

METCALF & EDDY

SEWER TRENCH SECTIONS FOR PVC PIPE 18-IN. DIAMETER AND SMALLER

DATE

SCALE: NONE

1

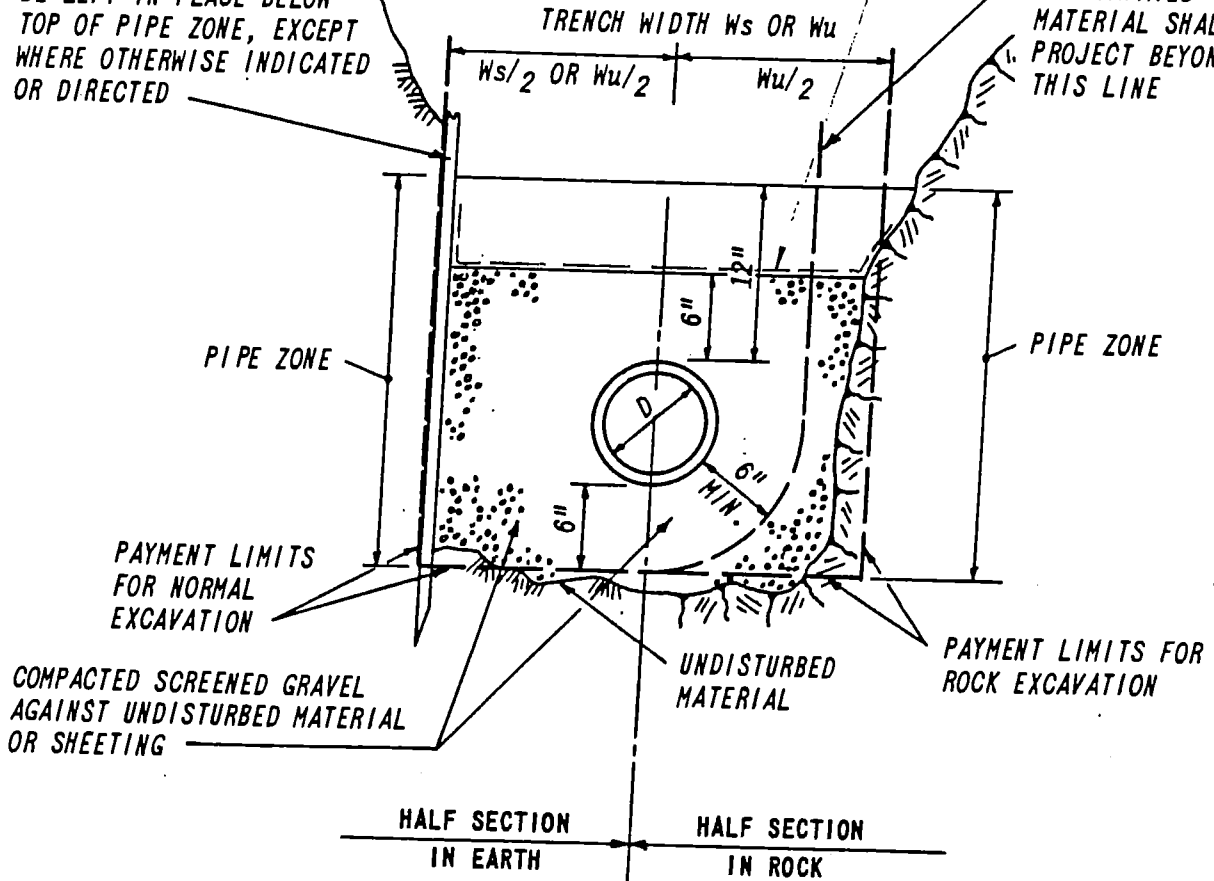
004295

2-1.1.4

6 MIL POLYETHYLENE "CAP" TO BE INSTALLED IN TRENCHES WITHIN THE PAVED SURFACE OF STATE HIGHWAYS

SHEETING IF USED SHALL BE LEFT IN PLACE BELOW TOP OF PIPE ZONE, EXCEPT WHERE OTHERWISE INDICATED OR DIRECTED

NO LEDGE OR UNEXCAVATED MATERIAL SHALL PROJECT BEYOND THIS LINE



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SEWER TRENCH SECTIONS FOR DI PIPE 18-IN. DIAMETER AND SMALLER

DATE

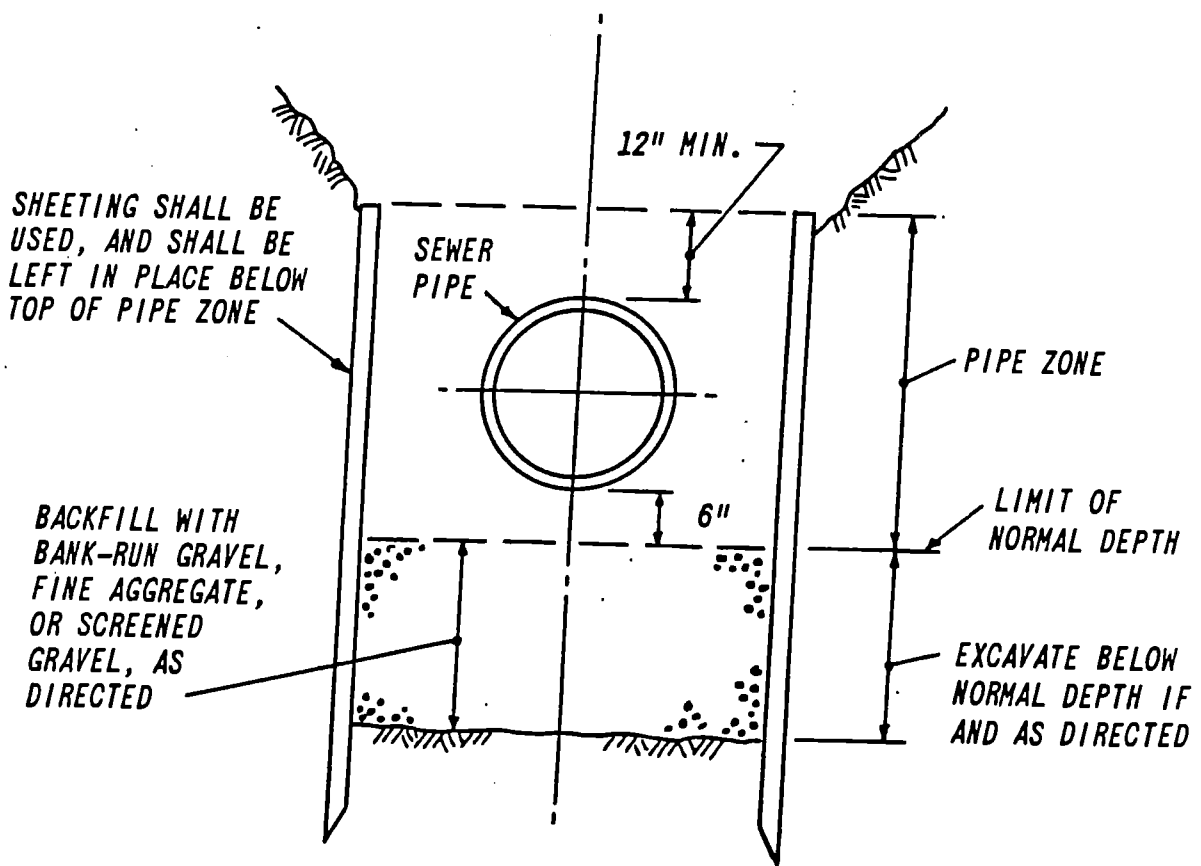
SCALE: NONE

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2-1.1.3

12/87



SHEETING SHALL BE USED, AND SHALL BE LEFT IN PLACE BELOW TOP OF PIPE ZONE

SEWER PIPE

12" MIN.

PIPE ZONE

BACKFILL WITH BANK-RUN GRAVEL, FINE AGGREGATE, OR SCREENED GRAVEL, AS DIRECTED

LIMIT OF NORMAL DEPTH

6"

EXCAVATE BELOW NORMAL DEPTH IF AND AS DIRECTED

DETAILS NOT SHOWN ARE SAME AS FOR SEWER TRENCH SECTIONS SHOWN ELSEWHERE.

NOTE: TO BE USED WHERE UNSUITABLE FOUNDATION MATERIAL EXISTS BELOW NORMAL DEPTH.



SEWER TRENCH SECTION

DATE

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2-1.1.9

12/87

TRENCH WIDTH WS OR WU		
DIAMETER OF PIPE D	Wu UNSHEETED	Ws SHEETED
12" AND SMALLER	3'-0"	4'-2"
15"	3'-2"	4'-4"
18"	3'-6"	4'-8"
21"	3'-10"	5'-0"
24"	4'-2"	5'-4"
27"	4'-6"	5'-8"
30"	4'-10"	6'-0"
36"	5'-6"	6'-8"
42"	6'-2"	7'-4"
48"	6'-10"	8'-0"



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TRENCH WIDTH WS OR WU

DATE

SCALE: NONE

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2-1.1.21

GENERAL NOTES

1. SEWER TRENCHES MAY BE EXCAVATED WIDER THAN TRENCH WIDTH W_s ABOVE THE TOP OF PIPE ZONE.
2. BELOW THE TOP OF PIPE ZONE THE TRENCH SHOULD NOT BE EXCAVATED BEYOND THE TRENCH WIDTH W_s .
3. IF EXCAVATION AND BACKFILL BELOW NORMAL DEPTH IS REQUIRED, SHEETING MUST BE USED.
4. SHEETING, IF USED, IN ALL CASES SHALL BE LEFT IN PLACE BELOW A LINE 1'-0" ABOVE THE TOP OF THE PIPELINE, UNLESS OTHERWISE INDICATED OR DIRECTED.
5. ALL EXTERIOR SURFACES OF MANHOLE GRADE ADJUSTMENT COURSES SHALL BE COVERED WITH 1/4" TO 3/8" MASONRY CEMENT PLASTER.
6. ALL OPENINGS IN PRECAST REINFORCED CONCRETE MANHOLE BASES FOR WHICH PIPES ARE TO CONNECT SHALL BE LOCK JOINT FLEXIBLE MANHOLE SLEEVES, MANUFACTURED BY INTERFACE CORPORATION, PARSIPPANY, NEW JERSEY 07054 OR AN ACCEPTABLE EQUIVALENT.
7. NO TREES OR TREE LIMBS ALONG THE ENTIRE ROUTE OF CONSTRUCTION ON PUBLIC WAYS SHALL BE CUT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. IN ADDITION TO COMPLIANCE WITH THE REQUIREMENTS OF THE SECTION TITLED "SAFETY" OF THE SPECIAL CONDITIONS, THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES AND SHALL PROVIDE ALL NECESSARY CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE AND STRENGTH TO PREVENT ACCESS TO ALL OPEN EXCAVATIONS AT THE COMPLETION OF EACH DAYS WORK.
9. ALL ELEVATIONS BASED ON U.S.G.S. MEAN SEA LEVEL.
10. TOPOGRAPHY FROM AERIAL SURVEY MADE BY AERIAL DATA REDUCTION ASSOCIATES, INC., 9285 COMMERCE HWY., P.O. BOX 557, PENNSAUKEN, NEW JERSEY 08110, IN APRIL, 1975.
11. EXACT LOCATIONS OF HOUSE CONNECTIONS AND CHIMNEYS TO BE DETERMINED IN THE FIELD BY THE ENGINEER. HOUSE CONNECTIONS SHALL BE 6-IN. PVC PIPE. ALL HOUSE CONNECTIONS SHALL TERMINATE AT THE PROPERTY LINE. THE LAST LENGTH OF PIPE AT THE PROPERTY LINE SHALL BE A MAXIMUM LENGTH OF 2'-0" AS INDICATED ON DETAIL 2-1.2.4.
12. LOCATION OF UTILITIES AND PROPERTY LINES ARE FROM THE BEST INFORMATION AVAILABLE. EXACT LOCATION AND COMPLETENESS IS NOT GUARANTEED.
13. CHIMNEYS SHALL BE A MINIMUM OF SEVEN-FEET BELOW THE STREET SURFACE.
14. STANDARD MANHOLE FRAMES AND COVERS SHALL BE CATALOG NO. LT102 AS MANUFACTURED BY E.L. LeBARON FOUNDRY CO., BROCKTON, MA. 02403 OR APPROVED EQUAL PRODUCT.



GENERAL NOTES

DATE

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2-1.1.22

GENERAL NOTES (CONT.)

15. ALL WATERTIGHT FRAMES AND COVERS SHALL BE PAMTIGHT NO. 62115 AS MANUFACTURED BY PONT-A-MOUSSON, INC. OR APPROVED EQUAL PRODUCT. ALL WATERTIGHT FRAMES SHALL BE SECURED TO THE MANHOLE CONES AS INDICATED ON DETAIL 2-1.5.61.
16. HEADWALLS, SIGNS, GUARDRAILS AND ANY OTHER OBJECTS DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED UNDER THE APPROPRIATE BID ITEM FOR CONSTRUCTING SEWERS.
17. PRIOR TO THE START OF CONSTRUCTION, TEST PITS SHOULD BE DUG AS NECESSARY TO DETERMINE LOCATION AND DEPTH OF UTILITIES.
18. EXISTING UTILITIES INTERFERING WITH THE WORK SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER IN THE FIELD.
19. WHENEVER POSSIBLE, THE SEWER SHALL BE LAID AT LEAST 10-FEET HORIZONTALLY FROM AN EXISTING WATER MAIN. WHENEVER SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18-INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHEN THE ELEVATION OF SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10-FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER MAIN SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CAST IRON PIPE AND SHALL BE PRESSURE TESTED TO ASSURE WATERTIGHTNESS.
20. ALL UNEXCAVATED ROCK WITHIN 3'-0" HORIZONTALLY OF THE ENDS OF BUILDING CONNECTIONS, BRANCHES, AND STUBS, AND DOWN TO A HORIZONTAL PLANE 6" BELOW THE BOTTOMS OF SUCH CONNECTIONS, BRANCHES, AND STUBS, SHALL BE REMOVED. SEE SPECIFICATIONS.
21. IN THOSE GRASSED AND WOODED AREAS DISTURBED BY THE CONTRACTOR'S OPERATION, THE SURFACE SHALL BE RESTORED WITH A MINIMUM OF 6" OF SEEDED TOPSOIL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE INCLUDED UNDER THE APPROPRIATE BID ITEM FOR CONSTRUCTING SEWERS.
22. WHERE REMOVAL AND RESETTING OF EXISTING METAL BEAM GUARDRAILS OR CABLE GUARDRAILS IS NECESSARY, REFER TO SECTIONS 9.01, 9.10, 9.11, AND 9.12 OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION FOR CONSTRUCTION METHODS. PAYMENT FOR THIS WORK SHALL BE INCLUDED UNDER THE APPROPRIATE BID ITEM FOR CONSTRUCTING SEWERS.
23. THE CONTRACTOR IS INSTRUCTED TO "CALL BEFORE YOU DIG" AT 1-800-922-4455 IN ADVANCE OF CONSTRUCTION.



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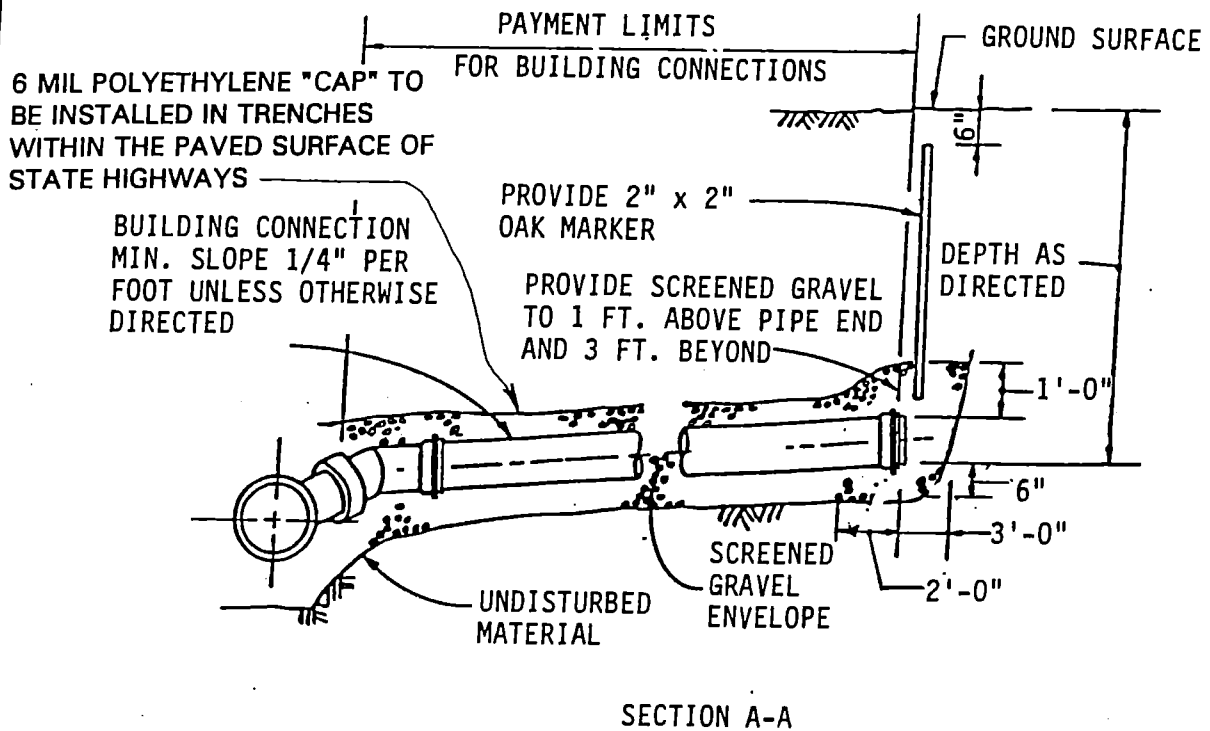
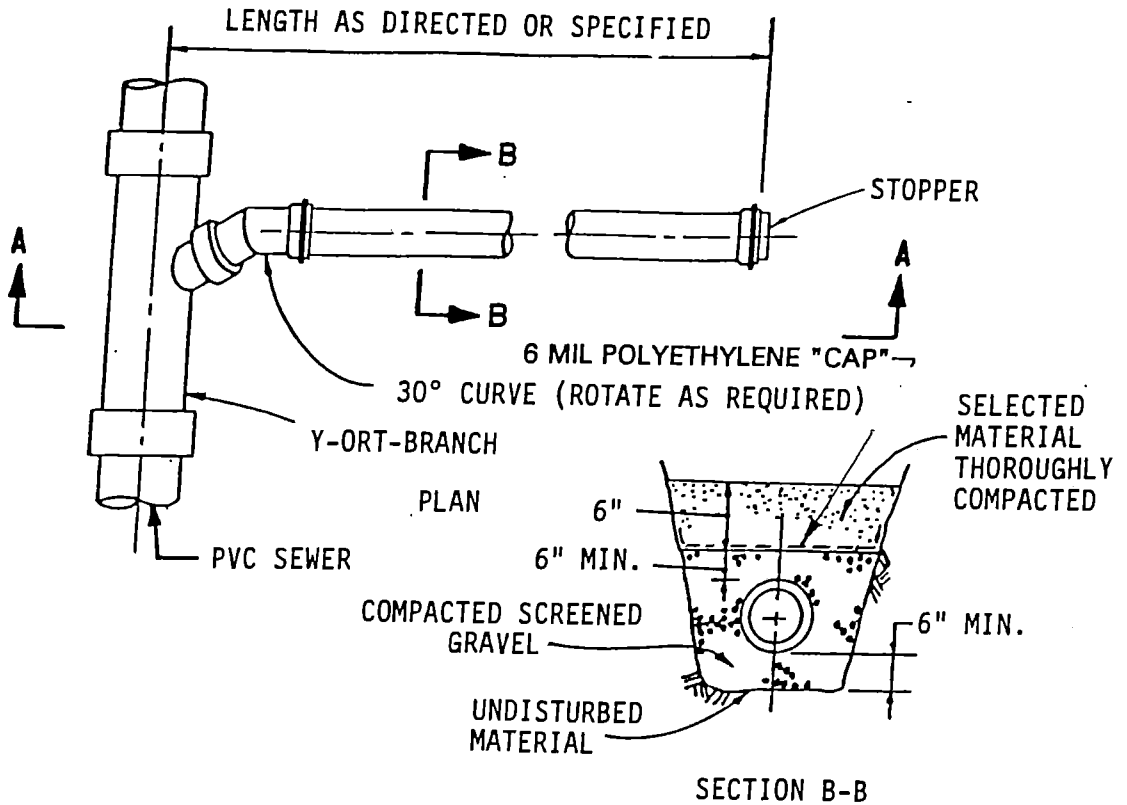
GENERAL NOTES (CONT.)

DATE

SCALE: NONE

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004295 2-1.1.22.1



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BUILDING CONNECTION
(FOR PVC PIPE)

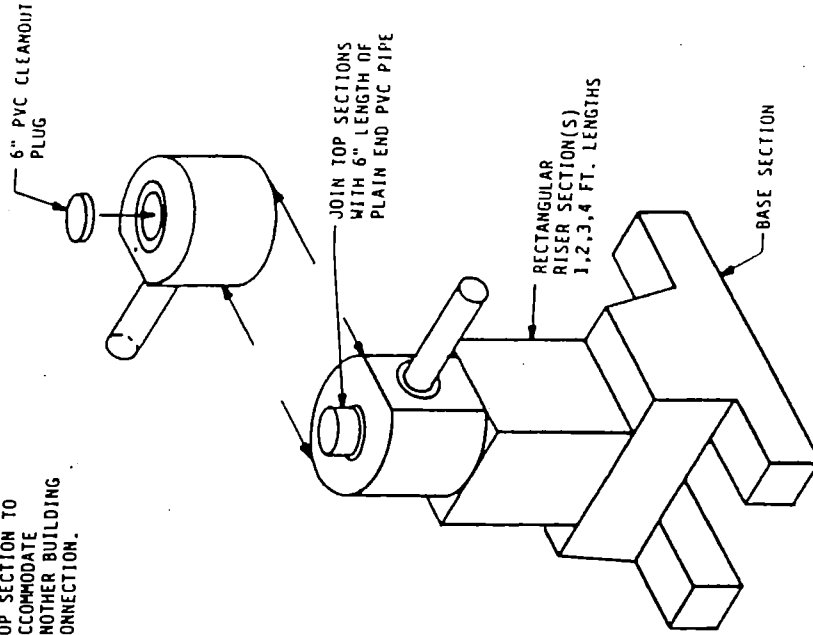
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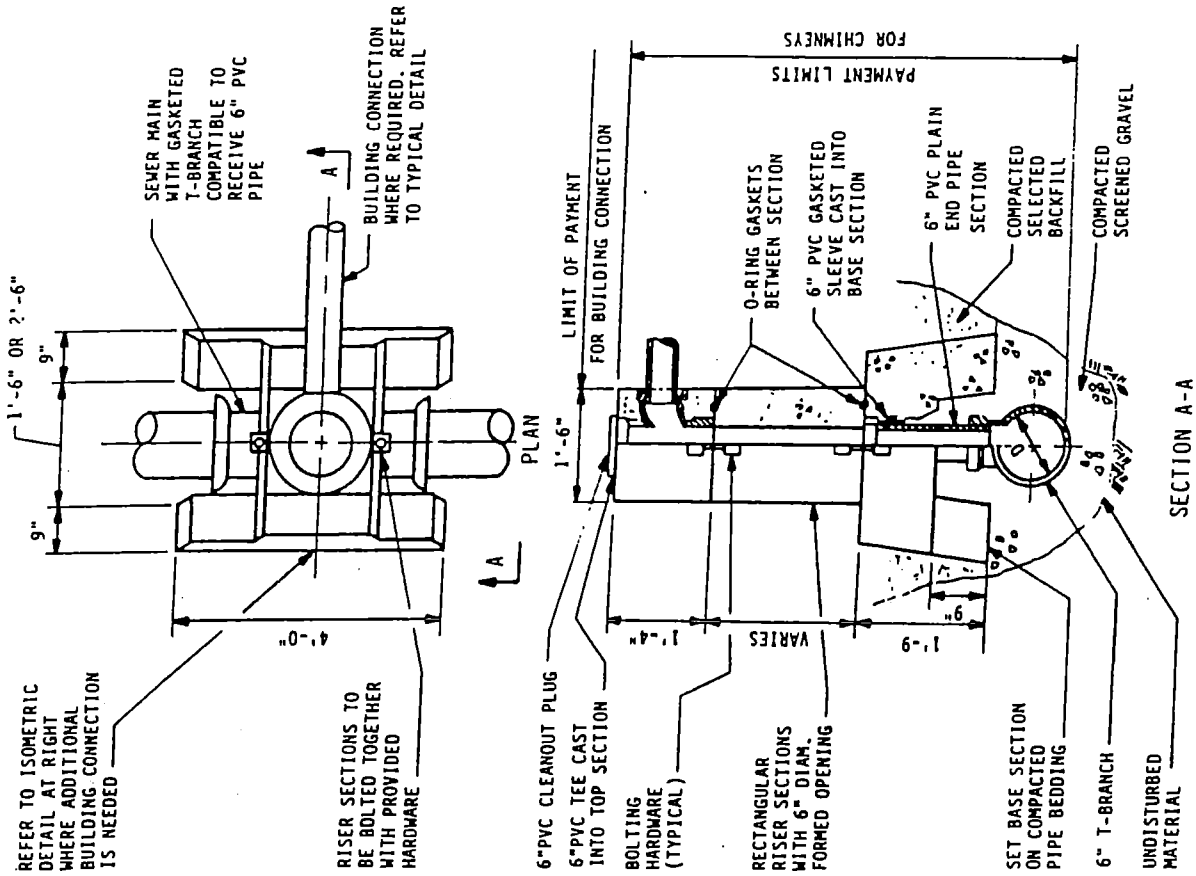
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2-1.2.4

NOTE
 USE ADDITIONAL
 TOP SECTION TO
 ACCOMMODATE
 ANOTHER BUILDING
 CONNECTION.



ISOMETRIC VIEW



REFER TO ISOMETRIC
 DETAIL AT RIGHT
 WHERE ADDITIONAL
 BUILDING CONNECTION
 IS NEEDED

RISER SECTIONS TO
 BE BOLTED TOGETHER
 WITH PROVIDED
 HARDWARE

6\"/>
 PVC CLEANOUT PLUG
 6\"/>
 PVC TEE CAST
 INTO TOP SECTION

BOLTING
 HARDWARE
 (TYPICAL)

RECTANGULAR
 RISER SECTIONS
 WITH 6\"/>
 DIAM.
 FORMED OPENING

SET BASE SECTION
 ON COMPACTED
 PIPE BEDDING

6\"/>
 T-BRANCH
 UNDISTURBED
 MATERIAL

SECTION A-A



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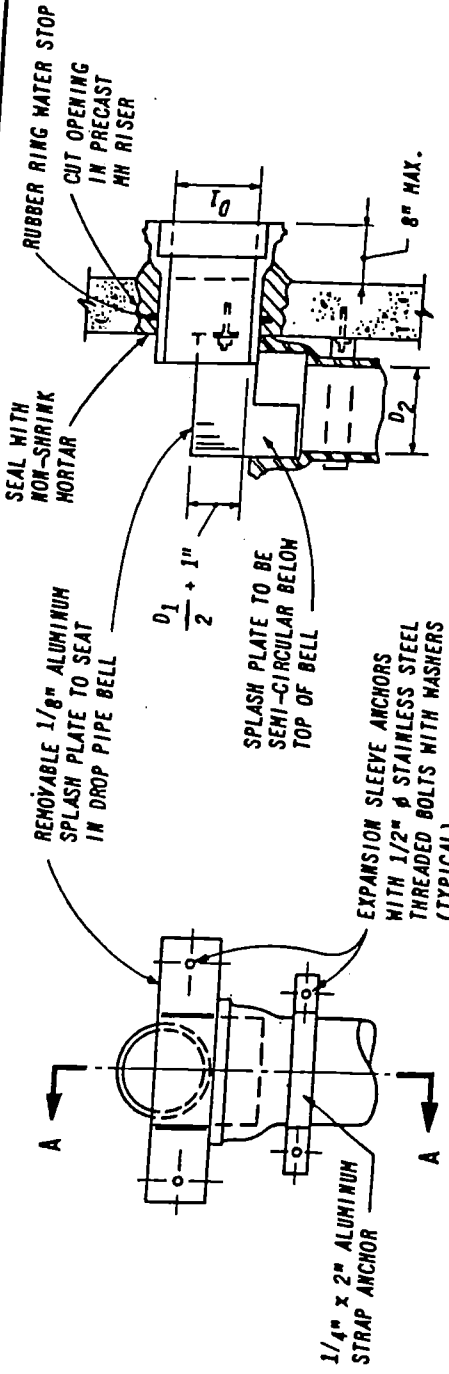
PRECAST REINFORCED-CONCRETE
 SEWER CHIMNEY

JUNE 1990

SCALE: NONE

004295

2-1.3



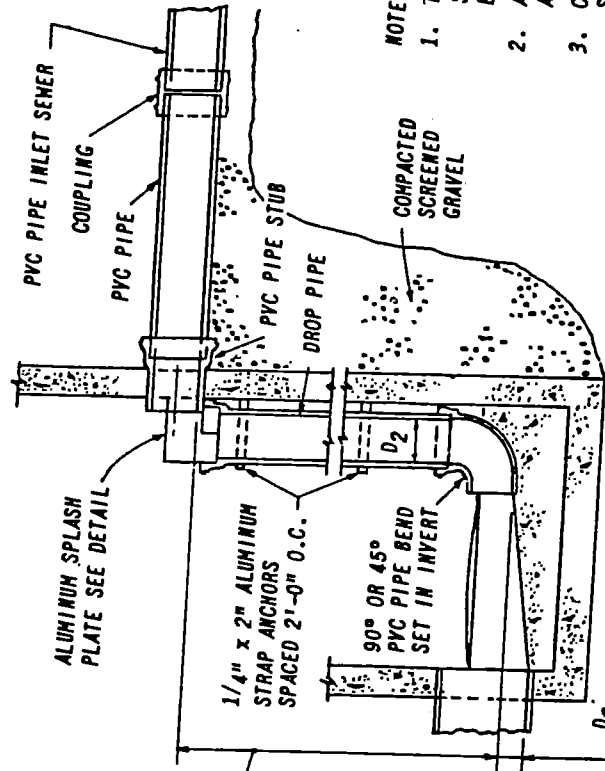
SECTION A-A

ALUMINUM SPLASH PLATE DETAIL

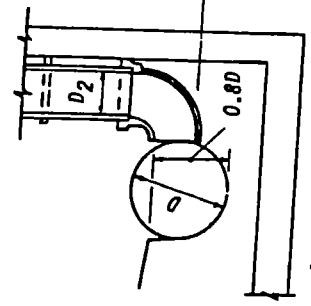
PIPE SIZE TABLE

PIPE SIZES (IN.)	
INLET SEWER D ₁	DROP PIPE D ₂
12	10
10	8
8	8
6	6
5	5

- NOTES:
1. DETAILS OF DROP MANHOLE TO BE SAME AS FOR TYPICAL MANHOLE EXCEPT AS SHOWN.
 2. ALUMINUM TO BE 6061-T6 ALLOY AND TEMPER.
 3. COUPLING: ELASTOMERIC PLASTIC SLEEVE WITH STAINLESS STEEL CLAMP BANDS. MATERIALS PER ASTH C425.
 4. RUBBER RING WATER STOP: MATERIALS PER ASTH C923.



INVERT DETAIL AT MAIN RUN DROPS



INVERT DETAIL AT SIDE DROPS



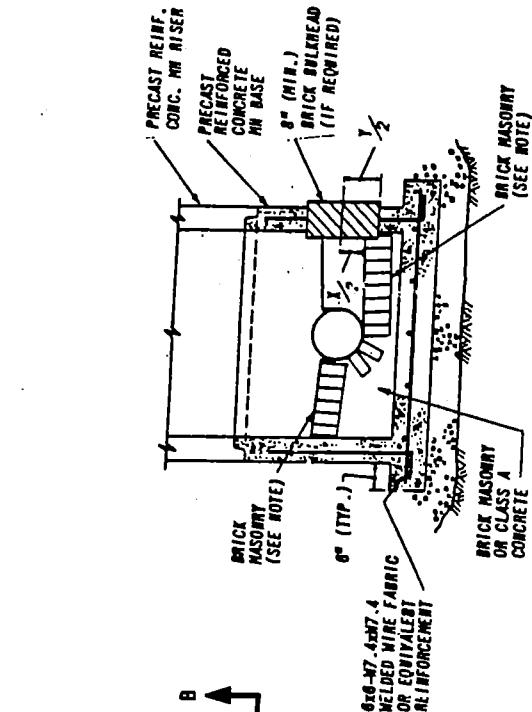
INSIDE DROP INLETS FOR PVC PIPE SEWERS 12" DIAMETER AND SMALLER

DATE

SCALE: NONE

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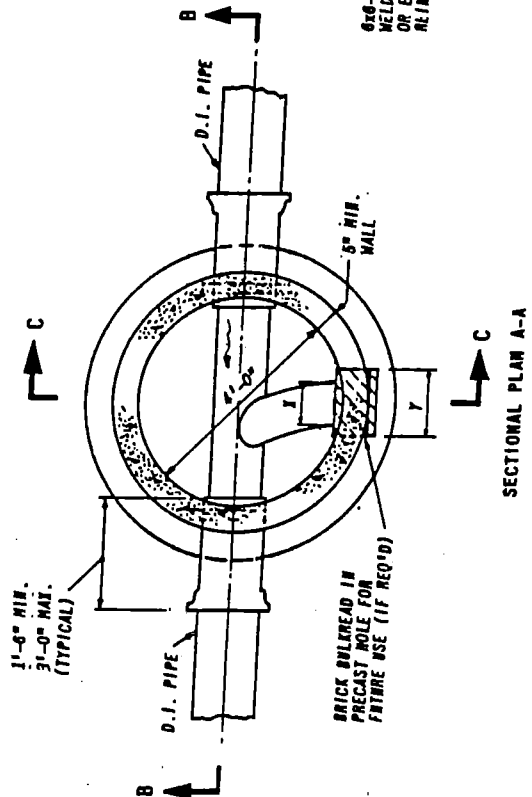
2-1.4.13



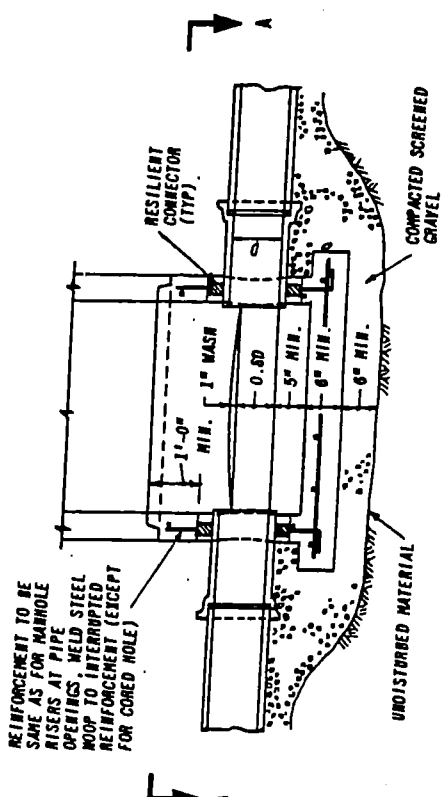
SECTION C-C

"N" (FUTURE PIPE DIAM.) (IN.)	"N" (PRECAST HOLE DIAM.) (IN.)
6	11
8	13
10	16
12	18
14	20
15	23
16	21
18	26

NOTE: INVERT CHAMFELS FOR SEWERS 18-IN. DIAMETER OR LARGER MAY BE CONSTRUCTED ENTIRELY OF CLASS A CONCRETE, IF DESIRED.



SECTIONAL PLAN A-A



SECTION B-B



4'-0" PRECAST REINFORCED CONCRETE MANHOLE BASE FOR DI SEWERS

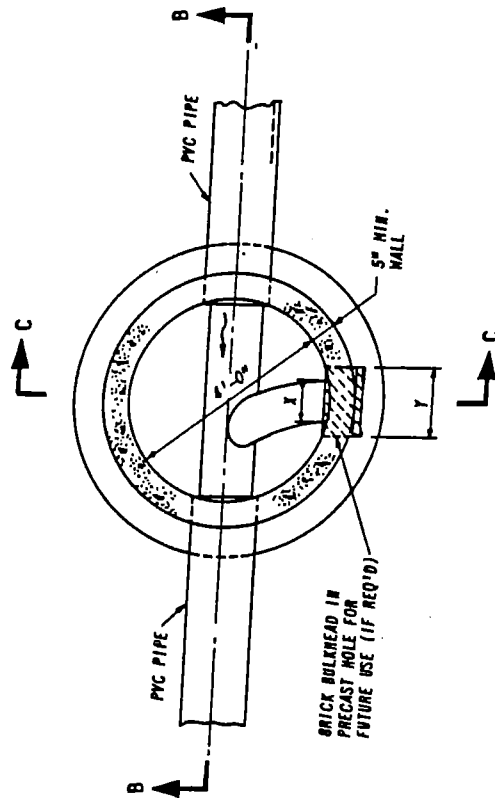
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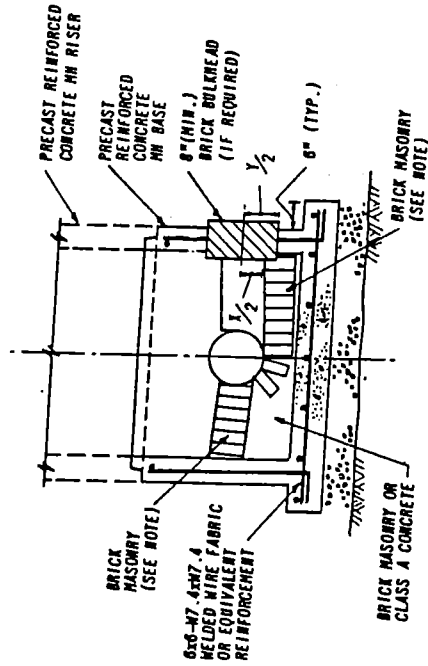
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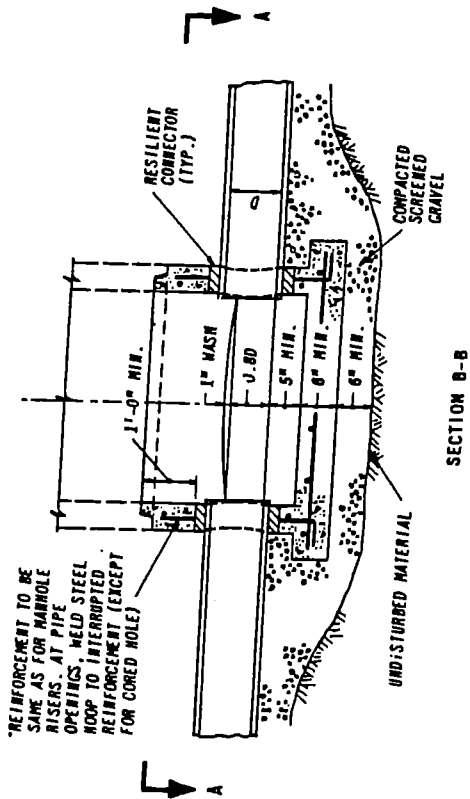
2-1.5.14



SECTIONAL PLAN A-A



SECTION C-C



SECTION B-B

"X" (FUTURE PIPE DIAM.) (IN.)	"Y" (PRECAST HOLE DIAM.) (IN.)
6	11
8	13
10	16
12	19
14	19
15	23
16	21
18	26

NOTE: INVERT CHANNELS FOR SEWERS 18-IN. DIAMETER OR LARGER MAY BE CONSTRUCTED ENTIRELY OF CLASS A CONCRETE, IF DESIRED.

REINFORCEMENT TO BE SAME AS FOR MANHOLE RISERS. AT PIPE OPENINGS, WELD STEEL HOOP TO INTERRUPTED REINFORCEMENT (EXCEPT FOR CORED HOLE)



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4'-0" PRECAST REINFORCED CONCRETE MANHOLE BASE FOR PVC SEWERS

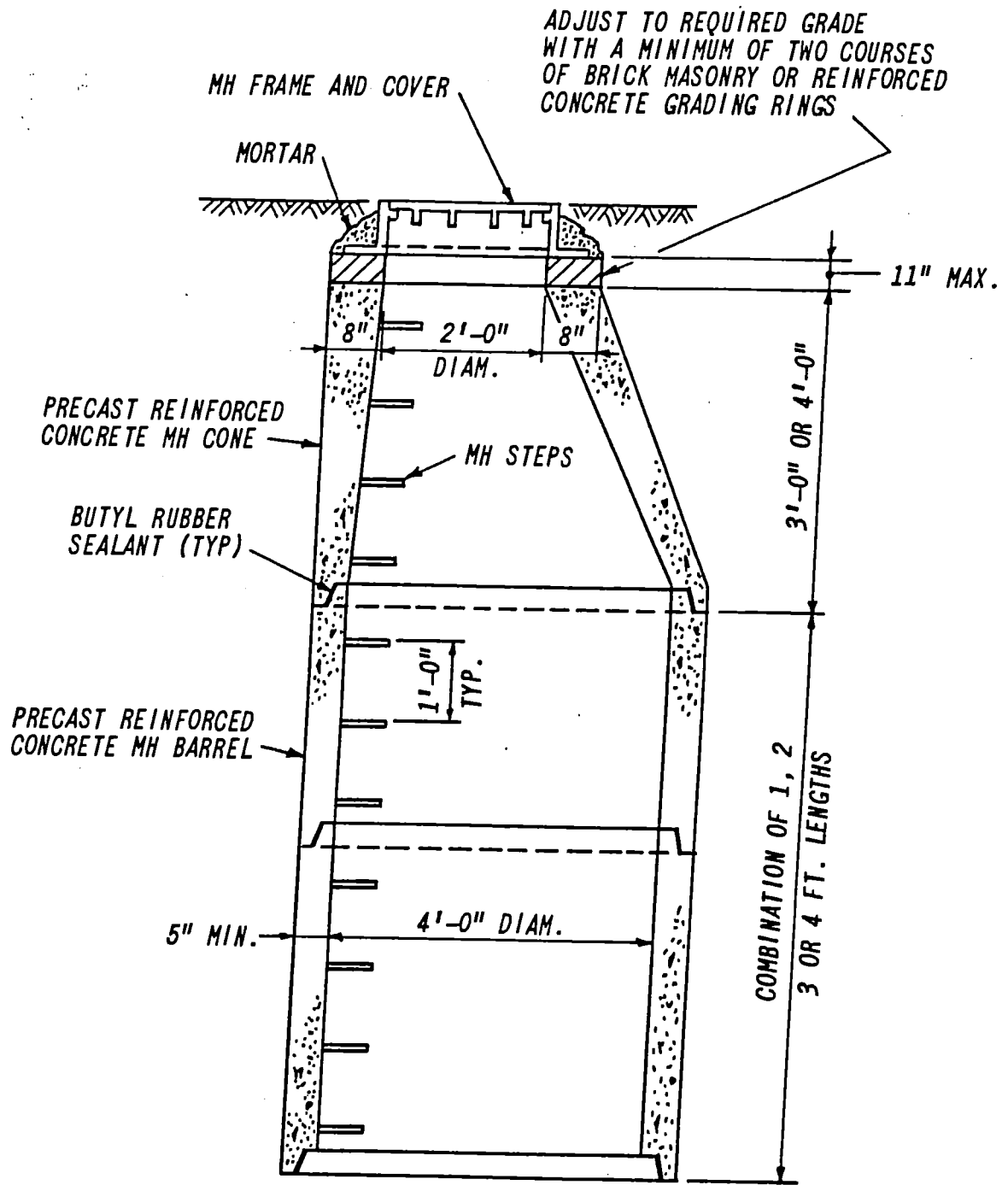
DATE

SCALE: NONE

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2-1.5.15



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SEWER MANHOLE RISER AND
ECCENTRIC CONE TOP
TYPE A

DATE

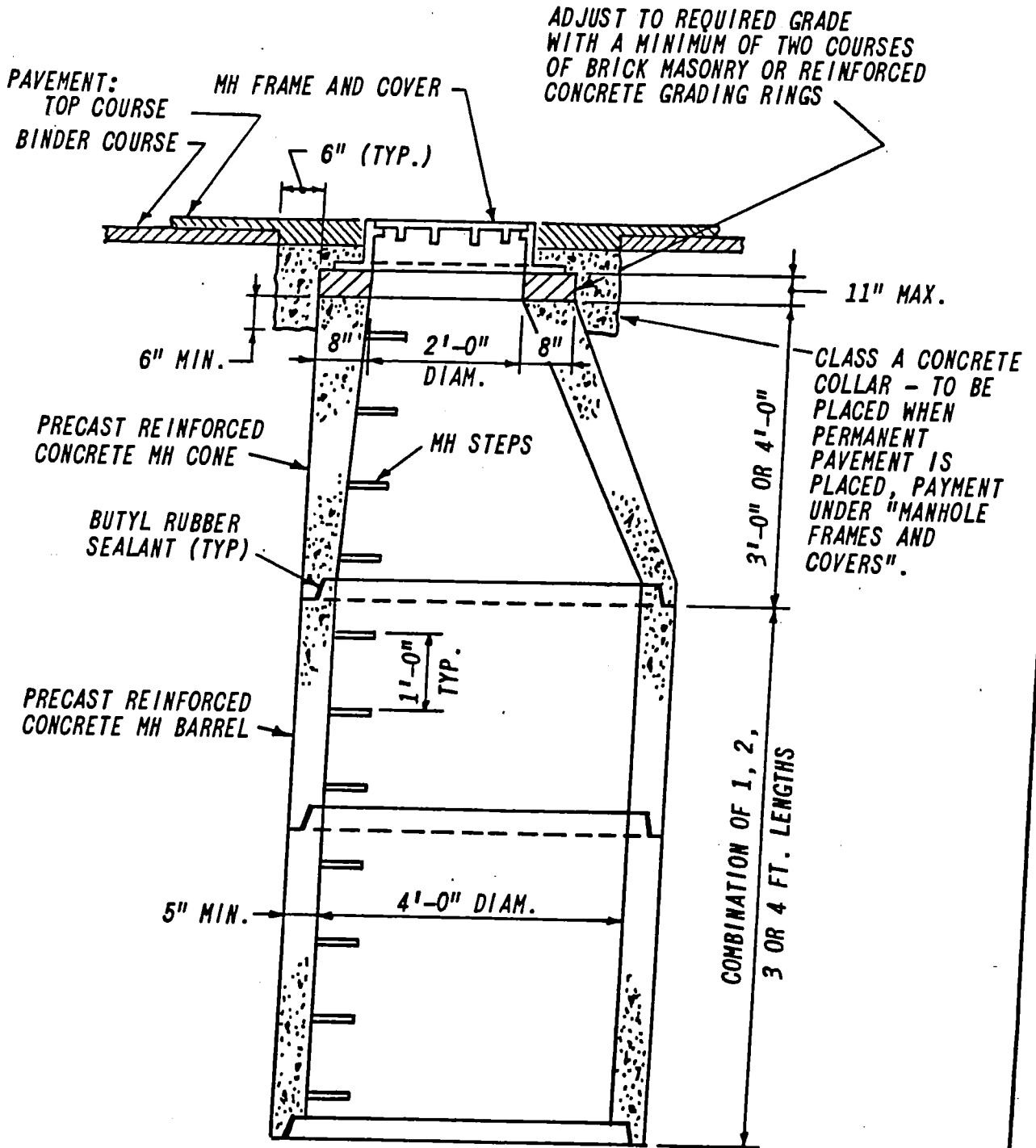
SCALE: NONE

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2-1.5.41

12/87



METCALF & EDDY

SEWER MANHOLE RISER AND ECCENTRIC CONE TOP TYPE B

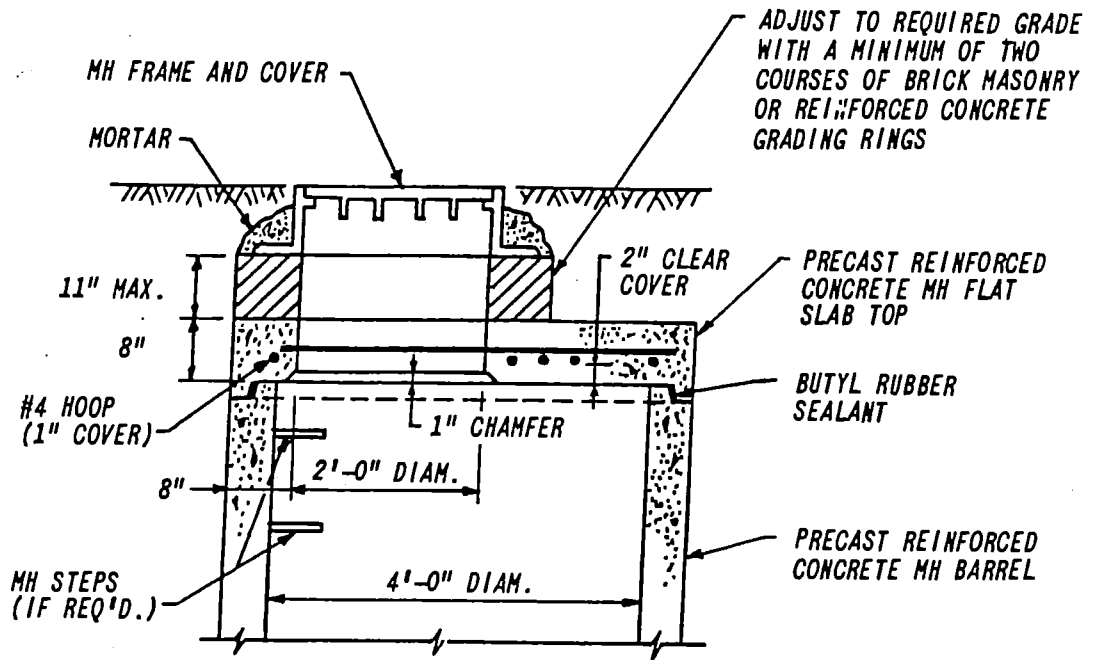
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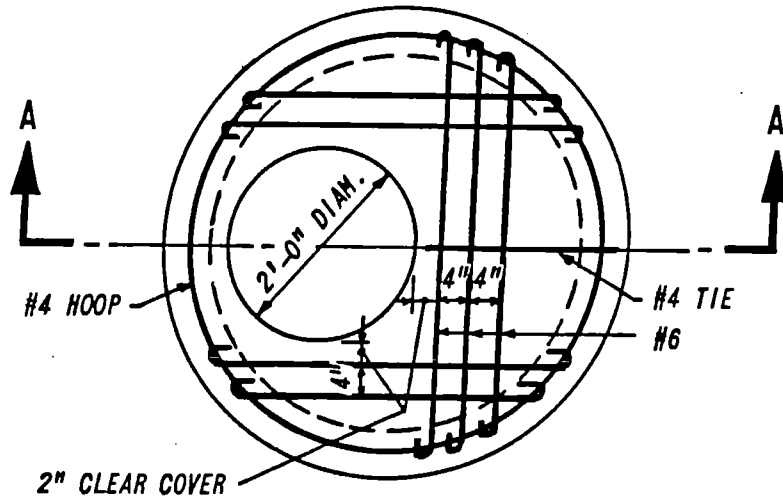
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SECTION A-A



PLAN OF PRECAST SLAB



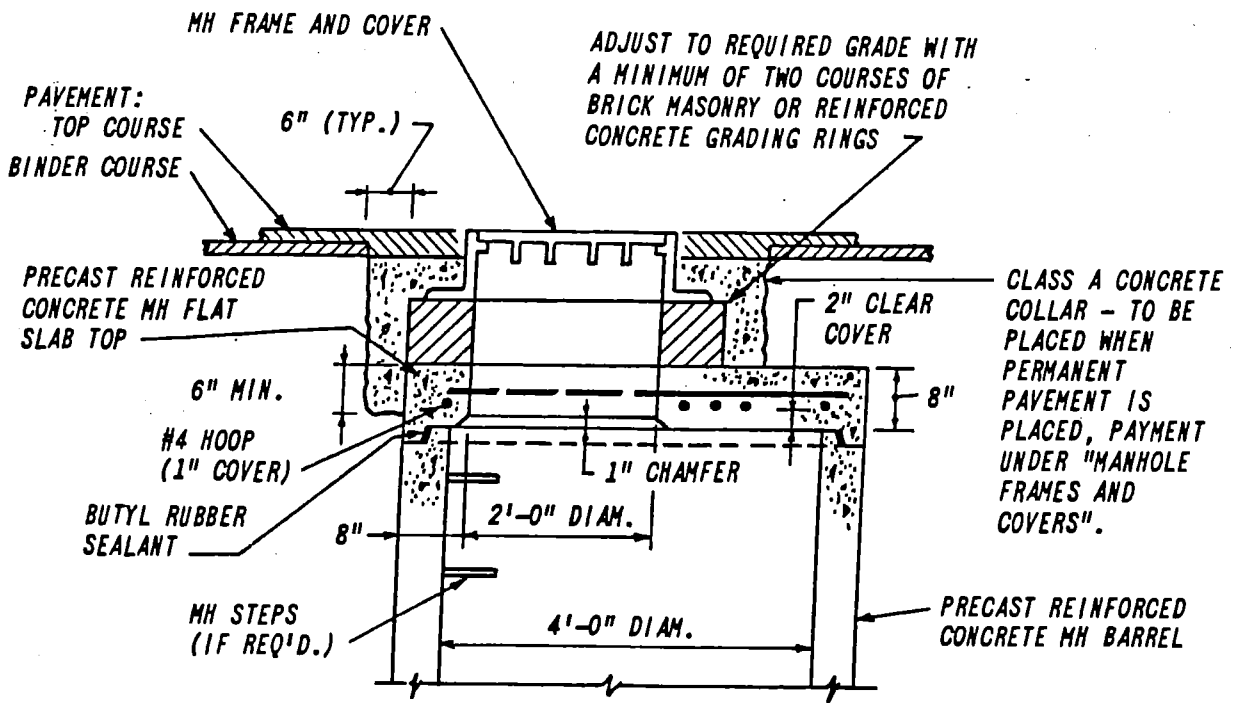
PRECAST FLAT SLAB TOP
FOR SHALLOW MANHOLE - TYPE A

DATE

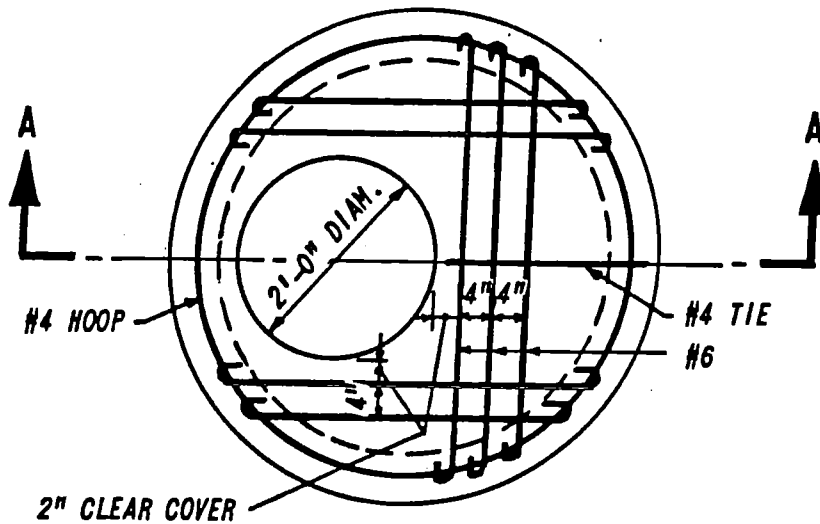
SCALE: NONE

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2-1.5.45



SECTION A-A



PLAN OF PRECAST SLAB



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PRECAST FLAT SLAB TOP
FOR SHALLOW MANHOLE - TYPE B

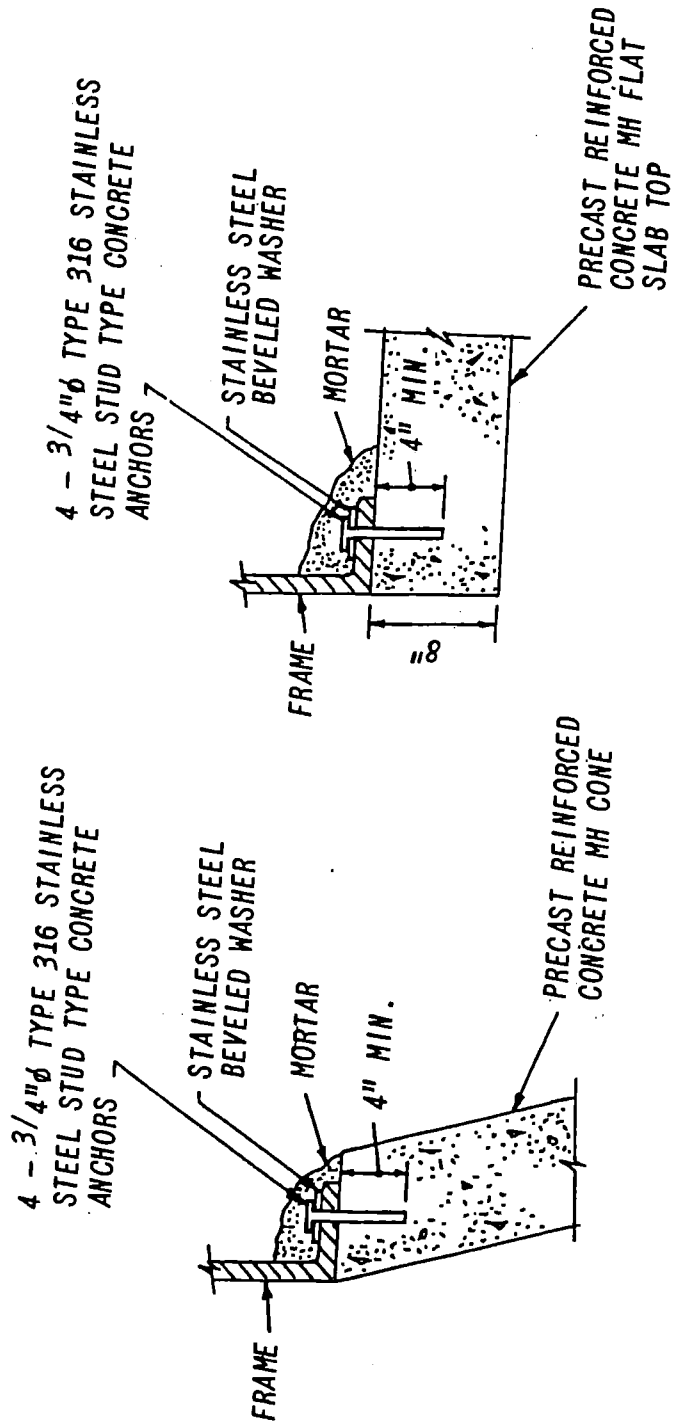
DATE

SCALE: NONE

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2-1.5.46



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ANCHOR BOLT DETAILS
FOR FRAMES FOR SEWER MANHOLE TOPS
IN UNPAVED AREAS

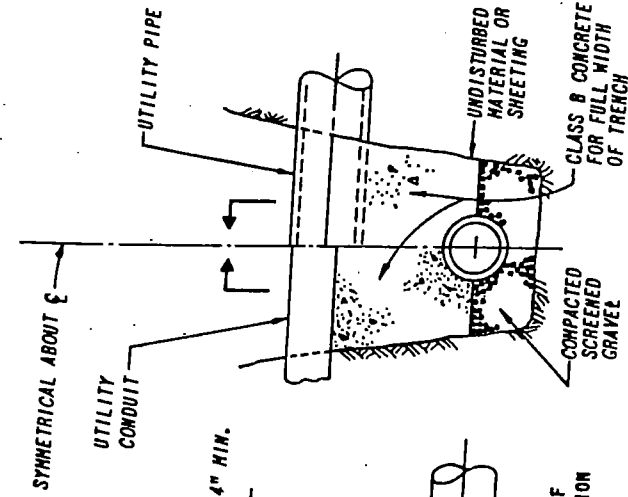
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SCALE: NONE

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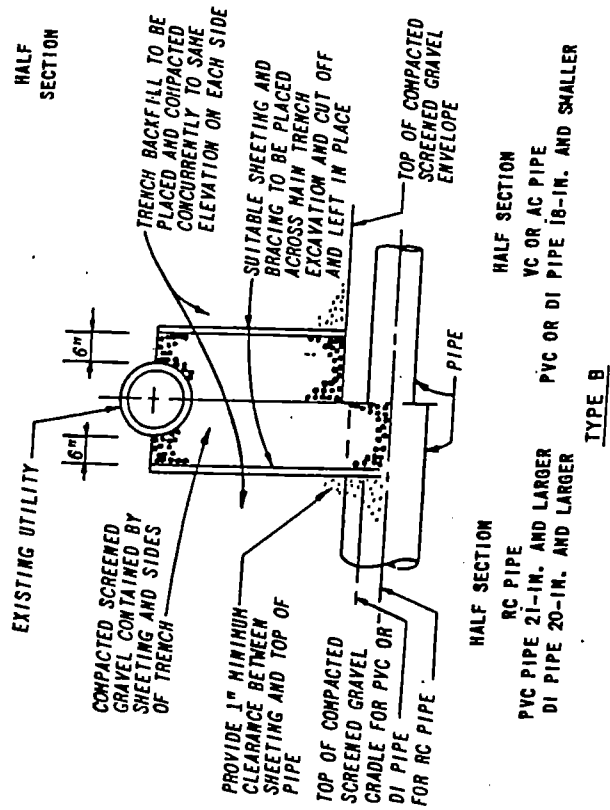
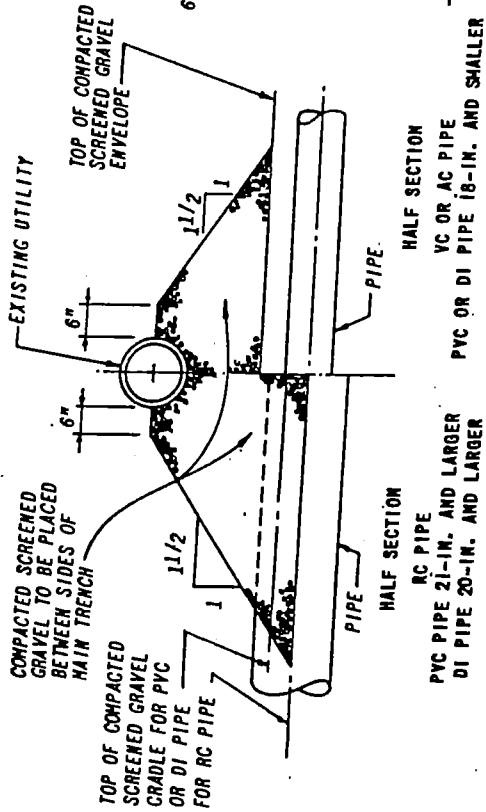
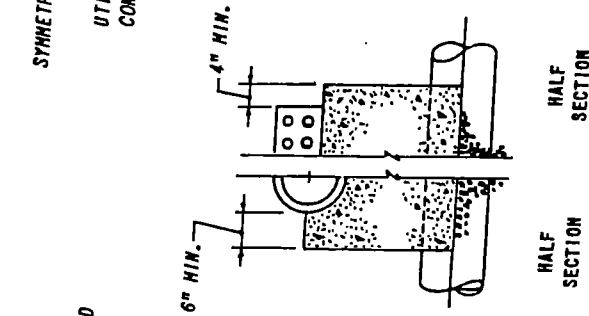
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TYPE C

NOTE: TYPE C SUPPORT TO BE PROVIDED WHERE DIRECTED



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TYPICAL SUPPORTS FOR UTILITIES

DATE

SCALE: NONE

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2-1.8

DATE

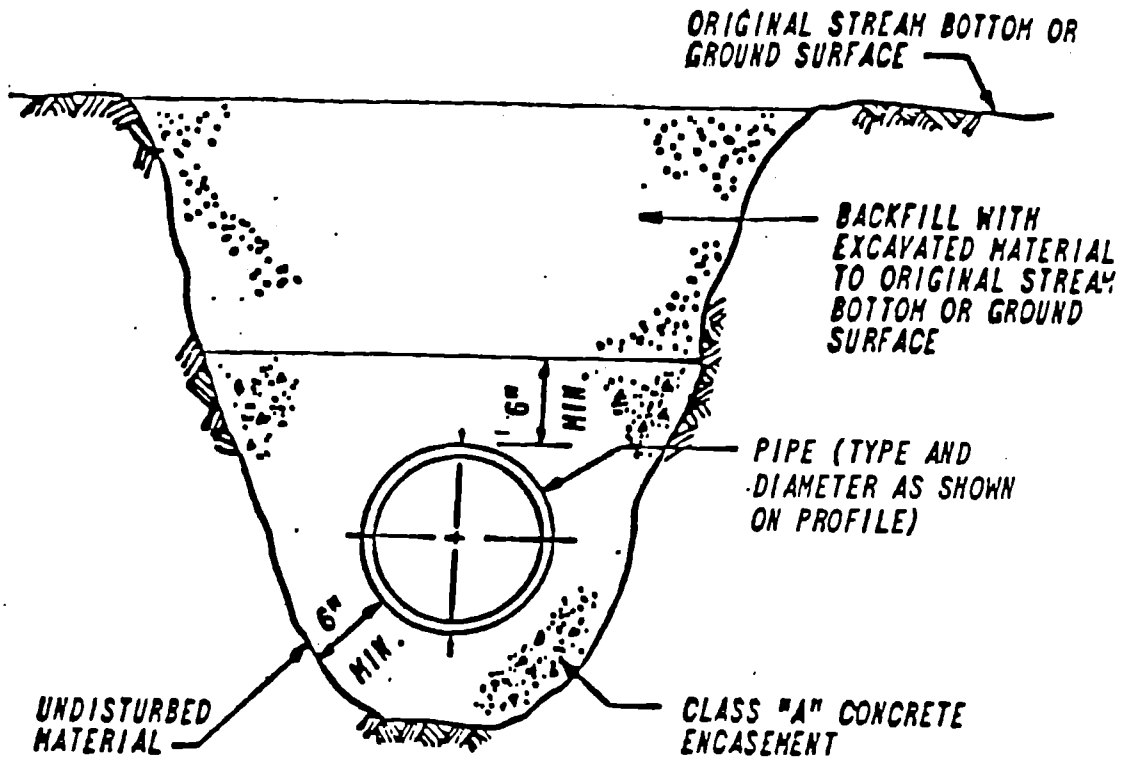
REVISION BY

DATE

APPROVED BY

DATE

DRAWN BY



NOTES:

1. THE PIPE SHALL BE PROPERLY SECURED TO PREVENT DISPLACEMENT DURING THE POURING OF CONCRETE ENCASEMENT.
2. LIMIT OF CONCRETE ENCASEMENT SHALL BE SHOWN ON THE PIPE PROFILE OR AS DIRECTED.



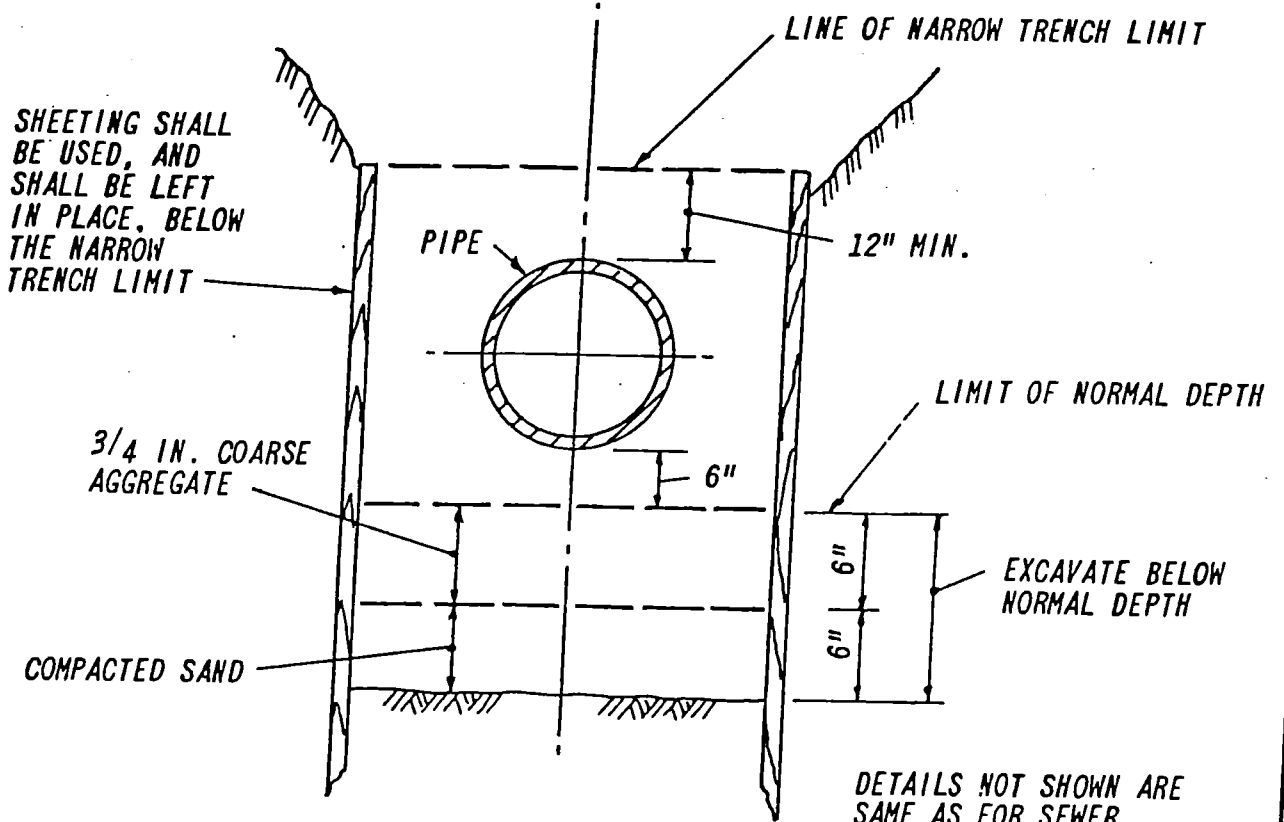
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CONCRETE ENCASEMENT DETAIL

SCALE: NONE

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2-1.8.2



NOTE: SAND MAY BE REPLACED BY AN APPROVED FILTER FABRIC.

DETAILS NOT SHOWN ARE SAME AS FOR SEWER TRENCH SECTIONS SHOWN ELSEWHERE.

GRADATION REQUIREMENTS

SIEVE SIZE	PERCENTAGE BY WEIGHT PASSING	
	3/4" COARSE AGGREGATE	SAND
1"	100	
3/4"	90 - 100	
3/8"	20 - 55	100
#4	0 - 10	95 - 100
#16		50 - 85
#50		10 - 30
#100		2 - 10



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SEWER TRENCH SECTION
(IN FINE SAND, SILT AND CLAY BELOW GROUNDWATER LEVEL)

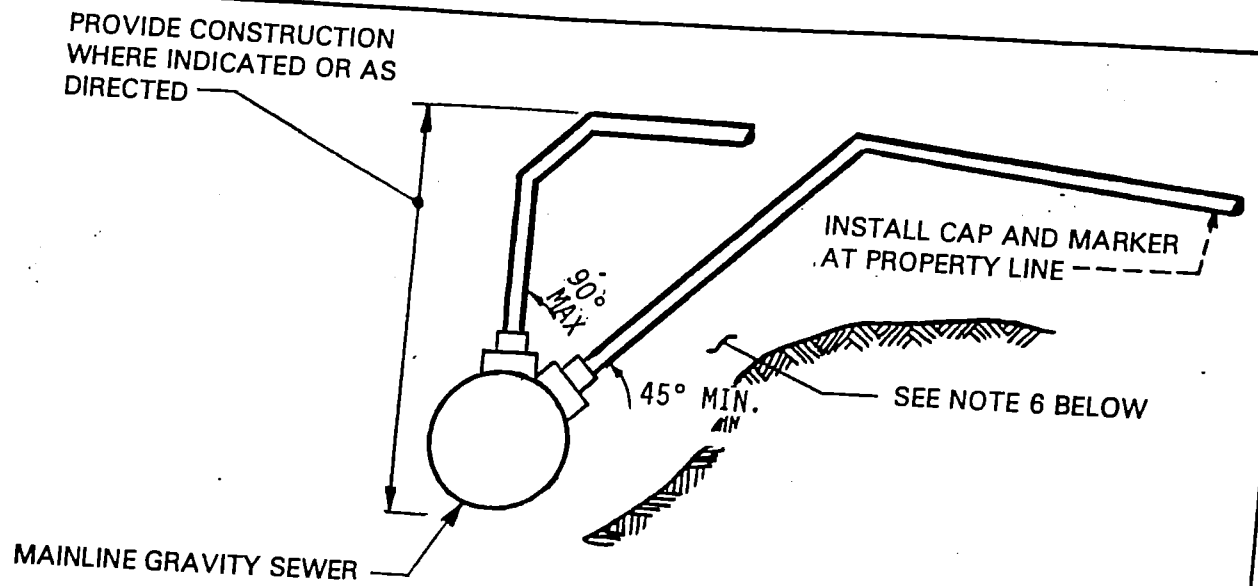
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SCALE: NONE

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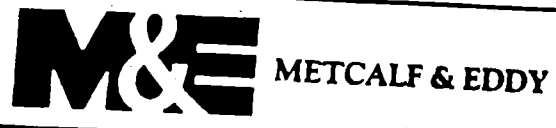
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2-9.1.2



NOTES:

1. PRESSURE SEWER HOUSE CONNECTION TO BE INSTALLED A MINIMUM 48" BELOW FINISHED GRADE AND WITH A MINIMUM 1'-0" VERTICAL BELOW AND 10'-0" HORIZONTAL CLEARANCE FROM ANY WATER HOUSE CONNECTION, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWING OR AS DIRECTED BY THE ENGINEER.
2. USE NECESSARY BENDS/FITTINGS TO MAINTAIN MINIMUM DEPTHS AND CLEARANCES. USE COMBINATIONS OF 45° BENDS AND OTHER FITTINGS IN LIEU OF 90° BENDS.
3. ALL FITTINGS TO BE BLOCKED OR ANCHORED IN ACCORDANCE WITH DETAILS G-4 AND G-5.
4. PRESSURE SEWER HOUSE CONNECTIONS SHALL HAVE MINIMUM 1'-0" CLEARANCE BELOW WATER MAINS AT CROSSING, WHERE CLEARANCES IN NOTE 1 AND THIS NOTE CANNOT BE MAINTAINED, PRESSURE SEWER JOINTS WITHIN 10 FEET OF WATER LINE SHALL BE ENCASED WITH CONCRETE MINIMUM 4" THICK AND AT LEAST 18" EACH SIDE OF JOINT.
5. SET GRAVITY SEWER T SO THAT OUTLET IS SET 45° TO 90° FROM THE HORIZONTAL.
6. PROVIDE SCREENED GRAVEL BEDDING, OAK MARKER, PLUG, CAPS, AND OTHER APPURTENANCES IN ACCORDANCE WITH DETAILS 2-1.2.4 TITLED GRAVITY SEWER BUILDING CONNECTION.
7. PROVIDE NECESSARY FITTINGS TO ADAPT FROM MAINLINE SEWER TO 1-1/4" PRESSURE SEWER HOUSE CONNECTION INCLUDING 2" BY 4" SDR21 (BELL) X SDR35 (SPIGOT) ADAPTER MANUFACTURED BY THE HARRINGTON CORPORATION, LYNCHBURG, VIRGINIA 24506, OR EQUALL.

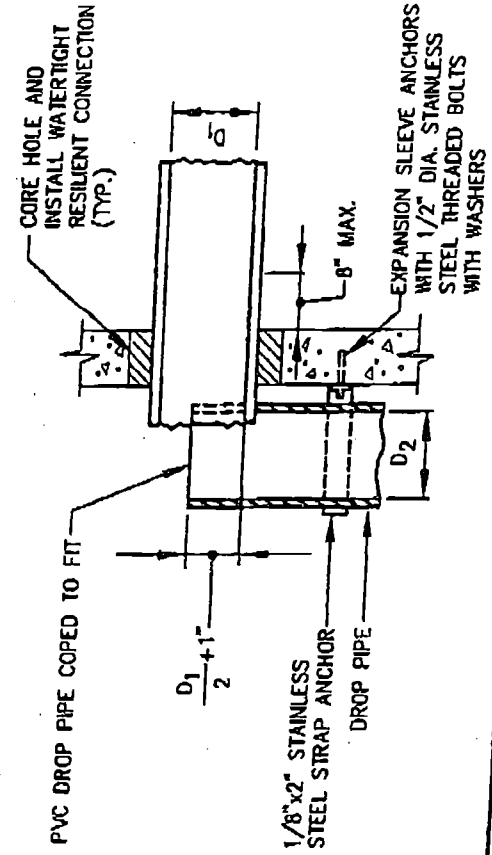


NEW PRESSURE SEWER HOUSE CONNECTION TO GRAVITY SEWER

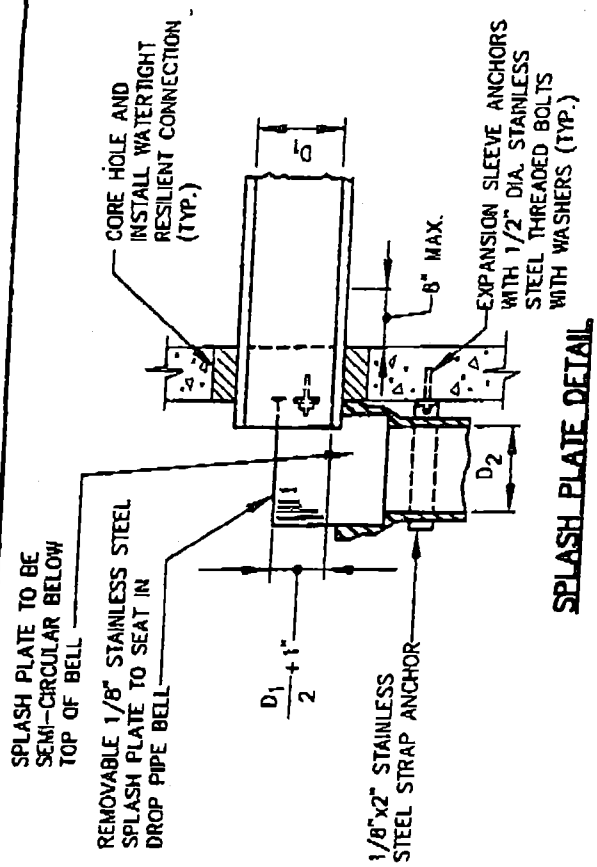
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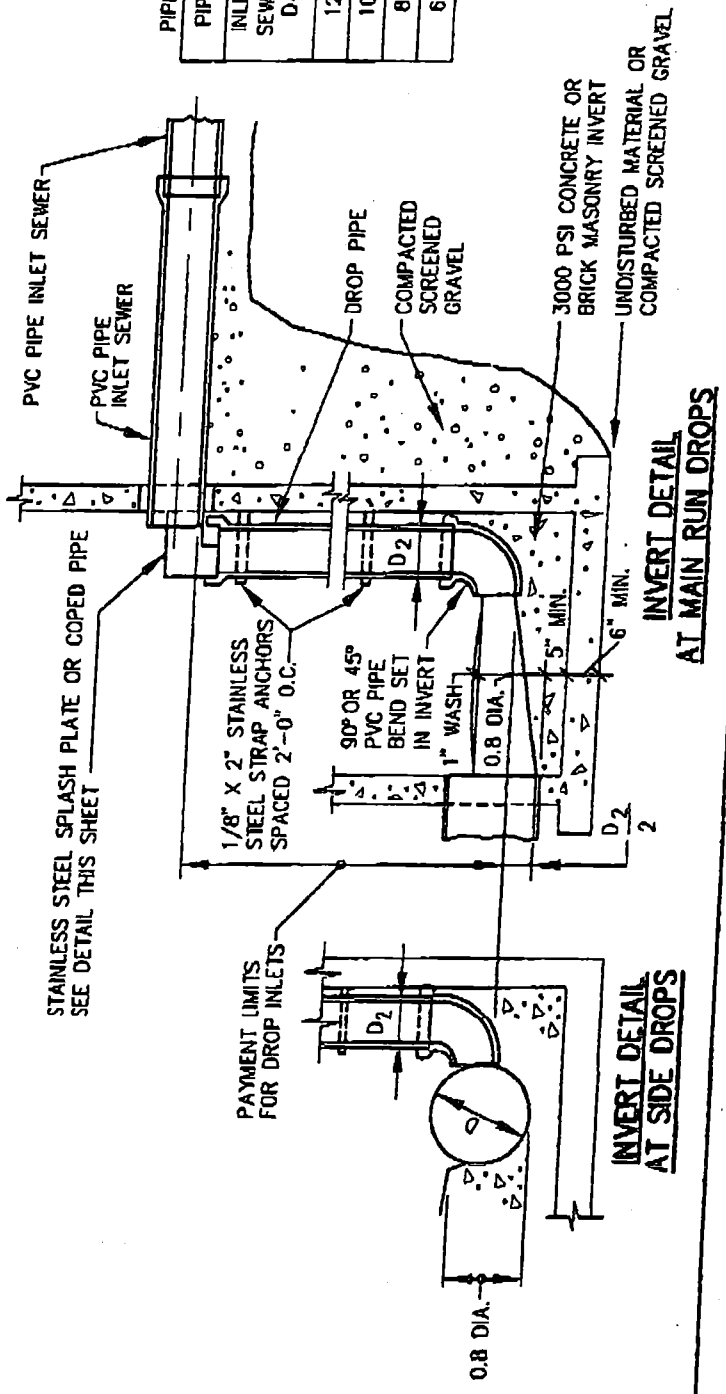
G-3



COPED PIPE DETAIL



SPASH PLATE DETAIL



INVERT DETAIL AT MAIN RUN DROPS

PIPE SIZE TABLE

PIPE SIZES (IN)	
INLET SEWER D ₁	DROP PIPE D ₂
12	12
10	10
8	8
6	6

**INSIDE DROP INLETS FOR PVC PIPE SEWERS
12 INCH DIAMETER AND SMALLER**

SCALE: NTS	22301JEW\C	7/28/99	CZJEW037.DWG	X
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