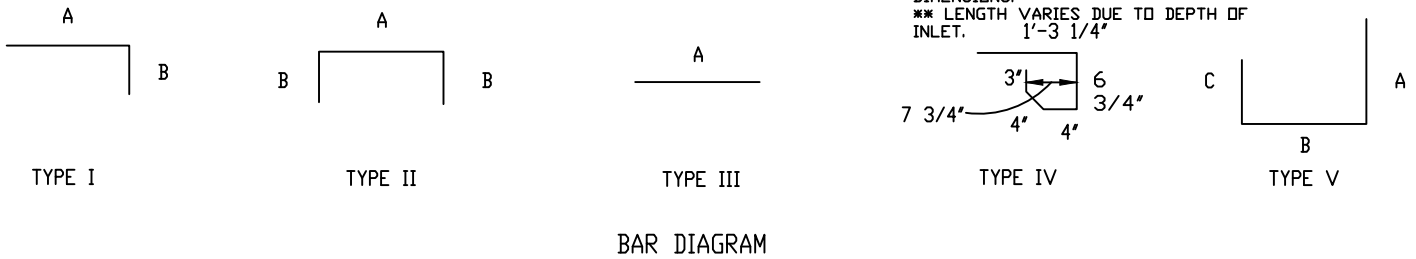


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ENGINEERING
DEPARTMENT

REINFORCING BAR SCHEDULE

INLET LENGTH	BAR MARK NUMBER	BAR DIAGRAM TYPE	BAR SIZE	NUMBER REQUIRED	BAR BENDING DIMENSIONS		
					A	B	C
8	A	I	#3	9	3' - 2"	6"	-
	B	I	#3	2	6' - 8"	6"	-
	C	II	#4	VARIES	8' - 8"	6"	-
	D	II	#4	12	8' - 8"	6"	-
	E	IV	#3	7	*	*	*
	F	III	#3	2	4' - 0"	-	-
	G	V	#4	10	**	3' - 2"	**
	H	III	#4	VARIES	3' - 2"	-	-
	I	III	#4	4	**	-	-
	N	III	#4	2	1' - 6"	-	-
10	A	I	#3	14	3' - 2"	6"	-
	B	I	#3	2	8' - 8"	6"	-
	C	II	#4	VARIES	10' - 8"	6"	-
	D	II	#4	12	10' - 8"	6"	-
	E	IV	#3	8	*	*	*
	F	III	#3	2	4' - 0"	-	-
	G	V	#4	12	**	3' - 2"	**
	H	III	#4	VARIES	3' - 2"	-	-
	I	III	#4	4	**	-	-
	N	III	#4	2	1' - 6"	-	-
12	A	I	#3	10	3' - 2"	6"	-
	B	I	#3	2	10' - 8"	6"	-
	C	II	#4	VARIES	12' - 8"	6"	-
	D	II	#5	6	12' - 8"	-	-
	E	IV	#3	12	*	*	*
	F	III	#3	2	4' - 0"	-	-
	G	V	#4	10	**	3' - 2"	**
	H	III	#4	VARIES	3' - 2"	-	-
	I	III	#4	4	**	-	-
	L	III	#4	5	**	-	-
	M	III	#4	5	2' - 8"	6"	-
	N	III	#4	2	1' - 6"	-	-
	P	I	#5	9	3' - 2"	6"	-
	R	V	#5	9	**	3' - 2"	**
14	A	I	#3	14	3' - 2"	6"	-
	B	I	#3	2	12' - 8"	6"	-
	C	II	#4	VARIES	14' - 8"	6"	-
	D	II	#5	6	14' - 8"	-	-
	E	IV	#3	16	*	*	*
	F	III	#3	2	4' - 0"	-	-
	G	V	#4	14	**	3' - 2"	**
	H	III	#4	VARIES	3' - 2"	-	-
	I	III	#4	4	**	-	-
	L	III	#4	5	**	-	-
	M	III	#4	5	2' - 8"	6"	-
	N	III	#4	2	1' - 6"	-	-
	P	I	#5	9	3' - 2"	6"	-
	R	V	#5	9	**	3' - 2"	**



**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

SCALE: NTS DATE: 01/2005
SHEET 6 OF 6

**CURB LINE INLET
REINFORCING BAR SCHEDULE**

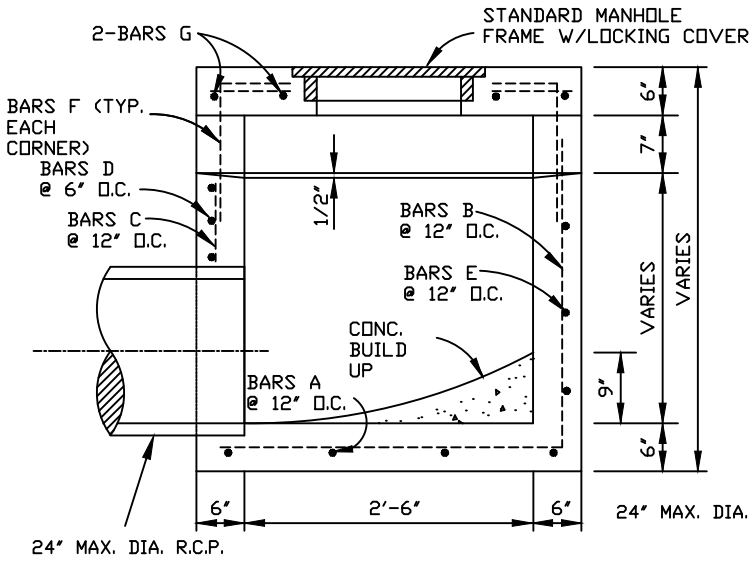
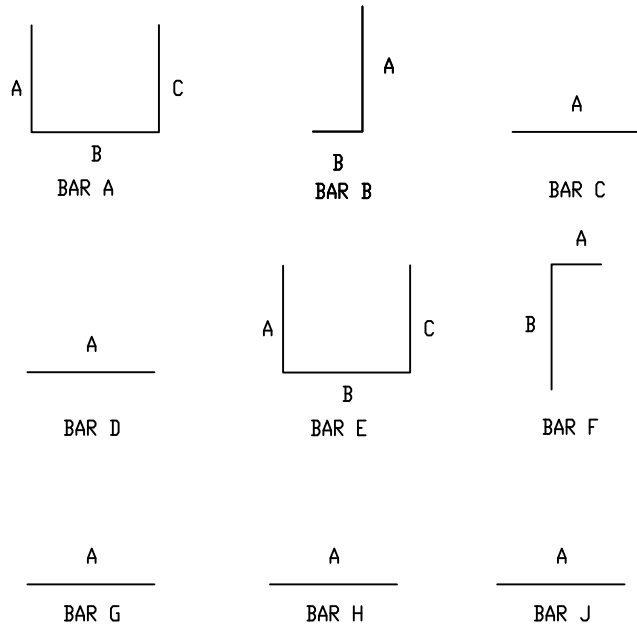


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ENGINEERING
DEPARTMENT

REINFORCING BAR SCHEDULE					
BAR	NO. REQ'D	BAR SIZE	BAR BENDING DIMENSIONS		
			A	B	C
A	4	#4	VARIABLES	3'-0"	VARIABLES
B	4	#4	3'-0"	VARIABLES	-
C	2	#4	VARIABLES	-	-
D	VARIABLES	#4	3'-0"	-	-
E	VARIABLES	#4	3'-0"	3'-0"	3'-0"
F	4	#4	1'-0"	2'-0"	-
G	8	#4	3'-2"	-	-
H	8	#4	2'-1"	-	-
J	4	#4	3'-2"	-	-

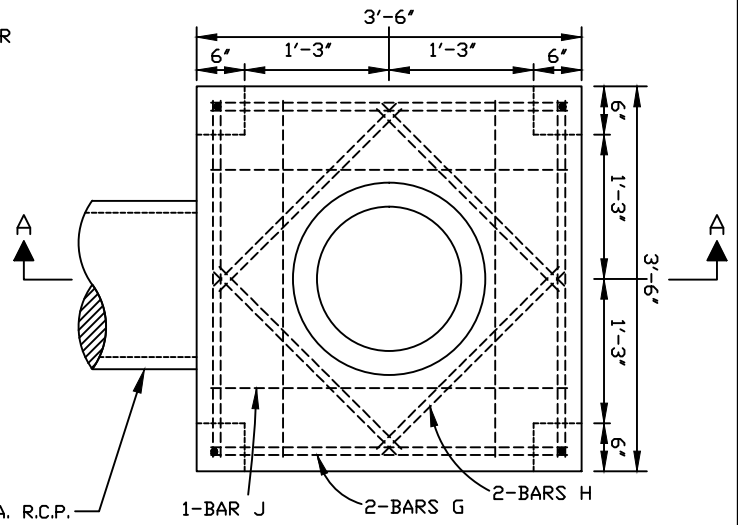
NOTE:
 BARS 'A' & 'E' ARE USED IN THE WALLS
 PARALLEL TO THE R.C.P., BARS 'B' ARE IN THE
 WALL OPPOSITE THE R.C.P.

BAR DIAGRAM



SECTION A-A

N.T.S.



PLAN VIEW

N.T.S.

GENERAL DESIGN STANDARDS
 DRAINAGE DETAILS

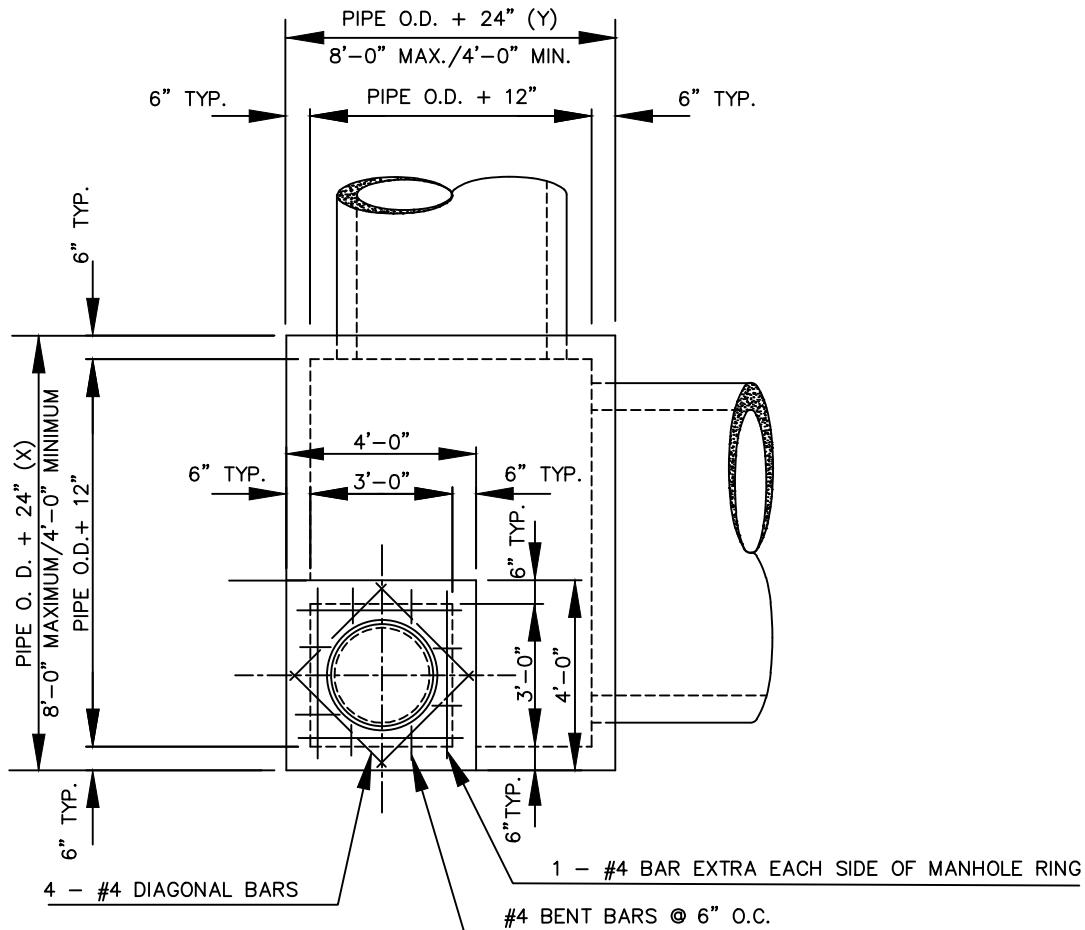
SCALE: NTS DATE: 01/2006
 SHEET 1 OF 1



"Y" TYPE INLET
 DETAILS

D-2

ENGINEERING
 DEPARTMENT



GENERAL NOTES:

CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 P.S.I. ALL EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER. AN ALTERNATE DESIGN (BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER) WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES AND/OR EQUIVALENT STRUCTURAL DESIGN WITH THE APPROVAL OF THE DIRECTOR OF ENGINEERING.

IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL, BLOCKOUTS, PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL, THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE DESIGNING ENGINEER.

CONNECTING PIPES SHOULD ENTER WITHIN TEN (10) DEGREES OF NORMAL TO THE INLET WALL. IF NECESSARY, PIPE ELBOWS OR CURVED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT. PIPES MAY ENTER ANY OR ALL WALLS, EXCEPT AT CORNERS. THE MAXIMUM SIZE OF PIPE THAT CAN BE ACCOMODATED IS 60 INCHES IN DIAMETER, MORE THAN ONE PIPE MAY ENTER A SIDE, SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACENT PIPES SHOULD BE A MINIMUM OF 9 INCHES.

MINIMUM REBAR LAP IS TO BE THIRTY (30) BAR DIAMETERS (MINIMUM LENGTH OF 18 INCHES). ALL CONCRETE SHALL BE 4000 P.S.I.

MANHOLE LID SHALL BE 30" DIAMETER AND SHALL SAY "CARROLLTON" & "STORM SEWER" ON IT.

MANHOLE STEPS, WHERE SHOWN AND NOT OBSTRUCTED BY PIPE OPENINGS, ARE TO BE CONTINUED TO WITHIN 12 INCHES OF FINISHED MANHOLE FLOOR. WHERE POSSIBLE MANHOLE STEPS ARE TO BE LOCATED ON A WALL WHICH HAS NO OPENINGS. MANHOLE STEPS ARE TO BE COPOLYMER POLYPROPYLENE PLASTIC COATED STEEL OR CAST IRON REINFORCED STEPS CONFORMING TO ASTM C-478.

**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

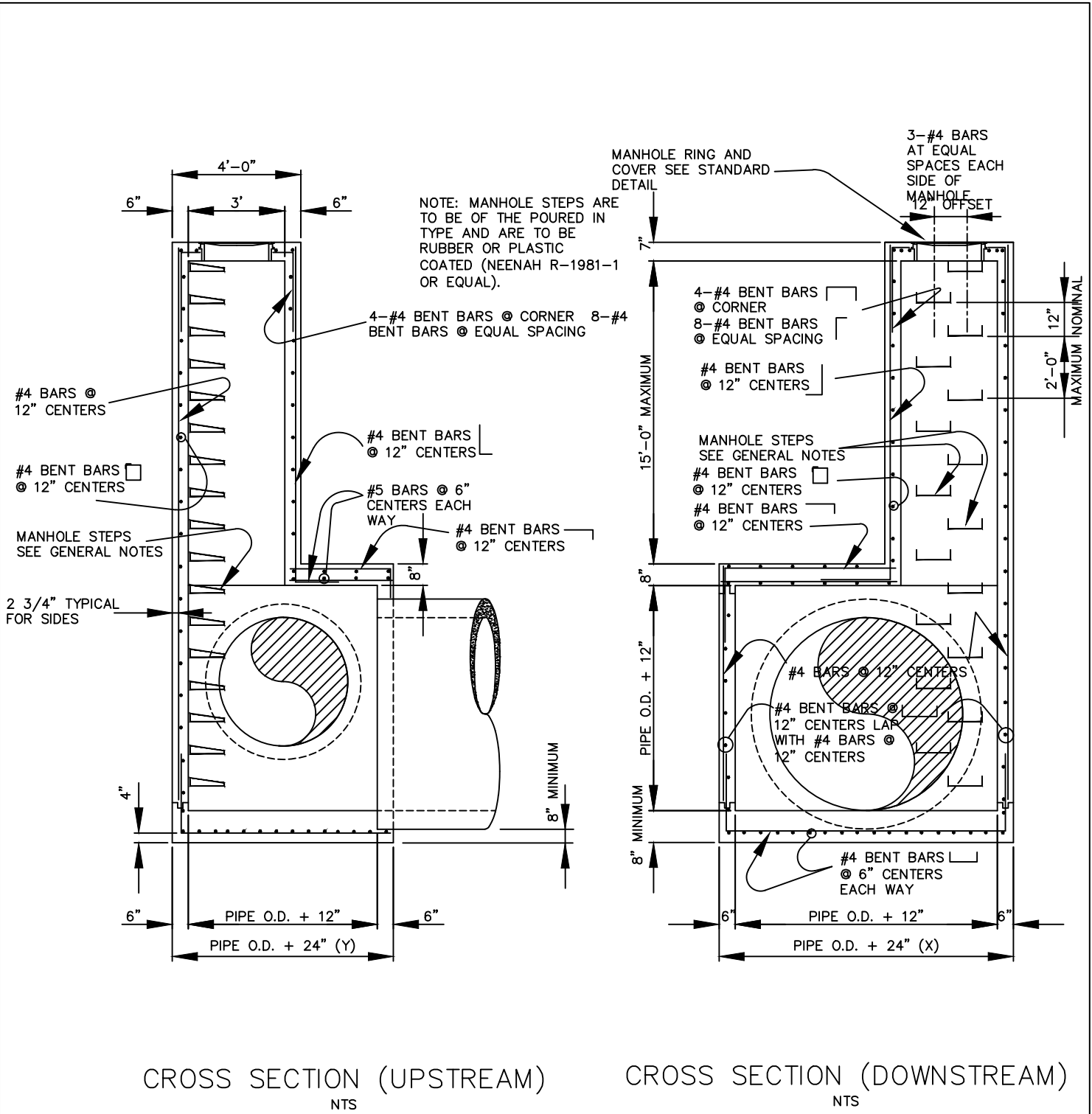
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SHEET 1 OF 2



**STORM DRAIN
MANHOLE DETAILS**

D-3

**ENGINEERING
DEPARTMENT**



**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

SCALE: NTS DATE: 06/2005
SHEET 2 OF 2



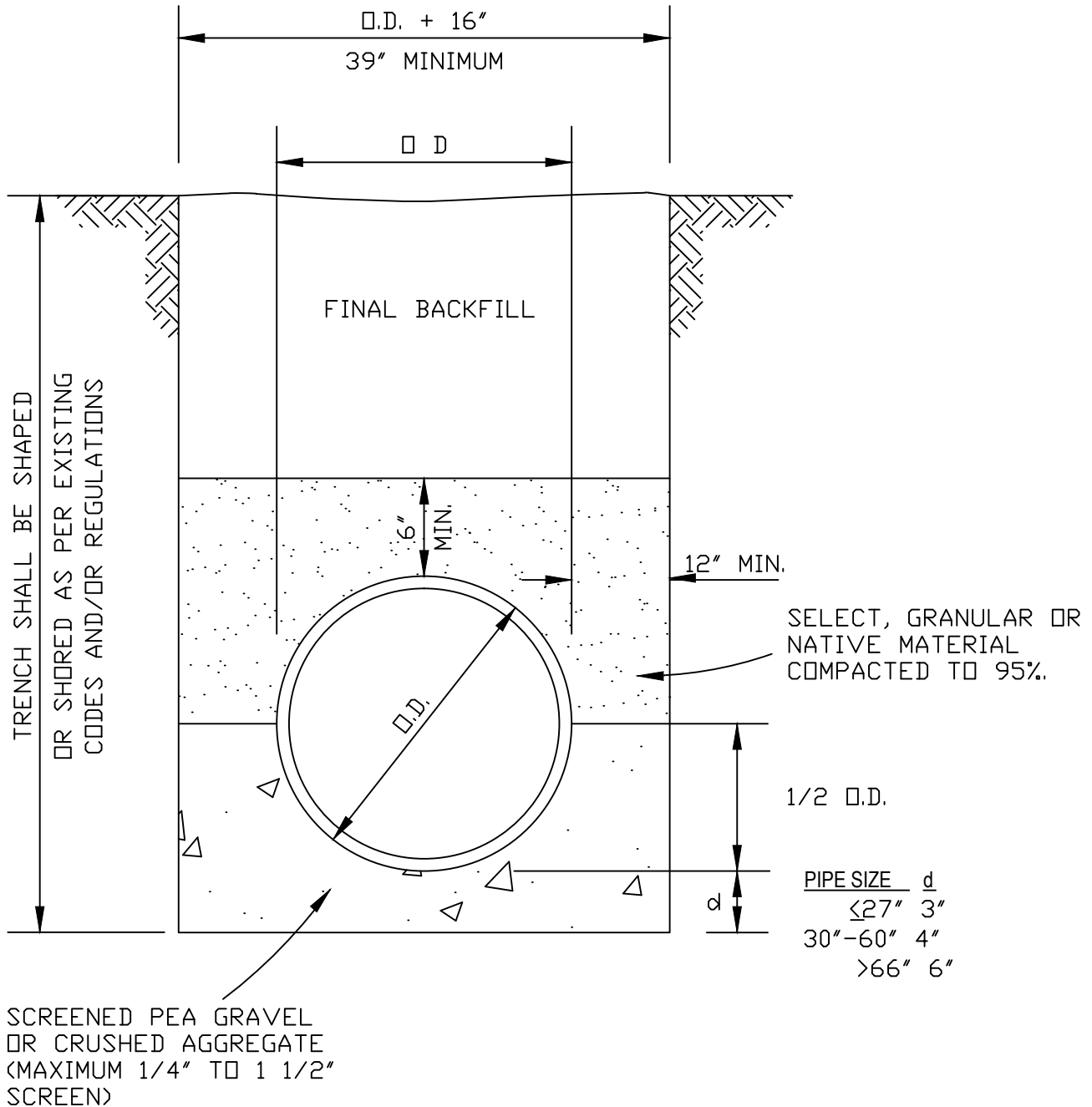
**STORM DRAIN
MANHOLE DETAILS**

D-3

ENGINEERING
DEPARTMENT

GENERAL NOTES:

- FOR THE DEFINITION OF THE BACKFILL MATERIAL TERMS SEE N.C.T.C.O.G. SPECIFICATIONS ITEM 2.1.8.
- FINAL BACKFILL SHALL CONSIST OF AND BE PLACED IN ACCORDANCE WITH N.C.T.C.O.G. SPECIFICATIONS ITEM 6.2.9.



**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

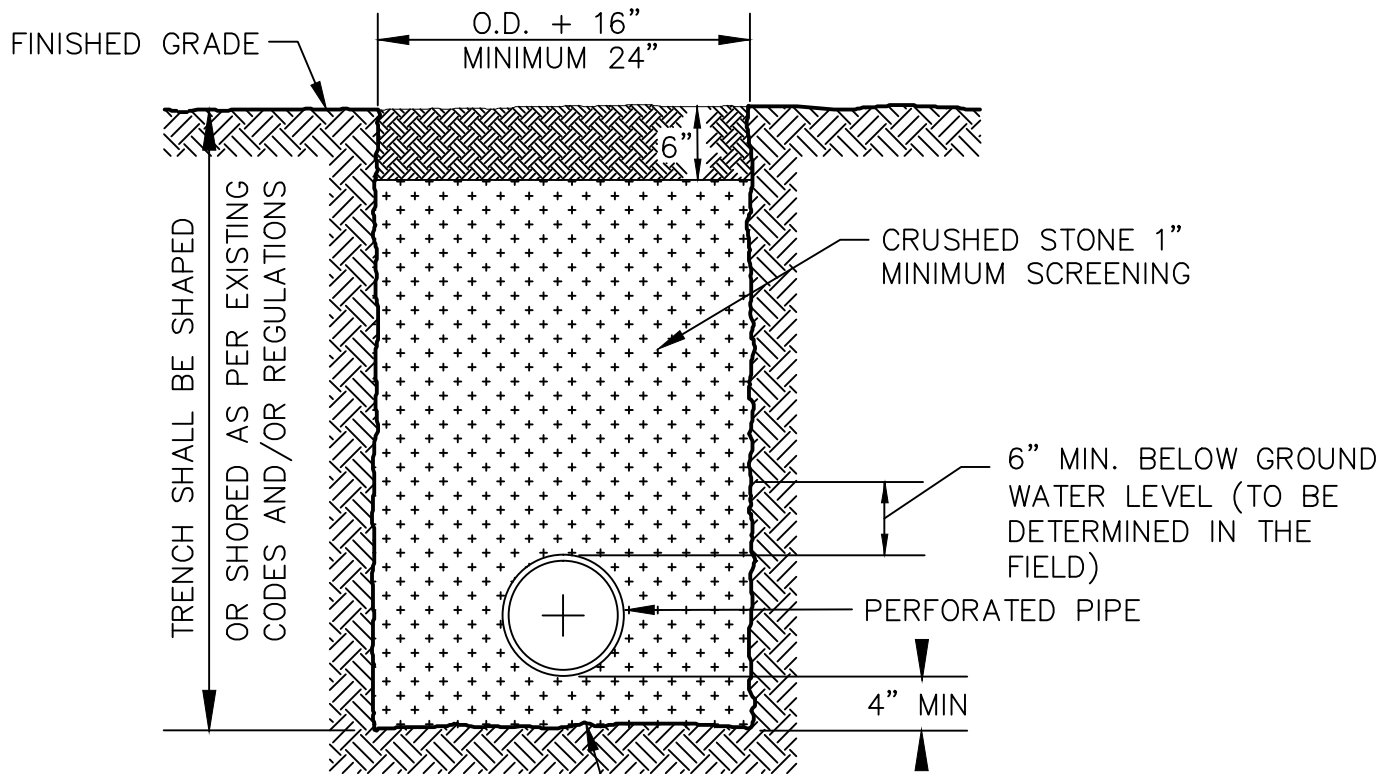
SCALE: NTS DATE: 01/2004
SHEET 1 OF 1



STORM DRAIN R.C.P.
PIPE EMBEDMENT

D-4

ENGINEERING
DEPARTMENT



SINGLE LAYER OF FILTER FABRIC WITH A LAP OVER THE PVC PIPE, BETWEEN THE EMBEDMENT AND INITIAL BACKFILL MATERIAL. THE FILTER FABRIC SHALL BE A NON-WOVEN INERT MATERIAL EQUAL TO OR GREATER THEN "MIRAFI 140N" AS MANUFACTURED BY THE MIRAFI GEOTEXTILE FABRICS COMPANY.

GENERAL NOTES:

1. WHERE THE CONTRACTOR ENCOUNTERS UNDERGROUND WATER A SUBSURFACE DRAINAGE SYSTEM SHALL BE INSTALLED, WITH THE DISCHARGE OF SAID SYSTEM BEING CARRIED TO THE NEAREST STORM DRAIN INLET OR NATURAL WATER SHED SYSTEM.
2. THE SUBSURFACE DRAINAGE SYSTEM SHALL BE CONSTRUCTED WITH A MINIMUM SIZE OF SIX (6) INCH DIAMETER TYPE PS-46 PVC PIPE OR APPROVED EQUAL. THE PIPE SHALL MEET ALL CURRENT ASTM F758 REQUIREMENTS, AND SHALL HAVE GASKET TYPE JOINTS. THE PERFORATED AND CONDUCTING PIPES SHALL BE WHITE IN COLOR.
3. THE FINAL BACKFILL SHALL CONSIST OF AND BE PLACED IN ACCORDANCE WITH THE N.C.T.C.O.G. SPECIFICATIONS ITEM 6.2.9.
4. CLEANOUTS SHALL BE INSTALLED EVERY 200' AND AT THE END OF EACH PIPING SYSTEM.
5. FRENCH DRAINS SHALL BE SHOWN ON ALL RECORD DRAWINGS.

**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

SCALE: NTS DATE: 01/2004
SHEET 1 OF 2

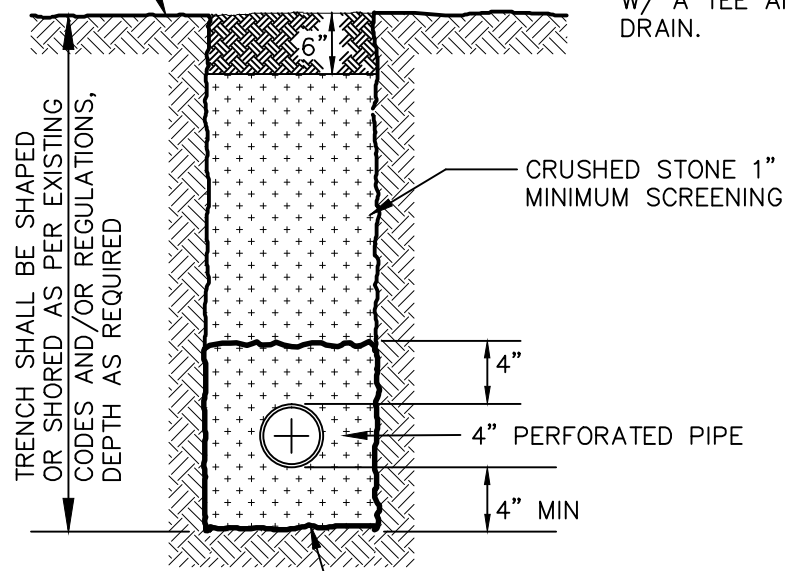


SUBSURFACE
DRAINAGE DETAIL

D-5

ENGINEERING
DEPARTMENT

FINISHED GRADE

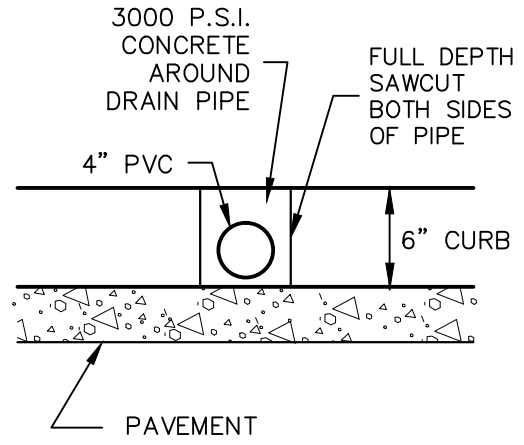
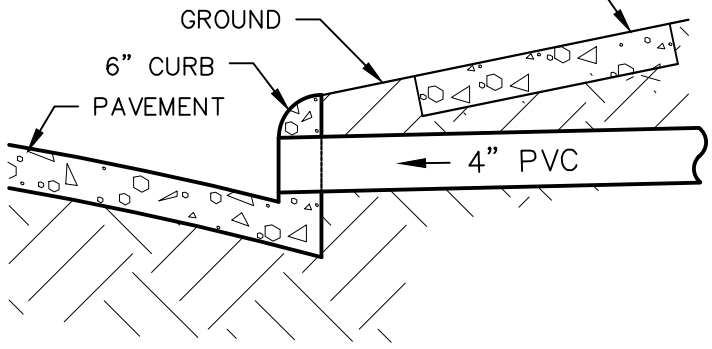


NOTE:
 ANY CONNECTIONS TO CITY OWNED TRENCH DRAINS MUST BE DONE W/ A TEE AND A 6" X 6" AREA DRAIN.

OPTIONAL SINGLE LAYER OF FILTER FABRIC. THE FILTER FABRIC SHALL BE A NON-WOVEN INERT MATERIAL EQUAL TO OR GREATER THEN "MIRAFI 140N" AS MANUFACTURED BY THE MIRAFI GEOTEXTILE FABRICS COMPANY.

TRENCH DRAIN

SIDEWALK SHALL BE REMOVED WITH FULL DEPTH SAWCUT AND REPLACED WITH 3000 P.S.I. CONCRETE DOWELLED INTO EXISTING SIDEWALK WITH 3-#3 BARS



CURB CUT DETAIL

**GENERAL DESIGN STANDARDS
 DRAINAGE DETAILS**

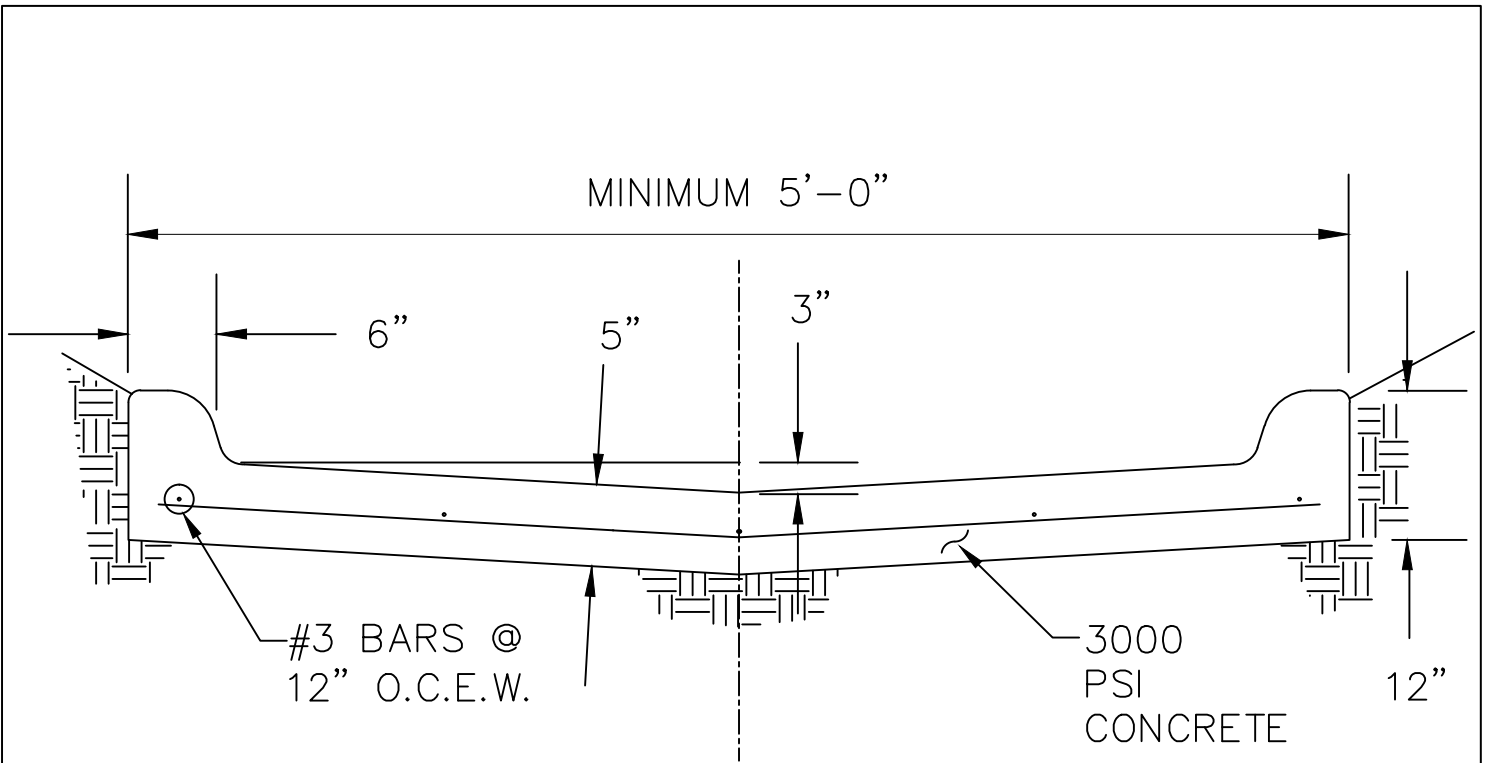
**RESIDENTIAL SUBSURFACE
 DRAINAGE DETAIL**

SCALE: NTS DATE: 01/2004
 SHEET 2 OF 2



D-5

ENGINEERING
 DEPARTMENT



CONTRACTOR WILL SOD SIDE
SLOPES AS SPECIFIED

NOTE:

IF FLUME IS 7' OR WIDER, PLACE PIPE
BOLLARDS 7' X 6" DIA., FILLED WITH
CONCRETE (4' BURY DEPTH) @ 3' O.C.
AT BOTH ENDS OF FLUME

**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

CURBED FLUME DETAIL

SCALE: NTS DATE: 01/2004
SHEET 1 OF 1

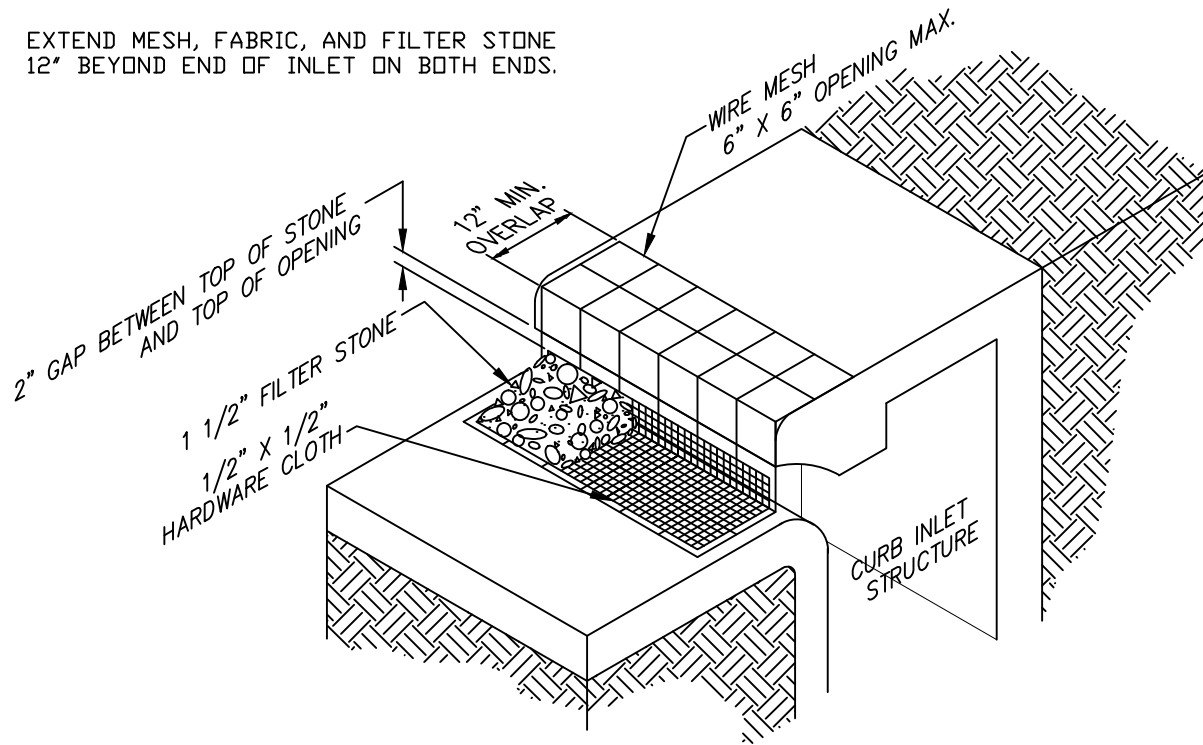


D-6

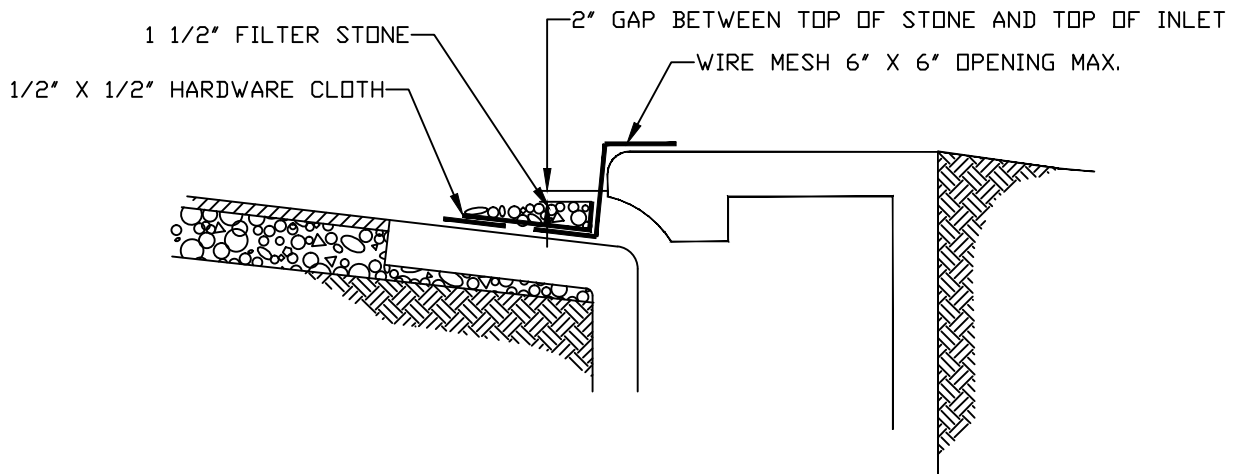
ENGINEERING
DEPARTMENT

NOTE:

EXTEND MESH, FABRIC, AND FILTER STONE
12" BEYOND END OF INLET ON BOTH ENDS.



ISOMETRIC
VIEW



INLET SECTION

**GENERAL DESIGN STANDARDS
DRAINAGE DETAILS**

SCALE: NTS DATE: 01/2004
SHEET 1 OF 1



TYPE "A"
CURB INLET
PROTECTION

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ENGINEERING
DEPARTMENT