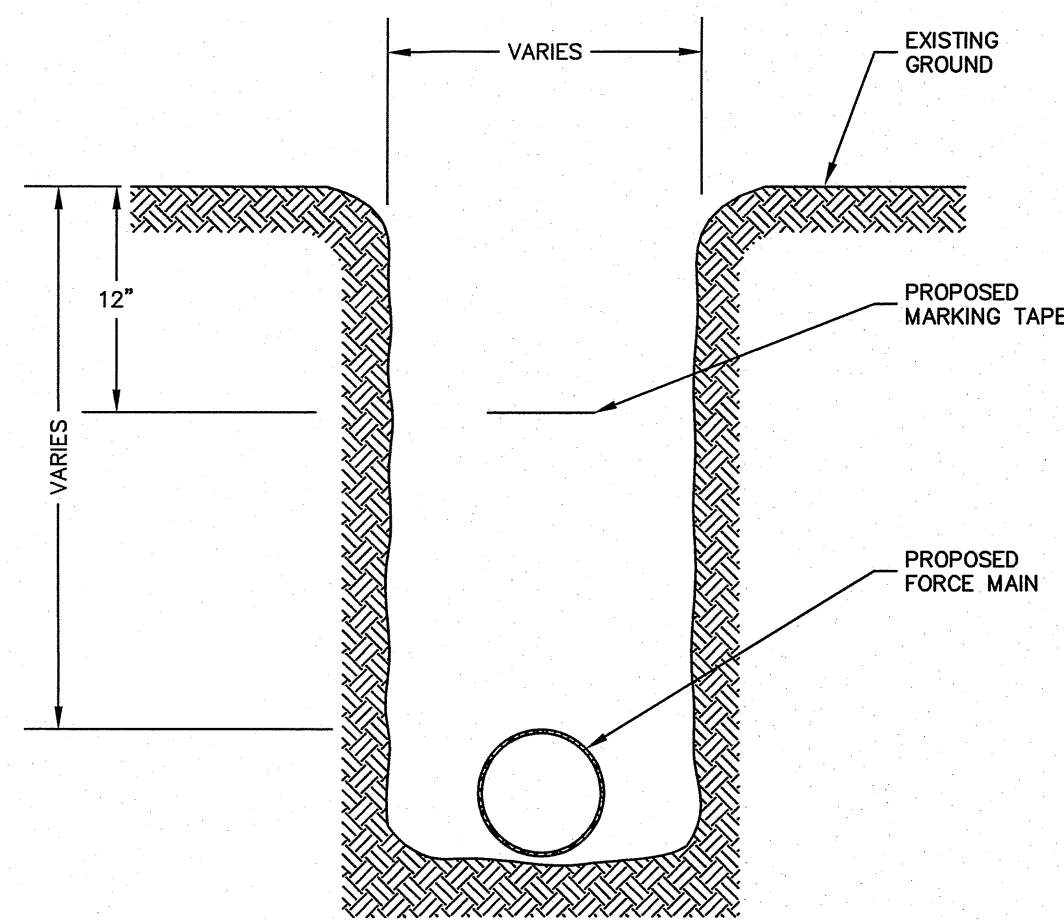


NOTES

- LOCATION WIRE SHALL BE #12 AWG SOLID COPPER WIRE WITH GREEN MOISTURE RESISTANT THWN PLASTIC INSULATION WITH EXCEPTION TO HORIZONTAL DIRECTIONAL DRILL INSTALLATIONS (SEE SPECIFICATIONS).
- LOCATION WIRE SHALL BE STRAPPED TO PIPE WITH NYLON CABLE TIES. NYLON CABLE TIE SPACING SHALL NOT EXCEED:
 - A. SIX (6) FEET FOR ALL PIPE INSTALLED BY OPEN CUT.
 - B. FOUR (4) FEET FOR ALL PIPE INSTALLED IN CASING.
 - C. FOUR (4) FEET FOR ALL PIPE INSTALLED BY DIRECTIONAL DRILLING.
- LOCATION WIRE SHALL BE CONTINUOUS THROUGHOUT THE ENTIRE PIPE LINE. WHERE SPLICES ARE NECESSARY, SPLICES SHALL BE SUITABLE FOR UNDERGROUND USE.
- DRILL 3/4" HOLE WITHIN TOP SIX (6) INCHES OF VALVE BOX FOR INSERTION OF LOCATION WIRE. EXTEND LOOP OF LOCATION WIRE EIGHTEEN (18) INCHES MINIMUM INTO BOX, AND COIL WITH NYLON CABLE TIE. WIRE SHALL NOT BE CUT AT VALVE BOXES.

LOCATION WIRE FOR FORCE MAIN

A



NOTES

- MARKING TAPE SHALL BE INSTALLED ONE (1) FOOT BELOW FINAL GRADE.

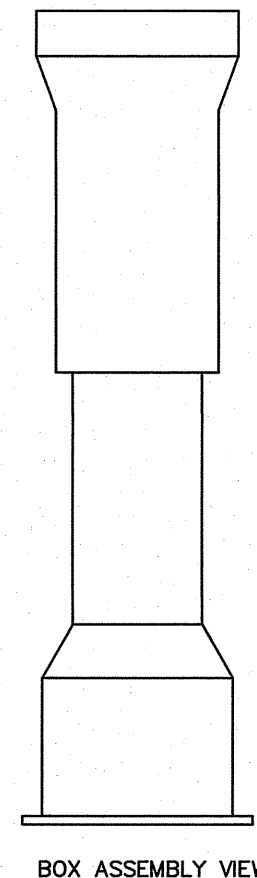
MARKING TAPE FOR FORCE MAIN

B

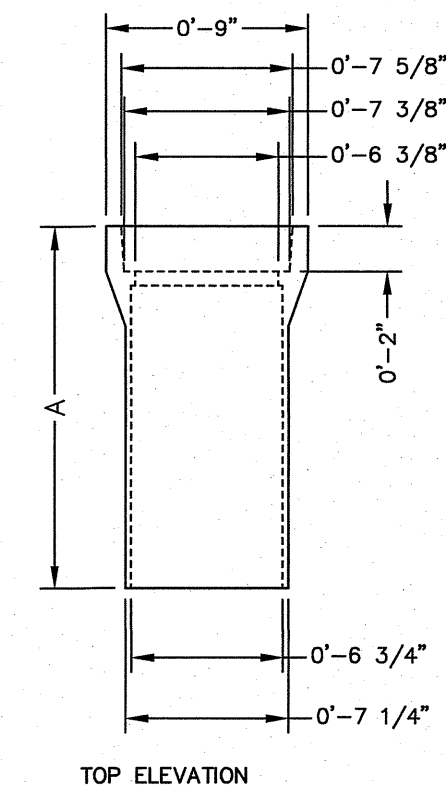
PART NUMBER	INCHES		A		B		LBS.
	MIN.	TO MAX. ADJUSTMENT	TOP LENGTH	BOTTOM LENGTH	TOP LENGTH	BOTTOM LENGTH	
V-8461	18"	TO 24"	10"	15"	15"	55	
V-8462	24"	TO 36"	16"	24"	24"	75	
V-8465	39"	TO 60"	26"	36"	36"	110	

NOTE: 3 PC. SETS ARE PACKAGED WITH COVERS MARKED WATER. COVERS MARKED GAS OR SEWER ARE AVAILABLE SEPARATELY.

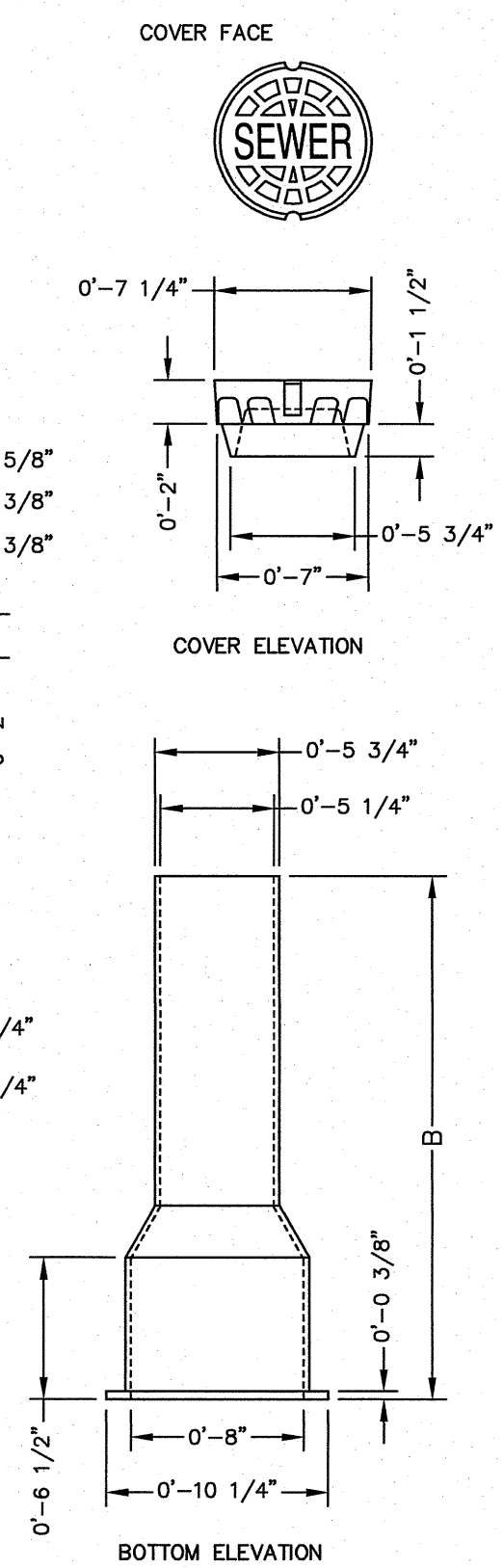
VALVE BOX SHALL BE VULCAN V-8460 SCREW-TYPE SERIES.



BOX ASSEMBLY VIEW



TOP ELEVATION



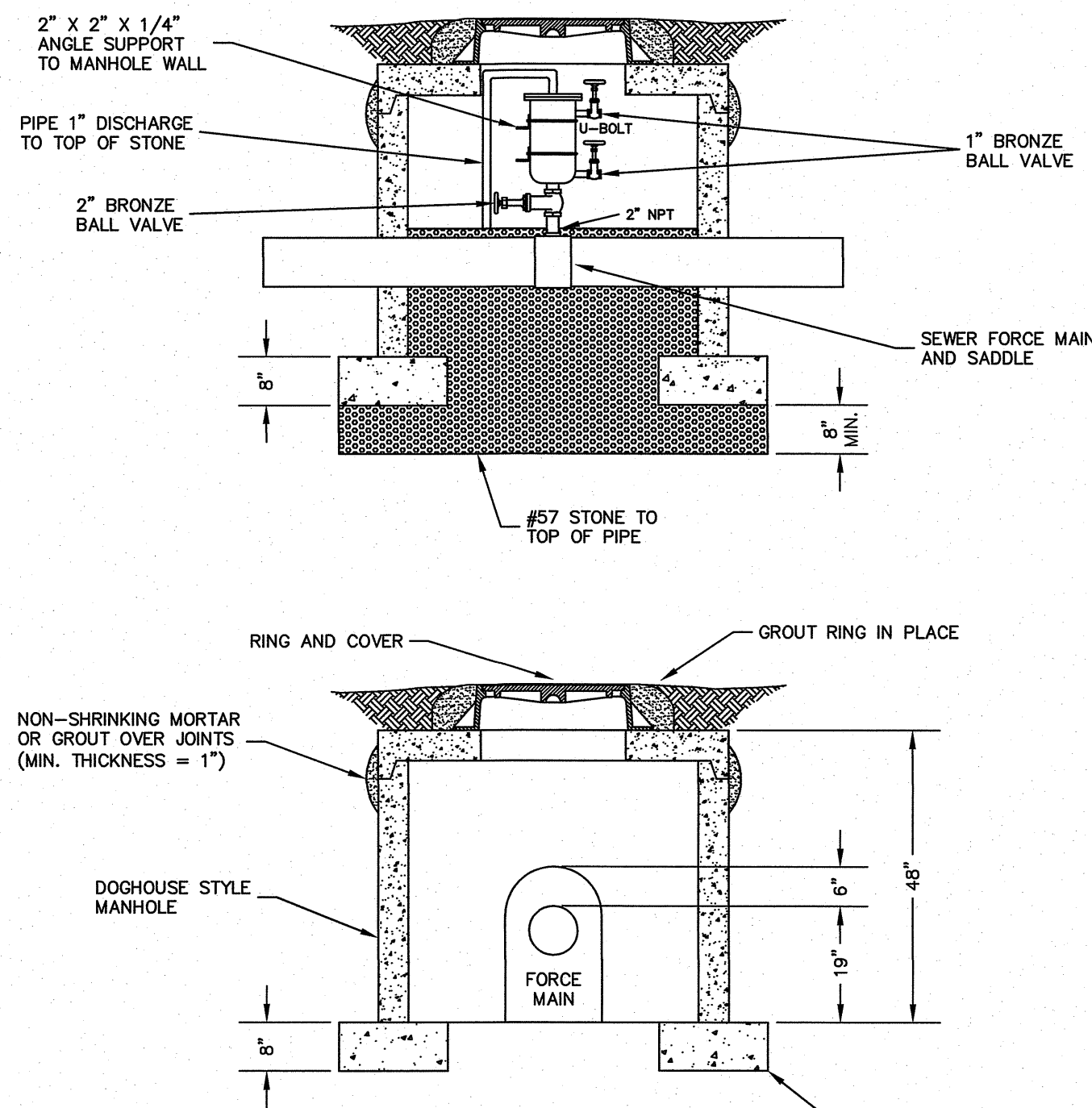
COVER FACE

COVER ELEVATION

BOTTOM ELEVATION

VALVE BOX

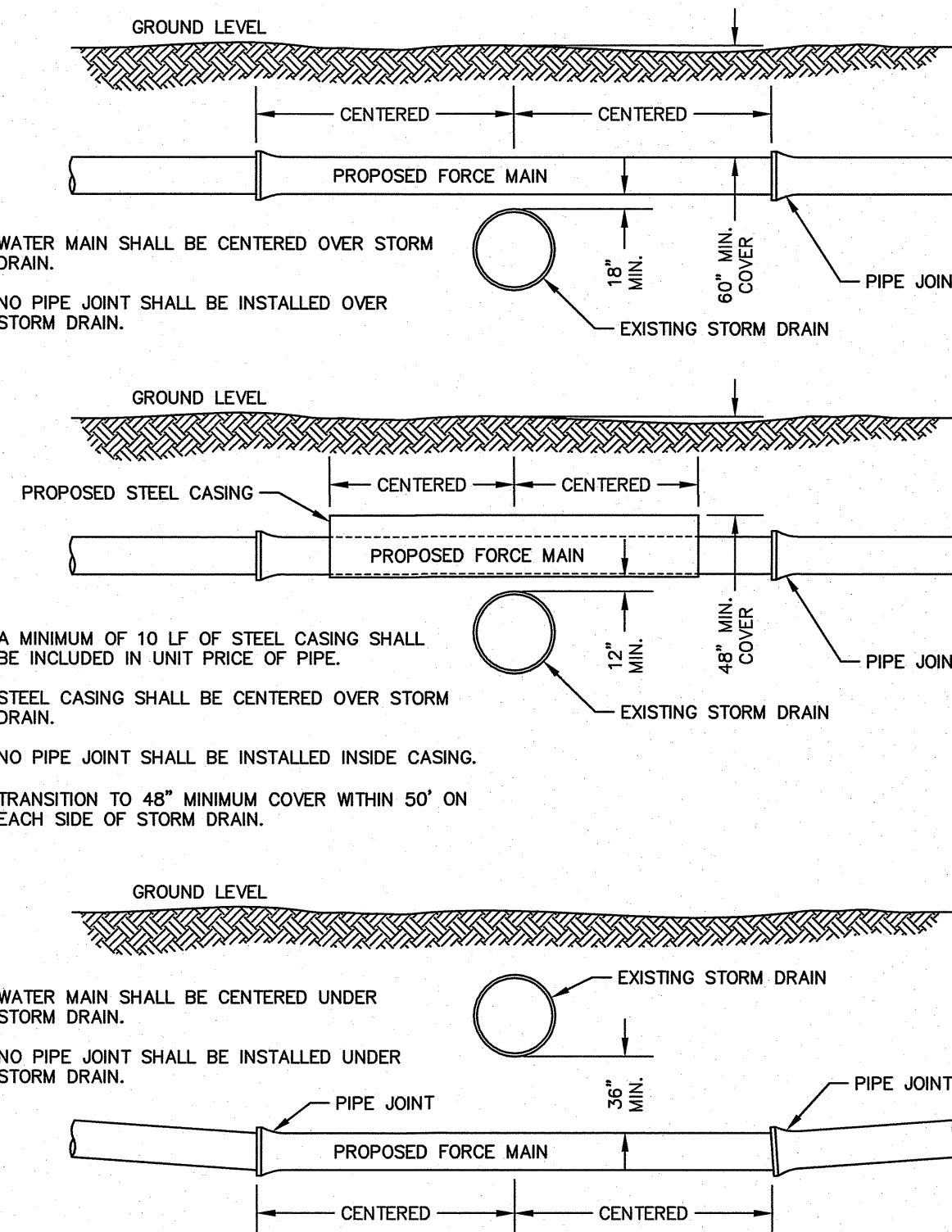
C



- PROVIDE 2"x1" SHORT BODIED TYPE COMBINATION AIR AND VACUUM SEWER VALVE.
- MINIMUM MANHOLE INSIDE DIAMETER TO BE FOUR (4) FEET.
- MINIMUM MANHOLE DEPTH TO BE FIVE (5) FEET.
- PRECAST CONCRETE MANHOLE IN ACCORDANCE WITH ASTM C478.
- MANHOLE SHALL BE DESIGNED FOR H-20 HIGHWAY LOADING.

COMBINATION AIR/VACUUM RELEASE VALVE ASSEMBLY MANHOLE

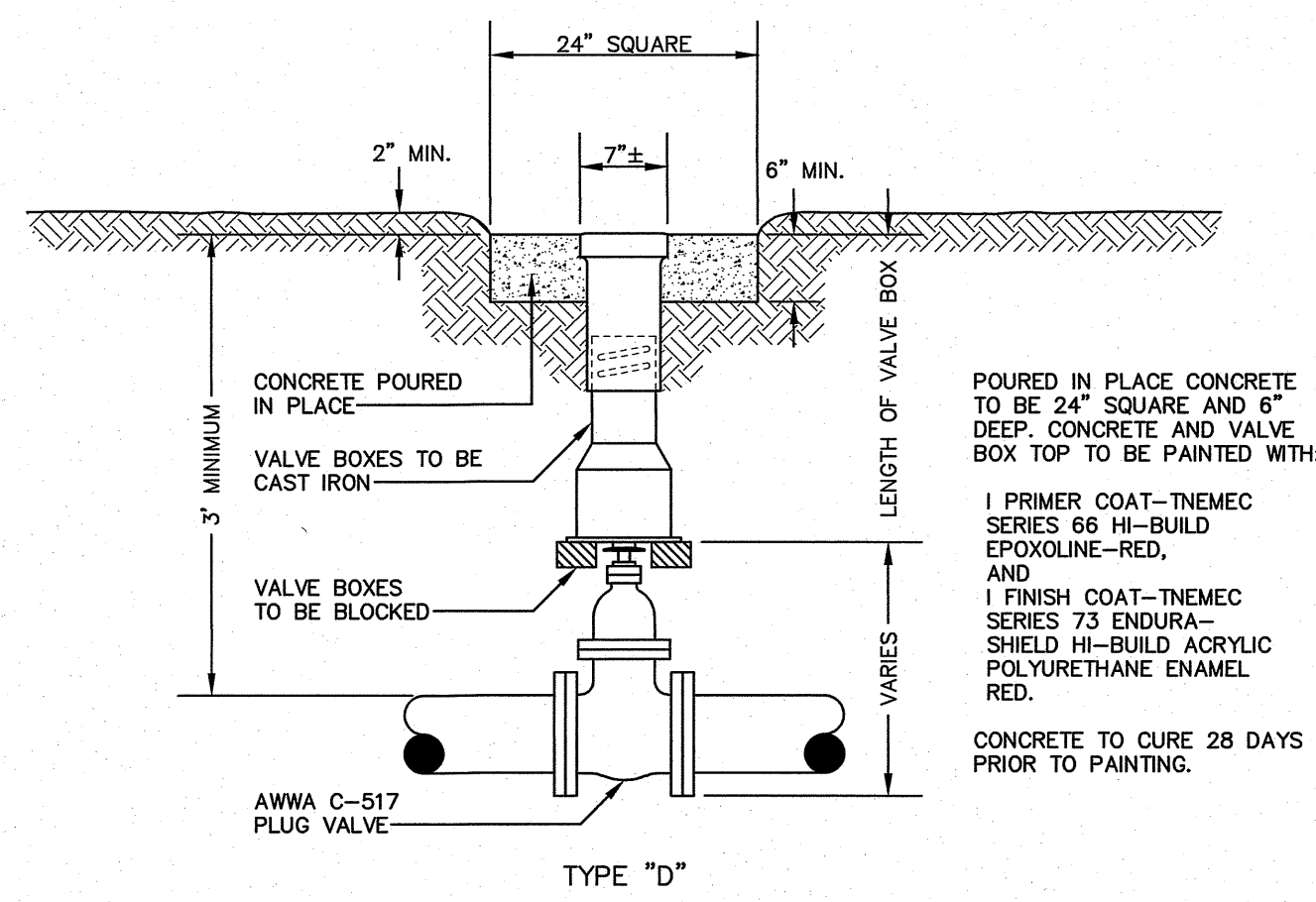
D



- WHERE UNCASED BORES ARE NOT POSSIBLE OR WHERE DURING INSTALLATION THE BEDDING BENEATH THE EXISTING STORM DRAIN IS DISTURBED, THE FOLLOWING ACTION SHALL BE REQUIRED:
 - A. THE EXISTING STORM DRAIN SHALL BE REMOVED AND #57 STONE BEDDING SHALL BE USED BETWEEN THE WATERLINE AND THE CENTERLINE OF THE STORM DRAIN, OR
 - B. THE EXISTING STORM DRAIN SHALL BE SUPPORTED IN PLACE AND FLOWABLE FILL (CEMENT GROUT) SHALL BE USED AS BEDDING BETWEEN THE WATER LINE AND THE CENTERLINE OF THE STORM DRAIN.
- THE COST OF BEDDING, #57 STONE, FLOWABLE FILL, ETC. SHALL BE INCLUDED IN THE UNIT PRICE OF THE PROPOSED MAIN.

FORCE MAIN CROSSING STORM SEWER

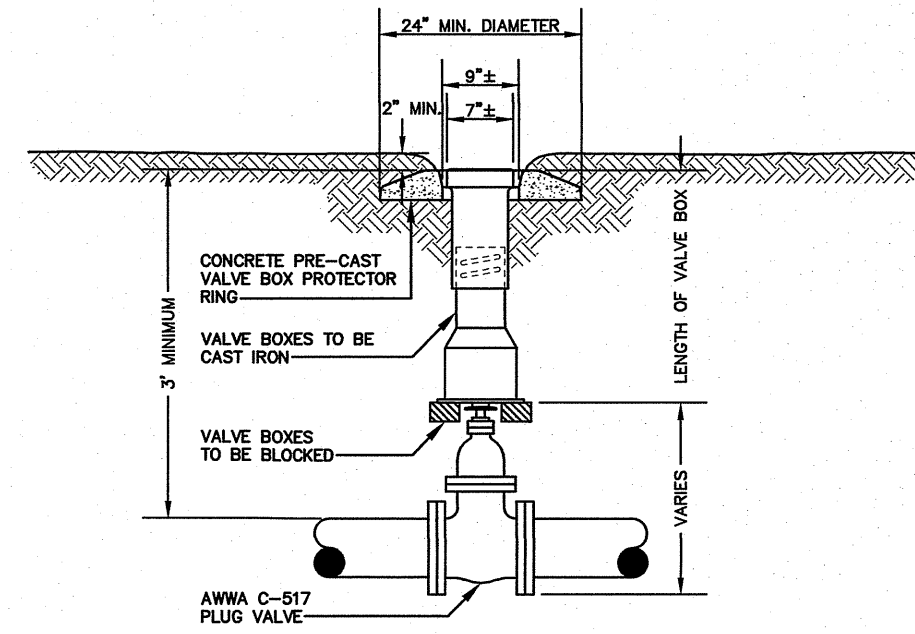
E



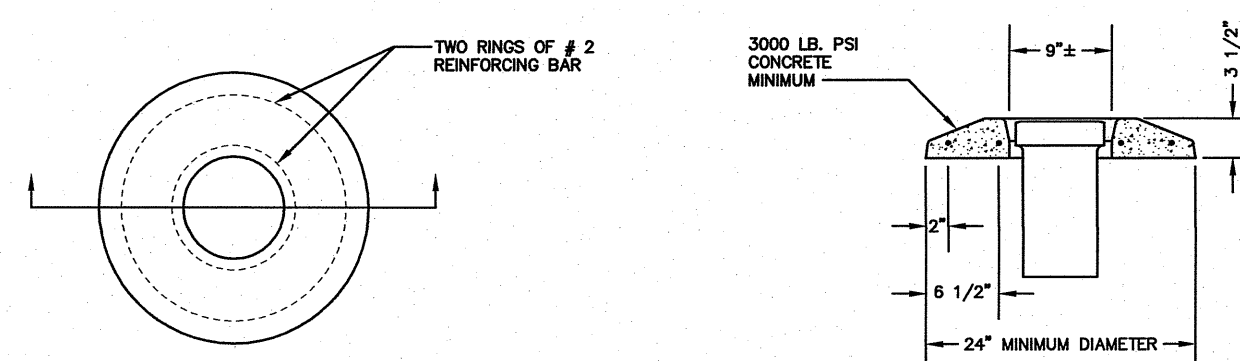
TYPE 'D'

PLUG VALVE AND BOX TYPE D

F



PLUG VALVE AND BOX TYPE B



PRECAST CONCRETE VALVE BOX PROTECTOR RING

H

PROJECT REFERENCE NO. B-4926
SHEET NO. UC-3D

DESIGNED BY: JWM
DRAWN BY: MW
CHECKED BY: DEG
APPROVED BY: JWM
REVISED:

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
UTILITIES ENGINEERING SEC.
PHONE: (919)707-6690
FAX: (919)250-4151

UTILITY CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED

MAI REVIEW OFFICER APPROVAL

DATE _____ MAI REVIEW OFFICER _____

1-19-0309-3401

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REVISIONS

NO.	DATE	DESCRIPTION