

**CITY OF CANTON  
STANDARD PLATES**

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**CITY OF CANTON  
STANDARD PLATES**

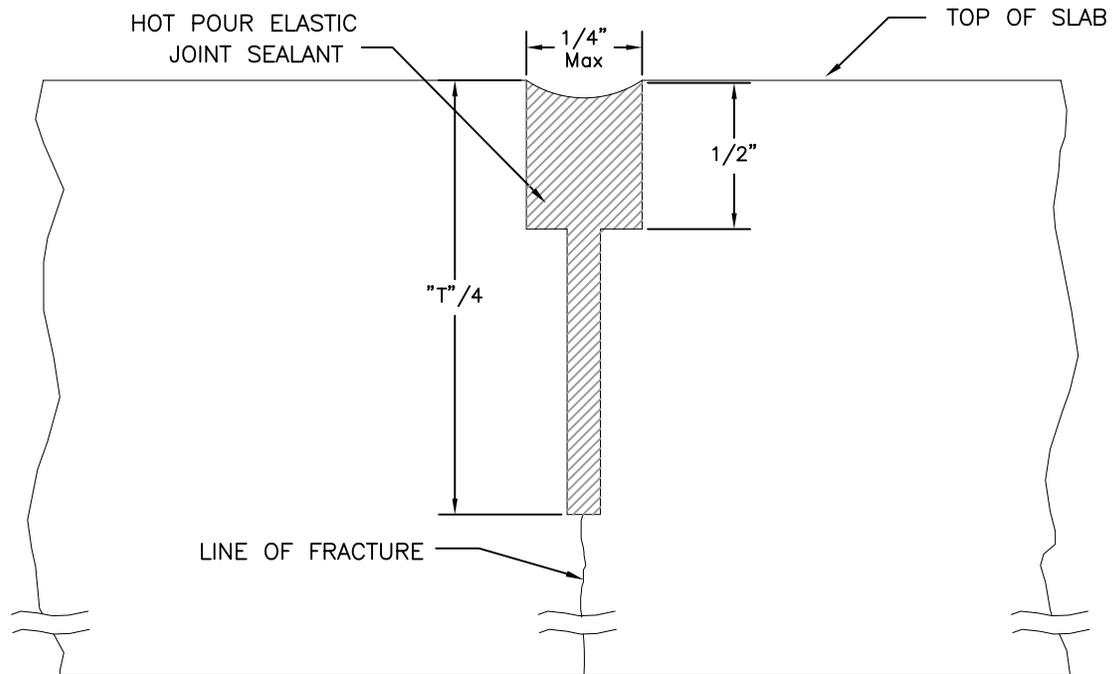
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**CITY OF CANTON  
STANDARD PLATES**

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Special	Tree Planting	1100.01 SP	February-2005



T = PAVEMENT THICKNESS

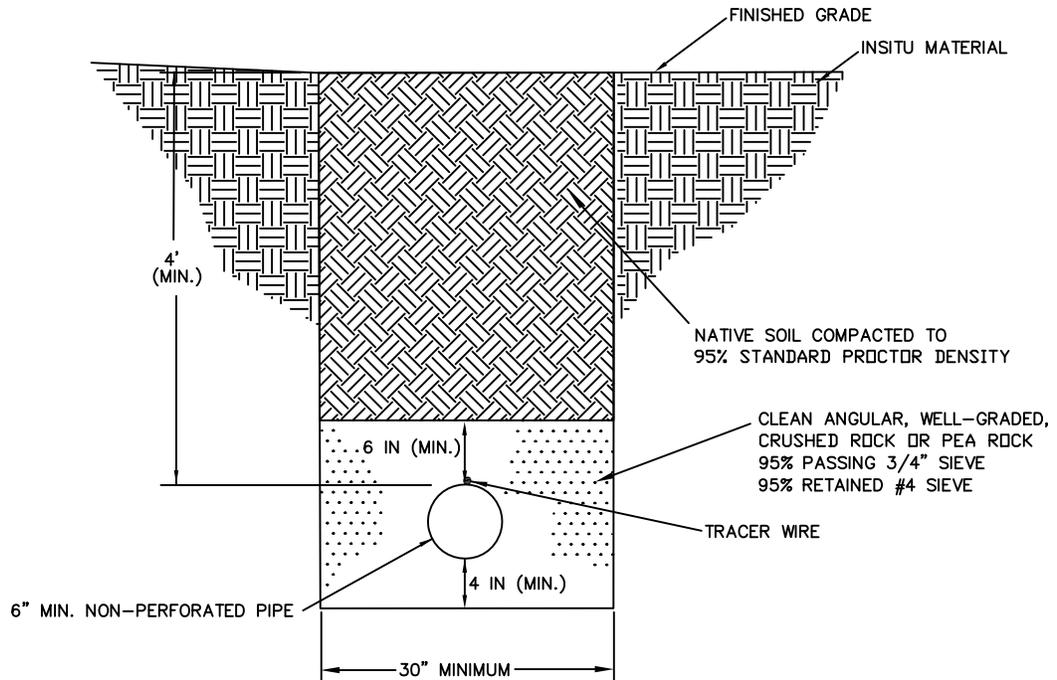
THE FIRST SAW CUT TO CONTROL CRACKING SHALL BE A MINIMUM OF 1/4 THE DEPTH OF THE PAVEMENT. ADDITIONAL SAWING FOR WIDENING THE SAW CUT TO PROVIDE THE WIDTH FOR THE INSTALLATION OF THE HOT POUR ELASTIC JOINT SEALANT MAY BE NECESSARY.

ISSUED: SEPTEMBER 2005

SPECIFICATION  
REFERENCE  
NO.  
380

CITY OF CANTON  
TRANSVERSE CONTRACTION  
JOINT

PLATE  
NUMBER  
380.04 SP



MATERIAL SHALL BE NON-PERFORATED RIGID POLYETHYLENE (SMOOTH INTERIOR) OR NON-PERFORATED PVC PIPE MEETING MANUFACTURER'S SPECIFICATIONS.

INSULATION IS REQUIRED IF THE MINIMUM 4' COVER IS NOT ACHIEVED. SEE DETAIL 950.18.

ANIMAL GUARDS SHALL BE INSTALLED AT THE END OF COLLECTOR PIPES DISCHARGING DIRECTLY INTO A PUBLIC DRAINAGEWAY. ANIMAL GUARDS SHALL MEET MANUFACTURER'S SPECIFICATIONS.

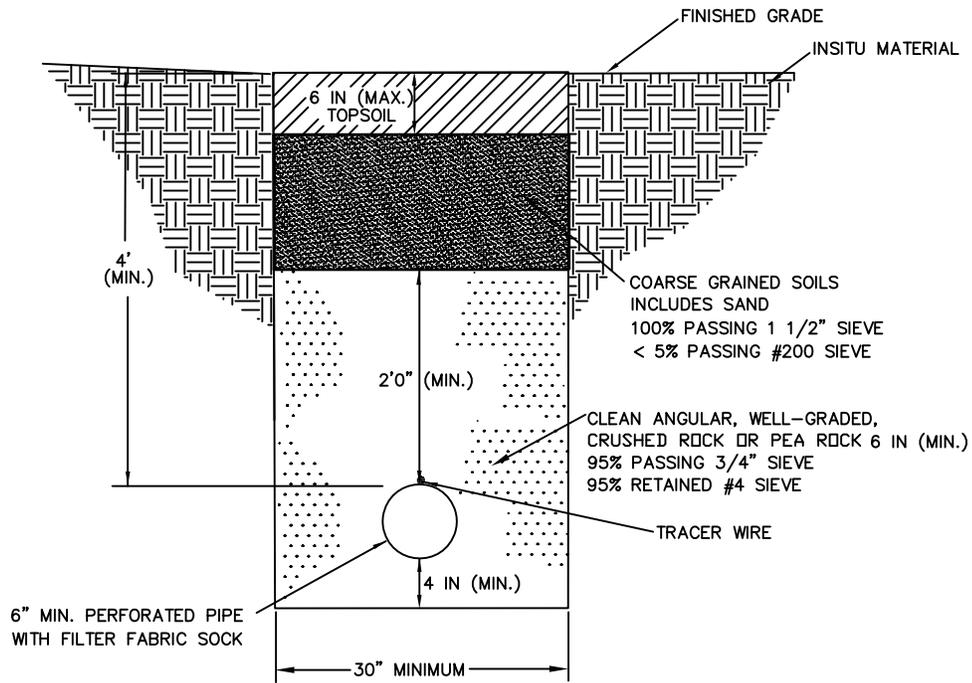
TYPE OF MATERIAL	PIPE SIZE DIAMETER (IN.)	TRENCH WIDTH (IN.)	TRENCH HEIGHT (IN.)	TRENCH AREA (S.F.)	PIPE AREA (S.F.)	BEDDING MATERIAL (S.F.)	BEDDING MATERIAL (TON/FT)
PEA ROCK	6	30	16	3.33	0.26	3.07	0.19
(125 LBS/CU.FT.)	8	30	18	3.75	0.45	3.30	0.21

ISSUED: MARCH 2004

SPECIFICATION  
REFERENCE  
NO.  
SPECIAL

CITY OF CANTON  
NON-PERFORATED PIPE AS  
SUMP PUMP COLLECTOR

PLATE  
NUMBER  
450.04



MATERIAL SHALL BE PERFORATED RIGID POLYETHYLENE (SMOOTH INTERIOR) OR PERFORATED PVC PIPE MEETING MANUFACTURER'S SPECIFICATIONS.

FILTER FABRIC SOCK SHALL BE AN APPROVED STRONG ROUGH POROUS, POLYESTER OR OTHER APPROVED KNITTED FABRIC WHICH COMPLETELY COVERS AND IS SECURED TO THE PERFORATED PIPE IN SUCH A WAY AS TO PREVENT INFILTRATION OF TRENCH BACKFILL MATERIAL. MATERIAL SHALL MEET THE REQUIREMENTS OF ASTM D 3786 AND ASTM D 737.

ANIMAL GUARDS SHALL BE INSTALLED AT THE END OF COLLECTOR PIPES DISCHARGING DIRECTLY INTO A PUBLIC DRAINAGEWAY. ANIMAL GUARDS SHALL MEET MANUFACTURER'S SPECIFICATIONS.

INSULATION IS REQUIRED IF THE MINIMUM 4' COVER IS NOT ACHIEVED. SEE DETAIL 950.18. INVERTED U INSULATION SHALL NOT BE USED.

TYPE OF MATERIAL	PIPE SIZE DIAMETER (IN.)	TRENCH WIDTH (IN.)	TRENCH HEIGHT (IN.)	TRENCH AREA (S.F.)	PIPE AREA (S.F.)	BEDDING MATERIAL (S.F.)	BEDDING MATERIAL (TON/FT)
SAND (130 LBS/CU.FT.)	6 OR 8	30	18	3.75	N/A	3.75	0.24
PEA ROCK (125 LBS/CU.FT.)	6	30	34	7.08	0.26	6.82	0.43
	8	30	36	7.5	0.45	7.05	0.44

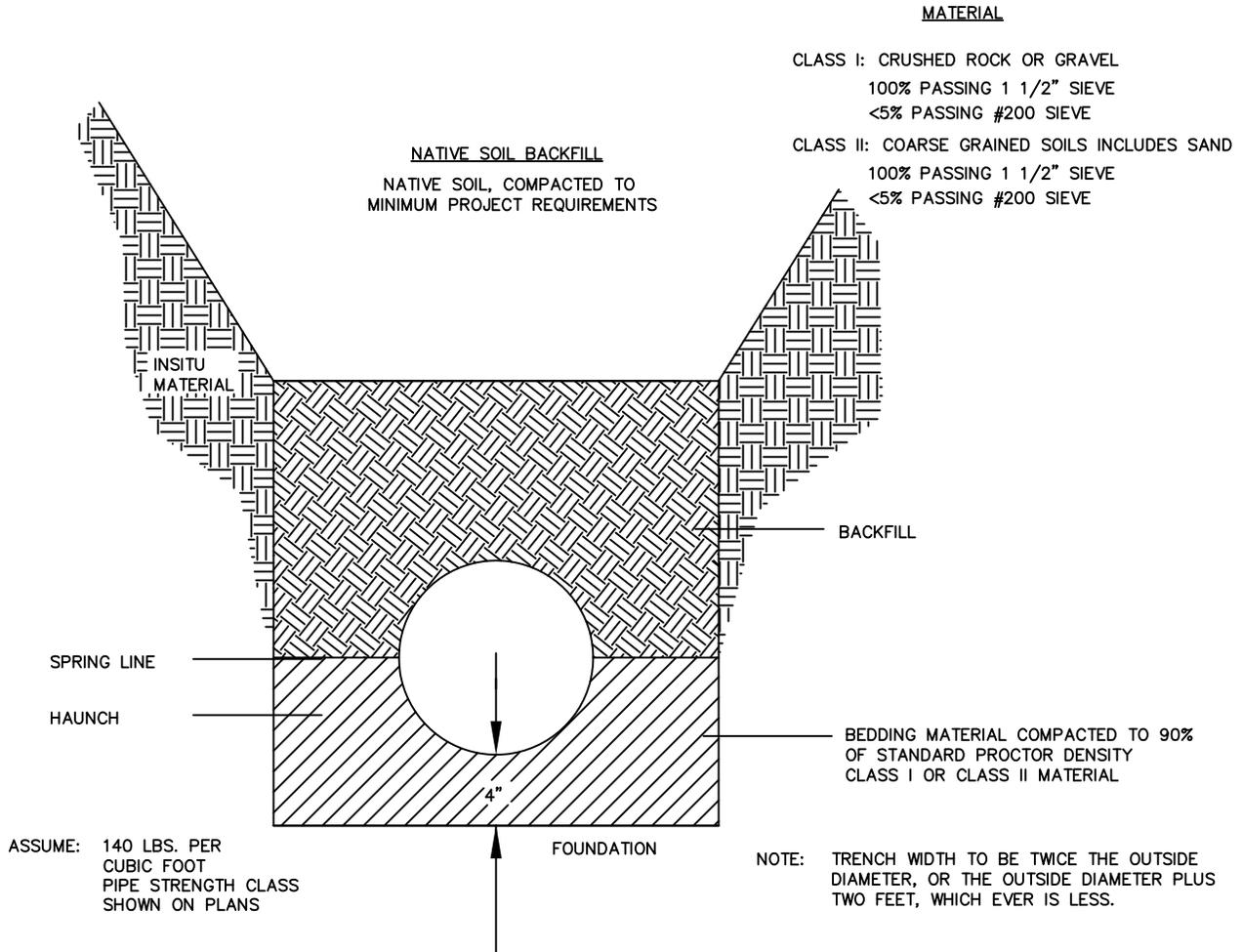
REVISED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
SPECIAL

CITY OF CANTON  
PERFORATED PIPE AS  
SUMP PUMP COLLECTOR

PLATE  
NUMBER  
450.05

FOR 12" THRU 84" DIAMETER PIPE  
TYPE B INSTALLATION



QUANTITY ESTIMATE TABLE  
FOR BEDDING MATERIAL

12"	0.14 TON/L.F.
15"	0.19 TON/L.F.
18"	0.25 TON/L.F.
21"	0.29 TON/L.F.
24"	0.33 TON/L.F.
27"	0.36 TON/L.F.
30"	0.40 TON/L.F.
33"	0.44 TON/L.F.
36"	0.48 TON/L.F.
42"	0.57 TON/L.F.
48"	0.67 TON/L.F.
54"	0.77 TON/L.F.
60"	0.88 TON/L.F.
66"	0.98 TON/L.F.
72"	1.10 TON/L.F.
78"	1.24 TON/L.F.
84"	1.35 TON/L.F.

REVISED: JANUARY 2008

SPECIFICATION  
REFERENCE  
NO.  
SPECIAL

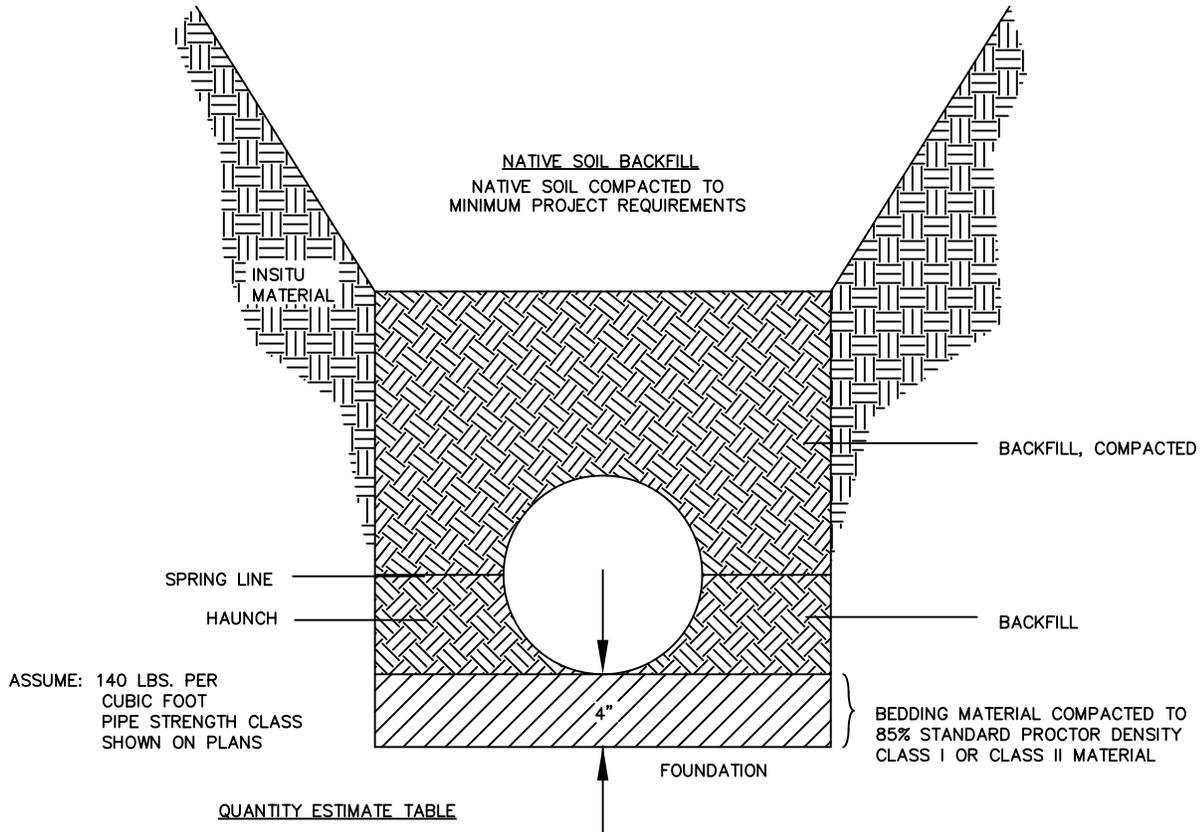
CITY OF CANTON  
BEDDING AND BACKFILL  
FOR RCP TYPE B INSTALLATION

PLATE  
NUMBER  
450.06

FOR 12" THRU 84" DIAMETER PIPE  
TYPE D INSTALLATION

MATERIAL

- CLASS I: CRUSHED ROCK OR GRAVEL  
100% PASSING 1 1/2" SIEVE  
<5% PASSING #200 SIEVE
- CLASS II: COARSE GRAINED SOILS INCLUDES SAND  
100% PASSING 1 1/2" SIEVE  
<5% PASSING #200 SIEVE



QUANTITY ESTIMATE TABLE  
FOR BEDDING MATERIAL

12"	0.07 TON/L.F.
15"	0.08 TON/L.F.
18"	0.09 TON/L.F.
21"	0.10 TON/L.F.
24"	0.11 TON/L.F.
27"	0.12 TON/L.F.
30"	0.12 TON/L.F.
33"	0.13 TON/L.F.
36"	0.14 TON/L.F.
42"	0.15 TON/L.F.
48"	0.16 TON/L.F.
54"	0.17 TON/L.F.
60"	0.18 TON/L.F.
66"	0.20 TON/L.F.
72"	0.21 TON/L.F.
78"	0.22 TON/L.F.
84"	0.24 TON/L.F.

NOTE: TRENCH WIDTH TO BE TWICE THE OUTSIDE DIAMETER, OR THE OUTSIDE DIAMETER PLUS TWO FEET, WHICH EVER IS LESS.

REVISED: JANUARY 2008

SPECIFICATION  
REFERENCE  
NO.  
SPECIAL

CITY OF CANTON  
BEDDING AND BACKFILL  
FOR RCP TYPE D INSTALLATION

PLATE  
NUMBER  
450.08

# FOR 12" THRU 30" DIAMETER PIPE

COVER FROM 1.5 TO 10 FEET

SELECT BACK FILL AND BEDDING MATERIAL TO BE PAID BY THE LINEAR FOOT

**MATERIAL**

CLASS I: CRUSHED ROCK OR GRAVEL

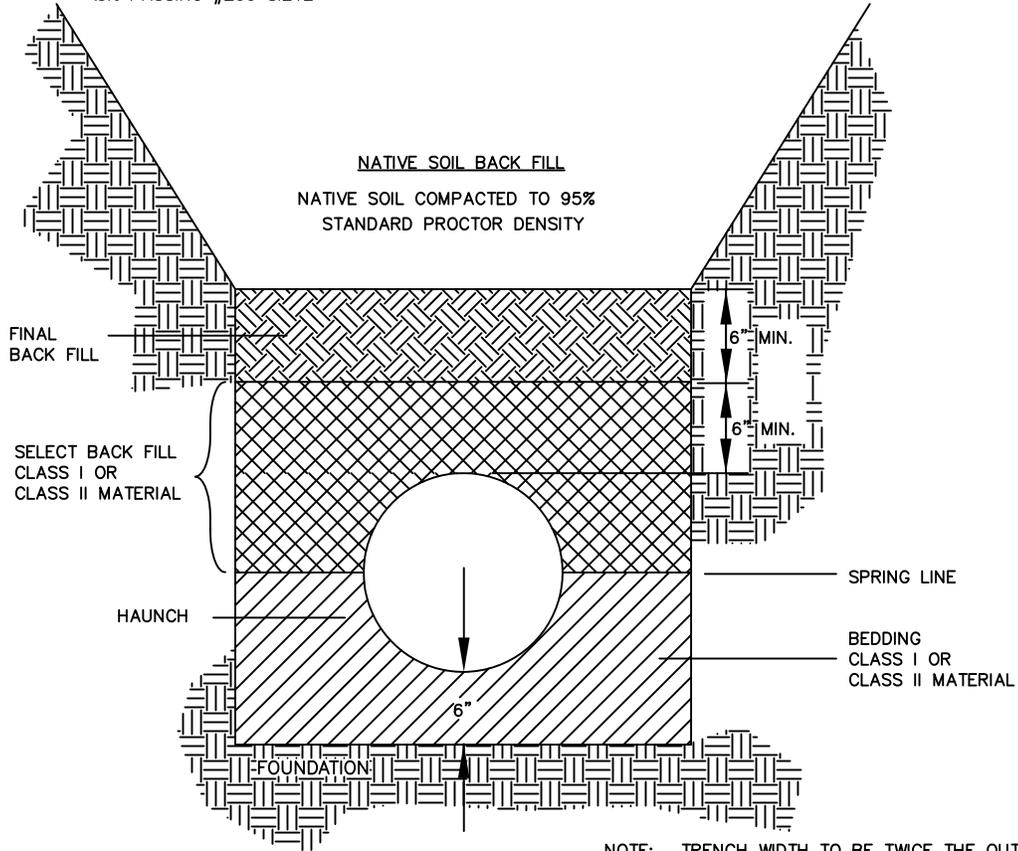
100% PASSING 1 1/2" SIEVE  
<5% PASSING #200 SIEVE

CLASS II: COARSE GRAINED SOILS INCLUDES SAND

100% PASSING 1 1/2" SIEVE  
<5% PASSING #200 SIEVE

**SELECT MATERIAL COMPACTION REQUIREMENTS ARE:**

CLASS I	KNIFED
CLASS II	85% STANDARD PROCTOR DENSITY



NOTE: TRENCH WIDTH TO BE TWICE THE OUTSIDE DIAMETER, OR THE OUTSIDE DIAMETER PLUS TWO FEET, WHICH EVER IS LESS.

ASSUME: 140 LBS. PER CUBIC FOOT  
6" OF SELECT FILL ABOVE PIPE  
6" OF BEDDING MATERIAL BELOW PIPE

**QUANTITY ESTIMATE TABLE  
FOR BEDDING MATERIAL**

12"	0.14 TON/L.F.
15"	0.20 TON/L.F.
18"	0.25 TON/L.F.
24"	0.36 TON/L.F.
30"	0.45 TON/L.F.

**QUANTITY ESTIMATE TABLE  
FOR SELECT FILL MATERIAL**

12"	0.14 TON/L.F.
15"	0.20 TON/L.F.
18"	0.25 TON/L.F.
24"	0.36 TON/L.F.
30"	0.45 TON/L.F.

APPLIES TO BOTH SOIL TIGHT AND WATER TIGHT JOINTS

REVISED: NOVEMBER 2001

SPECIFICATION REFERENCE NO. SPECIAL	CITY OF CANTON  BEDDING AND BACKFILL FOR POLYETHYLENE PIPE	PLATE NUMBER 450.09
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# FOR 12" THRU 30" DIAMETER PIPE

COVER FROM 10 TO 15 FEET

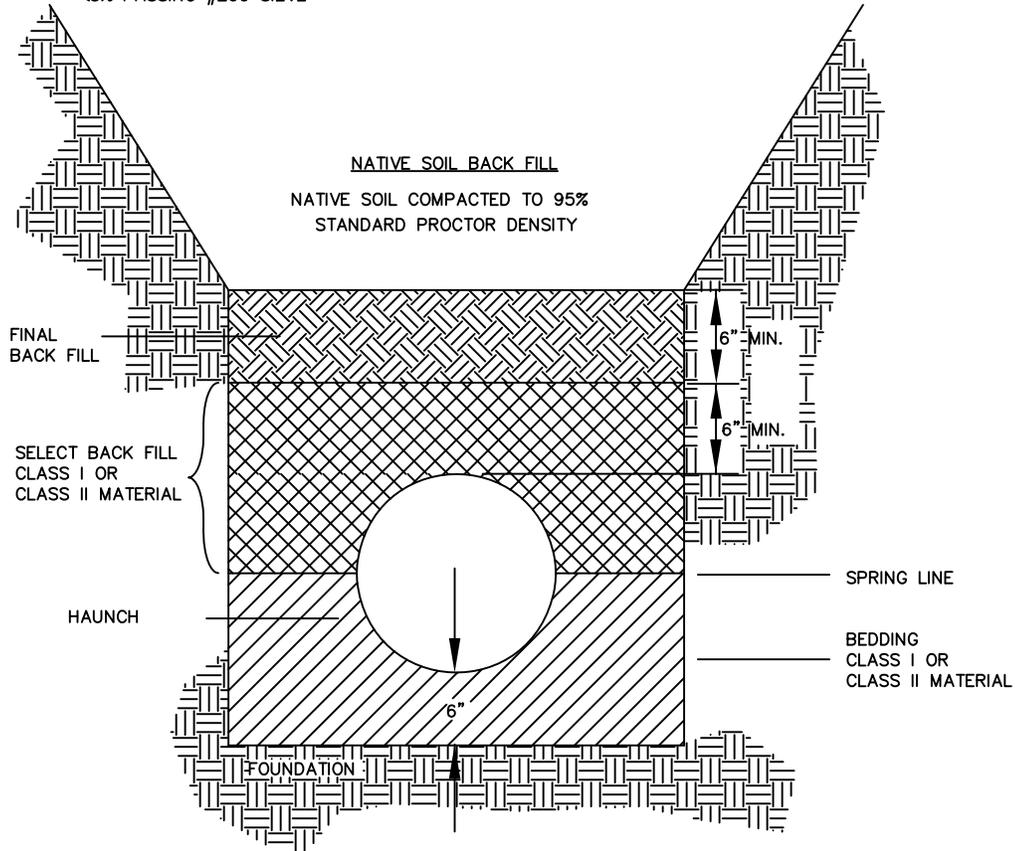
SELECT BACK FILL AND BEDDING MATERIAL TO BE PAID BY THE LINEAR FOOT

**MATERIAL**

- CLASS I: CRUSHED ROCK OR GRAVEL  
 100% PASSING 1 1/2" SIEVE  
 <5% PASSING #200 SIEVE
- CLASS II: COARSE GRAINED SOILS INCLUDES SAND  
 100% PASSING 1 1/2" SIEVE  
 <5% PASSING #200 SIEVE

**SELECT MATERIAL COMPACTION REQUIREMENTS ARE:**

CLASS I	KNIFED
CLASS II	90% STANDARD PROCTOR DENSITY



NOTE: TRENCH WIDTH TO BE TWICE THE OUTSIDE DIAMETER, OR THE OUTSIDE DIAMETER PLUS TWO FEET, WHICH EVER IS LESS.

ASSUME: 140 LBS. PER CUBIC FOOT  
 6" OF SELECT FILL ABOVE PIPE  
 6" OF BEDDING MATERIAL BELOW PIPE

**QUANTITY ESTIMATE TABLE  
 FOR BEDDING MATERIAL**

12"	0.14 TON/L.F.
15"	0.20 TON/L.F.
18"	0.25 TON/L.F.
24"	0.36 TON/L.F.
30"	0.45 TON/L.F.

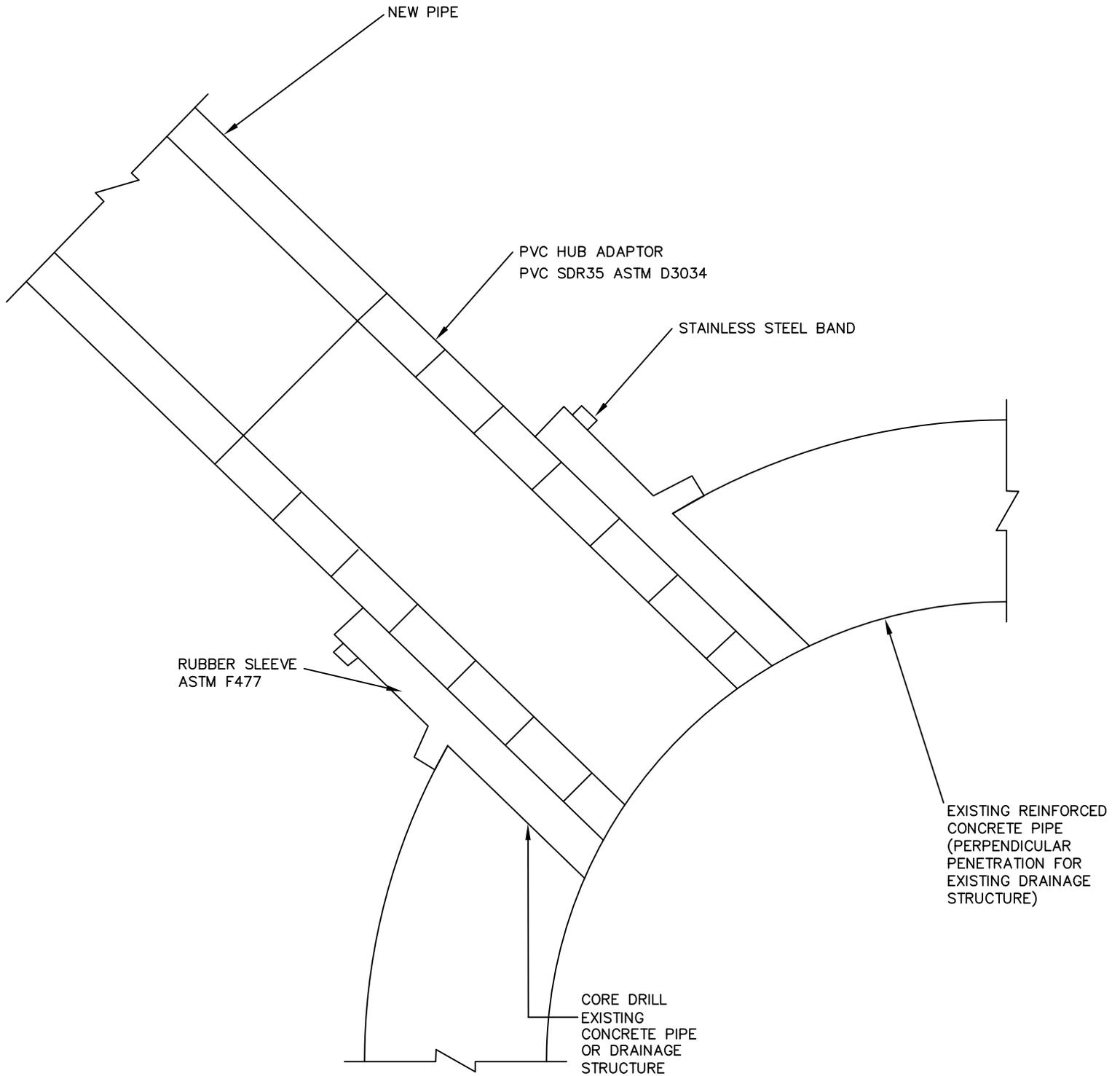
**QUANTITY ESTIMATE TABLE  
 FOR SELECT FILL MATERIAL**

12"	0.14 TON/L.F.
15"	0.20 TON/L.F.
18"	0.25 TON/L.F.
24"	0.36 TON/L.F.
30"	0.45 TON/L.F.

APPLIES TO BOTH SOIL TIGHT AND WATER TIGHT JOINTS

REVISED: NOVEMBER 2001

SPECIFICATION REFERENCE NO. SPECIAL	CITY OF CANTON BEDDING AND BACKFILL FOR POLYETHYLENE PIPE	PLATE NUMBER 450.10
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NOTES: BOOT CONNECTION SHALL BE INSERTA TEE OR APPROVED EQUIVALENT  
 NEW PIPE IS TO BE INSTALLED INTO THE UPPER HALF OF THE  
 (LARGER) PIPE OR AS PER LATERAL ELEVATIONS INDICATED ON PLANS  
 AND 18" BELOW THE FLOWLINE OF THE CURB AND GUTTER

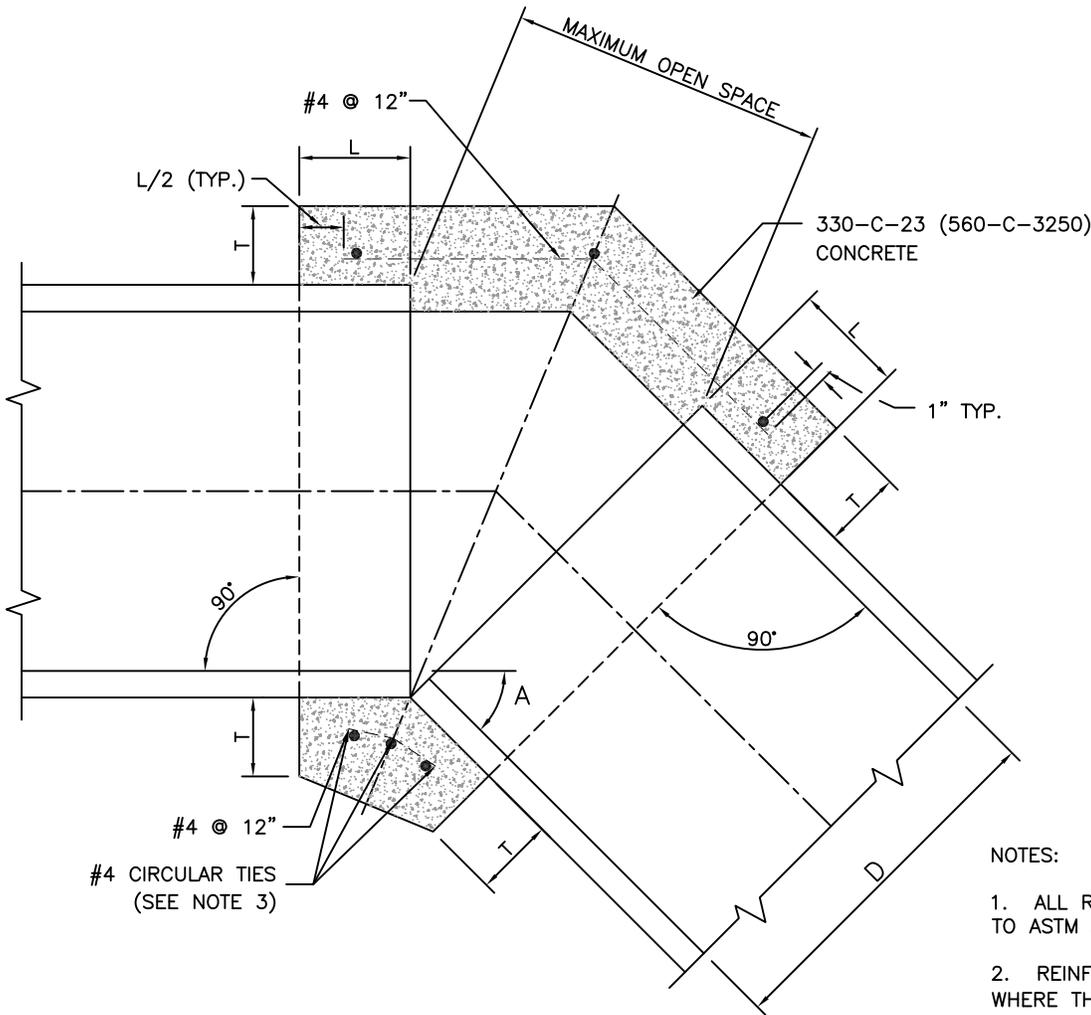
REVISED: NOVEMBER 2003

SPECIFICATION  
 REFERENCE  
 NO.  
 450

CITY OF CANTON  
 STORM SEWER  
 BOOT CONNECTION

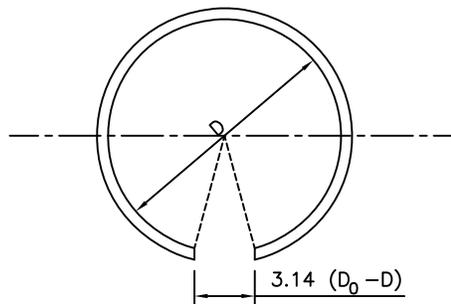
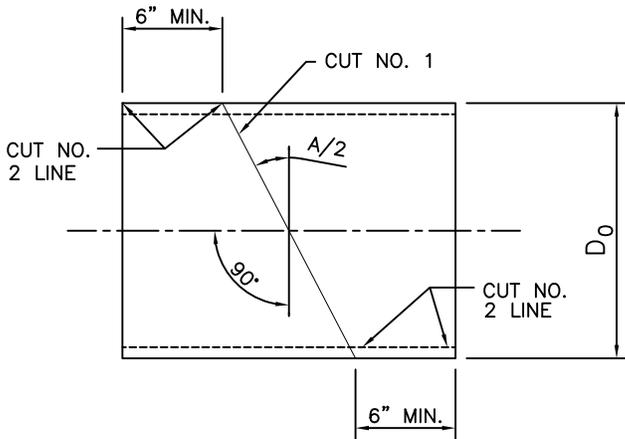
PLATE  
 NUMBER  
 450.13 SP

D	L	T
12"	12"	4"
18"	12"	5"
24"	12"	6"
30"	18"	7"
36"	18"	9"
42"	18"	9"
48"	18"	10"
57"	18"	10"
60"	21"	11"
66"	21"	11"
72"	24"	12"



NOTES:

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
2. REINFORCING STEEL IS NOT REQUIRED WHERE THE "MAXIMUM OPEN SPACE" IS LESS THAN 3".
3. MAXIMUM SPACING FOR CIRCULAR TIES SHALL BE 6". THE DIAMETER OF CIRCULAR TIES SHALL BE EQUAL TO THE PIPE O.D. PLUS T.



DETAIL "A"

SONO-TUBE, OR EQUAL, INTERIOR FORM

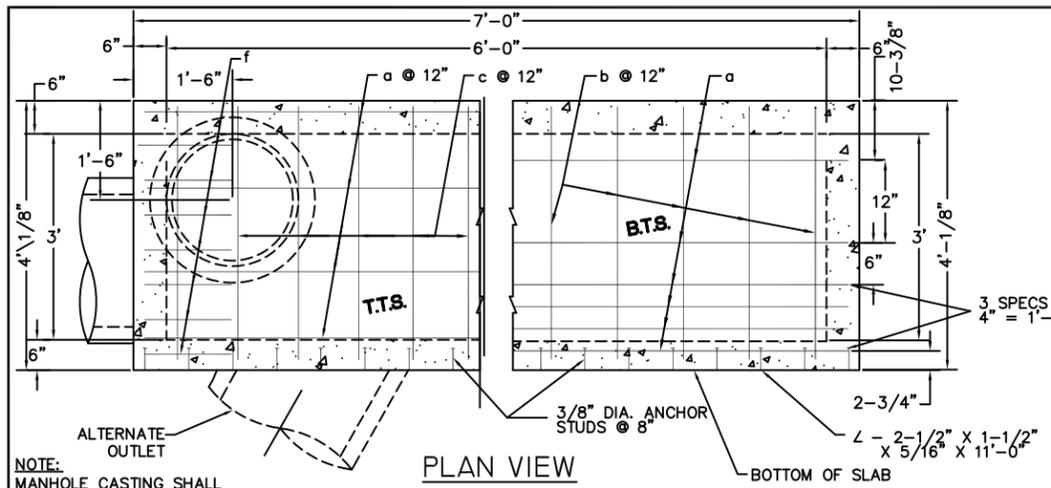
CUT NO. 1: SAW THE TUBE AT AN ANGLE OF A/2 WITH THE TRANSVERSE PLANE. REVERSE ON SECTION AND TAPE BOTH SECTIONS TOGETHER FORMING THE DEFLECTION ANGLE A.  
 CUT NO. 2: SAW THE TUBE LONGITUDINALLY REMOVING A STRIP 3.14 (D - D) WIDE ON THE SIDE OPPOSITE THE OPEN JOINT. BEND THE ENDS OF THE CUT TOGETHER AND INSERT THE TUBE IN THE PIPE.

ISSUED: FEBRUARY 2004

SPECIFICATION  
 REFERENCE  
 NO.  
 450

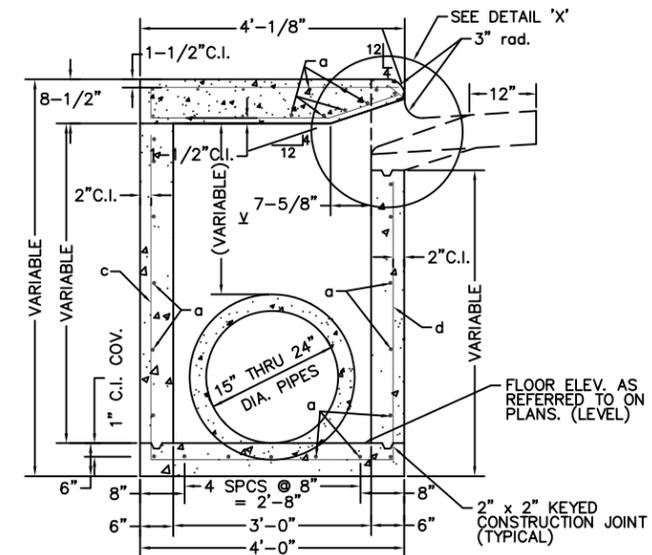
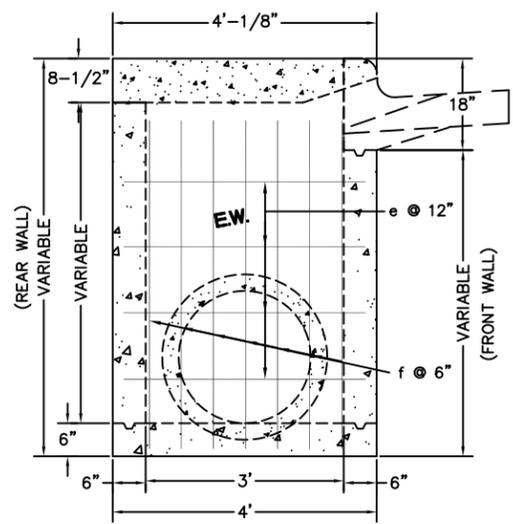
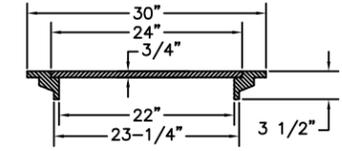
CITY OF CANTON  
 CONCRETE COLLAR

PLATE  
 NUMBER  
 450.17 SP

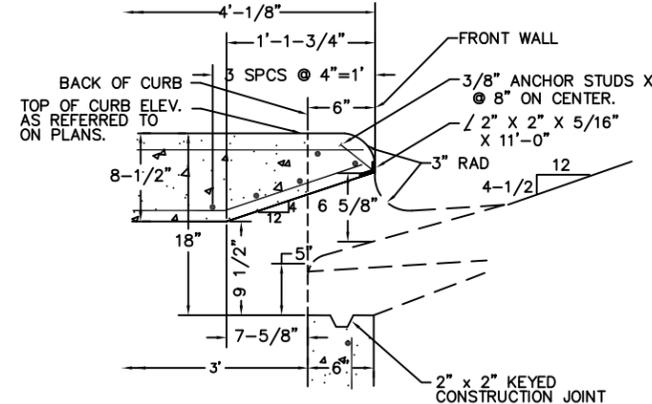
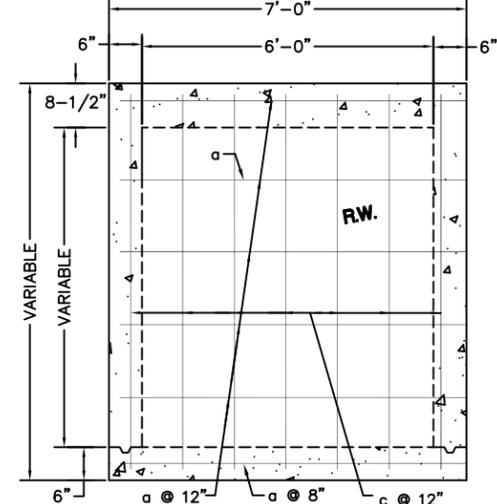
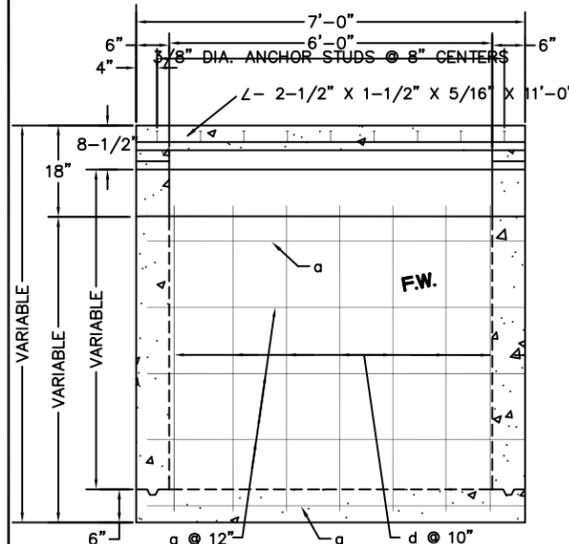


**LEGEND FOR PLACING RE-STEEL**

T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB



NOTE: MANHOLE CASTING SHALL BE PLACED OVER OUTLET.



**GENERAL NOTES**

- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
- DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
- ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
- UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I. REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
- THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
- TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
- MINIMUM 3/8" EXPANSION MATERIAL SHALL BE PLACE BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE MATERIAL.
- TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
- IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
- ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.

**SPECIFICATION NOTE**

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

**ESTIMATED QUANTITIES**

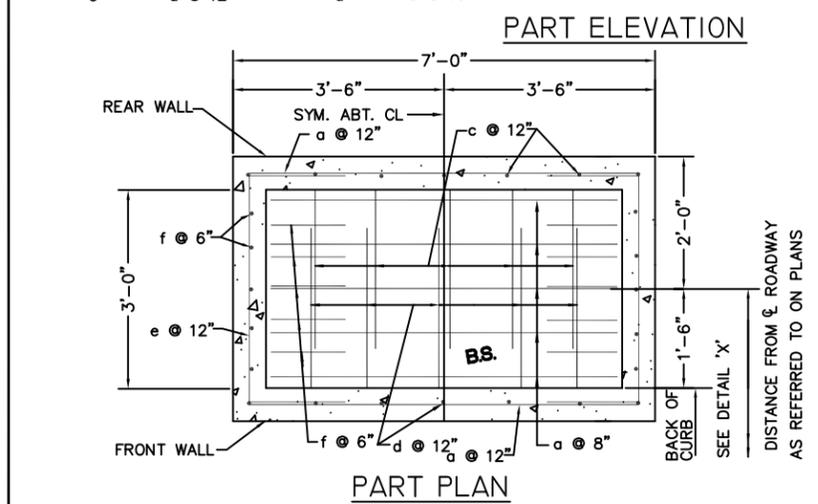
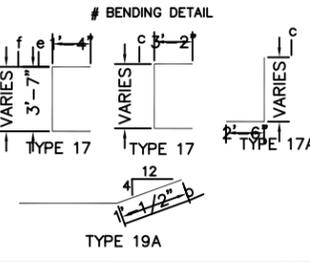
ITEM	UNIT	6' LONG INLET					
		15" DIA. OUTLET		18" DIA. OUTLET		24" DIA. OUTLET	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.72	0.35V	1.82	0.35V	2.02	0.35V
REINFORCEMENT-CONC. MASONRY	LBS	278	43.9V	290	43.9V	303	43.9V
MANHOLE RIM & COVER-TYPE Y	EACH	1	---	1	---	1	---

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 15" DIA. = -0.04 C.Y., 18" DIA. = -0.05 C.Y., 24" DIA. = -0.09 C.Y.

**REINFORCING SCHEDULE**

		15" DIA. PIPE		30" DIA. PIPE		18" ARCH PIPE		
MK	SZ	TYPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
*a	5	STR	21+2V	6'-3"	21+2V	6'-3"	21+2V	6'-3"
*b	4	19A	6	3'-9"	6	3'-3"	6	3'-3"
*c	4	17	7	7'9 3/4"+V	7	9'-1"+V	7	8'7 1/2"+V
d	6	17A	7	3'4 3/4"+V	7	3'-8"+V	7	4'-2"+V
*e	4	17	4+2V	6'-3"	4+2V	6'-3"	4+2V	6'-3"
*f	4	17	14	4'8 3/4"+V	14	5'-0"+V	14	5'6 1/2"+V

\* CUT AND BEND IN FIELD AS NECESSARY TO FIT  
# ALL REINFORCING STEEL DIMENSIONS ARE OUTSIDE TO OUTSIDE.



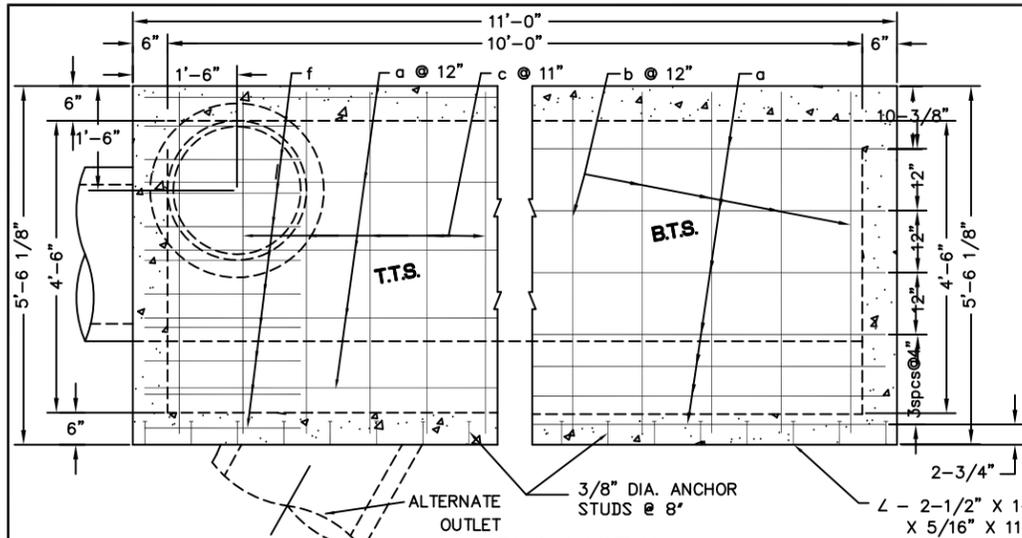
NOTE: FOR 15" TO 24" PIPES - MAX. REVISED: DECEMBER 2009

CITY OF CANTON

STANDARD 6'-0" S.F. TYPE STORM SEWER INLET

SPECIFICATION REFERENCE NO. 460	PLATE NUMBER 460.01
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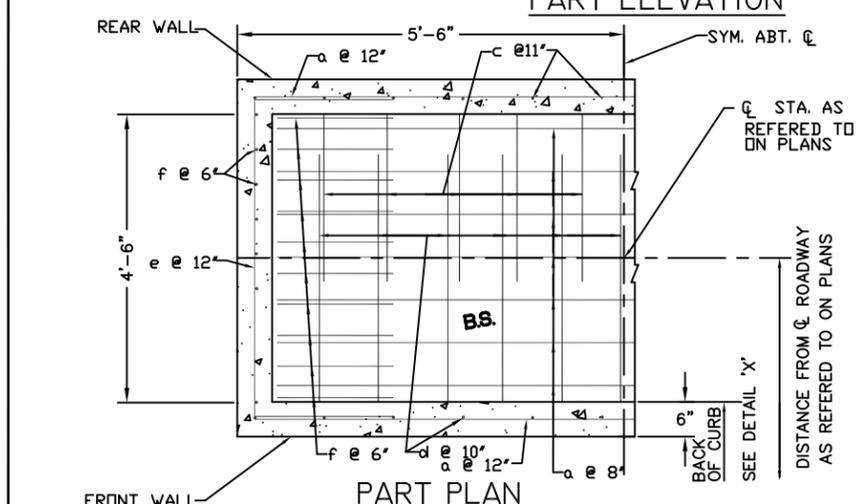
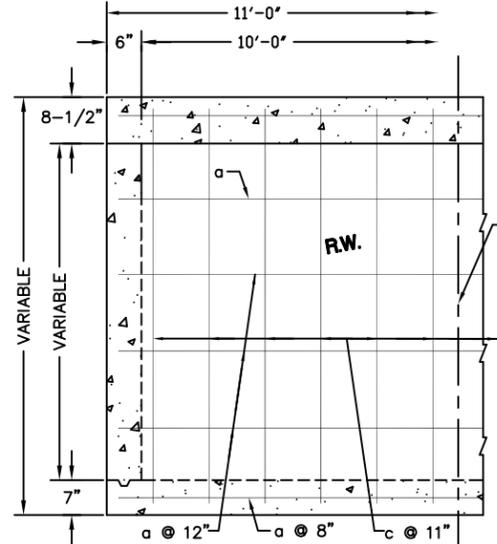
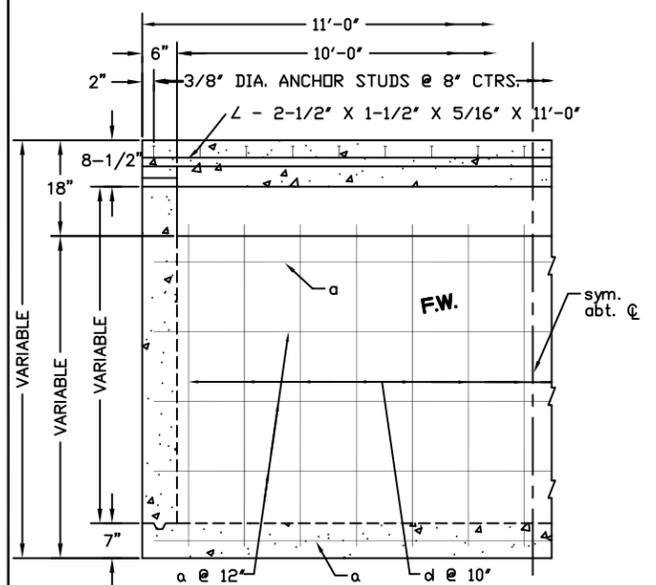




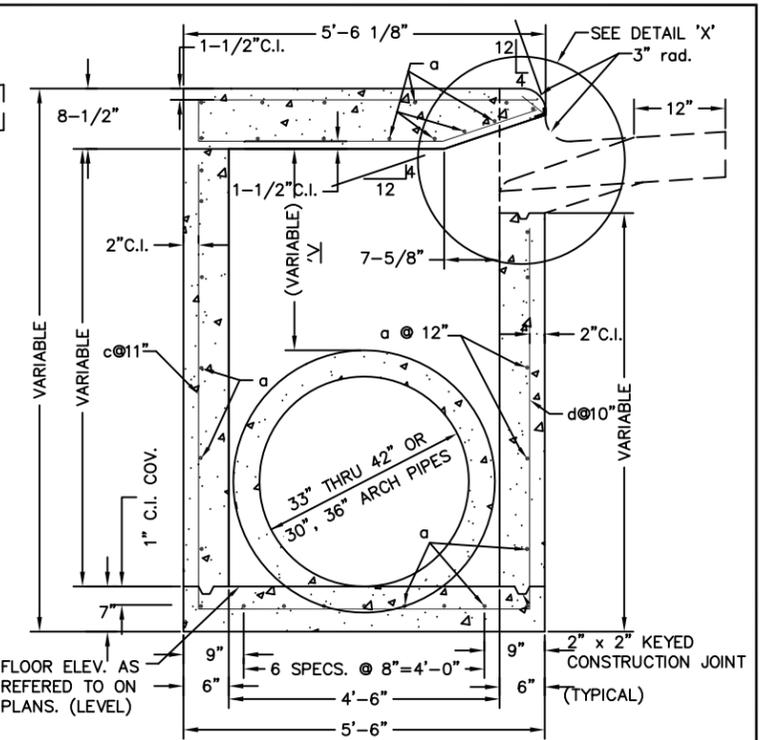
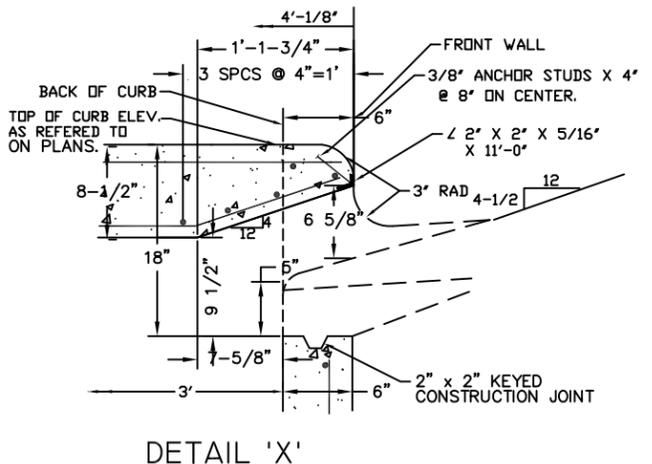
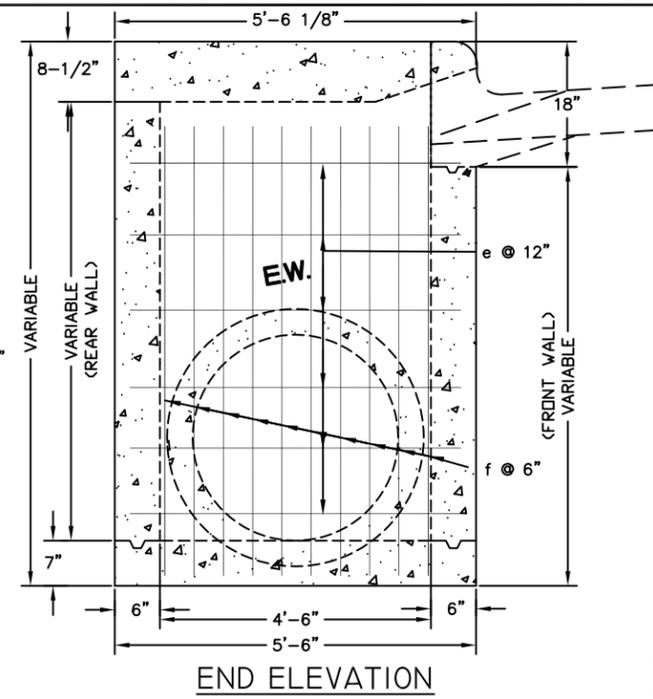
**LEGEND FOR PLACING RE-STEEL**

T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB

NOTE: MANHOLE CASTING SHALL BE PLACED OVER OUTLET.



**TYPICAL SECTION THRU MANHOLE ASSEMBLY**  
 MANHOLE FRAME AND COVER SHALL BE A NEENAH R-6040, TYPE Y OR ENGINEER APPROVED EQUAL.



- GENERAL NOTES**
- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
  - DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
  - ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
  - UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I. REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
  - THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
  - TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
  - MINIMUM  $3/8$ " EXPANSION MATERIAL SHALL BE PLACED BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE INLET.
  - TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
  - IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
  - ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.

**SPECIFICATION NOTE**

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

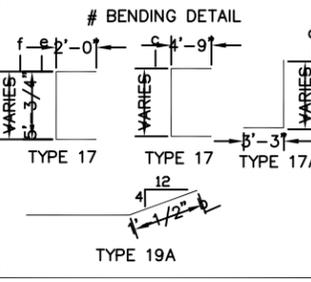
\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS: 33" DIA. = -0.17 C.Y., 36" DIA. = -0.20 C.Y., 42" DIA. = -0.26 C.Y., 30" ARCH = -0.14 C.Y., 36" ARCH = -0.19

**ESTIMATED QUANTITIES**

ITEM	UNIT	10' LONG INLET									
		33" DIA. OUTLET		36" DIA. OUTLET		42" DIA. OUTLET		30" ARCH OUTLET		36" ARCH OUTLET	
		CONSTANT	VARIABLE								
* CLASS M6 CONCRETE	CUYDS	4.56	0.55V	4.72	0.55V	5.03	0.55V	4.07	0.55V	4.29	0.55V
REINFORCEMENT-CONC. MASONRY	LBS	722	78.8V	734	78.8V	793	78.8V	650	78.8V	700	78.8V
MANHOLE RIM & COVER-TYPE Y	EACH	1		1		1		1		1	

**REINFORCING SCHEDULE**

MK	SZ	TYPE	33" DIA. PIPE		36" DIA. PIPE		42" DIA. PIPE		30" ARCH PIPE		36" ARCH PIPE	
			NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
*a	5	STR	27+2V	10'-3"	27+2V	10'-3"	29+2V	10'-3"	25+2V	10'-3"	27+2V	10'-3"
*b	4	19A	11	4'-9"	11	4'-9"	11	4'-9"	11	4'-9"	11	4'-9"
*c	5	17	12	11'4 1/2"+V	12	12'-3/4"+V	12	12'7 1/4"+V	12	10'11 1/4"+V	12	11'-4"+V
d	6	17A	13	5'-9"+V	13	6'-0"+V	13	6'-7"+V	13	4'-11"+V	13	5'-3"+V
*e	4	17	6+2V	9'-0"	6+2V	9'-0"	8+2V	9'-0"	4+2V	9'-0"	6+2V	9'-0"
*f	4	17	20	7'8 1/4"+V	20	7'11 1/2"+V	20	8'-6"+V	20	6'-10"+V	20	7'2 3/4"+V



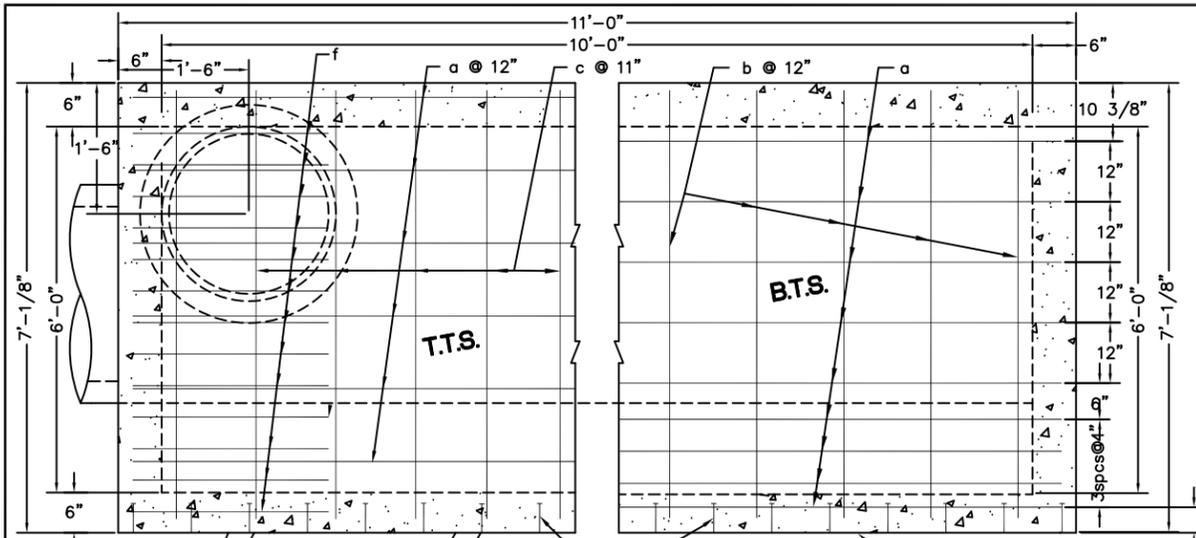
NOTE: FOR 33" TO 42" PIPES - MAX. REVISED: DECEMBER 2009

CITY OF CANTON

STANDARD 10'-0" S.F. TYPE STORM SEWER INLET

SPECIFICATION REFERENCE NO. 460	PLATE NUMBER 460.03
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\* CUT AND BEND IN FIELD AS NECESSARY TO FIT # ALL REINFORCING STEEL DIMENSIONS ARE OUTSIDE TO OUTSIDE.



NOTE: MANHOLE CASTING SHALL BE PLACED OVER OUTLET.

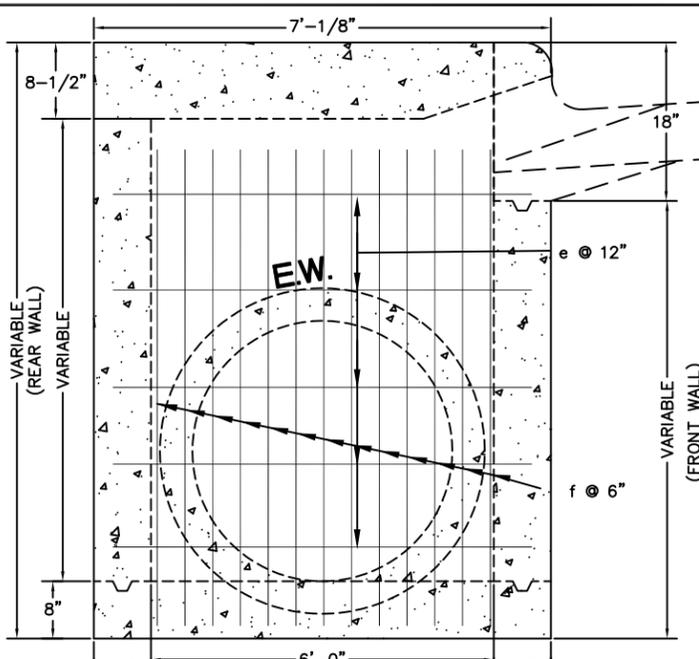
ALTERNATE OUTLET

3/8" DIA. ANCHOR STUDS @ 8"

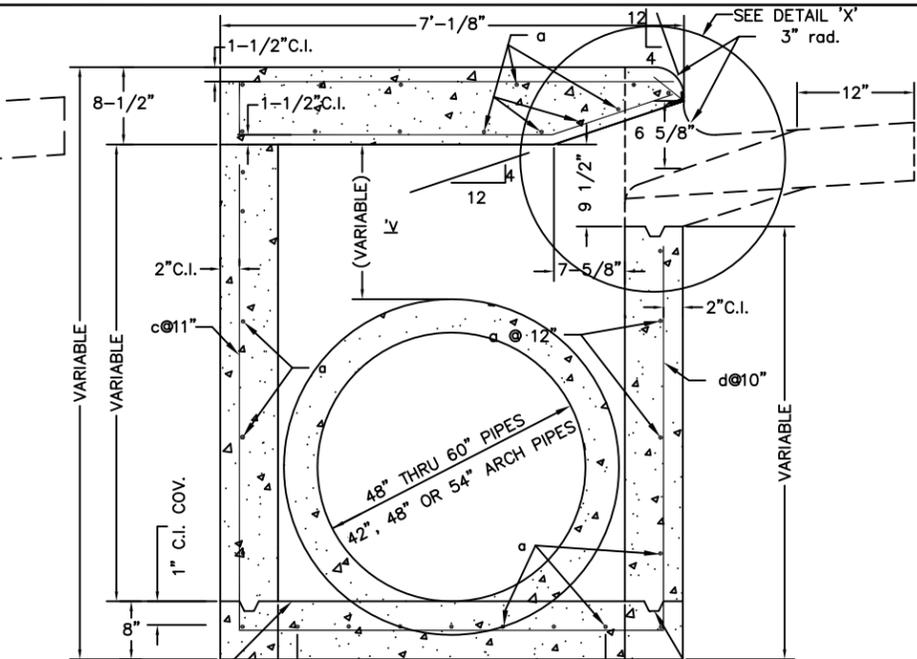
L - 2-1/2" X 1-1/2" X 5/16" X 11'-0"

2-3/4"

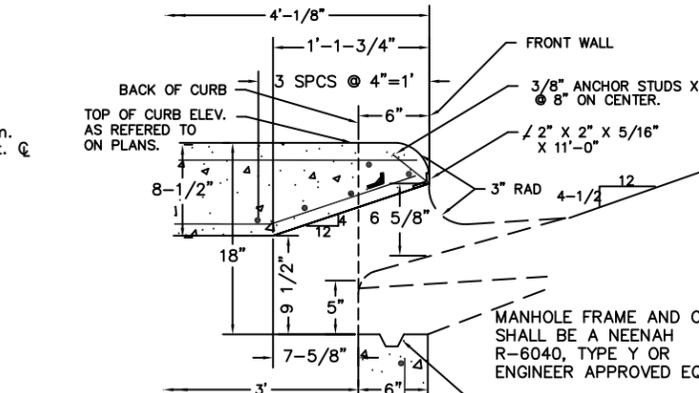
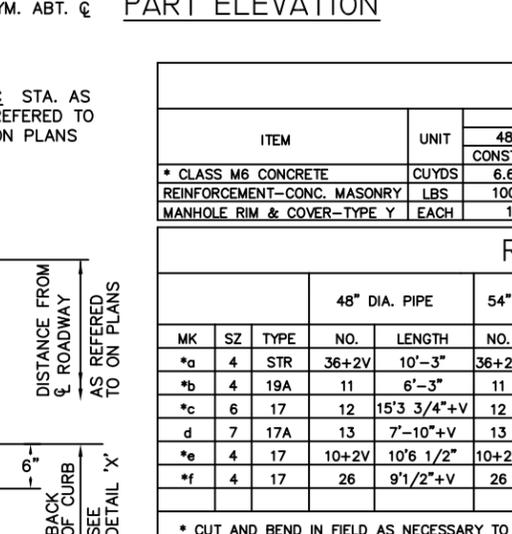
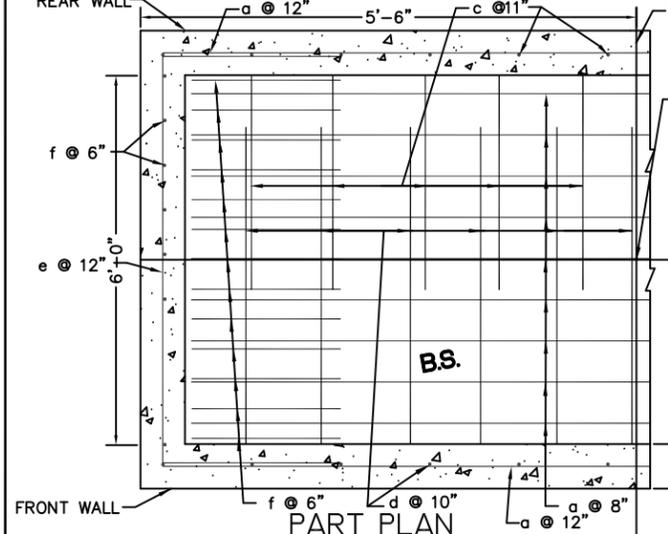
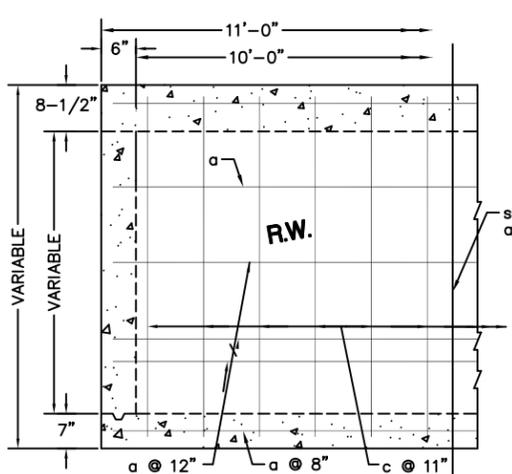
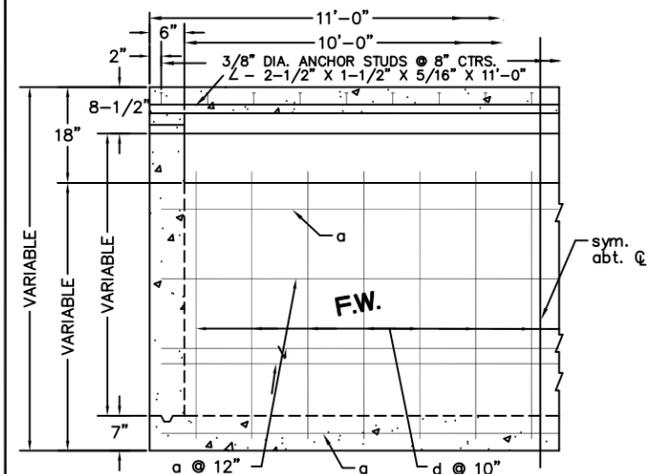
PLAN VIEW



END ELEVATION



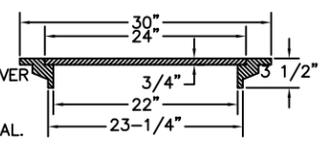
TYPICAL SECTION



DETAIL 'X'

LEGEND FOR PLACING RE-STEEL

T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB



TYPICAL SECTION THRU MANHOLE ASSEMBLY

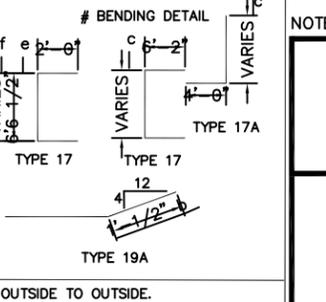
- GENERAL NOTES
- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
  - DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
  - ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
  - UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I.
  - REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
  - THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
  - TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
  - MINIMUM 3/8" EXPANSION MATERIAL SHALL BE PLACE BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE INLET.
  - TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
  - IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
  - ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.
- SPECIFICATION NOTE
- USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.
- \* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS: 48" DIA. = -0.34 C.Y., 54" DIA. = -0.43 C.Y., 60" DIA. = -0.52 C.Y., 42" ARCH = -0.25 C.Y., 48" ARCH = -0.32 C.Y., 54" ARCH = -0.40 C.Y.

ESTIMATED QUANTITIES

ITEM	UNIT	10' LONG INLET											
		48" DIA. OUTLET		54" DIA. OUTLET		60" DIA. OUTLET		42" ARCH OUTLET		48" ARCH OUTLET		54" ARCH OUTLET	
		CONSTANT	VARIABLE										
* CLASS M6 CONCRETE	CUYDS	6.60	0.60V	6.94	0.60V	7.28	0.60V	5.68	0.60V	6.02	0.60V	6.20	0.60V
REINFORCEMENT-CONC. MASONRY	LBS	1004	89.7V	1039	89.7V	1099	89.7V	860	89.7V	914	89.7V	939	89.7V
MANHOLE RIM & COVER-TYPE Y	EACH	1		1		1		1		1		1	

REINFORCING SCHEDULE

			48" DIA. PIPE		54" DIA. PIPE		60" DIA. PIPE		42" ARCH PIPE		48" ARCH PIPE		54" ARCH PIPE	
MK	SZ	TYPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
*a	4	STR	36+2V	10'-3"	36+2V	10'-3"	38+2V	10'-3"	32+2V	10'-3"	34+2V	10'-3"	34+2V	10'-3"
*b	4	19A	11	6'-3"	11	6'-3"	11	6'-3"	11	6'-3"	11	6'-3"	11	6'-3"
*c	6	17	12	15'3 3/4"+V	12	15'10 1/4"+V	12	16'4 3/4"+V	12	13'10 1/2"+V	12	14'33/4"+V	12	14'8 1/2"+V
d	7	17A	13	7'-10"+V	13	8'-5"+V	13	8'-11"+V	13	6'-5"+V	13	6'-10"+V	13	7'-7"+V
*e	4	17	10+2V	10'6 1/2"	10+2V	10'6 1/2"	12+2V	10'-6 1/2"	6+2V	10'-6 1/2"	8+2V	10'-6 1/2"	8+2V	10'-6 1/2"
*f	4	17	26	9'1/2"+V	26	9'-7"+V	26	10'1 1/2"+V	26	7'7 1/4"+V	26	8'-1/2"+V	26	8'-5"+V



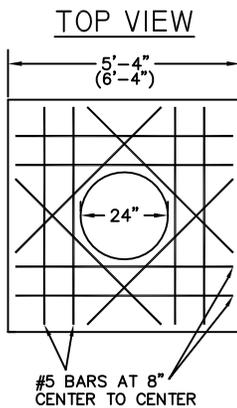
NOTE: FOR 48" TO 60" PIPES - MAX. REVISED: DECEMBER 2009

CITY OF CANTON

STANDARD 10'-0" S.F. TYPE STORM SEWER INLET

SPECIFICATION REFERENCE NO. 460

PLATE NUMBER 460.04



**GENERAL NOTES**

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION, AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60.

ALL REINFORCING STEEL SHALL BE CUT AND/OR BENT IN THE FIELD TO

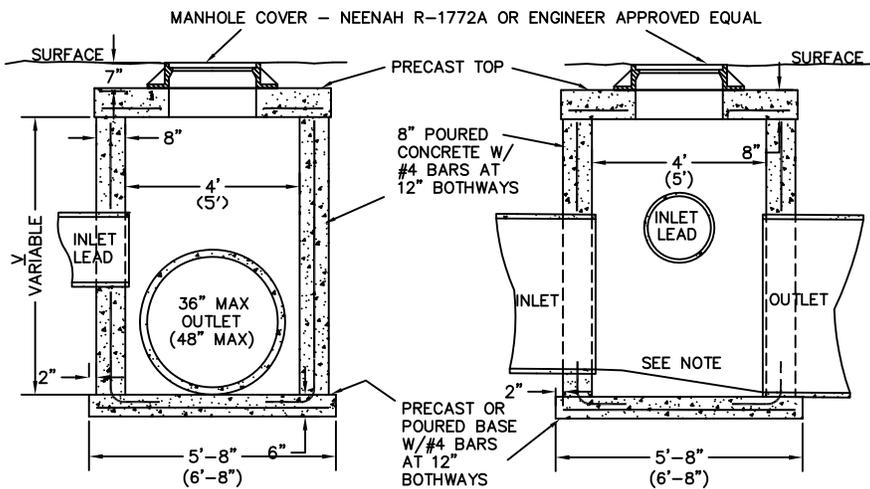
MAINTAIN A MINIMUM OF 2" COVER ON ALL REINFORCING STEEL.

NO VERTICAL CONSTRUCTION JOINTS ARE ALLOWED.

ALL CONC. SHALL BE CLASSED M-6.

UNIT STRESSES: CONCRETE  $F_c = 1600$  P.S.I.  
REINFORCING STEEL  $F_c = 20,000$  P.S.I.

TOP OF MANHOLE COVER TO BE SET FLUSH WITH FINISHED SURFACE ELEVATION.



**SIDE VIEWS**

ESTIMATED QUANTITIES					
ITEM	UNIT	4' X 4' JCT. BOX		5' X 5' JCT. BOX	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.29	0.46V	1.93	0.56V
REINFORCEMENT-CONC. MASONRY	LBS	103	23V	131	35V
MANHOLE RIM & COVER-AS SPECIFIED	EACH	1	----	1	----

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS;  
 12" DIA.= -0.03 C.Y., 15" DIA.= -0.04 C.Y., 18" DIA.= -0.05 C.Y., 21" DIA.= -0.07 C.Y., 24" DIA.= -0.09 C.Y.,  
 27" DIA.= -0.11 C.Y., 30" DIA.= -0.14 C.Y., 33" DIA.= -0.17 C.Y., 36" DIA.= -0.20 C.Y., 42" DIA.= -0.26 C.Y.,  
 48" DIA.= -0.34 C.Y.

**NOTES:**

COVER REINFORCEMENT REQUIRES 12-#5 BARS 5'(6') LONG TO BE PLACED AS SHOWN.  
 2" FROM CIRCULAR OPENING AND 8" CENTER TO CENTER AT A DEPTH OF 6" W/MIN. COVER THICKNESS OF 8".

FLOOR OF JCT. BOX TO BE FINISHED IN SUCH A MANNER TO INSURE UNINTERRUPTED FLOW THRU THE BOX.

WHEN PIPE SIZES DIFFER THRU JCT. BOX, TOP OF PIPE TO MATCH WHEN POSSIBLE.

( ) INDICATES SPECIFICATIONS FOR A 5' X 5' JCT. BOX. MAXIMUM PIPE SIZE ALLOWED  
 FOR 4' X 4' JCT. BOX IS 36" R.C.P. A 5' X 5' JCT. IS 48" R.C.P.  
 VARIABLE DEPTH UP TO 8'

REVISED: DECEMBER 1995

SPECIFICATION REFERENCE NO. 460	CITY OF CANTON  STANDARD STORM SEWER JUNCTION BOX TYPE 1	PLATE NUMBER 460.05
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GENERAL NOTES

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION ,AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615, GRADE 60.

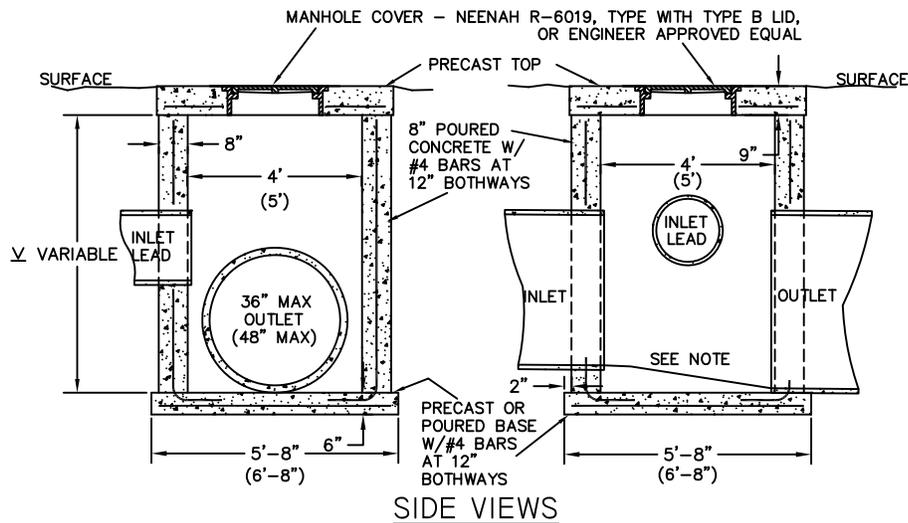
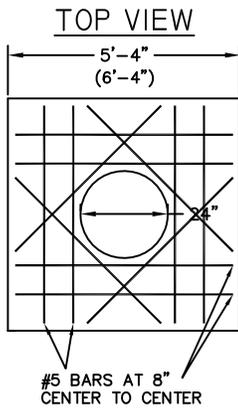
ALL REINFORCING STEEL SHALL BE CUT AND/OR BENT IN THE FIELD TO MAINTAIN A MINIMUM OF 2" COVER ON ALL REINFORCING STEEL.

NO VERTICAL CONSTRUCTION JOINTS ARE ALLOWED.

ALL CONC. SHALL BE CLASSED M-6.

UNIT STRESSES: CONCRETE  $F_c = 1600$  P.S.I.  
 REINFORCING STEEL  $F_c = 20,000$  P.S.I.

TOP OF MANHOLE COVER TO BE SET FLUSH WITH FINISHED SURFACE ELEVATION.



ESTIMATED QUANTITIES

ITEM	UNIT	4' X 4' JCT. BOX		5' X 5' JCT. BOX	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	1.29	0.46V	1.93	0.56V
REINFORCEMENT-CONC. MASONRY	LBS	103	23V	131	35V
MANHOLE RIM & COVER-AS SPECIFIED	EACH	1	----	1	----

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS;  
 12" DIA.--0.03 C.Y., 15" DIA.--0.04 C.Y., 18" DIA.--0.05 C.Y., 21" DIA.--0.07 C.Y., 24" DIA.--0.09 C.Y.,  
 27" DIA.--0.11 C.Y., 30" DIA.--0.14 C.Y., 33" DIA.--0.17 C.Y., 36" DIA.--0.20 C.Y., 42" DIA.--0.26 C.Y.,  
 48" DIA.--0.34 C.Y.

NOTES:

COVER REINFORCEMENT REQUIRES 12-#5 BARS 5'(6') LONG TO BE PLACED AS SHOWN.  
 2" FROM CIRCULAR OPENING AND 8" CENTER TO CENTER AT A DEPTH OF 6" W/MIN. COVER THICKNESS OF 8".

FLOOR OF JCT. BOX TO BE FINISHED IN SUCH A MANNER TO INSURE UNINTERRUPTED FLOW THRU THE BOX.

WHEN PIPE SIZES DIFFER THRU JCT. BOX, TOP OF PIPE TO MATCH WHEN POSSIBLE.

( ) INDICATES SPECIFICATIONS FOR A 5' X 5' JCT. BOX MAXIMUM PIPE SIZE ALLOWED  
 FOR 4' X 4' JCT. BOX IS 36" R.C.P. A 5' X 5' JCT. IS 48" R.C.P.

VARIABLE DEPTH UP TO 8'

REVISED: DECEMBER 1995

SPECIFICATION  
 REFERENCE  
 NO.  
 460

CITY OF CANTON  
 STANDARD STORM SEWER  
 JUNCTION BOX TYPE II

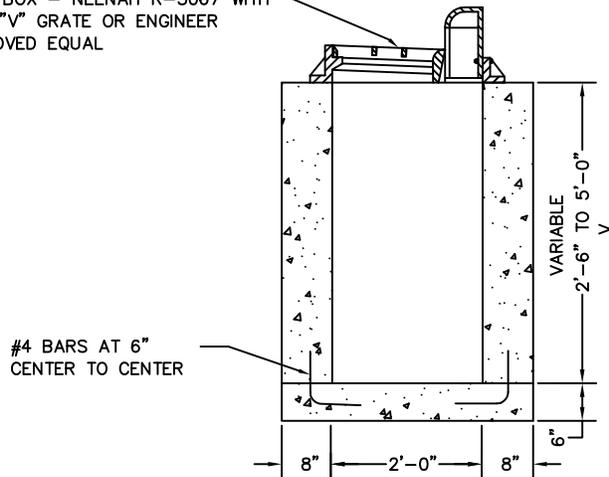
PLATE  
 NUMBER  
 460.06

## ESTIMATED QUANTITIES

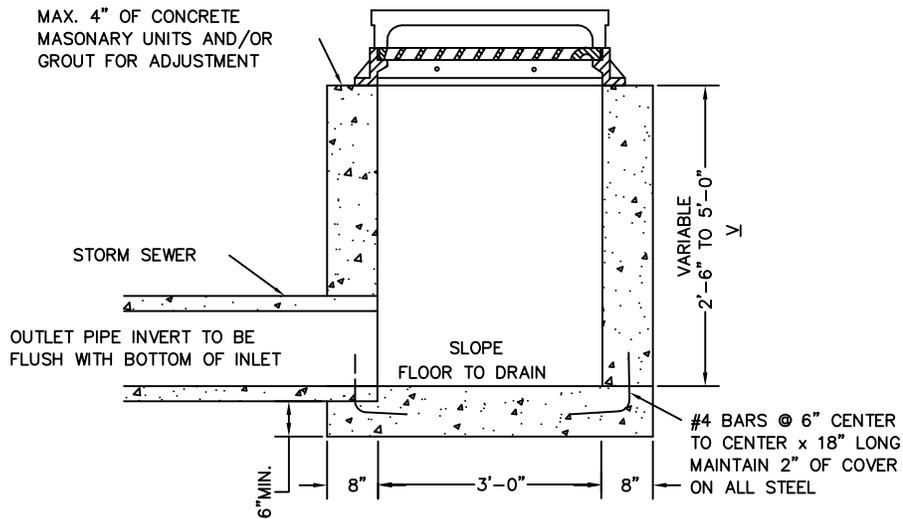
ITEM	UNIT	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	0.27	0.32V
REINFORCEMENT-CONC. MASONRY	LBS	28	---

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 12" DIA.=--0.03 C.Y., 15" DIA.--0.04 C.Y., 18" DIA.--0.05 C.Y., 24" DIA.--0.09 C.Y.

FRAME & GRATE WITH ADJUSTABLE CURB BOX - NEENAH R-3067 WITH TYPE "V" GRATE OR ENGINEER APPROVED EQUAL



MAX. 4" OF CONCRETE MASONRY UNITS AND/OR GROUT FOR ADJUSTMENT

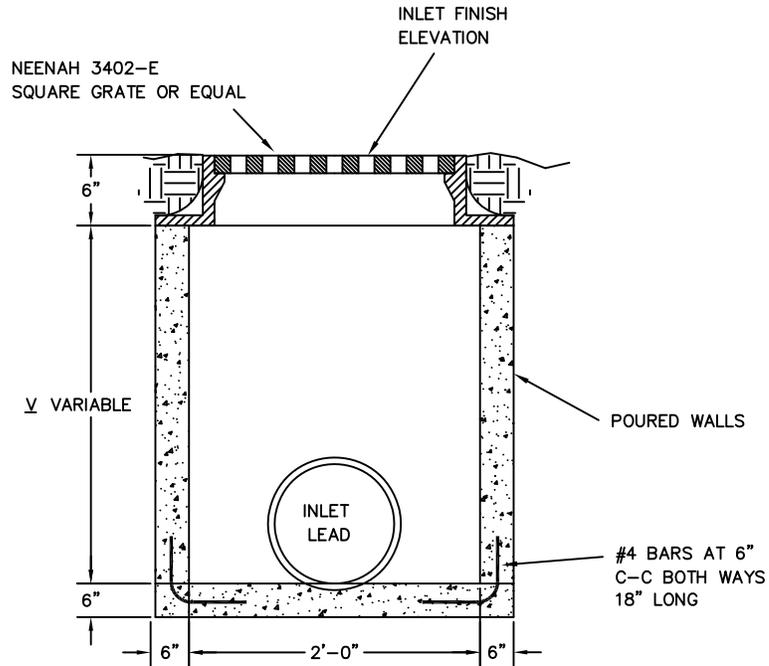


REVISED: DECEMBER 1995

SPECIFICATION  
REFERENCE  
NO.  
460

CITY OF CANTON  
STANDARD STORM SEWER  
INLET TYPE B1

PLATE  
NUMBER  
460.07



### ESTIMATED QUANTITIES

ITEM	UNIT	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	0.17	0.19V
REINFORCEMENT-CONC. MASONRY	LBS	16	---

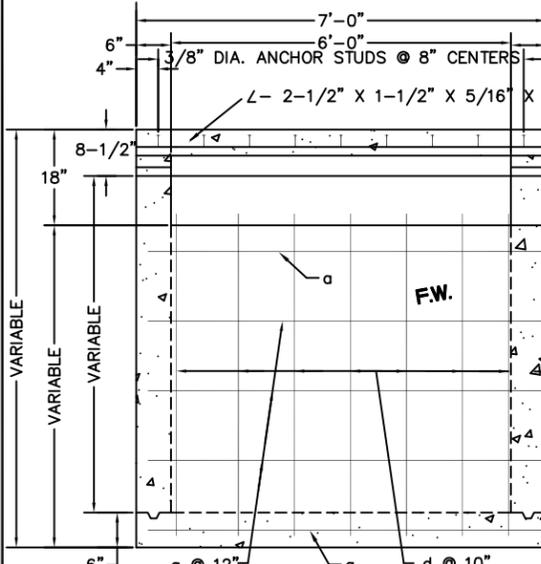
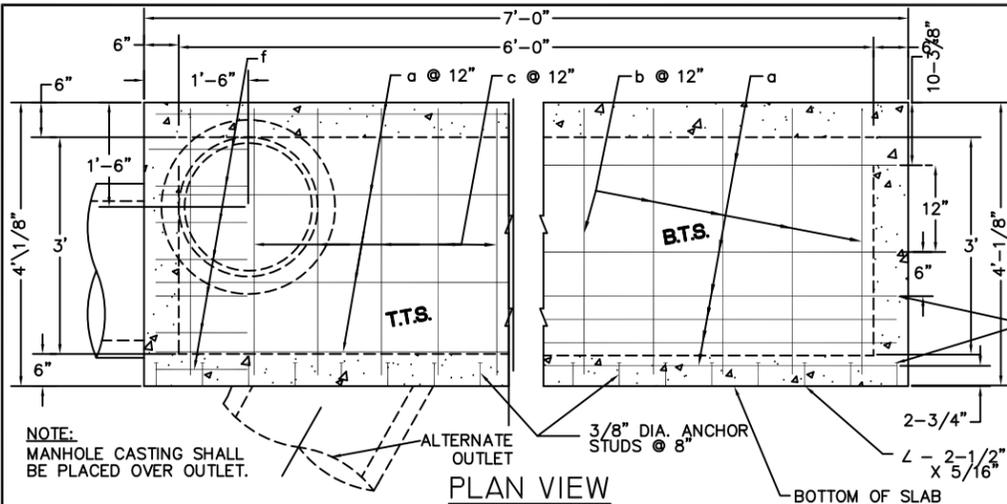
\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 12" DIA.=0.03 C.Y., 15" DIA.=0.04 C.Y., 18" DIA.=0.05 C.Y.

REVISED: DECEMBER 1995

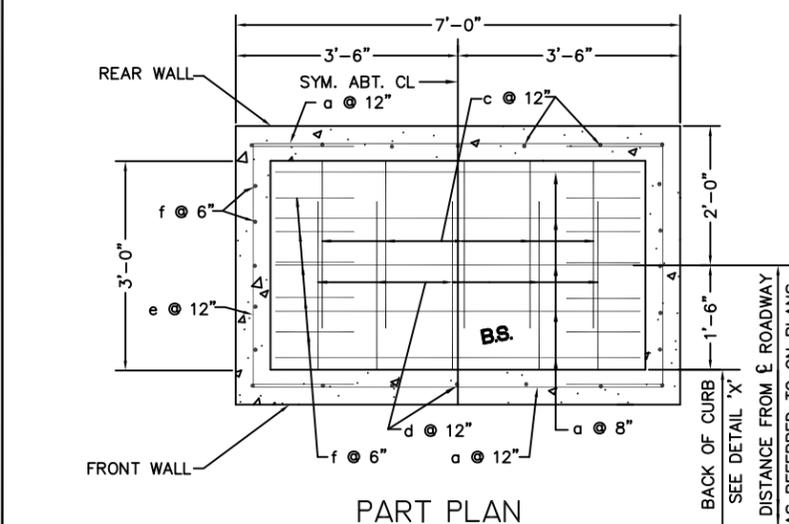
SPECIFICATION  
REFERENCE  
NO.  
460

CITY OF CANTON  
2' X 2' CATCH BASIN  
WITH SURFACE DRAIN

PLATE  
NUMBER  
460.08



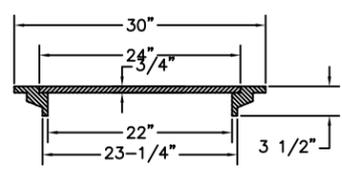
PART ELEVATION



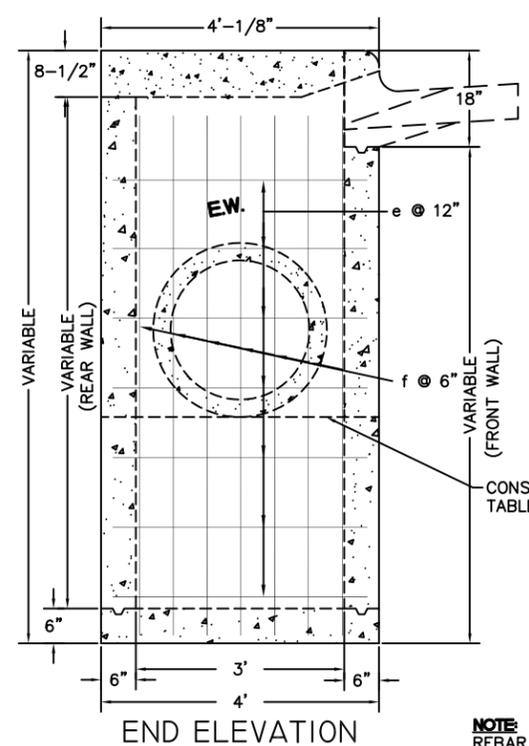
PART PLAN

**LEGEND FOR PLACING RE-STEEL**

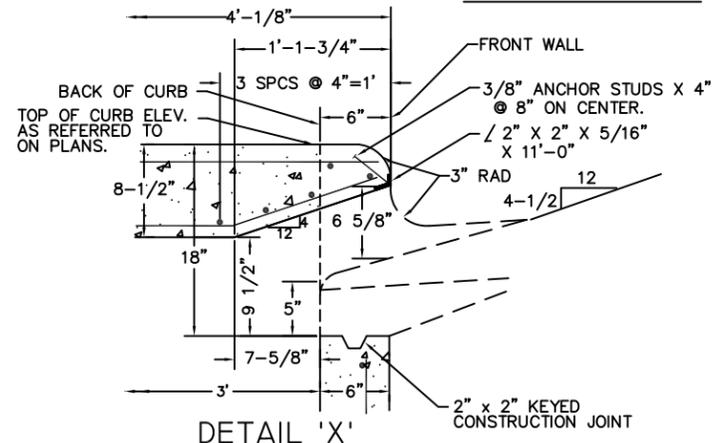
T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB



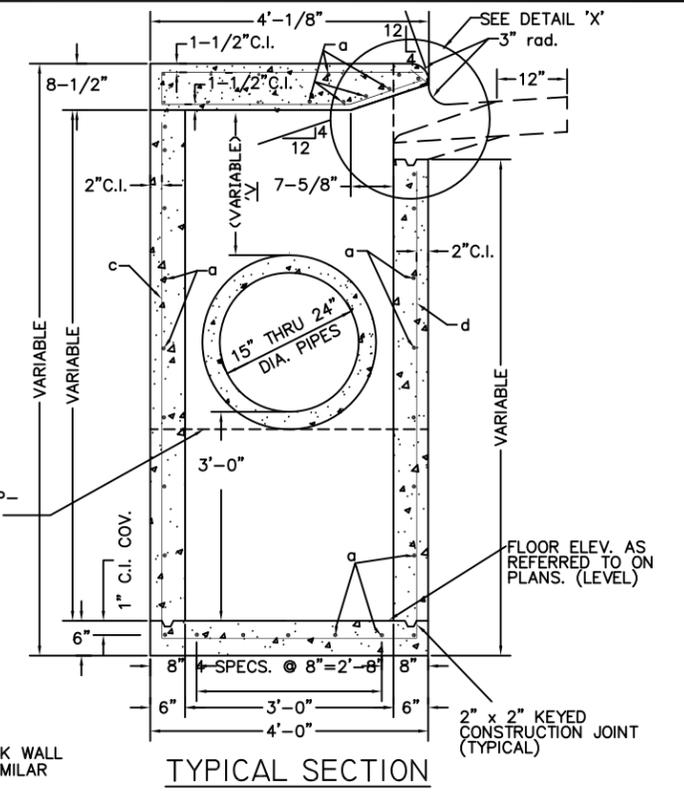
TYPICAL SECTION THRU MANHOLE ASSEMBLY



END ELEVATION



DETAIL 'X'



TYPICAL SECTION

- GENERAL NOTES**
- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
  - DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
  - ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
  - UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I. REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
  - THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
  - TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
  - MINIMUM 3/8" EXPANSION MATERIAL SHALL BE PLACE BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE INLET.
  - TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
  - IT IS ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH A CONSTRUCTION JOINT. IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
  - ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.
- SPECIFICATION NOTE**
- USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

**ESTIMATED QUANTITIES**

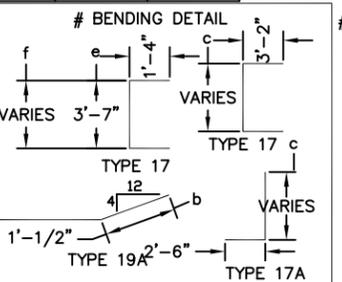
ITEM	UNIT	6' LONG INLET					
		15" DIA. OUTLET		18" DIA. OUTLET		24" DIA. OUTLET	
		CONSTANT	VARIABLE	CONSTANT	VARIABLE	CONSTANT	VARIABLE
* CLASS M6 CONCRETE	CUYDS	2.86	0.35V	2.96	0.35V	3.16	0.35V
REINFORCEMENT-CONC. MASONRY	LBS	500	43.9V	512	43.9V	525	43.9V
MANHOLE RIM & COVER-TYPE Y	EACH	1		1		1	

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS: 15" DIA. = -0.04 C.Y., 18" DIA. = -0.05 C.Y., 24" DIA. = -0.09 C.Y.

**REINFORCING SCHEDULE**

		15" DIA. PIPE		30" DIA. PIPE		18" ARCH PIPE		
MK	SZ	TYPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
*a	5	STR	21+2V	6'-3"	21+2V	6'-3"	21+2V	6'-3"
*b	4	19A	6	3'-9"	6	3'-3"	6	3'-3"
*c	4	17	7	7'9 3/4"+V	7	9'-1"+V	7	8'7 1/2"+V
d	6	17A	7	3'4 3/4"+V	7	3'-8"+V	7	4'-2"+V
*e	4	17	4+2V	6'-3"	4+2V	6'-3"	4+2V	6'-3"
*f	4	17	14	4'8 3/4"+V	14	5'-0"+V	14	5'6 1/2"+V

\* CUT AND BEND IN FIELD AS NECESSARY TO FIT

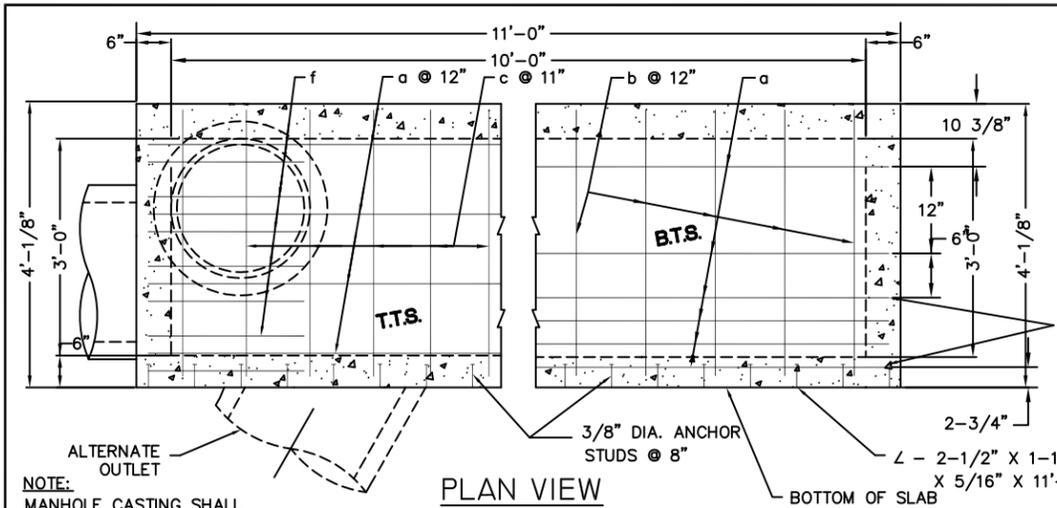


NOTE: 15" TO 24" PIPES - MAX. REVISED: DECEMBER 2009

CITY OF CANTON

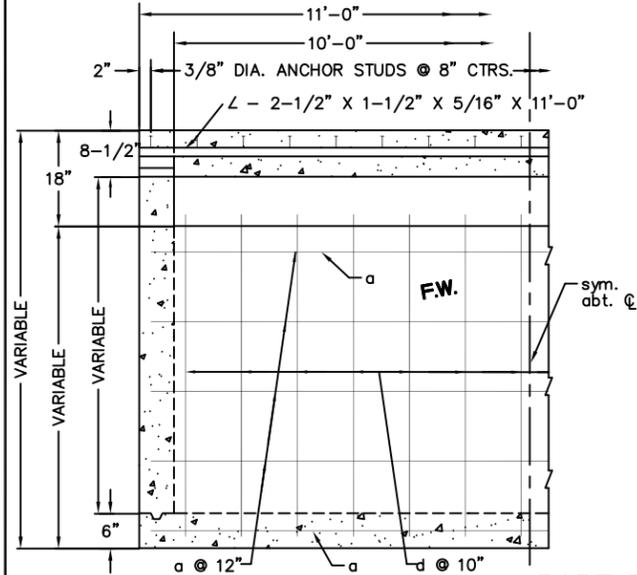
STANDARD 6'-0" S.F. SUMP  
TYPE STORM SEWER INLET

SPECIFICATION REFERENCE NO. 460	PLATE NUMBER 460.09
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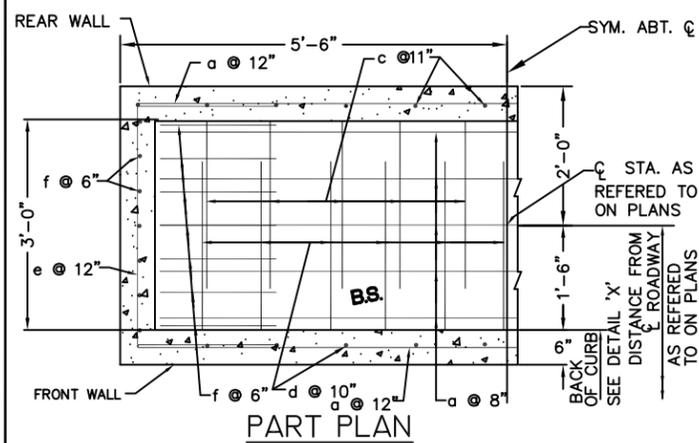


NOTE: MANHOLE CASTING SHALL BE PLACED OVER OUTLET.

PLAN VIEW



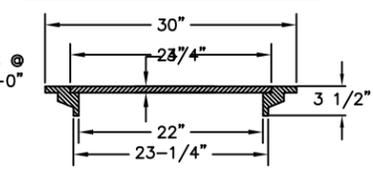
PART ELEVATION



PART PLAN

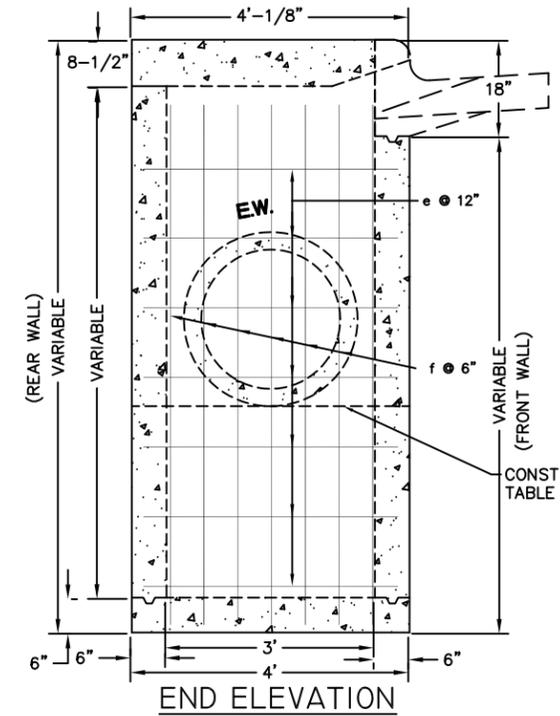
**LEGEND FOR PLACING RE-STEEL**

T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB

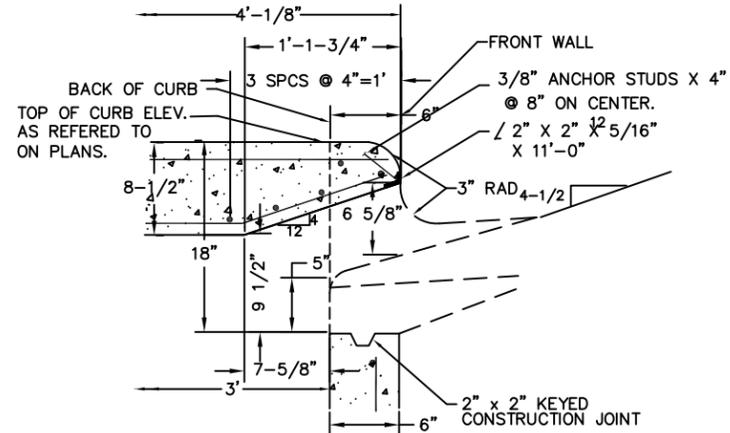


TYPICAL SECTION THRU MANHOLE ASSEMBLY

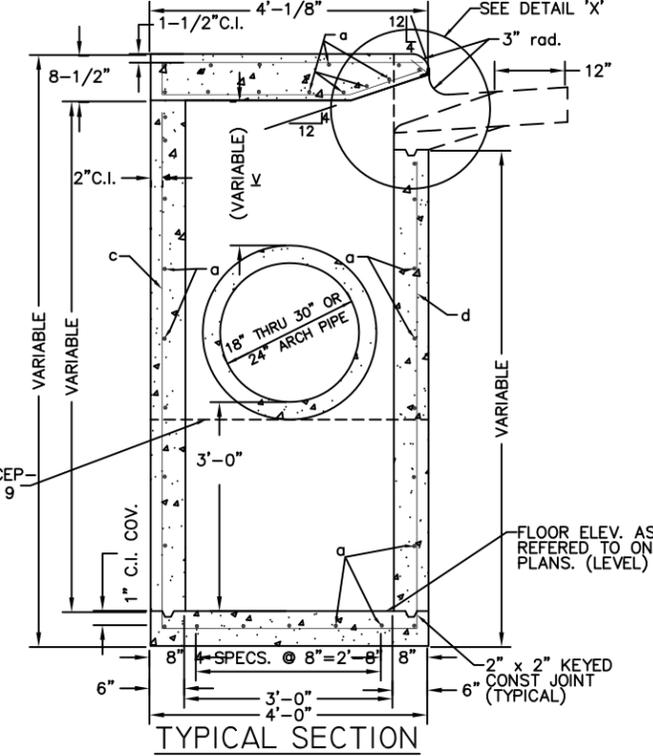
MANHOLE FRAME AND COVER SHALL BE A NEENAH R-6040, TYPE Y OR ENGINEER APPROVED EQUAL.



END ELEVATION



DETAIL 'X'



TYPICAL SECTION

**GENERAL NOTES**

- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
- DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
- ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
- UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I. REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
- THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
- TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
- MINIMUM 3/8" EXPANSION MATERIAL SHALL BE PLACE BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE INLET.
- TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
- IT IS ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH A CONSTRUCTION JOINT. IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
- ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.

**SPECIFICATION NOTE**

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 18" DIA. = -0.05 C.Y., 21" DIA. = -0.07C.Y., 24" DIA. = -0.09 C.Y., 27" DIA. = -0.11 C.Y., 30" DIA. = -0.14 C.Y. AND ARCH = -0.09 C.Y.

NOTE: FOR 18" TO 30" PIPES - MAX. REVISED: DECEMBER 2009

**ESTIMATED QUANTITIES**

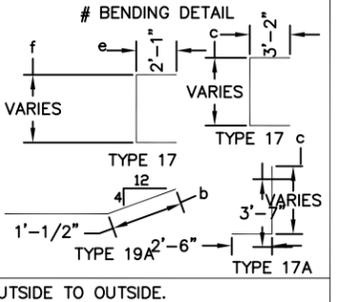
ITEM	UNIT	18" DIA. OUTLET		21" DIA. OUTLET		24" DIA. OUTLET		27" DIA. OUTLET		30" DIA. OUTLET		24" ARCH OUTLET	
		CONSTANT	VARIABLE										
* CLASS M6 CONCRETE	CUYDS	4.31	0.49V	4.45	0.49V	4.59	0.49V	4.73	0.49V	4.87	0.49V	4.35	0.49V
REINFORCEMENT-CONC. MASONRY	LBS	724	68.6V	734	68.6V	743	68.6V	786	68.6V	796	68.6V	727	68.6V
MANHOLE RIM & COVER-TYPE Y	EACH	1	---	1	---	1	---	1	---	1	---	1	---

**REINFORCING SCHEDULE**

		18" DIA. PIPE		21" DIA. PIPE		24" DIA. PIPE		27" DIA. PIPE		30" DIA. PIPE		24" ARCH PIPE		
MK	SZ	TYPE	NO.	LENGTH	NO.	LENGTH								
*a	5	STR	21+2V	10'-3"	21+2V	10'-3"	21+2V	10'-3"	23+2V	10'-3"	23+2V	10'-3"	21+2V	10'-3"
*b	4	19A	11	3'-9"	11	3'-3"	11	3'-3"	11	3'-3"	11	3'-3"	11	3'-3"
*c	4	17	12	8'-1"+V	12	8'-41/4"+V	12	8'-71/2"+V	12	8'103/4"+V	12	9'-2"+V	12	8'-2"+V
*d	5	17A	13	3'-8"+V	13	3'-11"+V	13	4'-2"+V	13	4'-6"+V	13	4'-9"+V	13	3'-9"+V
*e	4	17	4+2V	7'-9"	4+2V	7'-9"	4+2V	7'-9"	6+2V	7'-9"	6+2V	7'-9"	4+2V	7'-9"
*f	4	17	14	6'-6"+V	14	6'-91/4"+V	14	7'-1/2"+V	14	7'-33/4"+V	14	7'-7"+V	14	6'-7"+V

\* CUT AND BEND IN FIELD AS NECESSARY TO FIT

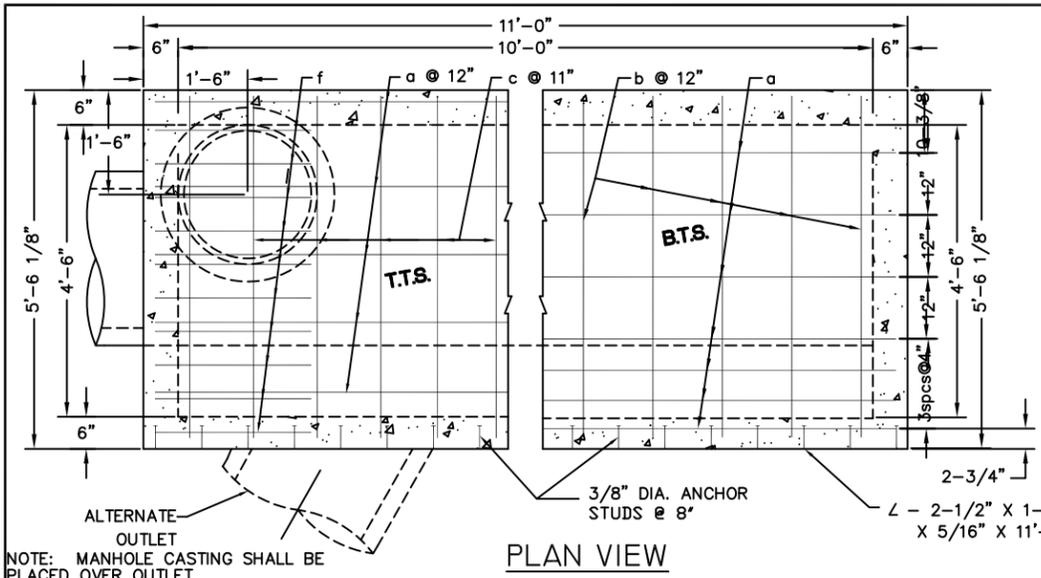
# ALL REINFORCING STEEL DIMENSIONS ARE OUTSIDE TO OUTSIDE.



CITY OF CANTON

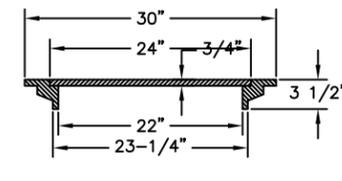
STANDARD 10'-0" S.F. SUMP  
TYPE STORM SEWER INLET

SPECIFICATION REFERENCE NO. 460	PLATE NUMBER 460.10
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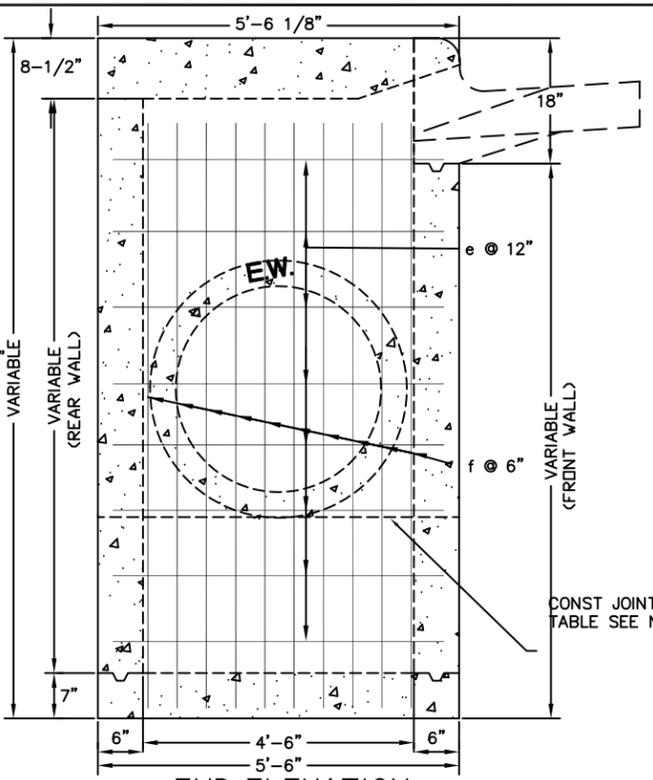


**LEGEND FOR PLACING RE-STEEL**

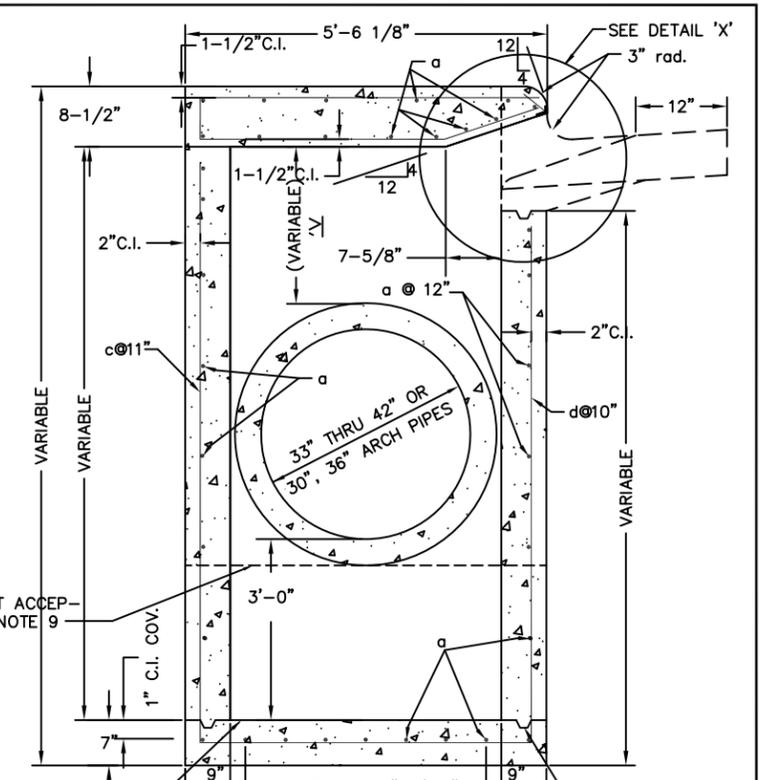
T.T.S. ~ TOP OF TOP SLAB
B.T.S. ~ BOTTOM OF TOP SLAB
F.W. ~ FRONT WALL
R.W. ~ REAR WALL
E.W. ~ END WALL
B.S. ~ BOTTOM SLAB



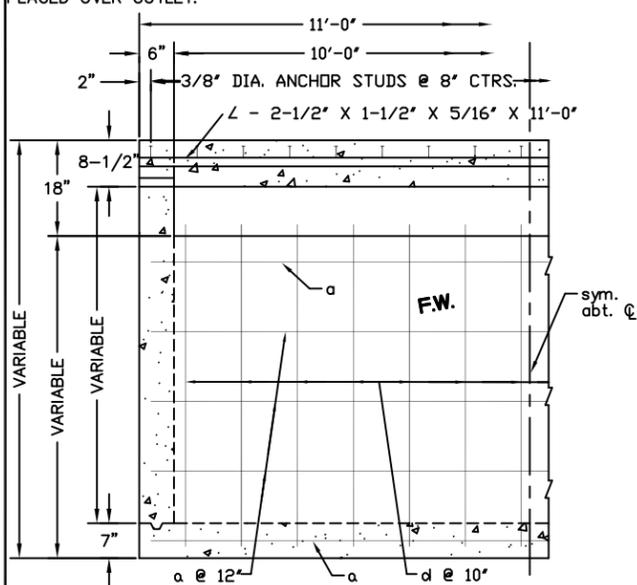
**TYPICAL SECTION THRU MANHOLE ASSEMBLY**  
MANHOLE FRAME AND COVER SHALL BE A NENAH R-6040, TYPE Y OR ENGINEER APPROVED EQUAL.



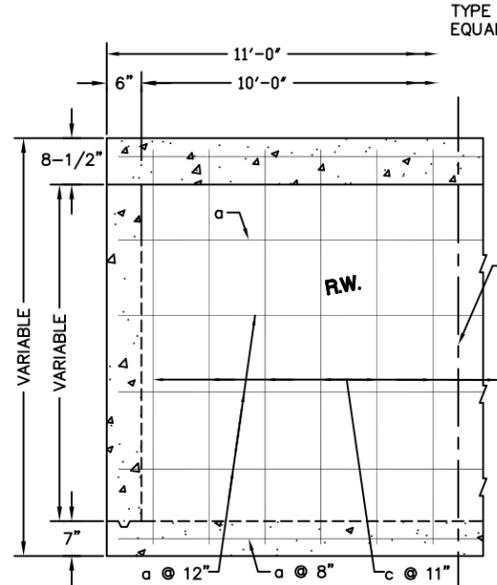
**END ELEVATION**



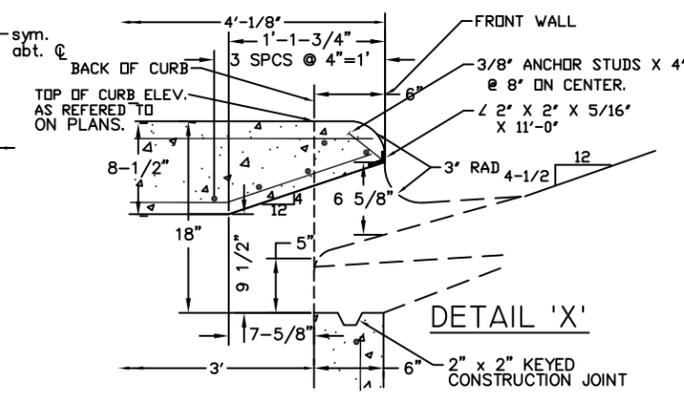
**TYPICAL SECTION**



**PART ELEVATION**



**PART ELEVATION**



**DETAIL 'X'**

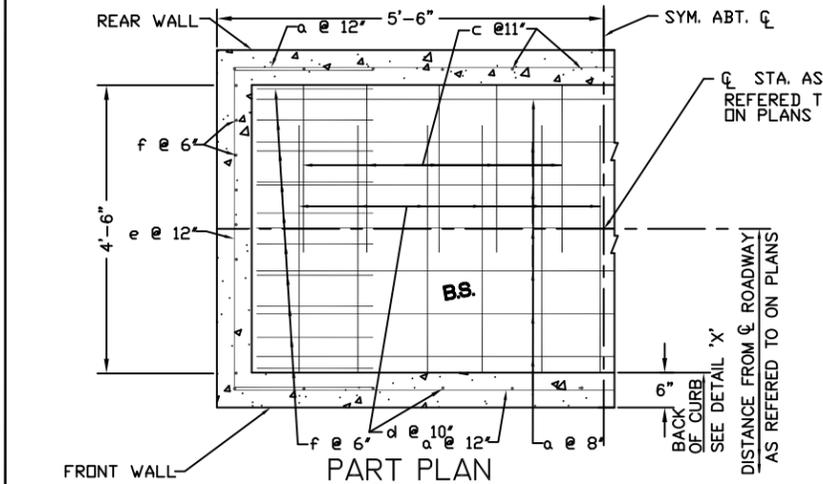
**GENERAL NOTES**

- ALL EXPOSED EDGES SHALL BE CHAMFERED 1".
- DESIGN SPECIFICATION: A.A.S.H.T.O. SPECIFICATIONS FOR HIGHWAY BRIDGES, LATEST EDITION.
- ALL REINFORCING STEEL SHALL CONFORM TO A.S.T.M. A615 GRADE 60.
- UNIT STRESSES: CONCRETE:  $f_c = 1,600$  P.S.I.;  $f_c = 4,000$  P.S.I. REINFORCING STEEL:  $f_s = 20,000$  P.S.I.
- THE COST OF ANGLE, STUDS AND GALV. SHALL BE ABSORBED IN THE PRICE BID FOR REINFORCING STEEL OR UNIT PRICE FOR EACH INLET.
- TRANSITION TO FULL INLET OPENING DEPTH SHALL BE 3" EACH SIDE OF OUTSIDE WALLS.
- MINIMUM  $3/8$ " EXPANSION MATERIAL SHALL BE PLACE BETWEEN THE CURB AND THE INLET LID ON BOTH SIDES OF THE INLET.
- TOOLED JOINTS SHALL BE PLACED ACROSS THE GUTTER PAN AT THE OUTSIDE WALLS OF THE INLET STRUCTURE.
- IT IS ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH A CONSTRUCTION JOINT. IT IS NOT ACCEPTABLE TO CONSTRUCT THIS STRUCTURE WITH THE PIPE CONNECTION AS A NON-MONOLITHIC INSTALLATION.
- ALL REINFORCING STEEL IS TO BE TIED IN PLACE PRIOR TO THE START OF CONCRETE PLACEMENT.

**SPECIFICATION NOTE**

USE SOUTH DAKOTA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION AND REQUIRED PROVISIONS, SUPPLEMENTAL SPECIFICATIONS AND/OR SPECIAL PROVISIONS AS INCLUDED IN THE PROPOSAL.

\* CONSTANT SHALL BE REDUCED FOR THE APPROPRIATE PIPE OR COMBINATION OF PIPES, THUS; 33" DIA. = -0.17 C.Y., 36" DIA. = -0.20C.Y., 42" DIA. = -0.26 C.Y., 30" ARCH = -0.14 C.Y., 36" ARCH = -0.19



**PART PLAN**

**ESTIMATED QUANTITIES**

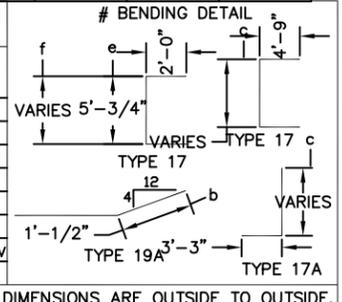
ITEM	UNIT	10' LONG INLET									
		33" DIA. OUTLET		36" DIA. OUTLET		42" DIA. OUTLET		30" ARCH OUTLET		36" ARCH OUTLET	
		CONSTANT	VARIABLE								
* CLASS M6 CONCRETE	CUYDS	6.33	0.55V	6.49	0.55V	6.80	0.55V	5.84	0.55V	6.06	0.55V
REINFORCEMENT-CONC. MASONRY	LBS	1016	78.8V	1028	78.8V	1087	78.8V	944	78.8V	994	78.8V
MANHOLE RIM & COVER-TYPE Y	EACH	1	---	1	---	1	---	1	---	1	---

**REINFORCING SCHEDULE**

		33" DIA. PIPE		36" DIA. PIPE		42" DIA. PIPE		30" ARCH PIPE		36" ARCH PIPE		
MK	SZ	TYPE	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH
*a	5	STR	27+2V	10'-3"	27+2V	10'-3"	29+2V	10'-3"	25+2V	10'-3"	27+2V	10'-3"
*b	4	19A	11	4'-9"	11	4'-9"	11	4'-9"	11	4'-9"	11	4'-9"
*c	5	17	12	11'4 1/2"+V	12	12'-3/4"+V	12	12'7 1/4"+V	12	10'11 1/4"+V	12	11'-4"+V
*d	6	17A	13	5'-9"+V	13	6'-0"+V	13	6'-7"+V	13	4'-11"+V	13	5'-3"+V
*e	4	17	6+2V	9'-0"	6+2V	9'-0"	8+2V	9'-0"	4+2V	9'-0"	6+2V	9'-0"
*f	4	17	20	7'8 1/4"+V	20	7'11 1/2"+V	20	8'-6"+V	20	6'-10"+V	20	7'2 3/4"+V

\* CUT AND BEND IN FIELD AS NECESSARY TO FIT

# ALL REINFORCING STEEL DIMENSIONS ARE OUTSIDE TO OUTSIDE.



NOTE: FOR 33" TO 42" PIPES - MAX. REVISED: DECEMBER 2009

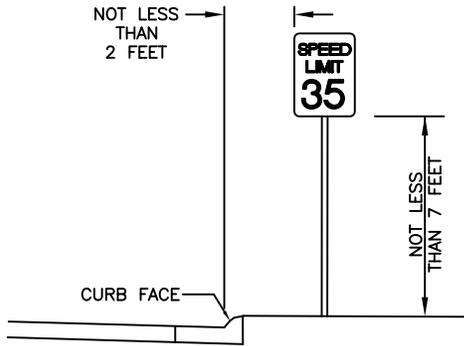
CITY OF CANTON

STANDARD 10'-0" S.F. SUMP  
TYPE STORM SEWER INLET

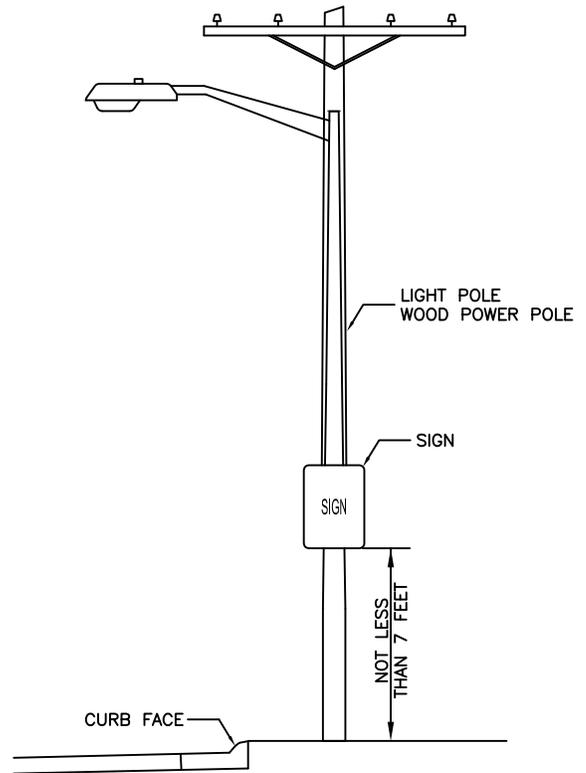
SPECIFICATION REFERENCE NO. 460	PLATE NUMBER 460.11
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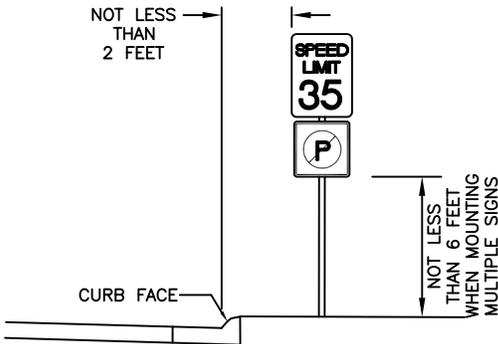
ROADSIDE SINGLE SIGN



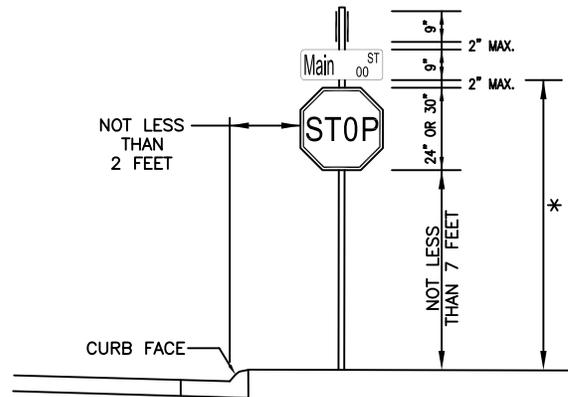
STREET LIGHT/WOODEN POWER POLE MOUNT



ROADSIDE MULTIPLE SIGN



STOP/STREET NAME SIGNS



\* 10' WHEN STREET NAME SIGNS ARE MOUNTED ALONE ON POST.

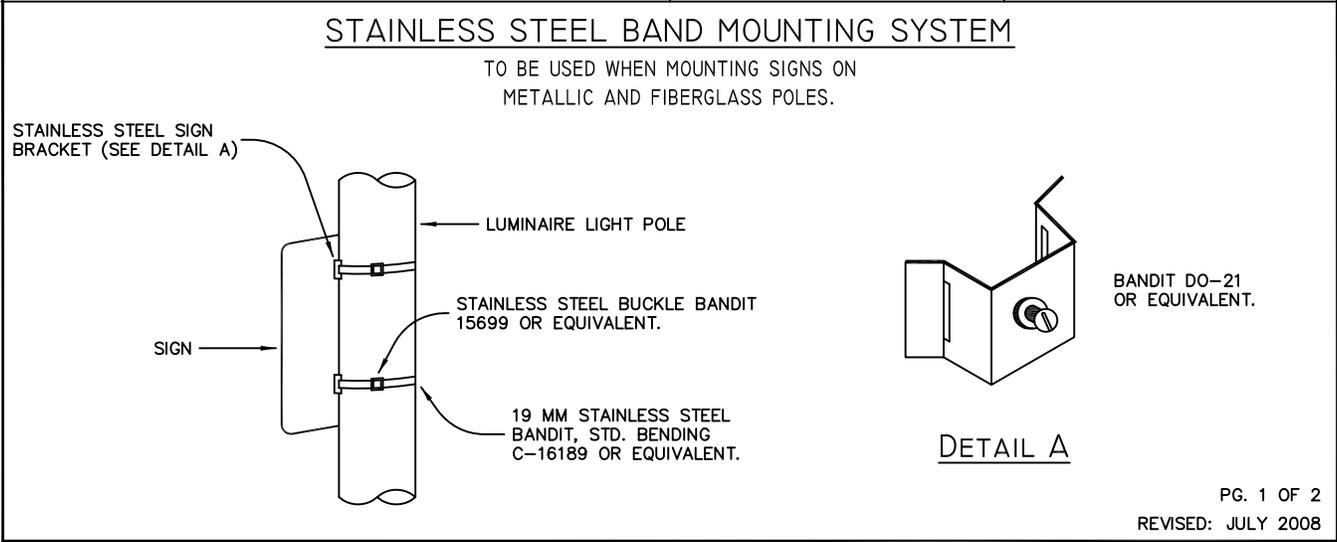
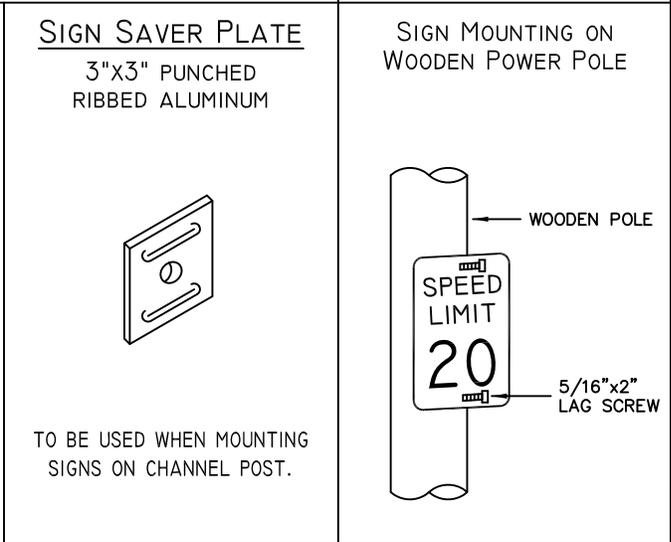
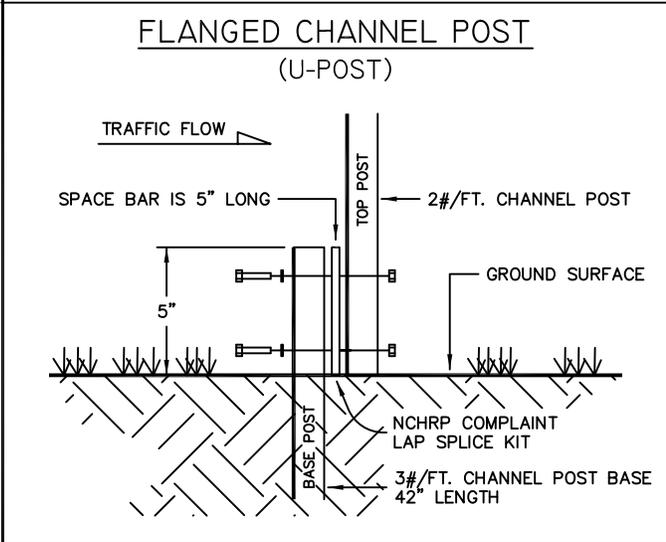
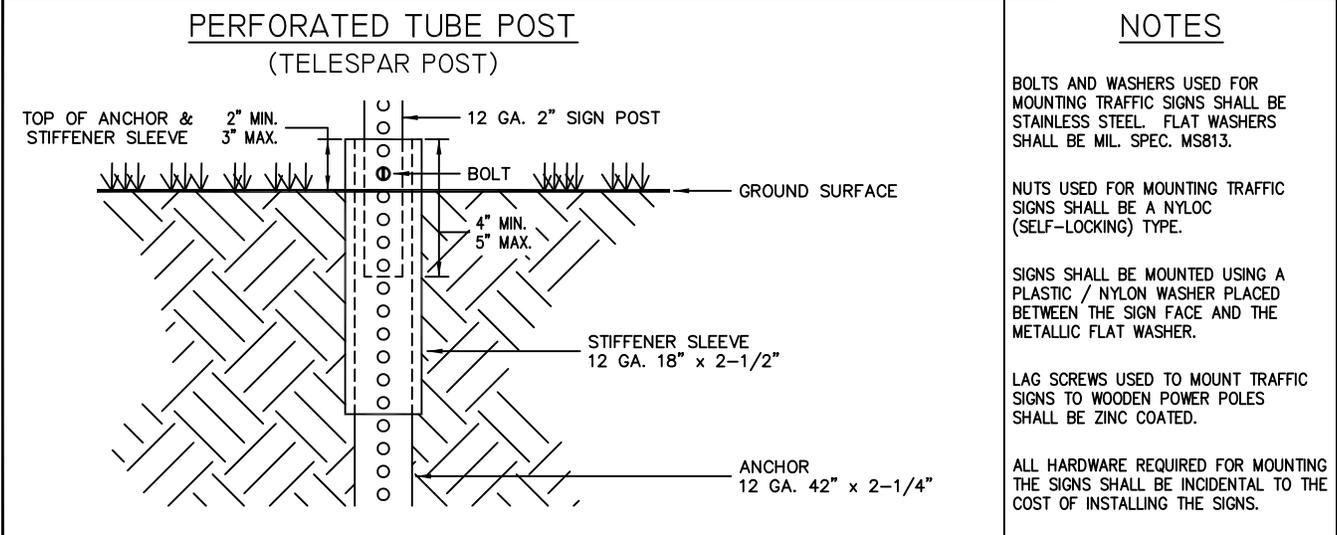
NOTE: ALL R7 & R8 SERIES SIGNS WITH ARROWS SHALL BE INSTALLED AT A 45 DEGREE ANGLE TO THE STREET.

REVISED: SEPTEMBER 2010

SPECIFICATION  
REFERENCE  
NO.  
632

CITY OF CANTON  
HEIGHTS AND LATERAL LOCATIONS OF  
SIGNS FOR TYPICAL URBAN INSTALLATION

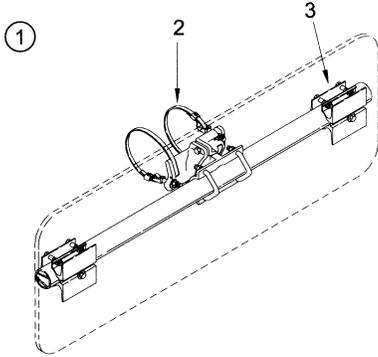
PLATE  
NUMBER  
632.10



SPECIFICATION REFERENCE NO. 632	CITY OF CANTON  SIGN MOUNT SPECIFICATIONS	PLATE NUMBER 632.20
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# MAST ARM SIGN MOUNTINGS

## ASTRO SIGN-BRAC BAND MOUNT



ITEM	DESCRIPTION	PART NO.
①	ASTRO SIGN-BRAC, Stellar Series Band Mount for Overhead Street Name Signs .....	AS-0128
2	CLAMP KIT, Stellar Series Band Mount .....	AS-3004
3	SIGN CLAMP, 4" w/ AB-5010 Hardware Kit .....	AB-0502

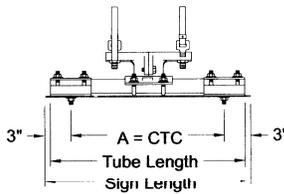
**Notes:**

- All assemblies are supplied standard with stainless fasteners and natural aluminum alodine coating. Stainless upgrade to include stainless steel clamp screws.
- Suggested maximum sign face of 16 sq. ft. per bracket.
- Please specify options when ordering.

**SIGNS 1'-6" to 3'-0" LONG**

SIGN LENGTH	TUBE LENGTH	CTC A
1'-6"	16"	12"
2'-0"	22"	18"
2'-6"	28"	24"
3'-0"	34"	30"

Maximum sign height: 48"

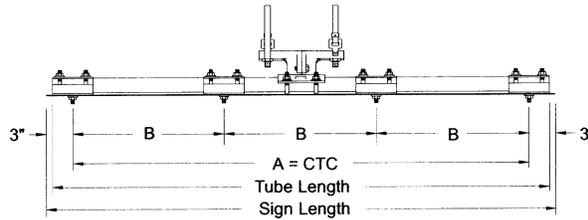


OPTIONS
CTC DIMENSIONS (see charts)
BAND LENGTH: 29", 36", 42", 48" or 56"
STAINLESS UPGRADE
PAINT

**SIGNS 3'-6" to 8'-0" LONG**

SIGN LENGTH	TUBE LENGTH	CTC A	B
3'-6"	40"	36"	12"
4'-0"	46"	42"	14"
4'-6"	52"	48"	16"
5'-0"	58"	54"	18"
5'-6"	64"	60"	20"
6'-0"	70"	66"	22"
6'-6"	76"	72"	24"
7'-0"	82"	78"	26"
7'-6"	88"	84"	28"
8'-0"	94"	90"	30"

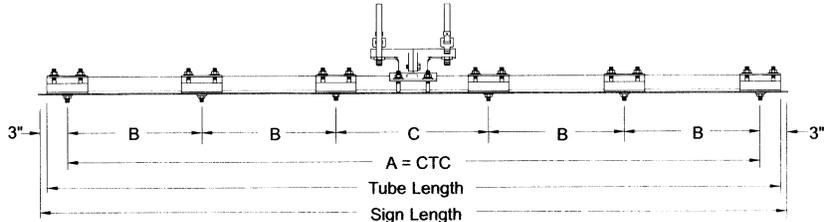
Maximum sign height: 24"



**SIGNS 8' to 10' LONG**

SIGN LENGTH	TUBE LENGTH	CTC A	B	C
8'-6"	100"	96"	19"	20"
9'-0"	106"	102"	20"	22"
9'-6"	112"	108"	21"	24"
10'-0"	118"	114"	22"	26"

Maximum sign height: 16"

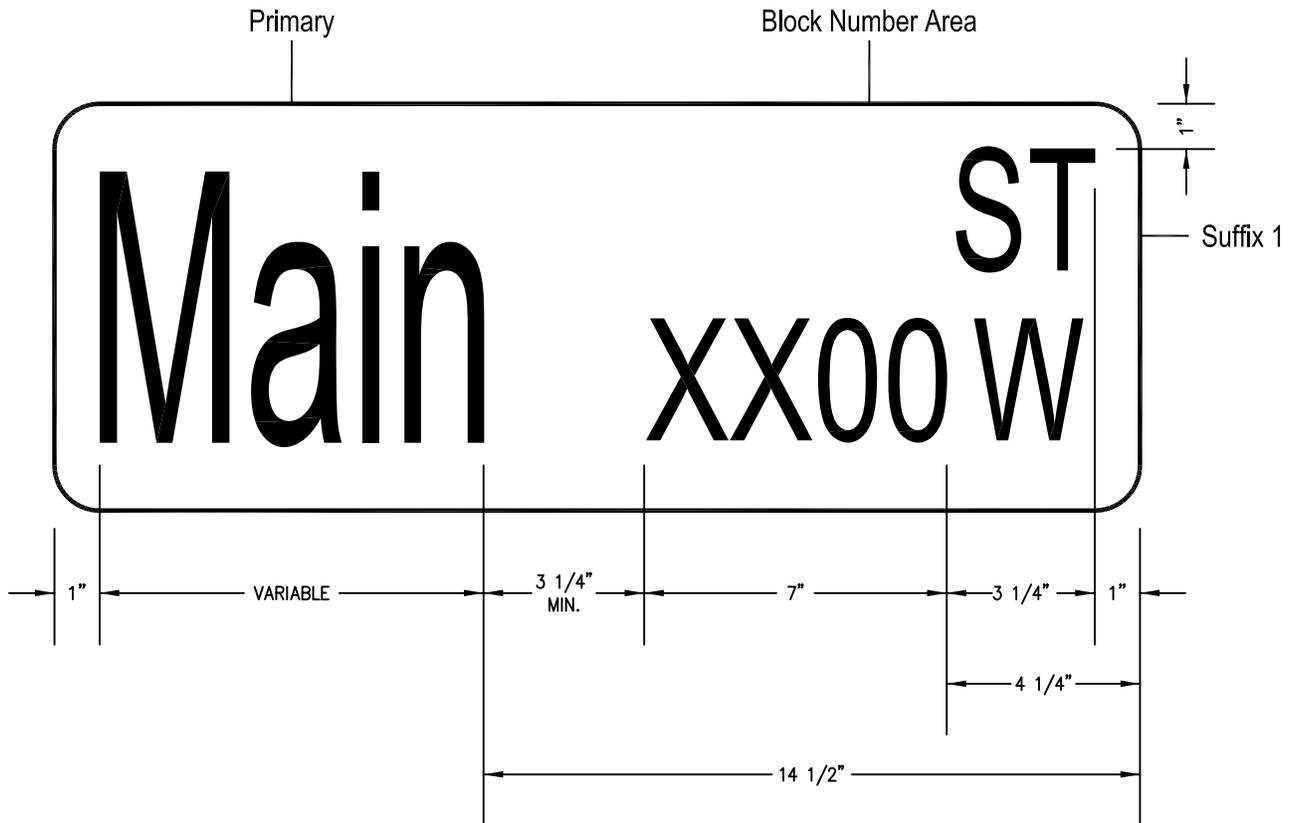


SPECIFICATION  
REFERENCE  
NO.  
632

CITY OF CANTON  
SIGN MOUNT SPECIFICATIONS

PLATE  
NUMBER  
632.20

# 9" STREET NAME SIGN



**PRIMARY:**

6 INCH UPPER CASE AND 4 1/2 INCH LOWER CASE  
(TO BE PUT ON BY SUPPLIER AND CENTERED IN SPACE WITH NO MORE THAN 80% COMPRESSION)

**SUFFIX 1:**

3 INCH CAPITAL LETTERS (TO BE PUT ON BY SUPPLIER)

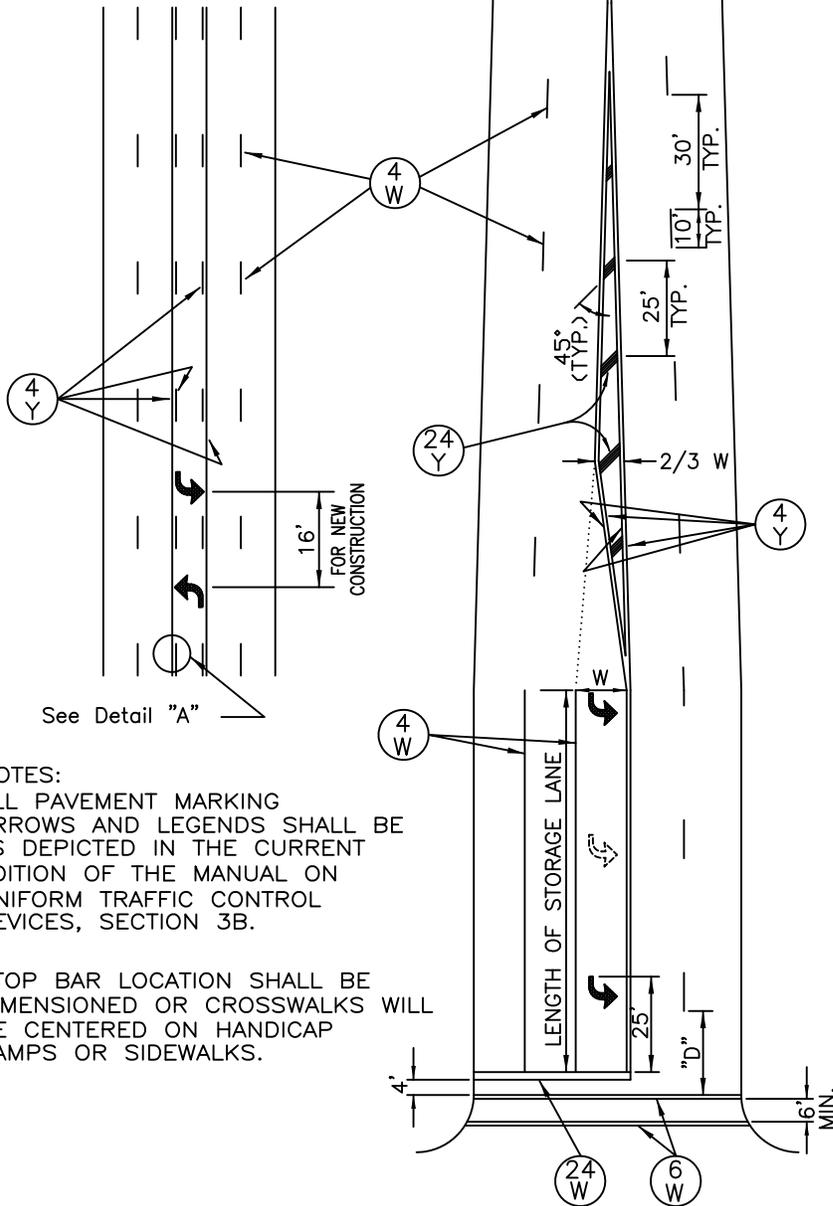
**BLOCK NUMBER AREA:**

TO BE PUT ON BY SUPPLIER/CONTRACTOR

REVISED: SEPTEMBER 2010

SPECIFICATION REFERENCE NO. 632	CITY OF CANTON  9" STREET NAME SIGN	PLATE NUMBER 632.30
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TYPICAL LIMITS OF PAVEMENT MARKING AT AN INTERSECTION, UNLESS OTHERWISE NOTED

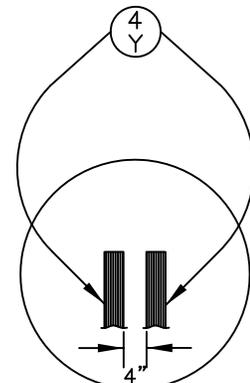


See Detail "A"

NOTES:  
ALL PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE AS DEPICTED IN THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, SECTION 3B.

STOP BAR LOCATION SHALL BE DIMENSIONED OR CROSSWALKS WILL BE CENTERED ON HANDICAP RAMPS OR SIDEWALKS.

KEY	ITEM
(4 W)	4" WHITE
(4 Y)	4" YELLOW
(6 W)	6" WHITE
(24 W)	24" WHITE
(24 Y)	24" YELLOW
➔	ARROW (10 SQ.FT.) (URBAN CONDITIONS)



DETAIL "A"

PAVEMENT MARKING ARROW SPACING FOR LEFT AND RIGHT TURN LANES:

FOR LANES 75 FEET OR LESS, ONE ARROW SHALL BE PLACED AT THE BEGINNING OF THE LANE.

FOR LANES 80-150 FEET, ONE ARROW SHALL BE PLACED AT THE BEGINNING OF THE LANE AND A SECOND ARROW PLACED 25 FEET FROM THE STOP BAR.

FOR LANES 155 FEET OR GREATER, ONE ARROW SHALL BE PLACED AT THE BEGINNING OF THE LANE, ONE ARROW PLACED 25 FEET FROM THE STOP BAR, AND A THIRD ARROW CENTERED BETWEEN THE OTHER TWO ARROWS.

DIMENSION "D" IS VARIABLE BUT SHALL NOT EXCEED 29'.

REVISED: JANUARY 2008

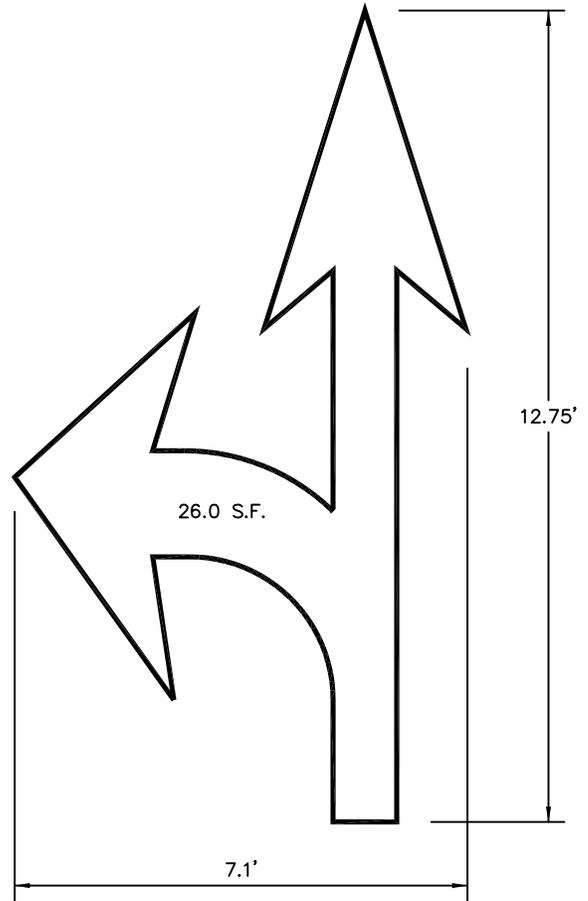
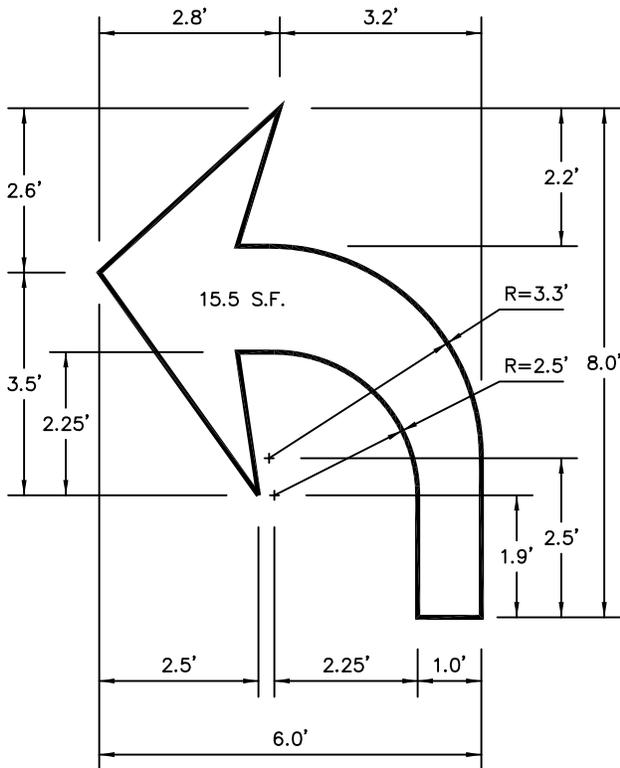
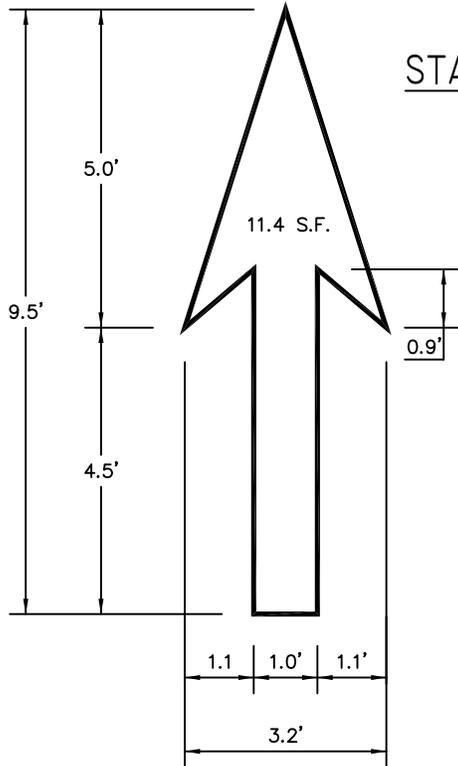
SPECIFICATION REFERENCE NO. 633

CITY OF CANTON  
PAVEMENT MARKINGS

PLATE NUMBER 633.10

# STANDARD SIZE PAVEMENT MARKING ARROWS

GENERAL NOTE: UNLESS OTHERWISE SPECIFIED, STANDARD SIZE PAVEMENT MARKING ARROWS SHALL BE USED ON ALL STREETS WITH POSTED SPEED LIMIT OF 45 MPH OR GREATER AND AT ALL INTERSTATE INTERCHANGES.



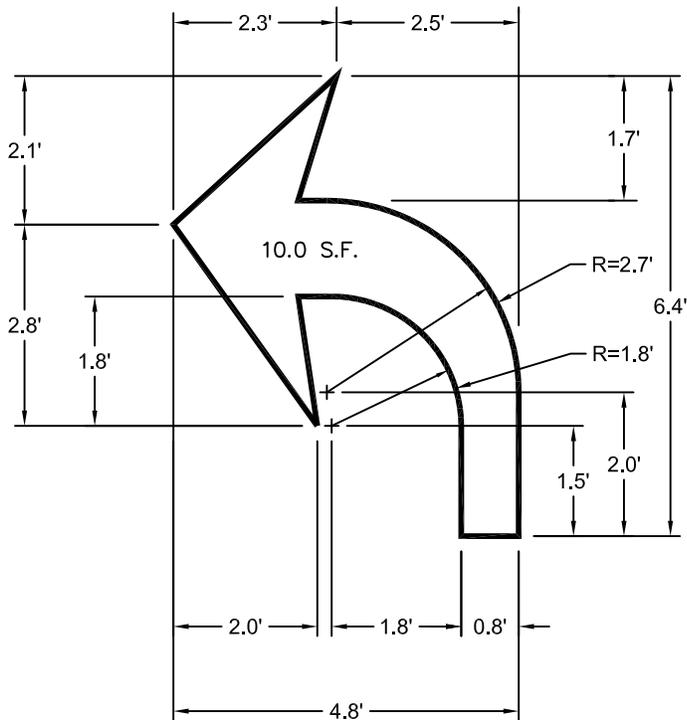
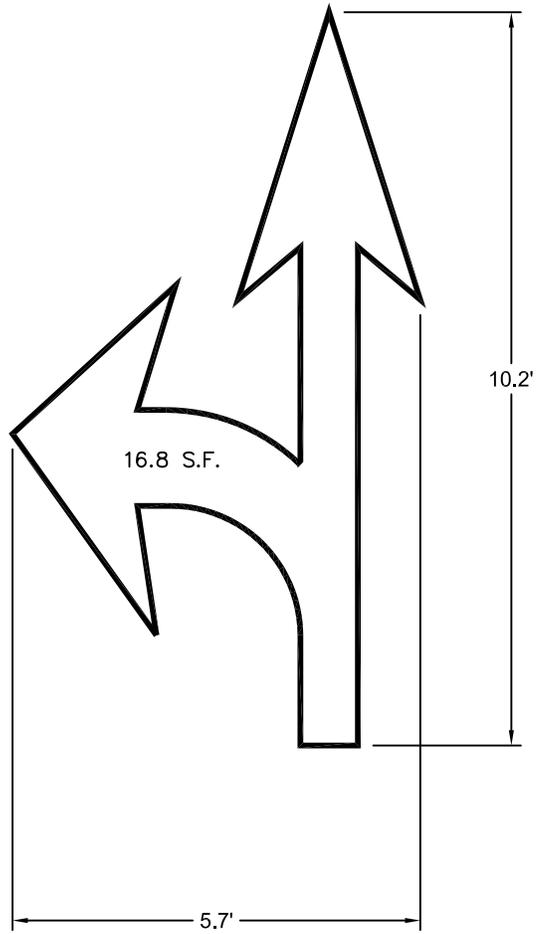
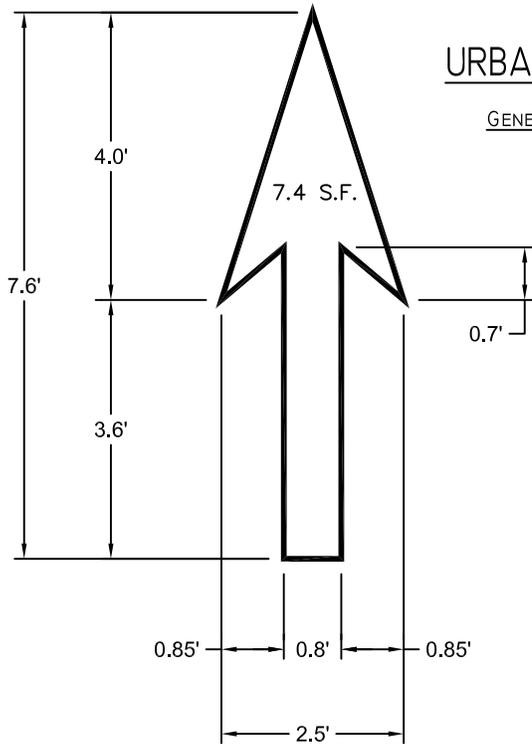
SPECIFICATION  
REFERENCE  
NO.  
633

CITY OF CANTON  
PAVEMENT MARKING ARROWS

PLATE  
NUMBER  
633.20

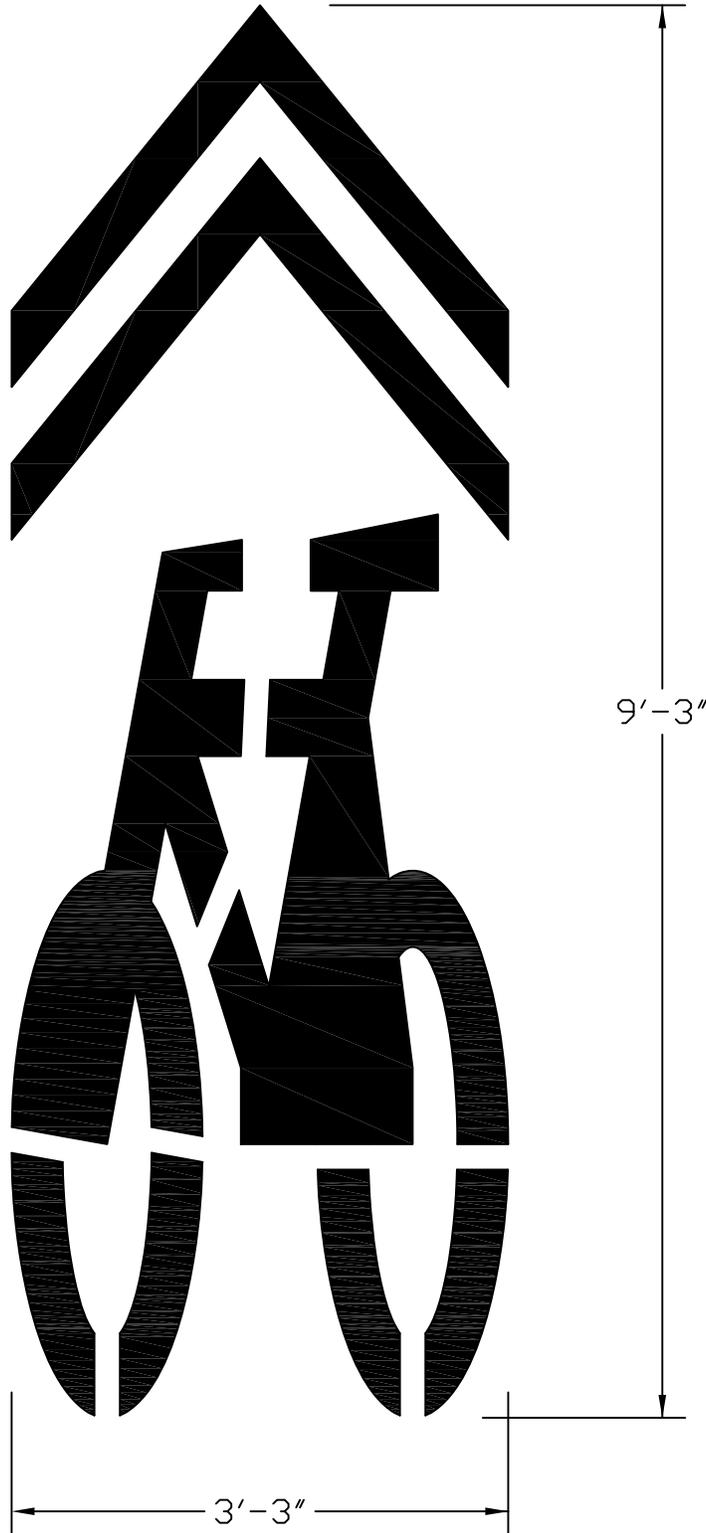
# URBAN SIZE PAVEMENT MARKING ARROWS

GENERAL NOTE: UNLESS OTHERWISE SPECIFIED, URBAN SIZE PAVEMENT MARKING ARROWS SHALL BE USED ON ALL STREETS WITH POSTED SPEED LIMIT OF 40 MPH OR LESS.



<p>SPECIFICATION REFERENCE NO. 633</p>	<p>CITY OF CANTON  PAVEMENT MARKING ARROWS</p>	<p>PLATE NUMBER 633.20</p>
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12.0 S.F.



9'-3"

3'-3"

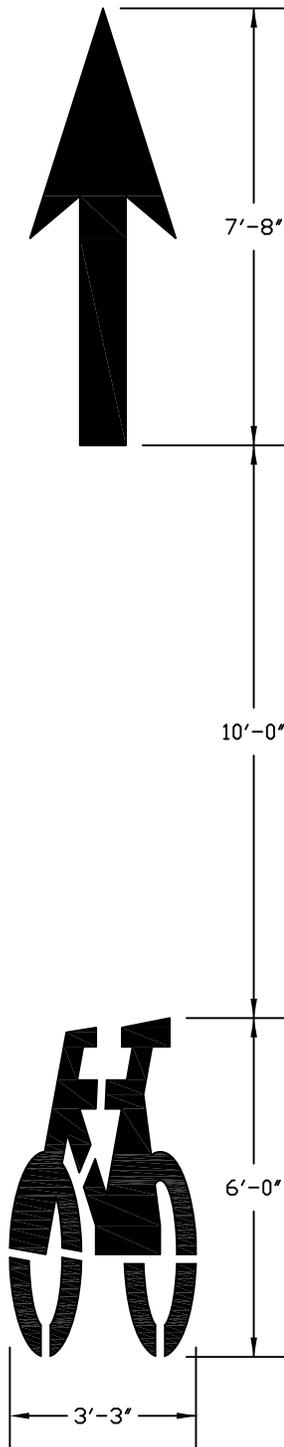
REVISED: SEPTEMBER 2010

SPECIFICATION  
REFERENCE  
NO.  
633

CITY OF CANTON  
SHARROW STRIPING DETAIL

PLATE  
NUMBER  
633.30

16.4 S.F.



REVISED: SEPTEMBER 2010

SPECIFICATION  
REFERENCE  
NO.  
633

CITY OF CANTON  
BICYCLE STRIPING DETAIL

PLATE  
NUMBER  
633.40

# TRAFFIC CONTROL (Typical Lane Closure)

**TAPER FORMULA:**

$L = S \times W$  FOR SPEEDS OF 45 OR MORE.

$L = WS^2/60$  FOR SPEEDS OF 40 OR LESS.

**WHERE:**

- L = MINIMUM LENGTH OF TAPER
- S = NUMERICAL VALUE OF POSTED SPEED LIMIT PRIOR TO WORK OR 85TH PERCENTILE SPEED.
- W = WIDTH OF OFFSET.

□ CHANNELIZING DEVICES

∞∞ ARROW PANEL

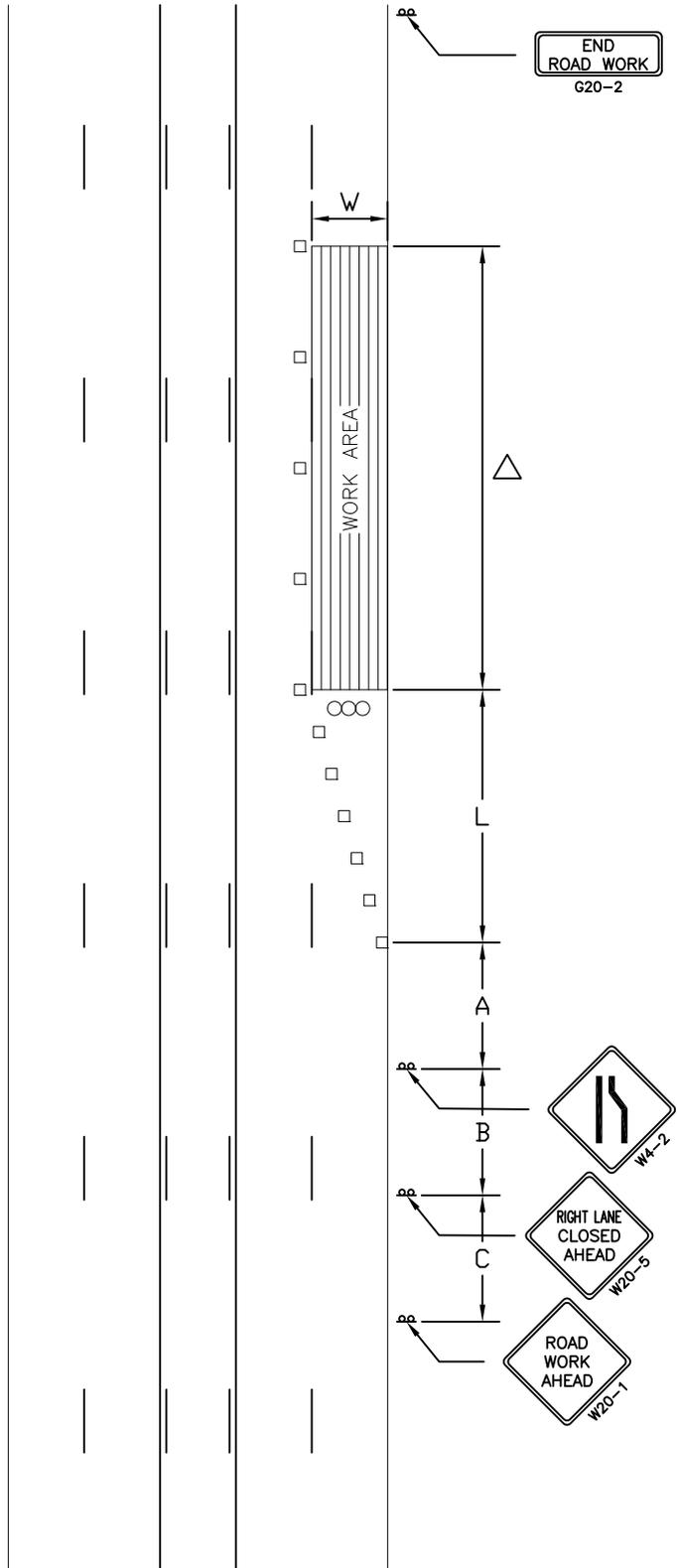
△ SPACING BETWEEN DEVICES SHALL BE UP TO 2 TIMES THE NUMERICAL VALUE OF THE POSTED SPEED LIMIT PRIOR TO WORK.

**NOTE:**

THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHALL BE APPROXIMATELY EQUAL IN FEET TO THE SPEED LIMIT.

IF THE ROAD HAS AN AADT OF LESS THAN 20,000, THE CLOSURE IS NOT IN PLACE OVERNIGHT, AND THE SPEED IS LESS THAN 40 MPH, THE W20-5 SIGN IS OPTIONAL.

POSTED SPEED PRIOR TO WORK (M.P.H.)	SPACING OF ADVANCE WARNING SIGNS (FEET)			TAPER LENGTH (FEET) (L)
	(A)	(B)	(C)	
0 - 25	100 - 200			$\frac{W \cdot S^2}{60}$
30	120 - 240			$\frac{W \cdot S^2}{60}$
35	140 - 280			$\frac{W \cdot S^2}{60}$
40	160 - 320			$\frac{W \cdot S^2}{60}$
45	180 - 360			$W \cdot S$
50	200 - 400			$W \cdot S$
55	220 - 440			$W \cdot S$



REVISED: SEPTEMBER 2010

SPECIFICATION  
REFERENCE  
NO.  
634

CITY OF CANTON  
TYPICAL APPLICATION - CONSTRUCTION OPERATIONS  
TYPICAL LANE CLOSURE

PLATE  
NUMBER  
634.01

**CAST IRON COVER**

18" DIA JB - NEENAH FOUNDRY COMPANY  
R-5900-C SERIES OR ENGINEER APPROVED.

24" DIA JB - NEENAH FOUNDRY COMPANY  
R-5900-E SERIES OR ENGINEER APPROVED.

**NOTES:**

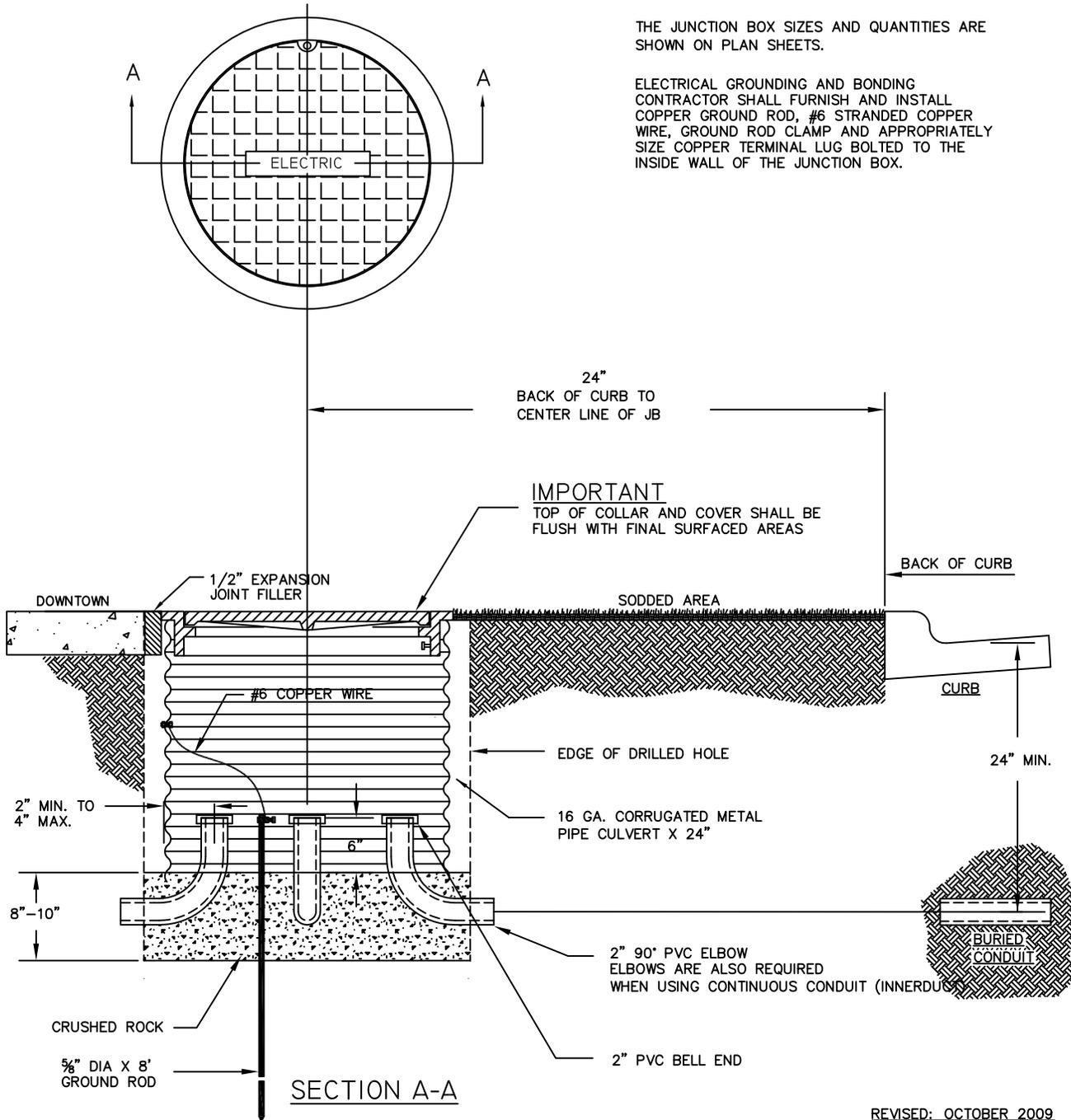
ALLOW SUFFICIENT SLACK SO THAT CABLE ENDS CAN BE PULLED TO 18" ABOVE JUNCTION BOX.

NUMBER OF CONDUIT ENTRANCES VARIES WITH LOCATION OF JUNCTION BOX.

COVER SHALL BE STAMPED ELECTRIC.

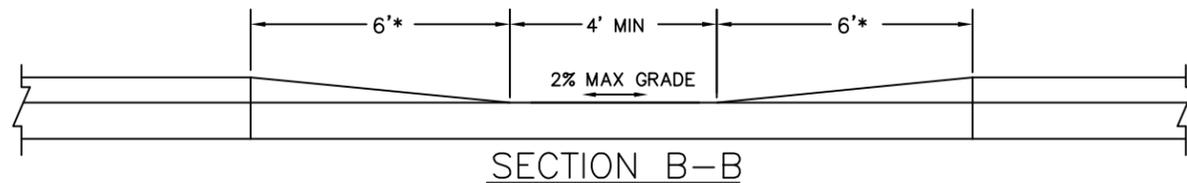
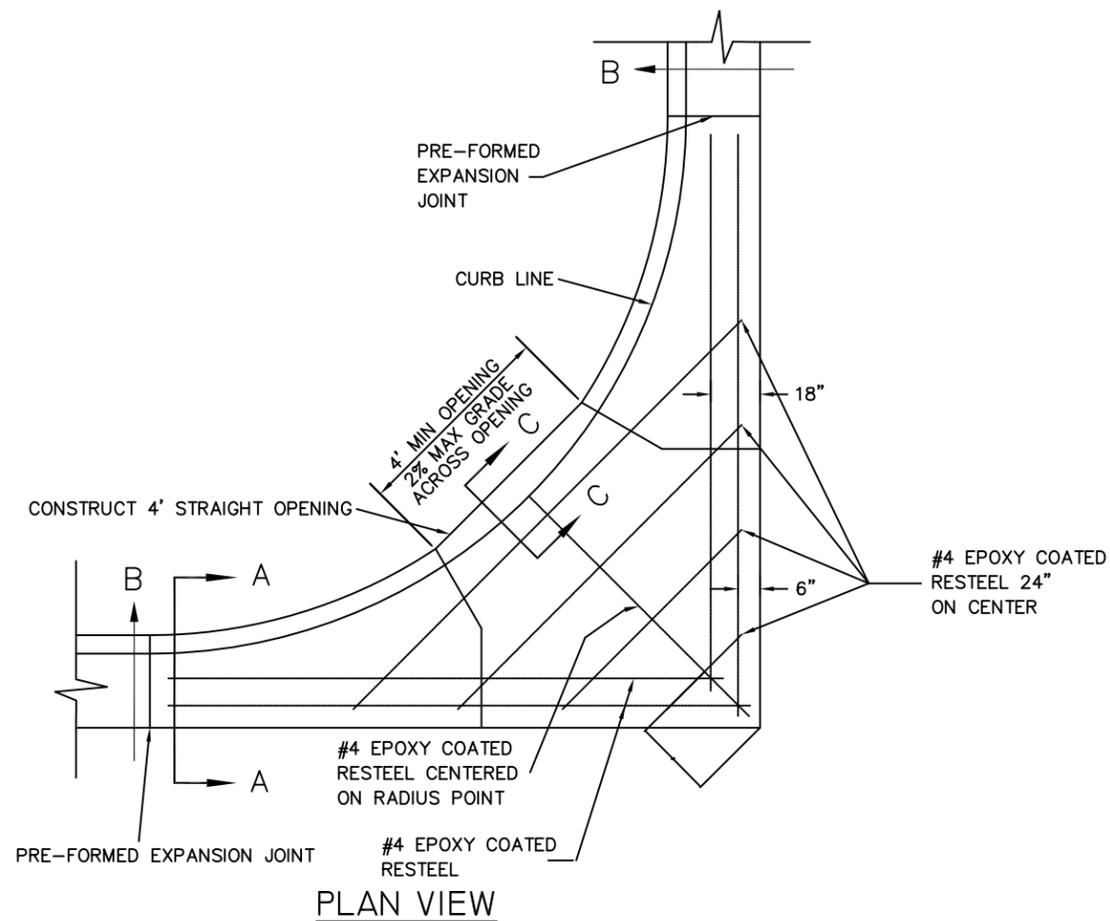
THE JUNCTION BOX SIZES AND QUANTITIES ARE SHOWN ON PLAN SHEETS.

ELECTRICAL GROUNDING AND BONDING CONTRACTOR SHALL FURNISH AND INSTALL COPPER GROUND ROD, #6 STRANDED COPPER WIRE, GROUND ROD CLAMP AND APPROPRIATELY SIZE COPPER TERMINAL LUG BOLTED TO THE INSIDE WALL OF THE JUNCTION BOX.



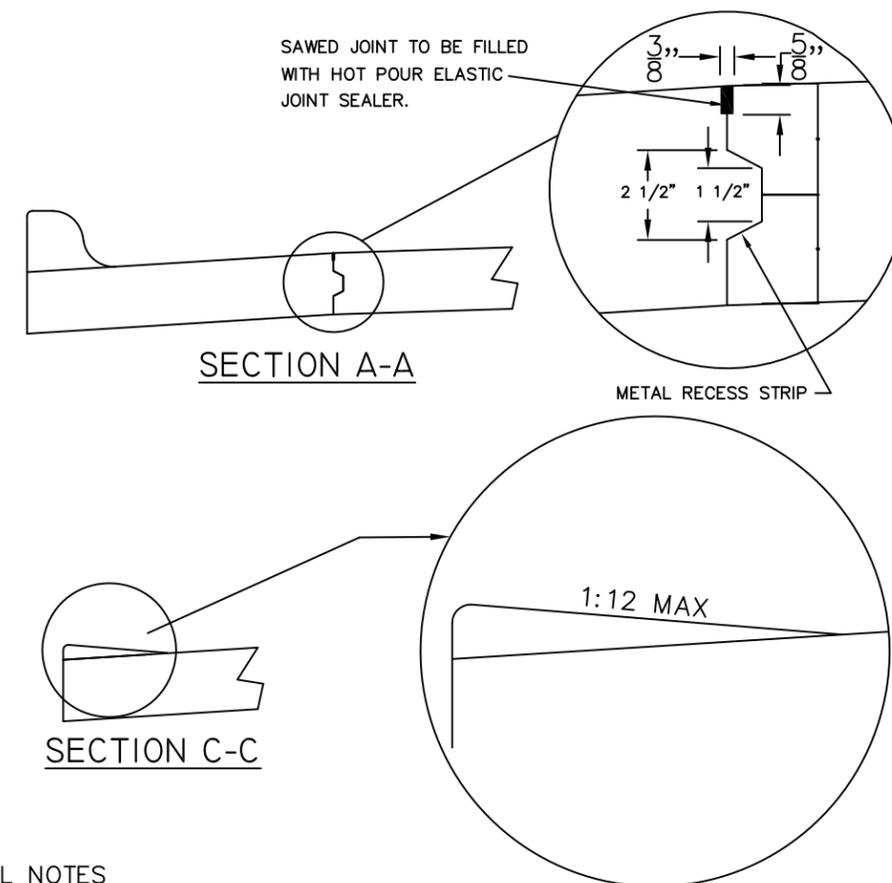
REVISED: OCTOBER 2009

<p>SPECIFICATION REFERENCE 635B</p>	<p>CITY OF CANTON JUNCTION BOX - LIGHTING</p>	<p>PLATE NUMBER 635.70</p>
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\* REQUIREMENT: WHEN BACK OF CURB SIDEWALK IS GOING TO BE INSTALLED IT WILL BE NECESSARY TO EXTEND THE TAPER LENGTH ACCORDING TO TABLE BELOW TO ACHIEVE THE 8.33% MAXIMUM RUNNING SLOPE ON THE SIDEWALK RAMP ADJACENT TO THE CURB. THE TAPER LENGTH WILL BE LIMITED TO 15' IN LENGTH.

STREET GRADE	TAPER LENGTH 1:12 MAX	
	LOW SIDE	HIGH SIDE
1%	6'-0"	7'-2"
2%	6'-0"	8'-4"
3%	6'-0"	10'-0"
4%	6'-0"	12'-6"
5% +	6'-0"	15'-0"



**GENERAL NOTES**

ALL REINFORCING STEEL SHALL HAVE 1-1/2" CLEARANCE AND SHALL CONFORM TO A.S.T.M. A615, GRADE 40.

M-6 CONCRETE SHALL BE USED IN THE CONSTRUCTION OF THE FILLETS.

THE CURB SHALL BE MONOLITHIC WITH THE FILLET. NO SEPARATE PAYMENT WILL BE MADE FOR THE CURB AS IT WILL BE CONSIDERED PART OF THE FILLET.

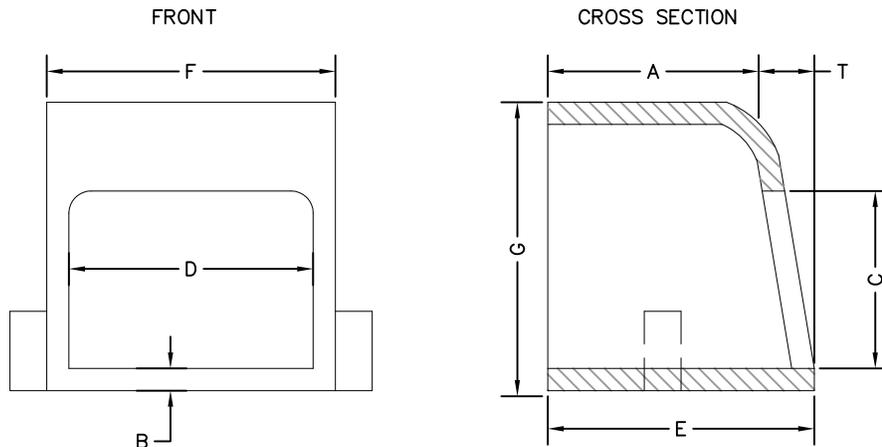
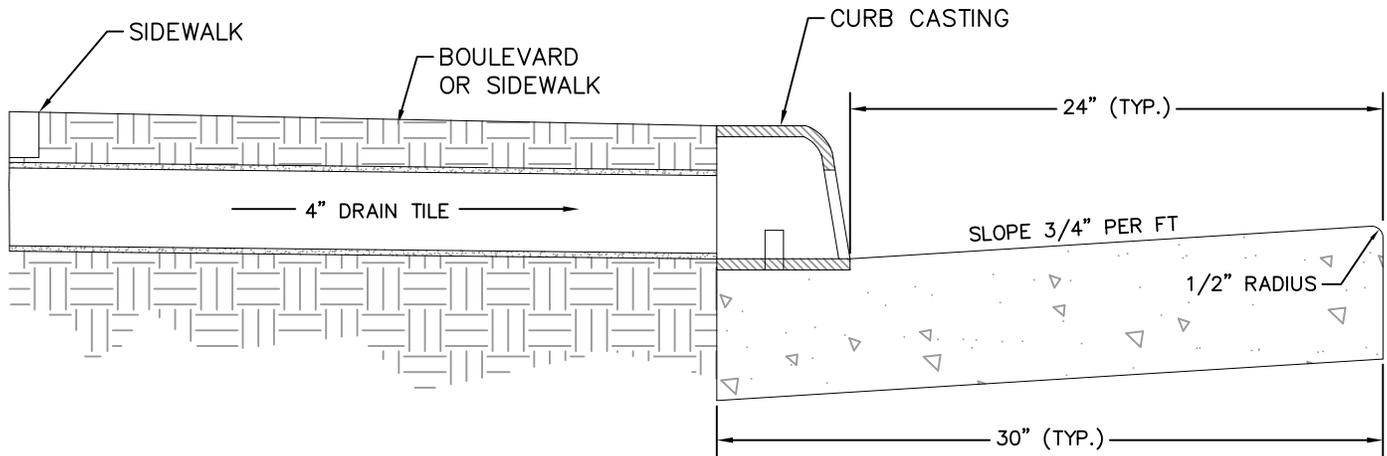
FILLET DEPTH SHALL BE EQUAL TO THE DEPTH OF ADJOINING PAVEMENT BUT NOT LESS THAN 6".

FILLETS ADJACENT TO PCC PAVEMENT SHALL HAVE A KEYWAY CONSTRUCTION JOINT WITHOUT TIE BAR.

FILLETS SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD OF FILLET SECTION. PAYMENT INCLUDES ALL LABOR AND MATERIALS NECESSARY TO COMPLETE THE WORK.

CITY OF CANTON	
CONCRETE FILLET SECTION AND CURB OPENING	
SPECIFICATION REFERENCE NO. 650	PLATE NUMBER SPECIAL

SECTION SHOWING CURB WIDTH



NO SCALE

DIMENSIONS IN INCHES

NEENAH CATALOG NO.	A	B	C	D	E	F	G	T	WT. LBS.
R-3262-3	5	1/2	4	5 1/2	6	6 1/2	6 1/2	1	20
R-3262-4	5	1/2	4	16	7	17	6 3/8	2	45

CURB OPENING CASTINGS ARE USED AS SHOWN, WHERE IT IS ADVANTAGEOUS TO TRANSMIT STORM WATER FROM DOWNSPOUT IN SHALLOW DRAINS AND DISCHARGE IT THROUGH THE CURB TO THE STREET GUTTER.

WHERE STORM SEWER IS AVAILABLE, DISCHARGE SHALL BE DIRECTLY TO THE STORM SEWER.

FOR PCC PAVEMENT DEPTH OF GUTTER SHALL EQUAL THAT OF PAVEMENT AND LONGITUDINAL CONSTRUCTION JOINTS WITH TIE BARS SHALL BE USED WHERE CURB & GUTTER IS POURED SEPERATELY.

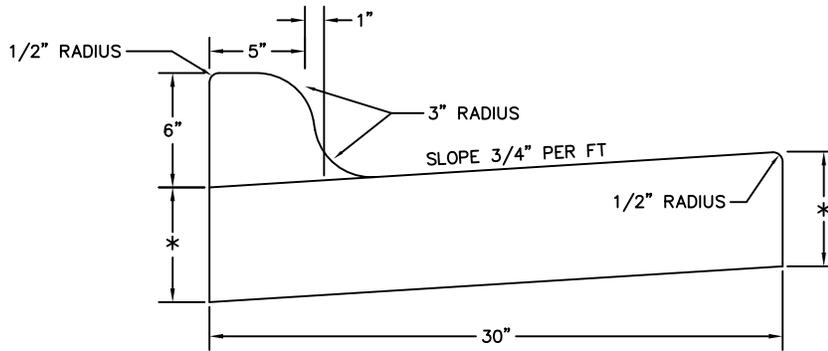
M-6 CONCRETE SHALL BE USED IN CONSTRUCTION OF THE CURB & GUTTER.

REVISED: MARCH 2000

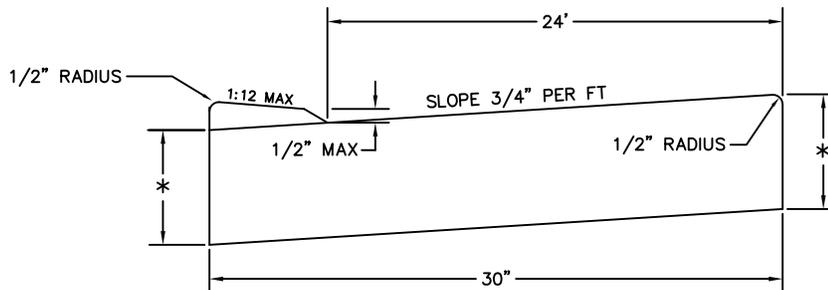
SPECIFICATION  
REFERENCE  
NO.  
650

CITY OF CANTON  
STORMWATER CURB OPENING

PLATE  
NUMBER  
650.01 SP

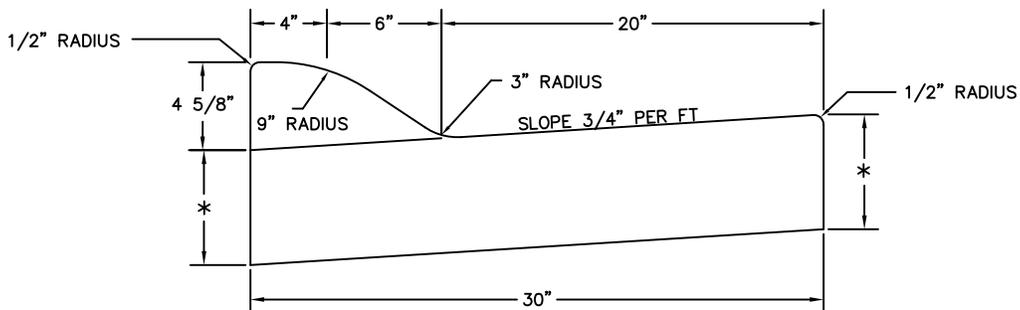


STANDARD CURB AND GUTTER



DROP TYPE CURB AND GUTTER

SEE "CONCRETE FILLET SECTION AND CURB OPENING" STANDARD PLATE FOR CURB OPENING REQUIREMENTS WHEN CURB AND GUTTER IS POURED IN LIEU OF FILLETS AT INTERSECTIONS.



S TYPE CURB AND GUTTER

(OPTIONAL IN CUL-DE-SACS ONLY)

\* THICKNESS SHALL BE EQUAL TO THE DEPTH OF THE ADJOINING PAVEMENT BUT NOT LESS THAN 6".

GENERAL

ON PCC PAVEMENT A LONGITUDINAL CONSTRUCTION JOINT WITH TIE BARS SHALL BE USED WHEN CURB AND GUTTER IS POURED SEPARATELY.

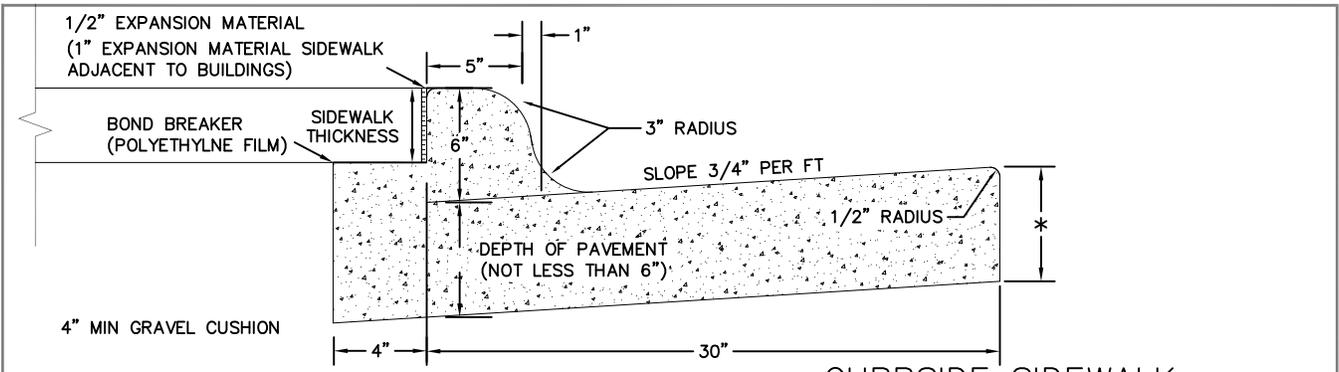
M-6 CONCRETE SHALL BE USED IN THE CONSTRUCTION OF THE CURB AND GUTTER.

REVISED: JANUARY 2005

SPECIFICATION  
REFERENCE  
NO.  
650

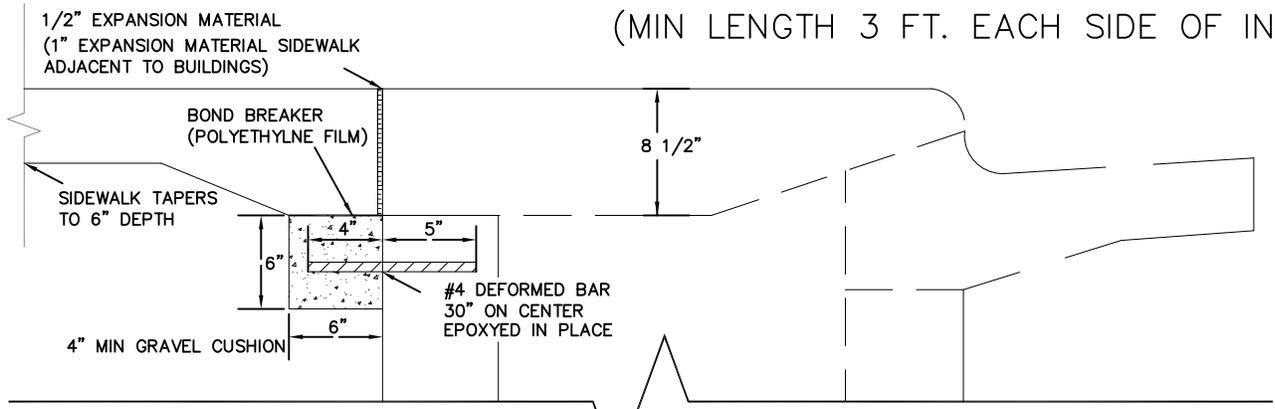
CITY OF CANTON  
CONCRETE CURB AND  
GUTTER SECTION

PLATE  
NUMBER  
650.01



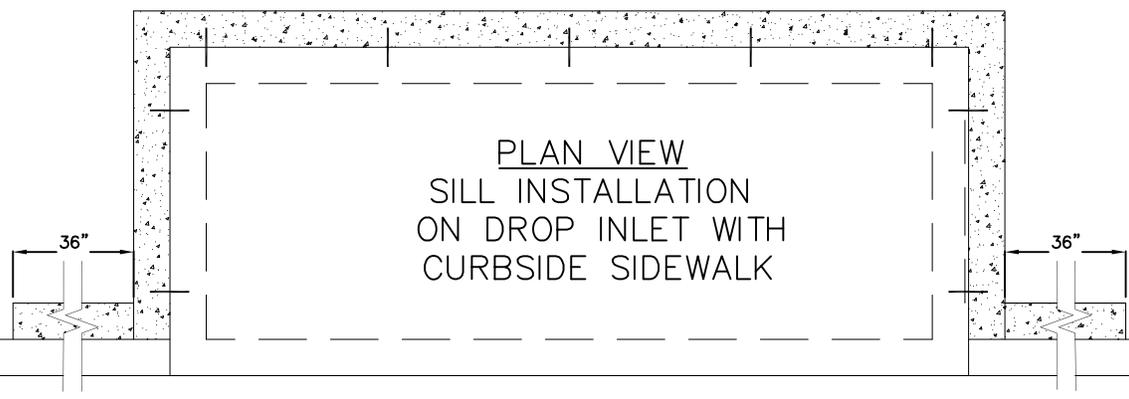
**CURBSIDE SIDEWALK**

SILL TO BE INSTALLED WITH CURB AND GUTTER INSTALLED WITH DRAIN INLET REPLACEMENT OR REPAIR (MIN LENGTH 3 FT. EACH SIDE OF INLET)



**CURBSIDE SIDEWALK**

SILL TO BE INSTALLED ON EXISTING AND NEW DROP INLETS (SIDEWALK TAPERS TO 6" MIN.)

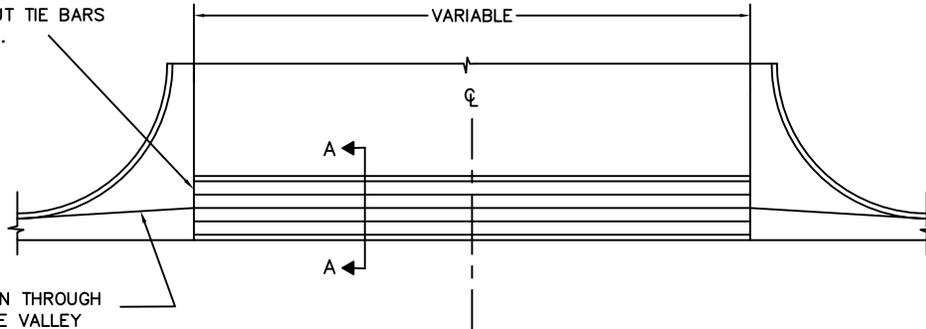


**PLAN VIEW**  
SILL INSTALLATION ON DROP INLET WITH CURBSIDE SIDEWALK

ISSUED: DECEMBER 2005

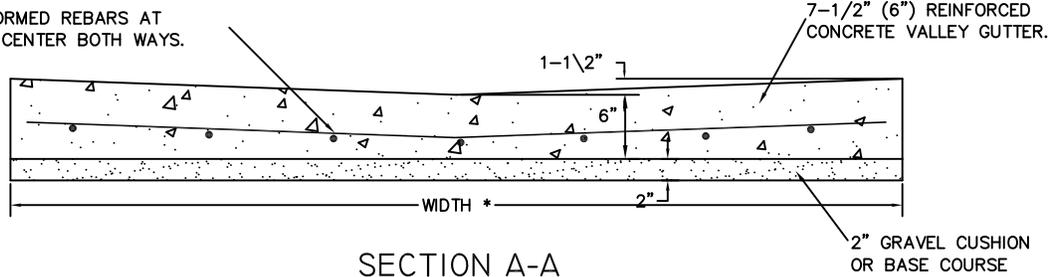
<p>SPECIFICATION REFERENCE NO. 650</p>	<p>CITY OF CANTON CURBSIDE SIDEWALK DROP INLET INTERFACE</p>	<p>PLATE NUMBER 650.02 SP</p>
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KEYWAY CONSTRUCTION  
JOINT WITHOUT TIE BARS  
(DO NOT TIE).



FLOW LINE SHALL RUN THROUGH  
CENTER OF CONCRETE VALLEY  
GUTTER (NOT CONSTRUCTION JOINT).

#4 DEFORMED REBARS AT  
12" ON CENTER BOTH WAYS.



SECTION A-A

NOTES:

ALL REBAR SHALL BE EPOXY COATED

REFER TO PLANS FOR LENGTH OF VALLEY GUTTER

ALL REBAR WILL BE TIED AND IN PLACE. (NOT A PAY ITEM)

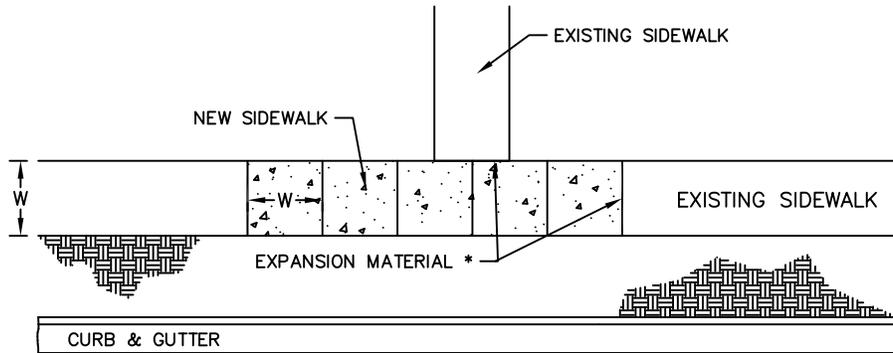
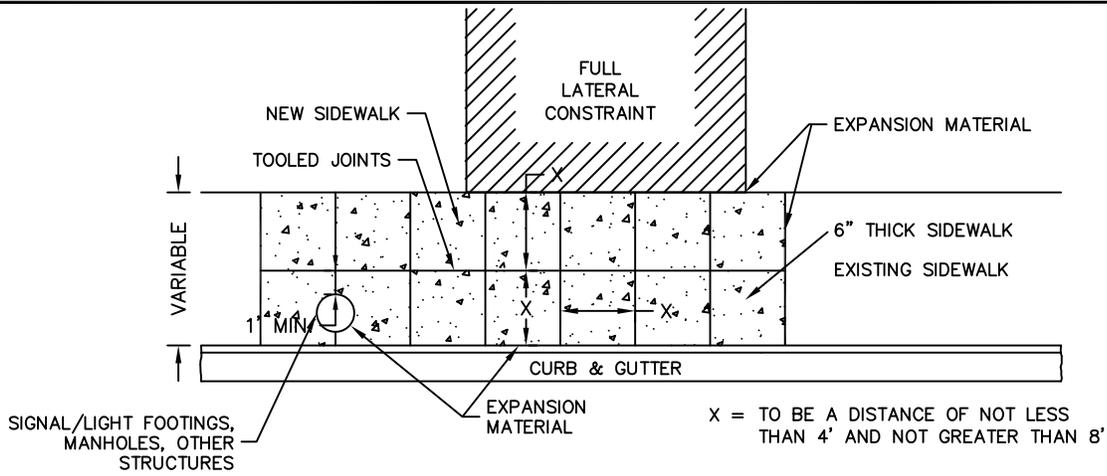
\* WIDTH SHALL BE 6'0" MINIMUM ON RESIDENTIAL STREETS. 8'0"  
MINIMUM WHERE USED ADJACENT TO OR ON COLLECTOR STREETS.

REVISED: DECEMBER 1995

SPECIFICATION  
REFERENCE  
NO.  
650

CITY OF CANTON  
CONCRETE VALLEY GUTTER

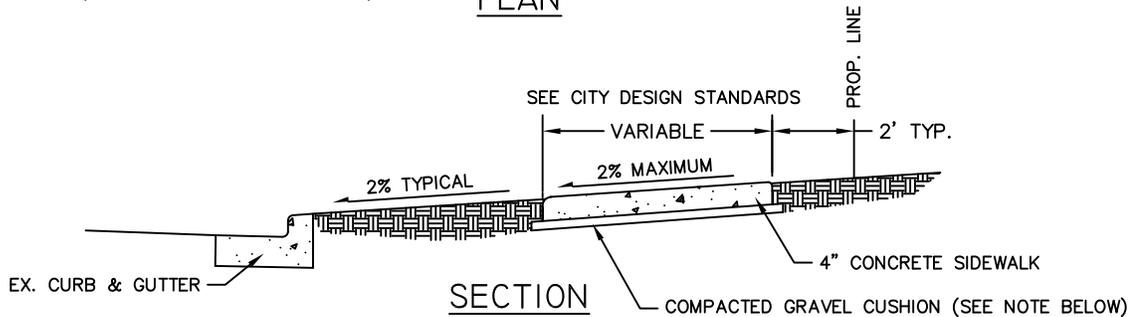
PLATE  
NUMBER  
650.05



W = THE WIDTH OF THE SIDEWALK JOINT SPACING SHOULD BE EQUAL TO THE WIDTH OF THE SIDEWALK. (EXCEPTIONS SEE NOTE BELOW)

EXPANSION JOINTS SHALL BE PLACED AT 50 FOOT INTERVALS, OR TO THE NEAREST TOOLED JOINT.

PLAN



SECTION

NOTES:

LOCATION OF SIDEWALK FROM CURB LINE WILL VARY, HOWEVER, IN MOST INSTANCES THE SIDEWALK WILL BE LOCATED 2' OFF THE PROPERTY LINE. VERIFY SIDEWALK LOCATIONS WITH THE CITY BEFORE PROCEEDING.

ALL SIDEWALKS SHALL HAVE A 4' MINIMUM WIDE PATH WHICH WILL SERVE AS THE PEDESTRIAN ACCESS ROUTE. THIS PEDESTRIAN ACCESS ROUTE SHALL BE CLEAR OF ALL OBSTRUCTIONS SUCH AS LIGHT POLES, SIGNAL POLES, METER POSTS, ETC. ADDITIONALLY, THE MAXIMUM CROSS SLOPE ON THE PEDESTRIAN ACCESS ROUTE IS 2%. POSITIVE DRAINAGE MUST BE MAINTAINED ON ALL SIDEWALKS.

SIDEWALK PLACED DIRECTLY BEHIND THE CURB AND GUTTER SHALL BE A MINIMUM OF 6" IN DEPTH.

ISOLATION JOINTS SHALL EITHER INTERSECT STRUCTURES OR BE A MINIMUM ONE FOOT CLEAR OF STRUCTURE.

CONTRACTION JOINTS SHALL BE FORMED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK. WHEN THE DISTANCE DOES NOT WORK OUT TO AN EVEN NUMBER OF SPACES, THE DISTANCE BETWEEN JOINTS SHOULD BE ADJUSTED SO THAT ALL THE JOINTS LOOK UNIFORM.

THE SUBGRADE ON WHICH THE CONCRETE IS TO BE LAID SHALL BE COMPACTED AND OF THE PROPER DEPTH TO OBTAIN THE DESIRED THICKNESS. THE GRADE SHALL BE FREE OF VEGETATION, BRICK, ASPHALT, BROKEN CONCRETE, AND ANY OTHER ITEM THAT MAY BE DETRIMENTAL TO THE NEW CONCRETE.

REVISED: JANUARY 2005

SPECIFICATION  
REFERENCE  
NO.  
651

CITY OF CANTON  
SIDEWALK LAYOUT DETAILS

PLATE  
NUMBER  
651.01

## STANDARD REQUIREMENTS

- 1) ALL RAMPS ARE REQUIRED TO HAVE A LANDING AREA WITH NO MORE THAN A 2% SLOPE IN ANY DIRECTION. THE LANDING AREA SHALL BE A MINIMUM OF 4' BY 4'. TYPICALLY, THE LANDING AREA SHALL BE LOCATED WHERE A PEDESTRIAN MAKES A TURNING MOVEMENT TO LINE UP WITH THE CURB OPENING. FOR EXAMPLE, THE LANDING AREA SHALL BE LOCATED WHERE 2 BOULEVARD SIDEWALKS JOIN AND CONNECT TO THE RAMP. THE LANDING AREA ON A CURB SIDE SIDEWALK SHALL BE LOCATED AT THE CURB OPENING. IT MAY BE NECESSARY TO HAVE MULTIPLE LANDING AREAS WHEN COMBINING BOULEVARD AND CURBSIDE SIDEWALKS. GRADE CHANGES FROM THE CONNECTING SIDEWALK OR RAMP TO THE LANDING AREA MUST BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.
- 2) ALL RAMPS HAVE A MAXIMUM RUNNING SLOPE OF 8.33% (1" PER FOOT) WITH THE FOLLOWING EXCEPTION: ON BACK OF CURB SIDEWALKS, THE CURB RAMP LENGTH MAY NEED TO BE EXTENDED ACCORDING TO TABLE B TO ACHIEVE THE MAXIMUM SLOPE OF 8.33%. THE CURB RAMP LENGTH WILL BE LIMITED TO A MAXIMUM LENGTH OF 15'.
- 3) ALL SIDEWALKS AND RAMPS HAVE A MAXIMUM CROSS SLOPE OF 2% (1/4" PER FOOT).
- 4) INSTALL PREMANUFACTURED DETECTABLE WARNING PANELS IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS. THE CITY HAS AN APPROVED LIST OF MANUFACTURES ON FILE. SEE DETAIL A AND TABLE A FOR DETECTABLE WARNING PANEL SIZE AND LOCATION. DETECTABLE WARNING PANELS SHALL BE AN APPROVED RED COLOR EXCEPT IN LOCATIONS WHERE THE ADJOINING CONCRETE SIDEWALK IS RED OR DARK IN COLOR. AT THESE LOCATIONS THE DETECTABLE WARNING PANEL SHALL BE A CONTRASTING COLOR APPROVED BY THE CITY ENGINEER. THE SIDEWALK DEPTH SHALL BE A MINIMUM OF 6" FOR A 2' AREA ADJACENT TO THE DETECTABLE WARNING PANEL.
- 5) OBSTRUCTIONS SUCH AS SIGNAL POLES, LIGHT POLES, TRAFFIC CONTROLLER CABINETS, ETC. CAN NOT BE LOCATED IN THE LANDING AREA OR THE RAMP SLOPE. ALL SIDEWALKS SHALL HAVE A 4' MINIMUM WIDTH FREE OF OBSTRUCTIONS TO ACCOMMODATE PEDESTRIAN TRAVEL.
- 6) DEPENDING ON ADJOINING GRADES AND EXISTING CONDITIONS A CURB WITH A MAXIMUM HEIGHT OF 6" MAY NEED TO BE INSTALLED ON THE BACK OF THE LANDING AREA AND CONNECTING SIDEWALK. THIS CURB MAY ALSO NEED TO BE INSTALLED TO ENSURE STREET DRAINAGE DOES NOT OVERFLOW THE AREA BEHIND THE LANDING AREA AND RAMP.

## GENERAL NOTES

THE CONTRACTOR MUST HAVE AN ELECTRONIC LEVEL ON SITE TO ENSURE THE SPECIFIED SLOPES ARE MAINTAINED.

CARE SHALL BE TAKEN TO ENSURE THE SURFACE OF THE DETECTABLE WARNING PANEL IS CLEAN AND FREE OF CURING COMPOUND AND CONCRETE RESIDUE.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

JOINTS SHALL BE TOOLED INTO THE CONCRETE ADJACENT TO THE DETECTABLE WARNING PANELS TO ALLEVIATE POSSIBLE CORNER CRACKING (SEE DETAIL A).

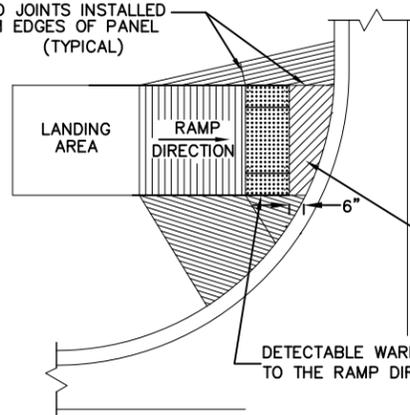
THERE WILL BE NO SEPARATE PAYMENT FOR THE SIDEWALK LANDING AREA OR RAMP. THE SIDEWALK LANDING AREA AND RAMP, INCLUDING THE DETECTABLE WARNING PANEL AREA, SHALL BE MEASURED AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR THE CORRESPONDING CONCRETE SIDEWALK BID ITEM. NO ADDITIONAL PAYMENT WILL BE MADE FOR THE ADDITIONAL CONCRETE DEPTH ADJACENT TO THE DETECTABLE WARNING PANEL.

THE DETECTABLE WARNING PANEL SHALL BE MEASURED TO THE NEAREST SQUARE FOOT. PAYMENT WILL BE AT THE CONTRACT UNIT PRICE PER SQUARE FOOT FOR THE DETECTABLE WARNING PANELS. PAYMENT SHALL INCLUDE ALL COSTS FOR MATERIALS, LABOR, AND EQUIPMENT NECESSARY FOR THE INSTALLATION OF THE DETECTABLE WARNING PANELS.

TABLE A

NEW OR IN PLACE SIDEWALK	RAMP OPENING	DETECTABLE WARNING PANEL DIMENSIONS
4'	4'	2' x 4'
5'	4'	2' x 4'
6'+	4'	2' x 4'

TOOLED JOINTS INSTALLED FROM EDGES OF PANEL (TYPICAL)

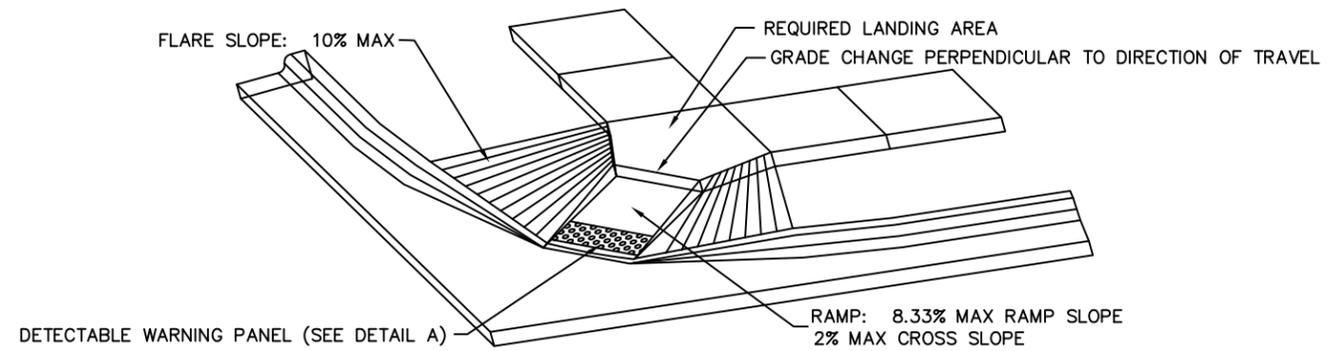


DETAIL A

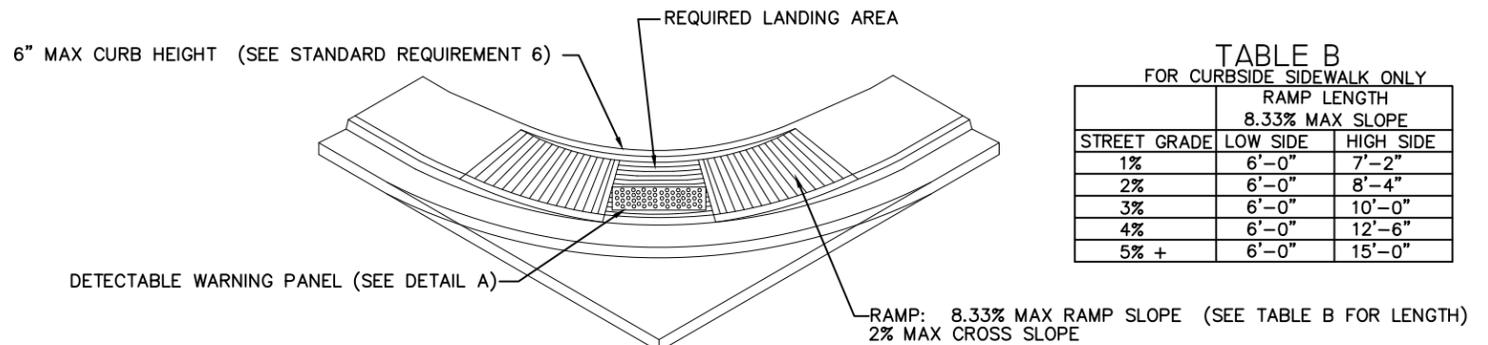
UNLESS CURB RAMP IS PERPENDICULAR TO THE CURB RADIUS AN AREA OF SPECIAL SHAPING MUST BE PROVIDED AT THE BOTTOM OF THE RAMP.

DETECTABLE WARNING PANELS SHALL BE INSTALLED PERPENDICULAR TO THE RAMP DIRECTION. SET 6" BACK FROM CURB.

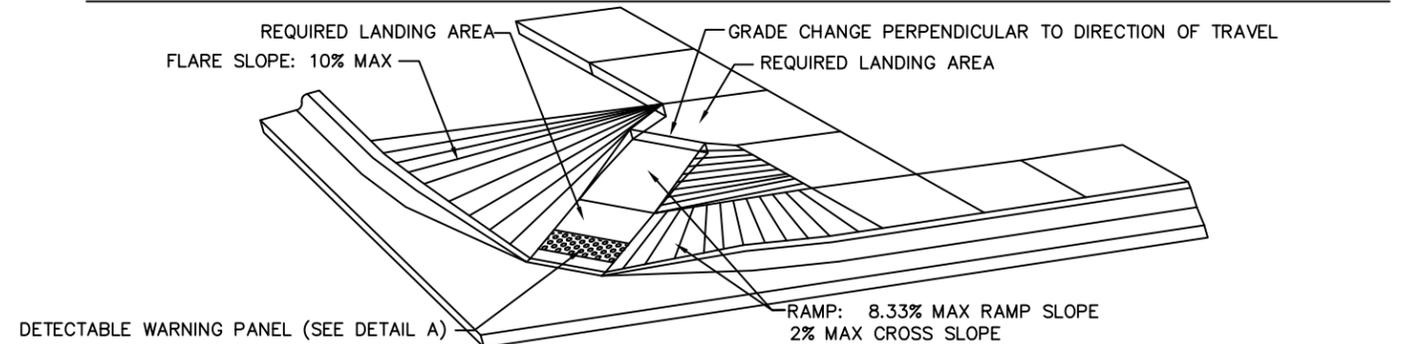
THE FOLLOWING PERSPECTIVE VIEWS ARE ILLUSTRATIONS OF DIFFERENT TYPES OF INSTALLATIONS INCORPORATING THE MANDATORY REQUIREMENTS.



PERSPECTIVE VIEW - BOULEVARD SIDEWALK RAMP



PERSPECTIVE VIEW - CURBSIDE SIDEWALK RAMP



PERSPECTIVE VIEW - BOULEVARD AND CURBSIDE COMBO SIDEWALK RAMP

TABLE B  
FOR CURBSIDE SIDEWALK ONLY

STREET GRADE	RAMP LENGTH 8.33% MAX SLOPE	
	LOW SIDE	HIGH SIDE
1%	6'-0"	7'-2"
2%	6'-0"	8'-4"
3%	6'-0"	10'-0"
4%	6'-0"	12'-6"
5% +	6'-0"	15'-0"

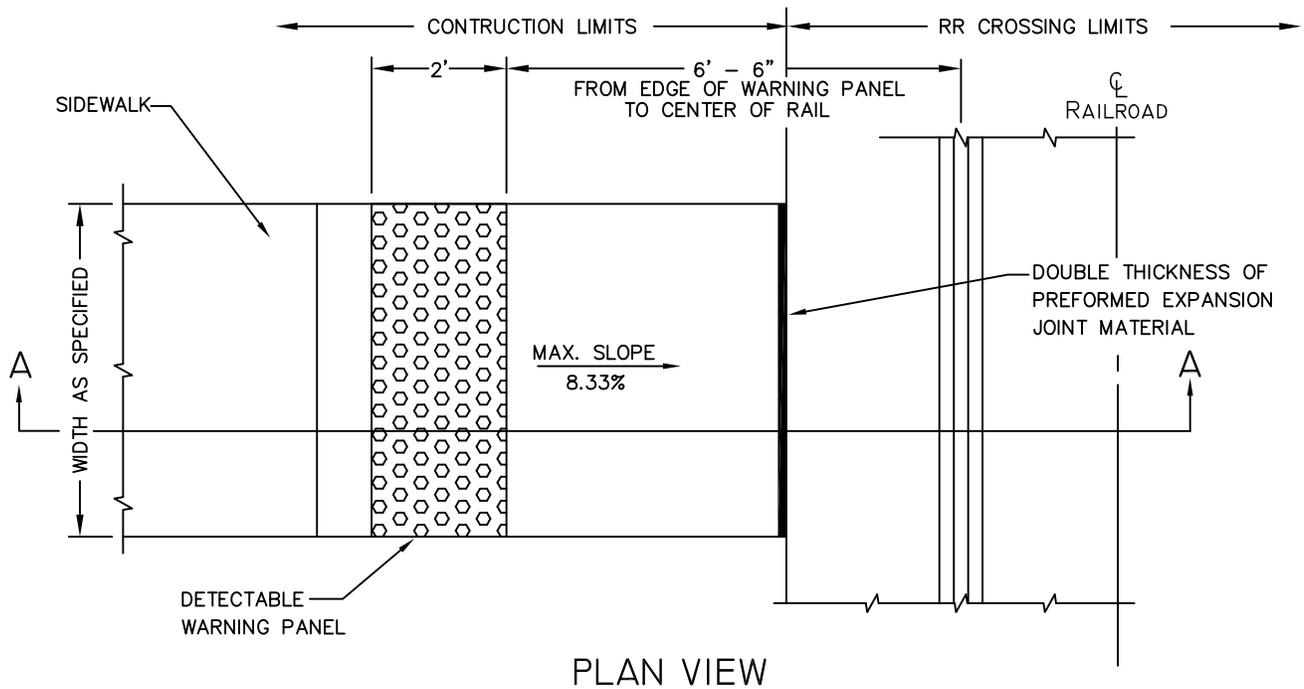
ISSUED: JANUARY 2005

CITY OF CANTON

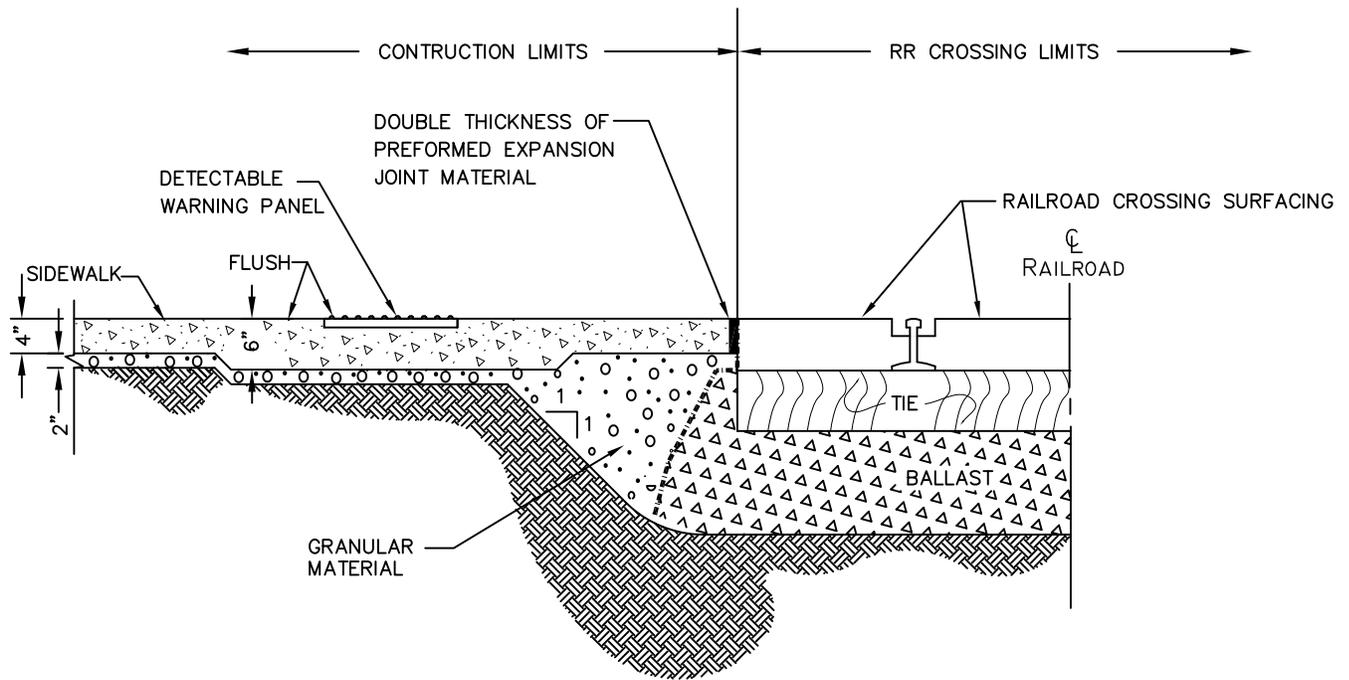
SIDEWALK RAMPS AND  
DETECTABLE WARNING PANELS

SPECIFICATION  
REFERENCE  
NO.  
651

PLATE  
NUMBER  
651.02



PLAN VIEW



SECTION A-A

GENERAL NOTES:

THE MAXIMUM ALLOWABLE CROSS SLOPE OF THE SIDEWALK IS 2%.

THE CONTRACTOR MUST HAVE AN ELECTRONIC LEVEL ON SITE TO ENSURE THE SPECIFIED SLOPES ARE MAINTAINED.

IF CURB AND GUTTER IS ADJACENT TO THE SIDEWALK, THEN A CURB TRANSITION SHALL BE USED WITH A MAXIMUM LONGITUDINAL SLOPE OF 8.33%. THE SURFACE OF THE CURBSIDE SIDEWALK SHALL MATCH THE SLOPE OF THE CURB TRANSITION.

BALLAST MATERIAL SHALL NOT BE DISTURBED DURING CONSTRUCTION WORK ADJACENT TO THE RAILROAD CROSSING UNLESS THE ADJACENT WORK INVOLVES RECONSTRUCTION OR MAINTENANCE OF THE RAILROAD CROSSING.

CARE SHALL BE TAKEN TO ENSURE THE SURFACE OF THE DETECTABLE WARNING PANEL IS CLEAN AND FREE OF CURING COMPOUND AND CONCRETE RESIDUE.

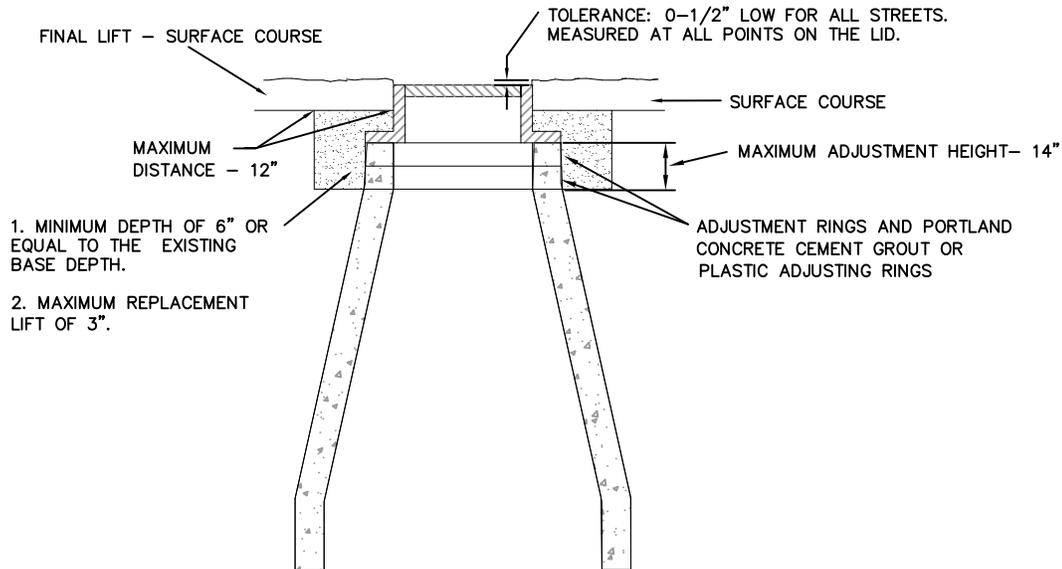
THE DETECTABLE WARNING PANEL SHALL BE THE WIDTH OF THE SIDEWALK AND BRICK RED IN COLOR.

ISSUED: JANUARY 2005

SPECIFICATION  
REFERENCE  
NO.  
651

CITY OF CANTON  
SIDEWALK ADJACENT TO  
RAILROAD CROSSING

PLATE  
NUMBER  
651.03



1. MINIMUM DEPTH OF 6" OR EQUAL TO THE EXISTING BASE DEPTH.
2. MAXIMUM REPLACEMENT LIFT OF 3".

**NOTES:**

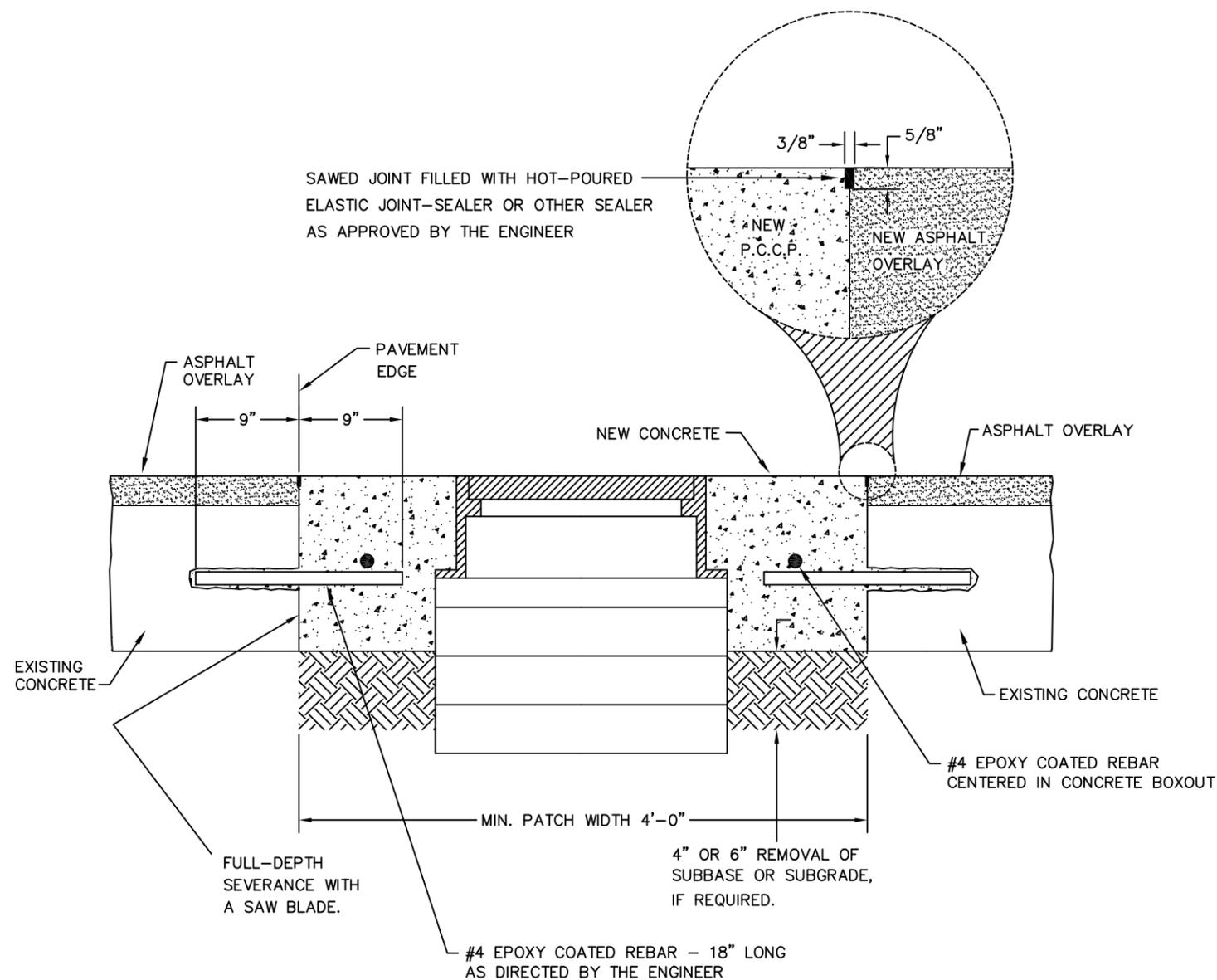
1. THE ADJUSTMENT OF MANHOLE AND JUNCTION BOX CASTINGS INVOLVES ADDING OR REMOVING ADJUSTING RINGS UNDER THE FRAME. IF THE ELEVATION OF THE COVER IS TOO HIGH, IT MAY BE NECESSARY FOR THE CONTRACTOR TO REMOVE THE UPPER COURSE OF BRICK AND/OR BREAK DOWN THE CONCRETE WALLS IN THE MANHOLE OR JUNCTION BOX AND SEAT THE FRAMES IN MORTAR SO THAT THE ELEVATIONS FOR THE COVERS ARE FLUSH WITH THE TOP OF THE FINISHED SURFACE. ADJUSTMENT OF FRAME AND COVERS SHALL BE IN ACCORDANCE WITH THIS STANDARD PLATE AND THE SUPPLEMENTAL STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION.
2. MANHOLE AND CASTING SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF CONCRETE SURFACING.
3. ALL MANHOLES SHALL BE ADJUSTED TO BE FLUSH WITH THE FINISHED SURFACE. ALLOWABLE TOLERANCE SHALL BE 0" TO 1/2" LOW. IN NO CASE SHALL THE MANHOLE FRAME AND COVER BE ABOVE THE FINISHED SURFACE.
4. CONCEALED PICK HOLES AND THE SEAL BETWEEN THE FRAME AND COVER SHALL BE PROTECTED FROM ASPHALT, CONCRETE PAVEMENT, CHIP SEAL, MICROSURFACING MATERIAL, AND SOIL. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE CONCEALED PICK HOLE AND FRAME AND COVER SEAL DURING THE WORK.
5. PAYMENT FOR ADJUSTING MANHOLE AND JUNCTION BOX FRAMES AND COVERS SHALL BE AT THE CONTRACT UNIT BID PRICE PER EACH IN THE PROPOSAL. PAYMENT SHALL INCLUDE ALL MATERIALS, ADJUSTING RINGS, STREET SURFACING REMOVAL AND REPLACEMENT, EXCAVATION, REMOVAL OF THE UPPER COURSE OF BRICK OR BREAKING DOWN THE UPPER PORTION OF THE CONCRETE WALLS IF NECESSARY, BACKFILLING, LABOR, TOOLS AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT SHALL BE MADE FOR BOTH NEW AND EXISTING MANHOLES OR JUNCTION BOX FRAMES AND COVERS WHICH ARE ADJUSTED TO THE NEW PAVEMENT HEIGHT IN ACCORDANCE WITH THIS STANDARD PLATE.

REVISED: OCTOBER 2004

SPECIFICATION  
REFERENCE  
NO.  
671

CITY OF CANTON  
MANHOLE CASTING AND  
COVER ADJUSTMENT

PLATE  
NUMBER  
671.01



**NOTES:**

1. THE ADJUSTMENT OF MANHOLE AND JUNCTION BOX CASTINGS INVOLVES ADDING ADJUSTING RINGS UNDER THE FRAME SO THAT THE ELEVATIONS FOR THE COVERS ARE FLUSH WITH THE TOP OF THE FINISHED ASPHALT OVERLAY SURFACE. ADJUSTMENT OF FRAME AND COVERS SHALL BE IN ACCORDANCE WITH THIS STANDARD PLATE AND THE SUPPLEMENTAL STANDARD SPECIFICATIONS FOR SANITARY SEWER CONSTRUCTION.
2. THE ADJUSTMENT OF VALVE BOXES INVOLVES "SPINNING UP" THE TOP SECTION OF THE BOX SO THE TOP OF THE VALVE BOX IS FLUSH WITH THE TOP OF THE FINISHED PAVEMENT SURFACE. NON-THREADED ADJUSTMENTS FOR VALVE BOXES WILL NOT BE ALLOWED.
3. A CONCRETE BOXOUT IS REQUIRED FOR ASPHALT OVERLAY ON EXISTING CONCRETE STREETS. THE CONCRETE BOXOUT SHALL BE CENTERED ON THE MANHOLE OR JUNCTION BOX FRAME AND COVER OR VALVE BOX.
4. THE BOXOUT SHALL BE CUT OUT AFTER THE INSTALLATION OF THE ASPHALT OVERLAY. THE PAVEMENT SHALL BE SAWED FULL DEPTH WITH A VERTICAL FACE. THE CONTRACTOR SHALL ENSURE THAT THE ADJACENT ASPHALT SURFACE IS LEFT INTACT AND UNDAMAGED WHEN REMOVING THE BOXOUT.
5. THE ALLOWABLE VERTICAL TOLERANCE BETWEEN THE ASPHALT PAVEMENT AND ANY PART OF THE FRAME AND COVER OR VALVE BOX SHALL BE 0" TO 1/2" LOW FOR ALL ADJUSTMENTS. IN NO CASE SHALL THE MANHOLE OR JUNCTION BOX FRAME AND COVER OR VALVE BOX BE ABOVE THE SURFACE OF THE ASPHALT PAVEMENT.
7. THE CONCRETE BOXOUT SHALL BE SQUARE OR RECTANGULAR, AND HAVE MINIMUM DIMENSIONS OF 4'x4'.

**NOTES (con't):**

8. APPLY TACK COAT TO THE VERTICAL ASPHALT AND CONCRETE SURFACES PRIOR TO PLACEMENT OF CONCRETE FOR BOXOUT.
9. CLASS M6 CONCRETE SHALL BE USED FOR THE BOXOUT. FAST TRACK CONCRETE MAY BE USED AT THE DISCRETION OF THE ENGINEER.
10. STEEL REINFORCING SHALL BE EPOXY COATED GRADE 40.
11. STEEL REINFORCING SHALL CONSIST OF #4 REBAR SUPPORTED BY APPROVED CHAIRS.
12. THE CONCRETE BOXOUT WORK SHALL BE COMPLETED PRIOR TO OPENING THE STREET TO TRAFFIC.
13. CONCEALED PICK HOLES AND THE SEAL BETWEEN THE FRAME AND COVER SHALL BE PROTECTED FROM FOREIGN MATERIAL. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT FOREIGN MATERIAL FROM ENTERING THE CONCEALED PICK HOLE AND FRAME AND COVER SEAL DURING THE WORK.
14. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT FOREIGN MATERIAL FROM ENTERING THE VALVE BOX DURING THE WORK.
15. PAYMENT FOR ADJUSTING MANHOLE AND JUNCTION BOX FRAMES AND COVERS AND VALVE BOXES SHALL BE AT THE CONTRACT UNIT BID PRICE PER EACH IN THE PROPOSAL, WHICH PRICE SHALL CONSTITUTE FULL COMPENSATION FOR ALL MATERIALS, ADJUSTING RINGS, ASPHALT AND CONCRETE REMOVAL AND REPLACEMENT, EXCAVATION, BACK FILLING, SAWING, STEEL REINFORCEMENT, CHAIRS, LABOR, TOOLS, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK. PAYMENT SHALL BE MADE FOR BOTH NEW AND EXISTING MANHOLE OR JUNCTION BOX FRAMES AND COVERS AND VALVE BOXES WHICH ARE ADJUSTED TO THE NEW PAVEMENT HEIGHT IN ACCORDANCE WITH THIS STANDARD PLATE.

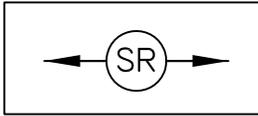
REVISED: JANUARY 2012

CITY OF CANTON

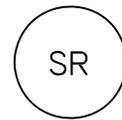
MH/JB/VALVE BOX ADJUSTMENT  
IN ASPHALT/CONCRETE OVERLAY

SPECIFICATION  
REFERENCE  
NO.  
671

PLATE  
NUMBER  
SPECIAL



# SURFACE ROUGHENING

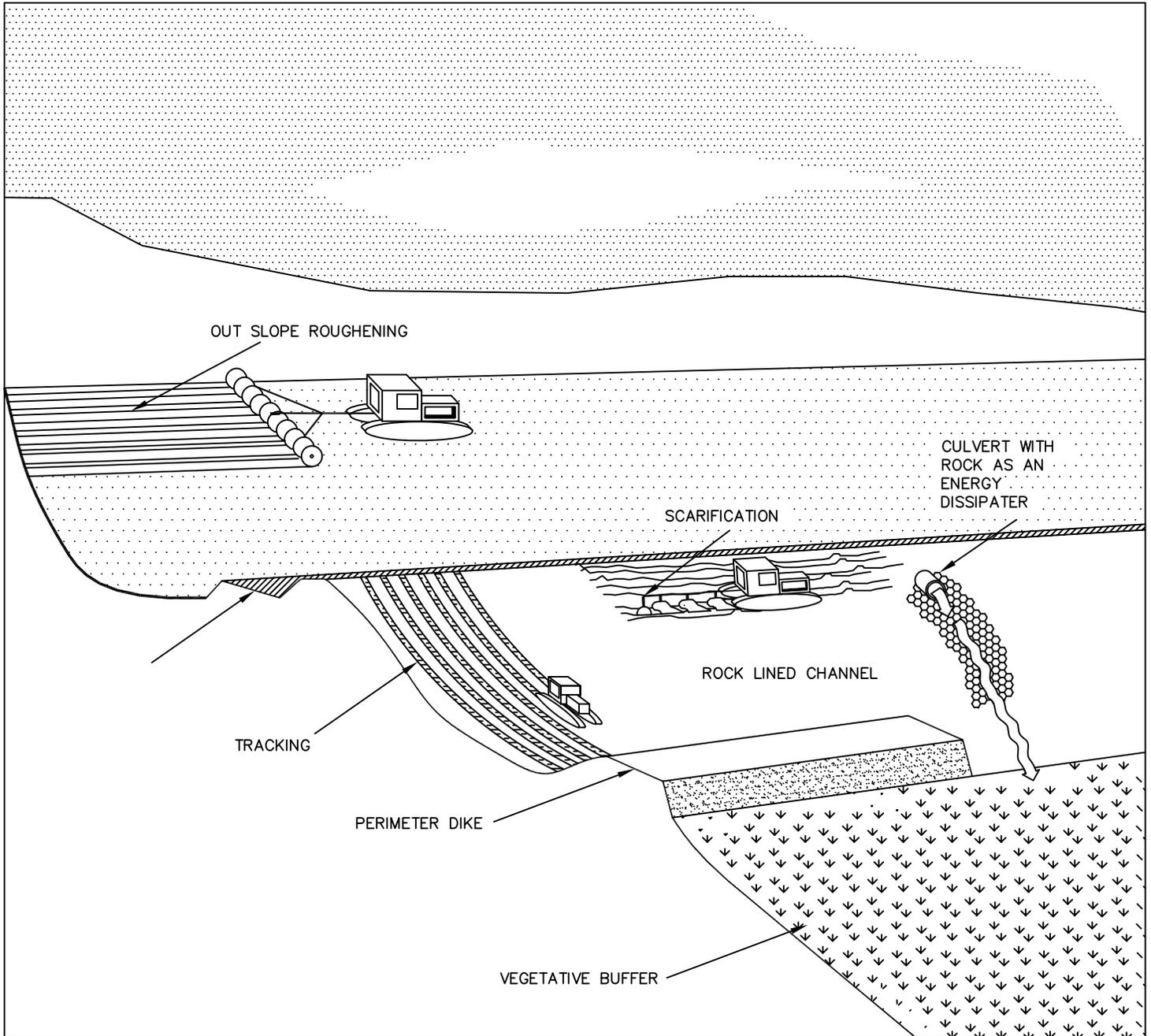


## DEFINITION:

PROVIDE A ROUGH SOIL SURFACE WITH HORIZONTAL DEPRESSIONS CREATED BY OPERATING A TILLAGE OR OTHER SUITABLE IMPLEMENT ON THE CONTOUR, OR BY LEAVING SLOPES IN A ROUGHENED CONDITION BY NOT FINE-GRADING THEM.

## PURPOSES:

1. TO AID IN SEED BED PREPARATION AND ESTABLISHMENT OF VEGETATIVE COVER.
2. TO REDUCE RUNOFF VELOCITY AND INCREASE INFILTRATION.
3. TO REDUCE RUNOFF AND WIND EROSION AND PROVIDE FOR SEDIMENT TRAPPING.

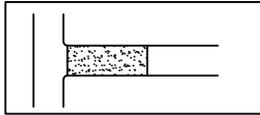


REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
SURFACE ROUGHENING

PLATE  
NUMBER  
734.01



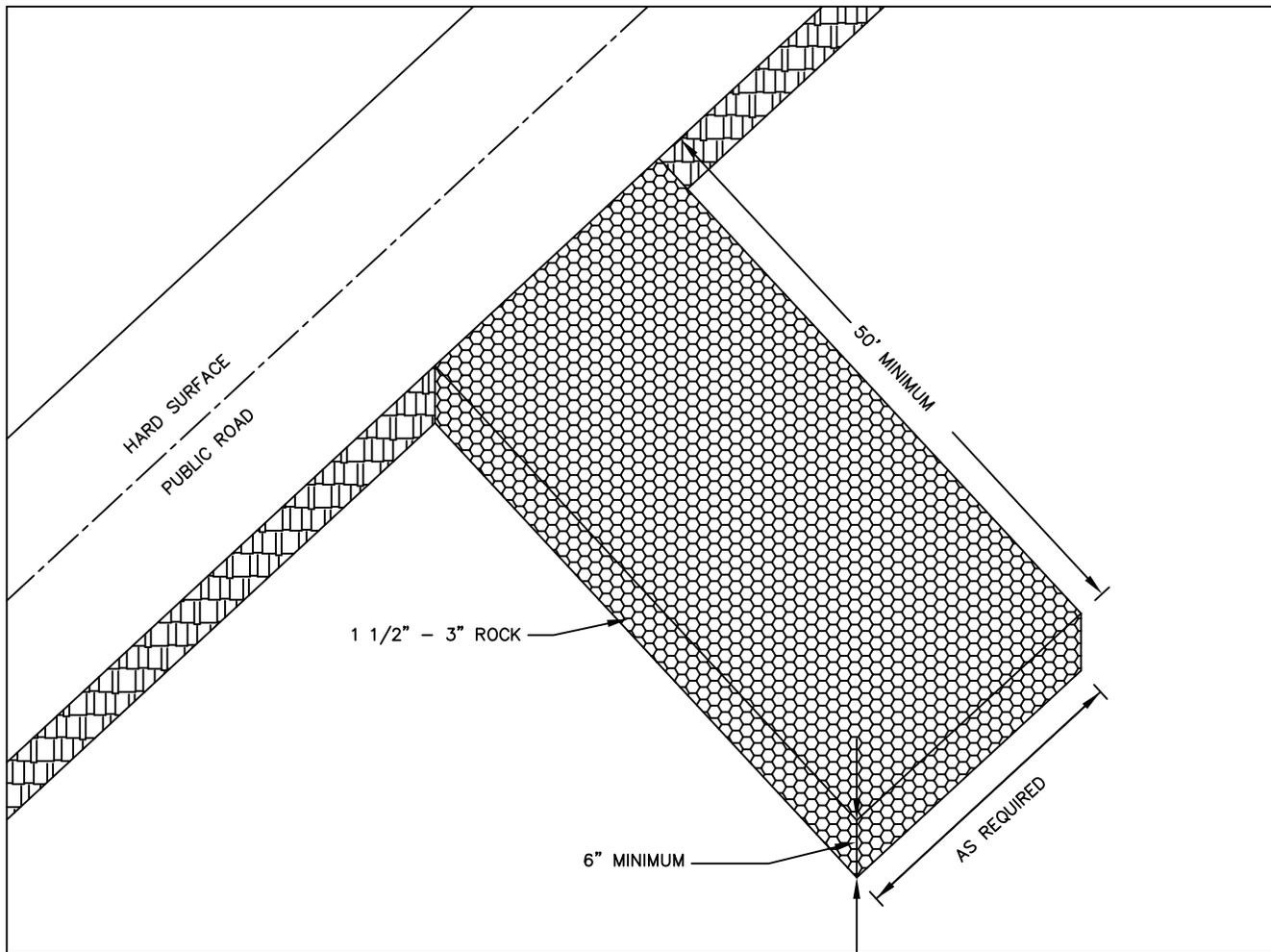
## VEHICLE TRACKING CONTROL

### DEFINITION:

A STONE STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

### PURPOSES:

TO REDUCE THE AMOUNT OF MUD TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF.

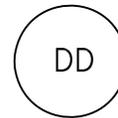
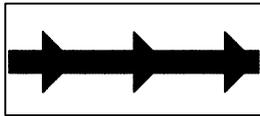


REVISED: MAY 2003

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
TEMPORARY VEHICLE  
TRACKING CONTROL

PLATE  
NUMBER  
734.02



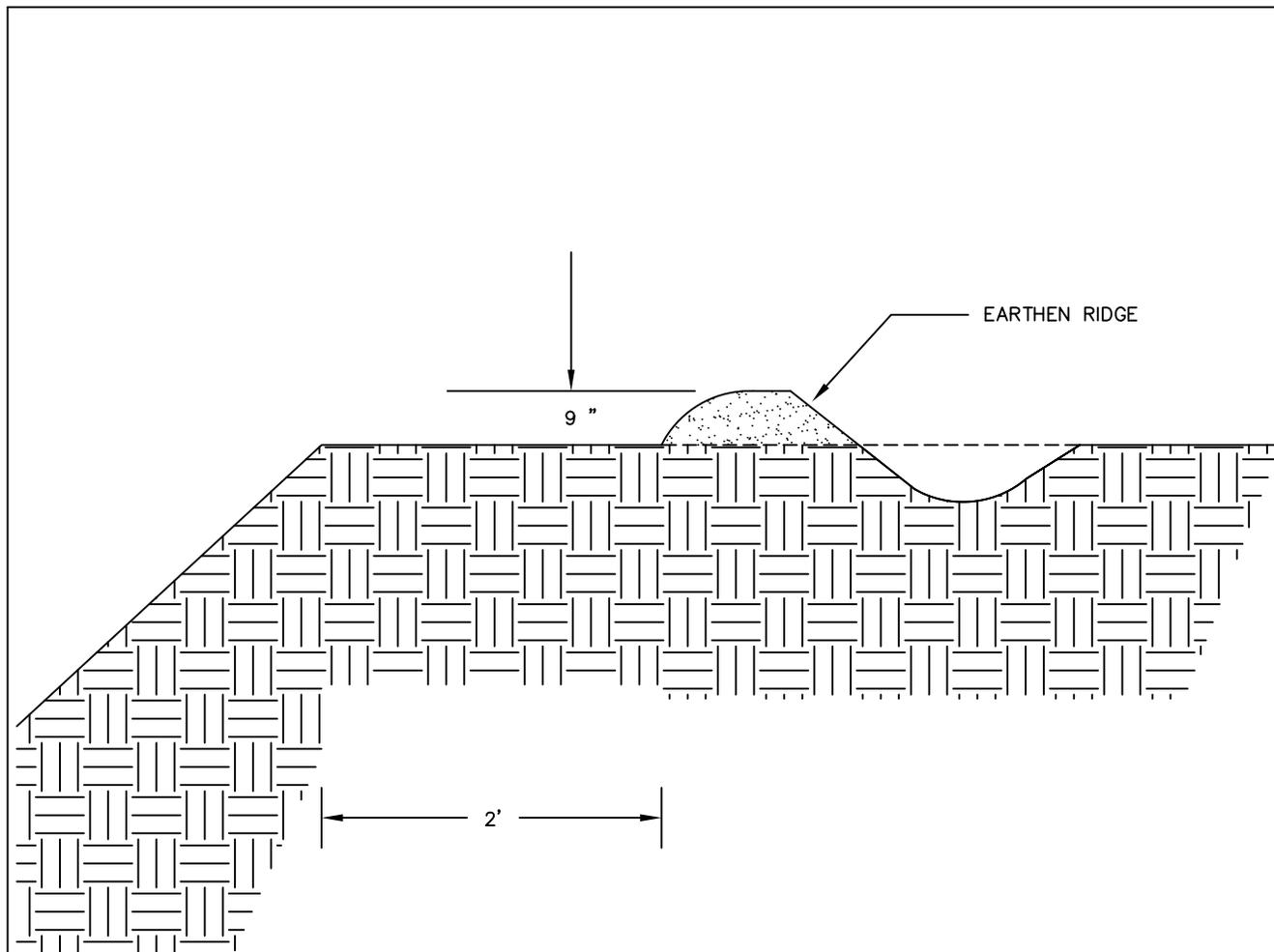
## TEMPORARY DIVERSION DIKE

### DEFINITION:

A TEMPORARY RIDGE OF COMPACTED SOIL LOCATED AT THE TOP, MID SLOPE, OR BASE OF A DISTURBED AREA.

### PURPOSES:

1. TO DIVERT STORM RUNOFF FROM HIGHER DRAINAGE AREAS AWAY FROM UNPROTECTED SLOPES TO A PERMANENT CHANNEL OR TEMPORARY CHANNEL DIVERSION.
2. TO DIVERT SEDIMENT-LADEN RUNOFF FROM THE MID SLOPE OF A DISTURBED AREA TO A TEMPORARY SLOPE DRAIN.
3. TO DIVERT SEDIMENT-LADEN RUNOFF FROM THE BASE OF A DISTURBED AREA TO A SEDIMENT TRAPPING FACILITY.

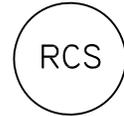
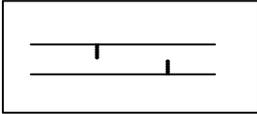


REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
TEMPORARY DIVERSION DIKE

PLATE  
NUMBER  
734.04



## ROUGH-CUT STREET CONTROL

DEFINITION:

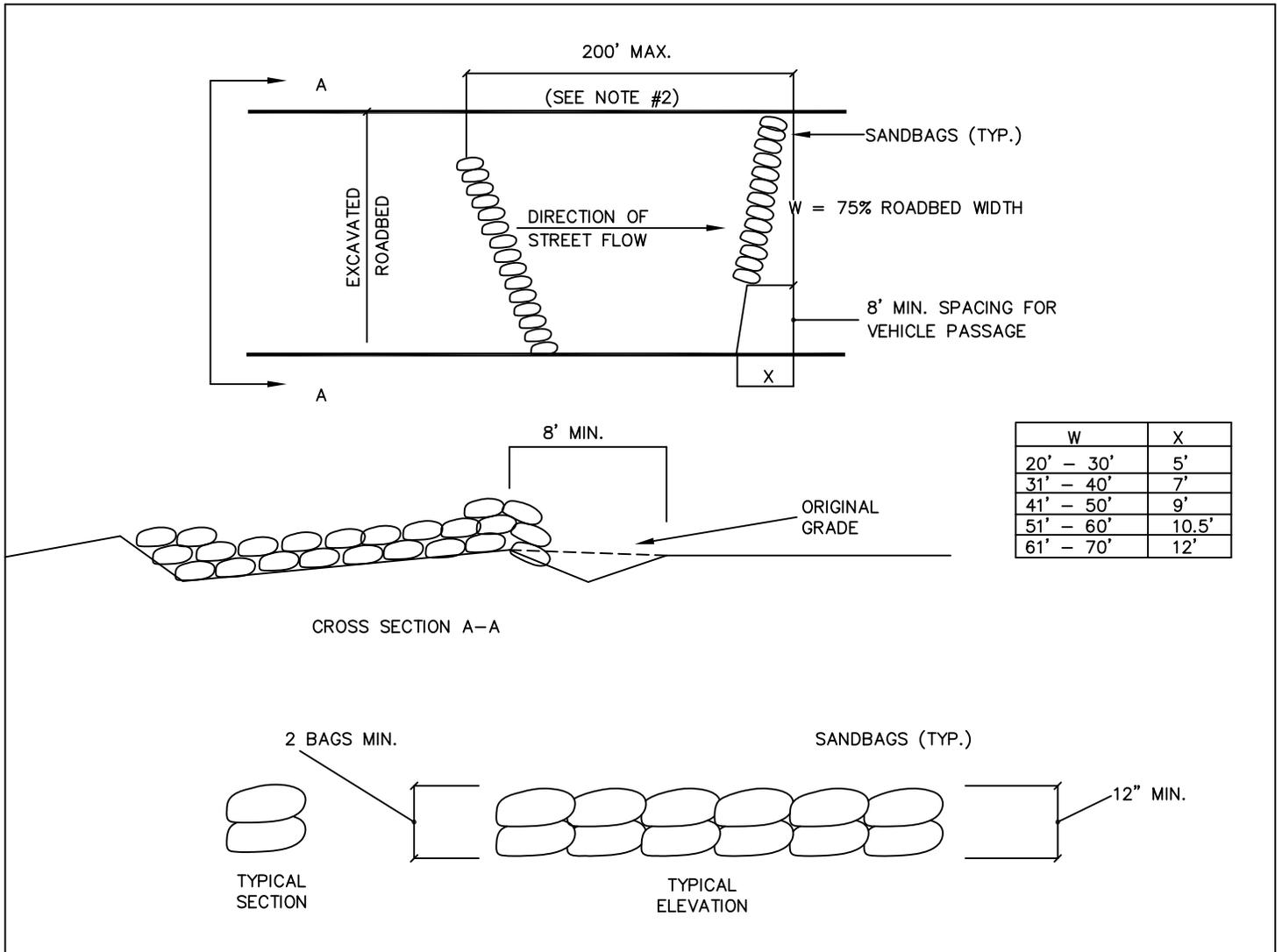
A TEMPORARY SEDIMENT BARRIER PLACED ON ALTERNATE SIDES OF A ROUGH CUT STREET.

PURPOSES:

TO DIVERT SEDIMENT-LADEN RUNOFF FROM ROUGH-CUT STREETS AND SLOW THE VELOCITY OF STORM RUNOFF.

NOTE: 1. ALTERNATE MATERIALS SUCH AS STRAW BALES OR SILT FENCES MAY BE USED WHERE LARGE FLOWS ARE NOT EXPECTED.

2. REQUIREMENTS FOR AND SPACING OF VELOCITY REDUCERS FOR STREETS WITH GRADES OF LESS THAN 4% SHALL BE AS SHOWN ON THE EROSION CONTROL PLAN.

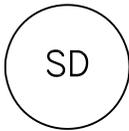


REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
ROUGH-CUT STREET CONTROL

PLATE  
NUMBER  
734.05



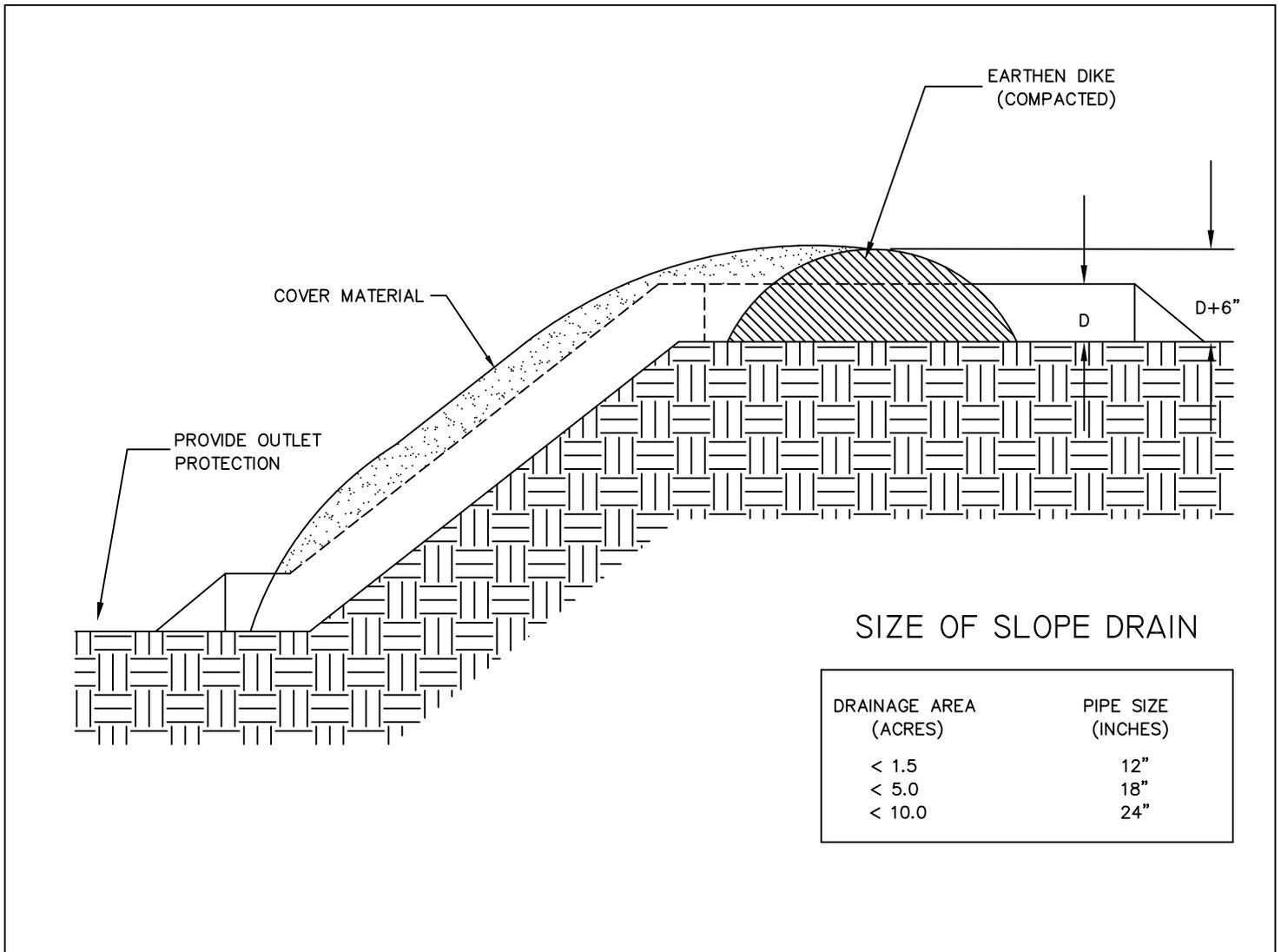
# TEMPORARY SLOPE DRAIN

DEFINITION:

A FLEXIBLE TUBE OR CONDUIT EXTENDING FROM THE TOP TO THE BOTTOM OF A CUT OR FILL SLOPE.

PURPOSES:

1. TO TEMPORARILY CONDUCT CONCENTRATED STORM WATER RUNOFF SAFELY DOWN THE FACE OF A CUT OR FILL SLOPE WITHOUT CAUSING EROSION PROBLEMS ON OR BELOW THE SLOPE.



REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

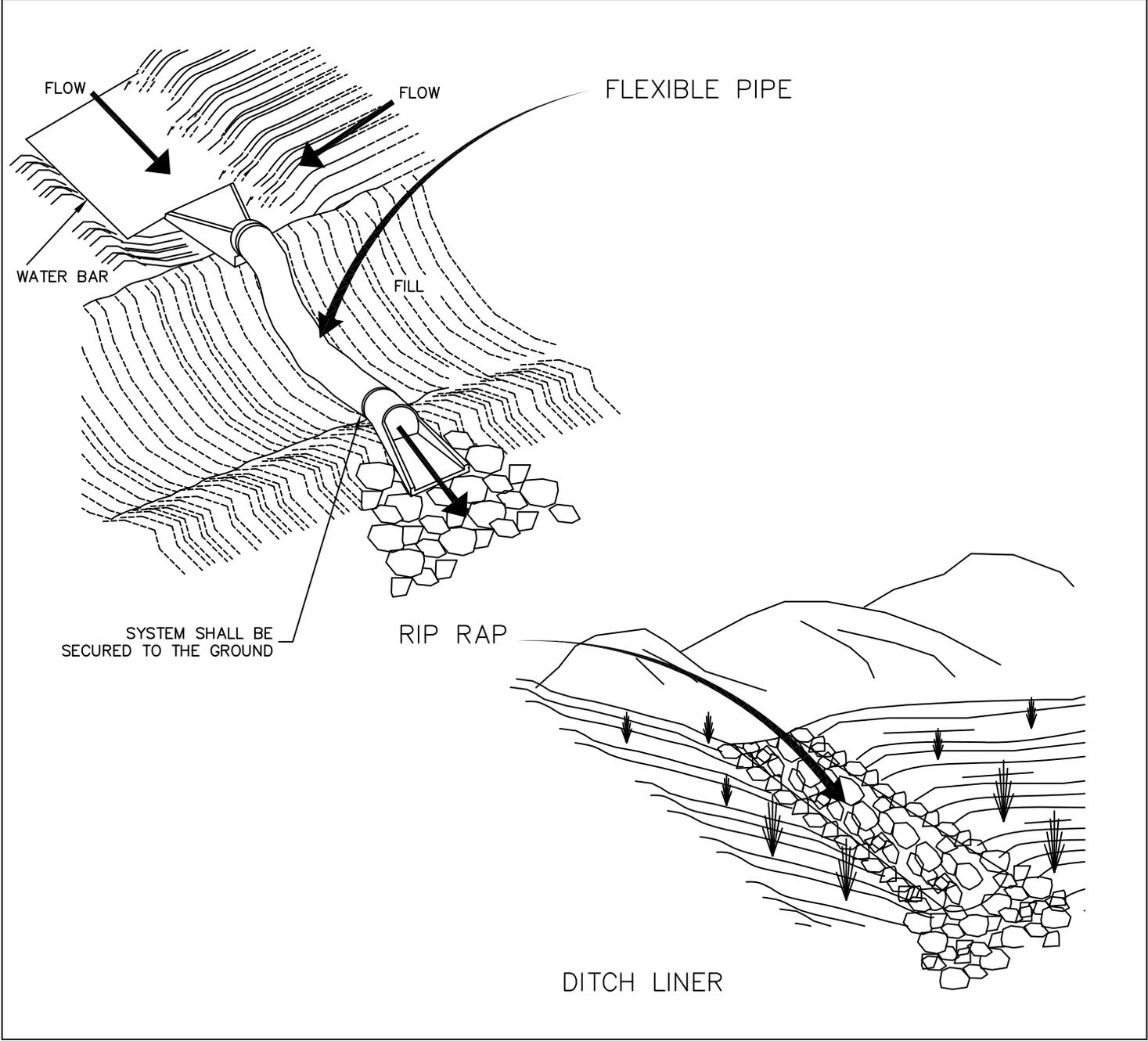
CITY OF CANTON  
TEMPORARY SLOPE DRAIN

PLATE  
NUMBER  
734.06



SD

# TEMPORARY SLOPE DRAIN

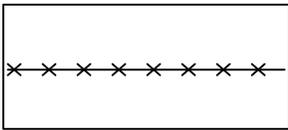


REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
TEMPORARY SLOPE DRAIN

PLATE  
NUMBER  
734.07



# SILT FENCE

SF

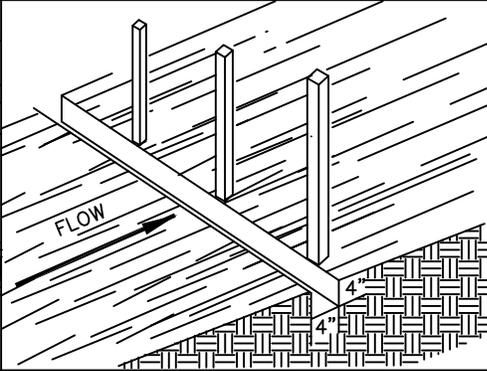
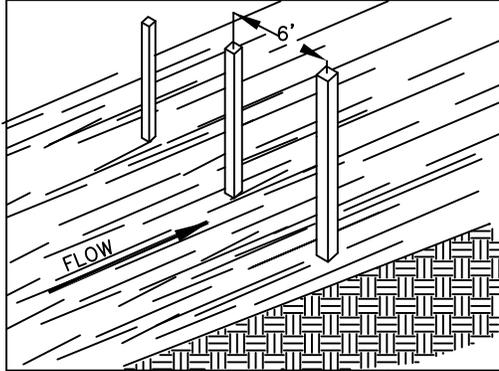
### DEFINITION:

A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. THE SILT FENCE IS A TEMPORARY LINEAR BARRIER CONSTRUCTED OF SYNTHETIC FILTER FABRIC AND SUPPORTED BY WOODEN OR STEEL POSTS.

### PURPOSES:

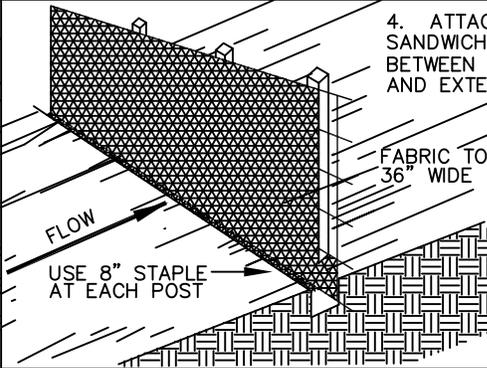
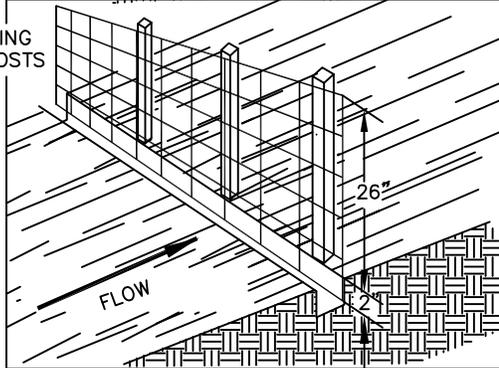
1. TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO REDUCE SEDIMENT IN RUNOFF FROM LEAVING THE SITE.
2. TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW-TO-MODERATE LEVEL CONCENTRATED FLOWS.

1. SET POSTS.



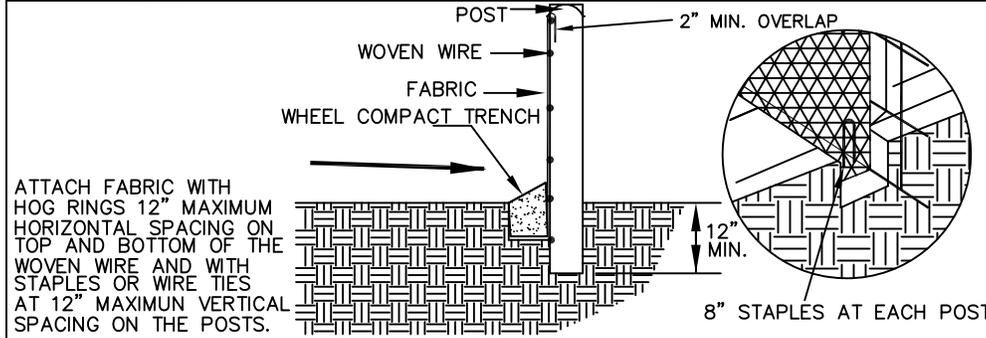
2. EXCAVATE A 4" X 4" TRENCH UPSLOPE ALONG THE POSTS.

3. ATTACH A SUPPORTING WIRE FENCE TO THE POSTS



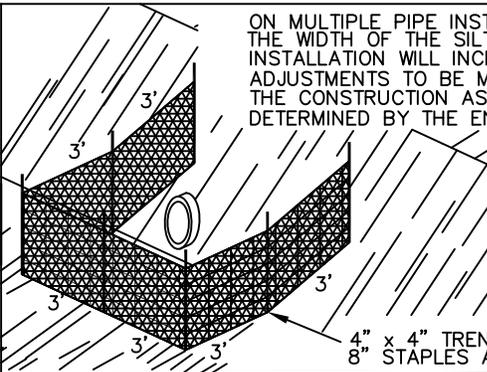
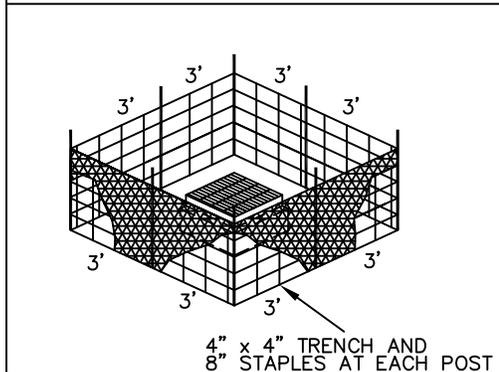
4. ATTACH FABRIC, SANDWICH FABRIC OVERLAP BETWEEN POSTS AND WIRE AND EXTEND INTO TRENCH.

5. BACKFILL TRENCH. IF ROCK TYPE SOILS ARE ENCOUNTERED, UTILIZE 30 TO 40 LB SANDBAGS BUTTED END TO END TO PREVENT UNDERFLOW.



ATTACH FABRIC WITH HOG RINGS 12" MAXIMUM HORIZONTAL SPACING ON TOP AND BOTTOM OF THE WOVEN WIRE AND WITH STAPLES OR WIRE TIES AT 12" MAXIMUM VERTICAL SPACING ON THE POSTS.

ON MULTIPLE PIPE INSTALLATIONS, THE WIDTH OF THE SILT FENCE INSTALLATION WILL INCREASE. ADJUSTMENTS TO BE MADE ON THE CONSTRUCTION AS DETERMINED BY THE ENGINEER.



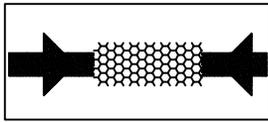
FENCE MATERIAL SHALL CONFORM TO GEOTEXTILE SPECIFICATIONS, SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
SILT FENCE (WOVEN WIRE)

PLATE  
NUMBER  
734.09



# TEMPORARY SEDIMENT TRAP

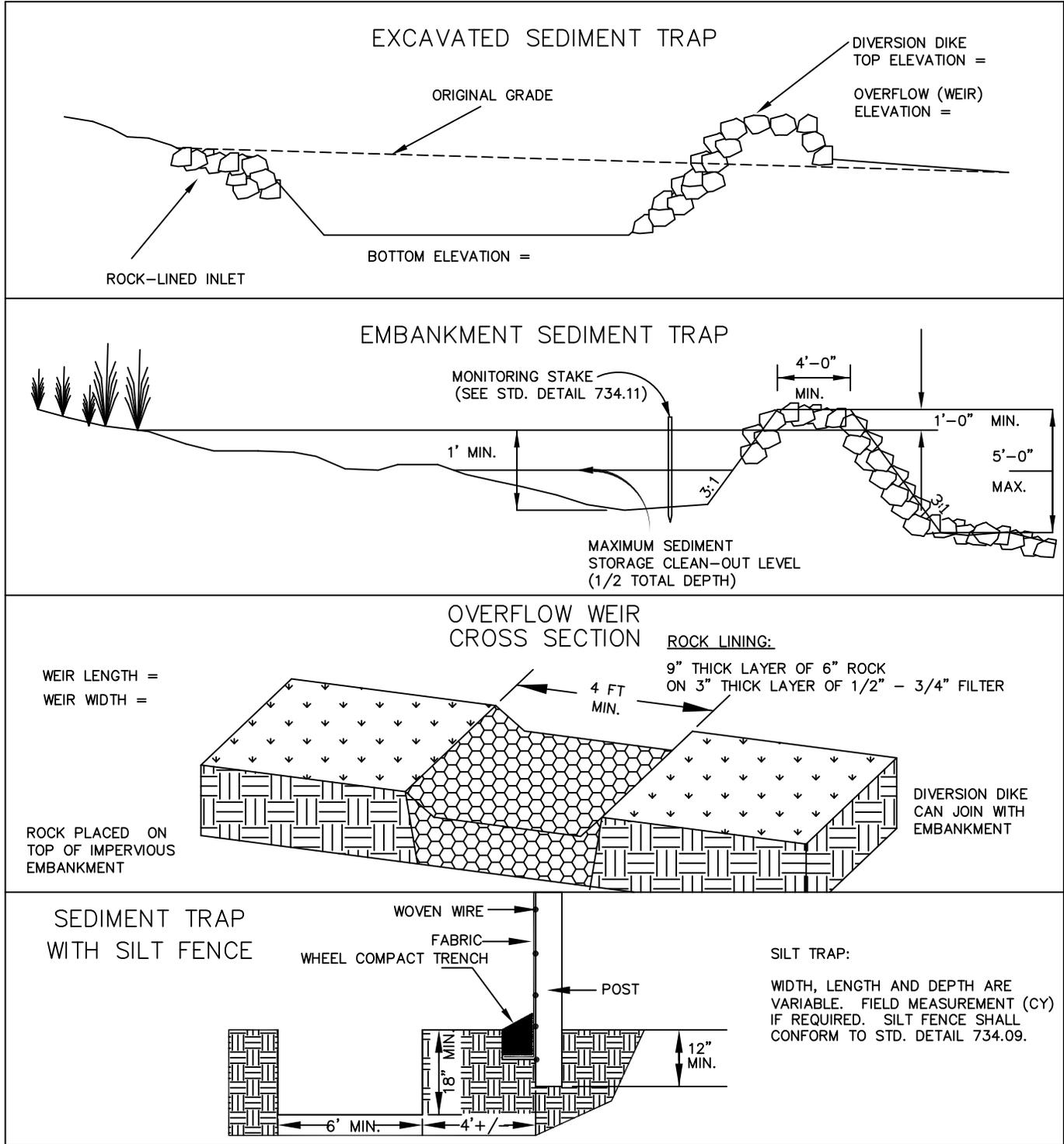


## DEFINITION:

A SMALL TEMPORARY PONDING AREA, FORMED BY CONSTRUCTING AN EARTHEN EMBANKMENT WITH A ROCK-COVERED OUTLET ACROSS A DRAINAGE SWALE, OR BY EXCAVATION OF A DEPRESSION BELOW ORIGINAL GRADE. RELATIVE ELEVATIONS SHOULD CONTAIN ALL RUNOFF WITHIN THE TRAP AREA.

## PURPOSES:

TO DETAIN SEDIMENT-LADEN RUNOFF FROM DISTURBED AREAS LONG ENOUGH TO ALLOW THE MAJORITY OF THE SEDIMENT TO SETTLE OUT.



MINIMUM TRAP SIZE: 3600 CF PER DISTURBED ACRE

REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

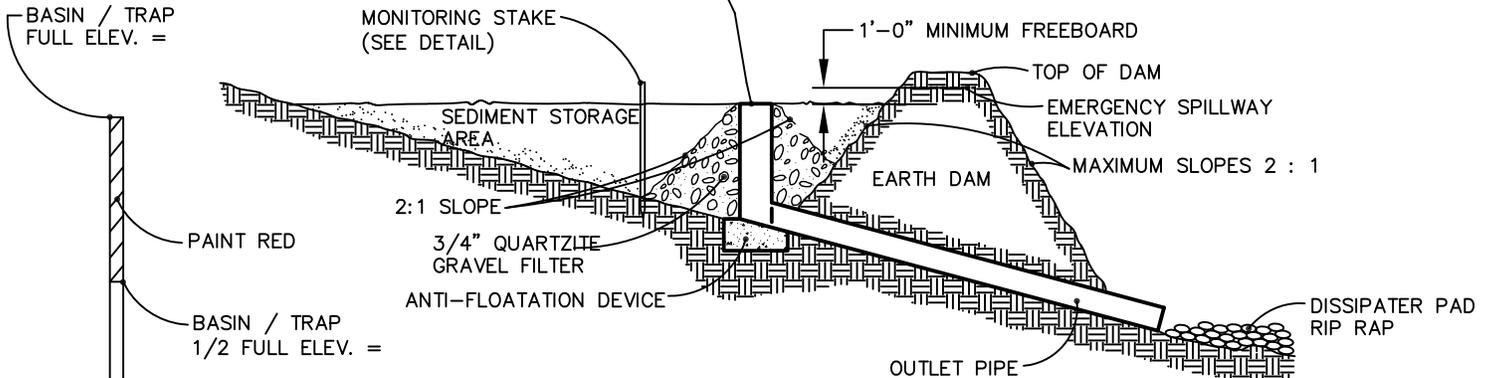
CITY OF CANTON  
TEMPORARY SEDIMENT TRAP

PLATE  
NUMBER  
734.10

	DIMENSIONS	ELEV.
EMERGENCY SPILLWAY		
TOP OF DAM WIDTH		
RIP RAP DISSIPATER PAD		
ANTI-FLOATATION DEVICE		
TOP OF RISER		
OUTLET PIPE INVERT IN		
OUTLET PIPE INVERT OUT		

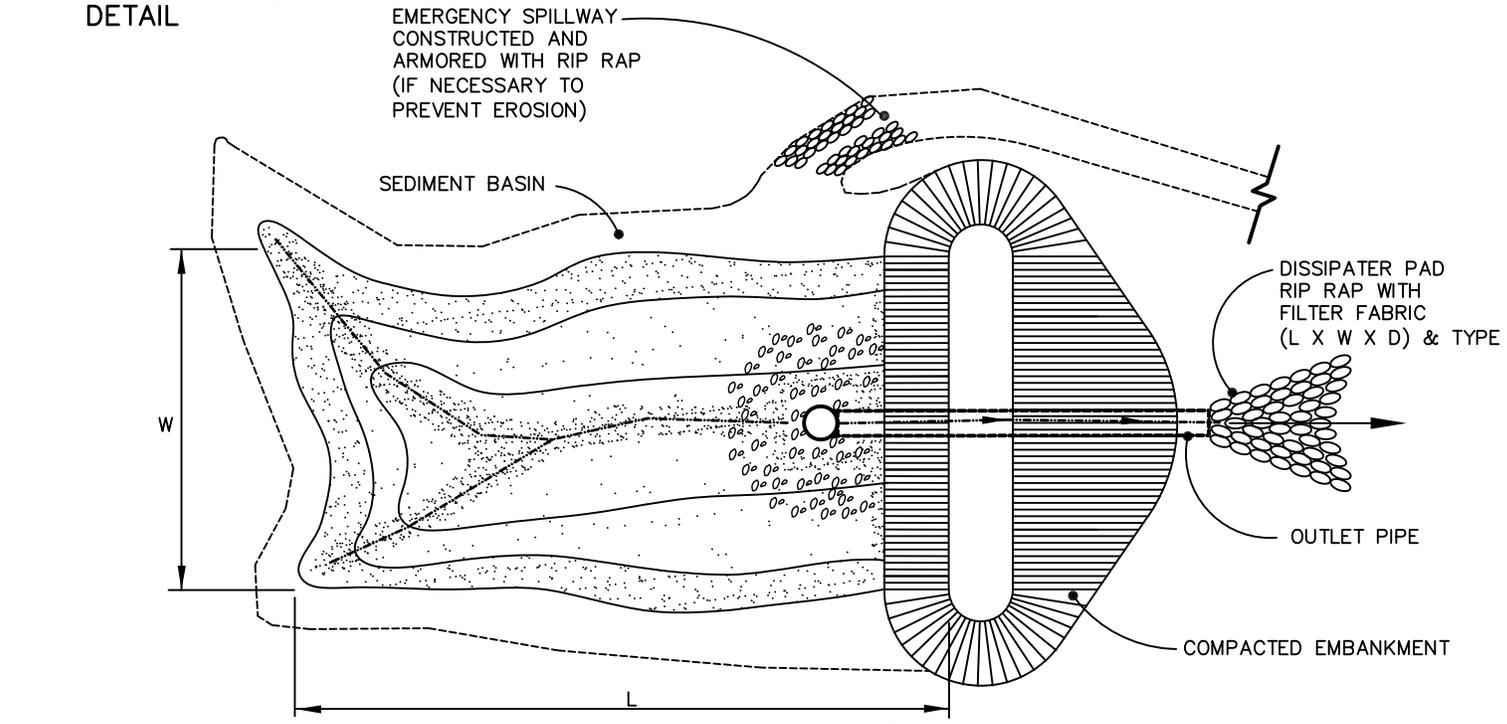
SB

RISER — PERFORATE SUCH THAT BASIN WILL DEWATER.  
ENCASE THE BOTTOM HALF OF THE RISER PIPE WITH FILTER FABRIC.



CROSS SECTION

MONITORING STAKE  
DETAIL



PLAN VIEW

MINIMUM L = 2W

DISTURBED AREA: \_\_\_\_\_ AC

REQUIRED STORAGE VOLUME: \_\_\_\_\_ CF (3600 CF / DISTURBED ACRE)

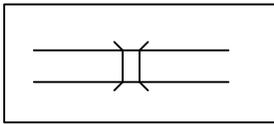
PROPOSED STORAGE VOLUME: \_\_\_\_\_ CF

REVISED: OCTOBER 2006

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
SEDIMENT BASIN RISER FILTER

PLATE  
NUMBER  
734.11



SC

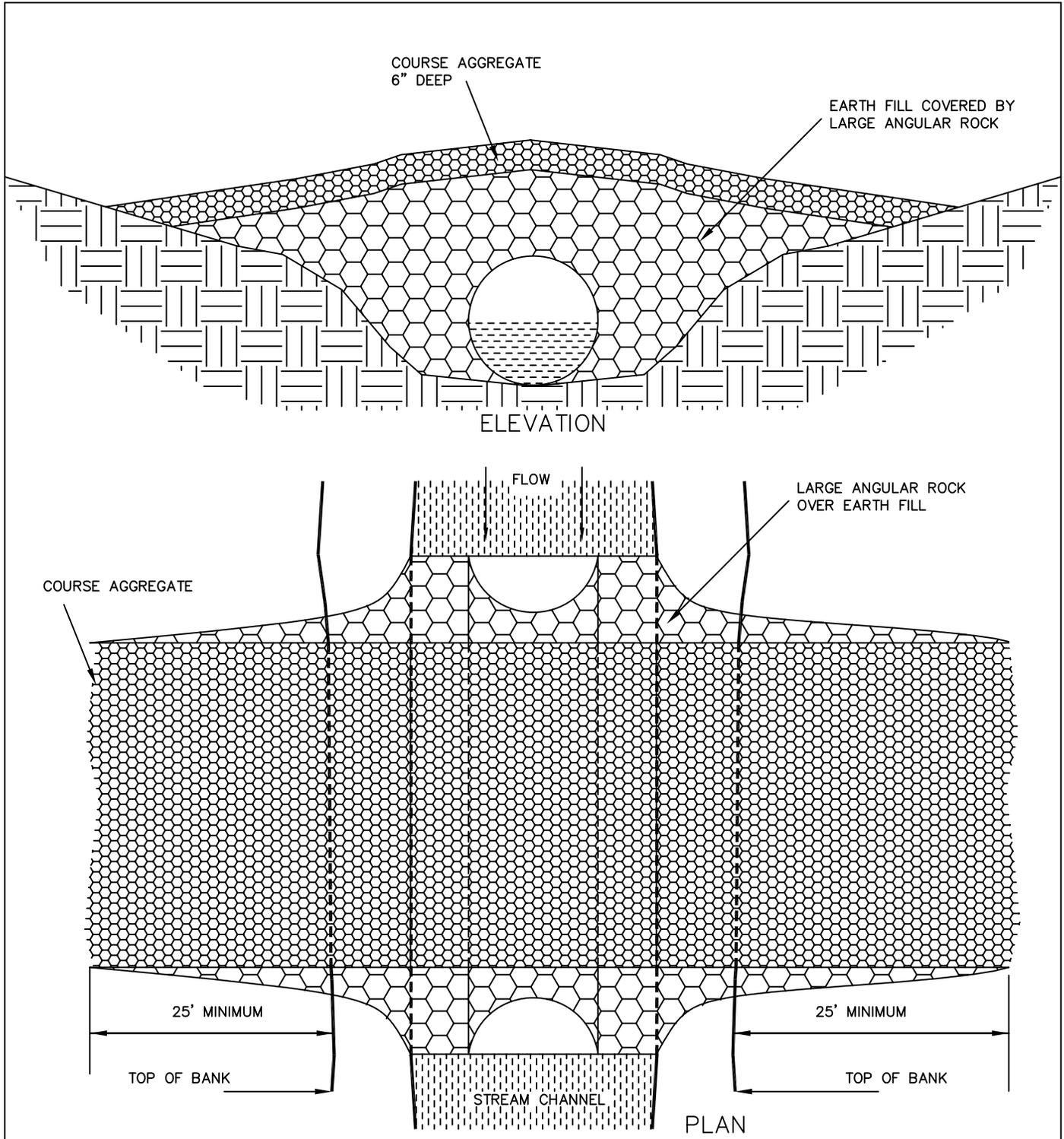
# TEMPORARY STREAM CROSSING

DEFINITION:

A TEMPORARY STRUCTURAL SPAN INSTALLED ACROSS A FLOWING WATERCOURSE FOR USE BY CONSTRUCTION TRAFFIC. STRUCTURES MAY INCLUDE BRIDGES, ROUND PIPES OR PIPE ARCHES.

PURPOSES:

TO STABILIZE STREAM CROSSINGS AND REDUCE EROSION CREATED BY CONSTRUCTION TRAFFIC.

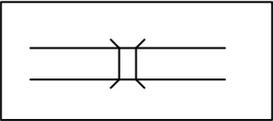


REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
TEMPORARY STREAM CROSSING

PLATE  
NUMBER  
734.12



# TEMPORARY STREAM CROSSING

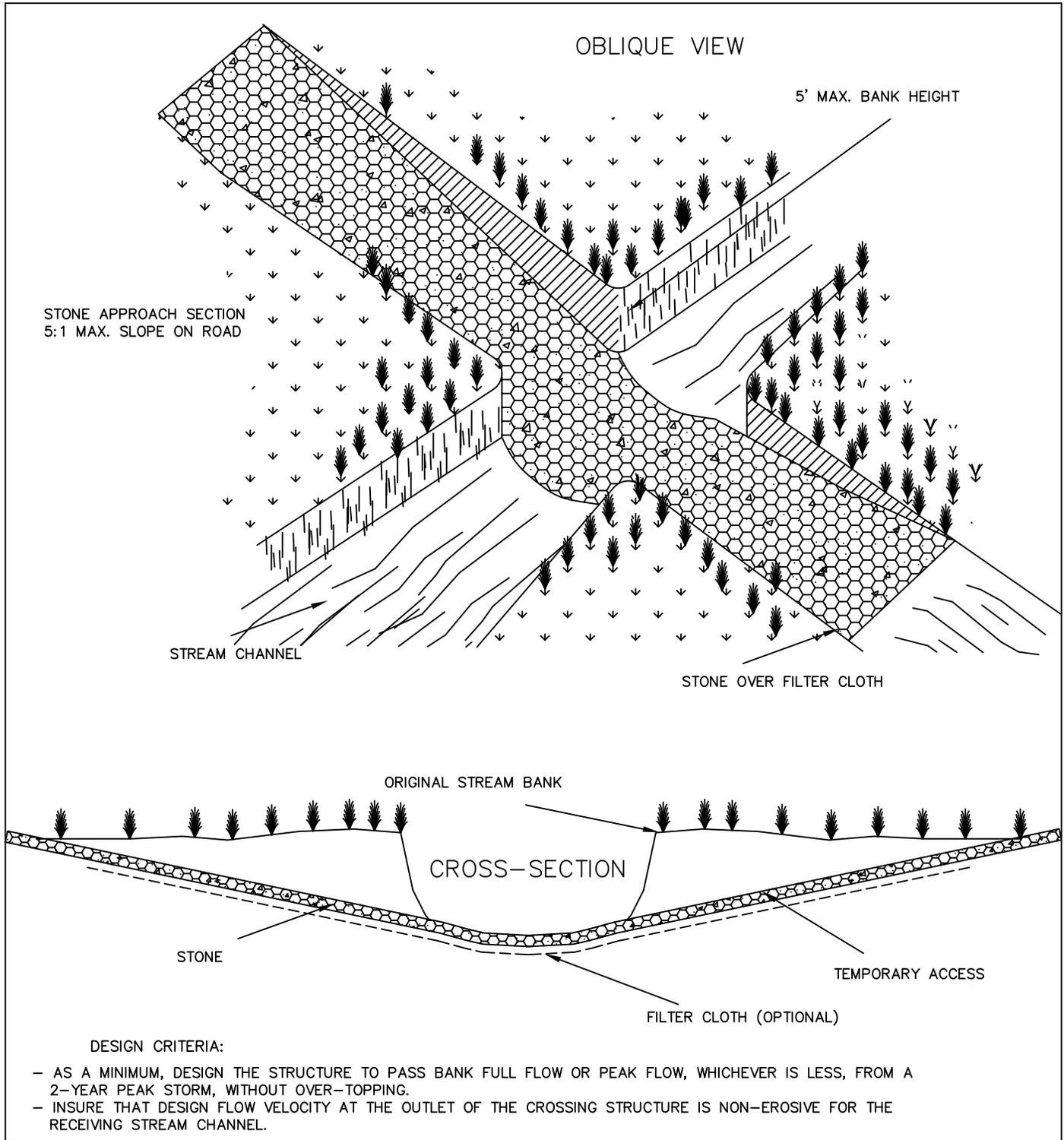
SC

### DEFINITION:

A TEMPORARY AT-GRADE STREAM CROSSING INSTALLED ACROSS A NORMALLY DRY WATERCOURSE FOR USE BY CONSTRUCTION TRAFFIC.

### PURPOSES:

TO STABILIZE STREAM CROSSINGS AND REDUCE EROSION CREATED BY CONSTRUCTION TRAFFIC.



### DESIGN CRITERIA:

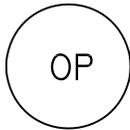
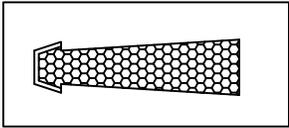
- AS A MINIMUM, DESIGN THE STRUCTURE TO PASS BANK FULL FLOW OR PEAK FLOW, WHICHEVER IS LESS, FROM A 2-YEAR PEAK STORM, WITHOUT OVER-TOPPING.
- INSURE THAT DESIGN FLOW VELOCITY AT THE OUTLET OF THE CROSSING STRUCTURE IS NON-EROSIVE FOR THE RECEIVING STREAM CHANNEL.

REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
TEMPORARY STREAM CROSSING

PLATE  
NUMBER  
734.13



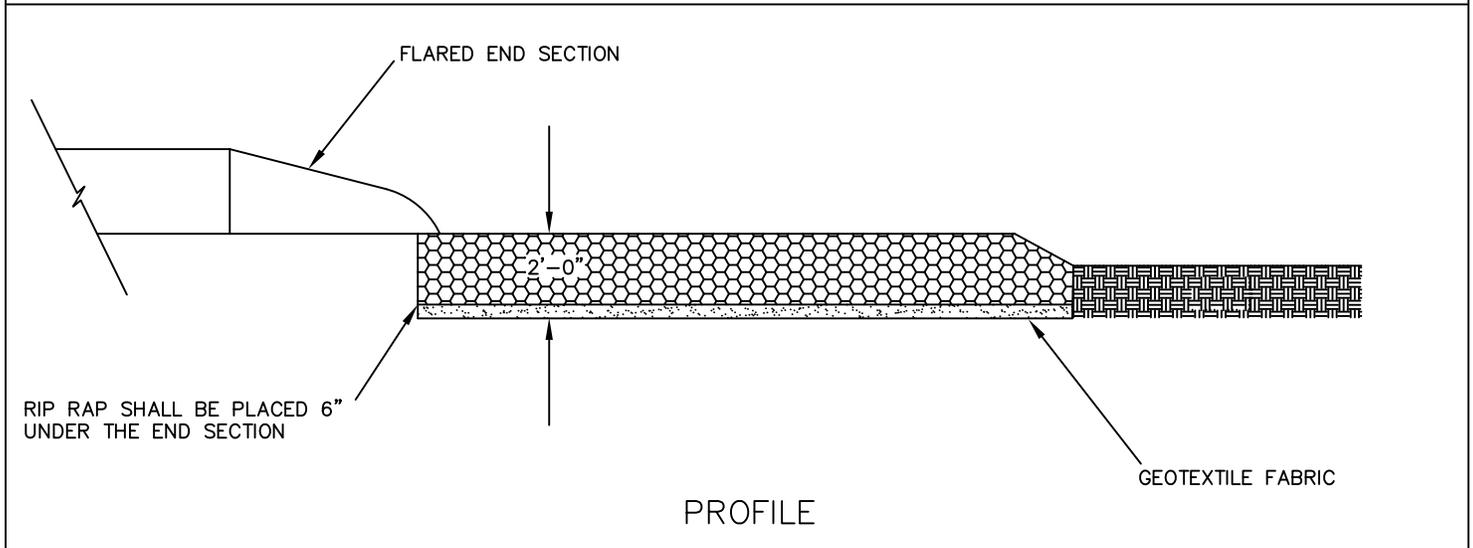
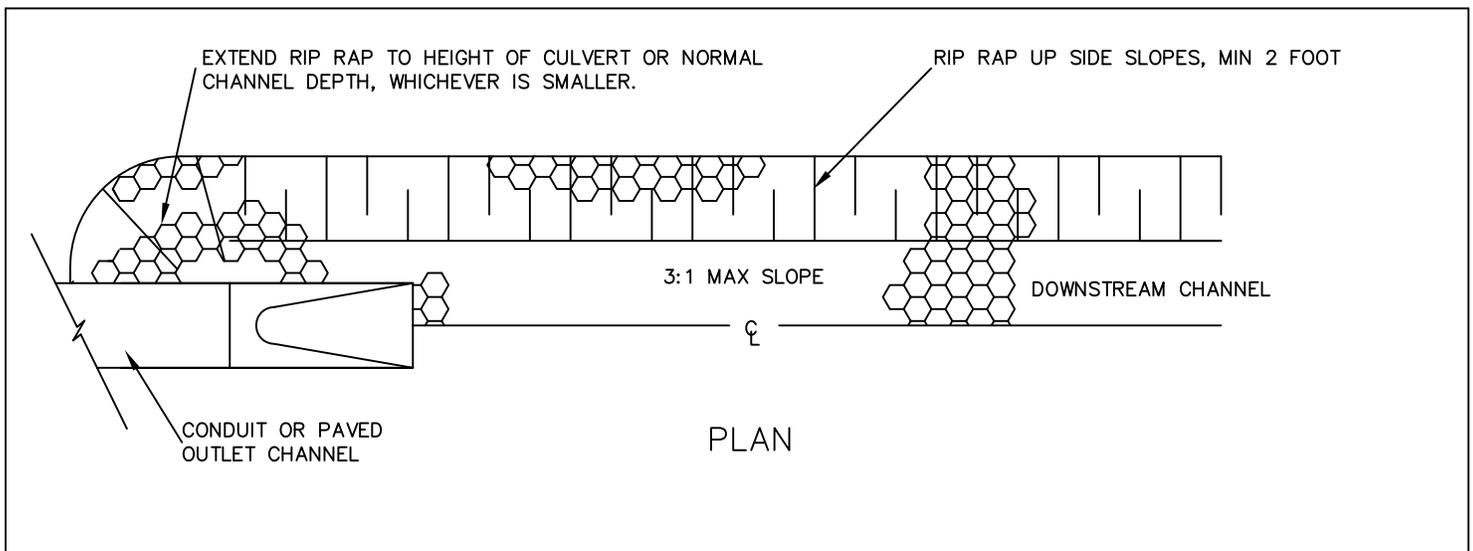
# OUTLET PROTECTION

## DEFINITION:

STRUCTURALLY LINED APRONS OR OTHER ACCEPTABLE ENERGY DISSIPATING DEVICES PLACED AT THE OUTLETS OF PIPES OR PAVED CHANNEL SECTIONS.

## PURPOSES:

1. TO PREVENT SCOUR AT STORM WATER OUTLETS AND TO MINIMIZE THE POTENTIAL FOR DOWNSTREAM EROSION BY REDUCING THE VELOCITY OF CONCENTRATED STORM WATER FLOWS.



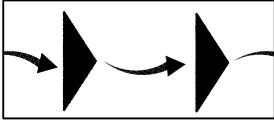
QUANTITY AND SIZE OF RIP RAP TO BE DETERMINED BY DESIGN.  
ALL RIP RAP SHALL BE UNDERLAID BY A SUITABLE FILTER FABRIC.

REVISED: DECEMBER 2009

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
OUTLET PROTECTION

PLATE  
NUMBER  
734.14



CD

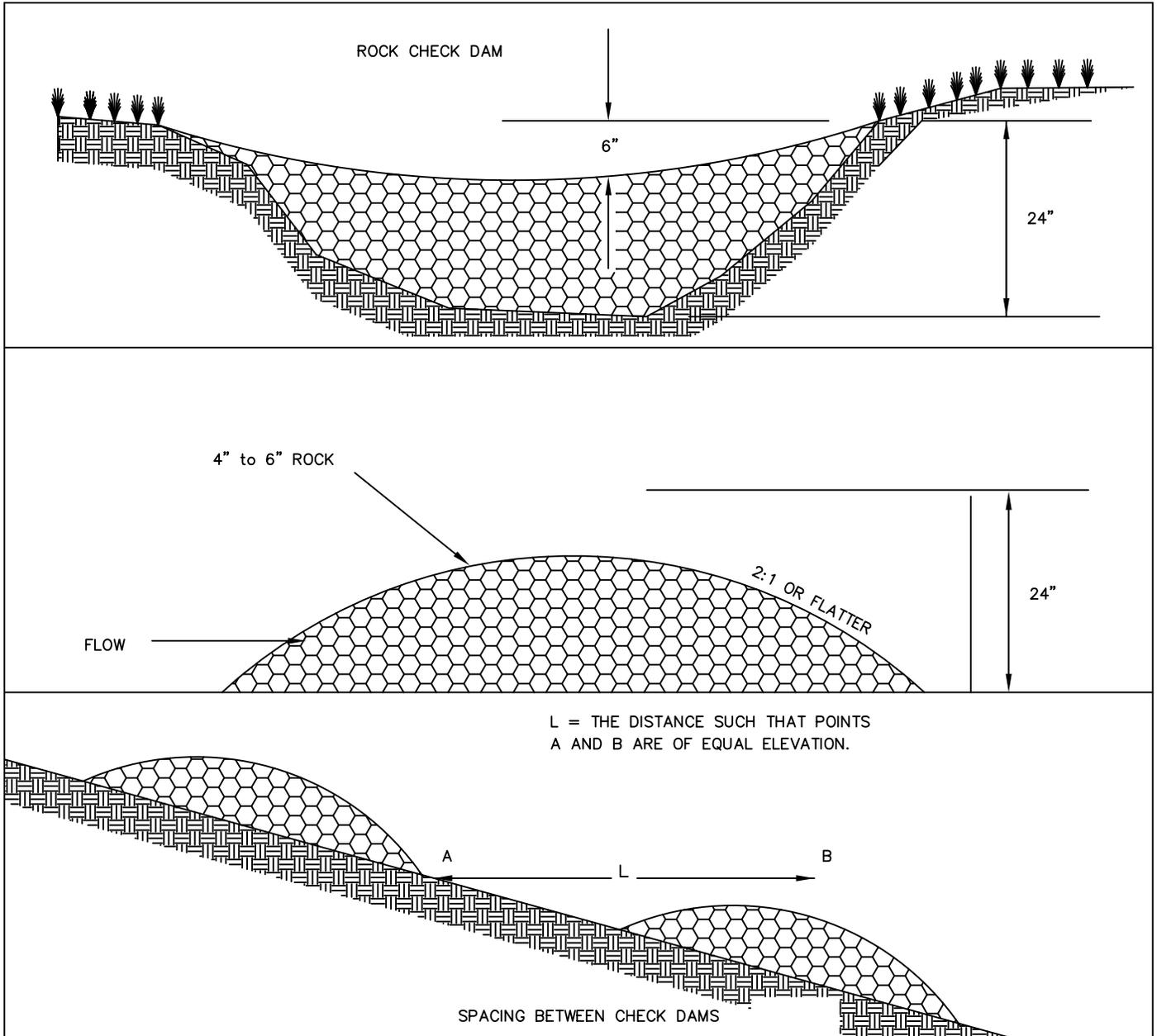
# CHECK DAM

DEFINITION:

SMALL TEMPORARY DAM CONSTRUCTED ACROSS A SWALE OR DRAINAGE DITCH.

PURPOSES:

TO REDUCE THE VELOCITY OF STORM WATER FLOWS AND EROSION OF THE SWALE OR DITCH.

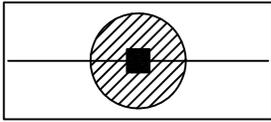


REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
CHECK DAM

PLATE  
NUMBER  
734.15



# INLET PROTECTION

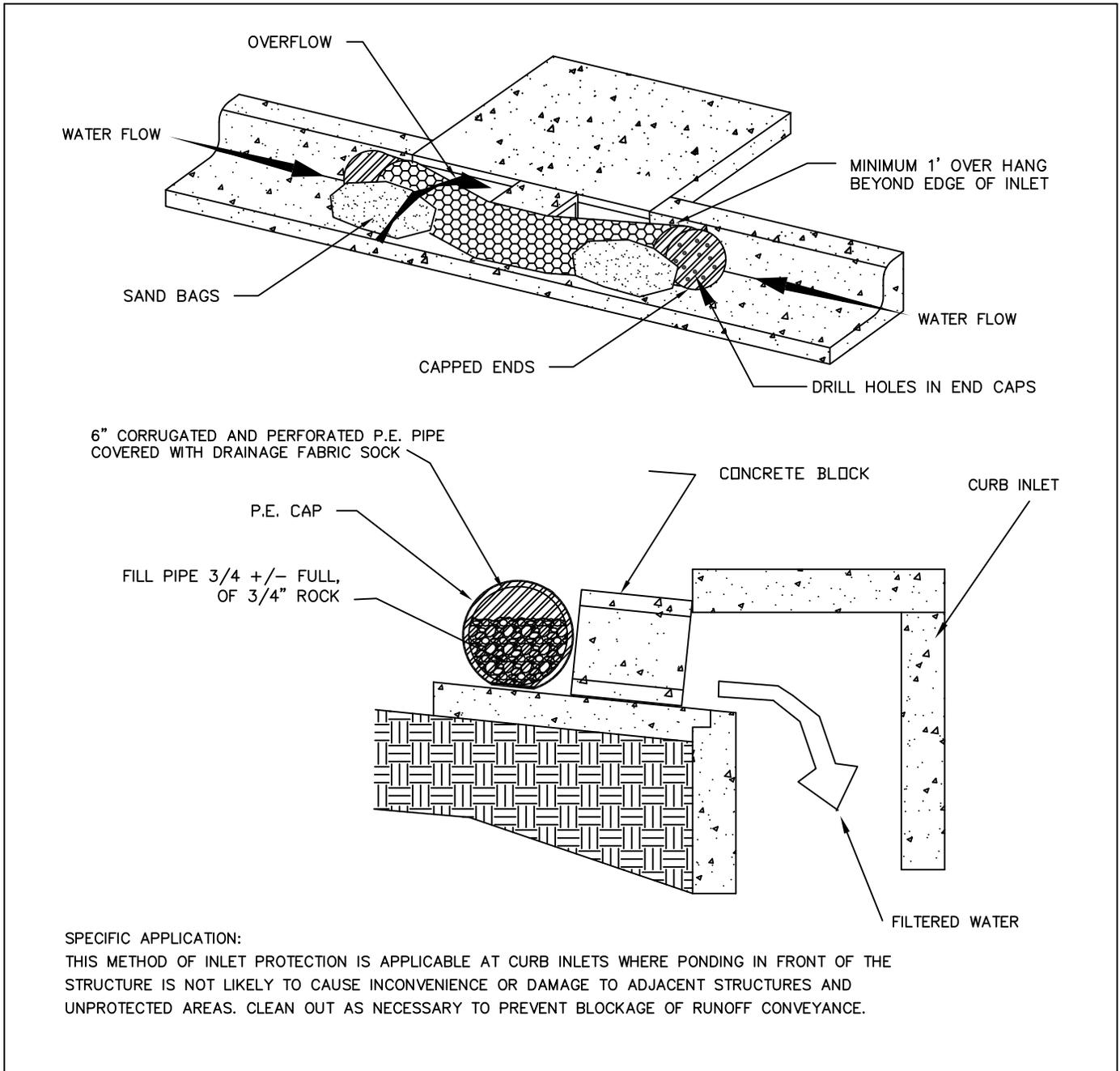


DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET. TO BE USED AT SUMP CONDITIONS.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.

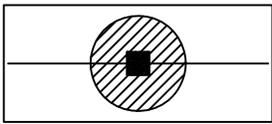


REVISED: NOVEMBER 2008

SPECIFICATION  
 REFERENCE  
 NO.  
 734

CITY OF CANTON  
 CORRUGATED PIPE AND FABRIC  
 INLET PROTECTION – OVERFLOW

PLATE  
 NUMBER  
 734.16



# INLET PROTECTION



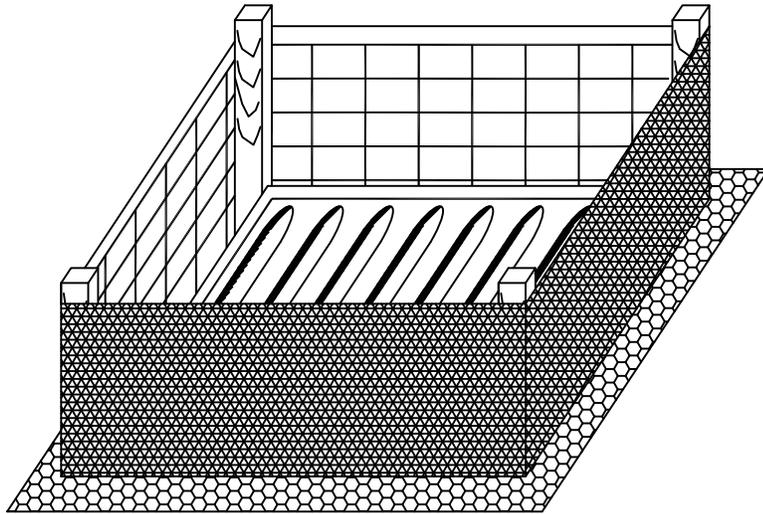
DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

PURPOSES:

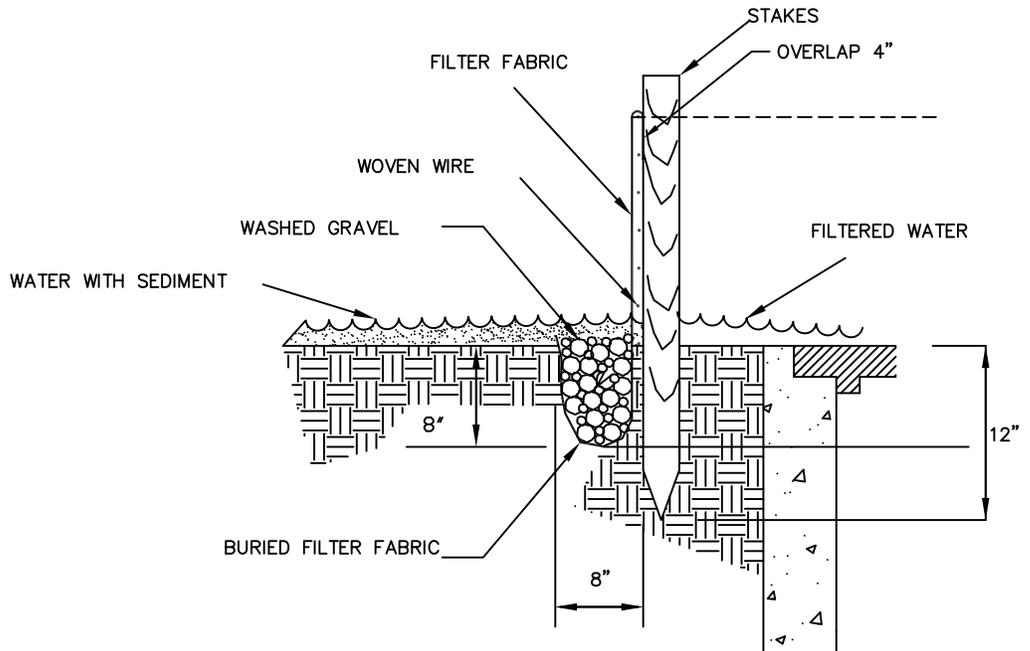
TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.

1. SET POSTS.
2. EXCAVATE AN 8" X 8" TRENCH UPSLOPE ALONG THE POSTS.
3. ATTACH A SUPPORTING WIRE FENCE TO THE POSTS
4. ATTACH FABRIC SANDWICH 4" FABRIC OVERLAP BETWEEN POSTS AND WIRE AND EXTEND INTO TRENCH.



5. BACK FILL TRENCH. IF ROCK TYPE SOILS ARE ENCOUNTERED, UTILIZE 30 TO 40 LB SANDBAGS BUTTED END TO END TO PREVENT UNDERFLOW.

ATTACH FABRIC WITH HOG RINGS 12" MAXIMUM HORIZONTAL SPACING ON TOP AND BOTTOM OF THE WOVEN WIRE AND WITH STAPLES OR WIRE TIES AT 12" MAXIMUM VERTICAL SPACING ON THE POSTS.



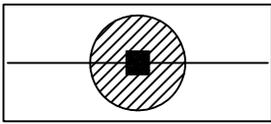
FILTER FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
SILT FENCE DROP INLET  
SEDIMENT FILTER

PLATE  
NUMBER  
734.17



# INLET PROTECTION

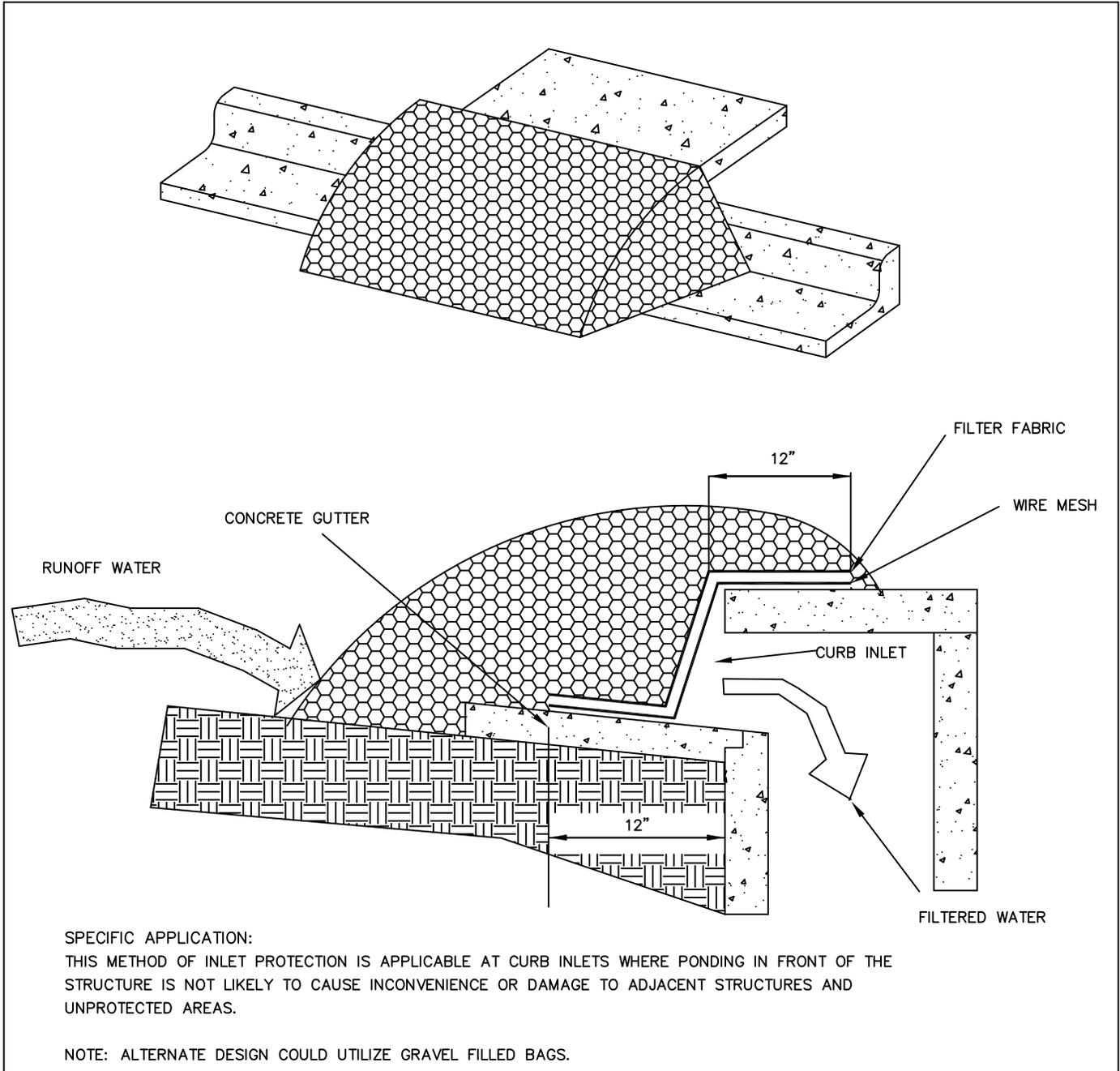


DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



**SPECIFIC APPLICATION:**

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

NOTE: ALTERNATE DESIGN COULD UTILIZE GRAVEL FILLED BAGS.

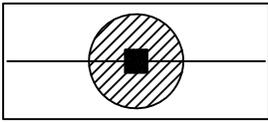
FILTER FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
GRAVEL/FILTER FABRIC  
DROP INLET SEDIMENT FILTER

PLATE  
NUMBER  
734.18



# INLET PROTECTION

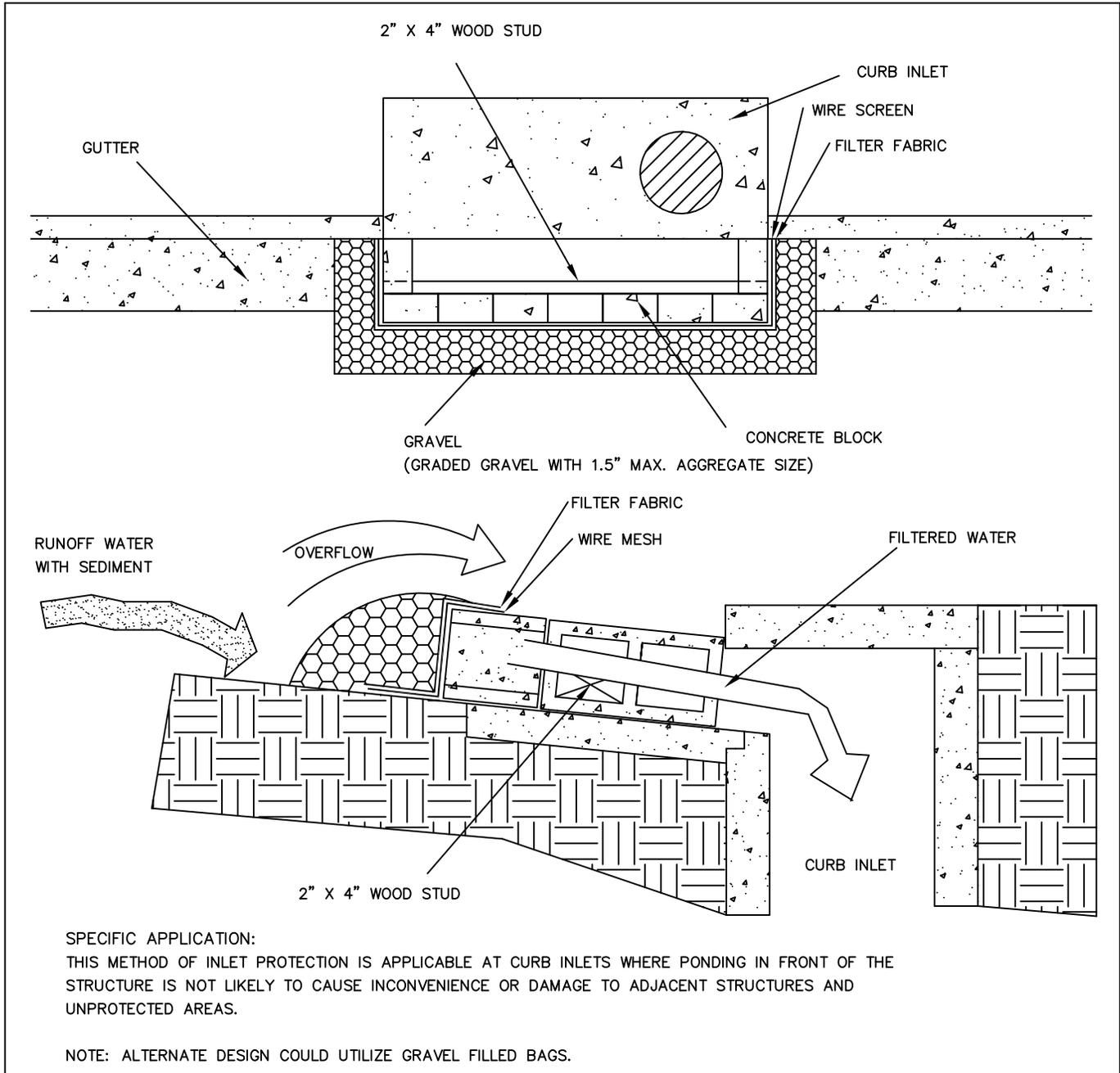


**DEFINITION:**

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

**PURPOSES:**

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



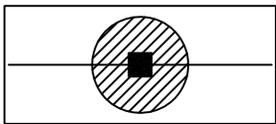
FILTER FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: JUNE 2000

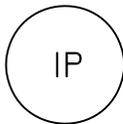
SPECIFICATION  
 REFERENCE  
 NO.  
 734

CITY OF CANTON  
 GRAVEL/CONCRETE BLOCK  
 DROP INLET SEDIMENT FILTER

PLATE  
 NUMBER  
 734.19



# INLET PROTECTION

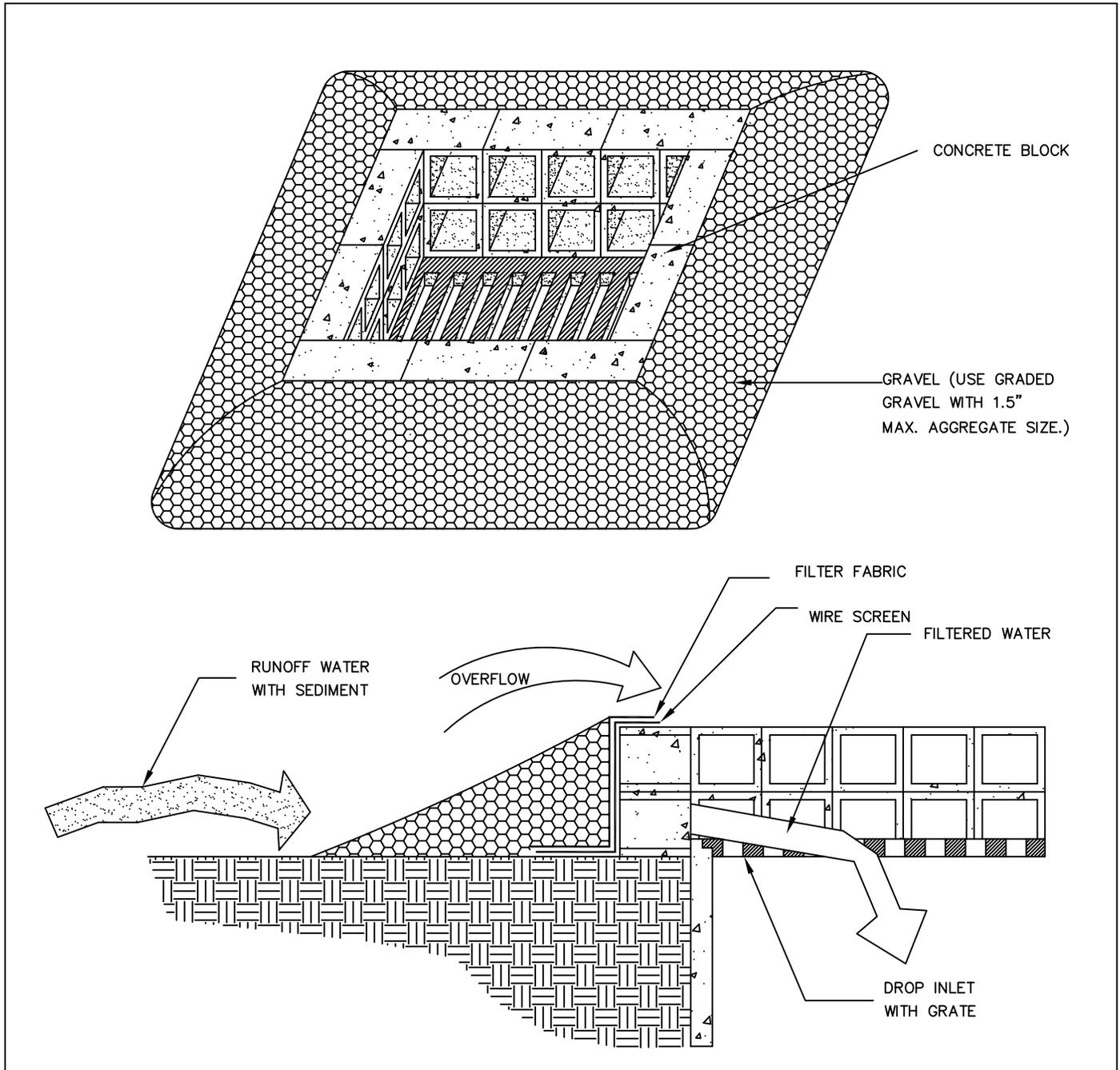


DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



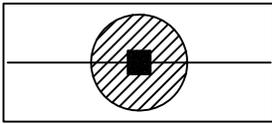
FILTER FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: JUNE 2000

SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
GRAVEL/CONCRETE BLOCK  
DROP INLET SEDIMENT FILTER

PLATE  
NUMBER  
734.20



# INLET PROTECTION

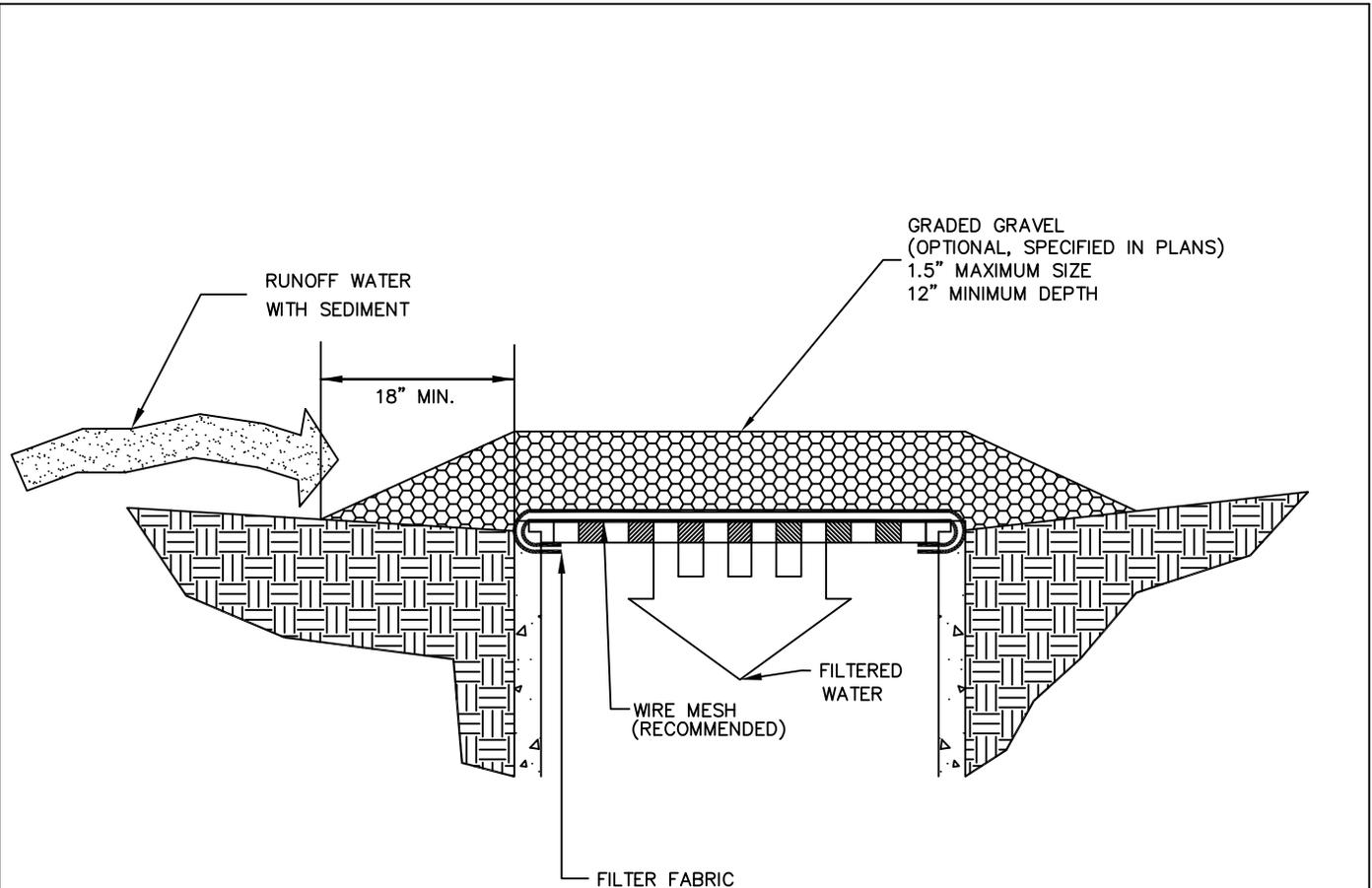


## DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET.

## PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



## SPECIFIC APPLICATION:

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

NOTE: ALTERNATE DESIGN COULD UTILIZE GRAVEL-FILLED BAGS.

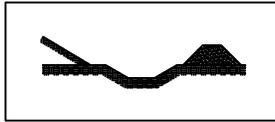
DRAINAGE AND FILTRATION FABRIC SHALL CONFORM TO SECTION 831 OF SDDOT STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, LATEST EDITION.

REVISED: OCTOBER 2006

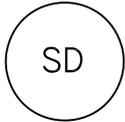
SPECIFICATION  
REFERENCE  
NO.  
734

CITY OF CANTON  
GRAVEL/FILTER FABRIC  
DROP INLET SEDIMENT FILTER

PLATE  
NUMBER  
734.21

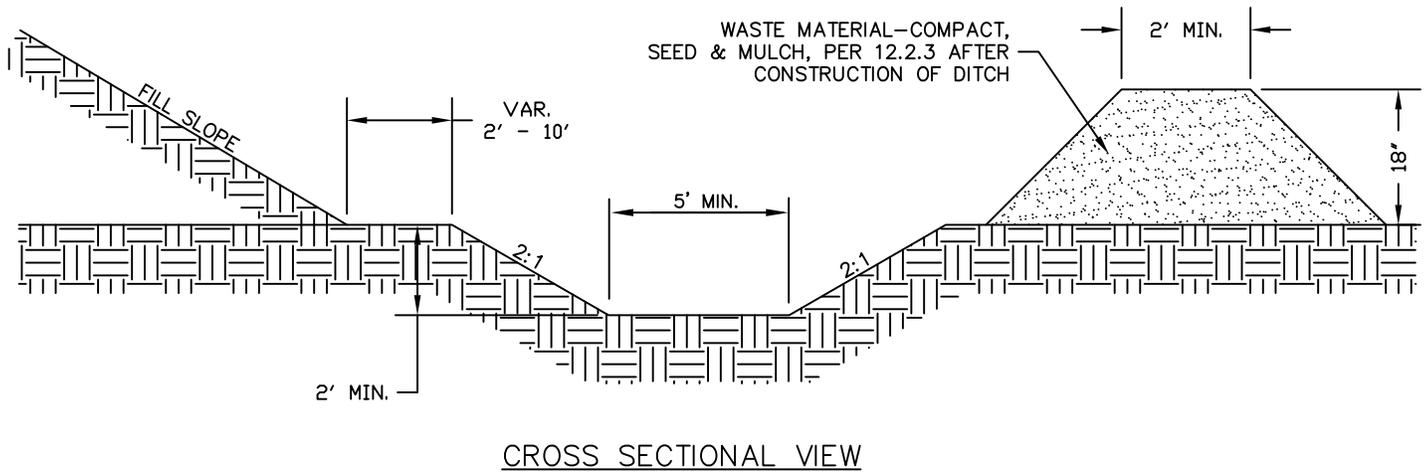


# SILT DITCH



**NOTES:**

- 1. SILT SHALL BE REMOVED WHEN SILT DITCH IS ONE-HALF FULL.
- 2. DITCH SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.

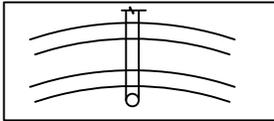


REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

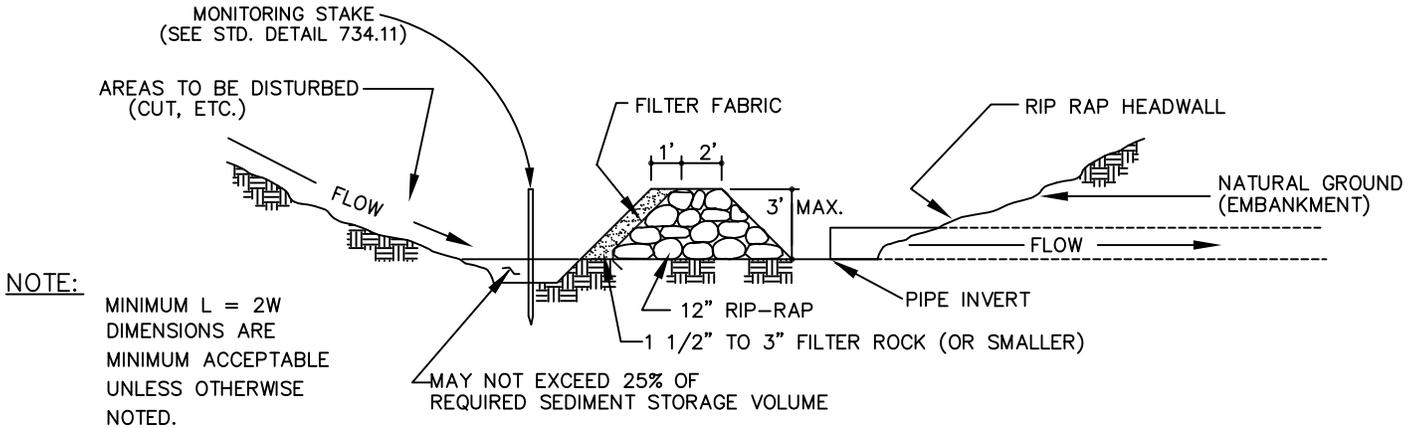
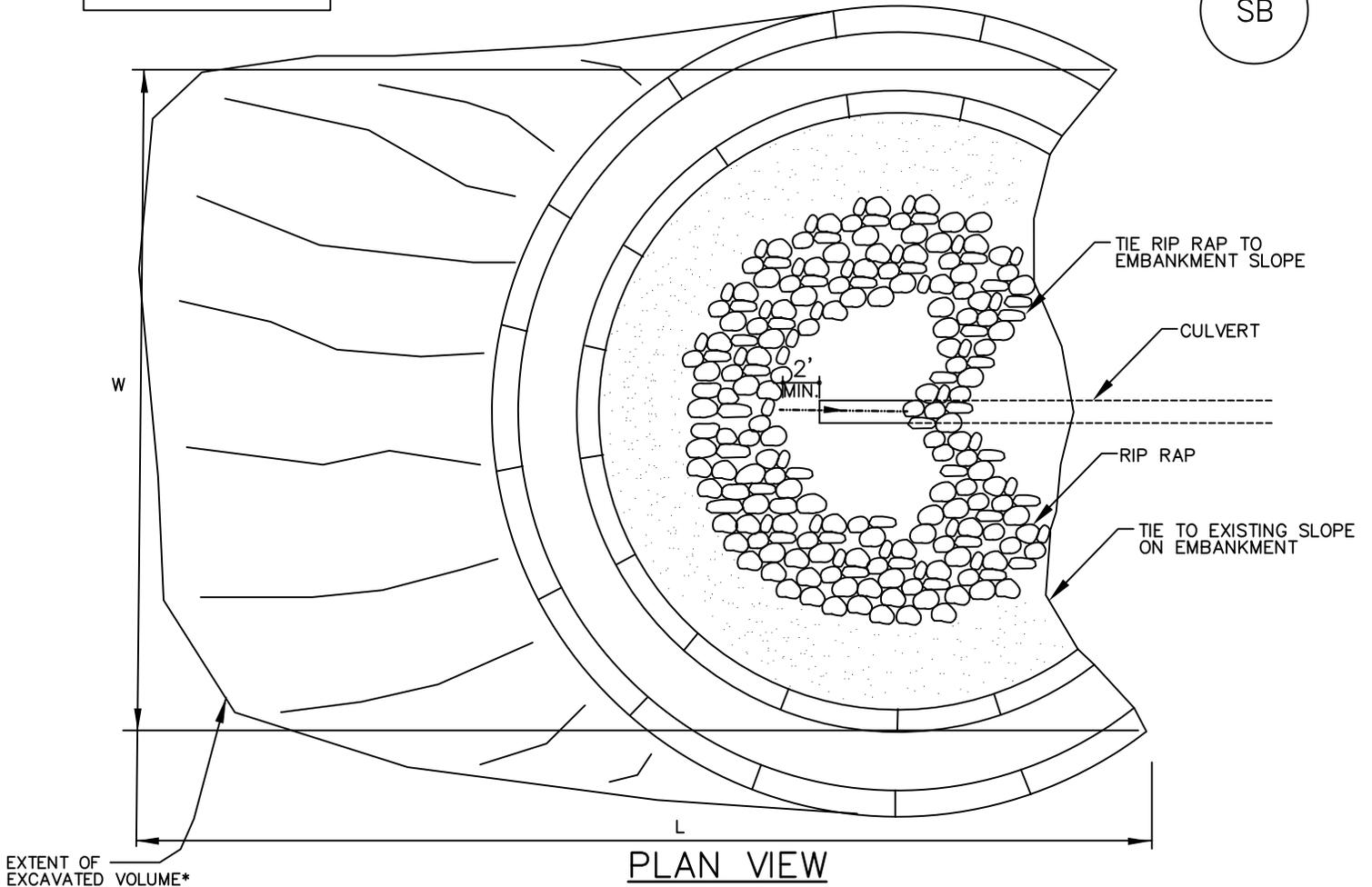
CITY OF CANTON  
  
SILT DITCH

PLATE  
NUMBER  
734.22



# SEDIMENT BASIN HORSESHOE FILTER

SB



## SECTION THRU BASIN, FILTER AND CULVERT PIPE

NO SCALE

**NOTE:**

GRAVEL & RIP RAP FILTER BERM BASIN DETAIL IS DESIGNED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 50 ACRES OR LESS.

\* EXISTING TOPOGRAPHY MAY PROVIDE FOR REQUIRED STORAGE VOLUME WITHOUT EXCAVATION

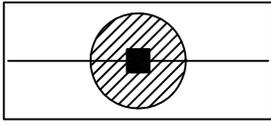
VOLUME REQUIRED = 3600 CF / AC X TRIBUTARY ACRE  
 VOLUME PROVIDED = CF  
 BOTTOM ELEVATION =  
 TOP ELEVATION =

REVISED: JANUARY 2008

SPECIFICATION  
 REFERENCE  
 NO.  
 734

CITY OF CANTON  
 SEDIMENT BASIN  
 HORSESHOE FILTER

PLATE  
 NUMBER  
 734.23



# INLET PROTECTION

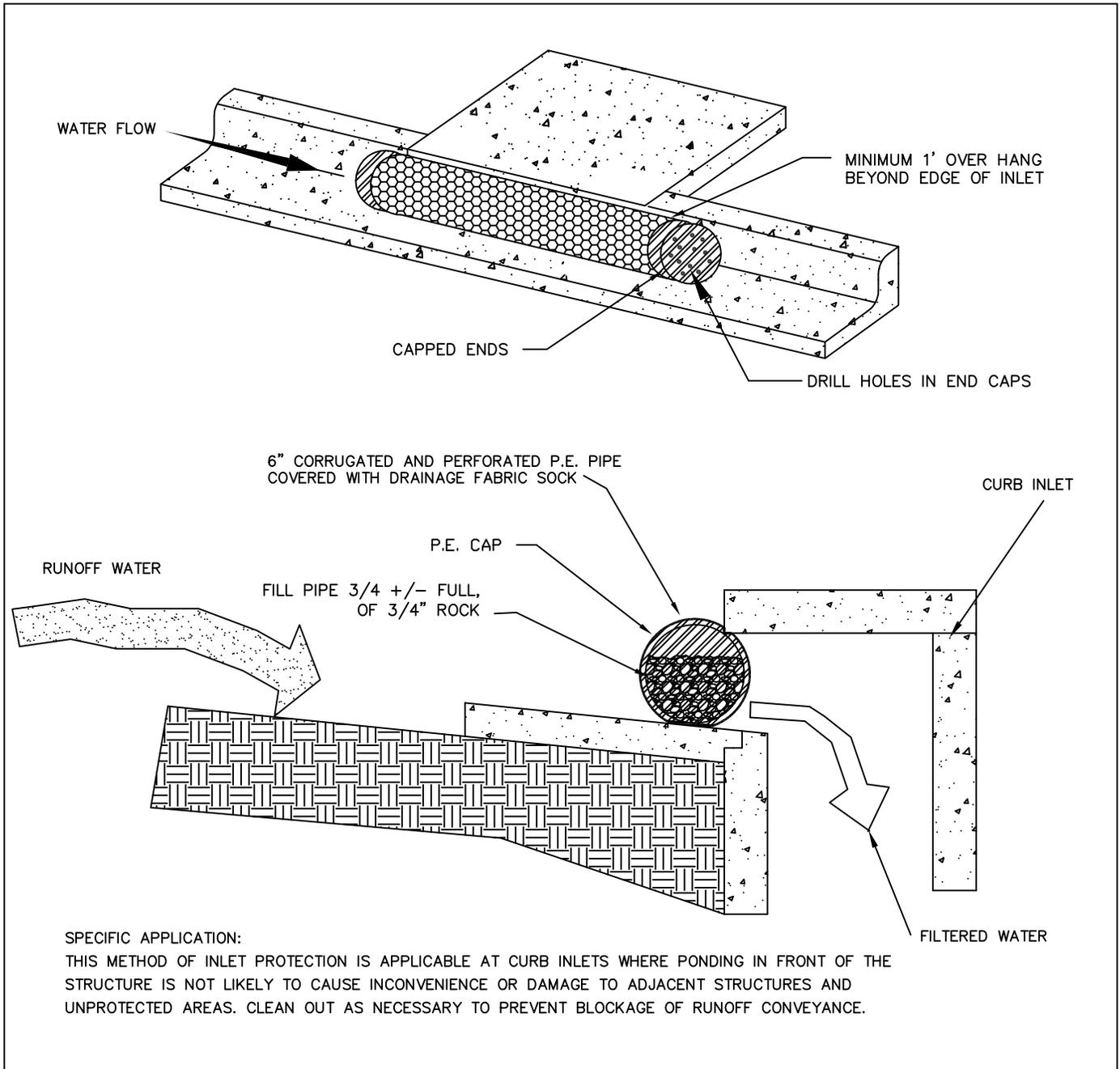


DEFINITION:

A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN DROP INLET OR CURB INLET. TO BE USED ONLY AT ON-GRADE CONDITIONS.

PURPOSES:

TO REDUCE SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF DISTURBED AREAS.



**SPECIFIC APPLICATION:**  
 THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS. CLEAN OUT AS NECESSARY TO PREVENT BLOCKAGE OF RUNOFF CONVEYANCE.

REVISED: NOVEMBER 2008

SPECIFICATION  
 REFERENCE  
 NO.  
 734

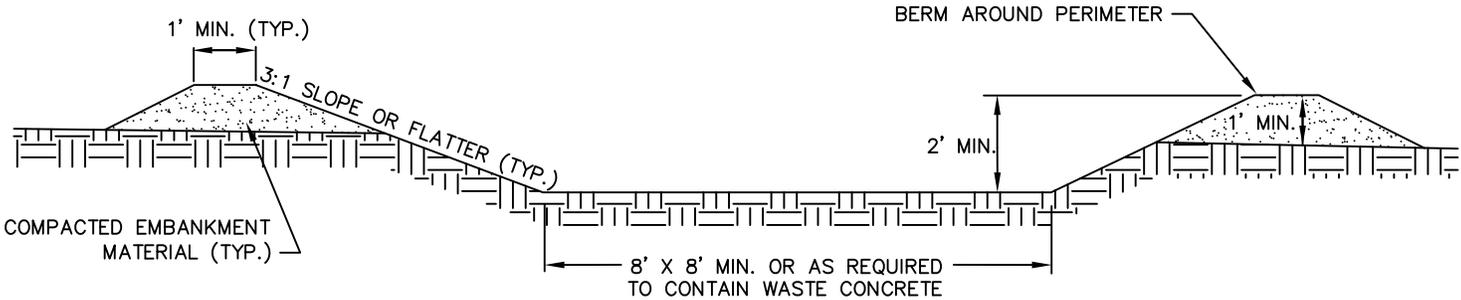
CITY OF CANTON  
 CORRUGATED PIPE AND FABRIC  
 INLET PROTECTION

PLATE  
 NUMBER  
 734.24

# CONCRETE WASHOUT FACILITY

NOTES:

1. CONCRETE WASHOUT FACILITY SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. A SIGN SHALL BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE CWF.
3. THE CONCRETE WASHOUT FACILITY SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
4. WHEN CWF ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE AND MATERIALS USED TO CONSTRUCT THE CWF SHALL BE REMOVED AND DISPOSED OF.
5. WHEN THE CONCRETE WASHOUT FACILITY IS REMOVED, THE HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE SHALL BE BACKFILLED, REPAIRED AND STABILIZED.



CROSS SECTIONAL VIEW

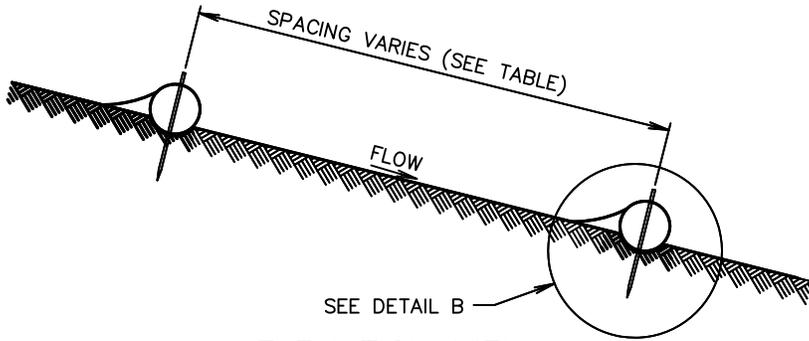
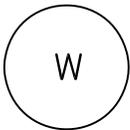
REVISED: DECEMBER 2008

SPECIFICATION REFERENCE NO. 734
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CITY OF CANTON  CONCRETE WASHOUT FACILITY
---

PLATE NUMBER 734.28
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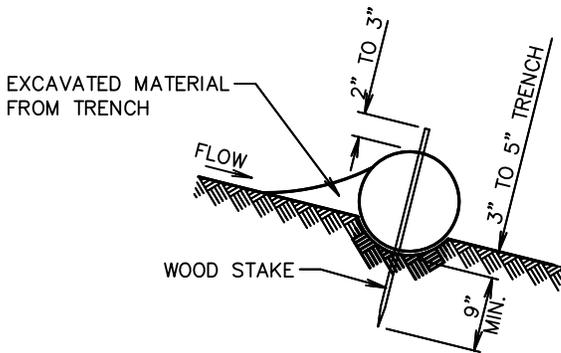
# SEDIMENT CONTROL WATTLE



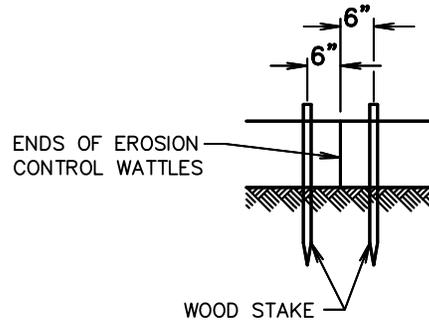
ELEVATION VIEW  
CUT OR FILL SLOPE INSTALLATION

CUT OR FILL SLOPE INSTALLATION	
SLOPE	SPACING (FT)
1:1	10
2:1	20
3:1	30
4:1	40

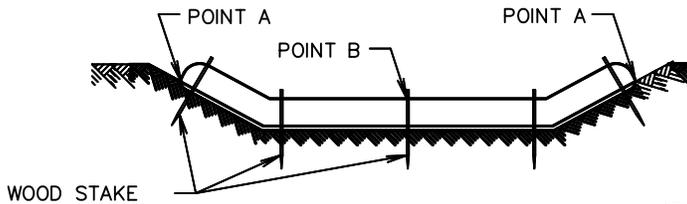
NOTE: IF ONLY ONE WATTLE IS REQUIRED, THE SLOPE SHALL NOT EXCEED 20:1.



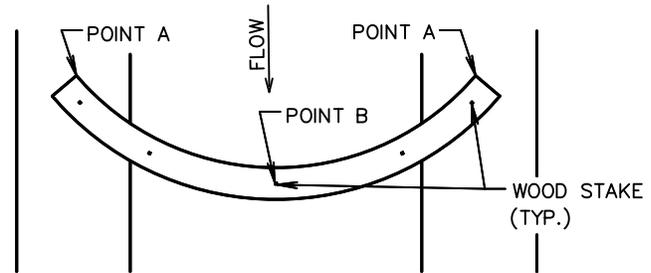
DETAIL B  
(TYPICAL OF ALL INSTALLATIONS)



DETAIL C



SECTION A-A



PLAN VIEW  
DITCH INSTALLATION

DITCH INSTALLATION	
GRADE	SPACING (FT)
2%	150
3%	100
4%	75
5%	50

## GENERAL NOTES:

AT CUT OR FILL SLOPE INSTALLATIONS, WATTLES SHALL BE INSTALLED ALONG THE CONTOUR AND PERPENDICULAR TO THE WATER FLOW.

AT DITCH INSTALLATIONS, POINT "A" MUST BE HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE WATTLE AND NOT AROUND THE ENDS.

THE CONTRACTOR SHALL DIG A 3" TO 5" TRENCH, INSTALL THE WATTLE TIGHTLY IN THE TRENCH SO THAT DAYLIGHT CAN NOT BE SEEN UNDER THE WATTLE, AND THEN COMPACT THE SOIL EXCAVATED FROM THE TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. SEE DETAIL B.

THE STAKES SHALL BE 1"x2" OR 2"x2" WOOD STAKES, HOWEVER, OTHER TYPES OF STAKES SUCH AS REBAR MAY BE USED ONLY IF APPROVED BY THE ENGINEER. THE STAKES SHALL BE PLACED 6" FROM THE ENDS OF THE WATTLES AND THE SPACING OF THE STAKES ALONG THE WATTLES SHALL BE 3' TO 4'.

WHERE INSTALLING RUNNING LENGTHS OF WATTLES, THE CONTRACTOR SHALL BUTT THE SECOND WATTLE TIGHTLY AGAINST THE FIRST AND SHALL NOT OVERLAP THE ENDS. SEE DETAIL C.

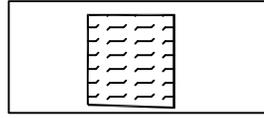
ISSUED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
734

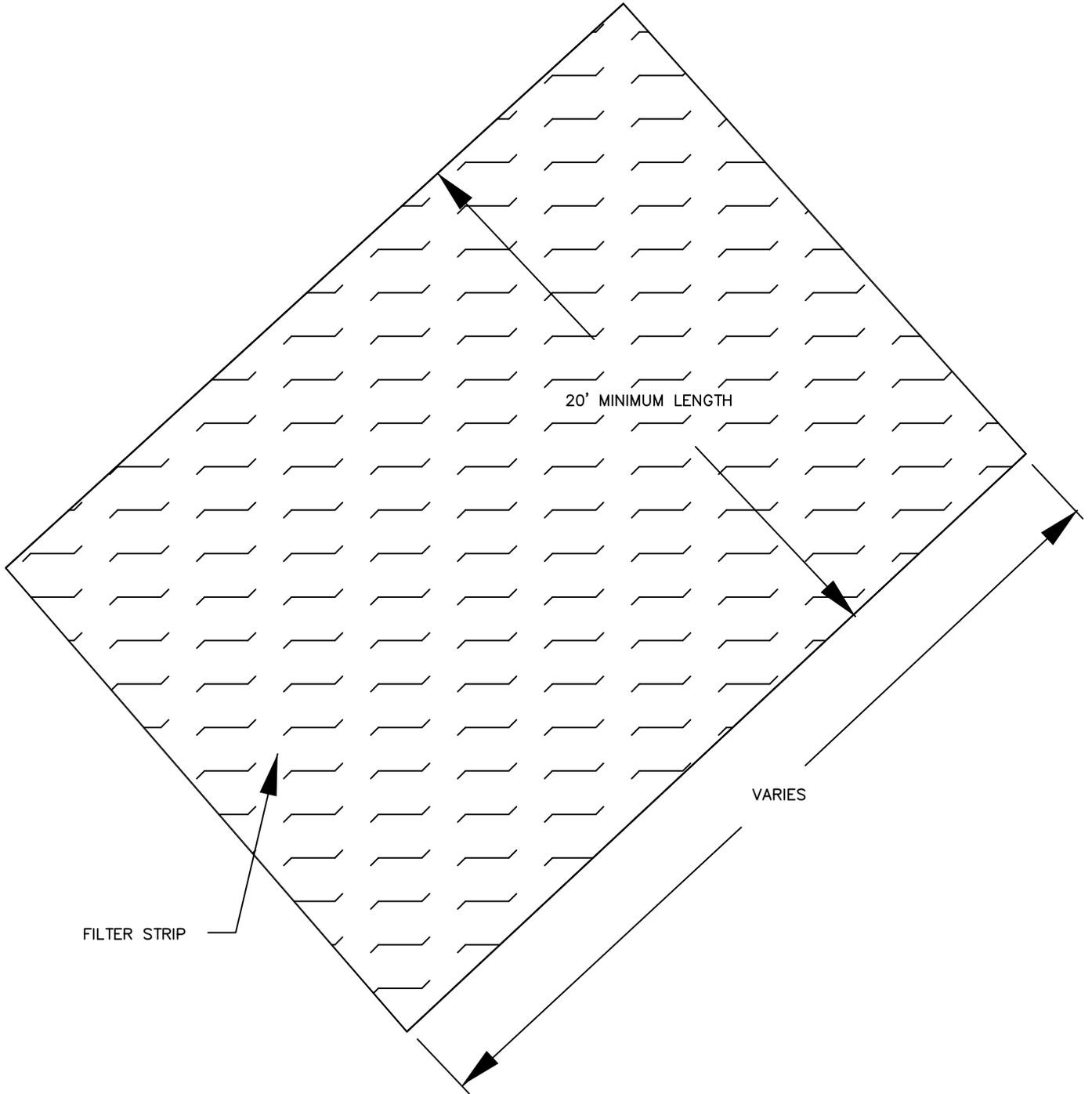
CITY OF CANTON  
SEDIMENT CONTROL WATTLE

PLATE  
NUMBER  
734.29

# FILTER STRIP



FS



NOTE: FILTER STRIPS SHALL BE UNDISTURBED NATURAL VEGETATION OR SOD.

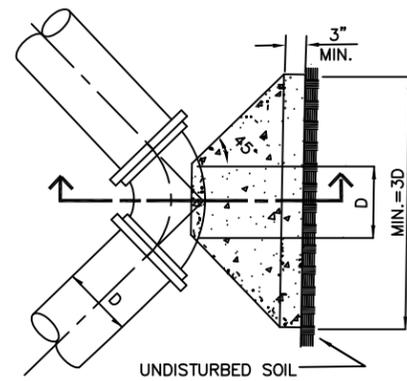
ISSUED: DECEMBER 2007

SPECIFICATION  
REFERENCE  
NO.  
734

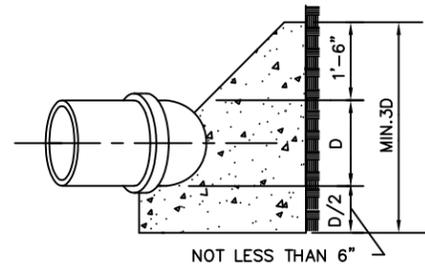
CITY OF CANTON  
FILTER STRIP

PLATE  
NUMBER  
734.31

**CAST-IN-PLACE THRUST  
BLOCKING NOT ALLOWED.  
SEE NOTE BELOW.**

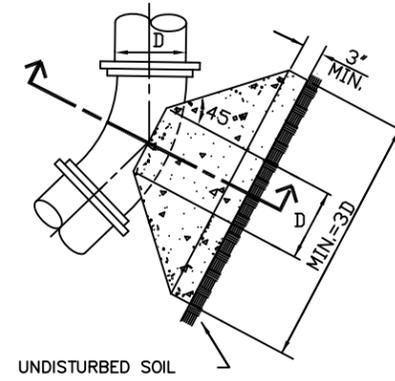


PLAN VIEW

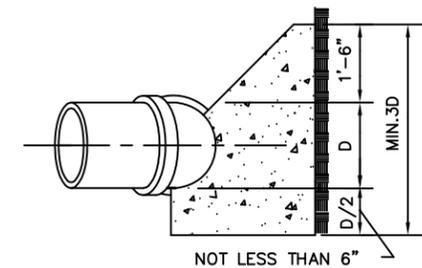


SECTION VIEW

90 - DEGREE BEND

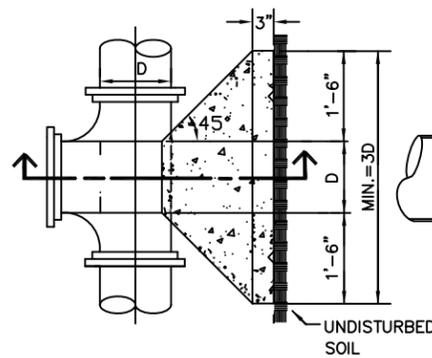


PLAN VIEW

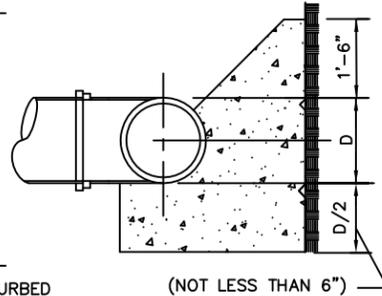


SECTION VIEW

11 1/4 - DEGREE, 22 1/2 - DEGREE AND 45 - DEGREE BENDS

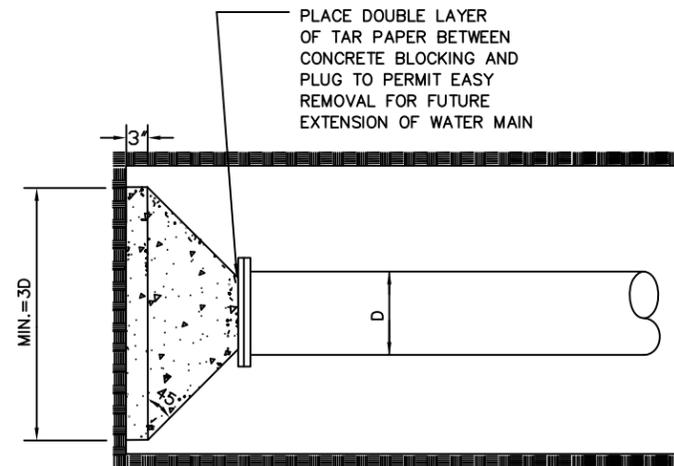


PLAN VIEW



SECTION VIEW

TEE



S.J. PLUG

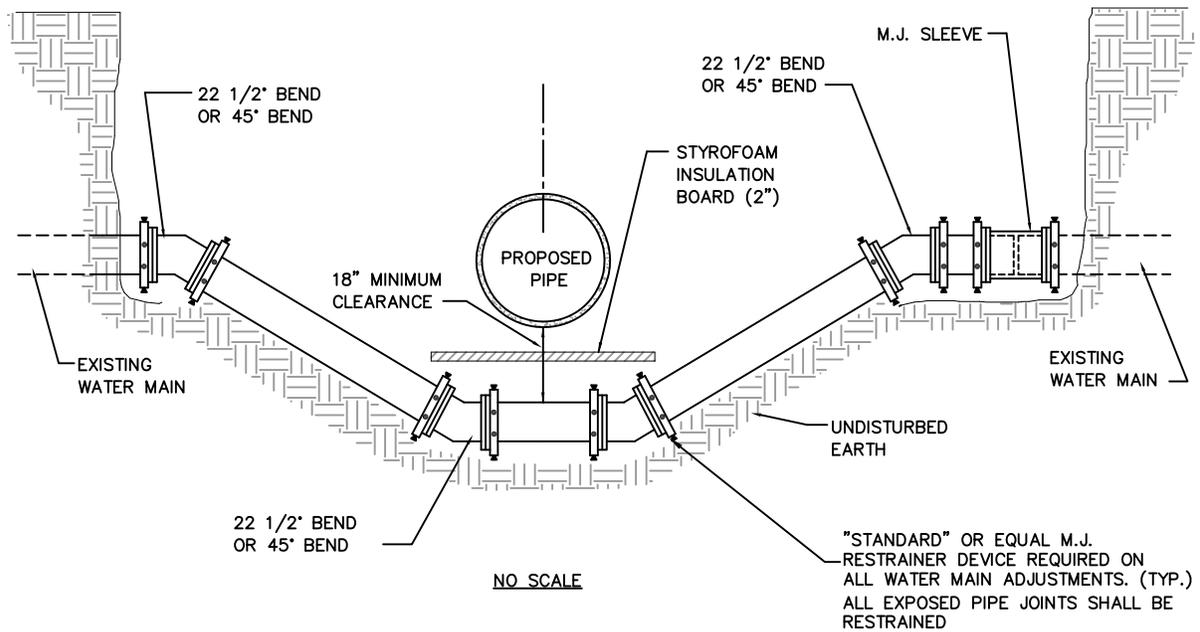
**CONCRETE THRUST BLOCK**

NOTE: CAST-IN-PLACE PCC THRUST BLOCKS WILL NOT BE ALLOWED. PRECAST PCC BLOCKS SHALL BE USED AND SHALL HAVE THE SAME AREAS AS SHOWN ABOVE.

REVISED: NOVEMBER 2004

CITY OF CANTON	
CONCRETE THRUST BLOCK	
SPECIFICATION REFERENCE NO. 900	PLATE NUMBER 900.01

## WATER MAIN ADJUSTMENT



**NOTE:**  
 THE PIPE, FITTINGS AND RESTRAINER  
 DEVICES SHALL BE BID AS SEPARATE  
 ITEMS FROM THE WATER MAIN ADJUSTMENT.

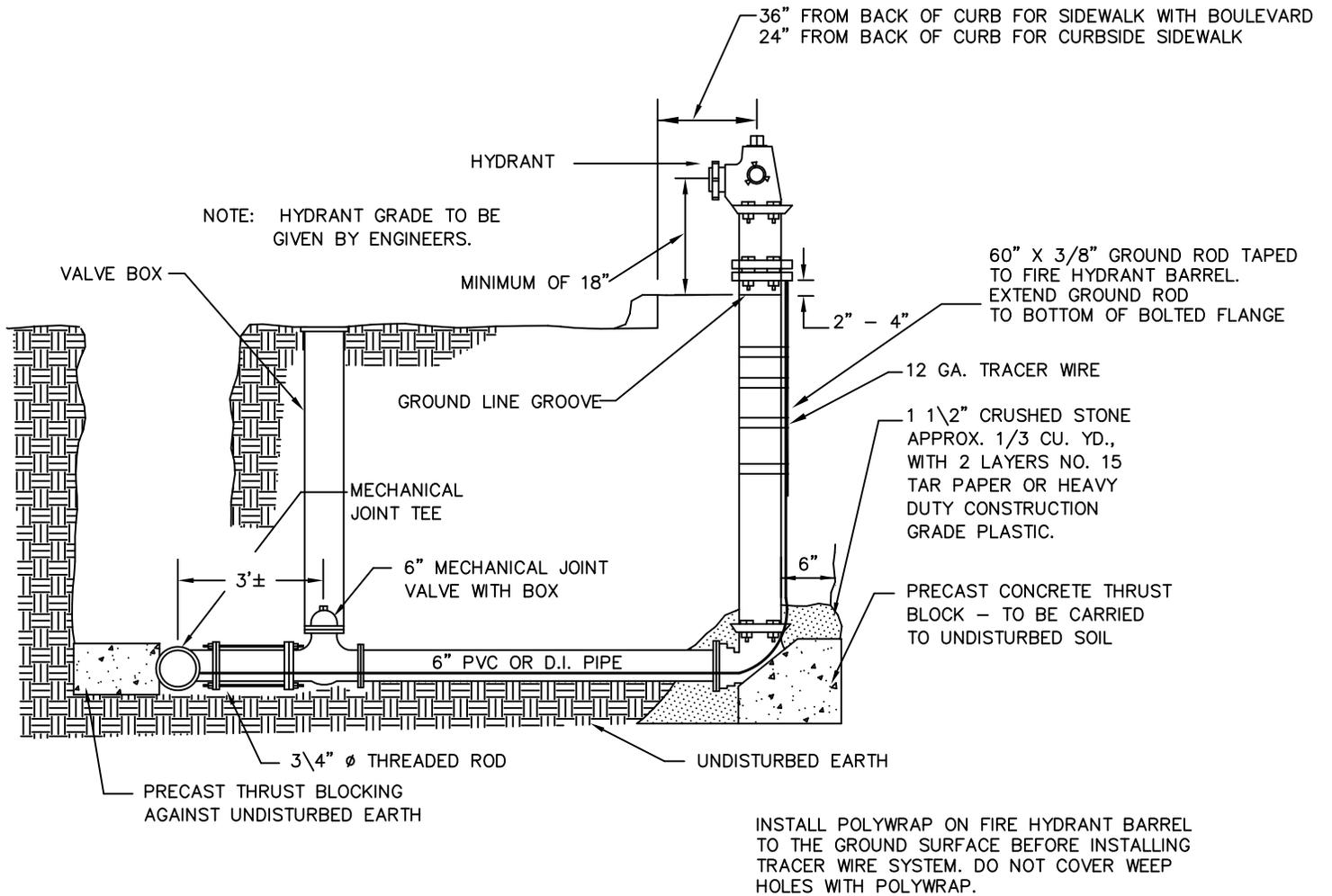
REVISED: JANUARY 2012

SPECIFICATION  
 REFERENCE  
 NO.  
 900

CITY OF CANTON  
 WATER MAIN ADJUSTMENT

PLATE  
 NUMBER  
 900.05

# HYDRANT CONNECTION

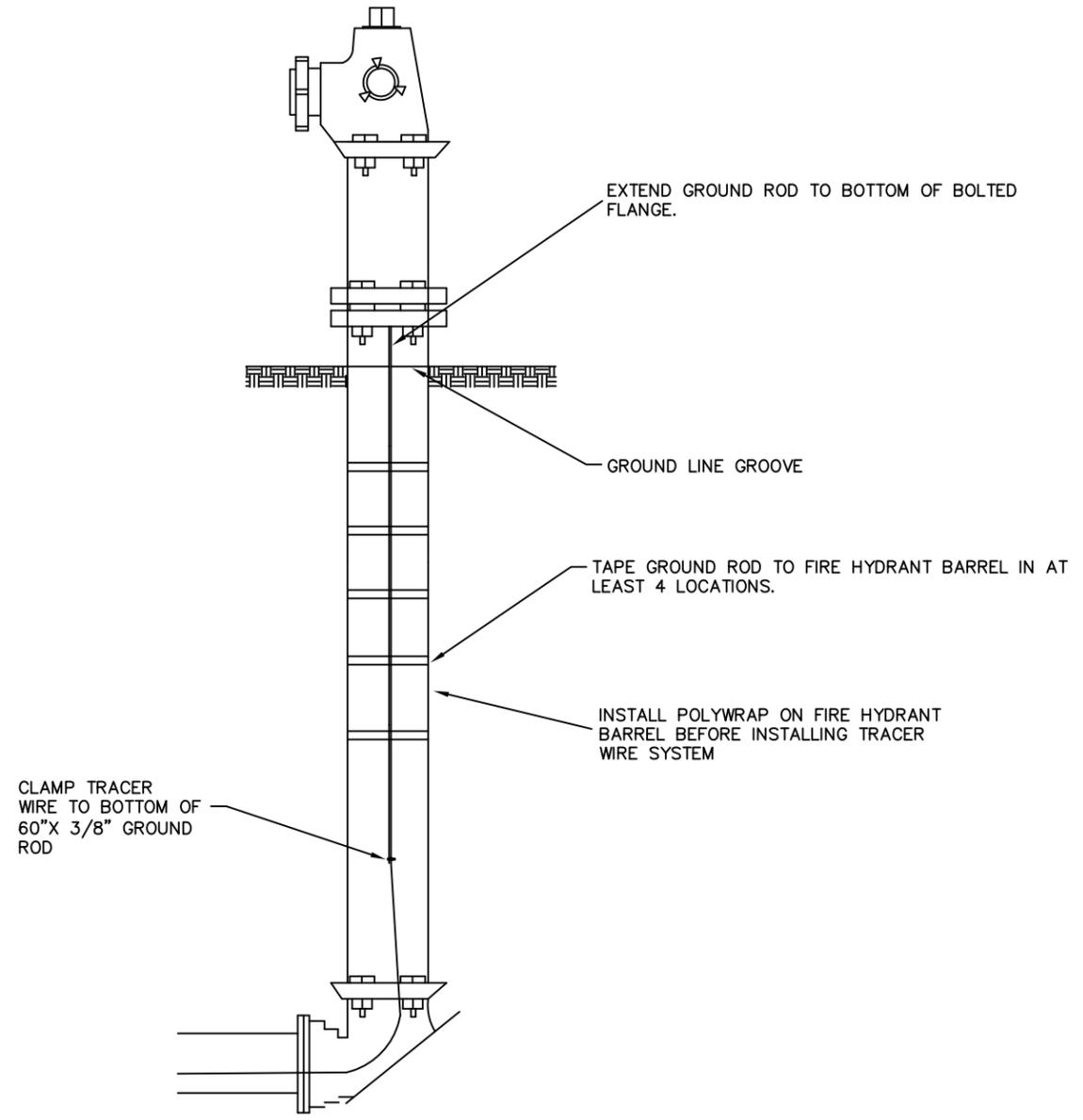


REVISED: NOVEMBER 2006

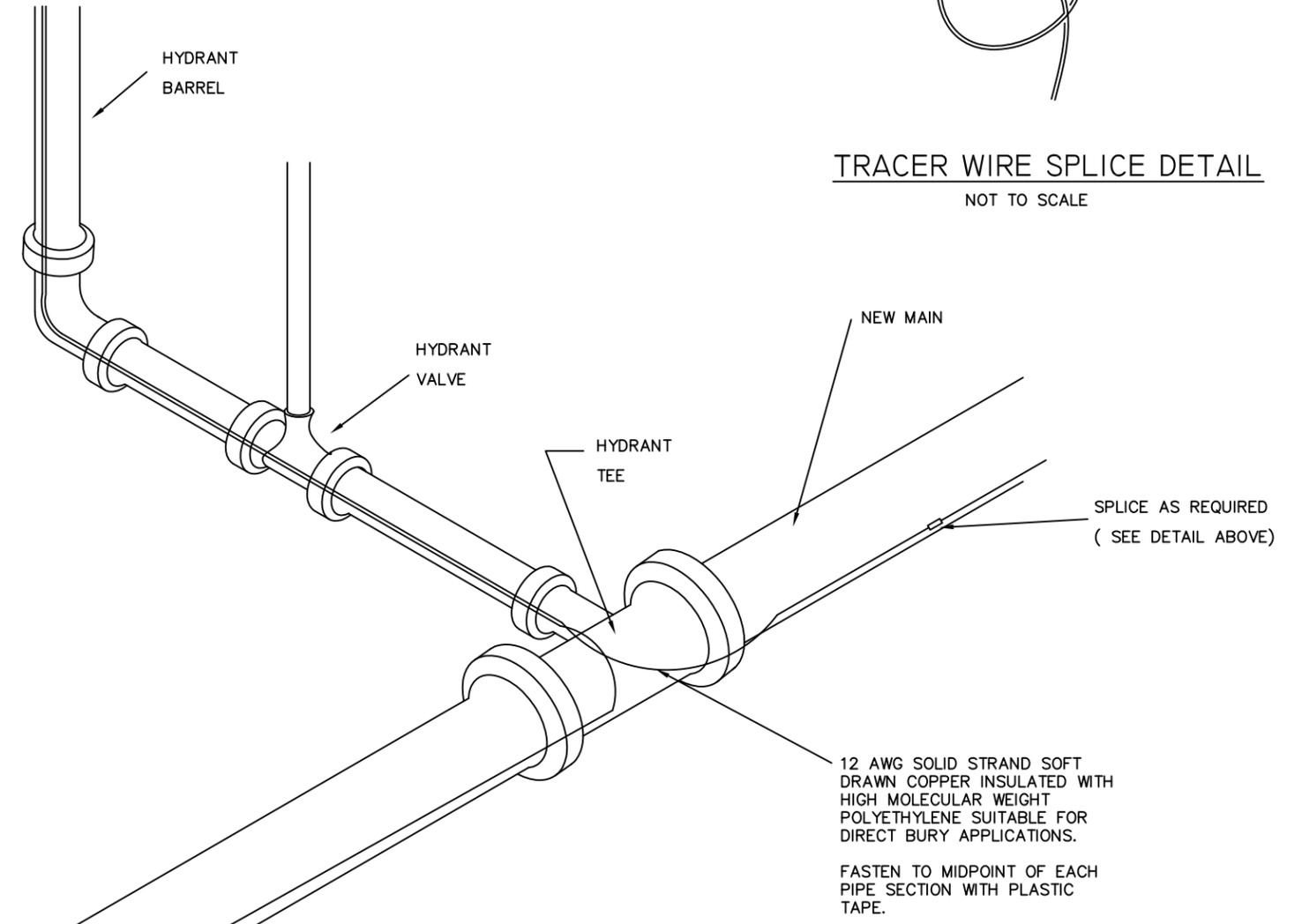
SPECIFICATION  
REFERENCE  
NO.  
900

CITY OF CANTON  
  
HYDRANT CONNECTION

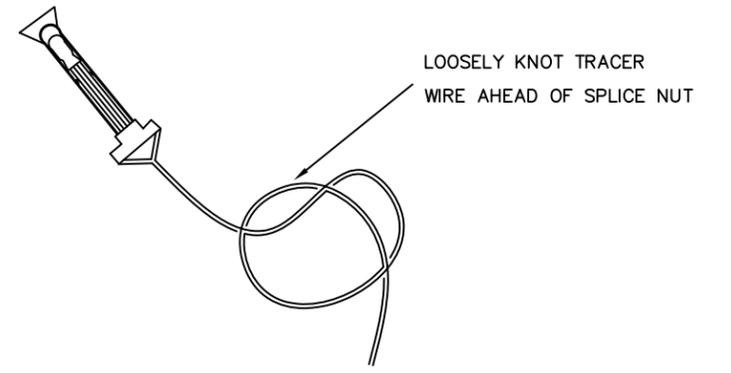
PLATE  
NUMBER  
900.06



**TRACER WIRE DETAIL AT FIRE HYDRANT**  
NOT TO SCALE



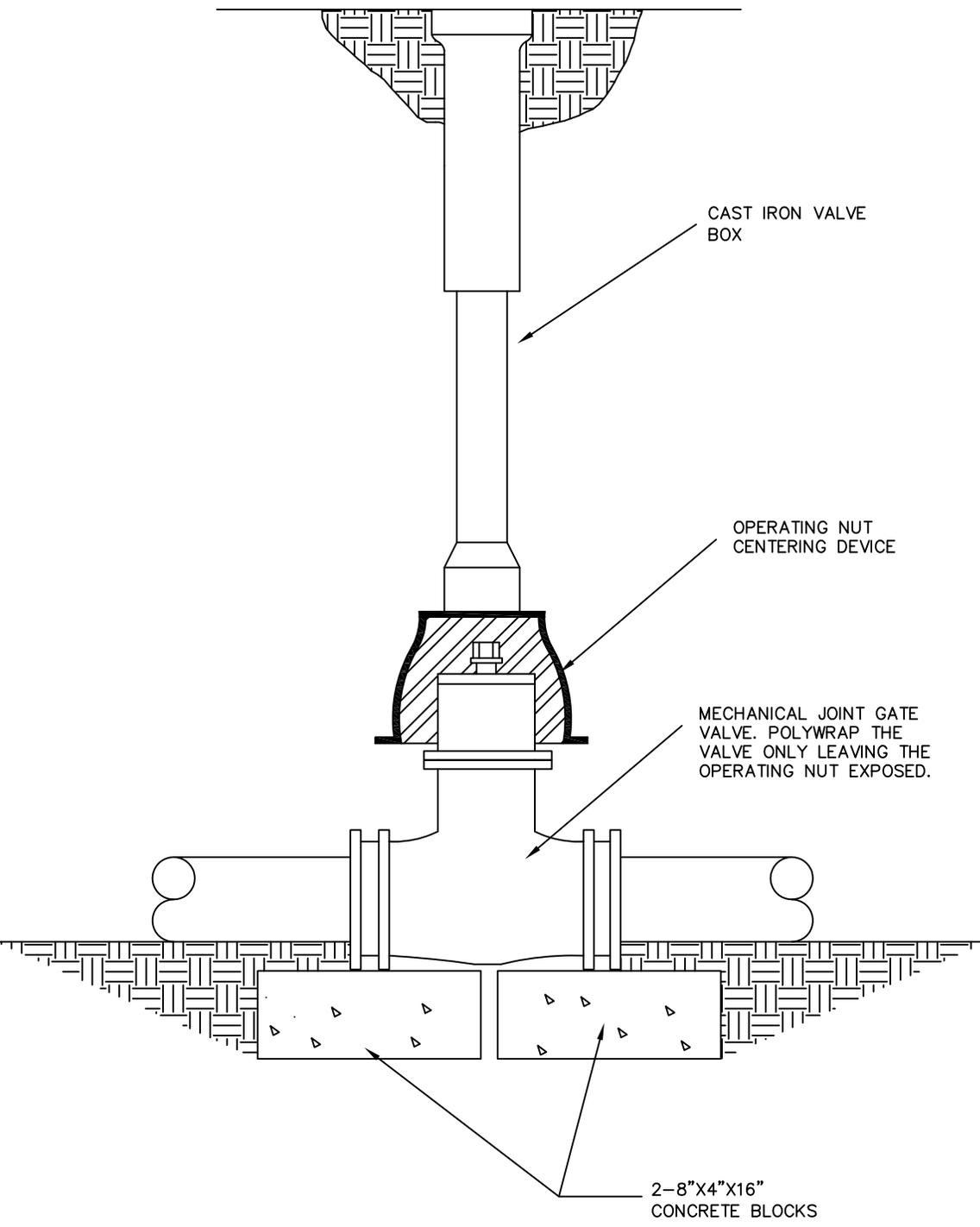
**TRACER WIRE DETAIL**  
NOT TO SCALE



**TRACER WIRE SPLICE DETAIL**  
NOT TO SCALE

REVISED: NOVEMBER 2004

CITY OF CANTON	
WATER MAIN TRACER WIRE SYSTEM	
SPECIFICATION REFERENCE NO. 900	PLATE NUMBER 900.07



GATE VALVE INSTALLATION

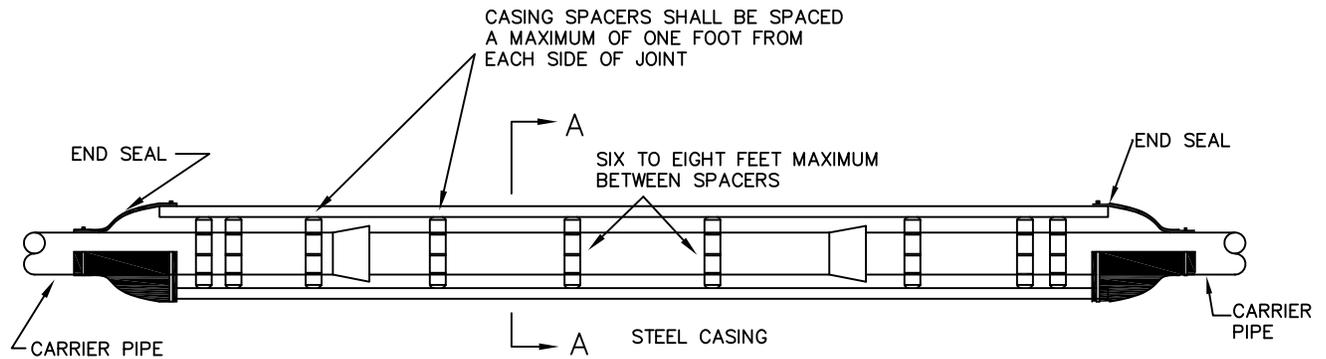
NO SCALE

REVISED: JANUARY 1999

SPECIFICATION  
REFERENCE  
NO.  
900

CITY OF CANTON  
GATE VALVE INSTALLATION

PLATE  
NUMBER  
900.08



## ELEVATION

CASING SPACERS AND END SEALS SHALL BE MANUFACTURED BY ADVANCED PRODUCTS AND SYSTEMS, INC. P.O. BOX 60399 LAFAYETTE, LA. 70596-0399 OR EQUAL AND MEET THESE REQUIREMENTS.

CASING SPACERS - MODEL SSI-8 (PIPE SIZES 24 INCHES IN DIAMETER AND SMALLER) OR MODEL SSI-12-2 (PIPE SIZES 30 INCHES IN DIAMETER AND GREATER) WITH T-304 STAINLESS STEEL SPACER.  
 BAND - 10 GAUGE T-304 STAINLESS STEEL.  
 RISER - 10 GAUGE T-304 STAINLESS STEEL.

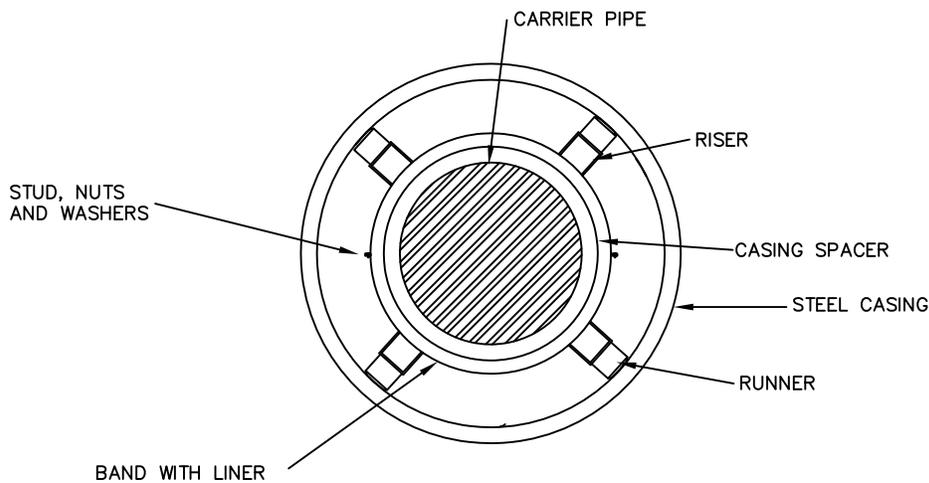
RUNNERS - TWO INCH WIDE MINIMUM GLASS REINFORCED PLASTIC. THE NUMBER OF RISERS SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT FOUR IS THE MINIMUM.

STUDS, NUTS AND WASHERS - T-304 STAINLESS STEEL.

HEIGHTS - AS REQUIRED FOR CENTER RESTRAINING

END SEALS - CONICAL SHAPED WRAP-AROUND 1/8 INCH SYNTHETIC RUBBER WITH T-304 STAINLESS STEEL STRAPS.

CASING PIPE MUST CONFORM TO AWWA C-200 WITH ASTM GRADE A36 PLATE STEEL MINIMUM YIELD STRENGTH OF 35,000 POUNDS PER SQUARE INCH.



## SECTION A-A

PIPE SIZE	CASING SIZE
4"	10"
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"
20"	30"
24"	36"
30"	42"
>36"	*

\* AS RECOMMENDED BY MANUFACTURER

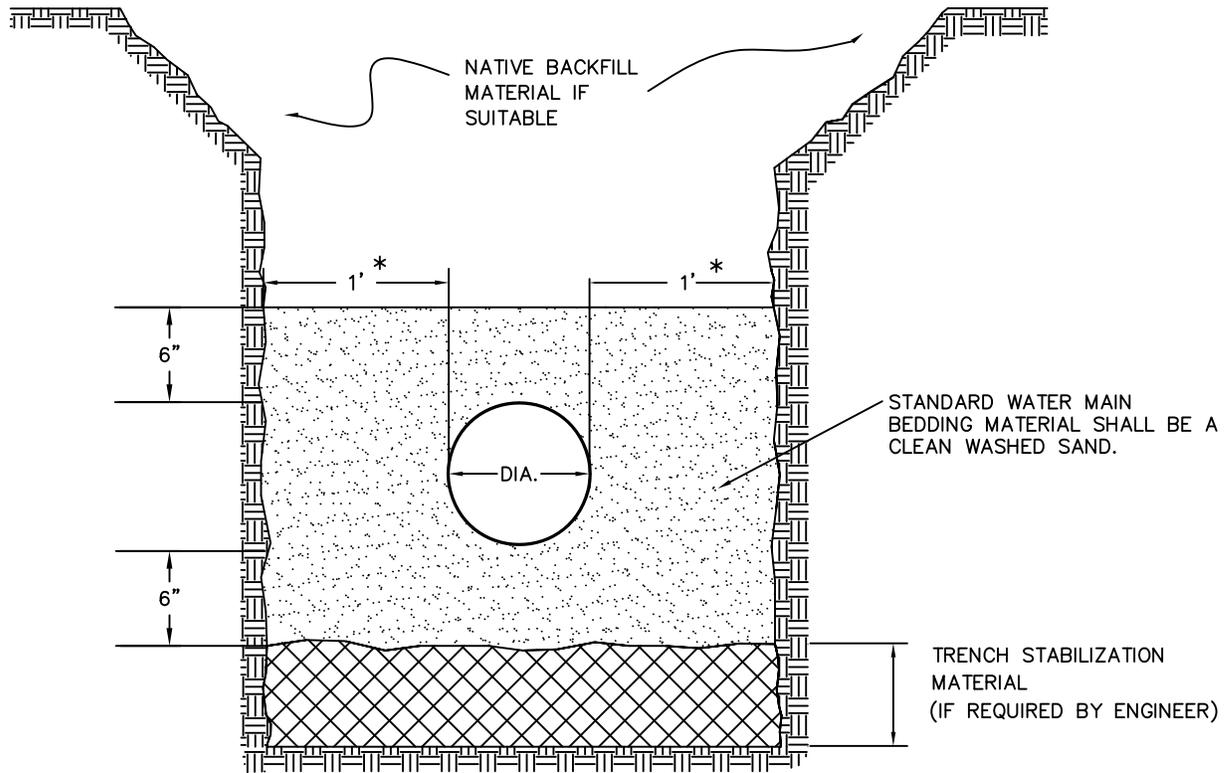
REVISED: DECEMBER 2007

SPECIFICATION  
REFERENCE  
NO.  
900

CITY OF CANTON  
STANDARD CASING/CARRIER  
FOR WATER PIPE

PLATE  
NUMBER  
900.09

# WATER MAIN BEDDING DETAIL



PIPE SIZE DIAMETER	TRENCH WIDTH	TRENCH HEIGHT	TRENCH AREA	PIPE AREA	WATER MAIN BEDDING MAT. AREA	WATER MAIN BEDDING MAT. TONS/LF
4"	28"	16"	3.11 SQ.FT.	.09 SQ.FT.	3.02 SQ.FT.	0.21
6"	30"	18"	3.75 SQ.FT.	.20 SQ.FT.	3.55 SQ.FT.	0.25
8"	32"	20"	4.44 SQ.FT.	.35 SQ.FT.	4.10 SQ.FT.	0.29
10"	34"	22"	5.19 SQ.FT.	.55 SQ.FT.	4.65 SQ.FT.	0.33
12"	36"	24"	6.00 SQ.FT.	.79 SQ.FT.	5.22 SQ.FT.	0.37
16"	40"	28"	7.78 SQ.FT.	1.40 SQ.FT.	6.38 SQ.FT.	0.45
20"	44"	32"	9.78 SQ.FT.	2.18 SQ.FT.	7.60 SQ.FT.	0.53
24"	48"	36"	12.00 SQ.FT.	3.14 SQ.FT.	8.86 SQ.FT.	0.62
30"	60"	42"	17.50 SQ.FT.	4.91 SQ.FT.	12.59 SQ.FT.	0.88

\* IF >30" USE DIA./2 ON EACH SIDE OF WATER MAIN PIPE.  
 \* LENGTH BASED ON ONE (1) FOOT OF MAIN.

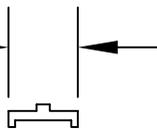
REVISED: MAY 2007

SPECIFICATION  
 REFERENCE  
 NO.  
 900

CITY OF CANTON  
 WATER MAIN BEDDING DETAIL

PLATE  
 NUMBER  
 900.12

APPROX. 3 3/4"



RED/SILVER REFLECTION TAPE ON TOP PORTION

ADHESIVE ATTACHED PREMIUM GRADE CAST-VINYL SHEETING WITH APPROPRIATE U.V. RESISTANT LETTERING.

WATER PIPELINE  
CAUTION

CARSONITE INTERNATIONAL'S COMPOSITE COMPOSITION UTILITY MARKER OR ENGINEER APPROVED EQUAL (WATER BLUE IN COLOR).

7'-0"

GROUND ELEVATION



1-1/4" BOLT 6" LONG SHALL BE PLACED THROUGH THE MARKER AND CAST INTO THE CONCRETE.

1'-6"

CONCRETE FOOTING

10"

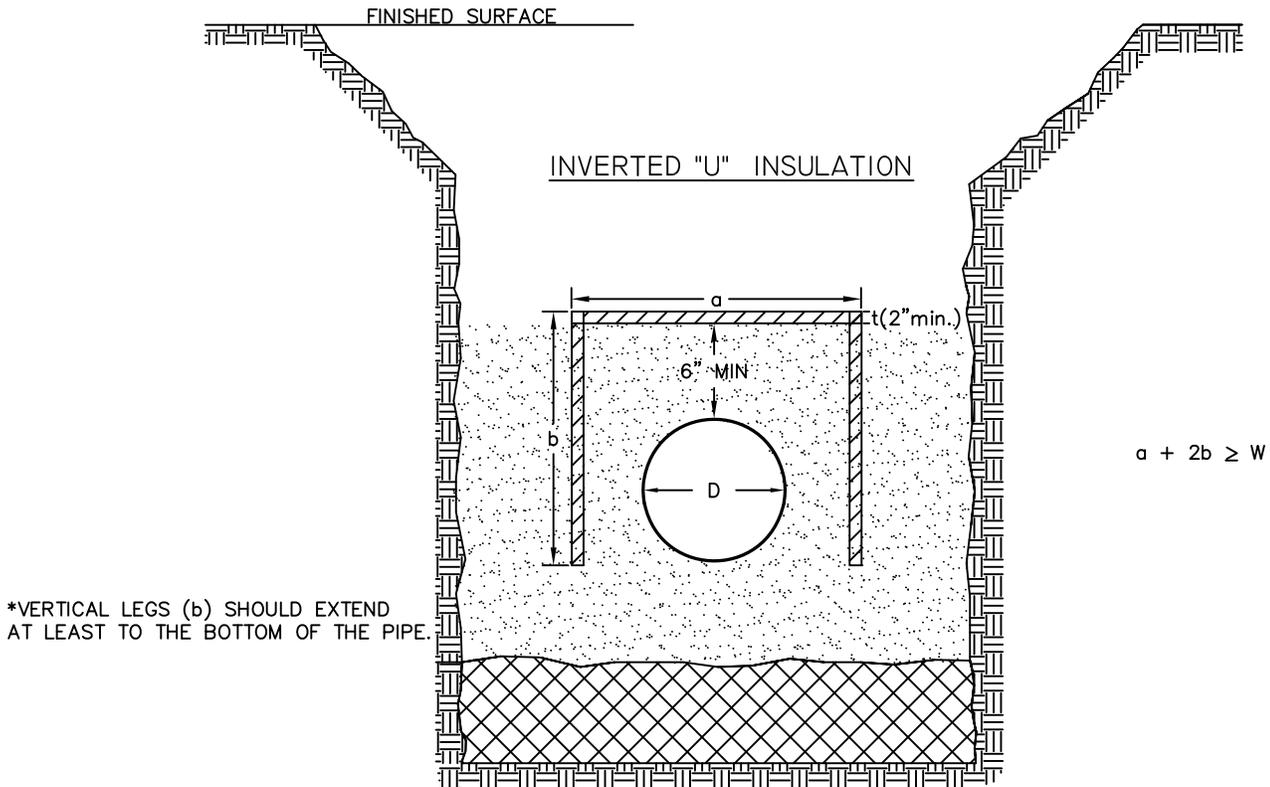
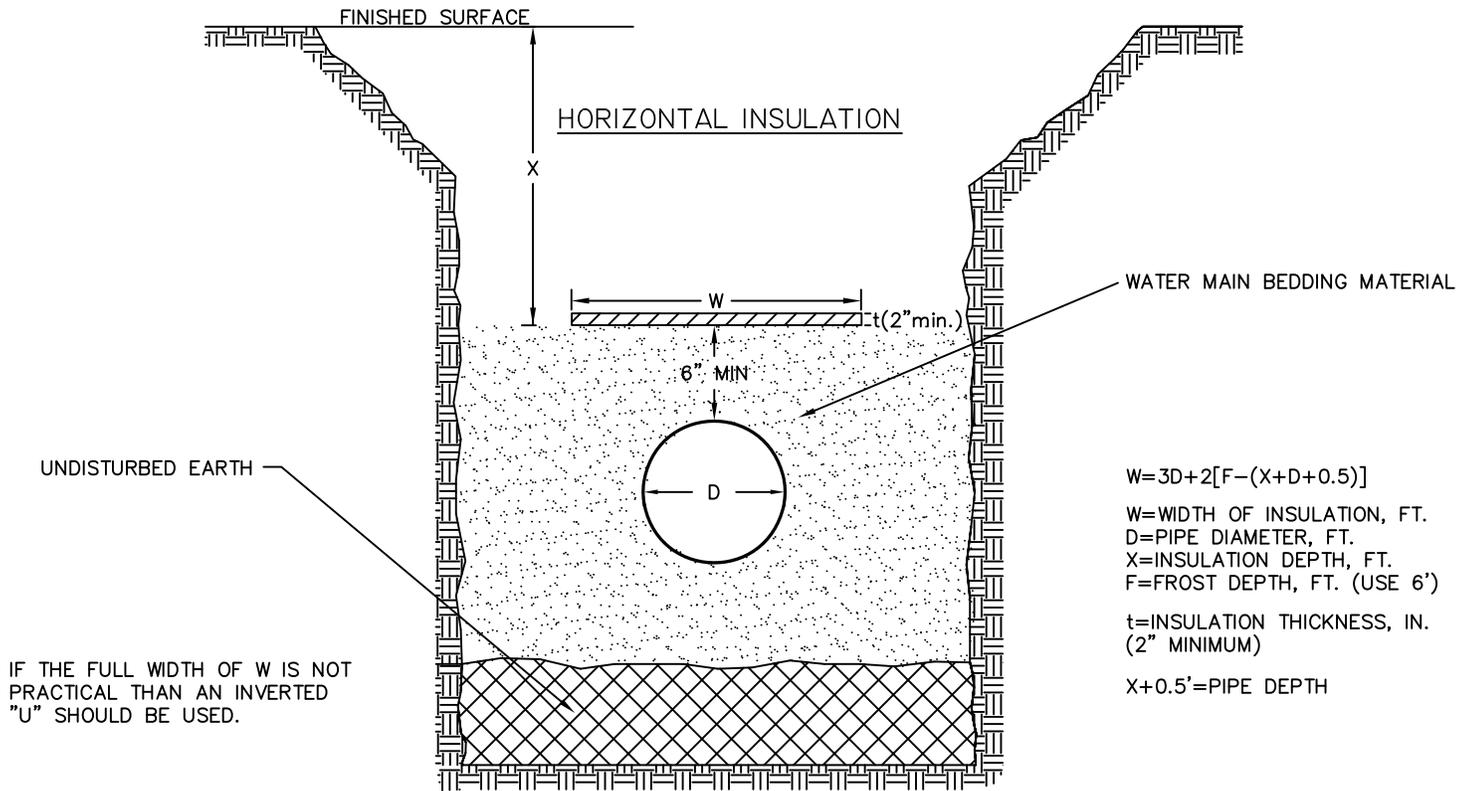
REVISED: NOVEMBER 2004

SPECIFICATION REFERENCE NO. 900

CITY OF CANTON  
VALVE BOX MARKER

PLATE NUMBER 900.13

# WATER MAIN INSULATION DETAIL



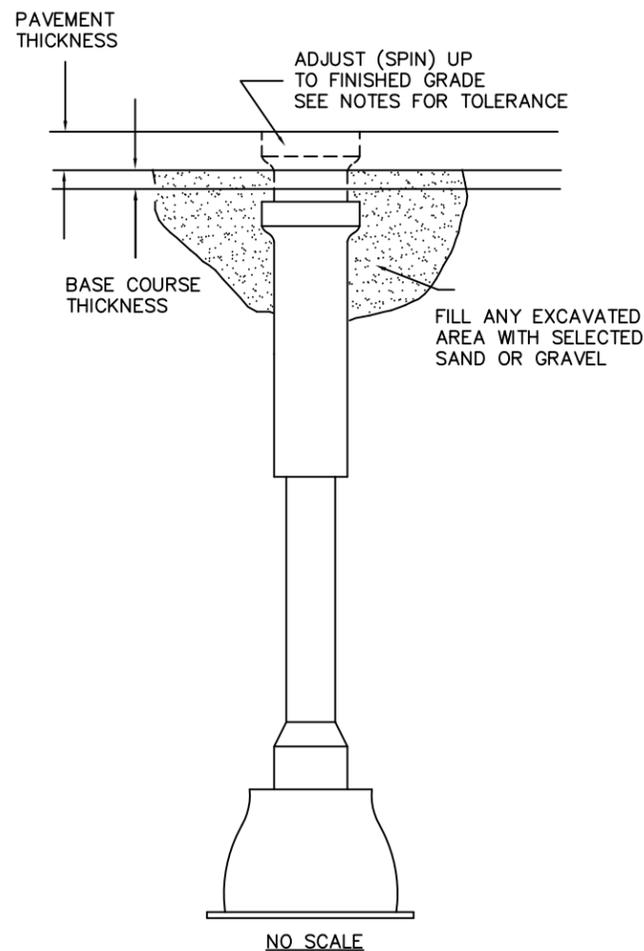
\*\*THIS DETAIL IS A GENERAL GUIDELINE. INSULATION OF WATER MAIN WILL BE DETERMINED ON A CASE BY CASE SITUATION DEPENDING ON THE FOLLOWING FACTORS: DEPTH, PIPE DIAMETER, FLOW, LOCATION, AND PROXIMITY TO BEDROCK. INSULATION MATERIAL AND INSTALLATION METHODS SHOULD FOLLOW THE WATER MAIN SUPPLEMENTAL SPECIFICATION SEC. 2.8 AND 3.7.

REVISED: SEPTEMBER 2005

SPECIFICATION  
REFERENCE  
NO.  
900

CITY OF CANTON  
  
WATER MAIN  
INSULATION DETAIL

PLATE  
NUMBER  
900.14



SPIN UP METHOD

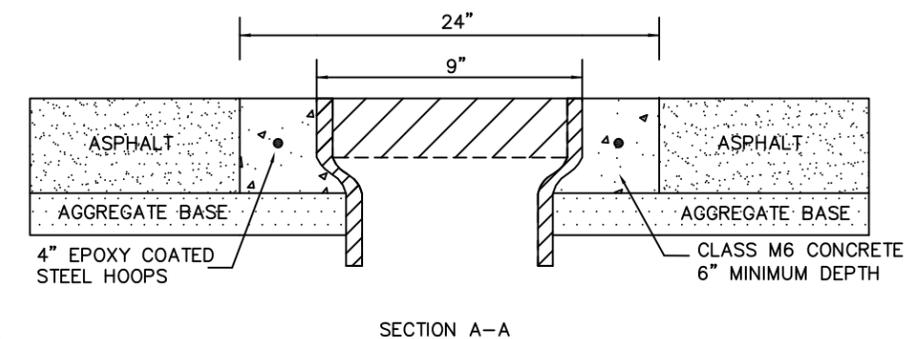
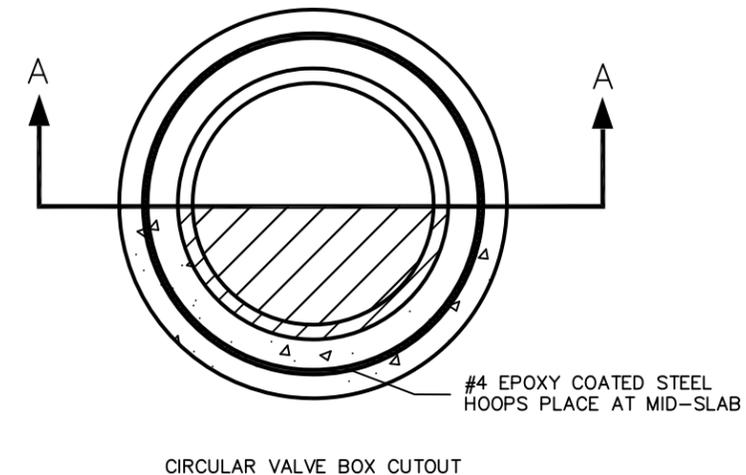
NOTES:

1. ADJUST TOP OF VALVE BOX TO MATCH STREET SURFACE.
2. VALVE BOX SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF THE PAVEMENT SURFACING.
3. ALL VALVE BOXES SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT SURFACE. THE ALLOWABLE VERTICAL TOLERANCE BETWEEN THE PAVEMENT SURFACE AND ANY PART OF THE VALVE BOX SHALL BE 0" TO 1/2" LOW. IN NO CASE SHALL THE VALVE BOX BE ABOVE THE SURFACE OF THE PAVEMENT.
4. NON-THREADED ADJUSTMENTS WILL NOT BE ALLOWED.
5. IF THE 0" TO 1/2" TOLERANCE CANNOT BE MET BY THE "SPIN UP" METHOD ON ASPHALT STREETS, THEN THE CONTRACTOR SHALL BE REQUIRED TO ADJUST THE VALVE BOX BY THE CIRCULAR CUTOUT METHOD. THIS ADDITIONAL WORK, IF REQUIRED, SHALL BE INCIDENTAL TO THE "VALVE BOX ADJUSTMENT" BID ITEM.
6. IF THE 0" TO 1/2" TOLERANCE CAN NOT BE MET BY THE "SPIN UP" METHOD ON CONCRETE STREETS, THE REPAIR METHOD WILL BE DETERMINED BY THE ENGINEER. THIS ADDITIONAL WORK SHALL BE INCIDENTAL TO THE "VALVE BOX ADJUSTMENT" BID ITEM.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE VALVE BOX DURING THE WORK.
8. ALL ADJUSTMENTS SHALL BE COMPLETED PRIOR TO OPENING UP THE STREET TO TRAFFIC.
9. IF THE VALVE BOX NEEDS MINOR ADJUSTMENT, A MINIMAL AMOUNT OF HEAT CAN BE APPLIED TO BREAK THE BOND BETWEEN THE VALVE BOX AND THE ASPHALT. FULL DEPTH HEATING OF THE ASPHALT WILL NOT BE ALLOWED. IF THE ASPHALT APPEARS TO SHOW SIGNS OF DETERIORATION, IT WILL BE AT THE DISCRETION OF THE ENGINEER TO REQUIRE THE CUT OUT METHOD.

NOTES:

1. VALVE BOX SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO PLACEMENT OF ASPHALT SURFACING IN ACCORDANCE WITH THE CIRCULAR CONCRETE CUTOUT METHOD.
2. THE CIRCULAR CONCRETE CUTOUT SHALL BE CENTERED ON THE VALVE BOX FRAME.
3. THE CIRCULAR CONCRETE CUTOUT SHALL BE CONSTRUCTED AFTER THE INSTALLATION OF THE TOP LIFT OF ASPHALT. THE PAVEMENT SHALL BE SAWED FULL DEPTH WITH A VERTICAL FACE. THE CONTRACTOR SHALL ENSURE THAT THE ADJACENT ASPHALT SURFACE IS LEFT INTACT AND UNDAUNAGED WHEN REMOVING THE CIRCULAR CUTOUT.
4. ALL VALVE BOXES SHALL BE ADJUSTED TO BE FLUSH WITH THE PAVEMENT SURFACE. THE ALLOWABLE VERTICAL TOLERANCE BETWEEN THE ASPHALT SURFACE AND ANY PART OF THE VALVE BOX SHALL BE 0" TO 1/2" LOW. IN NO CASE SHALL THE VALVE BOX BE ABOVE THE SURFACE OF THE ASPHALT.
5. NON-THREADED ADJUSTMENTS WILL NOT BE ALLOWED.
6. THE CIRCULAR CONCRETE CUTOUT DIAMETER SHALL BE 24".
7. APPLY TACK COAT TO THE VERTICAL ASPHALT SURFACES PRIOR TO PLACEMENT OF CONCRETE CUTOUT.
8. CLASS M6 CONCRETE SHALL BE USED FOR THE CUTOUT. FAST TRACK CONCRETE MAY BE USED AT THE DISCRETION OF THE ENGINEER.
9. STEEL REINFORCING SHALL BE EPOXY COATED GRADE 40.
10. STEEL REINFORCING SHALL CONSISTS OF #4 HOOPS (VARIABLE LENGTH) SUPPORTED BY APPROVED CHAIRS.
11. MAINTAIN A MINIMUM OF 2" CLEARANCE ON ALL STEEL REINFORCING.
12. ALL WORK ASSOCIATED WITH CONSTRUCTING THE CIRCULAR CONCRETE CUTOUT, INCLUDING, BUT NOT LIMITED TO: ALL MATERIALS, SAWING, STEEL REINFORCING, CHAIRS, CONCRETE, LABOR, TOOLS, REMOVAL AND REPLACEMENT, EXCAVATION AND BACKFILLING AND OTHER APPURTENANCES SHALL BE INCIDENTAL TO THE "VALVE BOX ADJUSTMENT" BID ITEM.
13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE VALVE BOX DURING THE WORK.
14. ALL ADJUSTMENTS WILL BE COMPLETED PRIOR TO OPENING UP THE STREET TO TRAFFIC.

CUTOUT METHOD



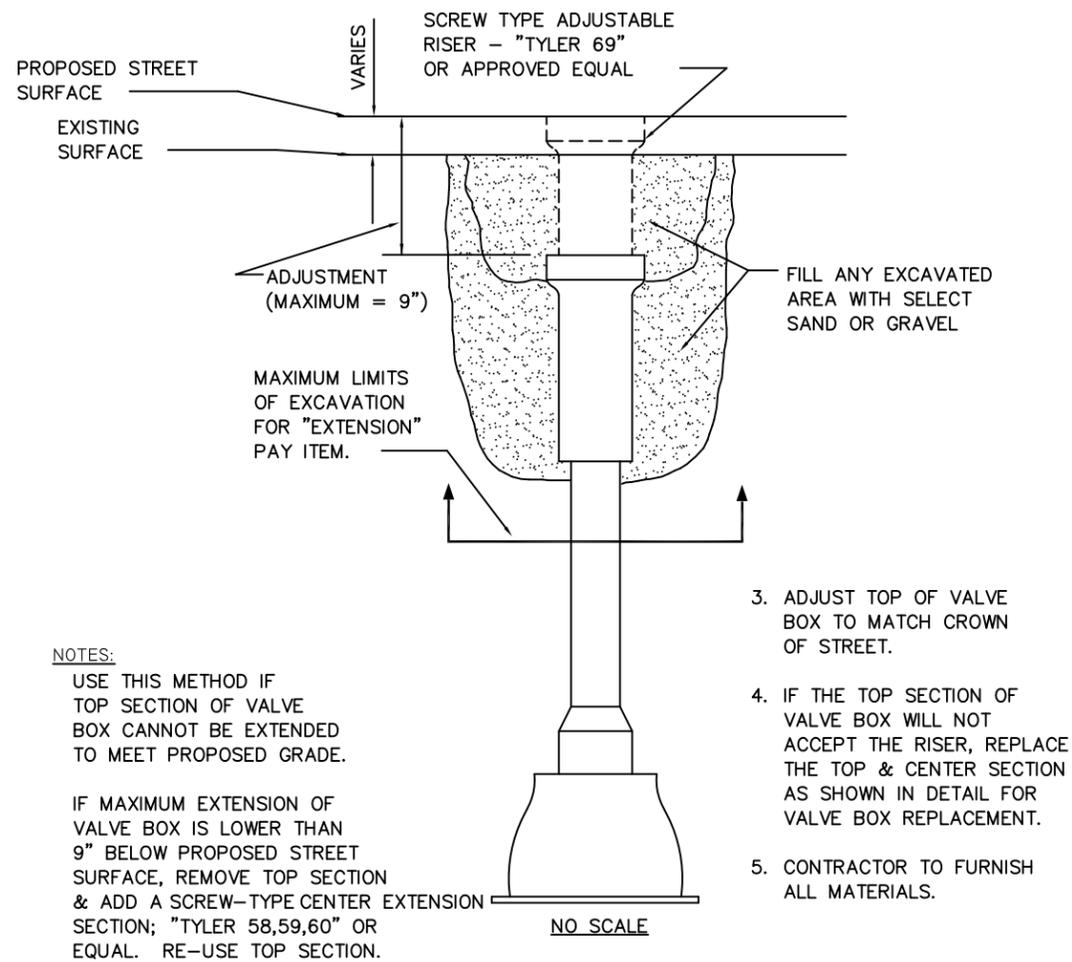
REVISED: JANUARY 2012

CITY OF CANTON

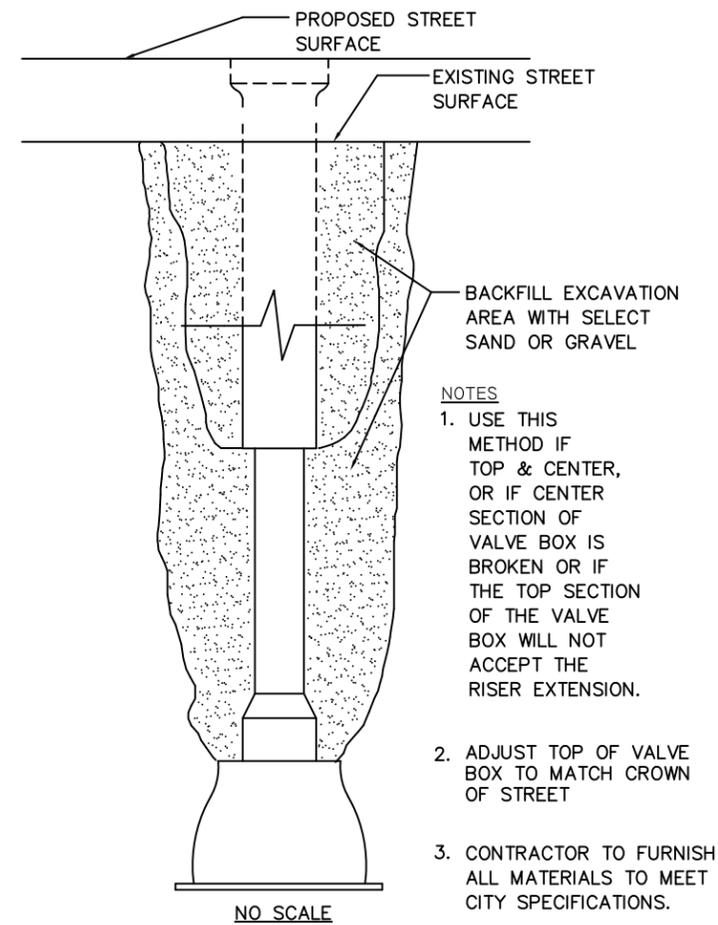
VALVE BOX  
ADJUSTMENT

SPECIFICATION  
REFERENCE  
NO.  
900

PLATE  
NUMBER  
SPECIAL



VALVE BOX EXTENSION  
(OR REPLACEMENT OF TOP SECTION)

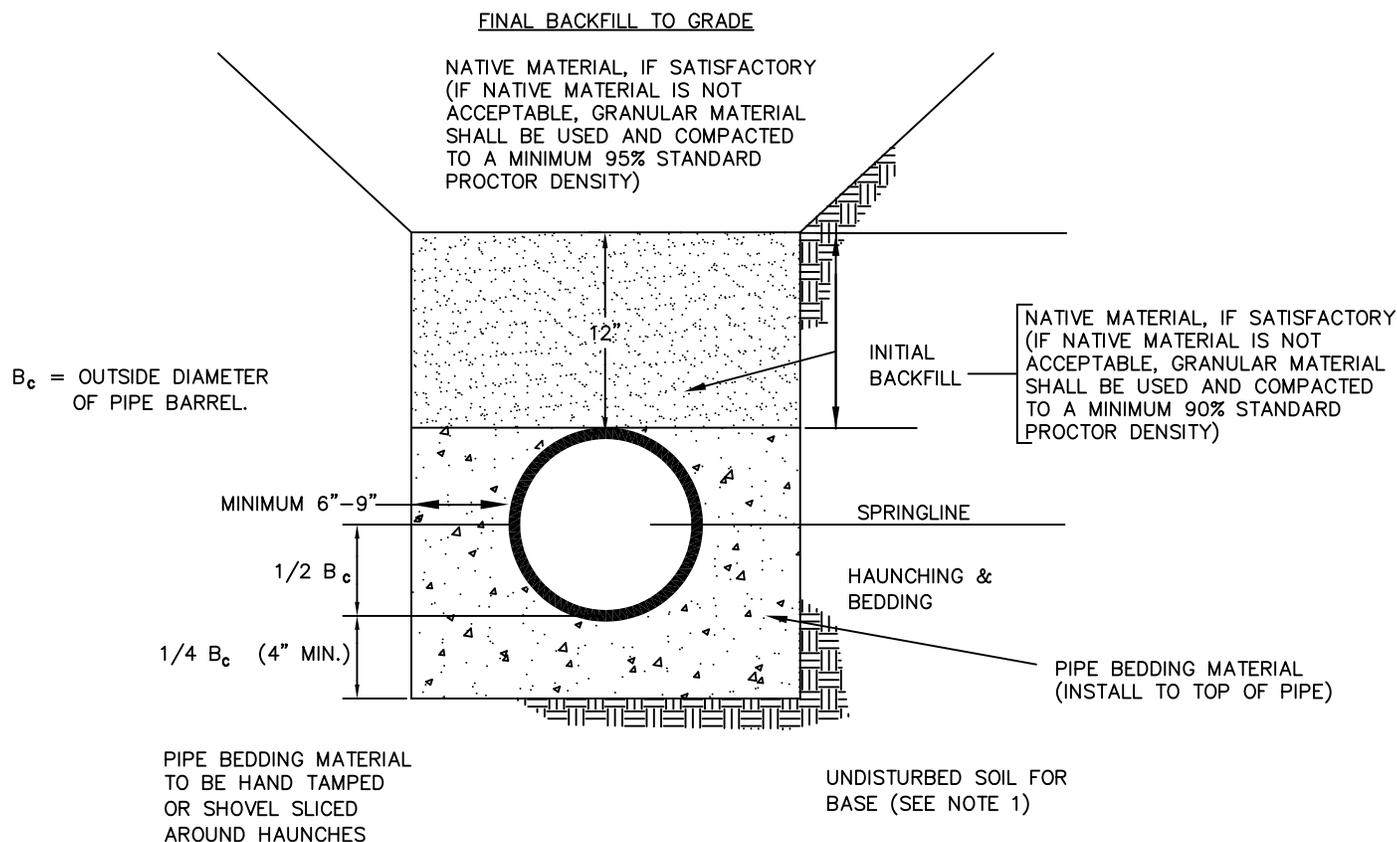


VALVE BOX INSTALLATION

REVISED: JANUARY 2012

CITY OF CANTON	
VALVE BOX INSTALLATION AND EXTENSION	
SPECIFICATION REFERENCE NO. 900	PLATE NUMBER SPECIAL

FOR 4" TO 12" DIAMETER PIPE



NOTE: 1. IF BASE IS UNSTABLE, TRENCH SHALL BE UNDERCUT AND STABILIZED WITH TRENCH STABILIZATION MATERIAL. SPECIFICATIONS AS PER MANUFACTURER'S RECOMMENDATIONS AND A.S.T.M. C12.

2. BEDDING MATERIAL

95% PASSING 3/4" SEIVE  
95% RETAINED #4 SEIVE

(CLEAN ANGULAR, WELL-GRADED, CRUSHED ROCK. PEA ROCK MAY BE USED FOR SANITARY SEWER SERVICE LINES.)

3. THE REQUIRED BEDDING MATERIAL UNDER THE BOTTOM OF THE PIPE SHALL BE INSTALLED PRIOR TO PIPE INSTALLATION.

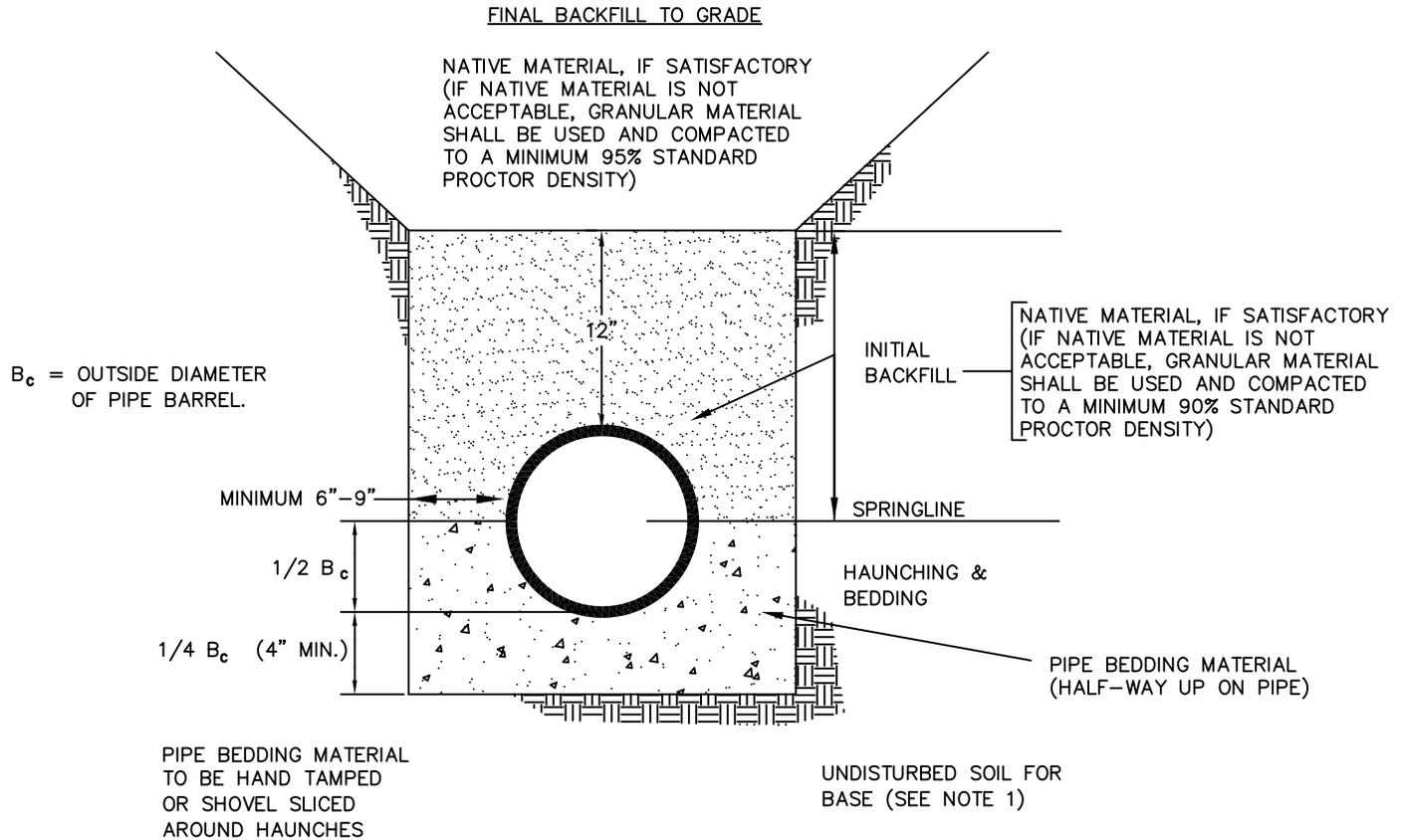
REVISED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
BEDDING AND BACKFILL REQUIREMENTS  
FOR 4" TO 12" SANITARY SEWER PIPE

PLATE  
NUMBER  
950.01

FOR 14" TO 60" DIAMETER PIPE



- NOTE: 1. IF BASE IS UNSTABLE, TRENCH SHALL BE UNDERCUT AND STABILIZED WITH TRENCH STABILIZATION MATERIAL. SPECIFICATIONS AS PER MANUFACTURER'S RECOMMENDATIONS AND A.S.T.M. C12.
2. BEDDING MATERIAL
- 95% PASSING 3/4" SEIVE
- 95% RETAINED #4 SEIVE
- (CLEAN ANGULAR, WELL-GRADED, CRUSHED ROCK)
3. THE REQUIRED BEDDING MATERIAL UNDER THE BOTTOM OF THE PIPE SHALL BE INSTALLED PRIOR TO PIPE INSTALLATION.

REVISED: OCTOBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
BEDDING AND BACKFILL REQUIREMENTS  
FOR 14" TO 60" SANITARY SEWER PIPE

PLATE  
NUMBER  
950.02

MANHOLE FRAME AND COVER TO BE NEENAH R1772A OR ENGINEER APPROVED EQUAL.

NEENAH R1712 (WITH BOLTDOWN COVER PLATE) OR ENGINEER APPROVED EQUAL WILL BE REQUIRED IN ALL EASEMENT AREAS OUTSIDE OF THE STREET R.O.W. UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

NEENAH R1713 MANHOLE FRAME AND COVERS SHALL BE INSTALLED WHERE MANHOLES ARE LOCATED IN CONCRETE PAVEMENT THICKER THAN 6 INCHES.

ALL MANHOLES SHALL BE CONSTRUCTED TO MEET THE REQUIREMENTS OF THE LATEST REVISIONS OF ASTM C478  
\*PRECAST REINFORCED CONCRETE MANHOLE SECTION.

ADJUSTING RINGS SHALL FORM A LEAKPROOF SEAL. MAXIMUM ADJUSTMENT 14".

PRECAST CONE SECTION TYPICAL JOINT SEALED WITH RAMNEK, KENTSEAL, OR APPROVED EQUAL RUBBER BASE GASKET SEALANT

2' - 4' PRECAST INTEGRAL BASE & BARREL SECTION WITH APPROVED PIPE GASKETS. REINFORCING ON THE BARREL SECTION TO BE 0.16 IN SQ/FT CIRCUMFERENTIAL STEEL TO BE EXTENDED TO BOTTOM OF BASE SECTION. BENT BARS TO EXTEND 3" ABOVE CUTOUT HOLE AND 12" INTO BASE.

PREFORMED INVERT, 2" MINIMUM THICKNESS

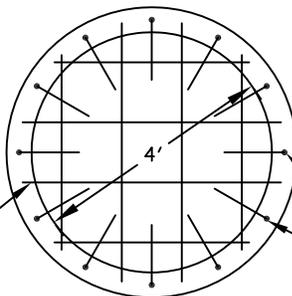
6" OF CRUSHED ROCK TO FORM A SOLID BASE.

WATERTIGHT GASKET, ADAPTER OR SEALER, PRESS SEAL GASKET CORPORATION PSX, OR EQUAL.

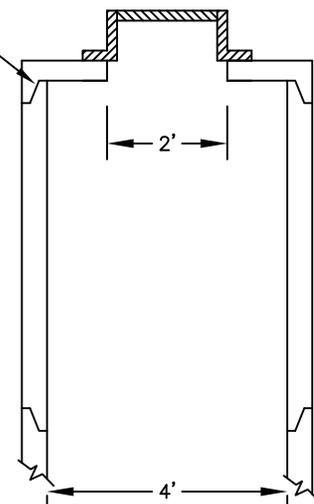
PRECAST FLAT TOP SECTION TYPICAL JOINT SEALED WITH RAMNEK, KENTSEAL, OR APPROVED EQUAL RUBBER BASE GASKET SEALANT (TONGUE AND GROOVE JOINT SHALL BE REQUIRED).

TYPICAL PRECAST & FLAT TOP SECTION (ONLY WHERE SPECIFIED)

BASE BARREL SECTION



#4 BARS AT 12" C-C BOTH WAYS; 12-#3 BENT BARS, 30"-36" LONG, PLACED AS SHOWN. TO BE DOUBLED AROUND LARGE PIPE CUTOUTS. BENT BARS SHALL EXTEND 3" ABOVE THE CUTOUT HOLE AND 12" HORIZONTAL INTO BASE.

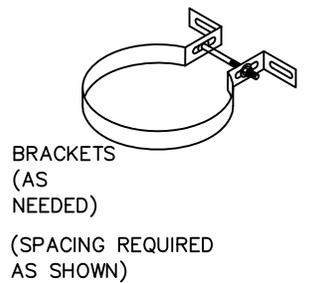
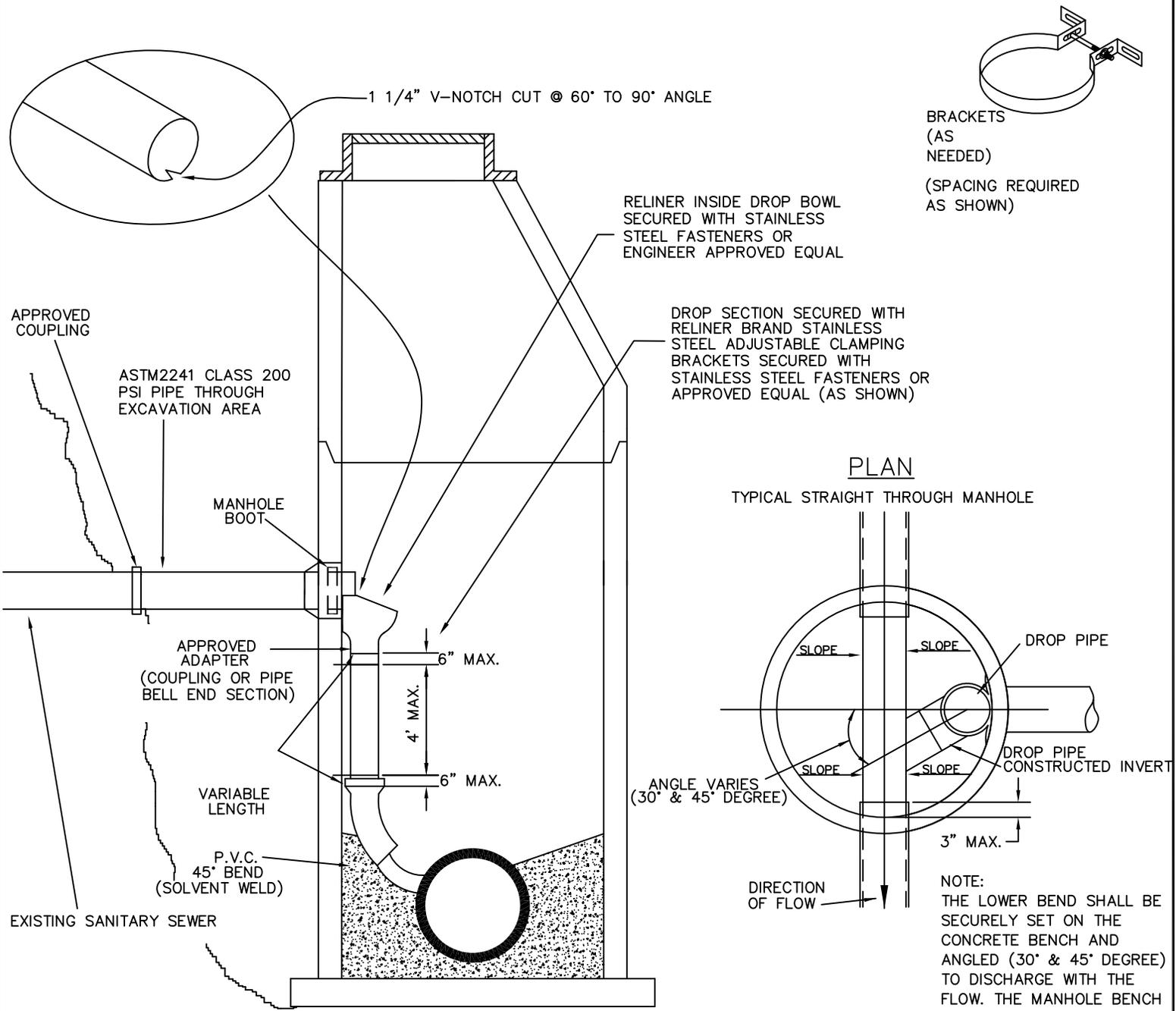


REVISED: FEBRUARY 2007

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER MANHOLE

PLATE  
NUMBER  
950.03



**NOTE:**

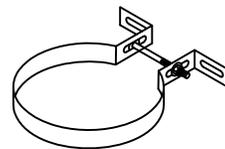
THE P.V.C. DROP SECTION SHALL BE SECURED TO THE BARREL SECTION WITH APPROVED NON-CORROSIVE ADJUSTABLE CLAMPING BRACKET(S), AND THE LOWER BEND SHALL BE SECURED AND FORMED INTO THE BENCH OF THE FLOWLINE. THE DROP BOWL SHALL BE SECURED WITH STAINLESS STEEL FASTENERS OR ENGINEER APPROVED EQUAL AND CONNECTED TO THE DROP PIPE WITH APPROVED ADAPTERS. THE DROP BOWL SHALL ALLOW CLEARANCE FOR MAINTENANCE EQUIPMENT INTO THE EXISTING LINE. ASTM 2241 CLASS 200 PSI PIPE SHALL BE LAID THROUGH THE EXCAVATION AREA (TO PREVENT BREAKAGE DURING SETTLEMENT) AND CONNECTED TO THE EXISTING MANHOLE THROUGH A MANHOLE BOOT. THE COST OF THE ASTM 2241 CLASS 200 PSI PIPE SHALL BE ABSORBED IN THE UNIT PRICE BID FOR THE MANHOLE DROP SECTION.

THE MANHOLE BOOT SHALL BE SIMILAR TO THE MANHOLE BASE SECTION SPECIFICATION MINIMUM OF 8" BETWEEN THE OPENING FOR THE DROP SECTION AND THE NEAREST JOINT.

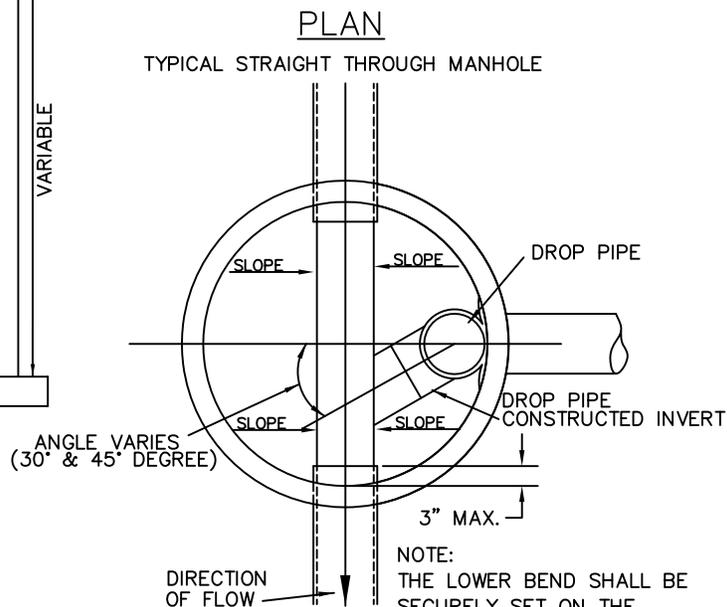
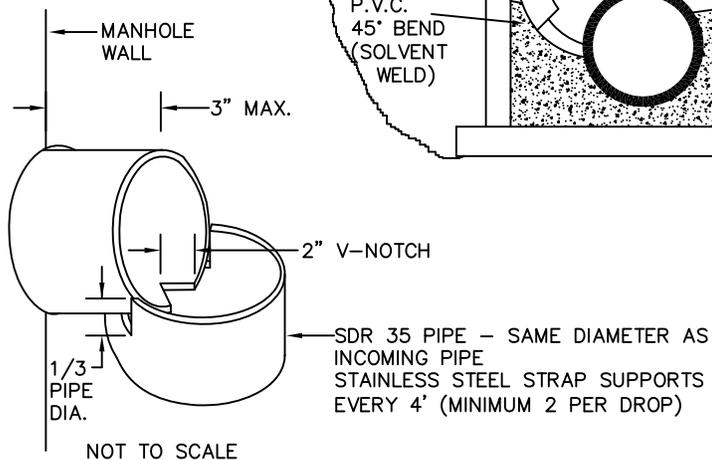
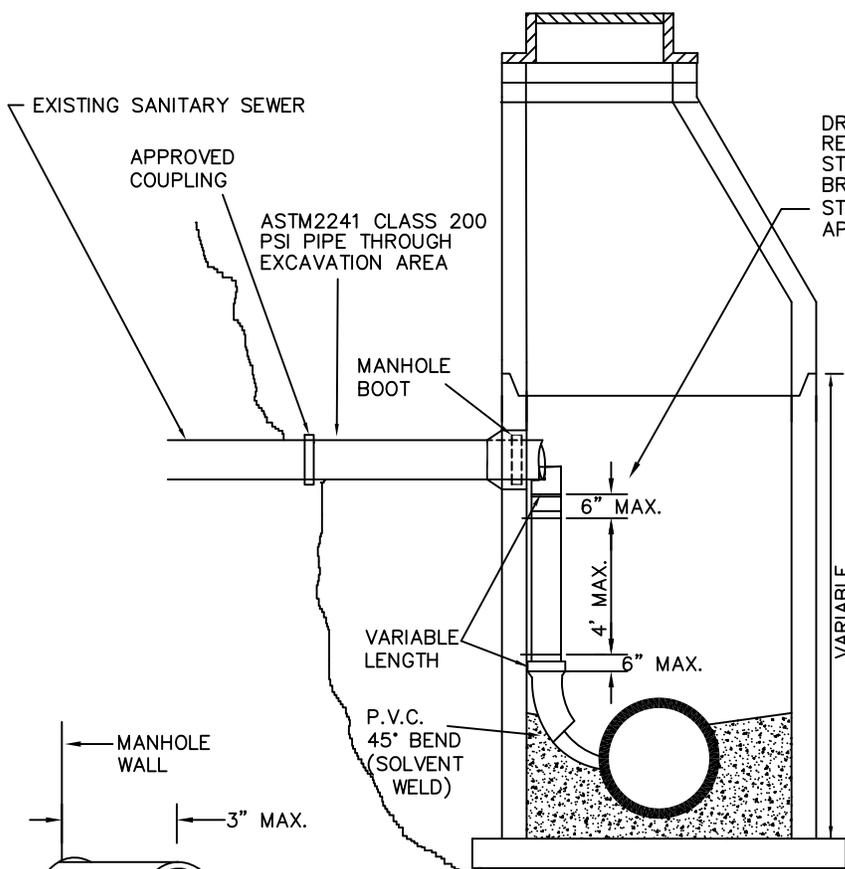
**NOTE:**  
 THE LOWER BEND SHALL BE SECURELY SET ON THE CONCRETE BENCH AND ANGLED (30° & 45° DEGREE) TO DISCHARGE WITH THE FLOW. THE MANHOLE BENCH SHALL BE CONSTRUCTED WITH AN INVERT FOR THE DROP PIPE TO DISCHARGE INTO.

REVISED: MAY 2003

SPECIFICATION REFERENCE NO. 950	CITY OF CANTON  SANITARY SEWER MANHOLE BOWL TYPE DROP SECTION	PLATE NUMBER 950.05
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BRACKETS  
(AS  
NEEDED)  
BRACKETS  
(SPACING REQUIRED  
AS SHOWN)



NOTE:  
THE LOWER BEND SHALL BE SECURELY SET ON THE CONCRETE BENCH AND ANGLED (30° & 45° DEGREE) TO DISCHARGE WITH THE FLOW. THE MANHOLE BENCH SHALL BE CONSTRUCTED WITH AN INVERT FOR THE DROP PIPE TO DISCHARGE INTO.

**NOTE:**

THE P.V.C. DROP SECTION SHALL BE SECURED TO THE BARREL SECTION WITH APPROVED NON-CORROSIVE ADJUSTABLE CLAMPING BRACKET(S), AND THE LOWER BEND SHALL BE SECURED AND FORMED INTO THE BENCH OF THE FLOWLINE. ASTM 2241 CLASS 200 PSI PIPE SHALL BE LAID THROUGH THE EXCAVATION AREA (TO PREVENT BREAKAGE DURING SETTLEMENT) AND CONNECTED TO THE EXISTING SEWER WITH AN APPROVING COUPLING AT THE MANHOLE WITH A MANHOLE BOOT. THE COST OF THE ASTM 2241 CLASS 200 PSI PIPE SHALL BE ABSORBED IN THE UNIT PRICE BID FOR THE MANHOLE DROP SECTION.

THE MANHOLE BOOT SHALL BE SIMILAR TO THE MANHOLE BASE SECTION SPECIFICATION MINIMUM OF 8" BETWEEN THE OPENING FOR THE DROP SECTION AND THE NEAREST JOINT.

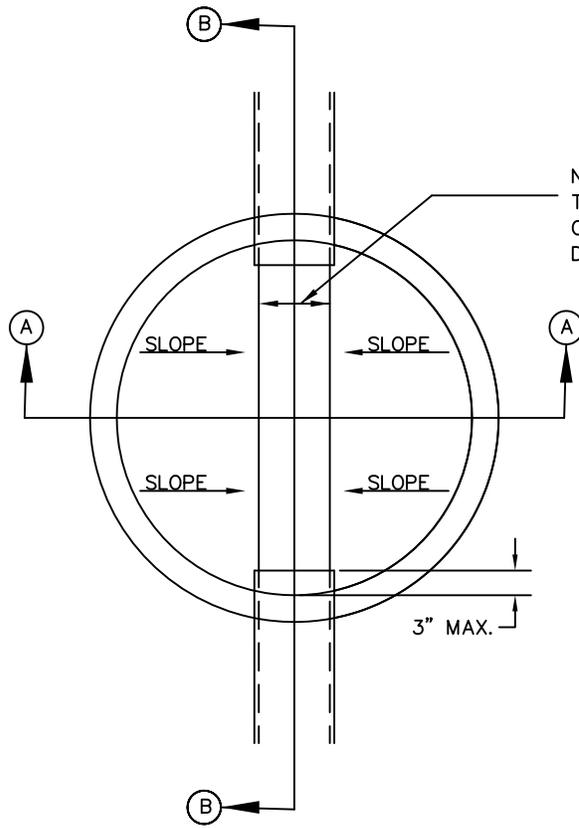
THE DROP SECTION SHALL BE USED ONLY WHERE MATERIAL SIZES ARE NOT AVAILABLE FROM THE MANUFACTURER FOR THE BOWL TYPE DROP SECTION.

REVISED: JANUARY 2007

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER MANHOLE DROP  
SECTION FOR 15" PIPE AND LARGER

PLATE  
NUMBER  
950.06

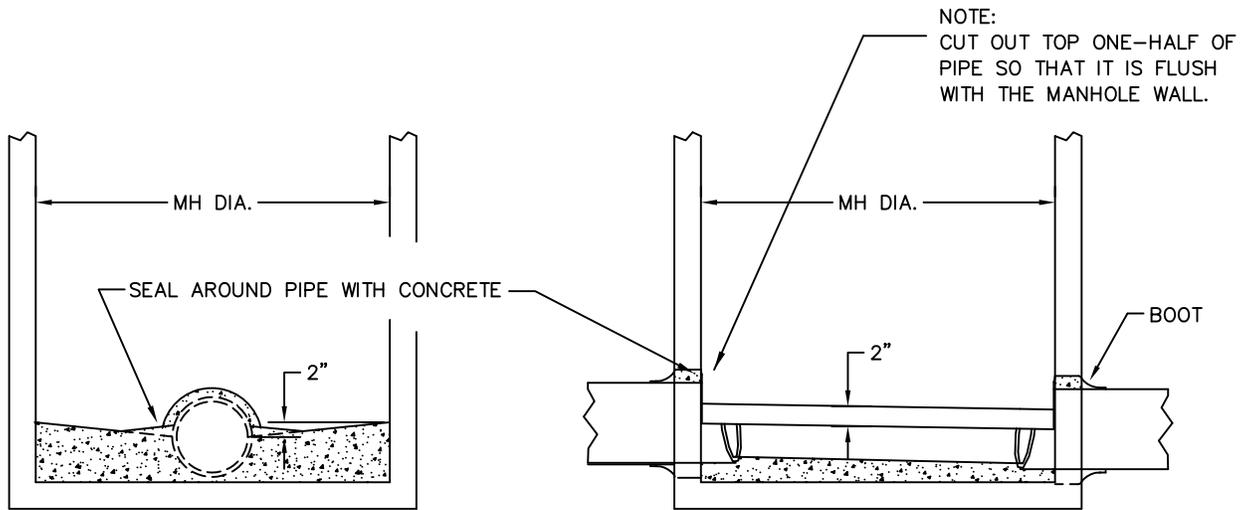


NOTE:  
THE MANHOLE INVERT SHALL  
CONFORM TO THE SAME I.D.  
DIMENSIONS OF THE PIPE.

3" MAX.

PLAN

TYPICAL STRAIGHT THROUGH MANHOLE



NOTE:  
CUT OUT TOP ONE-HALF OF  
PIPE SO THAT IT IS FLUSH  
WITH THE MANHOLE WALL.

SECTION A-A

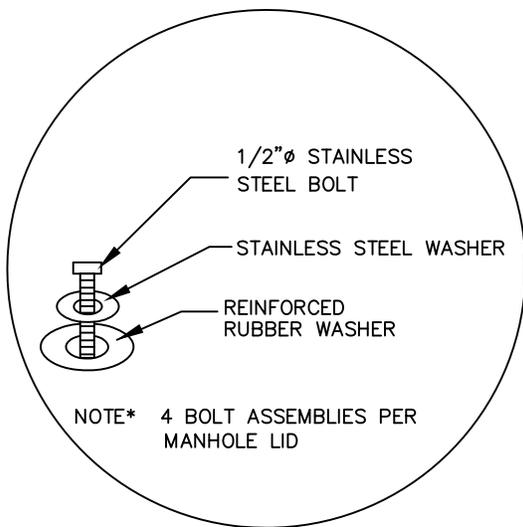
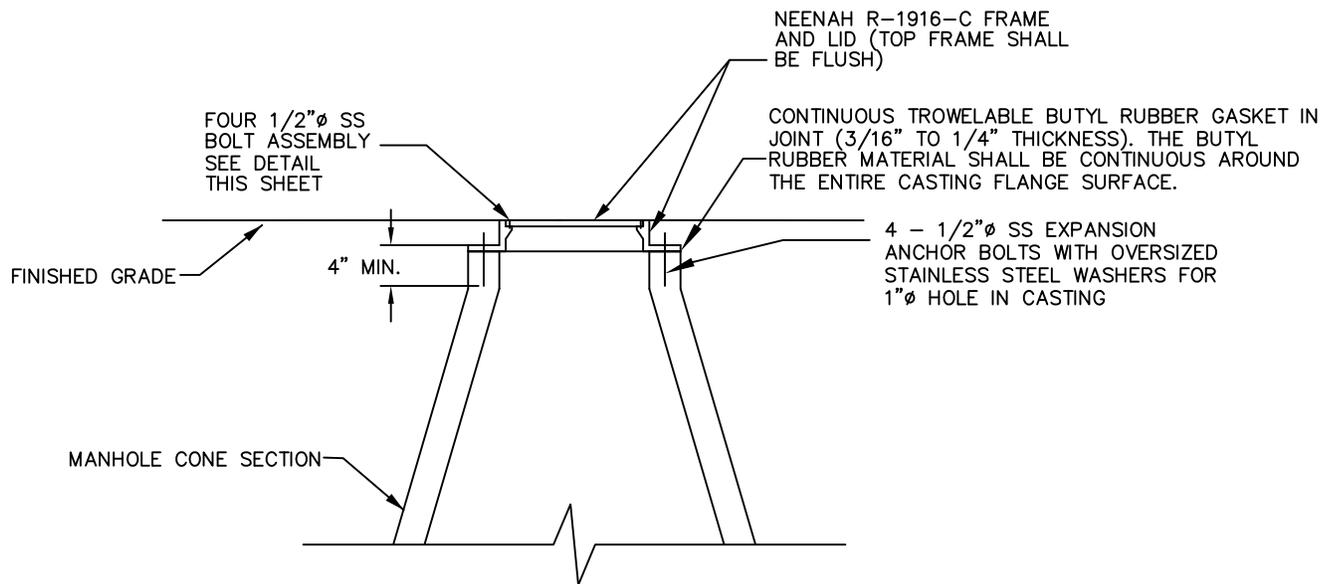
SECTION B-B

REVISED: NOVEMBER 2003

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
MANHOLE BENCH AND  
INVERT DETAIL

PLATE  
NUMBER  
950.07

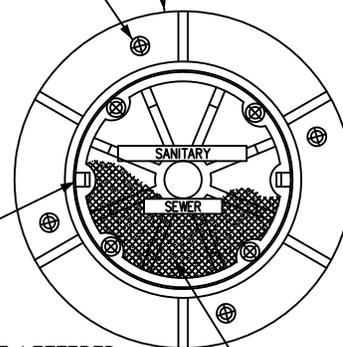


HOLES IN LID SHALL BE OVERSIZED TO ALLOW ASSEMBLY OF LID IN ANY CONFIGURATION

(4) - DRILL AND TAP FRAME FOR 1/2 - 13 x 1 3/4" STNLS. STL. HEX. HD. CAP SCREWS WITH REINFORCED RUBBER AND STAINLESS STEEL WASHERS.

(4) - 1" DIA. ANCHOR HOLES ON A 30" DIA. B.C.

(2) - CONCEALED TYPE PICK HOLES PER NF-22642



TYPE "C" CHECKERED TOP DESIGN W/PERMAGRIP SURFACE TEXTURE.

NOTES: 1. ALL LIDS FOR MANHOLES SHALL BE LETTERED WITH "SANITARY SEWER"

2. MANHOLE FRAME AND COVER SHALL BE NEENAH R-1916-C OR ENGINEER APPROVED EQUAL

3. MANHOLE FRAME AND COVER NEENAH R-1916-C SHALL BE INSTALLED IN SPECIFIED AREAS OUTSIDE OF THE STREET ROW WHICH ARE IN AREAS WITH HARD SURFACING

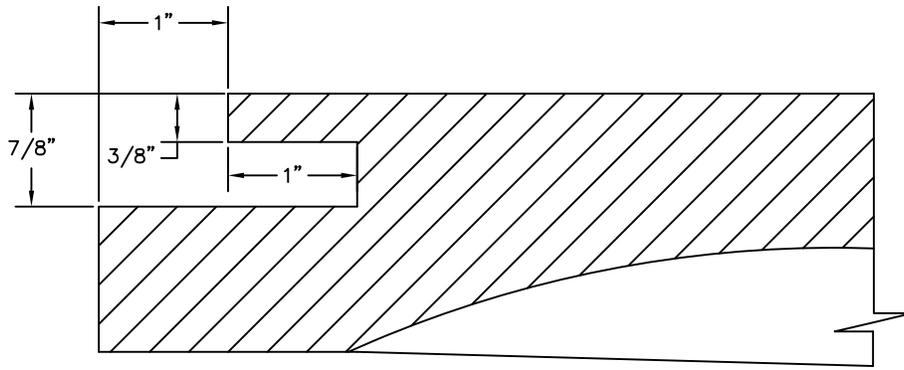
REVISED: OCTOBER 2005

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER WATERTIGHT  
FRAME AND BOLTED COVER

PLATE  
NUMBER  
950.08

MANHOLE COVER SECTION



WIDTH = 2 INCHES

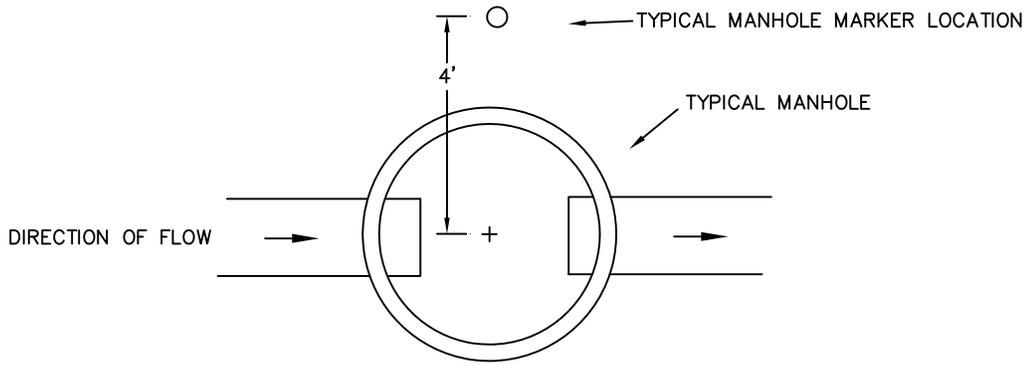
NOTE: CONCEALED PICK HOLES AND THE SEAL BETWEEN THE FRAME AND COVER SHALL BE PROTECTED FROM ASPHALT, CONCRETE PAVEMENT, CHIP SEAL AND SOIL. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE A SYSTEM TO PREVENT MATERIAL FROM ENTERING THE CONCEALED PICK HOLE AND FRAME AND COVER SEAL DURING THE WORK.

REVISED: OCTOBER 2004

SPECIFICATION  
REFERENCE  
NO.  
950

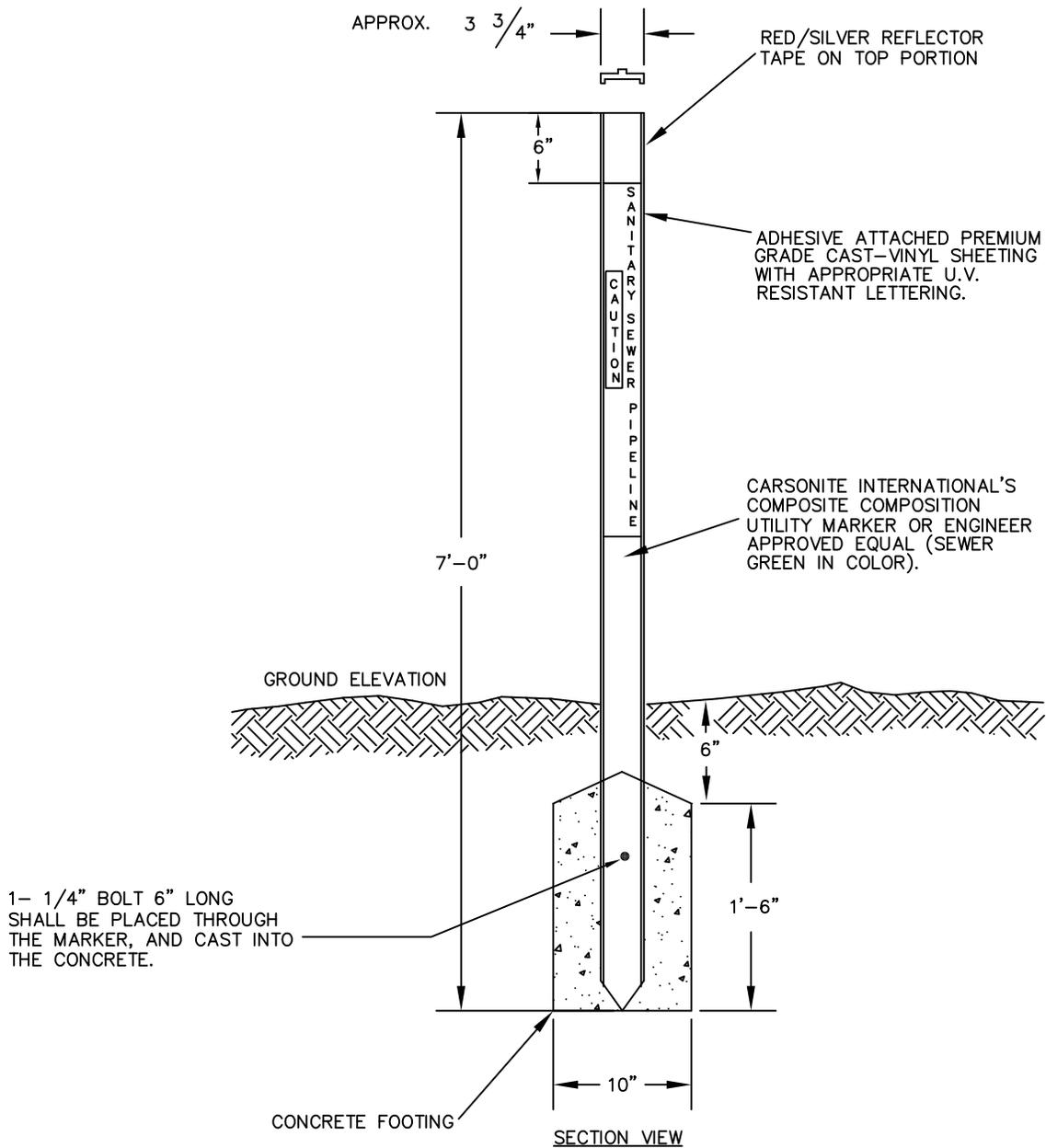
CITY OF CANTON  
CONCEALED PICK HOLE FOR  
SANITARY MANHOLE COVERS

PLATE  
NUMBER  
950.09



MANHOLE MARKER LOCATIONS WILL VARY.  
VERIFY LOCATION WITH ENGINEER IN THE FIELD.

PLAN VIEW



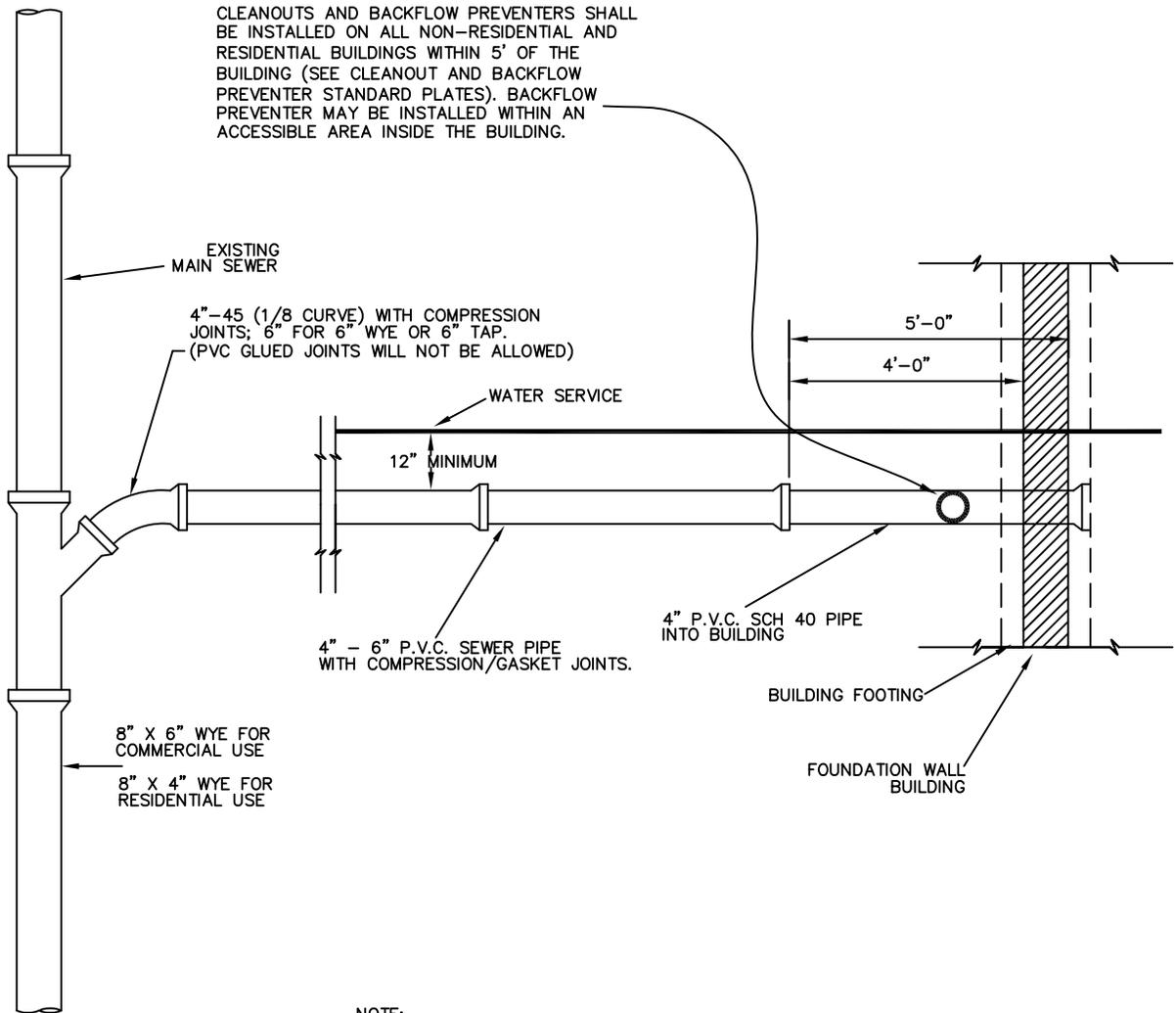
REVISED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
TYPICAL MANHOLE MARKER  
TYPE I

PLATE  
NUMBER  
950.10

CLEANOUTS AND BACKFLOW PREVENTERS SHALL BE INSTALLED ON ALL NON-RESIDENTIAL AND RESIDENTIAL BUILDINGS WITHIN 5' OF THE BUILDING (SEE CLEANOUT AND BACKFLOW PREVENTER STANDARD PLATES). BACKFLOW PREVENTER MAY BE INSTALLED WITHIN AN ACCESSIBLE AREA INSIDE THE BUILDING.



NOTE:

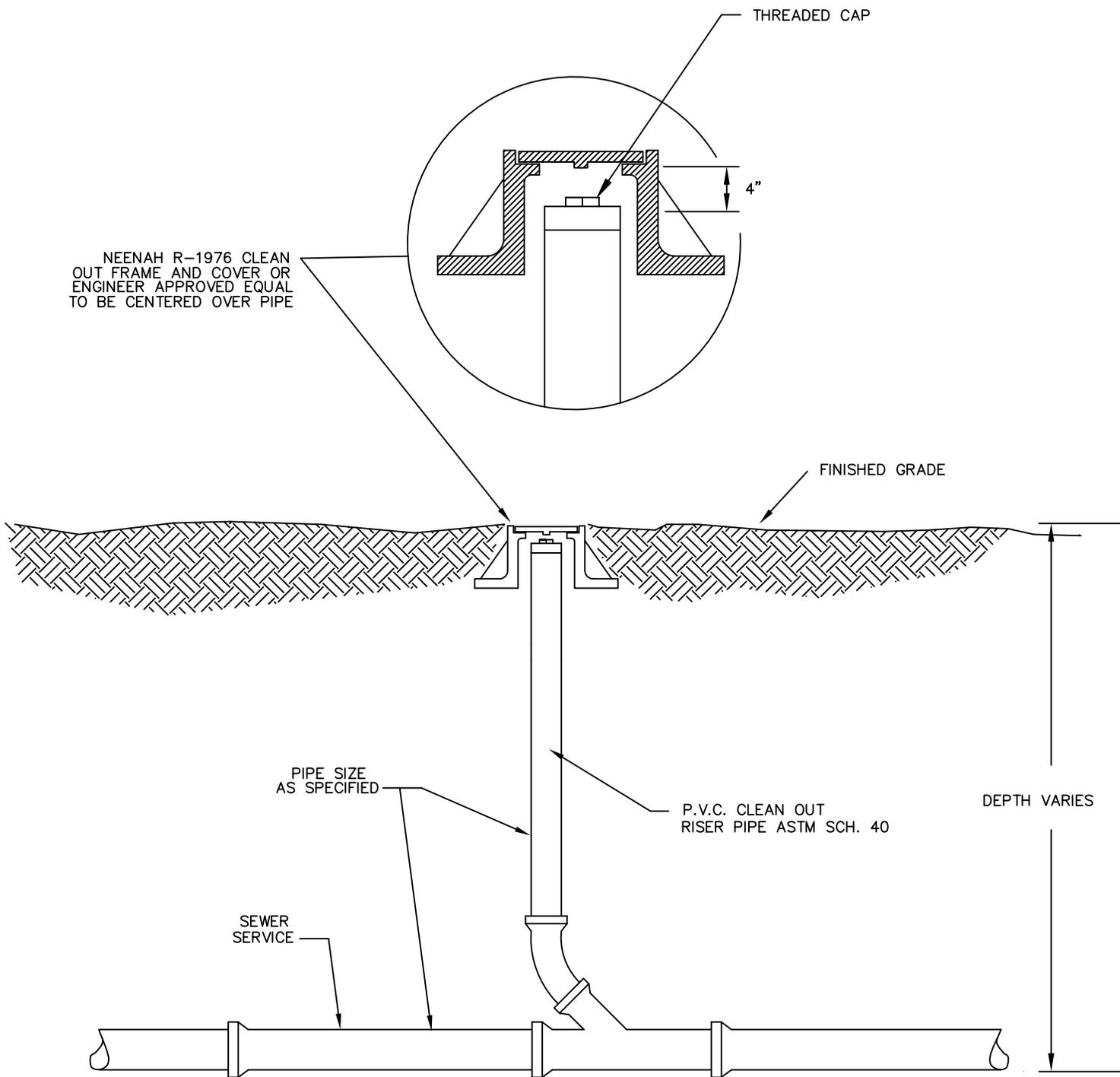
1. A 12" MINIMUM SEPARATION IN ALL DIRECTIONS BETWEEN THE SEWER AND WATER SERVICES SHALL BE MAINTAINED FROM THE PROPERTY LINE TO THE BUILDING AT ALL TIMES.
2. BEDDING MATERIAL SHALL BE INSTALLED ON ALL SERVICE LINES FROM 2" BELOW THE PIPE TO THE TOP OF THE PIPE. BEDDING MATERIAL SHALL BE THE SAME MATERIAL AS USED FOR SANITARY SEWER MAIN PIPE.
3. INSTALLATION IS SIMILAR WHERE 6" SERVICE IS REQUIRED.

REVISED: APRIL 2012

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
TYPICAL SANITARY  
SEWER SERVICE

PLATE  
NUMBER  
950.12



NEENAH R-1976 CLEAN  
OUT FRAME AND COVER OR  
ENGINEER APPROVED EQUAL  
TO BE CENTERED OVER PIPE

THREADED CAP

4"

FINISHED GRADE

PIPE SIZE  
AS SPECIFIED

P.V.C. CLEAN OUT  
RISER PIPE ASTM SCH. 40

DEPTH VARIES

SEWER  
SERVICE

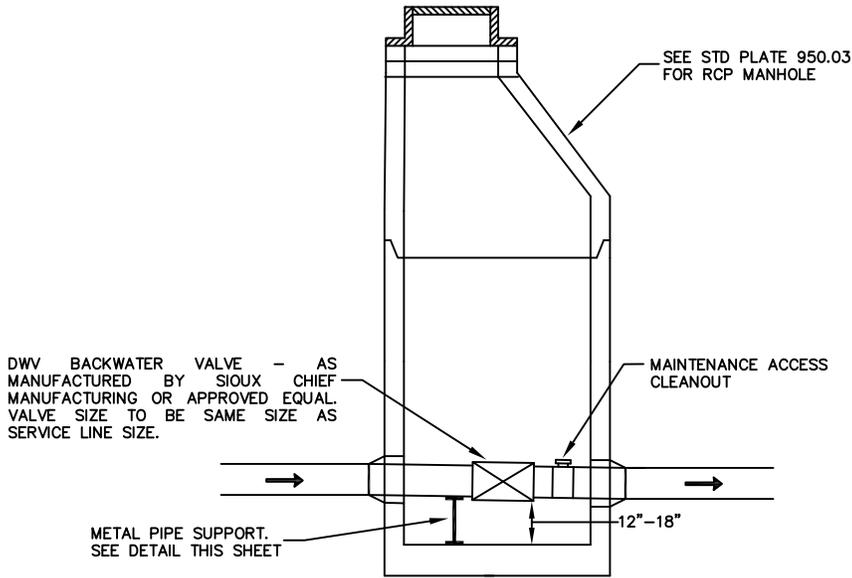
NOTE: FRAME AND COVER ARE NOT REQUIRED WITHIN 5'  
OF THE BUILDING

REVISED: NOVEMBER 2001

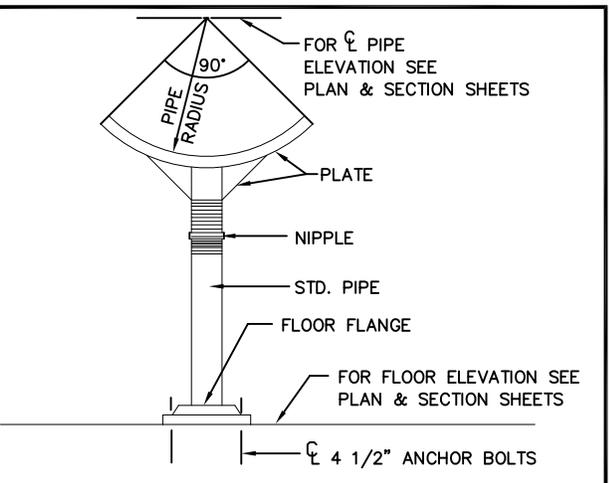
SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
CLEANOUT MANHOLE  
FRAME AND COVER

PLATE  
NUMBER  
950.13



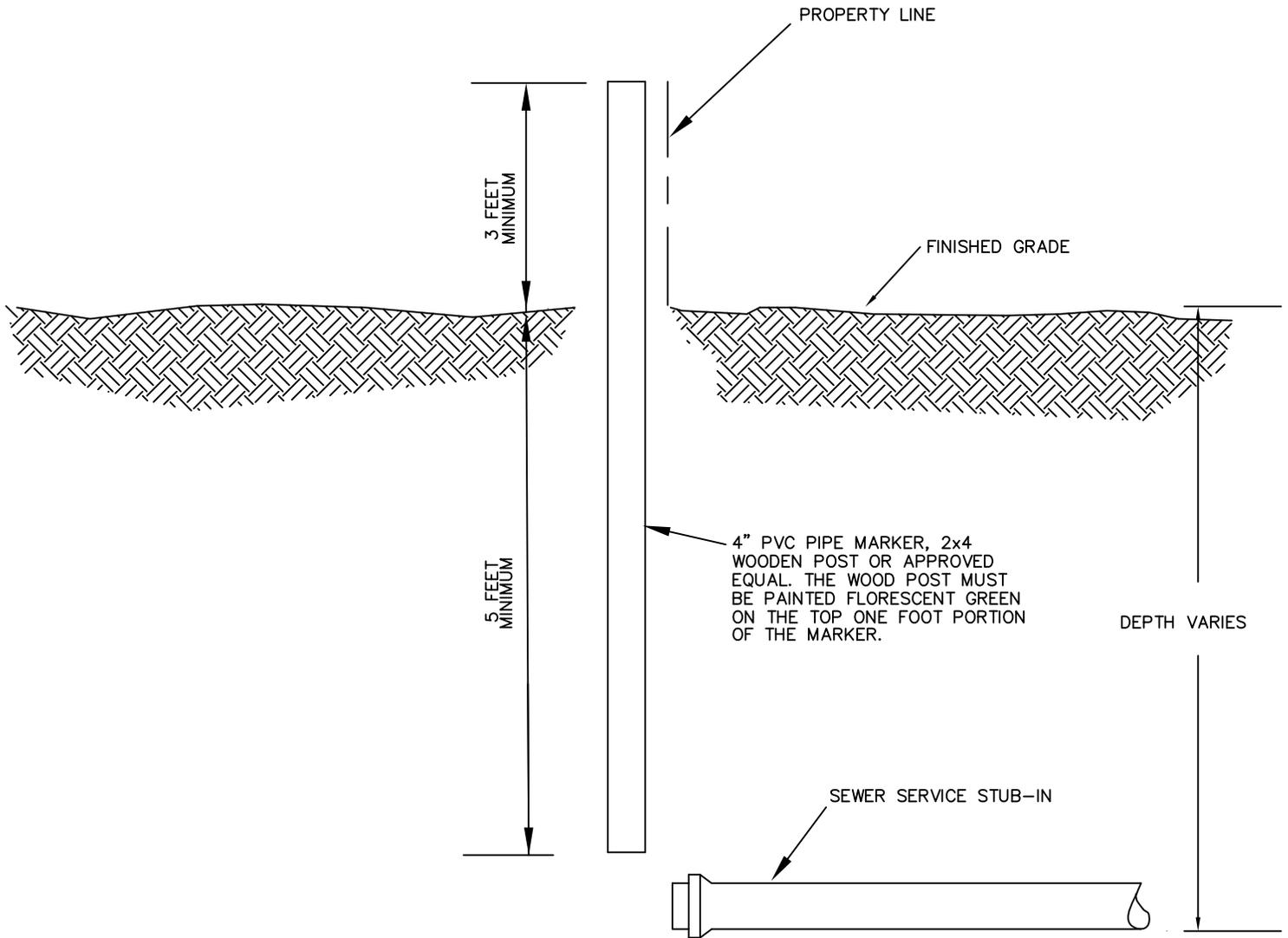
- NOTES**
1. MANHOLE TO BE SET A MINIMUM OF 5 FEET TO A MAXIMUM OF 10 FEET OUTSIDE OF BUILDING WALL.
  2. BACKFLOW PREVENTER MAY BE INSTALLED IN AN ACCESSIBLE SPACE INSIDE THE BUILDING.



METAL PIPE SUPPORT DETAIL

REVISED: APRIL 2012

<p>SPECIFICATION REFERENCE NO. 950</p>	<p>CITY OF CANTON SANITARY SEWER BACKFLOW PREVENTER</p>	<p>PLATE NUMBER SPECIAL</p>
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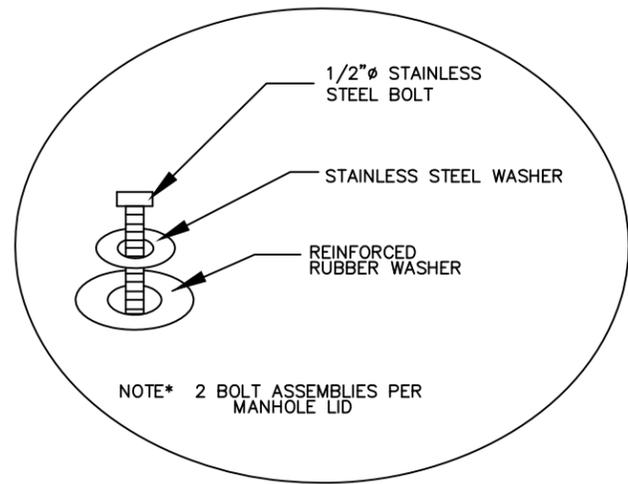
- NOTES:
1. MARKERS SHALL BE MAINTAINED BY THE PROPERTY OWNER UNTIL THE SERVICE IS EXTENDED TO THE HOUSE.
  2. PROPERTY OWNER WILL BE RESPONSIBLE FOR REPLACING DAMAGED MARKERS
  3. MARKERS SHALL BE PLACED VERTICAL FROM THE END OF THE STUB-IN AND NOT OFFSET.

REVISED: NOVEMBER 2001

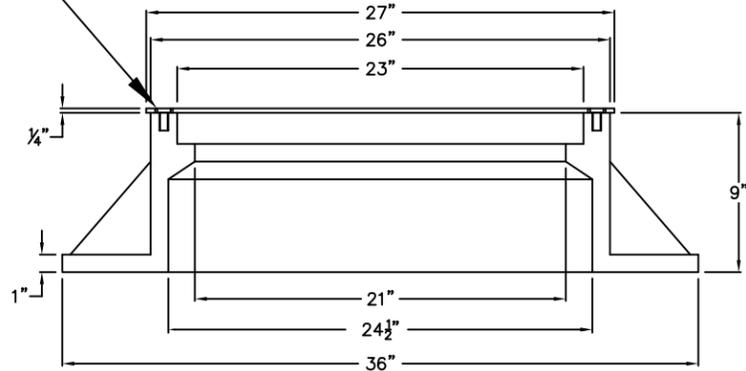
SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER SERVICE  
STUB-IN MARKER DETAIL

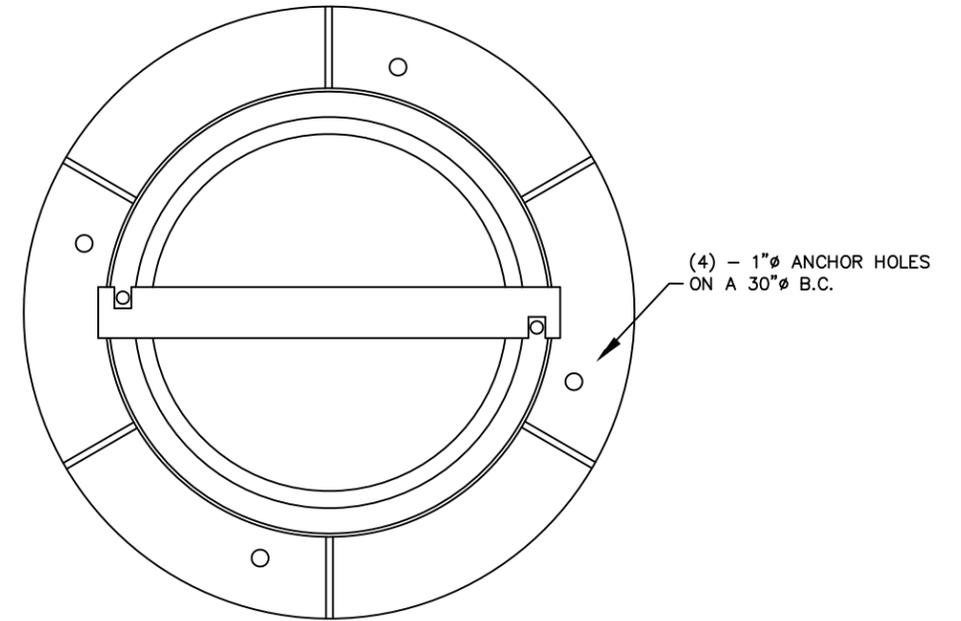
PLATE  
NUMBER  
950.14



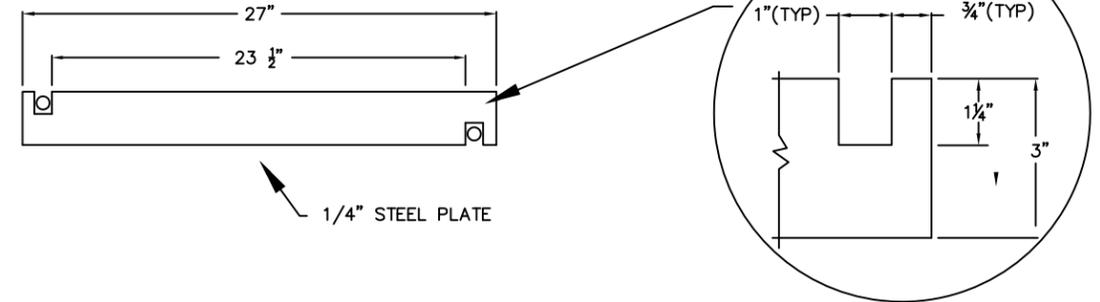
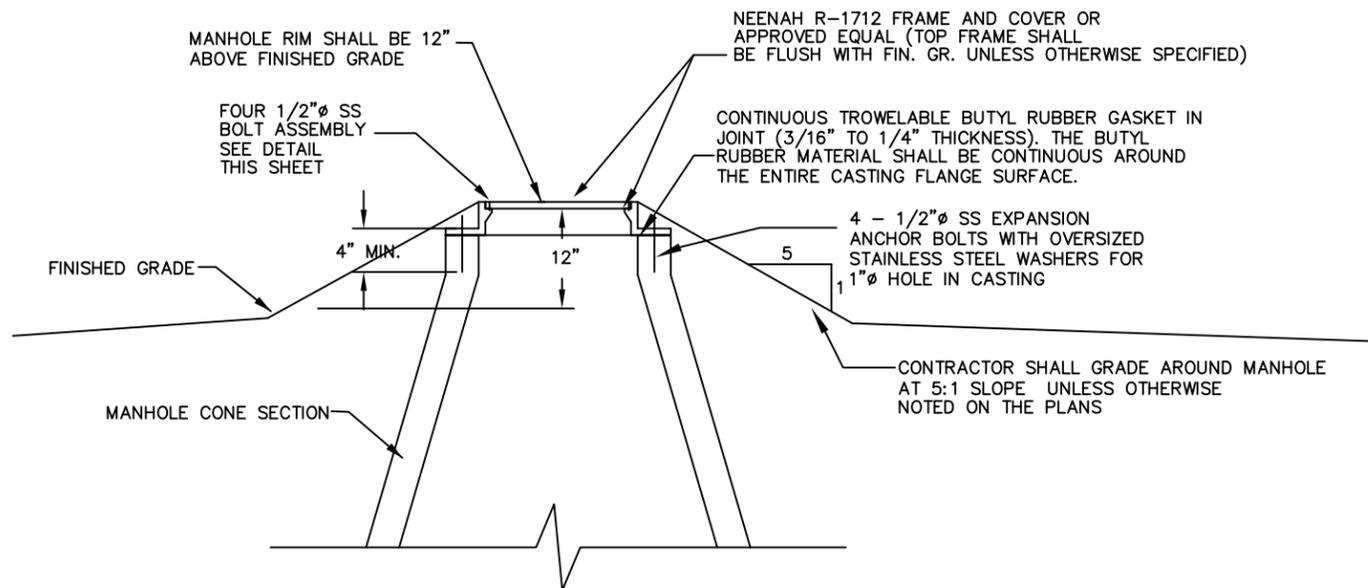
NOTE:  
THE BOLT DOWN MANHOLE CASTING SHALL BE USED IN ALL EASEMENT AREAS AND AREAS OUTSIDE OF PAVED ROADWAYS, UNLESS OTHERWISE NOTATED BY THE CITY ENGINEERS OFFICE.



NOTES:  
1. (2) DRILL AND TAP FRAME FOR 1/2"  $\phi$ -13 X 1" SS HEX HD CAP SCREWS WITH REINFORCED RUBBER AND STAINLESS STEEL WASHERS. THE HOLES SHALL BE 1 1/2" DEEP.  
2. THE BOLTS AND THREADS SHALL BE THOROUGHLY COATED WITH AN ANTI-SEIZE LUBRICANT MATERIAL. THE ANTI-SEIZE LUBRICANT MATERIAL SHALL BE "ZEP GROOVY-PASTE" AS MANUFACTURED BY ZEP MANUFACTURING COMPANY OR APPROVED EQUAL.

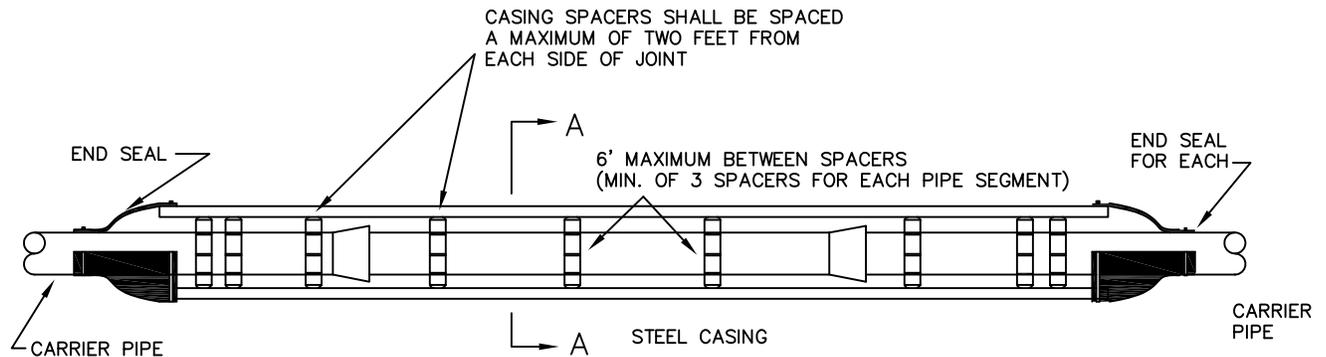


NOTE:  
THE PLATE SHALL BE ORIENTED SUCH THAT WHEN THE BOLTS ARE TIGHTENED IN A (CLOCKWISE) ROTATION, THE PLATE IS PULLED INTO THE BOLT AND NOT PUSHED AWAY FROM IT.



REVISED: OCTOBER 2005

CITY OF CANTON	
SANITARY SEWER WATERTIGHT FRAME AND BOLTED COVER PLATE DETAIL	
SPECIFICATION REFERENCE NO. 950	PLATE NUMBER 950.15



## ELEVATION

CASING SPACERS AND END SEALS SHALL BE MANUFACTURED BY ADVANCED PRODUCTS AND SYSTEMS, INC. P.O. BOX 60399 LAYAYETTE, LA. 70596-0399 OR EQUAL AND MEET THESE REQUIREMENTS.

CASING SPACERS - MODEL SSI-8. (PIPE SIZES 24 INCHES IN DIAMETER AND SMALLER) OR MODEL SSI-12-2 (PIPE SIZES 30 INCHES IN DIAMETER AND GREATER) WITH T-304 STAINLESS STEEL SPACER.  
 BAND - 14 GAUGE T-304 STAINLESS STEEL.  
 RISER - 14 GAUGE T-304 STAINLESS STEEL.

RUNNERS - TWO INCH WIDE MINIMUM GLASS REINFORCED PLASTIC. THE NUMBER OF RISERS SHALL BE AS RECOMMENDED BY THE MANUFACTURER, BUT FOUR IS THE MINIMUM.

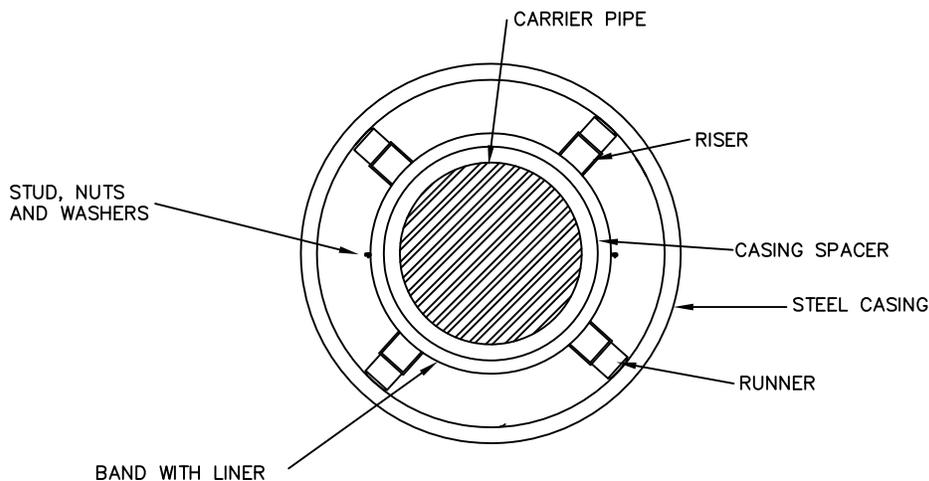
STUDS, NUTS AND WASHERS - T-304 STAINLESS STEEL.

HEIGHT - AS REQUIRED FOR CENTER RESTRAINING

END SEALS - CONICAL SHAPED WRAP-AROUND 1/8 INCH SYNTHETIC RUBBER WITH T-304 STAINLESS STEEL STRAPS.

CASING PIPE MUST CONFORM TO AWWA C-200 WITH ASTM GRADE A36 PLATE STEEL MINIMUM YIELD STRENGTH OF 35,000 POUNDS PER SQUARE INCH.

GROUTING OF THE ANNULAR SPACE WILL NOT BE REQUIRED UNLESS OTHERWISE NOTED.



## SECTION A-A

PIPE SIZE	CASING SIZE
4"	10"
6"	12"
8"	16"
10"	18"
12"	20"
16"	24"
20"	30"
24"	36"
30"	42"
>36"	*

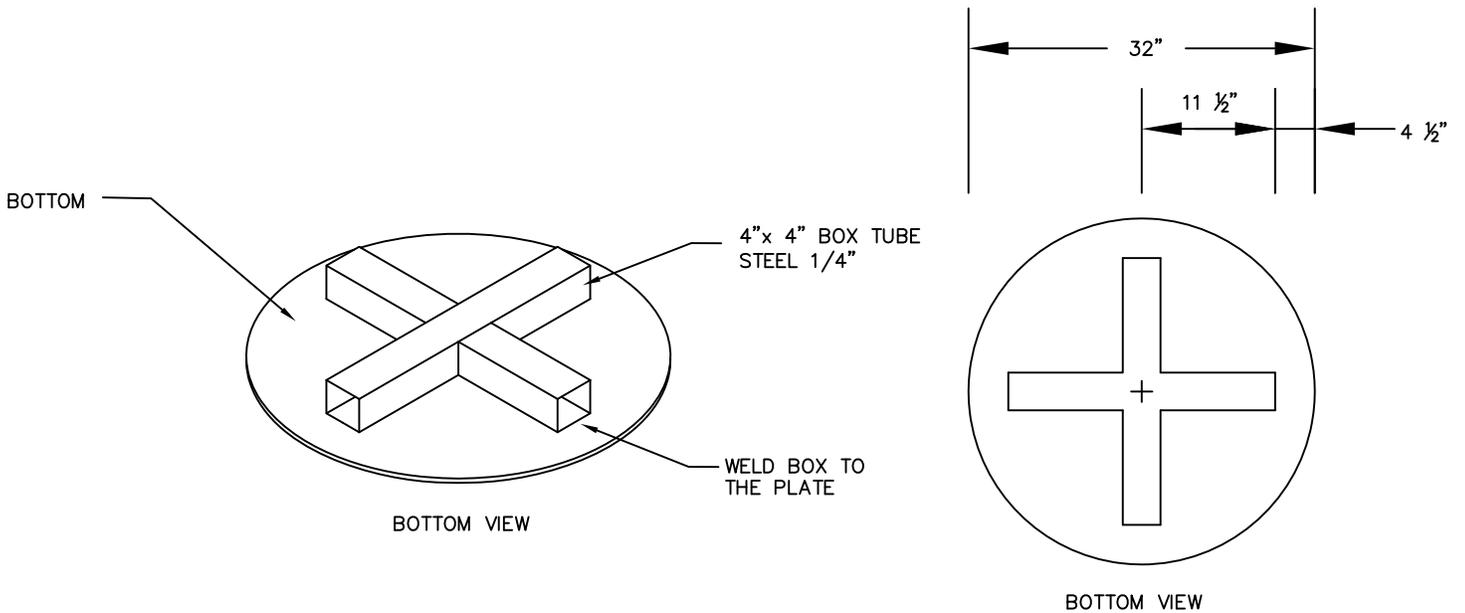
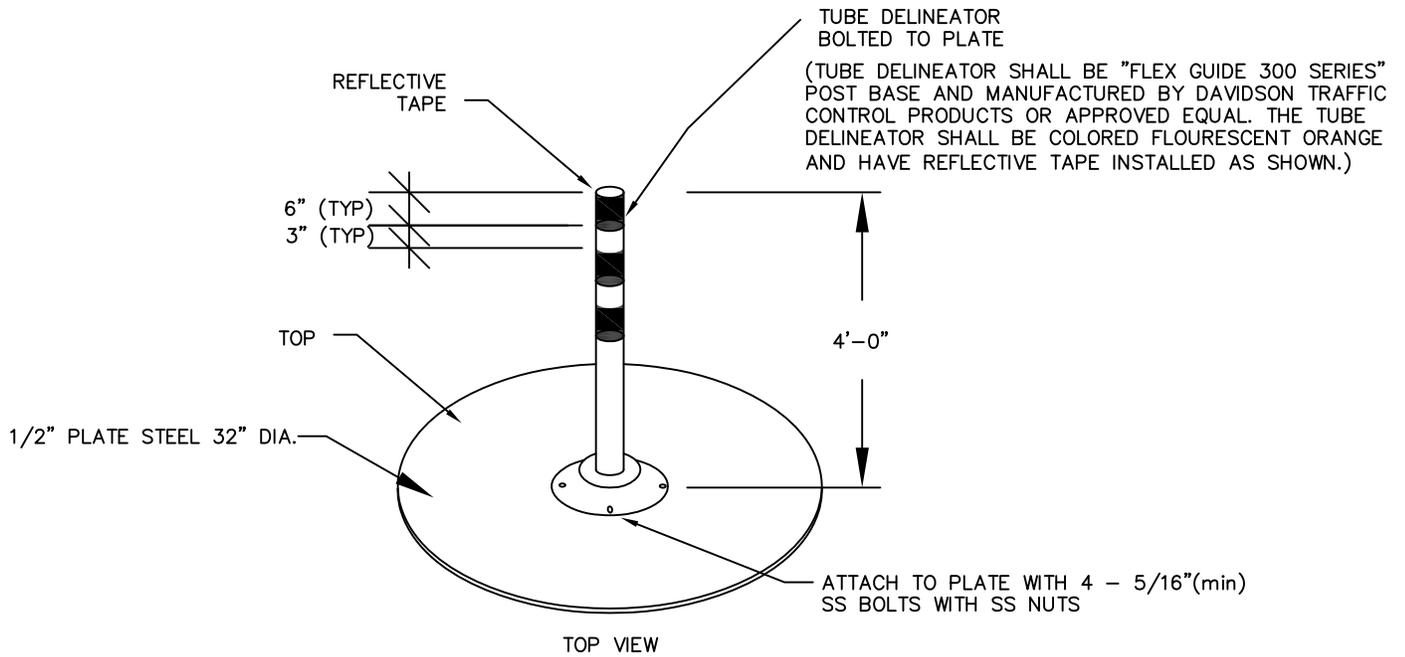
\* AS RECOMMENDED BY MANUFACTURER

REVISED: OCTOBER 2003

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
  
STANDARD CASING/CARRIER  
FOR SANITARY SEWER PIPE

PLATE  
NUMBER  
950.16



NOTE:

1. A SEALANT MATERIAL SHALL BE INSTALLED BETWEEN THE MANHOLE CONSTRUCTION PLATE MARKER AND THE MANHOLE TO FORM A WATERTIGHT SEAL.
2. BREAKAWAY LIFT HOOKS WILL BE ALLOWED ON THE TOP OF THE PLATE FOR USE IN INSTALLING AND REMOVING THE PLATE. THE LIFT HOOKS SHALL BE LOCATED WITHIN A 10 INCH RADIUS OF THE PLATE CENTER.

REVISED: MAY 2003

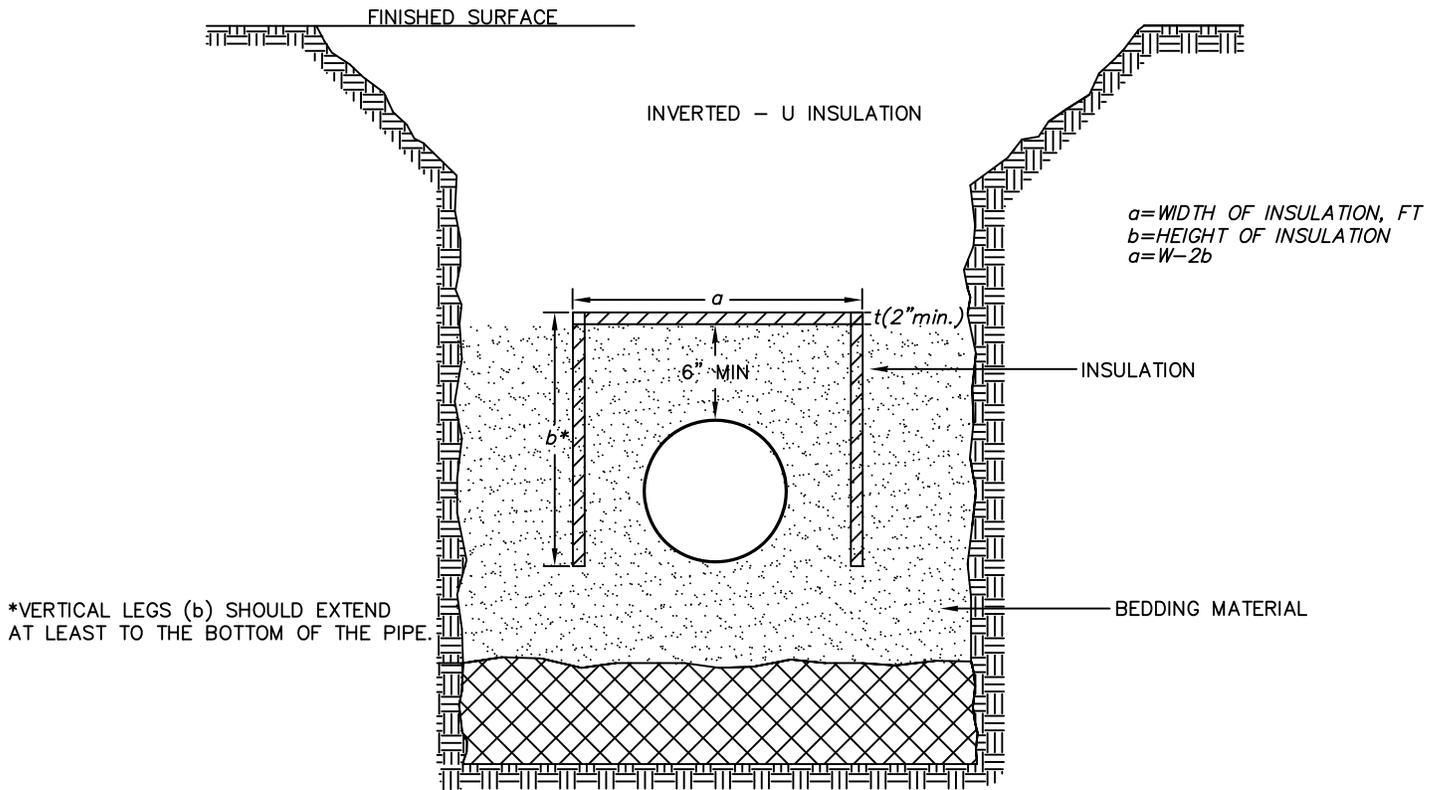
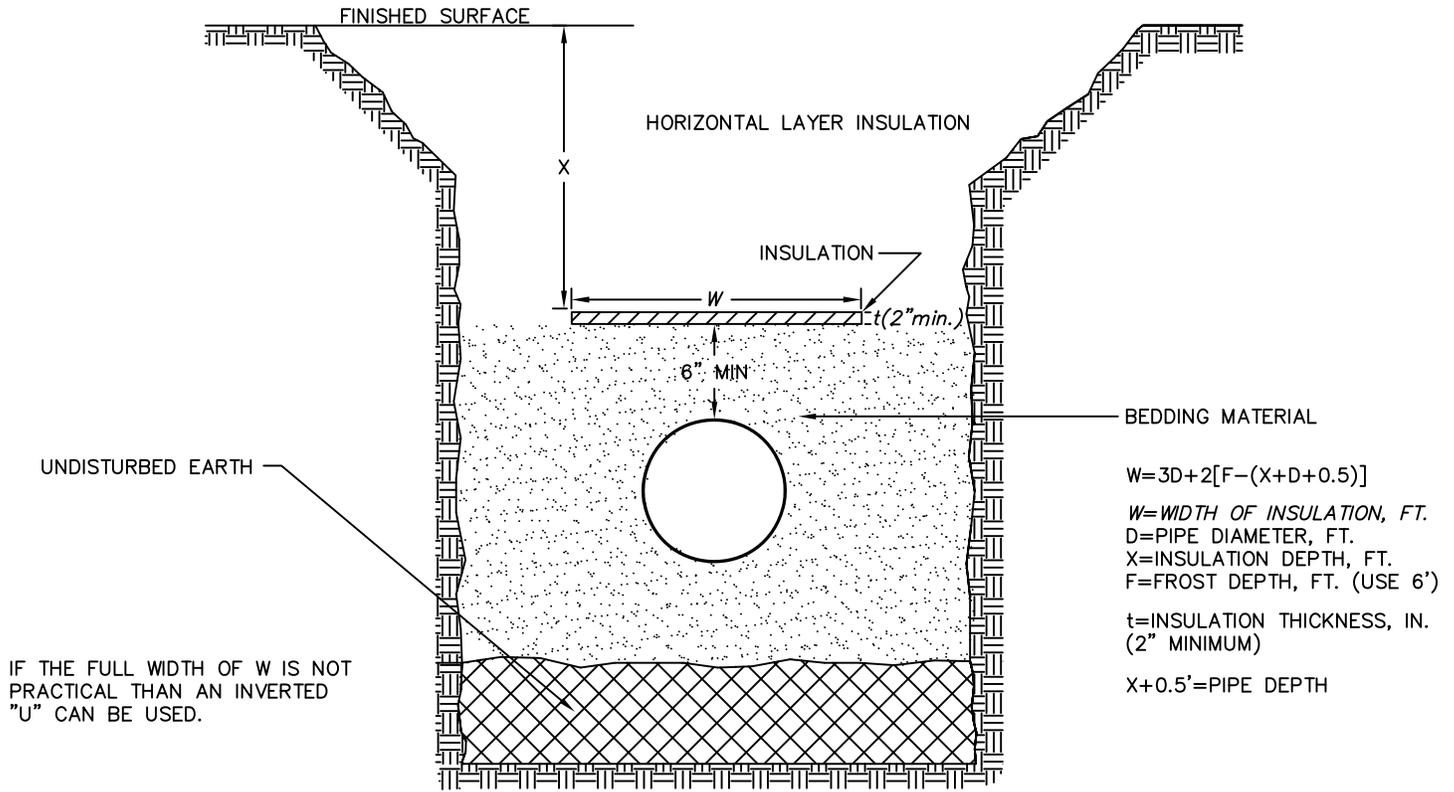
SPECIFICATION  
 REFERENCE  
 NO.  
 950

CITY OF CANTON  
 MANHOLE CONSTRUCTION  
 PLATE MARKER

PLATE  
 NUMBER  
 950.17

# SANITARY SEWER INSULATION DETAIL

## SUMP PUMP COLLECTOR PIPE INSULATION DETAIL



NOTE: THIS DETAIL IS A GENERAL GUIDELINE. INSULATION OF SANITARY SEWER PIPE WILL BE DETERMINED ON A CASE BY CASE SITUATION DEPENDING ON THE FOLLOWING FACTORS: DEPTH, PIPE DIAMETER, FLOW, LOCATION, AND PROXIMITY TO BEDROCK.

REVISED: NOVEMBER 2004

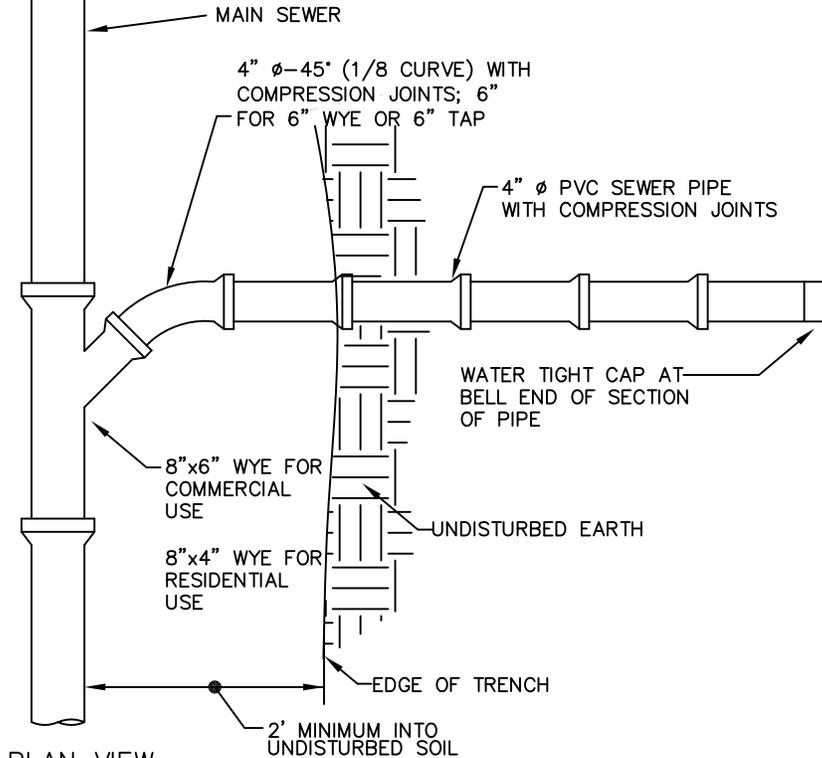
SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER & SUMP PUMP  
COLLECTOR PIPE INSULATION

PLATE  
NUMBER  
950.18

# TYPICAL SANITARY SEWER RISER SERVICE

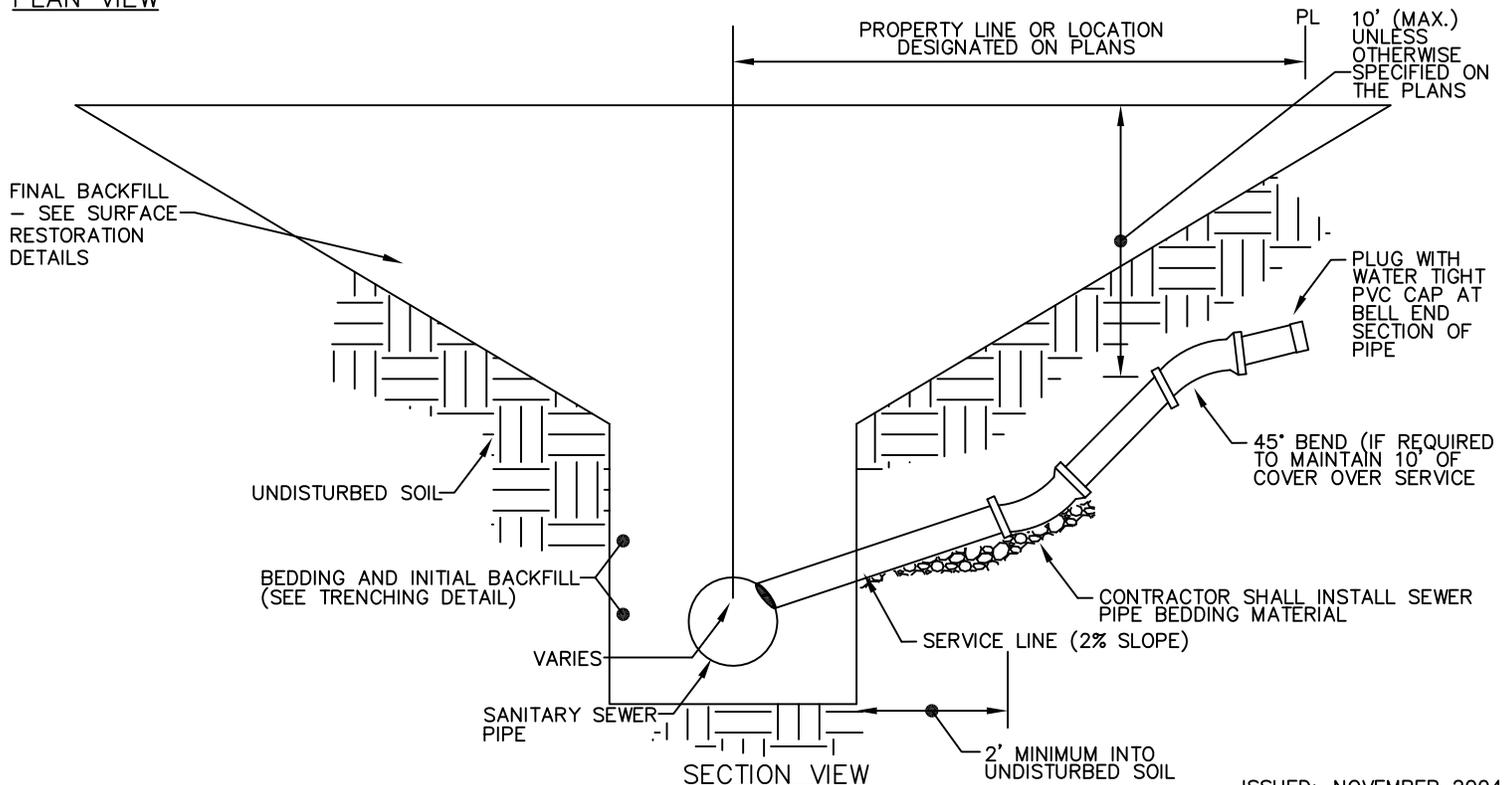
NOTE: JOINTS SHALL BE WIPED CLEAN AND DRY - AND COATED WITH LUBRICANT. SPIGOT SHALL BE INSERTED INTO BELL AS DEEP AS POSSIBLE. TRENCHES SHALL BE KEPT WATER FREE AND AS DRY AS POSSIBLE DURING BEDDING, LAYING AND JOINTING OF PIPE.



PLAN VIEW

**NOTES:**

1. USE FOR SERVICE CONNECTION WHEN SANITARY SEWER DEPTH EXCEEDS 12' UNLESS ADDITIONAL DEPTH IS NECESSARY TO SERVE ADJACENT PROPERTY.
2. CONTRACTOR SHALL INSTALL SERVICE AND RISER OUTSIDE OF THE SANITARY MAIN SEWER TRENCH
3. CONTRACTOR SHALL MARK THE LOCATION OF THE END OF THE SERVICE LINE (SEE STANDARD DETAIL 950.14)
4. FACTORY TEES OR WYES SHALL BE USED ON NEW CONSTRUCTION
5. PAYMENT AND MEASUREMENT:  
 PAYMENT UNDER BID ITEM FOR SANITARY SEWER SERVICES SHALL INCLUDE:
  - A. PIPE DIAMETER X SEWER WYE (SIZE SHOWN ON PLANS)
  - B. ALL PVC SERVICE LINE PIPING AND FITTINGS
  - C. BEDDING MATERIAL FOR PVC SERVICE LINE
  - D. WATER TIGHT PLUG
  - E. ANY OTHER MATERIALS REQUIRED TO COMPLETE SEWER SERVICE INSTALLATION



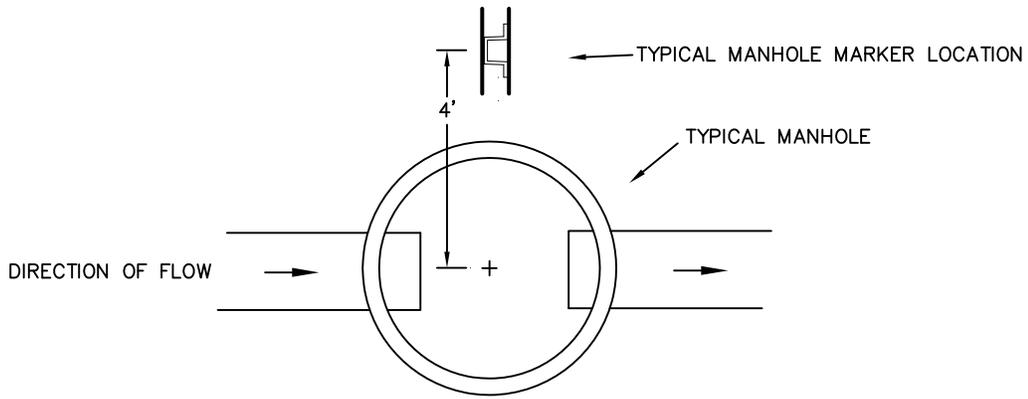
SECTION VIEW

ISSUED: NOVEMBER 2004

SPECIFICATION  
REFERENCE  
NO.  
950

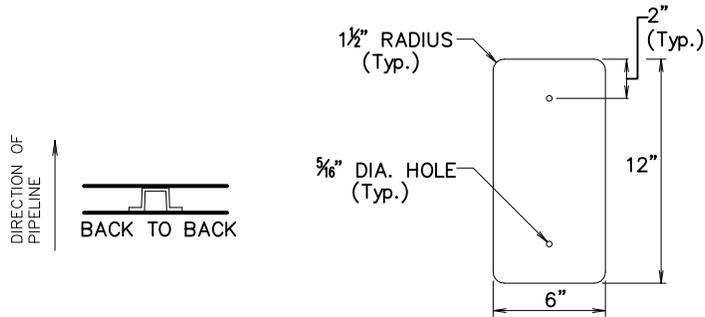
CITY OF CANTON  
TYPICAL SANITARY SEWER  
RISER SERVICE DETAIL

PLATE  
NUMBER  
950.19



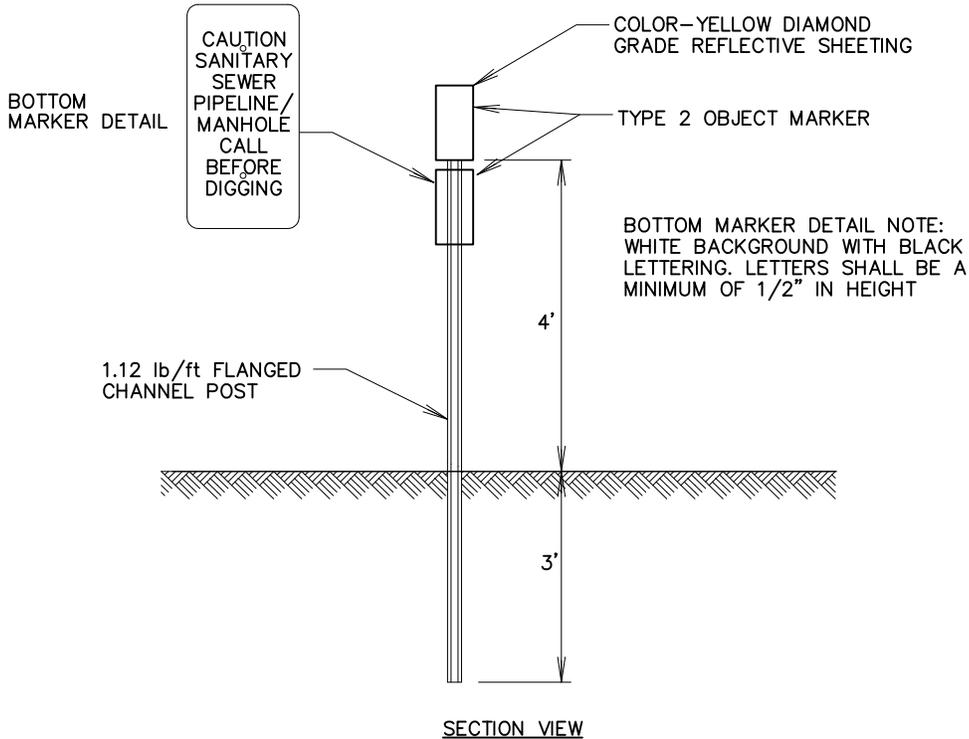
MANHOLE MARKER LOCATIONS WILL VARY.  
VERIFY LOCATION WITH ENGINEER IN THE FIELD.

PLAN VIEW



TYPE 2 OBJECT MARKER DETAIL  
7/8" TO 1 1/8" GRIP RANGE  
1/4" TWIN RIVET (SINGLE AND BACK TO BACK)

TYPE 2 OBJECT MARKER DETAILS AND POST ORIENTATION



GENERAL NOTES:

THE TYPE 2 OBJECT MARKERS SHALL CONFORM TO SDDOT STANDARD SPECIFICATIONS SECTION 982.2 I.

THE 1.12 lb/ft FLANGED CHANNEL POST SHALL CONFORM TO SDDOT STANDARD SPECIFICATIONS SECTION 982.2 I. 6.

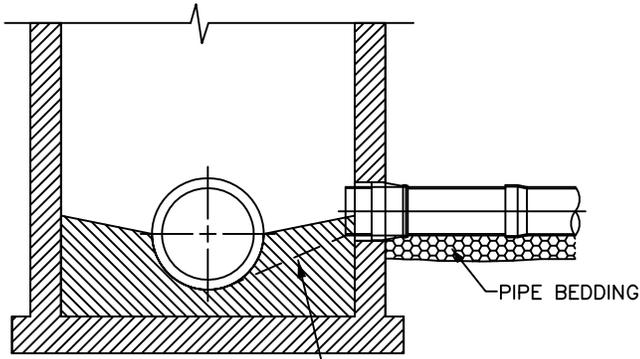
ISSUED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
TYPICAL MANHOLE MARKER  
TYPE 2

PLATE  
NUMBER  
950.20

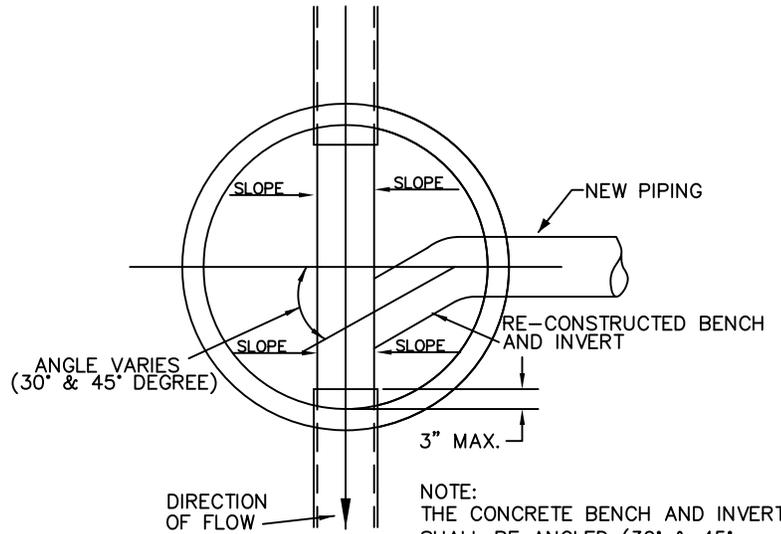
SECTION



CONTRACTOR SHALL REMOVE PART OF EXISTING CONCRETE BENCH AND INVERT AND CONSTRUCT NEW BENCH AND INVERT TO FACILITATE SMOOTH TRANSITION INTO EXISTING INVERTS.

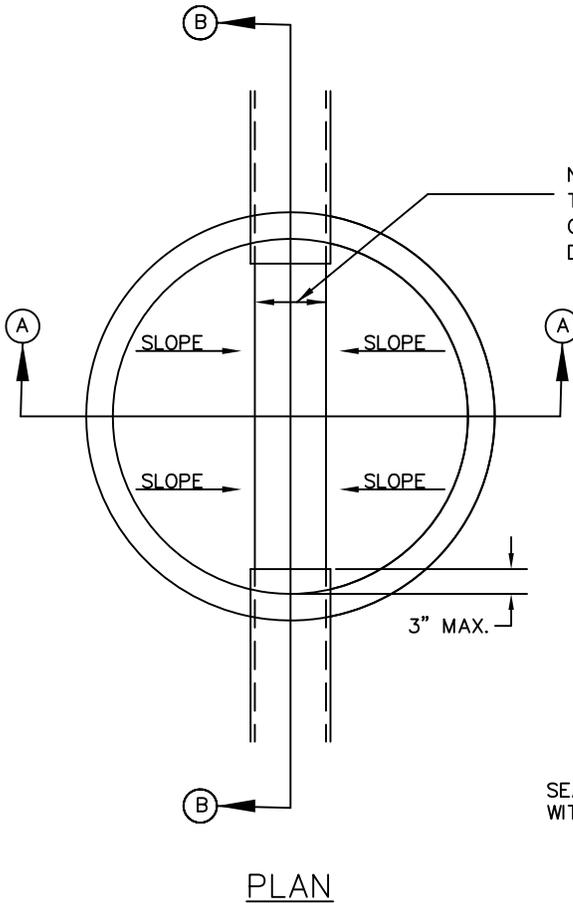
PLAN

TYPICAL STRAIGHT THROUGH MANHOLE



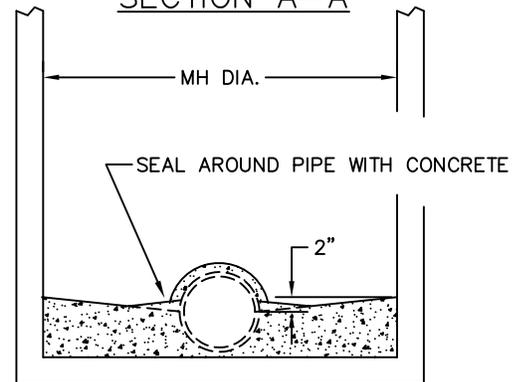
NOTE: THE CONCRETE BENCH AND INVERT SHALL BE ANGLED (30° & 45° DEGREE) TO DISCHARGE WITH THE FLOW. THE MANHOLE BENCH SHALL BE RECONSTRUCTED WITH A SMOOTH AS GLASS INVERT FOR THE NEW PIPE TO DISCHARGE INTO.

CONNECTION DETAIL

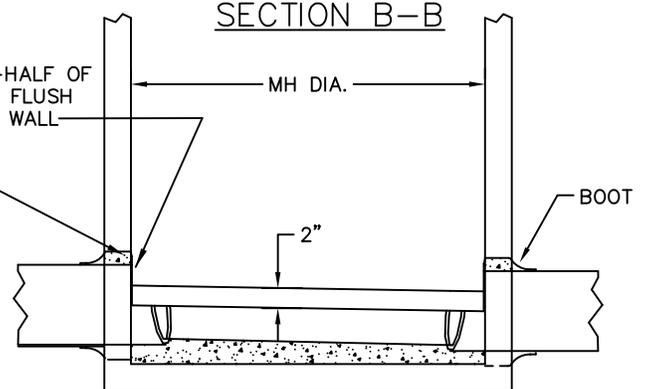


NOTE: THE MANHOLE INVERT SHALL CONFORM TO THE SAME I.D. DIMENSIONS OF THE PIPE.

SECTION A-A



SECTION B-B



MANHOLE BENCH AND INVERT DETAIL

ISSUED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
CONNECTION TO  
EXISTING MANHOLE

PLATE  
NUMBER  
950.21

WATERPROOF AND CORROSION PROOF  
ELECTRICAL CONNECTOR (CODE  
APPROVED FOR DIRECT BURY)

LOOSELY KNOT TRACER  
WIRE AHEAD OF SPLICE NUT

NOT TO SCALE

### TRACER WIRE SPLICE DETAIL

NOT TO SCALE

CAST IRON COLLAR  
& LOCKABLE LID

EXISTING GRADE

NOTE:  
TYPICAL MANHOLE MARKER TYPE 1 OR 2, DEPENDING  
UPON LOCATION AND AS DESIGNATED ON PLANS.

TERMINAL BLOCK

ACCESS BOX

2-#10 AWG INSULATED  
COPPER WIRES

NOTE:  
PROVIDE SUFFICIENT SLACK IN TRACE WIRES TO  
ALLOW TERMINAL BLOCK TO EXTEND 18" OUT OF  
FLUSH BOX. COIL WIRES IN ACCESS BOX.

FORCEMAIN

### TRACER WIRE TERMINAL BOX

NOT TO SCALE

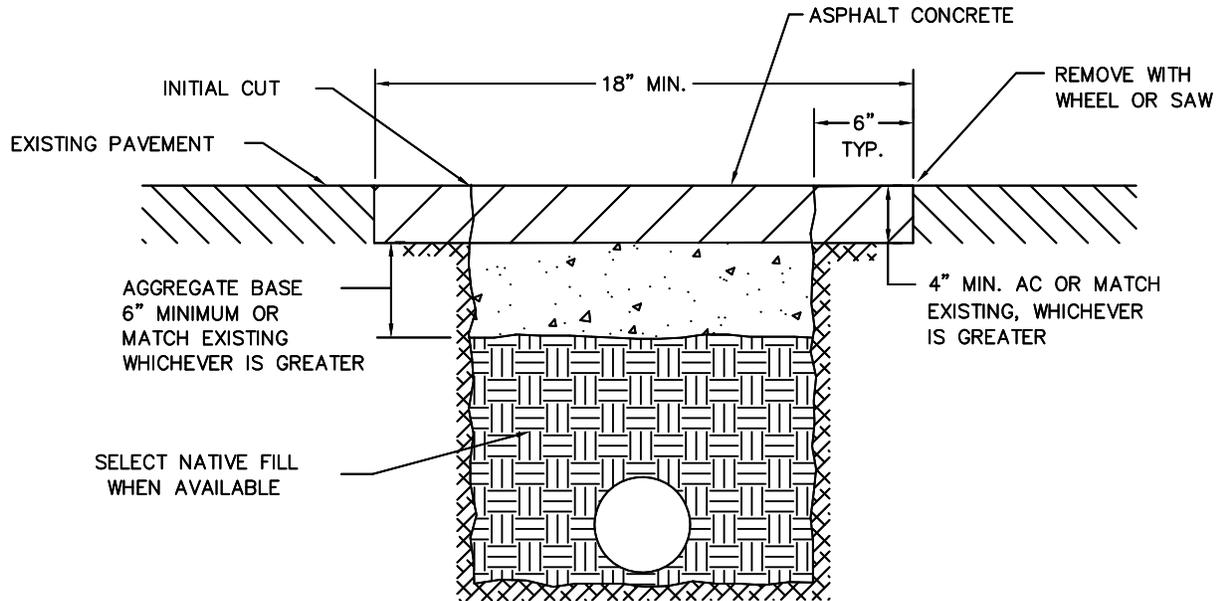
ISSUED: NOVEMBER 2006

SPECIFICATION  
REFERENCE  
NO.  
950

CITY OF CANTON  
SANITARY SEWER FORCE MAIN  
TRACER WIRE SYSTEM

PLATE  
NUMBER  
950.22

# UTILITY TRENCH DETAIL



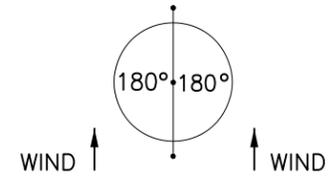
- 1) ALL TRENCHES IN ARTERIAL AND COLLECTOR STREETS SHALL BE BACKFILLED AND TEMPORARILY PAVED OR STEEL PLATED AT THE END OF EACH WORKING DAY.
- 2) TRAFFIC CONTROL TO MEET THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 3) BACKFILL MATERIAL TO BE PLACED IN 8" MAX. LIFTS AT 95% COMPACTION.
- 4) CONCRETE REPLACEMENT AND REINFORCEMENT TO BE AS PER CITY OF CANTON AND SD DOT STANDARD PLATES.
- 5) PAVEMENT ON ALL TRENCH EXCAVATIONS WITHIN 5' OF THE GUTTER PAN SHALL BE REMOVED TO THE PAN.
- 6) WHEN WEATHER CONDITIONS PREVENT USING SELECT NATIVE FILL, CRUSHED QUARTZITE MATERIAL (ROCK DUST) MAY BE USED FOR BACK FILL WITH CITY APPROVAL. COMPACTION REQUIREMENTS MUST BE FOLLOWED FOR CRUSHED QUARTZITE MATERIAL.

REVISED: SEPTEMBER 1997

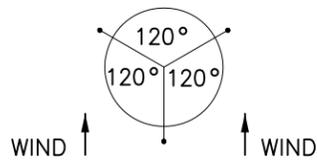
SPECIFICATION  
REFERENCE  
NO.  
1000

CITY OF CANTON  
  
UTILITY TRENCH REPAIR DETAIL

PLATE  
NUMBER  
1000.02

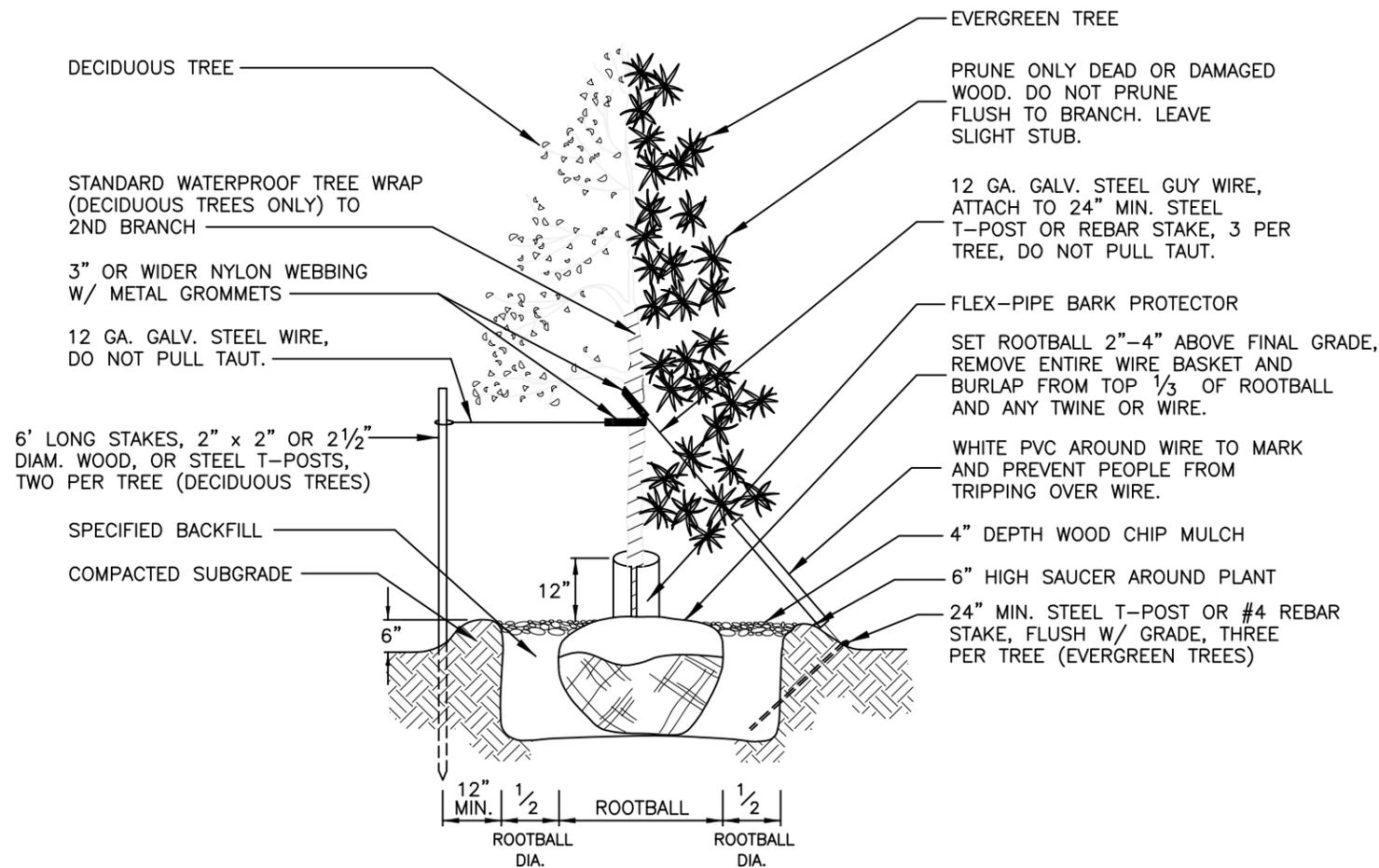


GUYING PATTERN  
FOR DECIDUOUS TREE  
PLANTING



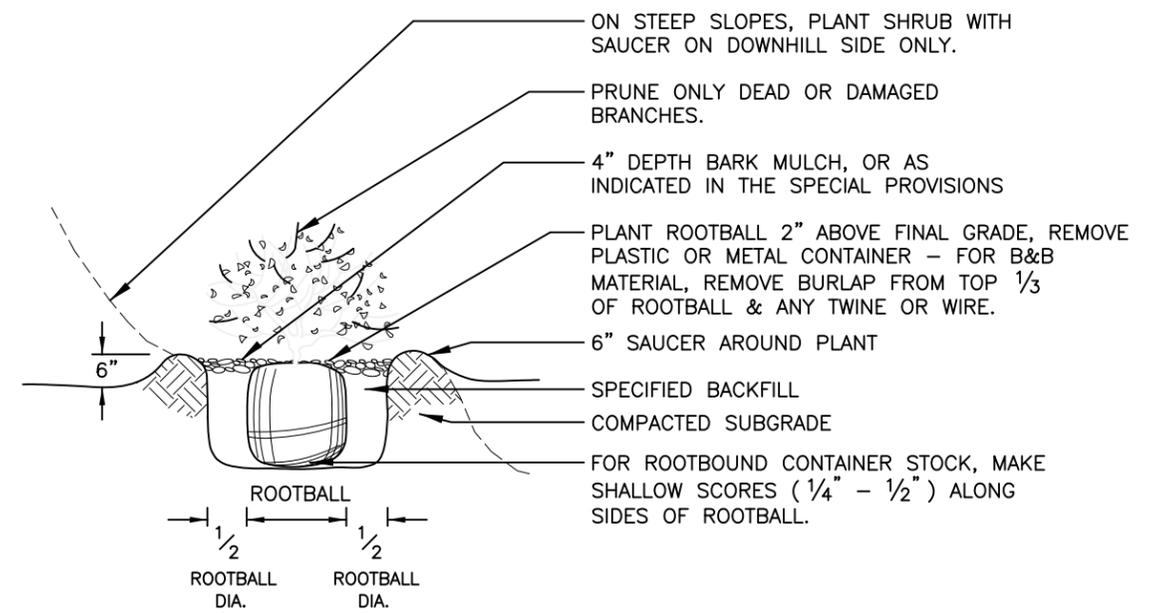
FOR TREES ON 4:1 OR STEEPER SLOPES, PLACE 2 GUYS UPSLOPE, ONE DOWNSLOPE; OTHERWISE PLACE FOR PREVAILING WIND.

GUYING PATTERN  
FOR EVERGREEN TREE  
PLANTING



DECIDUOUS AND EVERGREEN  
TREE PLANTING AND GUYING DETAIL

(GUY AND STAKE DECIDUOUS TREES 2" AND LARGER CALIPER AND CONIFEROUS TREES OVER 4' HT.)  
NOT TO SCALE



SHRUB PLANTING DETAIL  
NOT TO SCALE

ISSUED: FEBRUARY 2005

CITY OF CANTON	
TREE PLANTING	
SPECIFICATION REFERENCE NO. SPECIAL	PLATE NUMBER 1100.01 SP