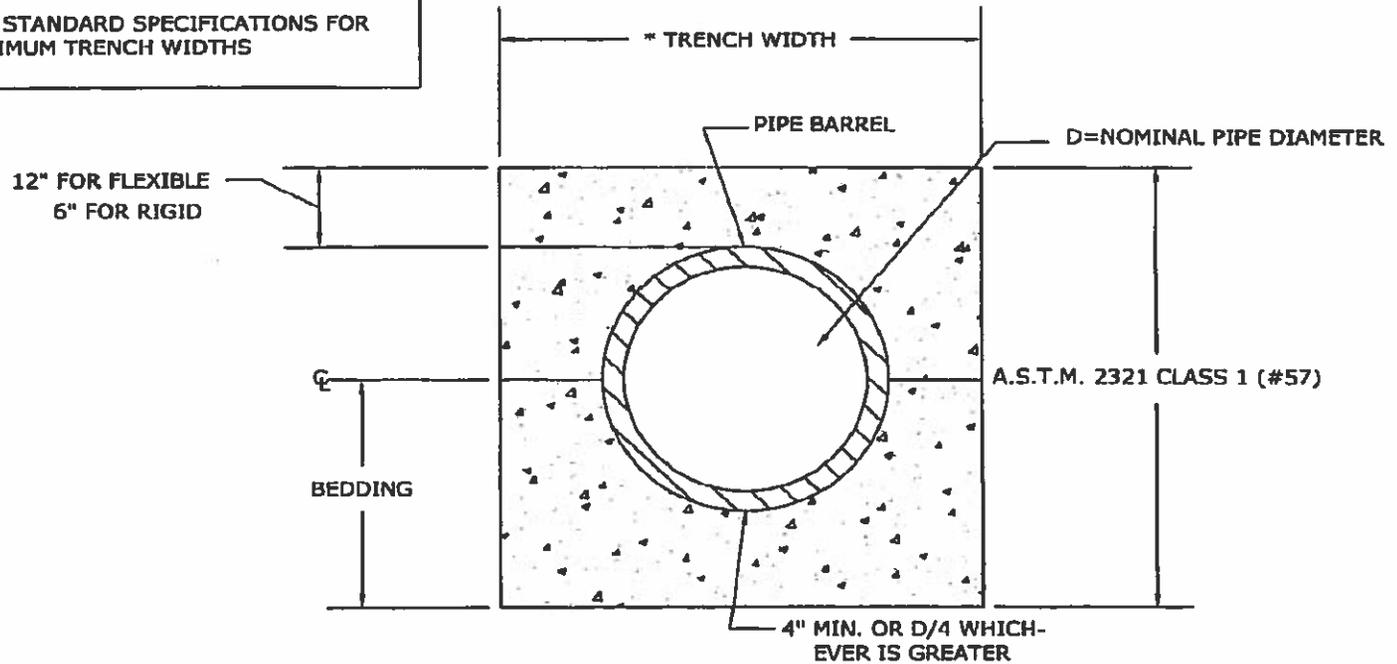


TYPICAL SEWER INSTALLATION

NO SCALE

*** NOTE:**

SEE STANDARD SPECIFICATIONS FOR
MINIMUM TRENCH WIDTHS



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016
Date

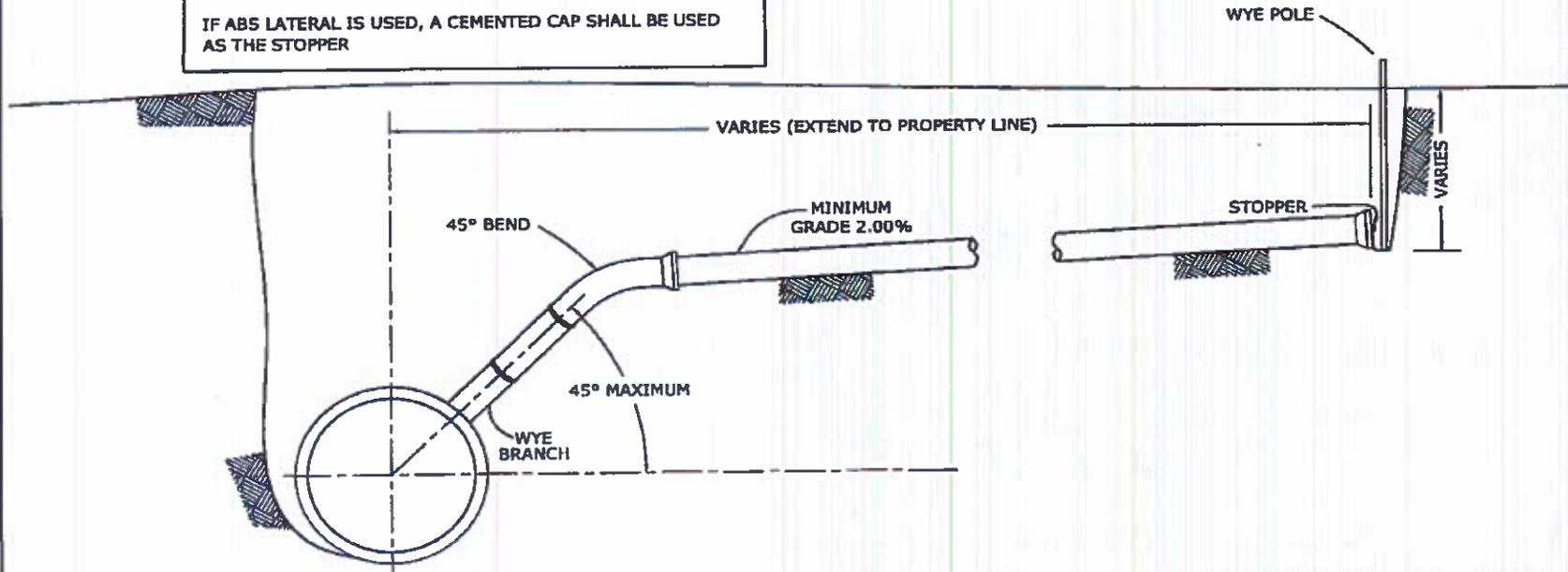
SAS-01

TYPICAL SERVICE CONNECTION

NO SCALE

NOTE:

IF ABS LATERAL IS USED, A CEMENTED CAP SHALL BE USED AS THE STOPPER



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent
12901 Beecher Gamble Road
Marysville, Ohio 43040
Phone 937-645-7350
Fax 937-645-7345

Approved:

Wastewater Superintendent

2/9/2016
Date

Drawing No.

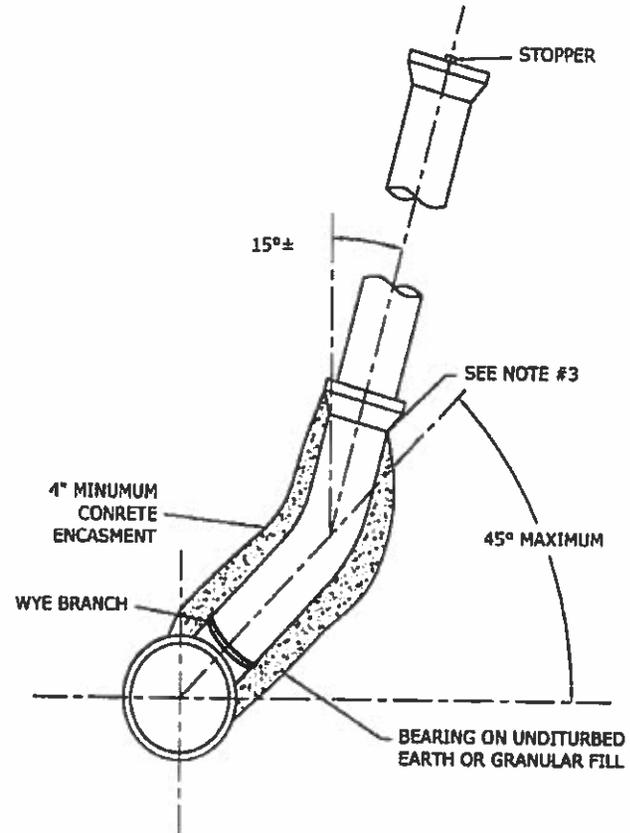
SAS-02

TYPICAL BRANCH CONNECTION & RISER PIPE

NO SCALE

NOTES:

- 1) RISER PIPE TO BE BEDDED SOLIDLY AGAINST ORIGINAL GROUND
- 2) 6" RISER PIPE TO BE INSTALLED FOR EACH WYE BRANCH WHERE THE COVER ON THE MAIN SEWER EXCEEDS 12'-0"
- 3) FOR ABS PIPE AT LEAST ONE COLLAR OR FITTING SHALL BE TOTALLY ENCASED WITH CONCRETE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

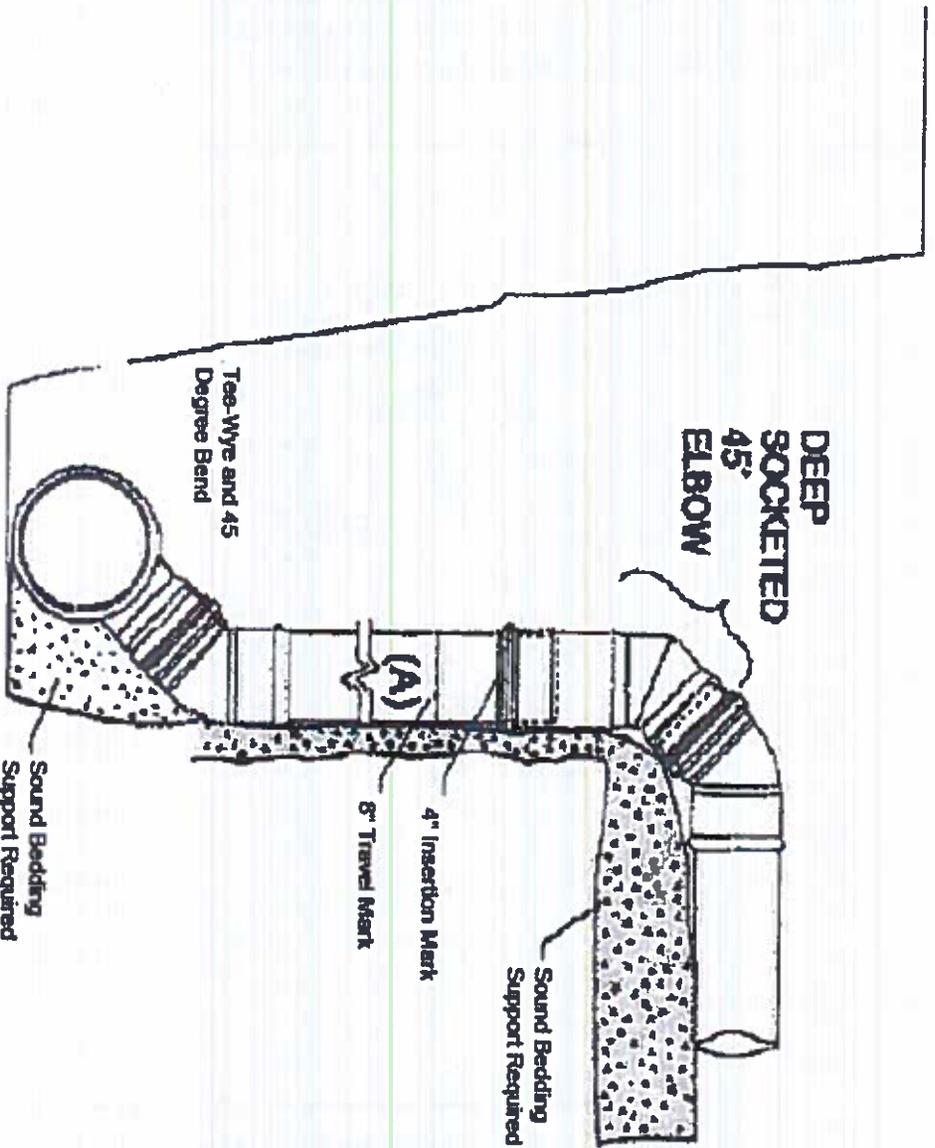
Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-03

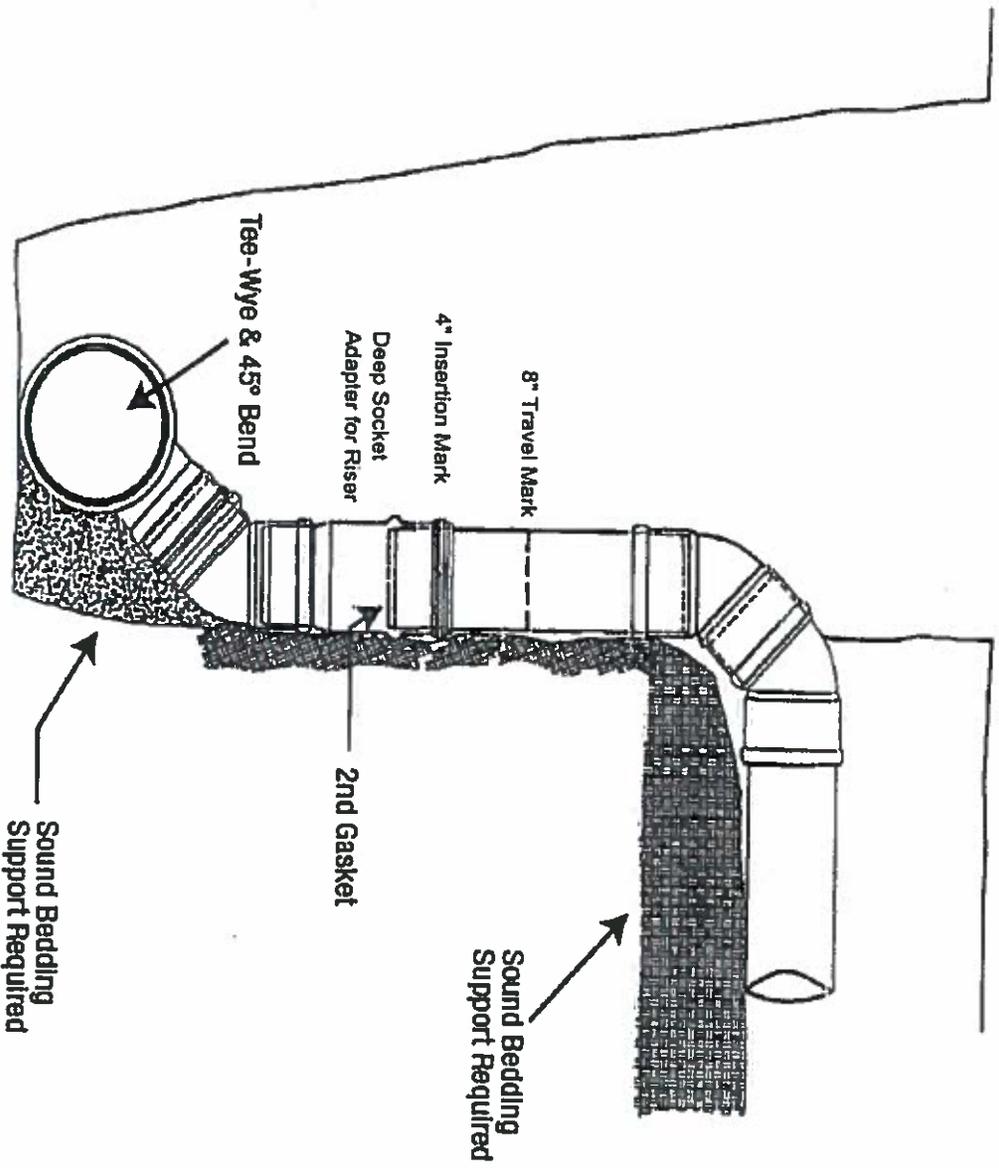


Typical Deep Socket Riser for Sanitary Service Laterals

The Deep Socket Elbow should be inserted 4" onto the Riser Pipe (A). Two lines should be marked on Riser Pipe (A). Mark at 4" for insertion and at 8" to measure any travel that may occur.

Deep Socket Adapters shall be GPK Products, or approved equal.

		<p>City of Marysville Division of Wastewater</p>		<p>STANDARD CONSTRUCTION DRAWING</p>	
<p>Approved: </p>		<p>Wastewater Superintendent</p>		<p>Deep Socket Elbow</p>	
<p>Date: 2/9/2016</p>				<p>Drawing No. SAS-04</p>	



Typical Deep Socket Adapter for the Riser on Sanitary Service Laterals

Deep Socket Adapters shall be GPK Products, or approved equal.



City of Marysville

Division of Wastewater

STANDARD CONSTRUCTION DRAWING

Deep Socket

Riser

Drawing No.

Approved:

[Signature]

2/9/2016

Wastewater Superintendent

Date

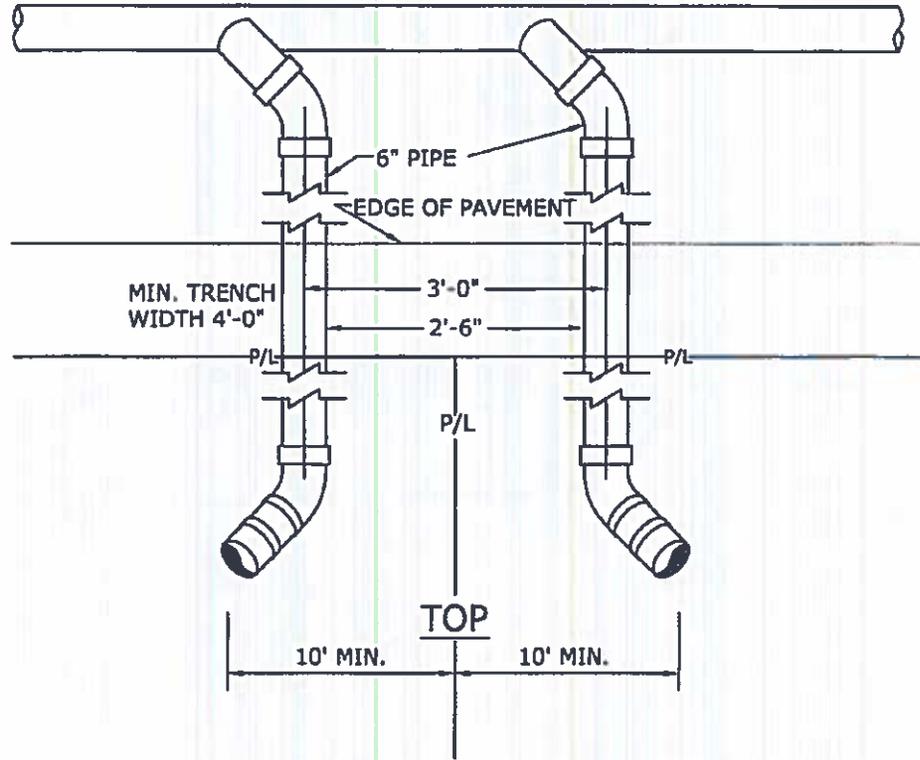
SAS-05

OPTIONAL DUAL LATERAL EXTENSION

NO SCALE

NOTE:

FOR USE ON STREET CROSSINGS AND
LATERALS EXCEEDING 50' IN LENGTH
TO LOTS OF 40' FRONTAGE OR LESS,
OR WITH WRITTEN APPROVAL BY THE
SANITARY ENGINEER



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

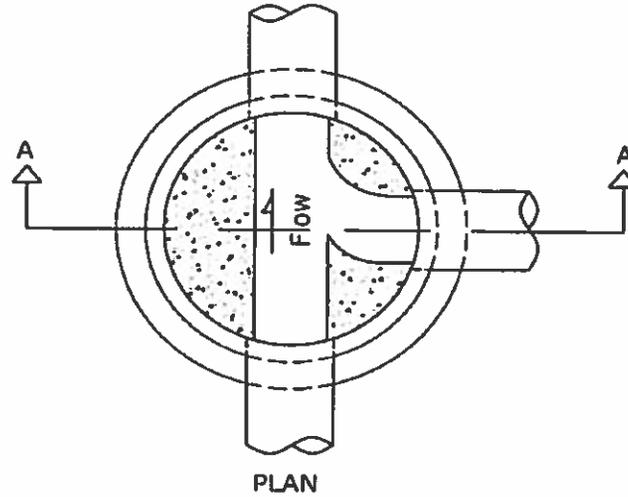
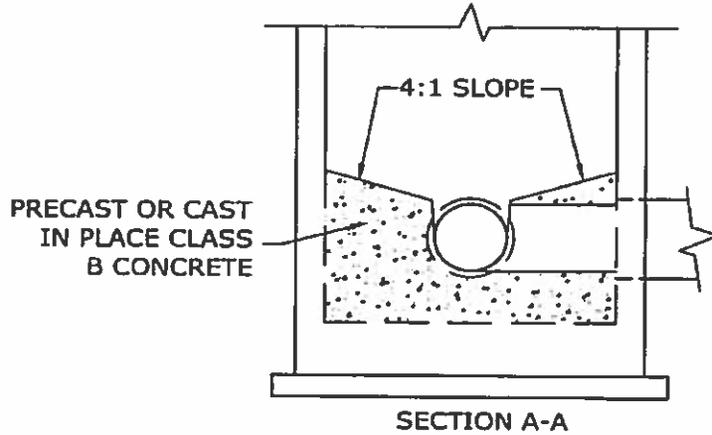
Wastewater Superintendent

2/9/2016
Date

SAS-06

MANHOLE CHANNEL

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-07

TYPICAL TYPE "A" PRECAST CONCRETE MANHOLE

NO SCALE

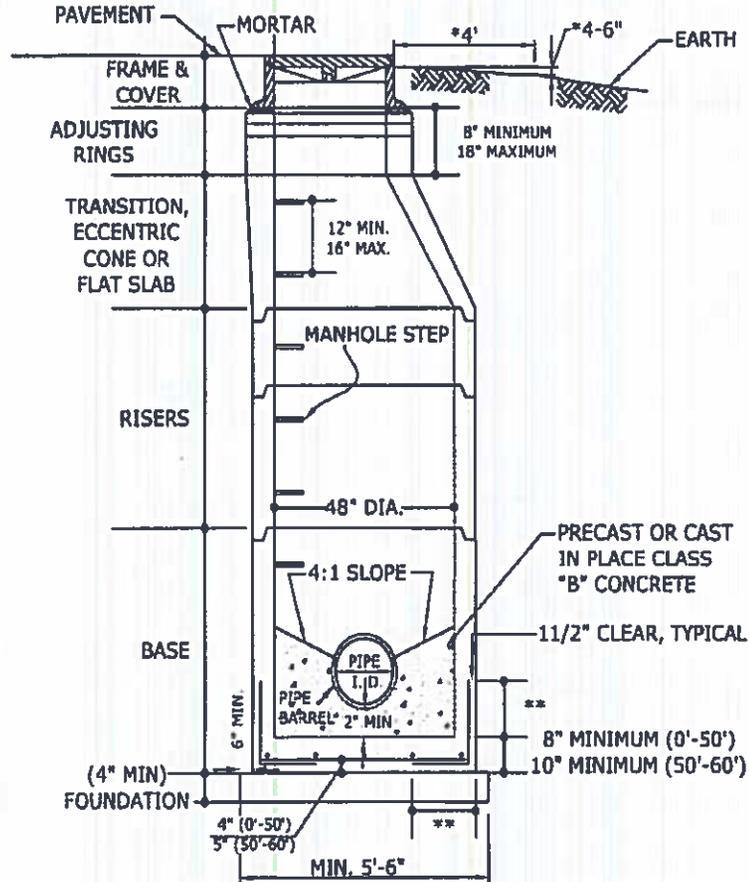
NOTES:

* 1) THESE FIGURES MAY BE ALTERED SLIGHTLY TO MEET EXISTING GROUND CONDITIONS, HOWEVER, SURFACE DRAINAGE SHOULD ALWAYS BE DIRECTED AWAY FROM THE MANHOLE

**2) 30 BAR DIAMETER, 12" MINIMUM

3) REINFORCEMENT BASED ON METAL BARS, IF WELDED WIRE FABRIC IS USED AREA MAY BE REDUCED BY 1/3

M.H. DEPTH	BASE SLAB REINFORCEMENT SQ. IN./FT. E.W.
0'-10'	0.17
10'-20'	0.22
20'-30'	0.27
30'-40'	0.32
40'-50'	0.36
50'-60'	0.32



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

[Signature]
Wastewater Superintendent

2/9/2016
Date

SAS-08

TYPICAL TYPE "B" PRECAST CONCRETE MANHOLE

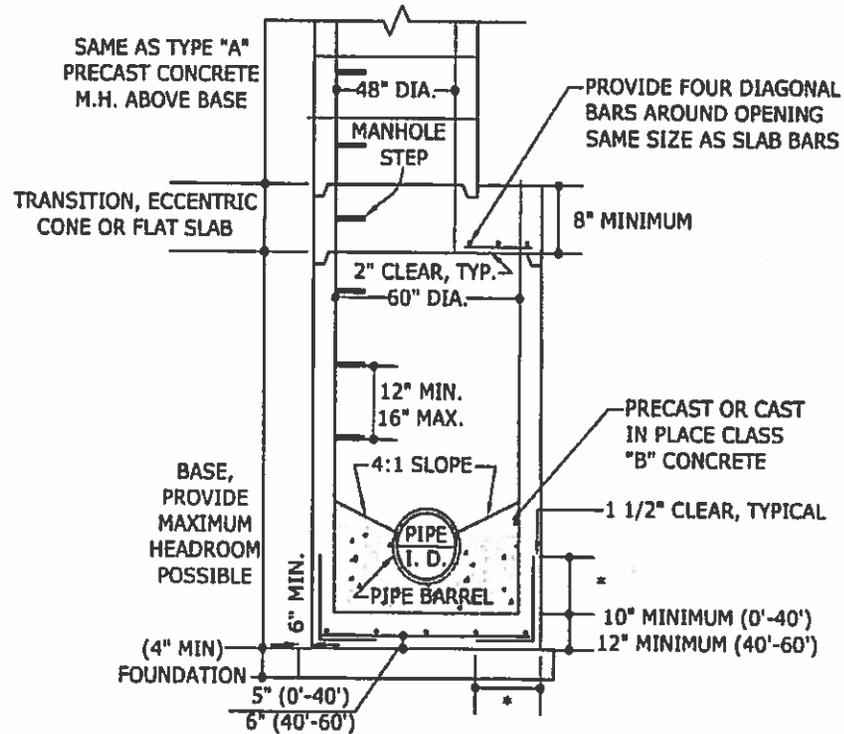
NO SCALE

NOTES:

*1)30 BAR DIAMETER, 12" MINIMUM

2)REINFORCEMENT BASED ON METAL BARS, IF WELDED WIRE FABRIC IS USED AREA MAY BE REDUCED BY 1/3

M.H. DEPTH	REINFORCEMENT SQ. IN./FT. E.W.	
	BASE SLAB	FLAT SLAB
0'-10'	0.16	0.17
10'-20'	0.26	0.32
20'-30'	0.35	0.44
30'-40'	0.43	0.57
40'-50'	0.46	0.69
50'-60'	0.50	0.82



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

[Signature]

Wastewater Superintendent

2/9/2016
Date

SAS-09

TYPICAL TYPE "C" PRECAST CONCRETE MANHOLE

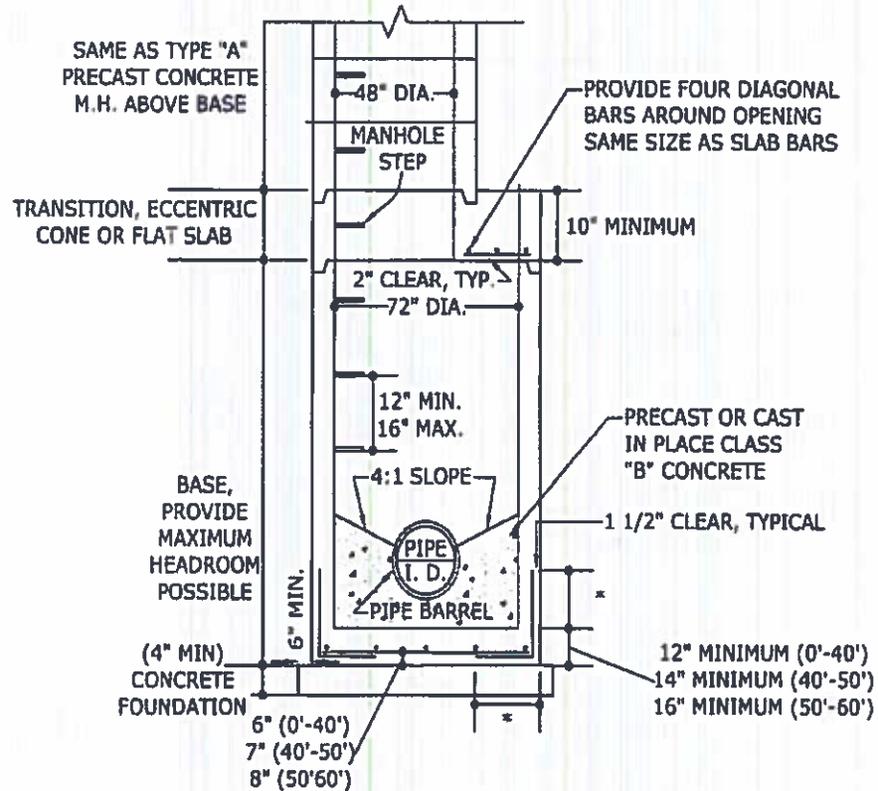
NO SCALE

NOTES:

*1) 30 BAR DIAMETER, 12" MINIMUM

2) REINFORCEMENT BASED ON METAL BARS, IF WELDED WIRE FABRIC IS USED AREA MAY BE REDUCED BY 1/3

M.H. DEPTH	REINFORCEMENT SQ. IN./FT. E.W.	
	BASE SLAB	FLAT SLAB
0'-10'	.014	0.13
10'-20'	0.28	0.29
20'-30'	0.40	0.45
30'-40'	0.52	0.60
40'-50'	0.55	0.76
50'-60'	0.57	0.91



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-10

TYPICAL TYPE "D" PRECAST CONCRETE MANHOLE

NO SCALE

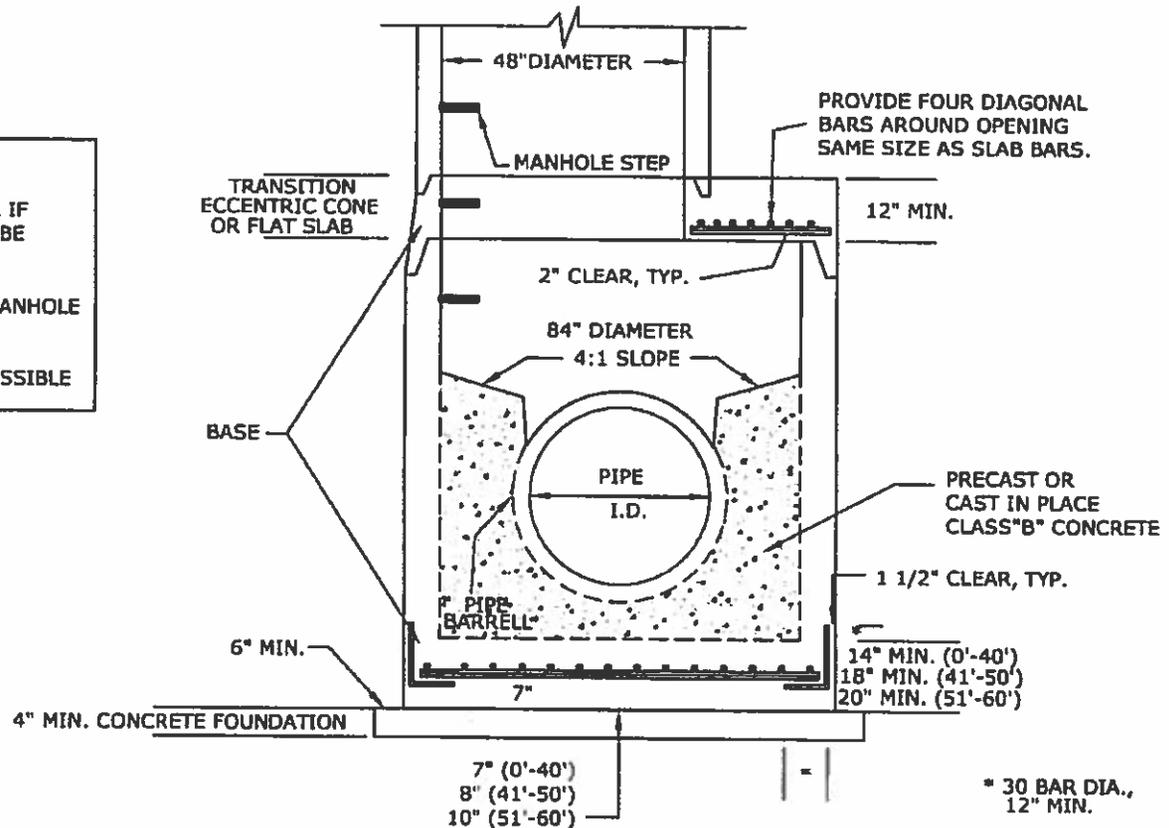
NOTES:

1) REINFORCEMENT BASED ON METAL BARS, IF WELDED WIRE FABRIC IS USED, AREA MAY BE REDUCED BY 1/3.

2) SAME AS TYPE "A" PRECAST CONCRETE MANHOLE ABOVE BASE

3) BASE, PROVIDE MAXIMUM HEADROOM POSSIBLE

M.H. DEPTH	REINFORCEMENT	
	SQ. IN. BASE SLAB	FT. E.W. FLAT SLAB
0'-10'	0.14	0.12
11'-20'	0.31	0.30
21'-30'	0.46	0.49
31'-40'	0.62	0.67
41'-50'	0.60	0.85
51'-60'	0.64	1.04



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

[Signature]

Wastewater Superintendent

2/9/2016
Date

SAS-11

ALTERNATE BASE FOR PRECAST CONCRETE MANHOLE CAST IN PLACE, TYPE I

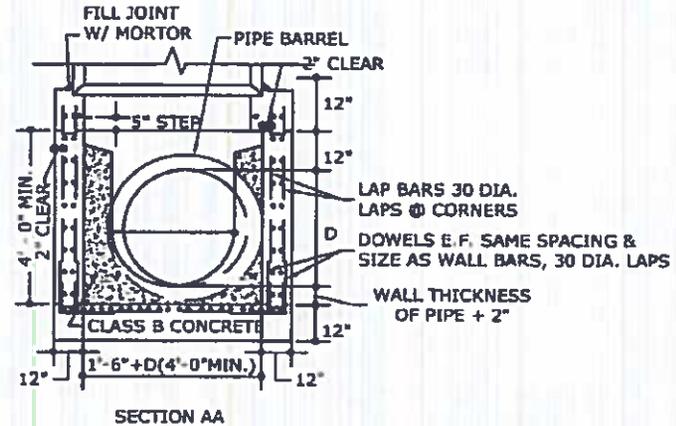
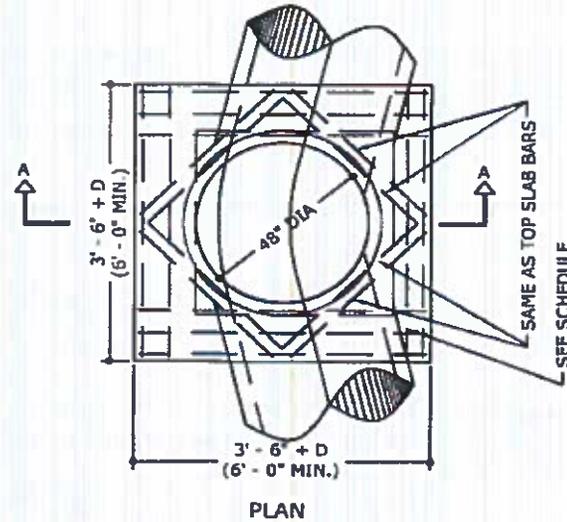
—————NO SCALE—————

PIPE SCHEDULE 8" TO 48" INCLUSIVE			
DEPTH OF FILL TO TOP OF SLAB	REINFORCEMENT		
	TOP SLAB	SIDE WALLS	BOTTOM SLAB
0' - 10'	#5@6", E.W.	#5@12", E.W., E.F.	#5@12", E.W.
10' - 20'	#5@6", E.W.	#5@12", E.W., E.F.	#5@6", E.W.
20' - 30'	#6@9", E.W.	#6@9", E.W., E.F.	#7@9", E.W.
30' - 40'	#6@6", E.W.	#6@8", E.W., E.F.	#6@5", E.W.
40' - 50'	#7@6", E.W.	#6@6", E.W., E.F.	#7@6", E.W.
50' - 60'	#7@6", E.W. ⁽¹⁾	#6@5", E.W., E.F. ⁽²⁾	#7@6", E.W. ⁽³⁾

(1) 14" SLAB
(2) 14" WALL

PIPE SCHEDULE 54" TO 72" INCLUSIVE			
DEPTH OF FILL TO TOP OF SLAB	REINFORCEMENT		
	TOP SLAB	SIDE WALLS	BOTTOM SLAB
0' - 10'	#6@6", E.W.	#5@12", E.W., E.F.	#5@6", E.W.
10' - 20'	#6@6", E.W.	#5@6", E.W., E.F.	#6@6", E.W.
20' - 30'	#7@6", E.W.	#6@6", E.W., E.F.	#7@6", E.W.
30' - 40'	#7@6", E.W.	#6@6", E.W., E.F.	#7@6", E.W.
40' - 50'	#9@6", E.W.	#9@6", E.W., E.F.	#10@6", E.W.
50' - 60'	#10@6", E.W. ⁽¹⁾	#9@6", E.W., E.F. ⁽²⁾	#11@6", E.W. ⁽³⁾

(1) 14" SLAB
(2) 14" WALL



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent
12901 Beecher Gamble Road Phone 937-645-7350
Marysville, Ohio 43040 Fax 937-645-7345

Approved: _____

[Signature]

Wastewater Superintendent

2/9/2016
Date

Drawing
No.

SAS-12

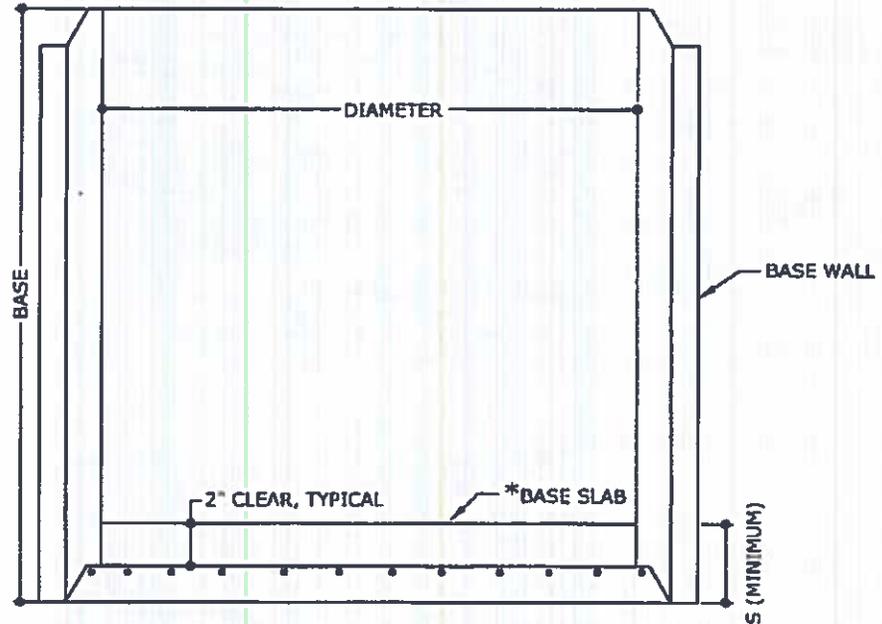
ALTERNATE BASE FOR PRECAST CONCRETE MANHOLE

NO SCALE

M. H. TYPE	DIA.	S		
		M. H. DEPTH		
		0'-40'	40'-50'	50'-60'
"A"	48"	7"	7"	8"
"B"	60"	8"	9"	9"
"C"	72"	9"	10"	11"
"D"	84"	10"	11"	12"

NOTE:
REINFORCEMENT BASED ON METAL BARS,
IF WELDED WIRE FABRIC IS USED AREA
MAY BE REDUCED BY 1/3.

M. H. DEPTH	REINFORCEMENT SQ. IN. / FT. E.W.			
	"A"	"B"	"C"	"D"
0'-10'	0.31	0.27	0.24	0.23
10'-20'	0.39	0.44	0.47	0.52
20'-30'	0.48	0.59	0.68	0.68
30'-40'	0.56	0.75	0.89	1.05
40'-50'	0.64	0.73	0.93	1.14
50'-60'	0.56	0.86	0.97	1.21



* IF THE BASE IS TO BE INSTALLED WITH THE BASE SLAB ATTACHED, PRECAUTIONS SHALL BE TAKEN TO PREVENT THE SEPERATION OF THE BASE SLAB FROM THE WALL.



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent
12901 Beecher Gamble Road Phone 937-645-7350
Marysville, Ohio 43040 Fax 937-645-7345

Approved: _____

Wastewater Superintendent

2/9/2016
Date

Drawing
No.

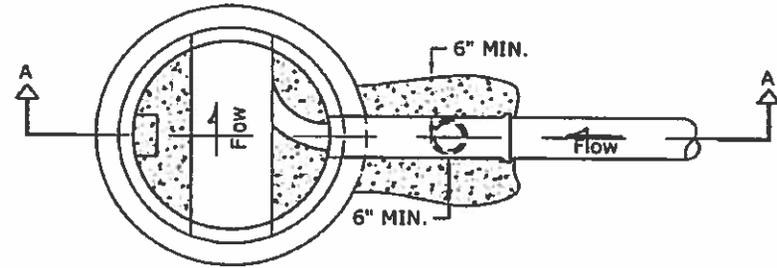
SAS-14

TYPICAL DROP MANHOLE

NO SCALE

NOTE:

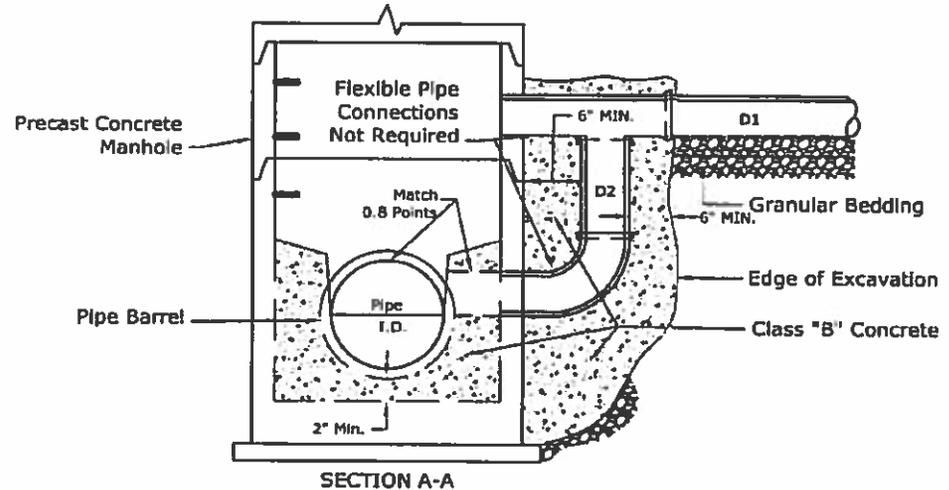
DROP MANHOLES SHALL BE USED WHEN THE DIFFERENCE IN ELEVATION BETWEEN THE INVERT AND THE OUTLET EXCEEDS 2.0 FEET.



NOT TO SCALE

PLAN

TABLE OF DIMENSIONS	
D1	D2 (MIN.)
6"	6"
8"	6"
10"	6"
12"	8"
15"	8"
18"	10"
21"	10"
24"	12"
27"	15"
30"	18"



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

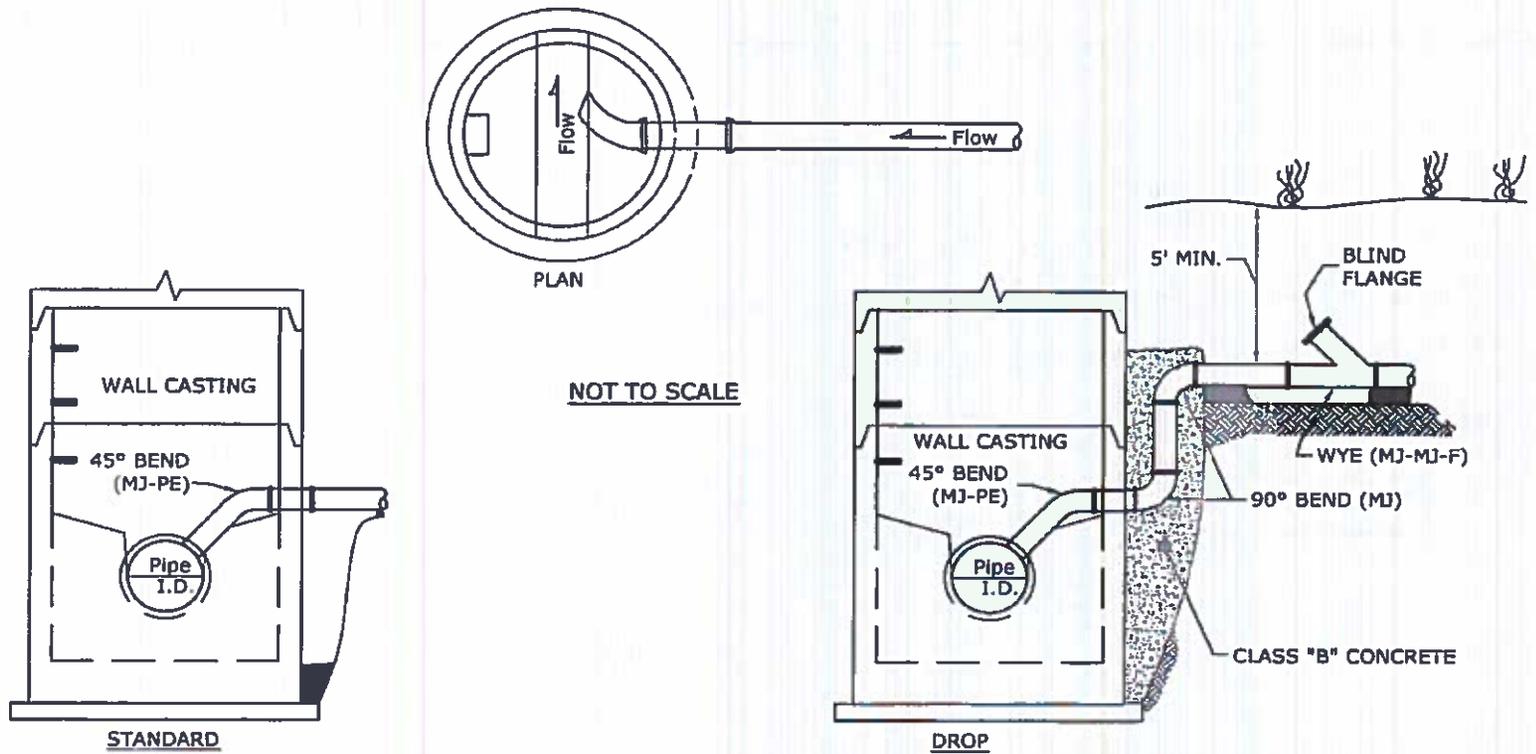
Wastewater Superintendent

2/9/2016
Date

SAS-15

TYPICAL FORCE MAIN CONNECTION TO MANHOLE

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent
12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

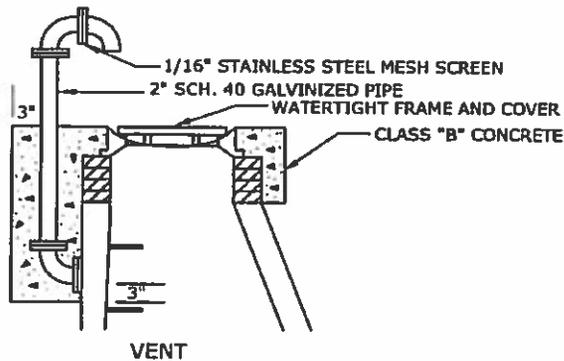
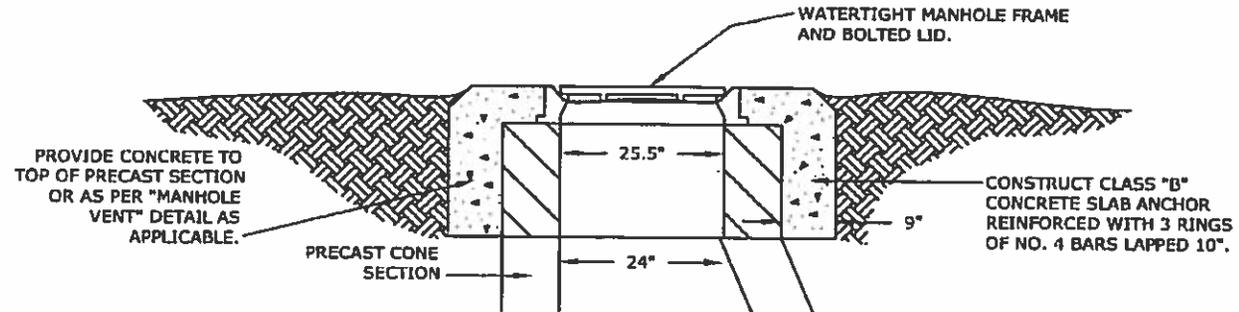
Wastewater Superintendent

2/9/2016
Date

SAS-16

TYPICAL WATERTIGHT MANHOLE CASTING

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

[Handwritten Signature]
Wastewater Superintendent

2/9/2016
Date

SAS-17

TYPICAL MANHOLE MARKING

NO SCALE

EXTERIOR DESIGN: THE MARKER POST MUST BE TRIANGULAR IN SHAPE WITH EACH SIDE AT LEAST 3" WIDE. A 2 7/8" WIDE DECAL SHALL FIT ON EACH SIDE OF THE MARKER. DECALS SHALL BE PLACED ON ALL THREE FLAT SIDES TO ENSURE THAT A WARNING MESSAGE CAN BE SEEN FROM ANY DIRECTION.

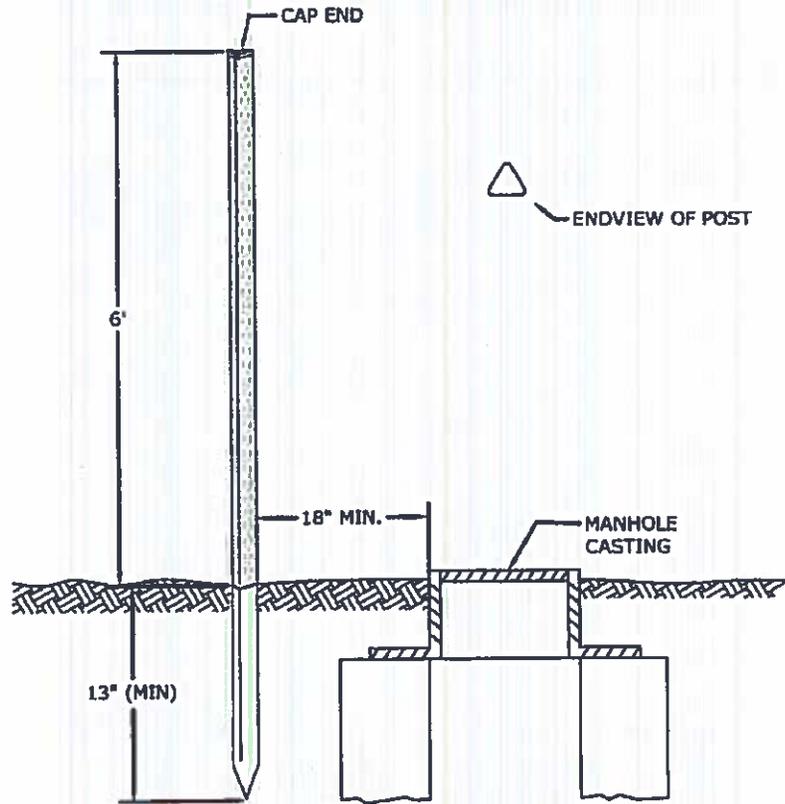
FLEXIBLE STYLE: THE MARKER SHALL BE FLEXIBLE AND REBOUND IF HIT BY AN AUTOMOBILE. THE MARKER SHALL WITHSTAND A MINIMUM OF FIVE VEHICLE IMPACTS AT 45MPH.

WEATHERING STABILITY: THE MARKING POST SHALL NOT SIGNIFICANTLY FADE OR BECOME BRITTLE WHEN EXPOSED TO ULTRAVIOLET LIGHT FOR A MINIMUM OF TEN YEARS. THE MARKING POST SHALL BE TEMPERATURE STABLE FROM -40° TO +150°.

SOIL ANCHOR: SOIL ANCHORS SHALL BE GALVANIZED STEEL, 13" LONG (MIN.) AND HAVE PUCH TABS WHICH LOCK INTO THE TRIANGULAR POST WHEN INSERTED IN THE ANCHOR. ANCHORS ARE TO BE INSTALLED FLUSH WITH THE GROUND SURFACE.

ACCEPTABLE MANUFACTURERS: REPNET TRIVIEW WITH™ SOIL ANCHOR OR APPROVED EQUAL

DECAL: DETAILS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

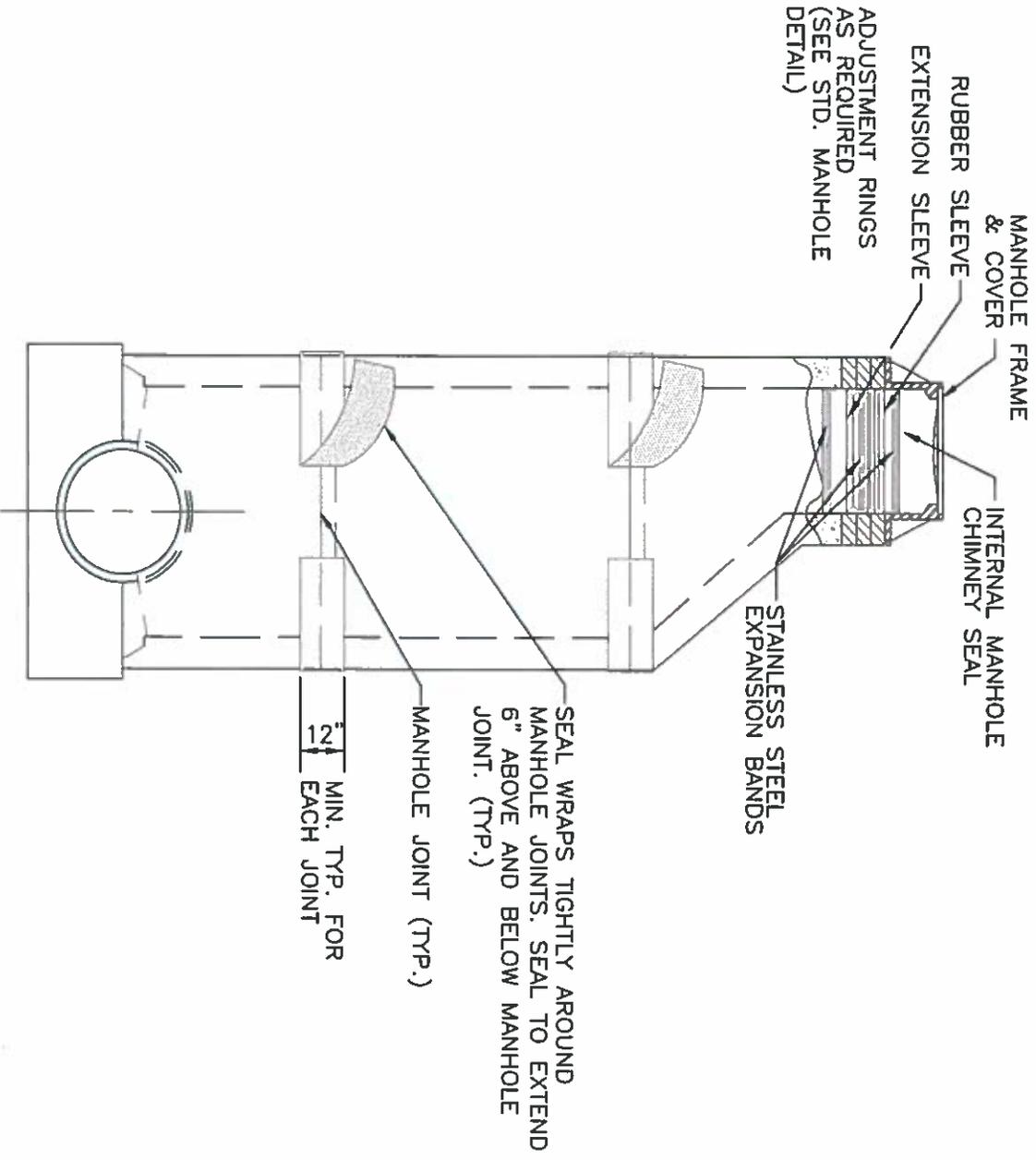
Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-18



- NOTES:**
1. MANHOLE SEAL SHALL BE WRAPIDSEAL, MANUFACTURED BY CANUSA-CPS, OR APPROVED EQUAL.
 2. MANHOLE JOINT SEAL SHALL BE INSTALLED ON ALL BARREL JOINTS OR AS DIRECTED BY THE ENGINEER.
 3. INTERNAL MANHOLE CHIMNEY SEAL SHALL CONSIST OF A FLEXIBLE RUBBER SLEEVE, INTERLOCKING EXTENSIONS, AND STAINLESS STEEL EXPANSION BANDS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS, OR APPROVED EQUAL.

 City of Marysville		STANDARD CONSTRUCTION DRAWING
Division of Wastewater		Chimney Seal and Manhole Seal Detail
Approved: 	Date: <u>2/9/2016</u>	Drawing No. SAS-19
Wastewater Superintendent		

NOTES

GENERAL : Manhole sections shall conform to ASTM C478.

Manhole joints shall conform to ASTM C443.

Openings for pipes shall be precast into the manhole sections. Openings shall be fitted with "Kor-N-Seal" rubber boots or approved equal.

Openings for the inlet and outlet sewer pipe shall be cast in the precast section unless the manhole base is built to an elevation two inches above the top of the outlet pipe.

Openings for pipes 18" diameter or less entering the manhole above the spring line of the outlet sewer may be cut in the field provided the portion of the pipe (15" or 18" diam.) inside the manhole is cut to fit the circumference of the manhole. pipes over 18" diameter entering the manhole above the spring line of the outlet sewer shall be connected to the manhole by a tee connection precast with the barrel of the manhole.

All joints at pipe openings in the manhole shall be thoroughly caulked with cement mortar or other suitable material to prevent infiltration of earth into the manhole.

MATERIALS : Concrete for the manhole base and connection box shall be class "C".

Precast reinf. conc. manhole sections and domes shall comply with the requirements of 706.13.

Minimum wall thickness shall be 5 inches for 48" sections and 6 inches for 60" sections. 1 1/4" holes for handling may be cast in domes and sections. Sections may be set with tongue end either up or down.

In lieu of the design shown for the junction between the manhole base and the manhole barrel, the base may be flat and the barrel may have a square end without tongue or groove and shall be set in a bed of mortar.

Manhole castings shall be: Neenah R-1762, or East Jordan Ironworks 1661, Frame and Cover with self sealing gasket, or approved equal, with wording "Marysville Sanitary Sewer" cast into the center of the lid.

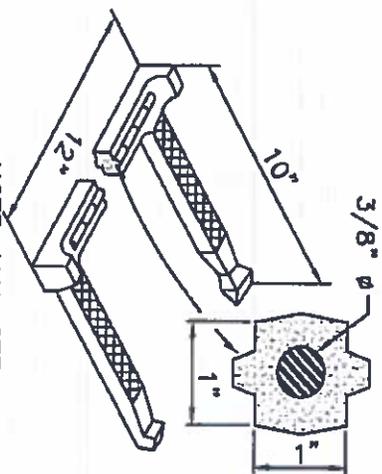
STEPS shall meet the requirements of 604.

Manhole steps shall be vertically aligned and be reinforced plastic.

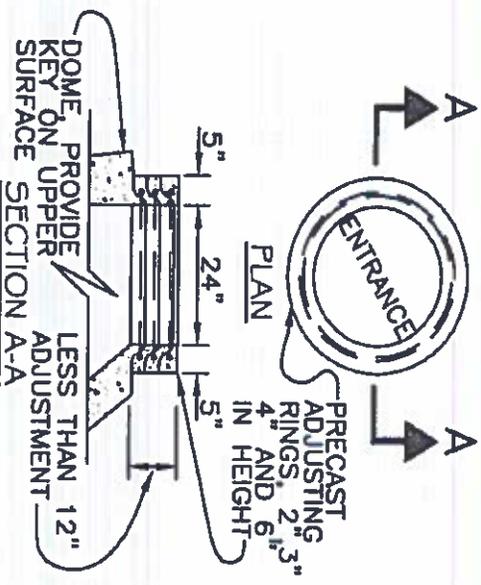
Manhole steps must be precast in place.

Reinforcing steel shall have 2 inch clearance except where otherwise specified.

Bulkheads shall be constructed by providing P.V.C. cap & timber blocking.

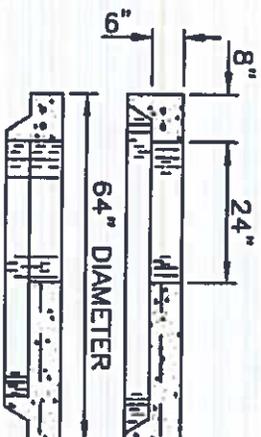


MANHOLE STEP DETAIL



METHODS

OF ADJUSTING TO GRADE



City of Marysville

Division of Wastewater



STANDARD CONSTRUCTION DRAWING

Standard Manhole

Details

Drawing No. SAS-20

Approved:

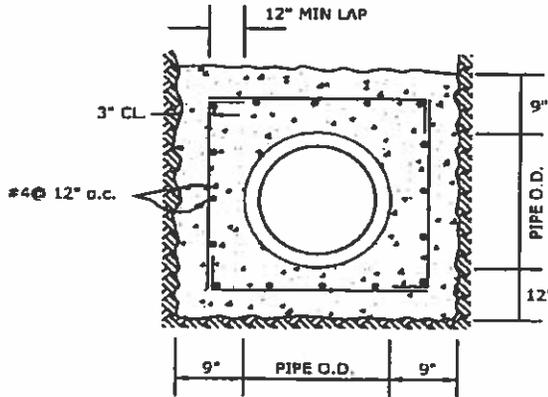
2/9/2016

Wastewater Superintendent

Date

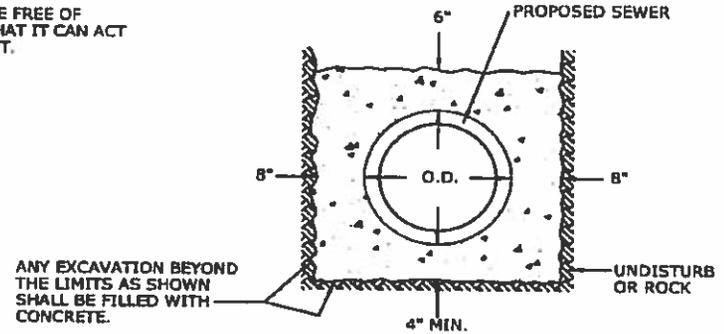
TYPICAL CONCRETE ENCASEMENT

NO SCALE



REINFORCED CONCRETE ENCASEMENT

NOTE: THE ENCASEMENT LIMITS SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION SUCH THAT THE ENCASEMENT TERMINATES AT A SEWER PIPE JOINT. THE JOINT SHALL BE FREE OF ENCASEMENT SO THAT IT CAN ACT AS A FLEXIBLE JOINT.



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

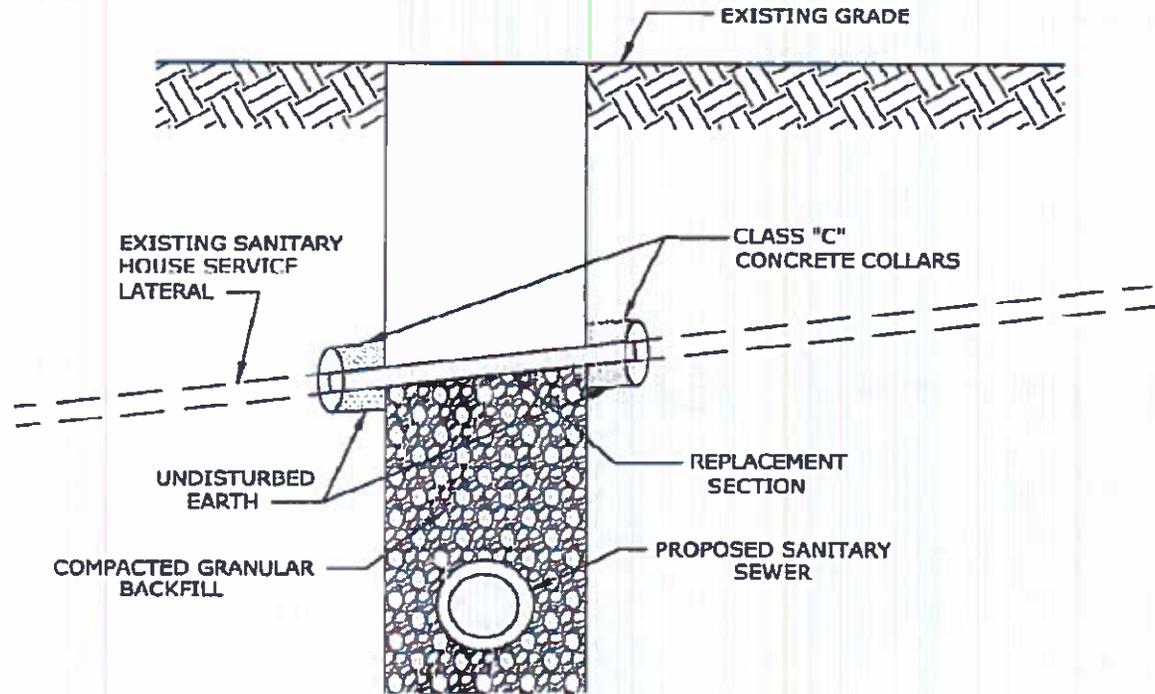
[Signature]
Wastewater Superintendent

2/9/2016
Date

SAS-22

HOUSE SANITARY SERVICE REPLACEMENT DETAIL

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent
12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

[Signature]

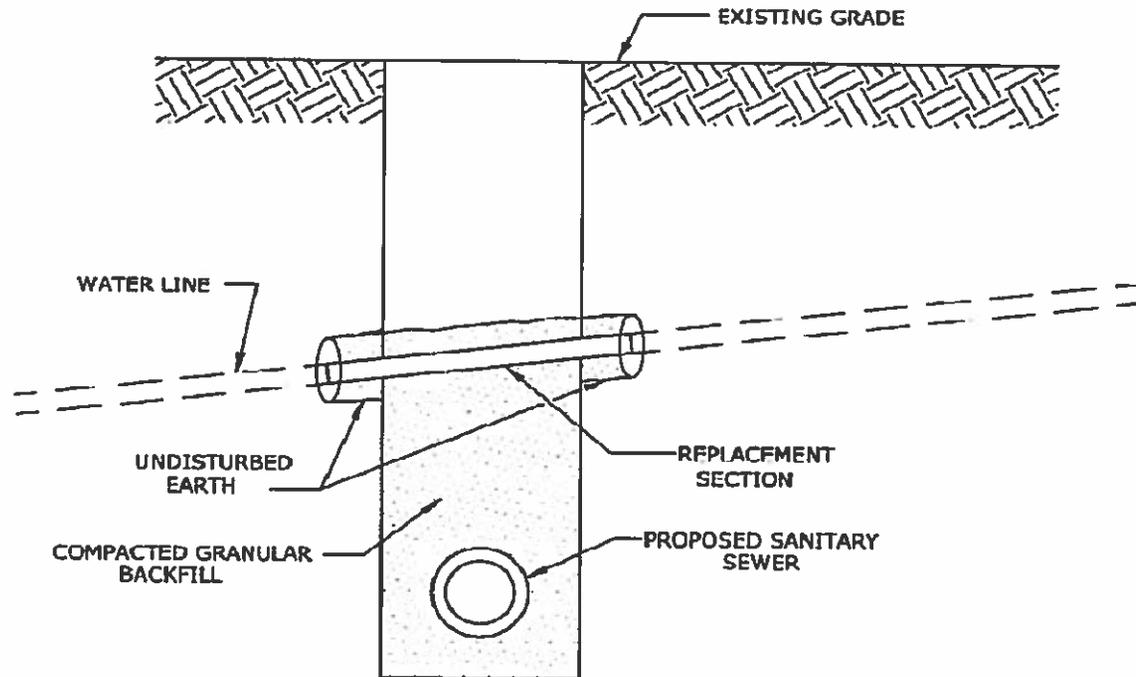
Wastewater Superintendent

2/9/2016
Date

23

WATERLINE CROSSINGS

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved: _____

[Signature]

Wastewater Superintendent

2/9/2016

Date

SAS-24

**City of Marysville
Public Service Department
Streets and Storm Water**

Pavement and Utility Cut Repair Standards

GENERAL NOTES

No person, firm, corporation or political subdivision shall do or permit to be done by its agents or employees any of the following activities without first obtaining a permit therefor from the City Engineer or his or her duly authorized representatives:

- (a) Make any excavation in any paved or concrete surface;
- (b) Remove, break or make holes in the pavement of the streets or other public ways or places, or cut any curb;
- (c) Construct, build, erect or place any permanent article or structure, or hinder visibility of oncoming traffic, under or upon any street, alley, lane or public way or place; or
- (d) Make any improvement or change in the surface of any street, alley, lane or other public way or place by grading, graveling, paving or curbing.

Scope of Work

This work shall consist of pavement removal, necessary excavation, and pavement replacement, in accordance with the City of Marysville Construction and Material Specifications. (MCMMS)

Procedures used for pavement removal and replacement shall not cause spalling or cracking to the adjacent pavement.

In the event that the contractor is unable to complete the pavement replacement in time for the street to be opened to traffic as indicated on the permit, the excavation shall be filled and a bituminous patch with a durable surface placed. A steel plate may be used to cover the excavation if approved by the City Engineer. The contractor will be responsible for maintaining these patches while they are in service. Placing, maintaining, removal and disposal of the patches shall be at the contractors expense.

When ODOT 613 (LSM) is used as a backfill, no pavement shall be placed until the bleed water has evaporated, drained, or removed from the surface.

The backfilling pavement repair and/or heatwelding shall be done by the contractor or permittee in accordance with MCMMS.

Restoration of any sidewalk, curb, street pavement, etc., shall occur no later than 30 days after conclusion of any utility repair or installation activity. Construction activity completed December through April shall be permanently resolved no later than May 31. Additional permits shall not be issued until the violations are corrected to the satisfaction of the City Engineer.

**City of Marysville
Public Service Department
Streets and Storm Water**

Pavement and Utility Cut Repair Standards

GENERAL NOTES (Cont.)

A small lateral trench or small pavement area shall be defined as 5 feet or less in width and/or no greater than 100 feet in length. When repair areas exceed one or both of these dimensions, the pavement repair section shall conform to a minimum 2 inches of 448 Type I asphaltic concrete placed on either 7 inches of either 301 asphalt or 305 concrete base. New pavement thickness shall match the existing pavement if values exceed the minimums shown above. Area is to be heat welded to include the cut and extend for 6 inches beyond each side of the cut to a depth of 2 inches. Heat weld shall conform to City of Marysville Supplemental Specification 1541.

When a trench exceeds 100 feet in length, the repair shall include planing the full lane width to a depth of 1 ¼ inches over the entire length of the trench. The planed area shall be paved with a paver in accordance with ODOT CMS. If trench crosses lanes, all affected lanes shall be planed and resurfaced as described above. Planed area shall have ODOT 407 tack coat applied before placing pavement. Joint sealing shall be done to exposed joints in conformance with ODOT 409.

Any cold mix that was placed as a temporary repair shall be removed and replaced with ODOT 448 Type I asphalt and is to be heat welded as soon as asphalt is available.

Special Notes

Note A: When using Low Strength Mortar (LSM), the optional fill area over the conduit may be backfilled with ODOT Type 1, 2, or 3 material, for a distance not to exceed 1 foot. A protective barrier of visqueen or similar material is permitted.

Note B: For Type I and Type II cut repairs, the area to be heat welded is to include the cut and extend for 6 inches beyond each side of the cut for a nominal depth of 2 inches.

Note C: For Type I and Type II pavement repair, the Item 448 Type I or cold mix shall be placed in lifts not to exceed 3 inches, and compacted with a combination vibratory plate compactor, or a vibratory steel wheeled roller with a minimum certified force of 2000 pounds. In all cases the surface lift shall be compacted with the vibratory steel wheeled roller. When placing cold mix full depth, material shall be 70 degrees or above.

Note D: Cold mix shall be HCM cold mix or other cold mix approved by the City of Marysville. In lieu of cold mix, the contractor may stockpile 448 Type I asphalt and reheat it to place in cut as pavement repair. Type II pavement replacement shall consist of full depth HPM cold mix for small excavations. Large excavations shall require a minimum of 7 inches of fast setting Portland cement and 2 inches of HPM cold mix.

Note E: The cold mix is to be replaced with Item 448 Type I asphalt which is to be heat welded as set forth in Note B. This work shall be performed as soon as asphalt is available.

Note F: Repair of Brick Streets

1. Bricks removed from a repair area shall be stored in a safe place by the contractor for reuse. The contractor will be responsible for replacing any bricks that are stolen or damaged, at no additional cost to the city.
2. Bricks supplied by the contractor must first be approved by the city before they are used.
3. Saw cutting: All partial bricks shall be sawcut. Further, no brick will be permitted to be cut for replacement to a length less than half its original length. This may require that adjacent bricks be saw cut.
4. The perimeter faces of the existing base material shall be cut back to as nearly vertical orientation as possible. If shearing of the adjacent base results, the contractor may be paid for the additional areas of removal as described on the attached detail sheet.
5. The maximum width of a brick mortar joint shall be ½". This restriction shall also apply to the joint formed adjacent to the perimeter of the repair area, where the rows may not be parallel to one another.
6. Mortaring of Joints: All joints shall be mortared with a 50/50 mixture by volume of sand and cement so as to provide a flush finish. This may require more than one application. Further, mechanical vibration will be required for consolidation of dry mortar mix.
7. Allowable base material shall be determined by the trench size as applicable for small or large excavations, as specified on page 3 of 7.

NOTE G: For alley repairs, the proposed pavement replacement shall conform to the existing type and thickness of pavement. Chip and Seal type alleys shall require matching the existing thickness of pavement with the appropriate combination of materials based on the size of the excavation. The minimum shall consist of 3 inches of Item 448 Type 1 asphaltic concrete. Finish concrete pavement is not permitted. Materials used shall conform to the City of Marysville CMS.

If more than 1/3 of the alley is removed, the pavement shall be replaced as per typical, and then the total width of pavement shall be overlaid for the entire length of the trench.

NOTE H: Item 304 – Compacted granular Backfill:

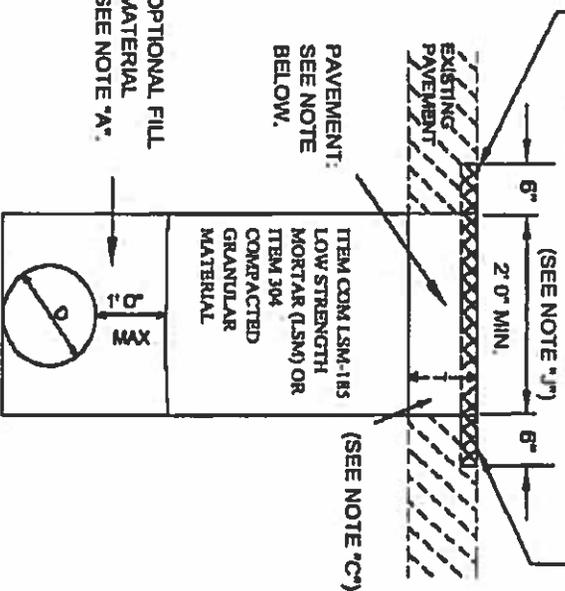
This method of backfill requires full time City inspection. A fee for the inspection must be posted when the permit is issued.

NOTE J: The trench width for small pipes and conduits shall be of sufficient width to allow for the proper placement and compaction of the backfill material. The pavement portion of the trench shall be a minimum of two (2) feet wide. This is to allow for the proper compaction of the asphalt pavement. If the trench is less than two (2) feet in width, the pavement shall be cut back to provide the 2 feet minimum width for paving.

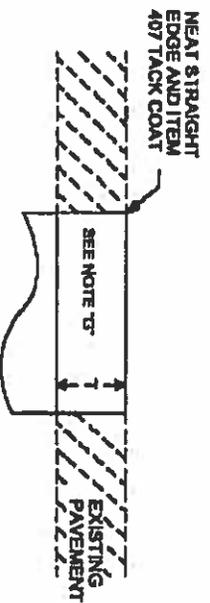
NOTE K: Item numbers on the following standards represent ODOT Construction and Material Specifications.

HEAT WELDED ASPHALT SURFACE
MINIMUM DEPTH 2"

NEAT STRAIGHT EDGE AND ITEM 407 TACK COAT.
AREA HATCHED IS TO BE HEAT WELDED.
SEE SUPPLEMENTAL SPECIFICATION 1541



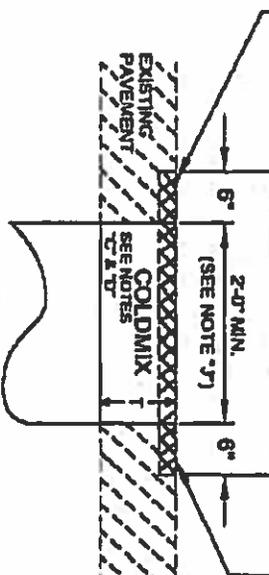
TYPE I
STANDARD FLEXIBLE ASPHALT REPAIR WITH
HEATWELDED SURFACE. (SEE NOTE *B*)



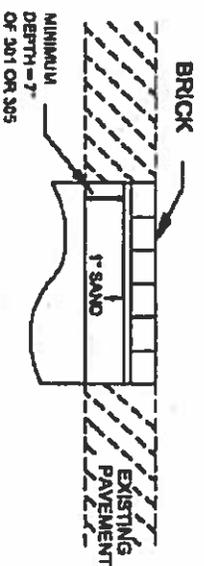
TYPE IV
ALLEY REPAIR

HEAT WELDED ASPHALT SURFACE
MINIMUM DEPTH 2"

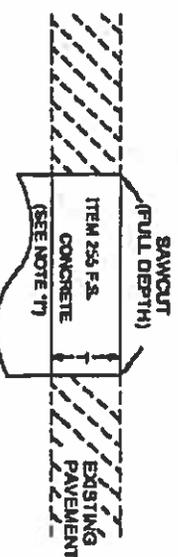
NEAT STRAIGHT EDGE AND ITEM 407 TACK COAT.
AREA HATCHED IS TO BE HEAT WELDED.
(SEE NOTE *B*)



TYPE II
WINTER OPERATIONS
FLEXIBLE ASPHALT REPAIR
WITH HEATWELD SURFACE
(SEE NOTE *E*)



TYPE III
BRICK STREET REPAIR
(SEE NOTE *F*)



TYPE V
CONCRETE STREET REPAIR
OR
CONCRETE BUS PAD

NOTE: BACKFILL FOR ALL TYPES SHALL MEET THE REQUIREMENTS SHOWN IN TYPE I ABOVE.
T: MATCH EXISTING PAVEMENT THICKNESS, HOWEVER, MINIMUM OF 9" ON ALL STREET CUTS.



City of Marysville
Division of Engineering

STANDARD CONSTRUCTION DRAWING

Approved:

City Engineer

Date

STANDARD
PAVEMENT REPAIR

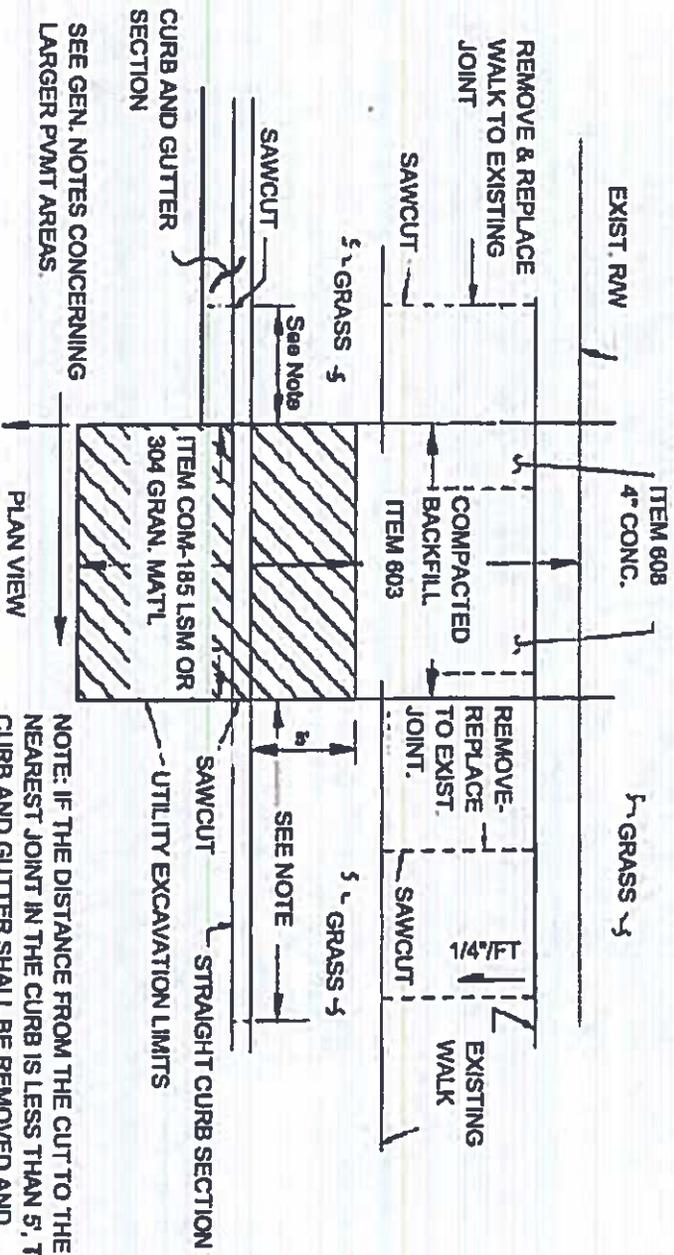
Drawing

No.

STR-04

Sht. 4 of 6

SIDEWALK AND CURB REPAIR DETAILS



City of Marysville
Division of Engineering

STANDARD CONSTRUCTION DRAWING

STANDARD

Drawing

PAVEMENT REPAIR

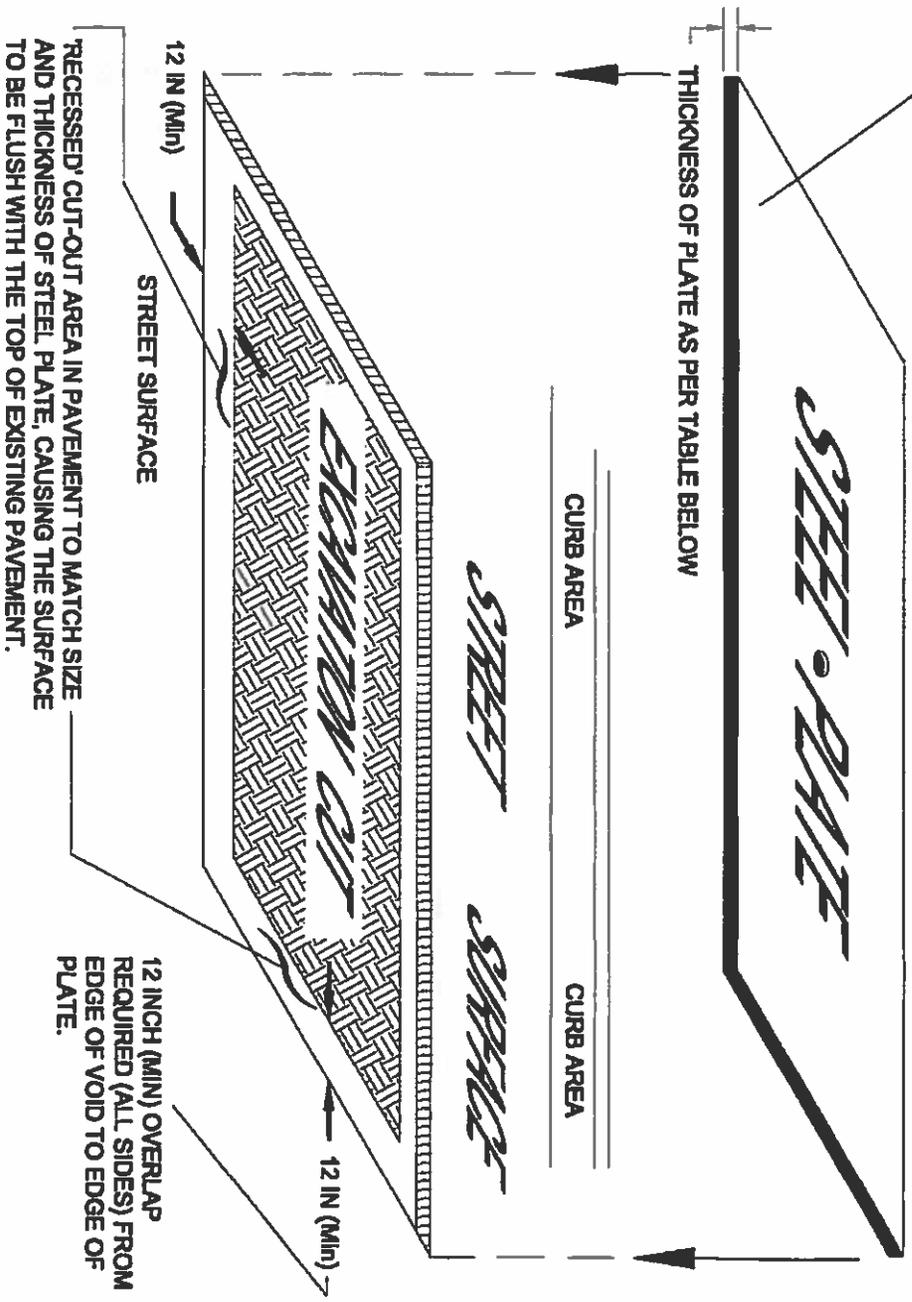
No.
STR-04
Sht. 5 of 6

Approved:

City Engineer

Date

OWNER'S NAME
24 HOUR EMERGENCY CONTACT PHONE NUMBER



RECESSED CUT-OUT AREA IN PAVEMENT TO MATCH SIZE AND THICKNESS OF STEEL PLATE, CAUSING THE SURFACE TO BE FLUSH WITH THE TOP OF EXISTING PAVEMENT.

12 INCH (MIN) OVERLAP REQUIRED (ALL SIDES) FROM EDGE OF VOID TO EDGE OF PLATE.

THIS DRAWING ONLY APPLIES TO BITUMINOUS ASPHALT SURFACED STREETS

NOTE: ALL STEEL PLATES MUST HAVE THE FOLLOWING INFORMATION CLEARLY AND LEGIBLY ETCHED INTO THEIR TOP SURFACE:
1 OWNER'S NAME
2 A 24 HR. EMERGENCY CONTACT PHONE NUMBER.

MINIMUM THICKNESS OF STEEL PLATES	
SIZE OF PLATE	THICKNESS
4 FT x 4 FT	1/2 INCH
4 FT x 6 FT	3/4 INCH
LARGER	1 INCH

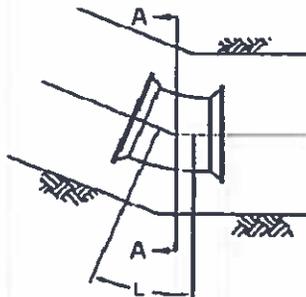
STEEL PLATE REQUIREMENTS

CONCRETE REACTION BACKING DETAIL

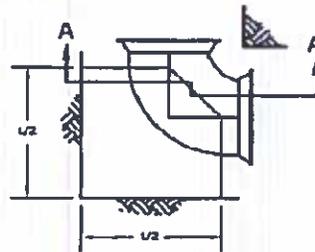
NO SCALE

SIZE OF PIPE	DEGREE OF BEND								RUN	BRANCH									
	11.25°		22.5°		45°		90°			6"		8"		12"		16"		20"	
	L"	D"	L"	D"	L"	D"	L"	D"		L"	D"	L"	D"	L"	D"	L"	D"	L"	D"
6"	8	6	10	6	20	6	36	6	6"	16	7								
8"	9	8	14	8	24	9	50	8	8"	14	8	18	12						
12"	14	12	22	12	30	16	60	15	12"	0	12	18	12	24	18				
16"	18	16	24	18	33	36	70	22	16"	8	16	14	16	28	16	30	26		
20"	25	20	28	29	38	42	80	30	20"	8	20	10	20	22	20	36	22	36	42
24"	21	24	31	31	32	36	92	38	24"	8	24	9	24	18	24	33	24	62	24

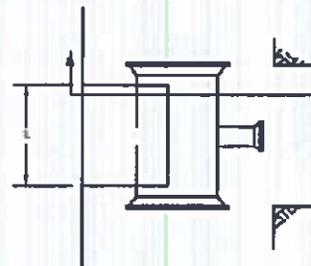
NOTE: STEEL WILL BE USED AS REQUIRED BY THE ENGINEER.
CONCRETE SHALL BE 4000 PSI



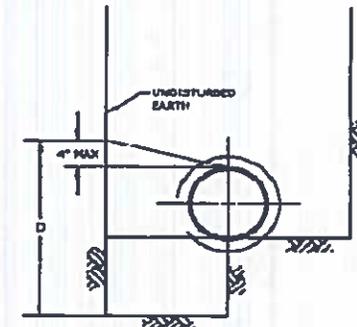
BENDS LESS THAN 90°



90° BENDS



TEES



SECTION AA



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016

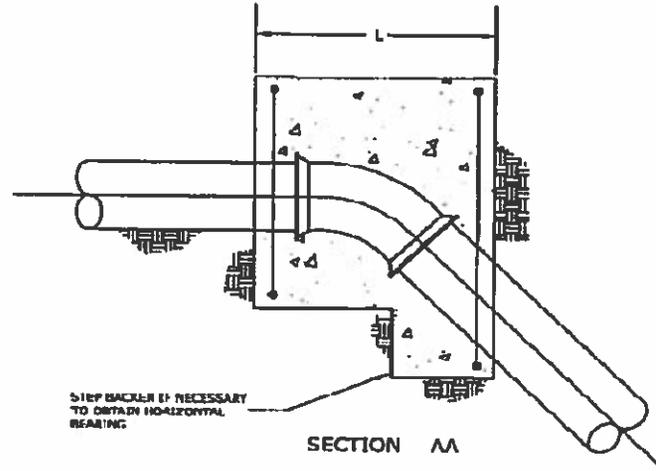
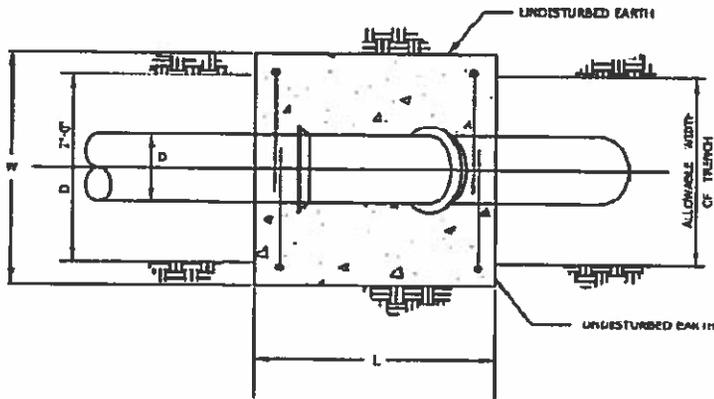
Date

SAS-25

BACKING FOR VERTICLE BENDS

NO SCALE

SIZE OF PIPE	DEGREE OF BEND											
	11 1/4°				22.5°				45°			
	L"	W"	H"	Vcu.ft.	L"	W"	H"	Vcu.ft.	L"	W"	H"	Vcu.ft.
6"	12	48	18	5.8	15	43	36	13.2	28	55	24	21
8"	12	63	24	10.2	18	57	34	19.9	36	57	33	38.2
12"	20	54	36	21	37	62	37	46.6	48	62	51	85.2
16"	31	65	38	44.4	60	65	39	82.4	65	65	65	151.6
20"	45	70	40	64.9	58	70	60	126.2	72	76	78	234
24"	38	72	54	95.4	67	74	69	180.5	88	84	84	335



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-26

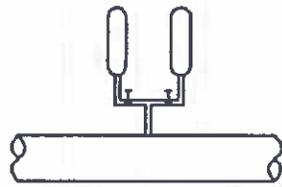
TYPICAL AUTOMATIC AIR RELEASE VALVE

NO SCALE

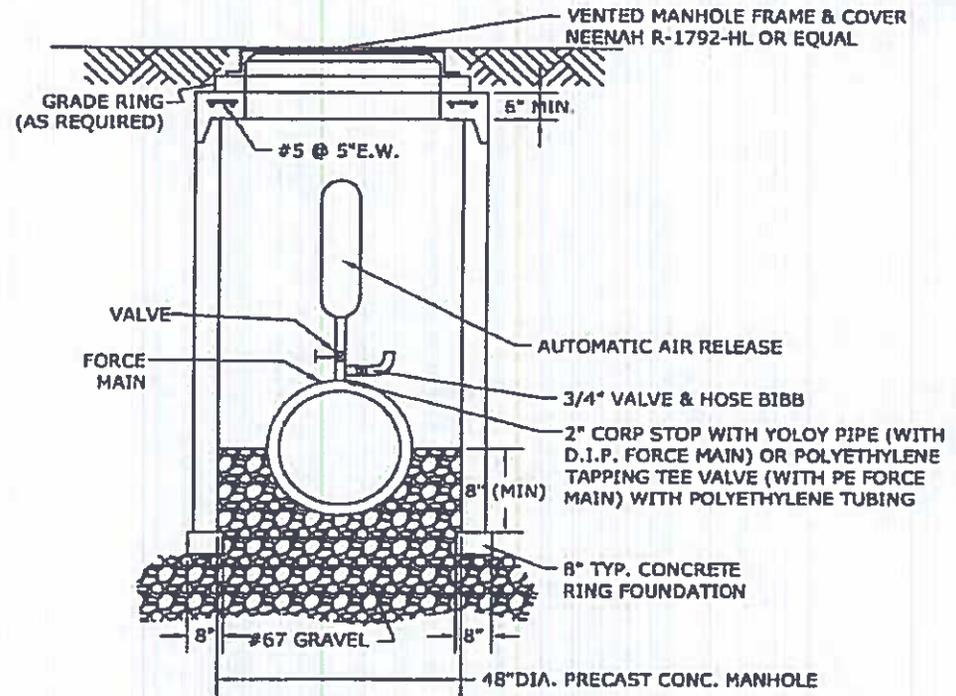
NOTES:

1) THE AIR RELEASE VALVE SHALL BE AN AUTOMATIC SEWAGE AIR VALVE WITH A 2" INLET & BACK FLUSHING ACCESSORIES AS MANUFACTURED BY ARI D SERIES OR EQUAL. (Rev 3-Aug-10)

2) WHERE VACUUM VALVES ARE SPECIFIED, THE VALVE SHALL BE AN AUTOMATIC SEWAGE VACUUM WITH 2" INLET & BACK FLUSHING ACCESSORIES AS MANUFACTURED BY CRISPIN (MODEL SL-20) OR EQUAL.



COMBINATION AIR RELEASE & VACUM VALVE MOUNTING (HOSE BIBB & VALVE NOT SHOWN)



NOT TO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

Wastewater Superintendent

2/9/2016
Date

SAS-27

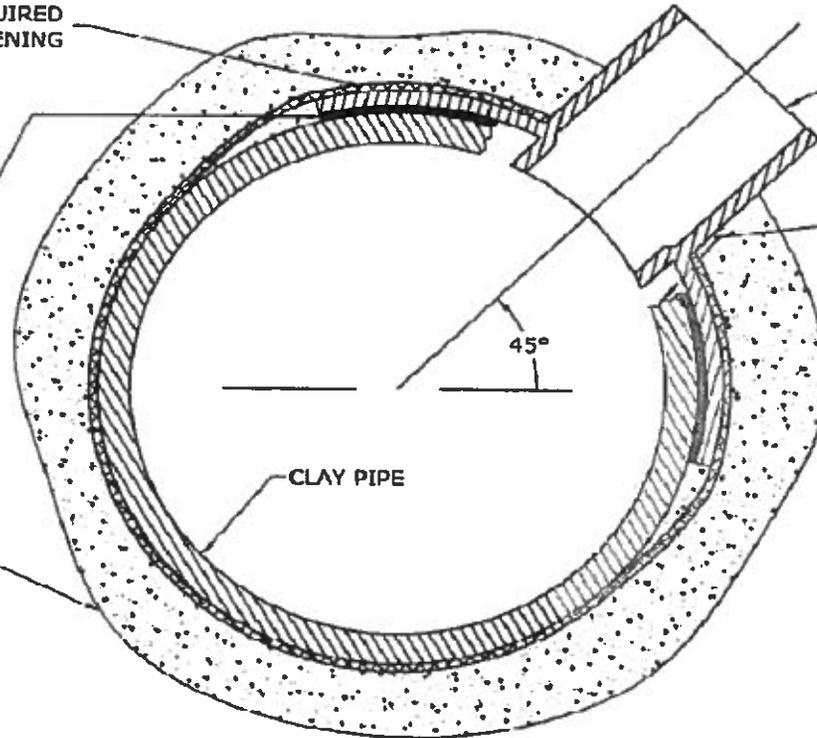
TAPPING DETAIL FOR CLAY PIPE

NO SCALE

SS BAND CLAMP, TWO REQUIRED
ONE ON EACH SIDE OF OPENING

SILICON FLEXIBLE
SEALANT

3" CONCRETE
ENCASEMENT



6" A.B.S. TAPPING
SADDLE (TEE OR WYE)

HOLE IN PIPE SHALL BE
SAW CUT OR DRILLED

45°

CLAY PIPE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

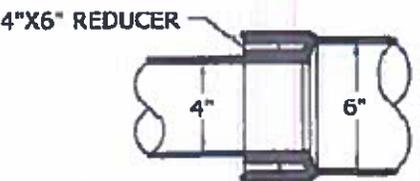
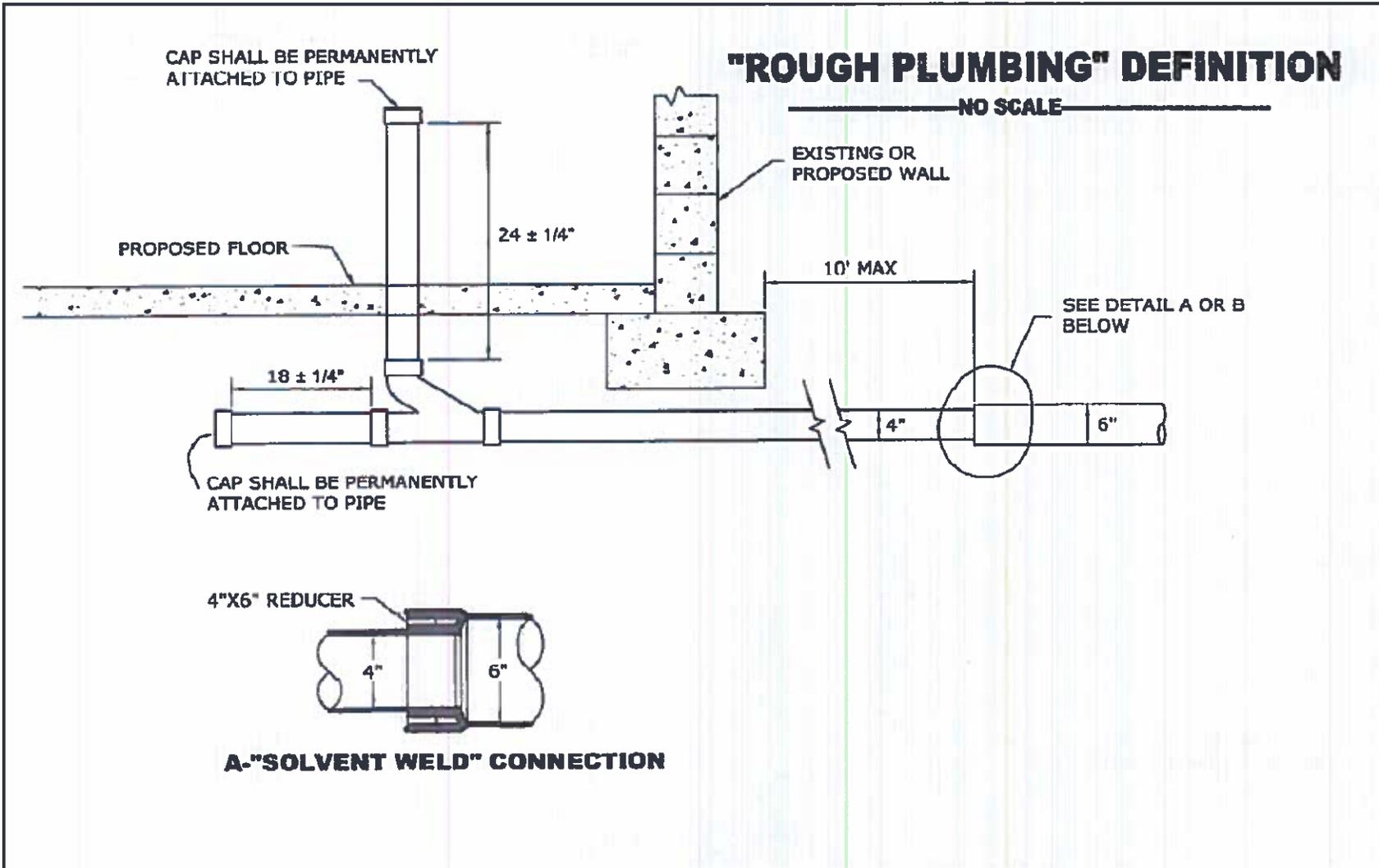
Drawing
No.

Approved:

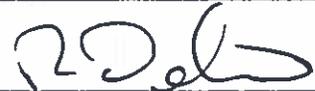
Wastewater Superintendent

2/9/2016
Date

SAS-28



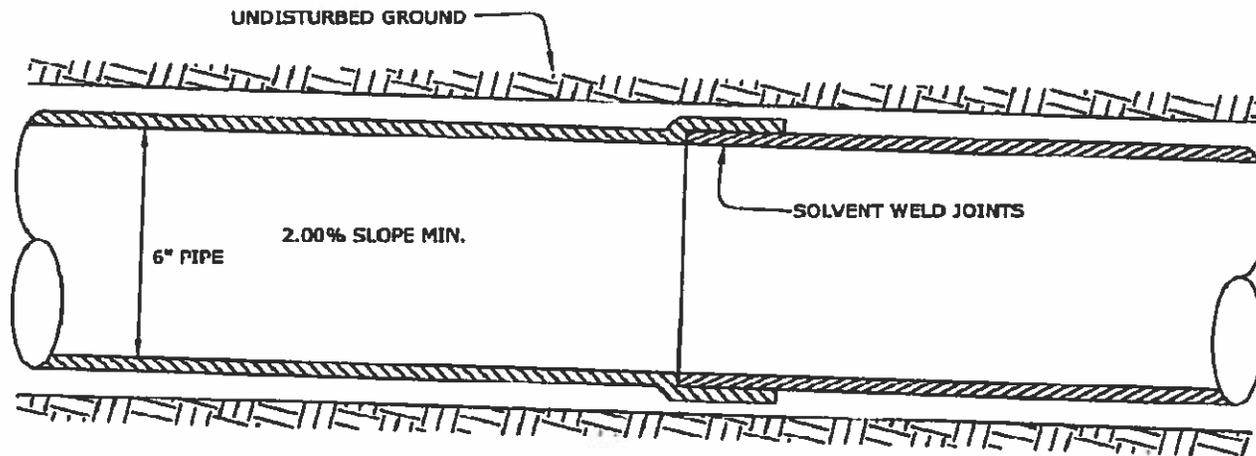
A-"SOLVENT WELD" CONNECTION

 <p>City of Marysville Division of Wastewater</p>	<p>Richard Felton, Wastewater Superintendent 12901 Beecher Gamble Road Marysville, Ohio 43040</p>	<p>Phone 937-645-7350 Fax 937-645-7345</p>
<p>Approved:  Wastewater Superintendent</p> <p>Date: <u>2/9/2016</u></p>	<p>Drawing No. SAS-29</p>	

6" LATERAL BORING AND JACKING

NO SCALE

NOTE: 1) WITH ANY OTHER APPROVED SEWER PIPE, A STEEL CASING PIPE MUST BE USED



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

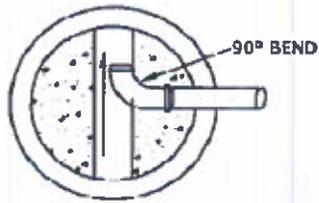
Approved: *[Signature]*
Wastewater Superintendent

2/9/2016
Date

SAS-30

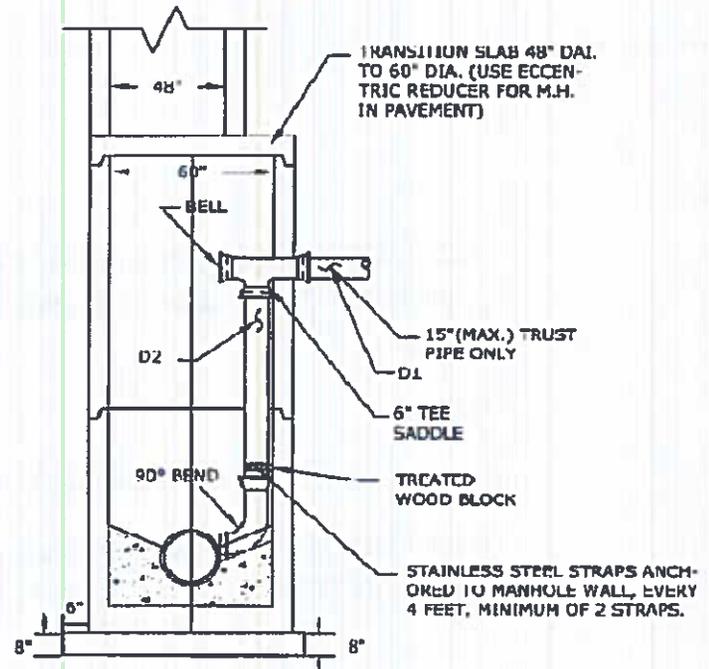
TYPICAL INSIDE DROP MANHOLE CASTING

NO SCALE



IDP

D1	D2
8"	6"
10"	6"
12"	8"
15"	8"



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing No.

Approved:

Wastewater Superintendent

2/9/2016
Date

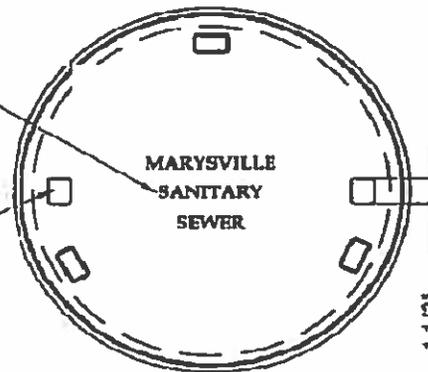
SAS-31

PLATEN LID W/CITY OF MARYSVILLE LOGO

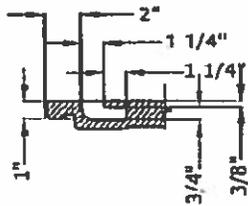
NO SCALE

3/4" HIGH LETTERS

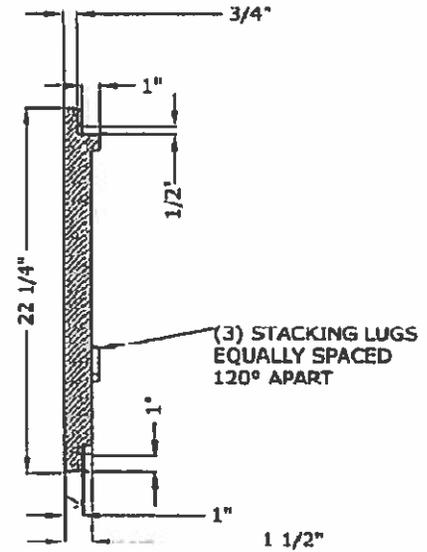
(2) CONCEALED PICK HOLES PER NF-42303



LID SHALL BE NEENAH R-1762 OR EAST JORDAN IRONWORKS 1661 FRAME AND COVER WITH SELF SEALING GASKET.



CONCEALED PICK HOLE DETAIL



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

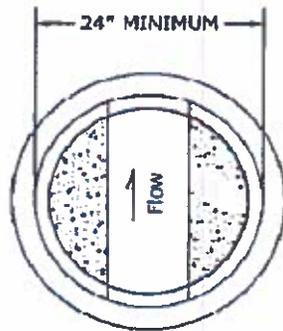
Wastewater Superintendent

2/9/2016
Date

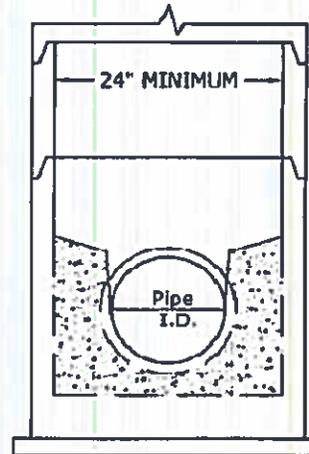
SAS-32

TYPICAL INSPECTION MANHOLE

NO SCALE



PLAN



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved:

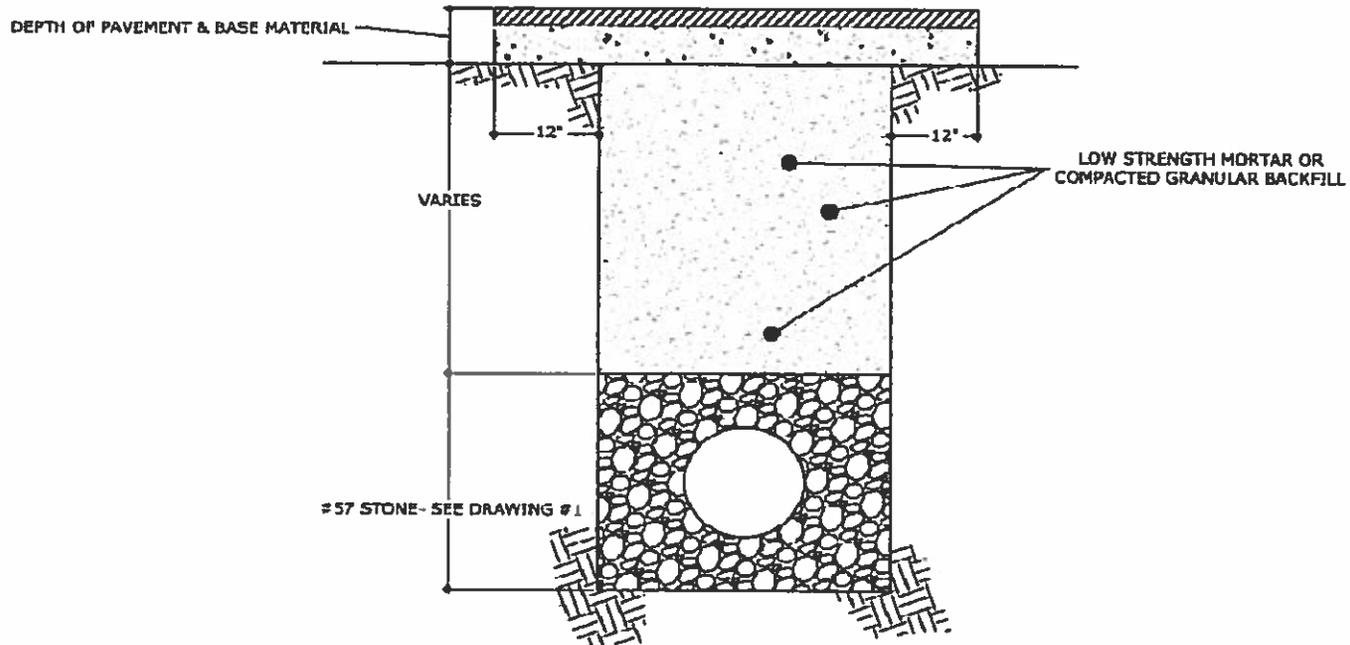
Wastewater Superintendent

2/9/2016
Date

SAS-33

BACKFILL & PAVEMENT REPLACEMENT

NO SCALE



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

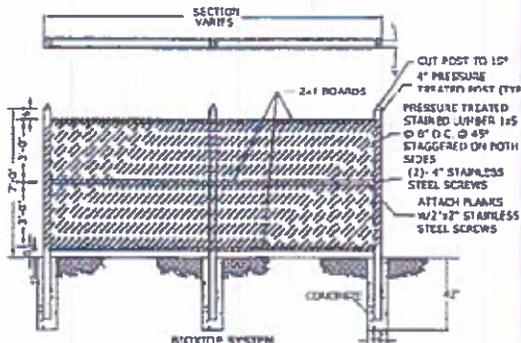
Approved:

Wastewater Superintendent

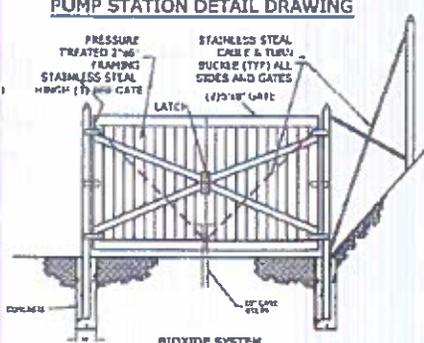
2/9/2016
Date

SAS-34

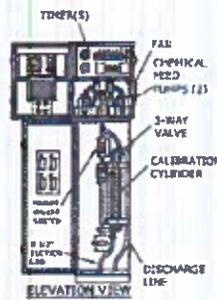
BIOXIDE SYSTEM DETAIL PUMP STATION DETAIL DRAWING



SECTION VARIOUS
PUMP STATION
FENCE DETAIL
No Scale



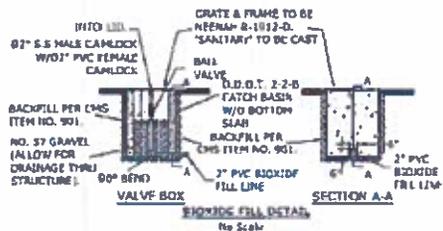
BIOXIDE SYSTEM
GATE DETAIL
No Scale



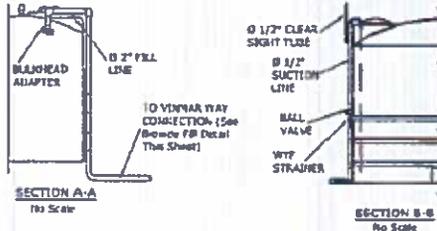
ELEVATION VIEW
No Scale

NOTES:

1. U.S. FILTER SHALL PROVIDE 2,000 GALLON BIOXIDE SYSTEM.
2. CONTRACTOR TO FURNISH CONCRETE PAD WITH ALL IN-SLAB PIPING AND CONDUIT.
3. ALL PIPING AND APPURTENANCES SHALL BE PVC, SCH 80.
4. ALL ELECTRICAL CONDUIT AND WIRING BY CONTRACTOR.
5. UTILIZE SWEEPS ONLY (NO ELBOWS) FOR CONDUIT DIRECTIONAL CHANGES.
6. CONTRACTOR TO FURNISH AND INSTALL ALL NECESSARY SLAB OFFSETTING, SLEEVES AND SEALANT.
7. CONTRACTOR TO FURNISH AND INSTALL ALL NECESSARY HANGERS, SUPPORTS, AND BLOCKING FOR PIPING.
8. ALL HARDWARE REQUIRED FOR INSTALLATION SHALL BE STAINLESS STEEL, FURNISHED AND INSTALLED BY CONTRACTOR.
9. SEE SUPPLEMENTAL STANDARD DETAILS FOR CHEMICAL FEED UNIT, CALIBRATION PEDESTAL, PIPING SUPPORT, STORAGE TANK, LEVEL, GAUGE AND VARIOUS OTHER COMPONENTS.
10. TWO COATS OF WATER PROOFING SEALER SHALL BE APPLIED TO FENCING.

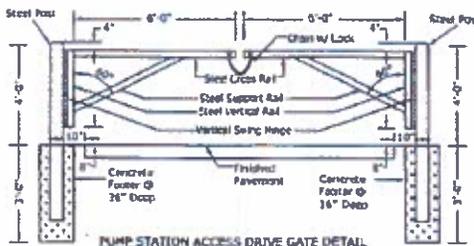


SECTION A-A
SHOWING FILL DETAIL
No Scale



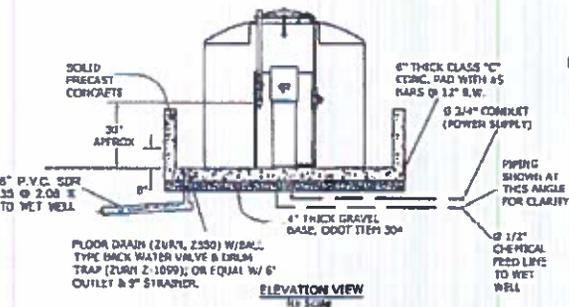
SECTION A-A
No Scale

SECTION B-B
No Scale

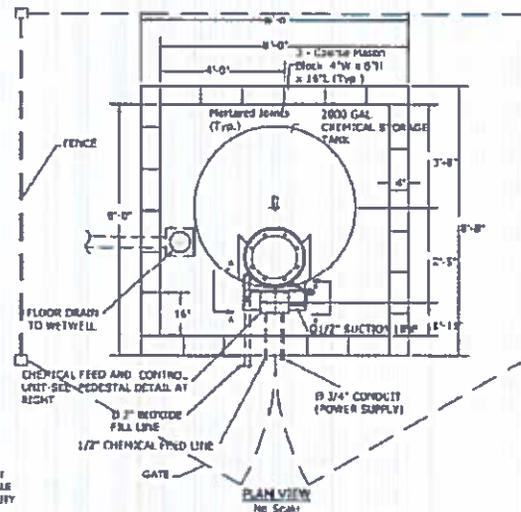


PUMP STATION ACCESS DRIVE GATE DETAIL
No Scale

Note: This gate shall be fabricated and installed to meet the standards of the Delaware County Sanitary Engineer.



ELEVATION VIEW
No Scale



PLAN VIEW
No Scale



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

Approved: _____

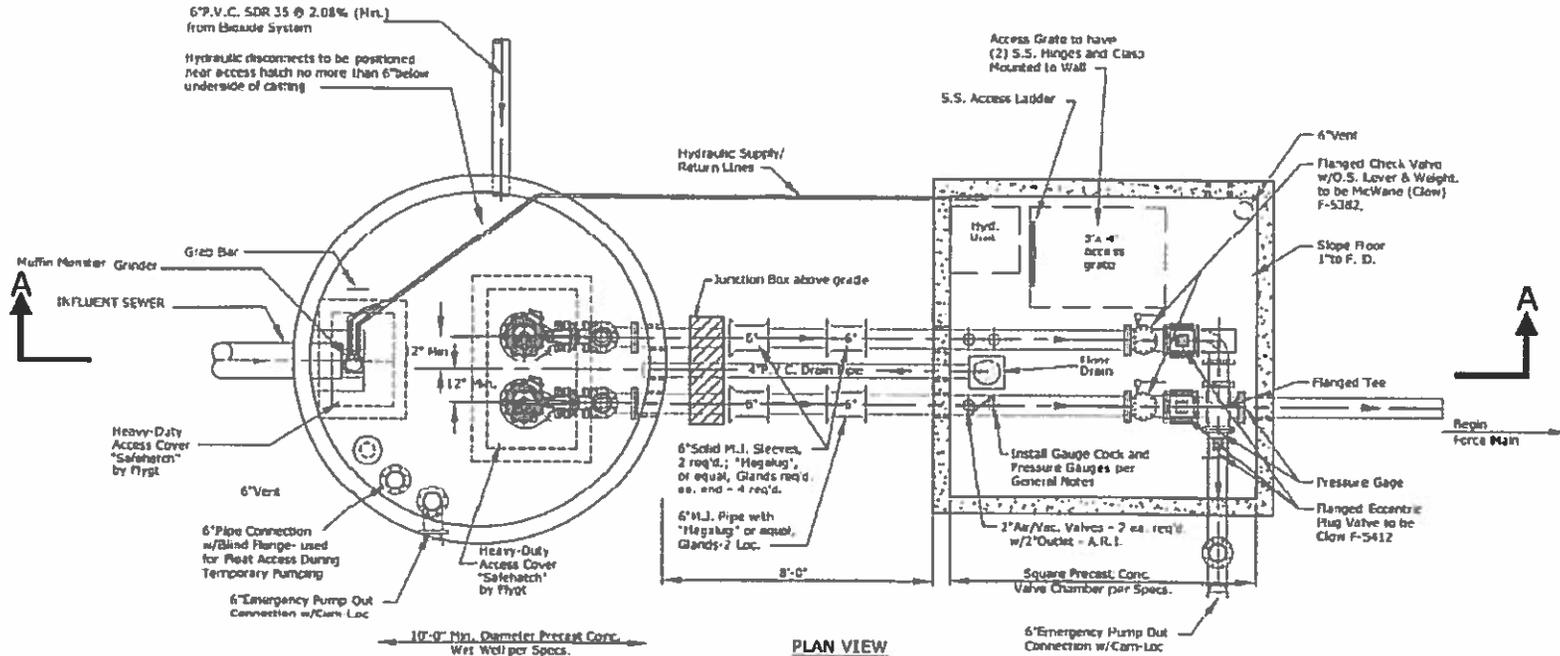
Wastewater Superintendent

2/9/2016
Date

SAS-35

PUMP STATION PLAN VIEW

PUMP STATION DETAIL DRAWING



PLAN VIEW
No Scale

Notes:
 Aluminum in contact with concrete shall be covered with a bimastic material.
 The Contractor shall be responsible for anti-rustion methods needed during construction until earth backfill is properly placed.

PUMP SCHEDULE	
Float 1	EL.
High Level Alarm	EL.
Lag Pump On	EL.
Lead Pump On	EL.
Low Level (All Pumps Off)	EL.



City of Marysville
 Division of Wastewater

Richard Felton, Wastewater Superintendent
 12901 Beecher Gamble Road Phone 937-645-7350
 Marysville, Ohio 43040 Fax 937-645-7345

Approved: *[Signature]* 2/9/2016
 Wastewater Superintendent Date

Drawing No.

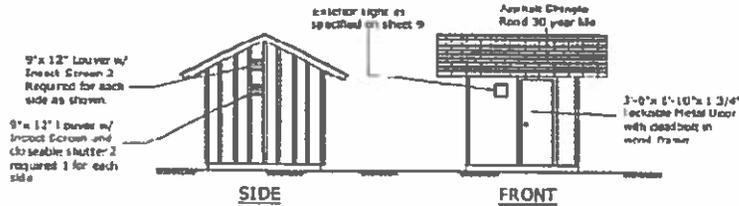
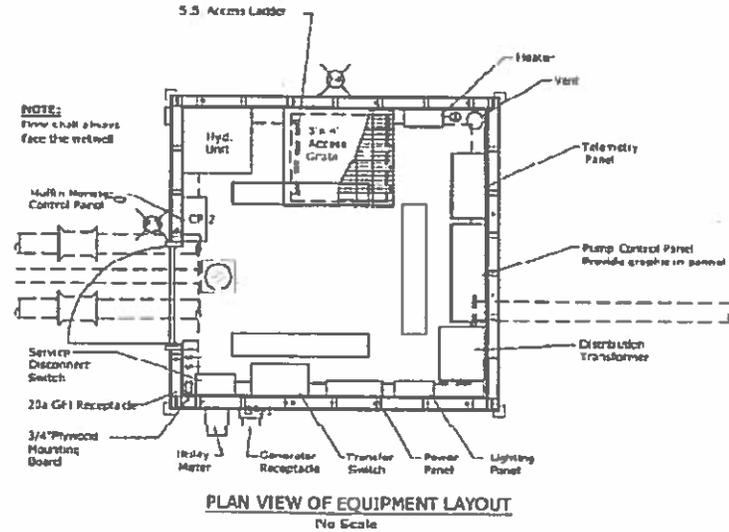
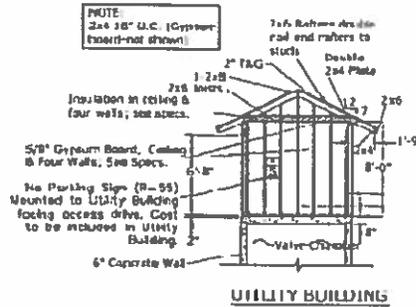
SAS-36

PUMP STATION BUILDING AND EQUIPMENT LAYOUT

PUMP STATION DETAIL DRAWING

UTILITY BUILDING NOTES

- Ceiling lights shall be provided according to electrical specification.
- Final electric install stainless steel end support hardware with individual insulated cable support (NPL). Provide slack for required adjustment (cord length 75' + as required). Weight cords for negative buoyancy to maintain position and alignment.
- The proposed construction shall conform to the requirements of Chapter 11 OBC and the "Americans with Disabilities Act Accessibility Guidelines" (ADAAG) as modified by Sections 1102.2 and 1133.0 OBC.
- Installation of plumbing equipment and systems shall comply with OBC Chapter 29 and the Ohio Plumbing Code (OPC).
- Mechanical equipment shall be installed in accordance with its underwriter approval, the manufacturer's recommendations, specifications and good engineering practices, Articles N-401 AND N-403.1 of the OBC.



ELEVATIONS
No Scale



City of Marysville
Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
Marysville, Ohio 43040

Phone 937-645-7350
Fax 937-645-7345

Drawing
No.

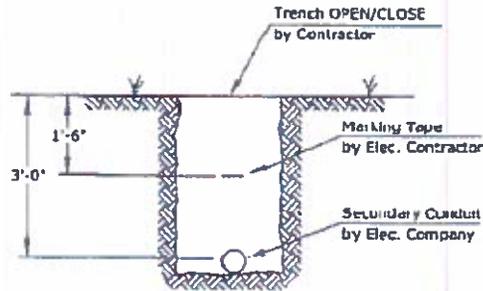
Approved:

Wastewater Superintendent

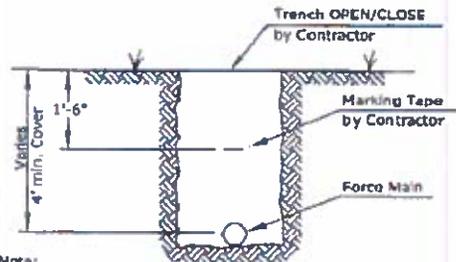
2/9/2016
Date

SAS-38

SITE LAYOUT DETAIL
PUMP STATION DETAIL DRAWING

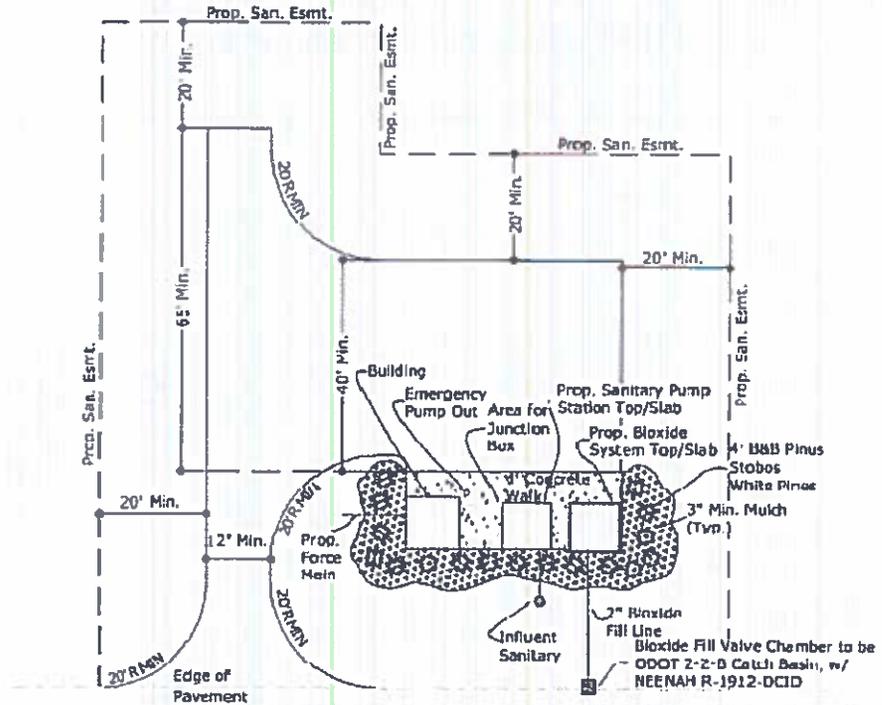


ELECTRICAL TRENCH DETAIL
 No Scale



Note:
 Cost to be included in price bid
 for Sewage Force Main.

MARKING TAPE DETAIL
 No Scale



PUMP STATION SITE PLAN
 No Scale



City of Marysville
 Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
 Marysville, Ohio 43040

Phone 937-645-7350
 Fax 937-645-7345

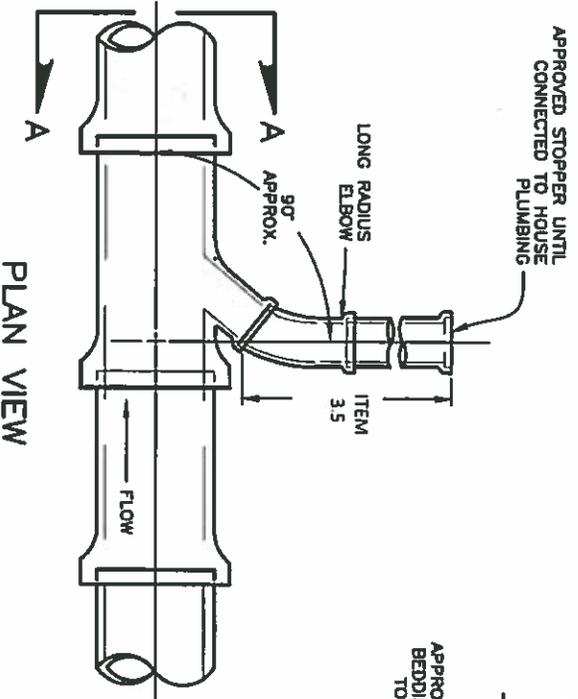
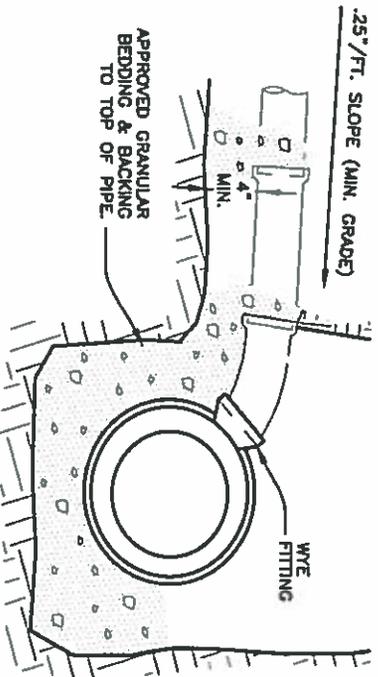
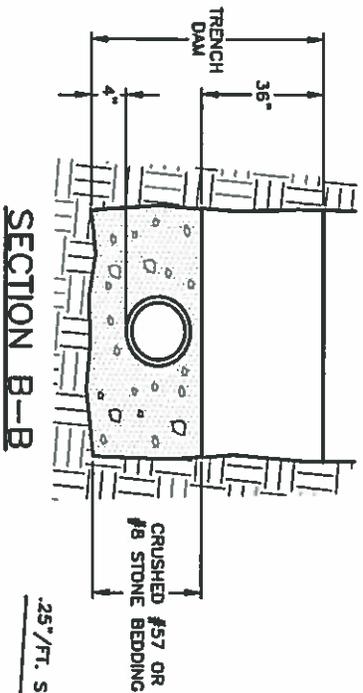
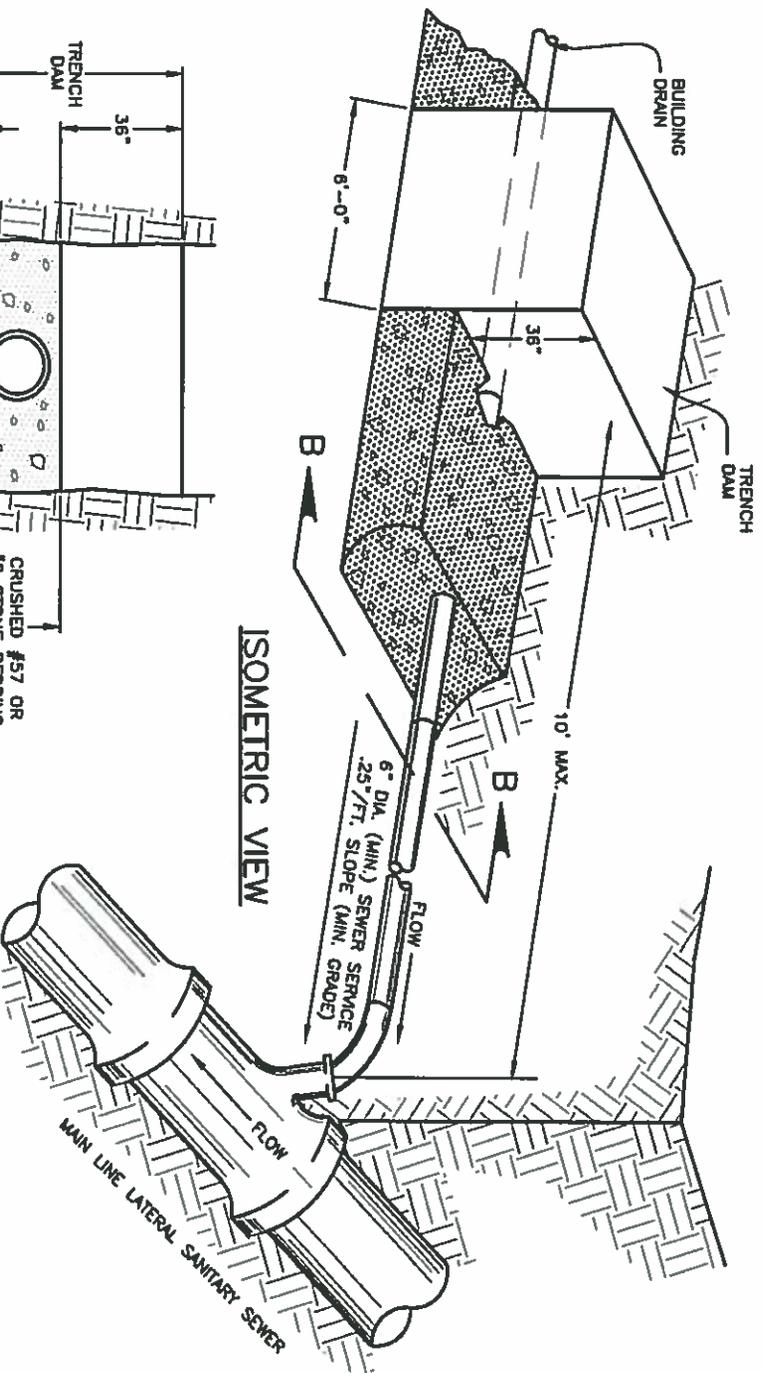
Drawing
 No.

Approved:

Wastewater Superintendent

2/19/2016
 Date

SAS-39



NOTES:
 TRENCH DAMS ARE REQUIRED UNDER ITEM 3.2C IN THE MCMS. SANITARY SERVICE LATERALS SHALL BE A MINIMUM DIAMETER OF 6" AND SHALL BE INSTALLED AT A MINIMUM GRADE OF 0.25" PER FOOT. NO FERNCO COUPLERS OR SADDLES ARE PERMITTED.



City of Marysville
 Division of Wastewater

STANDARD CONSTRUCTION DRAWING

Approved:

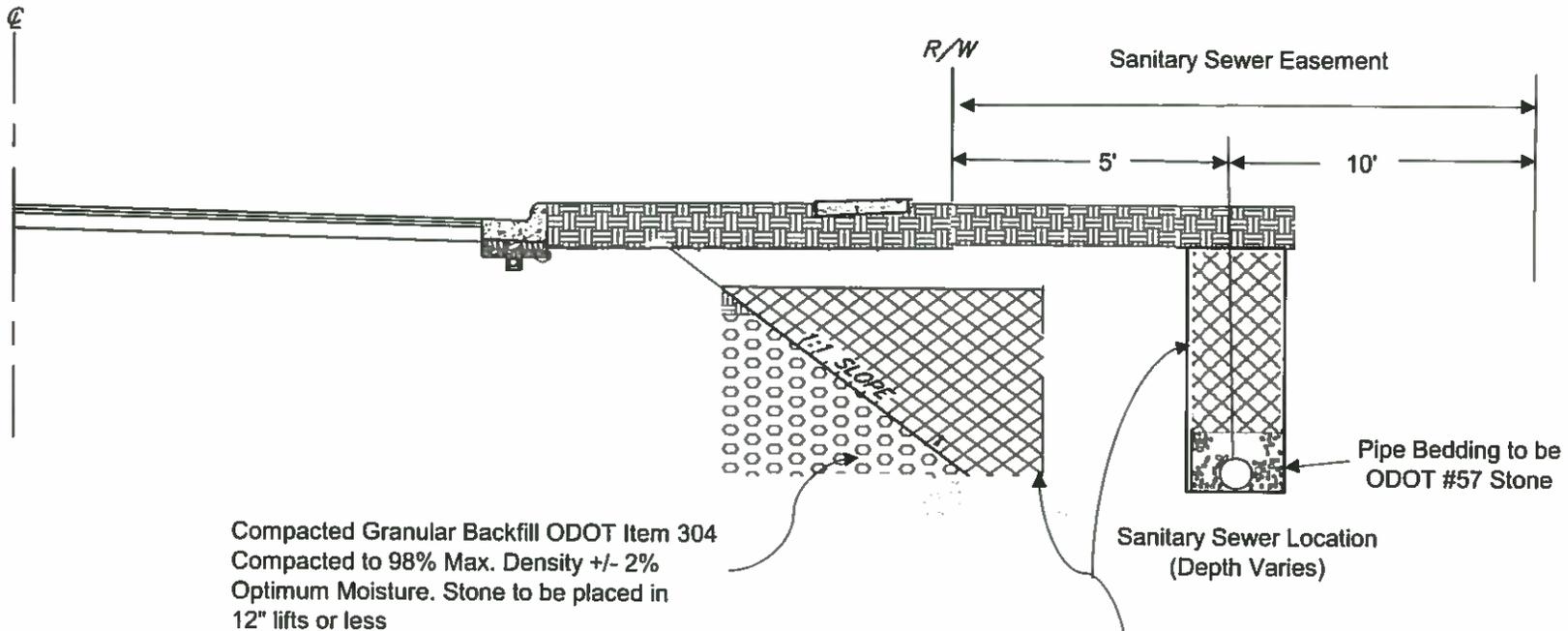
[Signature]
 Wastewater Superintendent

2/19/2016
 Date

Typical Sanitary House
 Connection Service

Drawing
 No.
 SAS-40

Typical Street Section



Compacted Granular Backfill ODOT Item 304
 Compacted to 98% Max. Density +/- 2%
 Optimum Moisture. Stone to be placed in
 12" lifts or less

Outside of the Influence of the Street, Backfill
 Shall be Natural Material Free of Stones Greater Than 6",
 Organics, Debris, Rubbish, or Frozen Material. Soil Shall be
 Compacted to 95% Maximum Dry Laboratory Weight at
 2% +/- of Optimum Moisture.



City of Marysville
 Division of Wastewater

Richard Felton, Wastewater Superintendent

12901 Beecher Gamble Road
 Marysville, Ohio 43040

Phone 937-645-7350
 Fax 937-645-7345

Drawing
 No.

Approved:

Wastewater Superintendent

2/16/2016
 Date

SAS-41