

**CITY
OF
FAIRLAWN**

**STANDARD CONSTRUCTION
DRAWINGS**

FOR

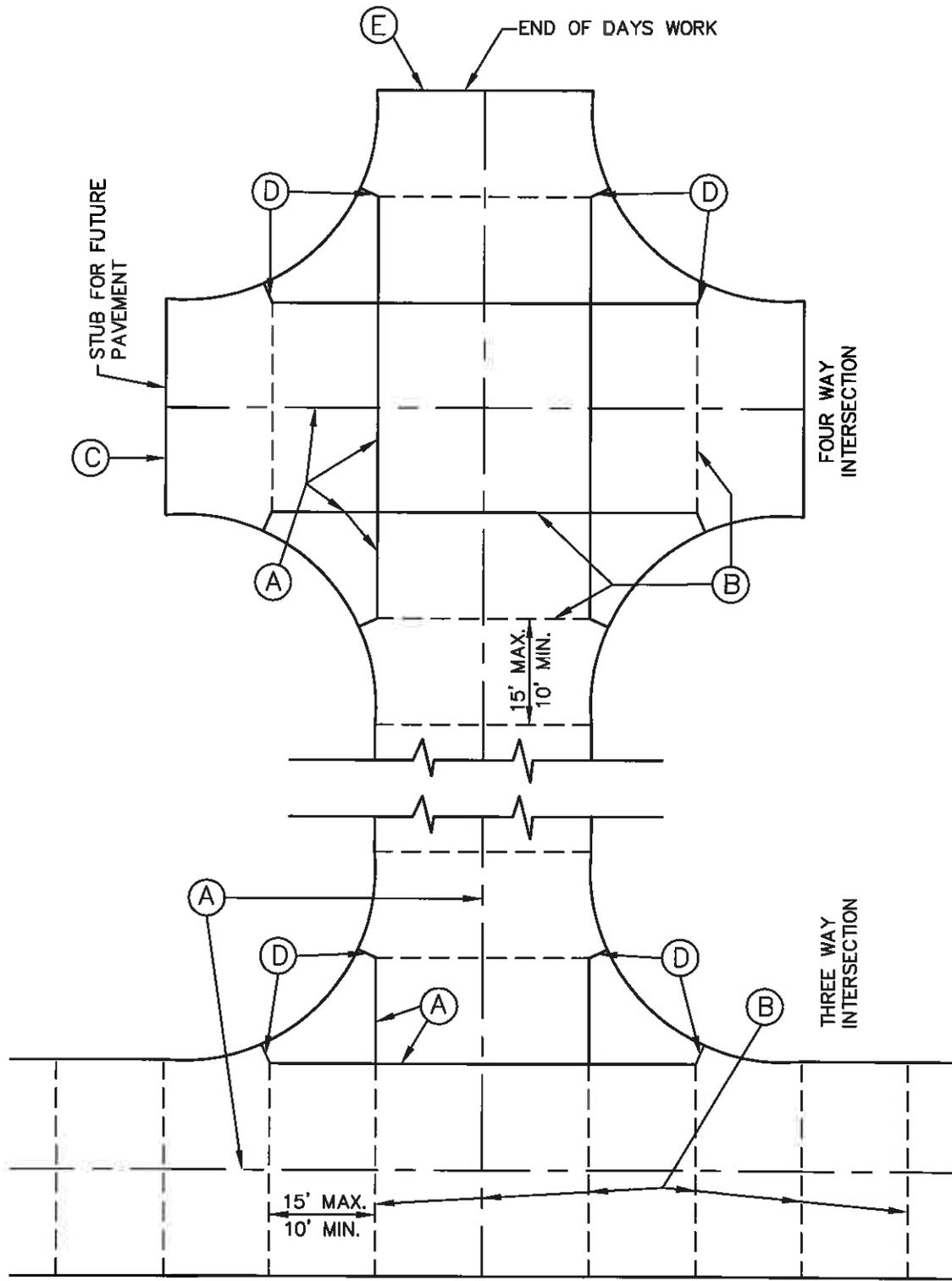
**PAVING,
STORM SEWER &
SANITARY SEWER**

August, 2013

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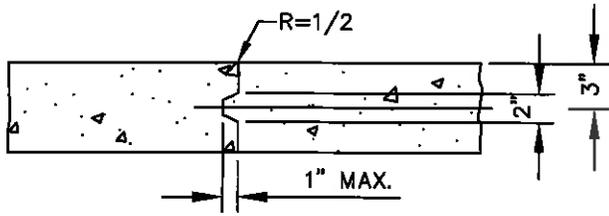
JOINT LOCATION PLAN

NO SCALE

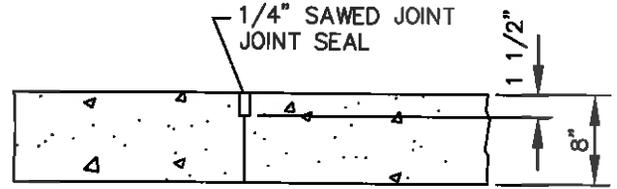
NOTES:

1. SEE JOINT DETAILS SHEET FOR SPECIFIC JOINT DETAILS - ITEMS 'A'-'E'

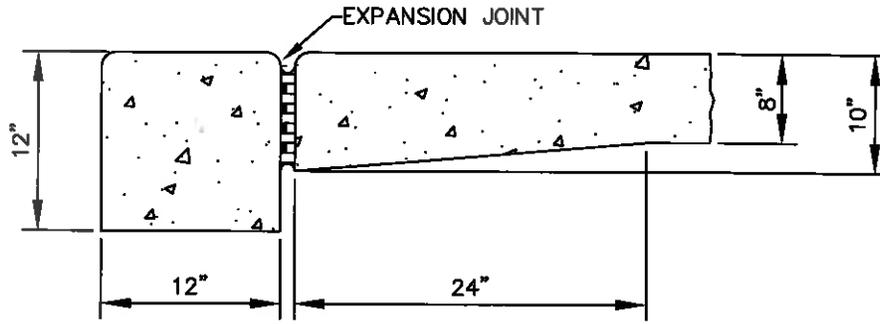
CITY OF FAIRLAWN	
JOINT LOCATION PLAN	
	1
DATE: 3/03/11	



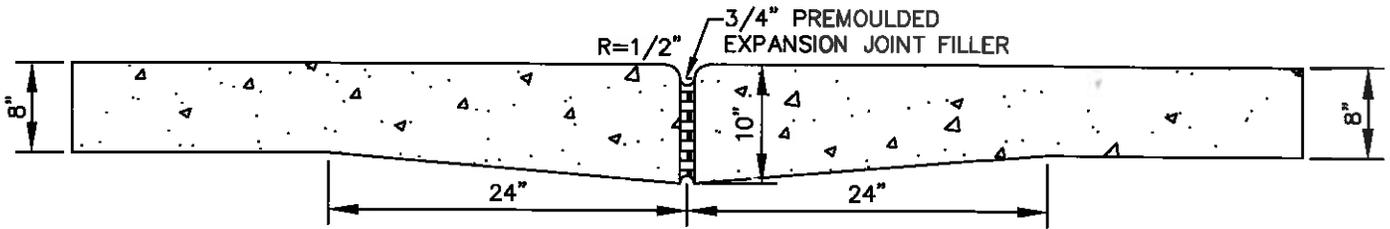
KEYED JOINT (A)



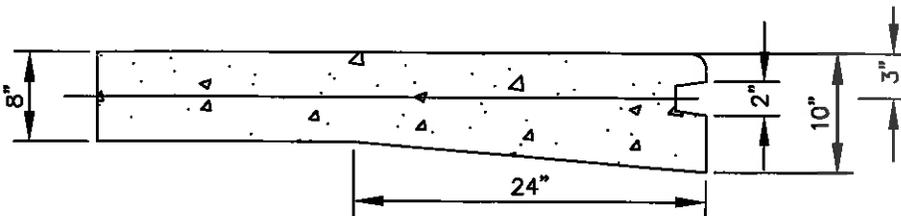
CONTRACTION JOINT (B)



HEADER AT STUB FOR FUTURE PAVEMENT (C)



EXPANSION JOINT (D)



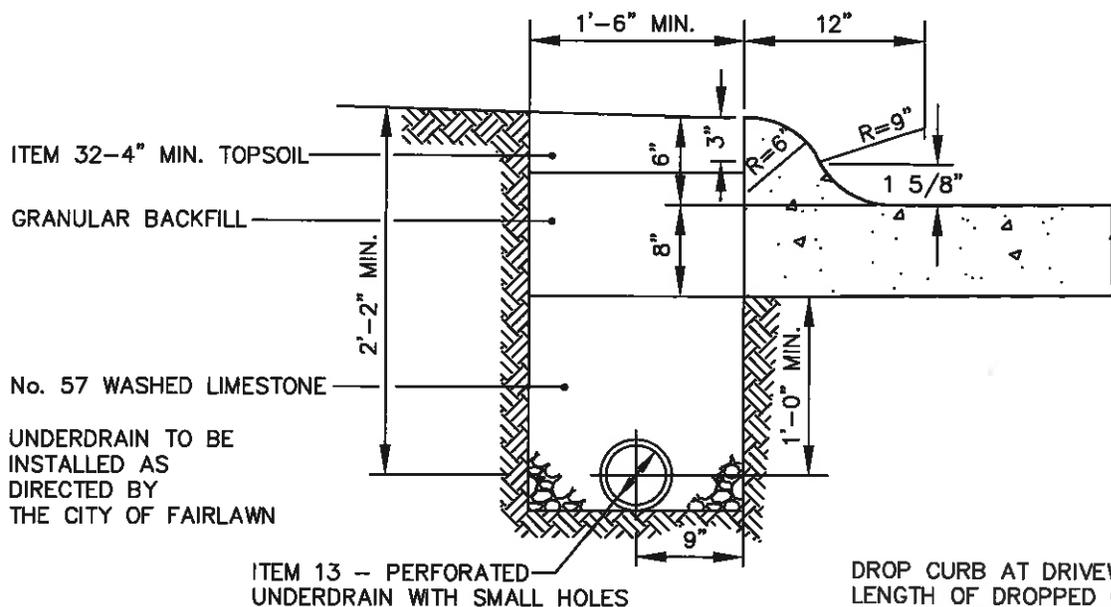
JOINT AT END OF DAYS WORK (E)

JOINT DETAILS
NO SCALE

NOTES:

- 1. SEE JOINT LOCATION PLAN SHEET FOR ADDITIONAL INFORMATION.

CITY OF FAIRLAWN	
JOINT DETAILS	2
DATE: 3/03/11	



DROP CURB AT DRIVEWAYS.
LENGTH OF DROPPED CURB
WILL BE THE WIDTH OF
DRIVE +6'.

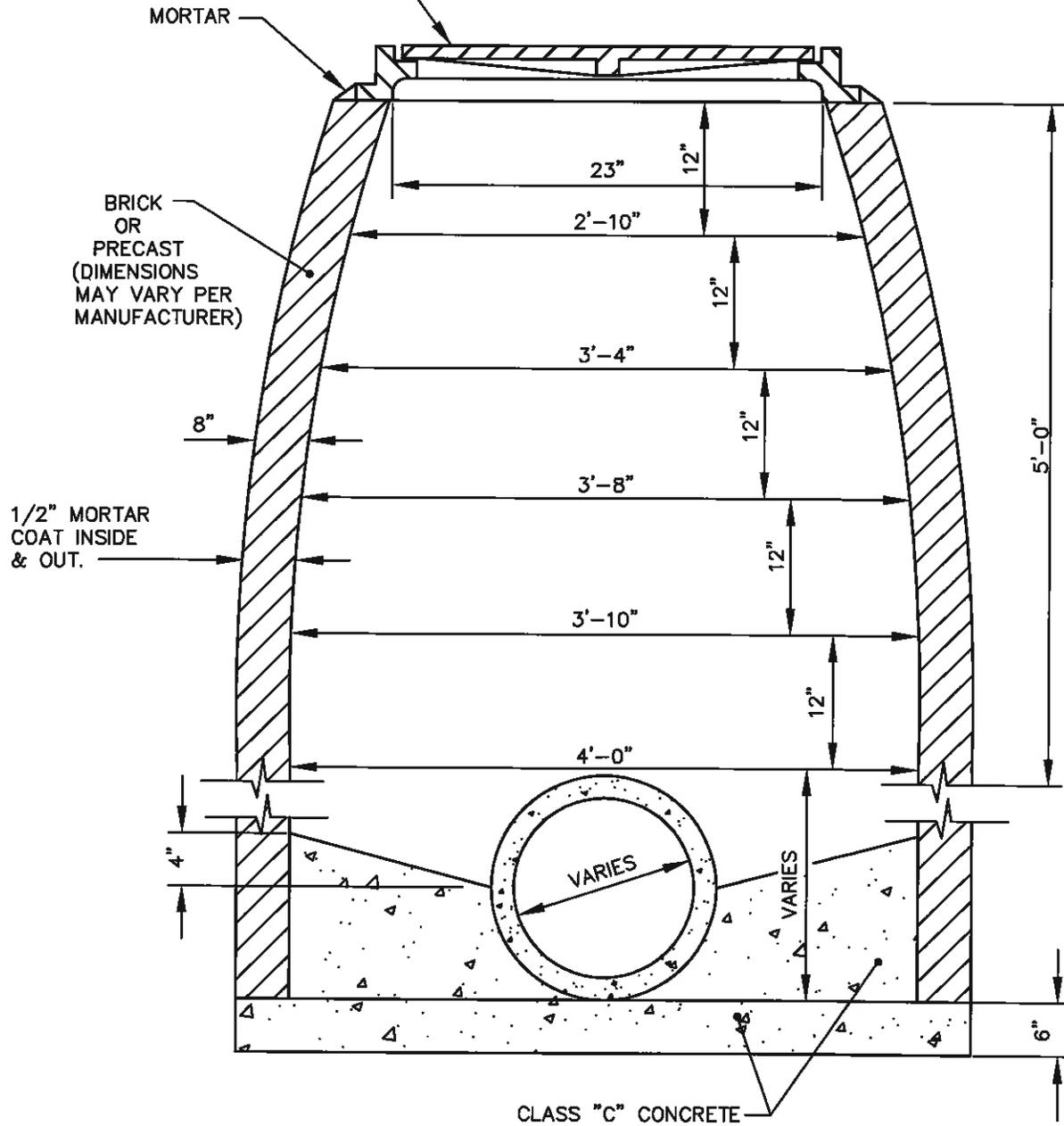
STANDARD ROLLED CURB DETAIL

NO SCALE

CITY OF FAIRLAWN	
STANDARD ROLLED CURB DETAIL	
DATE: 3/03/11	
2A	

NEENAH CASTING R-1690-A
OR EQUAL FRAME & COVER
WT. 200 LB.

STEPS ON 12" C-C
REQUIRED FOR MANHOLES
4' OR DEEPER



NOTE:
IF DEPTH IS LESS THAN 5'; BASE
DIAMETER TO MATCH CLOSEST
EVEN FOOT DEPTH SHOWN.

STORM SEWER MANHOLE

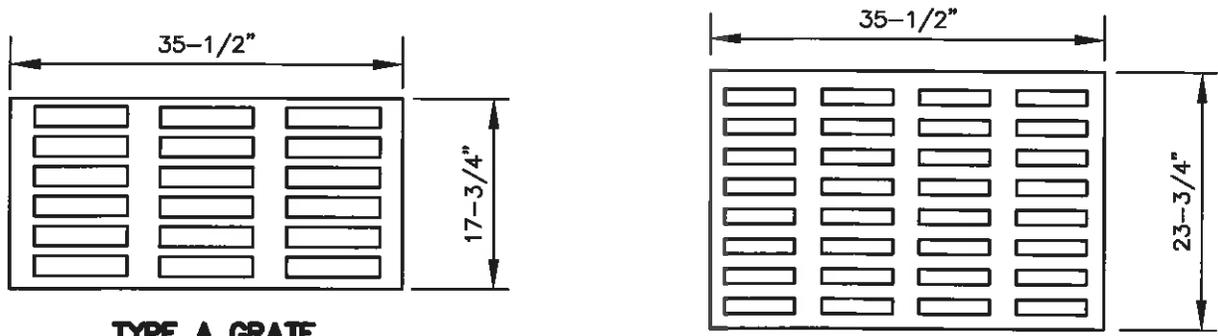
NO SCALE

CITY OF FAIRLAWN

STORM SEWER
MANHOLE

3

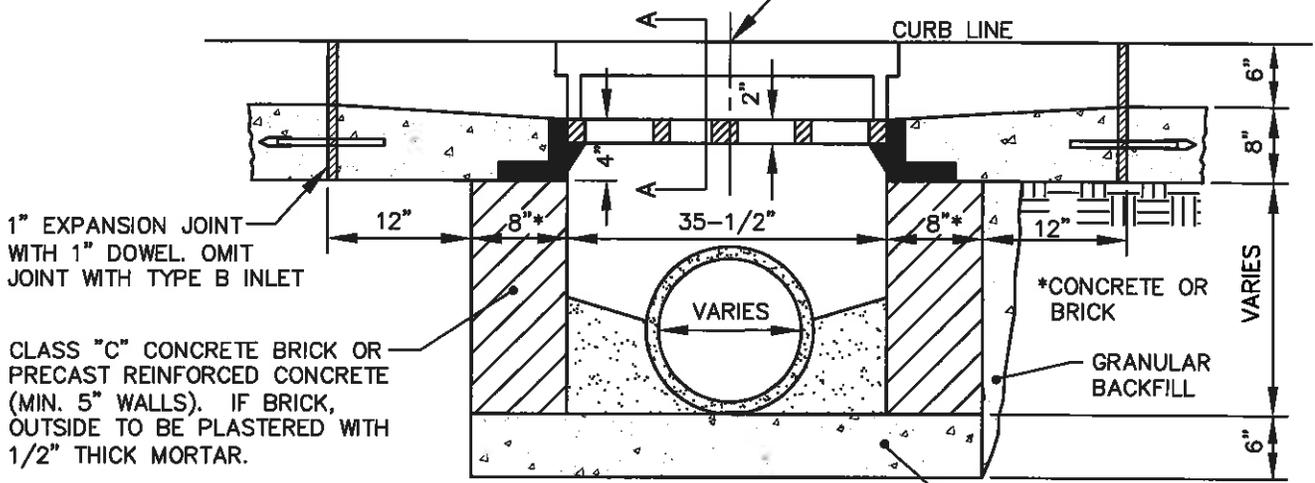
DATE: 3/03/11



TYPE A GRATE

TYPE B GRATE

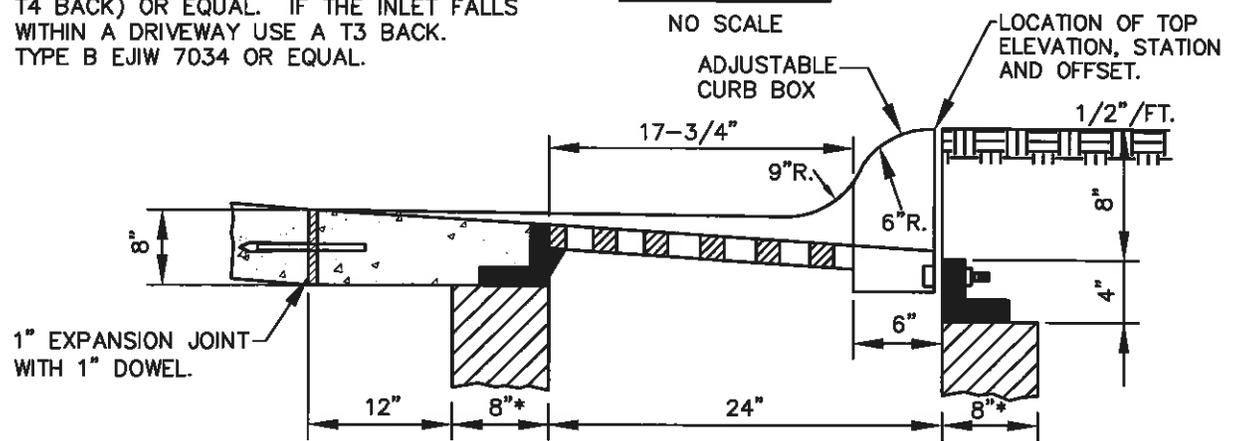
LOCATION OF TOP ELEVATION, STATION AND OFFSET.



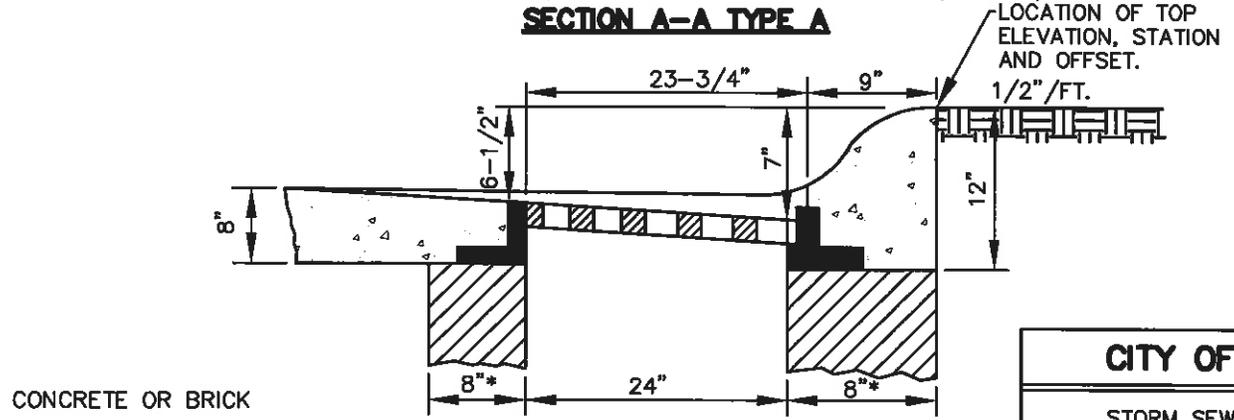
**STORM SEWER INLETS
TYPE A & B**

NOTE:
TYPE A EJIW 7030 CASTING (M2 GRATE, T4 BACK) OR EQUAL. IF THE INLET FALLS WITHIN A DRIVEWAY USE A T3 BACK.
TYPE B EJIW 7034 OR EQUAL.

NO SCALE



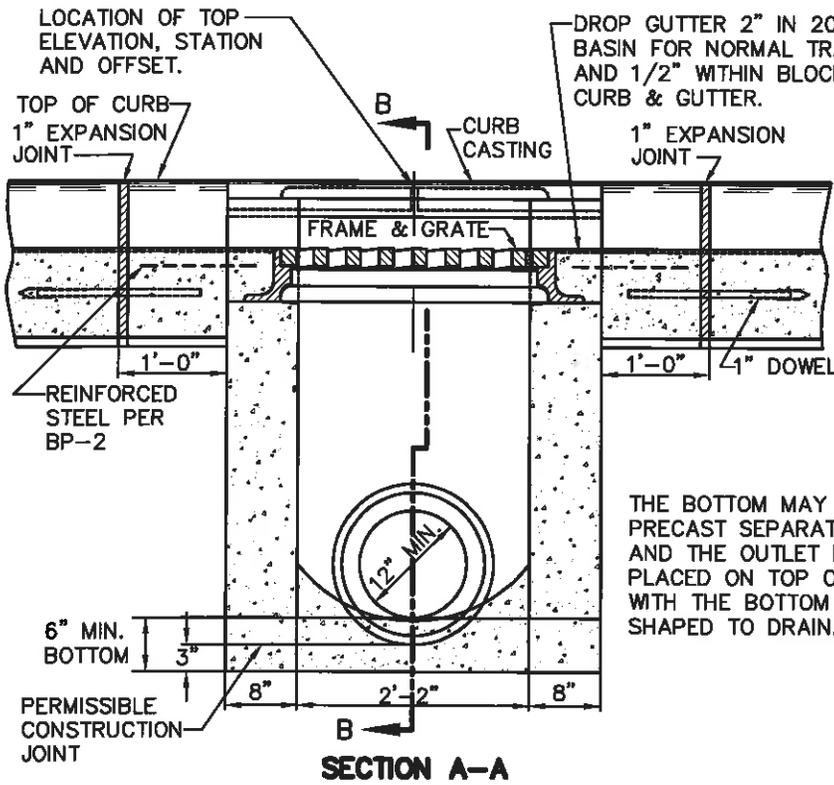
SECTION A-A TYPE A



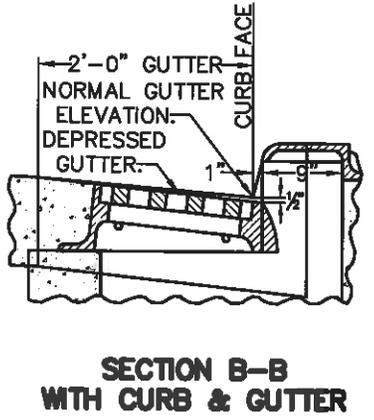
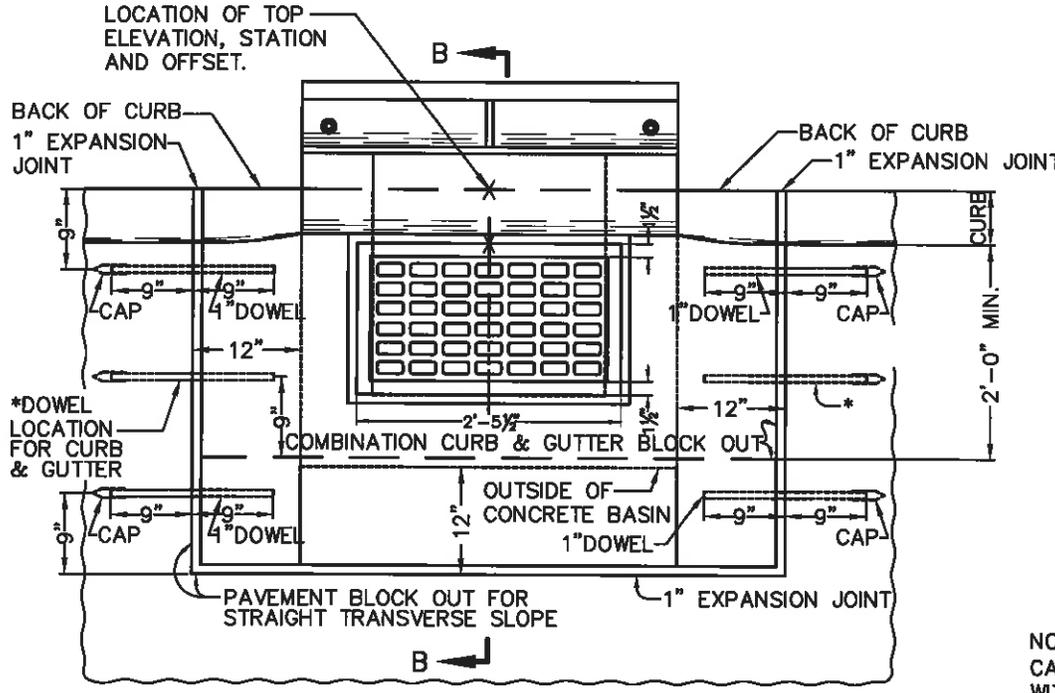
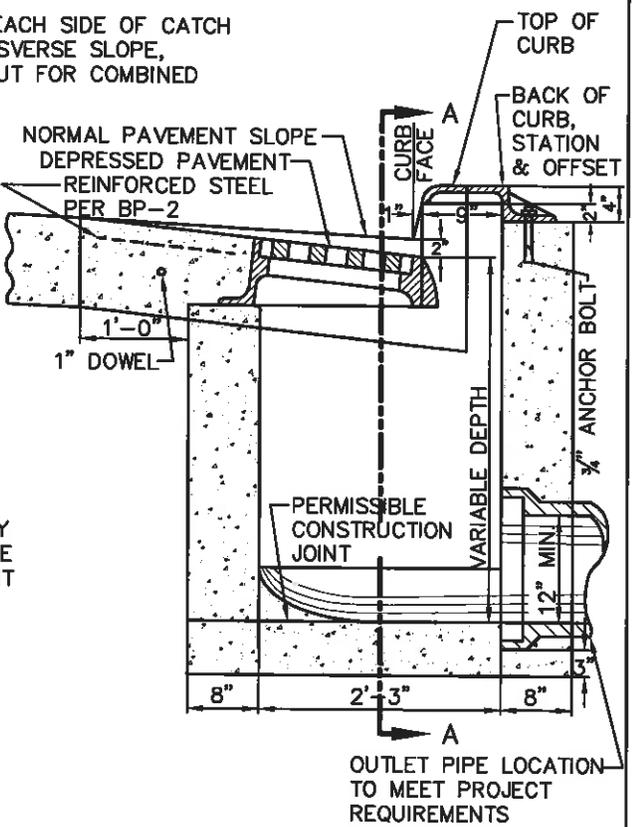
SECTION A-A TYPE B

* CONCRETE OR BRICK
TYPE B INLET CASTINGS TO BE SET AND POURED INTEGRAL WITH PAVEMENT

CITY OF FAIRLAWN	
STORM SEWER INLETS TYPE A & B	
DATE: 3/03/11	4



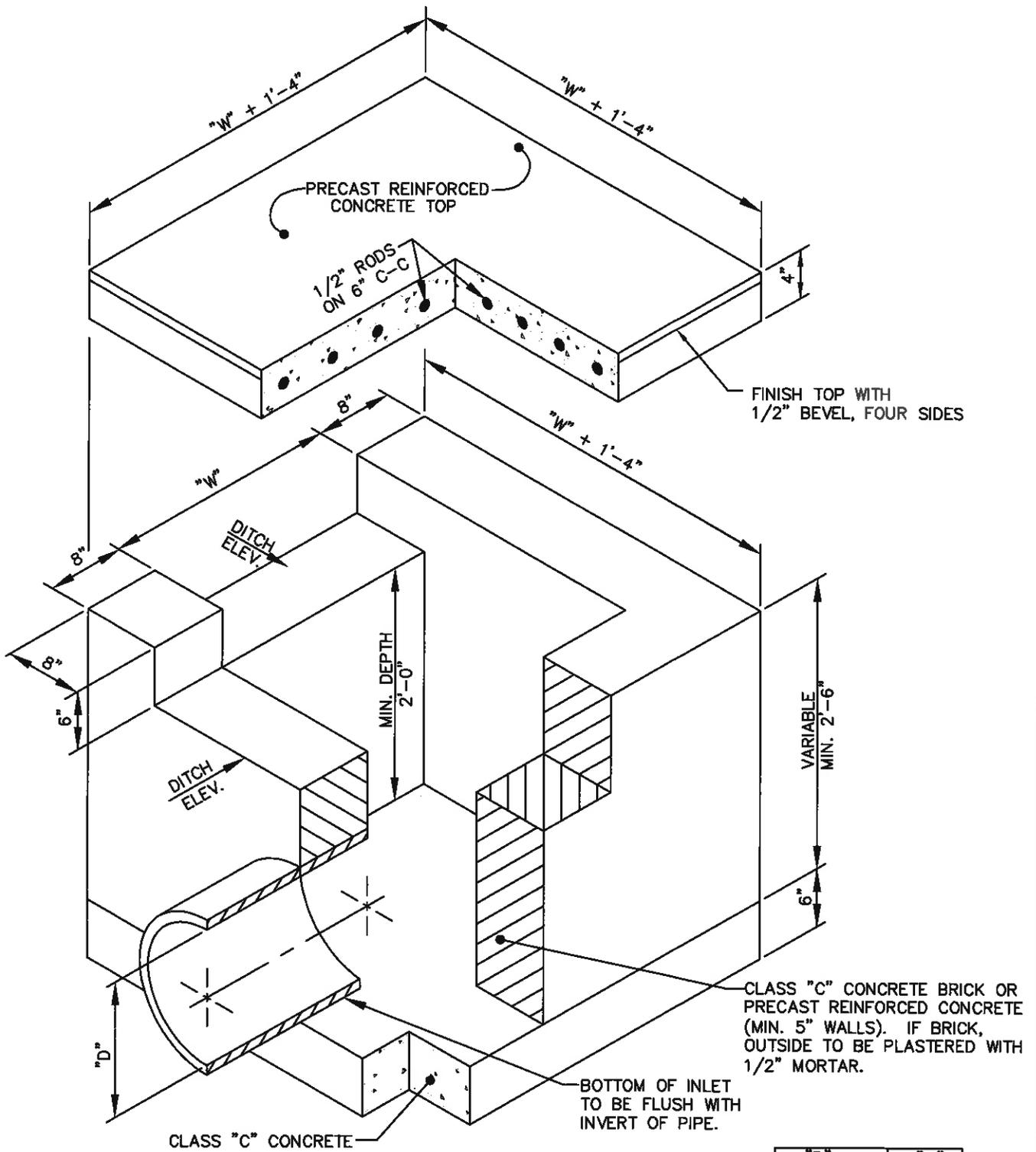
THE BOTTOM MAY BE PRECAST SEPARATELY AND THE OUTLET PIPE PLACED ON TOP OF IT WITH THE BOTTOM SHAPED TO DRAIN.



NOTE:
CASTING SHALL BE EAST JORDAN #7030 WITH A M2 GRATE & T4 BACK. IF INLET FALLS WITHIN A DRIVEWAY USE A T3 BACK.

**STORM SEWER CATCH BASIN
TYPE 3A**
NO SCALE

CITY OF FAIRLAWN	
STORM SEWER CATCH BASIN TYPE 3A	5
DATE: 3/03/11	



STORM SEWER INLET TYPE D

NO SCALE

NOTES:

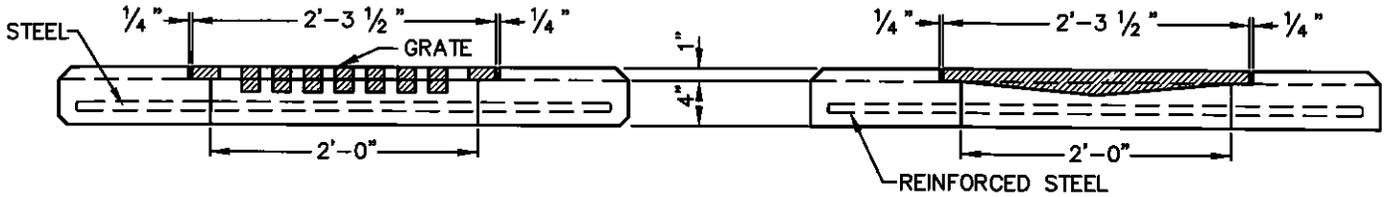
1. NUMBER OF WINDOW OPENINGS TO BE DETERMINED IN FIELD.
2. INLET TO BE BACKFILLED WITH TAMPED GRANULAR MATERIAL.
3. SEE STANDARD CONSTRUCTION DRAWING 6A FOR ALTERNATE STORM SEWER INLET TYPE D TOP.

CITY OF FAIRLAWN

STORM SEWER INLET
TYPE D

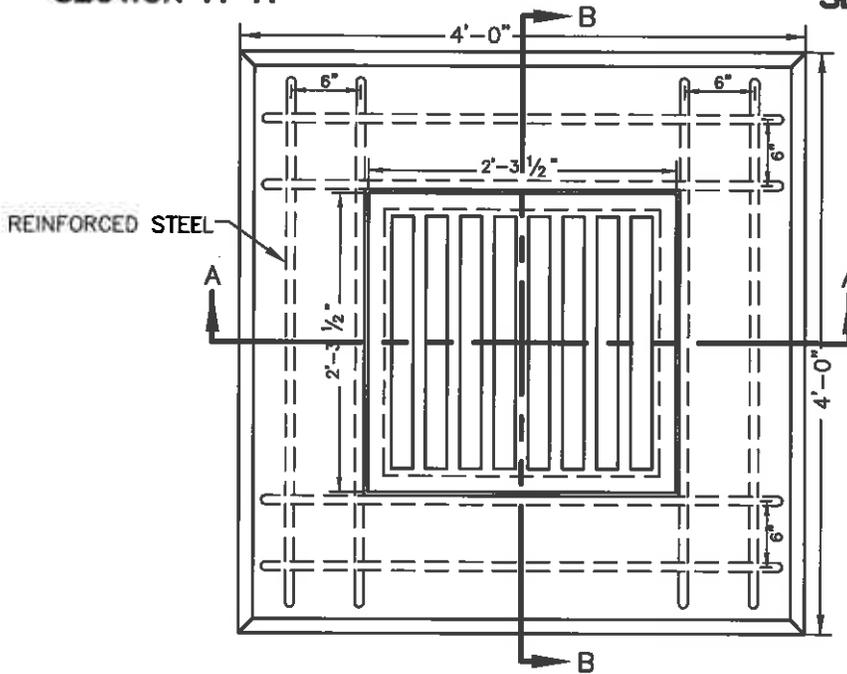
6

DATE: 3/03/11



SECTION A-A

SECTION B-B



ALL GRATE EDGES TO BE ROUNDED 1/4" RADIUS.

PLAN

**ALTERNATE STORM SEWER
INLET TYPE D TOP**

NO SCALE

NOTES:

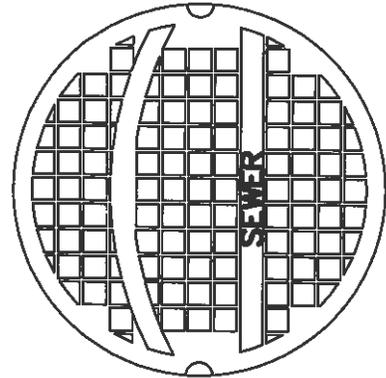
1. REINFORCING STEEL TO BE #4 BARS SPACED 6" CENTER TO CENTER. GRATE TO BE EAST JORDAN IRON WORKS NO. 5110, TYPE M1.

CITY OF FAIRLAWN

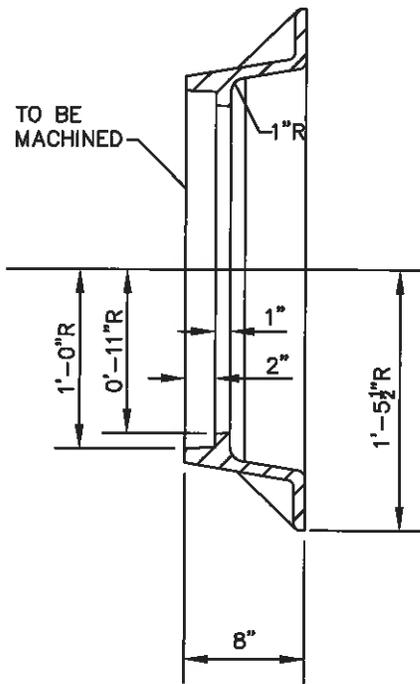
ALTERNATE STORM SEWER
INLET TYPE D TOP

6A

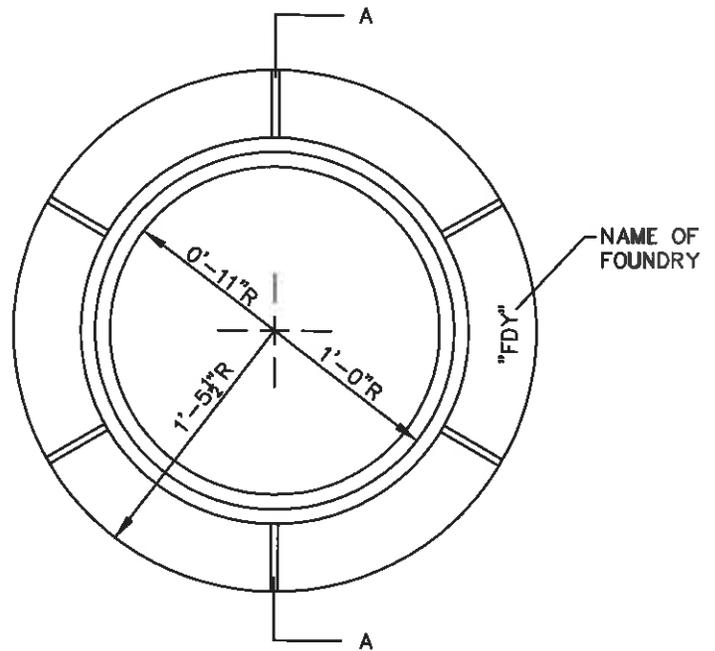
DATE: 3/03/11



USE LOCKING COVERS ON ALL
MANHOLES WITHIN EASEMENTS.



SECTION A-A



PLAN VIEW

WT. 350 LBS.

MANHOLE FRAME AND COVER

NO SCALE

NOTES:

FINISHED CASTINGS SHALL NOT VARY MORE THAN 1/16" PER FOOT IN ANY DIMENSION, OR MORE THAN 5% IN WEIGHT FROM THOSE CALLED FOR ON THE DRAWING. BEARING PARTS OF FRAME AND COVER SHALL BE MACHINED TO PROVIDE A FIRM AND EVEN SEAT FOR ANY POSITION OF THE COVER. MATERIAL FOR FRAME AND COVER TO BE CAST IRON OF GOOD QUALITY, CASTINGS TO BE FREE FROM BLOWHOLES AND OTHER DEFECTS. THEY SHALL BE CLEANED OF ALL SCALE AND GREASE AND RECEIVE TWO COATS OF BITUMINOUS PAINT. CASTINGS TO BE IN ACCORDANCE WITH TERMS OF SEWER SPECIFICATIONS, BOTH TO BEAR INSPECTION STAMP. EACH CASTING WHEN DELIVERED SHALL BE MARKED WITH ITS ACTUAL SHOP WEIGHT, CONSPICUOUSLY PAINTED IN WHITE. USE EAST JORDON IRON WORKS FRAME 1710, COVER TO BE TYPE A SOLID.

CITY OF FAIRLAWN

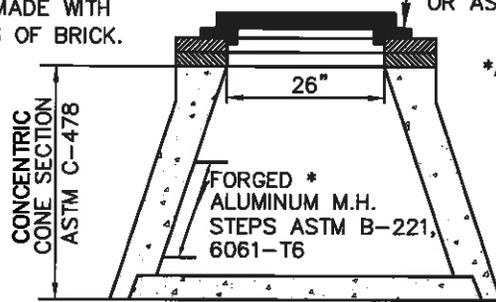
MANHOLE
FRAME AND COVER

7

DATE: 3/03/11

ADJUST TO GRADE WITH AT LEAST ONE 26" I.D. PRECAST GRADE RING. ADDITIONAL ADJUSTMENT MAY BE MADE WITH A MAX. OF TWO (2) COURSES OF BRICK.

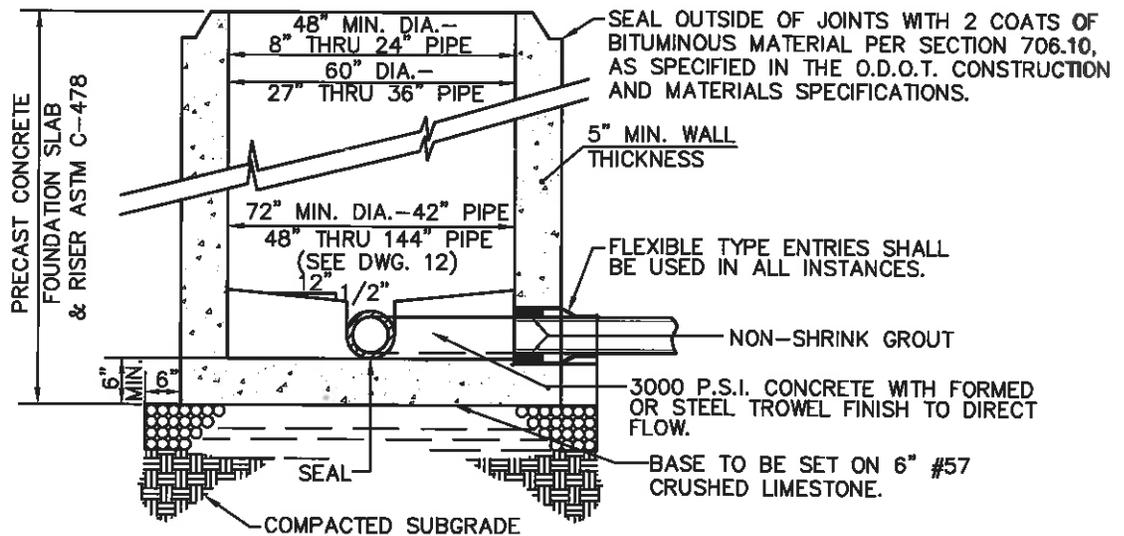
STD. M.H. FRAME & COVER SET IN 1-1/2" OF BITUMINOUS SEAL UNDER ENTIRE CASTING OR AS REQUIRED.



*ACCEPTABLE ALTERNATIVES
 EAST AKRON CASTING COMPANY - CAST IRON
 M.A. INDUSTRIES, INCORPORATED - PLASTIC COATED
 NEENAH FOUNDRY COMPANY - CAST IRON ALUMINUM
 STEPS ON 12" C-C OR 16" C-C REQUIRED FOR MANHOLES 4' DEEP OR DEEPER.

JOINTS BETWEEN SECTIONS SHALL CONFORM TO ASTM C-443

COAT ALL SURFACES IN CONTACT WITH CONCRETE WITH TWO (2) COATS OF BITUMINOUS PAINT.

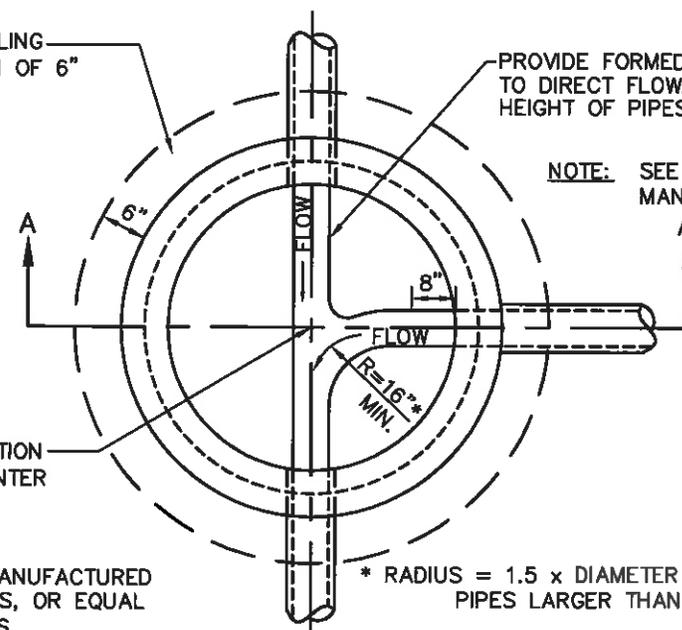


SECTION A-A

#57 CRUSHED LIMESTONE LEVELING COURSE TO EXTEND A MINIMUM OF 6" OUTSIDE PRECAST BASE.

PROVIDE FORMED OR STEEL TROWEL FINISH INVERT TO DIRECT FLOW. CHANNEL TO EXTEND TO FULL HEIGHT OF PIPES. SEE SECTION "A-A".

NOTE: SEE DRAWING NO. 10 FOR MANHOLES LESS THAN 6'-3" DEEP.



PLAN

INTERNAL CHIMNEY SEALS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS, OR EQUAL INSTALLED PER MANUFACTURER'S INSTRUCTIONS. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.02. MANHOLE WALLS TO BE SEALED USING WATER-PROOFING AS MANUFACTURED BY IPA SYSTEMS, INC. OR PRECO INDUSTRIES, LTD. OR EQUAL. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.08.

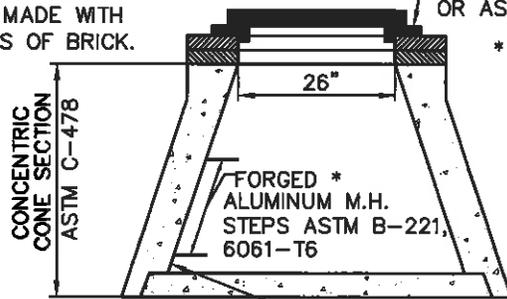
PRECAST MANHOLE WITH PRECAST CONCRETE BASE

NO SCALE

CITY OF FAIRLAWN	
PRECAST MANHOLE WITH PRECAST CONCRETE BASE	8
DATE: 3/03/11	

ADJUST TO GRADE WITH AT LEAST ONE 26" I.D. PRECAST GRADE RING. ADDITIONAL ADJUSTMENT MAY BE MADE WITH A MAX. OF TWO (2) COURSES OF BRICK.

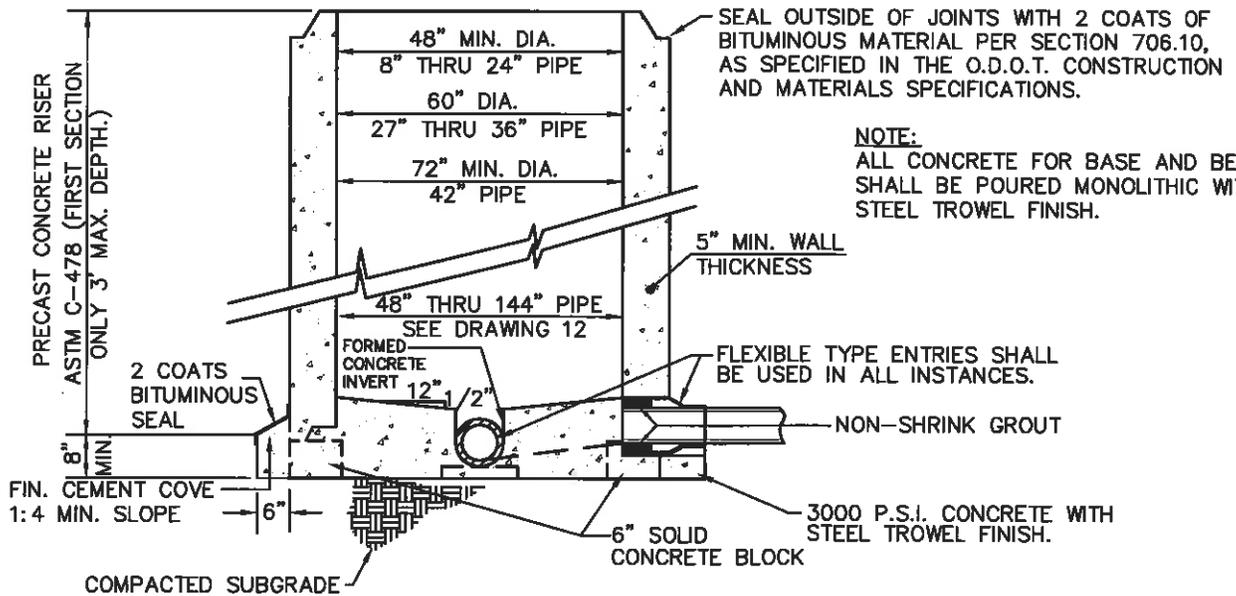
STD. M.H. FRAME & COVER SET IN 1-1/2" OF BITUMINOUS SEAL UNDER ENTIRE CASTING OR AS REQUIRED.



* ACCEPTABLE ALTERNATIVES
 EAST AKRON CASTING COMPANY - CAST IRON
 M.A. INDUSTRIES, INCORPORATED - PLASTIC COATED
 NEENAH FOUNDRY COMPANY - CAST IRON
 NEENAH FOUNDRY COMPANY - ALUMINUM
 STEPS ON 12" C-C OR 16" C-C REQUIRED FOR MANHOLES 4' DEEP OR DEEPER.

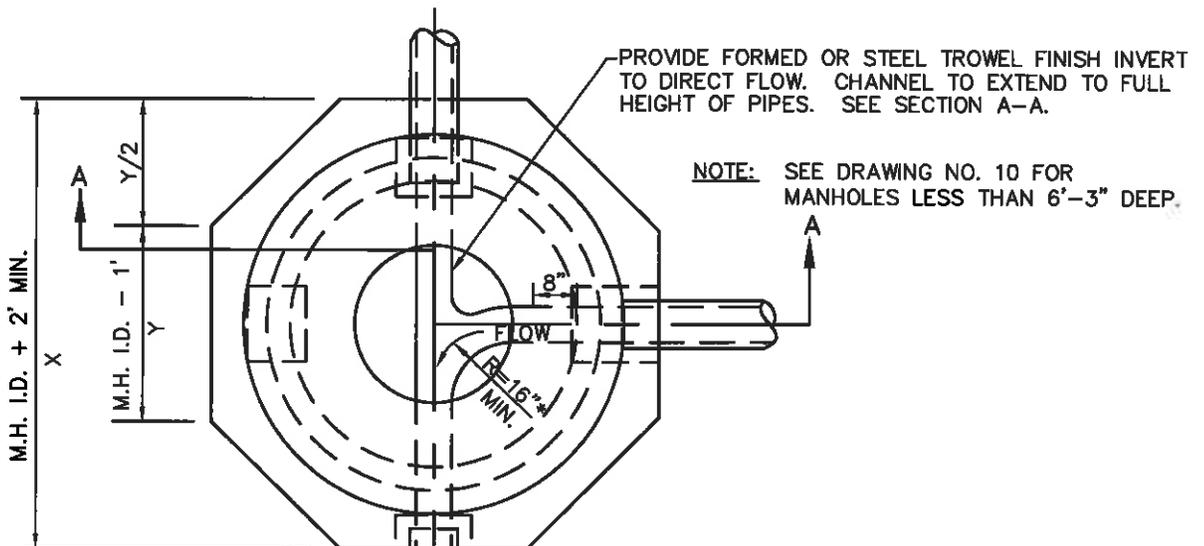
JOINTS BETWEEN SECTIONS SHALL CONFORM TO ASTM C-443

COAT ALL SURFACES IN CONTACT WITH CONCRETE WITH TWO (2) COATS OF BITUMINOUS PAINT.



NOTE:
 ALL CONCRETE FOR BASE AND BENCH SHALL BE POURED MONOLITHIC WITH STEEL TROWEL FINISH.

SECTION A-A



PLAN

PRECAST MANHOLE WITH CAST IN PLACE CONCRETE BASE

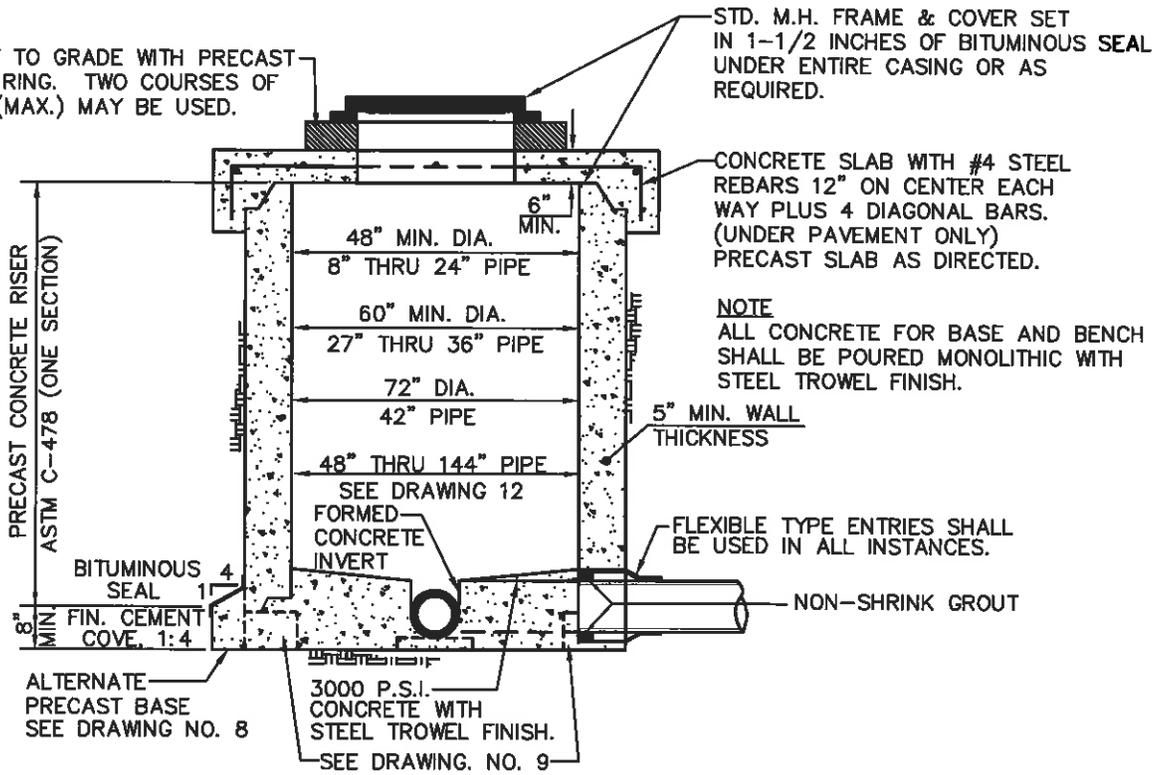
NO SCALE

INTERNAL CHIMNEY SEALS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS, OR EQUAL INSTALLED PER MANUFACTURER'S INSTRUCTIONS. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.02. MANHOLE WALLS TO BE SEALED USING WATER-PROOFING AS MANUFACTURED BY IPA SYSTEMS, INC. OR PRECO INDUSTRIES, LTD. OR EQUAL. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.08.

CITY OF FAIRLAWN	
PRECAST MANHOLE WITH CAST IN PLACE CONCRETE BASE	
DATE: 3/03/11	9

STEPS ON 12" C-C OR
16" C-C REQUIRED FOR
MAN HOLES 4' DEEP OR
DEEPER.

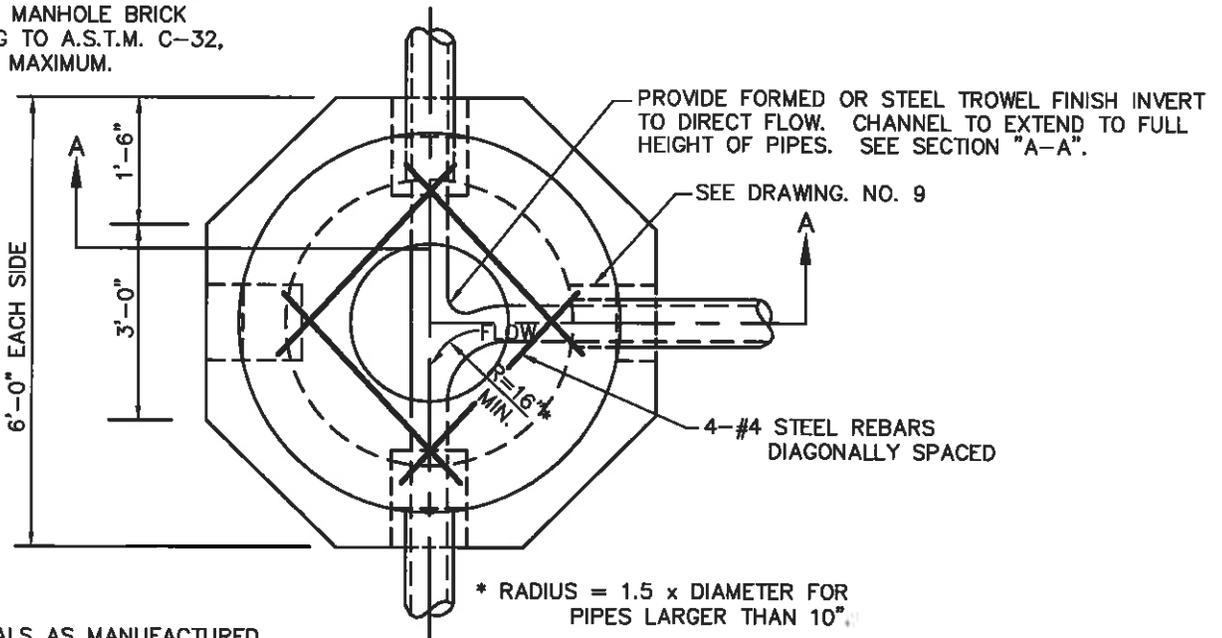
ADJUST TO GRADE WITH PRECAST
GRADE RING. TWO COURSES OF
BRICK (MAX.) MAY BE USED.



NOTE
ALL CONCRETE FOR BASE AND BENCH
SHALL BE POURED MONOLITHIC WITH
STEEL TROWEL FINISH.

SECTION A-A

BRICK TO BE CLAY OR SHALE
SEWER AND MANHOLE BRICK
CONFORMING TO A.S.T.M. C-32,
2 COURSES MAXIMUM.



**PLAN
POURED BASE SLAB**

SHALLOW MANHOLE

NO SCALE

INTERNAL CHIMNEY SEALS AS MANUFACTURED
BY CRETEX SPECIALTY PRODUCTS, OR EQUAL
INSTALLED PER MANUFACTURER'S
INSTRUCTIONS. SEE CITY OF FAIRLAWN
CONSTRUCTION AND MATERIALS
SPECIFICATIONS SECTION 40.02. MANHOLE
WALLS TO BE SEALED USING WATER-
PROOFING AS MANUFACTURED BY IPA
SYSTEMS, INC. OR PRECO INDUSTRIES, LTD.
OR EQUAL. SEE CITY OF FAIRLAWN
CONSTRUCTION AND MATERIALS
SPECIFICATIONS SECTION 40.08.

CITY OF FAIRLAWN	
SHALLOW MANHOLE 6'-3" AND UNDER	
DATE: 3/03/11	10

STEPS ON 12" C-C OR 16" C-C REQUIRED FOR MAN HOLES 4' DEEP OR DEEPER.

* CLASS 53 DUCTILE IRON PIPE

* AT LEAST 3' OF DUCTILE IRON PIPE TO BE PLACED ON UNDISTURBED EARTH OR AS DIRECTED.

6" MINIMUM FAIRLAWN ITEM 51

BITUMINOUS SEAL
STANDARD ELBOW

CAST IN PLACE BOTTOM SECTION (ALTERNATE)

COMPACTED SUBGRADE

FOR DETAIL OF MANHOLE SEE DRAWING NO. 8

SEAL OUTSIDE OF JOINTS WITH 2 COATS OF BITUMINOUS MATERIAL PER SECTION 706.10, AS SPECIFIED IN THE O.D.O.T. CONSTRUCTION AND MATERIALS SPECIFICATIONS.

"O" RING JOINTS

VARIES
24" MINIMUM

5"

PLAN Dia.

4" MIN.

48" MIN. INSIDE DIA.

5" MIN. WALL

MATERIAL FOR DROP SAME AS MAINLINE OR AS DIRECTED BY THE CITY OF FAIRLAWN.

CHANNEL AS REQUIRED

DIMENSION FURNISHED AS SPECIFIED

12" MIN. 1/2"

6"

12"

BASE TO BE SET LEVEL AND PLUMB ON 6" COURSE OF SLAG.

INTERNAL CHIMNEY SEALS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS, OR EQUAL INSTALLED PER MANUFACTURER'S INSTRUCTIONS. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.02. MANHOLE WALLS TO BE SEALED USING WATER-PROOFING AS MANUFACTURED BY IPA SYSTEMS, INC. OR PRECO INDUSTRIES, LTD. OR EQUAL. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.08.

MANHOLE WITH OUTSIDE DROP

NO SCALE

NOTES:

SEE CITY OF FAIRLAWN STANDARD DETAIL DRAWINGS 7 AND 8 FOR CONCENTRIC CONE SECTION, RISER, FRAME, COVER AND STEPS.

CONCRETE FOR BASE AND BENCH SHALL BE POURED AS ONE PIECE AND FINISHED WITH STEEL TROWEL OR PRECAST AS SHOWN ON DRAWINGS 8.

MANHOLE DROP SHALL BE A MINIMUM OF EIGHT INCHES IN DIAMETER UNLESS OTHERWISE SPECIFIED OR DIRECTED BY THE CITY OF FAIRLAWN.

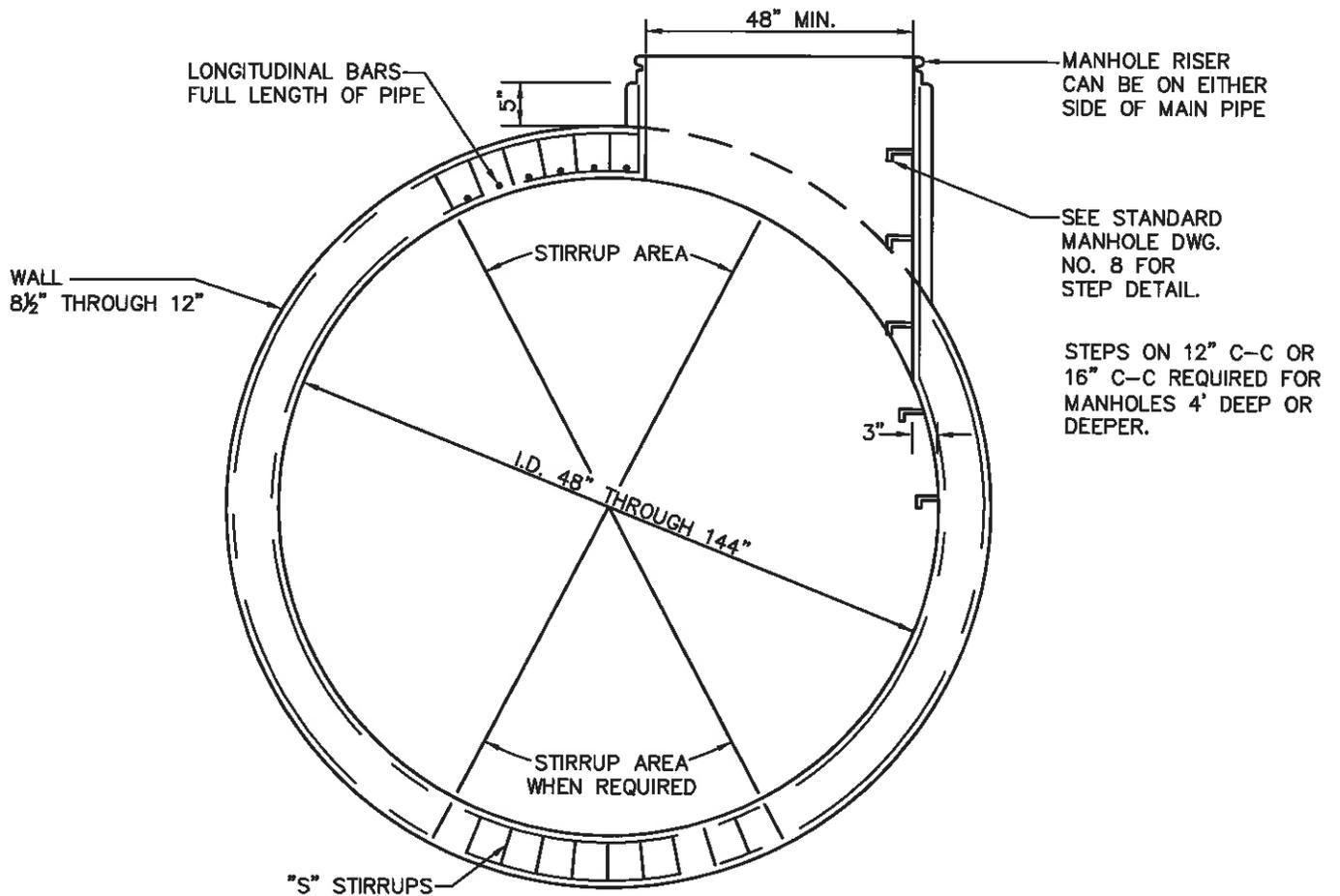
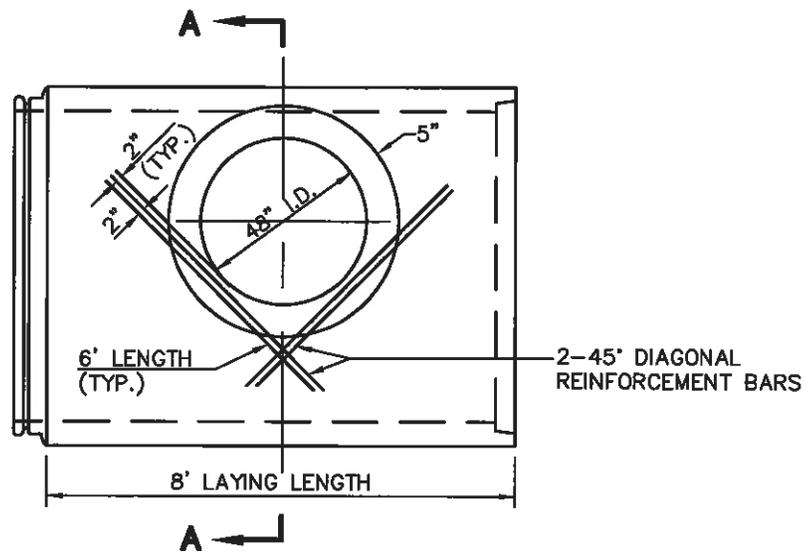
*OTHER MATERIAL MAY BE USED AS DIRECTED BY THE CITY OF FAIRLAWN.

CITY OF FAIRLAWN

MANHOLE WITH OUTSIDE DROP

11

DATE: 3/03/11



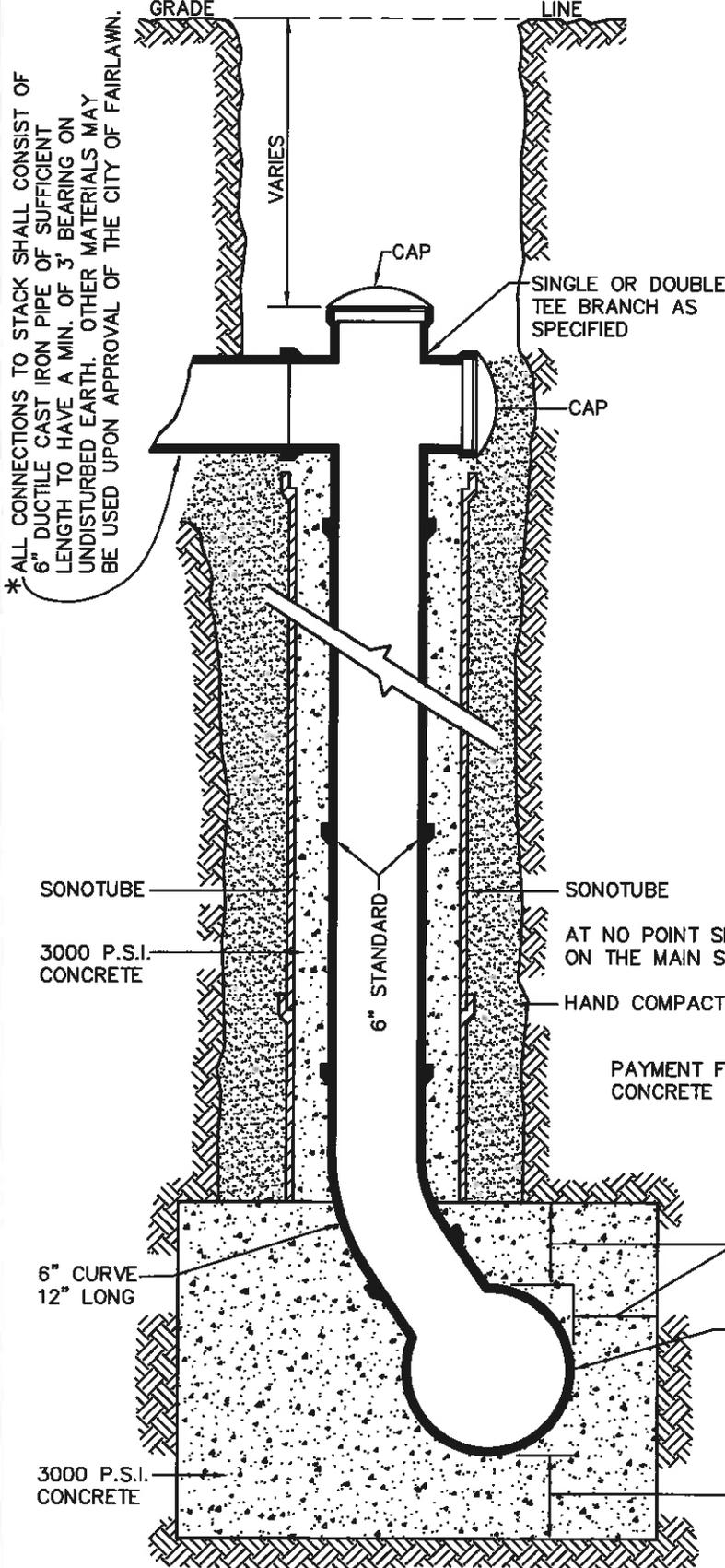
SECTION A-A

**PRECAST CONCRETE
MANHOLE TEE**

NO SCALE

INTERNAL CHIMNEY SEALS AS MANUFACTURED BY CRETEX SPECIALTY PRODUCTS, OR EQUAL INSTALLED PER MANUFACTURER'S INSTRUCTIONS. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.02. MANHOLE WALLS TO BE SEALED USING WATER-PROOFING AS MANUFACTURED BY IPA SYSTEMS, INC. OR PRECO INDUSTRIES, LTD. OR EQUAL. SEE CITY OF FAIRLAWN CONSTRUCTION AND MATERIALS SPECIFICATIONS SECTION 40.08.

CITY OF FAIRLAWN	
PRECAST CONCRETE MANHOLE TEE	
DATE: 3/03/11	12



* ALL CONNECTIONS TO STACK SHALL CONSIST OF 6" DUCTILE CAST IRON PIPE OF SUFFICIENT LENGTH TO HAVE A MIN. OF 3' BEARING ON UNDISTURBED EARTH. OTHER MATERIALS MAY BE USED UPON APPROVAL OF THE CITY OF FAIRLAWN.

BRANCHES, SERVICE EXTENSIONS AND STACKS

1. INSTALL AT LOCATIONS AND ELEVATIONS SHOWN ON DRAWINGS, OR AS DIRECTED BY THE CITY OF FAIRLAWN.
2. LAY 6" SERVICE CONNECTIONS TO 10' PAST PROPERTY LINE IN DEVELOPED AREAS UNLESS OTHERWISE DIRECTED OR SPECIFIED.
3. GENERALLY PROVIDE STACKS WHERE SEWER IS MORE THAN 12 FEET BELOW GROUND SURFACE AND EXTEND STACK TO WITHIN 10 FEET OF SURFACE.
4. ALL STACK PIPE AND STACK FITTINGS SHALL BE ACCEPTED BY THE CITY OF FAIRLAWN PRIOR TO CONSTRUCTION.
5. STACKS SHALL BE CONSTRUCTED AS SHOWN ON STANDARD DRAWING. ENCASEMENT SHALL BE WITH 3000 P.S.I. CONCRETE.
6. PRECAST BRANCHES AND STACKS SUPPORTED WITH HAND COMPACTED BACKFILL MAY ALSO BE APPROVED BY THE CITY OF FAIRLAWN.

MARKERS

1. PROVIDE 2"x2" POLES TO MARK END OF BRANCHES, STACKS AND SERVICE CONNECTIONS FOR FUTURE LOCATION.
2. EXTEND POLE FROM BELL TO 12" ABOVE GROUND SURFACE, DURING CONSTRUCTION.
3. REST POLES AGAINST BELL BUT NOT ON IT.
4. SUPPORT POLES IN VERTICAL POSITION DURING BACKFILL.
5. CUT 2"x2" POLES OFF 1'-0" BELOW GROUND LEVEL AFTER CONSTRUCTION. (POLES TO BE OF ROUGH CUT LUMBER)

AT NO POINT SHALL THE SONOTUBE REST ON THE MAIN SEWER LINE.

HAND COMPACTED BACKFILL

PAYMENT FOR STACK SHALL INCLUDE, TEE, CONCRETE AND PIPE COMPLETE IN PLACE.

6" CURVE 12" LONG

3000 P.S.I. CONCRETE

6" MIN. OR AS DIRECTED BY THE CITY OF FAIRLAWN.

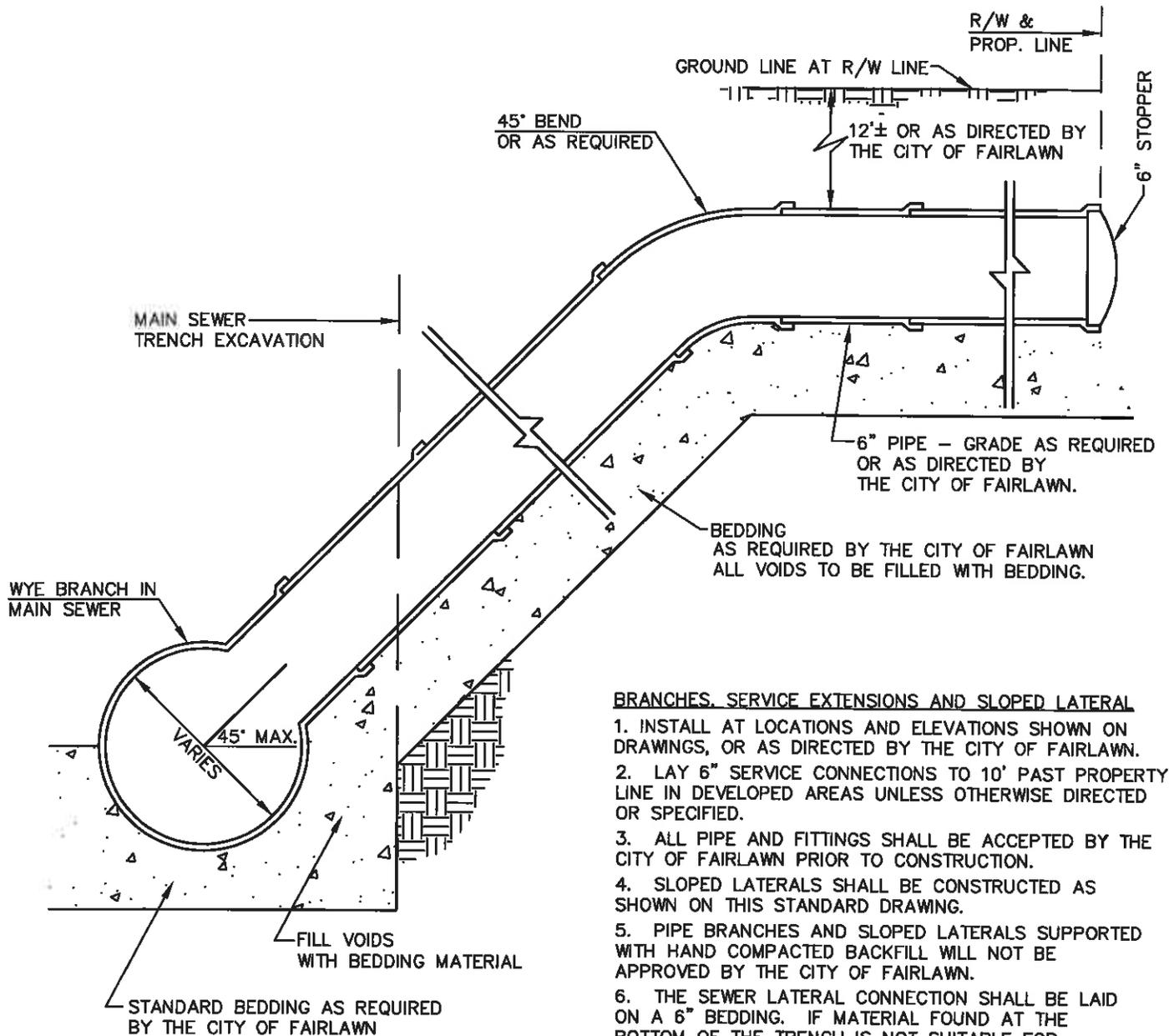
MAIN SEWER LINE

I.D. OF MAINLINE VARIABLE WITH 6" WYE BRANCH

6" MIN.

STACKS FOR SANITARY SEWERS
NO SCALE

CITY OF FAIRLAWN	
STACKS FOR SANITARY SEWERS	13
DATE: 3/03/11	



- BRANCHES, SERVICE EXTENSIONS AND SLOPED LATERAL**
1. INSTALL AT LOCATIONS AND ELEVATIONS SHOWN ON DRAWINGS, OR AS DIRECTED BY THE CITY OF FAIRLAWN.
 2. LAY 6" SERVICE CONNECTIONS TO 10' PAST PROPERTY LINE IN DEVELOPED AREAS UNLESS OTHERWISE DIRECTED OR SPECIFIED.
 3. ALL PIPE AND FITTINGS SHALL BE ACCEPTED BY THE CITY OF FAIRLAWN PRIOR TO CONSTRUCTION.
 4. SLOPED LATERALS SHALL BE CONSTRUCTED AS SHOWN ON THIS STANDARD DRAWING.
 5. PIPE BRANCHES AND SLOPED LATERALS SUPPORTED WITH HAND COMPACTED BACKFILL WILL NOT BE APPROVED BY THE CITY OF FAIRLAWN.
 6. THE SEWER LATERAL CONNECTION SHALL BE LAID ON A 6" BEDDING. IF MATERIAL FOUND AT THE BOTTOM OF THE TRENCH IS NOT SUITABLE FOR FOUNDATION IT SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL (I.E., GRAVEL, SLAG OR LIMESTONE) TO THE PROPER GRADE.
 7. TRENCH WIDTH SHALL BE O.D. OF PIPE PLUS 2'-0" MAXIMUM.

MARKERS

1. PROVIDE 2"x2" POLES TO MARK END OF BRANCHES, SERVICE CONNECTIONS AND SLOPED LATERALS FOR FUTURE LOCATION.
2. EXTEND POLE FROM BELL TO 12" ABOVE GROUND SURFACE DURING CONSTRUCTION.
3. REST POLES AGAINST BELL, BUT NOT ON IT.
4. SUPPORT POLES IN VERTICAL POSITION DURING BACKFILL.
5. CUT 2"x2" POLES OFF 12" BELOW GROUND LEVEL AFTER CONSTRUCTION. (POLES TO BE OF ROUGH CUT LUMBER.)

TYPICAL SECTION OF LATERAL TRENCH FOR STANDARD SLOPED LATERAL CONNECTION

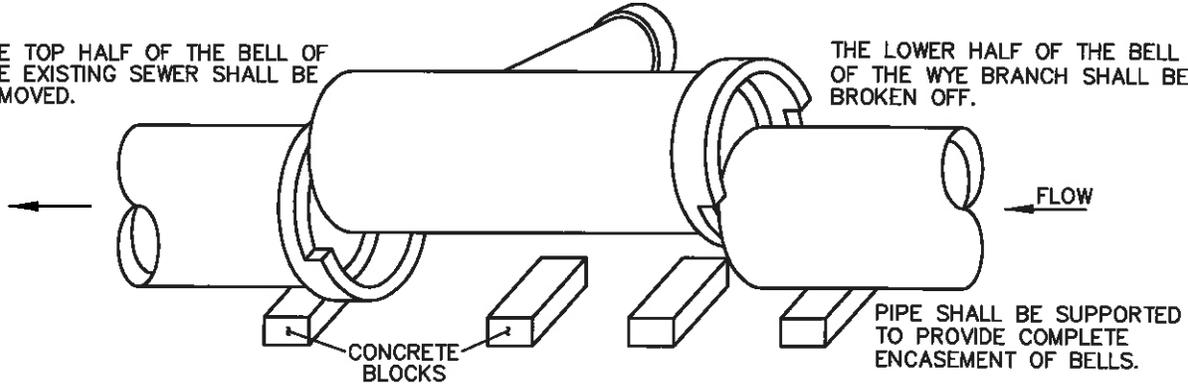
NO SCALE

CITY OF FAIRLAWN	
SLOPED LATERALS	14
DATE: 3/03/11	

THE NEW WYE BRANCH SHALL BE PLACED WITH THE WYE ON THE OPPOSITE SIDE OF THE SEWER FROM THE PROPOSED LATERAL.

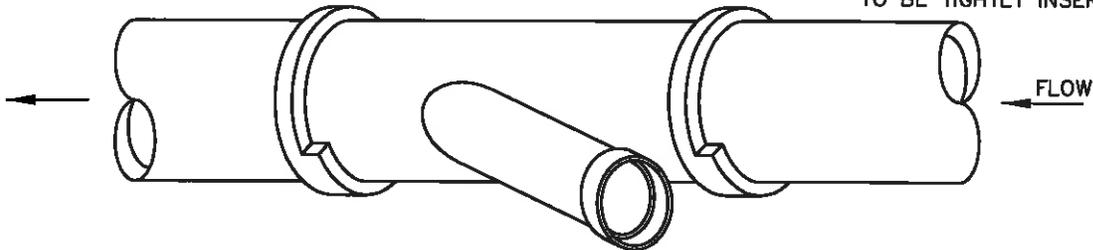
THE TOP HALF OF THE BELL OF THE EXISTING SEWER SHALL BE REMOVED.

THE LOWER HALF OF THE BELL OF THE WYE BRANCH SHALL BE BROKEN OFF.

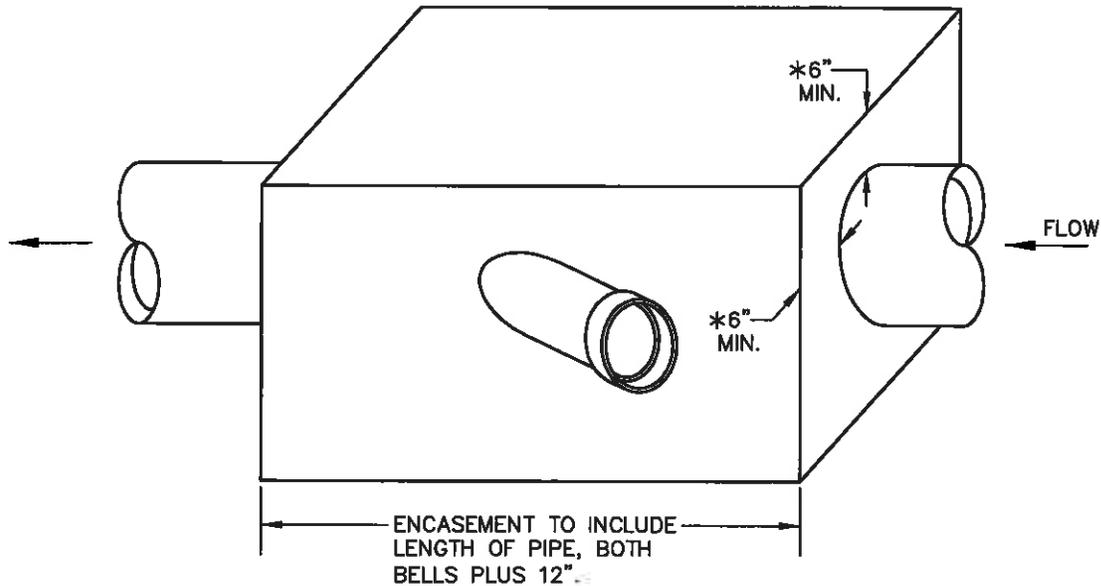


THE WYE BRANCH SHALL BE ROTATED TO BRING THE WYE INTO THE CORRECT POSITION FOR THE PROPOSED LATERAL.

EXISTING SEWER TO BE CUT TO PROPER LENGTH FOR NEW WYE TO BE TIGHTLY INSERTED.



THE GOOD PORTION OF THE BELL OF EACH PIPE SHALL BE UNDER THE JOINT AND JOINT PACKED WITH OAKUM OR EQUAL PRIOR TO PLACING CONCRETE ENCASEMENT.



NOTE:
*LARGER SIZES OF PIPE WILL REQUIRE MORE THAN 6" OF CONCRETE TO COMPLETELY ENCASE THE BELL.

WYE INSTALLATION ON EXISTING SANITARY SEWER

SCALE: NO SCALE

CITY OF FAIRLAWN	
WYE INSTALLATION ON EXISTING SANITARY SEWER	
DATE: 3/03/11	15

AMOUNTS FINER THAN EACH LABORATORY SIEVE (SQUARE OPENINGS), PERCENTAGE BY WEIGHT

NO.	NOMINAL SIZE SQUARE OPENINGS (1)	AMOUNTS FINER THAN EACH LABORATORY SIEVE (SQUARE OPENINGS), PERCENTAGE BY WEIGHT														
		4	3-1/2	3	2-1/2	2	1-1/2	1	3/4	1/2	3/8	NO.4	NO.8	NO.16	NO.50	NO.100
1	3-1/2 TO 1-1/2	100	90to100	--	25to60	--	0 to 15	--	0 to 5	--	--	--	--	--	--	--
2	2-1/2 TO 1-1/2	--	100	90to100	35to 70	0 to 15	--	0 to 5	--	--	--	--	--	--	--	--
24	3-1/2 TO 3/4	--	100	90to100	--	25to 60	--	0 to 10	0 to 5	--	--	--	--	--	--	--
3	2 TO 1	--	--	100	90to100	35to 70	0 to 15	--	0 to 5	--	--	--	--	--	--	--
357	2 TO NO. 4	--	--	100	95to100	--	35to 70	--	10to 30	--	--	0 to 5	--	--	--	--
4	1-1/2 TO 3/4	--	--	100	90to100	20to 55	0 to 15	--	0 to 5	--	--	--	--	--	--	--
467	1-1/2 TO NO. 4	--	--	100	95to100	--	35to 70	--	10to 30	0 to 5	--	--	--	--	--	--
5	1 TO 1/2	--	--	100	90to100	20to 55	0 to 10	0 to 10	0 to 5	--	--	--	--	--	--	--
56	1 TO 3/8	--	--	100	90to100	40to 75	15to 35	0 to 15	0 to 5	--	--	--	--	--	--	--
57	1 TO NO. 4	--	--	100	95to100	--	25to 60	--	0 to 10 to 5	--	--	--	--	--	--	--
6	3/4 TO 3/8	--	--	100	90to100	20to 55	0 to 15	0 to 5	--	--	--	--	--	--	--	--
67	3/4 TO NO. 4	--	--	100	90to100	40to 75	15to 35	0 to 15	0 to 5	--	--	--	--	--	--	--
68	3/4 TO NO. 8	--	--	100	90to100	--	25to 60	--	0 to 10 to 5	--	--	--	--	--	--	--
7	1/2 TO NO. 4	--	--	100	90to100	20to 55	0 to 15	0 to 5	--	--	--	--	--	--	--	--
78	1/2 TO NO. 8	--	--	100	90to100	40to 75	15to 35	0 to 15	0 to 5	--	--	--	--	--	--	--
8	3/8 TO NO. 8	--	--	100	95to100	--	35to 70	--	10to 30	0 to 5	--	--	--	--	--	--
89	3/8 TO NO. 16	--	--	100	90to100	20to 55	0 to 10	0 to 5	--	--	--	--	--	--	--	--
9	NO. 4 TO NO. 16	--	--	100	90to100	40to 75	15to 35	0 to 15	0 to 5	--	--	--	--	--	--	--
10	NO. 4 TO O(2)	--	--	100	90to100	40to 75	15to 35	0 to 15	0 to 5	--	--	--	--	--	--	10to 30

(1) IN INCHES, EXCEPT WHERE OTHERWISE INDICATED. NUMBERED SIEVES ARE THOSE OF THE UNITED STATES STANDARD SIEVE SERIES SCREENINGS.

(2) WHERE STANDARD SIZES OF COARSE AGGREGATE DESIGNATED BY TWO OR THREE DIGIT NUMBERS ARE SPECIFIED, OBTAIN THE SPECIFIED GRADATION BY COMBINING THE APPROPRIATE SINGLE DIGIT STANDARD SIZE AGGREGATES BY A SUITABLE PROPORTIONING DEVICE WHICH HAS A SEPARATE COMPARTMENT FOR EACH COARSE AGGREGATE COMBINED. PERFORM THE BLENDING AS DIRECTED BY THE LABORATORY.

SIZES OF COARSE AGGREGATE (AASHTO M 43)

CITY OF FAIRLAWN	
AGGREGATE SIZING STANDARD	
DATE: 3/03/11	16

DESCRIPTION OF EMBEDMENT MATERIAL CLASSIFICATIONS

SOIL CLASS	SOIL TYPE	DESCRIPTION OF MATERIAL CLASSIFICATIONS
CLASS I SOILS*	-	Manufactured angular, granular material, 1/4 to 1-1/2 inches (6 to 40 mm) size, including materials having regional significance such as crushed stone or rock, broken coral, crushed slag, cinders, or crushed shells.
CLASS II SOILS**	GW	Well-graded gravels and gravel-sand mixtures, little or no fines. 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
	GP	Poorly graded gravels and gravel-sand mixtures, little or no fines, 50% or more retained on No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
	SW	Well-graded sands and gravelly sands, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
	SP	Poorly graded sands and gravelly sands, little or no fines. More than 50% passes No. 4 sieve. More than 95% retained on No. 200 sieve. Clean.
CLASS III SOILS***	GM	Silty gravels, gravel-sand-silt mixtures. 50% or more retained on No. 4 sieve. More than 50% retained on No. 200 sieve.
	GC	Clayey gravels, gravel-sand-clay mixtures. 50% or more retained on No. 4 sieve. More than 50% retained on No. 200 sieve.
	SM	Silty sands, sand-silt mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.
	SC	Clayey sands, sand-clay mixtures. More than 50% passes No. 4 sieve. More than 50% retained on No. 200 sieve.
CLASS IV SOILS	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.
	CH	Inorganic clays of high plasticity, fat clays. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.
CLASS V SOILS	OL	Organic silts and organic silty clays of low plasticity. Liquid limit 50% or less. 50% or more passes No. 200 sieve.
	OH	Organic clays of medium to high plasticity. Liquid limit greater than 50%. 50% or more passes No. 200 sieve.
	PT	Peat, muck, and other highly organic soils.

* Soils defined as Class I materials are not defined in ASTM D-2487.

** In accordance with ASTM D-2487, less than 5% pass No. 200 sieve.

*** In accordance with ASTM D-2487, more than 12% pass No. 200 sieve. Soils with 5% to 12% pass No. 200 sieve fall in borderline classification, e.g., GP-GC.

CITY OF FAIRLAWN

STANDARD SOIL CLASSIFICATIONS

17

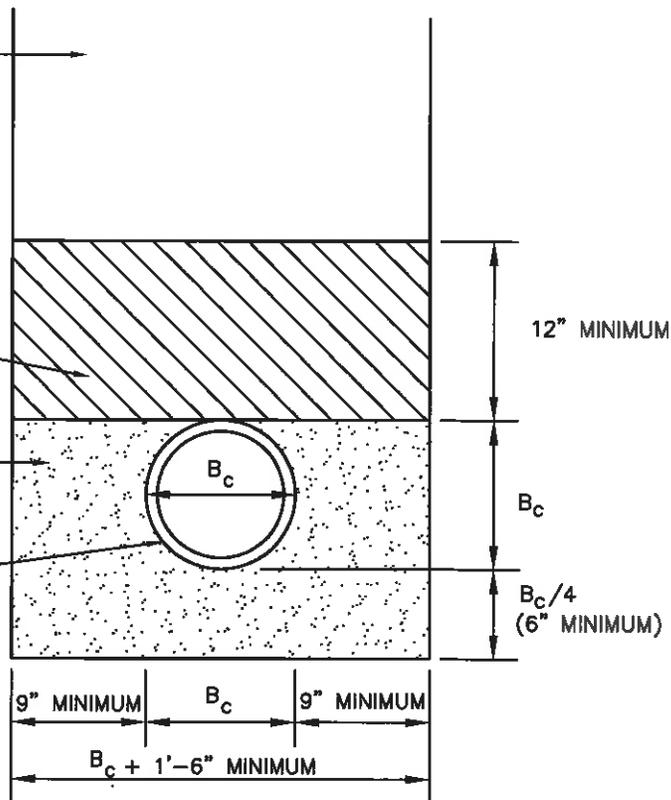
DATE: 8/01/02

FAIRLAWN ITEM 23
BACKFILL AS DIRECTED.

* STANDARD DRAWING NO. 17
CLASS I THRU III - COMPACTED
INITIAL BACKFILL - HAND PLACED.
TAMPED AS DIRECTED.

STANDARD DRAWING NO. 17
CLASS I, #467 AGGREGATE
OR AS DIRECTED.

CARE MUST BE TAKEN TO
ENSURE THAT SUFFICIENT
BEDDING HAS BEEN WORKED
UNDER THE HAUNCH OF THE
PIPE TO PROVIDE ADEQUATE
SIDE SUPPORT.



FLEXIBLE PIPE BEDDING AND BACKFILLING

NO SCALE

NOTE:

ALL BEDDING AND BACKFILLING SHALL BE IN ACCORDANCE WITH A.S.T.M. D-2321 UNLESS OTHERWISE DIRECTED HEREIN OR BY THE CITY OF FAIRLAWN.

* NOT APPLICABLE UNDER DRIVEWAYS, AND/OR TRAVELED ROADWAYS. SEE STANDARD DRAWING NO. 24.

"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

FLEXIBLE PIPE

- 1) A.S.T.M. D-2680, ACRYLONITRILE - BUTADINE STYRENE (A.B.S.) COMPOSITE PIPE
- 2) A.S.T.M. D-2751, ACRYLONITRILE - BUTADINE STYRENE (A.B.S.) SOLID WALL PIPE
- 3) A.S.T.M. D-3034, POLYVINYL CHLORIDE (P.V.C.) PIPE S.D.R. 35 MAXIMUM
- 4) UNI-B-11-85, POLYVINYL CHLORIDE (P.V.C.) SOLID WALL PIPE S.D.R. 25 MAXIMUM

CITY OF FAIRLAWN

FLEXIBLE PIPE
BEDDING AND BACKFILLING

18

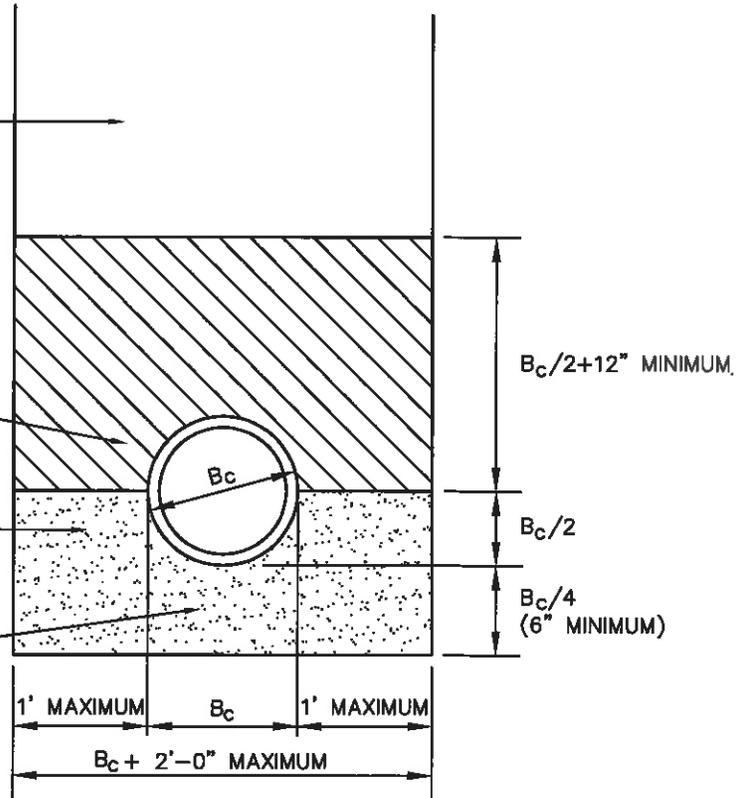
DATE: 3/03/11

FAIRLAWN ITEM 23
BACKFILL AS DIRECTED.

*STANDARD DRAWING NO. 17
CLASS I THRU III - COMPACTED
INITIAL BACKFILL - HAND PLACED.
TAMPED IF DIRECTED.

STANDARD DRAWING NO. 17
CLASS I, #467 AGGREGATE,
OR AS DIRECTED.

CARE MUST BE TAKEN TO
ENSURE THAT SUFFICIENT
BEDDING HAS BEEN WORKED
UNDER THE PIPE TO PREVENT
VOIDS.



RIGID PIPE BEDDING AND BACKFILLING

NO SCALE

NOTE:

"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

* NOT APPLICABLE UNDER DRIVEWAYS, AND/OR TRAVELED ROADWAYS. SEE STANDARD DRAWING NO. 24.

RIGID PIPE

- 1) A.S.T.M. C-14, PLAIN CONCRETE PIPE
- 2) A.S.T.M. C-76, REINFORCED CONCRETE PIPE
- 3) A.S.T.M. C-700, EXTRA STRENGTH CLAY PIPE
- 4) A.N.S.I. C-2151, DUCTILE IRON PIPE
- 5) A.S.T.M. C-2992, 2996 PERMASTRAN® WOUND RESIN

CITY OF FAIRLAWN

RIGID PIPE
BEDDING AND BACKFILLING

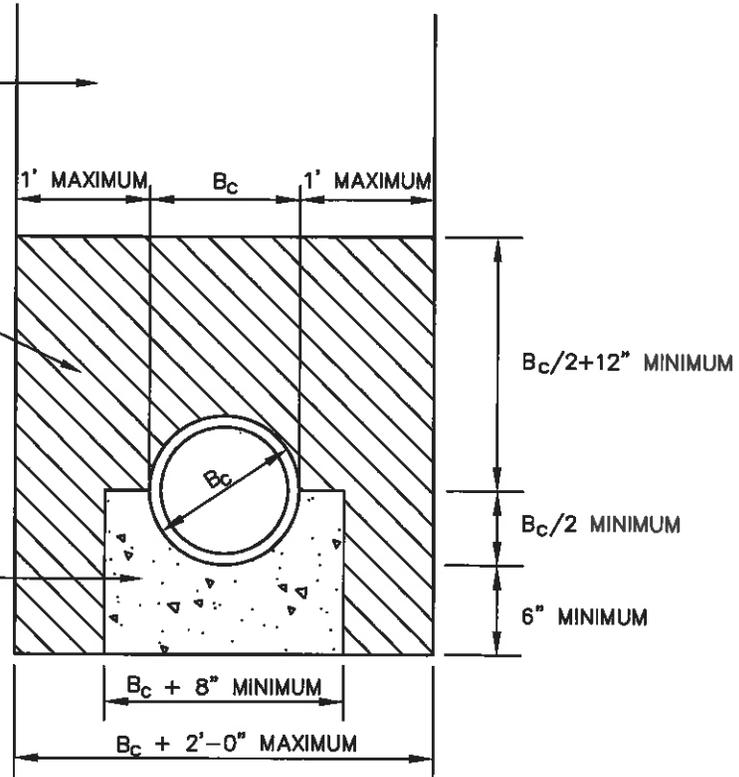
19

DATE: 3/03/11

FAIRLAWN ITEM 23
BACKFILL AS DIRECTED.

* STANDARD DRAWING NO. 17
CLASS I THRU III - COMPACTED
INITIAL BACKFILL - HAND PLACED
TAMPED IF DIRECTED.

PLAIN OR REINFORCED
3000 P.S.I. CONCRETE
AS REQUIRED BY DESIGN.



**RIGID PIPE - CONCRETE CRADLE
BEDDING AND BACKFILLING**

NO SCALE

CONTRACTOR HAS THE OPTION OF HAND BACKFILLING AND COMPACTING
ADDITIONAL SPACE TO TOP OF CRADLE OR, IN LIEU OF HAND FORMING,
MAY FILL ENTIRE TRENCH WITH CONCRETE TO TOP OF CRADLE AT
NO COST TO THE CITY OF FAIRLAWN.

* NOT APPLICABLE UNDER DRIVEWAYS, AND/OR TRAVELED ROADWAYS
SEE STANDARD DRAWING NO. 24.

"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

RIGID PIPE

- 1) A.S.T.M. C-14, PLAIN CONCRETE PIPE
- 2) A.S.T.M. C-76, REINFORCED CONCRETE PIPE
- 3) A.S.T.M. C-700, EXTRA STRENGTH CLAY PIPE
- 4) A.N.S.I. A-2151, DUCTILE IRON PIPE

CITY OF FAIRLAWN	
RIGID PIPE - CONCRETE CRADLE BEDDING AND BACKFILLING	20
DATE: 3/03/11	

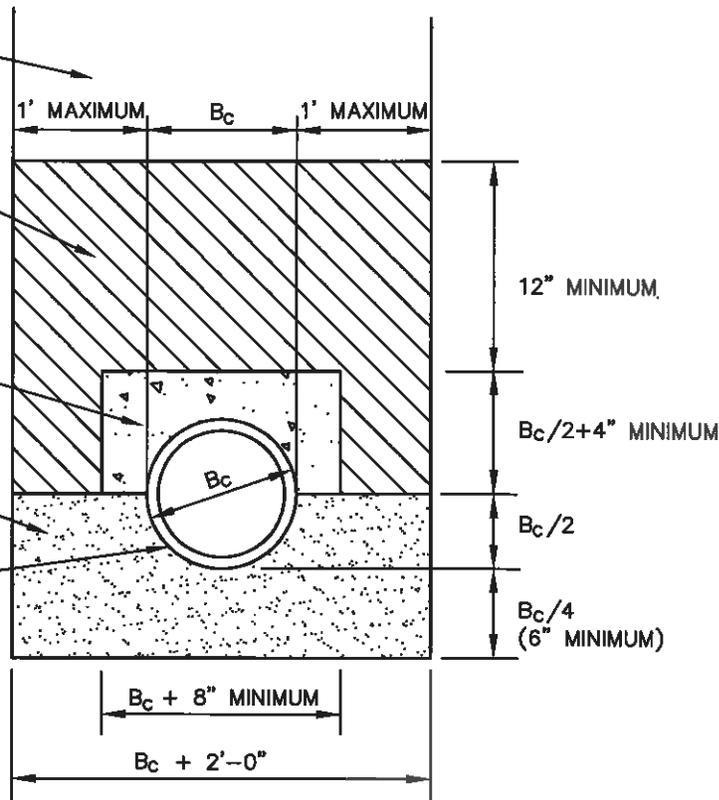
FAIRLAWN ITEM 23
BACKFILL AS DIRECTED.

* STANDARD DRAWING NO. 17
CLASS I THRU III - COMPACTED
INITIAL BACKFILL - HAND PLACED,
TAMPED IF DIRECTED.

PLAIN OR REINFORCED
3000 P.S.I. CONCRETE OR
AS REQUIRED BY DESIGN.

STANDARD DRAWING NO. 17
CLASS I, #467 AGGREGATE
OR AS DIRECTED.

CARE MUST BE TAKEN TO
ENSURE THAT SUFFICIENT
BEDDING HAS BEEN WORKED
UNDER THE PIPE TO PREVENT
VOIDS.



RIGID PIPE - CONCRETE ARCH BEDDING AND BACKFILLING

NO SCALE

CONTRACTOR HAS THE OPTION OF HAND BACKFILLING AND TAMPING ADDITIONAL SPACE TO TOP OF ARCH OR, IN LIEU OF HAND FORMING, MAY FILL ENTIRE TRENCH WITH CONCRETE TO TOP OF CAP AT NO COST TO THE CITY OF FAIRLAWN.

"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

* NOT APPLICABLE UNDER DRIVEWAYS, AND/OR TRAVELED ROADWAYS
SEE STANDARD DRAWING NO. 24

B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

RIGID PIPE

- 1) A.S.T.M. C-14, PLAIN CONCRETE PIPE
- 2) A.S.T.M. C-76, REINFORCED CONCRETE PIPE
- 3) A.S.T.M. C-700, EXTRA STRENGTH CLAY PIPE
- 4) A.N.S.I. A-2151, DUCTILE IRON PIPE

CITY OF FAIRLAWN

RIGID PIPE - CONCRETE ARCH
BEDDING AND BACKFILLING

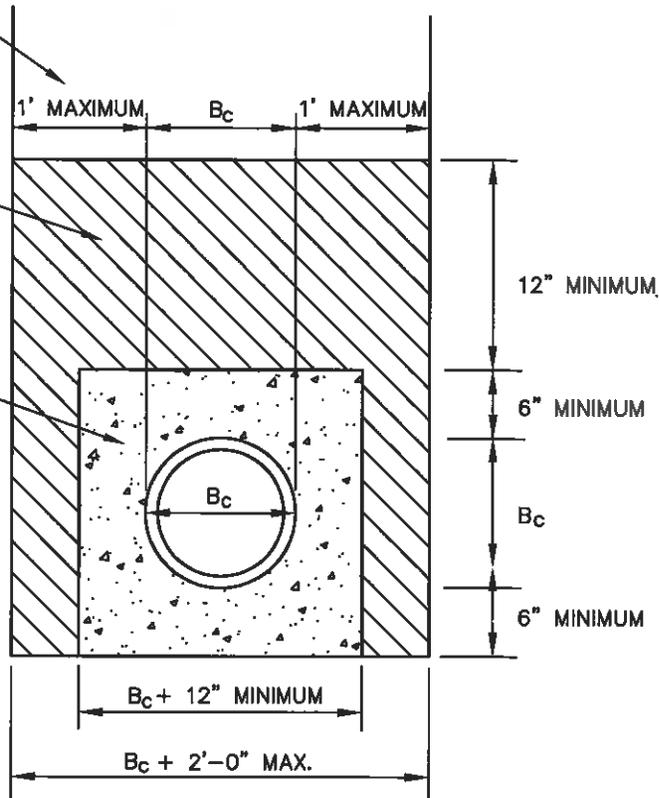
DATE: 3/03/11

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FAIRLAWN ITEM 23
BACKFILL AS DIRECTED.

* STANDARD DRAWING NO. 17
CLASS I THRU III - INITIAL
BACKFILL - HAND PLACED
AND TAMPED.

6" MINIMUM ENCASEMENT
3000 P.S.I. CONCRETE OR
AS REQUIRED BY DESIGN.



RIGID PIPE - FLEXIBLE PIPE
CONCRETE ENCASEMENT
BEDDING AND BACKFILLING

NO SCALE

CONTRACTOR HAS THE OPTION OF HAND BACKFILLING AND TAMPING ADDITIONAL SPACE TO TOP OF ENCASEMENT OR, IN LIEU OF HAND FORMING, MAY FILL ENTIRE TRENCH WIDTH WITH CONCRETE TO TOP OF ENCASEMENT AT NO COST TO THE CITY OF FAIRLAWN.

"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

THIS STANDARD APPLIES TO BOTH RIGID AND FLEXIBLE PIPE CATEGORIES.

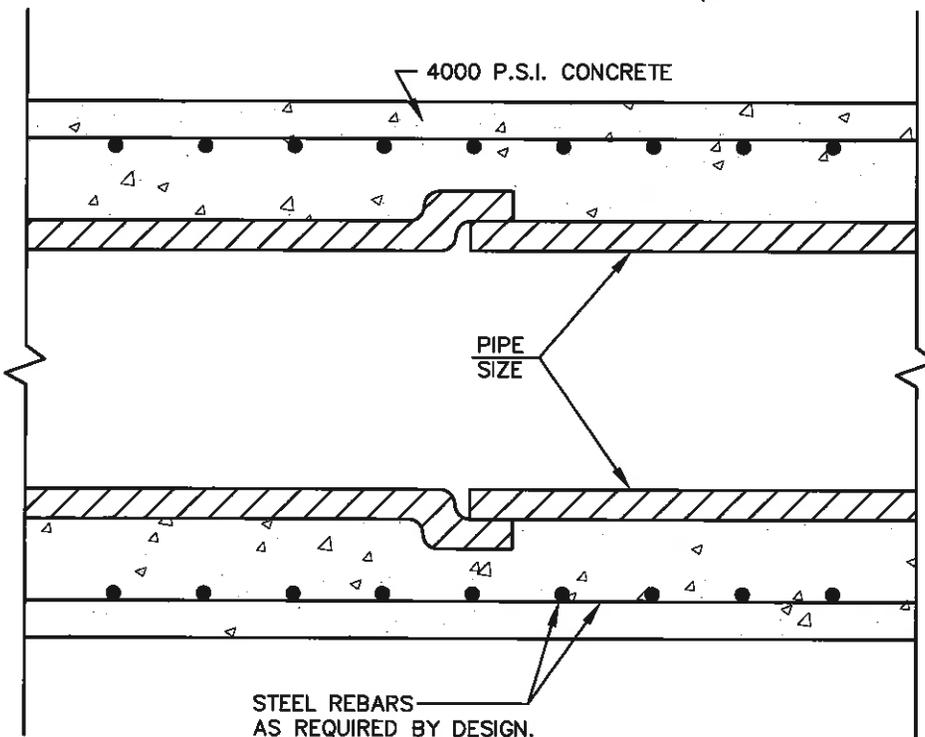
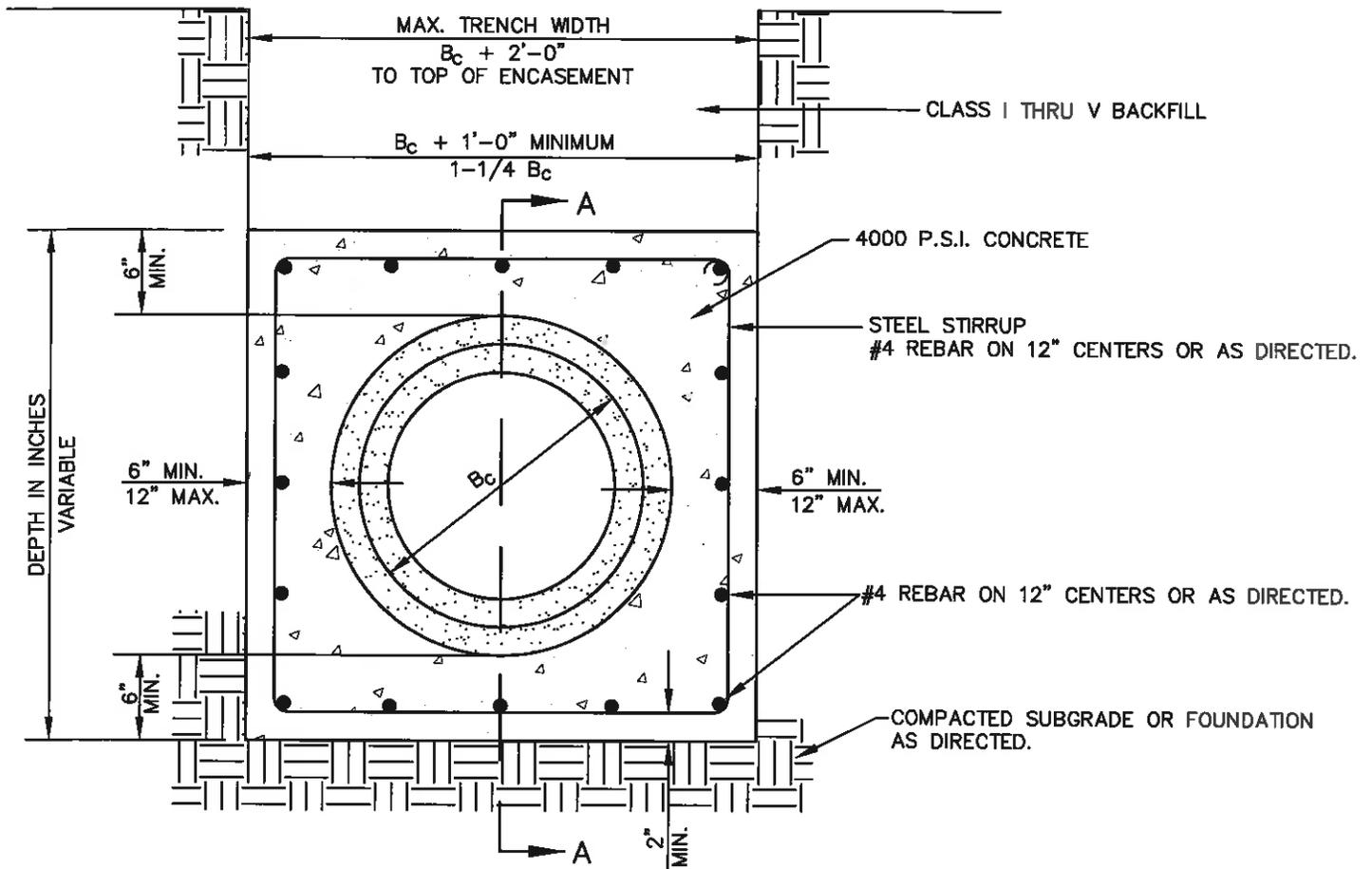
* NOT APPLICABLE UNDER DRIVEWAYS, AND/OR TRAVELED ROADWAYS
SEE STANDARD DRAWING NO. 24.

CITY OF FAIRLAWN

RIGID PIPE - FLEXIBLE PIPE
CONCRETE ENCASEMENT
BEDDING AND BACKFILLING

22

DATE: 3/03/11



B_c DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

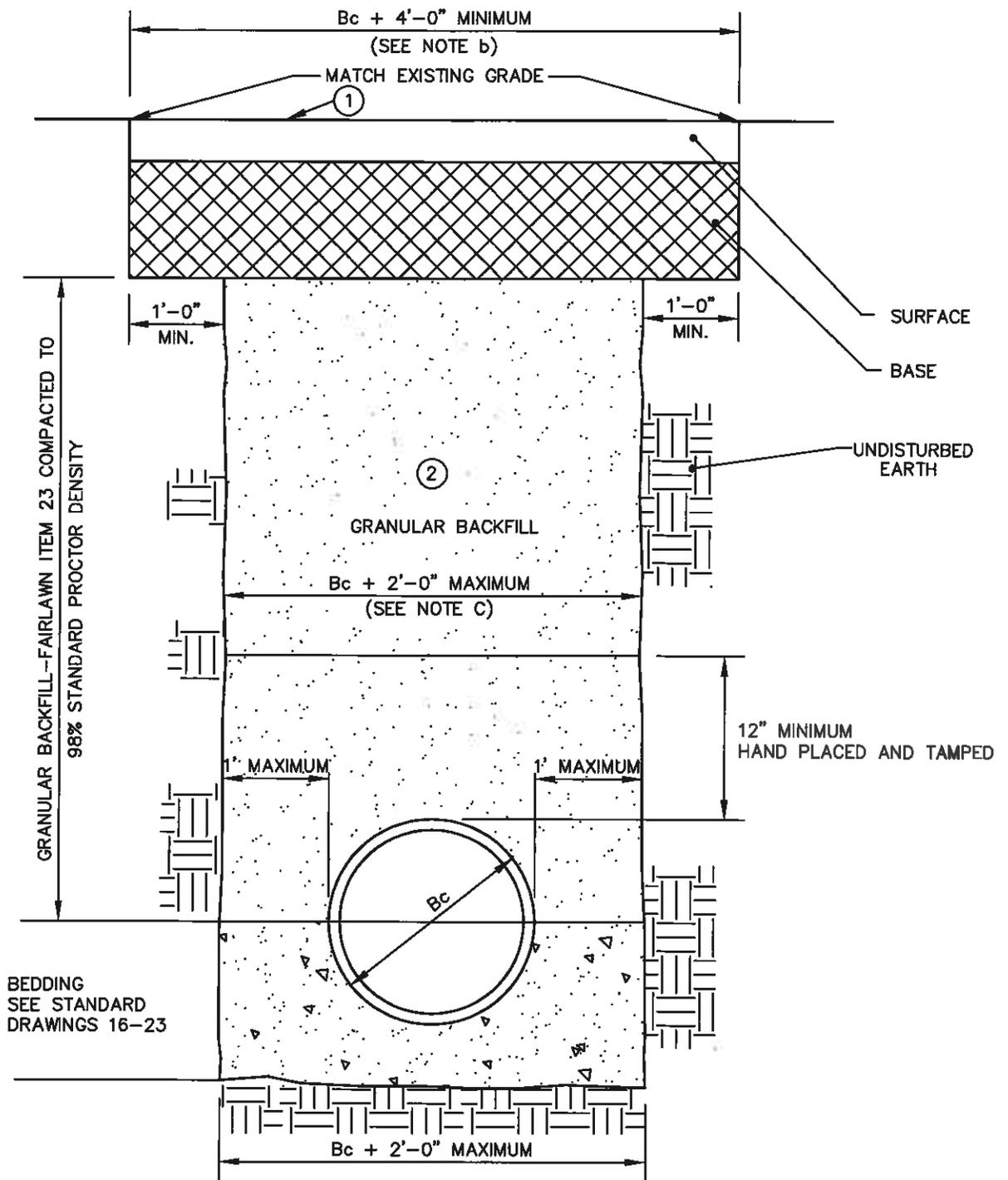
"AS DIRECTED" SHALL MEAN "AS DIRECTED BY THE CITY OF FAIRLAWN".

SECTION A-A

**REINFORCED CONCRETE
ENCASEMENT**

NO SCALE

CITY OF FAIRLAWN	
REINFORCED CONCRETE ENCASEMENT	23
DATE: 3/03/11	



**STREET CROSSING
TYPICAL TRENCH DETAIL**

NO SCALE

Bc DENOTES THE OUTSIDE DIAMETER OF THE BARREL OF THE PIPE.

NOTE:

- a) THIS DETAIL APPLIES ONLY WHEN ASPHALT PAVED STREETS ARE CROSSED BY UTILITIES INSTALLED BY THE OPEN CUT METHOD. WHERE OTHER TYPES OF STREETS ARE CROSSED BY SAID UTILITIES, IT SHALL BE UNDERSTOOD THAT THE EXISTING ROADWAY SURFACE SHALL BE REPLACED WITH NEW MATERIAL AS SHOWN ON DRAWING 25, OR AS DIRECTED BY THE CITY OF FAIRLAWN.
- b) THE AMOUNT OF PAVEMENT REPLACEMENT TO BE PAID FOR SHALL BE LIMITED TO $Bc+4'-0"$, UNLESS OTHERWISE APPROVED BY THE CITY OF FAIRLAWN.
- c) THE AMOUNT OF GRANULAR BACKFILL TO BE PAID FOR SHALL BE LIMITED TO $Bc+2'-0"$ UNLESS OTHERWISE APPROVED BY THE CITY OF FAIRLAWN.

INDEX

- ① SEE STANDARD DRAWING 25 FOR TYPICAL PAVEMENT REPLACEMENT
- ② FAIRLAWN ITEM 23

CITY OF FAIRLAWN	
STREET CROSSING TYPICAL TRENCH DETAIL	
DATE: 3/03/11	24

TYPICAL PAVEMENT REPLACEMENT

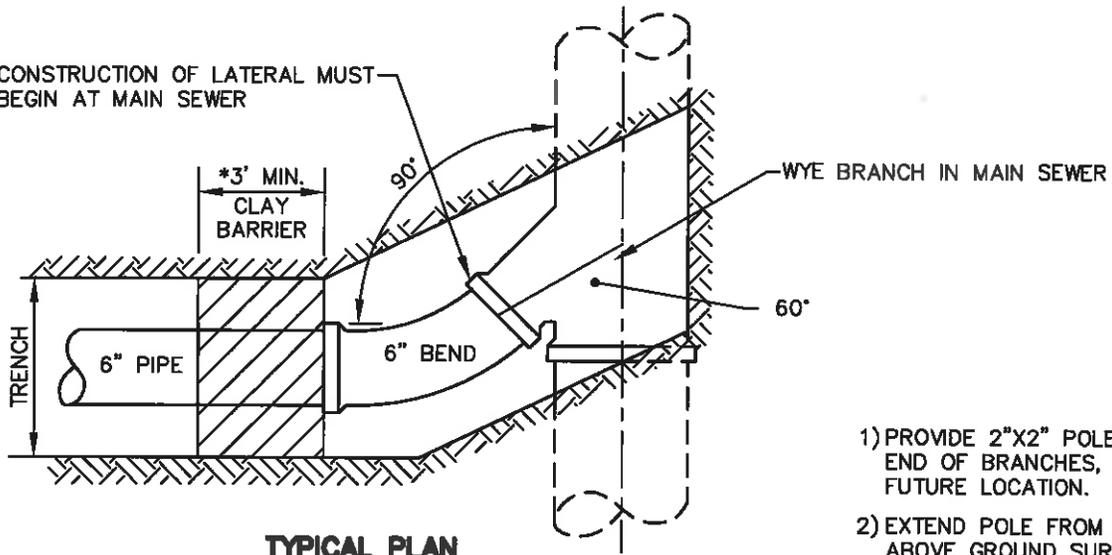
1. EXISTING AGGREGATE BASE – CHIP AND SEAL SURFACE
 - A. REPLACE BASE IN KIND OR FAIRLAWN ITEM 45 AS DIRECTED BY THE CITY OF FAIRLAWN.
 - B. SURFACE WITH 2-1/2" FAIRLAWN ITEM 49-ASPHALT CONCRETE SURFACE COURSE.
2. EXISTING AGGREGATE BASE – ASPHALT SURFACE
 - A. REPLACE BASE IN KIND OR FAIRLAWN ITEM 45 AS DIRECTED BY THE CITY OF FAIRLAWN.
 - B. SURFACE WITH 2-1/2" FAIRLAWN ITEM 49-ASPHALT CONCRETE SURFACE COURSE.
3. EXISTING ASPHALT BASE – ASPHALT SURFACE
 - A. REPLACE BASE IN KIND OR FAIRLAWN ITEM 46-ASPHALT CONCRETE BASE AS DIRECTED BY THE CITY OF FAIRLAWN.
 - B. SURFACE WITH 2-1/2" FAIRLAWN ITEM 49-ASPHALT CONCRETE SURFACE COURSE.
4. EXISTING CONCRETE BASE – ASPHALT SURFACE
 - A. REPLACE BASE IN KIND OR FAIRLAWN ITEM 50-PORTLAND CEMENT CONCRETE BASE AS DIRECTED BY THE CITY OF FAIRLAWN.
 - B. SURFACE WITH 2-1/2" FAIRLAWN ITEM 49-ASPHALT CONCRETE SURFACE COURSE.
5. EXISTING CONCRETE PAVEMENT
 - A. REPLACE WITH FAIRLAWN ITEM 51-NON-REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT AS DIRECTED BY THE CITY OF FAIRLAWN.

NOTES:

- A. ANY EXISTING PAVEMENT NOT LISTED ABOVE WILL BE REPLACED AS DIRECTED BY THE CITY OF FAIRLAWN.
- B. THE REPLACEMENTS LISTED ABOVE MAY VARY AS DIRECTED BY THE CITY OF FAIRLAWN.
- C. DRIVEWAY APPROACHES WILL BE REPLACED PER FAIRLAWN ITEM 26-CONCRETE DRIVEWAY APPROACHES.
- D. DRIVEWAY REPLACEMENT BEYOND THE DRIVE APPROACH WILL BE REPLACED IN KIND, OR AS DIRECTED BY THE CITY OF FAIRLAWN.
- E. THE CONTRACTOR MUST FAMILIARIZE HIMSELF WITH LOCAL REQUIREMENTS NOT LISTED ABOVE.

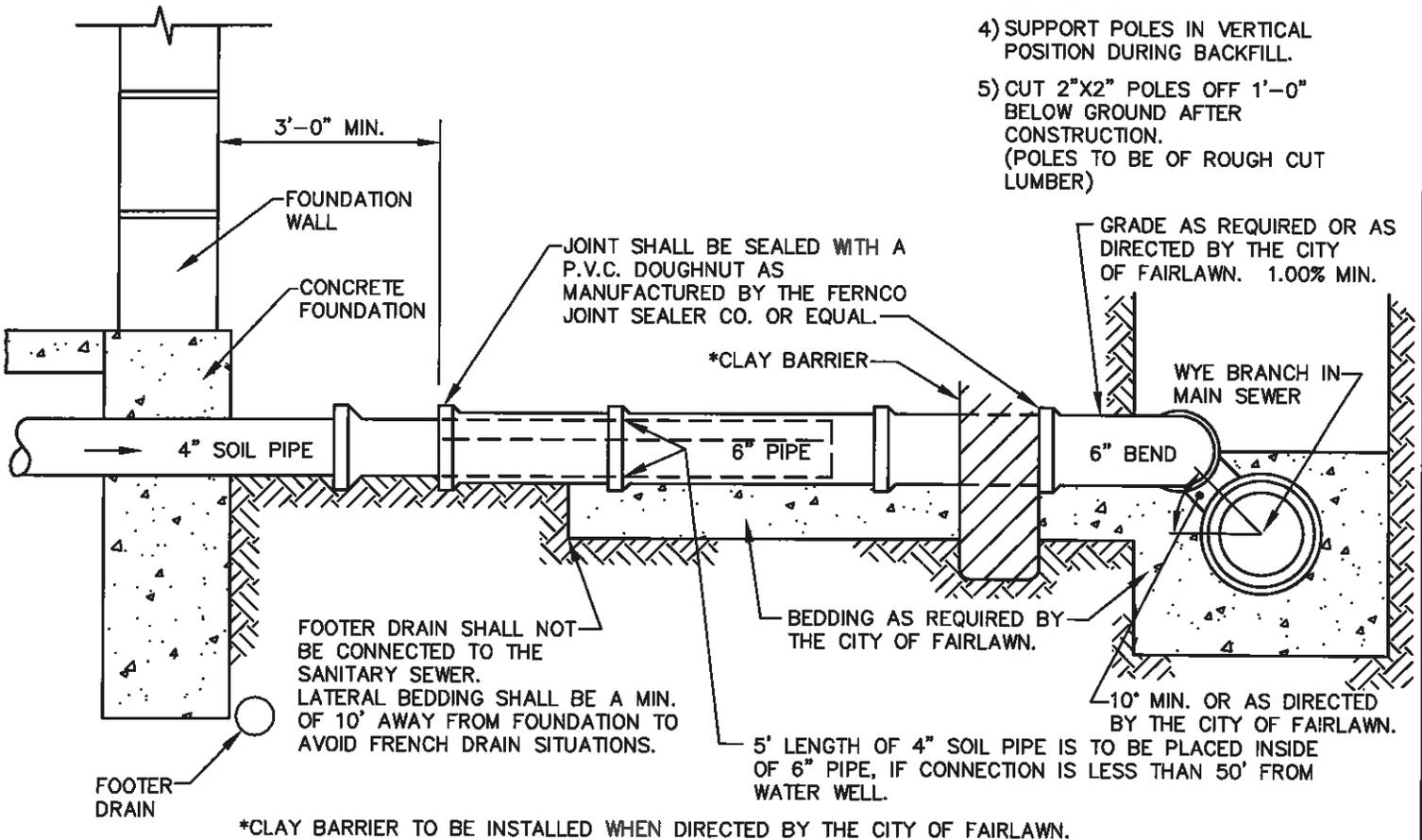
CITY OF FAIRLAWN	
TYPICAL PAVEMENT REPLACEMENT	25
DATE: 3/03/11	

CONSTRUCTION OF LATERAL MUST BEGIN AT MAIN SEWER



TYPICAL PLAN

- 1) PROVIDE 2"X2" POLES TO MARK END OF BRANCHES, RISERS FOR FUTURE LOCATION.
- 2) EXTEND POLE FROM BELL TO 12" ABOVE GROUND SURFACE.
- 3) REST POLE AGAINST BELL BUT NOT ON IT.
- 4) SUPPORT POLES IN VERTICAL POSITION DURING BACKFILL.
- 5) CUT 2"X2" POLES OFF 1'-0" BELOW GROUND AFTER CONSTRUCTION. (POLES TO BE OF ROUGH CUT LUMBER)



TYPICAL SECTION OF LATERAL TRENCH

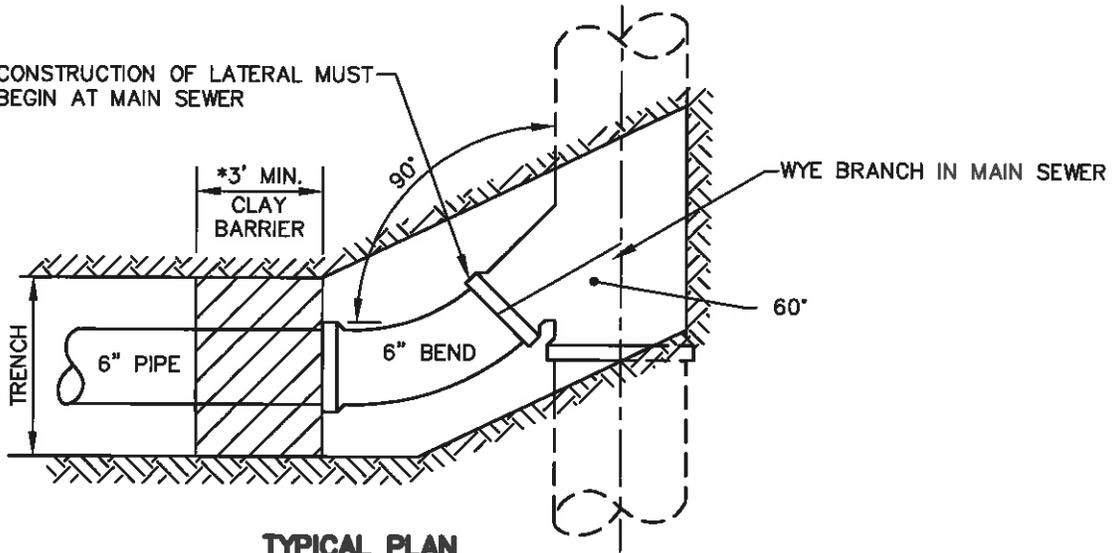
NO SCALE

CLEANOUTS SHALL BE INSTALLED ON ALL NON-RESIDENTIAL LATERALS 5' FROM THE INNER WALL OF THE BUILDING TO BE SERVED AND AT ALL CHANGES IN ALIGNMENT LOCATIONS.

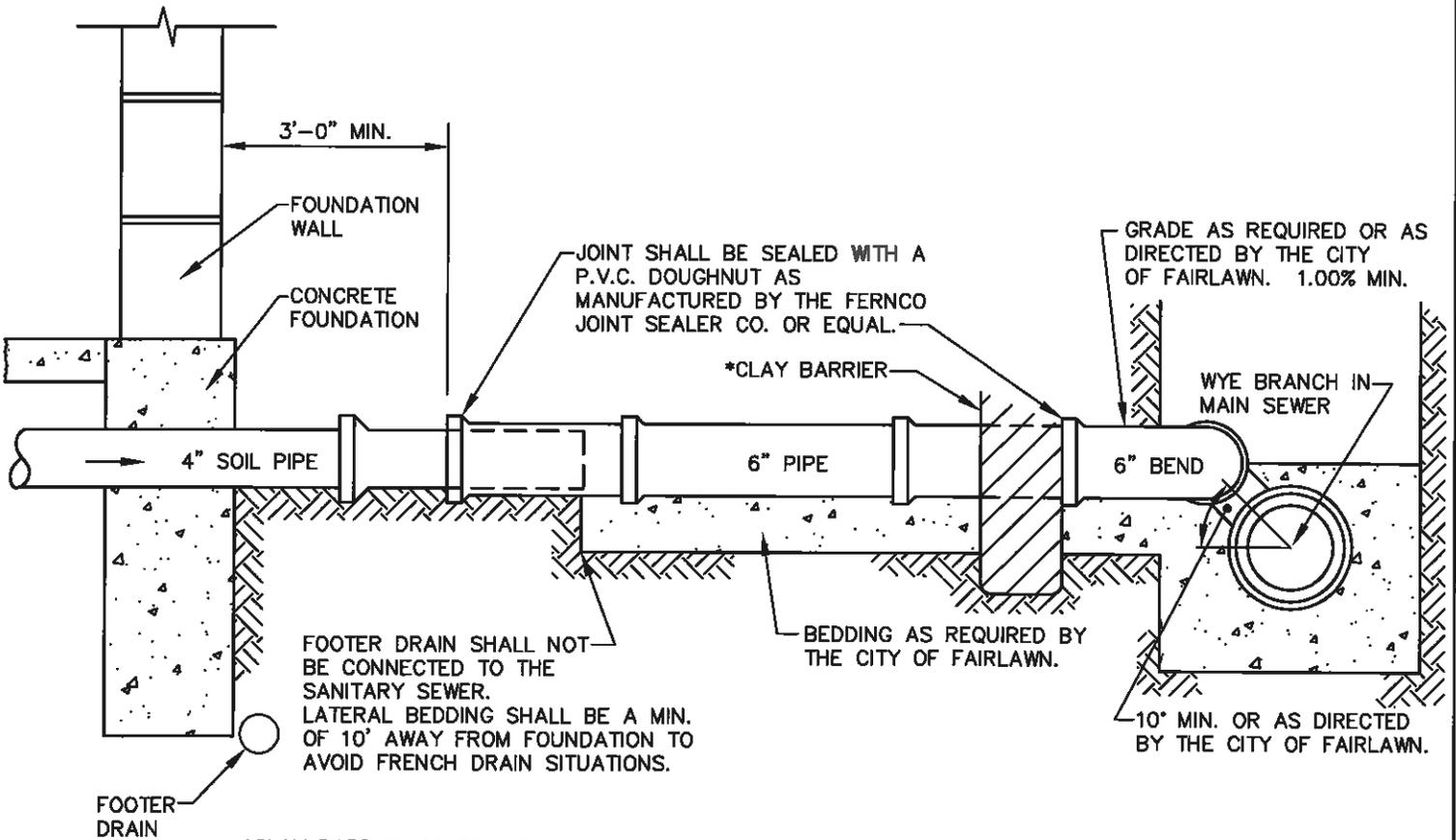
*CLAY BARRIER TO BE INSTALLED WHEN DIRECTED BY THE CITY OF FAIRLAWN.

CITY OF FAIRLAWN	
SANITARY SEWER LATERAL CONNECTION WITHIN 50' OF WATER WELL	
DATE: 3/03/11	26

CONSTRUCTION OF LATERAL MUST BEGIN AT MAIN SEWER



TYPICAL PLAN



FOOTER DRAIN SHALL NOT BE CONNECTED TO THE SANITARY SEWER. LATERAL BEDDING SHALL BE A MIN. OF 10' AWAY FROM FOUNDATION TO AVOID FRENCH DRAIN SITUATIONS.

*CLAY BARRIER TO BE INSTALLED WHEN DIRECTED BY THE CITY OF FAIRLAWN.

TYPICAL SECTION OF LATERAL TRENCH

NO SCALE

CLEANOUTS SHALL BE INSTALLED ON ALL NON-RESIDENTIAL LATERALS 5' FROM THE INNER WALL OF THE BUILDING TO BE SERVED AND AT ALL CHANGES IN ALIGNMENT LOCATIONS.

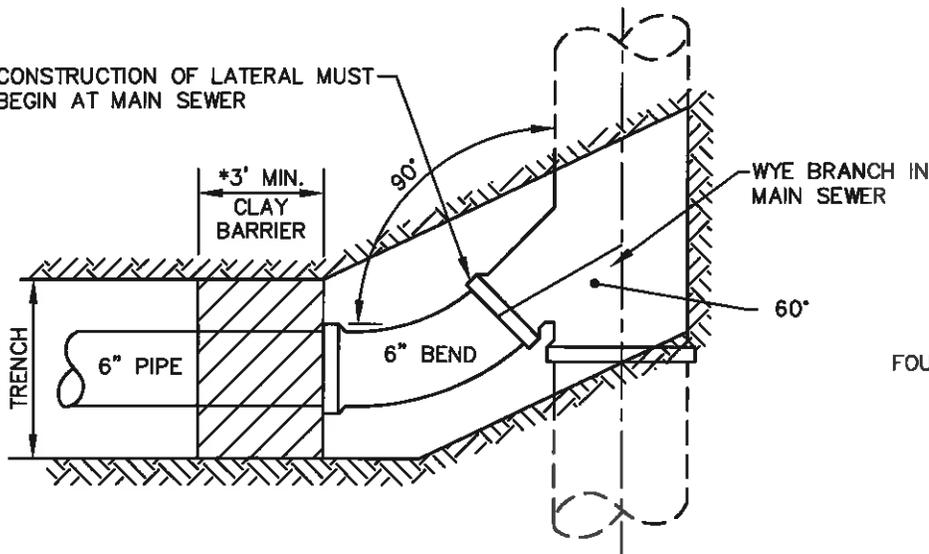
CITY OF FAIRLAWN

SANITARY SEWER LATERAL CONNECTION-EXISTING STRUCTURE

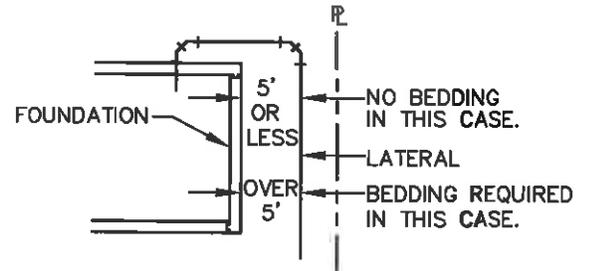
27

DATE: 3/03/11

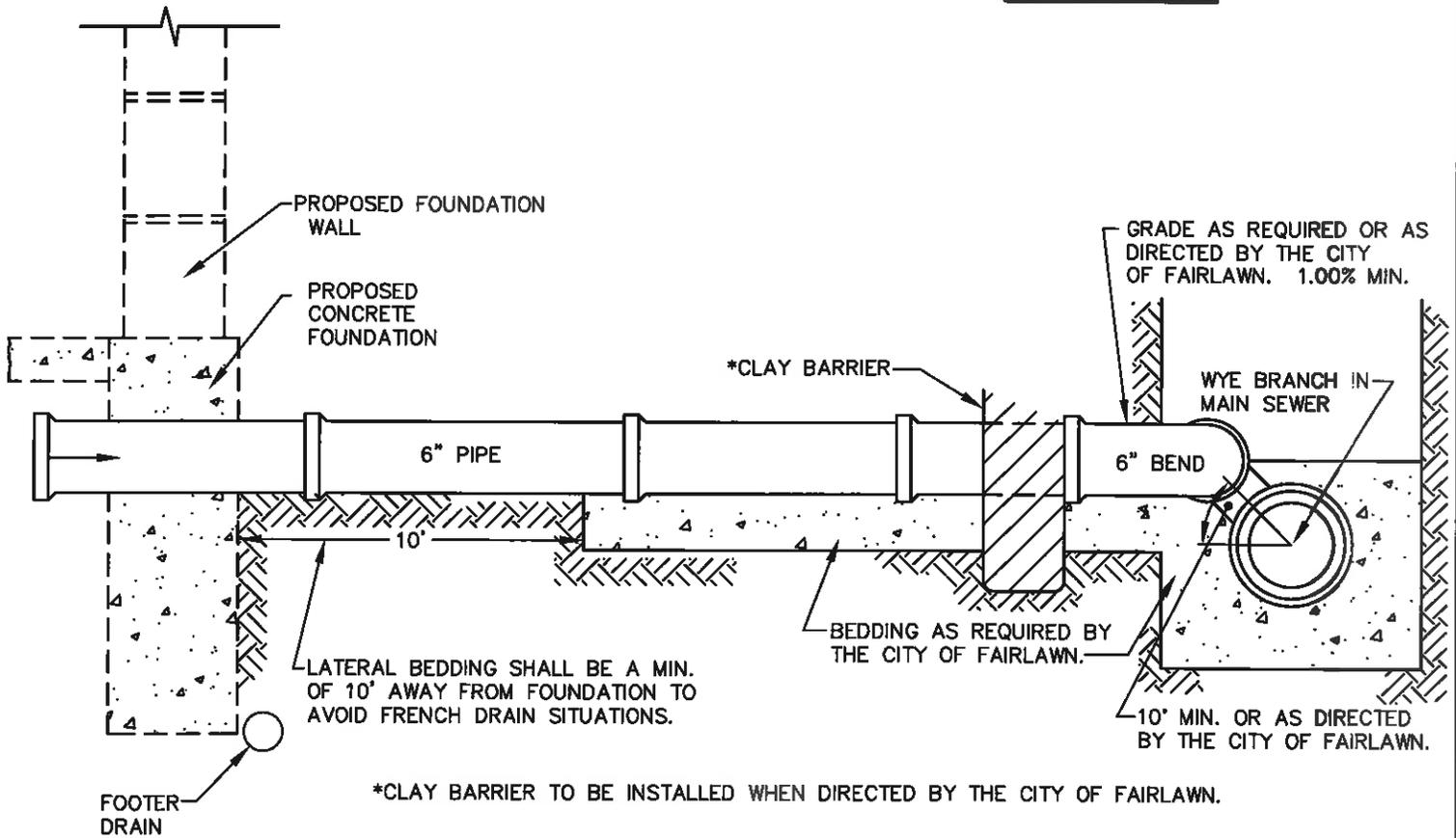
CONSTRUCTION OF LATERAL MUST BEGIN AT MAIN SEWER



TYPICAL PLAN



PLAN VIEW OF LATERAL PARALLEL TO FOUNDATION



TYPICAL SECTION OF LATERAL TRENCH

NO SCALE

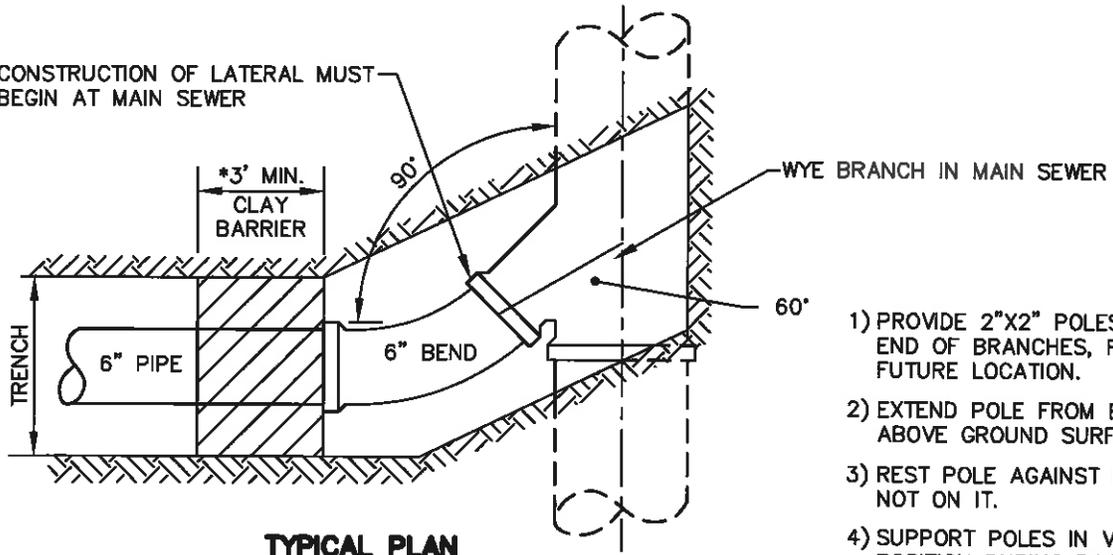
CLEANOUTS SHALL BE INSTALLED ON ALL NON-RESIDENTIAL LATERALS 5' FROM THE INNER WALL OF THE BUILDING TO BE SERVED AND AT ALL CHANGES IN ALIGNMENT LOCATIONS.

*CLAY BARRIER TO BE INSTALLED WHEN DIRECTED BY THE CITY OF FAIRLAWN.

F:\BLOCKS\FAIRLAWN STANDARDS\FAIR-SAN-Connection-New

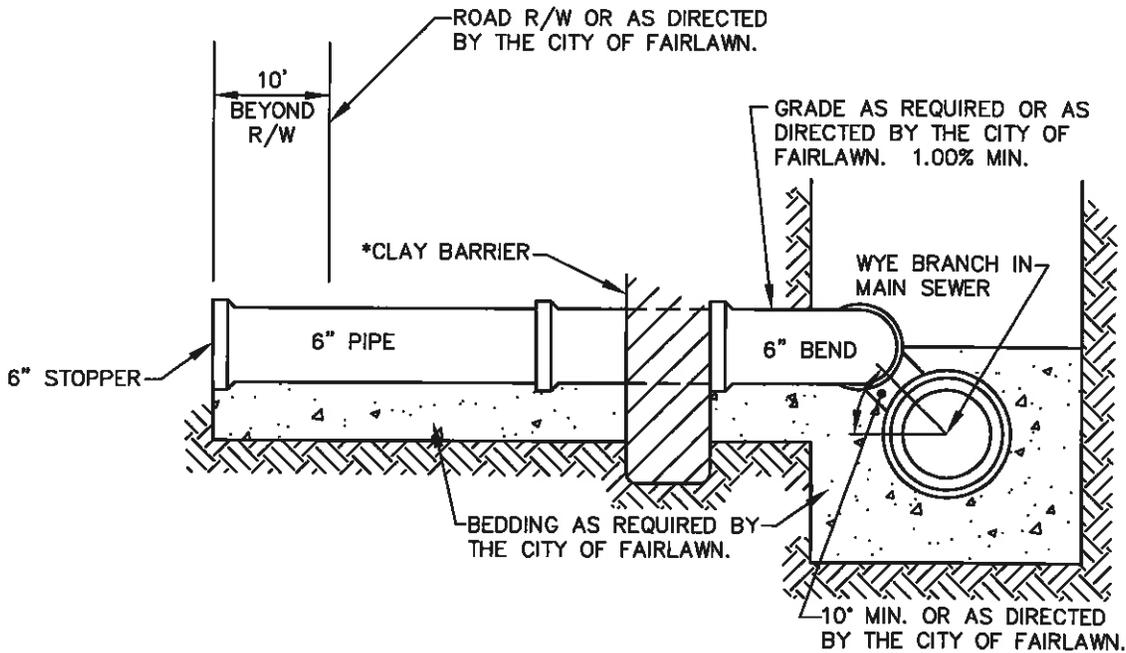
CITY OF FAIRLAWN	
SANITARY SEWER LATERAL CONNECTION-NEW STRUCTURE	28
DATE: 3/03/11	

CONSTRUCTION OF LATERAL MUST BEGIN AT MAIN SEWER



TYPICAL PLAN

- 1) PROVIDE 2"x2" POLES TO MARK END OF BRANCHES, RISERS FOR FUTURE LOCATION.
- 2) EXTEND POLE FROM BELL TO 12" ABOVE GROUND SURFACE.
- 3) REST POLE AGAINST BELL BUT NOT ON IT.
- 4) SUPPORT POLES IN VERTICAL POSITION DURING BACKFILL.
- 5) CUT 2"x2" POLES OFF 1'-0" BELOW GROUND AFTER CONSTRUCTION. (POLES TO BE OF ROUGH CUT LUMBER)



*CLAY BARRIER TO BE INSTALLED WHEN DIRECTED BY THE CITY OF FAIRLAWN.

TYPICAL SECTION OF LATERAL TRENCH

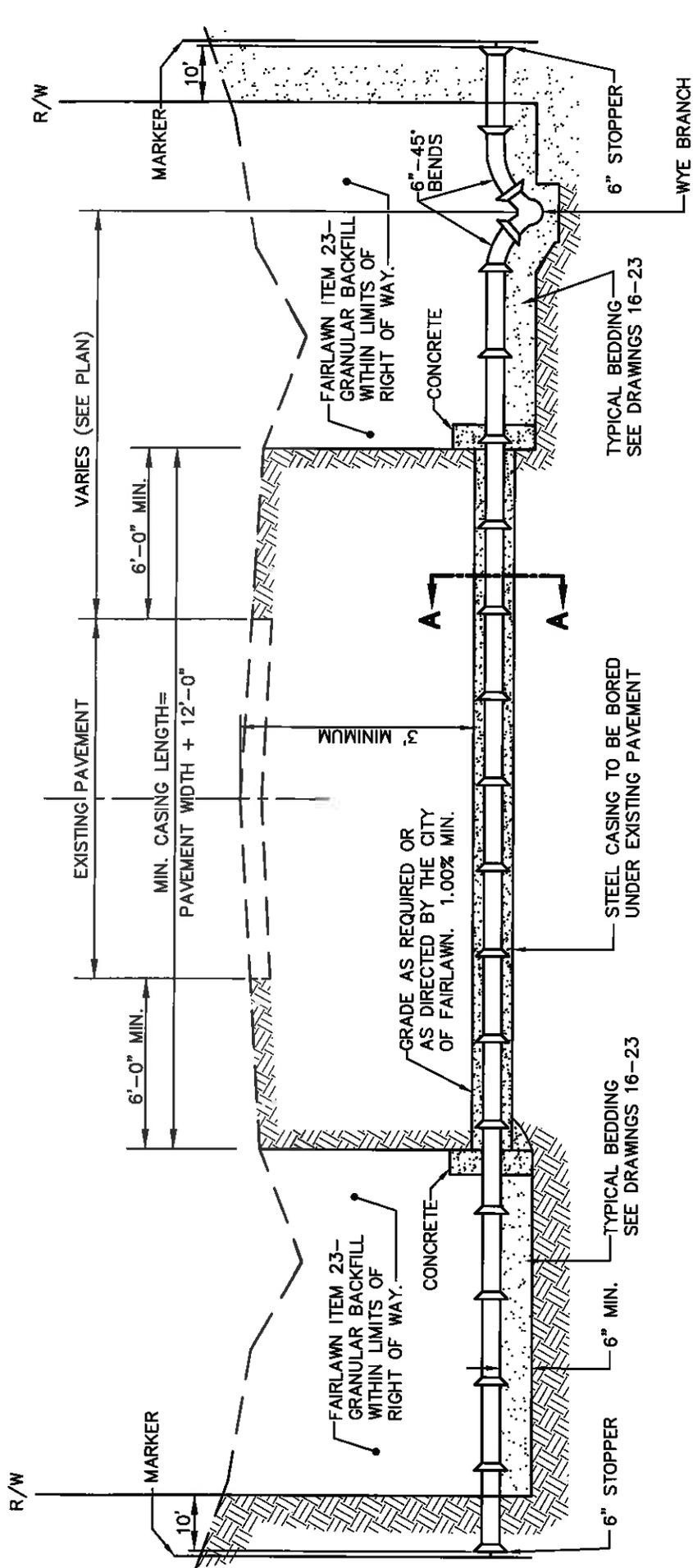
NO SCALE

CITY OF FAIRLAWN

SANITARY SEWER
LATERAL CONNECTION
NEW MAIN CONSTRUCTION

29

DATE: 3/03/11



SANITARY LATERAL
BORED ROAD CROSSING WITH STEEL CASING

NO SCALE

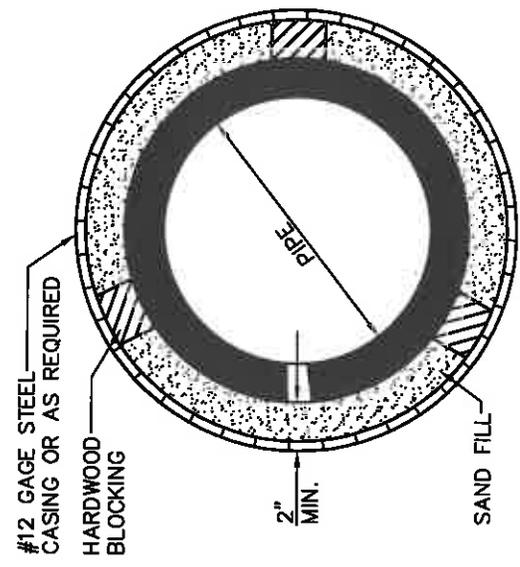
CITY OF FAIRLAWN	
SANITARY LATERAL-BORED ROAD CROSSING WITH STEEL CASING	
DATE: 3/03/11	32

MARKER NOTES:

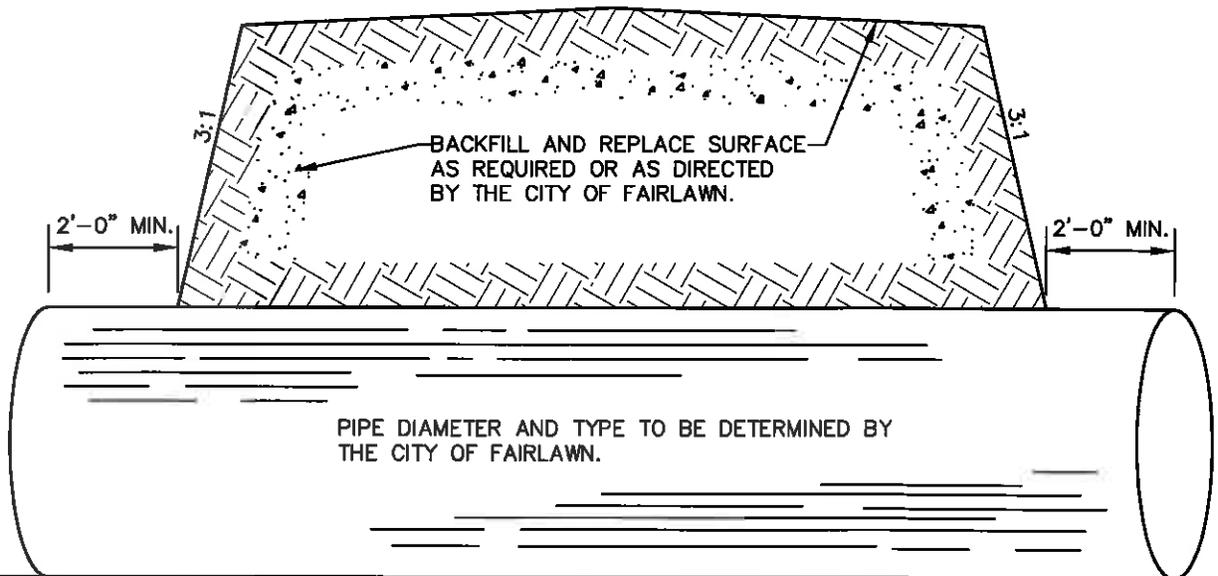
1. PROVIDE 2"x2" POLES TO MARK END OF BRANCHES, RISERS AND SERVICE CONNECTIONS FOR FUTURE LOCATION. EXTEND POLE TO 12" ABOVE GROUND. REST POLE AGAINST BELL BUT NOT ON IT.
2. SUPPORT POLES IN VERTICAL POSITION DURING BACKFILL.
3. CUT 2"x2" POLES OFF 1'-0" BELOW GROUND AFTER CONSTRUCTION. (MARKER TO BE ROUGH CUT LUMBER)

NOTES:

1. FILL VOID BETWEEN STEEL CASING AND PIPE WITH SAND OR OTHER APPROVED MATERIAL. CONCRETE SHALL BE PLACED AT BOTH ENDS OF STEEL CASING TO KEEP GRANULAR MATERIAL FIRMLY IN PLACE.
2. PIPE MATERIALS TO BE PER FAIRLAWN ITEM 59-SANITARY SERVICE CONNECTION LATERALS.
3. ALTERNATE METHODS MAY BE USED, IF FIRST APPROVED BY THE CITY OF FAIRLAWN.



SECTION A-A

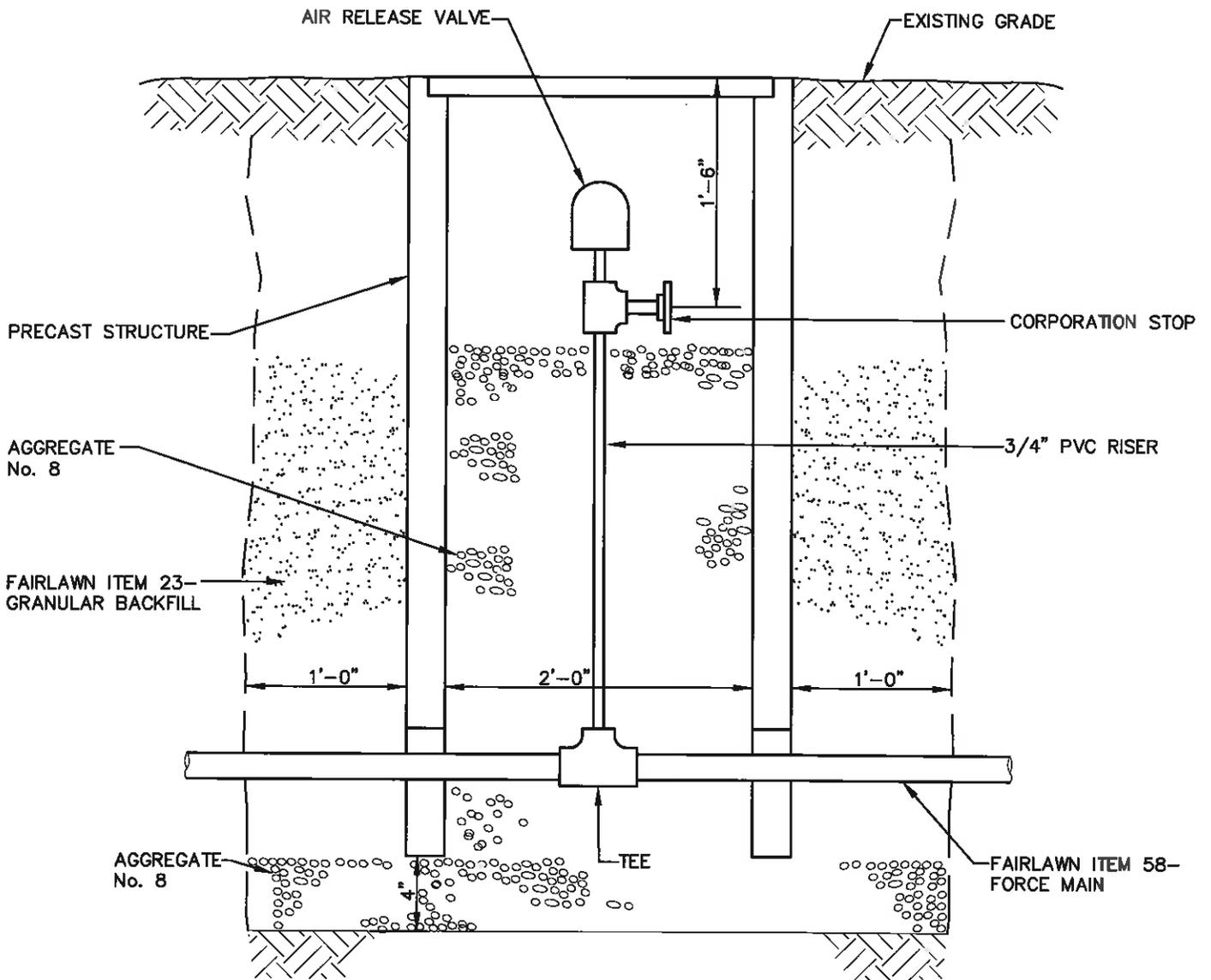


NOTE: PIPE SHALL EXTEND A MINIMUM OF 2'-0" BEYOND TOE OF SLOPE, BUT IN NO CASE SHALL BE LESS THAN 12'-0" IN LENGTH.

TYPICAL SECTION FOR CULVERT PIPE REPLACEMENT OR NEW INSTALLATION

NO SCALE

CITY OF FAIRLAWN	
TYPICAL SECTION CULVERT PIPE	33
DATE: 3/03/11	



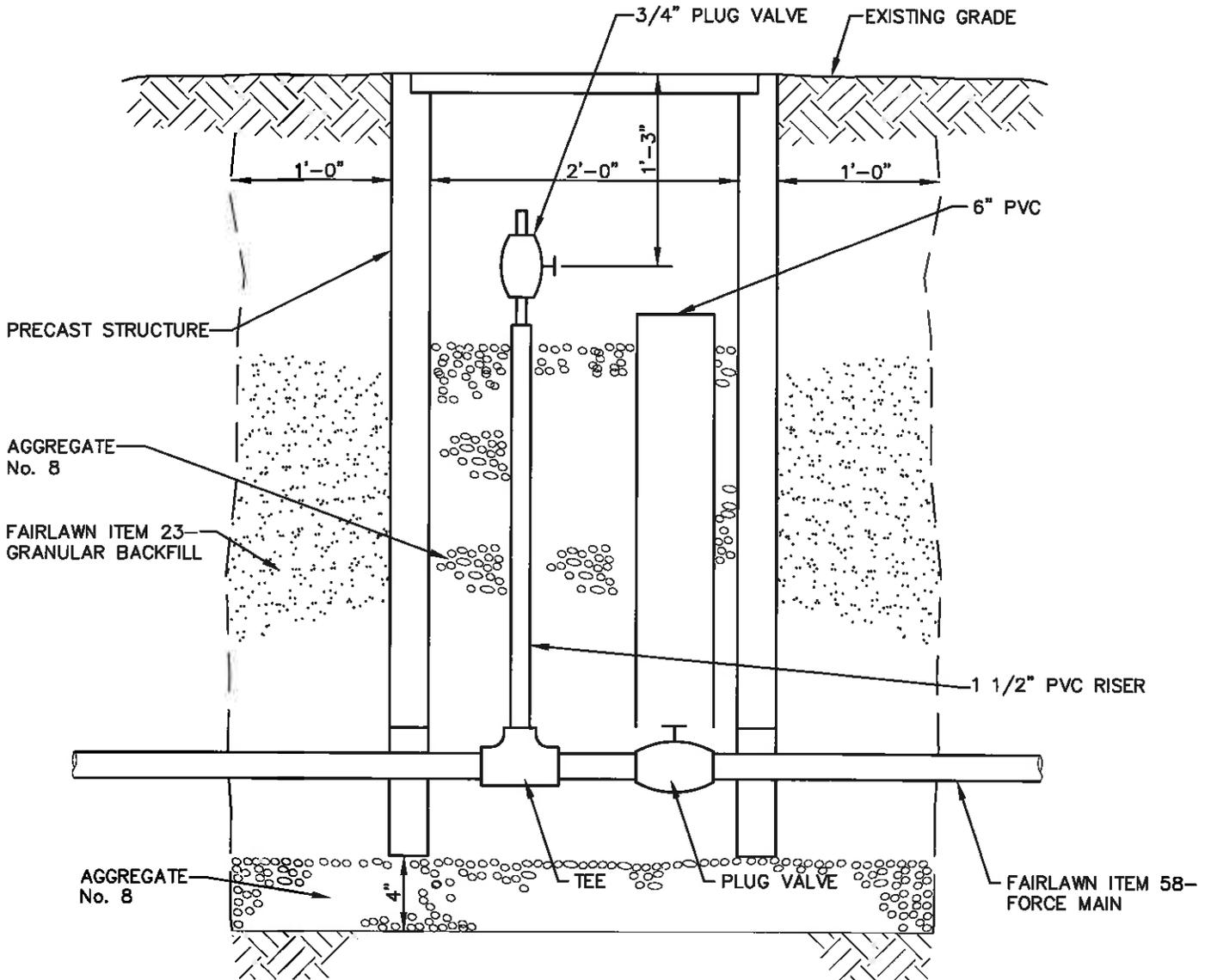
AIR RELEASE ASSEMBLY

NO SCALE

NOTES:

1. FOR USE WITHIN RIGHT OF WAY AND ONLY WHEN APPROVED BY THE CITY OF FAIRLAWN.

CITY OF FAIRLAWN	
AIR RELEASE ASSEMBLY	
DATE: 3/03/11	34



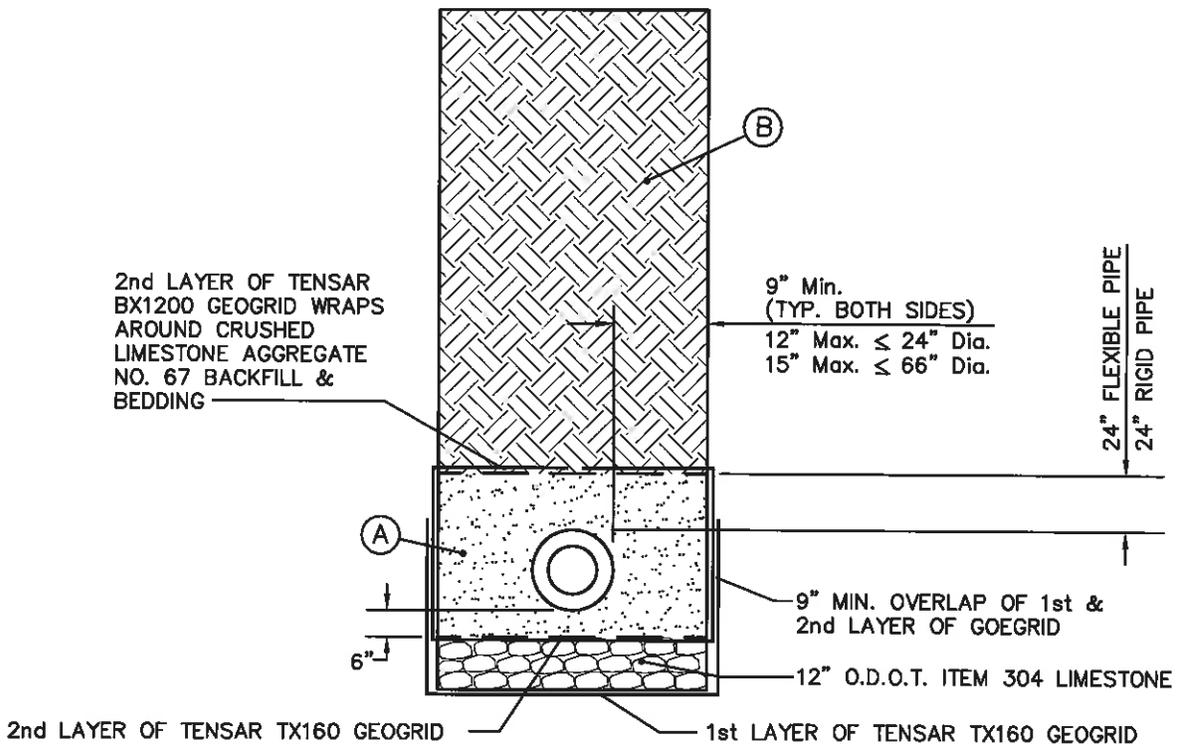
FORCE MAIN CLEAN OUT DETAIL

NO SCALE

NOTES:

1. FOR USE OUTSIDE OF RIGHT OF WAY AND ONLY WHEN APPROVED BY THE CITY OF FAIRLAWN.

CITY OF FAIRLAWN	
FORCE MAIN CLEAN OUT DETAIL	
DATE: 3/03/11	35



- (A) CRUSHED LIMESTONE AGGREGATE No. 57, THOROUGHLY COMPACTED, INSTALLED PER ASTM D-2321 CLASS 1.
- (B) TRENCH BACKFILL: INSTALLATION WITHIN THE RIGHT-OF-WAY SHALL BE INSTALLED IN ACCORDANCE WITH O.D.O.T 603 WITH MATERIAL MEETING O.D.O.T. ITEM 304 LIMESTONE BACKFILL.

COMPACTION REQUIREMENTS ARE AS FOLLOWS:

- (a) WITHIN THE RIGHT-OF-WAY - ANY BACKFILLING OF TRENCHES AND FILL MUST BE COMPACTED TO A MINIMUM OF 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY WITH THE MATERIAL'S MOISTURE CONTENT ADJUSTED TO WITHIN +1-2% OF THE OPTIMUM PRIOR TO COMPACTION.
- (b) OUTSIDE THE RIGHT-OF-WAY - ANY BACKFILL OR FILL MATERIAL MUST BE COMPACTED TO AT LEAST 85% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY WITH THE MATERIAL'S MOISTURE CONTENT ADJUSTED TO WITHIN +1-2% OF THE OPTIMUM PRIOR TO COMPACTION.
- (c) IN DEPTHS OVER 8 FEET AND WHEN COMPACTING WITH A HOE-PAC OR EQUAL HYDRAULIC COMPACTOR. A CONTRACTOR MAY INSTALL THE FIRST LIFT UP TO 3 FEET IN DEPTH BEFORE COMPACTING. SUBSEQUENT LIFTS SHALL BE COMPACTED AS PER THE ABOVE. ADDITIONALLY, O.D.O.T. ITEM 603.08 MUST BE ADHERED TO. IF ANY CONFLICTING COMPACTION PERCENTAGES ARE FOUND TO EXIST BETWEEN THOSE INDICATED ABOVE AND O.D.O.T. SPECIFICATIONS, THE HIGHER COMPACTION PERCENTAGE SHALL GOVERN.

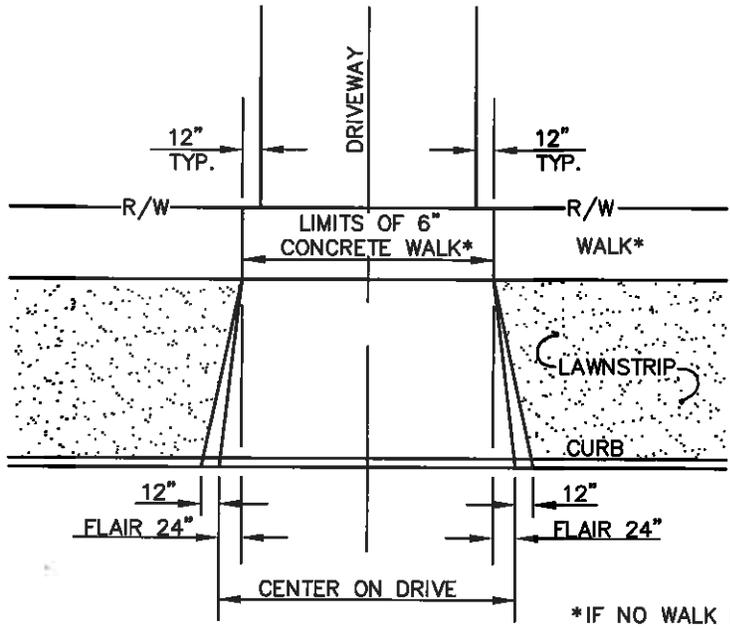
THESE REQUIREMENTS ARE TO BE FOLLOWED REGARDLESS OF THE MATERIAL USED TO BACKFILL OR FILL. THESE REQUIREMENTS PERTAIN TO INSTALLATION OF ALL UTILITIES, NOT JUST THE STORM SEWER.

STABILIZED TRENCH DETAIL

TO BE USED IN AREAS OF POOR SOIL CONDITIONS WHEN DIRECTED BY THE CITY OF FAIRLAWN.

NO SCALE

CITY OF FAIRLAWN	
STABILIZED TRENCH DETAIL	36
DATE: 3/03/11	



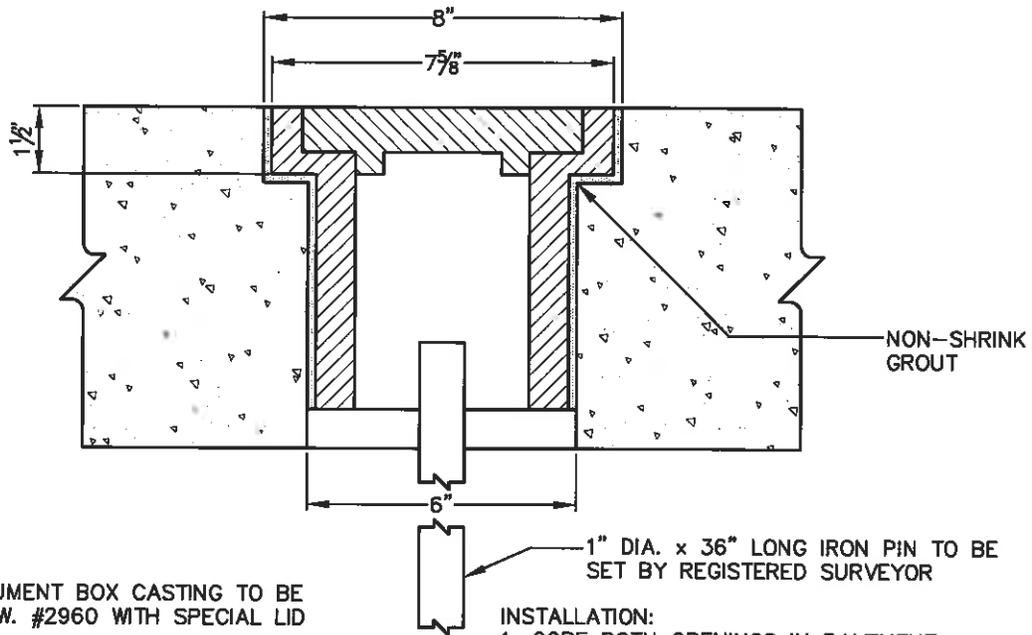
*IF NO WALK EXISTS THE FLAIR WILL END AT THE RIGHT-OF-WAY LINE OR 12.5' FROM BACK OF CURB, WHICH EVER IS LESS.

DRIVEWAY APPROACHES

NO SCALE

F:\BLOCKS\FAIRLAWN STANDARDS\FAIR-DRIVEWAY APPROACHES

CITY OF FAIRLAWN	
DRIVEWAY APPROACHES	37
DATE: 3/03/11	



MONUMENT BOX CASTING TO BE E.J.I.W. #2960 WITH SPECIAL LID

ANNULAR SPACE BETWEEN CASTING AND PAVEMENT TO BE FILLED WITH NON-SHRINK GROUT PER O.D.O.T. 705.20

FOR MONUMENT BOXES NOT ON PAVEMENT USE NEENAH 1978A OR E.J.I.W. 8365 CASTING OR EQUAL WITH 1" DIA. x 36" LONG IRON PIN

INSTALLATION:

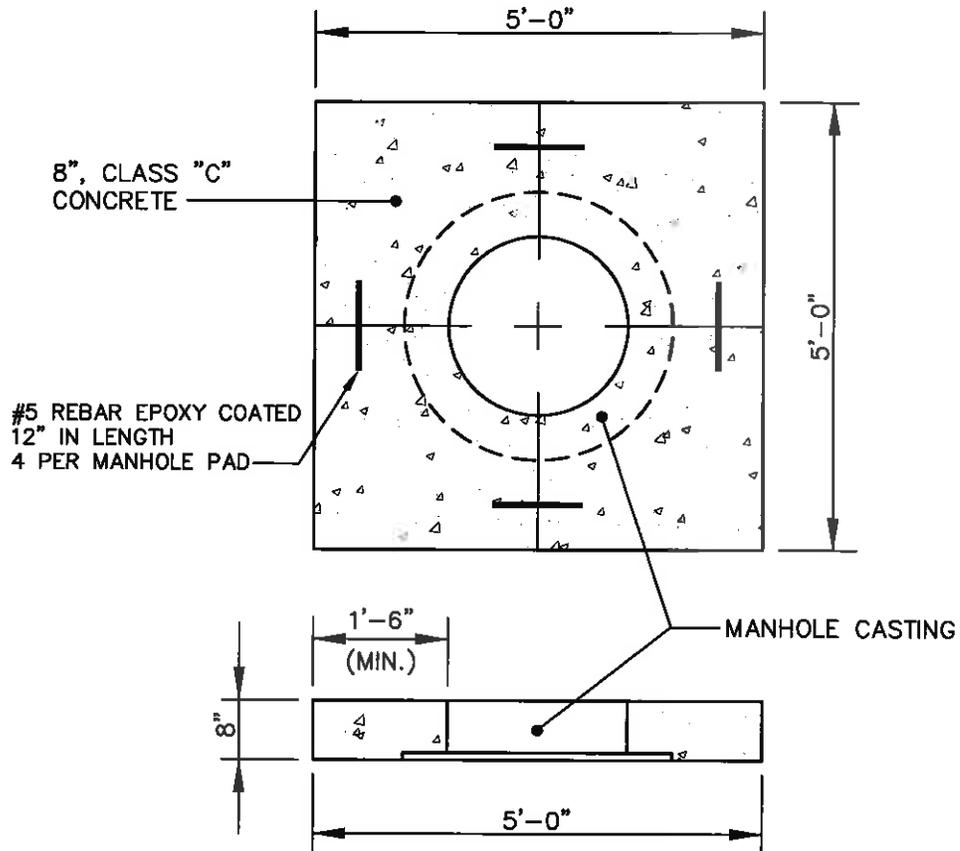
1. CORE BOTH OPENINGS IN PAVEMENT.
2. REMOVE DEBRIS AND PREPARE CONCRETE FOR GROUT PER MANUFACTURERS INSTRUCTIONS.
3. COAT PAVEMENT OPENING AND EXTERIOR OF CASTING WITH GROUT.
4. INSTALL CASTING AND FINISH FLUSH WITH EXISTING PAVEMENT.

RIGID OR FLEXIBLE PAVEMENT

CORED/BOXLESS MONUMENT ASSEMBLY

NO SCALE

CITY OF FAIRLAWN	
CORED/BOXLESS MONUMENT ASSEMBLY DETAIL	
DATE: 3/03/11	38



TYPICAL MANHOLE PAD

NO SCALE

CITY OF FAIRLAWN	
TYPICAL MANHOLE PAD	39
DATE: 3/03/11	