

# CITY OF ZACHARY

## STANDARD DETAILS



**CITY OF ZACHARY**

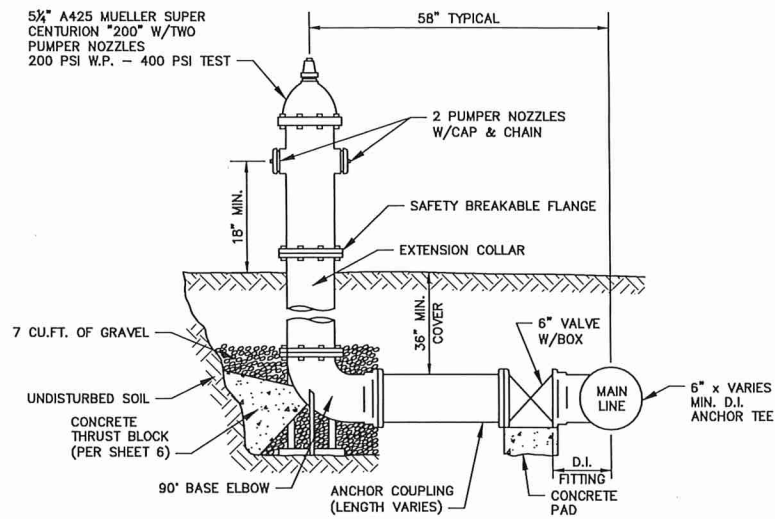
MAYOR  
HONORABLE DAVID McDAVID

<u>COUNCIL MEMBERS</u>	<u>DISTRICT</u>
COUNCILWOMAN BRANDY WESTMORELAND	1
COUNCILMAN JOHN LEBLANC	2
MAYOR PRO-TEMPORE COUNCILWOMAN AMBRE DEVIRGILIO	3
COUNCILMAN JAMES GRAVES	4
COUNCILWOMAN JENNIFER BOYD	5

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5	MISCELLANEOUS SEWER DETAILS	MARCH 2021
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702-97	PRECAST DRAINAGE STRUCTURES (STRUCTURAL DETAILS)	DECEMBER 2010

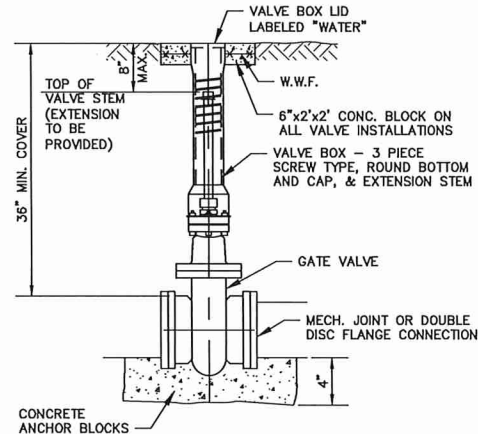
THESE DOCUMENTS ARE PROVIDED AS A MINIMUM STANDARD WHICH THE CITY REQUIRES AND SHALL BE USED EXCLUSIVELY FOR THE CITY PROJECT REQUIRING APPROVAL. IT IS THE SOLE RESPONSIBILITY OF THE DESIGNATED "ENGINEER OF RECORD" ON THIS PROJECT TO REVIEW AND APPROVE THIS STANDARD REGARDING COMPLIANCE WITH ALL CURRENT REGULATIONS, CONTROLLING CODE REQUIREMENTS AND OTHER STANDARDS AS APPLICABLE TO THIS SPECIFIC PROJECT. IF FOR ANY REASON, THIS STANDARD DOES NOT COMPLY WITH ALL SUCH APPLICABLE REGULATIONS OR CODES, THEN THE ENGINEER OF RECORD SHALL PROVIDE A COMPLIANT DESIGN FOR APPROVAL. THE ENGINEER OF RECORD SHALL HOLD AND SAVE THE CITY OF ZACHARY AND PROFESSIONAL ENGINEERING CONSULTANTS CORPORATION FREE AND HARMLESS FROM ANY CLAIMS BASED IN WHOLE OR IN PART ON ALLEGED DEFICIENCIES IN THE APPROVED PLANS.



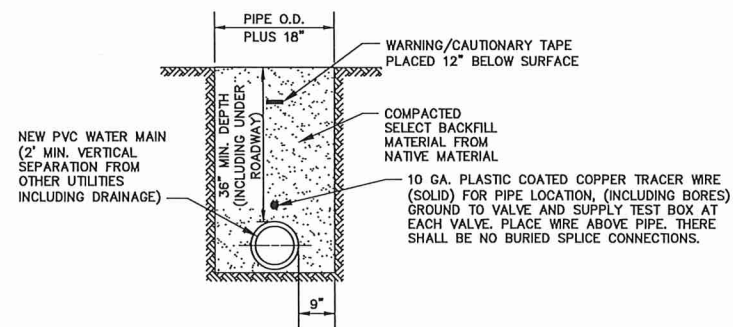
**TYPICAL FIRE HYDRANT INSTALLATION**  
N.T.S.

**FIRE HYDRANT NOTES:**

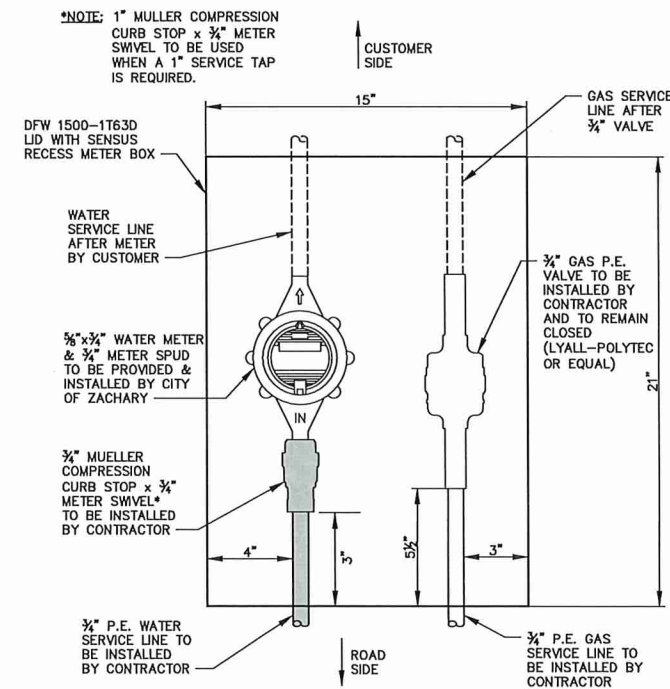
1. ALL FIRE HYDRANTS SHALL BE SHIPPED MANUFACTURER YELLOW AND SHALL BE RIGHT HAND TURN.
2. QUANTITY OF FIRE HYDRANTS AND SPACING MUST BE APPROVED BY THE FIRE CHIEF (MAXIMUM 500' SPACING).
3. RESTRAINED TYPE JOINTS MAY BE MECHANICAL JOINT RESTRAINT DEVICE, MECHANICAL JOINT ANCHORING FITTINGS AND PIPE, OR GROOVED JOINTS.
4. ALL PUMPER NOZZLES TO FACE ROADWAY.
5. CONTRACTOR IS TO VERIFY THREAD AND TURN DIRECTION WITH FIRE PROTECTION PERSONNEL PRIOR TO PURCHASING AND INSTALLING HYDRANTS.
6. ANCHORING TEES AND SLEEVES (PIPE) SHALL HAVE ROTATABLE RETAINED GLANDS.
7. DISTANCE BETWEEN HYDRANT AND VALVE VARIES. CONTRACTOR TO FURNISH REQUIRED LENGTH OF MECHANICAL JOINT ANCHORING SLEEVE FOR HYDRANT LOCATION.
8. ALL DEAD END WATER LINES (WHEREVER LOOPING TO THE EXISTING SYSTEM IS EXEMPTED BY THE CITY OF ZACHARY) SHALL HAVE A FIRE HYDRANT. FLUSH HYDRANTS SHALL NOT BE USED AS A SUBSTITUTE.
9. FIRE HYDRANTS SHALL BE INSTALLED AT EVERY STREET INTERSECTION, AT EVERY DEAD END AND NOT LESS THAN 500 FEET APART. WHEN HYDRANTS ARE LOCATED MID-BLOCK, THEY SHALL BE LOCATED AT LOT LINES.



**TYPICAL WATER VALVE SETTING**  
N.T.S.



**TYPICAL WATER MAIN TRENCH SECTION**  
N.T.S.



**TYPICAL WATER METER & GAS VALVE BOX DETAIL**  
N.T.S.

**GENERAL NOTES:**

1. WATER SERVICE LINE TO BE STUBBED INTO WATER METER BOX WITH VALVE.
2. WATER METER BOX TO BE PROVIDED BY THE CONTRACTOR.
3. WATER METER TO BE PROVIDED BY THE CITY OF ZACHARY.
4. NO METER BOXES SHALL BE ALLOWED IN DRIVEWAYS OR SIDEWALKS.

**GENERAL WATER NOTES:**

1. THE MINIMUM WATER LINE SIZE SHALL BE EIGHT (8") INCHES. WATER SERVICE LINES FROM THE WATER MAIN TO THE METER SHALL BE AT LEAST ONE INCH (1") IN DIAMETER.
2. THE TYPE OF PIPE TO BE USED FOR WATER LINES SHALL BE PVC AND SHALL BE AWWA C900. ALL WATER SERVICE LINES SHALL BE AT LEAST EIGHTEEN (18") INCHES BELOW THE SURFACE AT THE PROPERTY LINES AND AT LEAST THIRTY SIX (36") INCHES UNDER A ROADWAY OR DITCH. THE RIGHT TO UPGRADE THESE REQUIREMENTS IS RESERVED TO THE CITY OF ZACHARY.
3. CONTRACTOR SHALL INSTALL A BLUE 2 INCH WIDE "WARNING/CAUTIONARY" TAPE OVER ALL WATER MAINS. THE TAPE IS TO BE PLACED OVER THE PIPE APPROXIMATELY 12 INCHES BELOW FINISHED GRADE.
4. CONTRACTOR SHALL INSTALL A PLASTIC BONDED 10 GAUGE COPPER WIRE 12 INCHES ABOVE THE TOP OF THE WATER MAINS AND SERVICES (INCLUDING BORES). WIRE TO BE CONTINUOUS ALONG ENTIRE LENGTH OF THE PIPE GROUNDED TO GATE VALVES, FIRE HYDRANTS, FLUSH VALVES, AND SERVICES. SET TRACER WIRE TEST BOX IN CONCRETE VALVE BOX ADJACENT TO ALL WATER VALVES.
5. TIE-IN SHALL BE MADE BY HOT TAP AND SHALL BE COORDINATED WITH THE CITY OF ZACHARY. THERE SHALL BE NO INTERRUPTION OF SERVICE TO EXISTING CUSTOMERS.
6. CONNECTION TO CITY MAIN SHALL ONLY BE DONE AFTER NEW LINE HAS BEEN PRESSURE TESTED, LEAK TESTED, HAS BEEN CHLORINATED AND HAS RECEIVED APPROVAL BY THE CITY OF ZACHARY AND THE DEPARTMENT OF HEALTH AND HOSPITALS.
7. CONTRACTOR SHALL FILL WATER LINES FOR TESTING BY TYING INTO A FIRE HYDRANT NOZZLE ONLY WITH BACKFLOW PREVENTER AND WHEN COORDINATED AND APPROVED BY THE CITY OF ZACHARY. PERMANENT TIE-INS SHALL NOT BE DONE UNTIL LINES HAVE BEEN TESTED AND APPROVED.
8. NO VALVE BOXES OR METER BOXES SHALL BE ALLOWED IN DRIVEWAYS OR SIDEWALKS.
9. SURFACE WATER (DITCHES, CANALS AND DRAINAGE WATERWAYS) AERIAL/EXPOSED CROSSINGS OF WATER MAINS IS NOT ALLOWED. WATER MAINS SHALL BE HDPE DR11 AND HAVE 6 FOOT MINIMUM COVER.
10. NO EXISTING CITY OF ZACHARY VALVES SHALL BE OPERATED BY THE CONTRACTOR.
11. ALL WATER MAIN AND SERVICE LINES SHALL HAVE A MINIMUM 2 FOOT SEPARATION FROM OTHER UTILITIES INCLUDING DRAINAGE.
12. MAIN LINES FOR WATER SERVICE ARE TO BE RUN ALONG ONE SIDE OF A STREET IN THE SUBDIVISION AND THE SERVICE LINE MUST BE RUN FROM THE MAIN LINE TO EACH LOT ON BOTH SIDES OF THE STREET.
13. EACH LOT SHALL HAVE A DEDICATED WATER SERVICE LINE FROM THE WATER MAIN WITH BRONZE SERVICE SADDLE AND 1" BRONZE CORPORATION STOP W/COMPRESSION CONNECTION OUTLET FITTING.
14. SHOP DRAWINGS ON ALL MATERIALS OF CONSTRUCTION SHALL BE SUBMITTED AND APPROVED BY THE CITY OF ZACHARY PRIOR TO COMMENCING WORK.
15. AT EVERY LOCATION WHERE THE WATER MAIN LAYOUT REQUIRES A TEE FITTING, 3 VALVES AND AN ANCHOR TEE ARE TO BE INSTALLED (ONE AT EACH BRANCH).

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

OWNER

STANDARD DETAILS  
MISCELLANEOUS WATER DETAILS  
TITLE

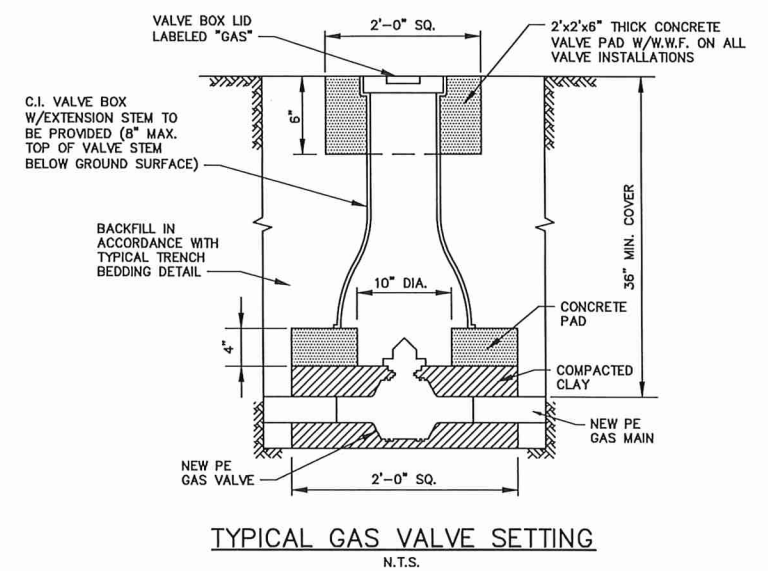
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DRAWN: TLB	DATE: OCTOBER 2022
CHECKED: DAC	APPROVED: TAA



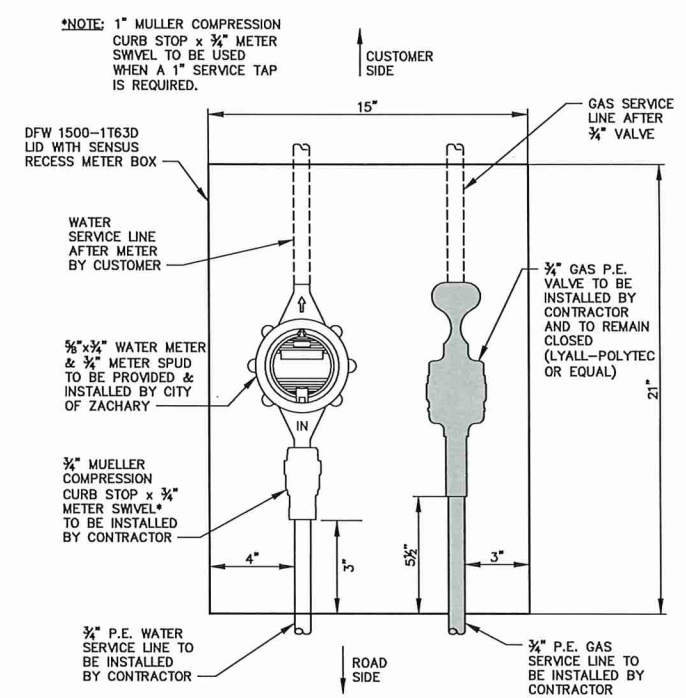
PROJECT NO. 10367  
SHEET NO. 2

**GENERAL GAS NOTES:**

1. THE MINIMUM GAS LINE SIZE SHALL BE TWO (2") INCHES. GAS SERVICE LINES FROM THE MAIN TO THE METER SHALL BE AT LEAST 3/4" INCH IN DIAMETER.
2. THE TYPE OF PIPE TO BE USED FOR GAS LINES SHALL BE POLYETHYLENE AND SHALL BE PE 270B/DR11. ALL GAS SERVICE LINES SHALL BE AT LEAST EIGHTEEN (18") INCHES BELOW THE SURFACE AND THIRTY-SIX (36") INCHES UNDER A ROADWAY OR DITCHES. THE RIGHT TO UPGRADE THESE REQUIREMENTS IS RESERVED TO THE CITY OF ZACHARY.
3. CONTRACTOR SHALL INSTALL A YELLOW 2 INCH WIDE "WARNING/CAUTIONARY" TAPE OVER ALL GAS MAINS. THE TAPE IS TO BE PLACED AS REQUIRED BY PIPELINE SAFETY.
4. CONTRACTOR SHALL INSTALL A PLASTIC BONDED 10 GAUGE COPPER WIRE IN ACCORDANCE WITH PIPELINE SAFETY AND 12 INCHES ABOVE THE TOP OF THE GAS MAINS AND SERVICES (INCLUDING BORES). WIRE TO BE CONTINUOUS ALONG ENTIRE LENGTH OF THE PIPE GROUNDED TO GATE VALVES AND SERVICES. SET TRACER WIRE TEST BOX IN CONCRETE VALVE PAD ADJACENT TO ALL GAS VALVES.
5. TIE-IN SHALL BE MADE BY HOT TAP AND SHALL BE COORDINATED WITH THE CITY OF ZACHARY. THERE SHALL BE NO INTERRUPTION OF SERVICE TO EXISTING CUSTOMERS.
6. CONNECTION TO CITY MAIN SHALL ONLY BE DONE AFTER NEW LINE HAS BEEN PRESSURE TESTED AND LEAK TESTED.
7. CONTRACTOR MUST BE LICENSED AND CERTIFIED BY THE CITY OF ZACHARY AND COMPLY WITH ALL STATE AND FEDERAL REGULATIONS TO PERFORM WORK ON GAS LINES.
8. NO VALVE BOXES OR METER BOXES SHALL BE ALLOWED IN DRIVEWAYS OR SIDEWALKS.
9. SURFACE WATER (DITCHES, CANALS AND DRAINAGE WATERWAYS) AERIAL/EXPOSED CROSSINGS OF GAS MAINS IS NOT ALLOWED. GAS MAINS SHALL BE HDPE DR11 AND HAVE 6 FOOT MINIMUM COVER.
10. NO EXISTING CITY OF ZACHARY VALVES SHALL BE OPERATED BY THE CONTRACTOR.
11. ALL GAS MAINS AND SERVICE LINES SHALL HAVE A MINIMUM 2 FOOT SEPARATION FROM OTHER UTILITIES INCLUDING DRAINAGE.
12. MAIN LINES FOR GAS SERVICE ARE TO BE RUN ALONG ONE SIDE OF A STREET IN THE SUBDIVISION AND SERVICE LINE MUST BE RUN FROM THE MAIN LINE TO EACH LOT ON BOTH SIDES OF THE STREET.
13. EACH LOT SHALL HAVE A DEDICATED GAS SERVICE LINE 3/4" TAPPED FROM THE GAS MAIN AND NEW SERVICE LINE EXCESS FLOW VALVE AT MAIN (UMAC SERIES 1800 GREEN LABEL BY GAS BREAKER INC. OR EQUAL). TAGS FOR ALL SERVICES INSTALLED AND MANUFACTURER'S SUBMITTALS SHALL BE PROVIDED TO THE CITY OF ZACHARY AND LABELED WITH LOT NUMBERS/ADDRESSES.
14. SHOP DRAWINGS ON ALL MATERIALS OF CONSTRUCTION SHALL BE SUBMITTED AND APPROVED BY THE CITY OF ZACHARY PRIOR TO COMMENCING WORK.
15. AT EVERY LOCATION WHERE THE GAS MAIN LAYOUT REQUIRES A TEE, 3 VALVES ARE TO BE INSTALLED (ONE AT EACH BRANCH).



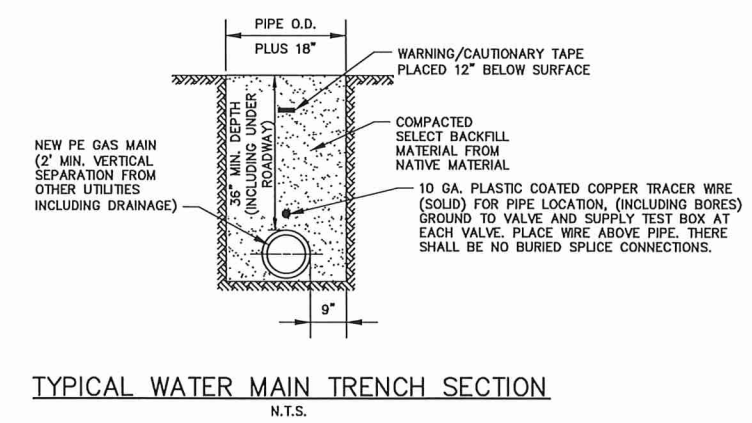
**TYPICAL GAS VALVE SETTING**  
N.T.S.



**TYPICAL WATER METER & GAS VALVE BOX DETAIL**  
N.T.S.

**GENERAL NOTES:**

1. GAS SERVICE LINE TO BE STUBBED INTO WATER METER BOX AND CAPPED.
2. CONTRACTOR FOR HOMEOWNER TO ROUTE GAS SERVICE FROM HOUSE TO BOX.
3. GAS METER TO BE PROVIDED BY AND PUT ON THE HOUSE BY THE CITY OF ZACHARY.
4. NO METER BOXES SHALL BE ALLOWED IN DRIVEWAYS OR SIDEWALKS.



**TYPICAL WATER MAIN TRENCH SECTION**  
N.T.S.

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA  
OWNER

STANDARD DETAILS  
MISCELLANEOUS GAS DETAILS  
TITLE

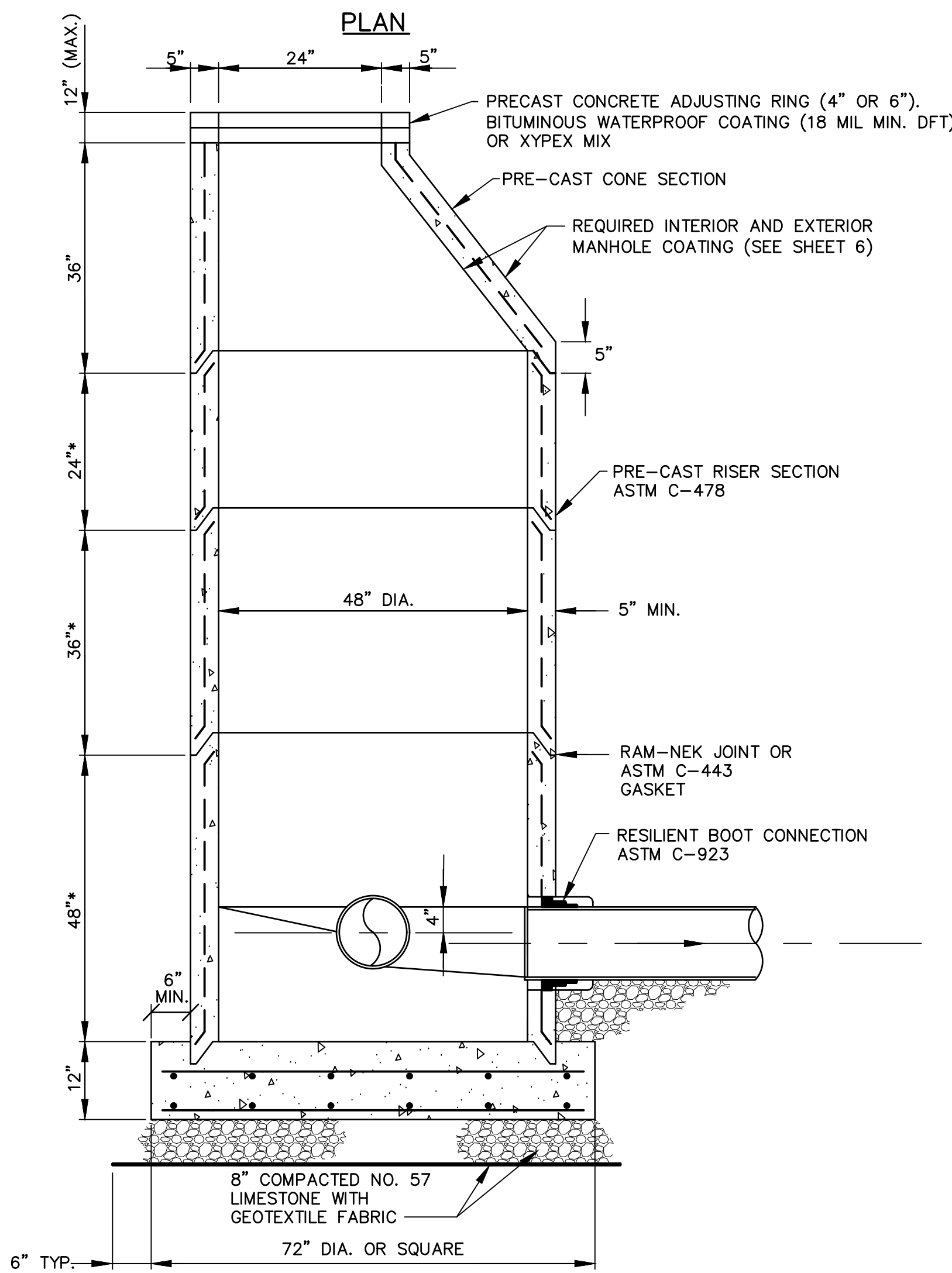
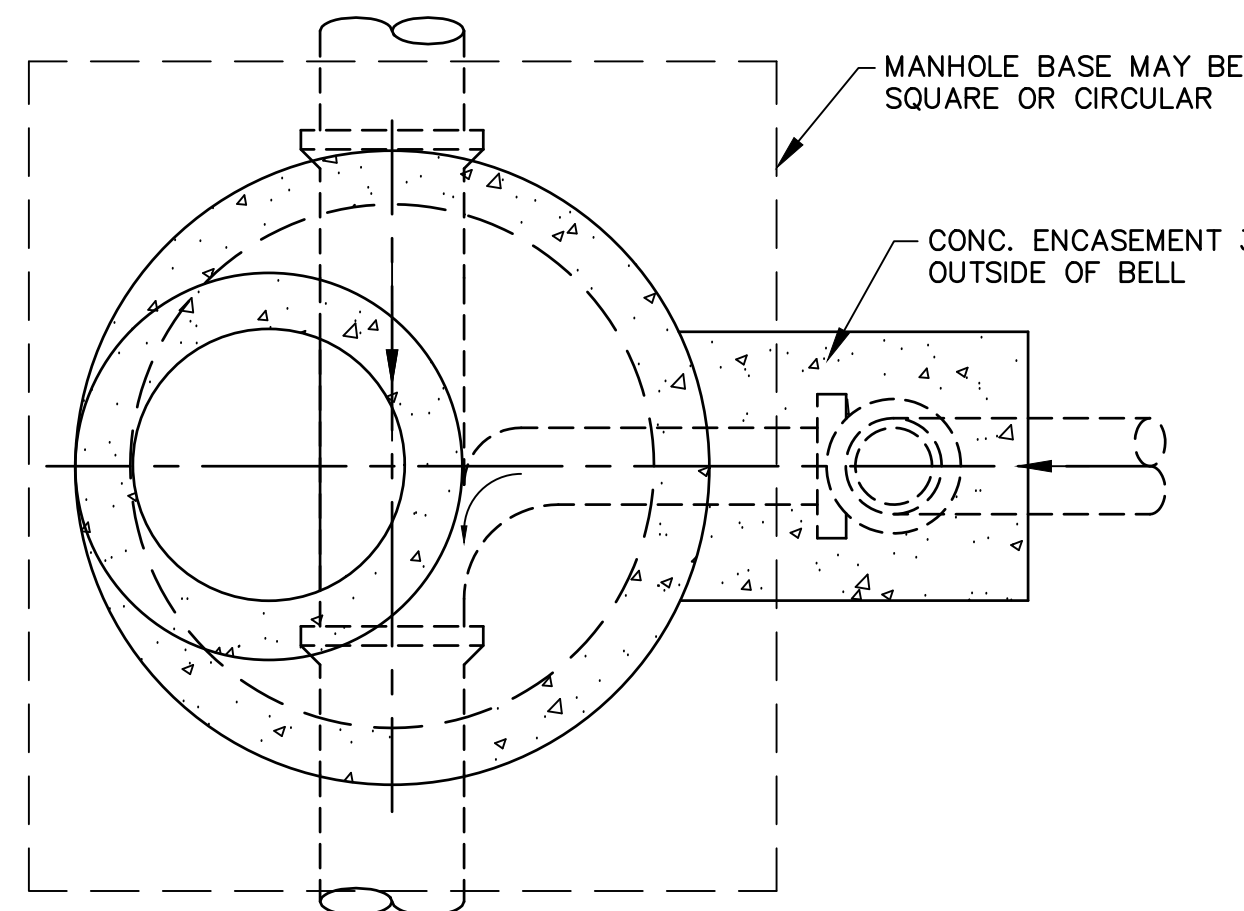
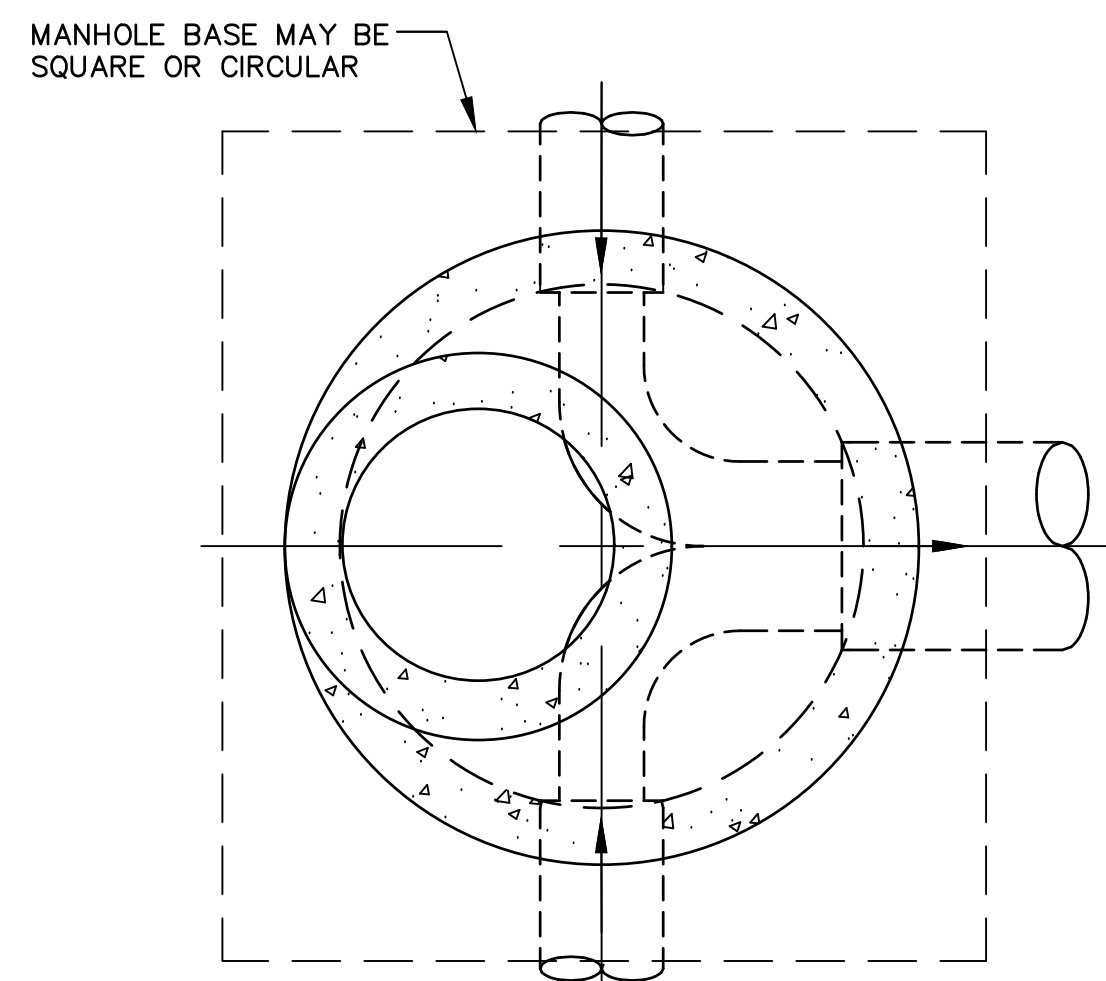
DESIGNED: BGH	SCALE: AS SHOWN		PROJECT NO. 10367
DRAWN: TLB	DATE: OCTOBER 2022		SHEET NO. 3
CHECKED: DAC			
APPROVED: TAA			

**TYPICAL MANHOLE NOTES:**

1. RISERS MAY BE USED IN DIFFERENT COMBINATIONS TO OBTAIN REQUIRED DEPTH.
2. BASE REINFORCING # 5 BAR @ 6" CENTERS E.W, T&B.
3. MANHOLE BASE & BOTTOM RISER MAY BE PRECAST AT OPTION OF CONTRACTOR.
4. EXTEND NO. 57 LIMESTONE & GEOTEXTILE FABRIC 6" MIN. BEYOND EDGE OF BASE (TYP.)
5. CAST-IN-PLACE CONCRETE 3,500 PSI MIN. STRENGTH AT 28 DAYS.

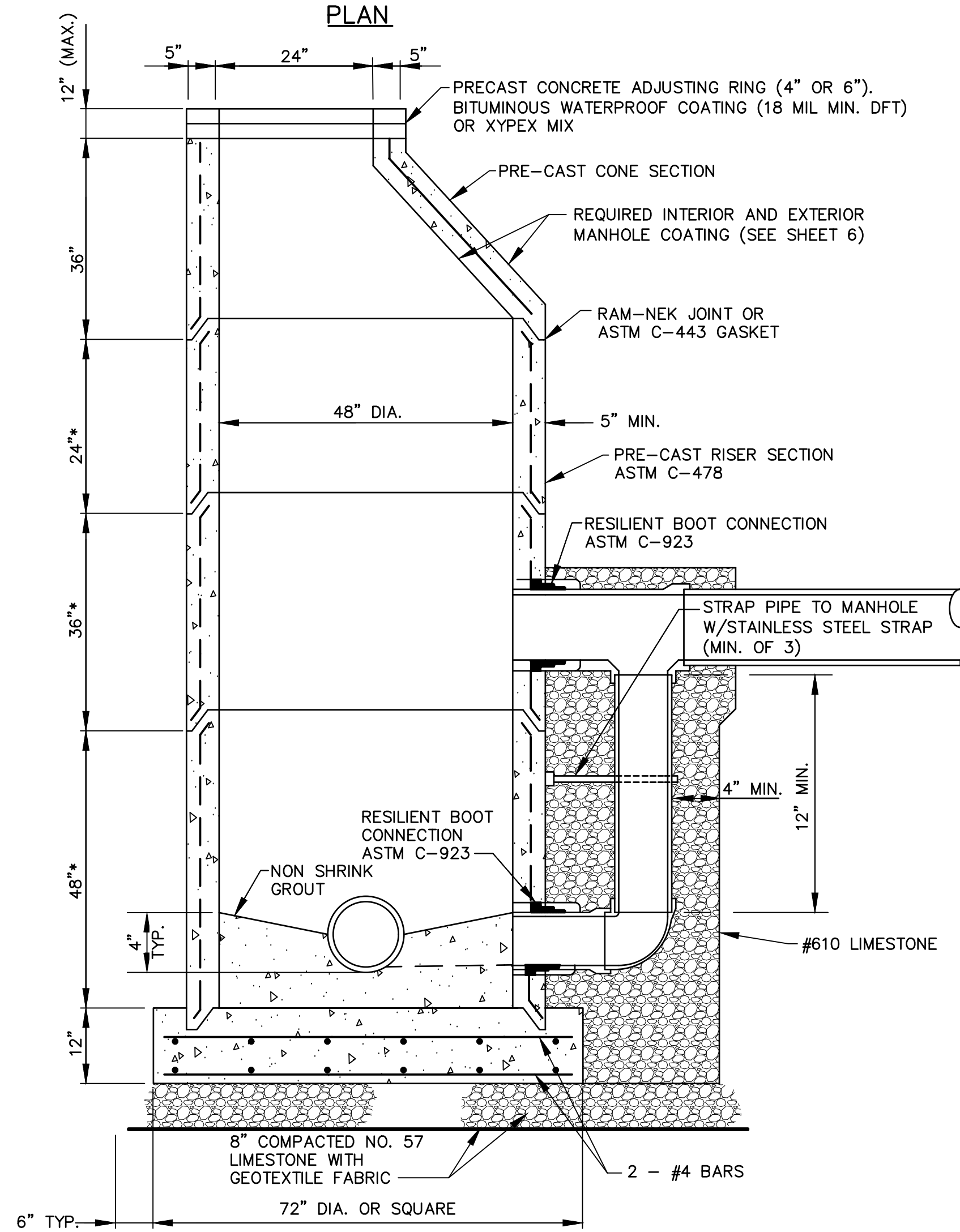
**SHALLOW MANHOLE NOTES:**

1. MANHOLES MAY BE EITHER CAST-IN-PLACE (TYPE 3), OR PRECAST REINF. CONC. MANHOLE RISERS AND TOPS CONFORMING TO A.S.T.M. C-478 WITH JOINTS OF "RAM-NEK" PREFORMED PLASTIC ROPE AS MANUFACTURED BY K.T. SNYDER, HOUSTON, TEXAS OR A.S.T.M. C-443 RUBBER GASKET.
2. BRICK MANHOLES SHALL BE ALLOWED ONLY WITH SPECIAL APPROVAL OF THE CITY.
3. EXTEND NO. 57 LIMESTONE & GEOTEXTILE FABRIC 6" MIN. BEYOND EDGE OF BASE.
4. ALL MANHOLE TOPS SHALL BE CONSTRUCTED AT LEAST ONE FOOT ABOVE THE HIGHEST FLOODWATER ELEVATION.
5. CONCRETE STRENGTH 3,500 PSI MIN. AT 28 DAYS.



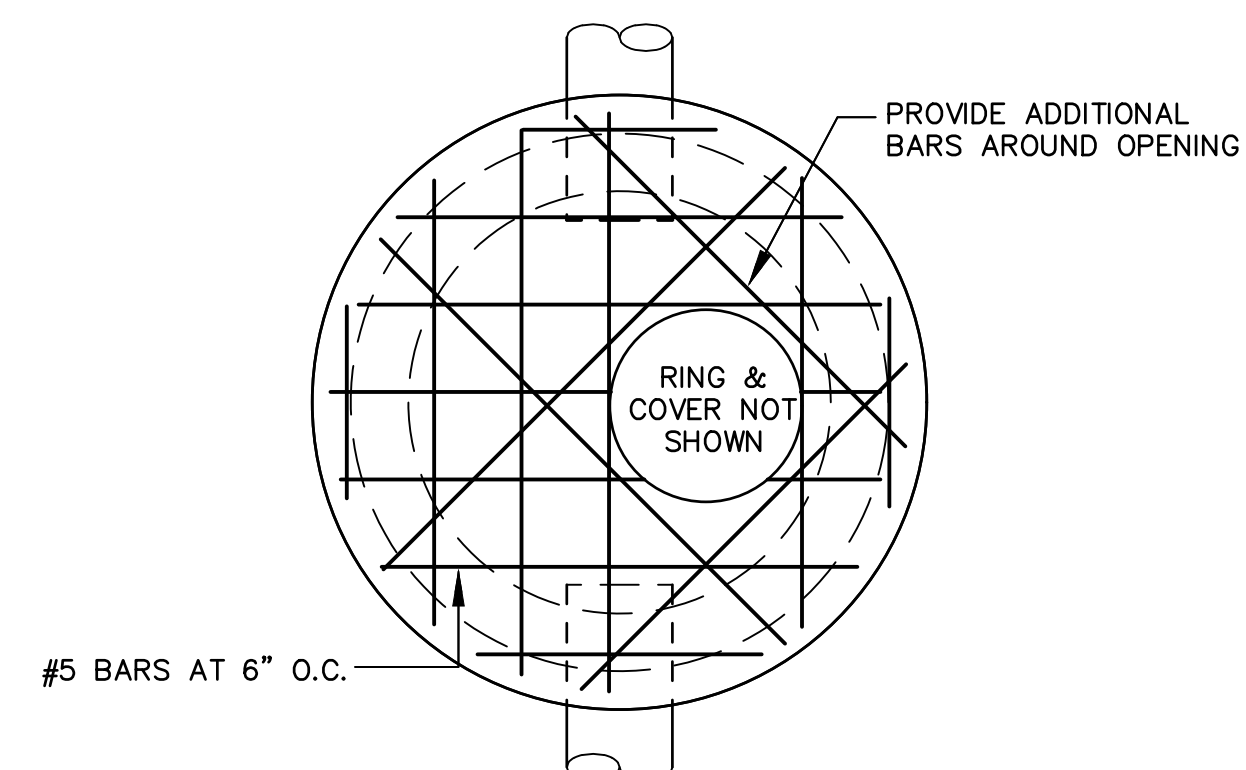
**TYPICAL MANHOLE**  
N.T.S.

\* RISERS MAY BE USED IN DIFFERENT COMBINATIONS TO OBTAIN REQUIRED DEPTH (14' MAXIMUM DEPTH).

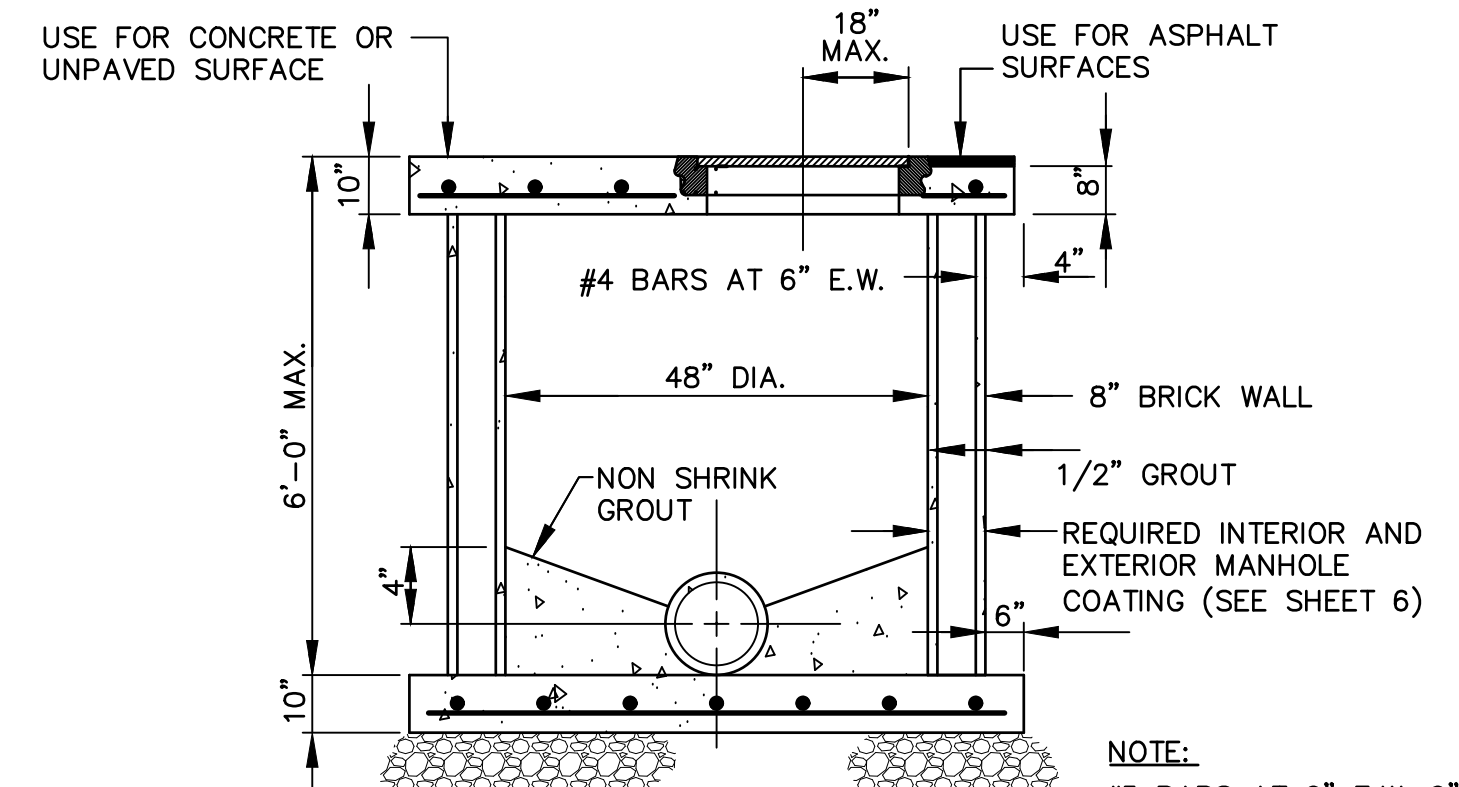


**DROP MANHOLE**  
(SHALL BE USED WHEN DROP IS GREATER THAN 24")  
N.T.S.

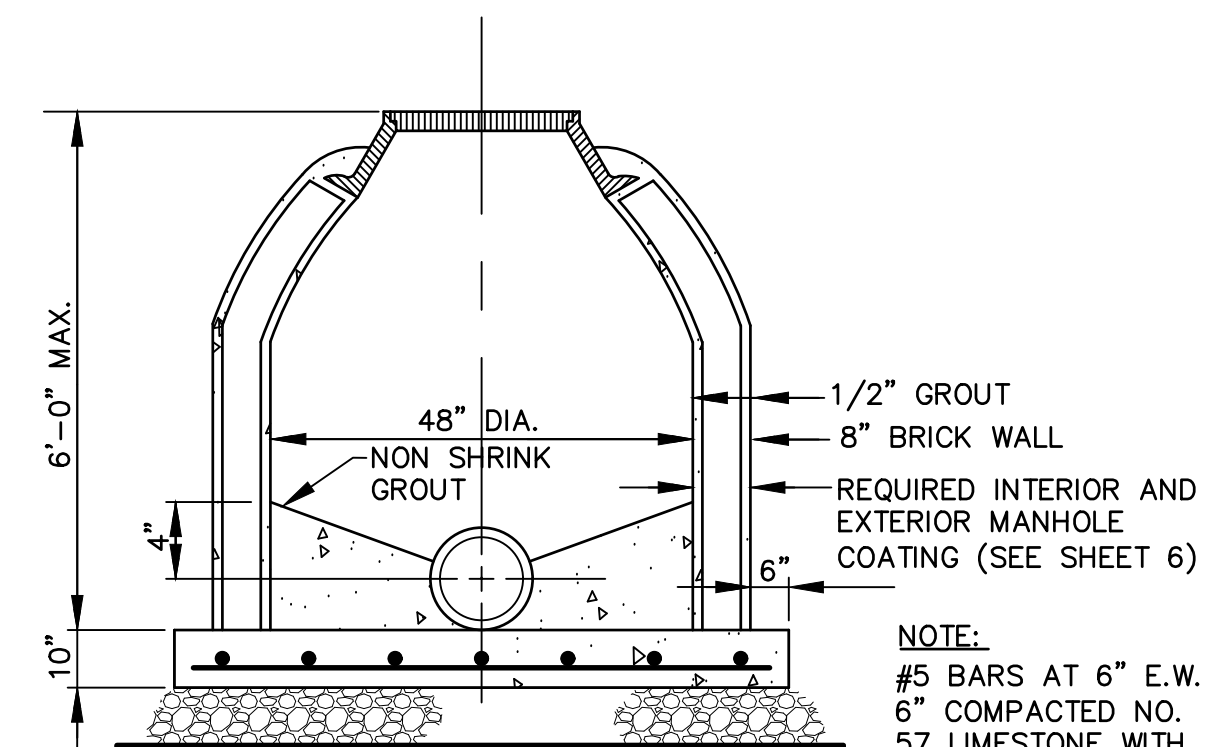
\*RISERS MAY BE USED IN DIFFERENT COMBINATIONS TO OBTAIN REQUIRED DEPTH (14' MAXIMUM DEPTH).



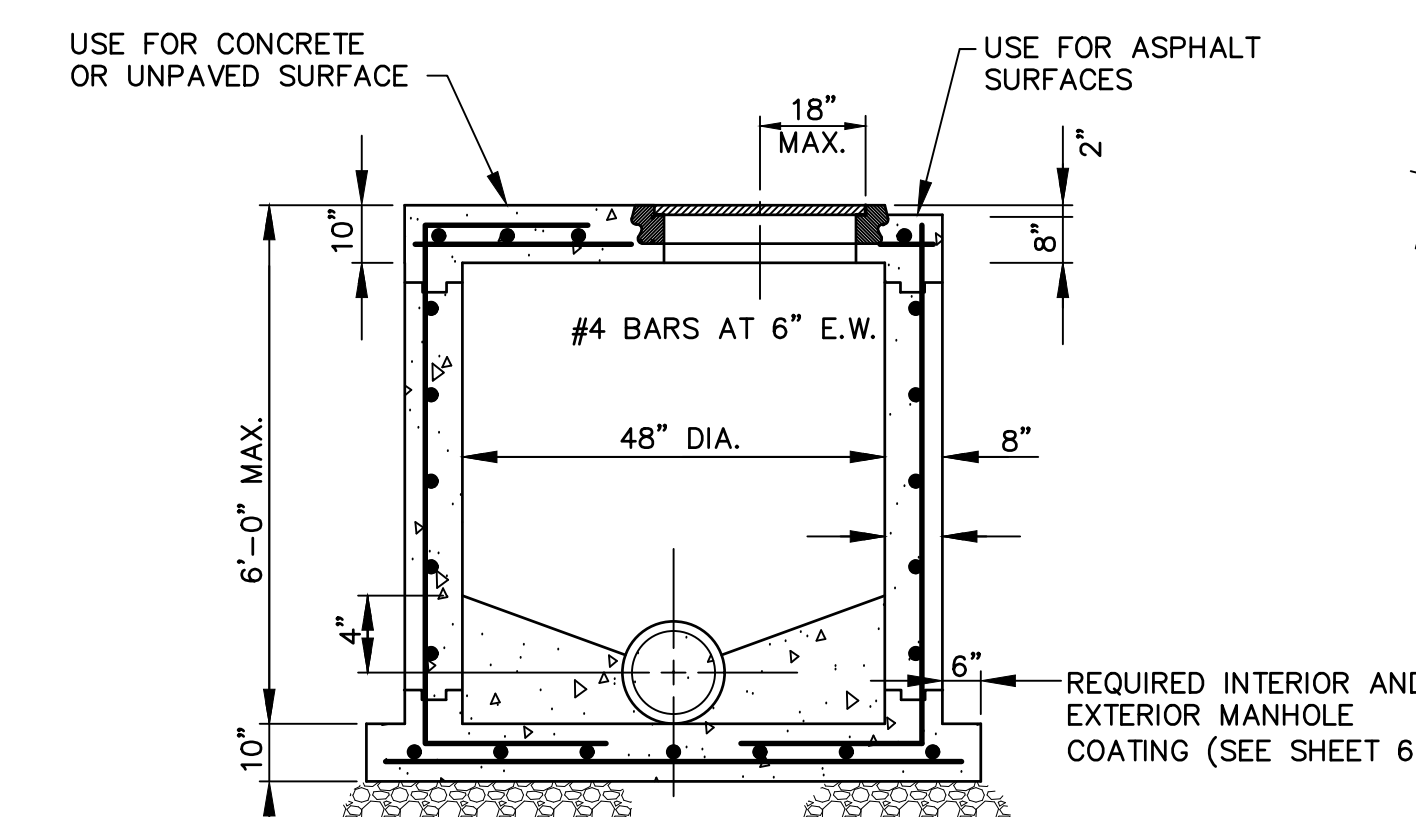
**TYPE 1 OR 3**  
**SHALLOW MANHOLE - PLAN**  
N.T.S.



**TYPE 1**  
**(WITH PERMISSION ONLY)**  
**SHALLOW MANHOLE (SECTION)**  
N.T.S.

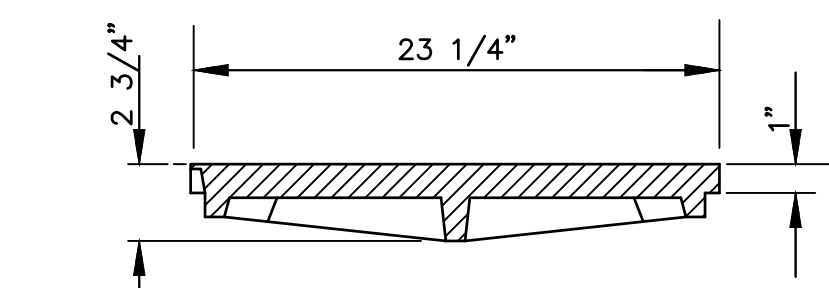
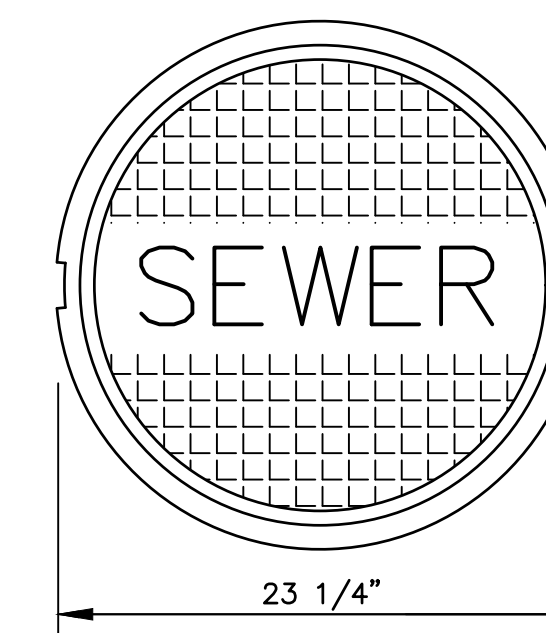


**TYPE 2**  
**(WITH PERMISSION ONLY)**  
**SHALLOW MANHOLE (SECTION)**  
N.T.S.



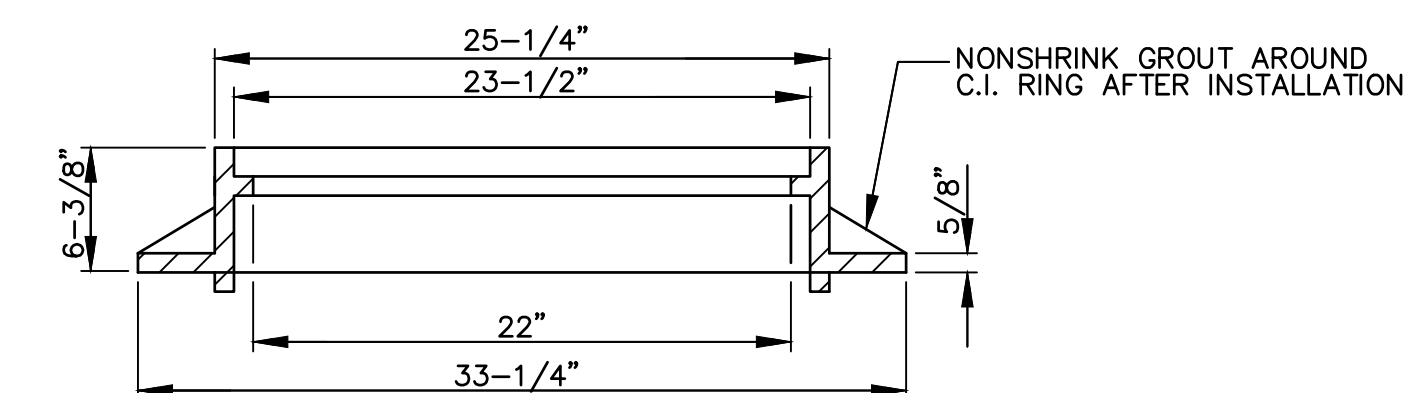
**TYPE 3**  
**SHALLOW MANHOLE (SECTION)**  
N.T.S.

NOTE:  
#5 BARS AT 6" E.W.  
6" COMPACTED NO. 57  
LIMESTONE WITH GEOTEXTILE  
FABRIC



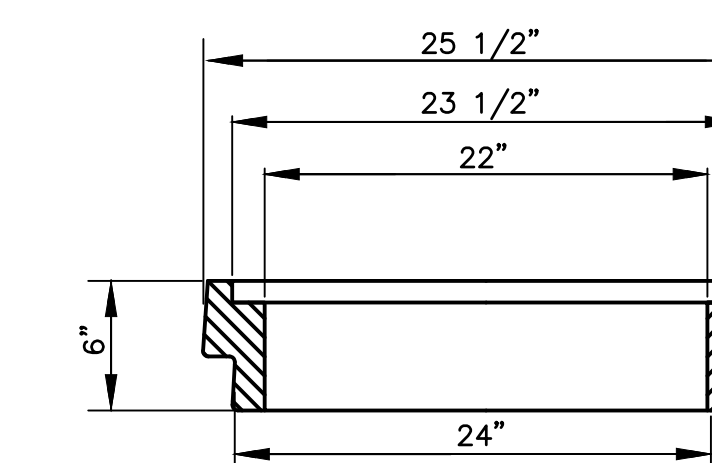
**STANDARD MANHOLE COVER**  
N.T.S.

VULCAN FOUNDRY V-1501 OR EQUAL. APPROX. WT. 110#



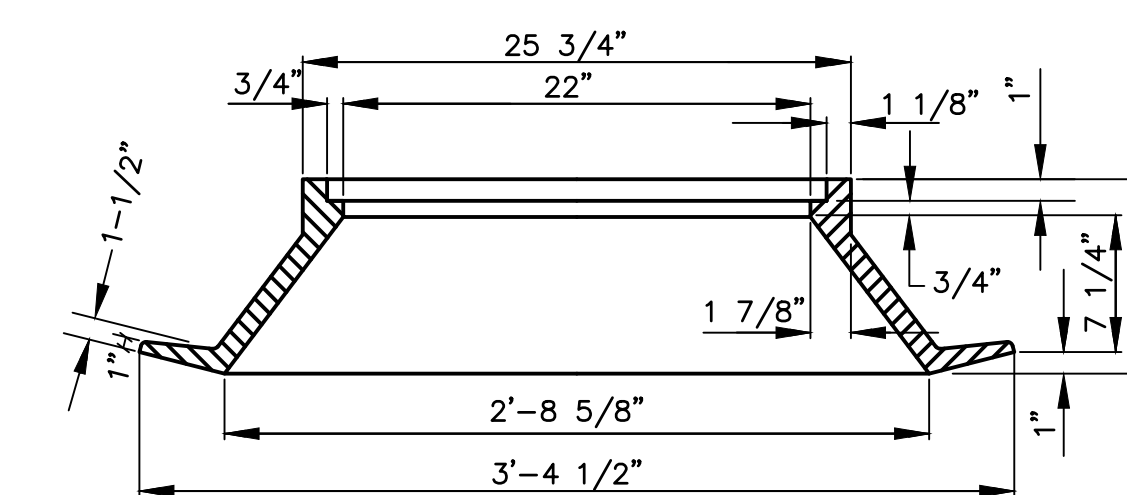
**STANDARD MANHOLE FRAME**  
N.T.S.

VULCAN FOUNDRY V-1403 OR EQUAL. APPROX. WT. 200#



**SHALLOW MANHOLE FRAME**  
**(TYPE 1 OR 3)**  
N.T.S.

VULCAN FOUNDRY VM-4 OR EQUAL. APPROX. WT. 130#



**SHALLOW MANHOLE FRAME**  
**(TYPE 2)**  
N.T.S.

NOTE: CONTRACTOR MAY FURNISH EITHER SHALLOW MANHOLE FRAME, AS DETAILED WITH MANHOLE. APPROX. WT. 315#

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

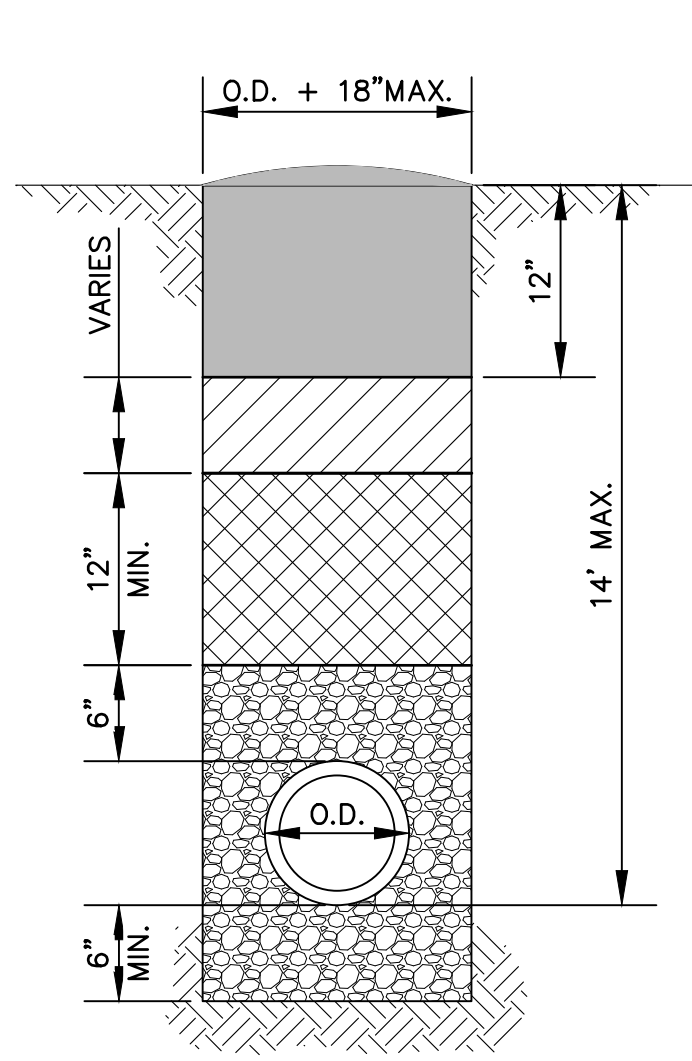
CITY OF ZACHARY, LOUISIANA

STANDARD DETAILS  
MISCELLANEOUS SEWER DETAILS  
TITLE

DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	
APPROVED: TAA	

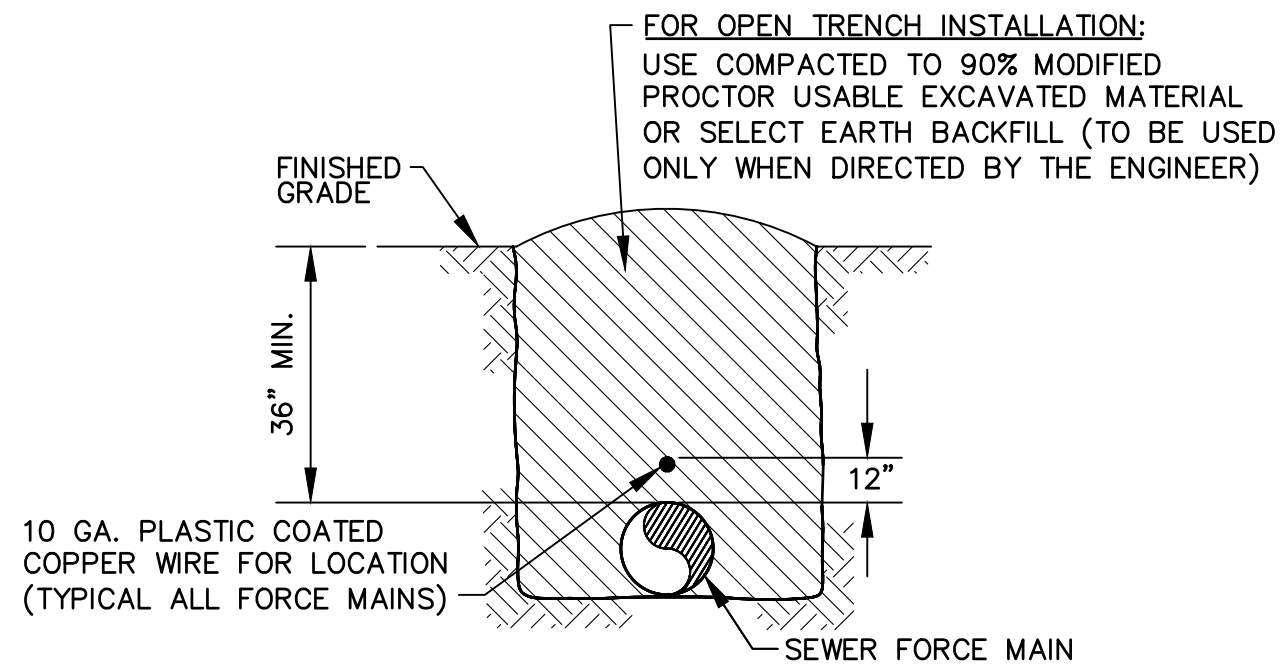


PROJECT NO. 10367  
SHEET NO. 4

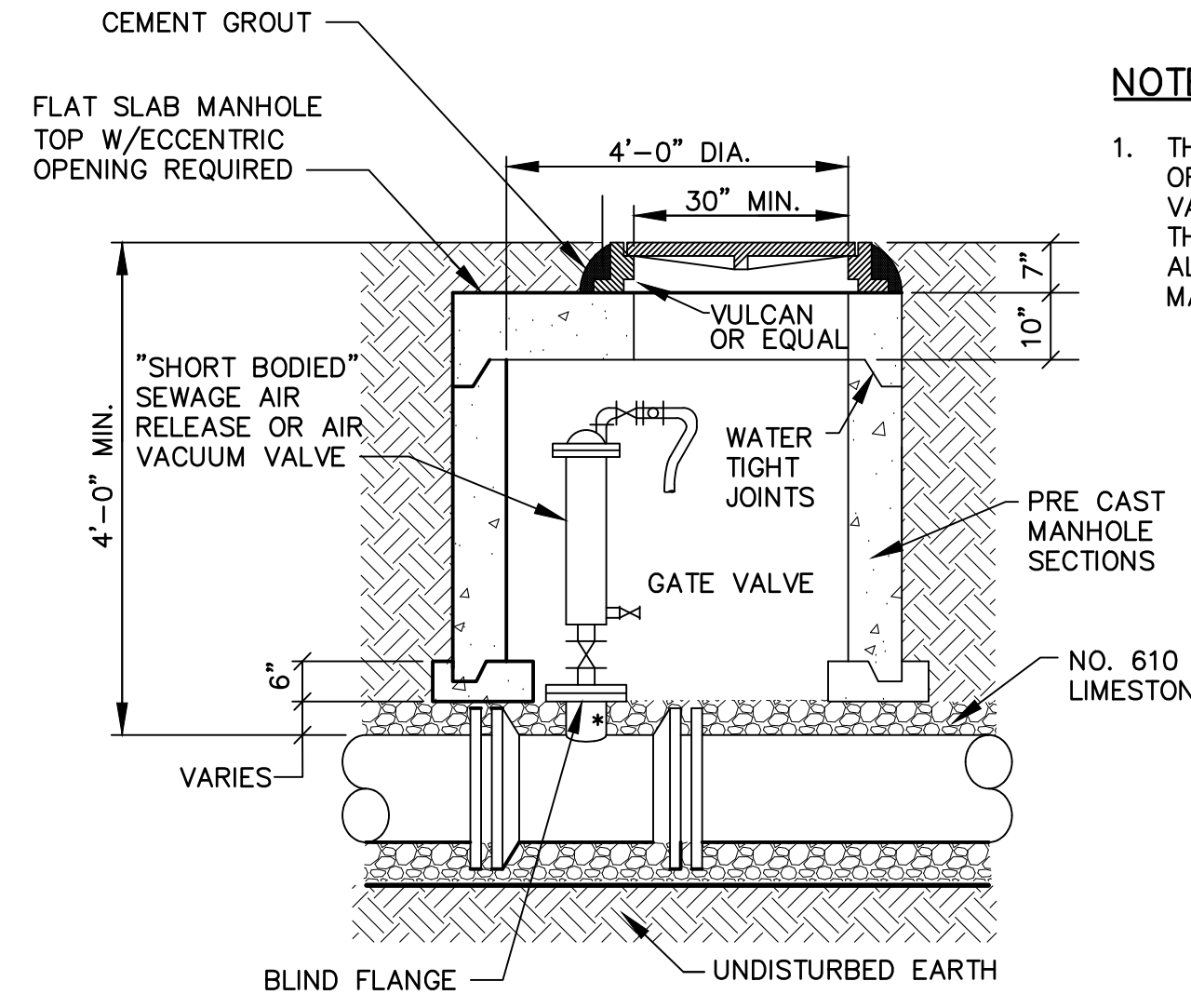


**LEGEND**

- COMPACTED FINAL BACKFILL IS THE MATERIAL THAT IS PLACED IN THE UPPER TWELVE INCHES (12") OF THE TRENCH AFTER DENSIFICATION OF THE INTERMEDIATE TRENCH BACKFILL. ACCEPTABLE FINAL BACKFILL MATERIALS ARE THE SAME AS INTERMEDIATE BACKFILL EXCEPT IN LOCATIONS UNDER PAVEMENTS, ROADS, STREETS, DRIVES, OR WALKS, FOR WHICH CONTRACTOR SHALL INSTALL 12" OF COMPACTED NO. 610 LIMESTONE FROM THE INTERMEDIATE BACKFILL UP TO THE BASE COURSE OF ROADS, STREETS, DRIVES OR WALKS.
- COMPACTED INTERMEDIATE BACKFILL IS THE MATERIAL THAT IS PLACED ABOVE THE INITIAL BACKFILL. ACCEPTABLE INTERMEDIATE BACKFILL MATERIALS ARE USEABLE EXCAVATED SOIL OR IF DIRECTED BY THE ENGINEER AND UNDER PAVED AREAS USE SELECT MATERIAL, LIMESTONE SIZES 67, OR 610, OR SAND-CLAY GRAVEL.
- COMPACTED INITIAL BACKFILL IS THE MATERIAL THAT IS ABOVE THE BEDDING MATERIAL TO A DISTANCE OF ONE FOOT ABOVE THE PIPE. ACCEPTABLE INITIAL BACKFILL IS USEABLE EXCAVATED SOILS IF SUITABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OF RECORD. IF MATERIAL IS DETERMINED TO BE UNSUITABLE AND UNDER PAVED AREAS, USE SELECT MATERIAL, LIMESTONE SIZE 67 OR 610 OR SAND-CLAY-GRAVEL.
- COMPACTED BEDDING IS THE MATERIAL THAT IS A MINIMUM OF SIX INCHES (6") UNDER THE PIPE UP TO A LEVEL OF SIX INCHES (6") ABOVE THE PIPE. BEDDING MATERIAL SHALL BE NO. 610 LIMESTONE.



**TYPICAL TRENCH FOR FORCE MAIN**  
N.T.S.



**FORCE MAIN AIR RELEASE VALVE**  
N.T.S.

**NOTE:**

- THE CONTRACTOR SHALL OFFSET THE AIR RELEASE VALVE TO ONE SIDE OF THE MANHOLE OPENING TO ALLOW ACCESS INTO THE MANHOLE STRUCTURE.

PIPE SIZE	BRANCH DIA.
4"-8"	2"
10"-16"	6"
18"-24"	8"
30"-42"	10"
48"-54"	24"

\* FLANGED OUTLET OR TEE

- GENERAL SEWER NOTES:**
- THE MINIMUM SEWER MAIN SIZE SHALL BE EIGHT (8") INCHES AND SERVICE LINES SHALL BE AT LEAST SIX (6") INCHES IN DIAMETER. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWERS AT LEAST 6 LINEAR FEET HORIZONTALLY FROM ANY EXISTING WATER MAIN. SANITARY SEWERS CROSSING WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE WATER MAIN AND THE SEWER. WHERE A WATER MAIN CROSSES UNDER A SEWER, ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE. THE DISTANCE BETWEEN WATER MAIN AND SEWER SHALL BE MEASURED FROM THE OUTSIDE OF THE WATER MAIN TO THE OUTSIDE OF THE SEWER PIPE.
  - THE CONTRACTOR SHALL VERIFY ALL EXISTING ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND SHALL DETERMINE ANGLES OF INCOMING LINES PRIOR TO ORDERING MANHOLES AND/OR WETWELLS.
  - ALL MATERIAL AND WORKMANSHIP WITHIN LA DOTD RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT CURRENT STANDARD SPECIFICATIONS.
  - NO MANHOLE OR CLEANOUT COVER SHALL BE ALLOWED IN DRIVEWAYS OR SIDEWALKS. IF ADJUSTMENTS ARE REQUIRED TO THE PIPING, IT SHALL BE DONE ONLY WITH THE APPROVAL OF THE CITY OF ZACHARY AND WITH 45° (OR LESS) ANGLES. NO 90° ANGLES ARE ALLOWED.
  - ALL SEWER LINES SHALL HAVE A MINIMUM 2 FOOT SEPARATION FROM OTHER UTILITIES INCLUDING DRAINAGE.
  - SEWER MAINS, SERVICE LINES, AND MANHOLES SHALL BE TESTED IN ACCORDANCE WITH CITY OF ZACHARY STANDARD SPECIFICATIONS. ALL IDENTIFIED SAGS NOT MEETING THE ACCEPTABLE LIMITS SPECIFIED HEREIN SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH PLAN SHEET 6.
  - EACH LOT SHALL HAVE A DEDICATED SEWER SERVICE LINE TO THE SEWER MAIN. PRIVATE SERVICE LINE CONNECTING TO PUBLIC CLEANOUT SHALL BE 4".
  - SHOP DRAWINGS ON ALL MATERIALS OF CONSTRUCTION SHALL BE SUBMITTED AND APPROVED BY THE CITY OF ZACHARY PRIOR TO COMMENCING WORK.
  - SURFACE WATER (DITCHES, CANALS AND DRAINAGE WATERWAYS) AERIAL/EXPOSED CROSSINGS OF SEWER GRAVITY MAINS AND FORCE MAINS IS NOT ALLOWED. GRAVITY MAINS SHALL HAVE 6' MINIMUM COVER AND BE ENCASED IN DUCTILE IRON CASING. FORCE MAINS SHALL BE HDPE DR11 AND HAVE 6' MINIMUM COVER.
  - THE MANHOLE BENCH SHALL SLOPE TOWARD THE INVERT CHANNEL AT THE RATE OF (1.5"/FT.), BUT MINIMUM OF 3" DIFFERENCE SHALL BE MAINTAINED FROM THE TOP OF CHANNEL TO THE WALL.
  - ALL CAST IRON FRAME COVERS SHALL BE TRAFFIC BEARING WITH THE WORD "SEWER". FRAME AND COVERS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE LATEST AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS DESIGNATION: M308 STANDARD SPECIFICATION FOR DRAINAGE, SEWER, UTILITY, AND RELATED CASTINGS. THEY SHALL HAVE AN ENVIRONMENTALLY SAFE, WATER-BASE ASPHALTIC COATING WHICH IS NONTOXIC, NONFLAMMABLE, COLORLESS, AND DRIES TO A HARD BLACK FINISH.
  - THE DEPTH OF THE INVERT CHANNEL IN THE MANHOLE SHALL BE EQUAL TO HALF THE DIAMETER OF THE LARGEST DIAMETER SEWER PIPE IN THE MANHOLE.
  - MANHOLE SECTIONS SHALL BE JOINED TOGETHER WITH FLEXIBLE WATERTIGHT RUBBER GASKETS AND EXTERNALLY SEALED AT THE JOINTS IN ACCORDANCE WITH THE SPECIFICATIONS.
  - FOR SEWERS 16" DIAMETER OR LESS CONSTRUCT 48" DIAMETER MANHOLE, FOR SEWERS LARGER THAN 16" UP TO 24" DIAMETER CONSTRUCT 60" DIAMETER MANHOLE, AND FOR SEWERS LARGER THAN 24" DIAMETER CONSTRUCT 72" DIAMETER MANHOLE. MANHOLE DIAMETER SIZING, HOWEVER IS CONTINGENT UPON THE LIMITATIONS OF THE MANUFACTURER DUE TO PIPE SIZE AND ORIENTATION AT THE MANHOLE. THE DESIGN ENGINEER MUST VERIFY THAT THE PROPER MANHOLE DIAMETER IS PROVIDED.
  - ALL GRAVITY SEWER MAINS CROSSING EXISTING STREETS SHALL BE ENCASED WITHIN A DUCTILE IRON CASING.

- NOTES:**
- INITIAL BACKFILL SHALL BE HAND PLACED AND CAREFULLY TAMPED IN 6" LAYERS TO A HEIGHT OF NOT LESS THAN 12" ABOVE THE TOP OF THE BEDDING MATERIAL. THE REMAINING TRENCH MAY BE MACHINE BACKFILLED, EXCEPT UNDER STREET, DRIVES, WALKS, OR OTHER PAVED AREAS.
  - MATERIAL TO BE USED AS BEDDING, INITIAL BACKFILL, INTERMEDIATE, AND FINAL BACKFILL SHALL BE COMPACTED PER SECTION 901 CITY OF ZACHARY STANDARD SPECIFICATIONS.

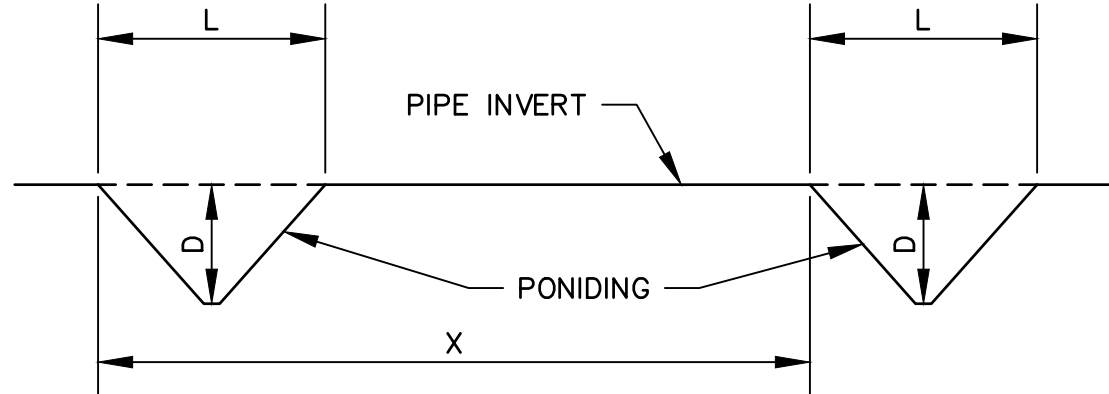
**PIPE TRENCH DETAIL FOR NEW GRAVITY SANITARY SEWER MAINS**  
N.T.S.

NOMINAL PIPE DIA. (INCHES)	MINIMUM GRADE (%)	MAX. ALLOWABLE SAGE DEPTH (D)* IN INCHES OF WATER EQUAL OR LESS THAN MINIMUM GRADE	MAXIMUM SAG LENGTH (L)**	MIN. ALLOWABLE DIST. BETWEEN SAGS W/10% OR GREATER DEPTH (X)***
8	0.400	0.8"	6 FT	36 FT
10	0.280	1"	6 FT	36 FT
12	0.220	1.1"	9 FT	54 FT
15	0.150	1.5"	9 FT	54 FT
16	0.140	1.5"	9 FT	54 FT
18	0.120	1.5"	9 FT	72 FT
21	0.100	1.5"	9 FT	72 FT
24	0.080	1.5"	9 FT	72 FT
27	0.067	2"	9 FT	72 FT
30	0.058	2"	9 FT	72 FT
36	0.046	2"	9 FT	72 FT
42	0.037	2"	9 FT	72 FT

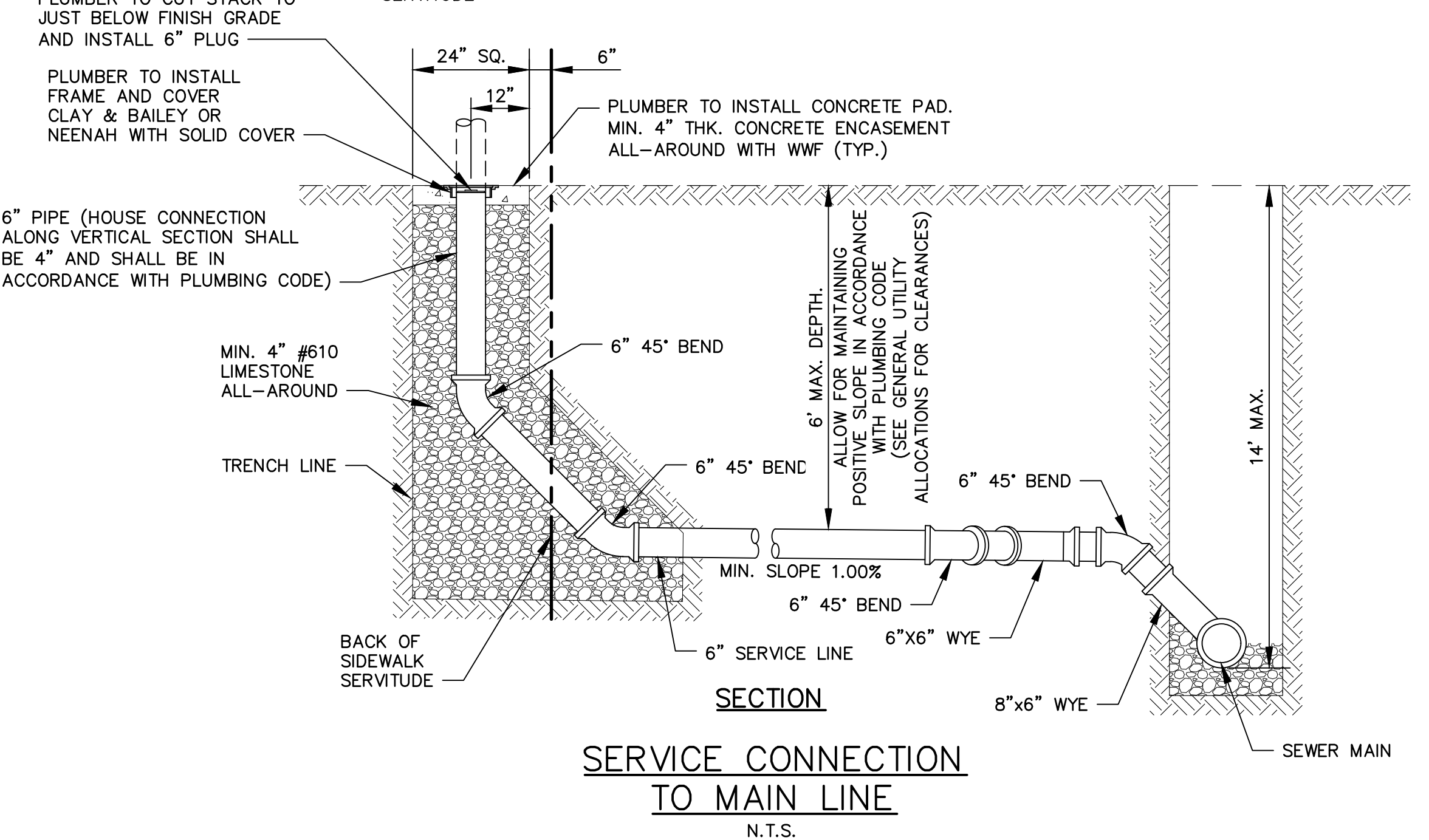
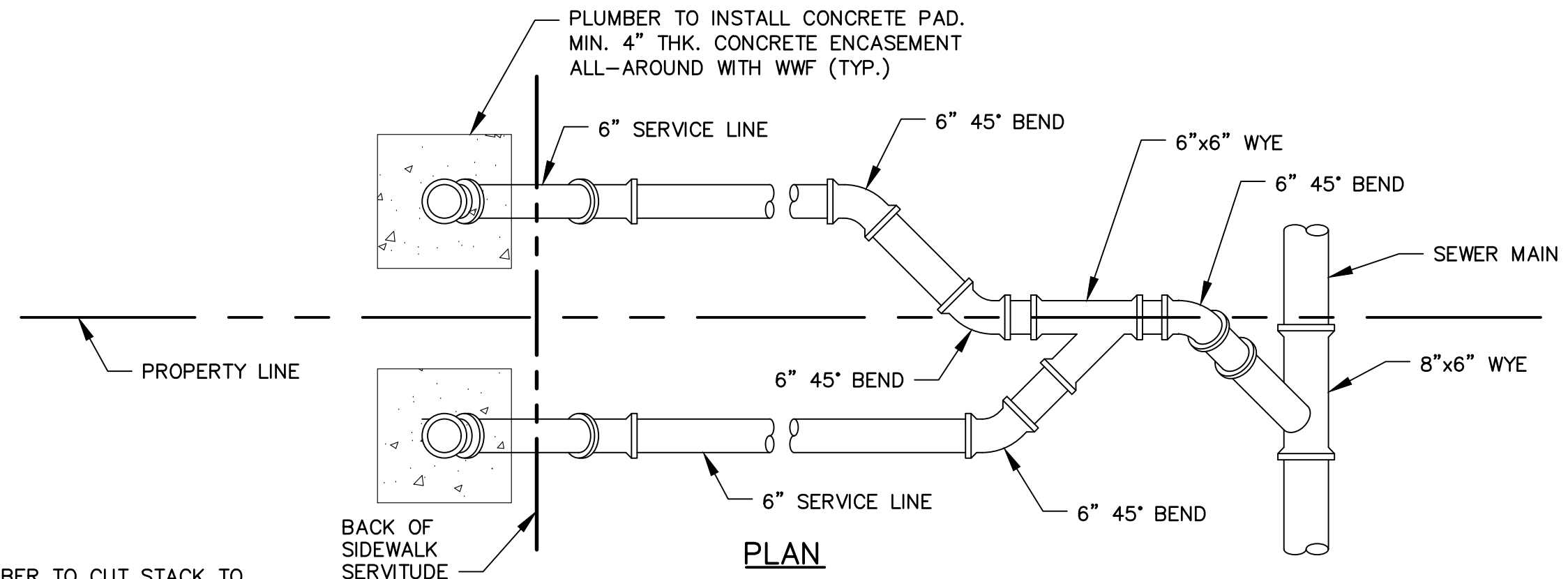
\*D = MAX. ALLOWABLE SAGE DEPTH = ALLOWABLE DEPTH OF POOLED WATER AS MEASURED FROM WATER SURFACE TO INVERT OF PIPE BY USE OF SAG GAUGE.

\*\*L = SAG LENGTH = LENGTH OF POOLED WATER SURFACE AS MEASURED FROM UPSTREAM EDGE OF POOLED WATER SURFACE TO DOWNSTREAM EDGE OF POOLED WATER SURFACE.

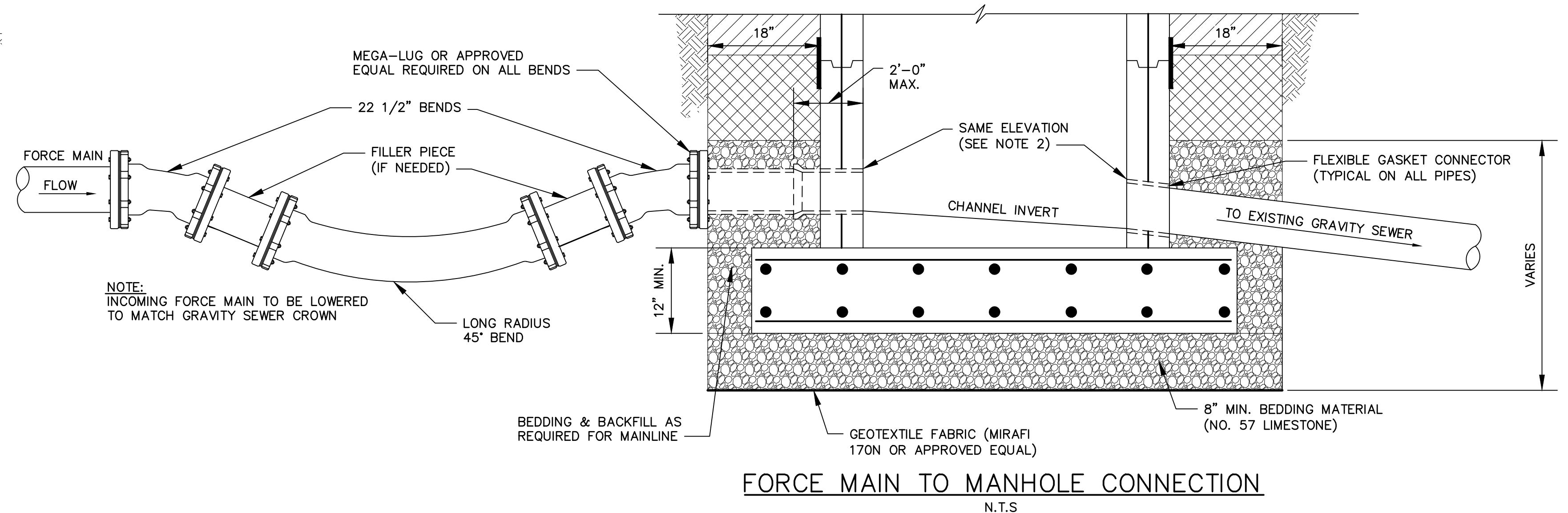
\*\*\*X = DISTANCE BETWEEN SAGS, AS MEASURED FROM UPSTREAM EDGE OF POOLED WATER SURFACES BETWEEN CONSECUTIVE SAGS.



**SANITARY SEWER GRADE TOLERANCE/ ACCEPTABLE SAG LIMITS**  
N.T.S.

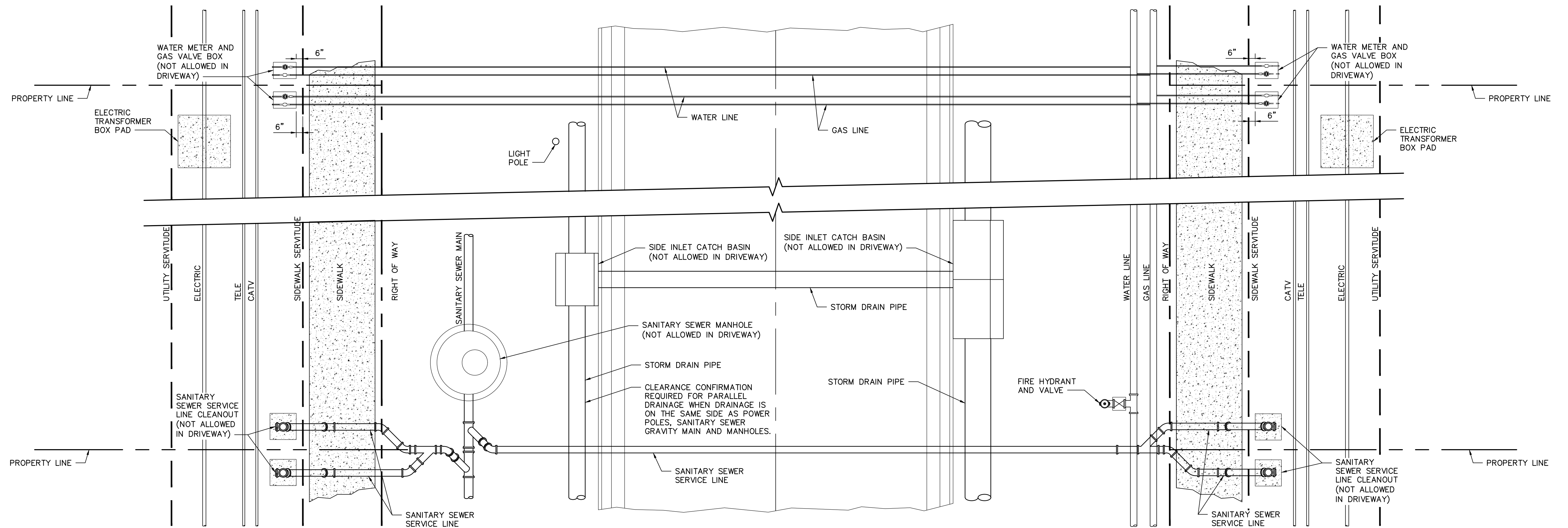


**SERVICE CONNECTION TO MAIN LINE**  
N.T.S.

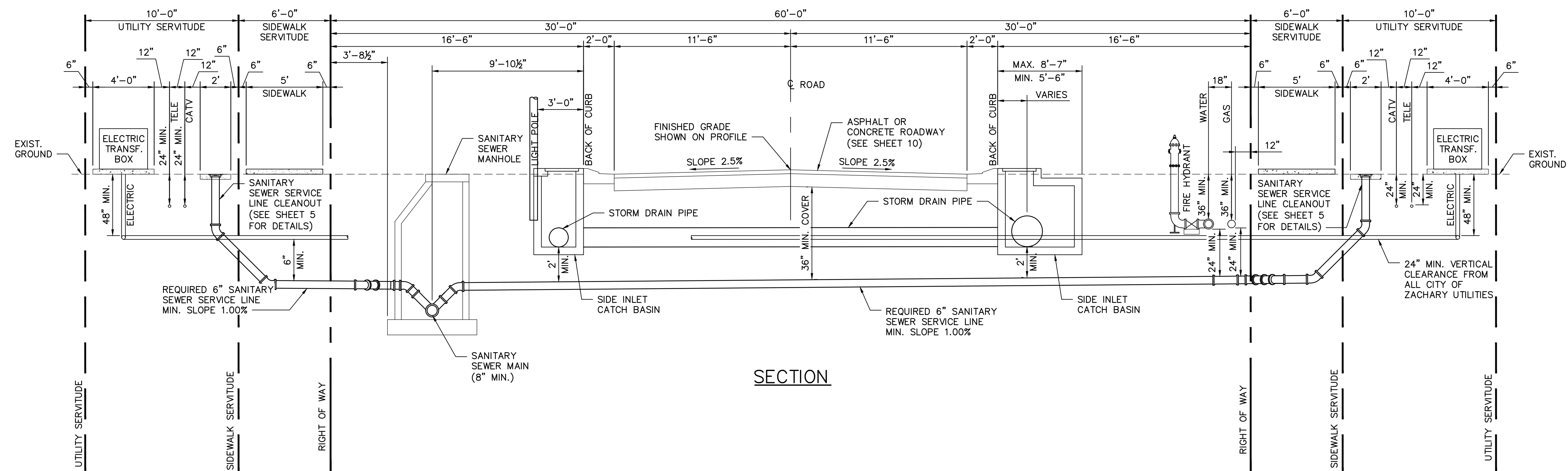


**FORCE MAIN TO MANHOLE CONNECTION**  
N.T.S.

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PLAN



SECTION

**NOTE** ALL UTILITIES, INCLUDING BUT NOT LIMITED TO, POTABLE WATER DISTRIBUTION, NATURAL GAS DISTRIBUTION, SANITARY SEWER COLLECTION, ELECTRICAL INFRASTRUCTURE, TELEVISION CABLE INFRASTRUCTURE, INTERNET INFRASTRUCTURE, AND TELEPHONE INFRASTRUCTURE SHALL BE COMPLETED PRIOR TO FINAL PLAT ACCEPTANCE.

6:\10487\2023\10487\_05A.dwg [5A] Dec 13, 2023 - 2:57pm by bta

DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

OWNER

STANDARD DETAILS  
GENERAL UTILITY ALLOCATIONS

TITLE

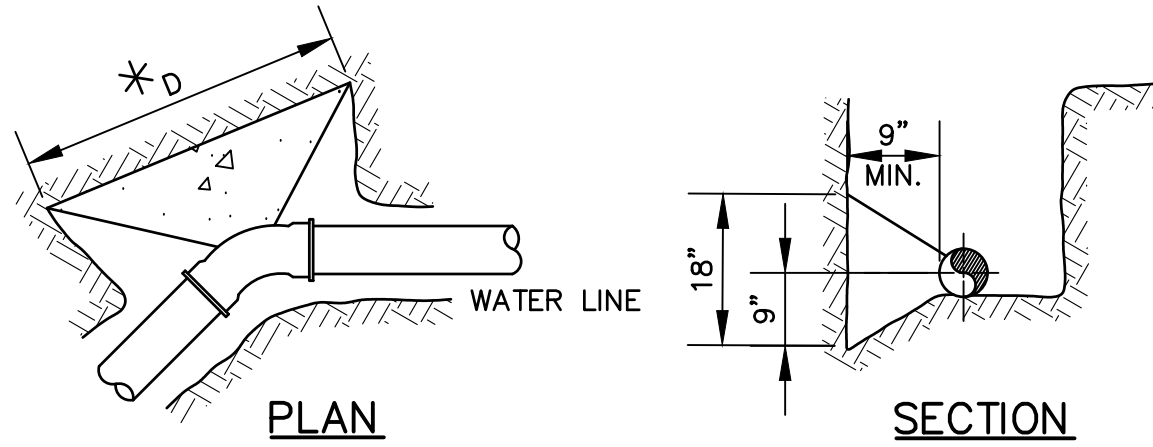
DESIGNED: BGH	SCALE: NOT TO SCALE
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	APPROVED: TAA

PROJECT NO. 10367  
SHEET NO. 5A

PIPE SIZE	THRUSTS FOR VARIOUS FITTINGS AND TEST PRESSURES (THRUST IN POUNDS)																			
	90° BENDS				TEES & DEAD ENDS				45° BENDS				22 1/2° BENDS				11 1/4° BENDS			
	225 TEST PR.	150 TEST PR.	100 TEST PR.	50 TEST PR.	225 TEST PR.	150 TEST PR.	100 TEST PR.	50 TEST PR.	225 TEST PR.	150 TEST PR.	100 TEST PR.	50 TEST PR.	225 TEST PR.	150 TEST PR.	100 TEST PR.	50 TEST PR.	225 TEST PR.	150 TEST PR.	100 TEST PR.	50 TEST PR.
2"	1,000	700	500	—	800	500	400	—	600	400	—	—	300	—	—	—	—	—	—	—
3"	2,300	1,500	1,000	500	1,600	1,100	800	400	1,300	900	600	—	700	500	300	—	—	—	—	—
4"	4,000	2,700	1,800	900	2,900	1,900	1,300	700	2,200	1,500	1,000	500	1,100	800	500	—	—	—	—	—
6"	11,900	8,000	5,300	2,000	8,500	5,700	3,800	1,500	6,500	4,300	2,900	1,100	3,300	2,200	1,500	600	—	—	—	—
8"	20,500	13,700	9,100	3,600	14,500	9,700	6,500	2,600	11,100	7,400	5,000	2,000	5,700	3,800	2,500	1,000	2,900	1,900	1,300	500
10"	30,800	20,600	13,700	5,600	21,800	14,600	9,700	4,000	16,700	11,100	7,400	3,100	8,500	5,700	3,800	1,600	4,300	2,900	1,900	800
12"	43,600	29,100	19,400	8,000	30,800	20,600	13,700	5,700	23,600	15,700	10,500	4,400	12,100	8,000	5,400	2,300	6,100	4,100	2,700	1,200
14"	58,500	39,000	26,000	10,900	41,400	27,600	18,400	7,700	31,700	21,100	14,100	5,900	16,200	10,800	7,200	3,100	8,200	5,400	3,600	1,600
16"	75,700	50,500	33,700	14,300	53,500	35,700	23,800	10,100	41,000	27,300	18,200	7,700	20,900	14,000	9,300	4,000	10,500	7,000	4,700	2,000
18"	95,100	63,400	42,300	18,000	67,200	44,800	29,900	12,800	51,500	34,300	22,900	9,800	26,300	17,500	11,700	5,000	13,200	8,800	5,900	2,500

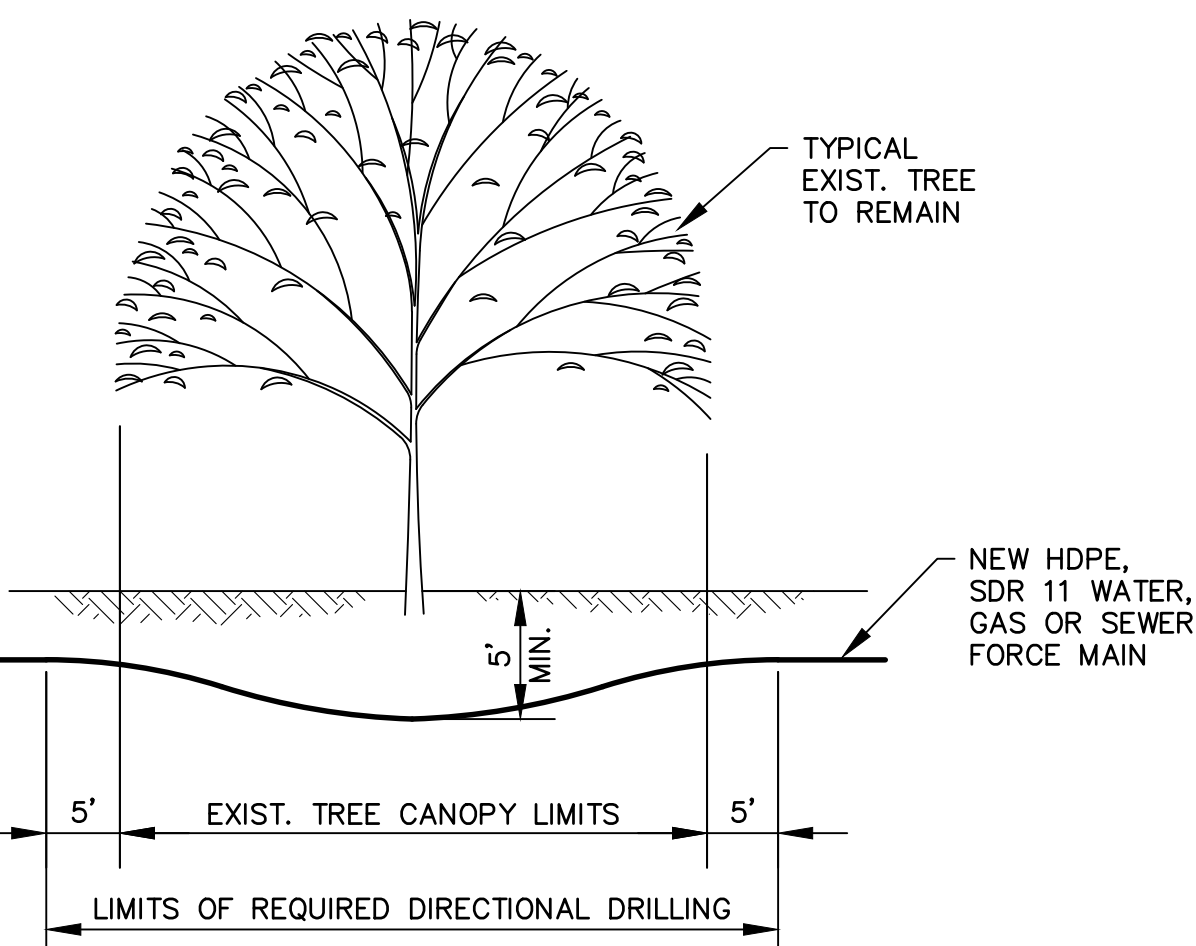
- NOTE: 1. FOR AREA OF THRUSTS BLOCK IN SQ. FT. DIVIDE APPROPRIATE THRUST BY ALLOWABLE SOIL BEARING.  
 2. TEST PRESSURES SHALL BE AS INDICATED IN THE SPECIFICATIONS OR SPECIAL CONDITIONS. 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING THRUST BLOCKS OR ANCHORAGE FOR VARIOUS PIPE SIZE AND FITTINGS ACCORDING TO APPROPRIATE SOIL BEARING AND TEST PRESSURE. COST OF THRUST ANCHORAGE SHALL BE INCLUDED IN PRICE BID FOR FITTINGS OR PIPE. USE OF TIE-ROD ANCHORS, LOCKING JOINT FITTINGS AND FLANGED FITTINGS CAN BE USED IN LIEU OF OR W/CONC. THRUST BLOCKS WITH APPROVAL OF ENGINEER.

ALLOWABLE SAFE LATERAL BEARING OF SOILS IN P.S.F.	
MUCK AND PEAT	0
SOFT CLAY	500
SAND	1,000
SAND AND GRAVEL	1,500
SAND AND GRAVEL CEMENTED W/CLAY	2,000
SHALE	5,000

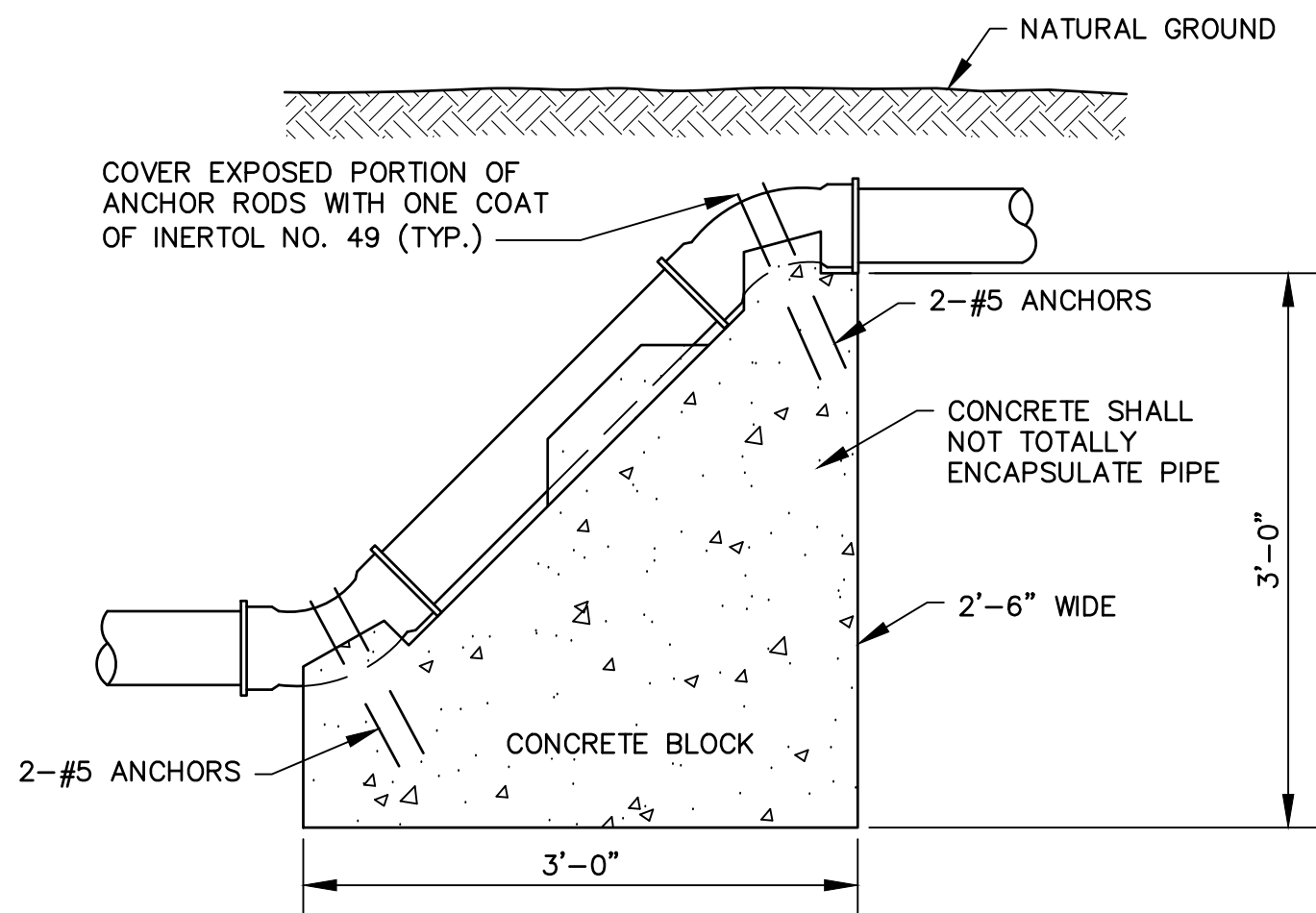


THRUST BLOCK FOR HORIZONTAL OFFSETS  
N.T.S.

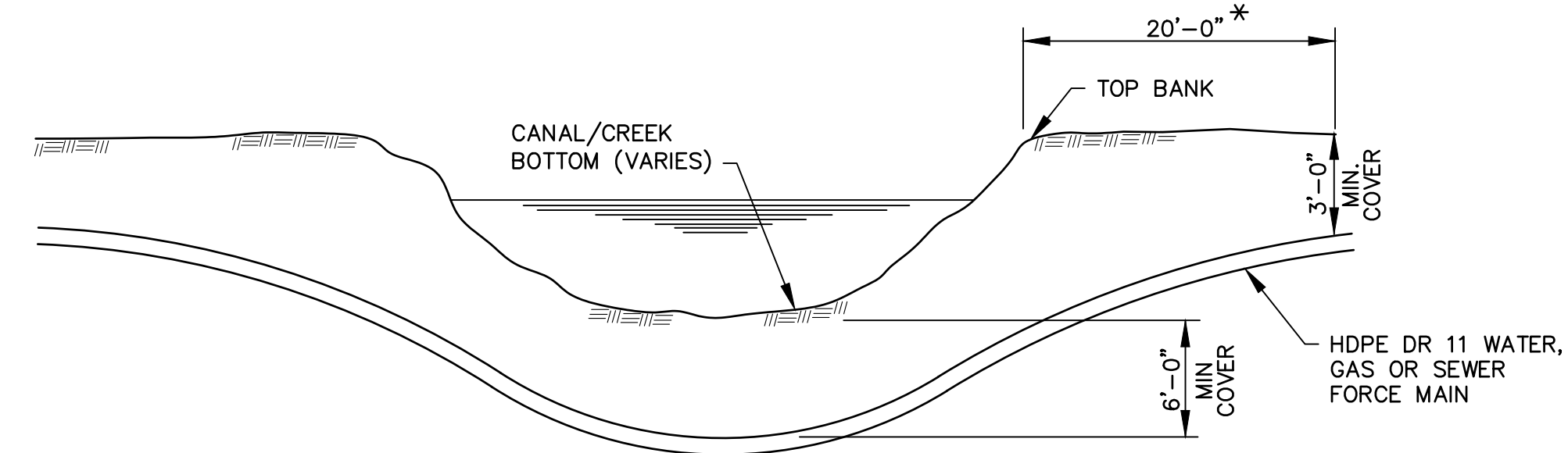
NOTE: RESTRAINED JOINT PIPING SHALL BE USED ONE JOINT BACK (EACH WAY) TO RESTRAIN VALVES AND FITTINGS ALONG WITH THRUST BLOCKS.



REQUIRED DIRECTIONAL DRILLING OF WATER, GAS OR SEWER FORCE MAIN UNDER EXISTING TREE TO REMAIN  
N.T.S.

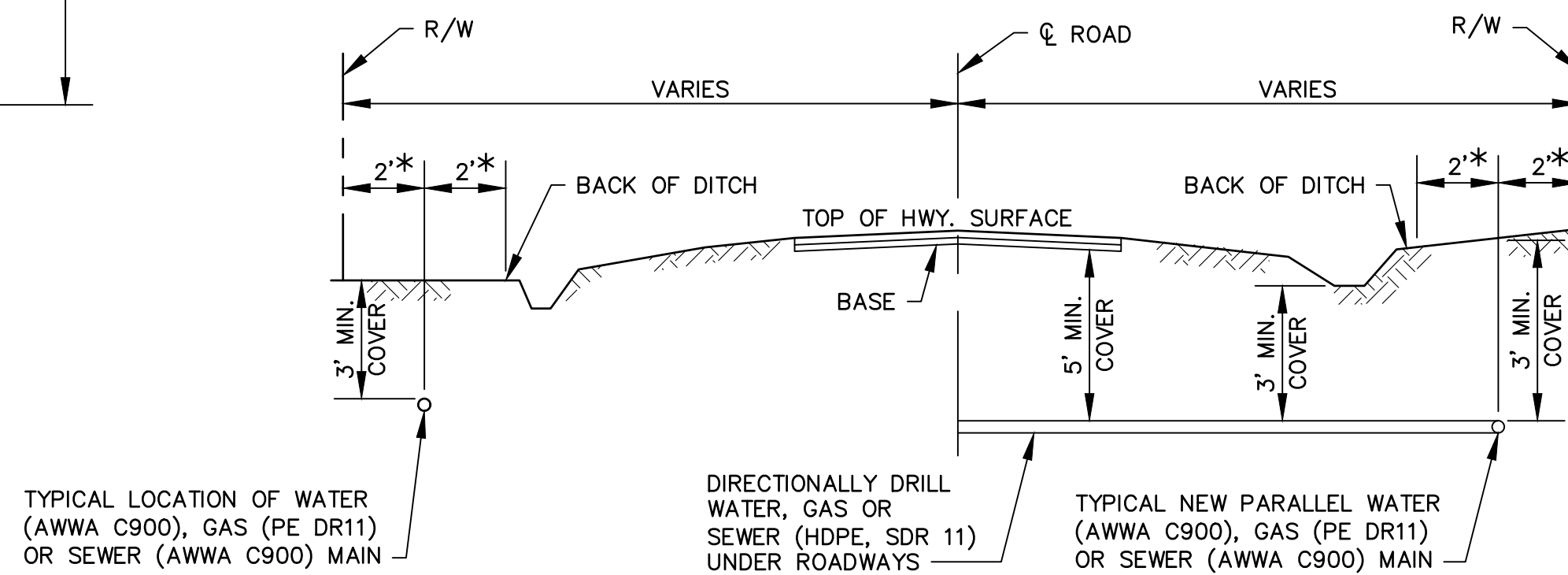


THRUST BLOCK FOR VERTICAL OFFSETS  
N.T.S.



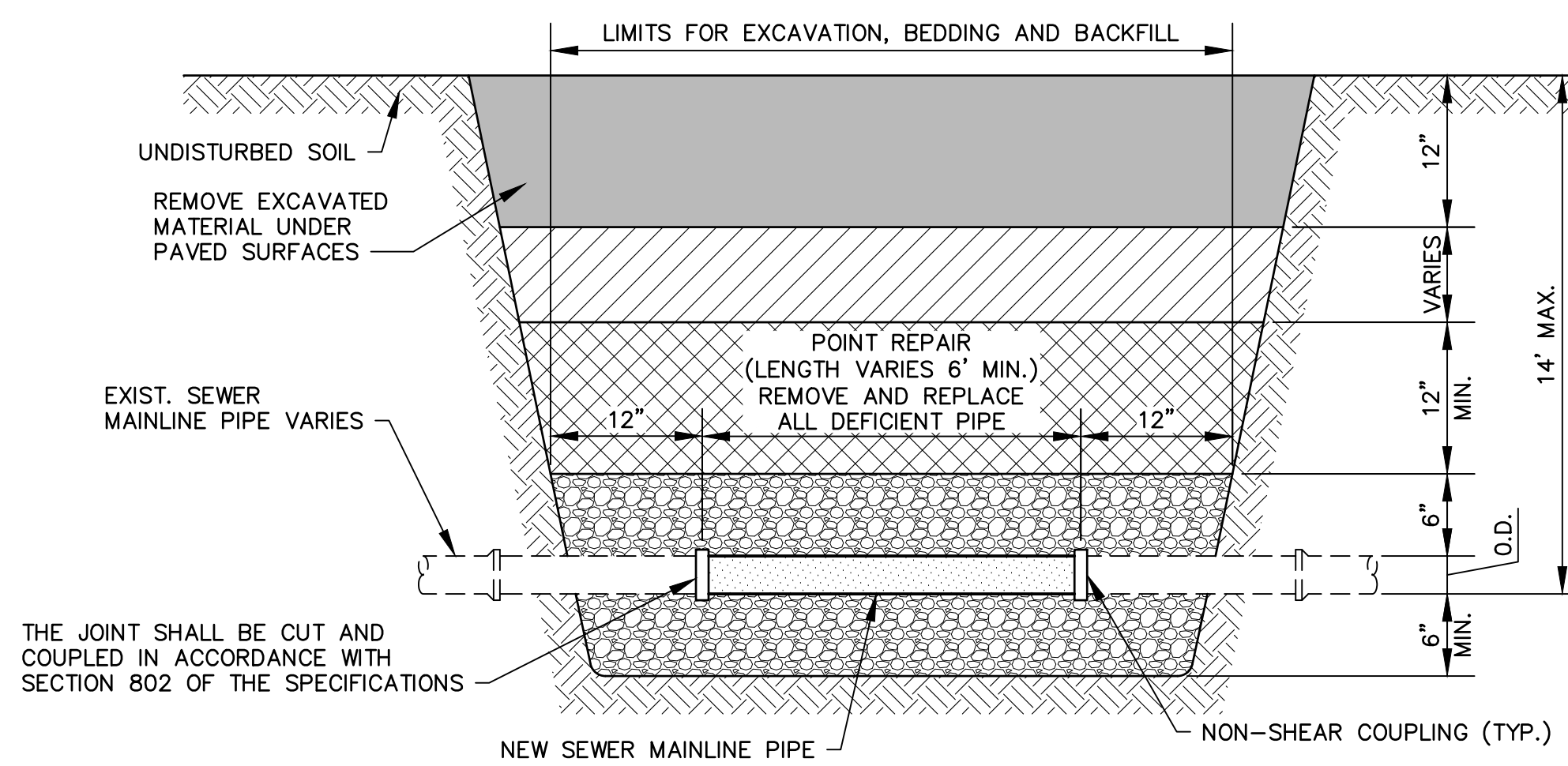
WATER, GAS AND SEWER FORCE MAIN UNDER EXISTING CREEK  
N.T.S.

\*OR AS RECOMMENDED BY THE PIPE MANUFACTURER FOR THE RADIUS OF CURVATURE FOR EACH SIZE AND TYPE OF PIPE.



TYPICAL WATER, GAS OR SEWER FORCE MAIN CONSTRUCTION ALONG EXISTING CITY STREET CROSSING  
N.T.S.

\*NOTE: PARALLEL WATER, GAS OR SEWER FORCE MAIN SHALL BE LOCATED 2 FEET FROM THE BACK OF THE RIGHT OF WAY BUT NOT LESS THAN 2 FEET FROM THE BACK OF THE DITCH (WHEN PRESENT).

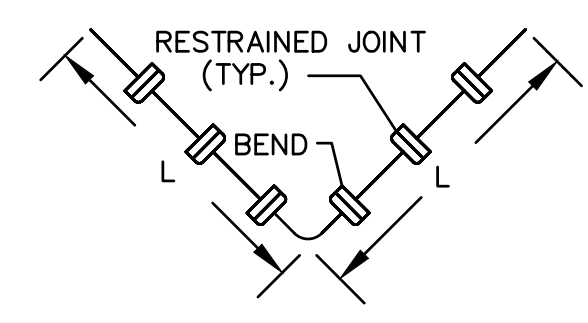


STANDARD TYPICAL SEWER PIPE REPLACEMENT WHERE REQUIRED TO CORRECT DEFICIENCY  
N.T.S.

LEGEND

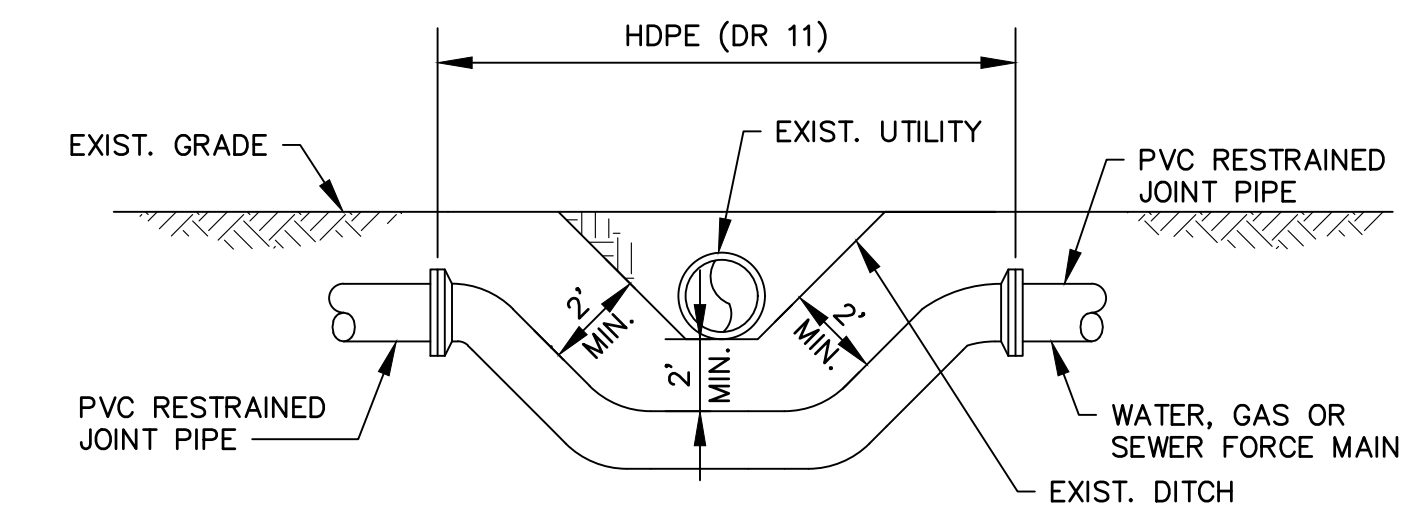
- COMPACTED FINAL BACKFILL IS THE MATERIAL THAT IS PLACED IN THE UPPER TWELVE INCHES (12") OF THE TRENCH AFTER DENSIFICATION OF THE INTERMEDIATE TRENCH BACKFILL. ACCEPTABLE FINAL BACKFILL MATERIALS ARE THE SAME AS INTERMEDIATE BACKFILL EXCEPT IN LOCATIONS UNDER PAVEMENTS, ROADS, STREETS, DRIVES, OR WALKS, FOR WHICH CONTRACTOR SHALL INSTALL 12" OF COMPACTED NO. 610 LIMESTONE FROM THE INTERMEDIATE BACKFILL UP TO THE BASE COURSE OF ROADS, STREETS, DRIVES OR WALKS.
- COMPACTED INTERMEDIATE BACKFILL IS THE MATERIAL THAT IS PLACED ABOVE THE INITIAL BACKFILL. ACCEPTABLE INTERMEDIATE BACKFILL MATERIALS ARE USABLE EXCAVATED SOIL OR IF DIRECTED BY THE ENGINEER AND UNDER PAVED AREAS USE SELECT MATERIAL, LIMESTONE SIZES 67, OR 610, OR SAND-CLAY GRAVEL.
- COMPACTED INITIAL BACKFILL IS THE MATERIAL THAT IS ABOVE THE BEDDING MATERIAL TO A DISTANCE OF ONE FOOT ABOVE THE PIPE. ACCEPTABLE INITIAL BACKFILL IS USABLE EXCAVATED SOILS IF SUITABLE AS DETERMINED BY THE GEOTECHNICAL ENGINEER OF RECORD. IF MATERIAL IS DETERMINED TO BE UNSUITABLE AND UNDER PAVED AREAS, USE SELECT MATERIAL, LIMESTONE SIZE 67 OR 610 OR SAND-CLAY-GRAVEL.
- COMPACTED BEDDING IS THE MATERIAL THAT IS A MINIMUM OF SIX INCHES (6") UNDER THE PIPE UP TO A LEVEL OF SIX INCHES (6") ABOVE THE PIPE. BEDDING MATERIAL SHALL BE NO. 610 LIMESTONE.

LENGTH OF RESTRAINED JOINT PIPE REQUIRED TO RESTRAIN FITTINGS



PIPE SIZE	FITTING SIZE (Bend Degs.)	L
4	11 1/4	2
	15	—
	22 1/2	4
	30	—
6	45	9
	60	—
	90	21
	15	—
8	11 1/4	3
	15	—
	22 1/2	6
	30	—
10	45	18
	60	—
	90	30
	15	—
12	11 1/4	8
	15	—
	22 1/2	15
	30	—
14	45	31
	60	—
	90	75
	15	—

- ADD 50% TO L FOR WHERE POLYETHYLENE WRAP IS USED.
- RESTRAINED JOINTS SHALL BE USED THROUGH ENTIRE BAYOU, DITCH, OR CANAL CROSSING.
- SAFETY FACTOR OF 1.5 IS INCLUDED IN LENGTHS.
- HYDROSTATIC TEST PRESSURE - 100 P.S.I.
- RESTRAINED LENGTHS BASED ON CLAY 1.
- RESTRAINED VALVES (ON DOWNSTREAM SIDE OF VALVE) AND BRANCHES OF TEES 1.5 X L FOR SAME SIZE 90 DEGREE BEND.
- CONTRACTORS MAY USE THRUST BLOCKS IN LIEU OF RESTRAINED JOINTS (NO DIRECT PAY)



CONFLICTING UTILITY OFFSET WITH THE USE OF FITTINGS  
IF APPROVED\*

\*NOTE: USE OF UTILITY LINE OFFSET REQUIRES CITY OF ZACHARY APPROVAL  
N.T.S.

REQUIRED COATINGS

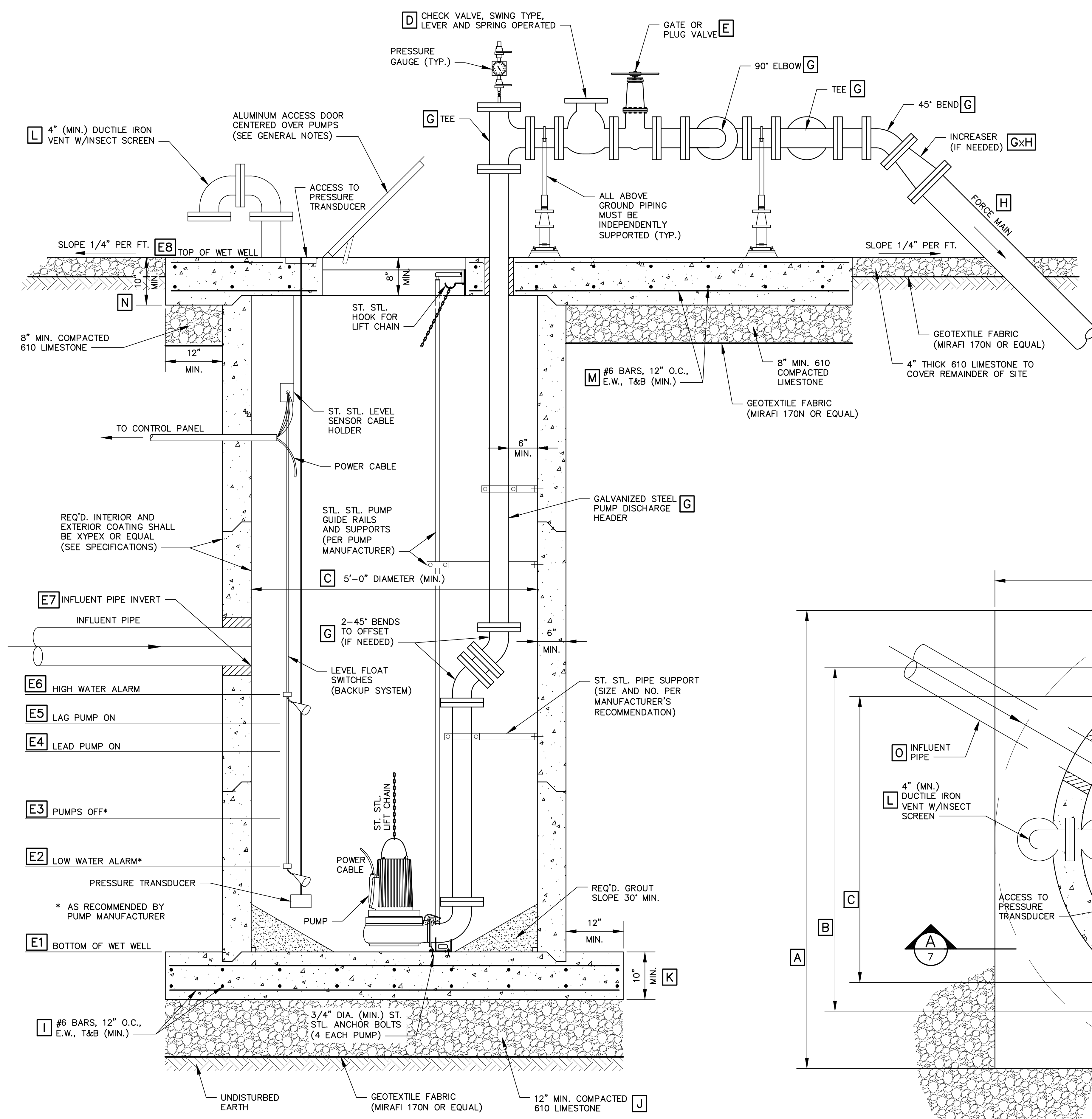
- FERROUS METALS: ONE COAT OF NO. 46-H-413 HI BUILD TNEEM TAR OR SW HIMIL SHERTAR (B69B40) (16.0-20.0 DFM/COAT).
- MANHOLES THAT ARE OR WILL BE RECEIVING FORCE MAINS AND MANHOLES THAT ARE WITHIN 100 FEET OF PUMP STATION SHALL INCLUDE XYPEX BIO SAN C500 ANTIMICROBIAL AND CRYSTALLINE ADMIXTURE OR EQUAL AT A RATE OF 1% BY WEIGHT OF TOTAL CEMENTITIOUS MATERIALS AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. PRODUCT SHALL INCLUDE FIELD DETENTION COLORANT, ANTIMICROBIAL ADDITIVE AND CRYSTALLINE CHEMICAL ALL IN ONE PACKAGE. NO EXCEPTIONS.
- ALL OTHER MANHOLES SHALL INCLUDE XYPEX ADMIX C-1000R MANUFACTURED BY XYPEX CHEMICAL CORPORATION, RICHMOND, B.C., CANADA INTO NEW PRECAST CONCRETE AT A DOSAGE OF 3.5% BY WEIGHT OF CEMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE XYPEX C-1000R SHALL CONTAIN RED DYE TO ENSURE DETECTION IN THE CONCRETE.

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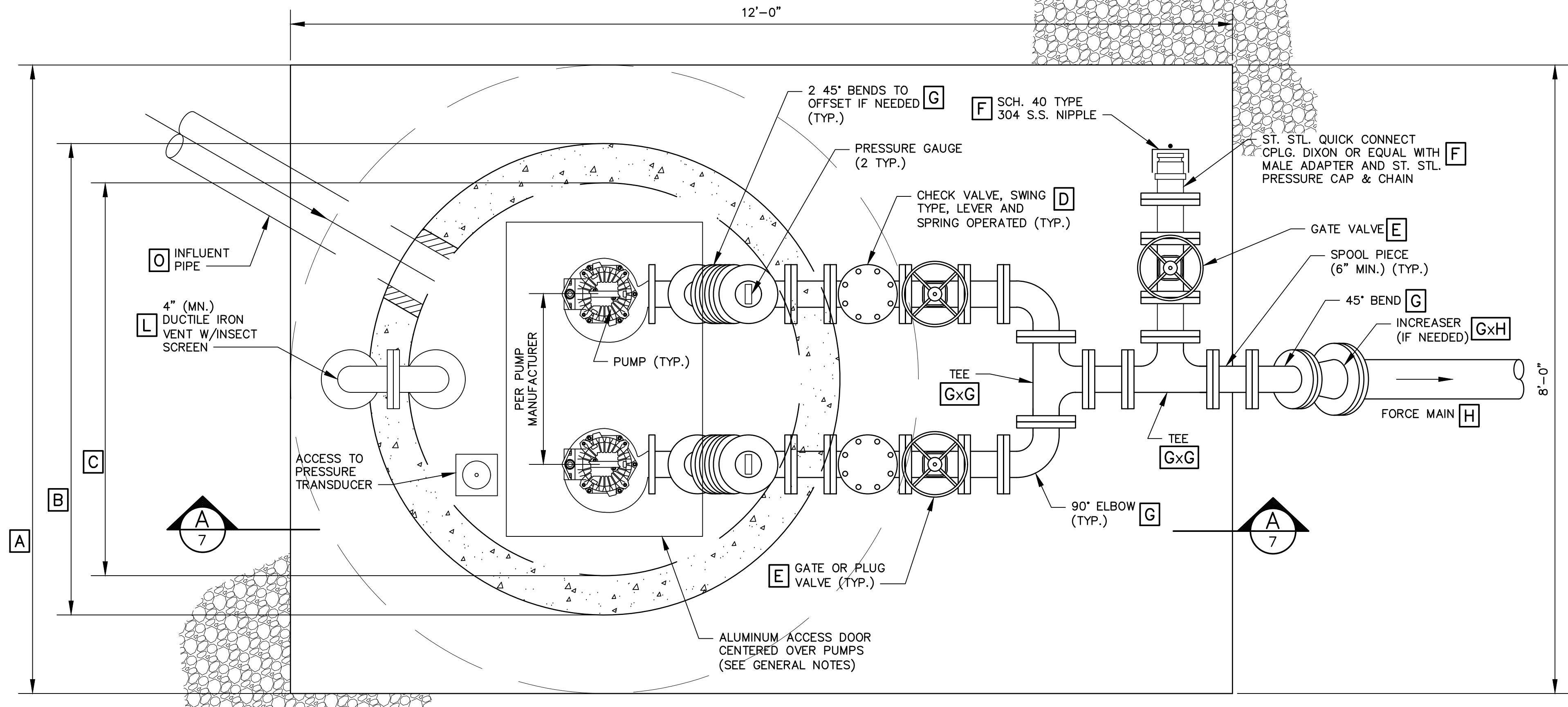
GENERAL/Generic INFORMATION PROVIDED HEREIN SHALL BE REVIEWED BY THE DESIGN ENGINEER FOR APPLICABILITY TO ACTUAL STATION. MINIMUM REQUIREMENTS ARE GIVEN HOWEVER THE DESIGN ENGINEER SHALL BE "ENGINEER OF RECORD" ON EACH SPECIFIC APPLICATION/DESIGN.

GENERAL PUMP STATION NOTES:

1. PIPING MAY BE SHOWN ROTATED FOR CLARITY.
2. ALL EXPOSED D.I. PIPING AND VALVES SHALL BE COATED (SEE SHEET 6).
3. WET WELL SHALL BE CONCRETE AND ALL REINFORCING SHALL BE ASTM 615 GRADE 60, #6 BARS @ 12" CENTER TO CENTER, EACH WAY, TOP AND BOTTOM AS SHOWN. PROVIDE ADDITIONAL BARS AROUND OPENING. WET WELL SHALL BE COATED (SEE SHEET 6).
4. ALL FASTENERS IN WET WELL SHALL BE 316 STAINLESS STEEL.
5. ACCESS DOORS/HATCHES SHALL BE ALUMINUM W/316 STAINLESS STEEL HARDWARE AND FALL PROTECTION GRATING (BILCO JD OR EQUAL).
6. REFER TO STANDARD SPECIFICATIONS FOR PUMPS AND CONTROLS.
7. PIPING AT PUMP STATION SHALL BE MINIMUM 2" DIAMETER AND DUCTILE IRON PIPE SHALL BE USED.
8. SITE PLAN SHALL BE PROVIDED.
9. GRAVITY MAINS SHALL BE NO DEEPER THAN 14 FEET. IF GREATER DEPTHS ARE REQUIRED, AN APPROVED PUMP STATION SHALL BE INSTALLED.
10. ALL PUMP STATION SITES SHALL BE FENCED (SEE SHEET 8) AND CONCRETE ACCESS DRIVE SHALL BE PROVIDED SUCH THAT WET WELL ACCESS COVER CAN BE READILY ACCESSED BY MAINTENANCE TRUCK.
11. SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS OF CONSTRUCTION SHALL BE SUBMITTED AND APPROVED BY THE CITY OF ZACHARY PRIOR TO COMMENCING WORK.
12. WATER HOSE BIBB WITH BACKFLOW PREVENTER SHALL BE PROVIDED AT EVERY PUMP STATION SITE.



**SECTION - SUBMERSIBLE PUMP STATION**  
N.T.S.



**PLAN - SUBMERSIBLE PUMP STATION**  
N.T.S.

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA  
OWNER

STANDARD DETAILS  
SEWER PUMP STATION DETAILS  
TITLE

DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	
APPROVED: TAA	

PROJECT NO. 10367  
SHEET NO. 7

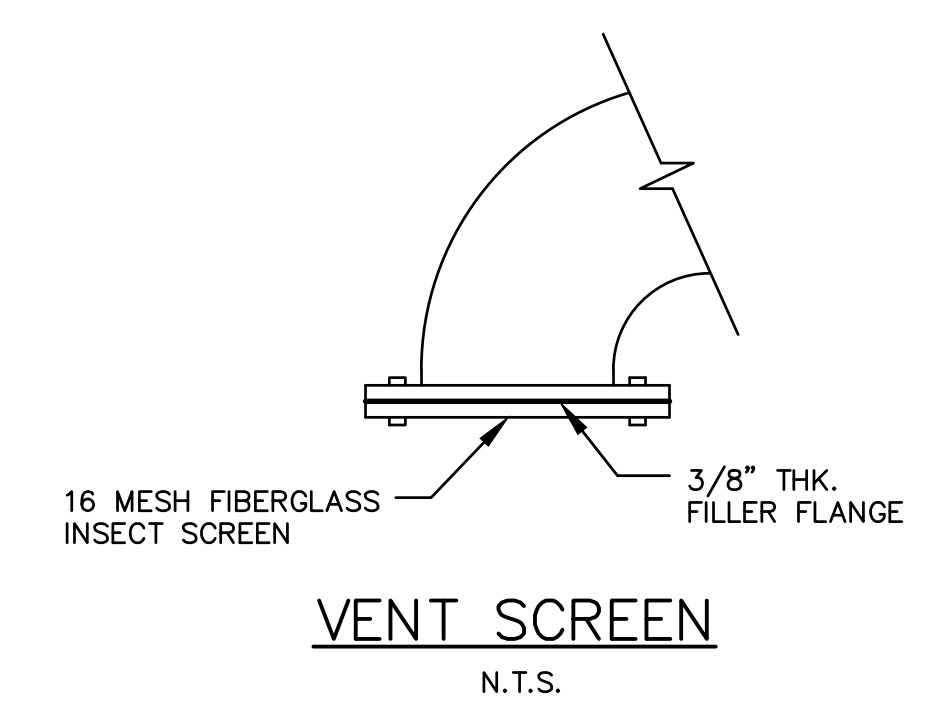


DUPLEX PUMP SCHEDULE (P-01, P-02)	
PUMPS SHALL BE FLYGT SERIES 3000 MP AND SHALL BE _____ HP (MAX.), _____ EFF. (MIN.). EACH PUMP SHALL BE CAPABLE OF PUMPING _____ GPM AT _____ FEET TOTAL DYNAMIC HEAD (DESIGN POINT).	
FLOW (GPM)	_____
HEAD (FT.)	_____

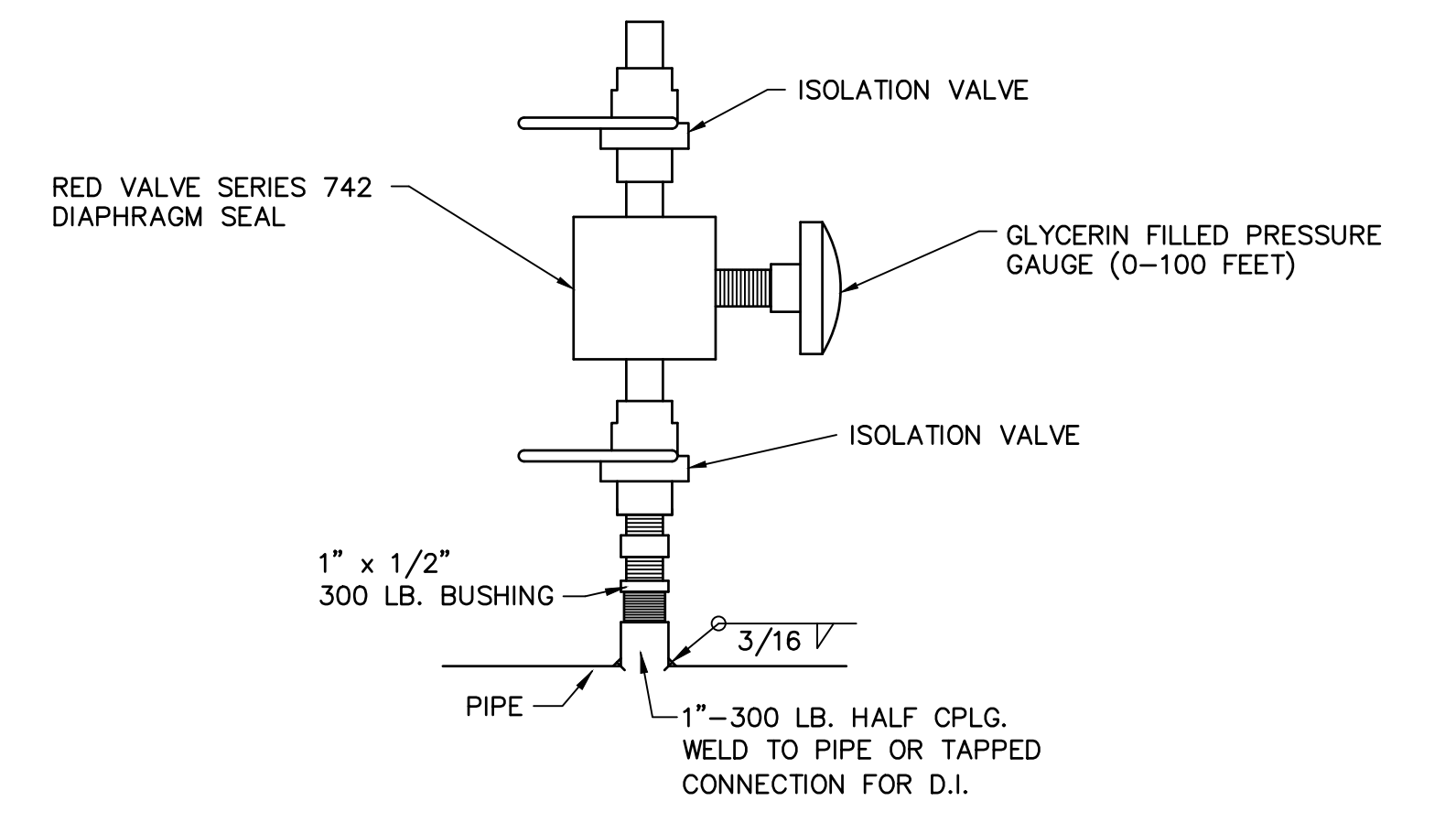
PUMP STATION _____		
ITEM DESCRIPTION	DIMENSIONS	
A	WET WELL BASE DIAMETER	
B	WET WELL OUTSIDE DIAMETER	
C	WET WELL INSIDE DIAMETER	
D	CHECK VALVE	
E	GATE VALVE	
F	EMERGENCY CONNECTION DIAMETER	
G	PUMP DISCHARGE HEADER	
H	FORCE MAIN DIAMETER	
I	WET WELL BASE REINFORCING	
J	WET WELL BEDDING MATERIAL THICKNESS	
K	WET WELL BASE THICKNESS	
L	VENT PIPE DIAMETER	
M	WET WELL TOP REINFORCING	
N	WET WELL TOP THICKNESS	
O	INFLUENT PIPE DIAMETER	

PUMP STATION _____ PUMP CONTROL SETTINGS AND DIMENSIONS			
CONTROL POINT	ELEV.	HEIGHT*	
100 YR FLOOD ELEVATION			
NATURAL GROUND @ SITE			
E8	TOP OF WET WELL		
E7	LOWEST INFLUENT INVERT		
E6	HIGH LEVEL ALARM		
E5	LAG PUMP ON		
E4	LEAD PUMP ON		
E3	PUMP OFF		
E2	LOW WATER ALARM		
E1	WET WELL INVERT ELEVATION		

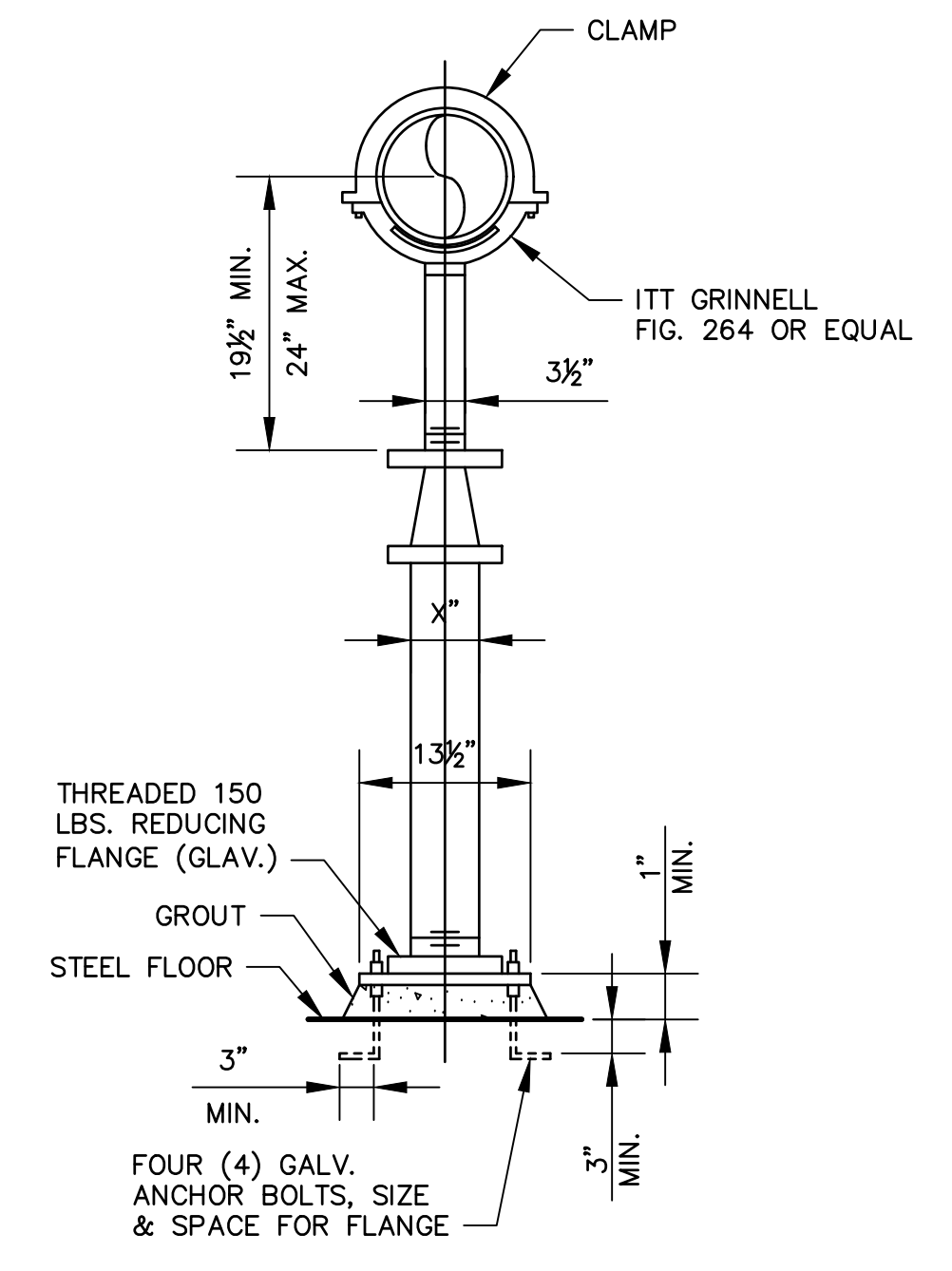
\* HEIGHT FROM INVERT OF WET WELL



**VENT SCREEN**  
N.T.S.



**DETAIL - TYPICAL PRESSURE GAUGE**  
SCALE: N.T.S.



**ADJUSTABLE PIPE SUPPORT**  
N.T.S.

DESIGN ENGINEER STAMP AND SIGNATURE HERE

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

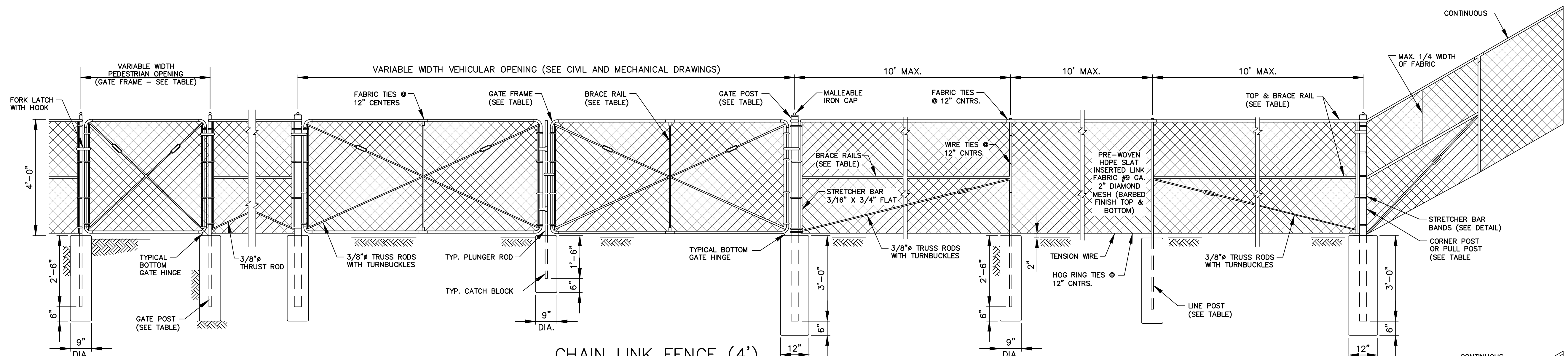
OWNER

STANDARD DETAILS  
SEWER PUMP STATION DETAILS  
TITLE

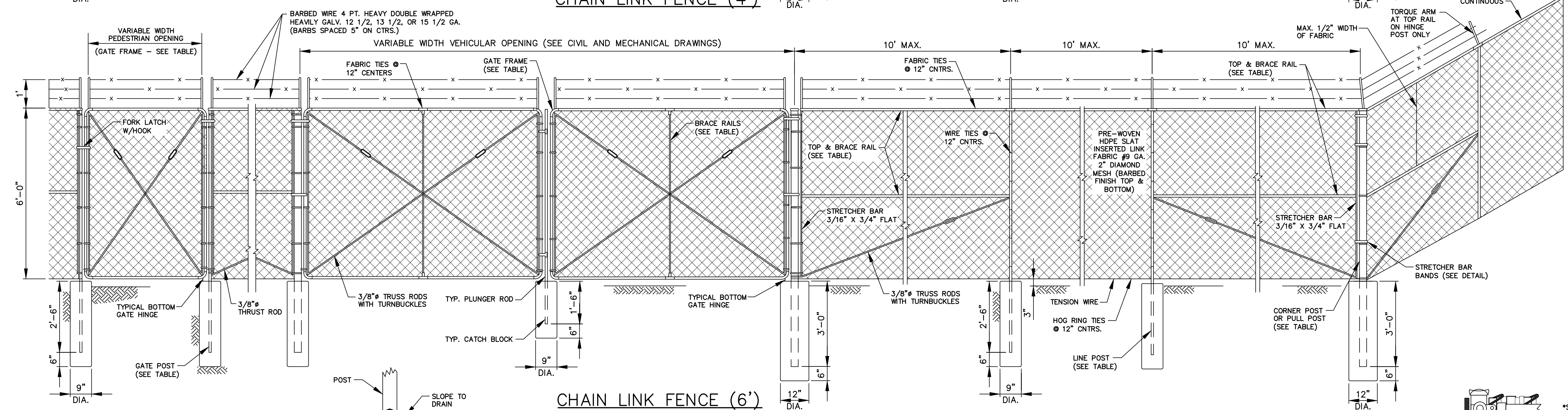
DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	
APPROVED: TAA	



PROJECT NO. 10367  
SHEET NO. 8



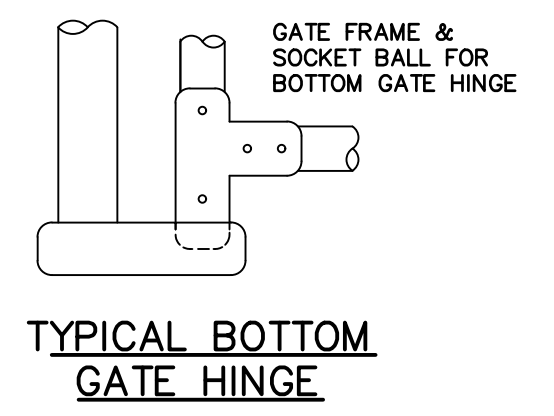
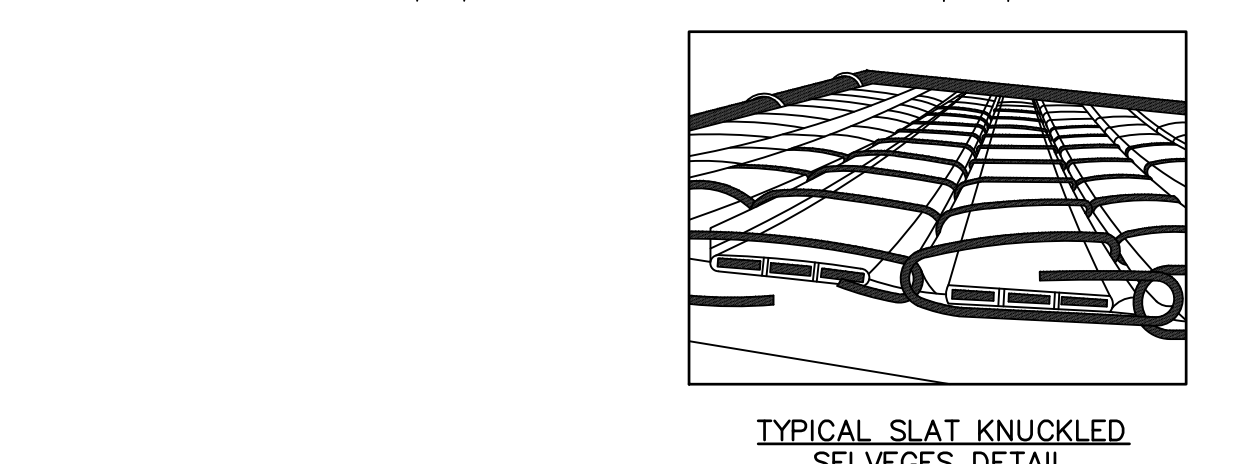
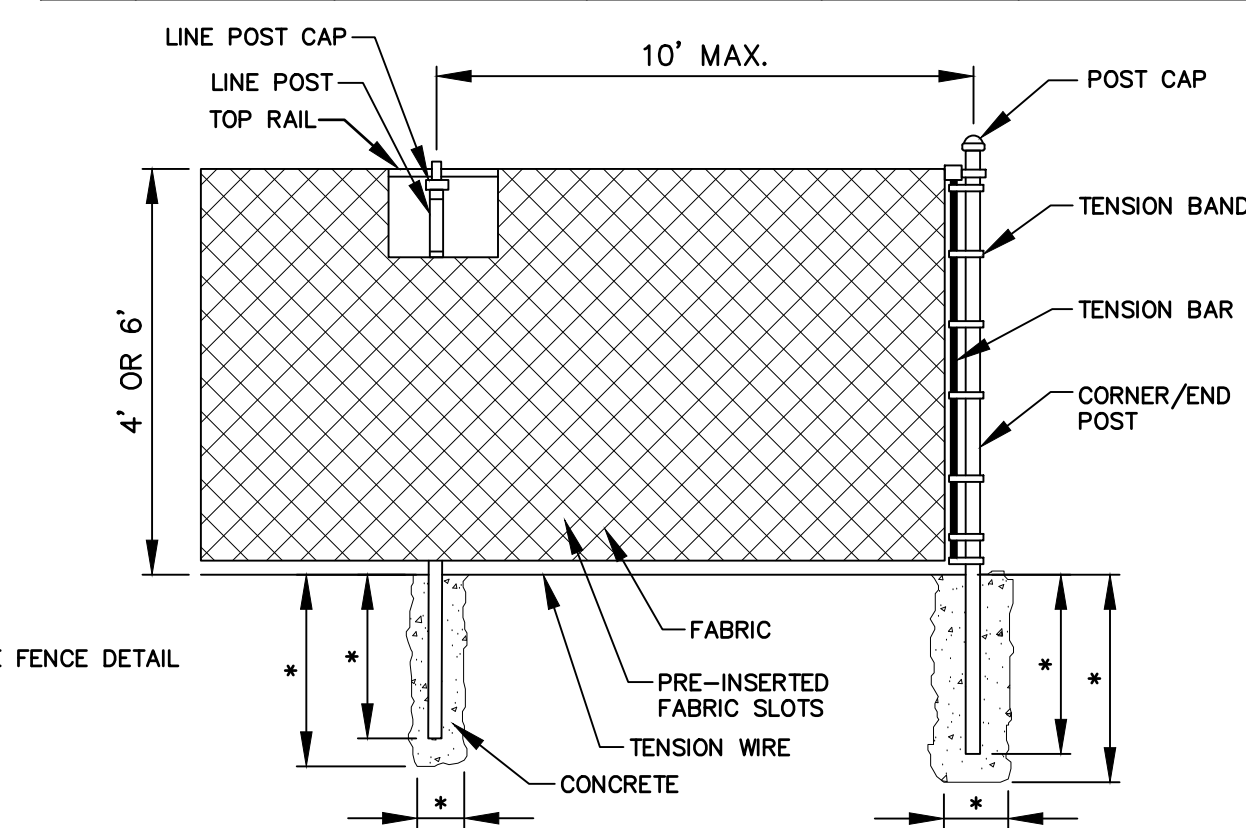
CHAIN LINK FENCE (4')



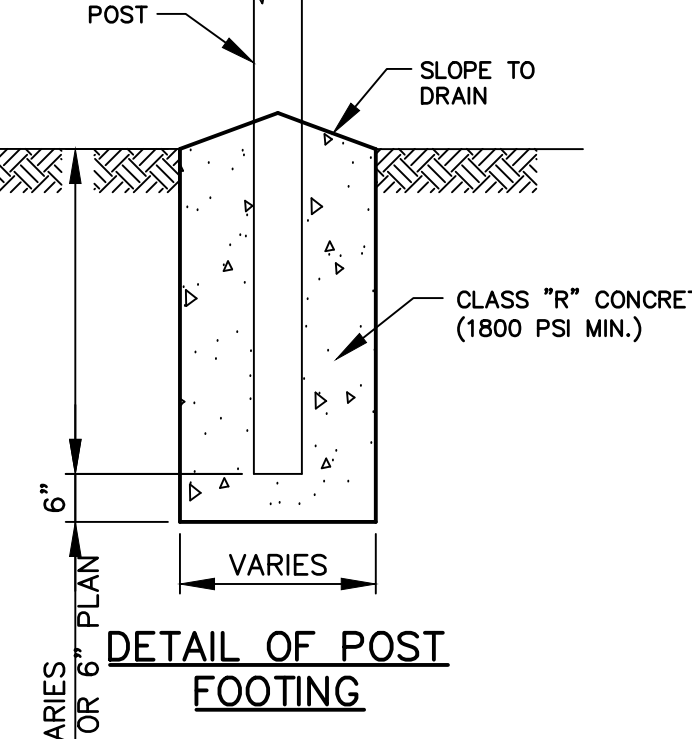
CHAIN LINK FENCE (6')

- NOTES:**
1. THE FENCE INSTALLATION AND DETAILS SHOWN ARE TYPICAL AND MAY VARY IN ACCORDANCE WITH DIFFERENT MANUFACTURERS, PROVIDED THAT THEY MEET THE STANDARD SPECIFICATIONS.
  2. TYPICAL INSTALLATION PLAN MAY VARY AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. LOCATION OF GATES TO BE SHOWN ON PLANS.
  3. GROUNDING DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
  4. CONNECTIONS TO ALUMINUM ALLOY OR ALUMINUM COATED FENCE TO BE MADE WITH STEEL MECHANICAL CONNECTORS. ALL OTHER MECHANICAL CONNECTORS TO BE BRONZE.
  5. ALL BOLTS TO BE UPSET TO DISCOURAGE VANDALISM.
  6. ALL CONNECTION METHODS TO BE APPROVED BY THE PROJECT ENGINEER.
  7. SEE CIVIL AND MECHANICAL DRAWINGS FOR LOCATION AND SIZE OF FENCING AND GATES.
  8. ALL CHAIN LINK FENCE SHALL BE FUSED AND BONDED VINYL COATED AND SHALL HAVE PRE-WOVEN HOPE SLAT INSERTS. COLOR TO BE APPROVED BY OWNER. COMPLETE FENCING SYSTEM SHALL PROVIDE 98% PRIVACY AND SHALL BE 3 1/2" X 5" MESH (NEAR TOTAL PRIVACY) WITH FIN2000 SLATS AS MANUFACTURED BY PRIVACY LINK, UTAH OR EQUAL.
  9. MINIMUM YIELD STRENGTH=45 KSI, EXCEPT FOR 1.625x1.25 BRACE RAIL. SEE DETAIL.
  10. SEE ASTM A120, ASTM D638, ASTM D746, ASTM D747, ASTM D1238, AND ASTM D1505 FOR ADDITIONAL DETAILS.
  11. COATING REQUIREMENTS FOR ROUND SECTIONS: THE INTERNAL SURFACE SHALL BE COATED WITH A ZINC RICH COATING OF NO LESS THAN 81% ZINC POWDER BY WEIGHT, 0.3 MIL OR GREATER IN THICKNESS.

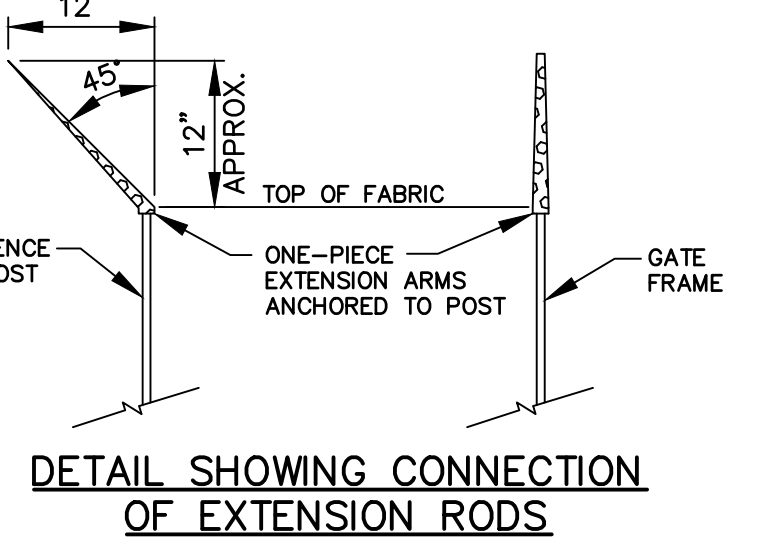
	OUTSIDE DIA. (INCHES)	LBS. (2) (PER LIN. FT.)	ALTERNATE (INCHES) (3)	SECTION (1)	LBS. (PER LIN. FT.)
LINEPOST	2 3/8	3.65	2.375	ROUND	3.12
			2.25 X 1.70	H	4.12
			2.25 X 1.70	HEAVY C	2.73
			1.875 X 1.625	STD. C	2.34
RAIL BRACE	1 5/8	2.27	1.660	ROUND	1.84
			1.875 X 1.625	H	3.33
			1.625 X 1.25	SEE DETAIL	1.35
COR. POST	2 7/8	2.27	2.875	ROUND	4.64
	4.0	9.10	3.500	ROUND	6.01
GATE FRAME	1 7/8	2.71	1.900	ROUND	2.28



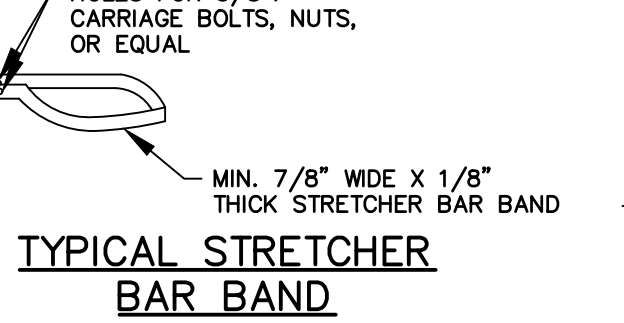
TYPICAL BOTTOM GATE HINGE



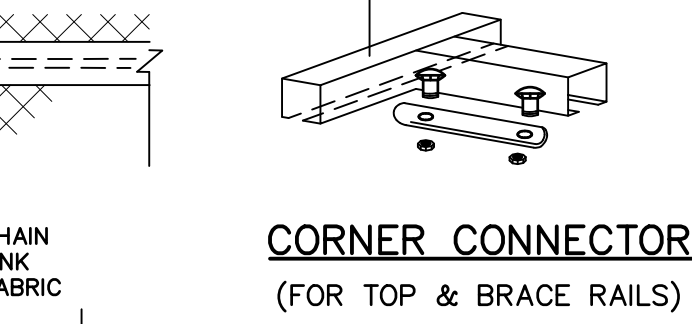
DETAIL OF POST FOOTING



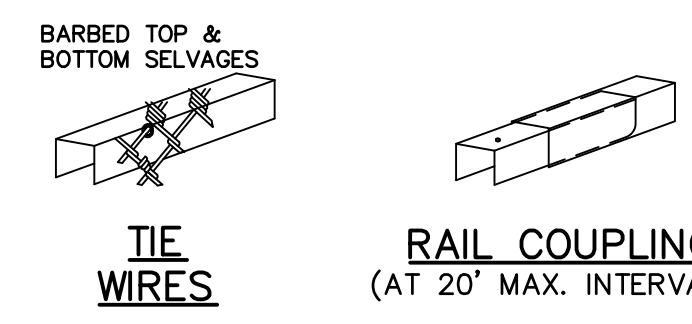
DETAIL SHOWING CONNECTION OF EXTENSION RODS



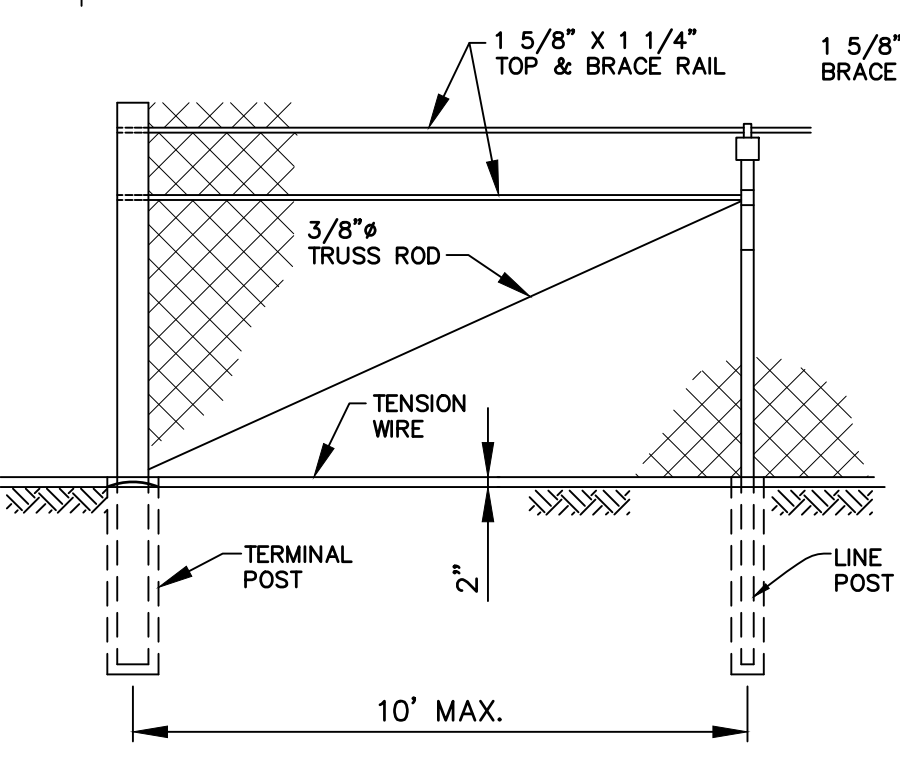
TYPICAL STRETCHER BAR BAND



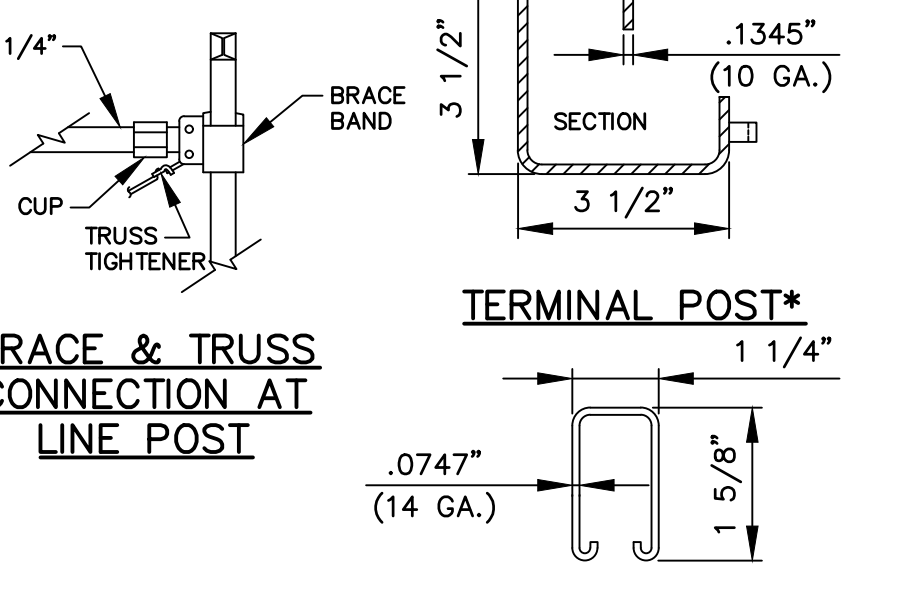
CORNER CONNECTOR (FOR TOP & BRACE RAILS)



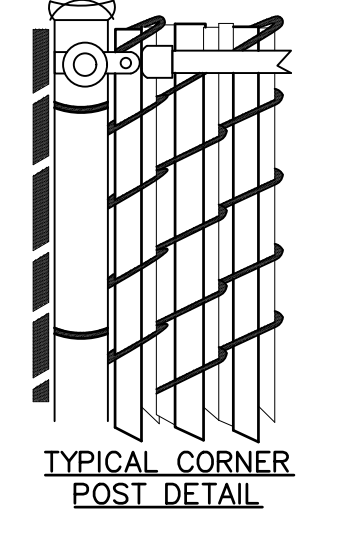
TIE WIRES RAIL COUPLING (AT 20' MAX. INTERVALS)



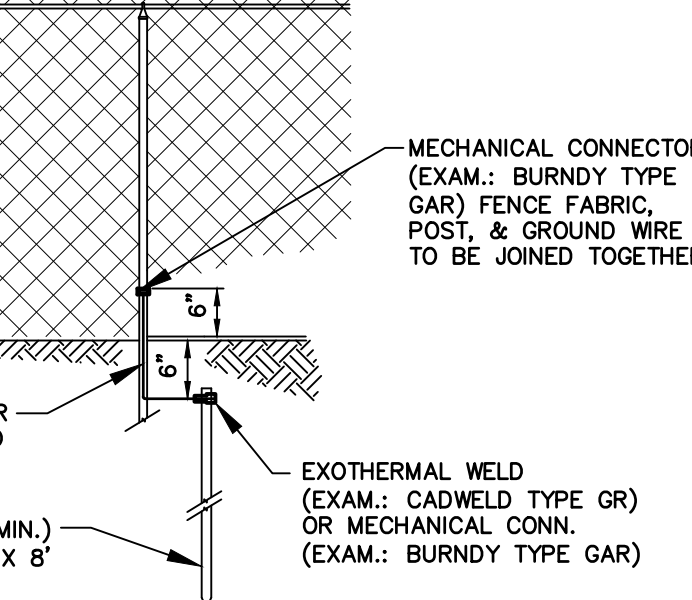
BRACE & TRUSS CONNECTION AT LINE POST



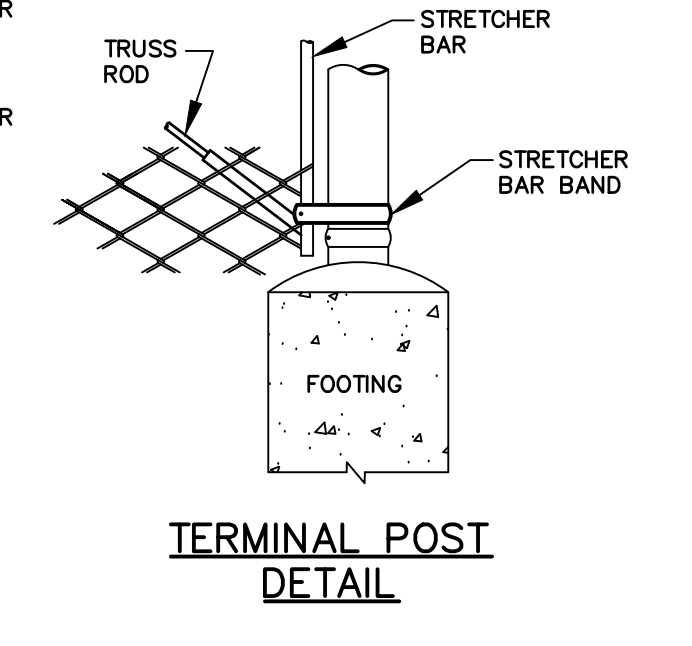
TERMINAL POST\* TOP & BRACE RAIL\* \*MINIMUM YIELD STRENGTH 35 KSI



TYPICAL CORNER POST DETAIL



DETAIL OF GROUND WIRES FOR FENCES



TERMINAL POST DETAIL

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

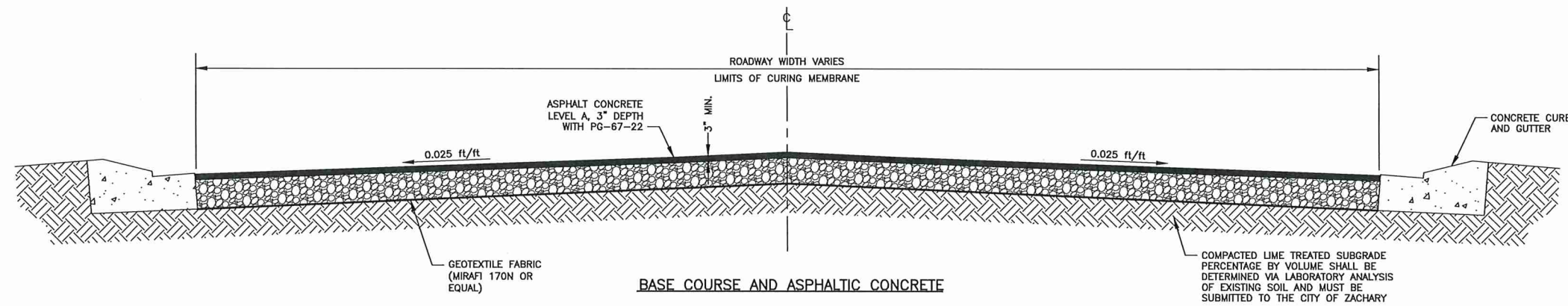
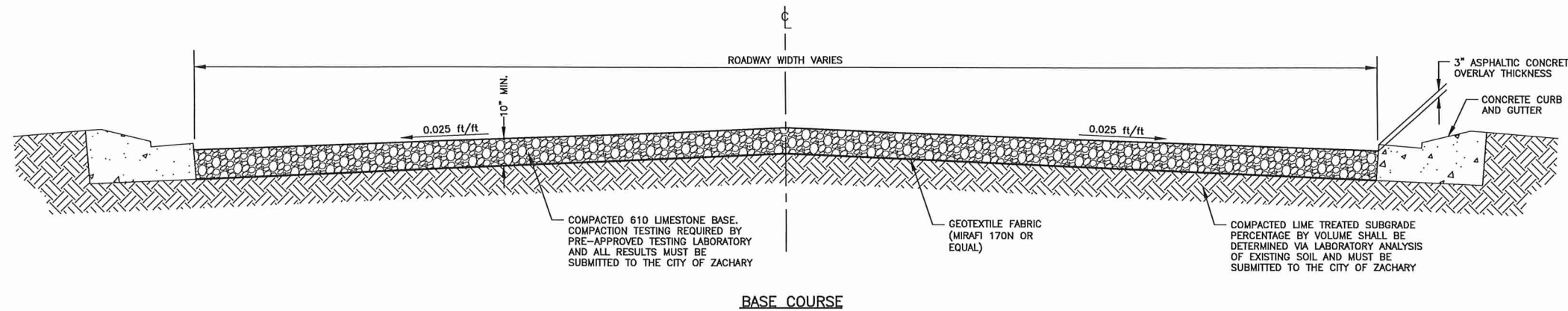
STANDARD DETAILS  
MISCELLANEOUS PUMP STATION DETAILS

DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	
APPROVED: TAA	

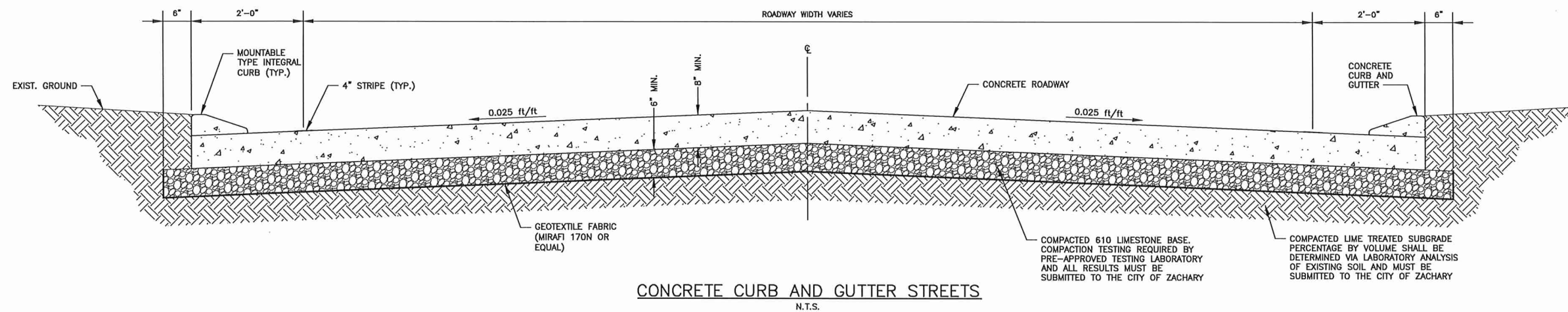
PROJECT NO. 10367  
SHEET NO. 9

**GENERAL ROAD NOTES:**

- STANDARD CROSS SECTIONS SHOWN REPRESENT THE **MINIMUM** ACCEPTABLE DESIGN FOR THE CITY, HOWEVER THIS DESIGN MUST BE CONFIRMED AS ACCEPTABLE BY A LICENSED GEOTECHNICAL ENGINEER AND THE PROFESSIONAL ENGINEER OF RECORD BASED ON FIELD TESTING. ALTERNATE DESIGNS OF EQUAL OR BETTER LONG TERM DURABILITY WILL BE CONSIDERED BUT MUST BE ACCOMPANIED BY A STATEMENT FROM ENGINEER CONFIRMING THIS. ALL DESIGNS MUST BE SUBMITTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
- PROOF ROLL OF BASE COURSE SHALL BE REQUIRED. PROOF ROLL WITH A MINIMUM 12 YARD LOADED TRUCK PROVIDED BY THE CONTRACTOR. FAILURES DURING PROOF ROLL TO BE REPAIRED AS REQUIRED BY THE CITY OF ZACHARY.
- DURING MAINTENANCE PERIOD IF FAILURES ARE DOCUMENTED, CORES SHALL BE TAKEN A MINIMUM OF EVERY 500' ALONG STREET (TAKE MINIMUM OF 2 CORES IF ROAD IS LESS THAN 1,000'). THE CITY OF ZACHARY OR ITS REPRESENTATIVE HAS THE RIGHT TO REQUEST ANY ADDITIONAL TESTS IF DEEMS NECESSARY.
- APPLY NC-30 CURING MEMBRANE TO LIMESTONE BASE.
- ALL CONCRETE ROADWAYS AND ALL CONCRETE CURBS AND GUTTERS SHALL BE MINIMUM 3,000 PSI CONCRETE. TEST CYLINDERS SHALL BE COLLECTED A MINIMUM OF EVERY 500 FEET (OR MORE FREQUENTLY IF REQUIRED BY THE CITY OF ZACHARY) BY A PRE-APPROVED TESTING LABORATORY. ALL TEST RESULTS MUST BE SUBMITTED TO THE CITY OF ZACHARY.
- ROAD REFLECTORS SHALL BE INSTALLED AT LOCATIONS WHERE THERE ARE FIRE HYDRANTS.
- WHEN A 3" LIFT OF OVERLAY IS REQUIRED, ASPHALT SHALL BE LAID UTILIZING TWO PASSES. MAXIMUM LIFT SHALL BE 2".
- TEE TURNAROUNDS SHALL BE 50' MINIMUM RADIUS.
- ALL RESIDENTIAL SUBDIVISION STREETS SHALL HAVE CURB AND GUTTERS WITH ASSOCIATED SUB-SURFACE DRAINAGE SYSTEM.

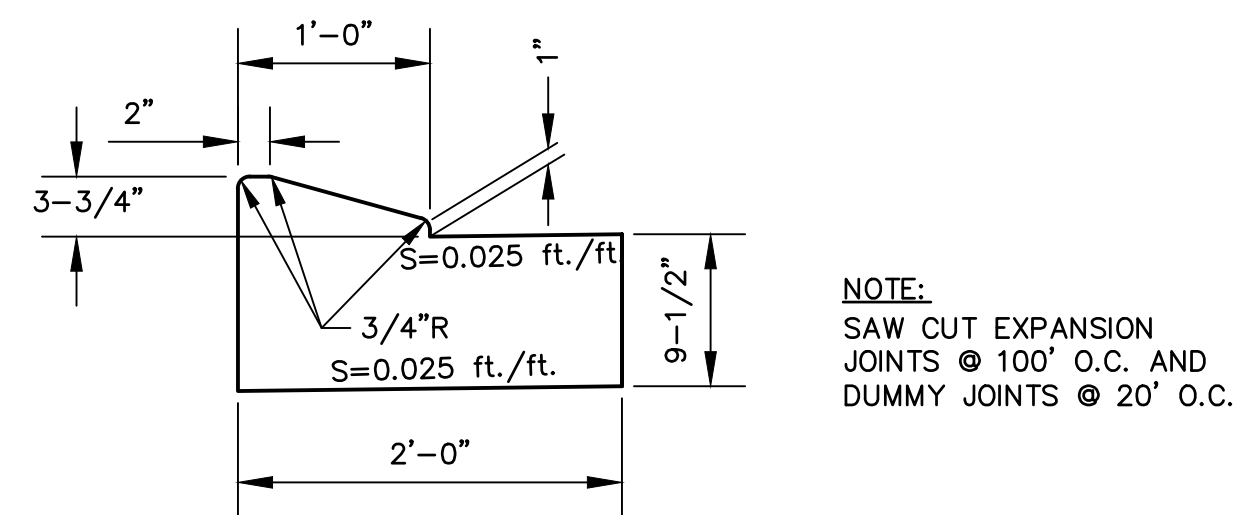


**ASPHALTIC CONCRETE CURB & GUTTER STREETS**  
N.T.S.



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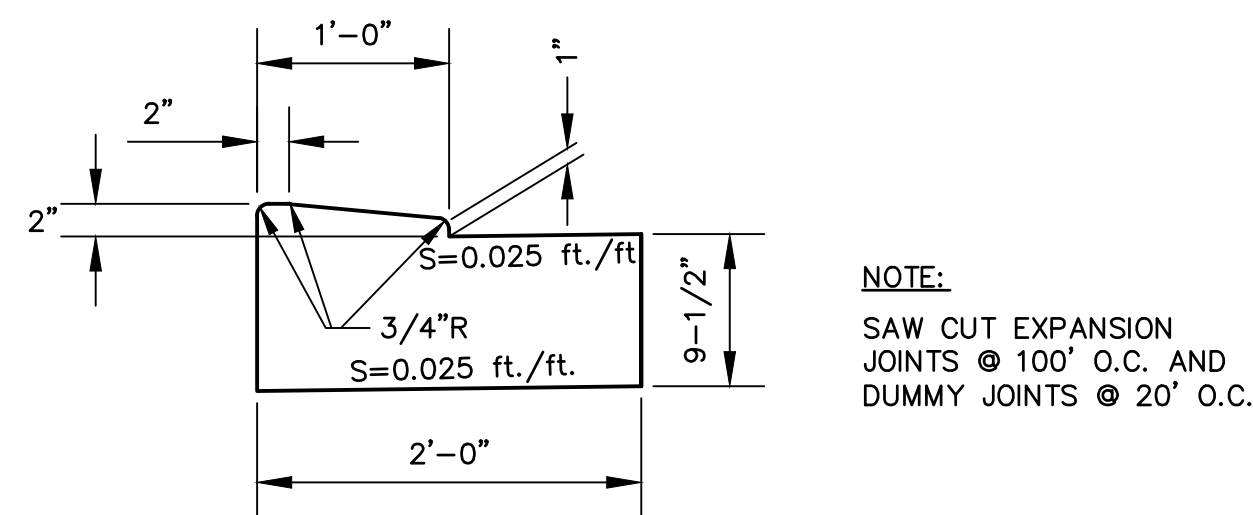
CITY OF ZACHARY, LOUISIANA				OWNER		STANDARD DETAILS MISCELLANEOUS ROAD DETAILS		TITLE		DESIGNED: BGH	SCALE: AS SHOWN	 PROJECT NO. 10367 SHEET NO. 10
										DRAWN: TLB	DATE: OCTOBER 2022	
										CHECKED: DAC		
										APPROVED: TAA		



NOTE:  
SAW CUT EXPANSION JOINTS @ 100' O.C. AND DUMMY JOINTS @ 20' O.C.

**MOUNTABLE CURB & GUTTER DETAIL**

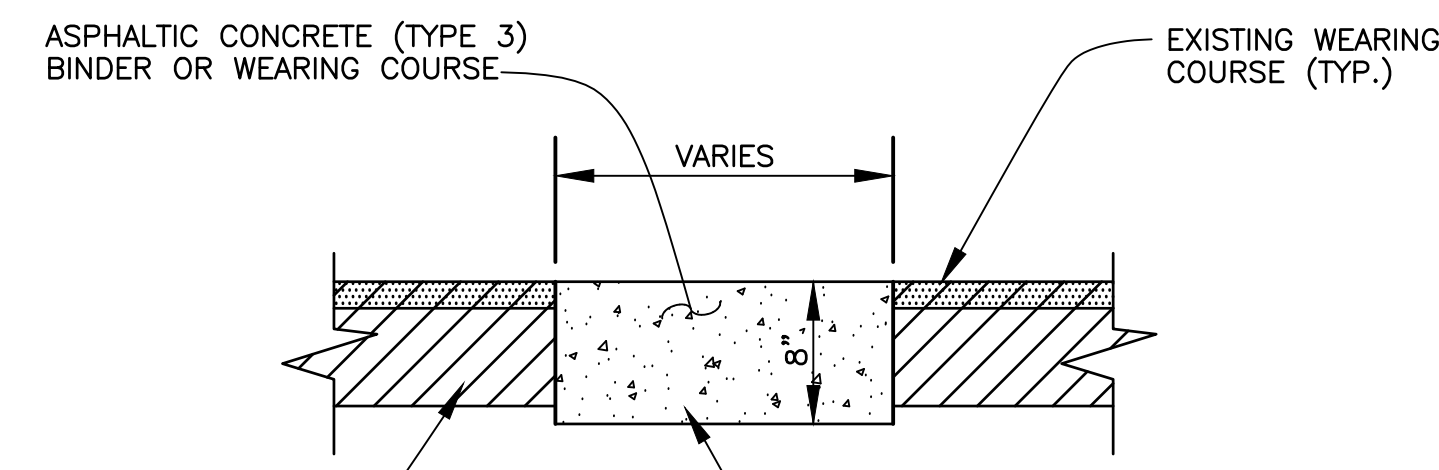
SCALE: 1"=1'-0"



NOTE:  
SAW CUT EXPANSION JOINTS @ 100' O.C. AND DUMMY JOINTS @ 20' O.C.

**MODIFIED MOUNTABLE CURB & GUTTER DETAIL**

SCALE: 1"=1'-0"

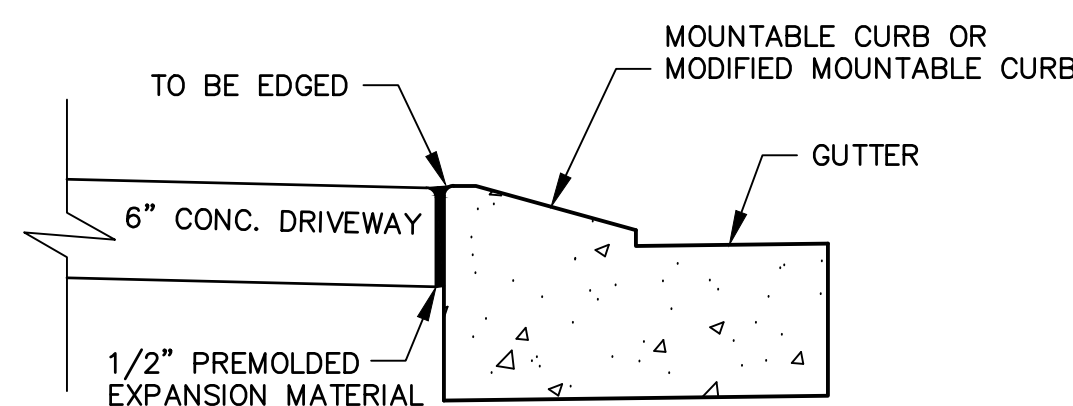


TO BE USED AT LOCATION AS DIRECTED BY THE CITY OF ZACHARY.  
1) REMOVAL OF EXISTING BASE & ASPHALT WEARING COURSE.  
2) NECESSARY EXCAVATION  
3) REPLACE WITH ASPHALTIC CONCRETE AS SHOWN ABOVE.

**TYPICAL ASPHALT PATCH DETAIL (TYPE A)**

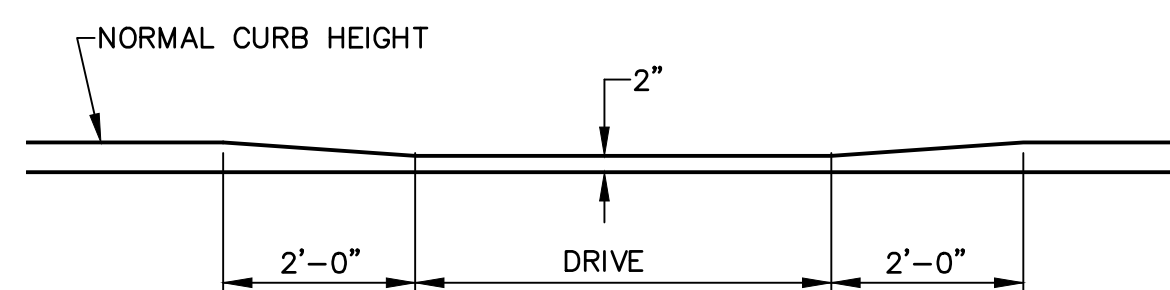
N.T.S.

NOTE:  
USE OF ASPHALT PATCH REQUIRES CITY OF ZACHARY APPROVAL



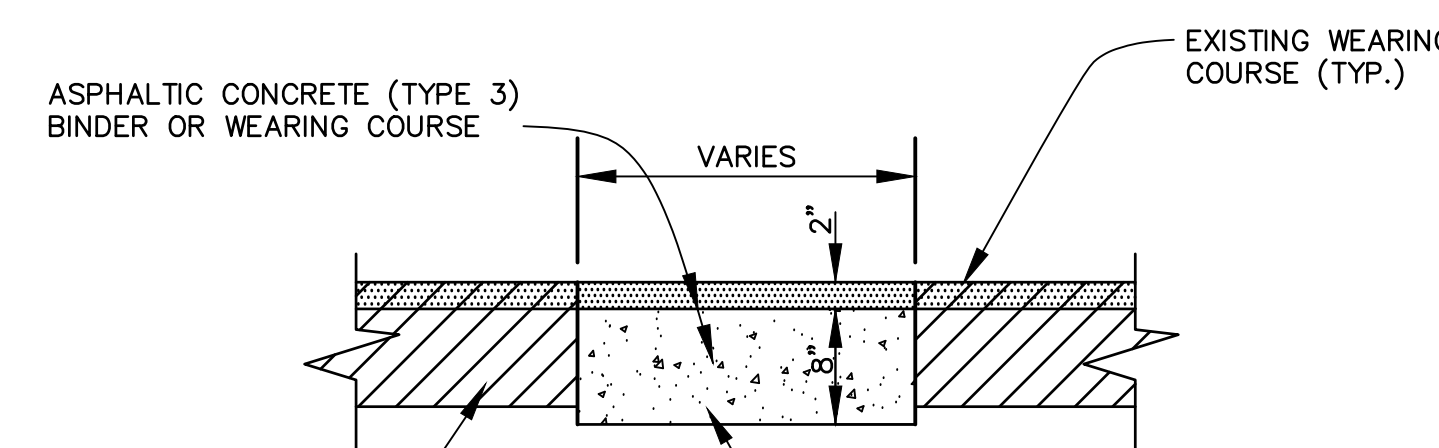
**MOUNTABLE CURB AND GUTTER DETAIL AT DRIVEWAY**

SCALE: 1"=1'-0"



**ELEVATION OF MOD. MOUNTABLE CURB**

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

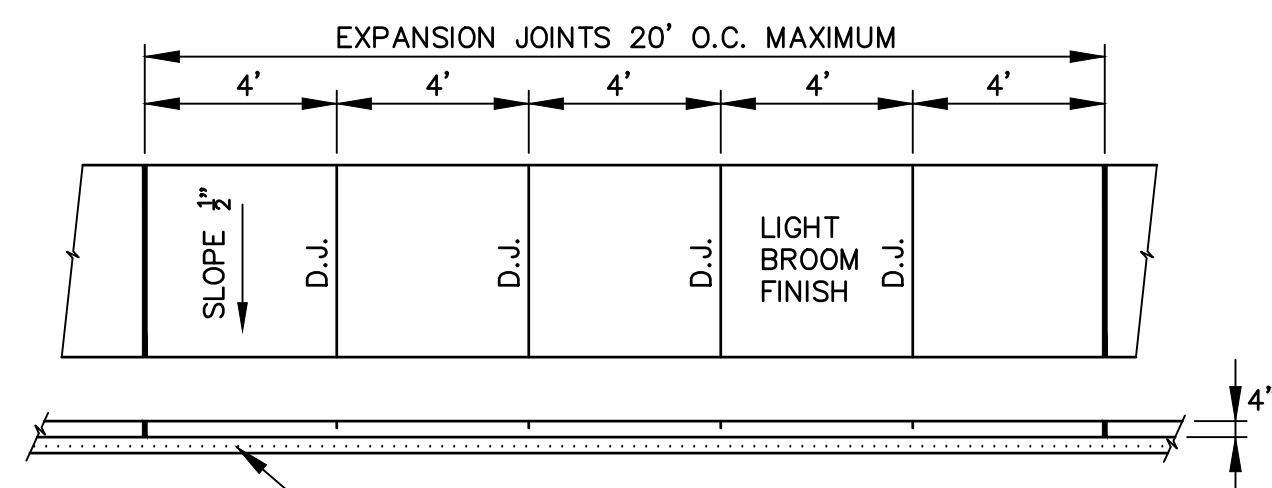


TO BE USED AT LOCATION AS DIRECTED BY THE CITY OF ZACHARY.  
1) REMOVAL OF EXISTING BASE & ASPHALT WEARING COURSE. (SCORED AS REQUIRED)  
2) NECESSARY EXCAVATION  
3) REPLACE WITH ASPHALTIC CONCRETE AT AN 8" DEPTH AND COOLED AS SHOWN ABOVE.  
4) 2" OVERLAY FOR A FINISHED RIDING SURFACE

**TYPICAL ASPHALT PATCH DETAIL (TYPE B)**

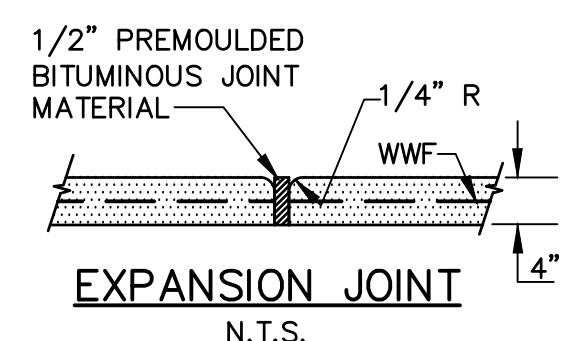
N.T.S.

NOTE:  
USE OF ASPHALT PATCH REQUIRES CITY OF ZACHARY APPROVAL



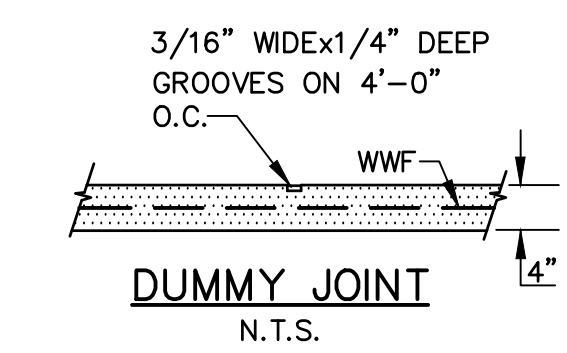
**5' SIDEWALK - PLAN**

SCALE: 1/4"=1'-0"



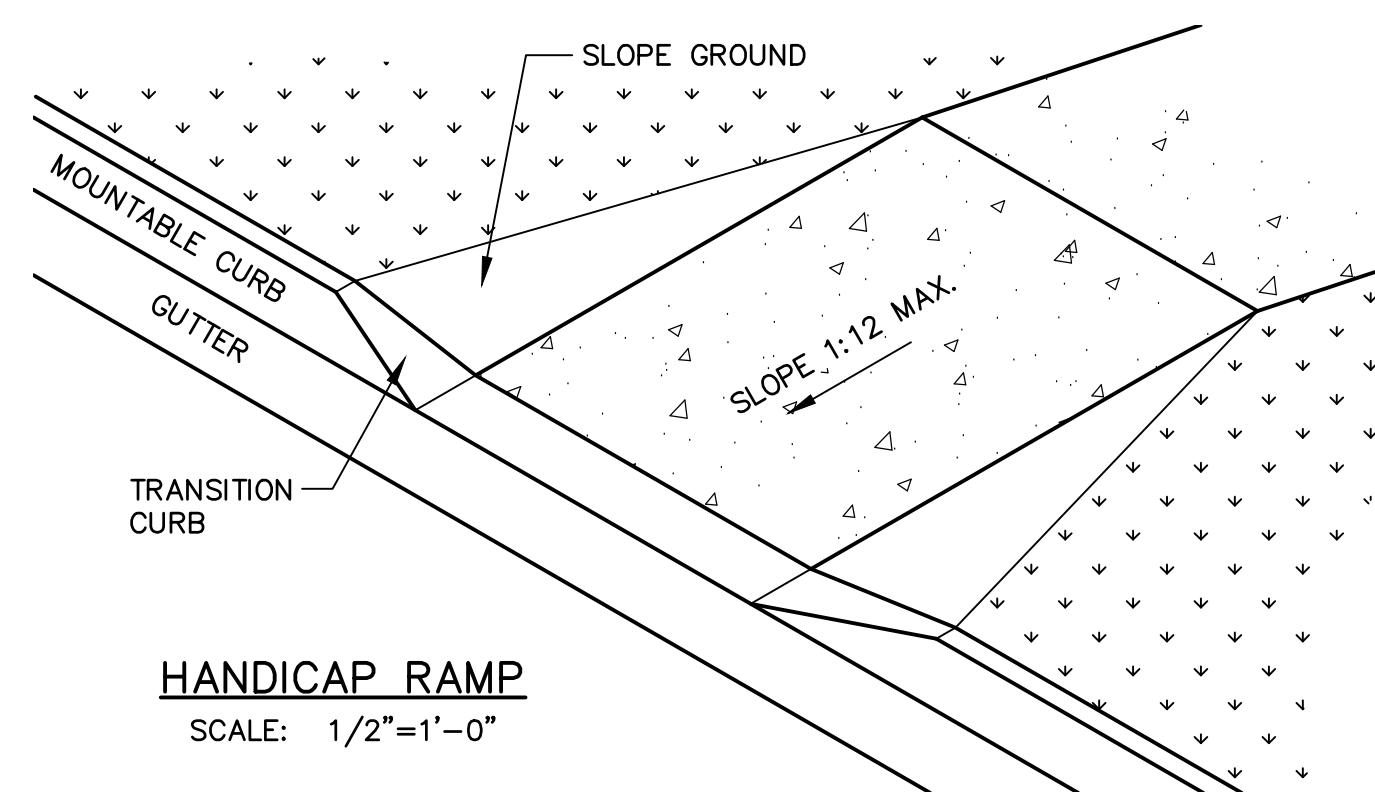
**EXPANSION JOINT**

N.T.S.



**DUMMY JOINT**

N.T.S.

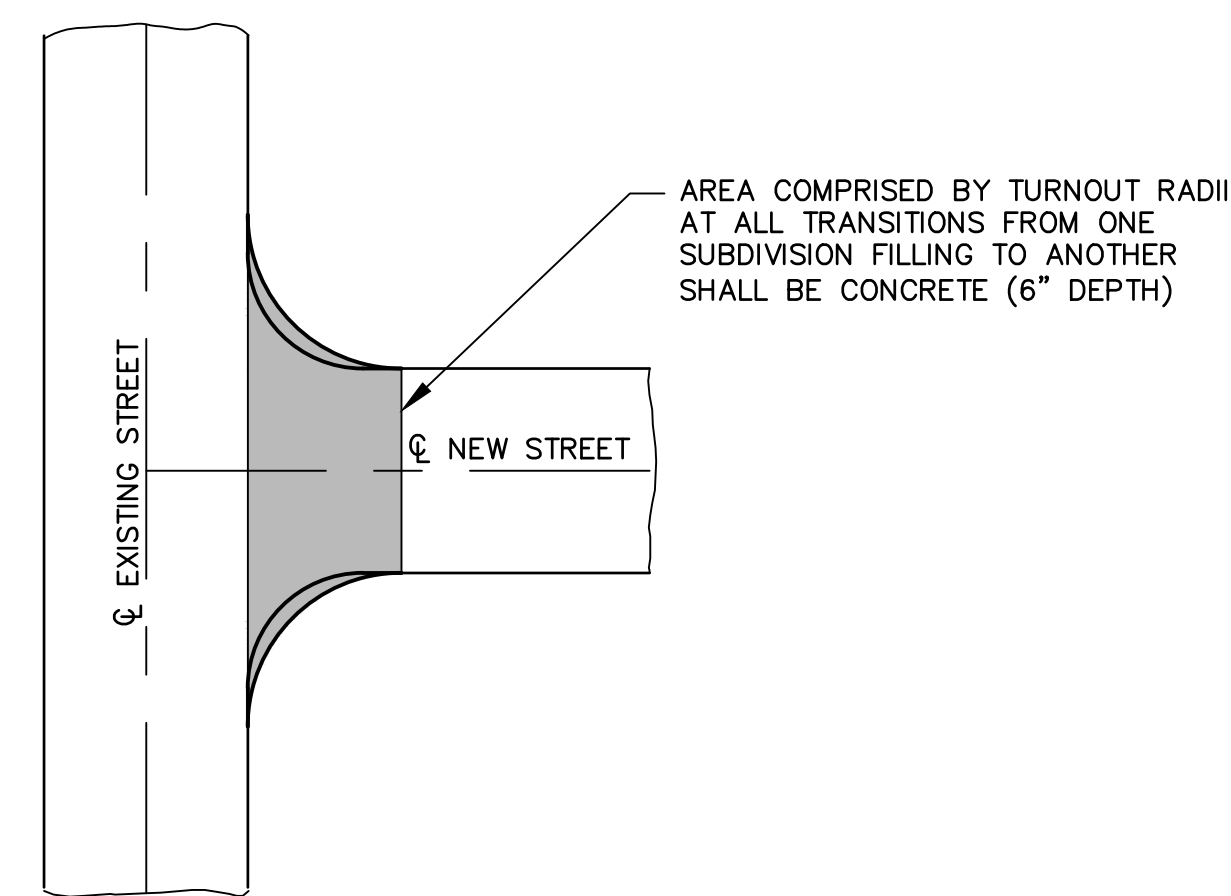


**HANDICAP RAMP**

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

**GENERAL SIDEWALK NOTES:**

1. ALL SIDEWALKS SHALL BE CONSTRUCTED AT THE TIME OF THE DEVELOPMENT, BEFORE FINAL PLAT AND SHALL BE MINIMUM 5' WIDTH.
2. ALL HANDICAP RAMPS SHALL BE PROVIDED WITH ADA DETECTING TRUNCATED DOMES.
3. NO DRAINAGE CATCH BASINS, MANHOLES, VALVE BOXES OR SEWER CLEANOUTS SHALL BE ALLOWED AT SIDEWALKS.
4. ALL SIDEWALKS SHALL BE A MINIMUM 3,000 PSI CONCRETE WITH MINIMUM NO. 10-6x6 WWF. TEST CYLINDERS SHALL BE COLLECTED EVERY 500 FEET (OR MORE FREQUENTLY IF REQUIRED BY THE CITY OF ZACHARY) BY A PRE-APPROVED TESTING LABORATORY. ALL TEST RESULTS MUST BE SUBMITTED TO THE CITY OF ZACHARY.



**ROAD TRANSITION FROM ONE FILLING TO ANOTHER**

N.T.S.

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

OWNER

STANDARD DETAILS  
MISCELLANEOUS ROAD DETAILS  
TITLE

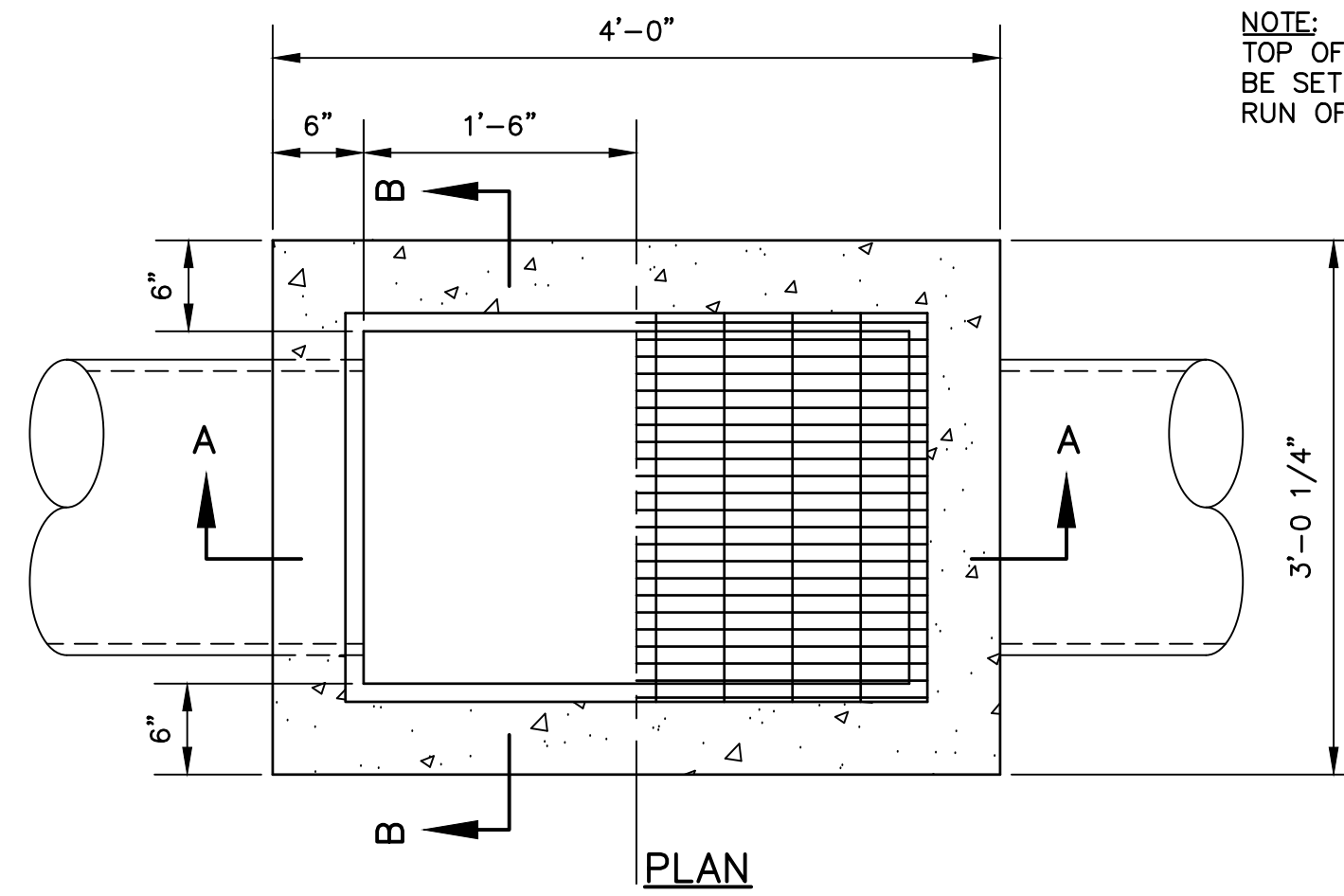
DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	
APPROVED: TAA	



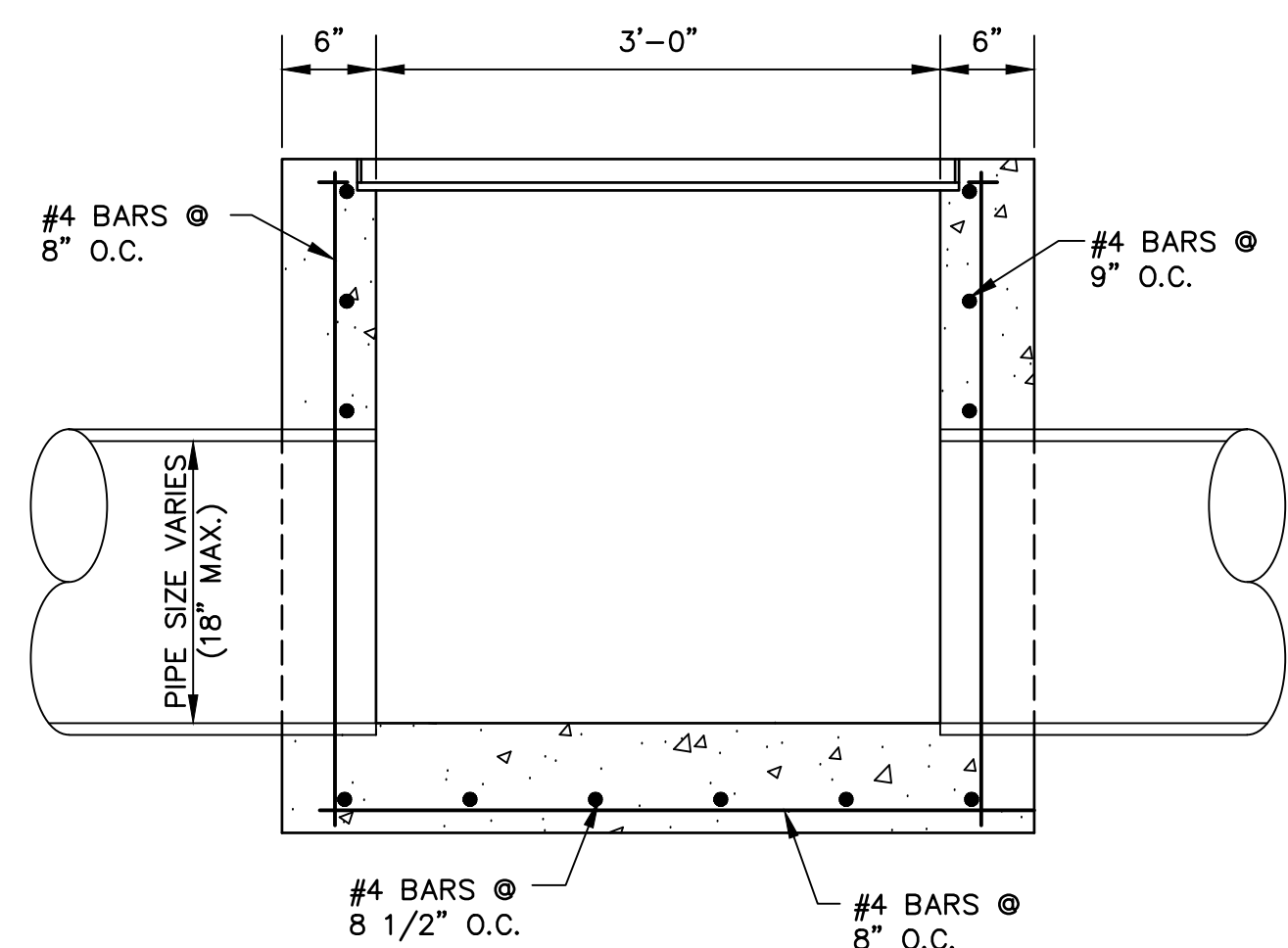
PROJECT NO. 10367  
SHEET NO. 11

**GENERAL DRAINAGE NOTES:**

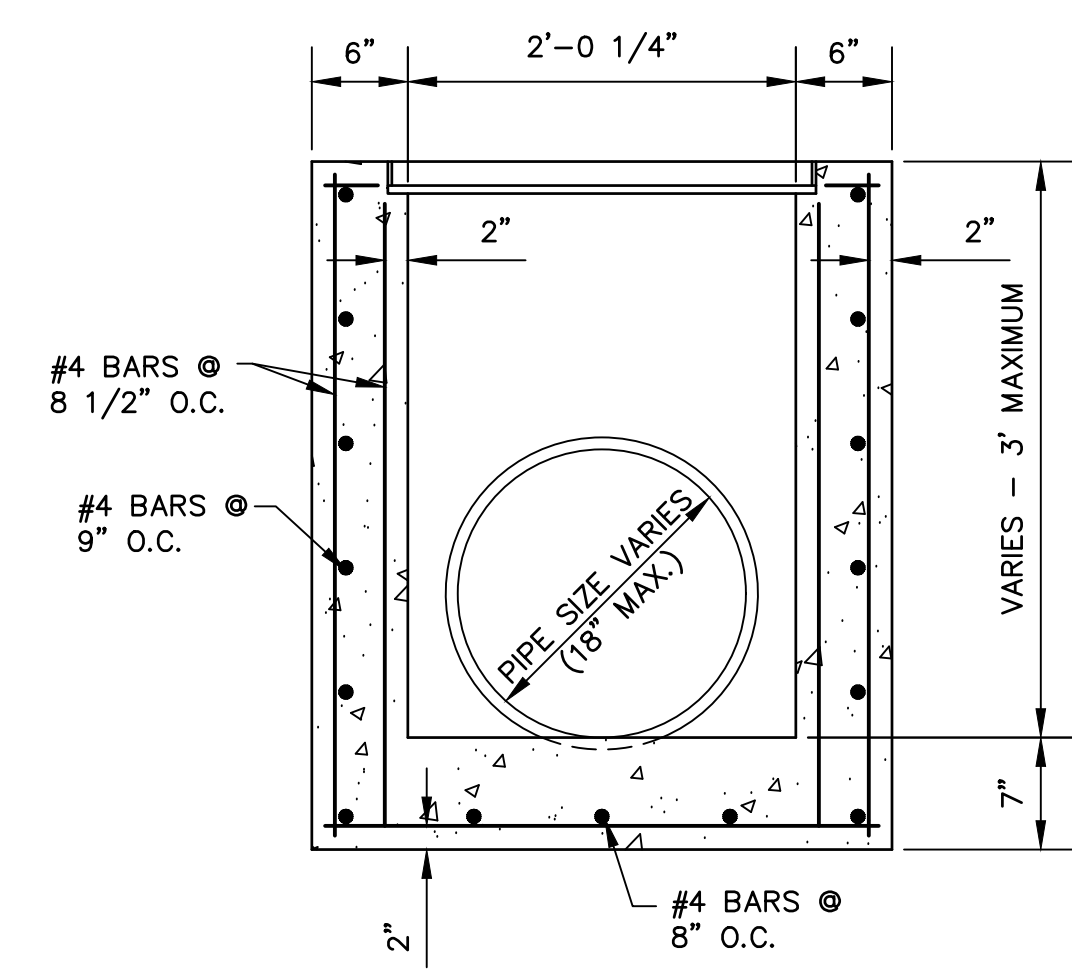
1. CONCRETE LINERS. FOUR (4") INCH CONCRETE LINERS MEETING CITY STANDARDS SHALL BE INSTALLED IN THOSE PORTIONS OF DRAINAGE CHANNELS WHICH ARE LOCATED WITHIN THE LIMITS OF SUBDIVISION DEVELOPMENT WHEN THE SUBDIVIDER SUBSTANTIALLY ALTERS EXISTING DRAINAGE CHANNELS WHICH ORIGINATE WITHIN THE LIMITS OF SUBDIVISION DEVELOPMENT.
2. THE MINIMUM SIZE OF DRAINAGE PIPE SHALL BE FIFTEEN (15") INCH INSIDE DIAMETER OR EQUIVALENT PIPE ARCH.
3. ALL PUBLIC DRAINAGE SYSTEMS SHALL BE SUB-SURFACE AND SHALL BE CONSTRUCTED WITH CLASS II CONCRETE GASKET JOINT PIPE. ALL PIPE JOINTS SHALL BE EXTERNALLY WRAPPED.
4. NO BRICK CONSTRUCTION SHALL BE ALLOWED FOR DRAINAGE STRUCTURES WITHIN THE CITY OF ZACHARY.
5. ALL PIPE JOINTS SHALL BE WRAPPED.
6. CONFLICT DRAINAGE BOXES SHALL ONLY BE USED FOR EXISTING SEWER LINES. NEW CONSTRUCTION SHALL NOT HAVE DRAINAGE CONFLICT BOXES.
7. OVERALL GRADING OF DEVELOPMENT AND INDIVIDUAL HOUSE CONSTRUCTION SHALL BE SUCH THAT NO REAR OR SIDE DRAINAGE COLLECTION SYSTEMS ARE REQUIRED.
8. ALL DRAINAGE FRAMES AND COVERS SHALL BE IMPRINTED WITH THE WORD "DRAIN".



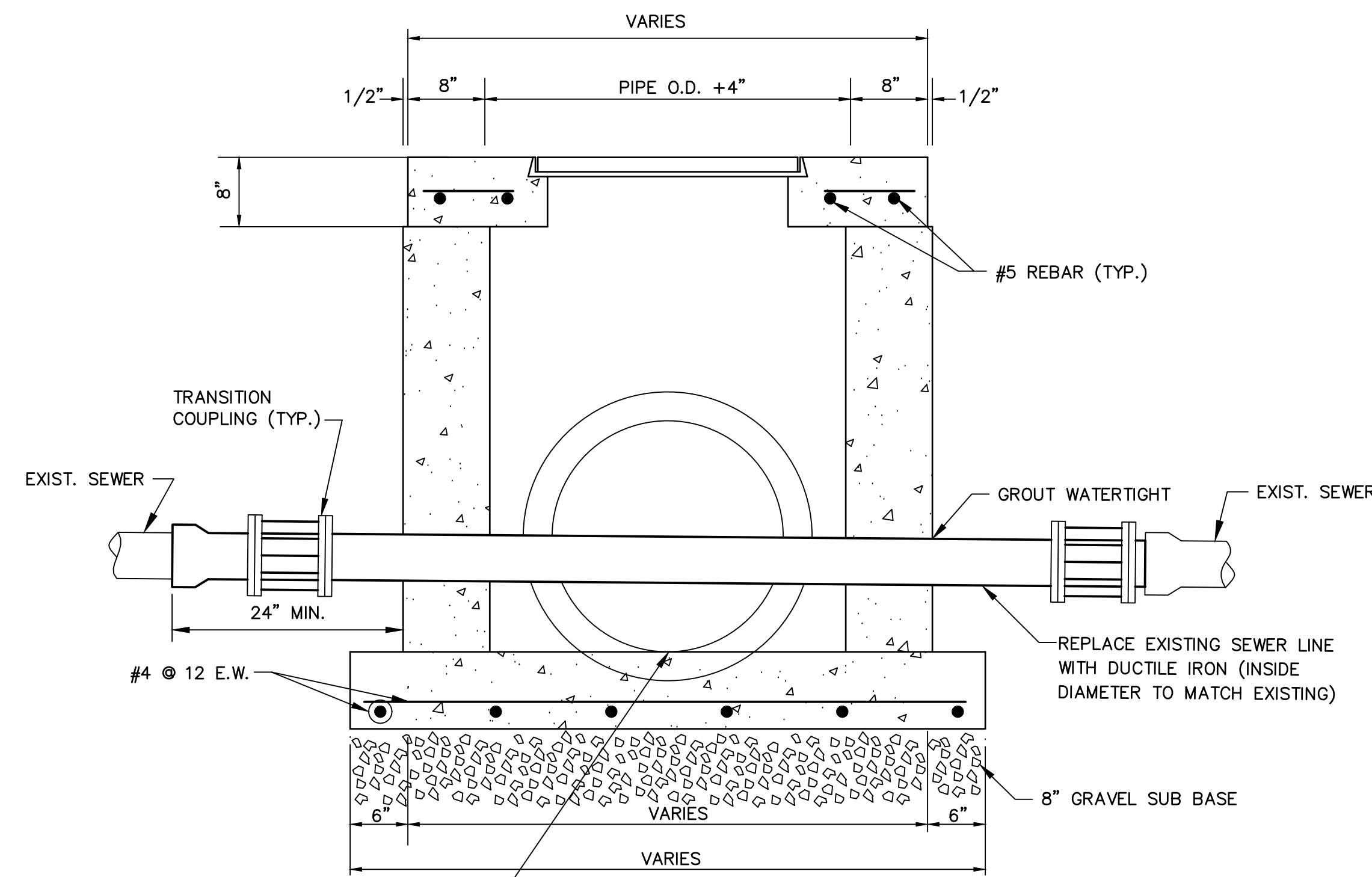
NOTE:  
TOP OF GRATE INLETS TO  
BE SET TO COLLECT AREA  
RUN OFF.



SECTION A-A



SECTION B-B  
**SPECIAL GRATE INLET**

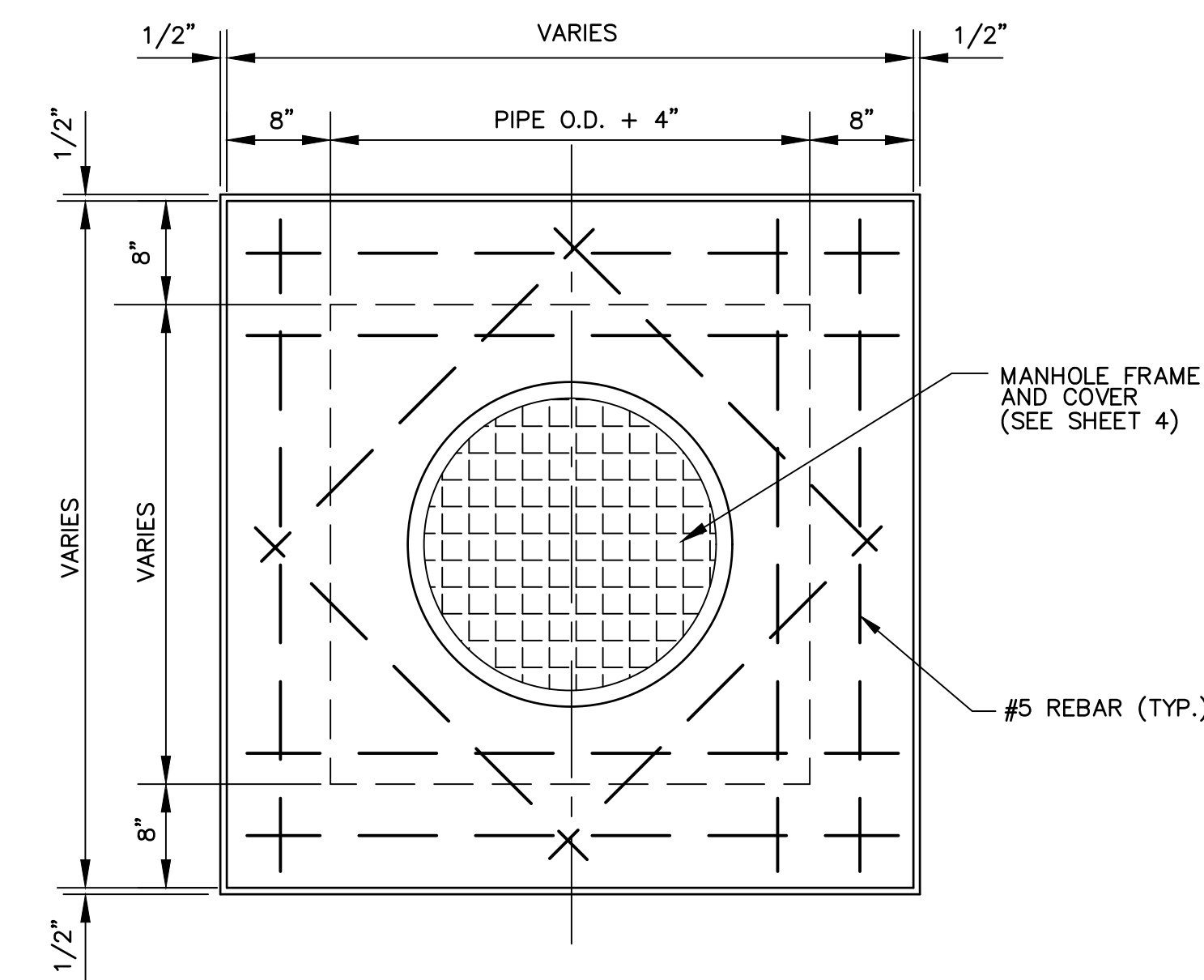


INVERTS MUST BE GROUTED IN  
WITH NON-SHRINK GROUT IF PIPE  
INVERT IS HIGHER THAN THE  
BOTTOM OF THE CATCH BASIN

SECTION

N.T.S.

NOTE:  
TYPE "A" CONFLICT BOX  
TO BE USED IN NON PAVED  
AREAS ONLY.



PLAN

SHOWING FRAME

**CONFLICT BOX (TYPE "A")**

N.T.S.

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DATE	REVISIONS	BY	DATE	REVISIONS	BY

CITY OF ZACHARY, LOUISIANA

OWNER

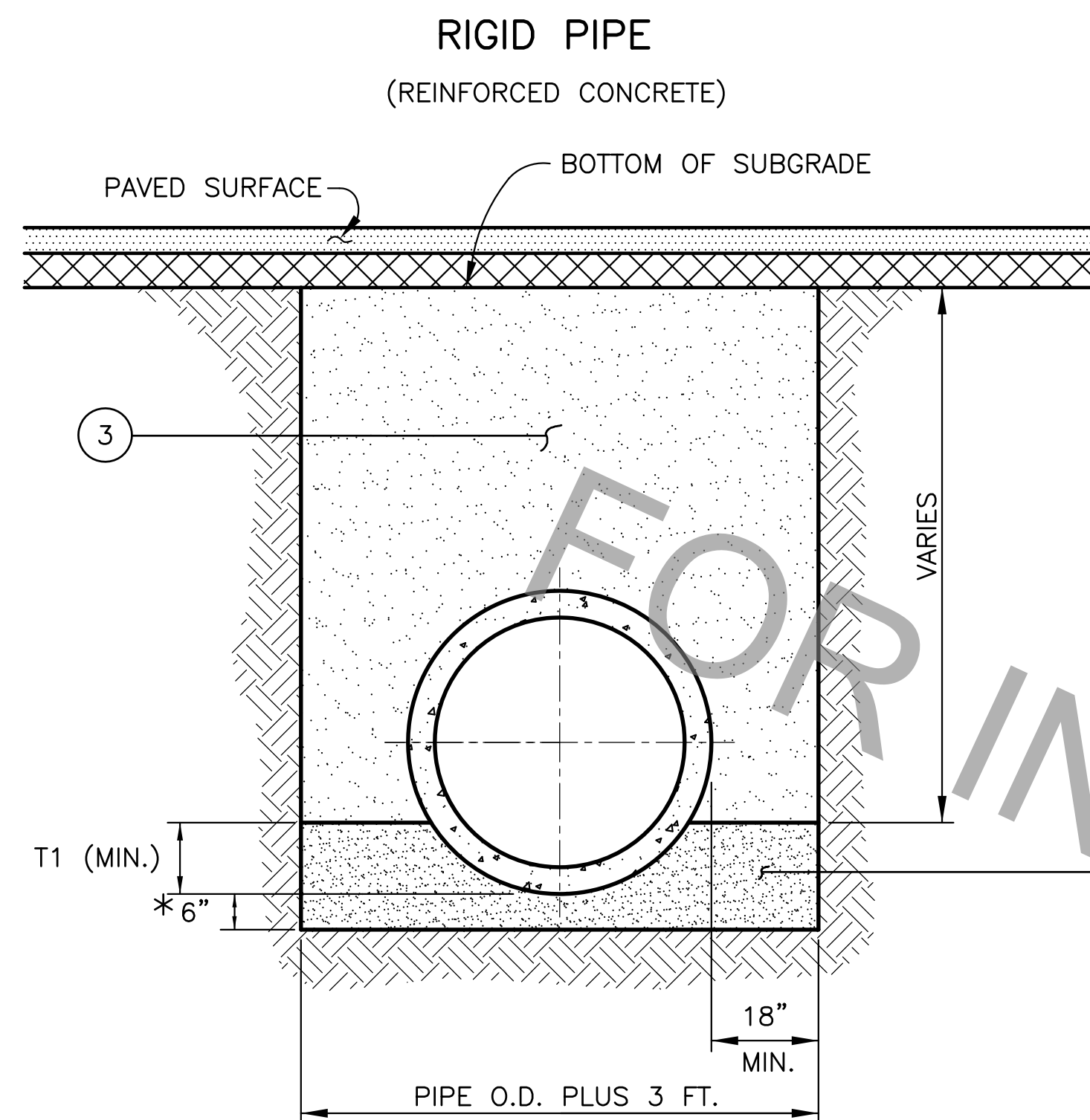
STANDARD DETAILS  
MISCELLANEOUS DRAINAGE DETAILS  
TITLE

DESIGNED: BGH	SCALE: AS SHOWN
DRAWN: TLB	DATE: MARCH 2021
CHECKED: DAC	APPROVED: TAA

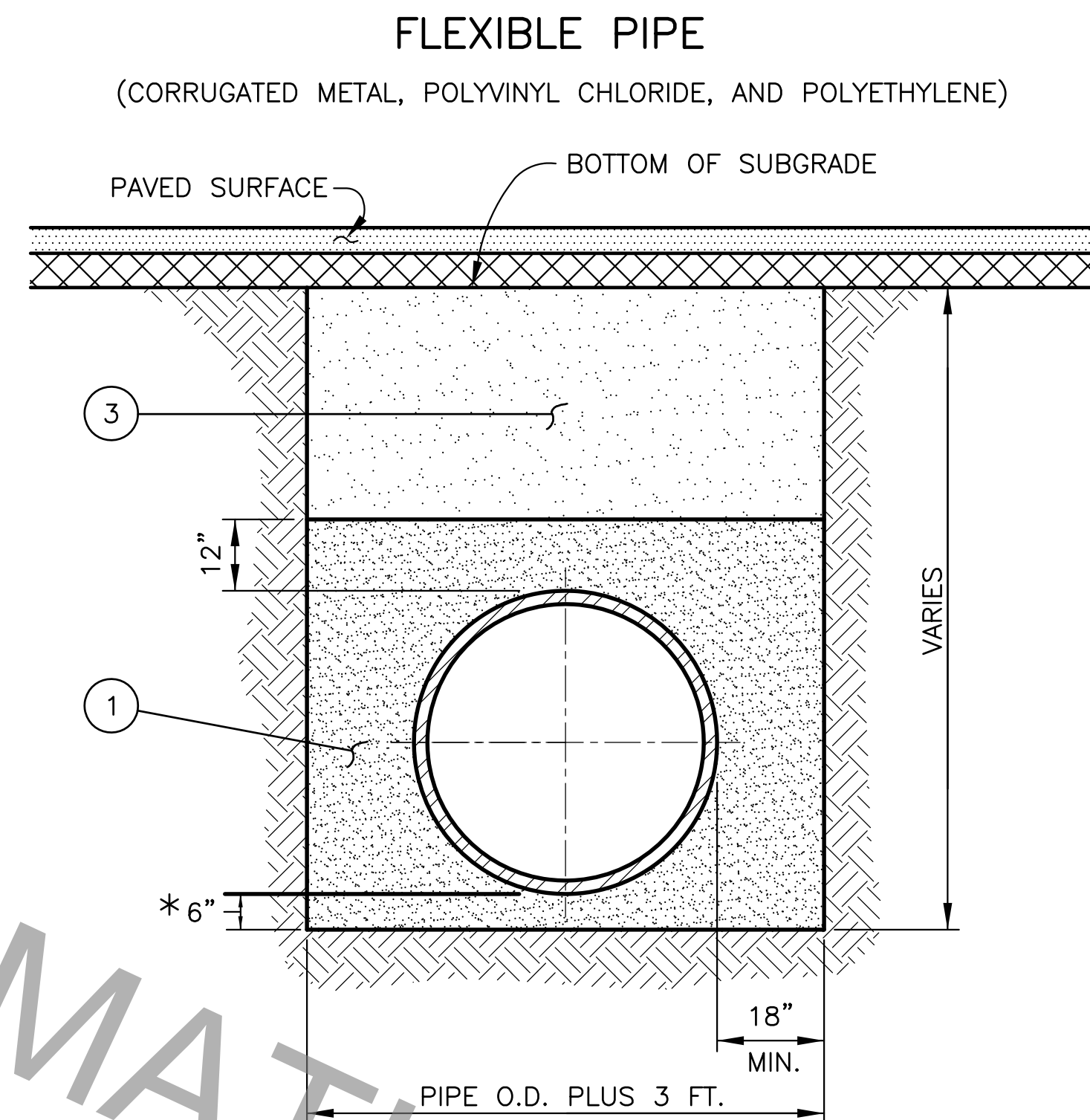


PROJECT NO. 10367  
SHEET NO. 12

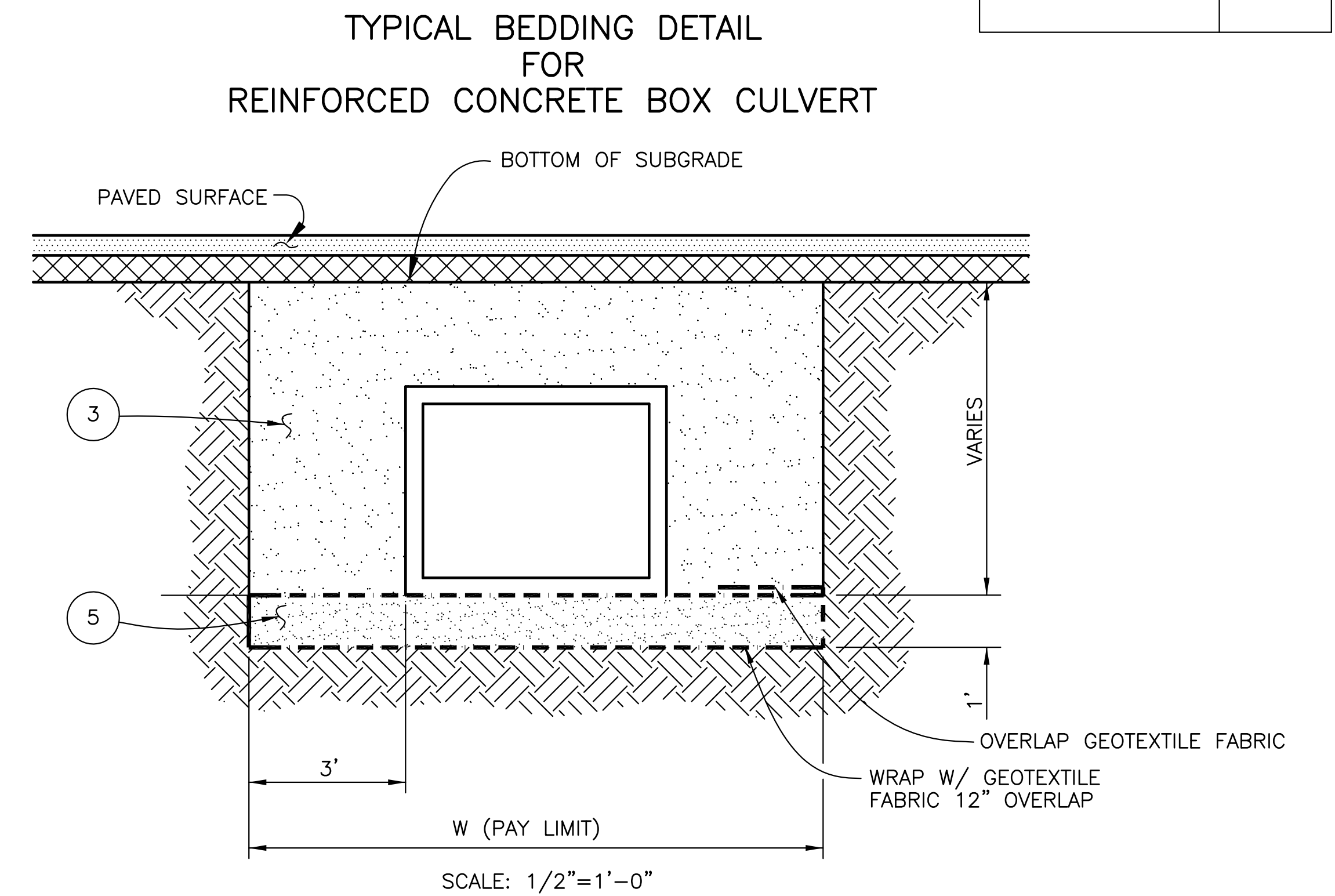
PROJECT NO.	SHEET



PIPE UNDER OR WITHIN 5 FEET OF STREETS AND PAVED SURFACES.  
SCALE: 1/2"=1'-0"



PIPE UNDER OR WITHIN 5 FEET OF STREETS AND PAVED SURFACES.  
SCALE: 1/2"=1'-0"



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

**GENERAL NOTES**

ALL MATERIALS AND WORK SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF BATON ROUGE AND PARISH OF EAST BATON ROUGE-"STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".

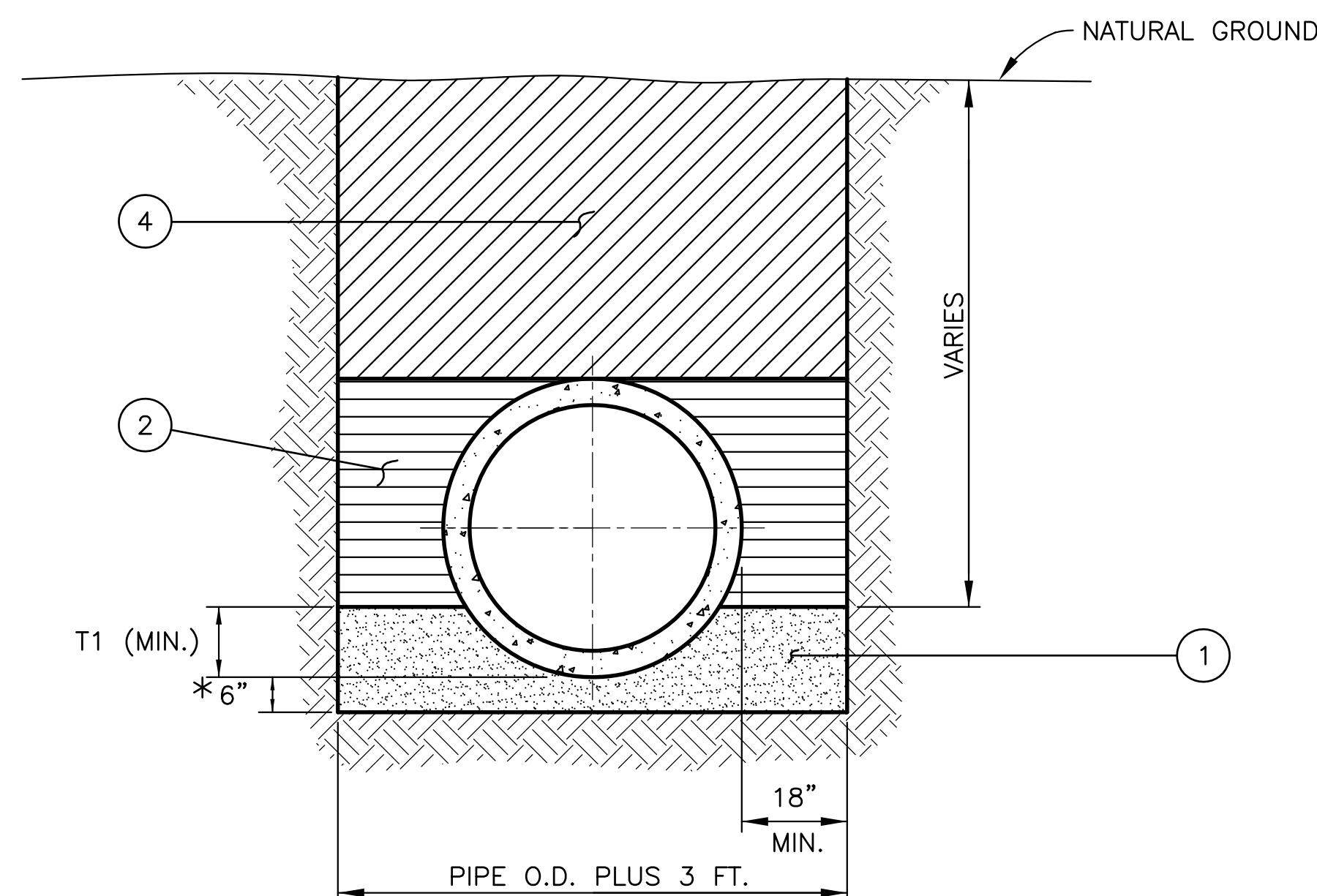
\* BEDDING UNDER PIPE SHALL BE 6" UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

**LEGEND**

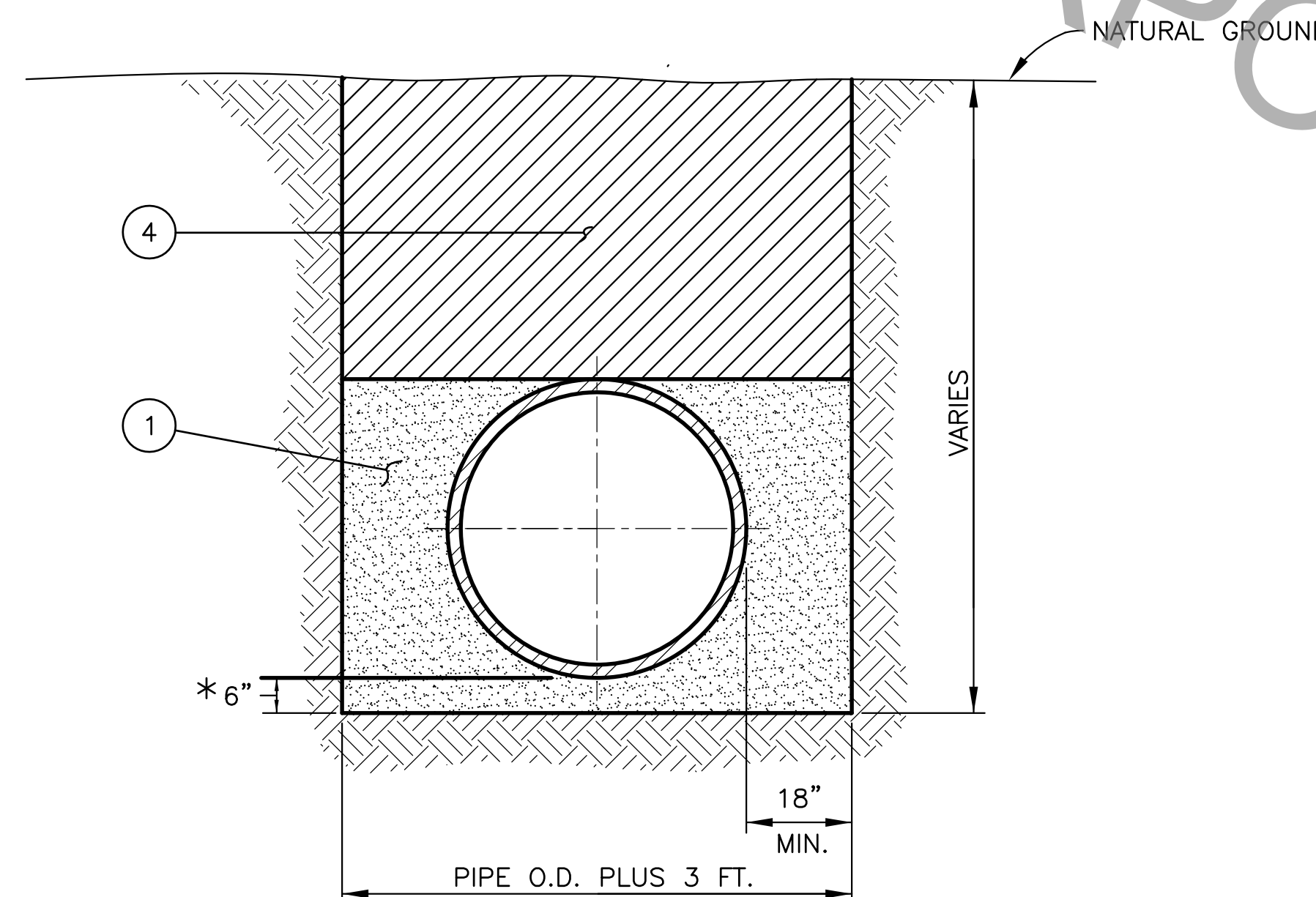
- ① BEDDING MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO DIRECT PAY).
- ② BACKFILL MATERIAL (QUALITY EXCAVATED OR SELECT MATERIAL OR SAND). COMPACTED TO A DENSITY AT LEAST EQUAL TO SURROUNDING UNDISTURBED SOIL. (NO DIRECT PAY).
- ③ BACKFILL MATERIAL (BACKFILL SAND), COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO DIRECT PAY).
- ④ BACKFILL MATERIAL (QUALITY EXCAVATED OR SELECT MATERIAL). COMPACTED TO A DENSITY AT LEAST EQUAL TO THE SURROUNDING UNDISTURBED SOIL. (NO DIRECT PAY).
- ⑤ 67 LIMESTONE W/ GEOTEXTILE FABRIC.

**PIPE BEDDING SCHEDULE (RIGID PIPE)**

PIPE SIZE	T1 (MIN.)
12"-30"	6"
36"-60"	12"
66"-96"	18"



OPEN GROUND OUTSIDE LIMITS OF STREETS AND PAVED SURFACES  
SCALE: 1/2"=1'-0"



OPEN GROUND OUTSIDE LIMITS OF STREETS AND PAVED SURFACES  
SCALE: 1/2"=1'-0"

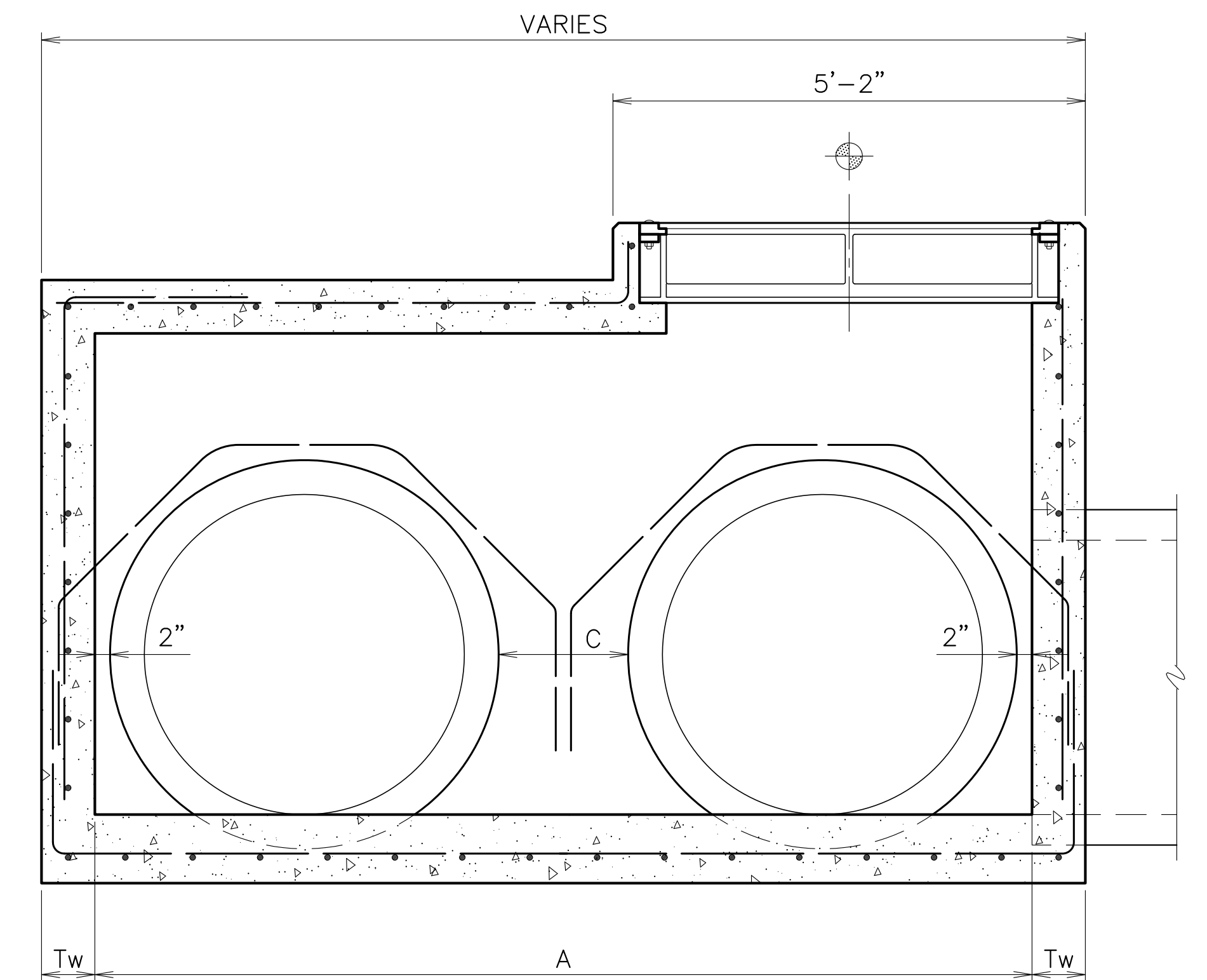
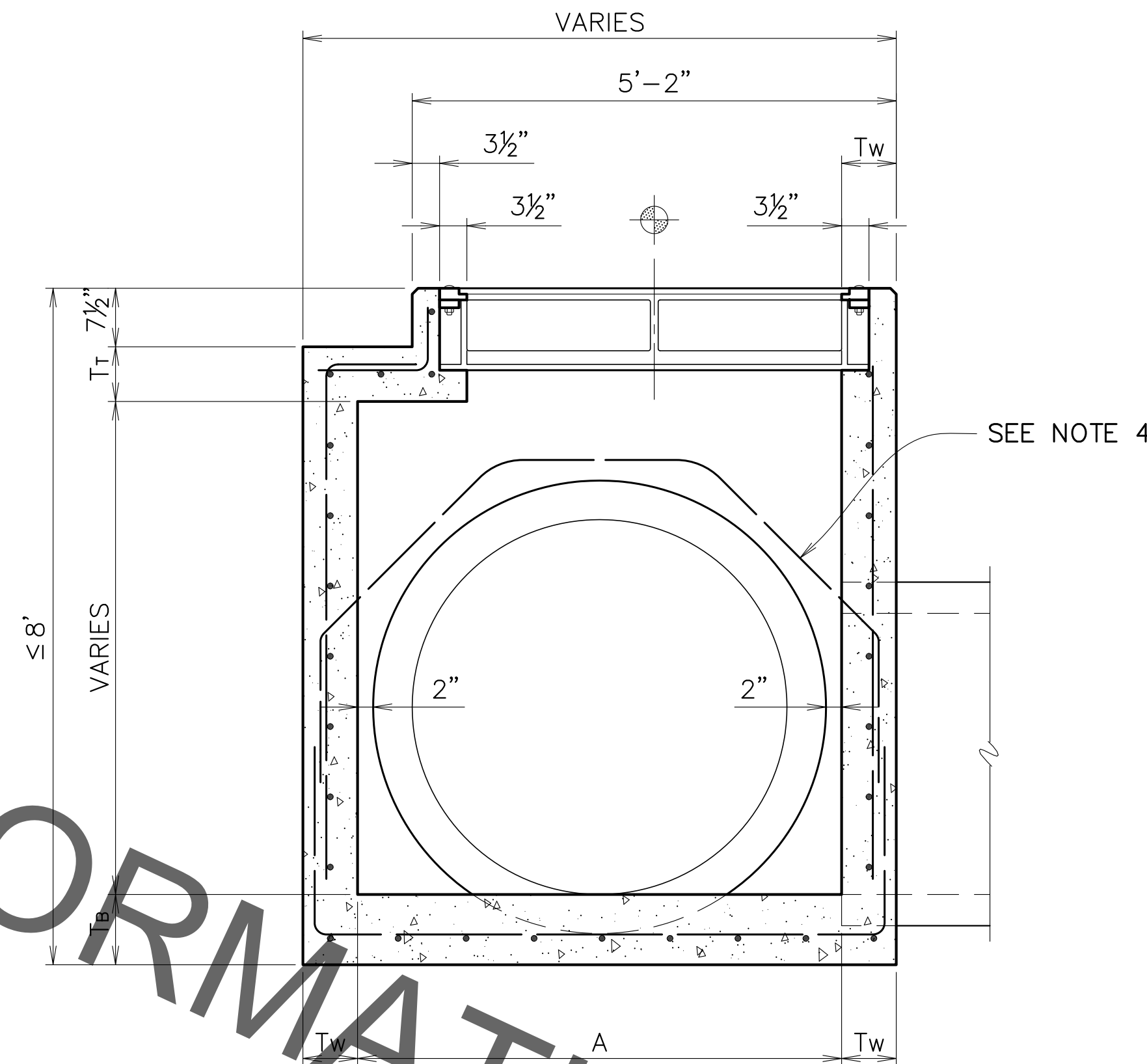
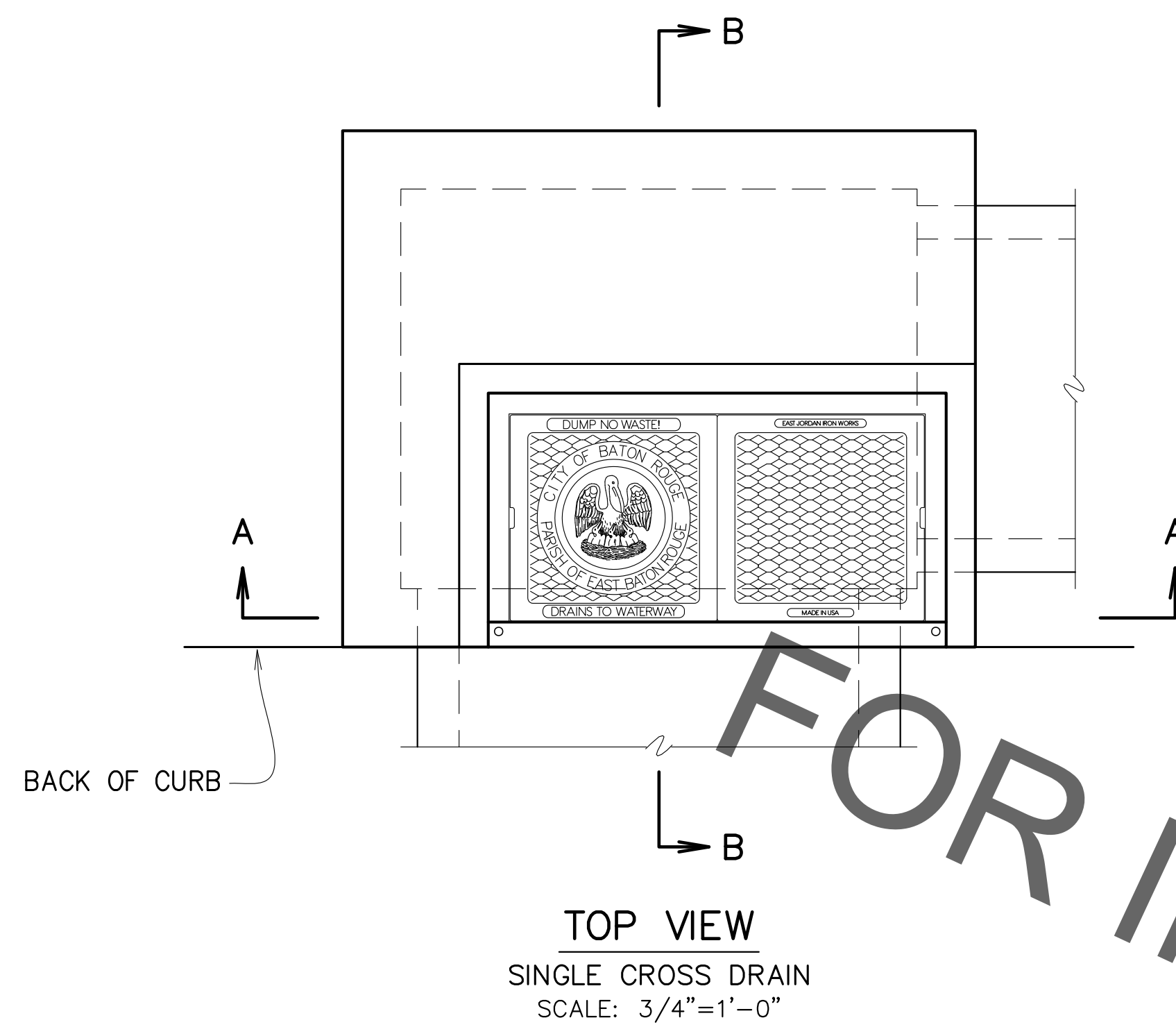


STANDARD PLAN NO. 701-01	DATED February 8, 2008	SHEET NO. 1 OF 1
<b>STANDARD BEDDING AND BACKFILL DETAILS FOR STORM DRAINAGE CONDUIT</b>		

ENGINEERING DIVISION <b>DEPARTMENT OF PUBLIC WORKS</b> CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED R. ELLIS	DRAWN G. VANNICE	CHECKED R. ELLIS	APPROVED B. HARMON

DATE	DESCRIPTION REVISIONS	BY

PROJECT NO.	SHEET



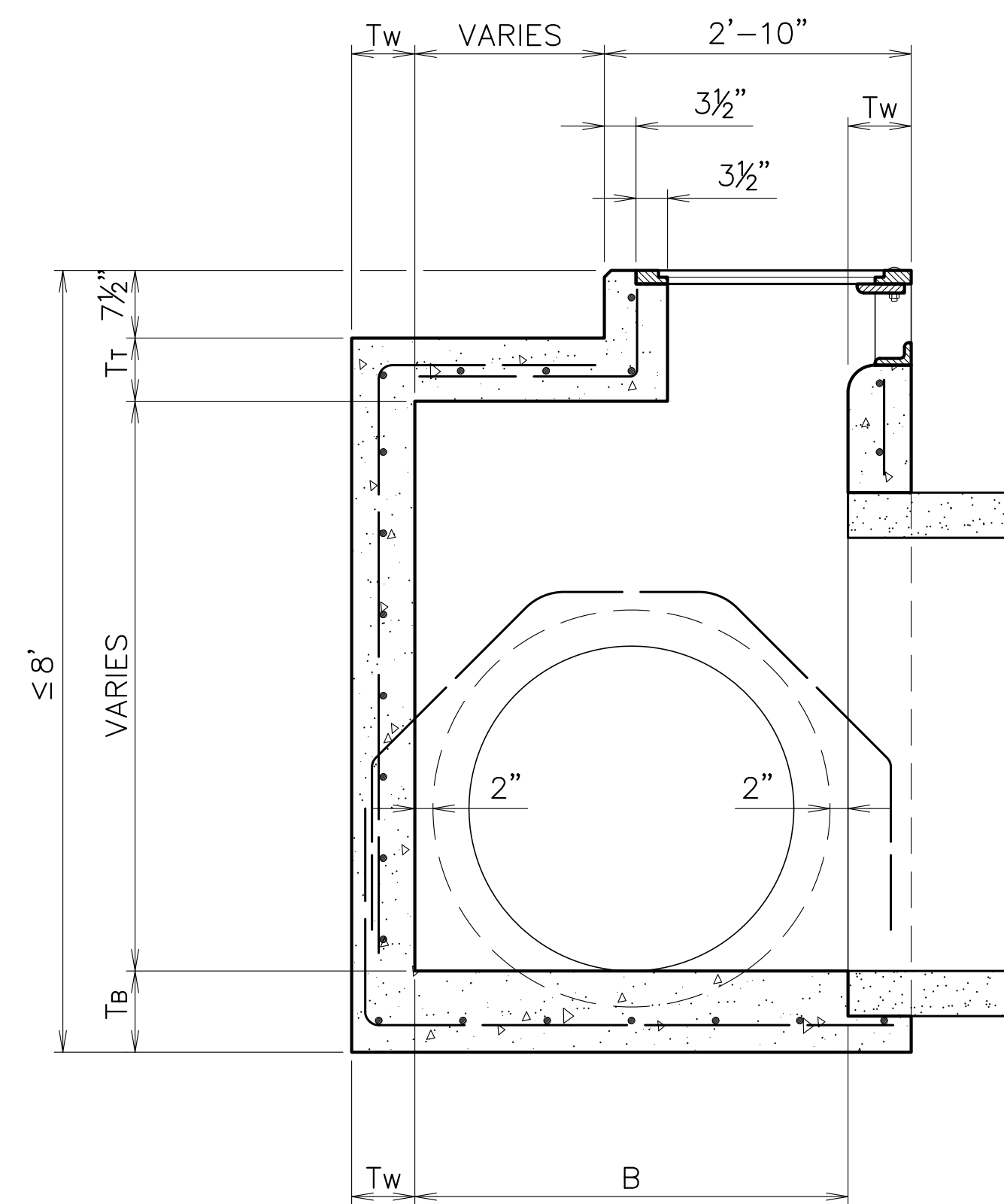
PIPE SIZE		DIMENSION			
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	A SINGLE PIPE	A DOUBLE PIPE	B	C
15"	-	4'-0"	5'-0"	2'-3"	15"
18"	15"	4'-0"	5'-7"	2'-3"	15"
24"	18"	4'-0"	6'-7"	2'-10"	15"
30"	24"	4'-0"	8'-9"	3'-5"	15"
36"	30"	4'-0"	8'-11"	4'-0"	15"
42"	36"	4'-8"	10'-5"	4'-8"	17"
48"	-	5'-2"	11'-7"	5'-2"	19"
54"	42"	5'-9"	12'-11"	5'-9"	21"
60"	48"	6'-4"	14'-3"	6'-4"	23"
-	54"	6'-8"	15'-0"	6'-8"	24"
72"	60"	7'-6"	16'-8"	7'-6"	24"
84"	72"	8'-10"	20'-0"	8'-10"	36"

■ CENTERED CASTING

NOTE:

- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 FRAME AND COVER REQUIRED. SINGLE FRAME AND COVER ALLOWED.
- PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
- CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
- DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
- A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
- SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
- SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.

⊙ PLAN STATION CALL-OUT



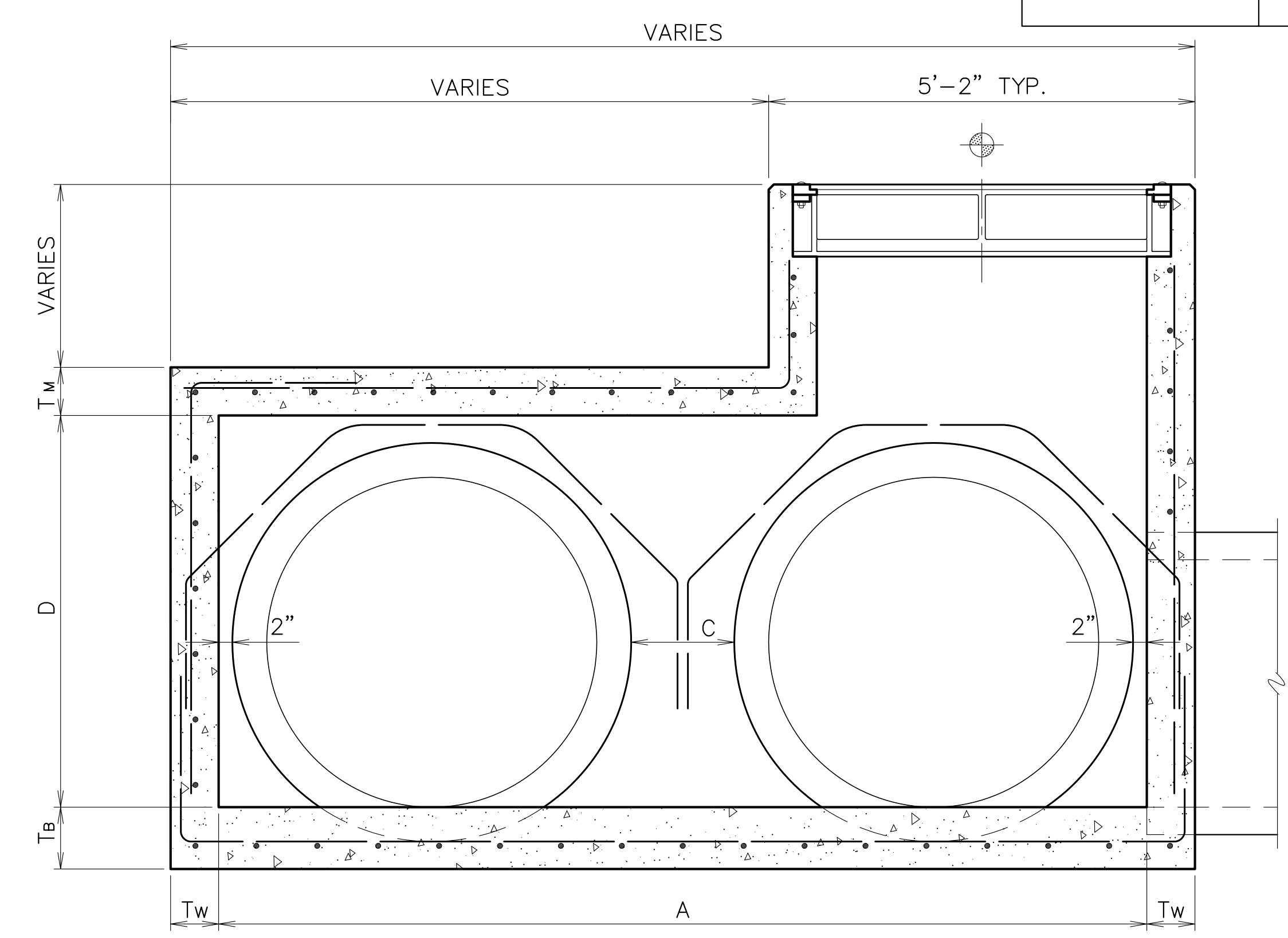
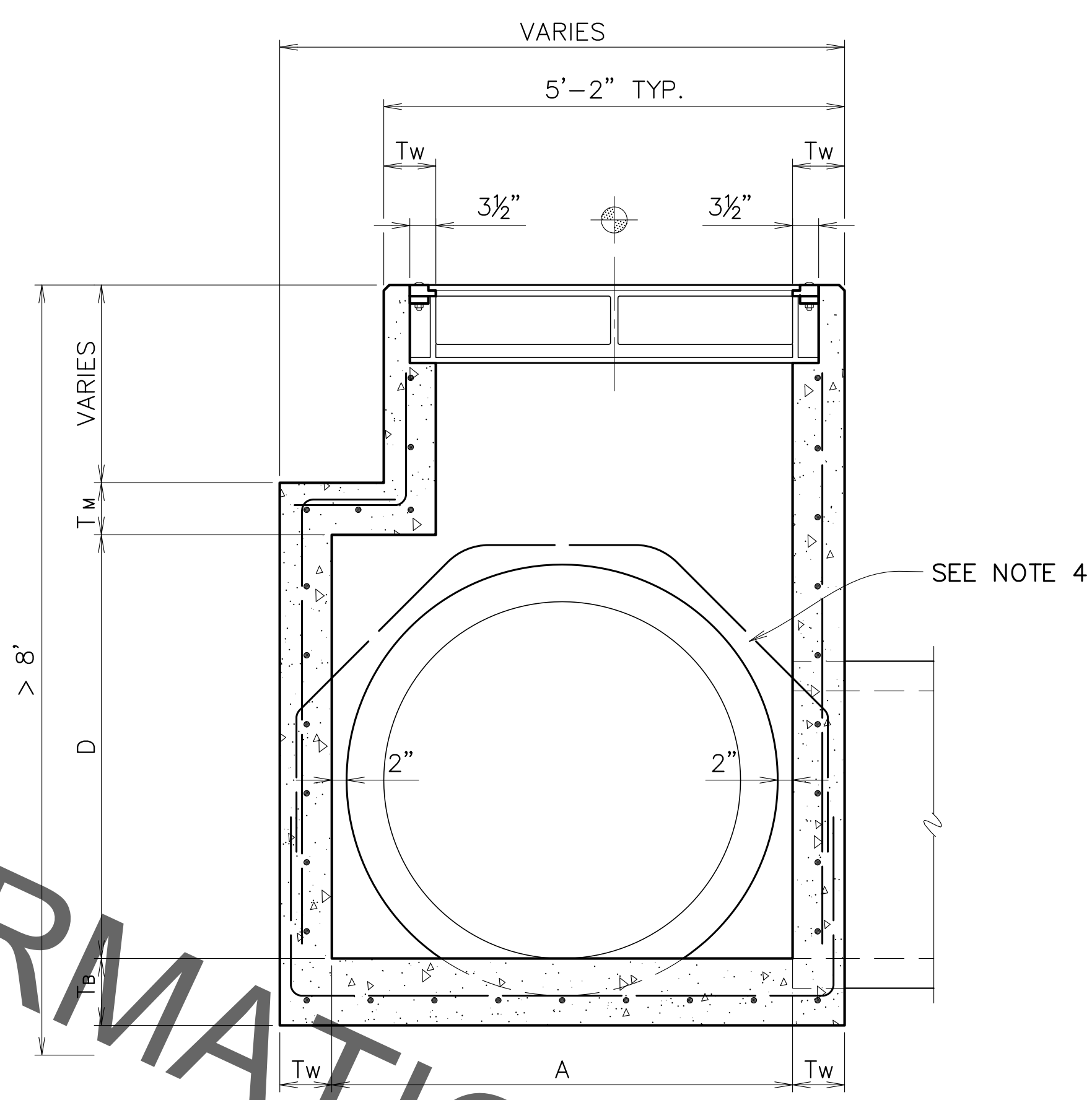
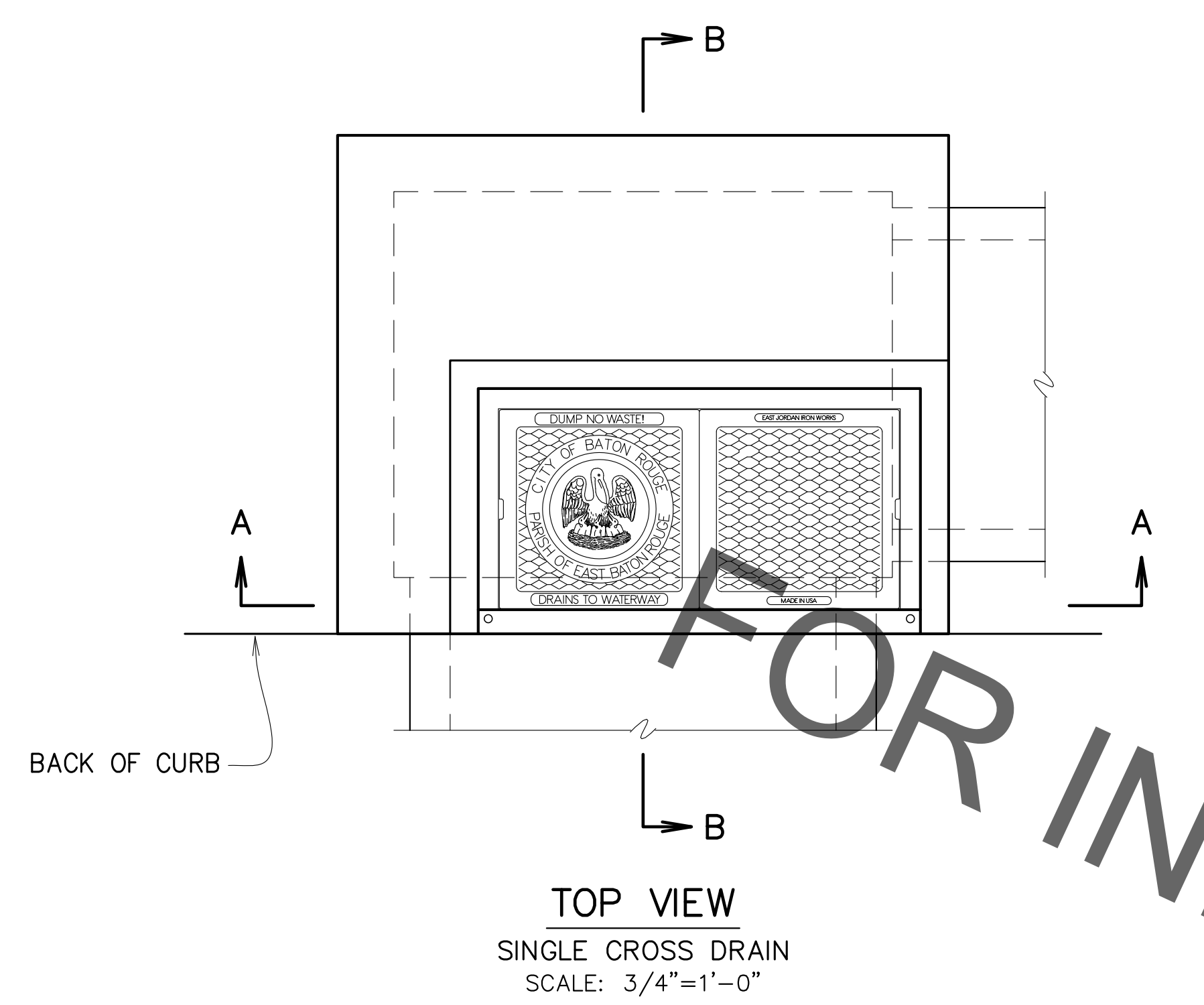
STATE OF LOUISIANA  
BRYAN K. HARMON  
REG. No. 22595  
REGISTERED PROFESSIONAL ENGINEER  
DECEMBER 6, 2010

STANDARD PLAN No. 702-01	DATED DEC. 6, 2010	SHT. No. 1 OF 2
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SINGLE CURB INLET  
(PIPE BEHIND CURB)  
(DEPTHS ≤ 8')

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

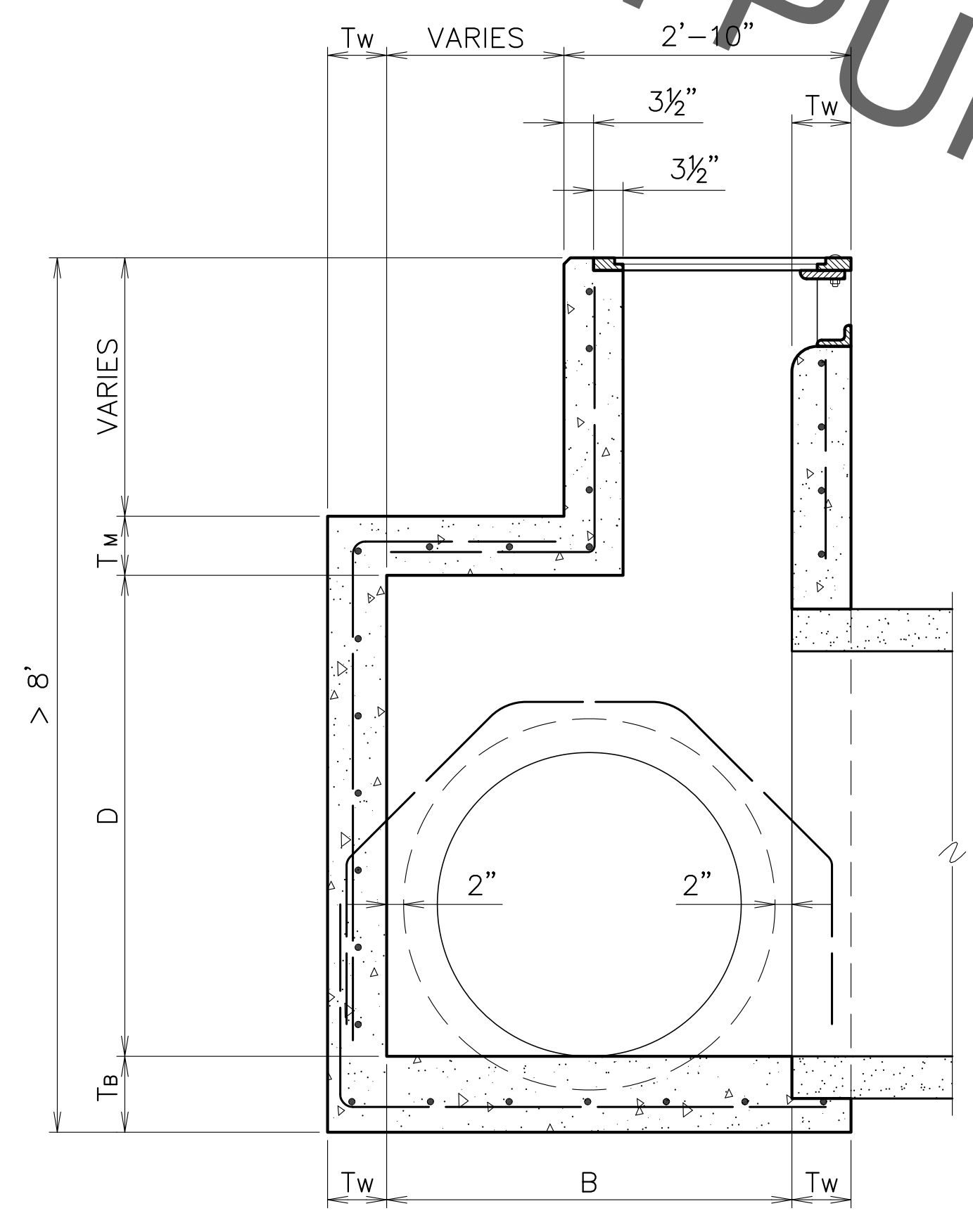


PIPE SIZE		DIMENSION					
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	A SINGLE PIPE	A DOUBLE PIPE	B	C	D ROUND PIPE	D ARCH PIPE
15"	-	4'-0"	5'-0"	2'-3"	15"	2'-0"	2'-0"
18"	15"	4'-0"	5'-7"	2'-3"	15"	2'-0"	2'-0"
24"	18"	4'-0"	6'-7"	2'-10"	15"	2'-7"	2'-0"
30"	24"	4'-0"	8'-9"	3'-5"	15"	3'-2"	2'-2"
36"	30"	4'-0"	8'-11"	4'-0"	15"	3'-8"	2'-6"
42"	36"	4'-8"	10'-5"	4'-8"	17"	4'-3"	2'-11"
48"	-	5'-2"	11'-7"	5'-2"	19"	4'-9"	3'-4"
54"	42"	5'-9"	12'-11"	5'-9"	21"	5'-4"	3'-9"
60"	48"	6'-4"	14'-3"	6'-4"	23"	5'-10"	4'-2"
-	54"	6'-8"	15'-0"	6'-8"	24"	6'-11"	4'-7"
72"	60"	7'-6"	16'-8"	7'-6"	24"	8'-0"	5'-5"
84"	72"	8'-10"	20'-0"	8'-10"	36"	-	-

Centered Casting

- NOTE:
- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 FRAME AND COVER REQUIRED. SINGLE FRAME AND COVER ALLOWED.
  - PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
  - CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
  - DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
  - A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
  - SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
  - SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.

PLAN STATION CALL-OUT



STATE OF LOUISIANA  
BRYAN K. HARMON  
REG. No. 22595  
PROFESSIONAL ENGINEER  
CIVIL ENGINEERING  
DECEMBER 6, 2010

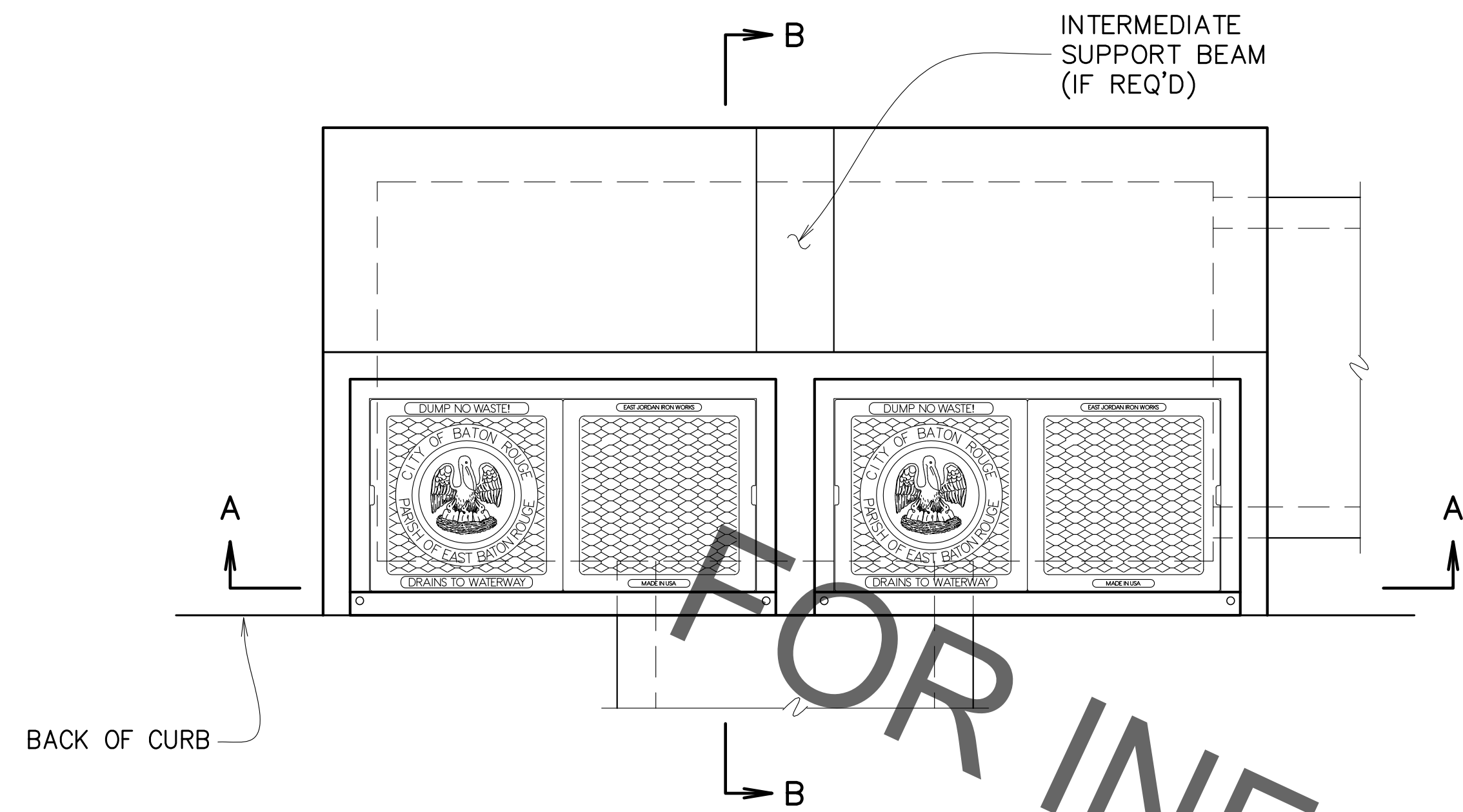
STANDARD PLAN No. 702-01	DATED DEC. 6, 2010	SHT. No. 2 OF 2
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SINGLE CURB INLET  
(PIPE BEHIND CURB)  
(DEPTHS > 8')

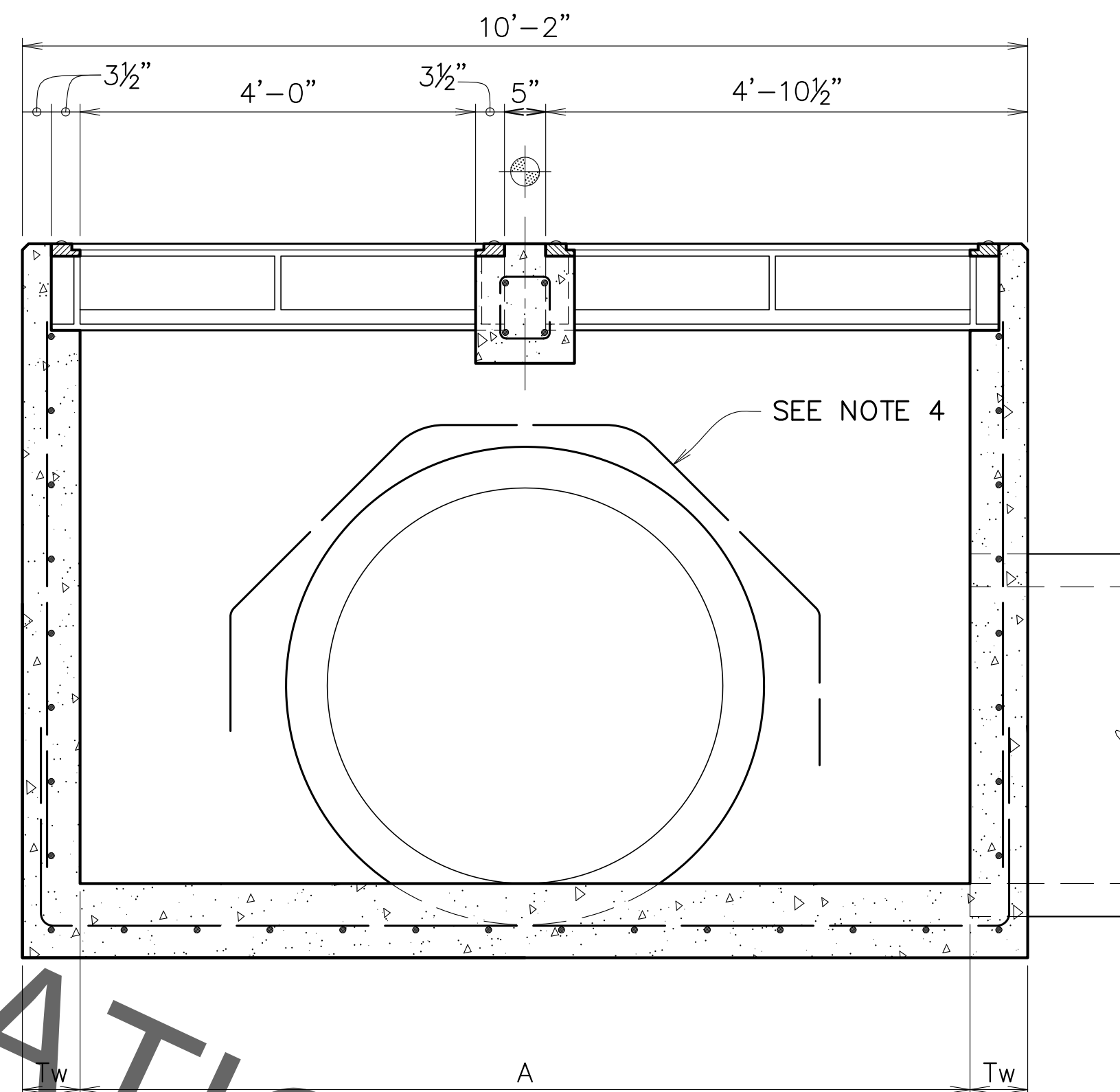
ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

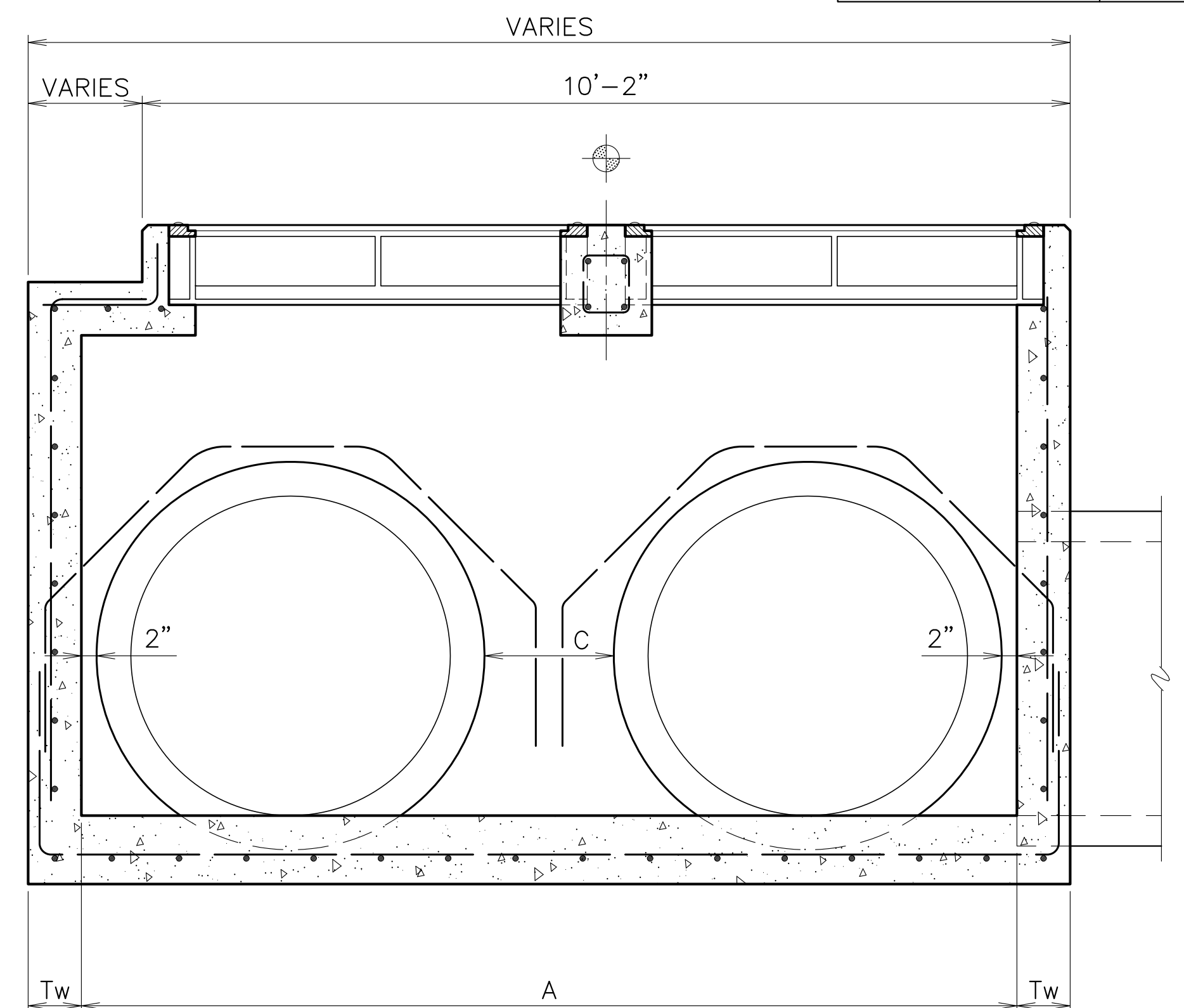




**TOP VIEW**  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



**SECTION A-A**  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



**SECTION A-A**  
DOUBLE CROSS DRAIN  
SCALE: 3/4"=1'-0"

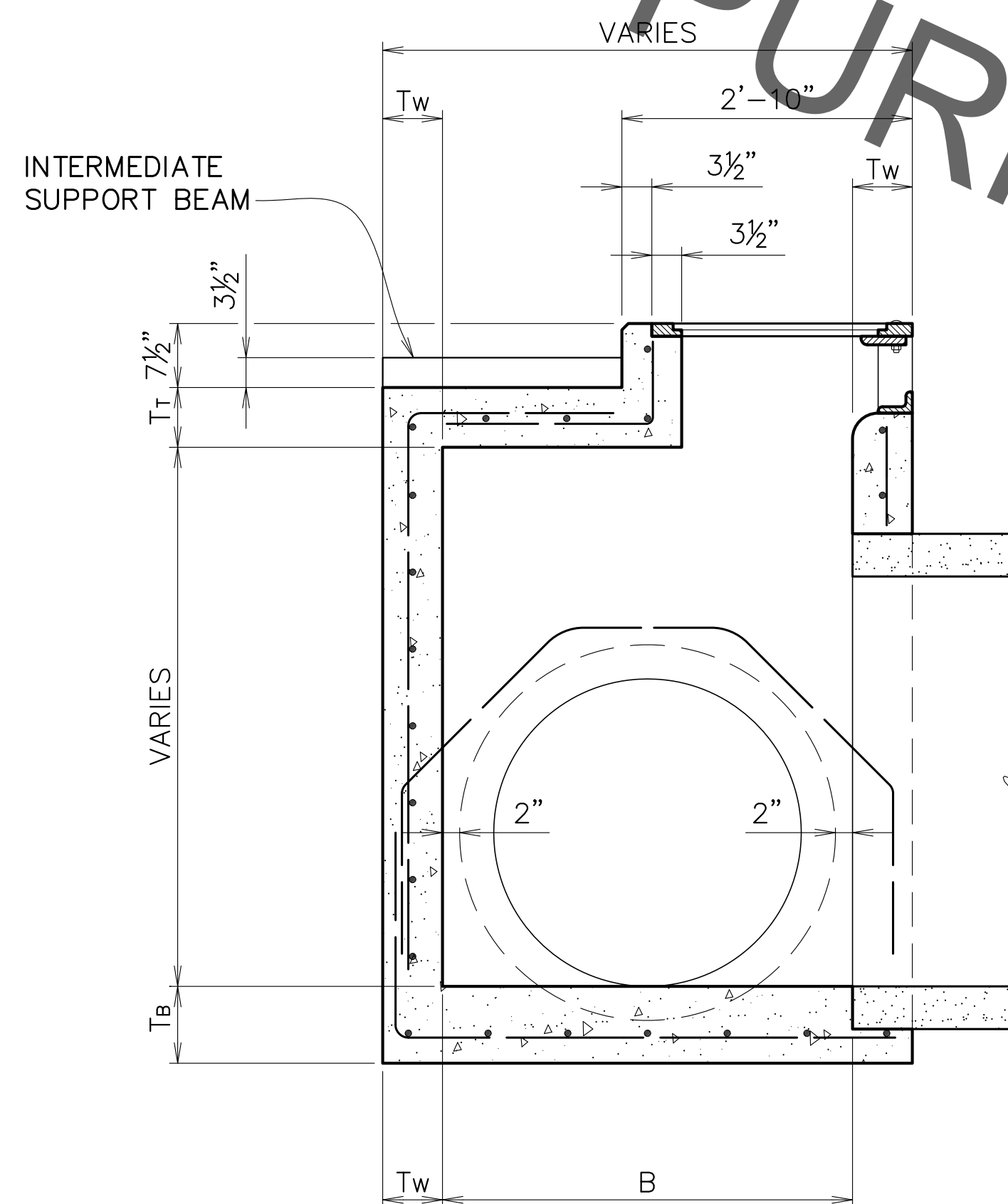
PIPE SIZE		DIMENSION			
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	A SINGLE PIPE	A DOUBLE PIPE	B	C
15"	-	9'-0"	9'-0"	2'-3"	15"
18"	15"	9'-0"	9'-0"	2'-3"	15"
24"	18"	9'-0"	9'-0"	2'-10"	15"
30"	24"	9'-0"	9'-0"	3'-5"	15"
36"	30"	9'-0"	9'-0"	4'-0"	15"
42"	36"	9'-0"	10'-5"	4'-8"	17"
48"	-	9'-0"	11'-7"	5'-2"	19"
54"	42"	9'-0"	12'-11"	5'-9"	21"
60"	48"	9'-0"	14'-3"	6'-4"	23"
-	54"	9'-0"	15'-0"	6'-8"	24"
72"	60"	9'-0"	16'-8"	7'-6"	24"
84"	72"	9'-0"	20'-0"	8'-10"	36"

■ CENTERED CASTING

**NOTE:**

- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 FRAME AND COVER REQUIRED. SINGLE FRAME AND COVER ALLOWED.
- PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
- CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
- DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
- A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
- SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
- SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.

⊙ PLAN STATION CALL-OUT



**SECTION B-B**  
SCALE: 3/4"=1'-0"

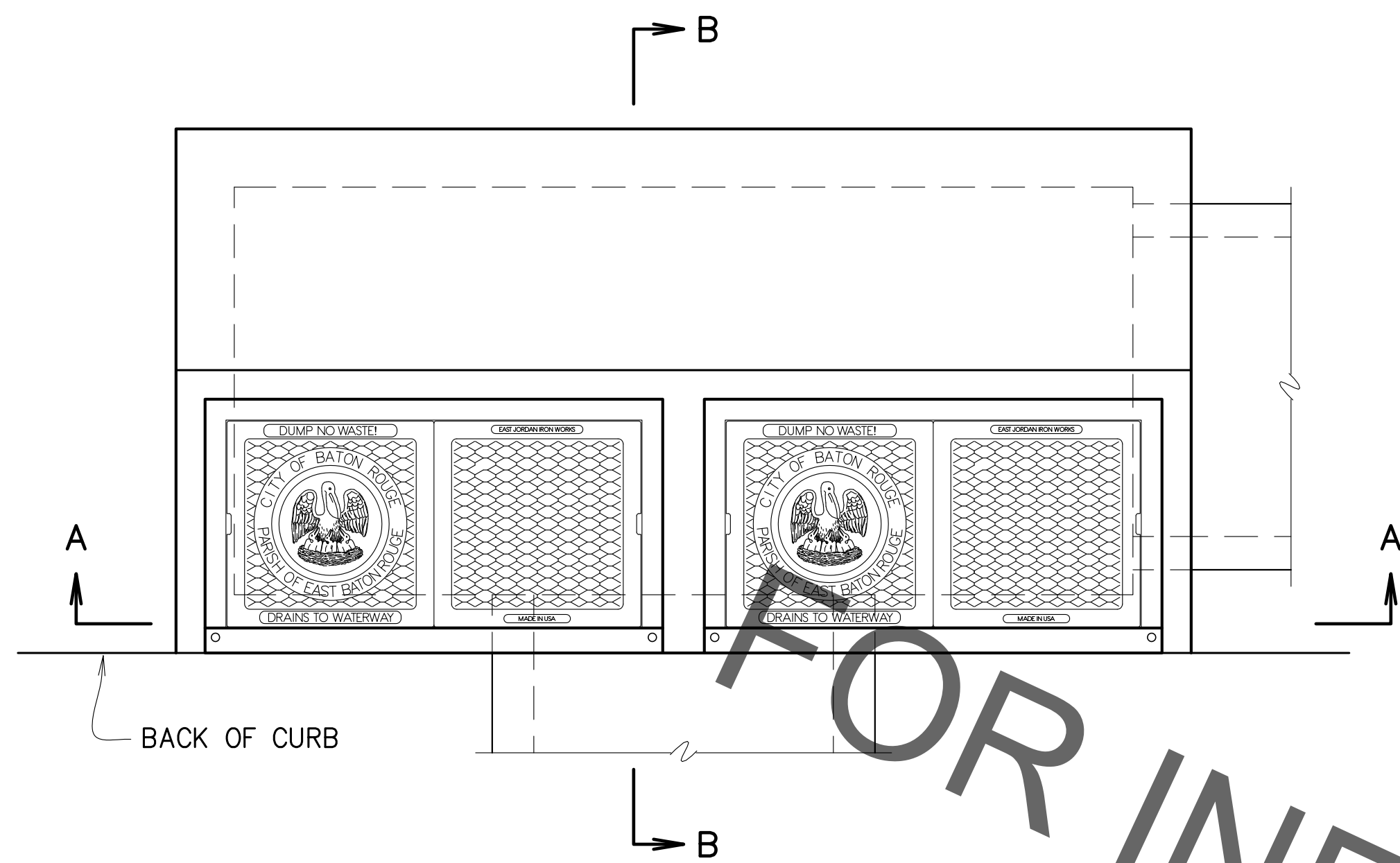
STATE OF LOUISIANA  
BRYAN K. HARMON  
REG. No. 22595  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL ENGINEERING  
B. Harmon  
DECEMBER 6, 2010

STANDARD PLAN No. 702-02	DATED DEC. 6, 2010	SHT. No. 1 OF 2
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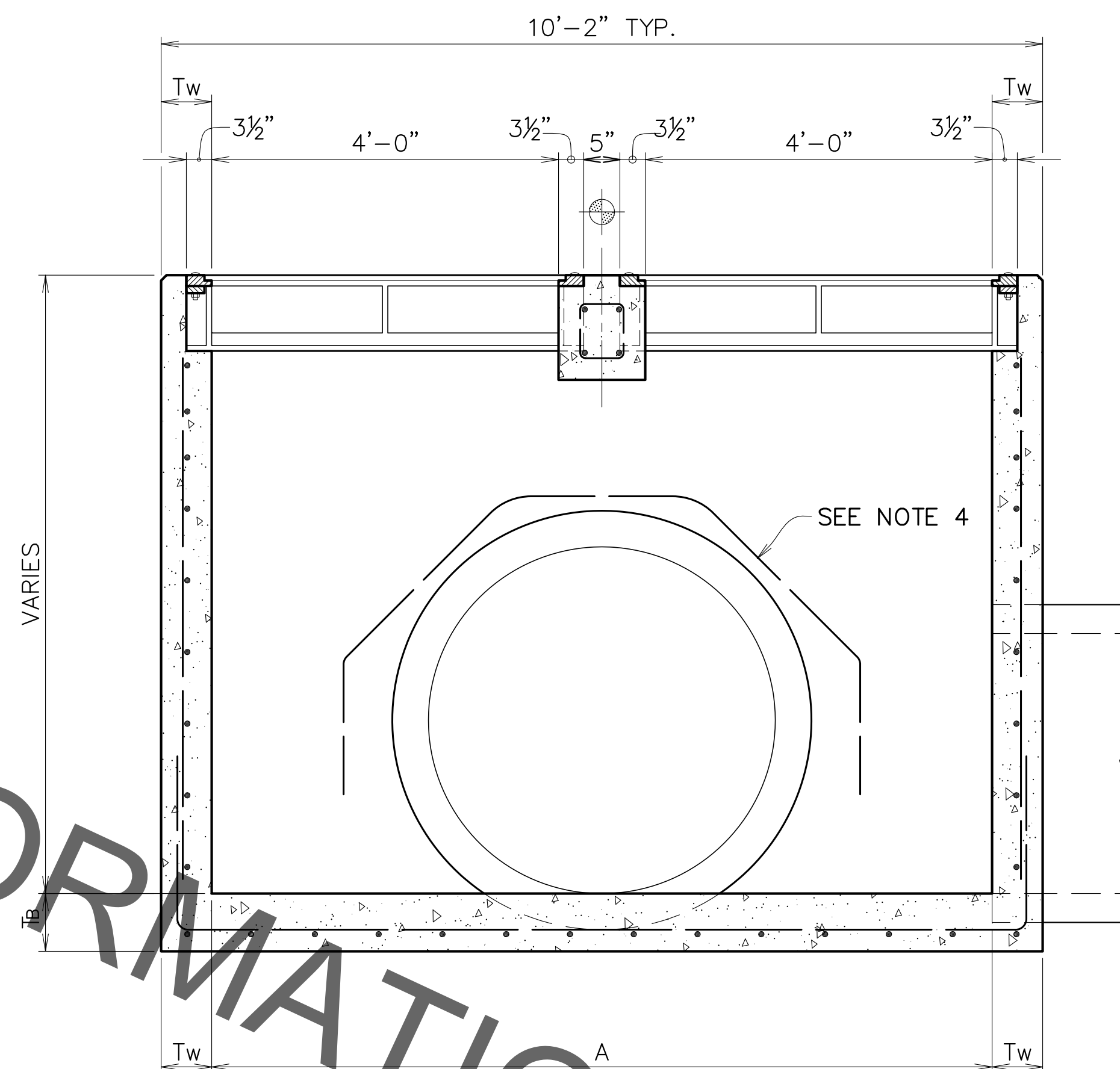
**DOUBLE CURB INLET**  
(PIPE BEHIND CURB)  
(DEPTHS ≤ 8')

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

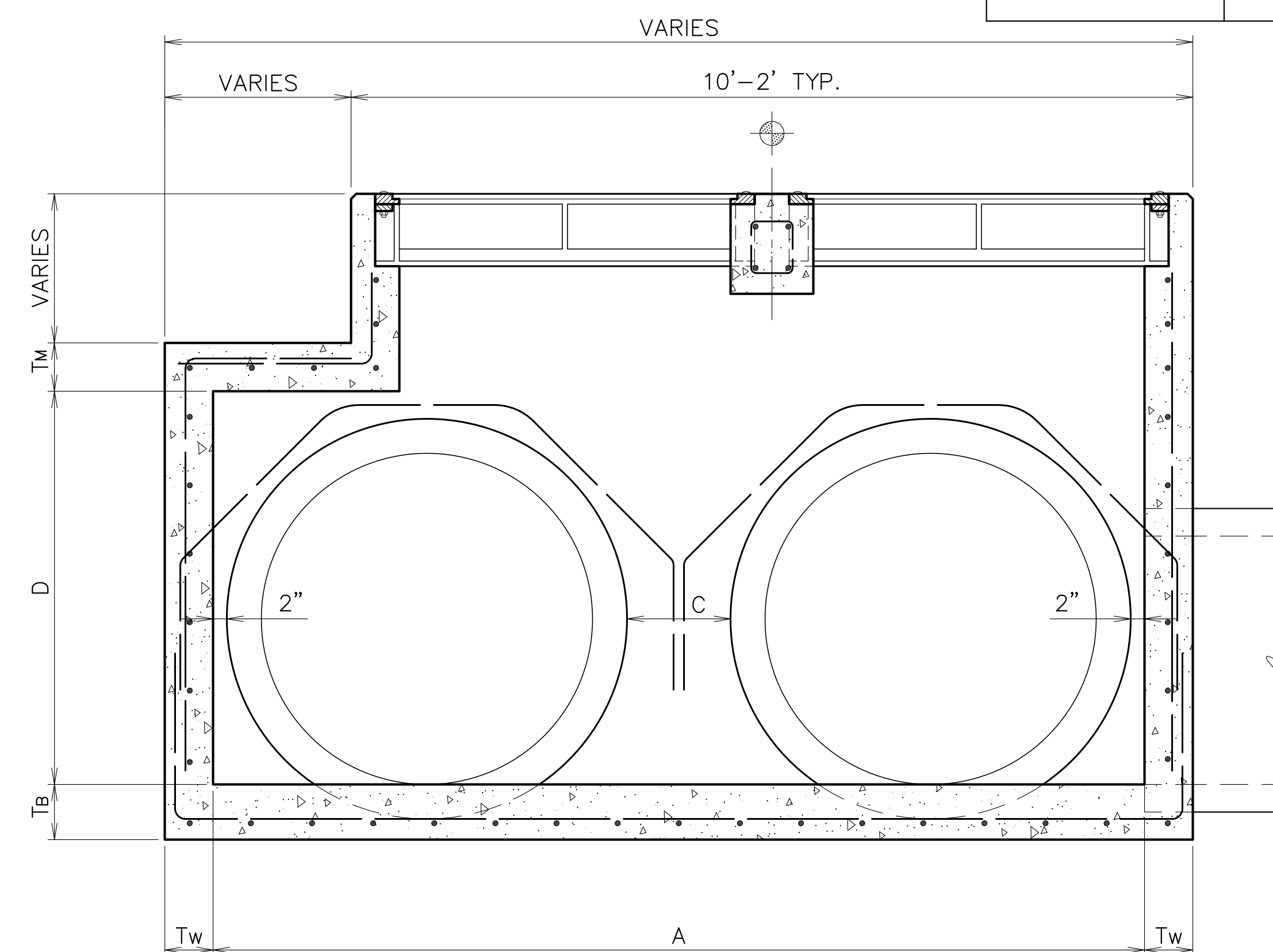
DATE	DESCRIPTION REVISION	BY



TOP VIEW  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



SECTION A-A  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



SECTION A-A  
DOUBLE CROSS DRAIN  
SCALE: 3/4"=1'-0"

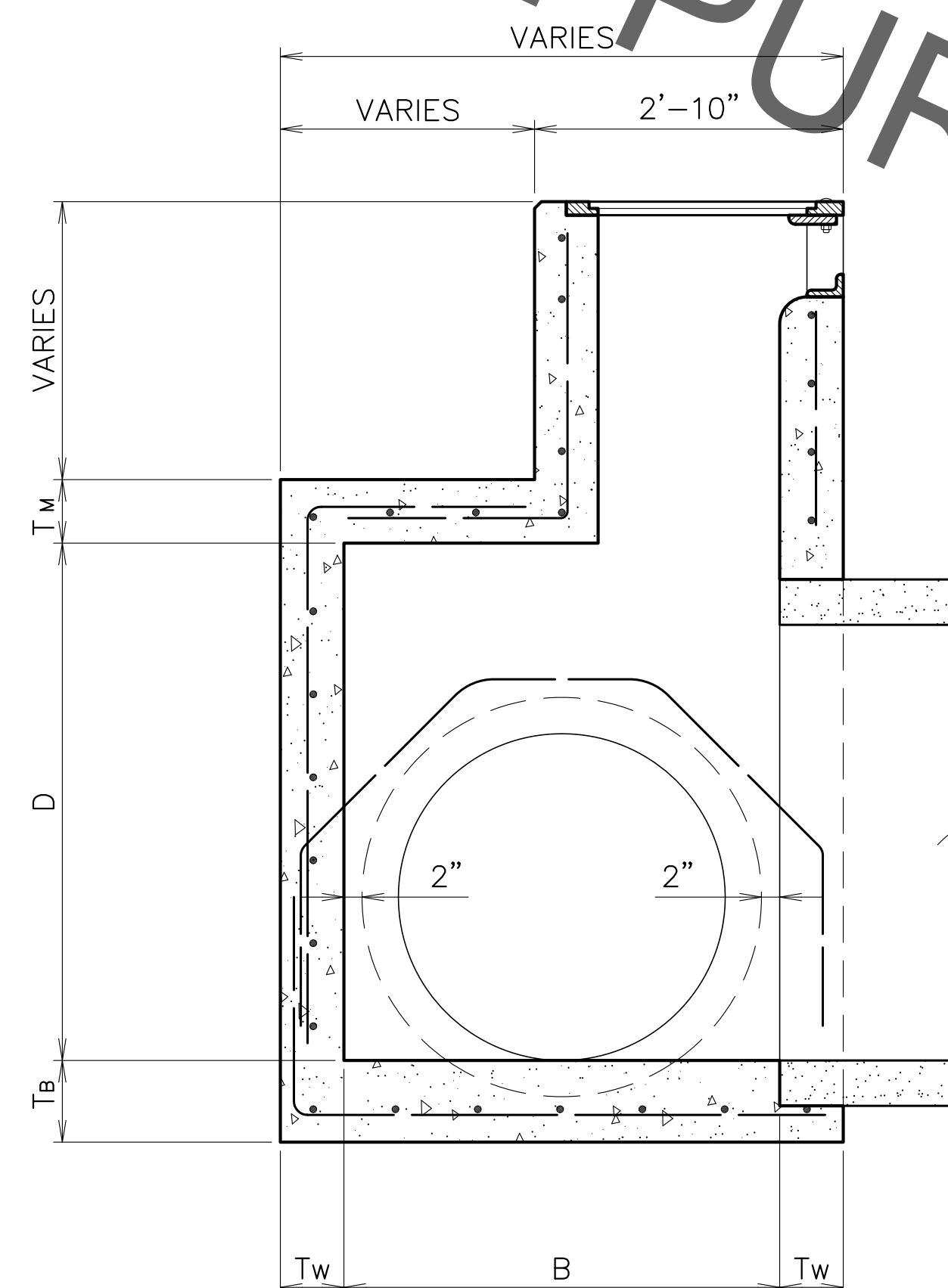
PIPE SIZE		DIMENSION					
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	A SINGLE PIPE	A DOUBLE PIPE	B	C	D ROUND PIPE	D ARCH PIPE
15"	-	9'-0"	9'-0"	2'-3"	15"	2'-0"	2'-0"
18"	15"	9'-0"	9'-0"	2'-3"	15"	2'-0"	2'-0"
24"	18"	9'-0"	9'-0"	2'-10"	15"	2'-7"	2'-0"
30"	24"	9'-0"	9'-0"	3'-5"	15"	3'-2"	2'-2"
36"	30"	9'-0"	9'-0"	4'-0"	15"	3'-8"	2'-6"
42"	36"	9'-0"	10'-5"	4'-8"	17"	4'-3"	2'-11"
48"	-	9'-0"	11'-7"	5'-2"	19"	4'-9"	2'-11"
54"	42"	9'-0"	12'-11"	5'-9"	21"	5'-4"	3'-4"
60"	48"	9'-0"	14'-3"	6'-4"	23"	5'-10"	3'-9"
-	54"	9'-0"	15'-0"	6'-8"	24"	6'-11"	4'-2"
72"	60"	9'-0"	16'-8"	7'-6"	24"	6'-11"	4'-7"
84"	72"	9'-0"	20'-0"	8'-10"	36"	8'-0"	5'-5"

■ CENTERED CASTING

NOTE:

- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 FRAME AND COVER REQUIRED. SINGLE FRAME AND COVER ALLOWED.
- PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
- CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
- DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
- A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
- SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
- SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.

⊙ PLAN STATION CALL-OUT



SECTION B-B  
SCALE: 3/4"=1'-0"



DECEMBER 6, 2010

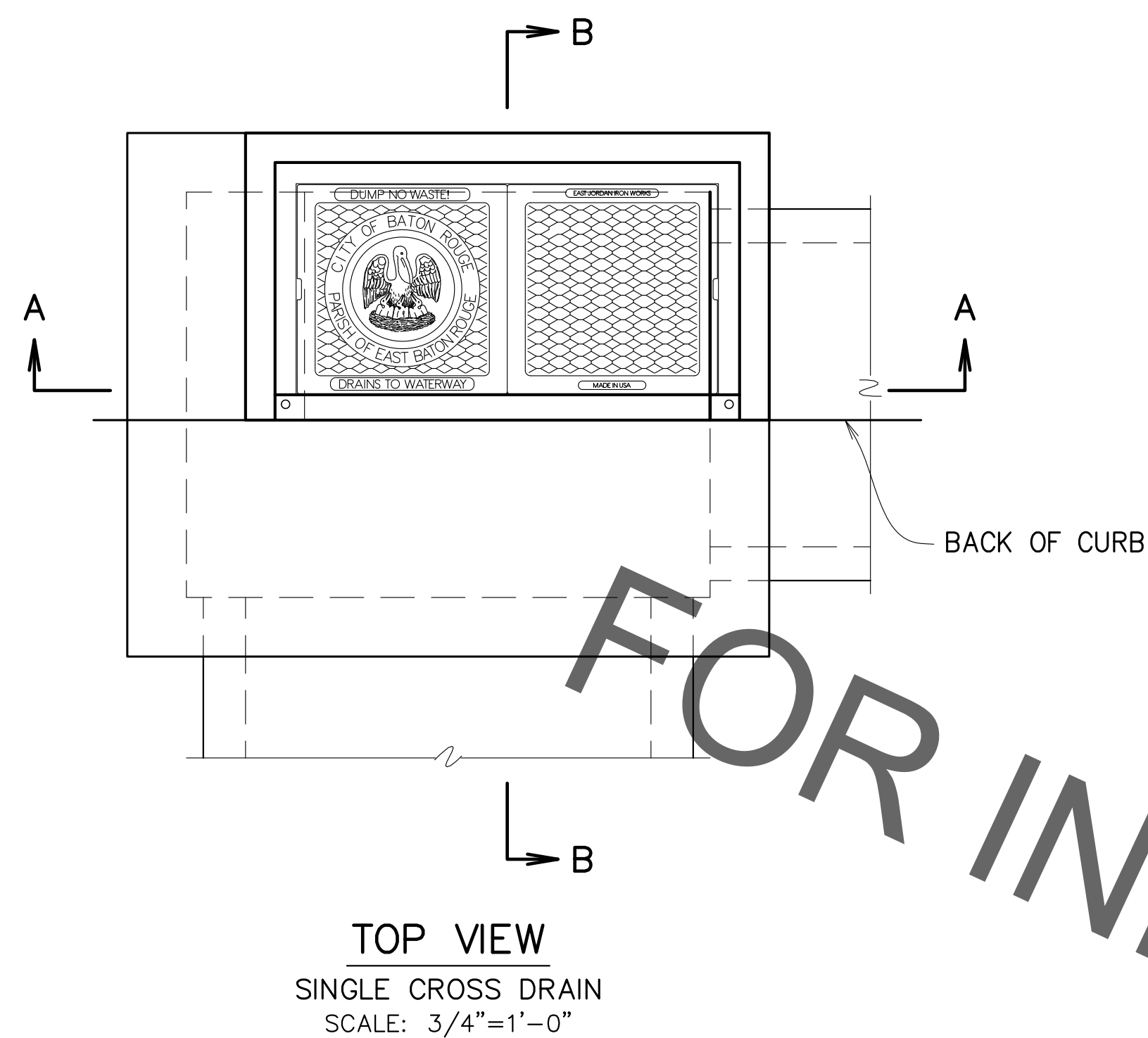
STANDARD PLAN No. 702-02	DATED DEC. 6, 2010	SHT. No. 2 OF 2
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DOUBLE CURB INLET  
(PIPE BEHIND CURB)  
(DEPTHS > 8')

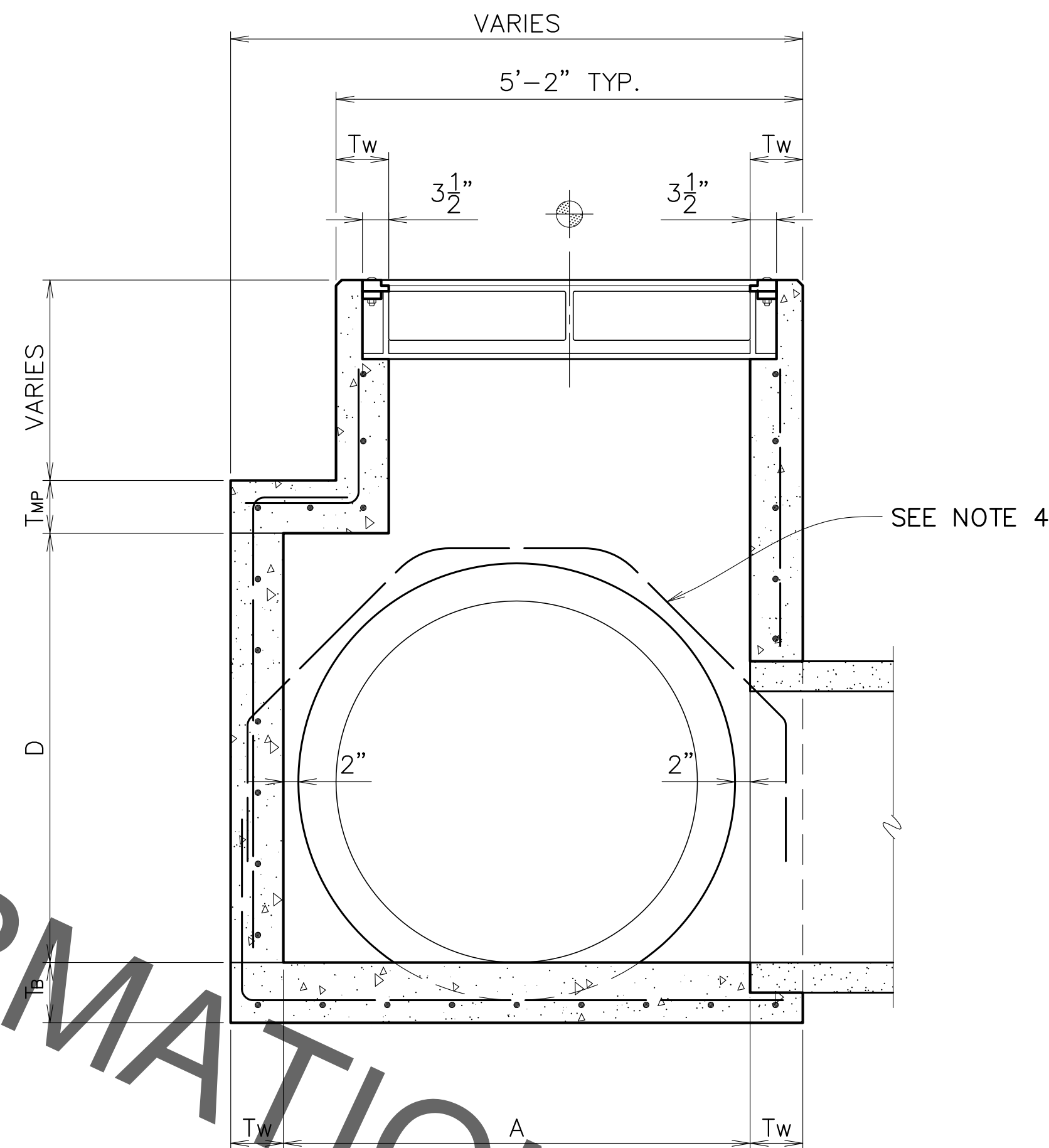
ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

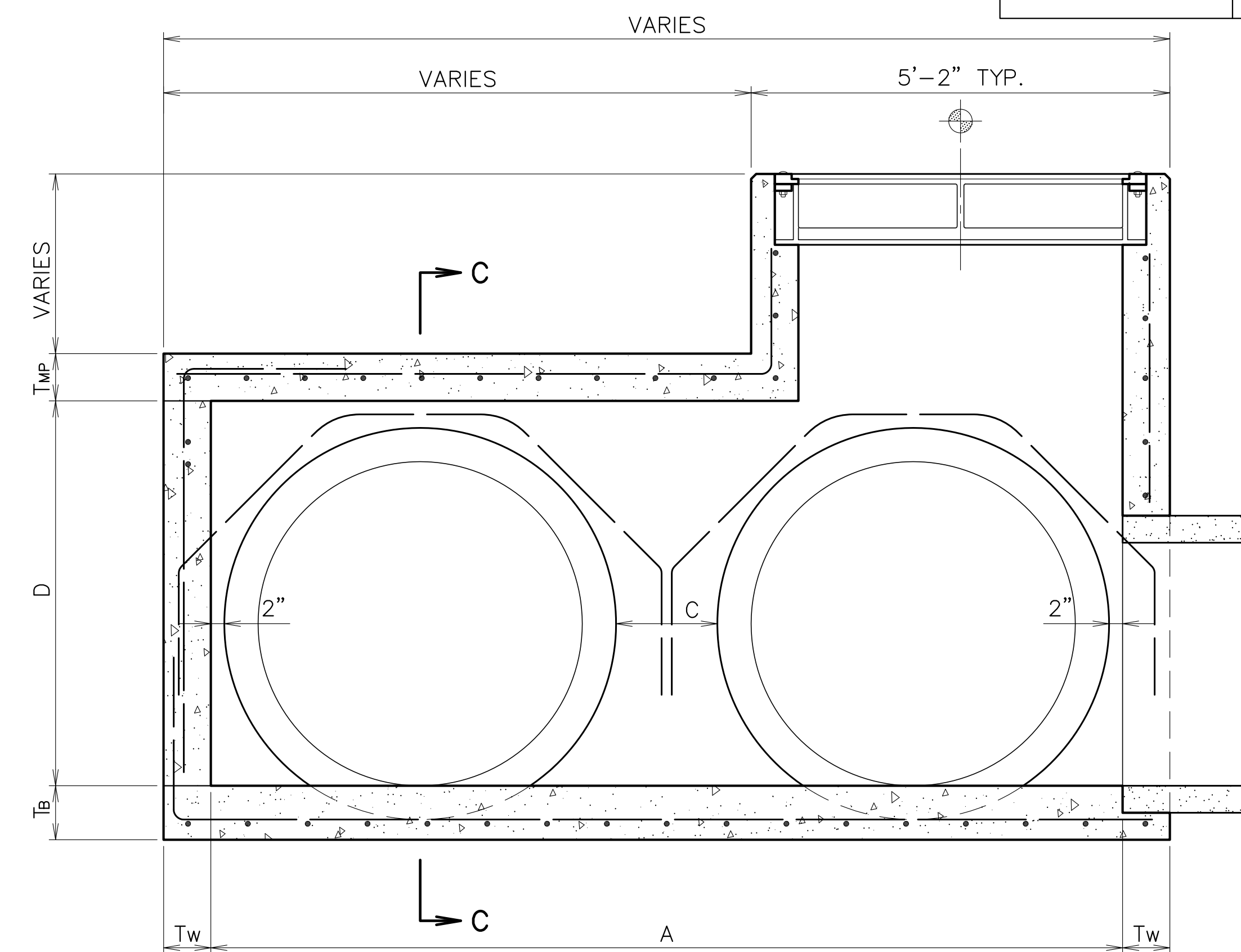
PROJECT NO.	SHEET



TOP VIEW  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



SECTION A-A  
SINGLE CROSS DRAIN  
SCALE: 3/4"=1'-0"



SECTION A-A  
DOUBLE CROSS DRAIN  
SCALE: 3/4"=1'-0"

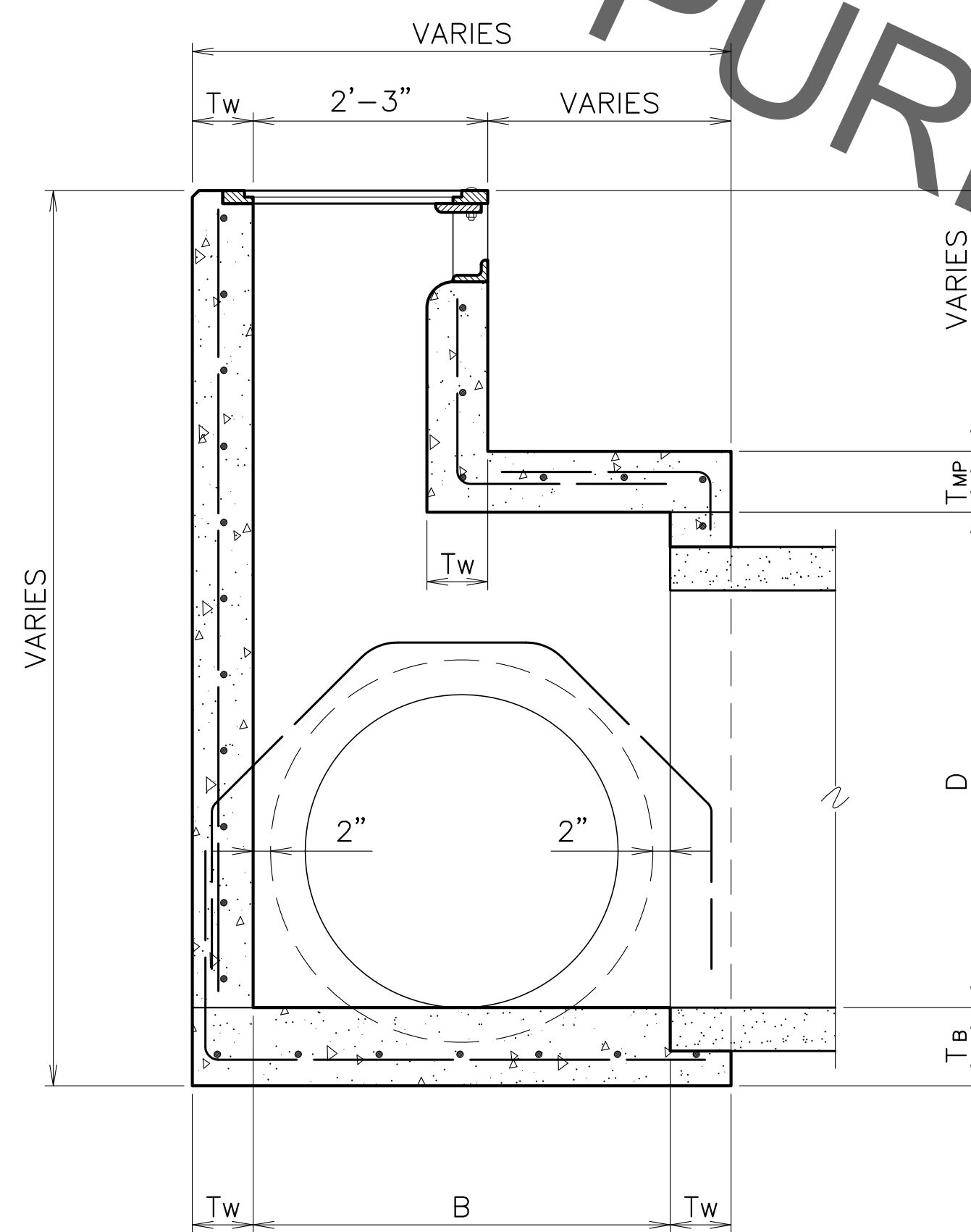
PIPE SIZE		DIMENSION					
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	A SINGLE PIPE	A DOUBLE PIPE	B	C	D ROUND PIPE	D ARCH PIPE
15"	-	4'-0"	5'-0"	2'-3"	15"	2'-0"	2'-0"
18"	15"	4'-0"	5'-7"	2'-3"	15"	2'-0"	2'-0"
24"	18"	4'-0"	6'-7"	2'-10"	15"	2'-7"	2'-0"
30"	24"	4'-0"	8'-9"	3'-5"	15"	3'-2"	2'-2"
36"	30"	4'-0"	8'-11"	4'-0"	15"	3'-8"	2'-6"
42"	36"	4'-8"	10'-5"	4'-8"	17"	4'-3"	2'-11"
48"	-	5'-2"	11'-7"	5'-2"	19"	4'-9"	3'-4"
54"	42"	5'-9"	12'-11"	5'-9"	21"	5'-4"	3'-9"
60"	48"	6'-4"	14'-3"	6'-4"	23"	5'-10"	4'-2"
-	54"	6'-8"	15'-0"	6'-8"	24"	6'-11"	4'-7"
72"	60"	7'-6"	16'-8"	7'-6"	24"	8'-0"	5'-5"
84"	72"	8'-10"	20'-0"	8'-10"	36"	-	-

Centered Casting

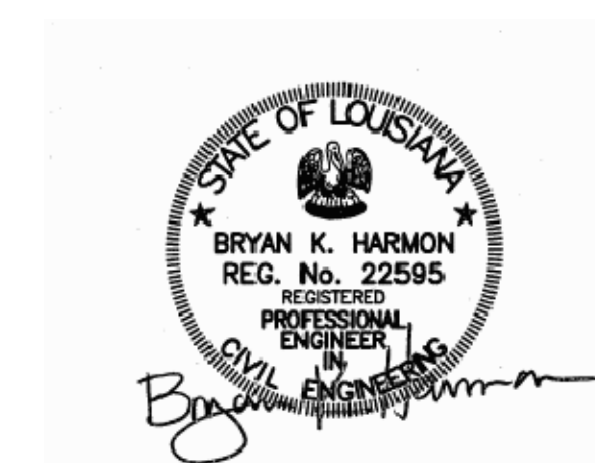
NOTE:

- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 FRAME AND COVER REQUIRED. SINGLE FRAME AND COVER ALLOWED.
- PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
- CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
- DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
- A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
- SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
- SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.

PLAN STATION CALL-OUT



SECTION B-B  
SCALE: 3/4"=1'-0"



DECEMBER 6, 2010

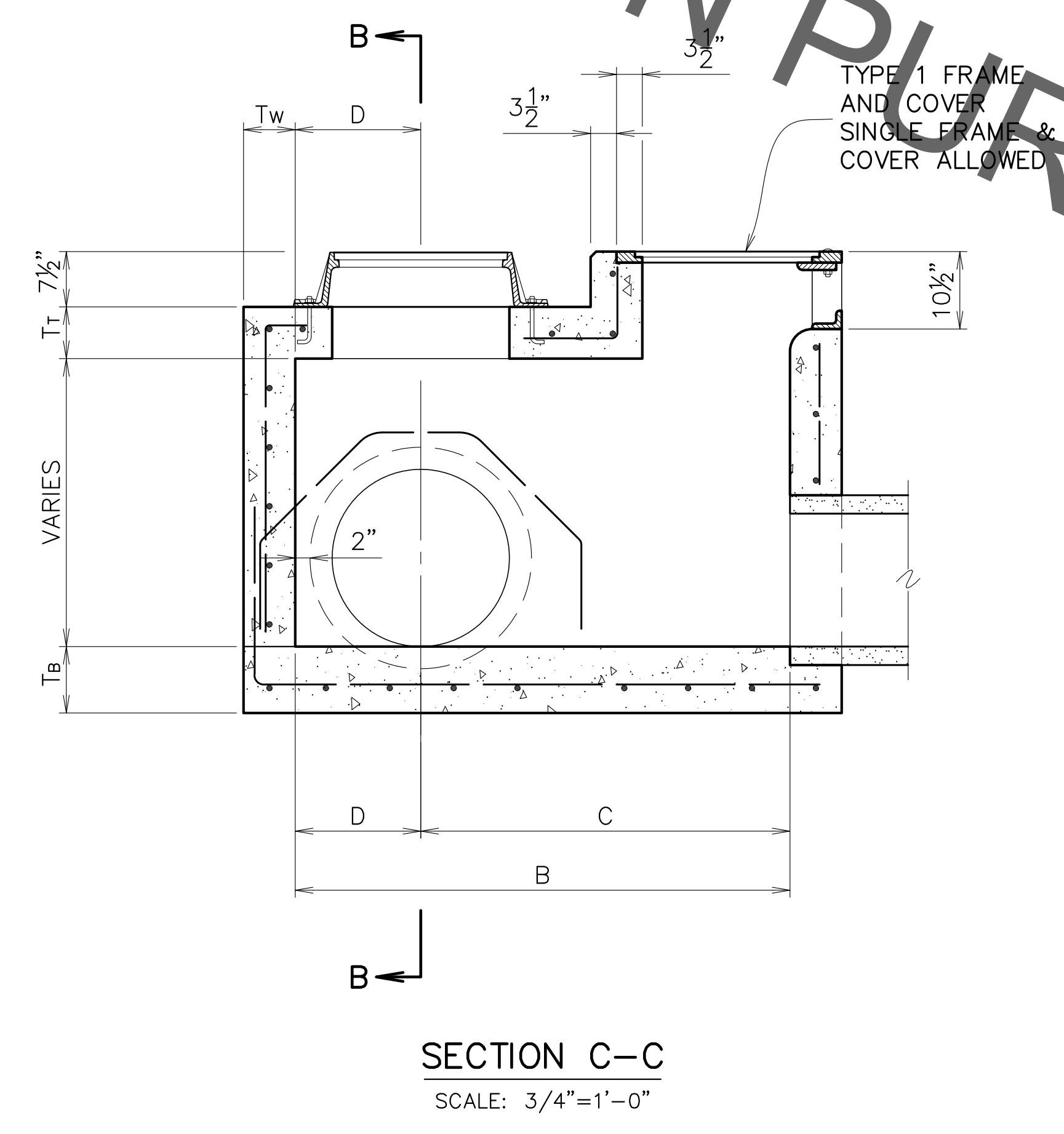
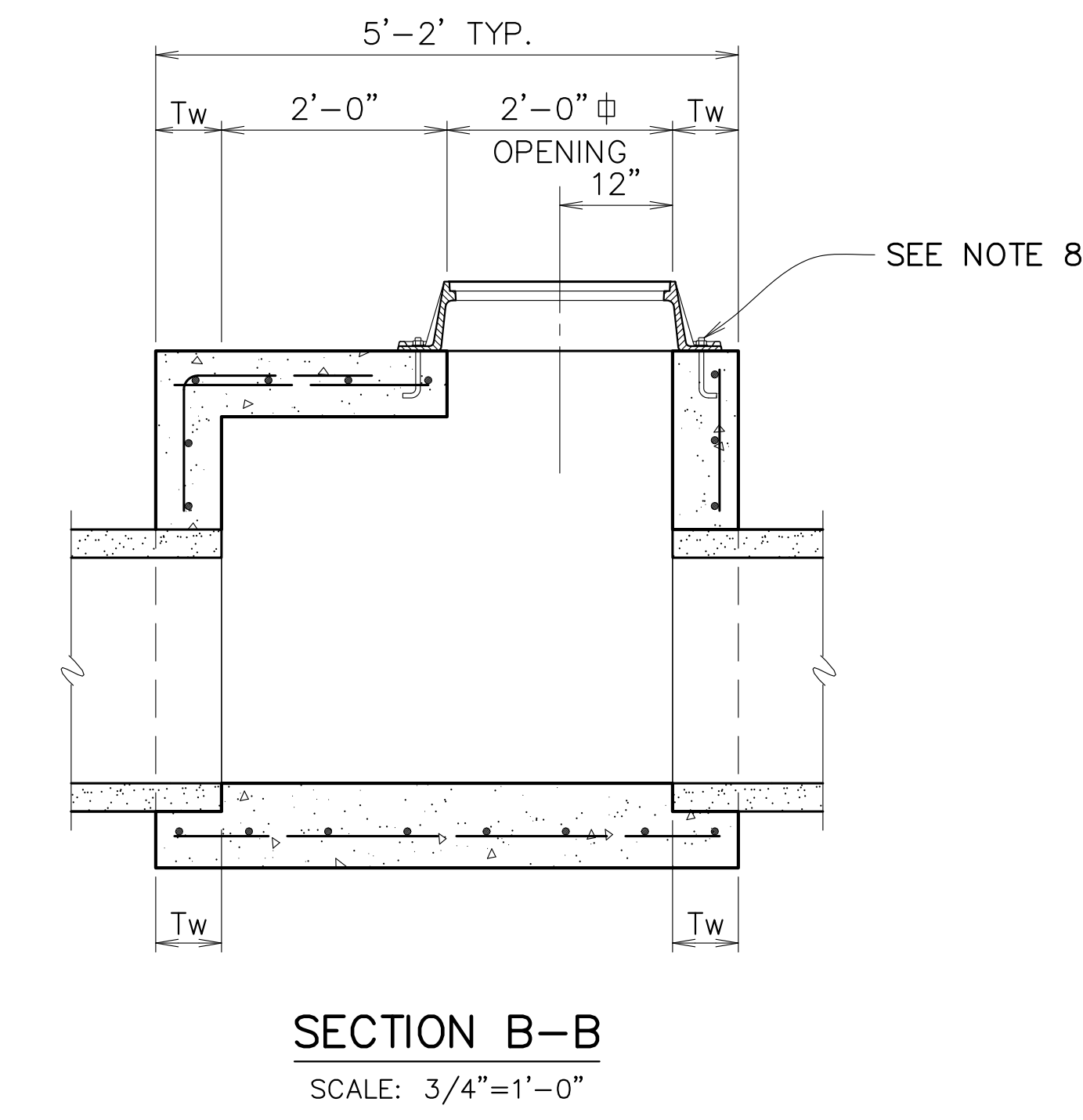
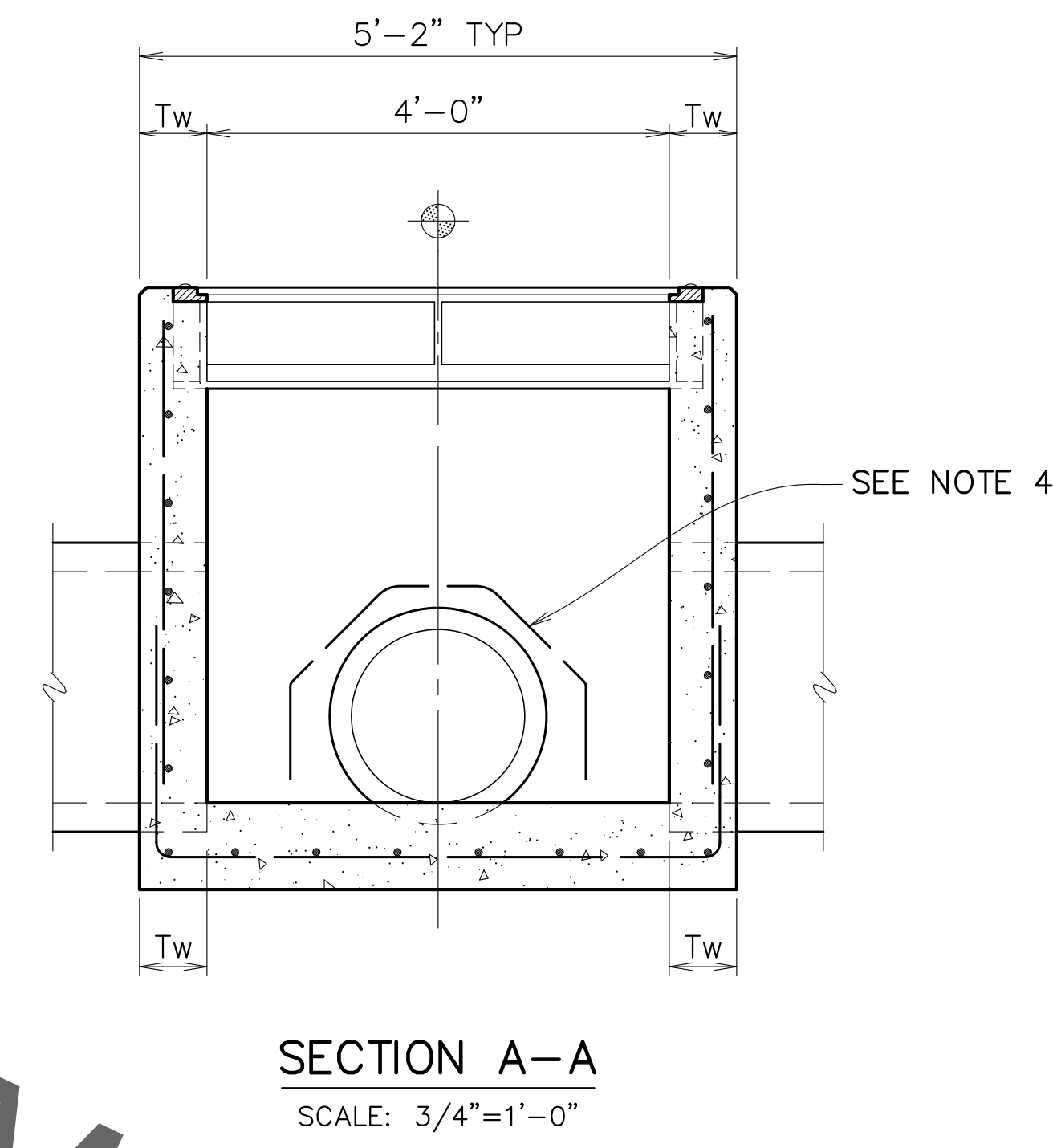
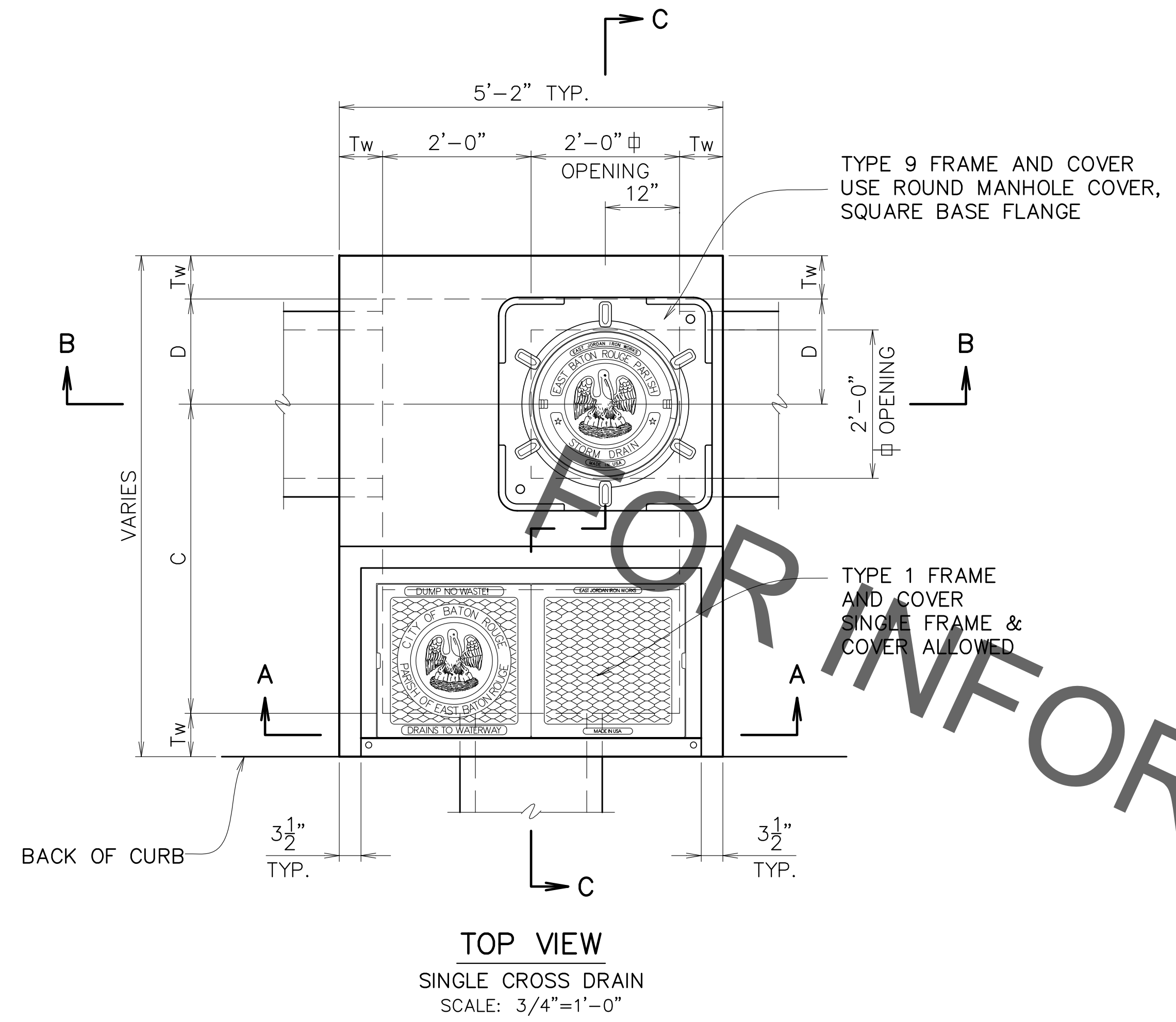
STANDARD PLAN No. 702-03	DATED DEC. 6, 2010	SHT. No. 1 OF 1
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SINGLE CURB INLET  
(PIPE UNDER CURB)

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

PROJECT NO.	SHEET

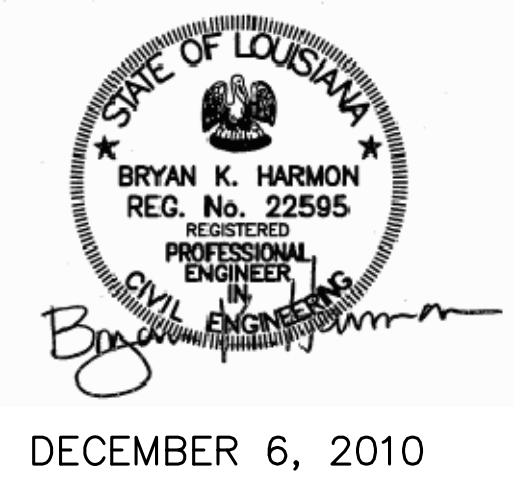


PIPE SIZE		DIMENSION			
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	FRONT INSIDE WIDTH	B	C	D
15"	-	4'-0"	4'-8"	3'-8"	1'-0"
18"	15"	4'-0"	4'-10"	3'-8"	1'-2"
24"	18"	4'-0"	5'-4"	3'-11"	1'-5"
30"	24"	4'-0"	6'-0"	4'-3"	1'-9"
36"	30"	4'-0"	6'-8"	4'-8"	2'-0"
42"	36"	4'-0"	7'-3"	4'-11"	2'-4"
48"	-	4'-0"	7'-9"	5'-2"	2'-7"

- NOTE:
- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 (SINGLE FRAME AND COVER ALLOWED) AND TYPE 9 FRAME AND COVER.
  - PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
  - CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
  - DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
  - A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
  - SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
  - SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.
  - TWO (2) GALV. STEEL CONCRETE ANCHOR BOLTS REQ'D FOR FRAME. MINIMUM BOLT SIZE IS 3/4x10x2x4.

⊙ PLAN STATION CALL-OUT

FOR INFORMATION PURPOSES ONLY



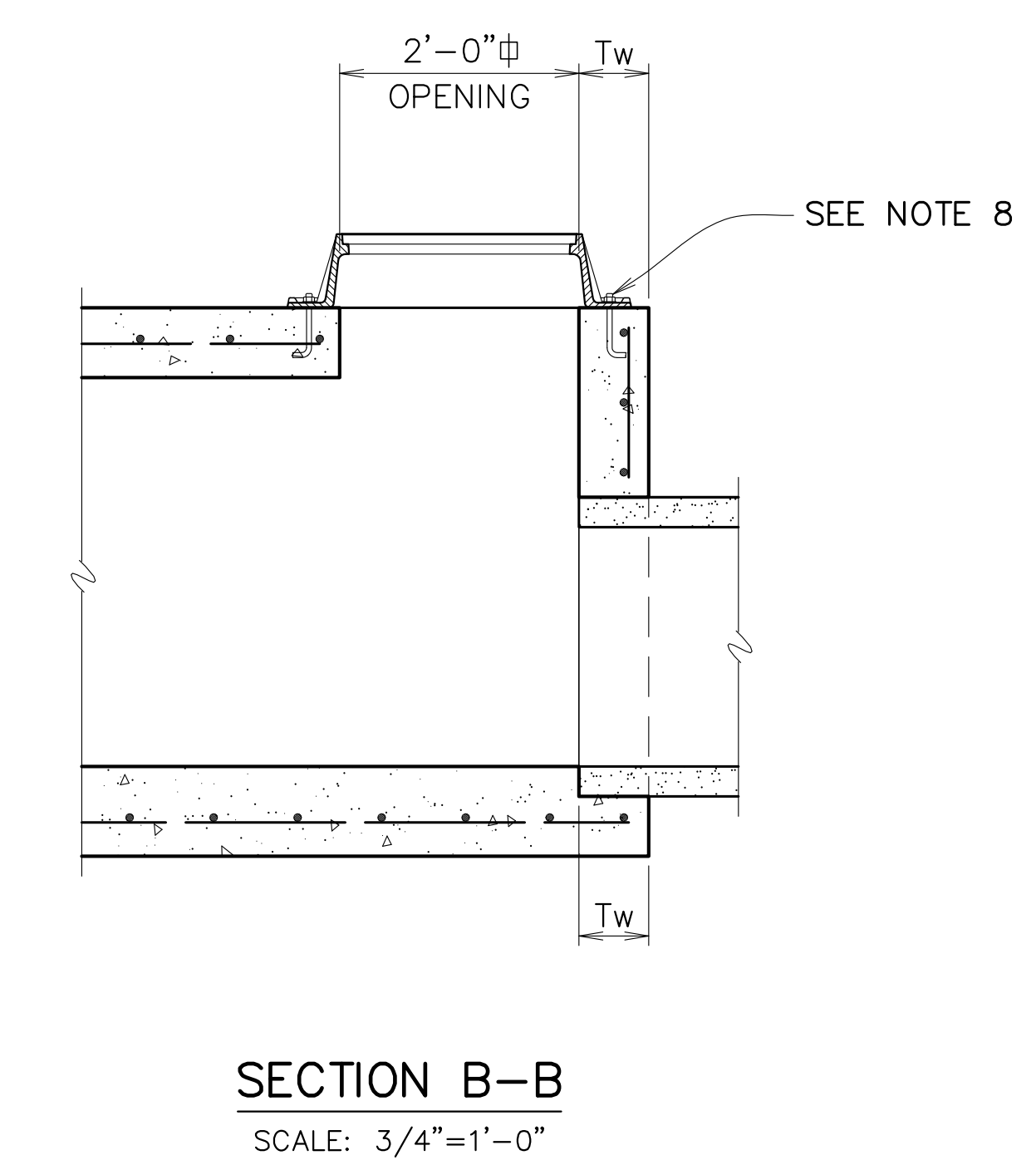
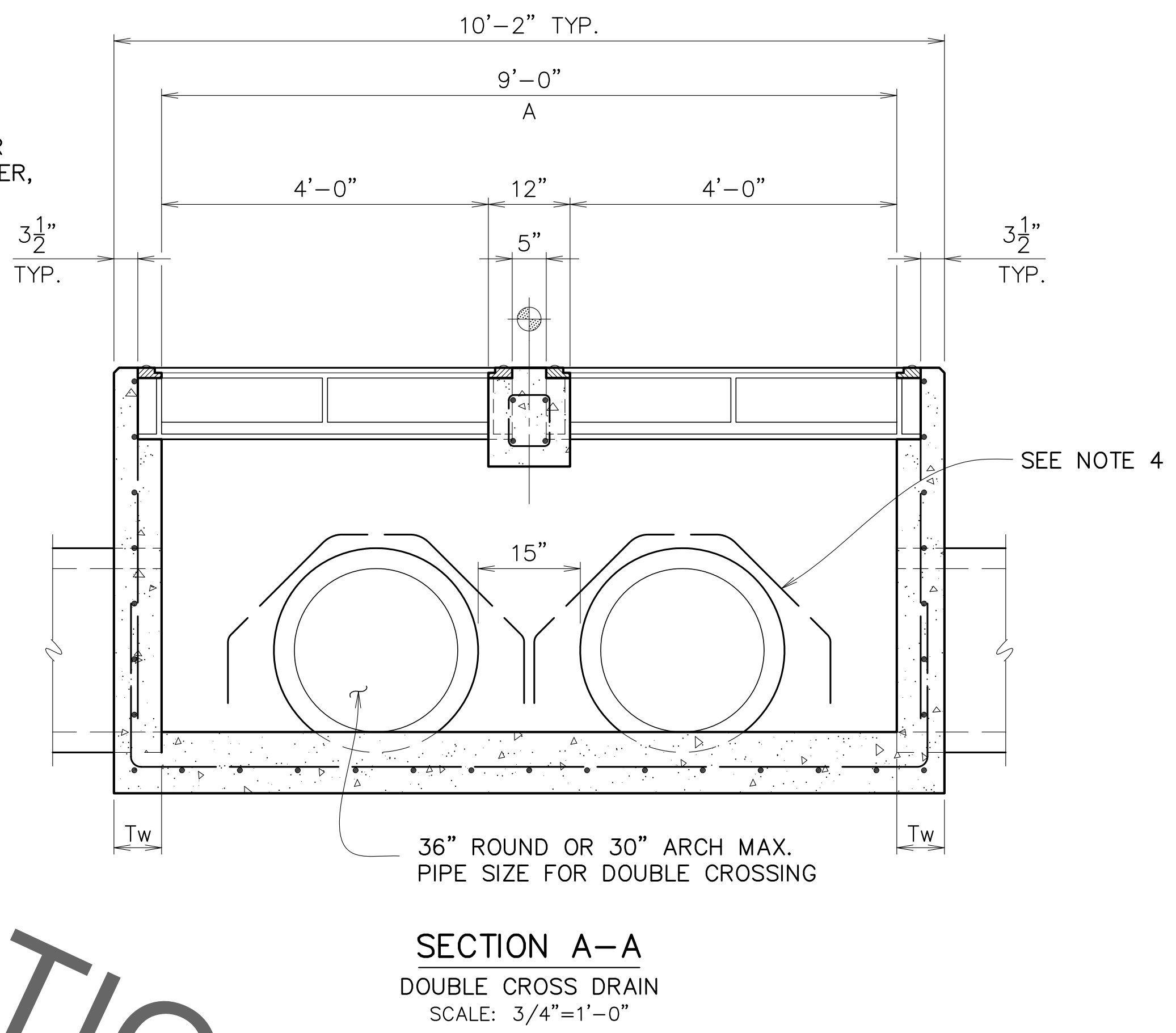
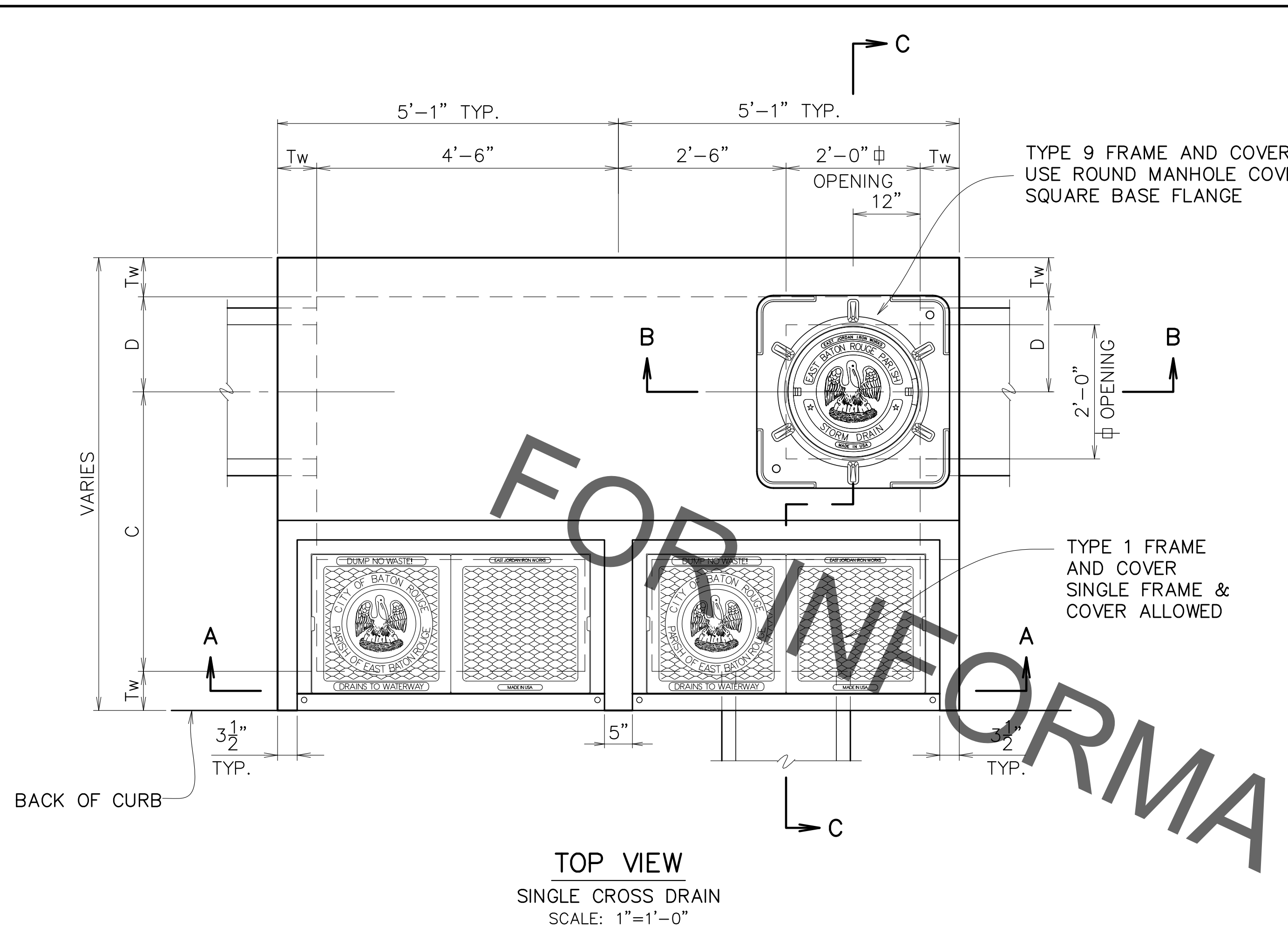
STANDARD PLAN No. 702-05	DATED DEC. 6, 2010	SHT. No. 1 OF 1
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**SINGLE CURB INLET  
(PIPE BEHIND CURB)  
FOR SUBDIVISION**

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

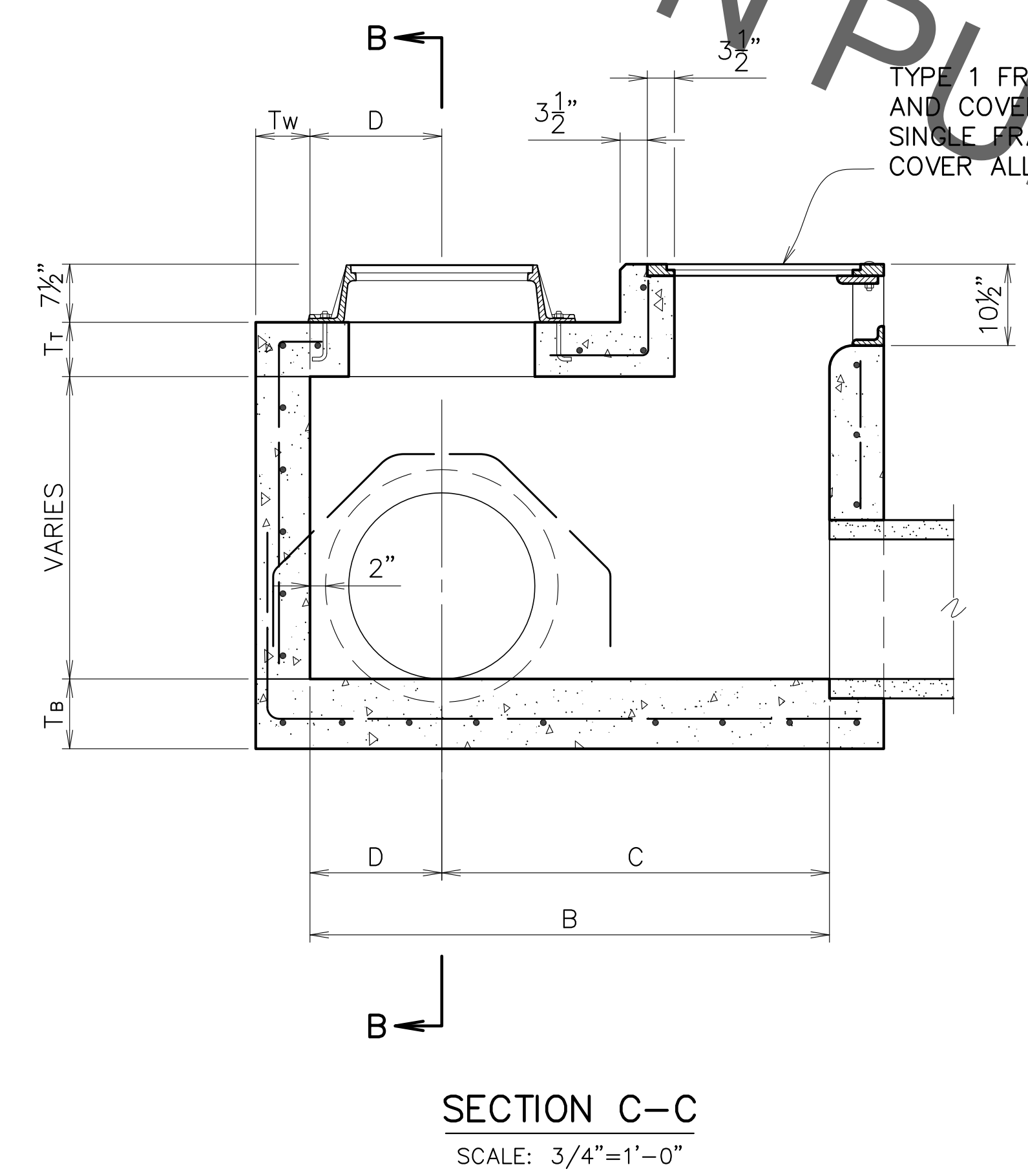
PROJECT NO.	SHEET



FOR INFORMATION PURPOSES ONLY

PIPE SIZE		DIMENSION			
ROUND PIPE	ARCH PIPE (ROUND EQUIV.)	FRONT INSIDE WIDTH	B	C	D
15"	-	9'-0"	4'-8"	3'-8"	1'-0"
18"	15"	9'-0"	4'-10"	3'-8"	1'-2"
24"	18"	9'-0"	5'-4"	3'-11"	1'-5"
30"	24"	9'-0"	6'-0"	4'-3"	1'-9"
36"	30"	9'-0"	6'-8"	4'-8"	2'-0"
42"	36"	9'-0"	7'-3"	4'-11"	2'-4"
48"	-	9'-0"	7'-9"	5'-2"	2'-7"

- NOTE:**
- SEE STANDARD PLAN 702-99 FOR FRAME AND COVER DETAILS. TYPE 1 (SINGLE FRAME AND COVER ALLOWED) AND TYPE 9 FRAME AND COVER.
  - PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLAN 702-97 MAY BE FURNISHED.
  - CONCRETE SHALL NOT BE PLACED ABOVE BOTTOM OF PAVEMENT UNTIL PAVING ADJACENT TO INLET HAS BEEN COMPLETED.
  - DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
  - A & B DIMENSIONS MAY BE VARIED FOR SKEWED PIPE.
  - SEE STANDARD PLAN 702-96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
  - SEE STANDARD PLAN 702-98 FOR CURB TRANSITION DETAILS.
  - TWO (2) GALV. STEEL CONCRETE ANCHOR BOLTS REQ'D FOR FRAME.



BRYAN K. HARMON  
 REG. No. 22595  
 REGISTERED PROFESSIONAL ENGINEER  
 IN CIVIL ENGINEERING  
 DECEMBER 6, 2010

STANDARD PLAN No. 702-06	DATED DEC. 6, 2010	SHT. No. 1 OF 1
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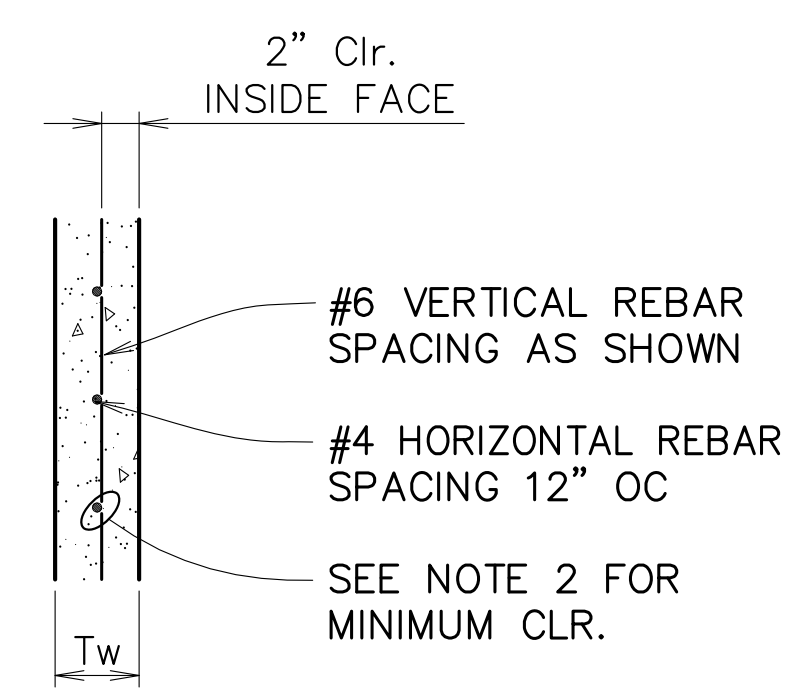
DOUBLE CURB INLET  
(PIPE BEHIND CURB)  
FOR SUBDIVISION

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY

PROJECT NO.	SHEET

ABBREVIATIONS:  
 OC - ON CENTER  
 EW - EACH WAY  
 TB - TOP & BOTTOM



**STANDARD WALL DETAIL**  
 SCALE: N.T.S.

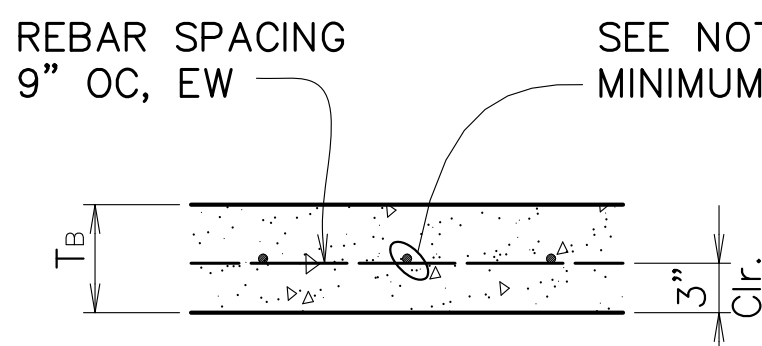
**WALL DIMENSIONS**

WALL HEIGHT (FT)	"Tw" WALL THICKNESS (IN)	VERT. REBAR SPACING (IN)
0'-4'	6.0"	12"
4'-8'	6.0"	9"
8'-10'	7.0"	9"
10'-12'	7.0"	6"
12'-16'	8.0"	6"
16'-20'	9.0"	6"

**PAVEMENT SLAB DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"Tp" SLAB THICKNESS (IN)	REBAR REQ'D *	INTERMEDIATE SUPPORT BEAM REQ'D (Y OR N)
≤10'	≤ 4'	7.0"	#5	N
≤10'	4'-6'	8.0"	#5	N
≤10'	6'-8'	10.0"	#6	N
6'-8'	6'-8'	7.0"	#5	Y
8'-10'	8'-10'	8.0"	#5	Y

\* 9" OC, EW, TB



**BOTTOM SLAB DETAIL**  
 SCALE: N.T.S.

**BOTTOM SLAB DIMENSIONS**

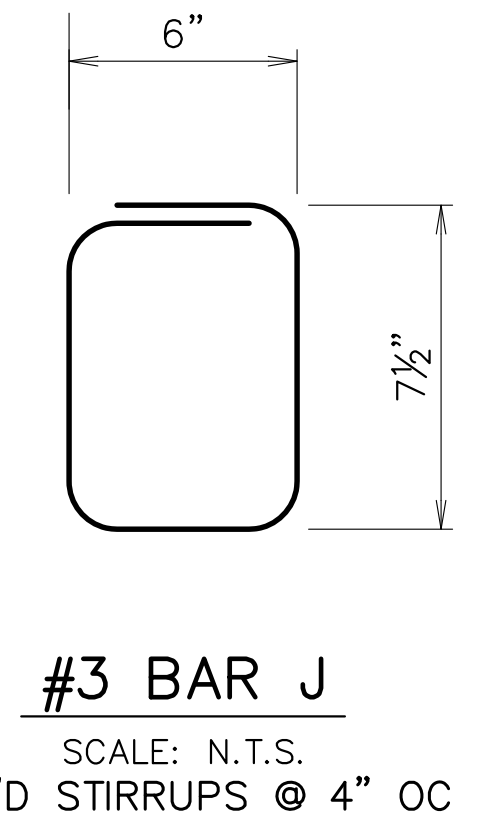
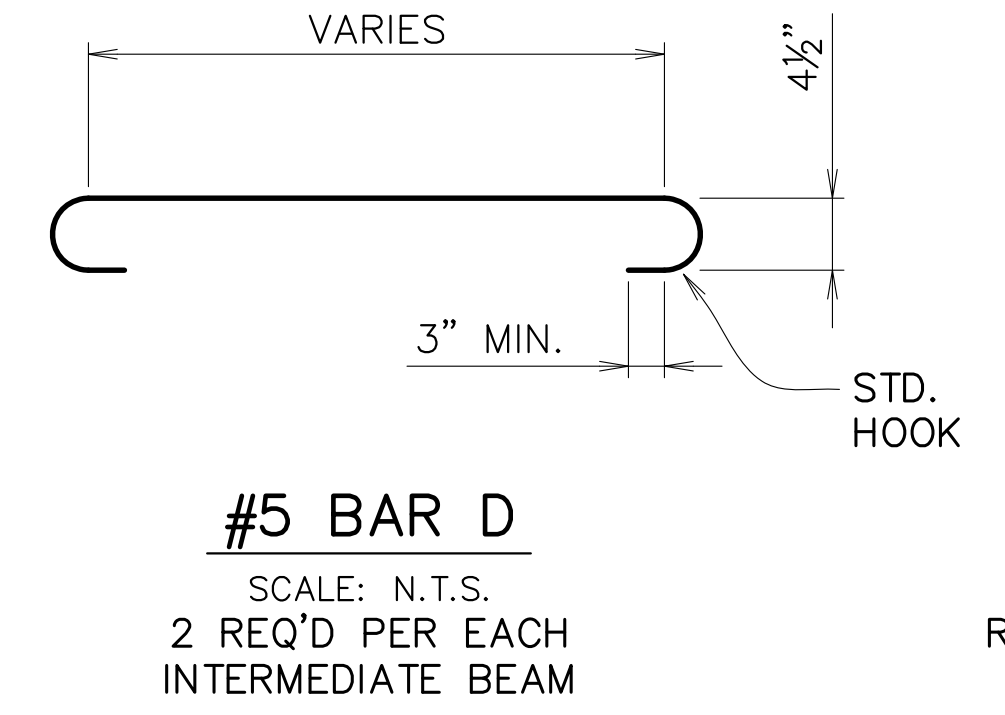
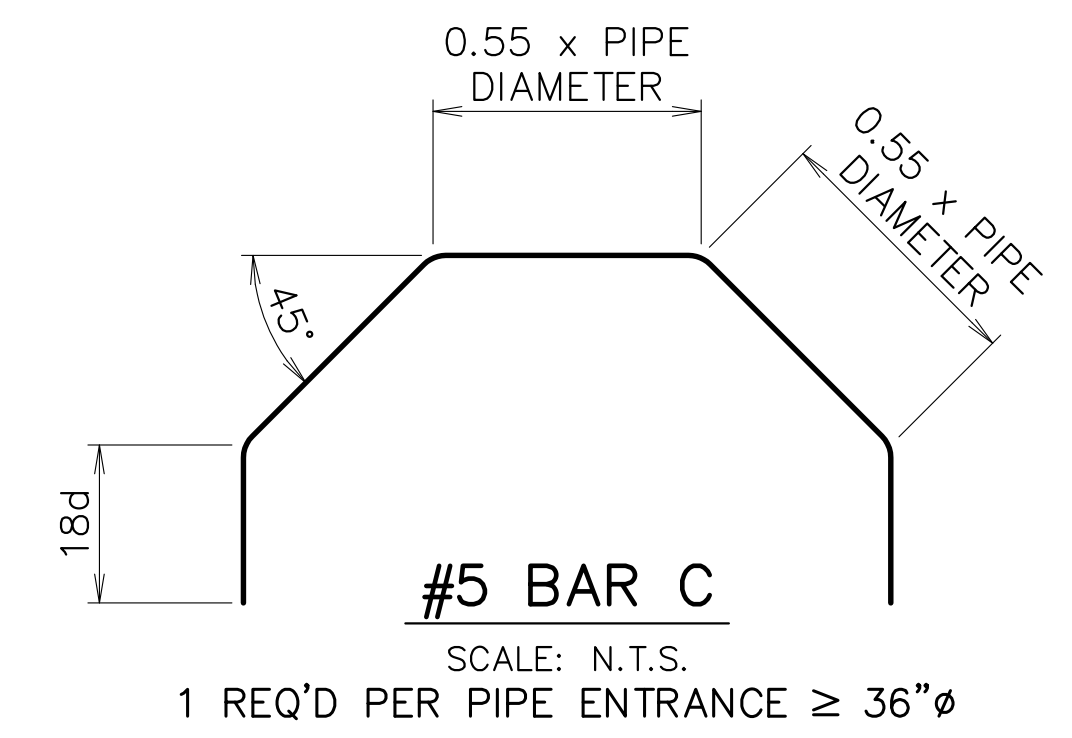
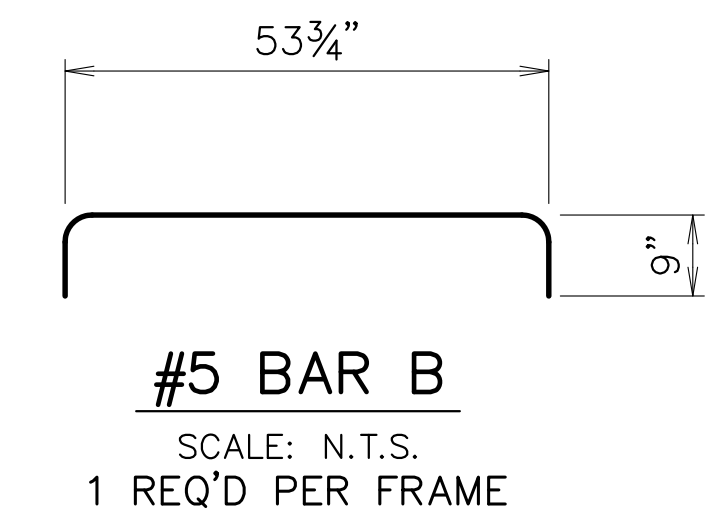
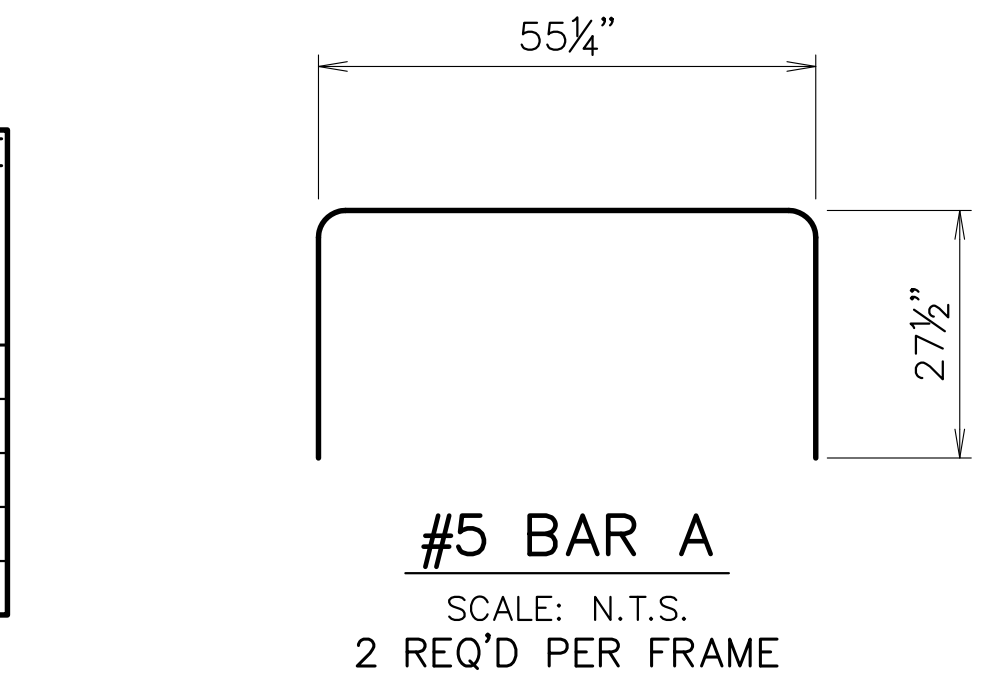
"Tb" SLAB THICKNESS (IN)	"A" OR "B" MAXIMUM WIDTH OF OPENING INSIDE STRUCTURE (FT)	MAXIMUM DEPTH OF STRUCTURE (FT)	REBAR REQ'D
6.0"	4'	8'	#4
7.0"	6'	12'	#5
8.0"	8'	16'	#5
9.0"	10'	20'	#6

BOTTOM SLAB THICKNESS TO MEET MINIMUM CRITERIA SHOWN FOR OPENING WIDTH AND STRUCTURE DEPTH.

**REBAR MINIMUM LAP AND DEVELOPMENT LENGTHS**

REBAR SIZE	LAP LENGTH (IN)	DEVELOPMENT LENGTH (IN)
#4	16"	12"
#5	20"	16"
#6	24"	19"

SHOP DRAWING DETAILING REQ'D TO PROVIDE MINIMUM LENGTHS OR ELSE USE STANDARD HOOKS



- NOTE:**
- ALL REINFORCING STEEL TO BE DEFORMED GRADE 60 MINIMUM REBAR. STEEL BAR SIZE & SPACING MAY BE ADJUSTED AS LONG AS AREA OF STEEL IS MAINTAINED PER FOOT.
  - MINIMUM CONCRETE COVER FOR REBAR STEEL IS TO BE 3" FOR CONCRETE FACES CAST AGAINST EARTH, 2.5" FOR FACES PERMANENTLY EXPOSED TO EARTH AND 2" FOR ALL OTHERS.
  - CONCRETE COMPRESSIVE STRENGTH FOR CAST-IN-PLACE STRUCTURES TO BE 4000 PSI AT 28 DAYS MINIMUM.
  - SEE SHEET 702-99 FOR FRAME AND COVER DETAILS.
  - SLABS MAY BE PRECAST AND DOWELED INTO WALL SECTIONS. (SEE STD. PLAN 702-97)

A=LENGTH INSIDE OPENING MEASURED PARALLEL TO CURB  
 B=WIDTH INSIDE OPENING MEASURED PERPENDICULAR TO CURB

**TOP SLAB DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"Tp" SLAB THICKNESS (IN)	* REBAR REQ'D
≤ 4'	≤ 4'	6.0"	#4
4'-6'	4'-6'	6.0"	#5
6'-8'	6'-8'	6.0"	#6
8'-20'	8'-10'	7.0"	#6

\* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM

**MIDDLE SLAB UNDER PAVEMENT DIMENSIONS**

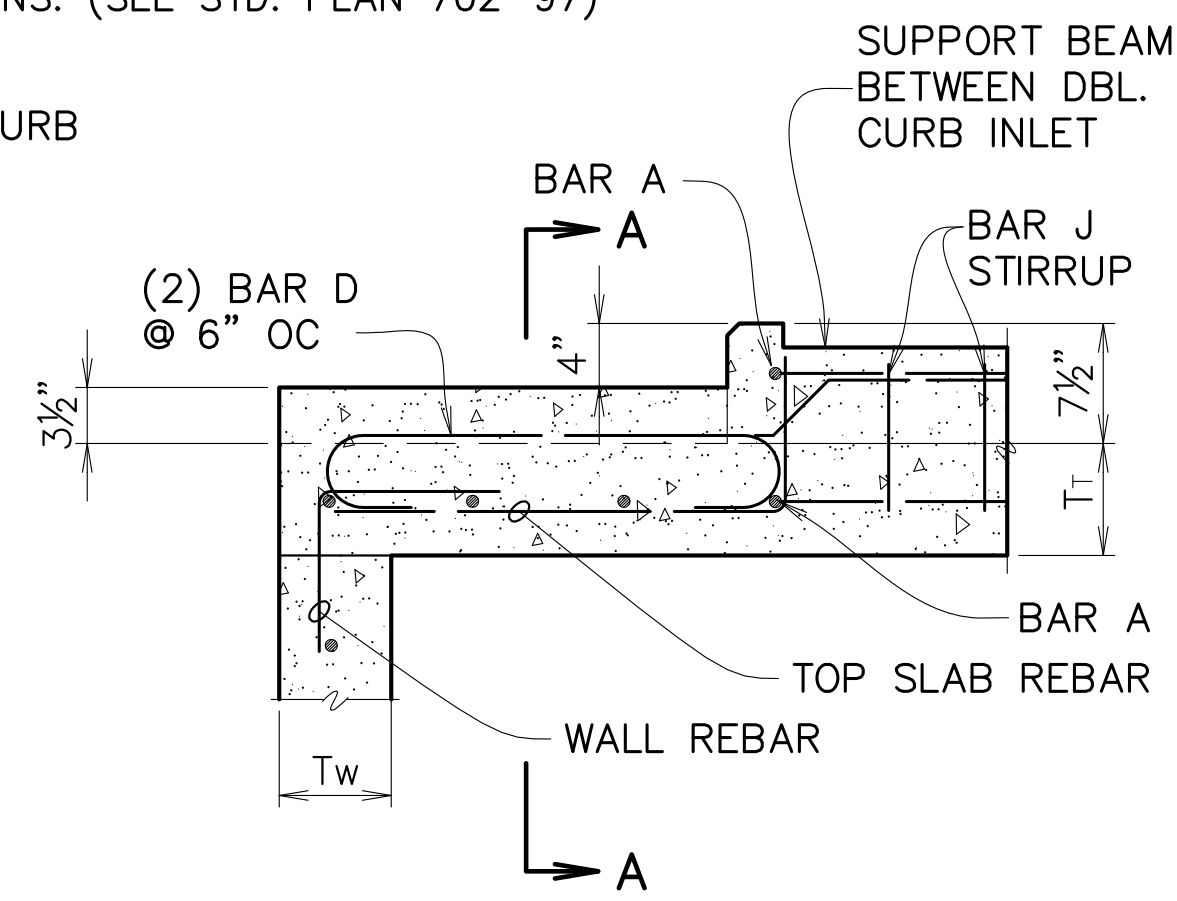
"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"Tp" SLAB THICKNESS (IN)	* REBAR REQ'D
≤20'	≤ 4'	7.0"	#4
≤20'	4'-6'	7.0"	#5
≤20'	6'-8'	8.5"	#6
≤20'	8'-10'	10.0"	#6

\* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM

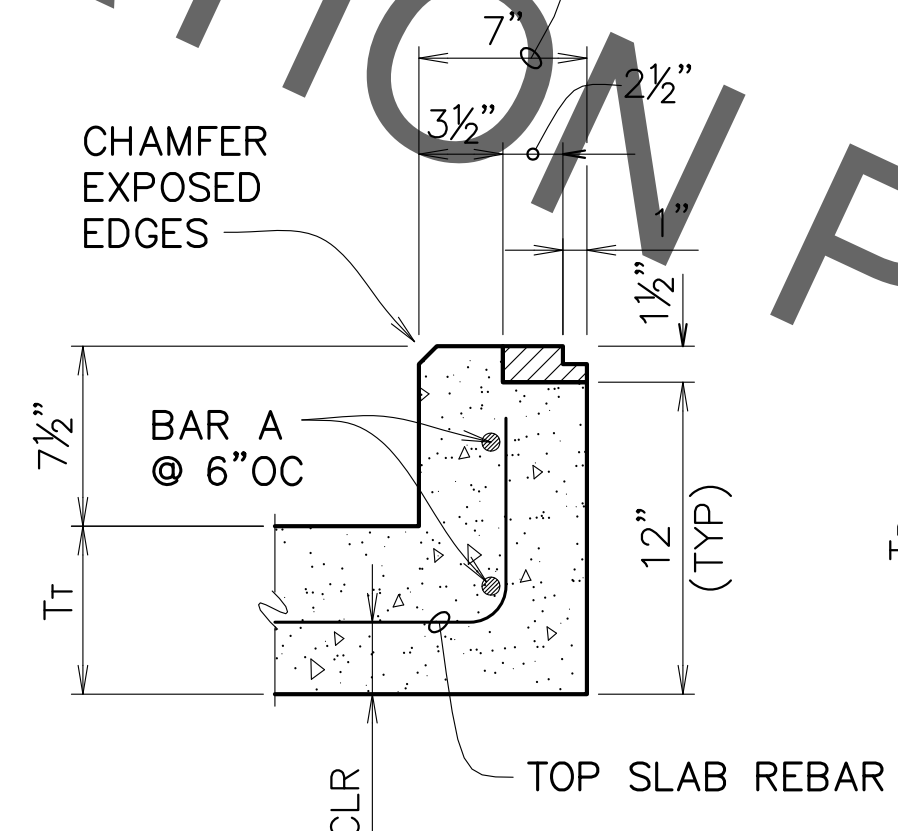
**MIDDLE SLAB OUTSIDE PAVEMENT DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"Tm" SLAB THICKNESS (IN)	* REBAR REQ'D
≤20'	≤ 4'	7.0"	#4
≤20'	4'-6'	7.0"	#5
≤20'	6'-8'	7.0"	#6
≤20'	8'-10'	8.0"	#6

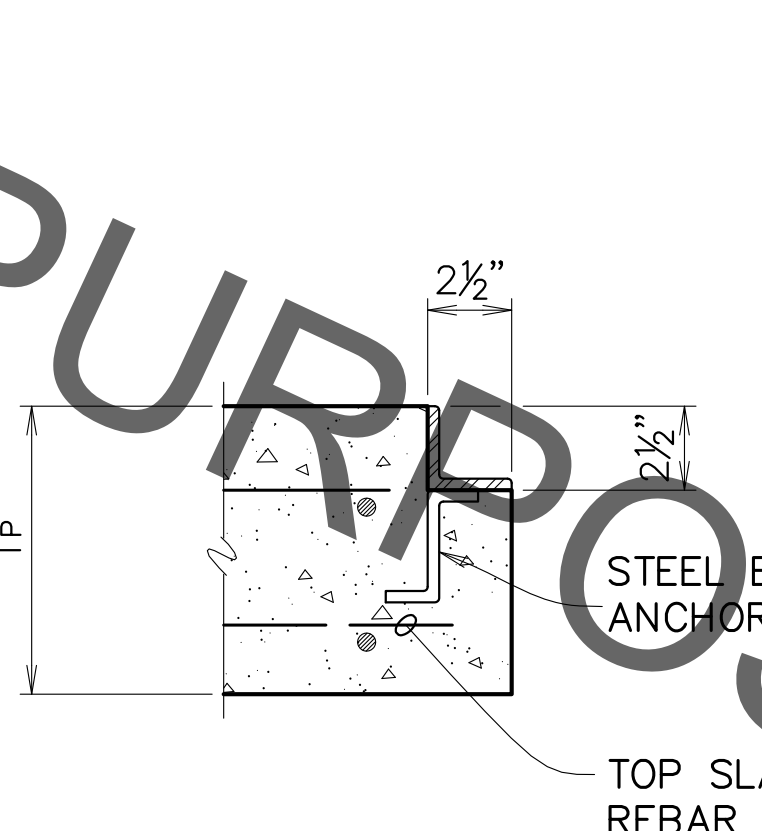
\* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM



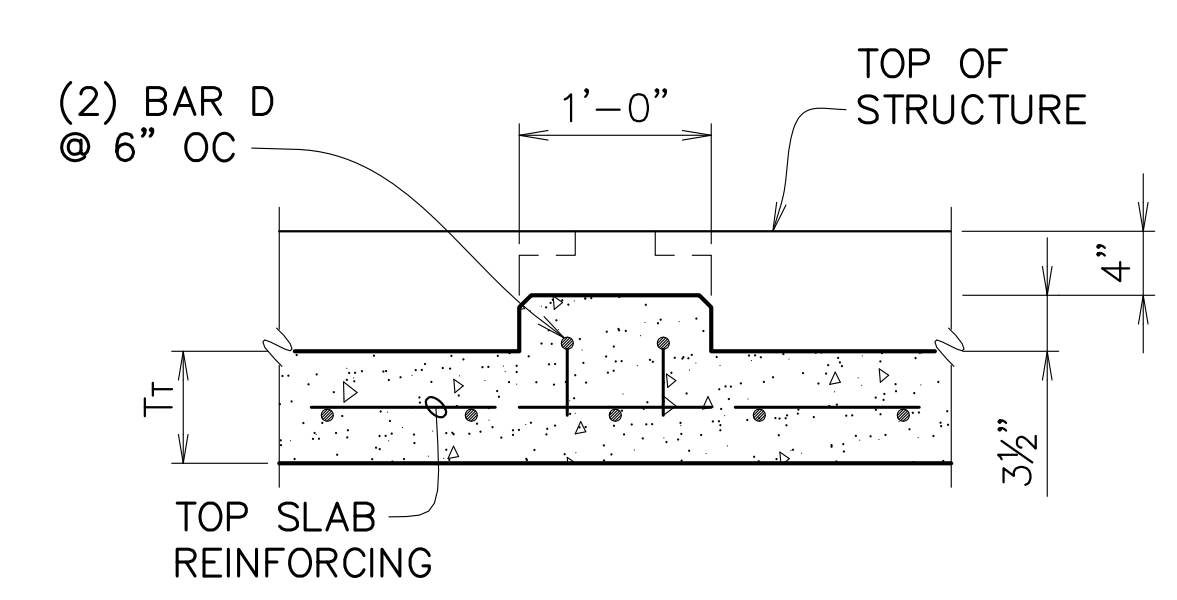
**TOP SLAB INTERMEDIATE SUPPORT BEAM FOR DOUBLE CURB INLET**  
 SCALE: N.T.S.



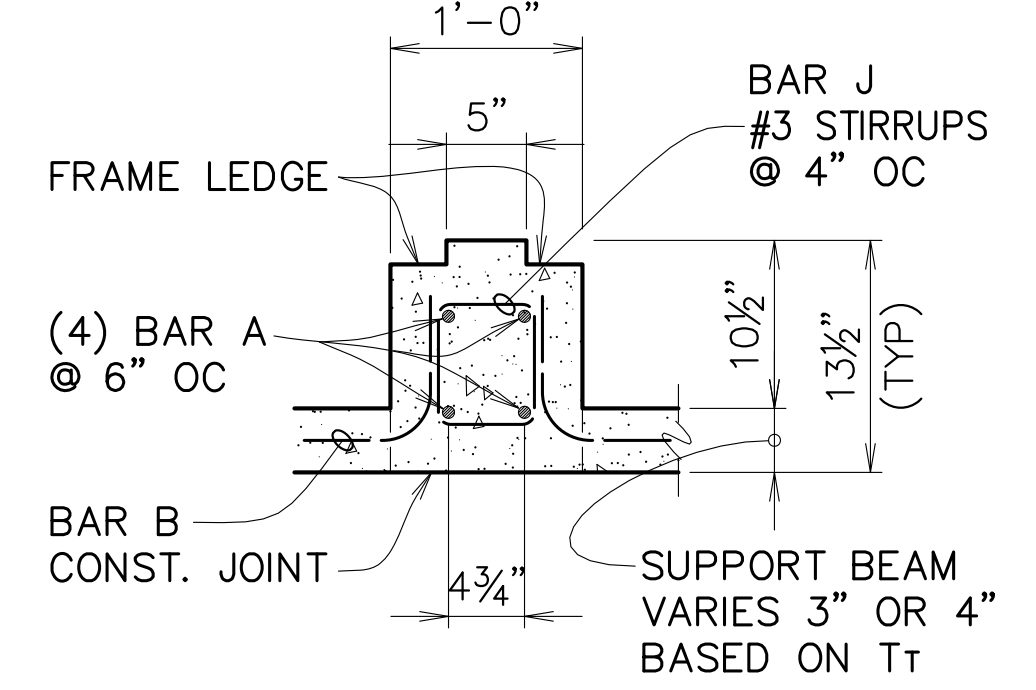
**TYPE 1 FRAME SUPPORT DETAIL**  
 SCALE: N.T.S.



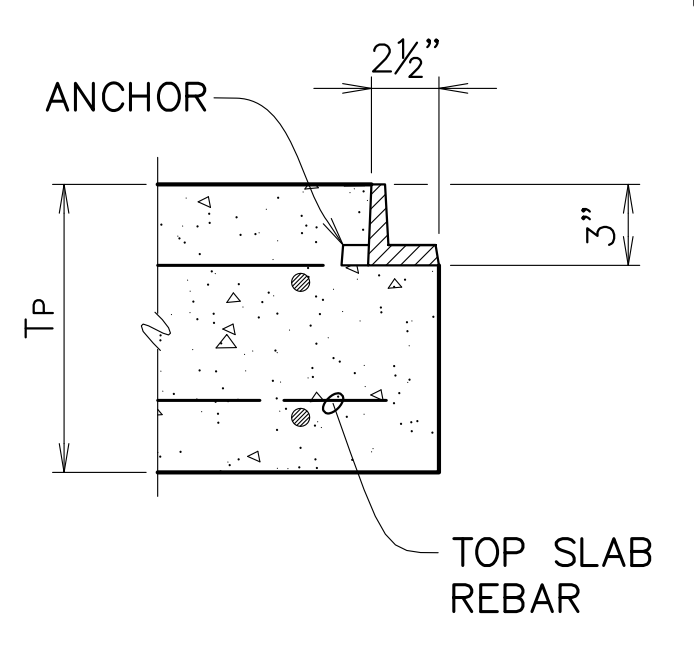
**TYPE 2 FRAME IN PAVEMENT SUPPORT DETAIL**  
 SCALE: N.T.S.



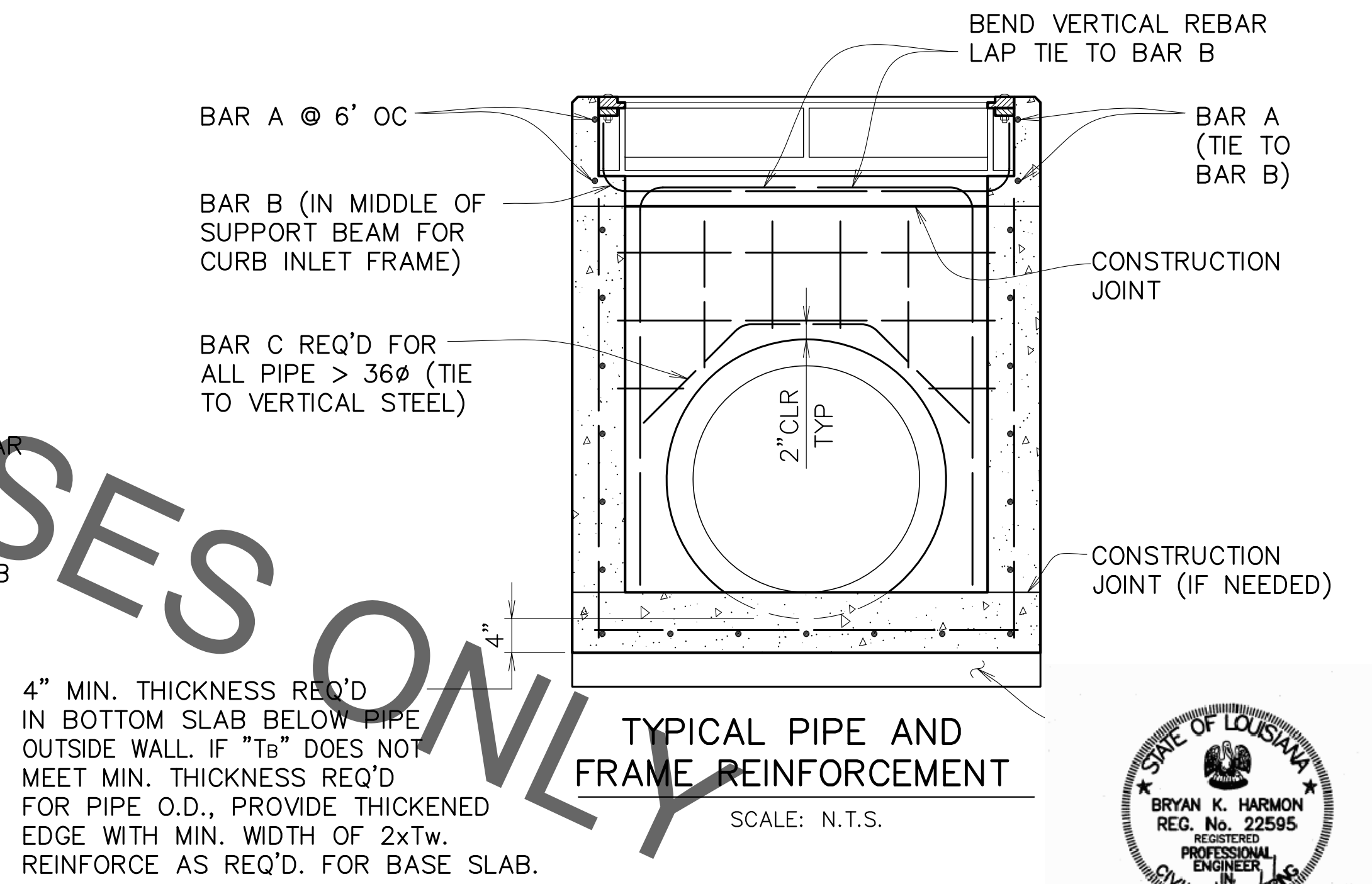
**SECTION A-A**  
 TOP SLAB INTERMEDIATE SUPPORT BEAM FOR DOUBLE CURB INLET  
 SCALE: N.T.S.



**TYPICAL SUPPORT BEAM BETWEEN DOUBLE CURB INLETS**  
 SCALE: N.T.S.



**TYPE 3 FRAME IN PAVEMENT SUPPORT DETAIL**  
 SCALE: N.T.S.



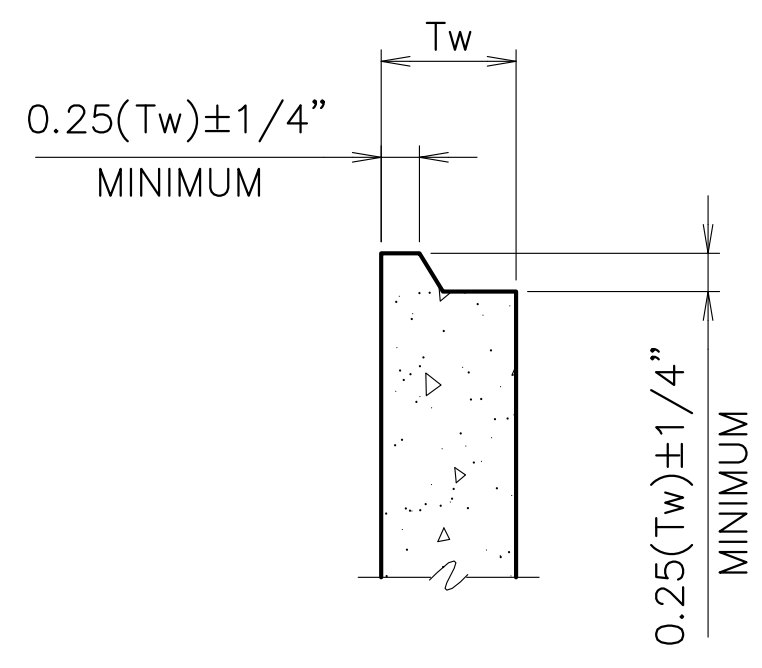
**TYPICAL PIPE AND FRAME REINFORCEMENT**  
 SCALE: N.T.S.



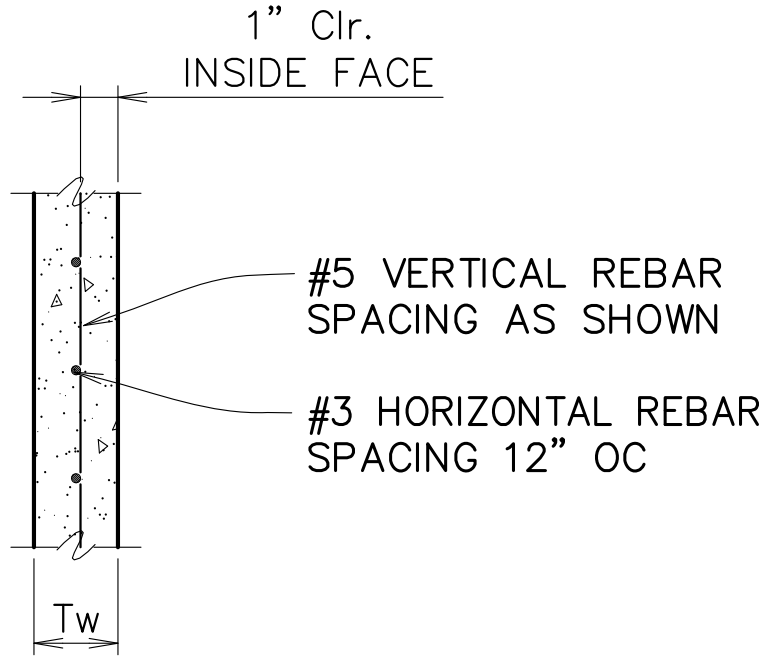
DECEMBER 6, 2010

STANDARD PLAN No. 702-96	DATED DEC. 6, 2010	SHT. No. 1 OF 1
<b>CAST-IN-PLACE DRAINAGE STRUCTURES (STRUCTURAL DETAILS)</b>		
ENGINEERING DIVISION <b>DEPARTMENT OF PUBLIC WORKS</b> CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE		
DESIGNED GLP	DRAWN GLP	CHECKED GLP
DATE	DESCRIPTION REVISION	BY
		APPROVED B. HARMON

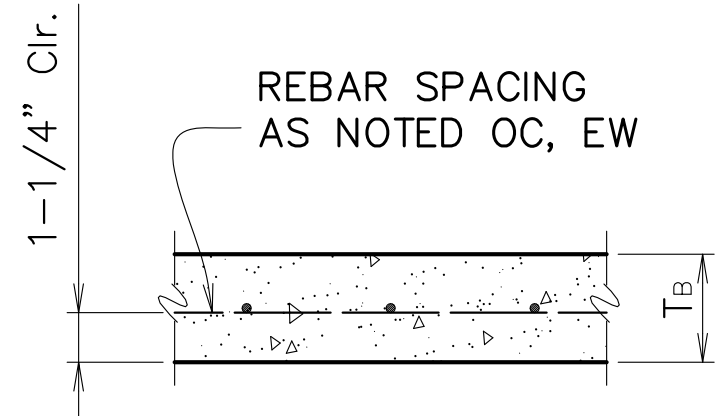
PROJECT NO.	SHEET



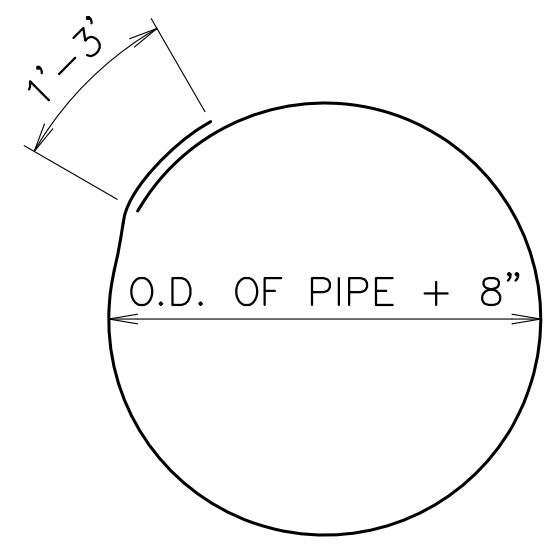
**JOINT DETAIL**  
SCALE: N.T.S.



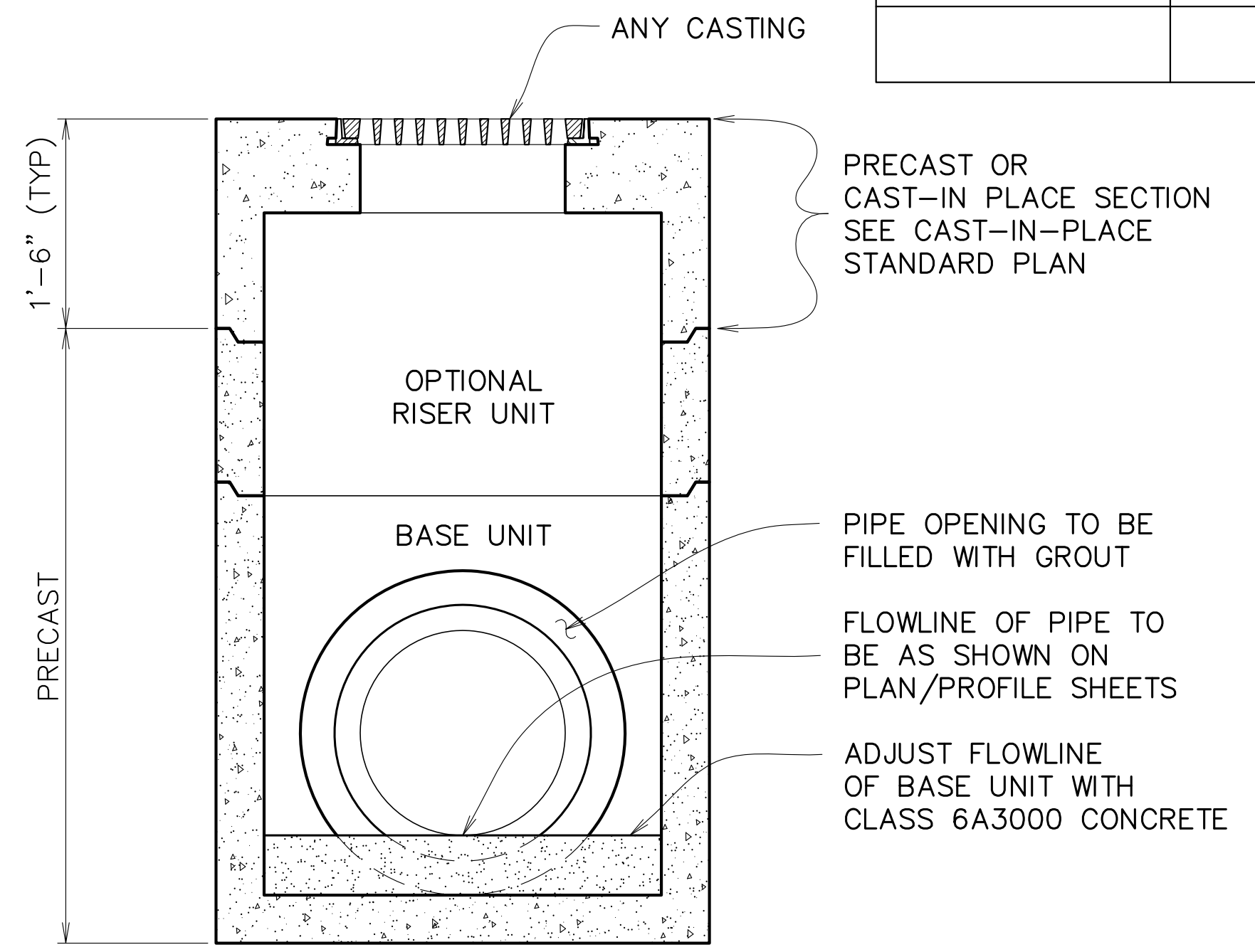
**STANDARD PRECAST WALL DETAIL**  
SCALE: N.T.S.



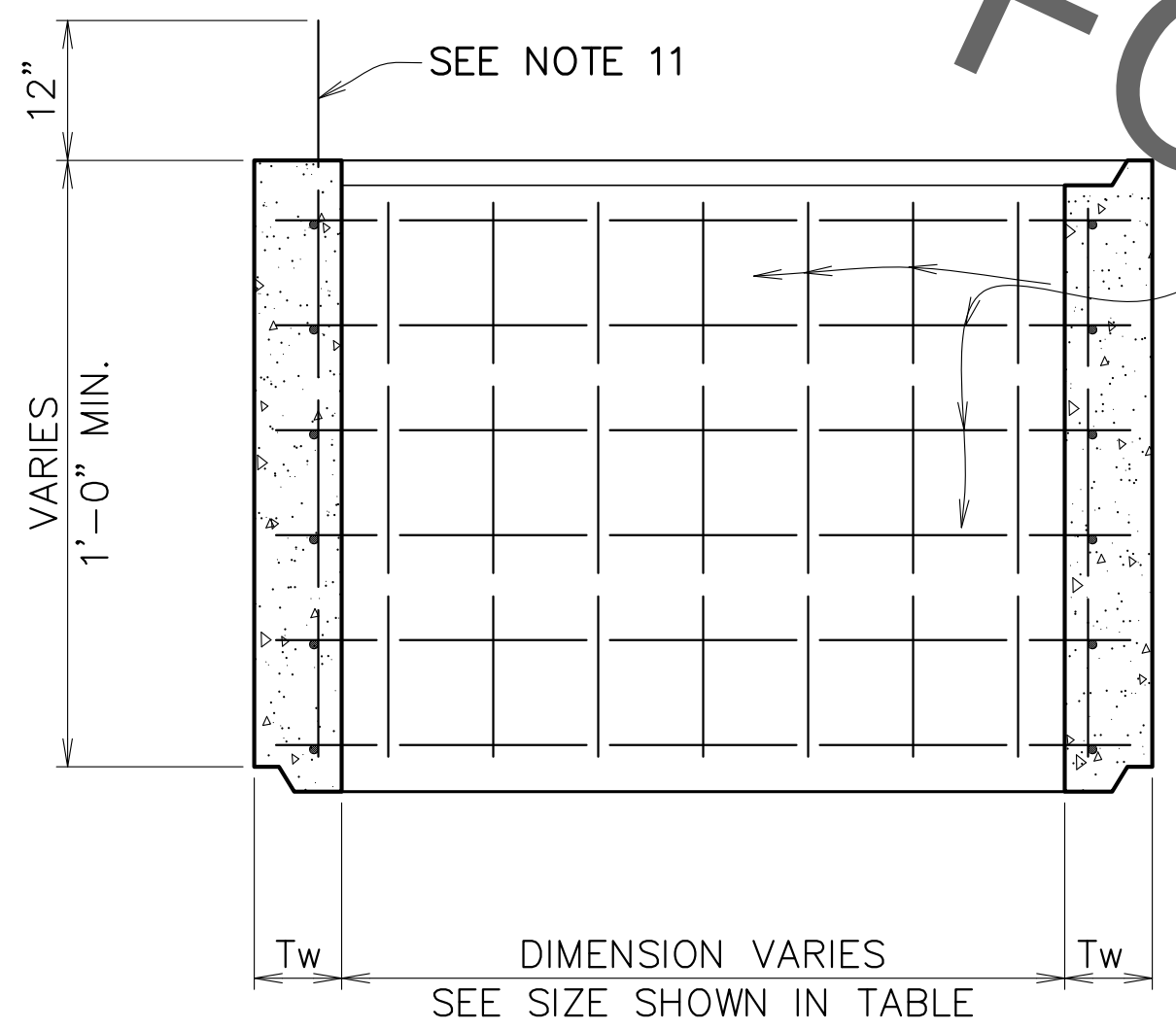
**BOTTOM SLAB DETAIL**  
SCALE: N.T.S.



**#4 HOOP**  
SCALE: N.T.S.



**TYPICAL COMPOSITE STRUCTURE**  
SCALE: N.T.S.



**OPTIONAL RISER UNIT**  
SCALE: N.T.S.

A=LENGTH INSIDE OPENING MEASURED PARALLEL TO CURB  
B=WIDTH INSIDE OPENING MEASURED PERPENDICULAR TO CURB

**PRECAST TOP SLAB DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"T" SLAB THICKNESS (IN)	* REBAR REQ'D	* REBAR SPACING
≤ 4'	≤ 4'	4.0"	#4	12"
4'-6'	4'-6'	4.0"	#5	12"
6'-8'	6'-8'	5.0"	#5	8"
8'-20'	8'-10'	5.5"	#5	6"

\* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

**PRECAST MIDDLE SLAB UNDER PAVEMENT DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"T" SLAB THICKNESS (IN)	* REBAR REQ'D	* REBAR SPACING
≤ 20'	≤ 4'	5.0"	#4	12"
≤ 20'	4'-6'	6.0"	#5	12"
≤ 20'	6'-8'	7.0"	#5	8"
≤ 20'	8'-10'	8.5"	#5	6"

\* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

**PRECAST MIDDLE SLAB OUTSIDE PAVEMENT DIMENSIONS**

"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"T" SLAB THICKNESS (IN)	* REBAR REQ'D	* REBAR SPACING
≤ 20'	≤ 4'	5.0"	#4	12"
≤ 20'	4'-6'	5.0"	#5	12"
≤ 20'	6'-8'	6.0"	#5	8"
≤ 20'	8'-10'	6.5"	#5	6"

\* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

**PRECAST BOTTOM SLAB DIMENSIONS**

"T" SLAB THICKNESS (IN)	"A" OR "B" MAXIMUM WIDTH OF OPENING INSIDE STRUCTURE (FT)	MAXIMUM DEPTH STRUCTURE (FT)	REBAR REQ'D	REBAR SPACING
4.0"	4'	4'	#4	12"
5.0"	6'	8'	#5	12"
6.0"	8'	12'	#5	12"
7.0"	8'	16'	#5	12"
7.5"	10'	20'	#5	6"

BOTTOM SLAB THICKNESS TO MEET MINIMUM CRITERIA SHOWN FOR OPENING WIDTH AND STRUCTURE DEPTH.

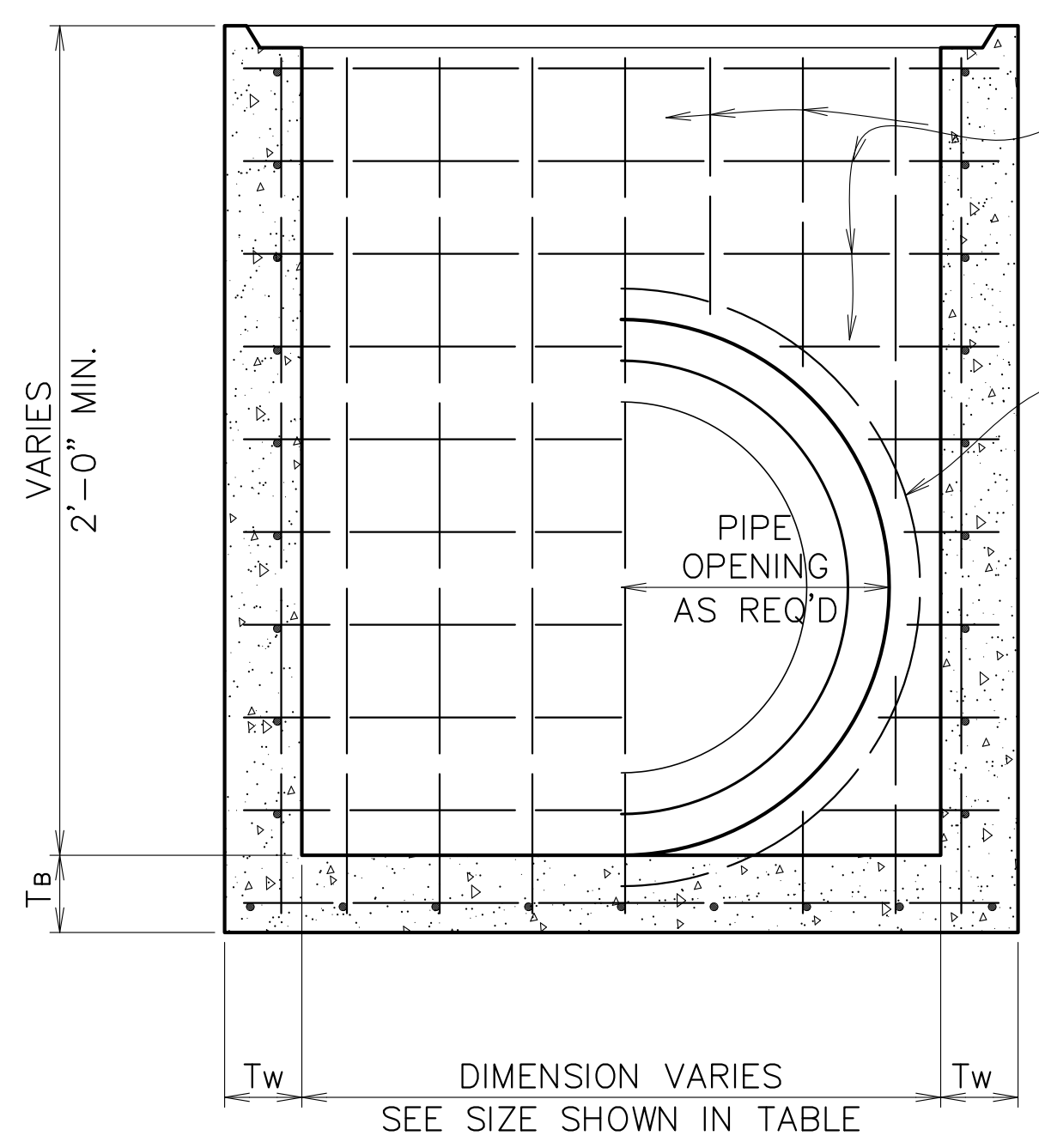
**PRECAST PAVEMENT SLAB DIMENSIONS**

INTERMEDIATE SUPPORT BEAM REQ'D (Y OR N)	"A" INSIDE LENGTH (FT)	"B" INSIDE WIDTH (FT)	"T" SLAB THICKNESS (IN)	REBAR REQ'D *	REBAR SPACING
N	≤ 10'	≤ 4'	6.0"	#5	12"
N	≤ 10'	4'-6'	7.0"	#5	12"
N	≤ 10'	6'-8'	9.0"	#5	8"
Y	6'-10'	6'-10'	6.0"	#5	12"

\* AS SHOWN OC, EW, TB

**PRECAST WALL DIMENSIONS**

WALL HEIGHT (FT)	"Tw" WALL THICKNESS (IN)	VERT. REBAR SPACING (IN)
0'-4'	4.0"	12"
4'-8'	5.0"	12"
8'-10'	6.0"	9"
10'-12'	6.0"	6"
12'-16'	7.0"	4.5"
16'-20'	7.5"	4.5"



**BASE UNIT**  
SCALE: N.T.S.

**NOTE:**

1. THESE PRECAST UNITS ARE INTENDED TO BE USED AS THE LOWER PORTION OF A COMPOSITE STRUCTURE. STRUCTURAL AND FINISHING DETAILS ARE SHOWN ON OTHER STANDARD PLANS FOR STRUCTURE TYPES.
2. ALL REINFORCING STEEL TO BE DEFORMED GRADE 60 MINIMUM REBAR. STEEL BAR SIZE & SPACING MAY BE ADJUSTED AS LONG AS AREA OF STEEL IS MAINTAINED PER FOOT IN ACCORDANCE WITH ASTM C913-08.
3. MINIMUM CONCRETE COVER FOR REBAR STEEL IS TO BE 1" FOR PRECAST CONCRETE WALLS AND 1-1/4" FOR OTHER PRECAST MEMBERS.
4. CONCRETE COMPRESSIVE STRENGTH FOR PRECAST STRUCTURES TO BE 5000 PSI AT 28 DAYS MINIMUM. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI BEFORE SHIPPING UNITS.
5. SEE SHEET 702-99 FOR FRAME AND COVER DETAILS.
6. SEE SHEET 702-96 FOR CAST-IN-PLACE STRUCTURAL DETAILS.
7. PIPE OPENING TO BE FORMED ONLY WHEN REQUIRED.
8. PIPE OPENING TO BE O.D. OF PIPE + 4" ± 1/2".
9. ALL PIPE ENDS TO BE SET FLUSH WITH INTERIOR WALLS FACE. PIPE ANNULAR SPACE IS TO BE GROUTED WITH NON-SHRINK GROUT AFTER INSTALLATION. GROUT AS REQUIRED TO CREATE INVERTS.
10. JOINTS BETWEEN PRECAST UNITS TO BE SEALED WITH FLEXIBLE PLASTIC GASKET MATERIAL AND WRAPPED WITH A 12" WIDTH OF GEOTEXTILE FABRIC.
11. JOINTS BETWEEN CAST-IN-PLACE SECTIONS AND OR PRECAST UNITS TO BE TONGUE AND GROOVE AND SEALED WITH TYPE II GRADE A EPOXY OR FLAT JOINT WITH A MINIMUM OF 12" OF No. 4 BARS AT 18" CTRS. (MAX.)
12. PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLANS MAY BE FURNISHED. LEDGE WIDTH MAY BE REDUCED BY 1" AROUND INLET FRAMES TO 2-1/2". SUPPORT BEAM BETWEEN DOUBLE RETICULINE GRATE INLETS MAY BE REDUCED BY 2" DEPTH TO FORM 10"x10" BEAM.

13. PRECAST UNITS SHALL CONFORM TO SECTION 1017 OF THE STANDARD SPECIFICATIONS.
14. ALL PRECAST UNITS TO BE EQUIPPED WITH AT LEAST 2 COMMERCIALY MANUFACTURED EMBEDDED INSERTS RATED FOR THE STRUCTURE'S LIFT LOAD IN COMPLIANCE WITH APPLICABLE ANSI AND OSHA STANDARDS (MINIMUM SAFETY FACTOR OF 4). EMBEDDED INSERTS TO CONSTRUCTED OF GALVANIZED STEEL OR CORROSION RESISTANT MATERIALS AND INSTALLED BY PRECAST MANUFACTURER IN ACCORDANCE WITH SUPPLIERS INSTRUCTIONS. NO LIFT INSERTS SHALL REMAIN EXPOSED ON VISIBLE SURFACES AFTER THE STRUCTURE IS INSTALLED. NO LIFTING WITH CHAINS WRAPPED AROUND STRUCTURE IS PERMITTED.
15. PRECASTERS ARE REQUIRED TO BE NPCA CERTIFIED.
16. INSTALLATION OF PRECAST STRUCTURES ARE TO BE PER MANUFACTURER'S INSTRUCTIONS. ANY MODIFICATIONS TO STRUCTURES IN FIELD SHALL REQUIRE PRECASTER'S WRITTEN APPROVAL.
17. MINIMUM THICKNESS OF STRUCTURAL ELEMENTS INSTALLED IN OR UNDER PAVEMENT SHALL BE 6".

STATE OF LOUISIANA  
BRYAN K. HARMON  
REG. No. 22505  
PROFESSIONAL ENGINEER  
DECEMBER 6, 2010

STANDARD PLAN No. 702-97	DATED DEC. 6, 2010	SHT. No. 1 OF 1
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**PRECAST DRAINAGE STRUCTURE (STRUCTURAL DETAILS)**

ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE			
DESIGNED GLP	DRAWN GLP	CHECKED GLP	APPROVED B. HARMON

DATE	DESCRIPTION REVISION	BY