

**NOTES:**

Sections Symetrical about  $C_c$ .  
 Dimensions are expressed in inches.  
 Backing or Encasement to be Class "C" Concrete Item 905  
 On sanitary sewer construction trench dams are required as specified under 901.11  
 \*\*  $W_n$  shown for trench width is the minimum width permitted. Actual width may vary dependant upon contractor's choice of operation. However, in no event shall contractor be paid for quantities in excess of those quantities calculated based upon  $W_n$ .  
 \* SUBTRACT VOLUME OF BACKING FROM BEDDING MATERIAL WHEN BACKING IS SPECIFIED.

D	VIT. CLAY PIPE t	CONCRETE PIPE t	$W_n$	BACKING cu.yd./L.F.	BEDDING MAT'L for ENCASM'T cu.yd./L.F.	BEDDING * MATERIAL cu.yd./L.F.	MINIMUM REPAVING sq.yd./L.F.	ENCASEMENT cu.yd./L.F.
6	11/16	3/4	30	.028	.031	.170	.5	.056
8	7/8	7/8	30	.029	.031	.179	.5	.058
10	1	1	30	.032	.031	.187	.5	.064
12	1 3/16	1 3/8	32	.038	.033	.214	.519	.076
15	1 1/2	1 5/8	36	.050	.037	.249	.556	.1
18		2 1/4	40	.064	.041	.231	.593	.128
21		2 3/4	44	.078	.045	.270	.630	.156
24		3	48	.094	.049	.311	.667	.188
27		3 1/4	52	.111	.053	.355	.704	.222

APPROVED 6-27-07  
  
 CITY ENGINEER  
 REVISED: 21 JUN 07

TYPE 1 BEDDING  
 FOR SEWER PIPE  
 6" - 27" DIAMETER  
 ITEM 901

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING  
 STANDARD  
 CONSTRUCTION DRAWING  
 DWG. BY: BIC  
 CHK'D BY:   
 FILE NUMBER  
 S-1

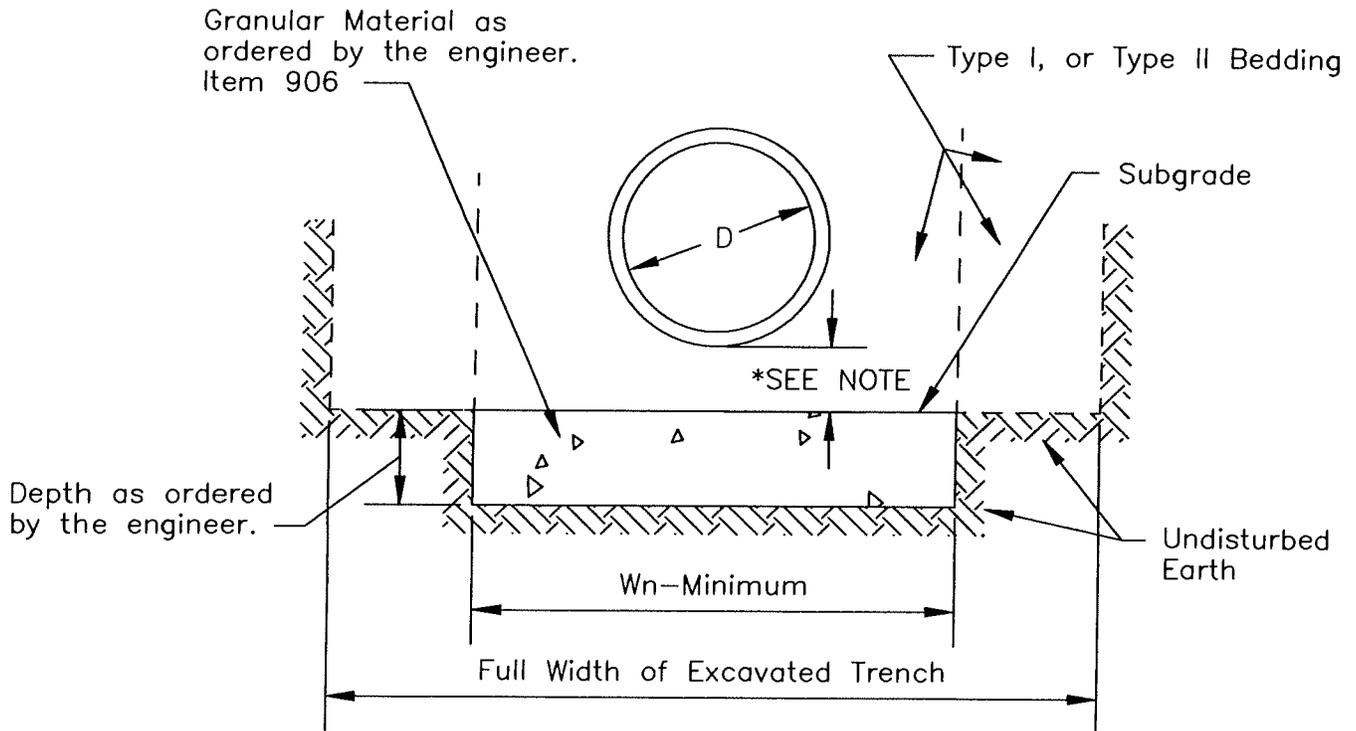
D	W <sub>n</sub>	Vol. of Excavation Vol. of Granular Mat'l. cu.yd./L.F./in. of depth
6	30	.00772
8	30	.00772
10	30	.00772
12	32	.00823
15	36	.00926
18	40	.01029
21	44	.01132
24	48	.01234
27	52	.01337
30	67	.0172
33	70.5	.0181
36	74	.0190
42	81	.0208
48	88	.0226
54	95	.0244
60	102	.0262
66	109	.0280
72	116	.0298
78	123	.0316
84	130	.0334
90	136	.0349
96	143	.0368
102	149	.0383
108	156	.0401

NOTE:

All dimensions are expressed in inches.

- \*4" of #67 Limestone for 6"-27" pipe
- 6" of #67 Limestone for 30"-90" pipe
- 8" of #67 Limestone for 96" and over

On sanitary sewer construction trench dams are required from the bottom of the stone foundation as specified under 901.04.



APPROVED 3-29-05

*Kent Huston*  
CITY ENGINEER

REVISED: 14 FEB 2005

STONE  
FOUNDATION  
for 6"-108" dia.  
pipe  
ITEM 906

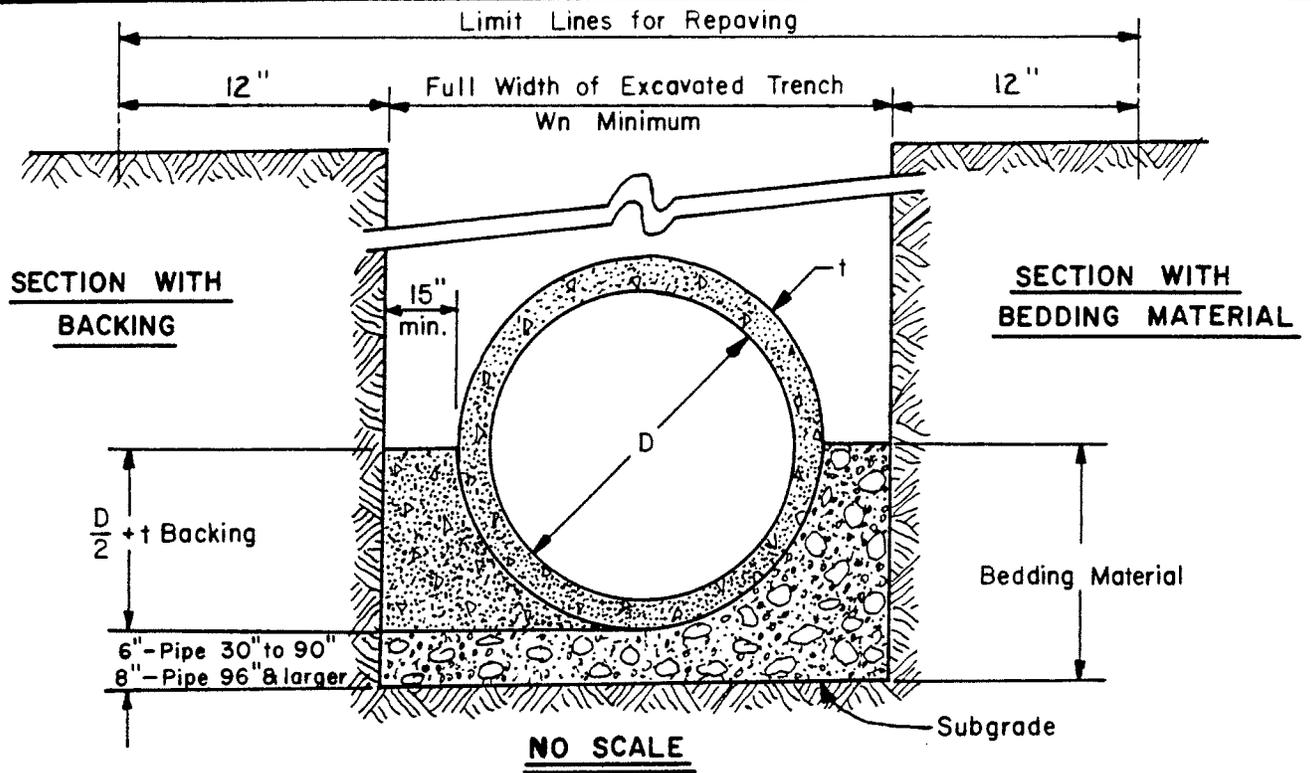
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: DDK  
CHK'D BY: TJH

FILE NUMBER

S-2



**NOTES:**

Sections Symetrical about  $\mathcal{C}$ .

Dimensions are expressed in inches.

Backing is to be Class "C" Concrete, Item 905.

On sanitary sewer construction trench dams are required as specified under 90I.04.

D	t	Wn	BACKING cu.yd./L.F.	BEDDING MATERIAL cu.yd./L.F.	MINIMUM REPAVING sq.yd./L.F.
30	3½	67	.181	.284	.843
33	3¾	70½	.202	.311	.875
36	4	74	.228	.337	.907
42	4½	81	.269	.394	.972
48	5	88	.317	.453	1.037
54	5½	95	.368	.514	1.102
60	6	102	.421	.578	1.167
66	6½	109	.477	.645	1.231
72	7	116	.536	.715	1.296
78	7½	123	.598	.788	1.361
84	8	130	.662	.863	1.426
90	8	136	.715	.925	1.482
96	8½	143	.784	1.078	1.547
102	8½	149	.841	1.148	1.602
108	9	156	.914	1.235	1.667

PREVIOUSLY 001A3

APPROVED 5 MAY 86  
DATE

*Perry J. Payne*  
CITY ENGINEER

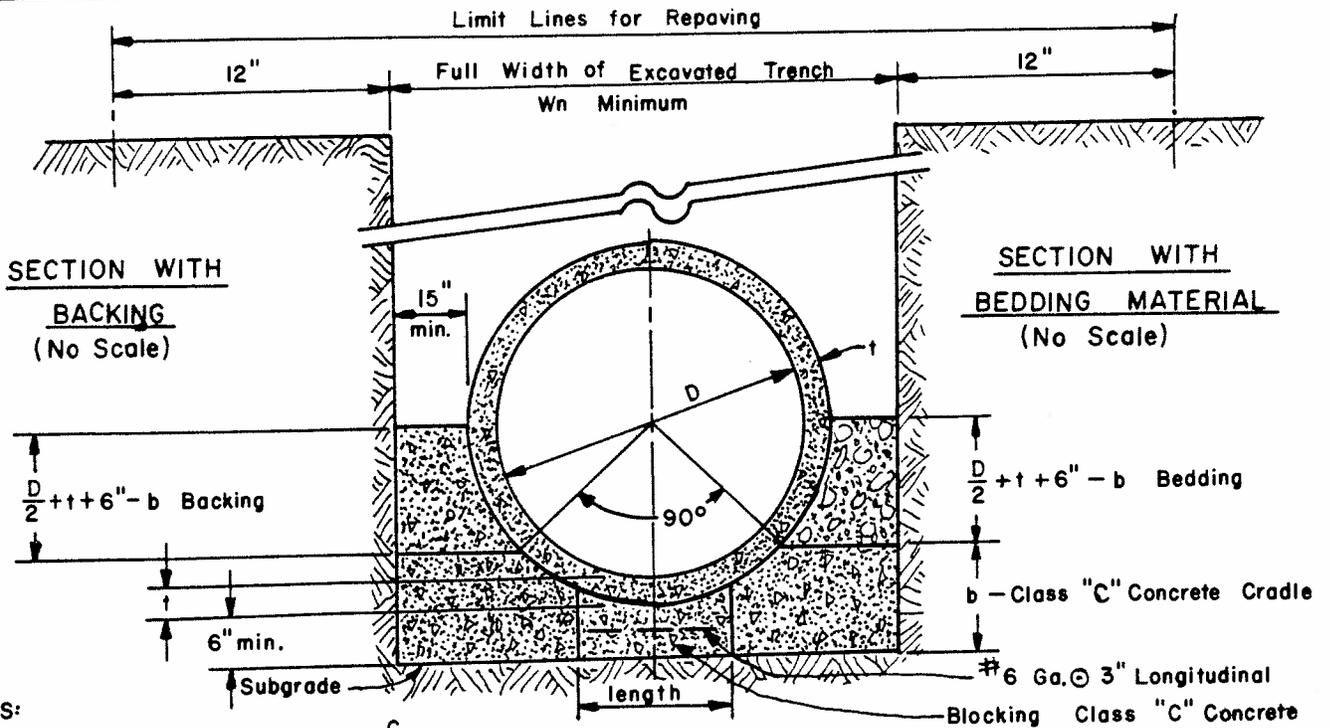
REVISED:

TYPE I BEDDING  
FOR SEWER PIPE  
30"-108" DIAMETER  
ITEM 90I

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: SLH FILE NUMBER  
CHK'D BY: PM S-3



**NOTES:**

Sections Symetrical about  $\epsilon$ .  
 Pipe dimensions on chart are minimum and expressed in inches.  
 On sanitary sewer construction trench dams are required as specified under 90I.04.  
 Blocking shall have the length shown in the chart or of sufficient length so that the pipe load on the subgrade shall not exceed 3000 lbs./S.F.  
 Backing to be Class "C" Concrete, Item 905.

D	t	Wn	b	CLASS "C" CONCRETE CRADLE * cu.yd./L.F.	BACKING cu.yd./L.F.	MINIMUM REPAVING sq.yd./L.F.	SIZE OF BLOCKING	
							Width	Length
30	3 1/2	67	11 1/2	.173	.111	.843	12	15
33	3 3/4	70 1/2	12	.188	.123	.875	12	16 1/2
36	4	74	12 1/2	.203	.134	.907	12	18
42	4 1/2	81	13 1/2	.234	.160	.972	12	21
48	5	88	14 1/2	.266	.187	1.037	14	24
54	5 1/2	95	15 1/2	.301	.213	1.102	15	27
60	6	102	16 1/2	.338	.241	1.167	16	30
66	6 1/2	109	17 1/2	.376	.269	1.231	18	33
72	7	116	18 1/2	.416	.299	1.296	20	36
78	7 1/2	123	19 1/2	.458	.329	1.361	21	39
84	8	130	20 1/2	.502	.361	1.426	22	42
90	8	136	21 1/2	.543	.383	1.481	22	45
96	8 1/2	143	22 1/2	.589	.416	1.546	23	48
102	8 1/2	149	23 1/2	.632	.438	1.602	23	51
108	9	156	24 1/2	.682	.485	1.667	25	54

\* Includes the volume of the Class "C" Concrete Block.

PREVIOUSLY 001 A4

APPROVED 5 MAY 86  
DATE

*Perry J. Payne*  
CITY ENGINEER

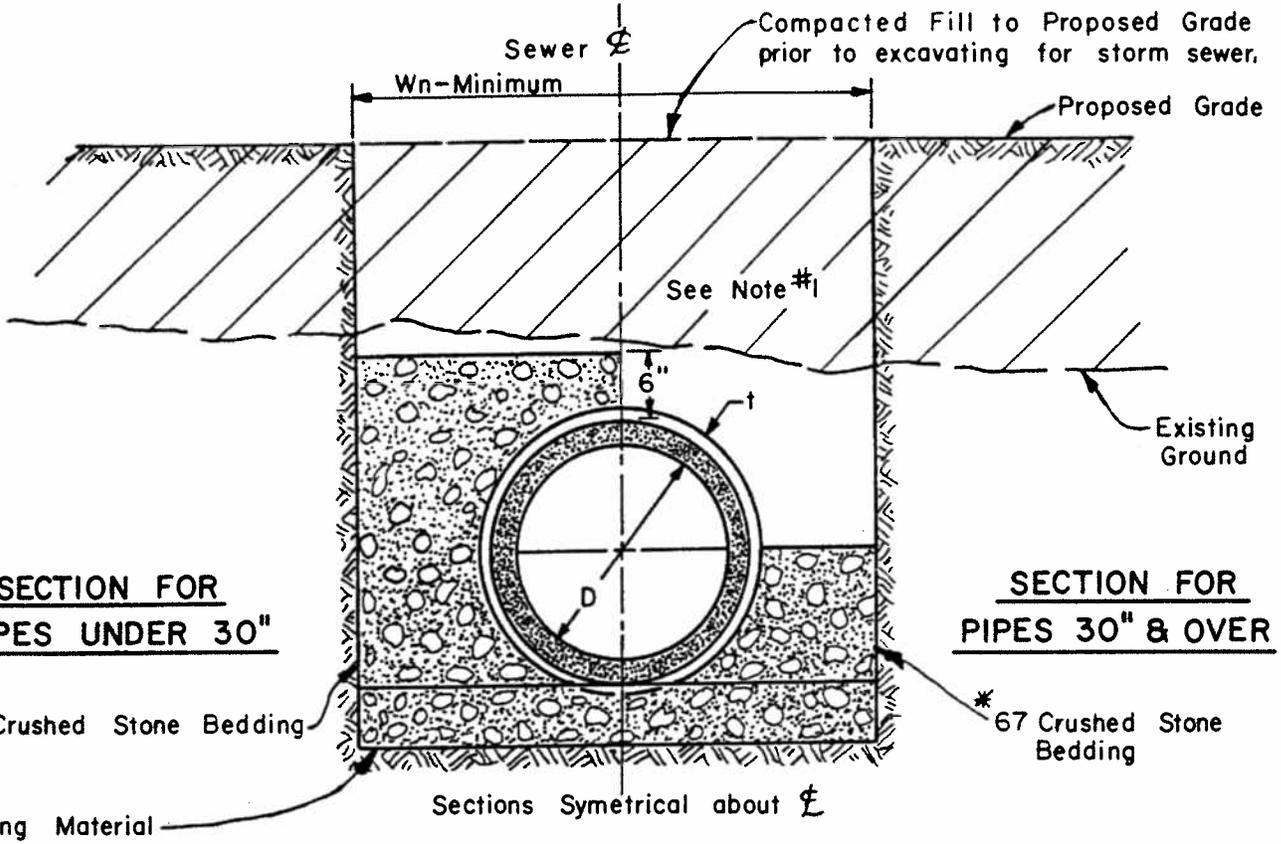
REVISED:

TYPE II BEDDING  
 FOR SEWER PIPE  
 30"-108" DIAMETER  
 ITEM 90I

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

DWG. BY: SLH  
 CHK'D BY: RM  
 FILE NUMBER  
 S-4



**NO SCALE**

**NOTES:**

1. Backfill of trench from top of 67 Crushed Stone Bedding to the top of trench shall be Compacted to 95% maximum dry density in accordance with Section 911. No grits will be allowed.
2. The compaction requirement will be strictly enforced by the City.
3. The £ of the proposed storm sewer should be offset from the property line.
4. The cost of the 67 Crushed Stone Bedding, Compacted Fill and Backfill shall be included in Item 901.
5. Minimum width of trench and quantities are as shown on drawings S-1 or S-3.

PREVIOUSLY 001A5

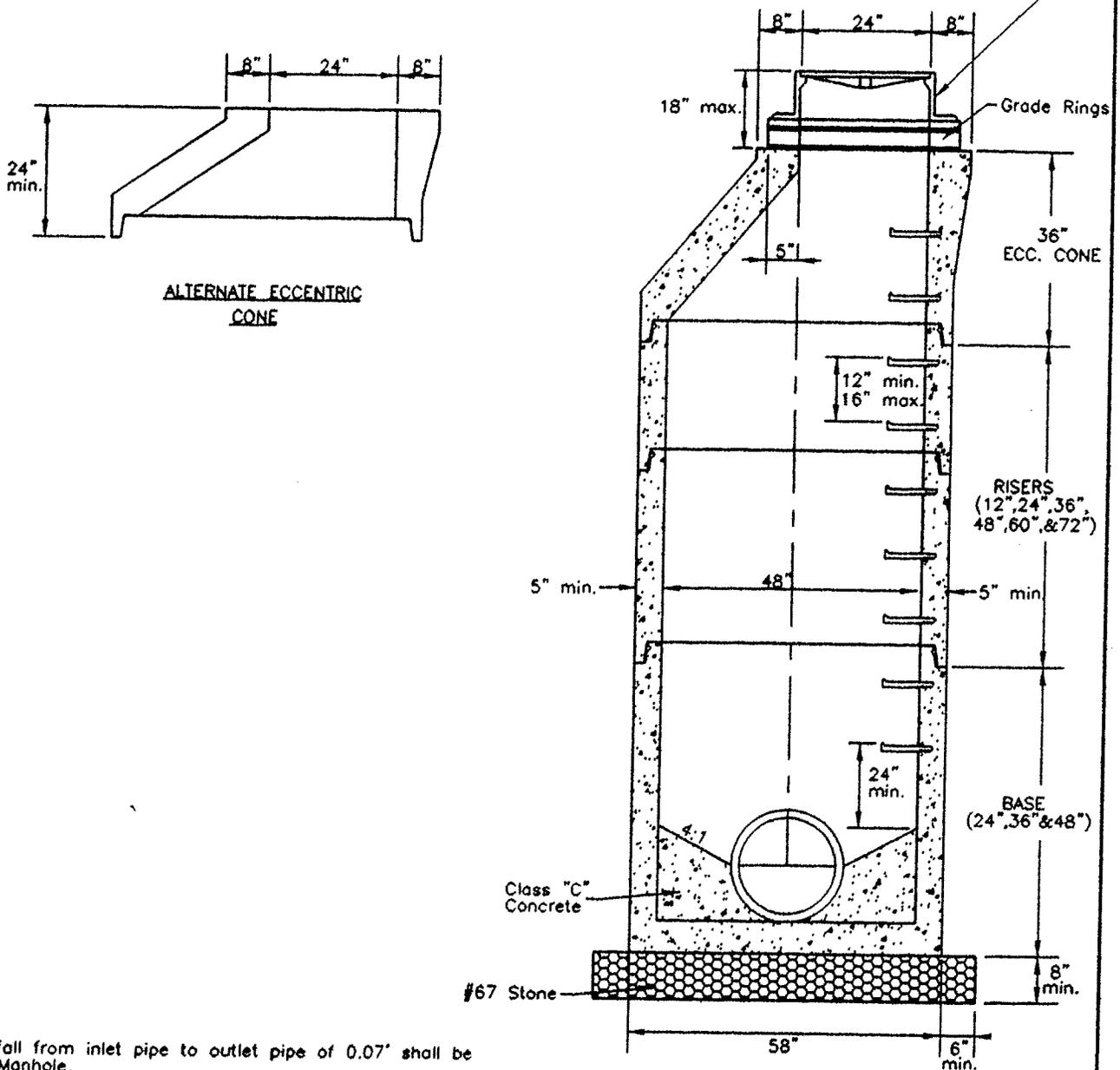
APPROVED 5 MAY 86  
DATE  
*Perry J. Payne*  
CITY ENGINEER

TYPICAL TRENCH  
DETAIL  
FOR STORM SEWERS  
OUTSIDE R/W WITH  
COVER 30" OR LESS

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING  
STANDARD  
CONSTRUCTION DRAWING  
DWG. BY: S.L.H.  
CHK'D BY: R.M.  
FILE NUMBER  
S-5

REVISED:

Manhole Casting Drawing see S-11 for Sanitary and S-12 for Storm



ALTERNATE ECCENTRIC CONE

SECTION VIEW

NOTES:

1. A Minimum fall from inlet pipe to outlet pipe of 0.07' shall be cast in the Manhole.
2. Manholes shall be in accordance with ASTM C-478
3. Steps shall conform to Standard Drawing S-13, and CMSL 604.02
4. O-Ring Joints shall conform to ASTM C-443
5. Precast walls shall have a minimum thickness of 5 inches and reinforced sufficiently to permit shipping and handling without damage.
6. Sanitary Manholes shall be watertight structures.
7. All lift holes and other openings shall be thoroughly and neatly grouted with cement mortar as approved by the Engineer.
8. For flat slab tops refer to standard construction drawing S-10.
9. Sanitary pipe connections shall conform to City of Lancaster, Ohio CMSL Section 604 or as approved by the Engineer.

APPROVED 11/13/97

*Robert H. Hurler*  
CITY ENGINEER

REVISED: 11-13-97

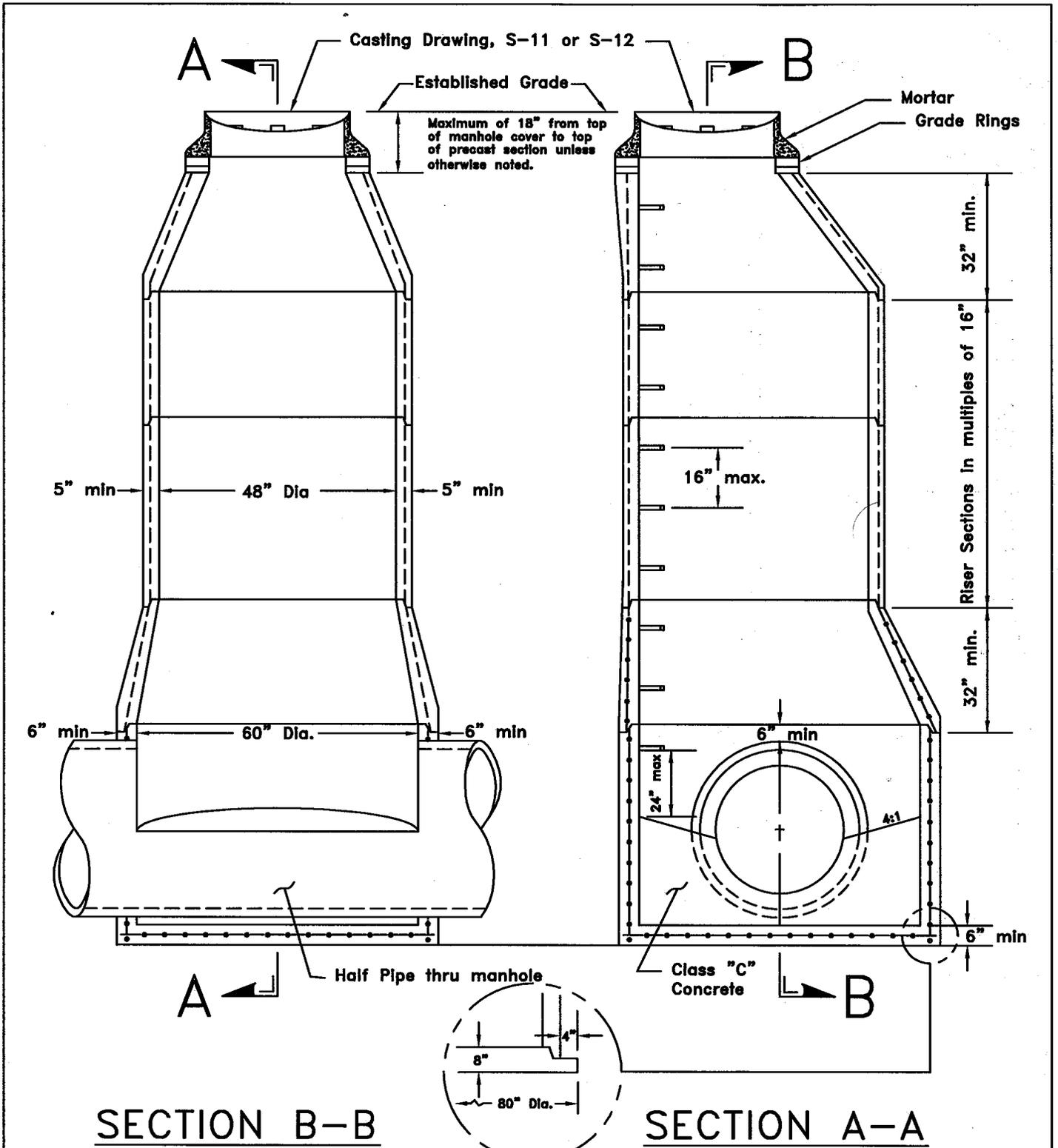
MANHOLE STANDARD  
NO. 1  
PRECAST BASE  
8" THRU 27" PIPE

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

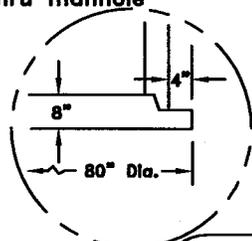
DWG. BY: ESW  
CHK'D BY: FRM

FILE NUMBER  
S-6



SECTION B-B

SECTION A-A



**NOTE:**

Joints shall be as specified under 901.06

ALTERNATE PRECAST BASE  
Furnished with integral bottom. W/O Ring Joint

APPROVED 8-20-13  
*Brad Faguell*  
CITY ENGINEER

TYPE "2" MANHOLE  
60" PRECAST BASE  
30" Thru 42" Pipe

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

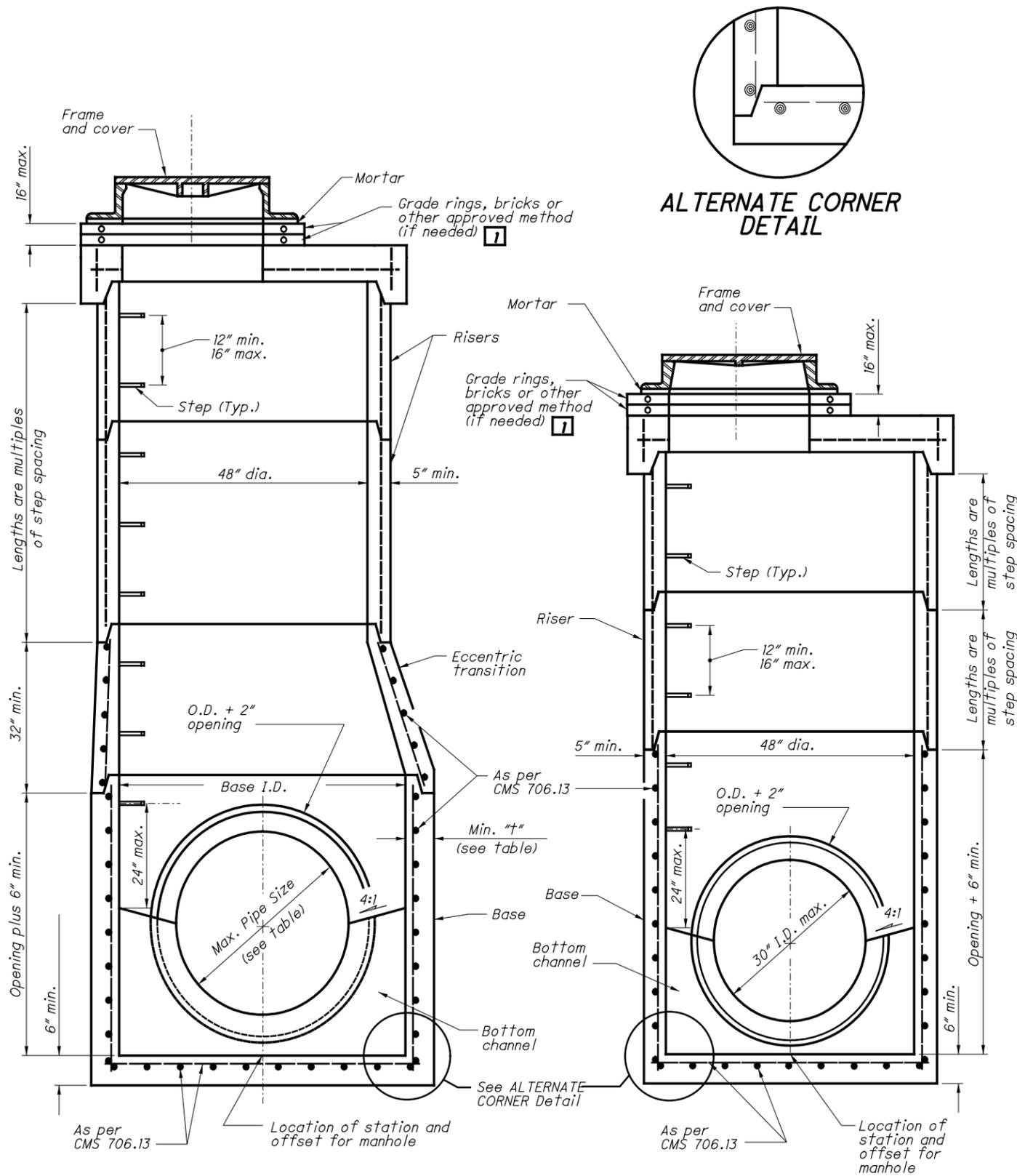
STANDARD  
CONSTRUCTION DRAWING

REVISED: 15 AUG 13

PREVIOUSLY 002A2

DWG. BY: DDK  
CHK'D BY: S.W.W.

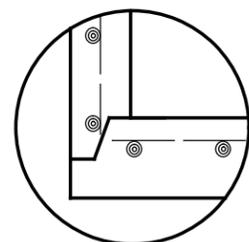
FILE NUMBER  
**S-7**



**60" to 108" PRECAST BASE**  
SEE TABLE FOR MAXIMUM PIPE SIZES

**48" PRECAST BASE**  
FOR 30" AND SMALLER PIPE

**SECTION VIEWS OF REINFORCED PRECAST MANHOLES**



**ALTERNATE CORNER DETAIL**

**NOTES**

**GENERAL:** With normal soil and site conditions, this standard precast manhole may be used for any required manhole depth. Cast and assemble sections of the precast manhole with either all tongue or all groove ends up. Lift holes may be provided in each section for handling. Leave handling device for the flat slab in place.

**TOP:** Provide a flat slab for this section unless an eccentric cone is specified.

**TRANSITION (OR REDUCER):** This section can be either eccentric cone or flat slab.

**BASE:** Manhole No. 3 is shown with a monolithic floor and riser which may be cast in one or two operations. A permissible alternate is to cast and ship the floor and barrel separately. Provide openings for inlet and outlet pipes, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete, precast in the base or field constructed as shown on **SCD MH-1.1** and **MH-3.1**.

**RISER SECTIONS:** Openings for 18" and smaller inlet pipes may be either prefabricated or cut in the field provided the sides of the pipe at the springline do not project into the manhole.

**CONNECTIONS:** Connections between precast manhole sections and pipes on sanitary sewers may be sealed with resilient connectors conforming to ASTM C 923.

**JOINT SEAL:** Furnish resilient seal between precast manhole sections on sanitary sewers and flexible gasket joints per CMS 706.11.

**OPENINGS:** Ensure pipe openings are the O.D. of the pipe being supplied plus 2" when fabricated or field cut. Fill any voids per C&MS 611.

**MATERIALS:** Provide materials for bases and other precast sections, including reinforcement not specified here, that meet the requirements of CMS 706.13.

**DROP PIPE:** When specified on the plans, construct drop pipe as shown on **SCD MH-3.1**.

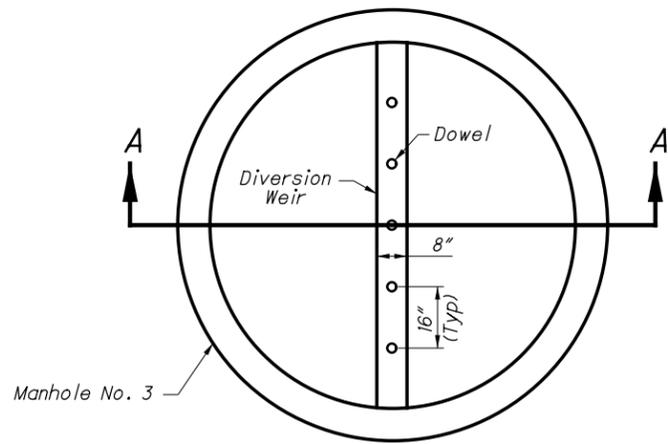
**STEPS, FRAMES AND COVERS:** Meet the requirements shown on **SCD MH-1.1**.

**TOP SLAB REBAR:** Use epoxy coated reinforcing steel within the top slab.

**LEGEND**

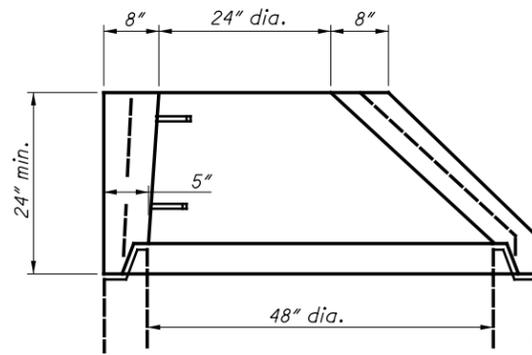
**1** Reconstruction to grade only. Approved materials are kept on file by the Office of Materials Management.

MAXIMUM PIPE SIZES		
BASE I.D.	MIN. #1"	MAX. PIPE SIZE
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7½"	60"
96"	8"	66"
108"	9"	72"

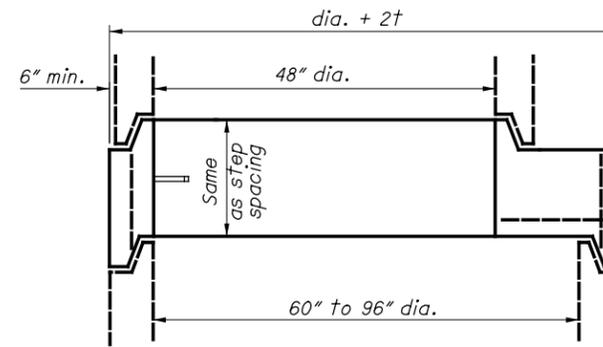


Manhole No. 3

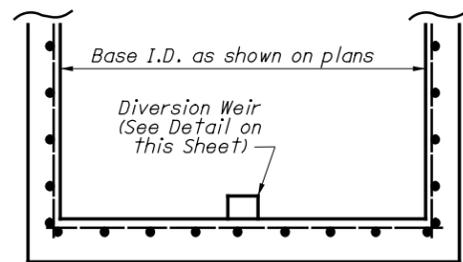
**MANHOLE NO. 3 W/  
\_\_\_" BASE I.D. AND \_\_\_" WEIR**  
(NTS)



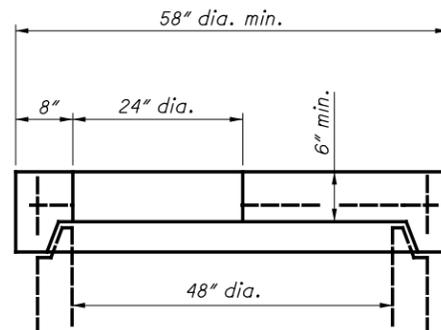
**ALTERNATE  
ECCENTRIC CONE TOP**  
(Only if specified)



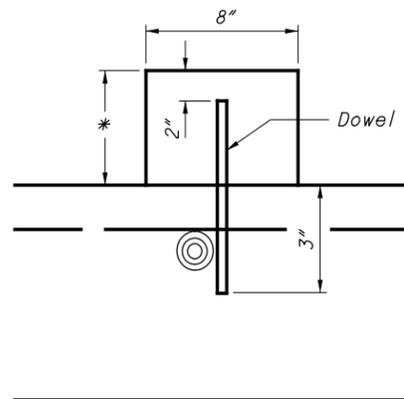
**FLAT SLAB TRANSITION**



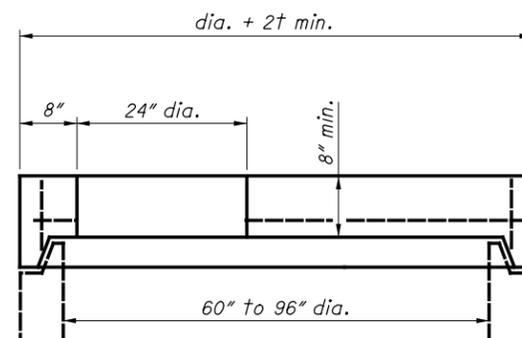
**SECTION A-A**  
(NTS)



**FLAT SLAB TOP**



\* Furnish weir height as shown in plans.  
**DIVERSION WEIR DETAIL**  
(NTS)



**FLAT SLAB TOP**

**NOTES**

**MANHOLE NO. 3 W/ \_\_\_" BASE I.D. AND \_\_\_" DIVERSION WEIR:**  
Furnish manhole base with precast diversion weir or construct diversion weir from Structural Concrete, 4000 psi compressive strength concrete or Brick and Masonry Units conforming to CMS 611. A bottom channel section for the manhole is not required when a diversion weir is specified on the plans.

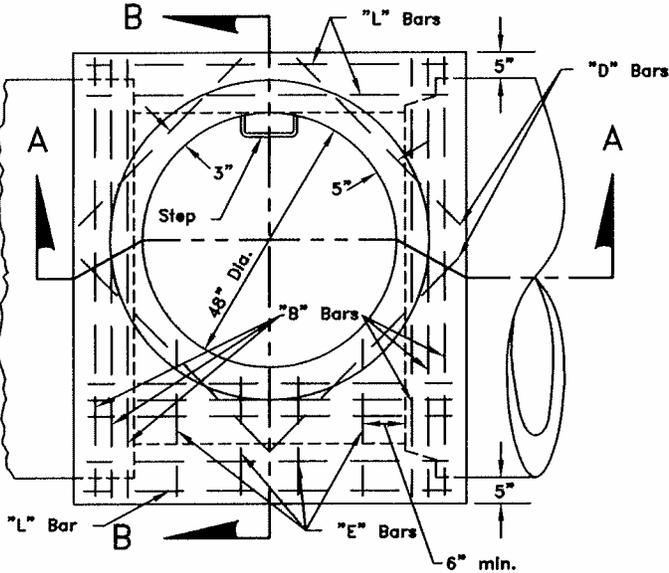
Place diversion weir perpendicular to flow of inflowing trunk sewer. Dowel concrete or masonry units into the base of the manhole to a depth of 3" using epoxy coated #4 reinforcing bars. Start dowels at the center of the diversion weir and space 16" on center across the entire weir.

All materials and labor, including excavation and backfill, are paid for at the contract price for **ITEM 611 - MANHOLE NO. 3 WITH \_\_\_" BASE I.D. AND \_\_\_" DIVERSION WEIR.**

STATE OF OHIO DEPARTMENT OF TRANSPORTATION	STATE HYDRAULIC ENGINEER
REVISIONS	
7-20-01	
7-19-02	
7-15-06	
7-20-06	
7-20-12	
1-18-13	
1-15-16	
ROADWAY HYDRAULIC ENGINEER	STATE HYDRAULIC ENGINEER
MATT COZZOLI	
OFFICE OF HYDRAULIC ENGINEERING	
STANDARD HYDRAULIC CONSTRUCTION DRAWING	MANHOLE No. 3
SCD NUMBER	MH-1.2
	2 / 2

REINFORCING STEEL LIST

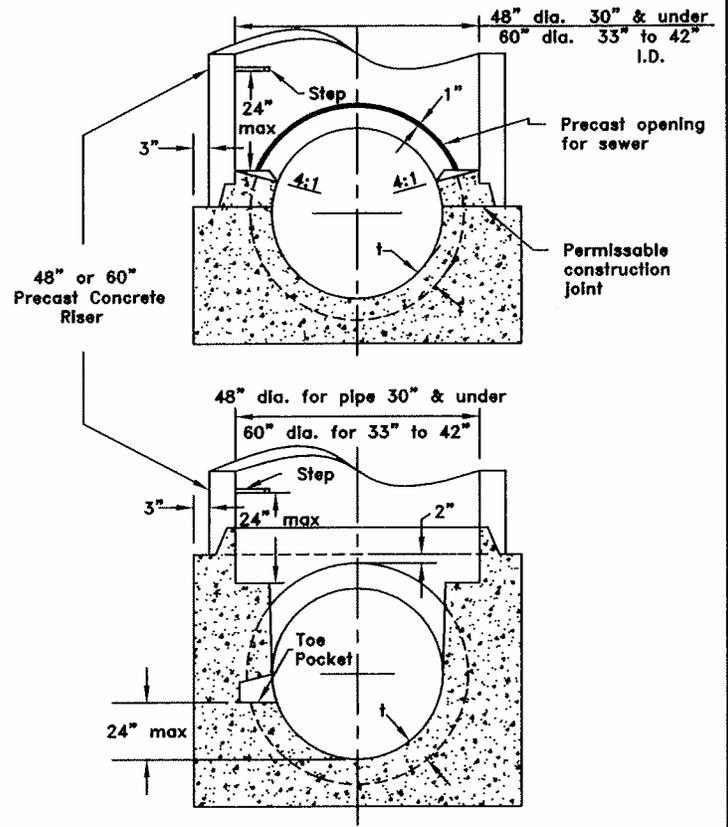
Bar	Spacing	Bar sizes for sewers		
		48"-60"	66"-78"	84"-95"
A	12" c/c both ways			
B	3" c/c both ways	5/8" #	3/4" #	7/8" #
L	as shown			
D	as shown	5/8" #	5/8" #	5/8" #
E	12" c/c			



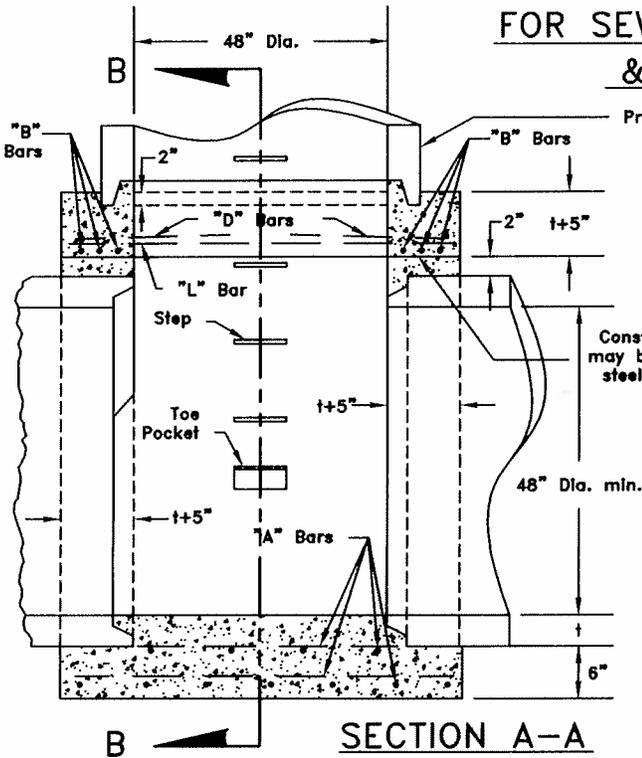
NOTE:

All concrete shall be Class "C"

PLAN VIEW

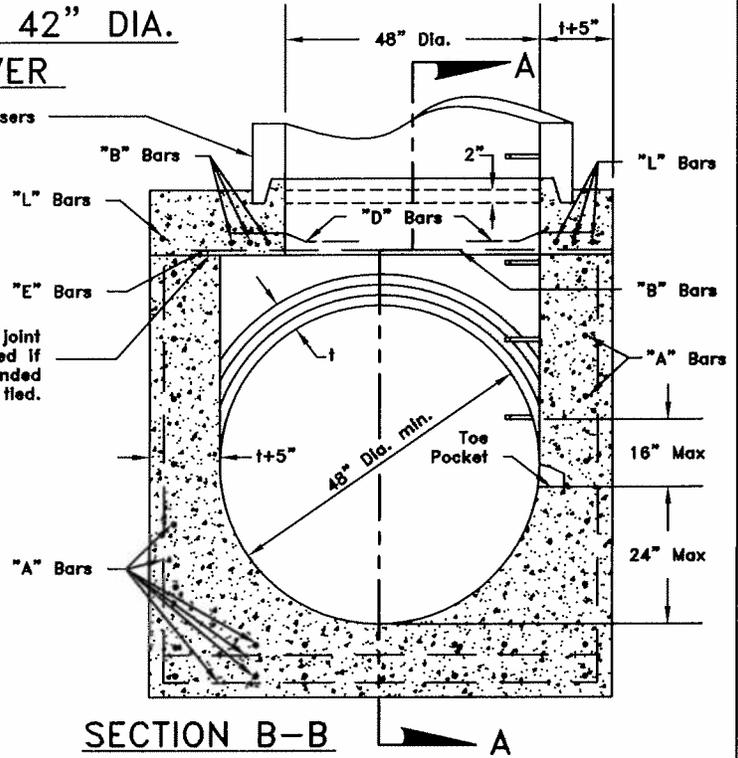


FOR SEWER 42" DIA. & UNDER



SECTION A-A

FOR SEWER 42" DIA. & OVER



SECTION B-B

APPROVED

6-27-07

*Brad Fagell*  
CITY ENGINEER

REVISED: 21 JUN 07

TYPE "4" MANHOLE  
CAST-IN-PLACE  
BASE

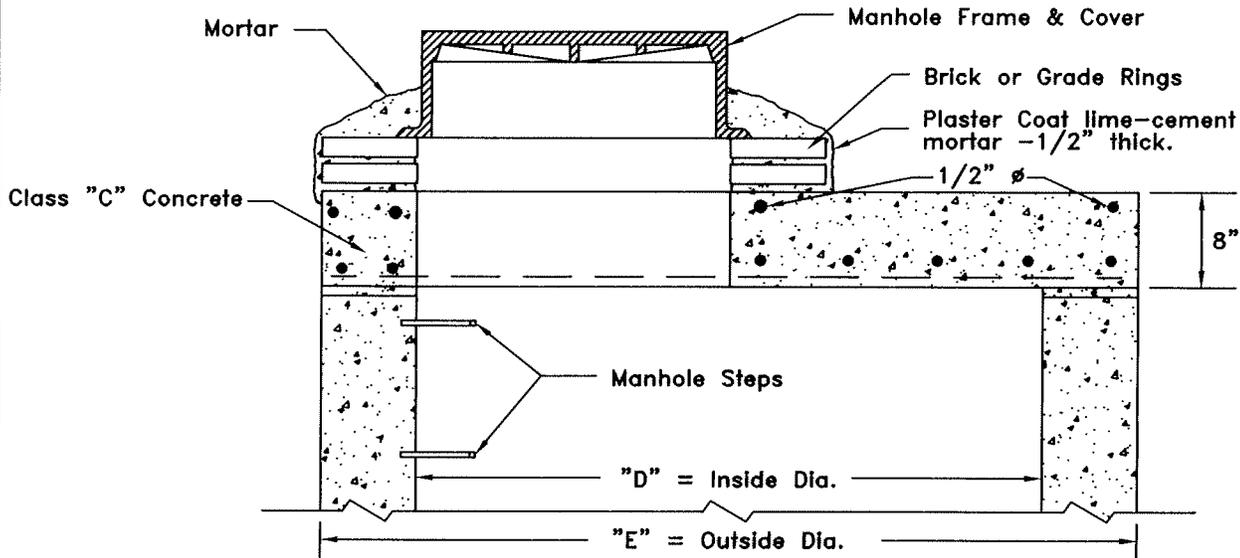
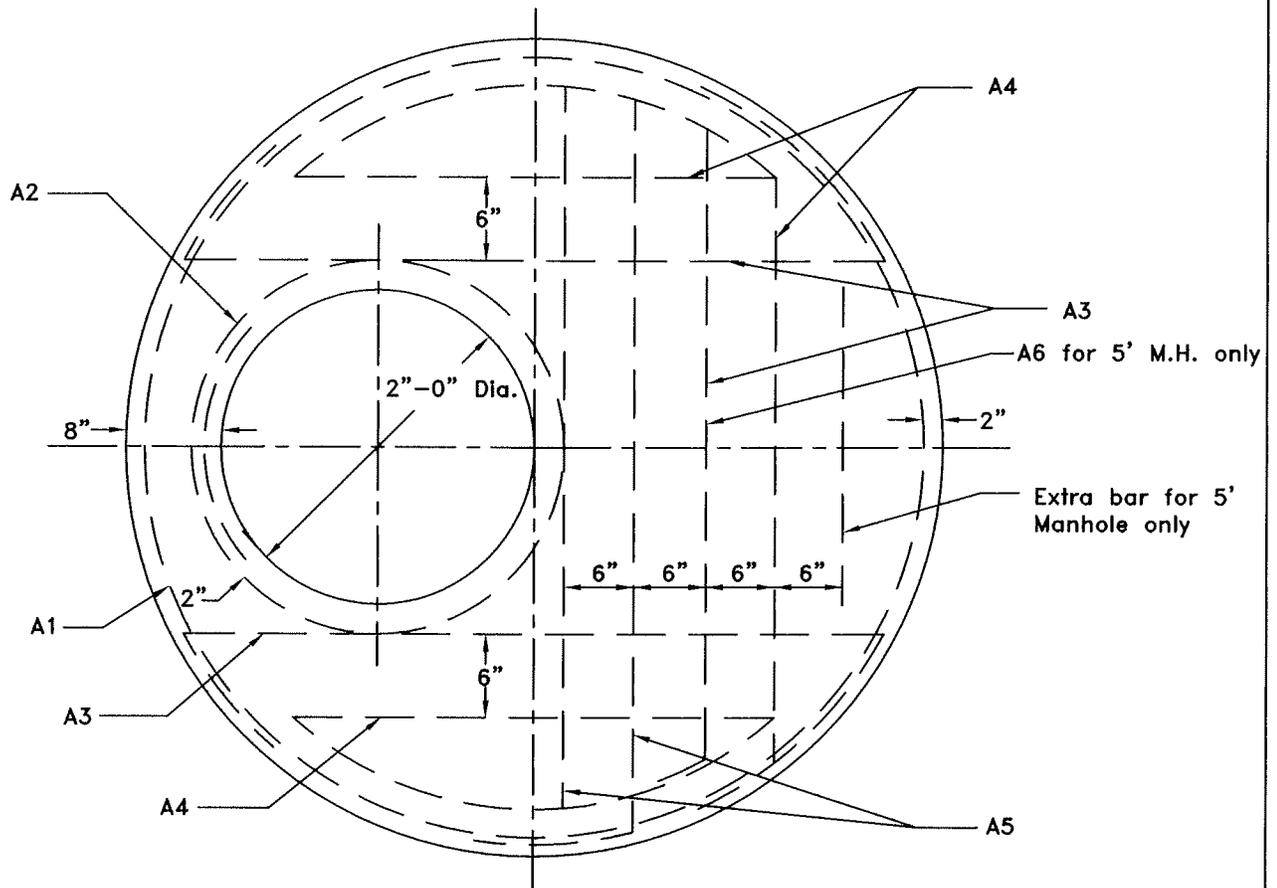
PREVIOUSLY 002 A4

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: BIC  
CHK'D BY: DRK

FILE NUMBER  
S-9



DIMENSIONS AND QUANTITIES FOR TOP SLAB

M.H. Dia. "D"	M.H. Dia. "E"	1/2" # Steel Reinforcement Bars														Weight Steel lbs.	Approx Concrete Volume Cu. Yd.
		A1		A2		A3		A4		A5		A6					
		No.	Length	Rod	No.	Length	Rod	No.	Length	No.	Length	No.	Length				
4'-0"	4'-10"	2	17'-5"	2'-3"	2	9'-0"	1'-2"	3	5'-11"	3	5'-3"	2	6'-6"	-	--	66	.38
5'-0"	6'-10"	2	20'-6"	2'-10"	2	9'-0"	1'-2"	3	7'-2"	3	6'-8"	2	7'-8"	1	7'-6"	82	.63

APPROVED 6-27-07

*Brad Fagell*  
CITY ENGINEER

REVISED: 21 JUN 07

CAST-IN-PLACE  
CONCRETE TOP SLAB  
FOR SHALLOW  
MANHOLES

PERVIOUSLY 002 A5

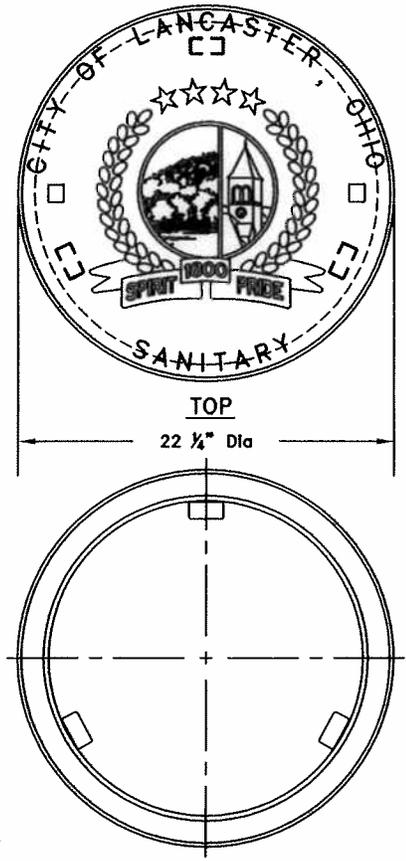
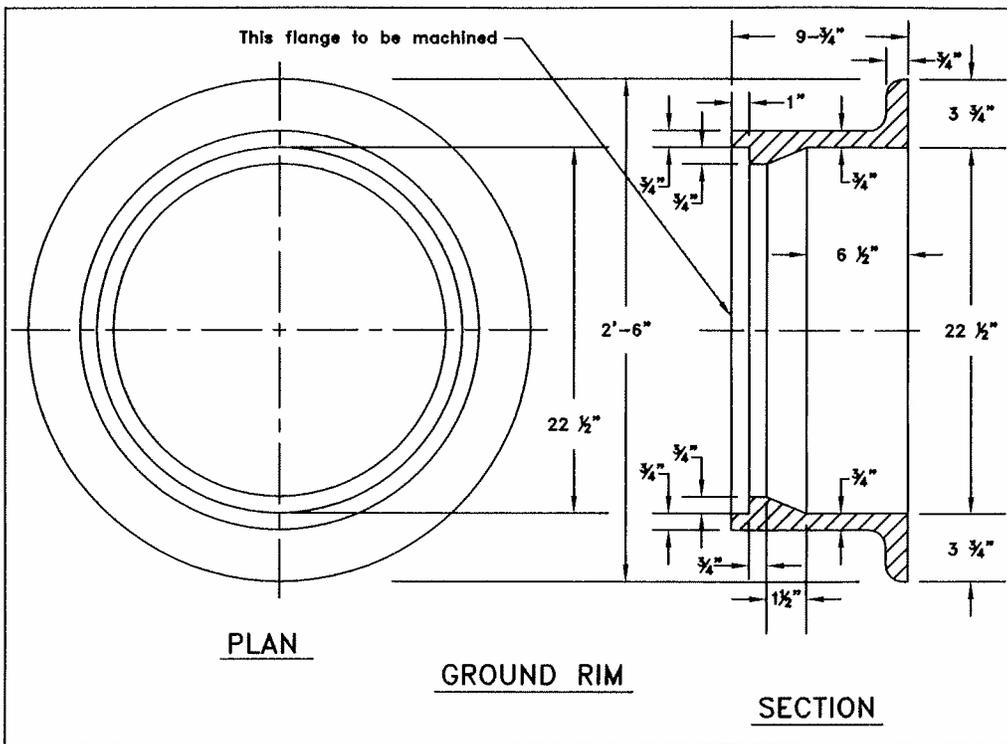
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: BIC  
CHK'D BY: *DPK*

FILE NUMBER

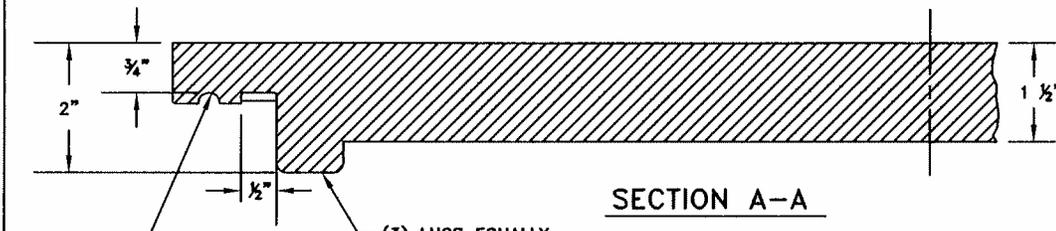
S-10



**TOP**  
22 1/2" Dia

**BOTTOM**  
**LID**  
approx. weight  
122-125 lbs.

East Jordan  
1660A3GS  
NEENAH R-1762  
(Lancaster)

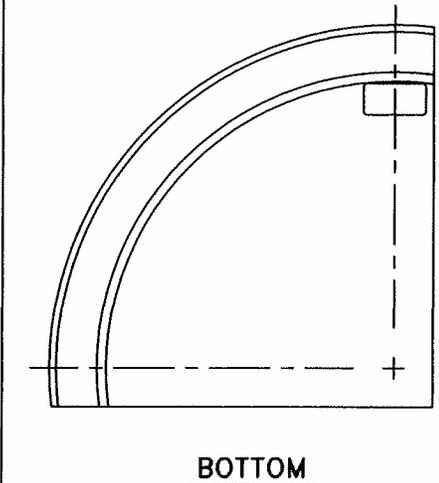


**SECTION A-A**

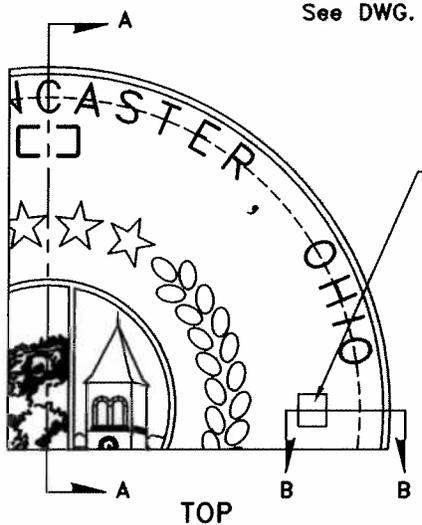
MACHINE GROOVE IN LID  
SEAT FOR OIL-RESISTANT  
T-GSKT NITRILE (60 DURO)

(3) LUGS EQUALLY  
SPACED 120° APART

Note: Neenah Lid Shown.  
For East Jordan Lid  
See DWG. S-12

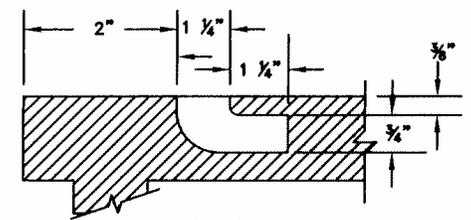


**BOTTOM**



**TOP**

(2)  
CONCEALED  
PICKHOLES  
PER LID



**SECTION B-B**

**T-GASKET PICKHOLE**

APPROVED 6-27-07

*Brad Fagell*  
CITY ENGINEER

REVISED: 21 JUN 07

STANDARD DIMENSIONS  
FOR  
MANHOLE  
FRAME & COVER CASTING

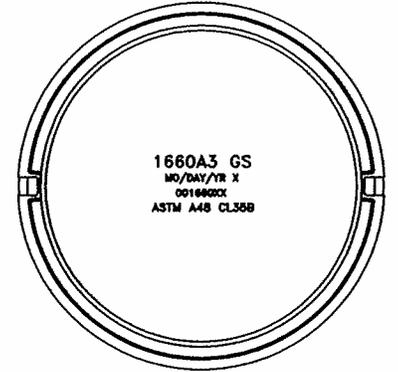
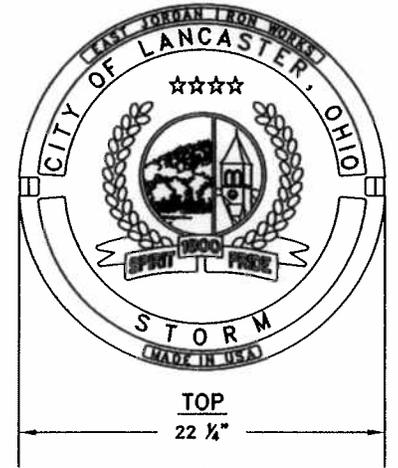
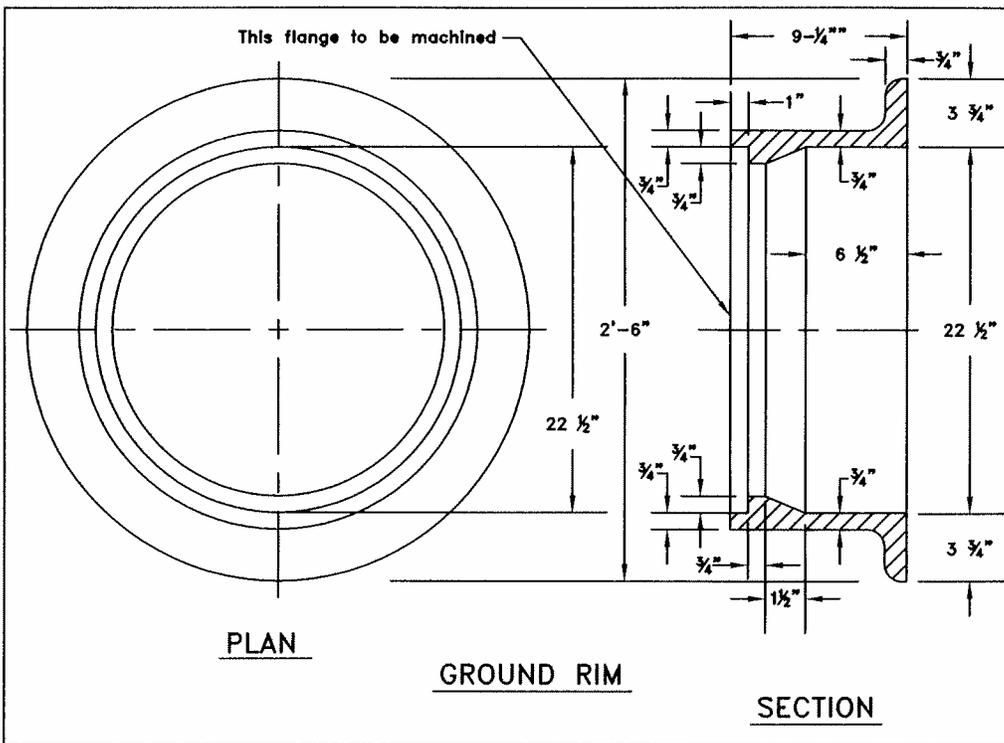
(SANITARY SEWERS)

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: BIC  
CHK'D BY: *DDK*

FILE NUMBER  
**S-11**



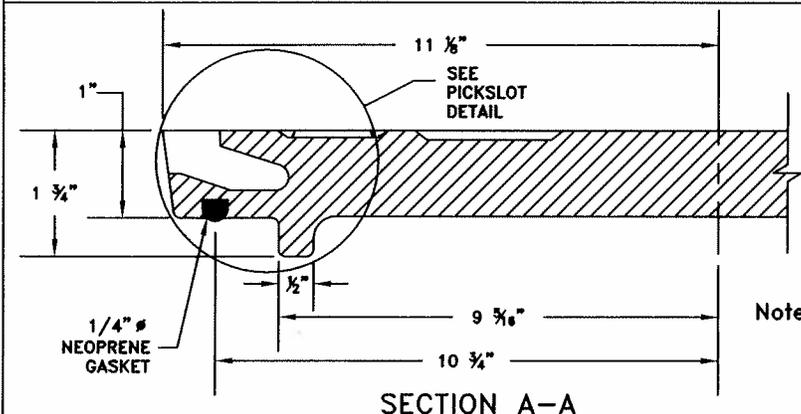
BOTTOM

LID

approx. weight  
122-125 lbs.

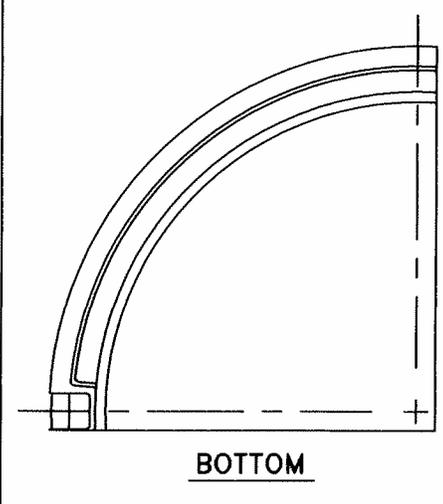
East Jordan  
1660A3GS

NEENAH R-1762  
(Lancaster)

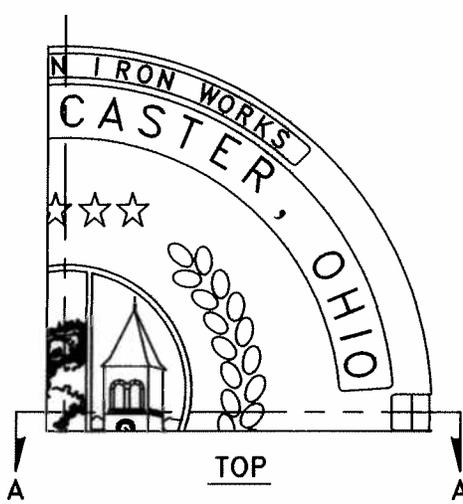


Note: East Jordan Lid  
Shown. For Neenah  
Lid see DWG. S-11

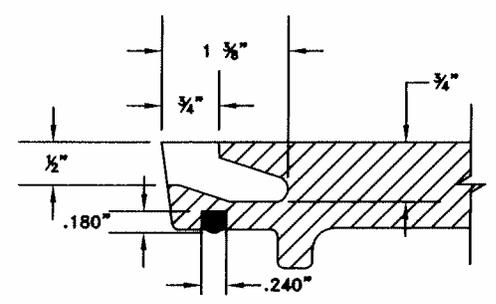
SECTION A-A



BOTTOM



TOP

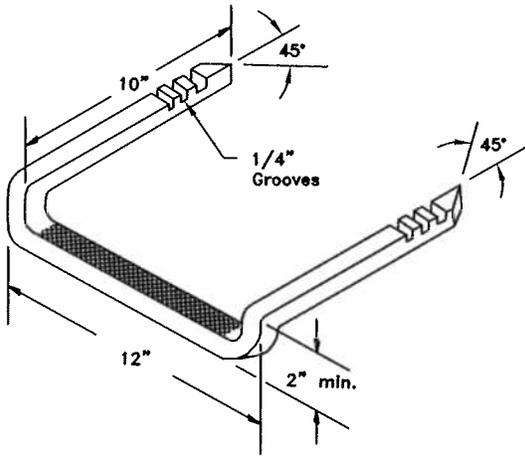


PICKSLOT DETAIL

APPROVED 6-27-07  
*Brad Fugrell*  
CITY ENGINEER  
REVISED: 21 JUN 07

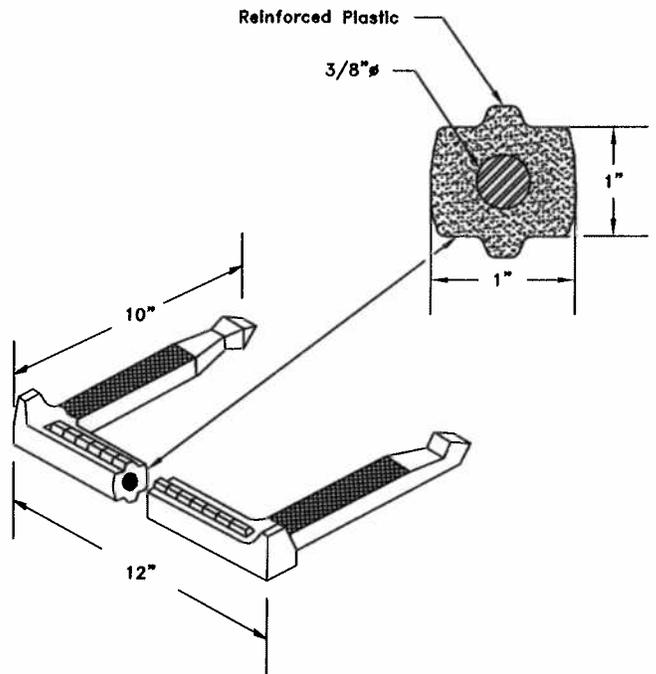
STANDARD DIMENSIONS  
FOR  
MANHOLE  
FRAME & COVER CASTING  
  
(STORM SEWERS)

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING  
  
STANDARD  
CONSTRUCTION DRAWING  
DWG. BY: BIC  
CHK'D BY: *DPK*  
FILE NUMBER  
S-12



ALUMINUM STEP

Steps shall be installed with a uniform vertical spacing of 12" to 16"



POLYPROPYLENE STEP

APPROVED 6-27-07

*Brad Fagrell*  
CITY ENGINEER

REVISED: 21 JUN 07

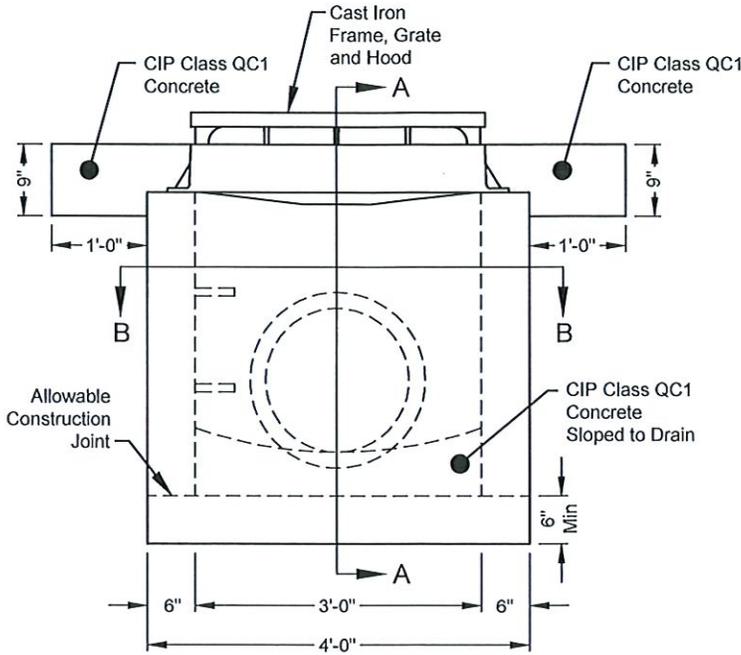
TYPICAL  
MANHOLE  
STEP

PREVIOUSLY 004 A1

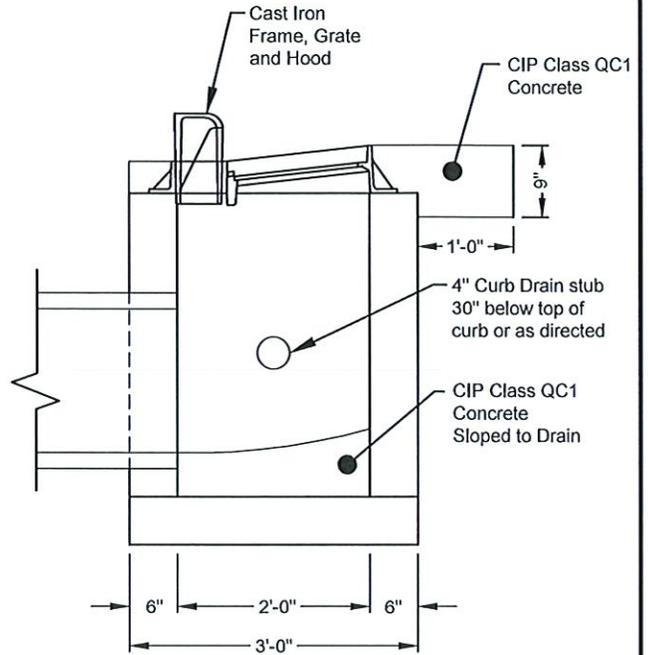
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

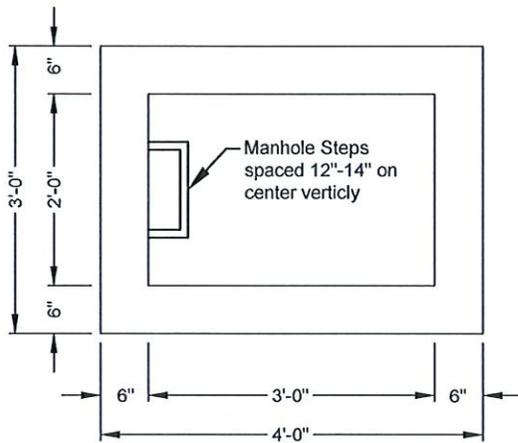
DWG. BY: BIC  
CHK'D BY: *DDK*  
FILE NUMBER  
**S-13**



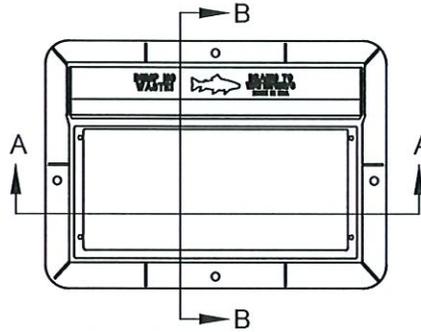
STRUCTURE ELEVATION



STRUCTURE SECTION A-A

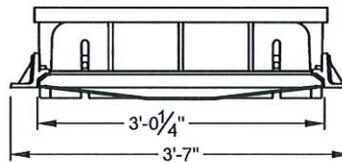


STRUCTURE SECTION B-B

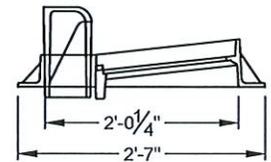


East Jordan model 7030Z1 frame or equivalent.  
East Jordan model 7030T1 hood or equivalent.

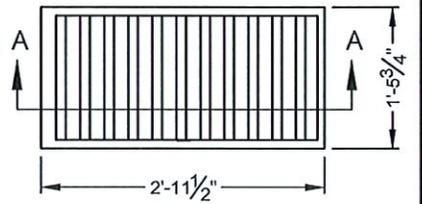
CASTING FRAME AND HOOD PLAN



CASTING FRAME AND HOOD SECTION A-A



CASTING FRAME AND HOOD SECTION B-B



East Jordan model 7030M4 grate or equivalent.

CASTING GRATE PLAN



CASTING GRATE SECTION A-A

NOTES:

1. Minimum depth of structure is the outside diameter of the outlet pipe plus 7". Minimum height of structure above outside diameter of pipe is 4".
2. Maximum pipesizes: 24" diameter in front and back (3') walls and 18" diameter in side (2') walls.
3. Structure shall be precast with a minimum wall thickness of 6" and meet the requirements of ASTM C913. Provide sufficient reinforcing to permit shipping, handling and installation without damage.
4. Casting shall be Gray Iron Castings meeting the requirements of ASTM A 48, Class 35B or Ductile Iron Castings meeting the requirements of ASTM A 536.

DATE: 09/04/2025

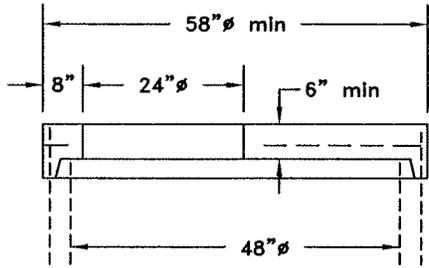
STANDARD CONSTRUCTION DRAWING

*[Signature]*  
9/4/25

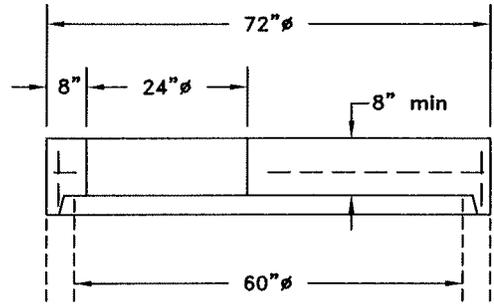


CURB AND GUTTER INLET

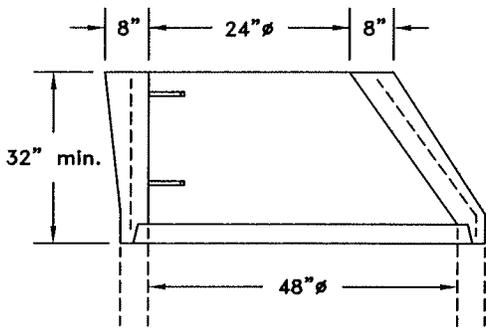
S-14



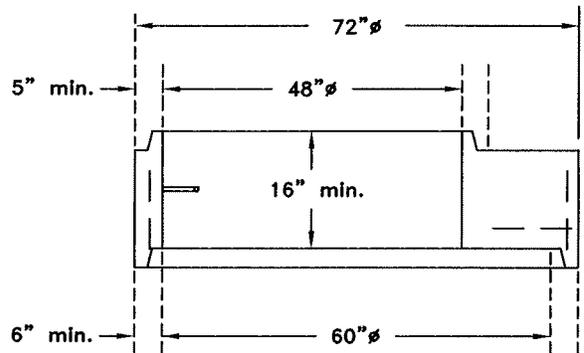
FLAT SLAB TOP  
(48" Risers)



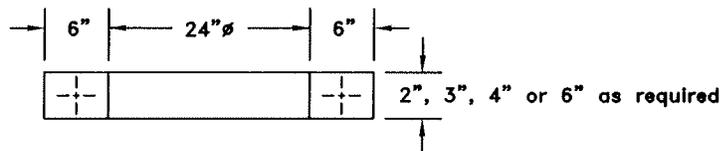
FLAT SLAB TOP  
(60" Risers)



ECCENTRIC CONE TOP  
(48" Risers)



FLAT SLAB TRANSITION  
(60" to 48")



STANDARD GRADE RING

PREVIOUSLY 013 A1

APPROVED 6-27-07

*Brad Fayrell*  
CITY ENGINEER

REVISED: 21 JUN 07

MISC. ITEMS  
PRECAST MANHOLE

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

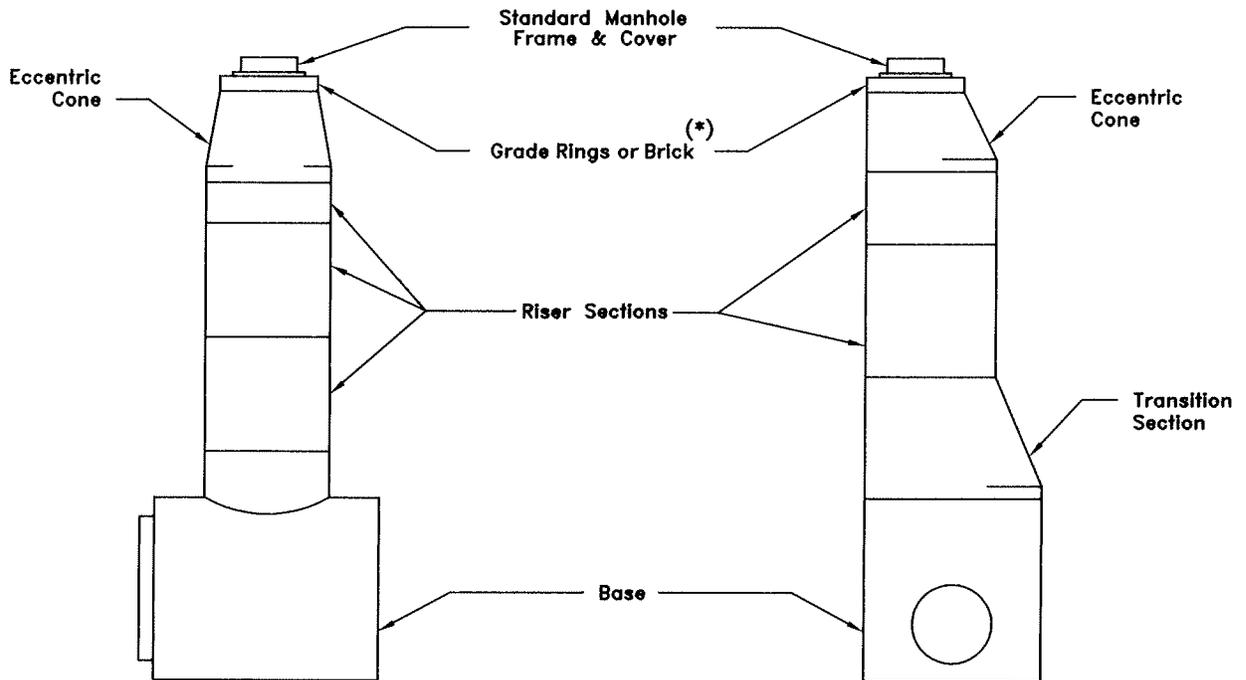
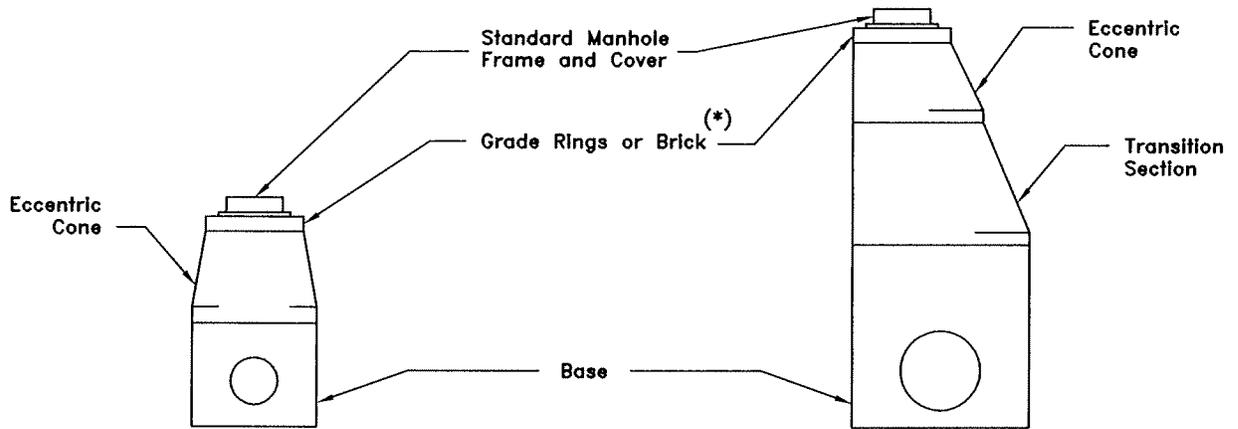
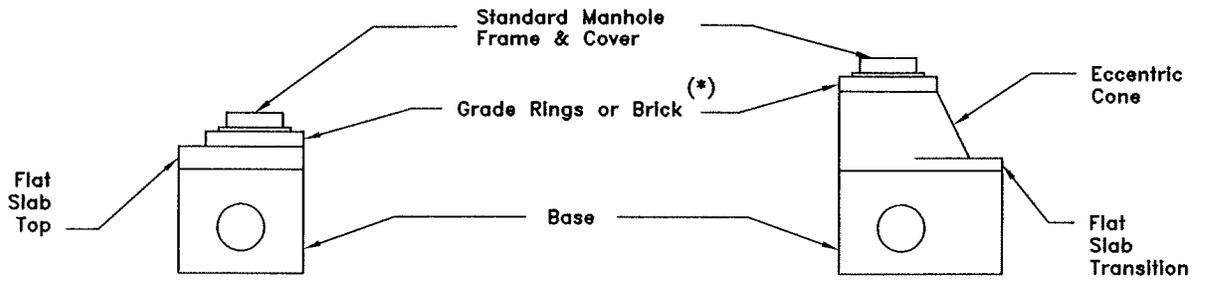
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: BIC

CHK'D BY: *DDA*

FILE NUMBER

S-15



(\* ) BRICK TO BE USED ON STORM MANHOLES ONLY

PREVIOUSLY 014A1

APPROVED 6-27-07

*Brad Faguell*  
CITY ENGINEER

REVISED: 21 JUN 07

TYPICAL ASSEMBLY  
COMBINATIONS  
for  
PRECAST MANHOLES

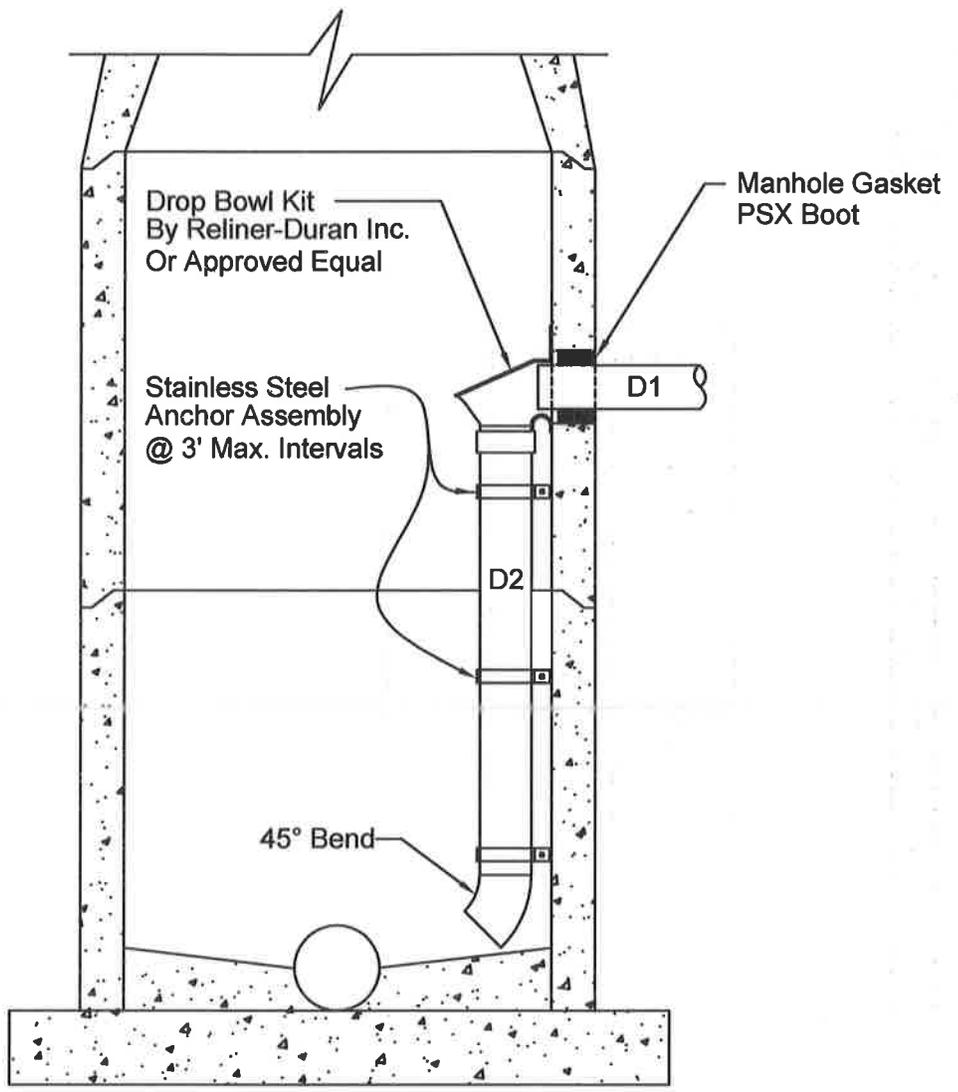
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: BIC  
CHK'D BY: *JPK*

FILE NUMBER

S-16

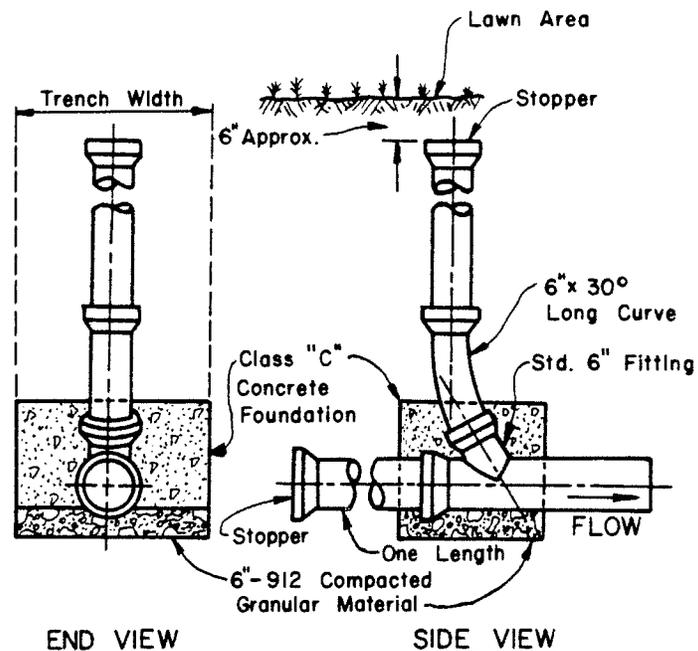
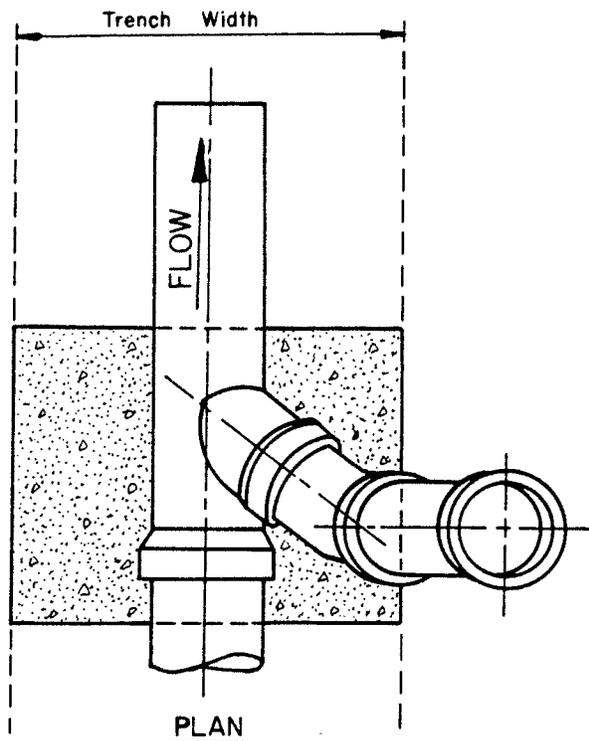


Pipe Diameter	
D1	D2
8"	8"
10"	8"
12"	10"
15"	10"
18"	12"
21"	12"
24"	12"

**NOTES:**

1. HEIGHT OF DROP PIPE IS TO BE AS SHOWN ON THE PLANS OR WILL BE DETERMINED AT THE TIME OF CONSTRUCTION.
2. ALL WORK AND MATERIALS REQUIRED TO CONSTRUCT THE INSIDE DROP SHOULD BE INCLUDED FOR PAYMENT UNDER ITEM 604, MANHOLES, OR ITEM 901, PIPE SEWERS COMPLETED IN PLACE.
3. MATERIAL FOR THE DROP PIPE AND BEND SHALL BE OF ONE TYPE AND BE ONE OF THE FOLLOWING: CAST IRON, ABS SOLID WALL OR PVC.

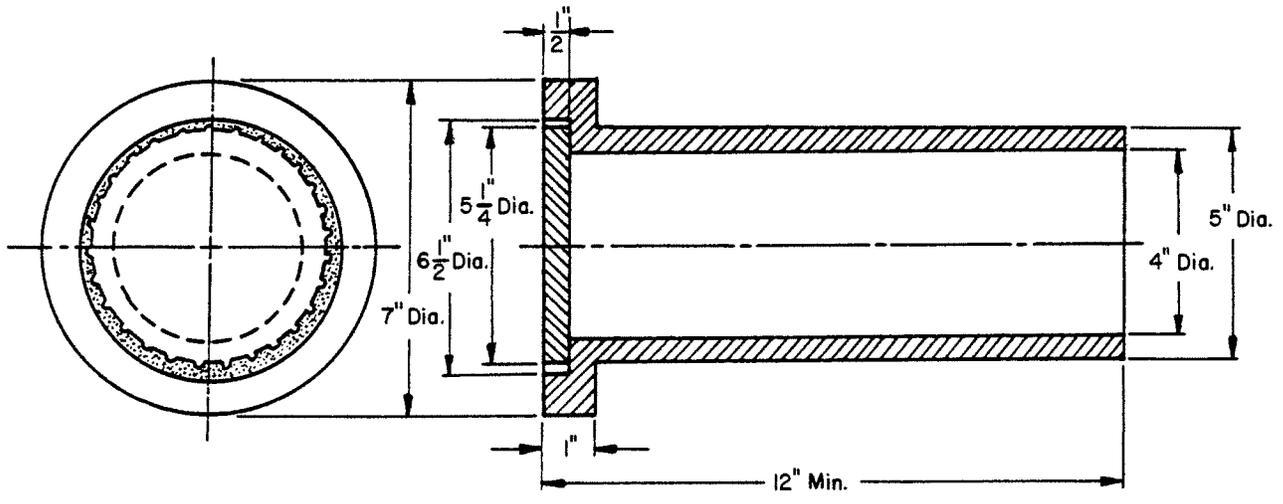
APPROVED <u>12-19-13</u>  CITY ENGINEER	<b>INSIDE DROP FOR MANHOLE</b>	CITY OF LANCASTER, OHIO DEPARTMENT OF ENGINEERING
REVISED: 12 DEC 13		<b>STANDARD CONSTRUCTION DRAWING</b>
		DWG. BY: <u>DDK</u> CHK'D BY: <u>RM</u>
		<b>FILE NUMBER S-17</b>



**CLEANOUT**

**NOTES:**

Pipe material shall be the same material fitting or with a compatible adapter as the main sewer or in accordance with 914.02.



**CLEANOUT STOPPER**

**NOTES:**

Material shall be as per 711.12.  
 Cost of stopper to be included in the cost for cleanout.  
 Weight: 21 lbs.

PREVIOUSLY 018 A1

APPROVED 10-10-86  
 DATE  
*Perry S. Payne*  
 CITY ENGINEER

**TYPICAL CLEANOUT  
 AND  
 CLEANOUT STOPPER  
 FOR LAWN AREAS**

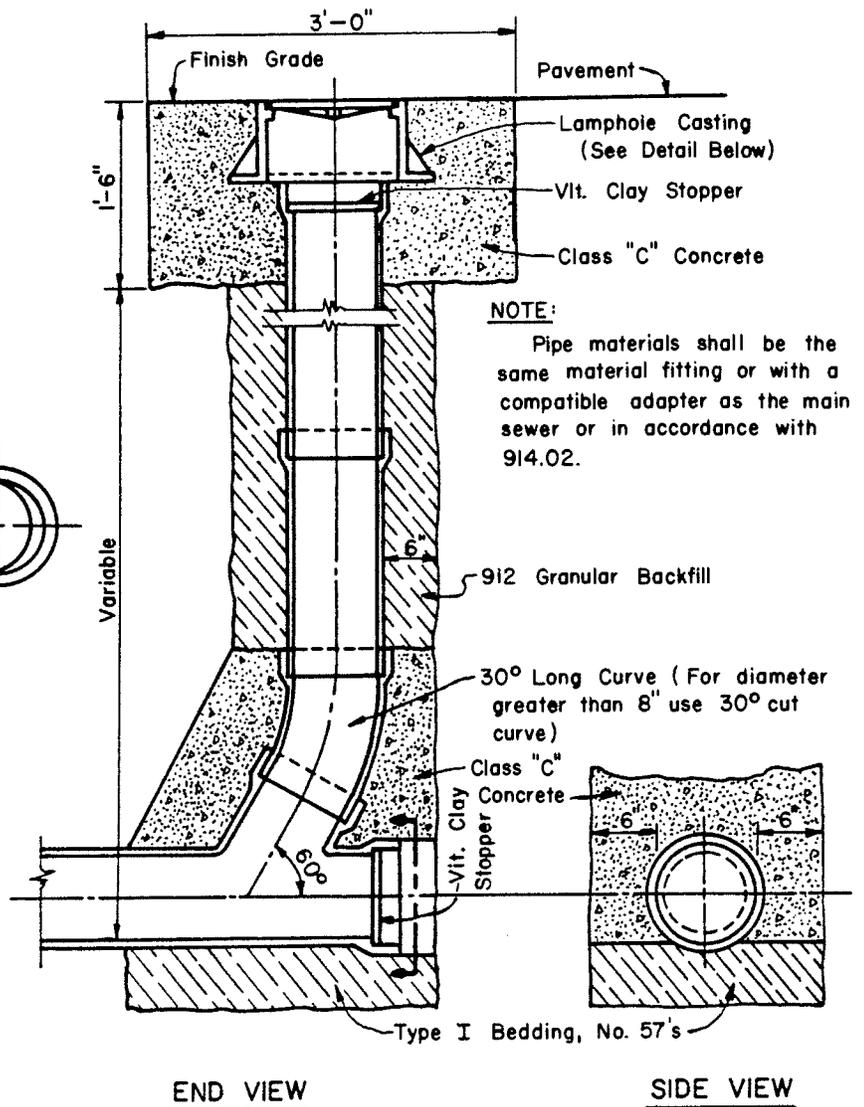
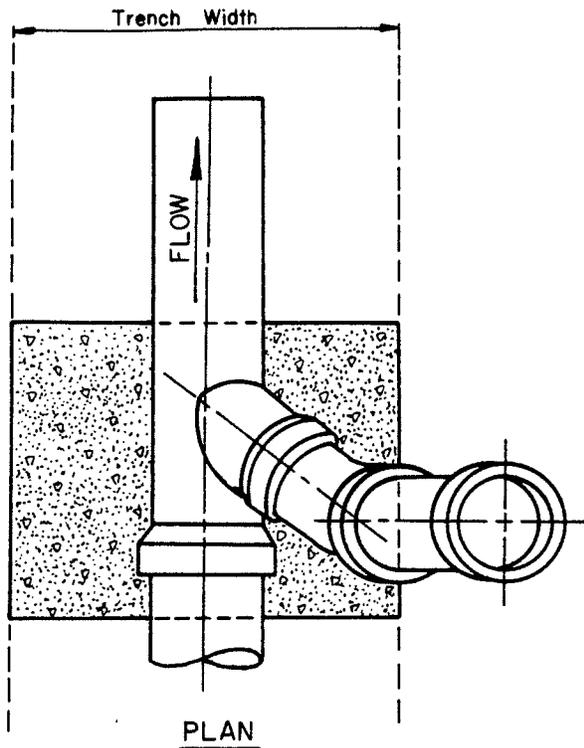
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

**STANDARD  
 CONSTRUCTION DRAWING**

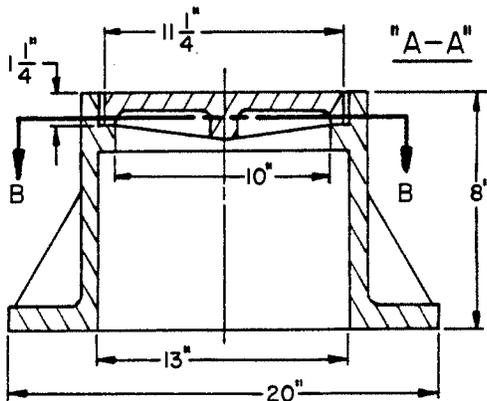
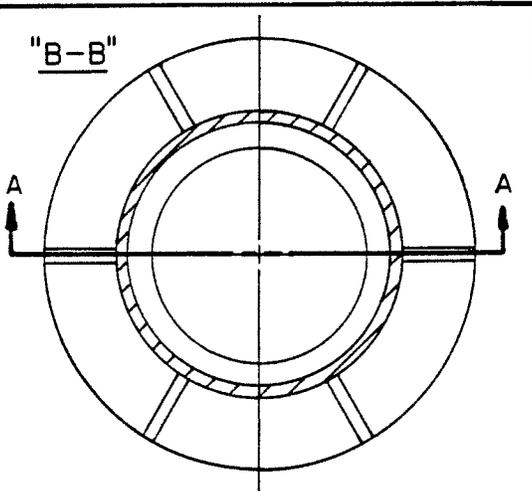
DWG. BY: SLH  
 CHK'D BY: .....

FILE NUMBER  
S-18

REVISED:



CLEANOUT



NOTES:

Material shall be as per 711.12.  
 Weight: 95 lbs.  
 Cost of lamphole casting to be included in the cost for cleanout.

LAMPHOLE CASTING DETAIL

PREVIOUSLY 018A2

APPROVED 10-10-86  
 DATE

*Perry D. Payne*  
 CITY ENGINEER

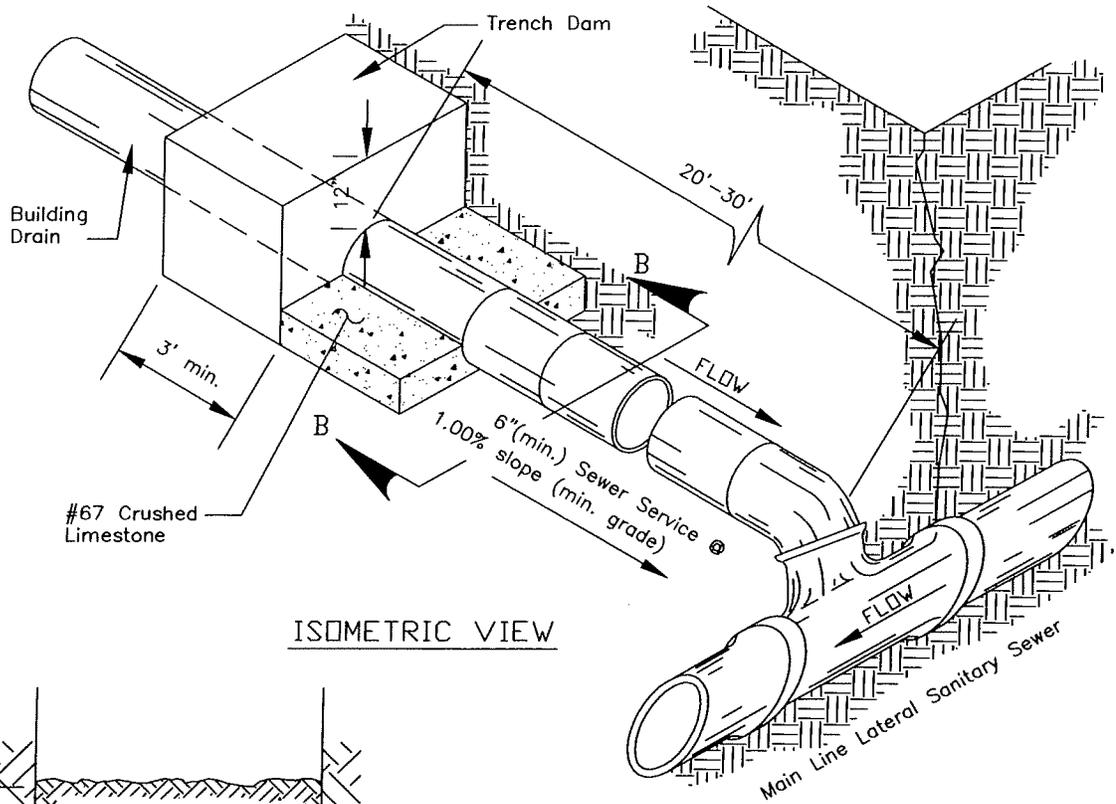
REVISED:

TYPICAL CLEANOUT  
 AND  
 LAMPHOLE CASTING  
 FOR PAVEMENT AREAS

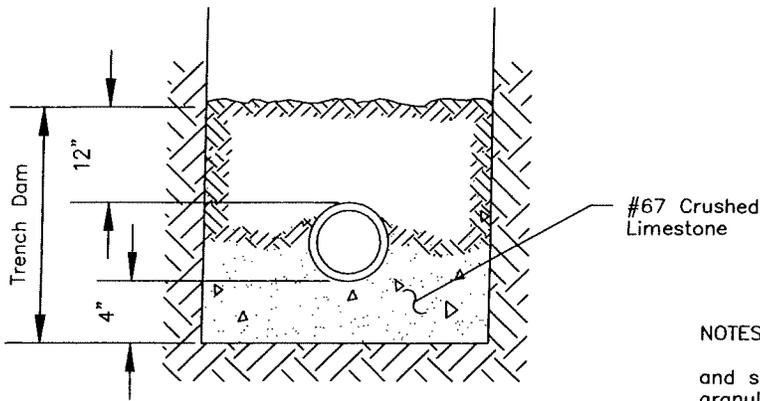
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

DWG. BY: SLH  
 CHK'D BY: FILE NUMBER  
 S-19

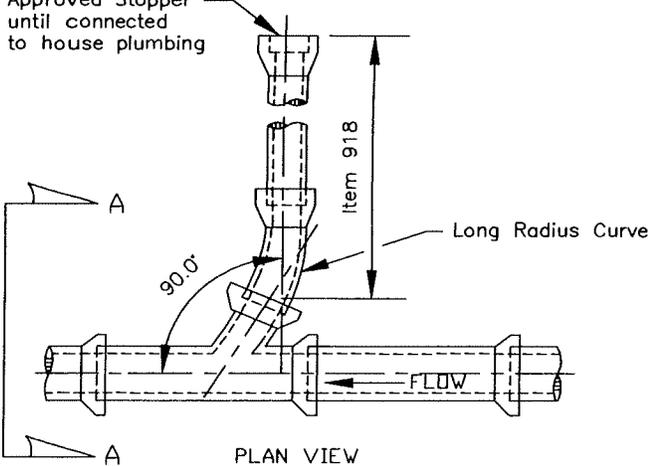


ISOMETRIC VIEW



SECTION B-B

Approved Stopper until connected to house plumbing

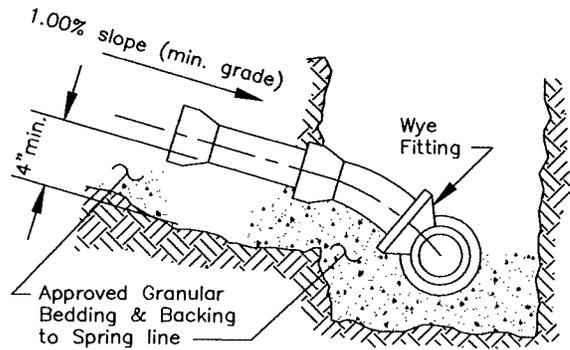


PLAN VIEW

NOTES:

Trench Dams are required as specified under 918.04 and shall be constructed to 12" over the pipe, if compacted granular material is used for backfilling, or to the height of bedding material.

Sanitary house connection services shall be connected to the existing sewer with the same material fitting or with a compatible adapter in accordance with 918.02.



SECTION A-A

APPROVED 3-24-05

*Keith Hunter*  
CITY ENGINEER

REVISED: 14 Feb 2005

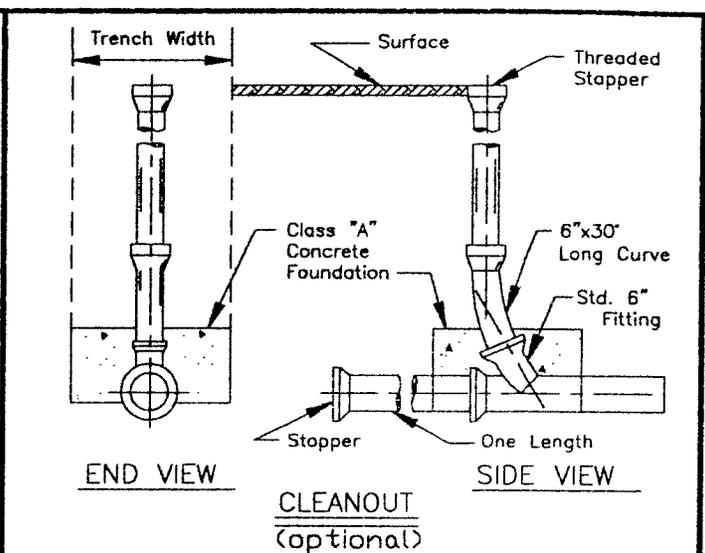
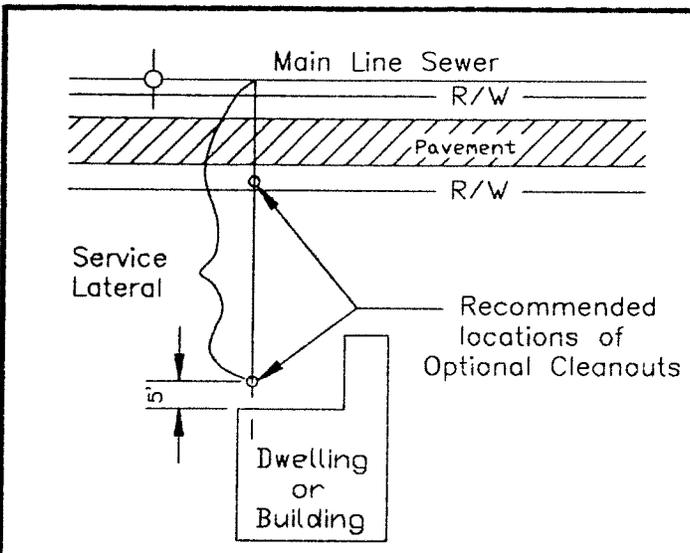
TYPICAL SANITARY  
HOUSE CONNECTION  
SERVICE

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

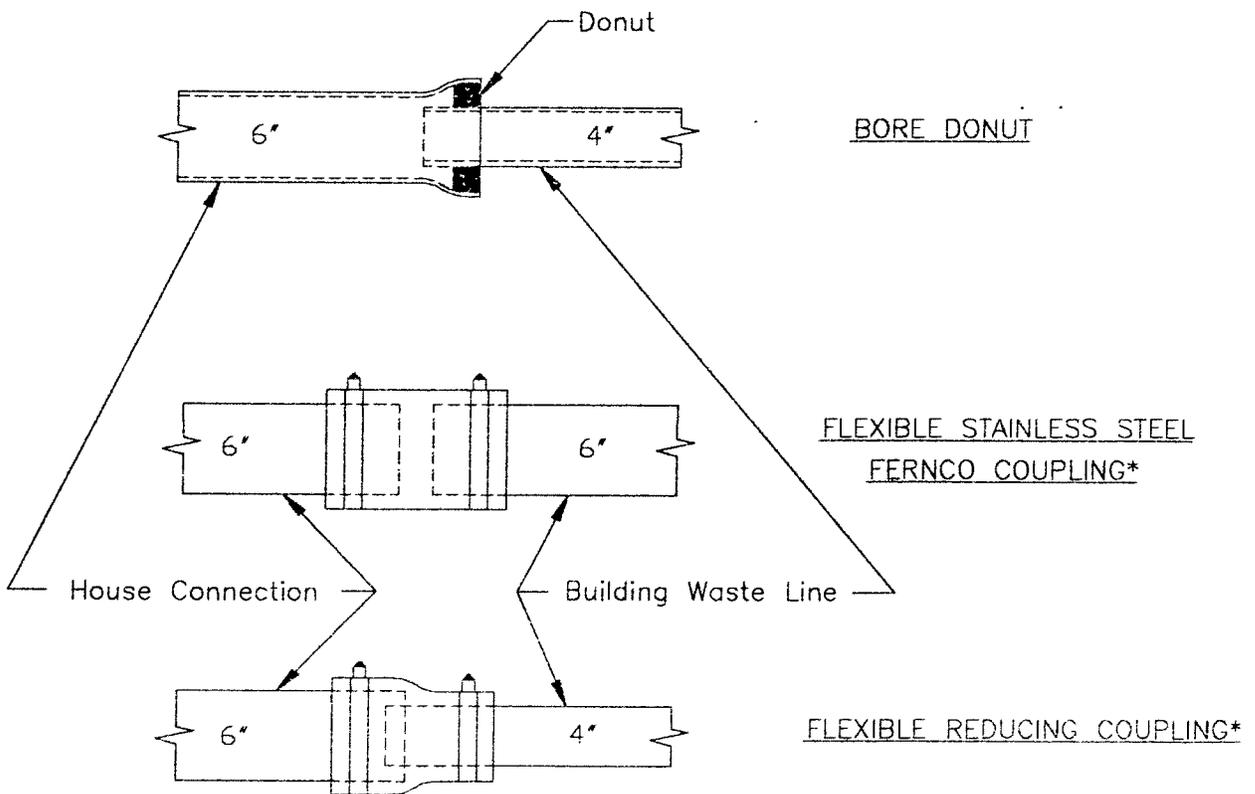
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: DDK  
CHK'D BY: TJH

FILE NUMBER  
S-20 SHEET  
1 OF 2



ALLOWABLE CONNECTIONS—  
SANITARY HOUSE CONNECTION TO BUILDING WASTE LINE



\*COUPLING CLAMPS SHALL BE STAINLESS STEEL

APPROVED 10-30-00

*Kent Houston*  
CITY ENGINEER

REVISED: 19 OCT 2000

TYPICAL SANITARY  
HOUSE CONNECTION  
SERVICE

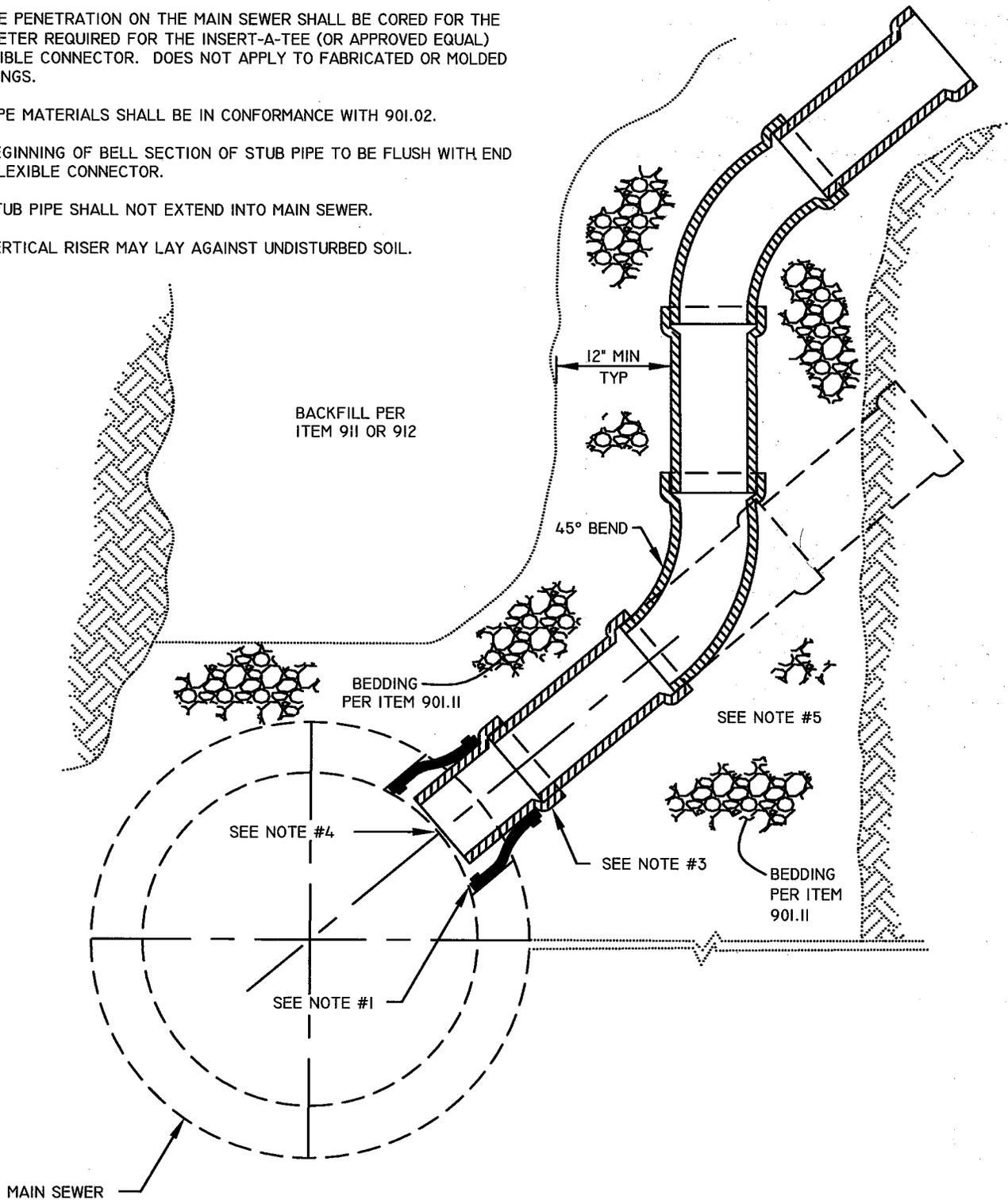
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: DDK FILE NUMBER  
CHK'D BY: RM S-20 SHEET  
2 OF 2

**NOTES:**

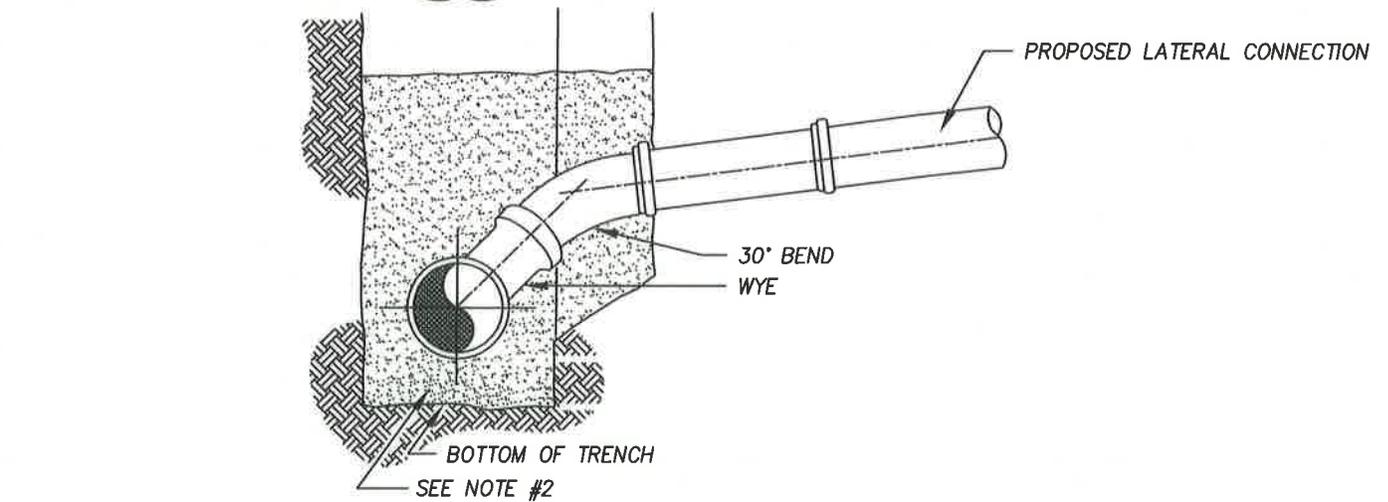
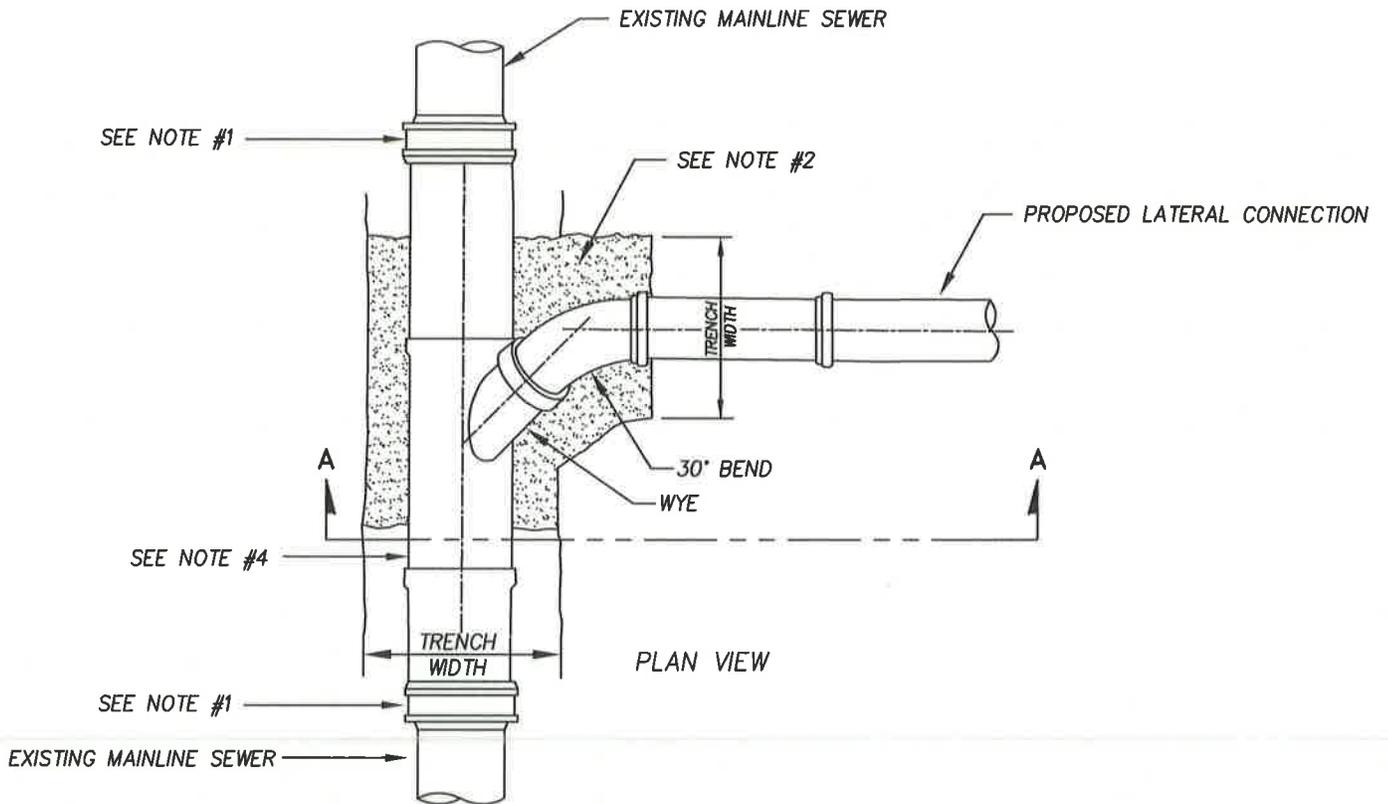
1. THE PENETRATION ON THE MAIN SEWER SHALL BE CORED FOR THE DIAMETER REQUIRED FOR THE INSERT-A-TEE (OR APPROVED EQUAL) FLEXIBLE CONNECTOR. DOES NOT APPLY TO FABRICATED OR MOLDED FITTINGS.
2. PIPE MATERIALS SHALL BE IN CONFORMANCE WITH 901.02.
3. BEGINNING OF BELL SECTION OF STUB PIPE TO BE FLUSH WITH END OF FLEXIBLE CONNECTOR.
4. STUB PIPE SHALL NOT EXTEND INTO MAIN SEWER.
5. VERTICAL RISER MAY LAY AGAINST UNDISTURBED SOIL.



APPROVED 4-3-13  
*Brad Fagrell*  
 CITY ENGINEER  
 REVISED: 26 MAR 13

TYPICAL CORED  
 RISER DETAIL

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING  
 STANDARD  
 CONSTRUCTION DRAWING  
 DWG. BY: DDK  
 CHK'D BY: M.B.NIXON  
 FILE NUMBER  
 S-21



SECTION A-A

NOTES:

- |   |  |
|---|--|
| <p>1. FITTING SHALL BE FERNCO COUPLING #5000 SERIES, OR APPROVED EQUAL</p> <p>2. BEDDING SHALL CONFORM TO STANDARD DRAWING S-1.</p> <p>3. TRENCH WIDTH SHALL CONFORM TO STANDARD DRAWING S-1.</p> | <p>4. INSTALL WYE AND NEW SEWER LENGTH AS REQUIRED. A REPAIR WYE SHALL BE USED WHEN NO SEGMENTS OF NEW SEWER ARE REQUIRED. SIZE AND TYPE SHALL MATCH EXISTING.</p> <p>5. ACCEPTABLE CONNECTIONS INTO SEWERS LARGER THAN 24" DIAMETER WILL BE DETERMINED BY THE CITY ON A CASE-BY-CASE BASIS.</p> |
|---|--|

APPROVED 3-27-15  
*Brad Fagrell*  
 CITY ENGINEER

REVISED: 27 MAR 15

SERVICE CONNECTION  
 FOR EXISTING  
 SANITARY SEWER PIPE  
 6"-24" DIAMETER

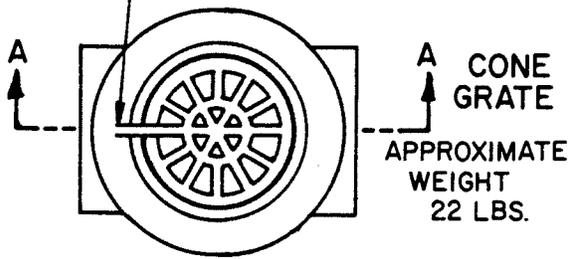
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

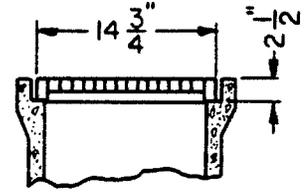
DWG. BY: .....SWW  
 CHK'D BY: .....M.B.NIXON

FILE NUMBER  
 S-22

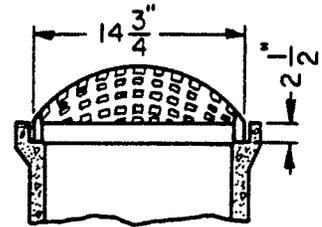
3/8"  $\phi$  ANCHOR ROD 2'-0" LONG, BENT AROUND GRATE AS SHOWN AND ANCHORED INTO THE CONCRETE CASING.



PLAN

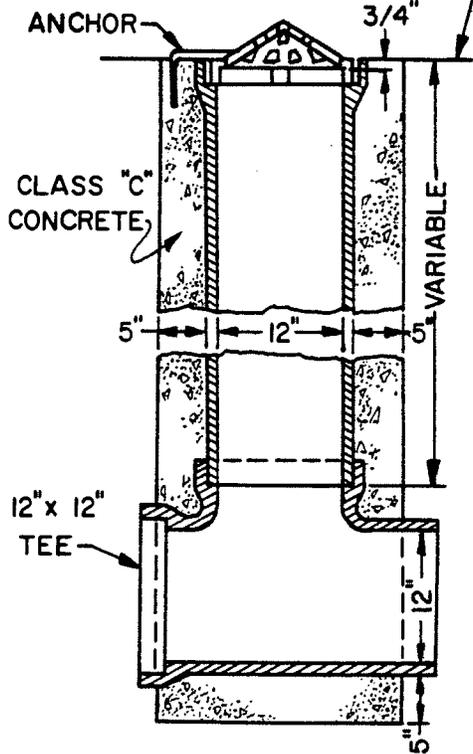


**FLAT GRATE**  
APPROXIMATE WEIGHT  
32 LBS.



**DOME GRATE**  
APPROXIMATE WEIGHT  
50 LBS.

ELEVATION OF TOP OF DITCH INLET TO BE DETERMINED IN THE FIELD AT TIME OF CONSTRUCTION



SECTION A-A

NOTES:

1. CONCRETE CASING RISER MAY BE ROUND, SQUARE, OR HEXAGONAL IN SHAPE.
2. WHERE CARRYING LINE IS NOT CONTINUOUS THROUGH INLET THE UPSTREAM OPENING OF THE TEE SHALL BE PROPERLY PLUGGED USING APPROVED STOPPER AND SEALED JOINT.
3. A 12" - 90° BEND MAY BE USED INSTEAD OF 12" x 12" TEE AT STORM SEWER TERMINUS.
4. ANCHOR RODS SHALL BE INSTALLED FOR ALL TYPES OF GRATES.

APPROVED 7/27/87  
DATE

Kent Huston  
CITY ENGINEER

REVISED:

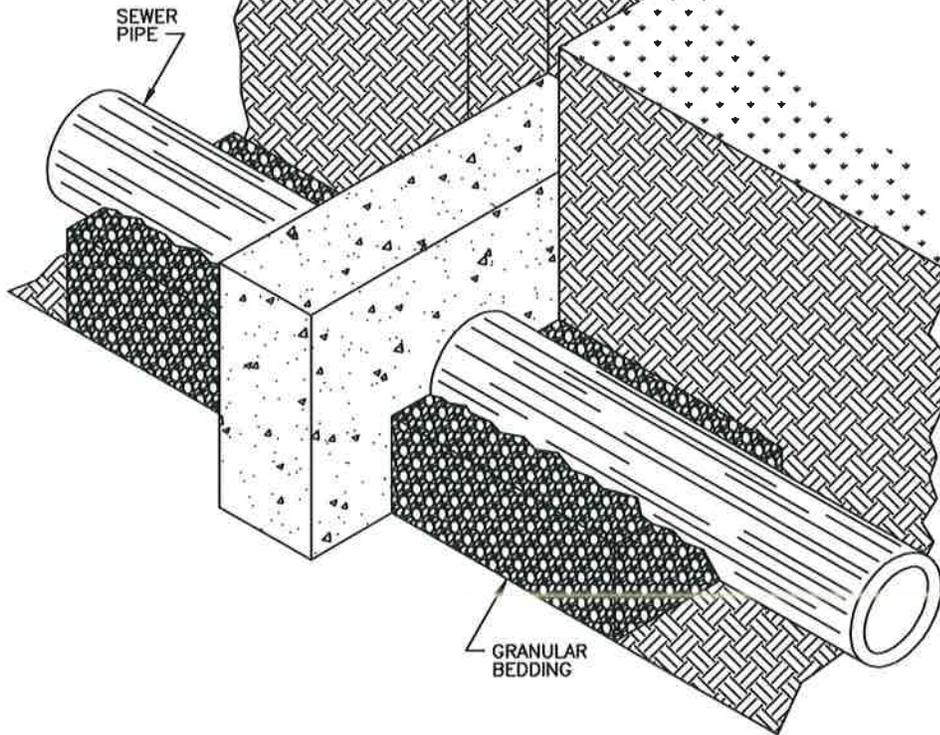
12"  
PIPE  
INLET

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

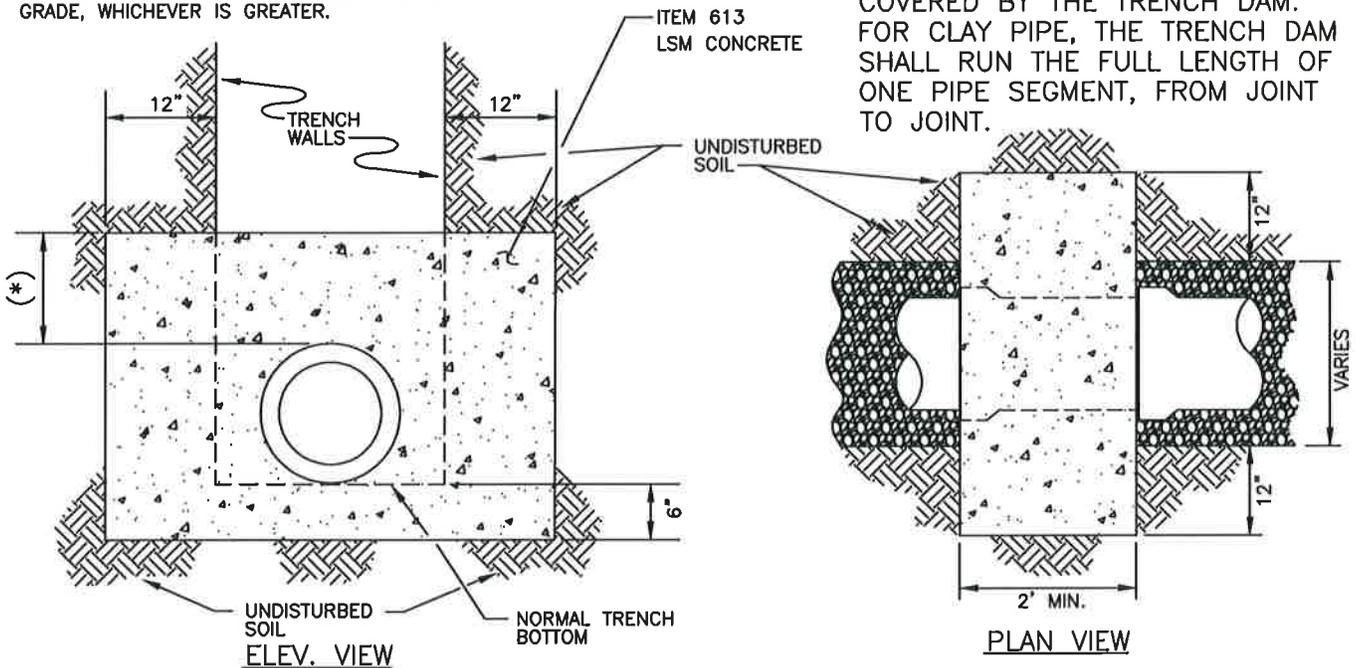
DWG. BY: SLH  
CHK'D BY: R.M. FILE NUMBER  
S-23

TRENCH DAMS SHALL BE BUILT PER CMSL 901.11



(\*) 2.5', OR A LENGTH SUCH THAT THE TOP OF THE TRENCH DAM IS 5' BELOW FINISHED GRADE, WHICHEVER IS GREATER.

NOTE: NO PIPE JOINTS SHALL BE COVERED BY THE TRENCH DAM. FOR CLAY PIPE, THE TRENCH DAM SHALL RUN THE FULL LENGTH OF ONE PIPE SEGMENT, FROM JOINT TO JOINT.



APPROVED 10/10/14  
*Brad Faquell*  
 CITY ENGINEER

TRENCH DAM

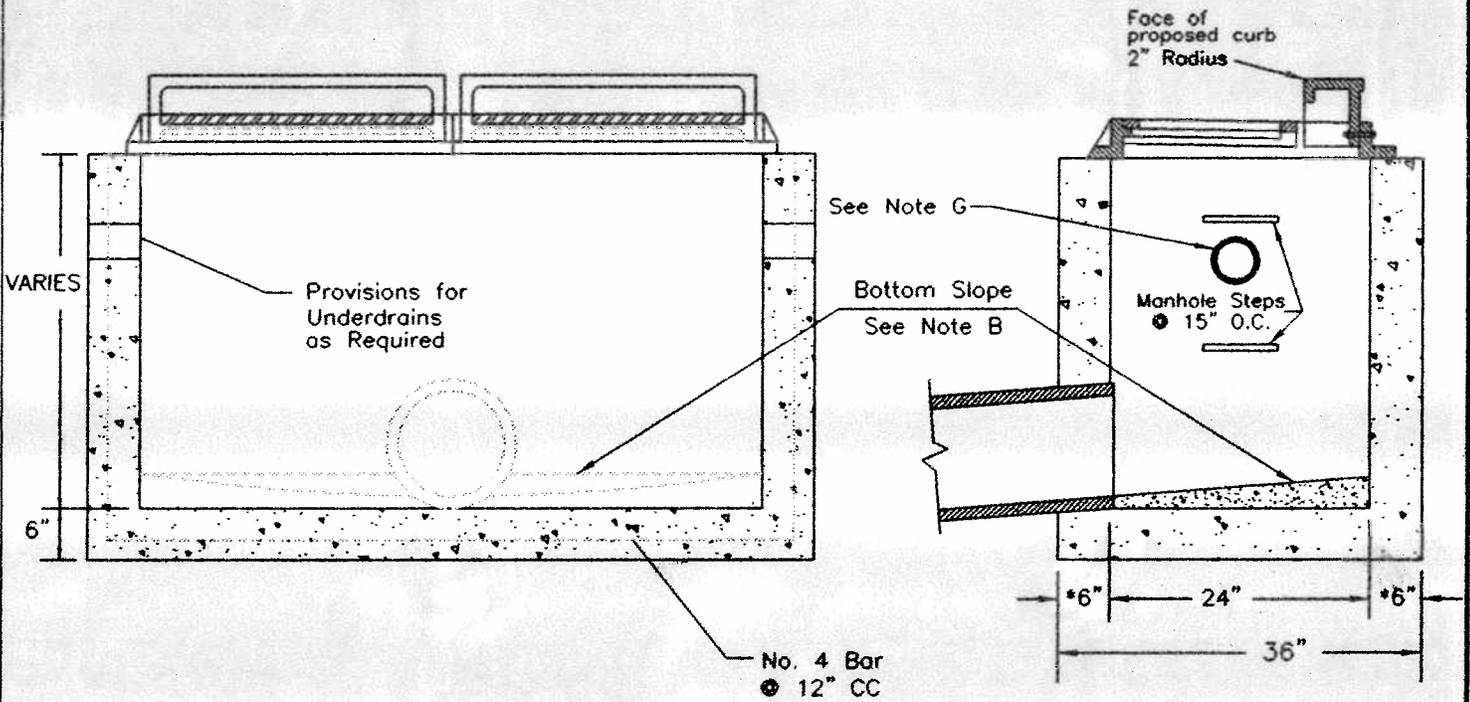
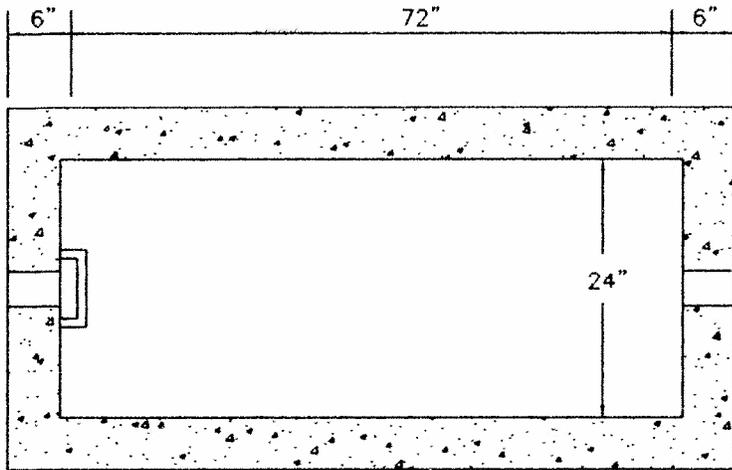
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

REVISED: 10 OCT 14

DWG. BY: SWW  
 CHK'D BY: DLC

FILE NUMBER  
S-24



- NOTE A:** Cut-outs from pipes shall not be cut closer than 6 inches to an adjoining wall or top.
- NOTE B:** The inlet bottom shall be shaped to provide slope of 3" to 4" to outlet pipe. The cross sectional form of bottom and longitudinal slope is to be adopted to location of outlet pipe as directed.
- NOTE C:** Outlet pipe may be located in front or back and the outlet pipe shall be directed towards the center of the inlet.
- NOTE D:** The existing gutter within the area around the inlet where cut out, shall be replaced with class "C" Concrete or Asphaltic Concrete Paving as approved.
- NOTE E:** The backfilling within proposed paved areas shall be well tamped in layers not exceeding 4" in thickness loose measurement, or backfilled with an approved material.
- \* **NOTE F:** Precast concrete units shall have walls with a minimum thickness of 6 inches and be reinforced sufficiently to permit shipping and handling without damage. Cast in place units shall have a wall thickness of 8". Block or brick walls will only be allowed under special circumstances as determined by the City Engineer.
- NOTE G:** Place 4" curb drain stubs 30" below top of curb or as directed.

APPROVED *April 10, 1997*

*Kent Houston*  
CITY ENGINEER

REVISED:

CURB AND  
GUTTER INLET  
DOUBLE UNIT

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

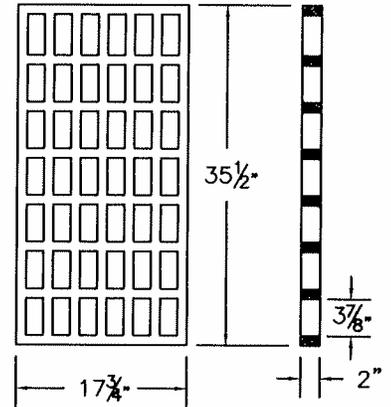
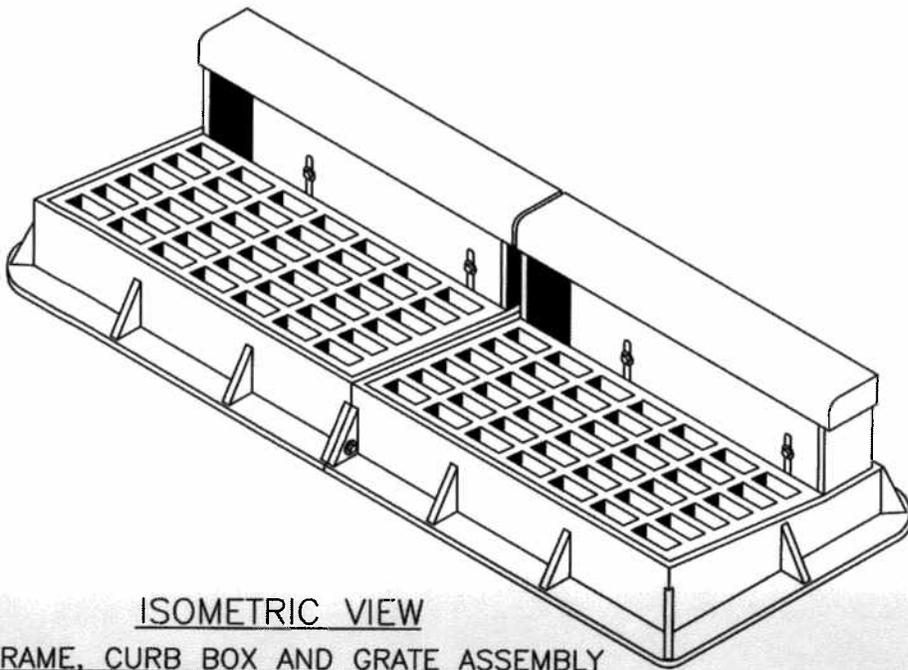
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: *CSW*

FILE NUMBER

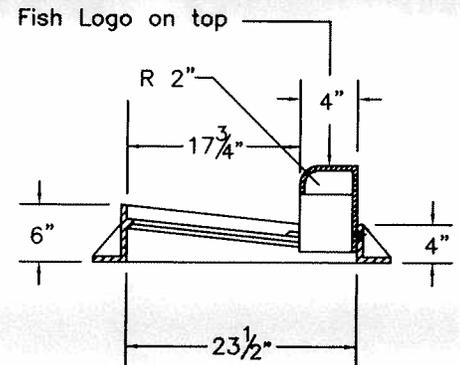
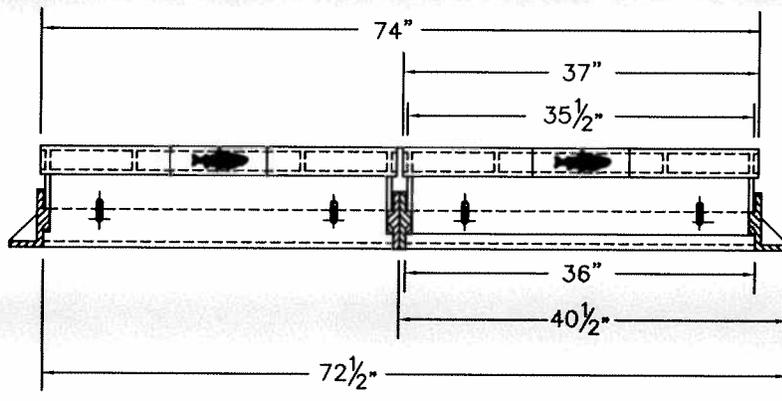
CHK'D BY: .....

S-25 SHEET  
1 OF 2

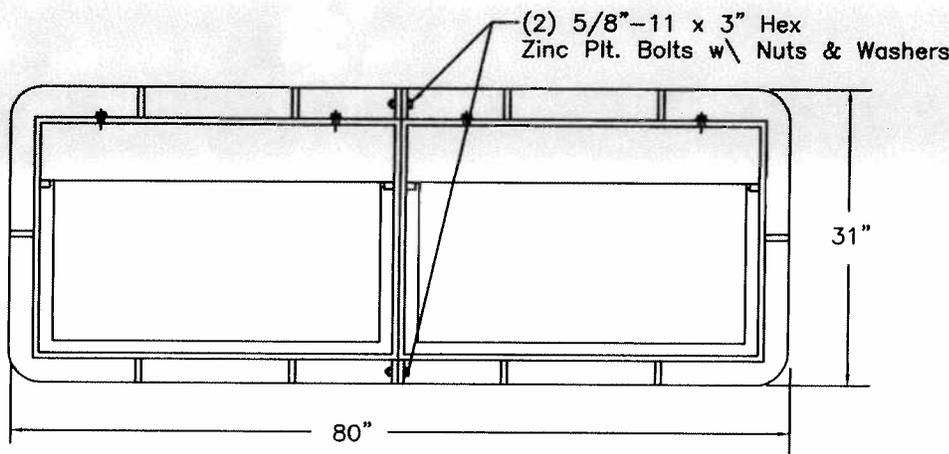


GRATE

ISOMETRIC VIEW  
 FRAME, CURB BOX AND GRATE ASSEMBLY  
 APPROX. WEIGHT = 1100 lbs.



Fish Logo on top



Each Frame = 225 lbs  
 Each Grate = 185 lbs  
 Each Back = 140 lbs

Neenah  
 R-3288

APPROVED 6-27-07

*Brad Fagrell*  
 CITY ENGINEER

REVISED: 2/2/2005

CAST IRON FRAMES  
 AND GRATES FOR  
 CURB & GUTTER INLET  
 DOUBLE UNIT

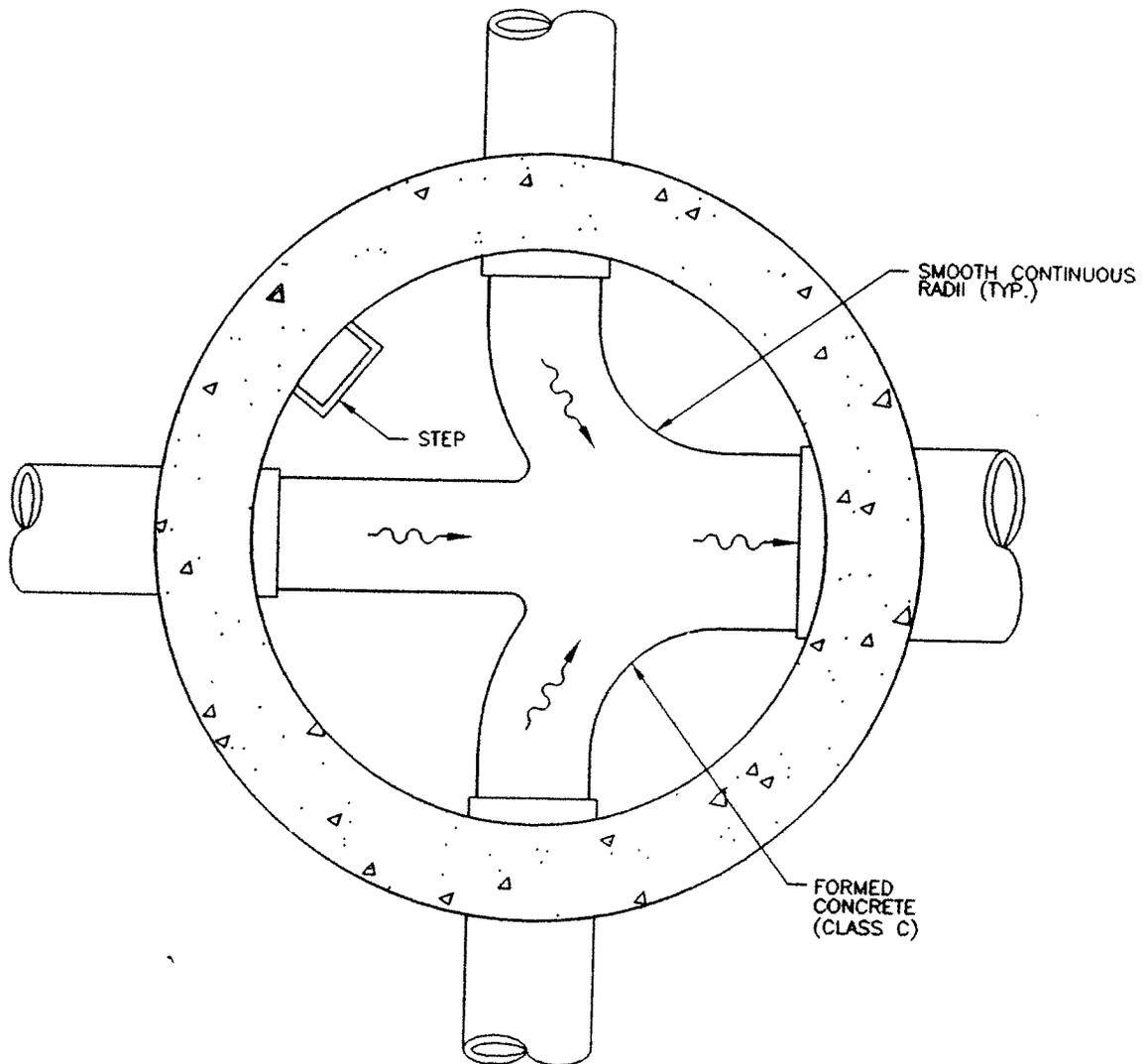
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

DWG. BY: BIC  
 CHK'D BY: *DDK*

FILE NUMBER

S-25 SHEET  
 2 OF 2

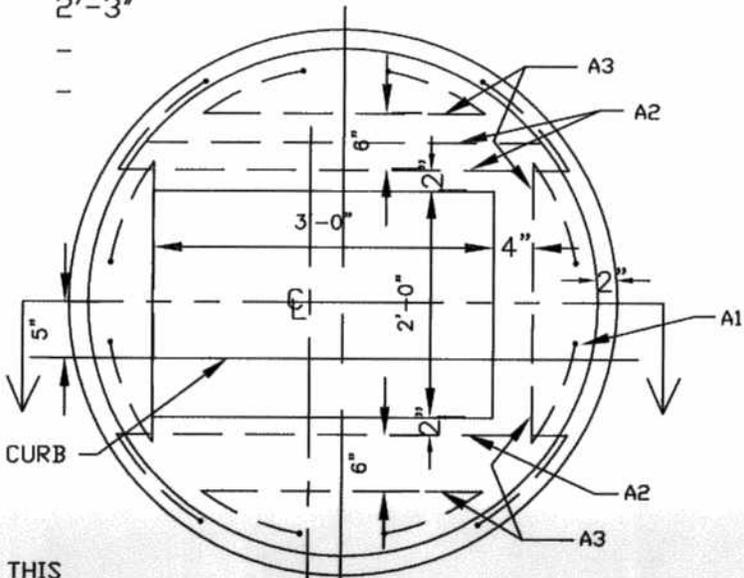


SECTION SHOWING  
METHOD OF TURNING SIDE DRAINS

APPROVED <u>11/13/97</u>	PRECAST MANHOLE BASE CHANNELIZATION DETAIL	CITY OF LANCASTER, OHIO DEPARTMENT OF ENGINEERING	
 CITY ENGINEER		STANDARD CONSTRUCTION DRAWING	
REVISED:	DWG. BY: <u>CSW</u> CHK'D BY: <u>RM</u>	FILE NUMBER <u>S-26</u>	

#5 REINFORCING BARS			
	NO.	LENGTH	RAD.
A1	2	17'-5"	2'-3"
A2	4	5'-11"	-
A3	8	5'-3"	-

WEIGHT STEEL (lbs.)= 105  
APPROX. CONC. VOL. (CY)=.30

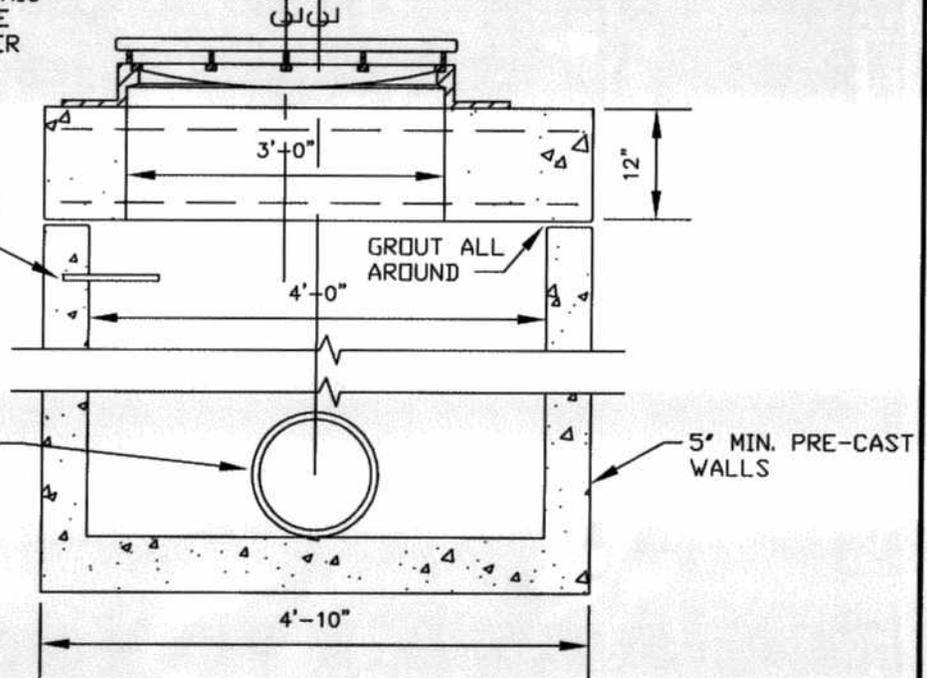


SLAB TOP TO BE USED WITH CITY OF LANCASTER MANHOLE TYPE "1"

SHEET 2 OF THIS DRWG. WILL BE FRAME & COVER

MANHOLE STEPS @ 12"-16"

SEE NOTE 4 FOR PIPE SIZES



1. THIS COMBINED INLET SHALL ONLY BE USED WHERE THE STORM SEWER PIPE IS LARGER THAN CAN BE ACCOMMODATED IN THE S-14 STRUCTURE.
2. THE MANHOLE STEPS AND CONCRETE TOP SLAB SHALL ALIGN WITH THE OPENING FOR THE CASTING IS ON THE PAVEMENT SIDE OF THE STRUCTURE CENTERLINE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE PRE CASTERS SHOP DRAWINGS TO VERIFY THE ALIGNMENT.
4. FOR PIPE SIZES 8"-27" REFER TO DRAWING S-6, SIZES 30"-42" USE S-7, SIZES 48" AND LARGER USE S-8.
5. MANHOLE OFFSET IS TO BE NO CLOSER THAN 6", MEASURED FROM THE CORNER OF THE CRATE TO THE OUTSIDE OF WALL.

APPROVED

6-27-07

*Brad Fagell*  
CITY ENGINEER

REVISED: 21 JUN 07

ALTERNATE  
COMBINED  
INLET

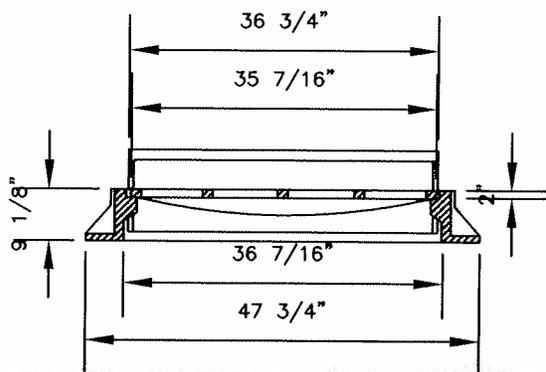
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

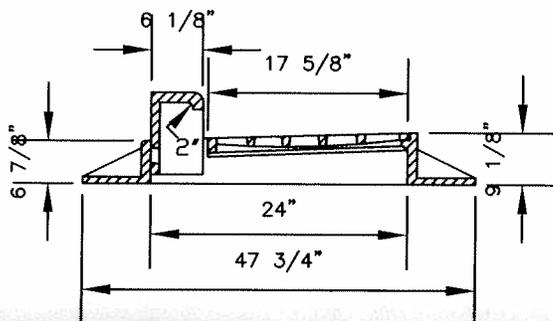
DWG. BY: BIC  
CHK'D BY: DRK

FILE NUMBER  
S-27 SHEET 1 OF 2

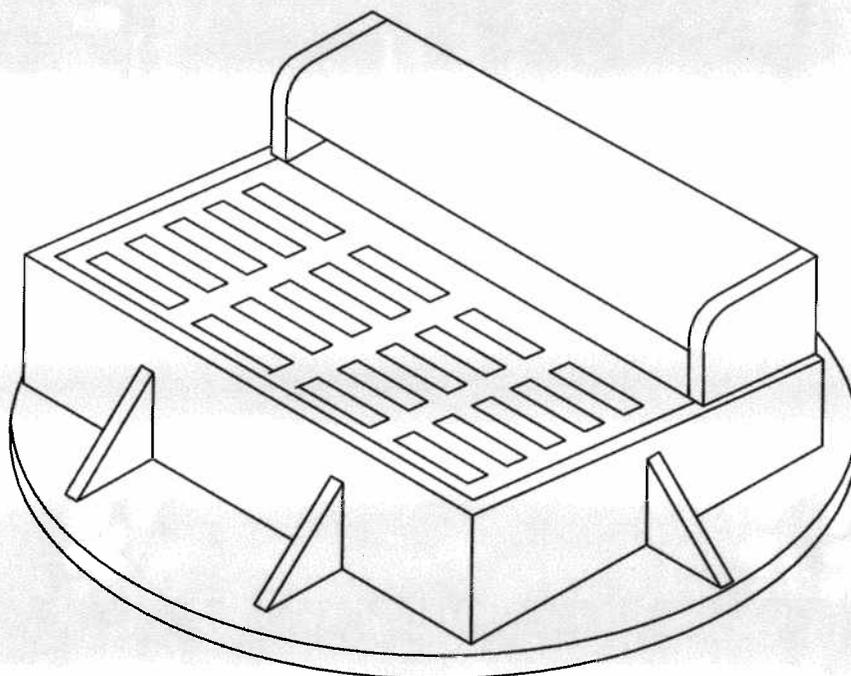
NOTE: 700 LBS. TOTAL WEIGHT  
 APPROXIMATELY 250 SQUARE INCHES OF OPENING  
 CURB ADJUSTMENT 4" TO 9"



FRONT SECTION



SIDE SECTION



ISOMETRIC

1. ALL GRATES SHALL BE BICYCLE SAFE ACCORDING TO THE MANUFACTURER
2. THE ALTERNATE COMBINED INLETS IS FOR USE ON STREETS WITH MINIMAL TRUCK TRAFFIC.

APPROVED 6-27-07

*Brad Fagrell*  
 CITY ENGINEER

REVISED: 21 JUN 07

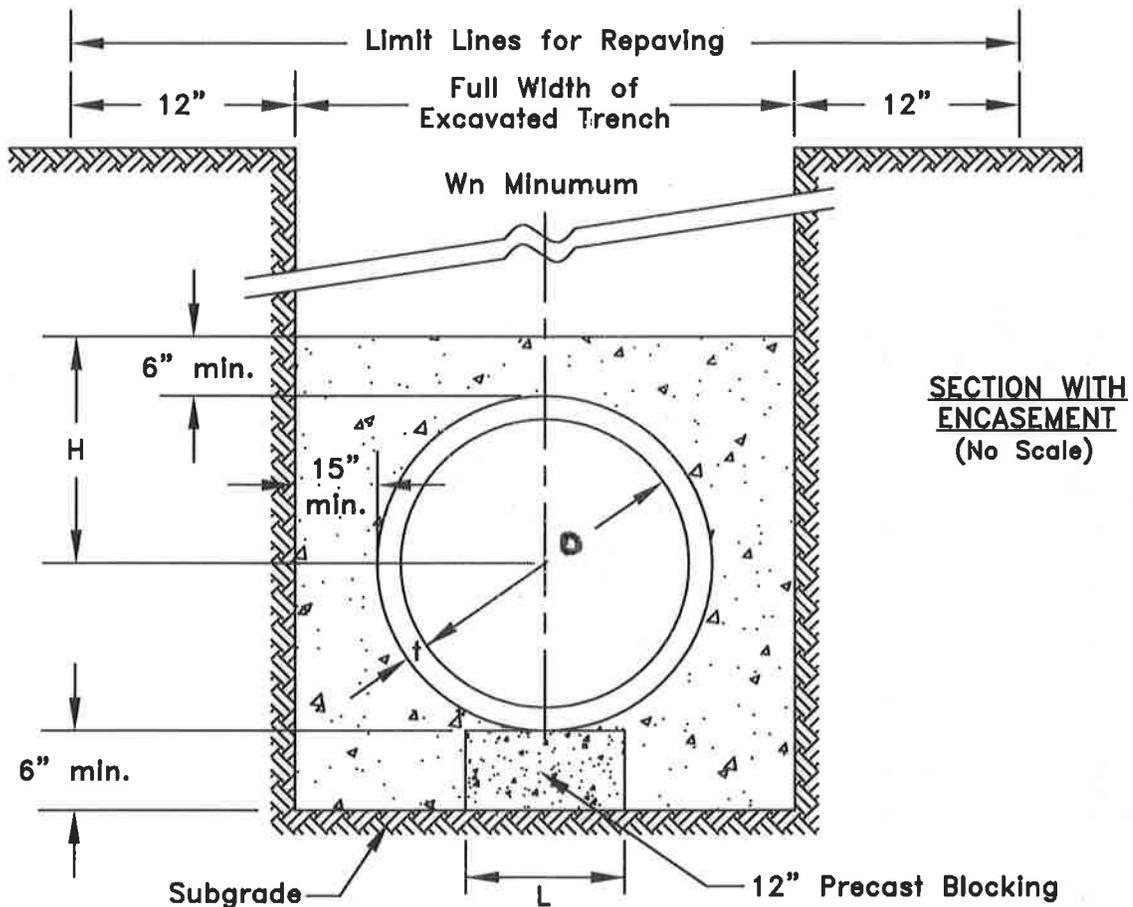
ALTERNATE  
 COMBINED  
 INLET

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

DWG. BY: ..... BIC .....  
 CHK'D BY: *DRK*

FILE NUMBER  
 S-27 SHEET  
 2 OF 2



**NOTES:**

Sections Symetrical about Centerline.  
 Pipe dimensions on chart are minimum and expressed in inches.  
 On sanitary sewer construction, trench dams are required as specified under 901.11.  
 Blocking shall have the length shown in the chart or of sufficient length so that the pipe load on the subgrade shall not exceed 3000 lbs/S.F.  
 Backing to be Class "A" Concrete, Item 905. under 901.11.

D	Wn	H	L
6	30		
8	30		
10	30		
12	32		
15	36		
18	40		
21	44		
24	48		
27	52		
30	57	26	15
33	61	28	16.5
36	64	30	18

D	Wn	H	L
42	71	34	21
48	78	38	24
54	87	43	27
60	96	47	30
66	105	51	33
72	116	55	36
78	123	58	39
84	130	63	42
90	138	67	45
96	143	71	48
102	151	74	51
108	160	78	54

APPROVED 5-30-14  
*Brad Fagell*  
 CITY ENGINEER

**ENCASEMENT DETAIL**  
**6"-108" DIAMETER**  
**ITEM 901**

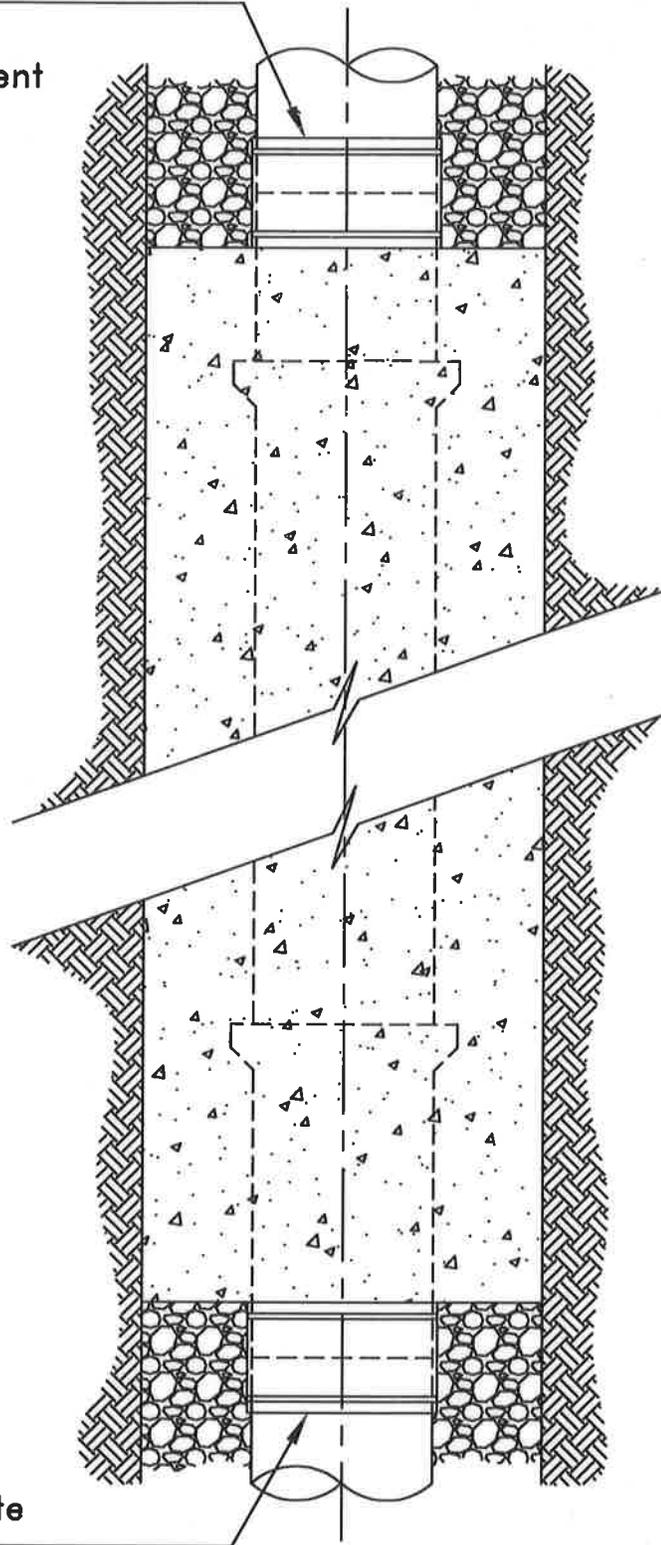
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

REVISED: 29 MAY 14

DWG. BY: DDK  
 CHK'D BY: SWW  
 FILE NUMBER: S-28  
 SHEET 1 of 2

Rubber Fernco  
At Beginning of  
Concrete Encasement



Rubber Fernco  
At End of Concrete  
Encasement

APPROVED 5-30-14

*Brad Fagrell*  
CITY ENGINEER

REVISED: 29 MAY 14

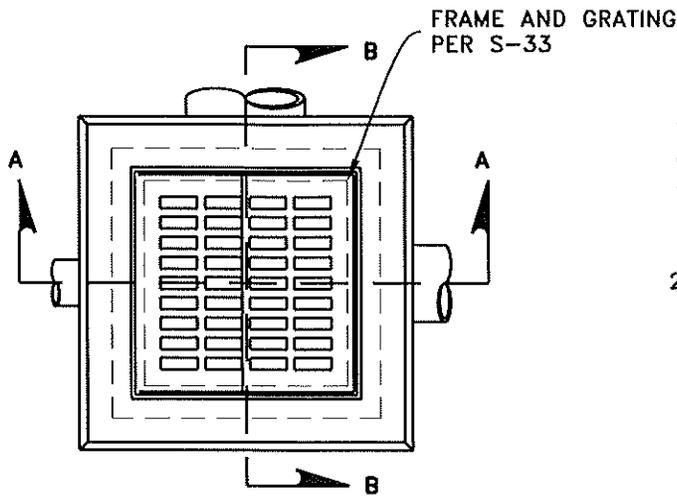
ENCASEMENT DETAIL  
6"-108" DIAMETER  
ITEM 901

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

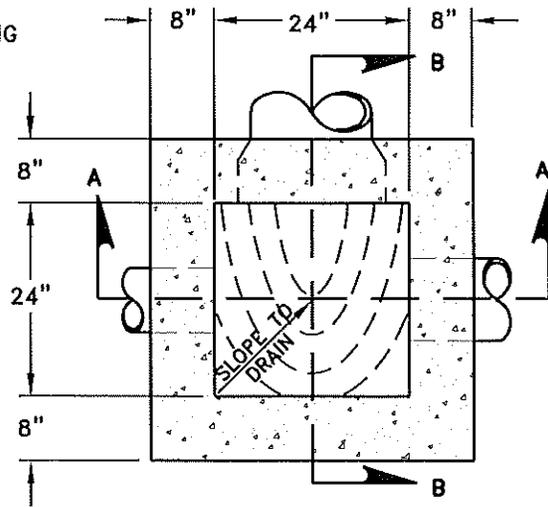
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: DDK  
CHK'D BY: SWW

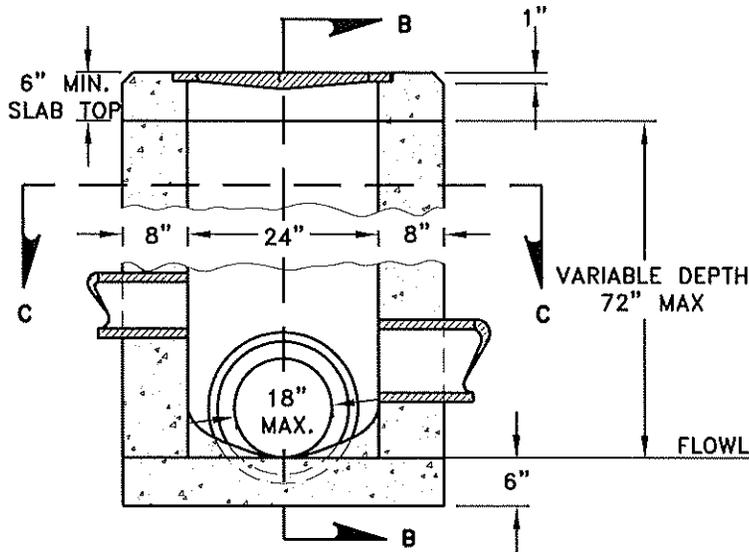
FILE NUMBER  
S-28 SHEET  
2 of 2



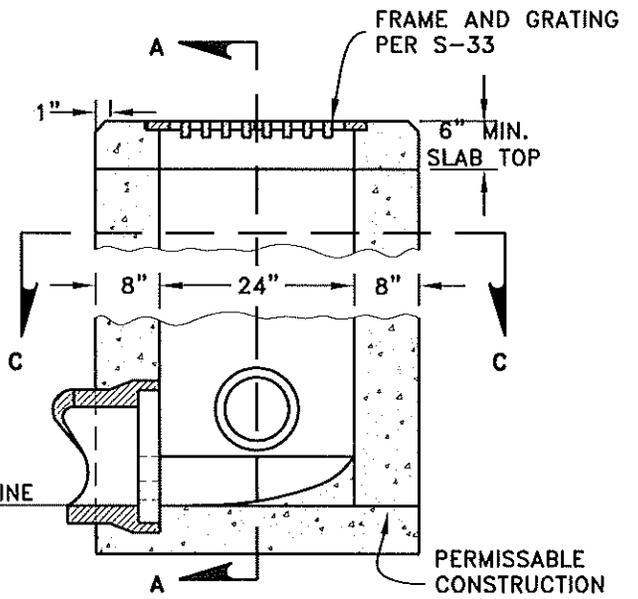
**GRATE-PLAN VIEW**



**SECTION C-C**



**SECTION A-A**



**SECTION B-B**

**NOTES:**

1. **WALLS:** CAST-IN-PLACE UNITS SHALL HAVE A NOMINAL THICKNESS OF 8" AND MIN. THICKNESS OF 6", PRECAST WALLS SHALL BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.
2. **CONCRETE:** CAST-IN-PLACE CONC. IS TO BE CLASS "QC1" PRECAST CONC. SHALL MEET REQUIREMENTS OF CMS 706.13 AND BE MARKED WITH CATCH BASIN NUMBER.
3. **PRECAST BASE:** IF A PRECAST BASE IS USED IT SHALL BE PLACED DEEP ENOUGH SO THAT THE TOP 6" CAN BE ADJUSTED TO PROVIDE THE GRATE ELEVATION SPECIFIED IN PLANS OR TO ALLOW POSITIVE DRAINAGE.
4. **MINIMUM DEPTH:** MINIMUM DEPTH SHALL BE THE OUTSIDE DIA. (O.D.) OF THE OUTLET PIPE PLUS 7".

APPROVED 5/3/24

*[Signature]*  
CITY ENGINEER

REVISED: 15 APR 20

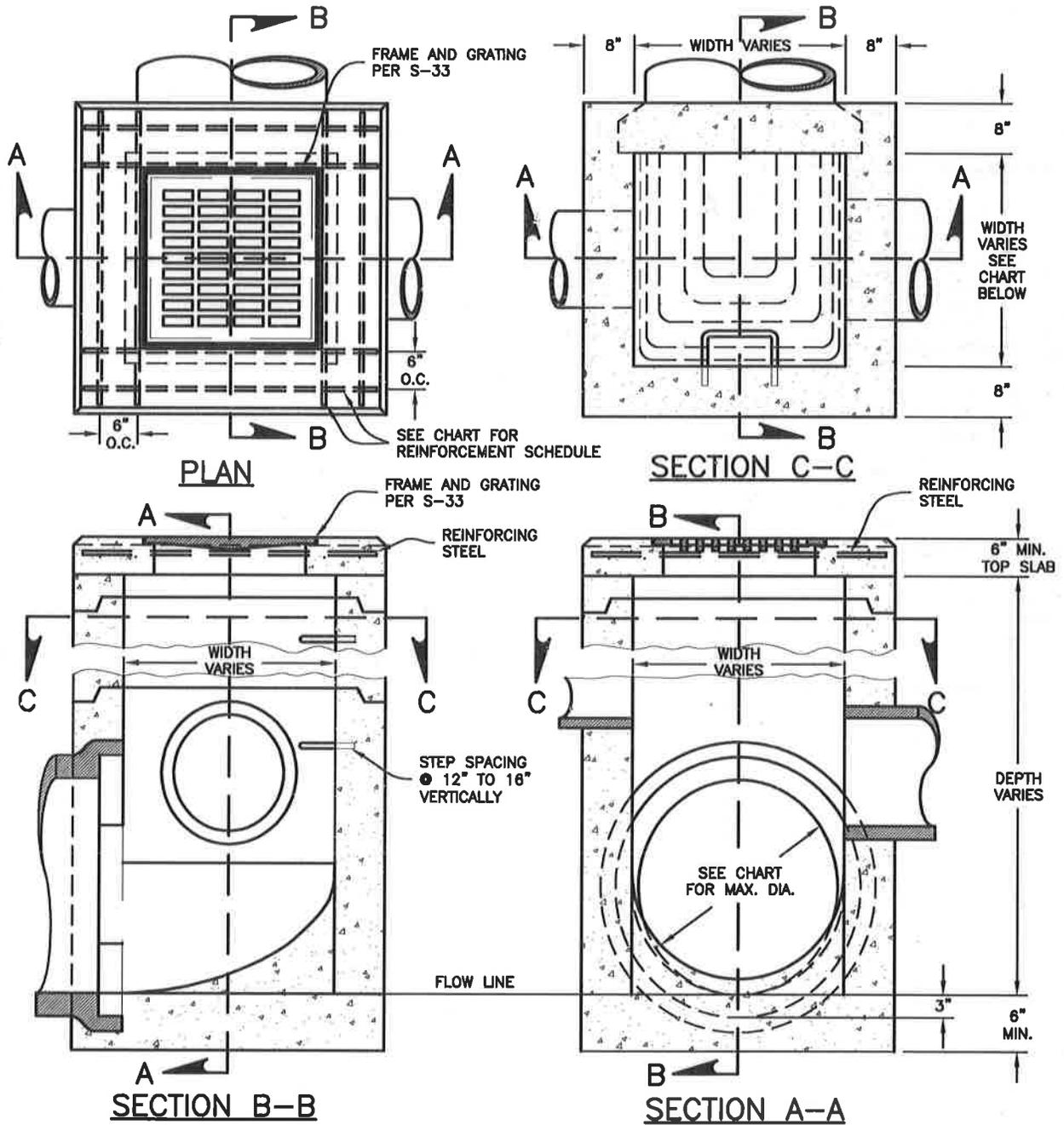
STANDARD CATCH  
BASIN  
(18" DIAMETER AND  
SMALLER PIPE)

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: ADH  
CHK'D BY: DLC

FILE NUMBER  
S-29



**NOTES:**

- WALLS:** CAST-IN-PLACE UNITS SHALL HAVE A NOMINAL THICKNESS OF 8" AND MIN. THICKNESS OF 6". PRECAST WALLS SHALL BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.
- CONCRETE:** CAST-IN-PLACE CONC. IS TO BE CLASS "C". PRECAST CONC. SHALL MEET REQUIREMENTS OF CMS 706.13 AND BE MARKED WITH CATCH BASIN NUMBER.
- PRECAST BASE:** IF A PRECAST BASE IS USED IT SHALL BE PLACED DEEP ENOUGH SO THAT THE TOP 6" CAN BE ADJUSTED TO PROVIDE THE GRATE ELEVATION SPECIFIED IN PLANS OR TO ALLOW POSITIVE DRAINAGE.

- MINIMUM DEPTH:** MINIMUM DEPTH SHALL BE THE OUTSIDE DIAMETER (O.D.) OF THE OUTLET PIPE PLUS 4".
- STEPS:** STEPS SHALL BE PROVIDED WHERE DEPTH EXCEEDS 4' AND SHALL MEET REQUIREMENTS OF S-13
- INLETS OVER 12' DEPTH:** PRECAST OR CAST-IN-PLACE SHALL BE REINFORCED WITH #4 BARS ON 12" CENTERS, VERTICAL & HORIZONTAL. 6. BARS SHALL HAVE 2" CLEARANCE FROM INSIDE WALL FACE.
- REINFORCEMENT:** TOP REINFORCING BARS SHALL BE ON 6" CENTERS. (SEE REINF. CHART).

WIDTH	MAX. PIPE SIZE
3 FEET	12" TO 27"
4 FEET	30" TO 36"

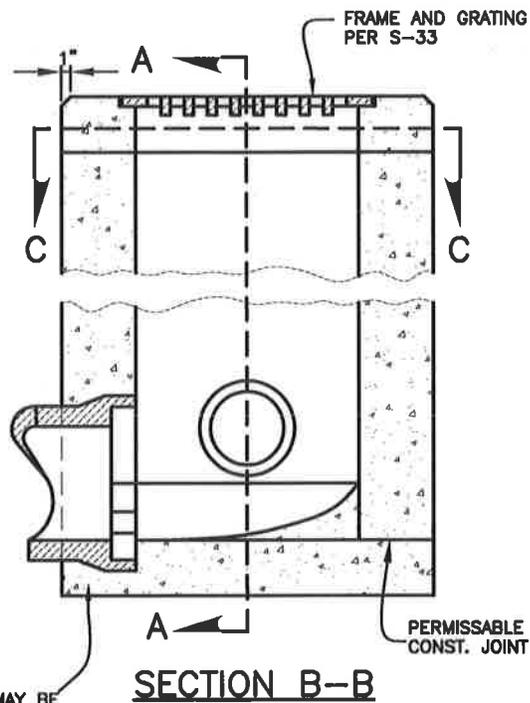
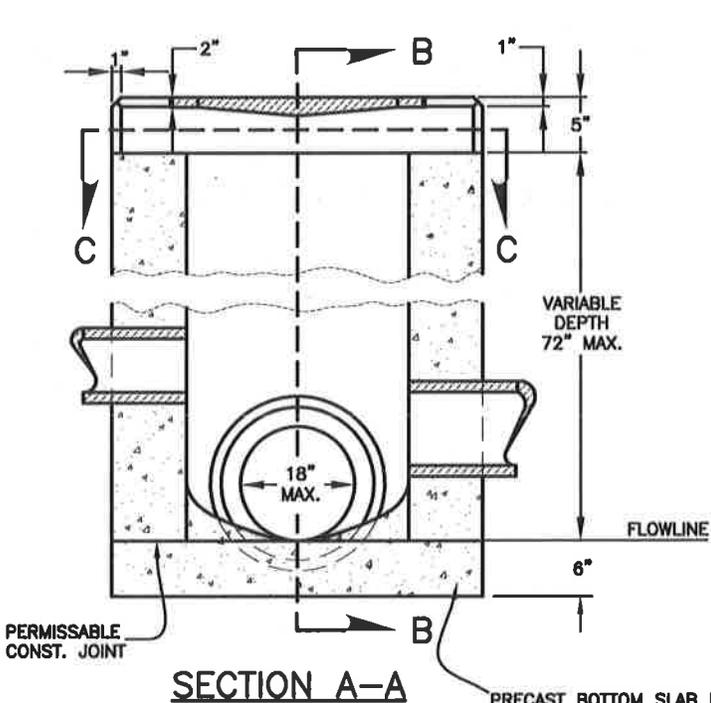
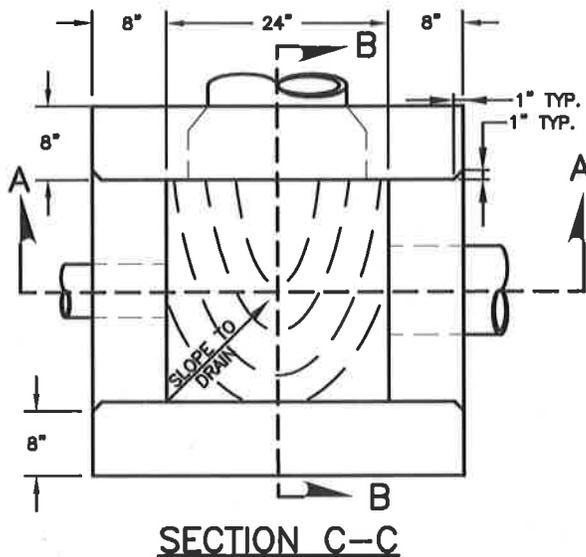
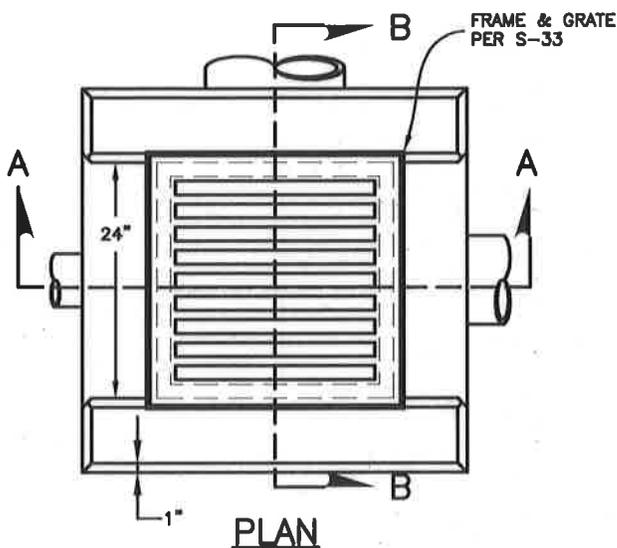
  

SLAB REINFORCEMENT	
WIDTH	#4 BARS
3 FEET	8
4 FEET	12

APPROVED 5-30-14  
*Brad Fogell*  
 CITY ENGINEER  
 REVISED: 5/21/2014

STANDARD CATCH BASIN  
 (21" TO 36" DIAMETER PIPE)

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING  
 STANDARD CONSTRUCTION DRAWING  
 DWG. BY: NZ  
 CHK'D BY: SW  
 FILE NUMBER  
 S-30



PRECAST BOTTOM SLAB MAY BE PLACED SEPARATELY. PLACE OUTLET PIPE WITH BOTTOM SLOPED TO DRAIN.

**NOTES:**

1. **WALLS:** CAST-IN-PLACE UNITS SHALL HAVE A NOMINAL THICKNESS OF 8" AND MIN. THICKNESS OF 6". PRECAST WALLS SHALL BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE.
2. **CONCRETE:** CAST-IN-PLACE CONC. IS TO BE CLASS "C". PRECAST CONC. SHALL MEET REQUIREMENTS OF CMS 706.13 AND BE MARKED WITH CATCH BASIN NUMBER.
3. **PRECAST BASE:** IF A PRECAST BASE IS USED IT SHALL BE PLACED DEEP ENOUGH SO THAT THE TOP 6" CAN BE ADJUSTED TO PROVIDE THE GRATE ELEVATION SPECIFIED IN PLANS OR TO ALLOW POSITIVE DRAINAGE.
4. **MINIMUM DEPTH:** MINIMUM DEPTH SHALL BE THE OUTSIDE DIA. (O.D.) OF THE OUTLET PIPE PLUS 4".
5. **SIDE INLETS:** SHALL BE ON BOTH SIDES OF CB IN SAGS & ON UPSTREAM SIDE ONLY WHEN DITCH HAS CONTINUOUS DOWN GRADE PAST THE CATCHBASIN. FLOWLINE SHALL BE 4" TO 6" BELOW NORMAL DITCH RETURNING TO NORMAL 10' TO 15' EACH SIDE OF INLET.
6. **STEPS:** STEPS SHALL BE PROVIDED WHERE DEPTH EXCEEDS 4' AND SHALL MEET REQUIREMENTS OF S-13.

APPROVED 5-30-14

*Brad Fogwell*  
CITY ENGINEER

STANDARD CATCH BASIN  
(18" DIAMETER AND SMALLER PIPE)  
WITH SIDE INLETS

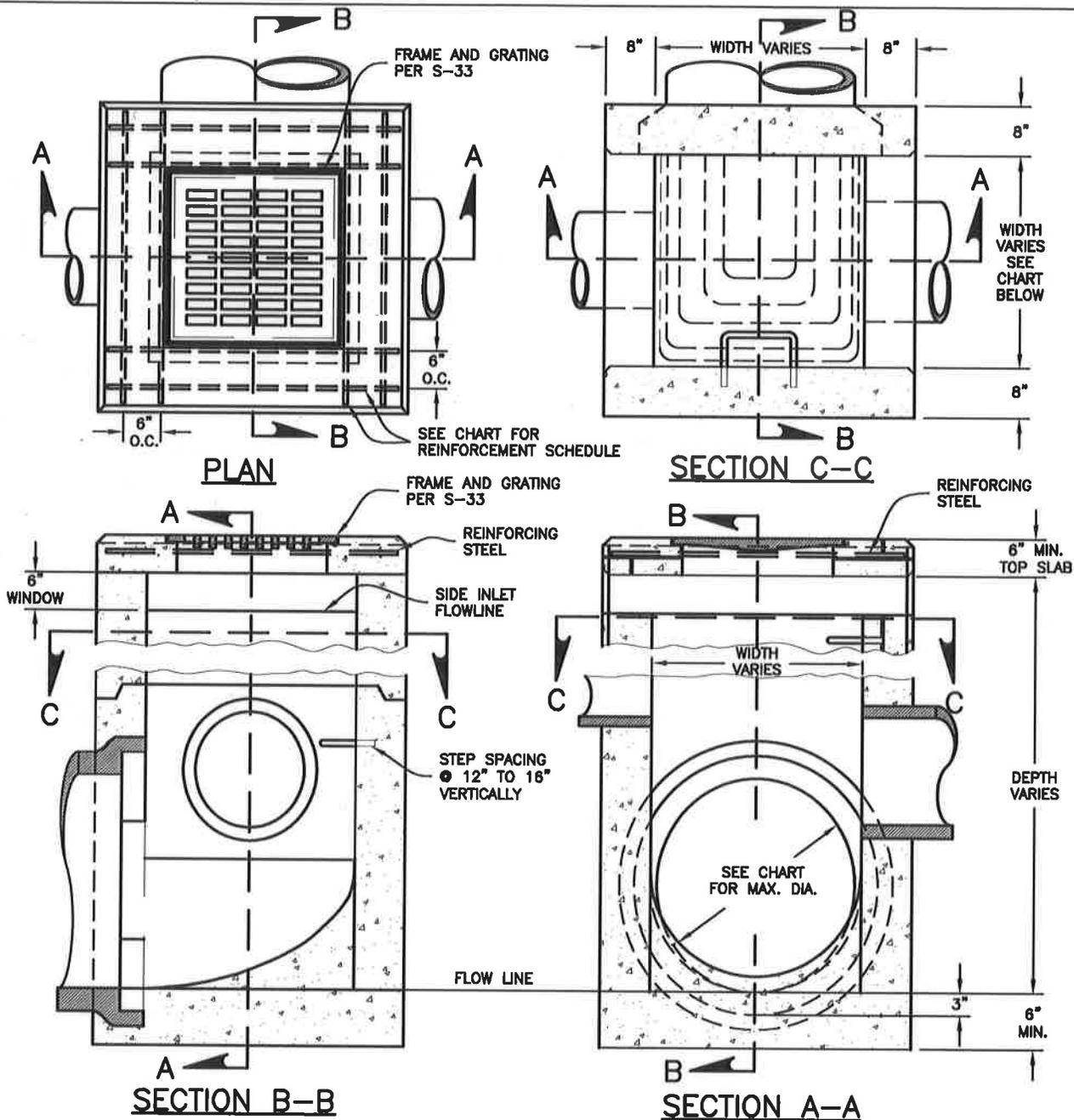
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD CONSTRUCTION DRAWING

DWG. BY: NZ  
CHK'D BY: SW

FILE NUMBER  
S-31

REVISED: 5/21/2014



**NOTES:**

- WALLS:** CAST-IN-PLACE UNITS HAVE A NOMINAL THICKNESS OF 8" AND MIN. THICKNESS OF 6". PRECAST WALLS SHALL HAVE A MIN. THICKNESS OF 6" AND BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING WITHOUT DAMAGE. PRECAST TOPS SHALL HAVE MIN. 6" THICKNESS.
- CONCRETE:** CAST-IN-PLACE CONC. IS TO BE CLASS "C". PRECAST CONC. SHALL MEET REQUIREMENTS OF CMS 706.13 AND BE MARKED WITH CATCH BASIN NUMBER.
- PRECAST BASE:** IF A PRECAST BASE IS USED IT SHALL BE PLACED DEEP ENOUGH SO THAT THE TOP 6" CAN BE ADJUSTED TO PROVIDE THE GRATE ELEVATION SPECIFIED IN PLANS OR TO ALLOW POSITIVE DRAINAGE.

- MINIMUM DEPTH:** MINIMUM DEPTH SHALL BE THE OUTSIDE DIA. (O.D.) OF THE OUTLET PIPE PLUS 4".
- STEPS:** STEPS SHALL BE PROVIDED WHERE DEPTH EXCEEDS 4' AND SHALL MEET REQUIREMENTS OF S-13
- INLETS OVER 12' DEPTH:** PRECAST OR CAST-IN-PLACE SHALL BE REINFORCED WITH #4 BARS ON 12" CENTERS. VERTICAL & HORIZONTAL 6. BARS SHALL HAVE 2" CLEARANCE FROM INSIDE WALL FACE.
- REINFORCEMENT:** TOP REINFORCING BARS SHALL BE ON 6" CENTERS. (SEE REINF. CHART).

WIDTH	MAX. PIPE SIZE
3 FEET	12" TO 27"
4 FEET	30" TO 36"

SLAB REINFORCEMENT	
WIDTH	#4 BARS
3 FEET	8
4 FEET	12

APPROVED \_\_\_\_\_

5-30-14

*Brad Fogell*  
CITY ENGINEER

REVISED: 5/21/2014

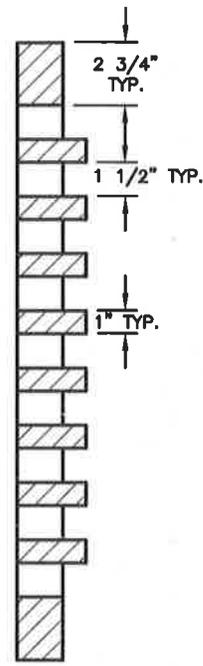
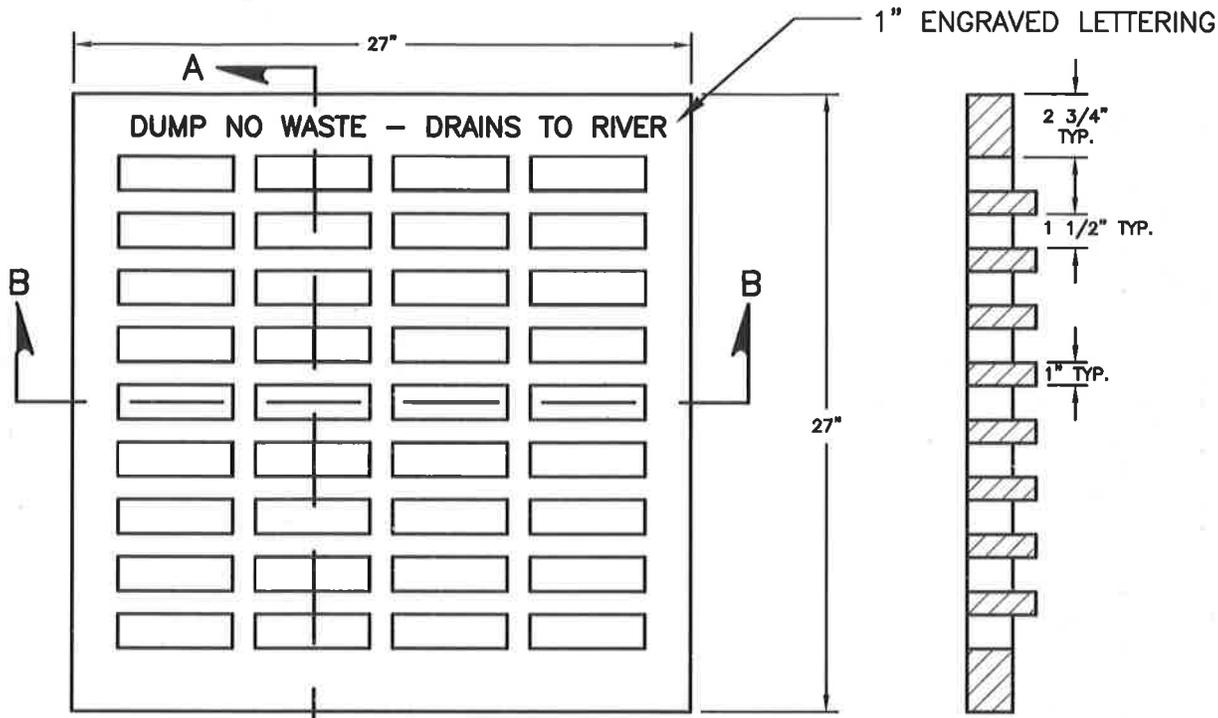
**STANDARD CATCH BASIN**  
(21" TO 36" PIPE)  
WITH SIDE INLETS

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

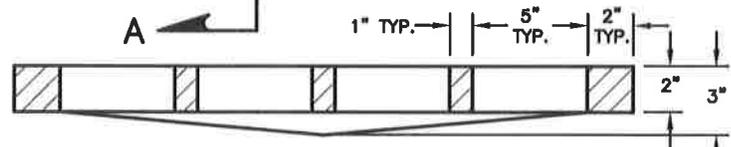
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: NZ  
CHK'D BY: SW

FILE NUMBER  
S-32

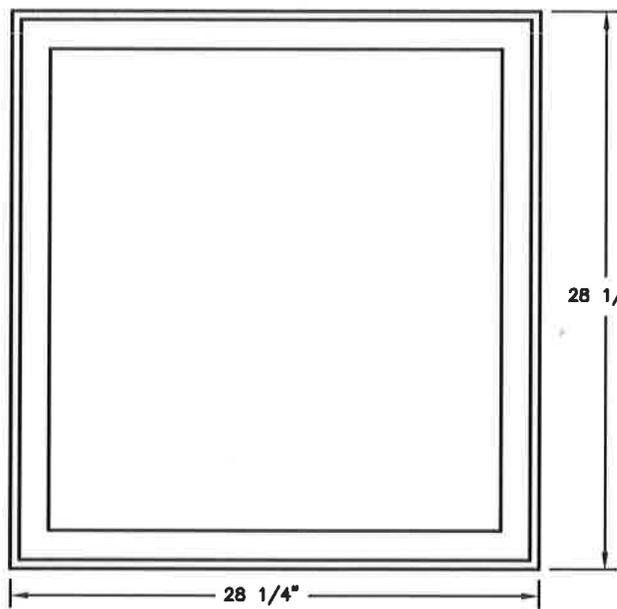


**SECTION A-A**

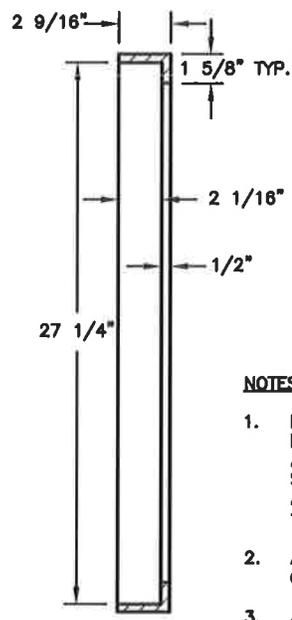


**SECTION B-B**

**PRE-APPROVED CASTINGS:**  
 EJ NO. - 5115M2, 5115Z OR 5116Z  
 NEENAH NO. R-4852-5003, R-1883-HI



**ANGLE FRAME**



**SECTION**

- NOTES:**
- FRAMES, GRATES, AND COVERS SHALL MEET REQUIREMENTS OF 804.02 AND AASHTO M308. DESIGN SHALL BE THE SAME AND EQUAL IN STRENGTH AS SHOWN. GRATE EDGES TO HAVE 1/4" ROUNDED EDGES.
  - ANGLE FRAME SHOWN FOR STANDARD CATCH BASIN WITH 24" SIDE INLETS.
  - APPROXIMATE WEIGHT OF GRATE = 210 LBS.
  - APPROXIMATE WEIGHT OF ANGLE FRAME = 54 LBS.

APPROVED 5-30-14  
*Brad Fogell*  
 CITY ENGINEER

**HEAVY DUTY GRATE AND ANGLE FRAME FOR STANDARD CATCH BASIN**

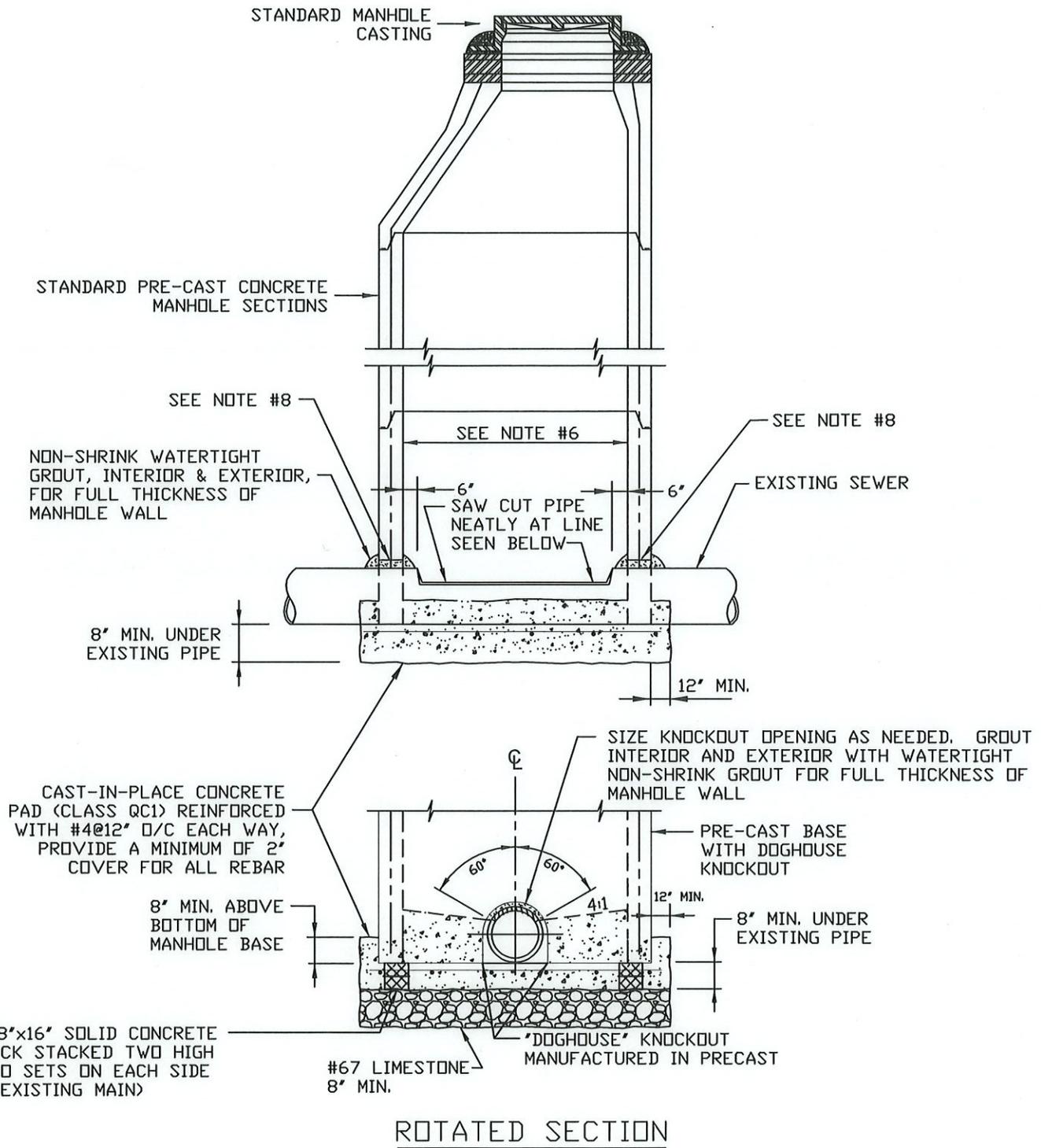
CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING

STANDARD  
 CONSTRUCTION DRAWING

DWG. BY: ..... NZ .....  
 CHK'D BY: ..... SW .....

FILE NUMBER  
**S-33**

REVISED: 5/21/2014

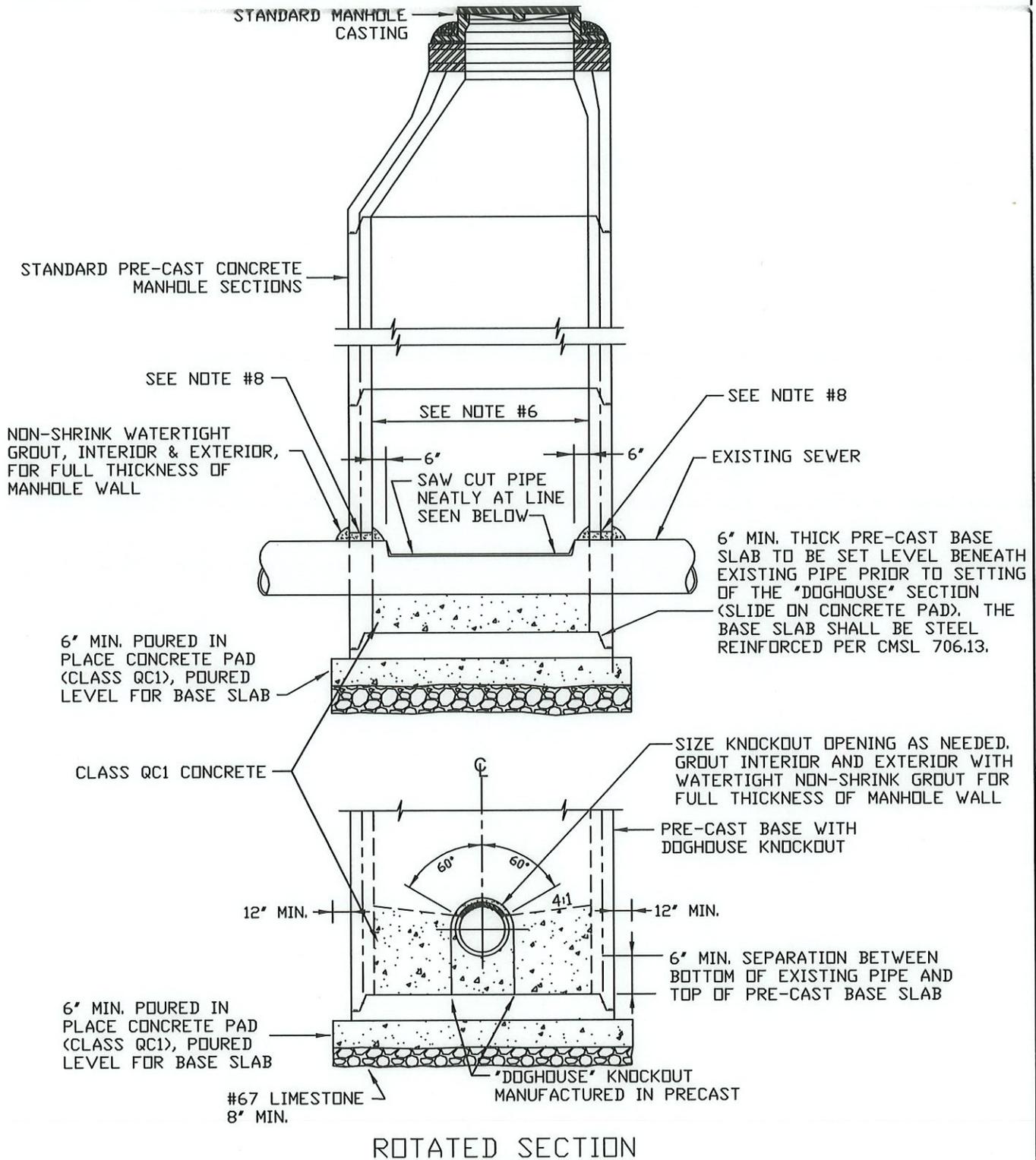


TYPE A

APPROVED 1-28-19  
*Nitah Nalud*  
 CITY ENGINEER  
 REVISED: 11 JAN 2019

TYPICAL DOGHOUSE  
 MANHOLE  
 6" THRU 42" PIPE

CITY OF LANCASTER, OHIO  
 DEPARTMENT OF ENGINEERING  
 STANDARD  
 CONSTRUCTION DRAWING  
 DWG. BY: ...DLD...  
 CHK'D BY: ...SWW...  
 FILE NUMBER  
 S-34<sub>1</sub> of 3



TYPE B

APPROVED 1-28-19

*Mitch Woluf*  
CITY ENGINEER

REVISED: 11 JAN 2019

TYPICAL DOGHOUSE  
MANHOLE  
6" THRU 42" PIPE

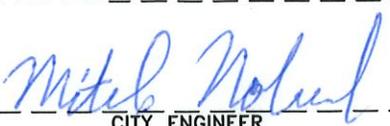
CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

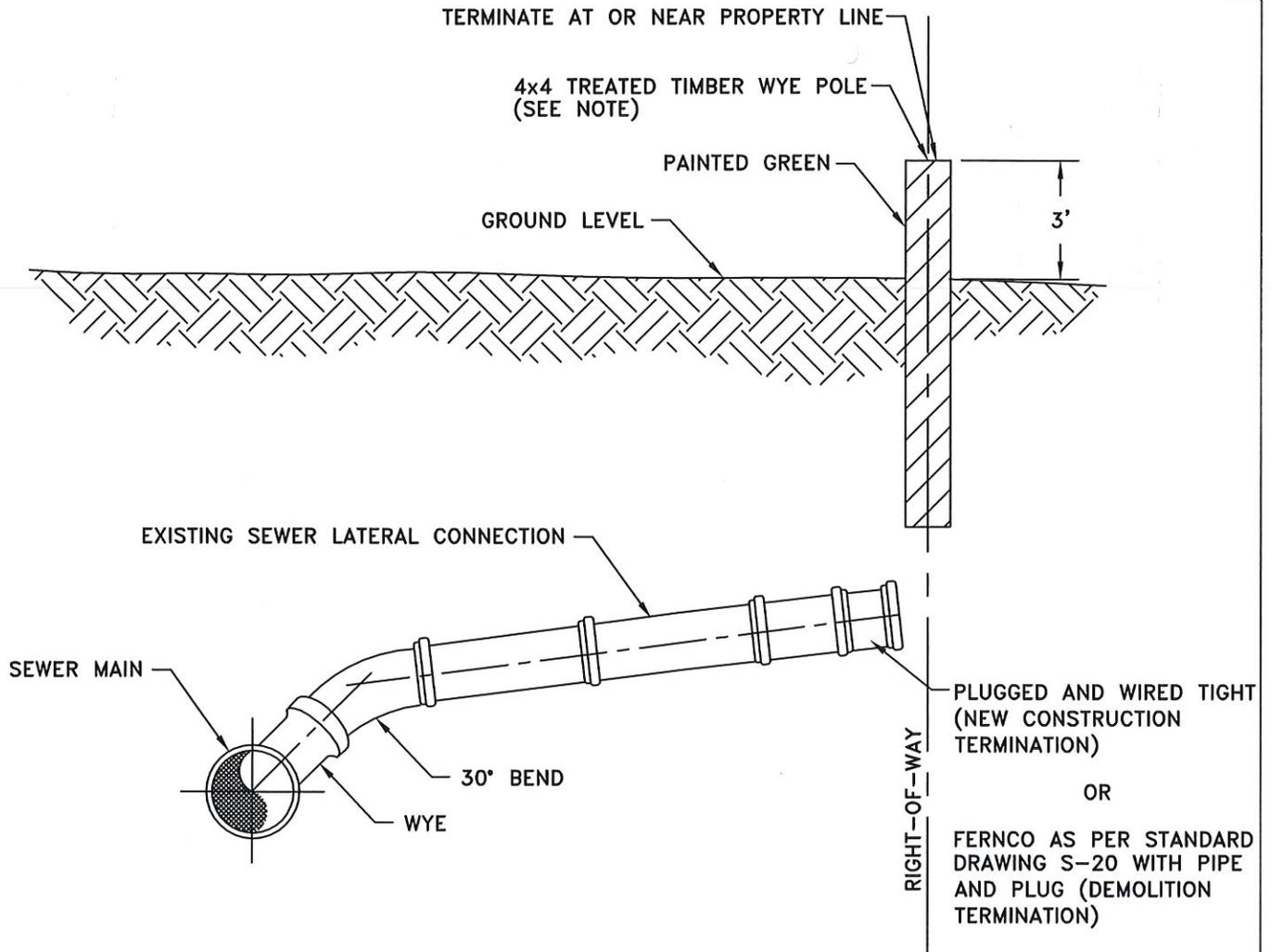
STANDARD  
CONSTRUCTION DRAWING

DWG. BY: ....DLD..... FILE NUMBER  
CHK'D BY: ....SWW..... S-34<sub>2</sub> of 3

NOTES:

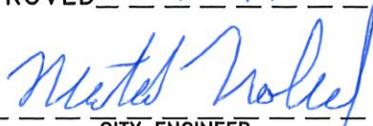
1. SANITARY DOGHOUSE MANHOLES SHALL BE VACUUM TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF CMSL 901.20(D) PRIOR TO CUTTING THE EXISTING SEWER. IF THE VACUUM TEST FAILS, THE CONTRACTOR SHALL DETERMINE WHETHER THE FAILURE WAS CAUSED BY ANY LEAK(S) IN THE EXISTING SEWER. THE CONTRACTOR WILL NOT BE RESPONSIBLE FOR FIXING ANY LEAK(S) IN THE EXISTING SEWER, BUT ANY OTHER LEAK(S) SHALL BE REPAIRED IN A MANNER SATISFACTORY TO THE ENGINEER AND RETESTED UNTIL LEAKAGE IS WITHIN THE ALLOWABLE LIMITS OR LIMITED SOLELY TO THE EXISTING SEWER.
2. ALL NEW MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF THE CMSL AND VARIOUS APPLICABLE CITY OF LANCASTER STANDARD CONSTRUCTION DRAWINGS.
3. THE EXCAVATION FOR TYPE B DOGHOUSE MANHOLES SHALL BE LARGE ENOUGH TO ALLOW ADEQUATE SPACE TO SLIDE THE PRE-CAST BASE UNDER THE EXISTING SEWER. ALL COSTS RELATED TO THE EXCAVATION SHALL BE INCLUDED IN THE BID PRICE FOR THE CONSTRUCTION OF THE DOGHOUSE MANHOLE. THE CONTRACTOR SHALL NOT BE DUE ANY ADDITIONAL COMPENSATION FOR ANY EXCAVATION THAT IS NECESSARY TO ACCOMMODATE THE PLACEMENT OF THE PRE-CAST BASE.
4. ALL NEW PIPING CONNECTED THROUGH THE MANHOLE WALLS SHALL BE SEALED WITH A GASKET EMBEDDED IN THE PRE-CAST, OR BY A NEOPRENE BOOT, OR BY ANOTHER METHOD FIRST APPROVED BY THE CITY ENGINEER.
5. THE CENTERLINE OF THE MANHOLE SHALL BE LOCATED OVER THE CENTERLINE OF THE MAIN SEWER, WHENEVER POSSIBLE.
6. WHEN THE EXISTING SEWER HAS A DIAMETER OF 6"-27", A FOUR FOOT (4') DIAMETER MANHOLE BASE SHALL BE UTILIZED. WHEN THE EXISTING SEWER HAS A DIAMETER OF 30"-42", A FIVE FOOT (5') DIAMETER MANHOLE BASE SHALL BE UTILIZED.
7. THE EXISTING SEWER SHALL BE SUPPORTED FROM ABOVE WITH SLINGS DURING ALL PHASES OF CONSTRUCTION. SLINGS ARE TO BE REMOVED ONLY AFTER CONCRETE BACKFILL WITHIN THE STRUCTURE HAS CURED.
8. FOR SANITARY SEWERS, PRIOR TO THE PLACEMENT OF CONCRETE AND GROUT A SIKA HYDROTITE DSS (OR APPROVED EQUAL) WATERSTOP SHALL BE INSTALLED BOTH AROUND THE EXISTING PIPE(S) AND ALONG THE PERIMETER OF THE KNOCKOUT OPENING(S) AT THE LOCATION(S) WHERE THE PIPE(S) WILL PENETRATE THE DOGHOUSE MANHOLE WALL. THE WATERSTOPS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

APPROVED <u>1-28-19</u>  CITY ENGINEER	<b>TYPICAL DOGHOUSE MANHOLE 6" THRU 42" PIPE</b>	CITY OF LANCASTER, OHIO DEPARTMENT OF ENGINEERING  <b>STANDARD CONSTRUCTION DRAWING</b>
REVISED: 11 JAN 2019		DWG. BY: ...DLD... CHK'D BY: ...SWW...
		<b>FILE NUMBER</b> <b>S-34</b> <small>3 of 3</small>



NOTES:

1. REFERENCE CITY OF LANCASTER STANDARD CONSTRUCTION DRAWING S-22 FOR THE SANITARY SEWER CONNECTION.
2. REFERENCE THE CITY OF LANCASTER CMS 915 FOR SPECIFICATIONS FOR WYE OR TEE FITTINGS AND CLEAN-OUTS.
3. REFERENCE THE CITY OF LANCASTER CMS 918 FOR SPECIFICATIONS FOR SANITARY HOUSE CONNECTION SERVICE.
4. THE WYE POLE SHALL BE TIMBER THAT HAS BEEN TREATED, IN GOOD CONDITION, STRAIGHT, SOUND, AND FREE FROM LARGE OR LOOSE KNOTS.
5. EXTEND THE WYE POLE TO A POINT 3' ABOVE THE GROUND LEVEL AND PAINT WITH GREEN PAINT
6. IF THE WYE POLE IS PULLED OUT OR BENT OVER, THE CONTRACTOR SHALL REMOVE THE ENTIRETY OF THE POLE AND REPLACE THE WYE POLE.
7. THE WYE POLE SHOULD BE PLACED ADJACENT TO THE END OF THE SERVICE.

APPROVED 10-14-20  
  
 CITY ENGINEER

SEWER TERMINATION  
LATERAL FOR FUTURE USE

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: ...ADH...  
CHK'D BY: ...MN...

FILE NUMBER  
S-35

REVISED: 14 OCT 20