

INDEX OF SHEETS

GENERAL NOTES

UNIFORM STANDARD
RECOMMENDED FRAME AND CASTINGS
CAST IRON UNLESS OTHERWISE SPECIFIED

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INDEX OF SHEETS AND GENERAL NOTES

<u>REVISIONS:</u>	<u>SCALE</u> No Scale	<u>DATE</u> 5-11-78	<u>REVIEWED:</u> <i>[Signature]</i>
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GENERAL NOTES

UNIFORM STANDARD
RECOMMENDED FRAME AND CASTINGS
CAST IRON UNLESS OTHERWISE SPECIFIED

UNIFORM STANDARD
RECOMMENDED FRAME AND CASTINGS
CAST IRON UNLESS OTHERWISE SPECIFIED

STANDARD SHEET NO.	TITLE	NEENAH NO.	EAST JORDAN NUMBER	STANDARD SHEET NO.	TITLE	NEENAH NO.	EAST JORDAN NUMBER
16	Trench Drain Catch Basin Trap Cast or Ductile Iron	R-3701	5954 C.I.	22	Round Precast Concrete Inlet Basin Vertical Curb (36" Dia. Basin) Mountable Curb (36" Dia. Basin)	R-3246-F R-3514-F w/ Round Base Flange	7360Z 7395Z
17	Special Inlet, Frame and Grate	R-3352	-----				
17	Cleanout Cover w/out Lift Hole	R-4055-8	6308				
18	Yard Type Catch Basin Grate and Frame	R-4353	-----	23	Force Main Air Release Valve Chamber, Frame and Solid Cover	R-6052-F	2870 Type "A" Cover
19	Rectangular Precast Concrete Catch Basin Vertical Curb Mountable Curb	R-3246-C w/ "C" Grate R-3514-F	7035 w/"MMM" Grate 7390 w/"MM" Grate	24	Standard Grease Trap, Frame and Solid Cover 30" Diameter 18" Diameter	R-6052-J R-6052-A	2880 Type "A" Cover -----
20	Rectangular Precast Concrete Inlet Basin Vertical Curb Mountable Curb	R-3246-C w/ "C" Grate R-3514-F	7035 w/"MMM" Grate 7390 w/"MM" Grate		Manhole Steps for Masonry and Formed Concrete - Ductile Iron	R-1981-I R-1981-S	8518 8514
21	Round Precast Concrete Catch Basin Vertical Curb (36" Dia. Basin) Mountable Curb (36" Dia. Basin) Catch Basin Trap	R-3246-F R-3514-F w/ Round Base Flange R-3707-12,15	7360Z 7395Z 5964-12,15		Manhole Steps - Plastic Meeting the Requirements of ASTM 2146-68 Type II Grade 49108 and ODOT S.S. #941 Survey Monument Boxes	R-1968 Type 36-B	8371

GENERAL NOTES

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UNIFORM STANDARDS CLEVELAND COUNTY — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT

NOTES

Sections of the precast manhole shall be cast and assembled with either all tongue or all groove ends up. Lift holes may be provided in each section for handling.

TOP AND TRANSITION (or reducer)
Sections may be either eccentric cone, concentric cone or flat slab.

BASES for Manholes are shown with monolithic floor and riser which may be cast in one or two operations.

A permissible alternate is to cast and ship the floor and barrel separately. Openings for inlet and outlet pipes shall be provided, either when the unit is cast or later, to meet project requirements. Bottom channels may be formed of concrete precast in the base or by field construction. Bases may also be poured in place.

OPENINGS IN RISER SECTIONS for 18" and smaller inlet pipes shall be prefabricated. Flexible connections shall be provided for sanitary and combined sewers.

BRICK shall conform to ASTM C-32.

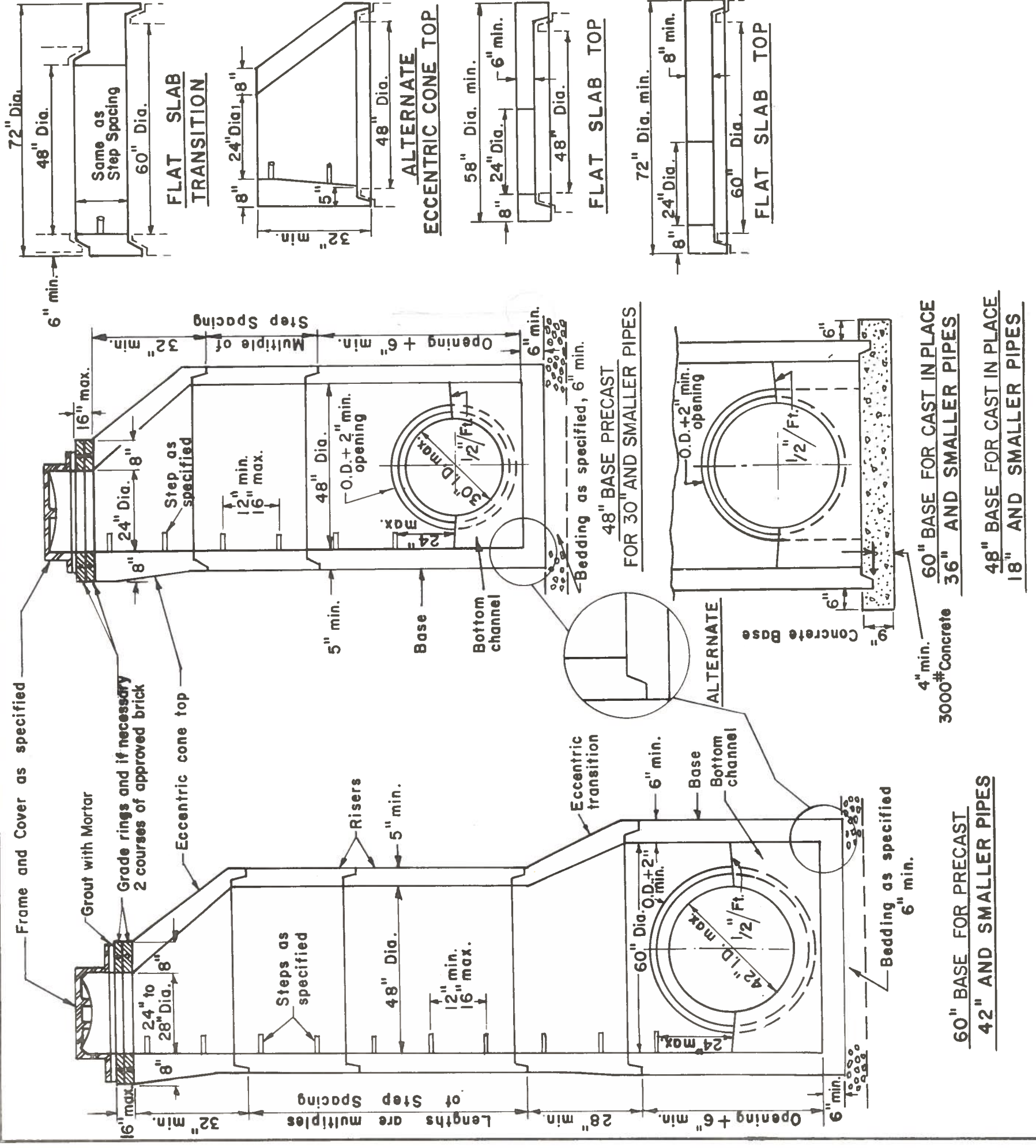
JOINT SEAL between precast manhole sections on sewers shall be resilient and flexible gasket joints per A.S.T.M. C443 - or latest edition.

MATERIALS for bases and other precast sections, including reinforcement not specified hereon, shall comply with the specifications.

LANDING PLATFORMS as shown on the Landing Details shall be installed in manholes that are over 28 feet deep to the invert with a maximum vertical spacing of 20 feet.

PRECAST MANHOLE shall conform to the requirements of A.S.T.M. C 478.

SEAL lift holes with approved concrete plugs and bit.



PRECAST CONCRETE MANHOLE
42" PIPE OR SMALLER

REVIEWED: *[Signature]*

SCALE: 3/8" = 1'-0"

DATE: 5-11-78

REGIONAL SEWER DISTRICT

CLEVELAND COUNTY — CLEVELAND

UNIFORM STANDARDS

REVISIONS:

NOTES

MANHOLE shall consist of the design shown hereon with precast base materials. Other manhole components above the base shall be as detailed or specified.

THIS MANHOLE is not designed for static or dynamic highway loads. In case of highway loads, a special detail will be required.

BEDDING shall be the same as is used under the adjoining conduits.

MORTAR to be Portland Cement Mortar as specified.

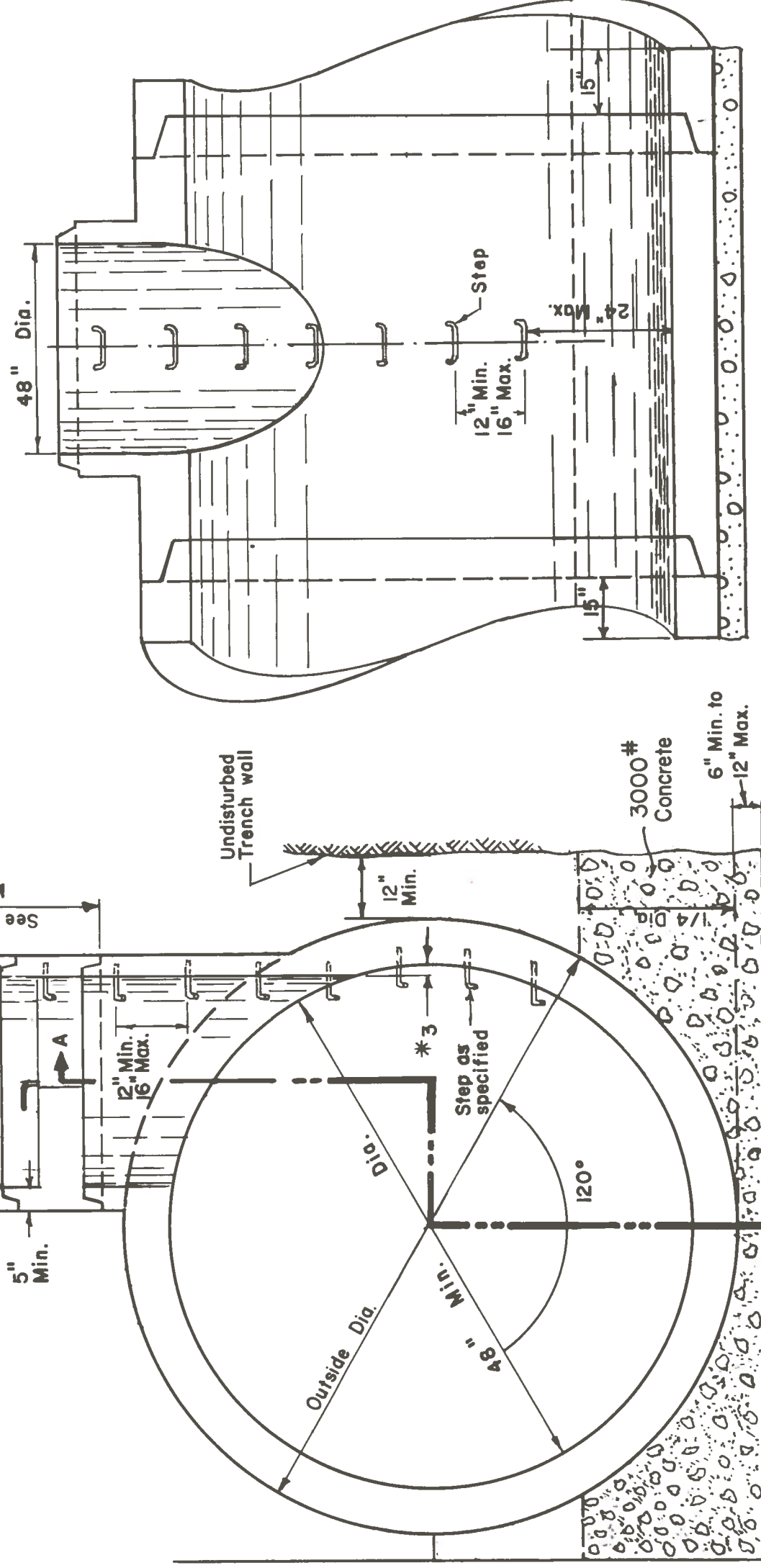
MANHOLE STEPS conform to O.S.H.A. standards

Frame & Cover as specified
16" max.
Grout with Mortar
Grade rings and if necessary two courses of approved brick

See landing detail for depths greater than 25'

See Precast Manhole
Max. 25'

* On all sizes except 48"



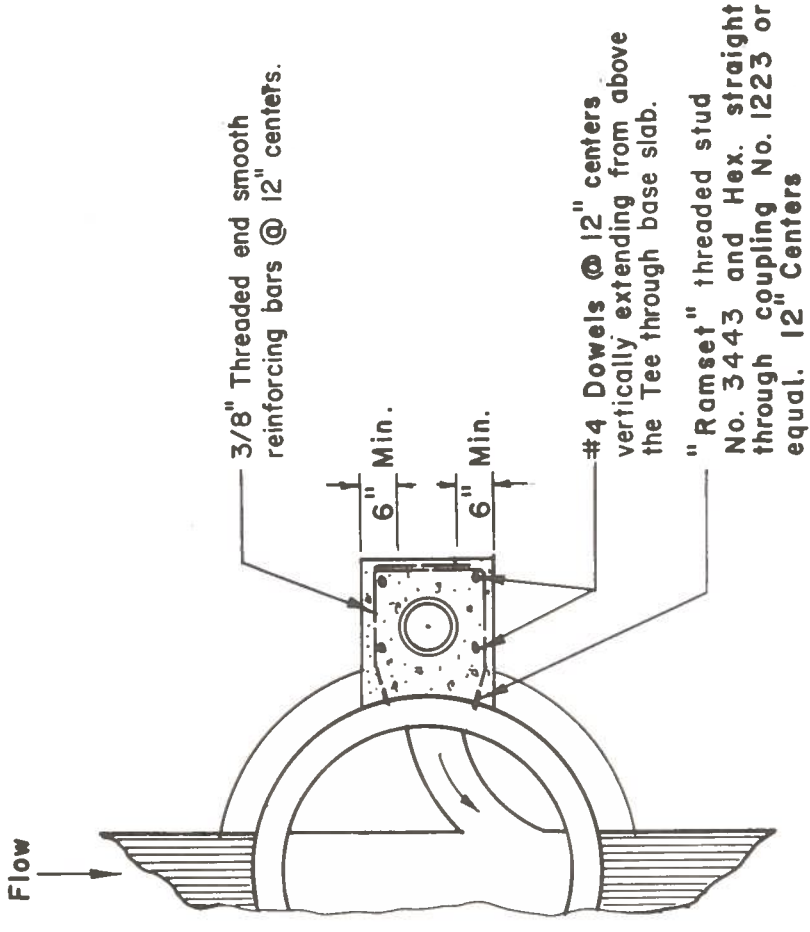
ELEVATION

SECTION A-A

**PRECAST CONCRETE
MANHOLE**
LARGER
48" PIPE OR SMALLER

REVISIONS:	SCALE No Scale	DATE 5-11-78	REVIEWED: <i>CLC/CO</i>
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UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT

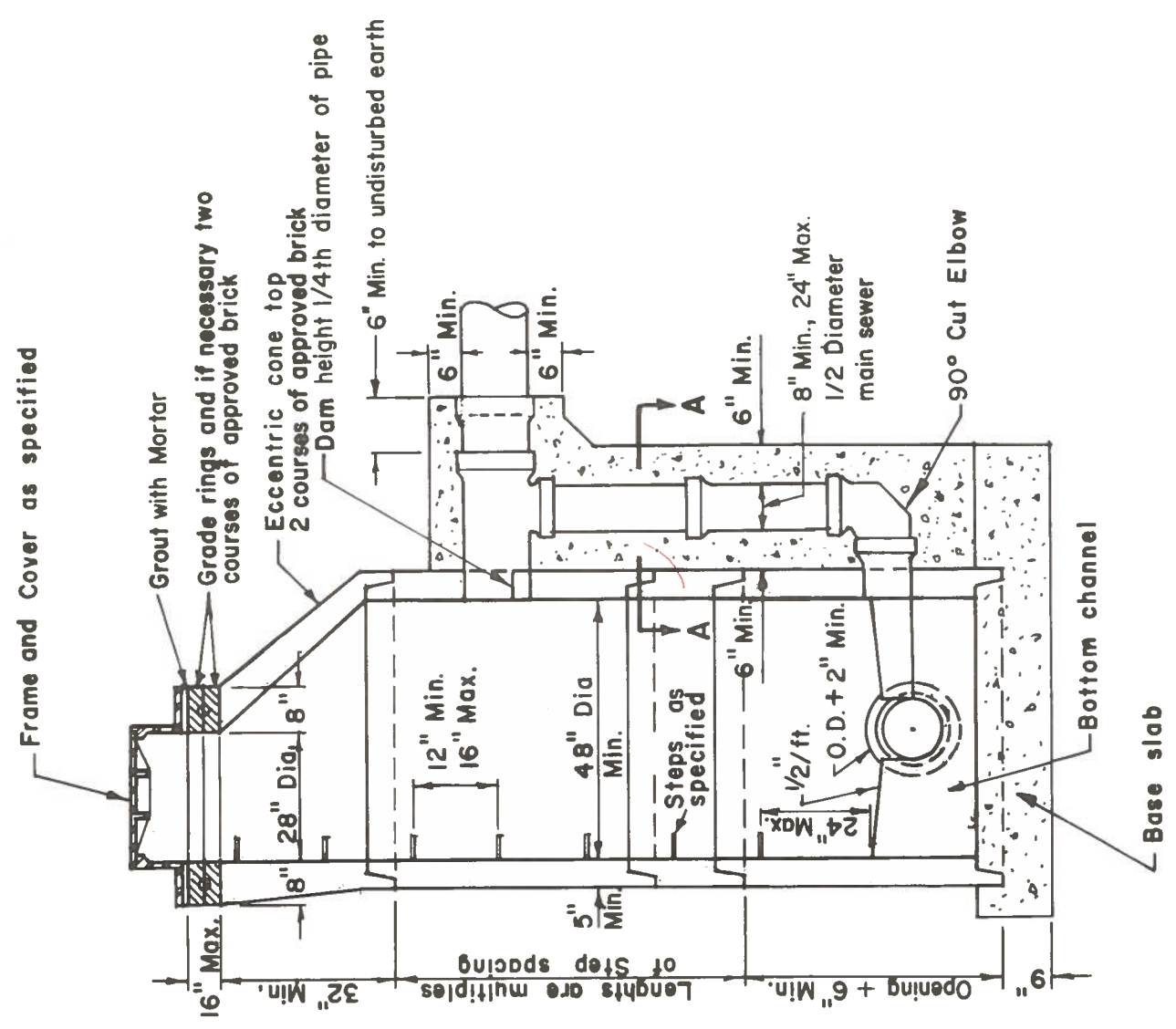


SECTION A - A

NOTES: A drop manhole shall be constructed in Sewers wherever the distance between the inverts is 2.5 ft. or greater.

The following notes on the Precast Concrete Manholes shall pertain to the Drop Manhole: Top or Transition Openings in riser sections, Joint Seal, Materials and Landing Platforms.

Poured in place concrete shall be 3000# Concrete.



NOTE: See Sheet 4 for 60" dia. transition

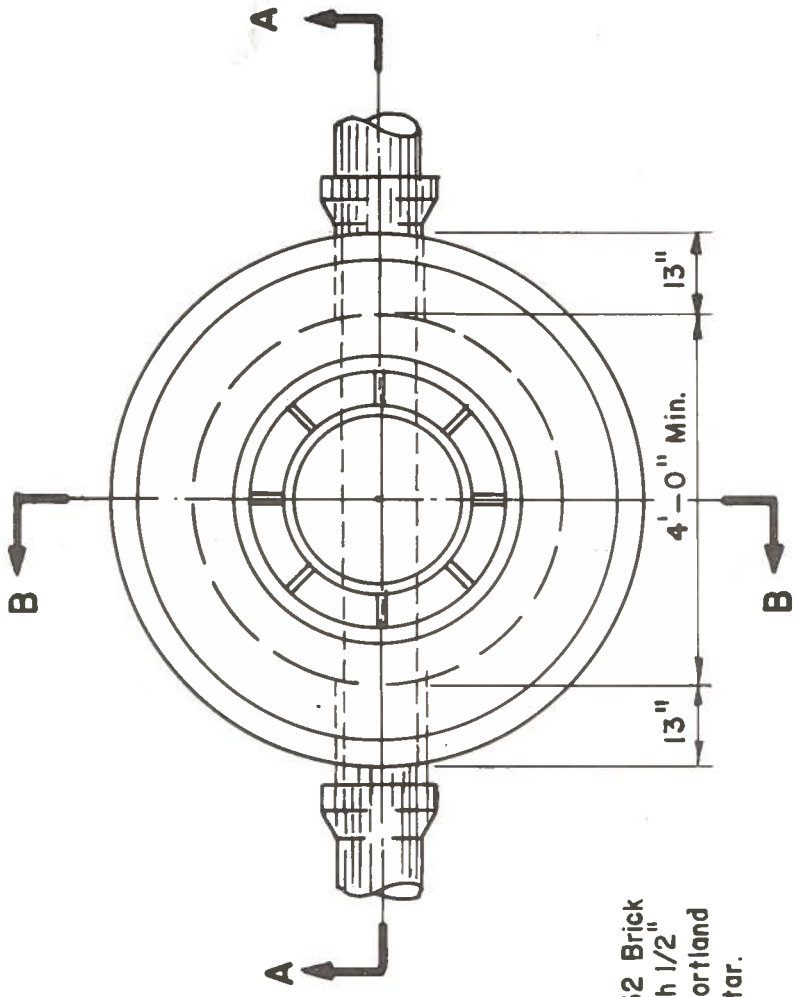
NOTE: This bedding with precast base on manhole.

ALTERNATE

PRECAST CONCRETE
DROP MANHOLE

REVISIONS:	SCALE 3/8" = 1'-0"	DATE 5-11-78	REVIEWED: <i>CKR/CO JPK D. Gault</i>
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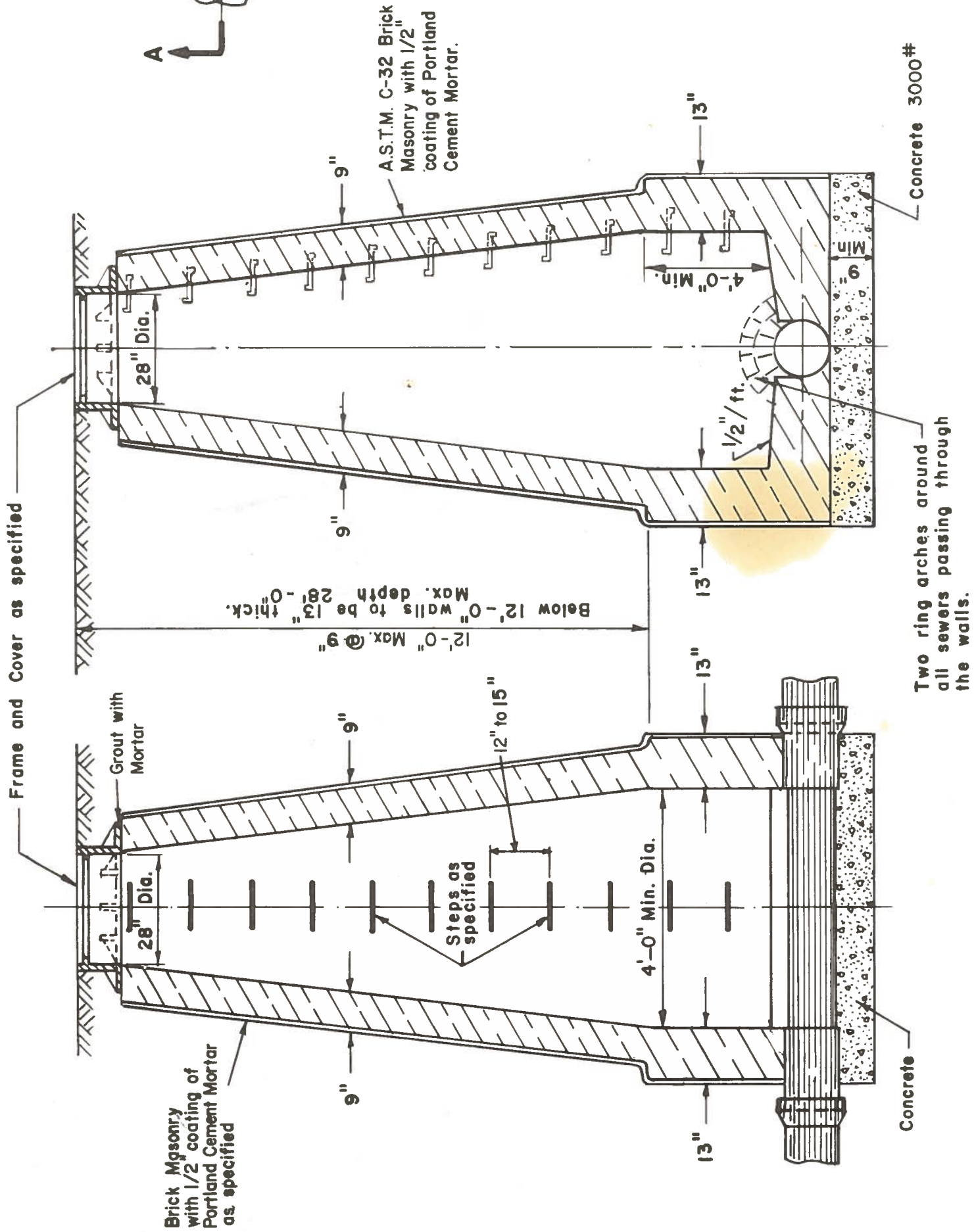
UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT



PLAN

NOTES

The cylindrical section of the manholes shall be extended vertically from the shelves for a distance equal to the internal diameter of the largest pipe entering the manhole, with a minimum vertical height of 4'-0".



SECTION A - A

SECTION B - B

BRICK MANHOLE FOR STORM SEWER

REVISIONS:

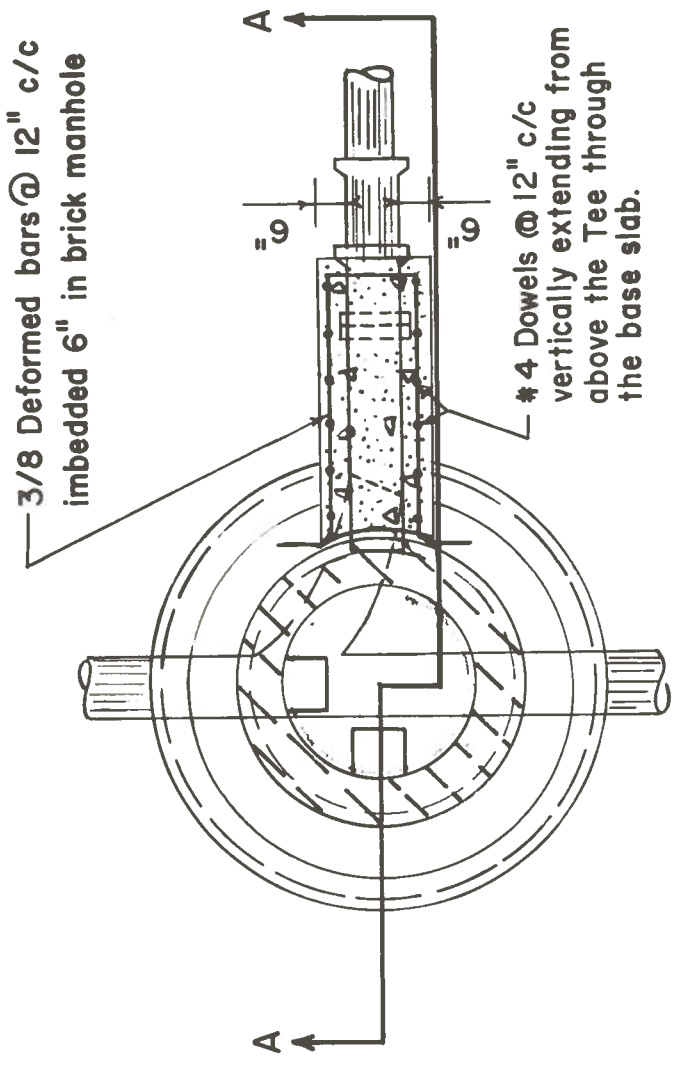
SCALE 3/8" = 1'-0"

DATE 5-11-78

REVIEWED: *C. R. Co. J. K. D. Smith*

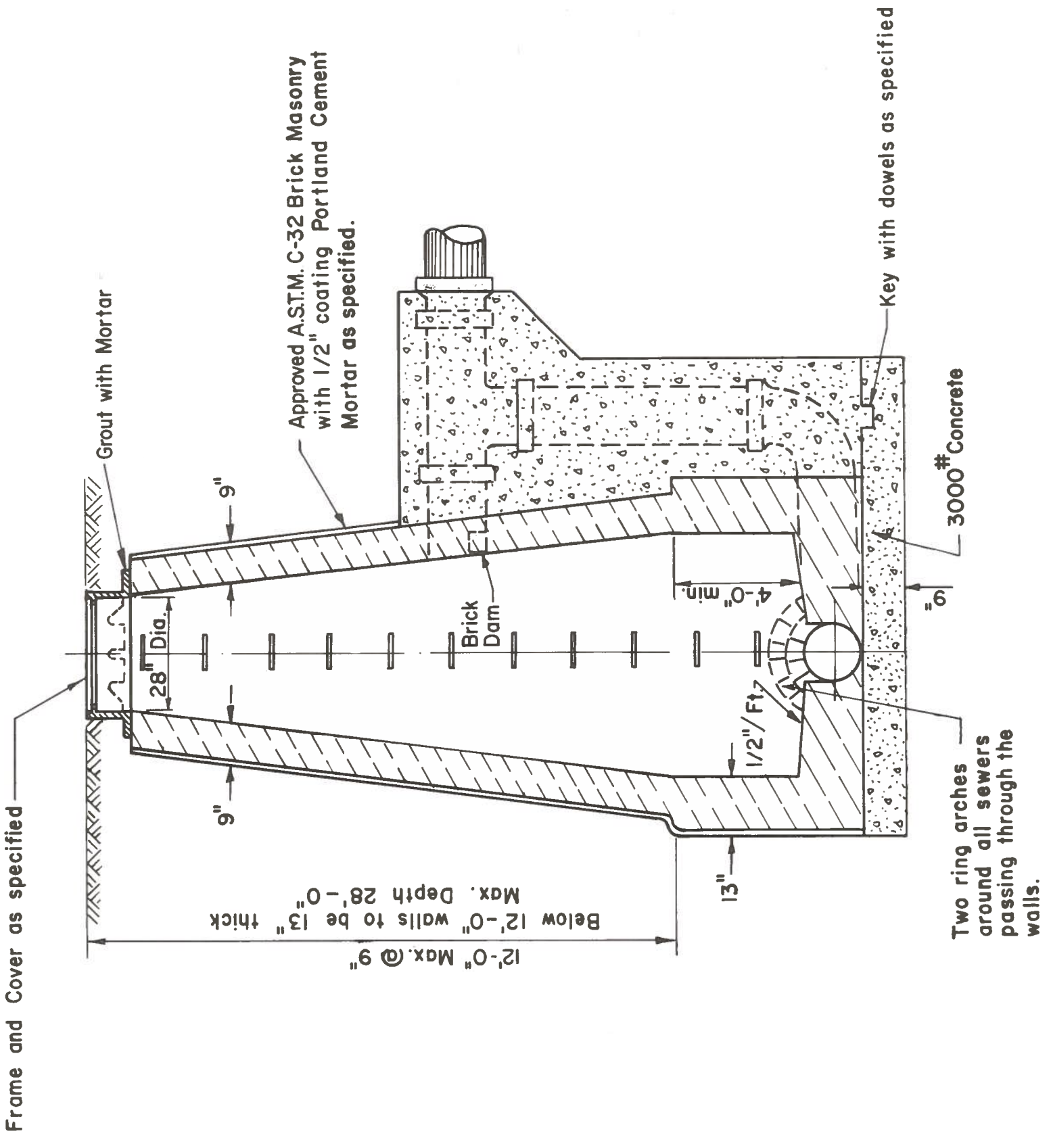
UNIFORM STANDARDS:

CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT



PLAN

NOTES: The cylindrical section of the Manhole shall be extended vertically from the shelves for the distance equal to the internal diameter of the Largest Pipe entering the Manhole, with a minimum vertical height of 4'-0".



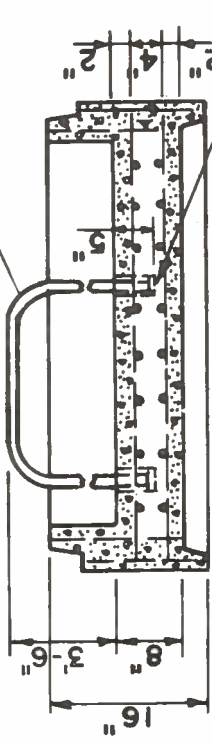
SECTION A-A

**BRICK DROP MANHOLE
FOR STORM SEWER**

REVISIONS:	SCALE	DATE	REVIEWED:
	No Scale	5-11-78	<i>[Signature]</i>

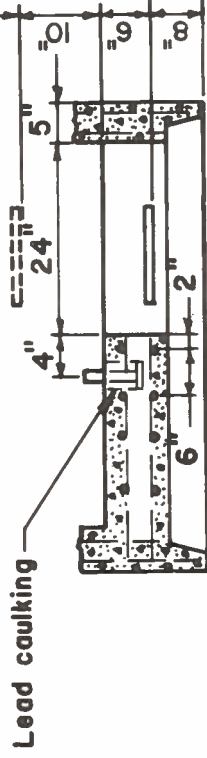
UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT

1 1/2" Dia. Solid steel bar
Hand Rail



2 1/4" Dia. Steel plate 3/4" thick
welded to both ends of 1 1/2" steel
bar with two passes of 1/4" fillet weld.

SECTION A-A



NOTE:

Landing Platforms as shown on the
Landing Details shall be installed in
manholes that are over 28 feet deep
to the invert with a maximum
vertical spacing of 20 feet.

SECTION B-B

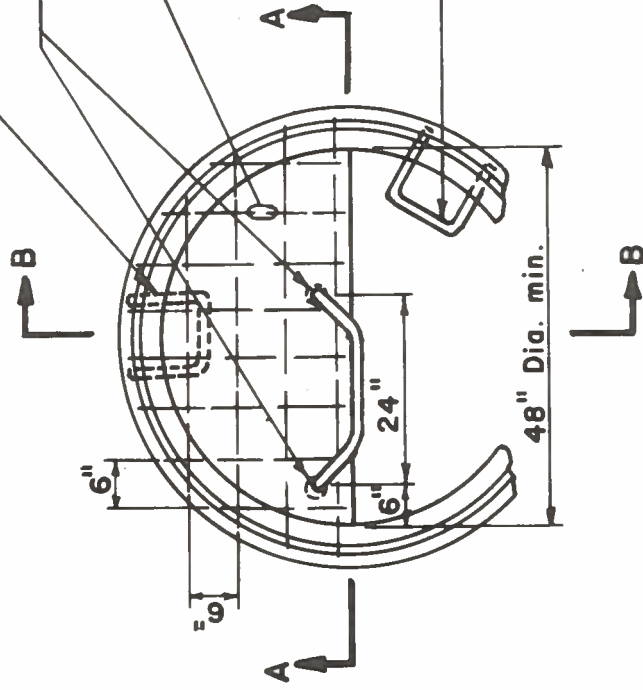
Manhole steps start 12" to 16" above
landing platform floor and continue
vertically above to the next landing
platform or top outlet.

Two 2 1/2" Dia. Precast openings
5" deep.

Typical bar placement in landing
riser - #4 Rebar.

If multiple landings are required
rotate adjacent landings 90°.
A 90° clear opening must be seen
from top to bottom of manhole.

Manhole steps stop 4' above top
of landing platform.



PLAN VIEW

16" LANDING RISER DETAIL
FOR PRECAST MANHOLE

REVISIONS:

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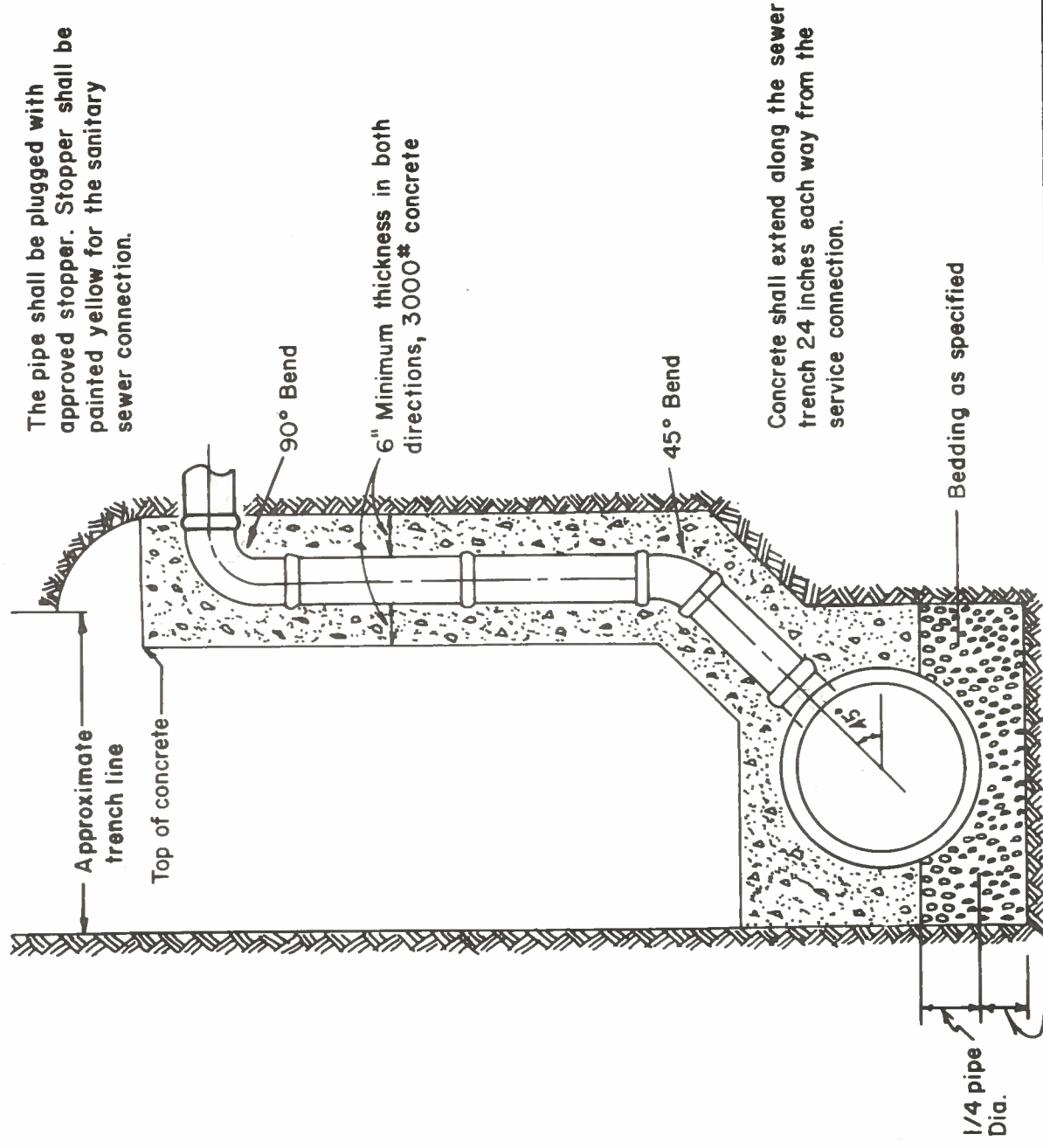
APPROVALS CL. CO. D

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REVIEWED
C. J. CO. J. D. Smith

DATE
5-11-78

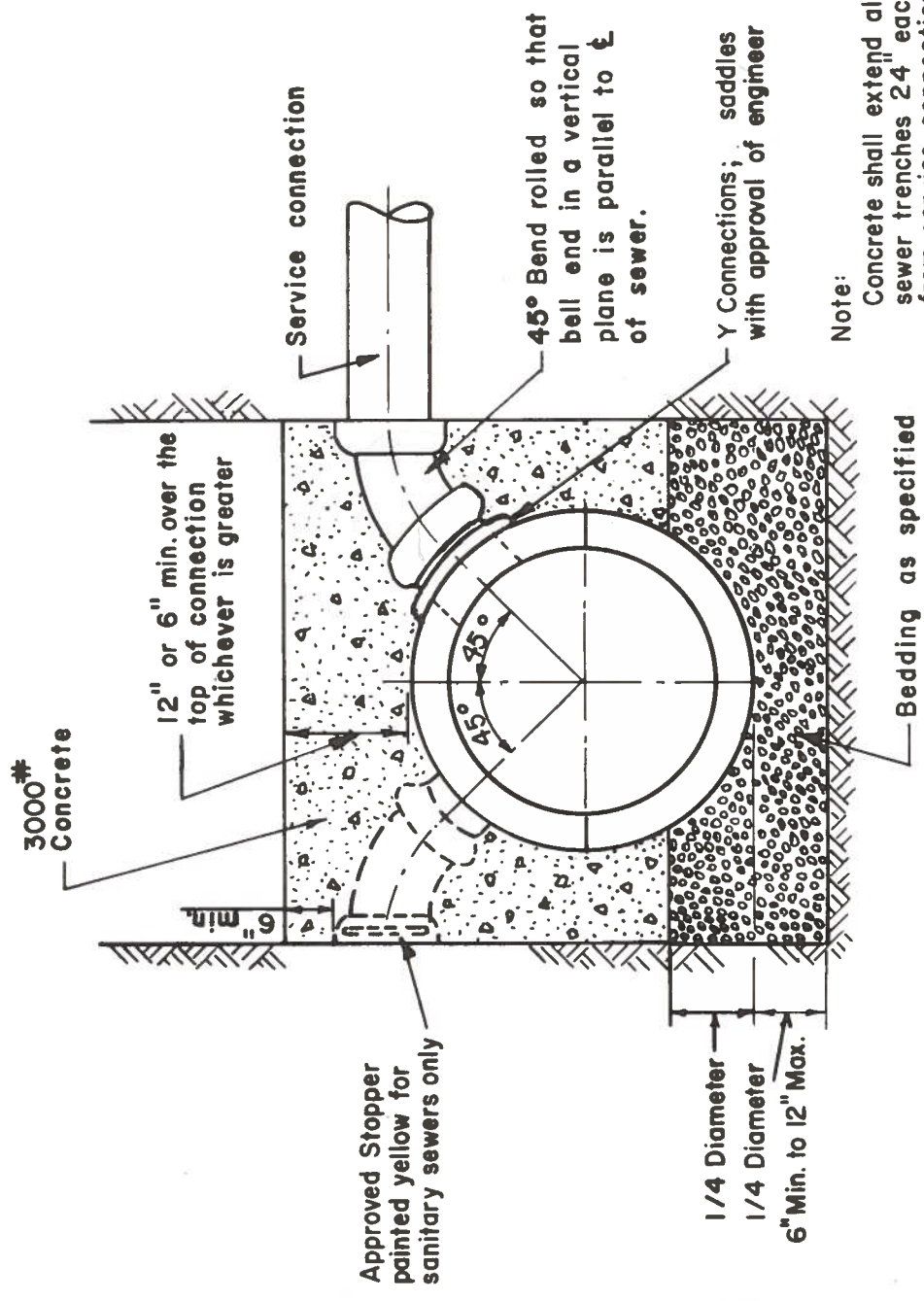
UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT



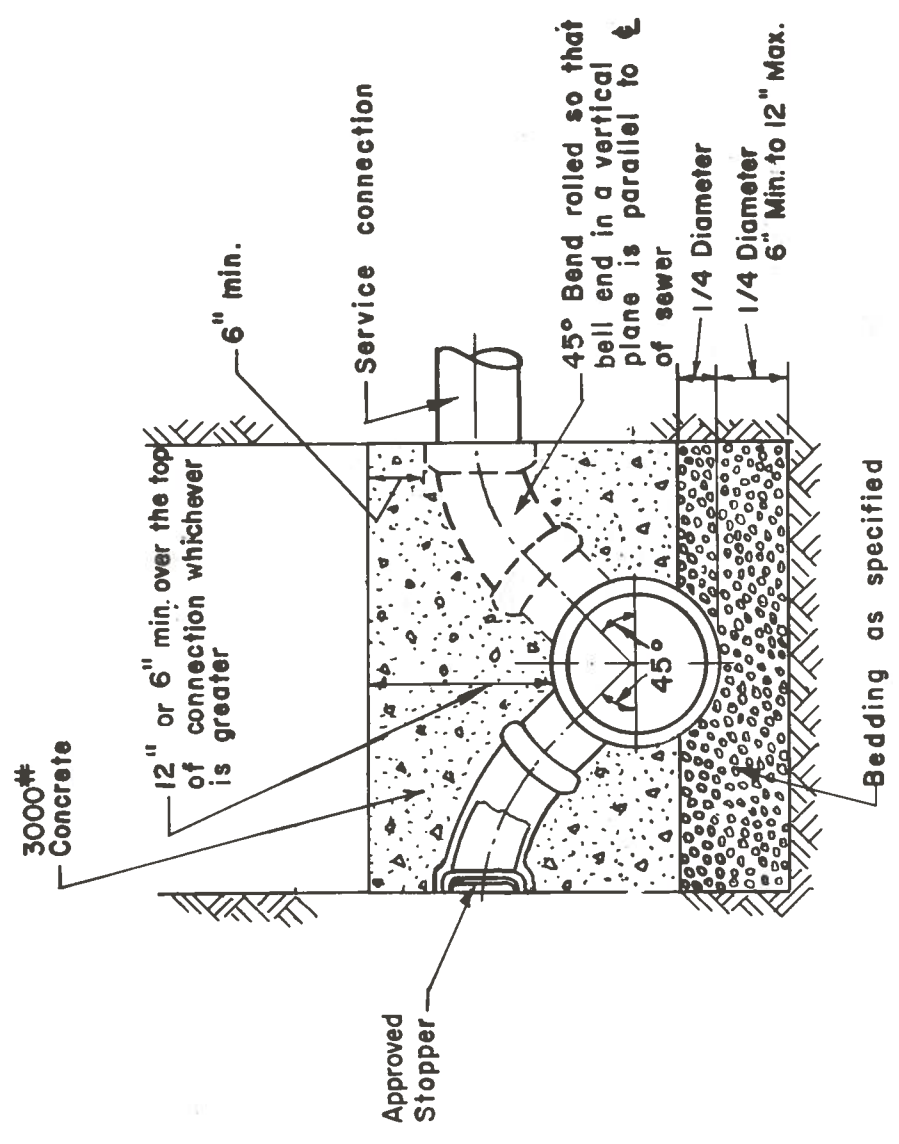
The pipe shall be plugged with
approved stopper. Stopper shall be
painted yellow for the sanitary
sewer connection.

Concrete shall extend along the sewer
trench 24 inches each way from the
service connection.

TYPICAL
RISER DETAIL



TYPICAL SLANT DETAIL



TYPICAL Y-BRANCH DETAIL

REVISIONS:

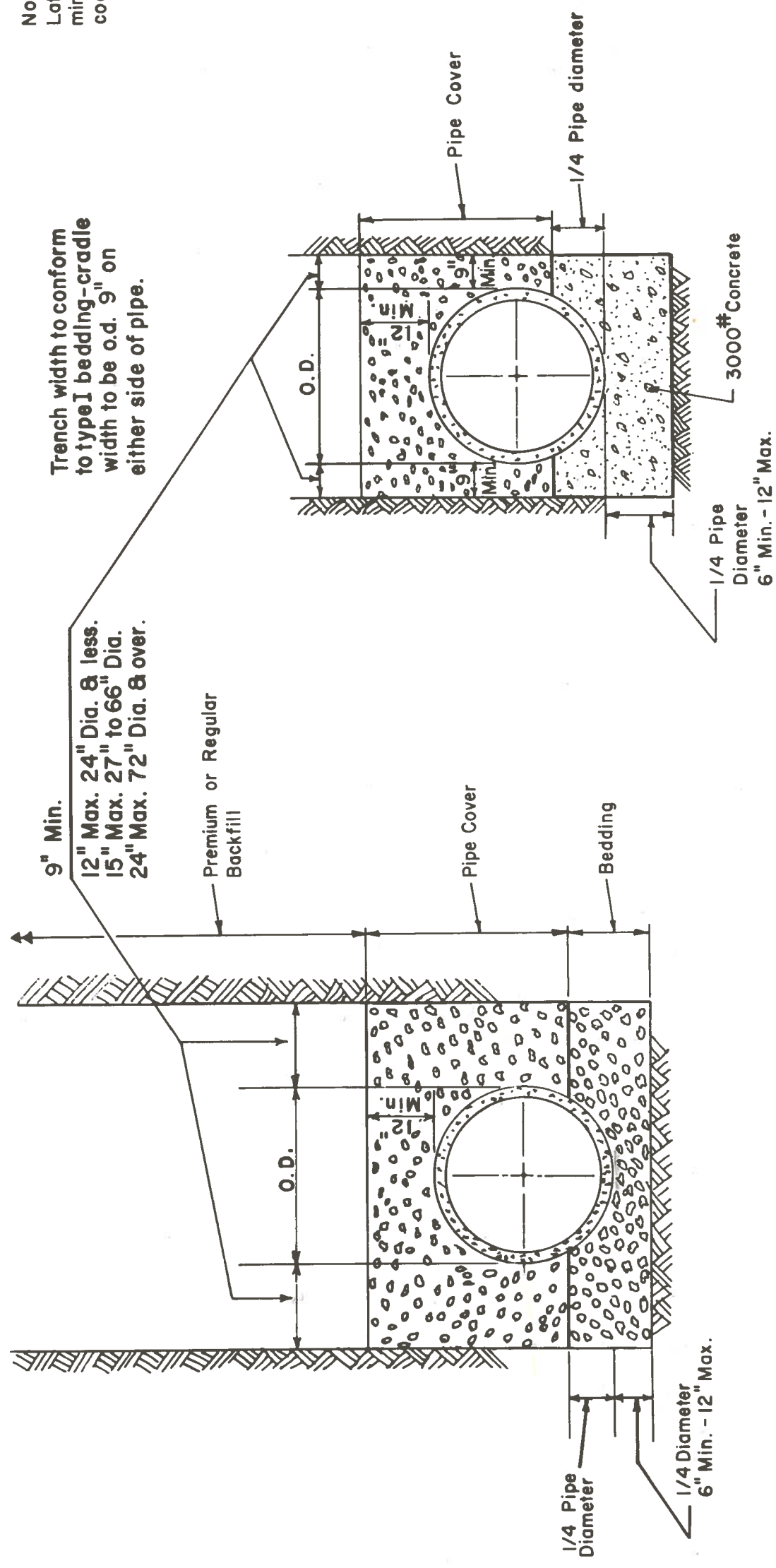
SCALE No Scale

DATE 5-11-78

REVIEWED: *J. L. Coffey*

SLANT AND Y-BRANCH DETAILS

Note:
Lateral connections to have a minimum bedding depth of 3" coarse aggregate.



TYPE I
TYPICAL TRENCH DETAIL
WITH CONCRETE CRADLE

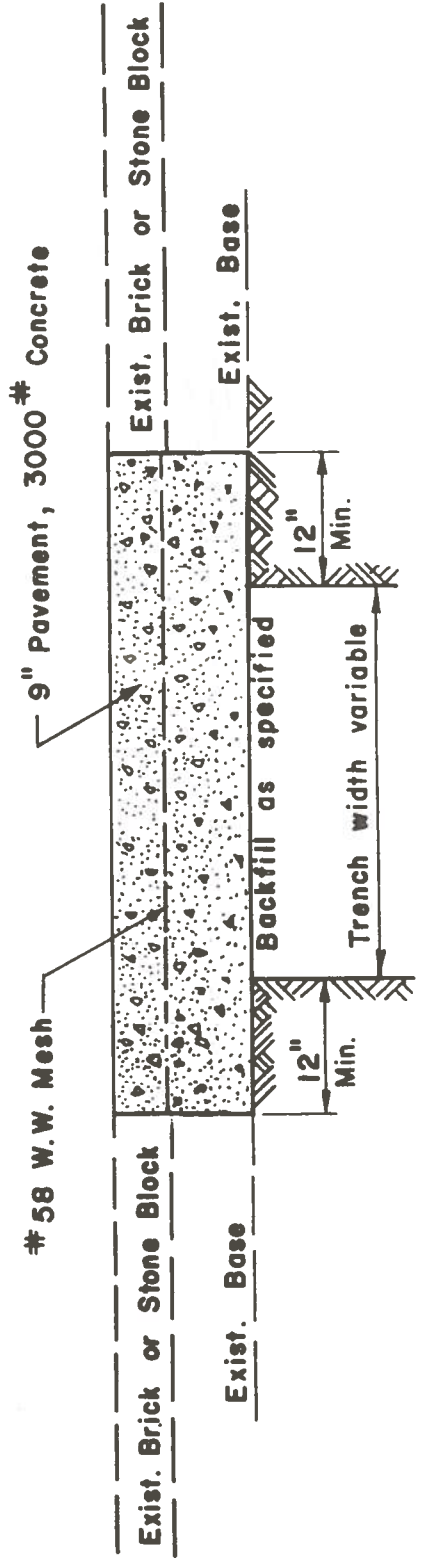
TYPE II
TYPICAL TRENCH DETAIL
WITH CONCRETE CRADLE

Premium Backfill shall consist of coarse interlocking aggregate no. 6, 67, 68, 7, 78, 8, also slag or limestone screenings.

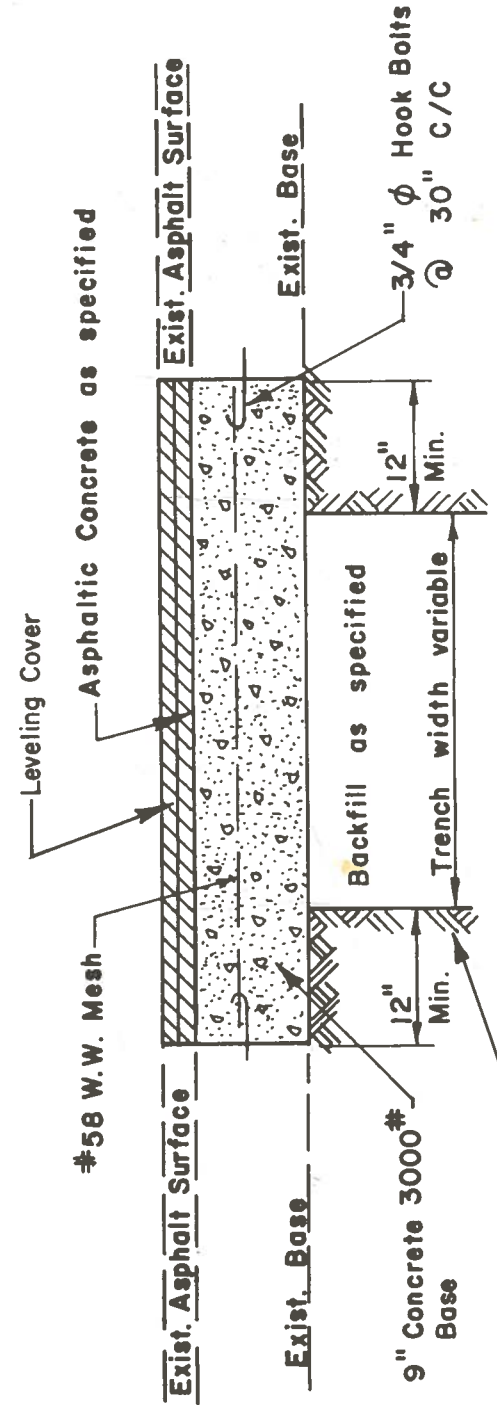
Pipe Cover shall consist of coarse interlocking aggregate no. 6, 67, 68, 7, 78, or 8.

Bedding shall consist of coarse interlocking aggregate no. 6, 67, 68, 7, 78, or 8 for 60" or smaller diameter pipe, for 66" or larger diameter pipe no. 4 aggregate may also be used.

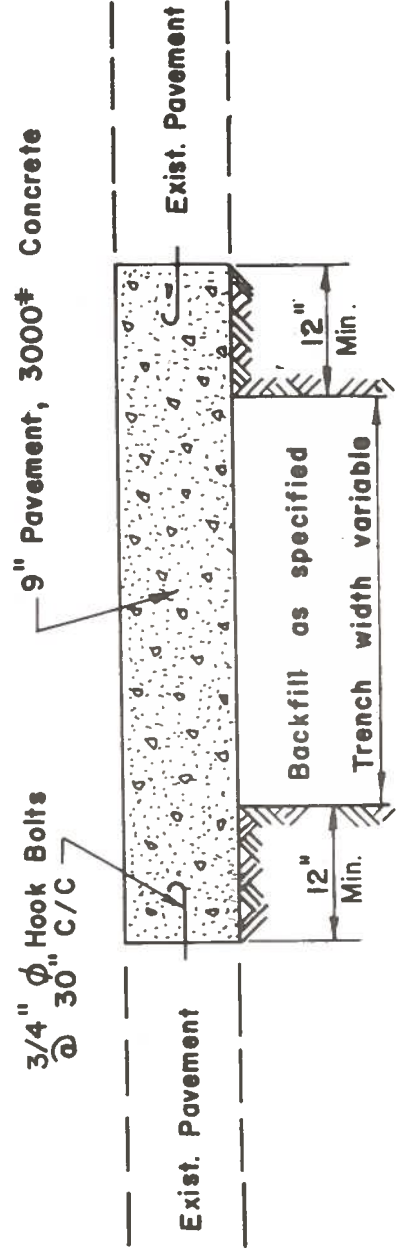
TYPICAL TRENCH DETAILS	
REVISIONS:	SCALE No Scale
	DATE 5-11-78
	REVIEWED: <i>[Signature]</i> CO. <i>[Signature]</i> DISTRICT
UNIFORM STANDARDS	CLEVELAND COUNTY — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT



TYPICAL SECTION
REPAVING OVER SEWER TRENCH
IN BRICK OR STONE BLOCK PAVEMENTS WITH
BASES



TYPICAL SECTION
REPAVING OVER SEWER TRENCH
IN ASPHALT PAVEMENT



TYPICAL SECTION
REPAVING OVER SEWER TRENCH
IN PAVEMENTS WITHOUT BASES

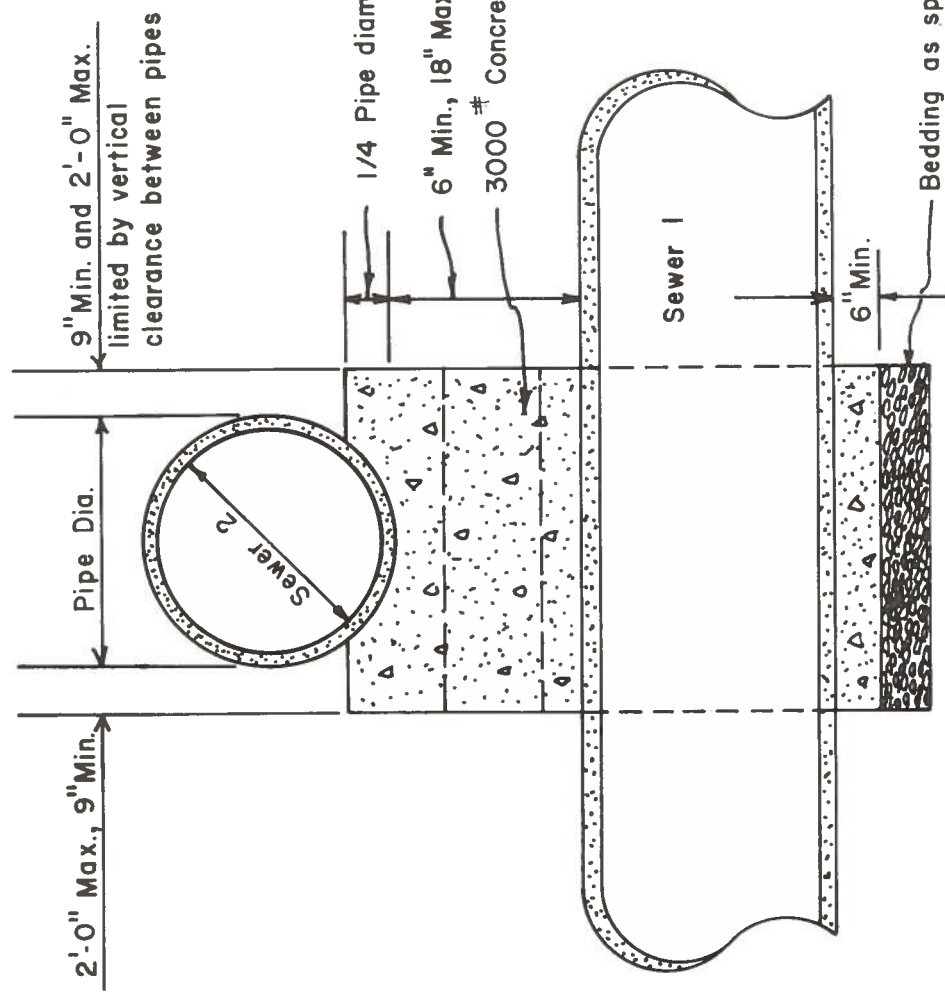
Note:
 Hook bolts shall be required when existing pavement base is concrete

REPAVING OVER
SEWER TRENCH

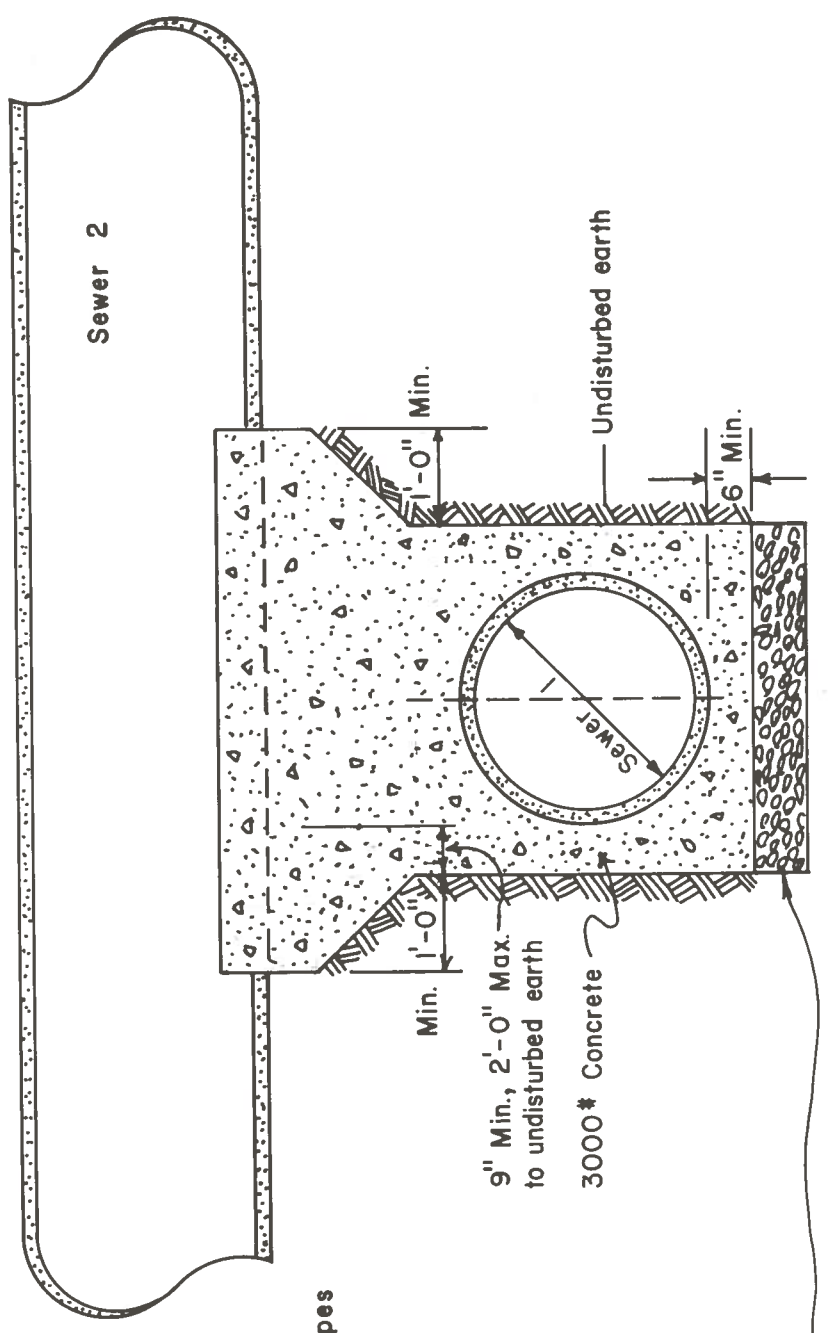
REVISIONS:	SCALE No. Scale	DATE 5-11-78	REVIEWED: G. P. L. CO. J. H. D. [Signature]
UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT			

Note:
Encasement required when pipe
clearance is less than 18"

PLAN VIEW



SECTION A-A

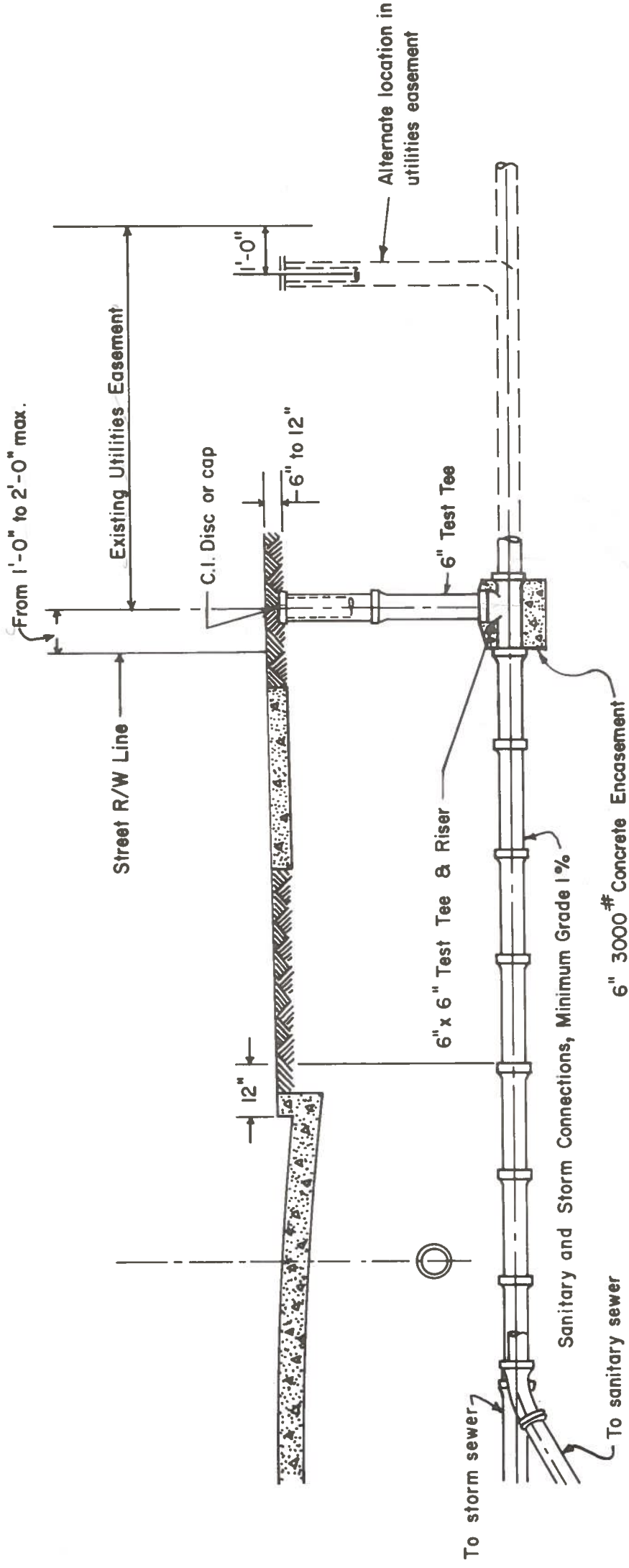


SECTION B-B

CONCRETE ENCASEMENT
MONOLITHIC CRADLING OF UPPER PIPE

REVISIONS:	SCALE No Scale	DATE 5-11-78	REVIEWED: CL. <i>[Signature]</i> CO. <i>[Signature]</i> D. <i>[Signature]</i>
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UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT



Note:

In no case shall the invert of the house connections be connected into the sewer below the sewer pipe top level.

6 inch, class 200, cast iron pipe is required for all bored sewer service connections including slip on rubber joints with an A.N.S.I. thickness classification No. 25, also

6 inch, ductile iron cement lined pipe may be used including slip on rubber joints with an A.N.S.I. thickness classification No. 53.

LATERAL CONNECTIONS

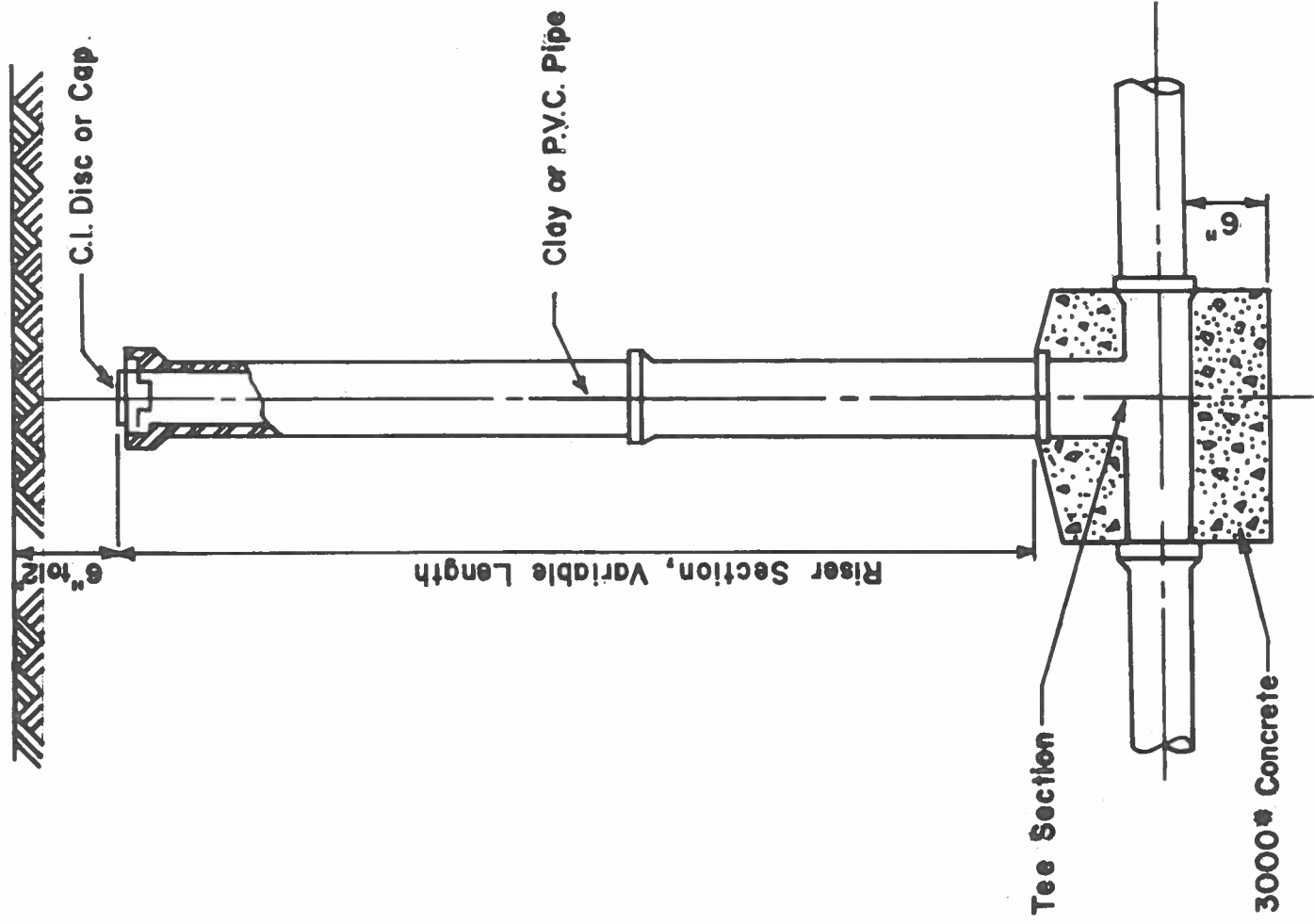
REVISIONS:

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DATE 5-11-78

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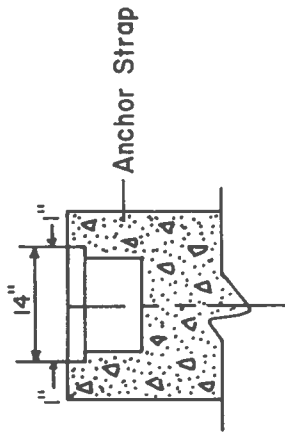
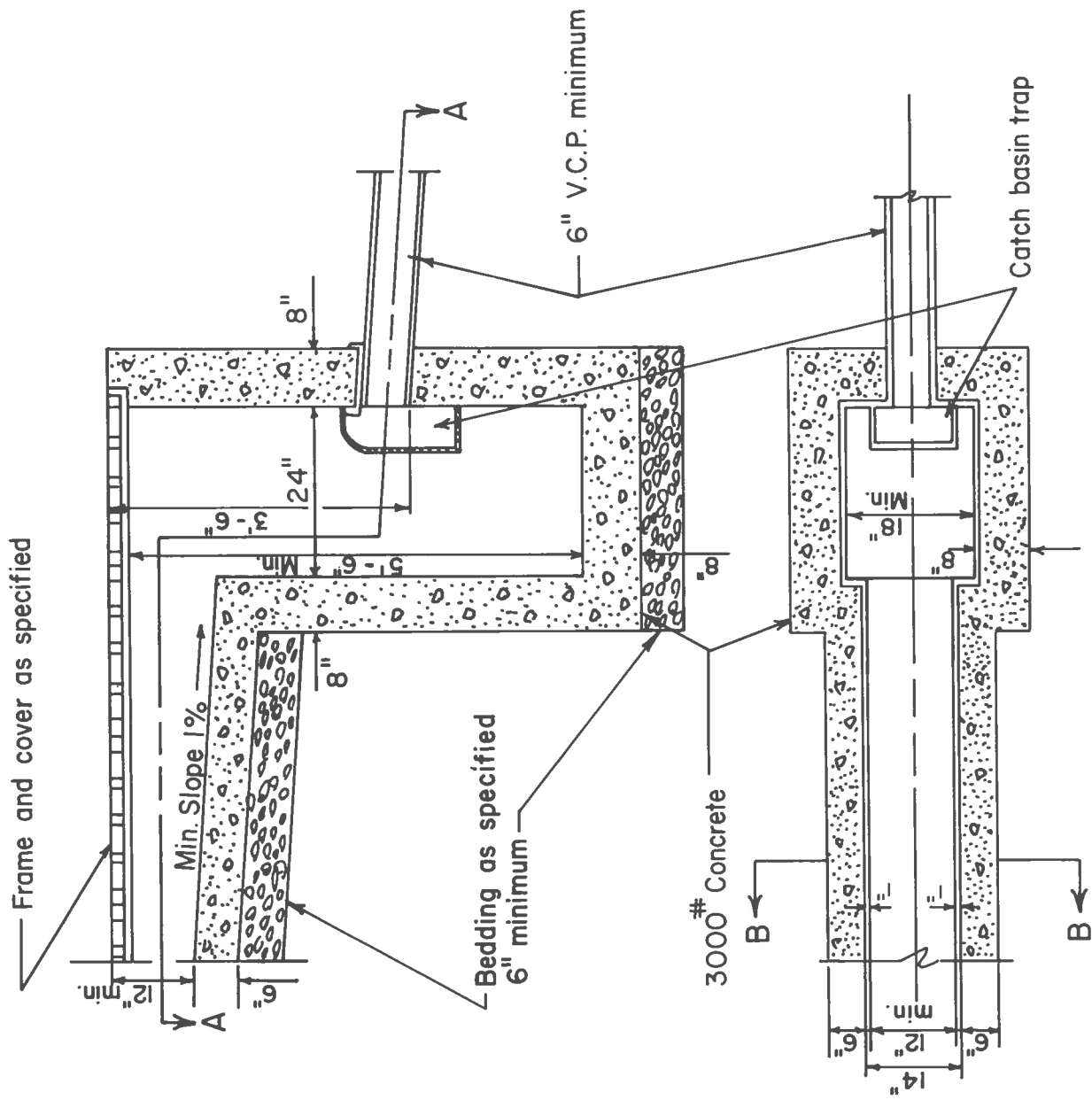
Notes:

- The test tee riser section shall be installed when the connection is extended to the building.
- Risers shall be furnished with stoppers upon which shall be placed a cast iron disc.
- Cast iron disc shall be painted yellow on sanitary sewer.

6" x 6" TEST TEE & 6" RISER FOR STORM SEWERS AND SANITARY SEWERS

TEST TEE

REVISIONS:	SCALE No Scale	DATE 5-11-78	REVIEWED: <i>C. J. CO. J. K. D. J.</i>
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TRENCH DRAIN

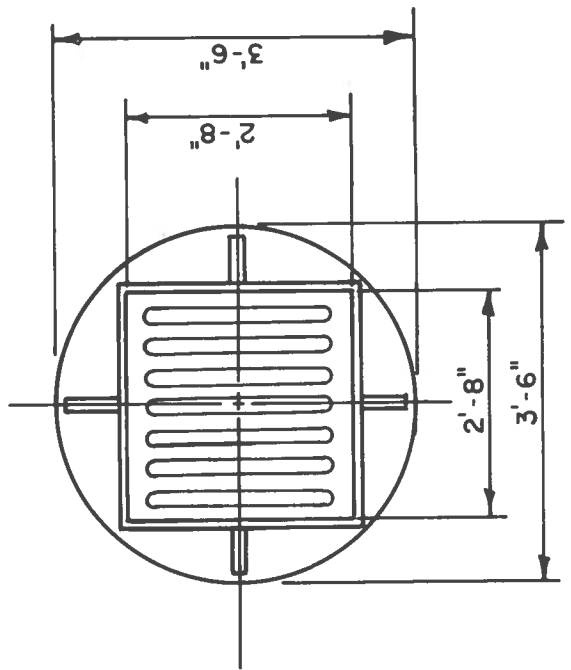
REVISIONS:

SCALE 1/2" = 1'-0"

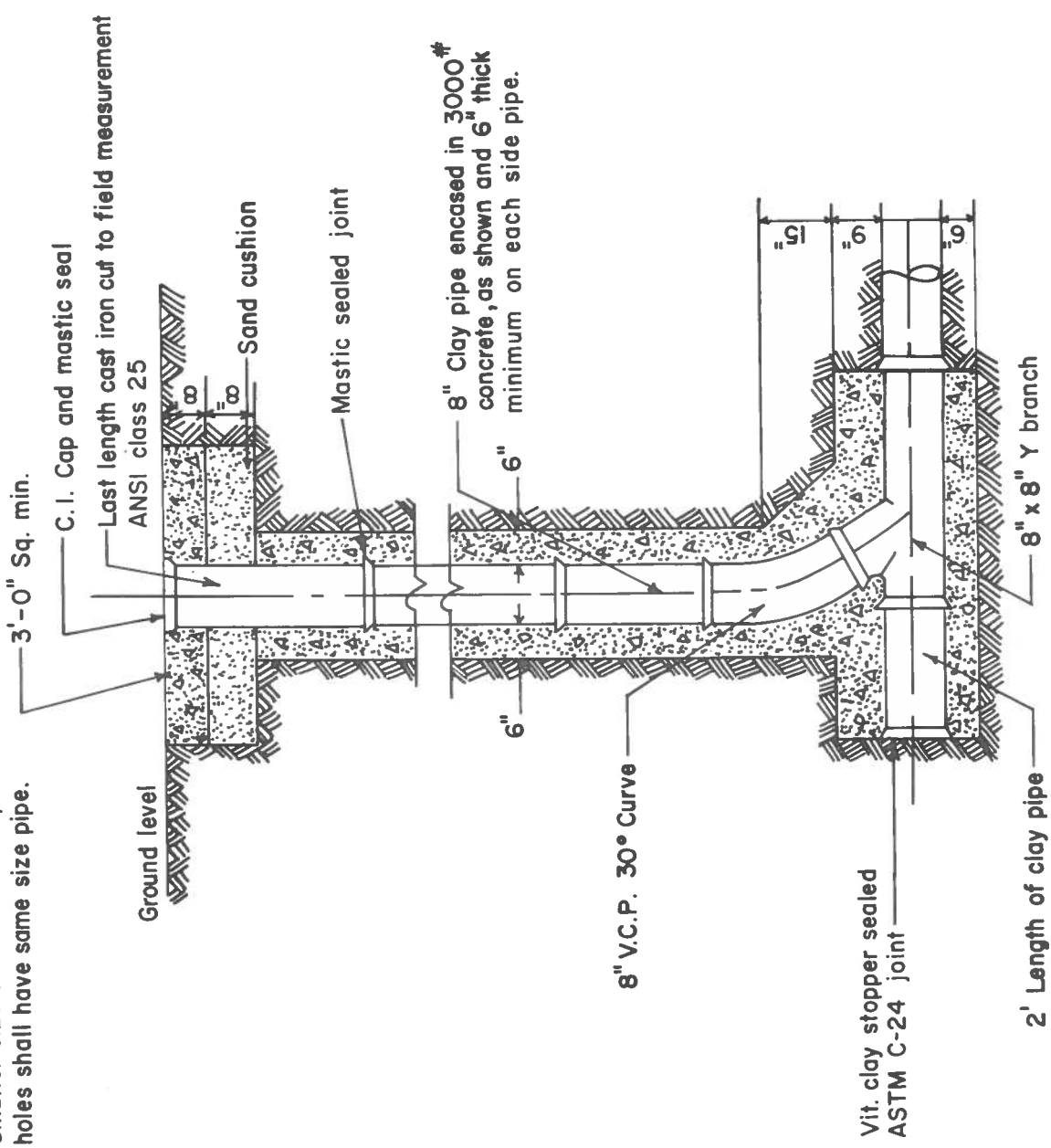
DATE 5-11-78

REVIEWED: *C. R. COOK*

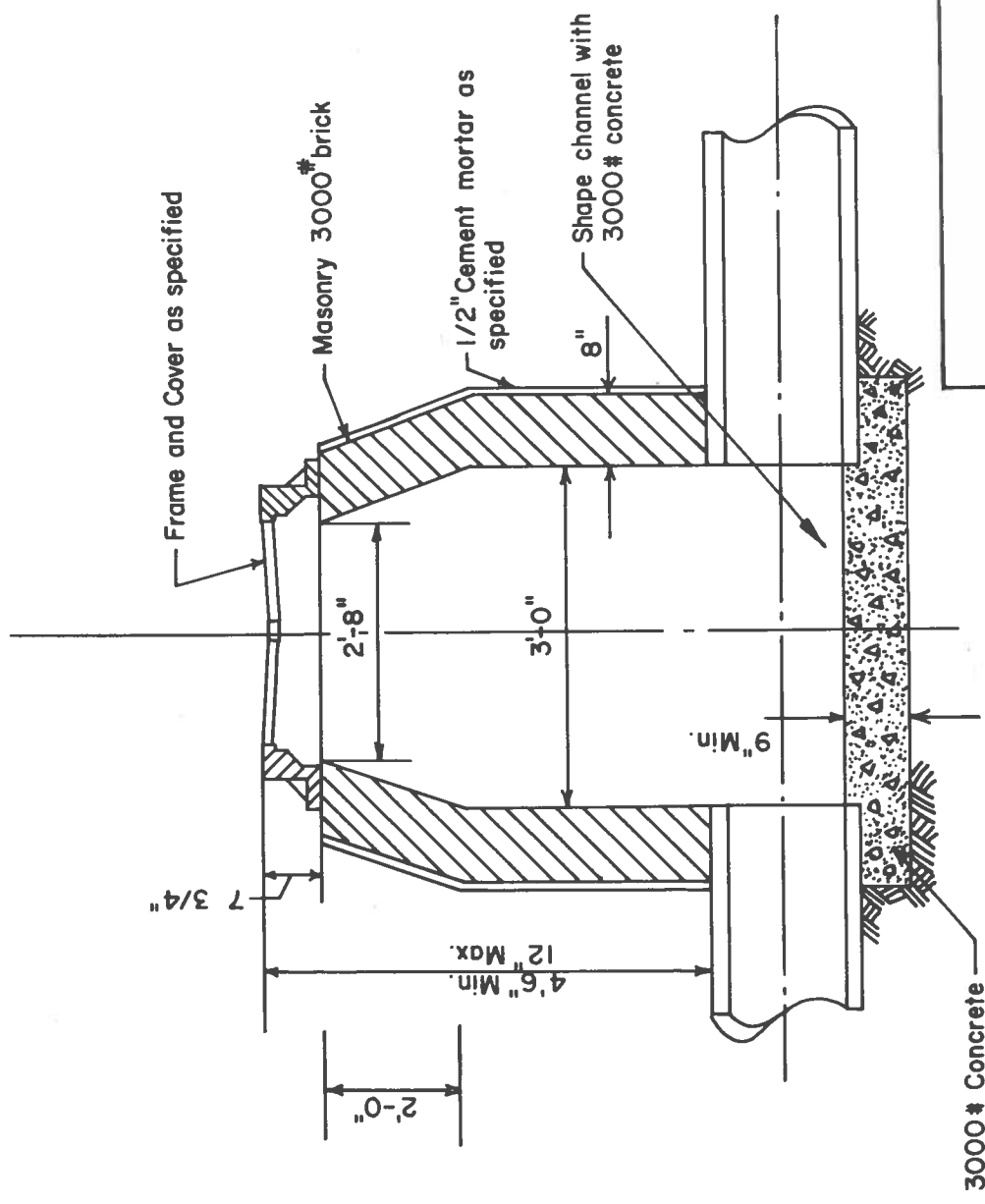
UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT



Note:
 8" Clean Out shall be used for
 8" sewer and larger.
 Smaller size sewers and lamp
 holes shall have same size pipe.



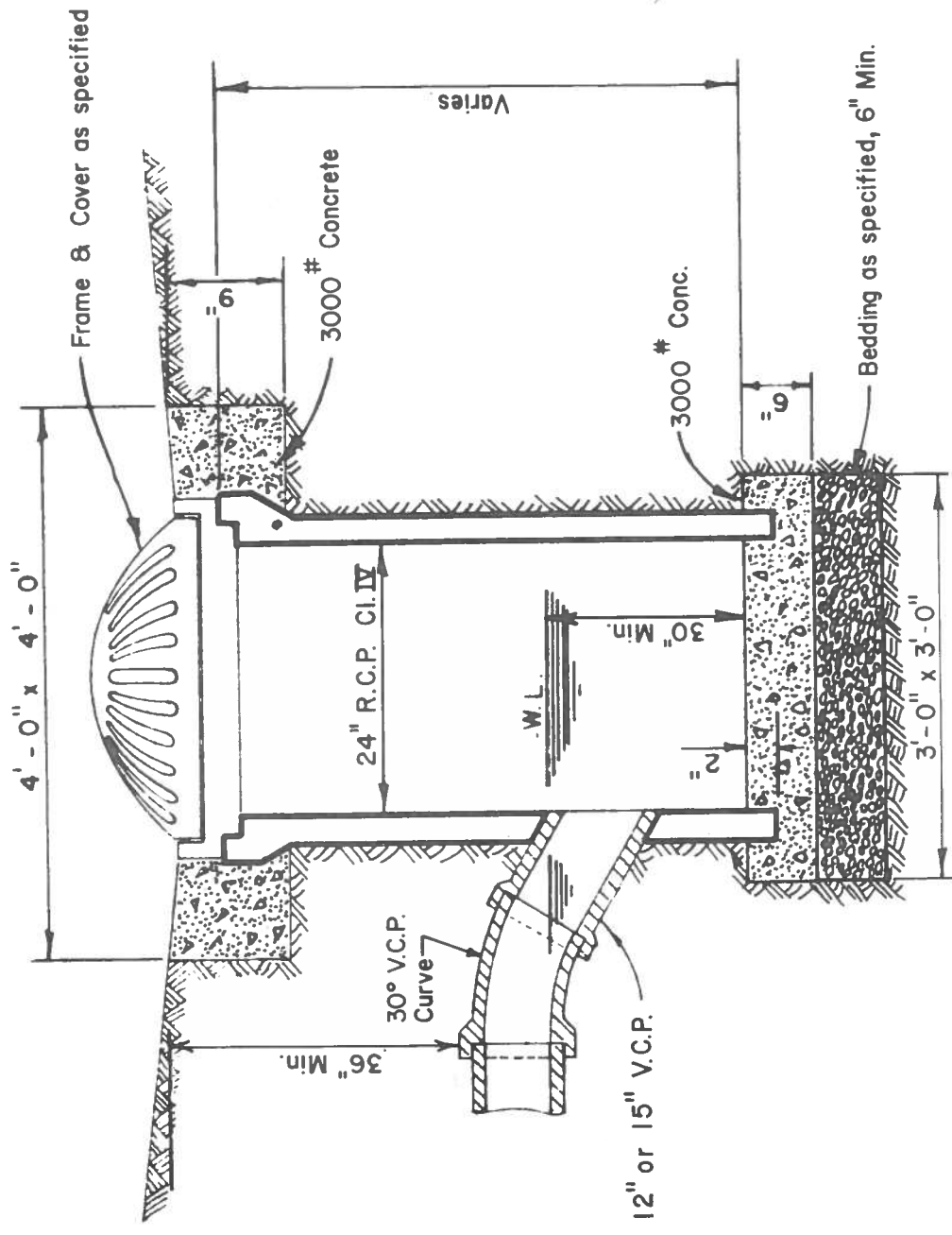
SPECIAL INLET



CLEANOUT

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UNIFORM STANDARDS: CLEVELAND — CUYAHOGA COUNTY — CLEVELAND REGIONAL SEWER DISTRICT



SECTION

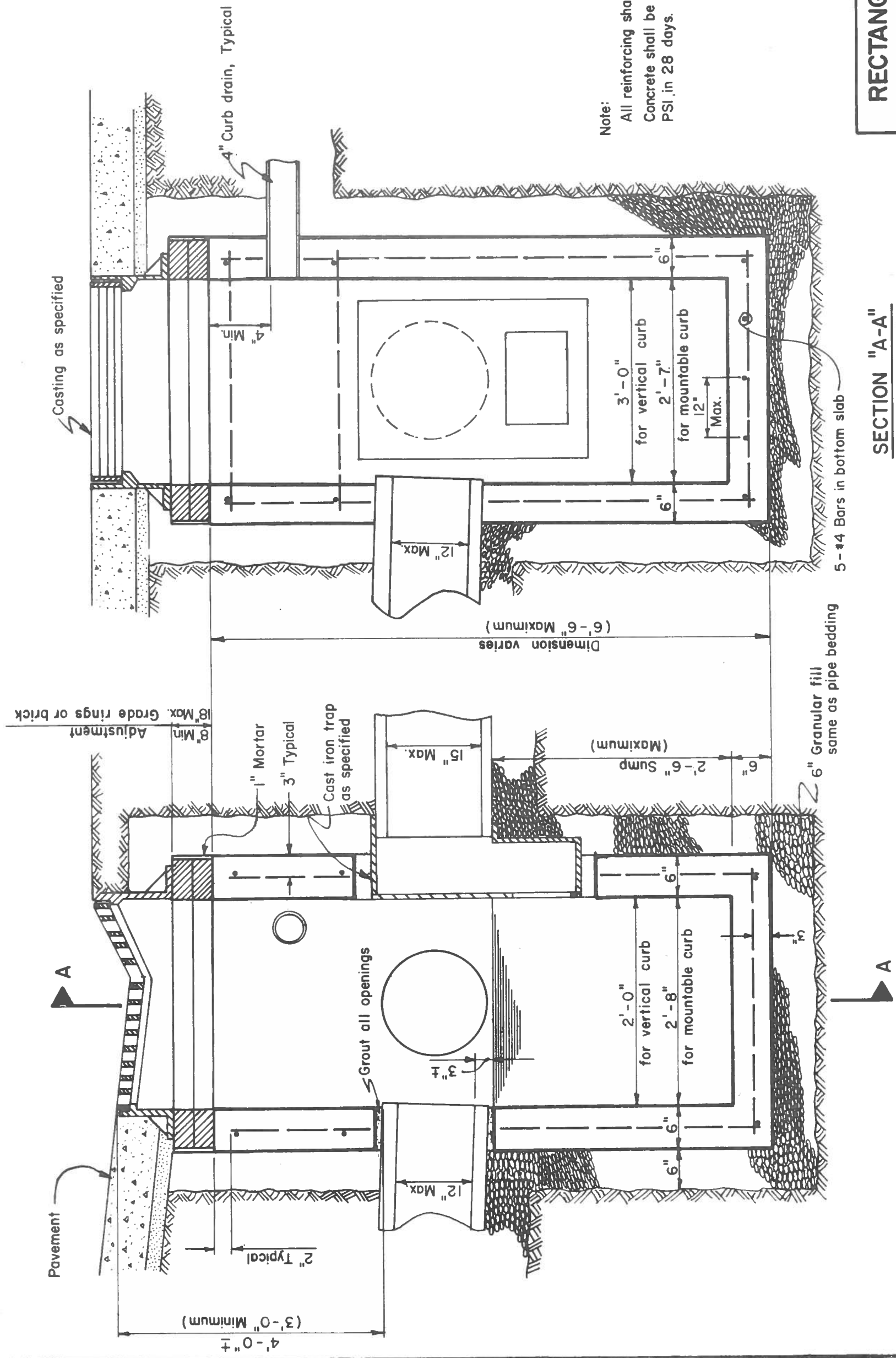
YARD TYPE
CATCH BASIN

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DATE: 5-11-78

SCALE: No Scale

REVISIONS:

UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT



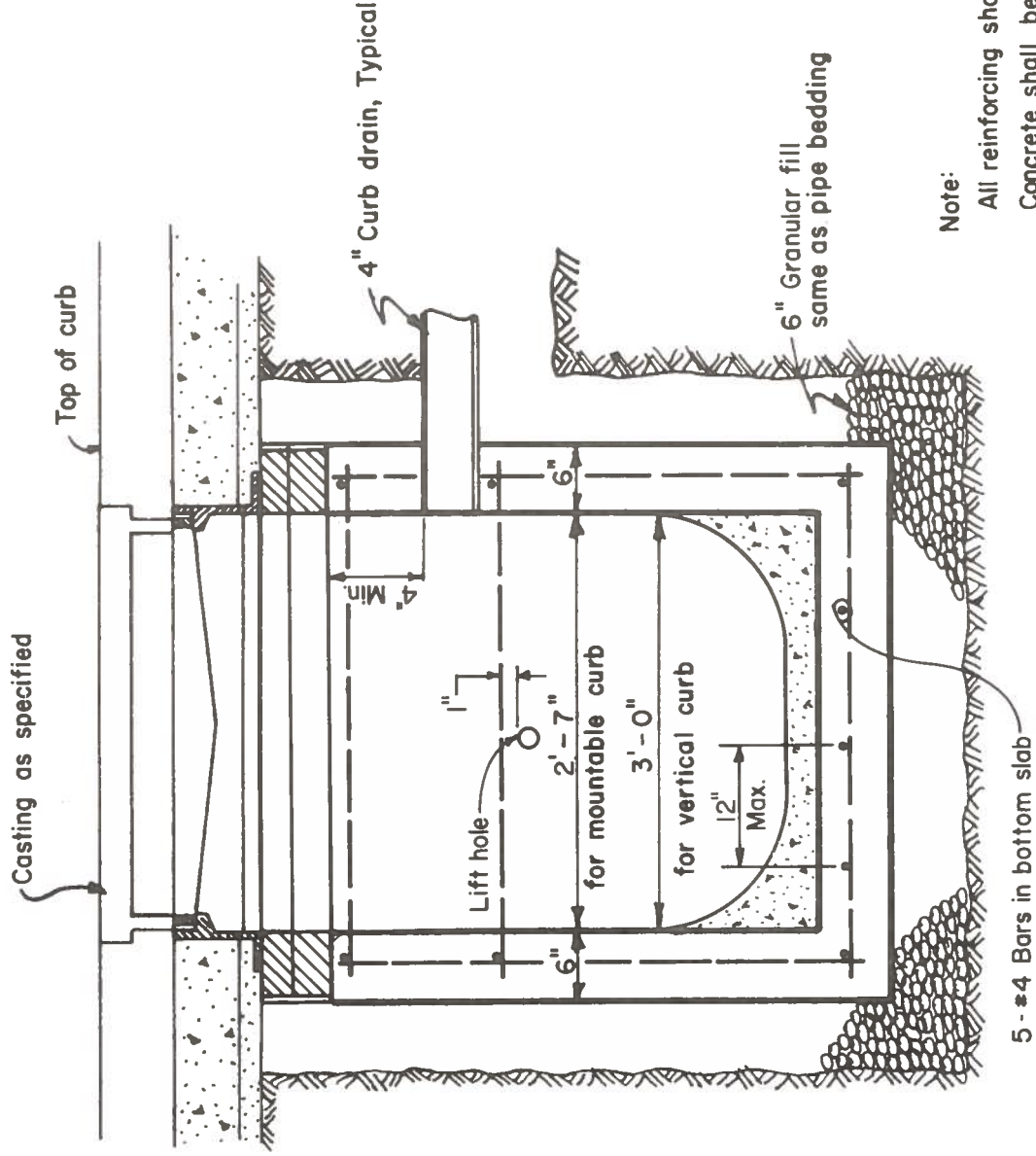
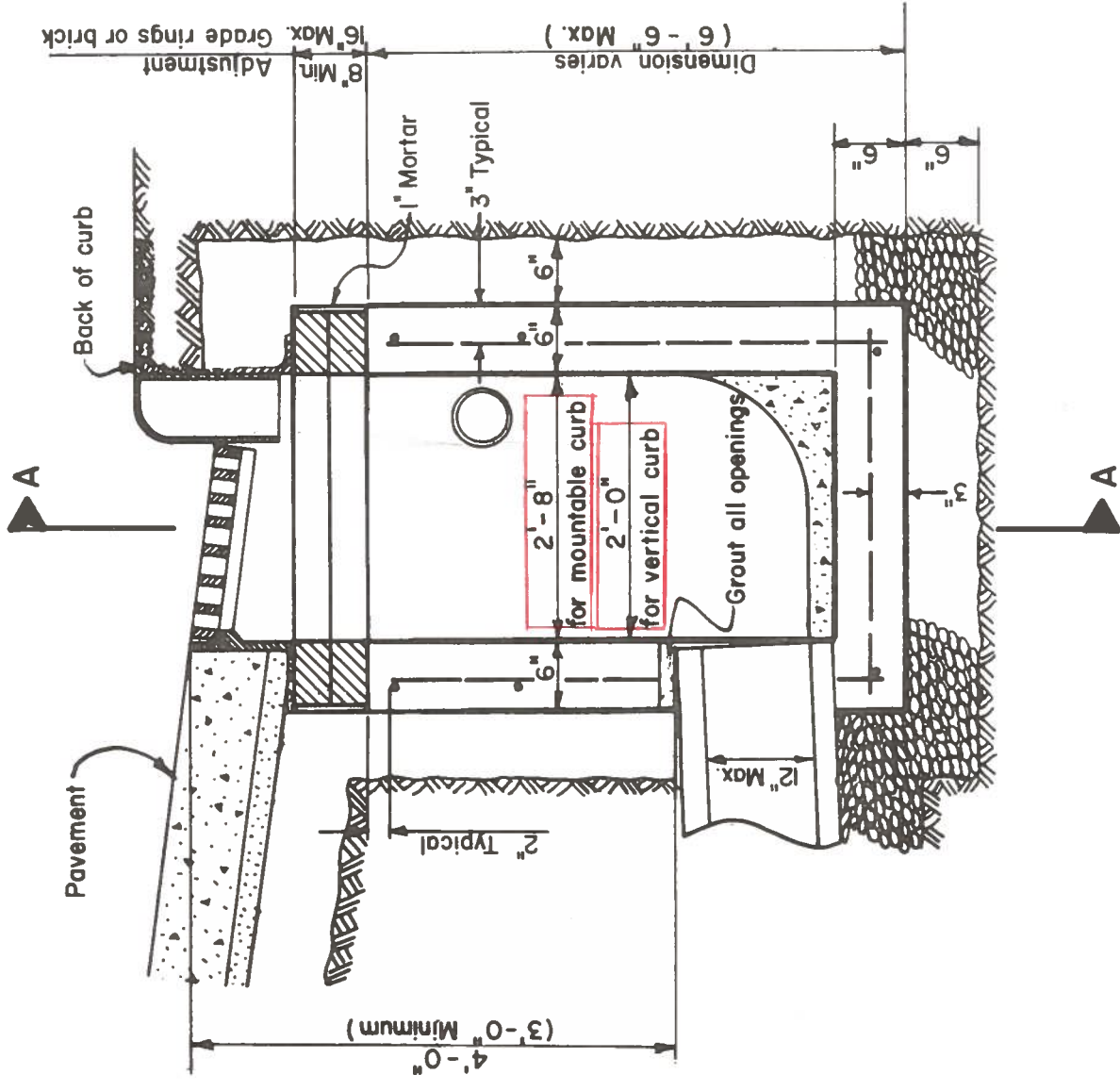
Note:
 All reinforcing shall be #4 deformed bars.
 Concrete shall be ODOT class "C" #4000
 PSI in 28 days.

SECTION "A-A"

RECTANGULAR PRECAST
 CONCRETE CATCH BASIN

REVISIONS:	SCALE No Scale	DATE 5-11-78	REVIEWED: <i>[Signature]</i>
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UNIFORM STANDARDS: CLEVELAND COUNTY - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT



Note:
 All reinforcing shall be #4 deformed bars.
 Concrete shall be ODOT class "C"
 #4000 PSI in 28 days.

SECTION "A-A"

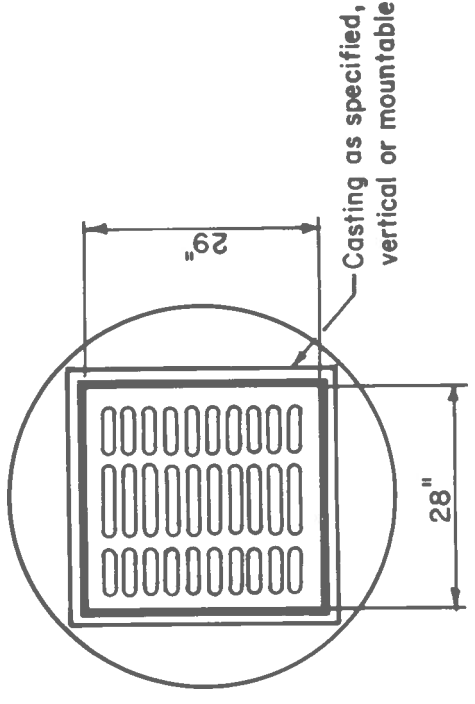
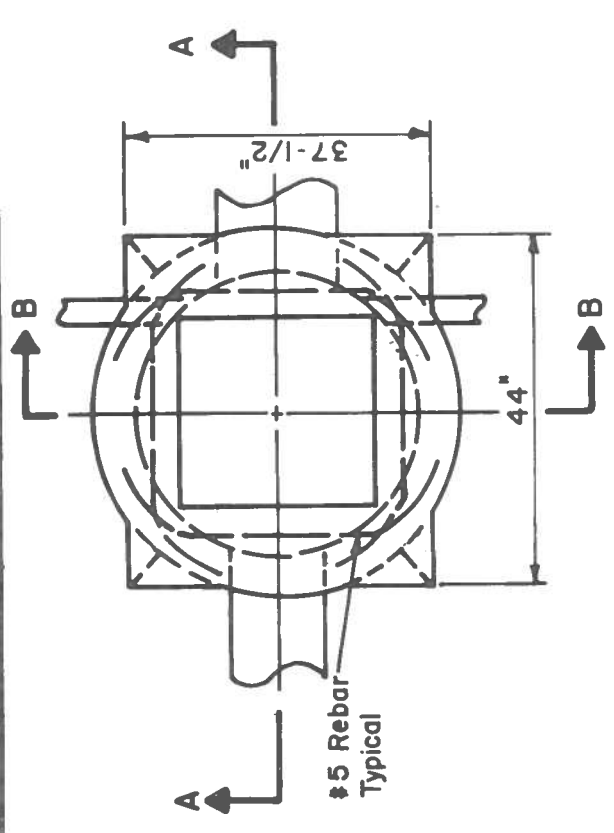
**RECTANGULAR PRECAST
CONCRETE INLET BASIN**

REVIEWED: *[Signature]*
 DATE: 5-11-78

SCALE: No Scale

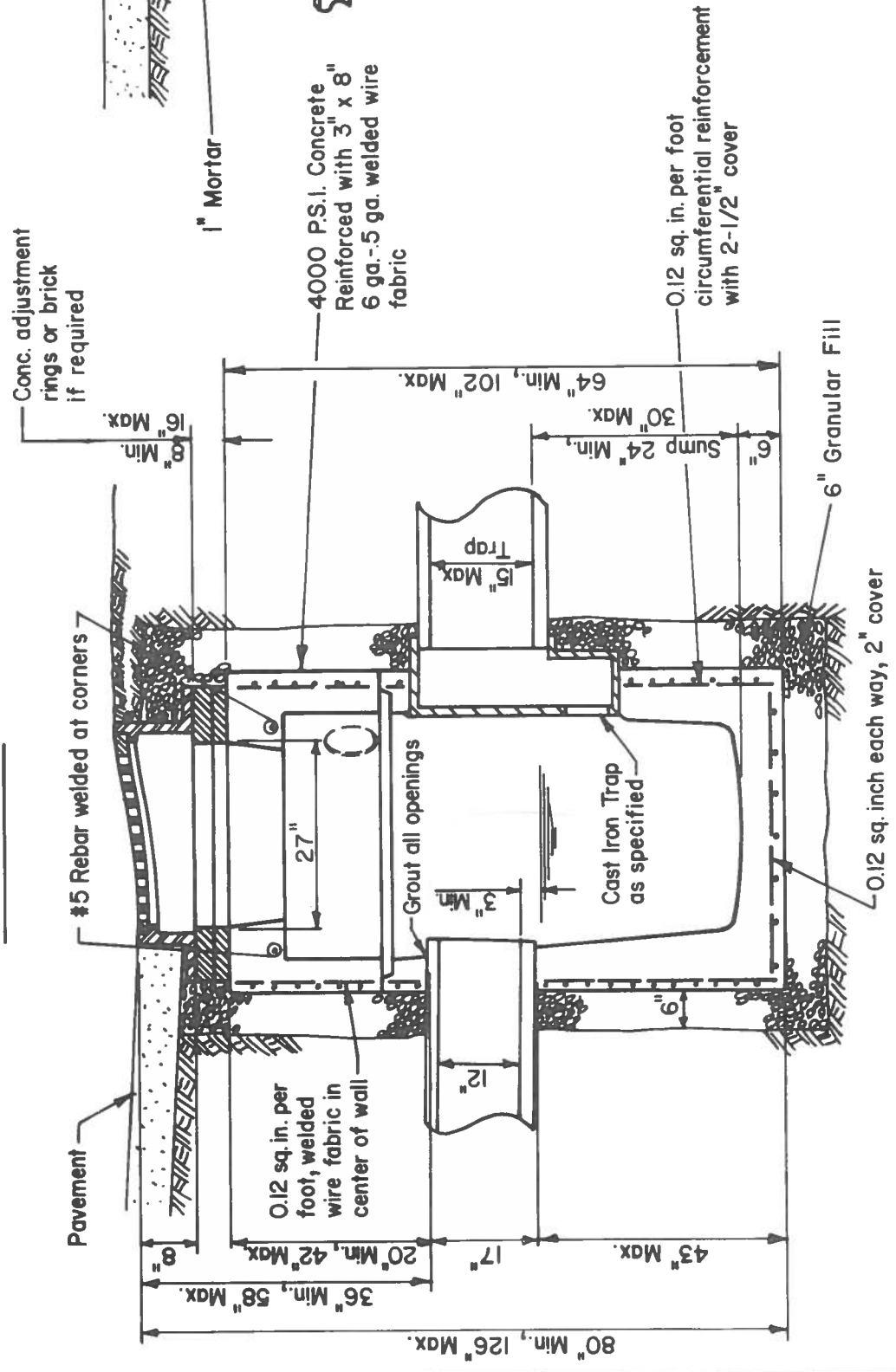
UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT

REVISIONS:



PLAN VIEW

CASTING DETAIL



Conc. adjustment rings or brick if required

4000 P.S.I. Concrete Reinforced with 3" x 8" 6 ga. -5 ga. welded wire fabric

0.12 sq. in. per foot circumferential reinforcement with 2-1/2" cover

6" Granular Fill

0.12 sq. inch each way, 2" cover

SECTION A-A

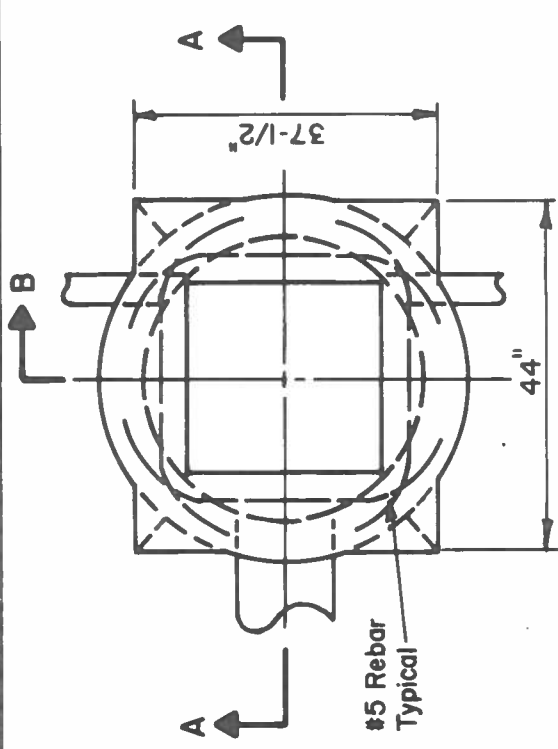
SECTION B-B

ROUND PRECAST CONCRETE CATCH BASIN

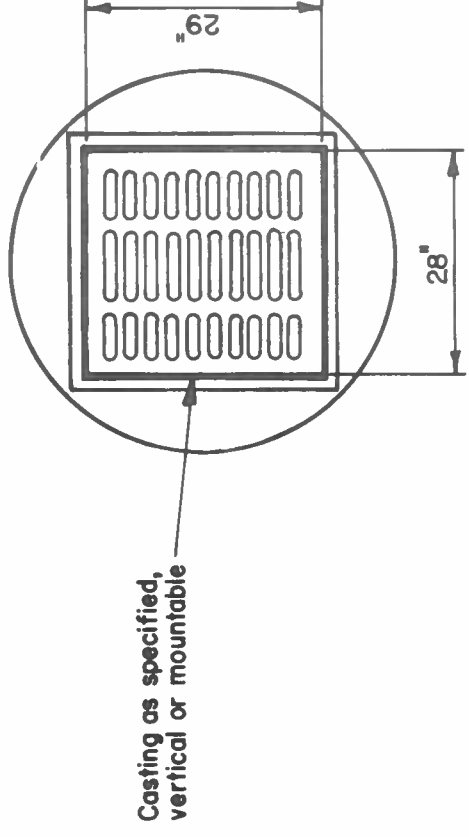
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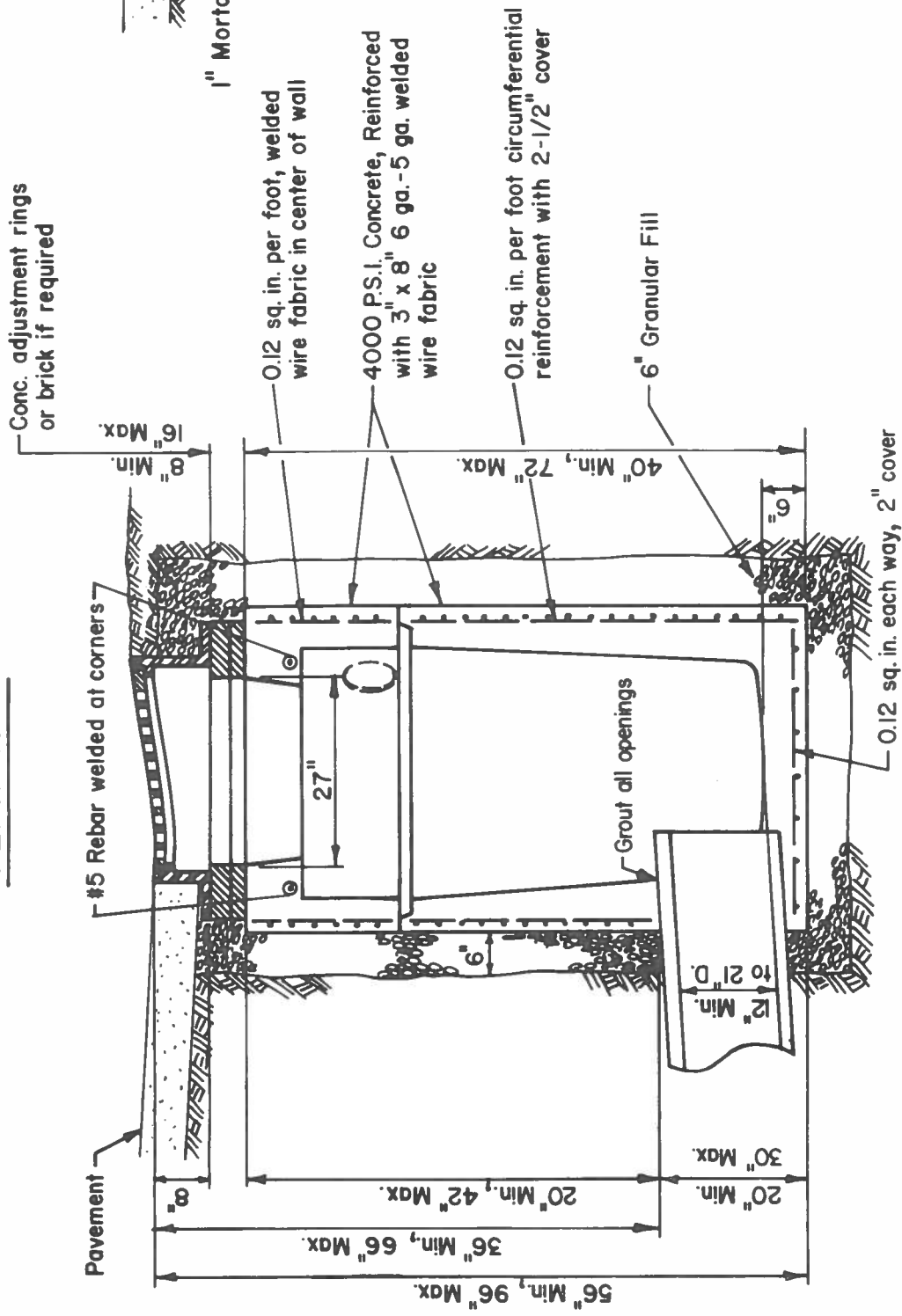
REVISIONS:



PLAN VIEW



CASTING DETAIL



SECTION A-A

SECTION B-B

ROUND PRECAST CONCRETE INLET BASIN

REVISIONS:

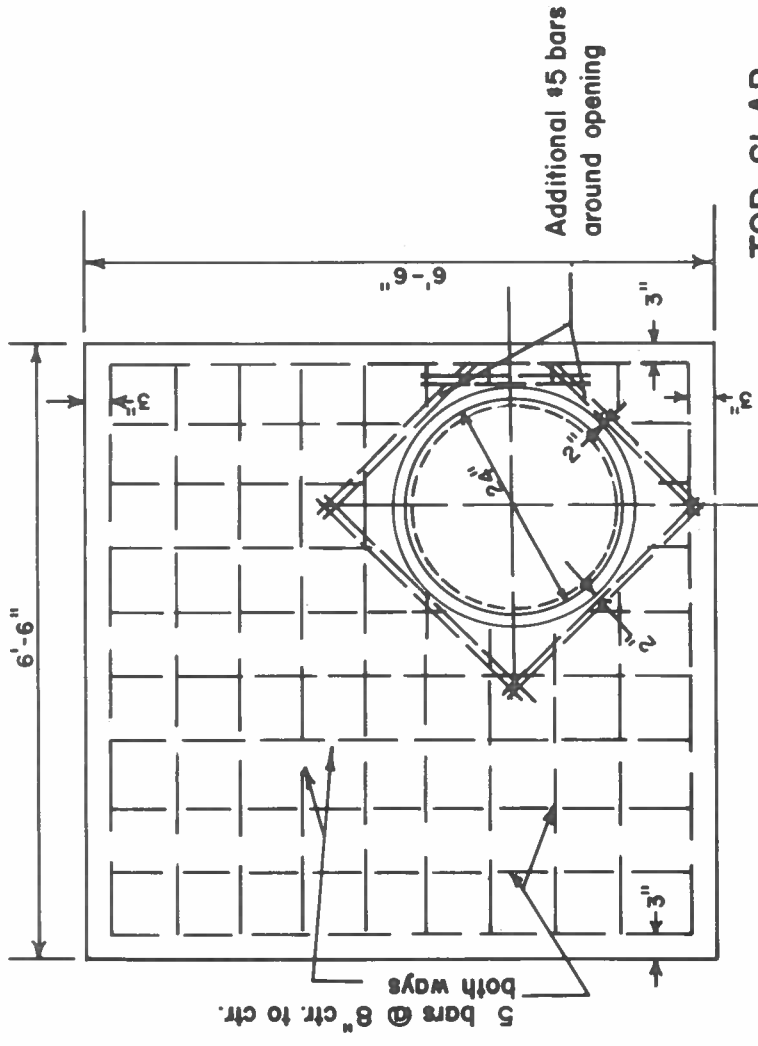
SCALE
No Scale

DATE
5-11-78

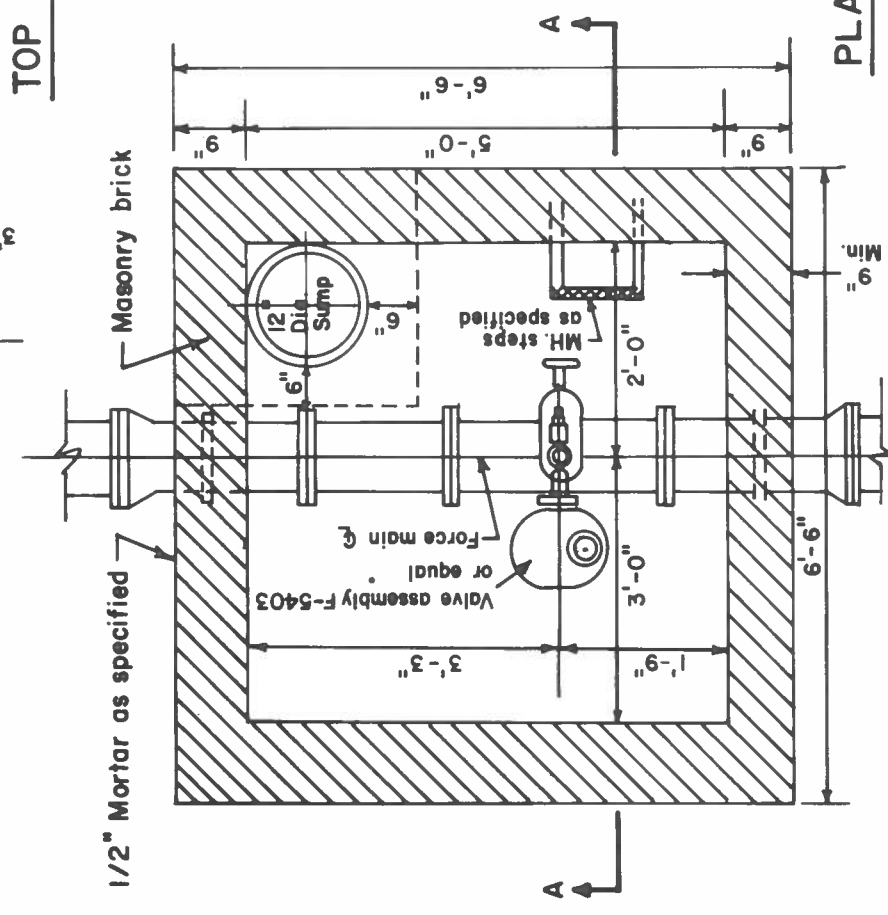
REVIEWED: *[Signature]*

Alternate:

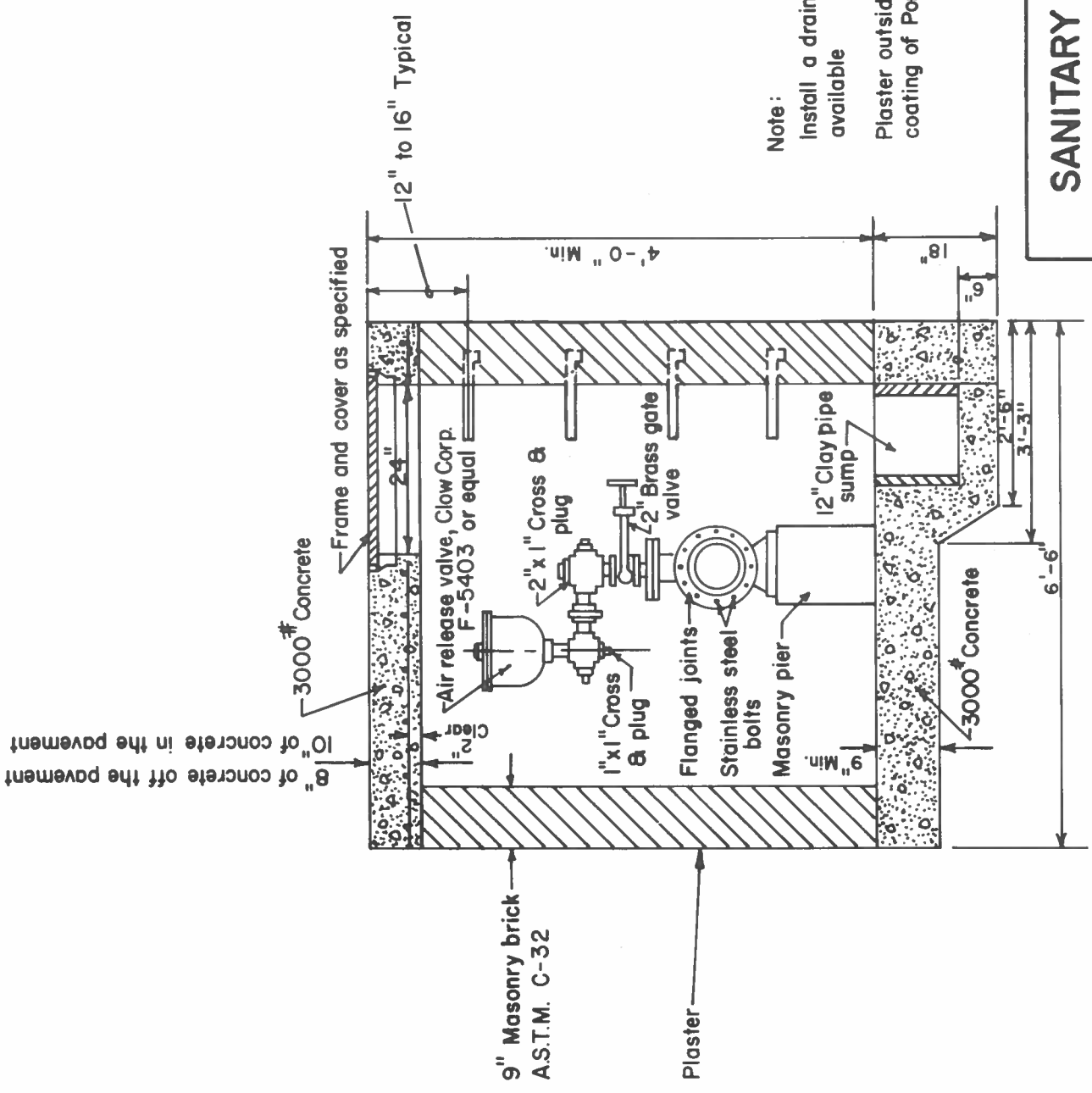
A precast chamber adequate for designed loading may be approved.



TOP SLAB



PLAN



SECTION A-A

Note:

Install a drain when sewers are available
Plaster outside of masonry 1/2" coating of Portland cement mortar

**SANITARY FORCE MAIN
AIR RELEASE VALVE CHAMBER**

REVIEWED: *CL [Signature]* DATE: 5-11-78

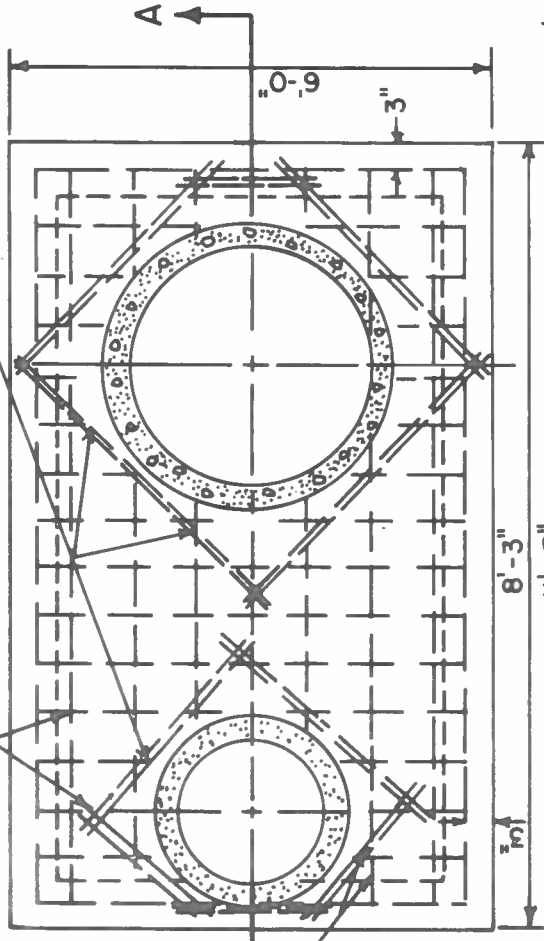
SCALE: No Scale

REVISIONS:

UNIFORM STANDARDS: CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT

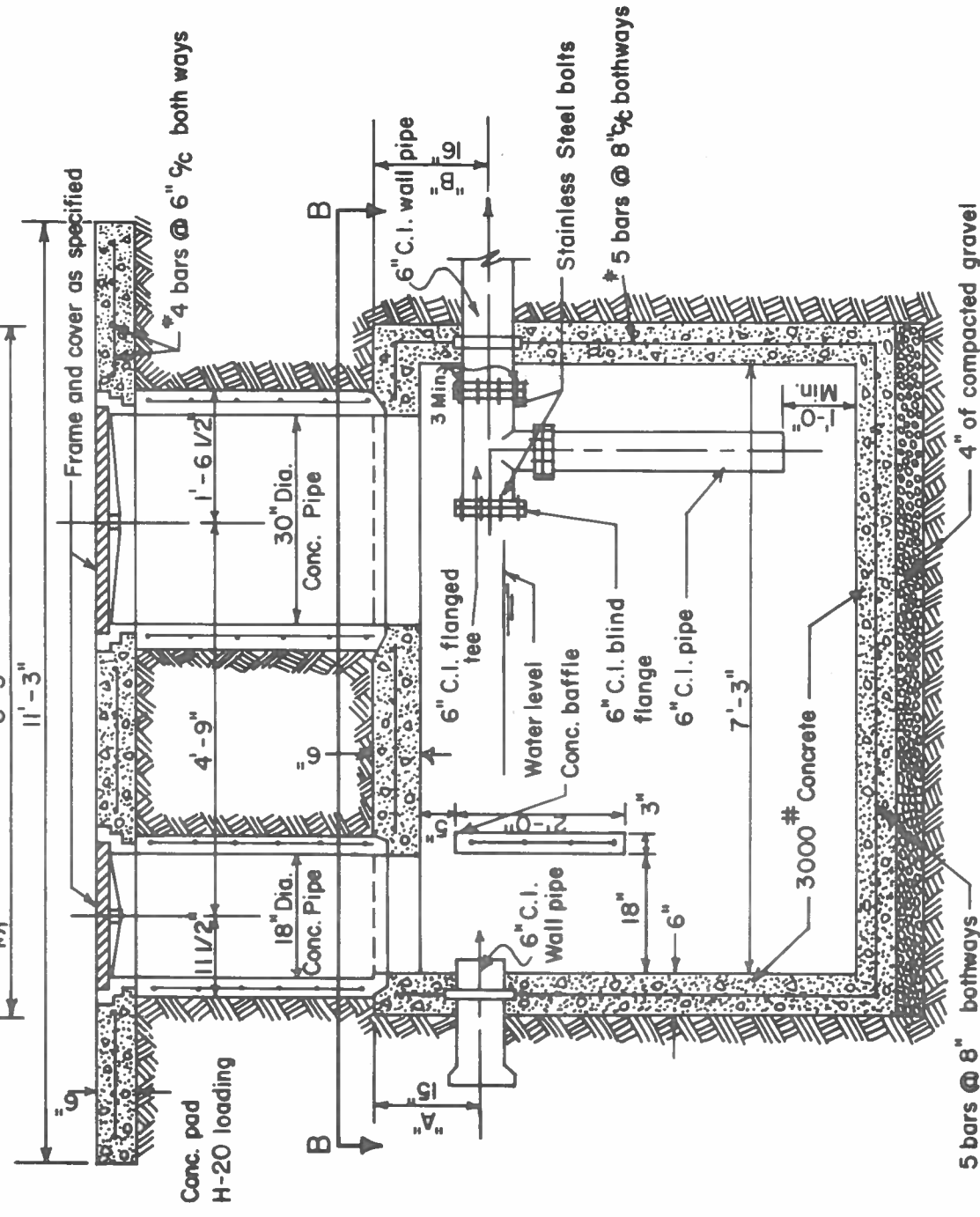
Additional #5 Bars @ 6" c/c

#5 Bars @ 6" c/c

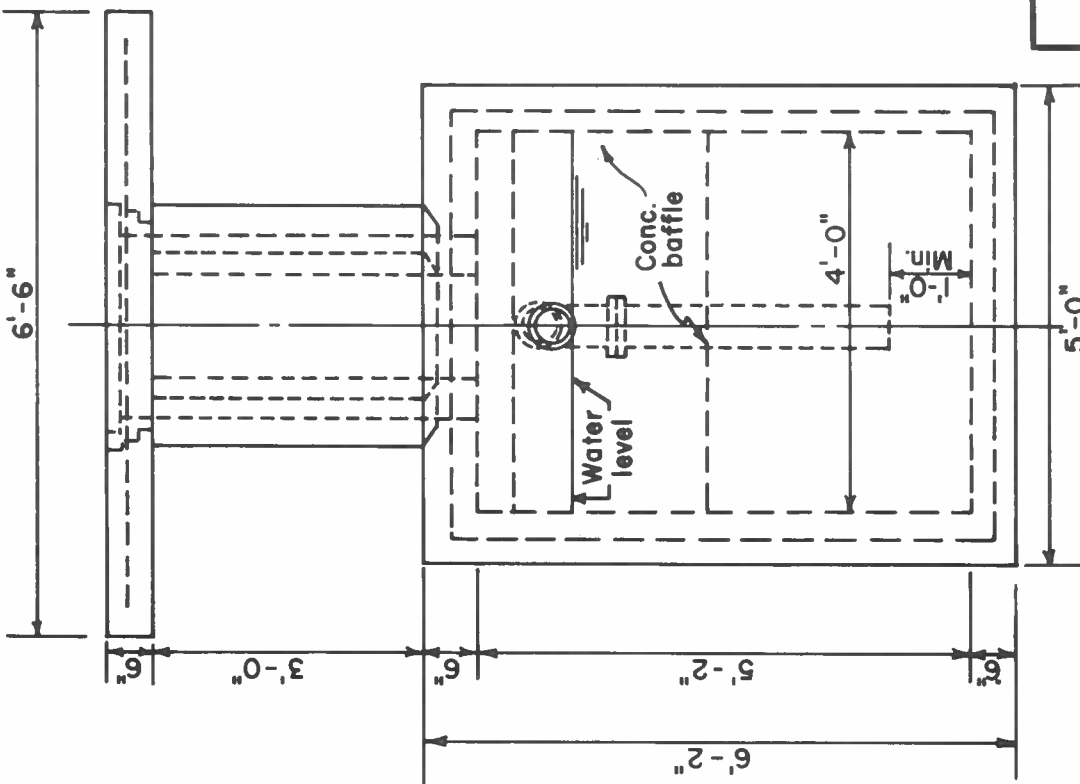


5 bars @ 8" c/c

SECTION B-B
SHOWING REINFORCING LAYOUT



SECTION A-A



END VIEW

Note:

Approximate capacity is 1120 gallons
 3000# Conc. pad - 4" when grease trap is not in the street
 3000# Conc. pad 6" (H-20 loading) when grease trap is in the street

STANDARD GREASE TRAP

REVISIONS:

SCALE = 1/2" = 1'-0"

DATE 5-11-78

REVIEWED: *[Signature]*

UNIFORM STANDARDS:

CLEVELAND - CUYAHOGA COUNTY - CLEVELAND REGIONAL SEWER DISTRICT