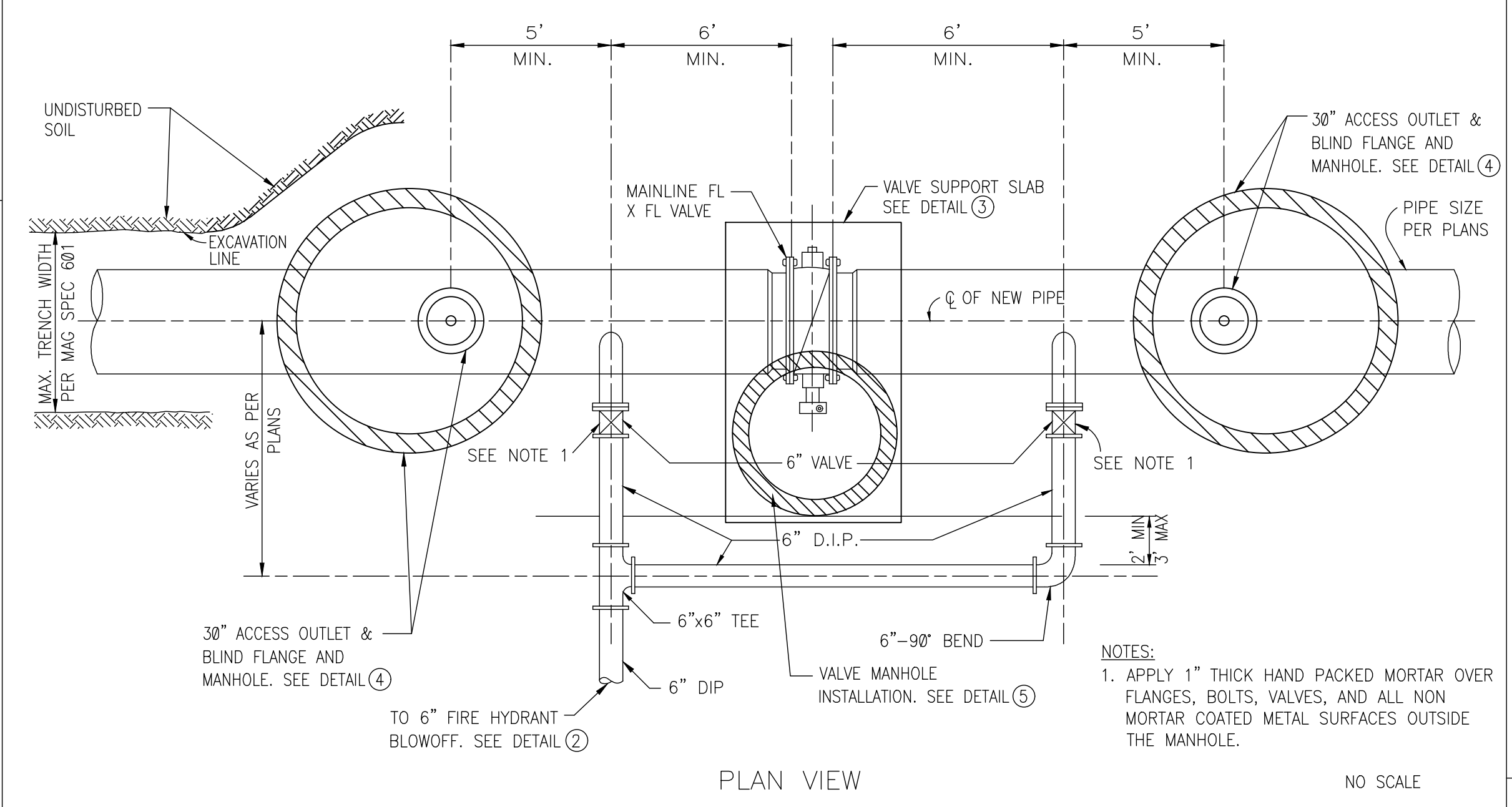


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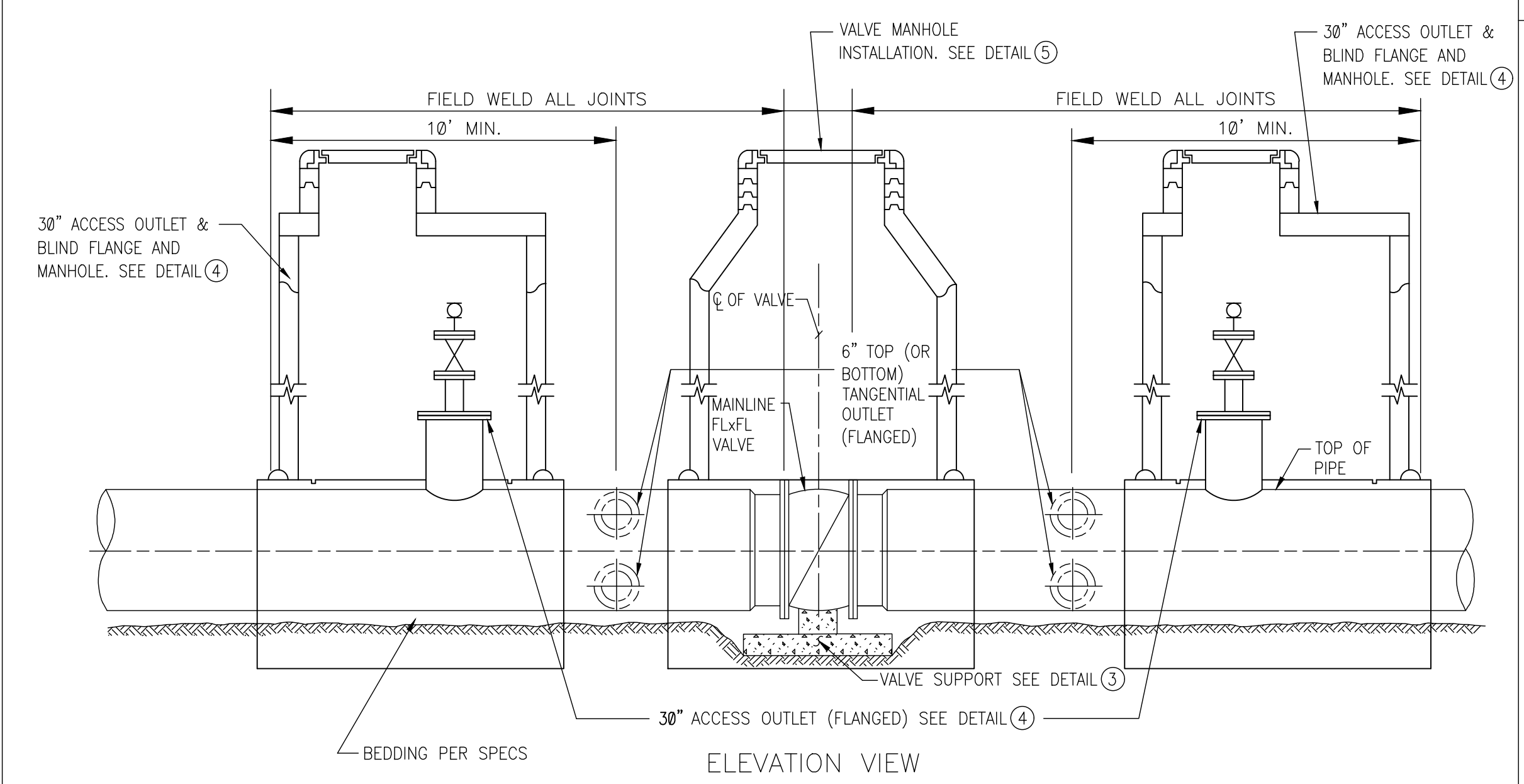
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1	AS SHOWN ON PLANS	RSY	RM	10/94
2	REVISION DETAIL 2	R.H.	RM	1/97
3	REVISED ALL DETAILS	BC	CITY	9/25



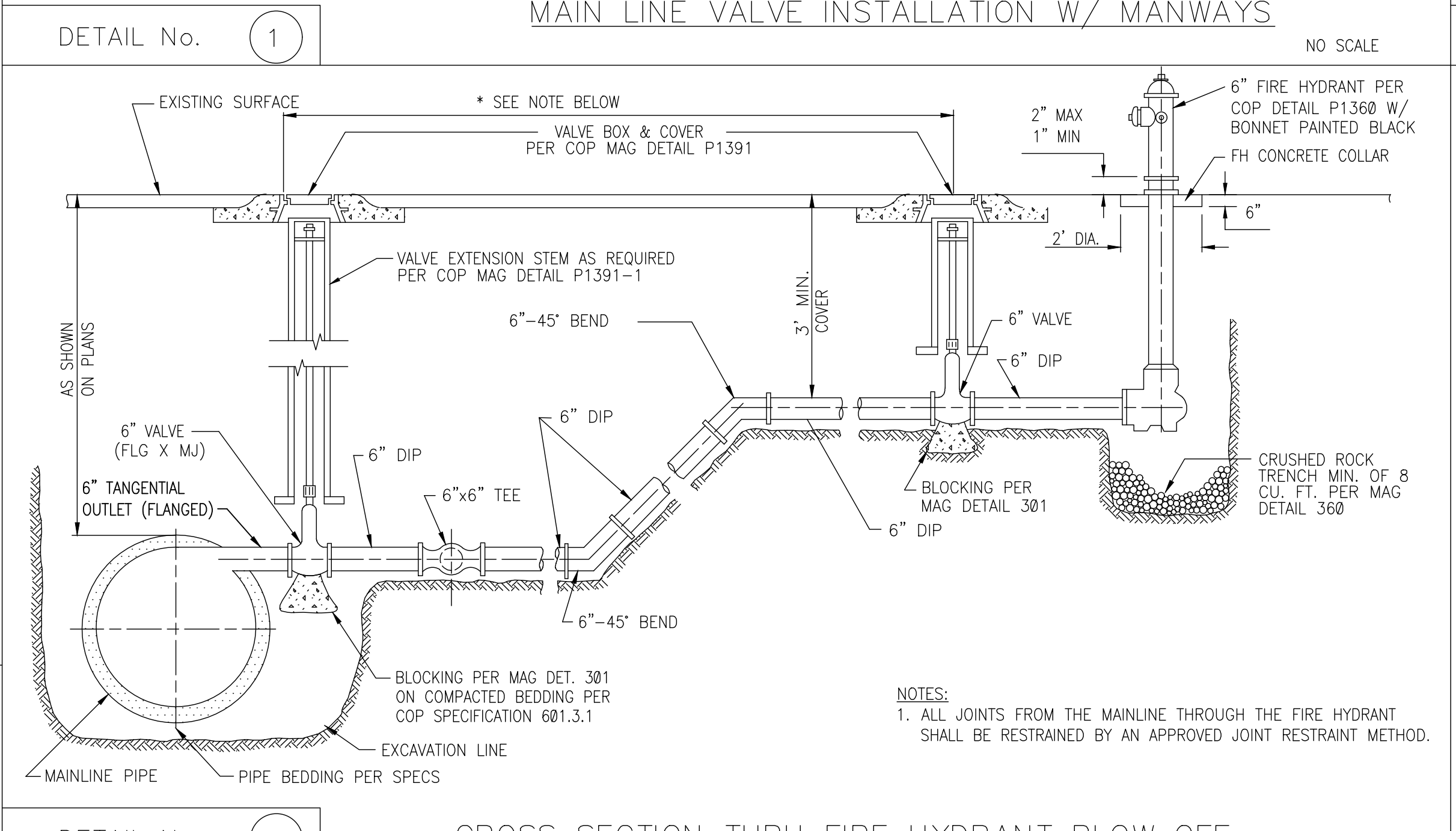
PLAN VIEW

NO SCALE



ELEVATION VIEW
MAIN LINE VALVE INSTALLATION W/ MANWAYS

NO SCALE

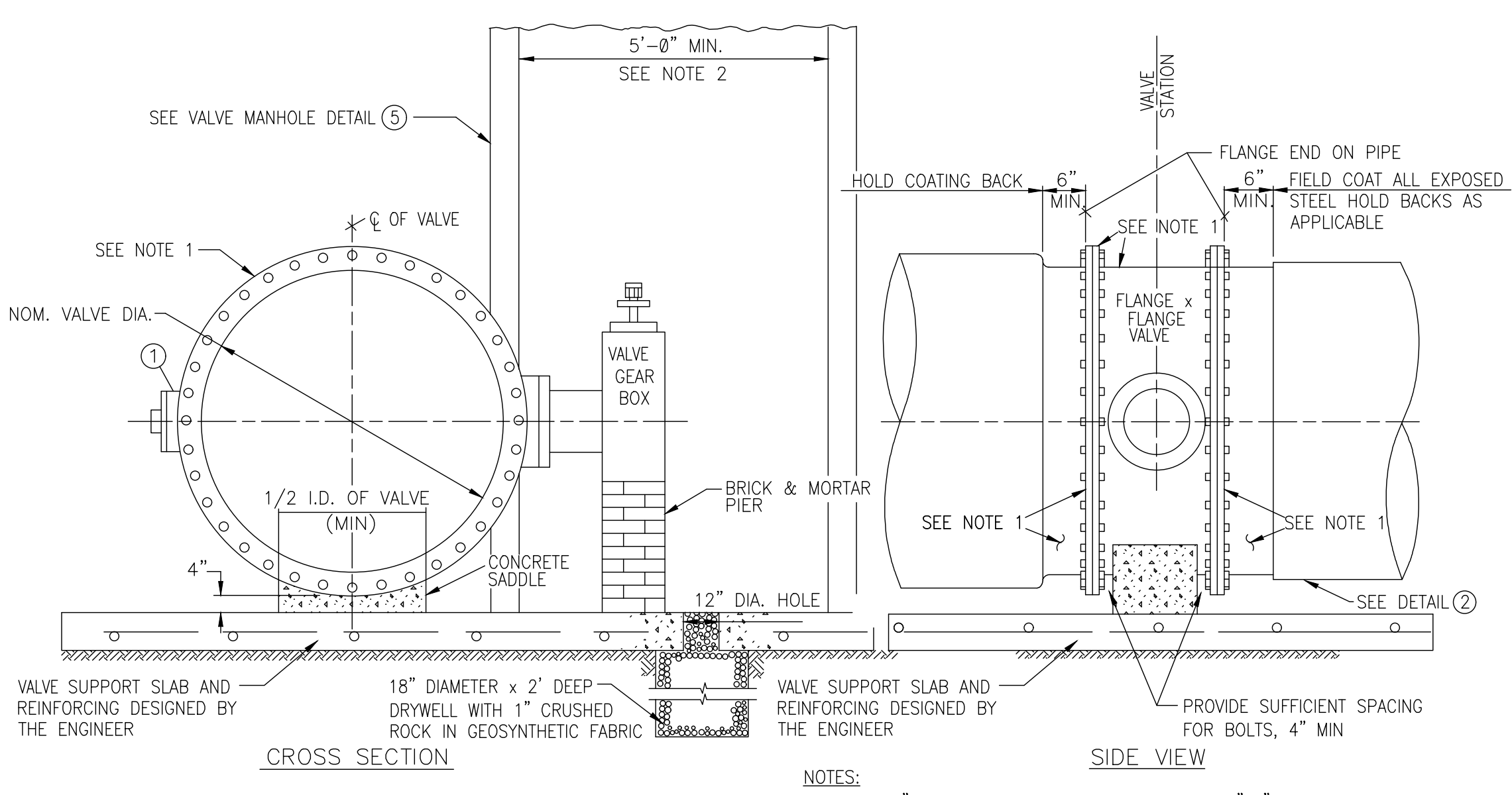


DETAIL No. 2

CROSS SECTION THRU FIRE HYDRANT BLOW OFF

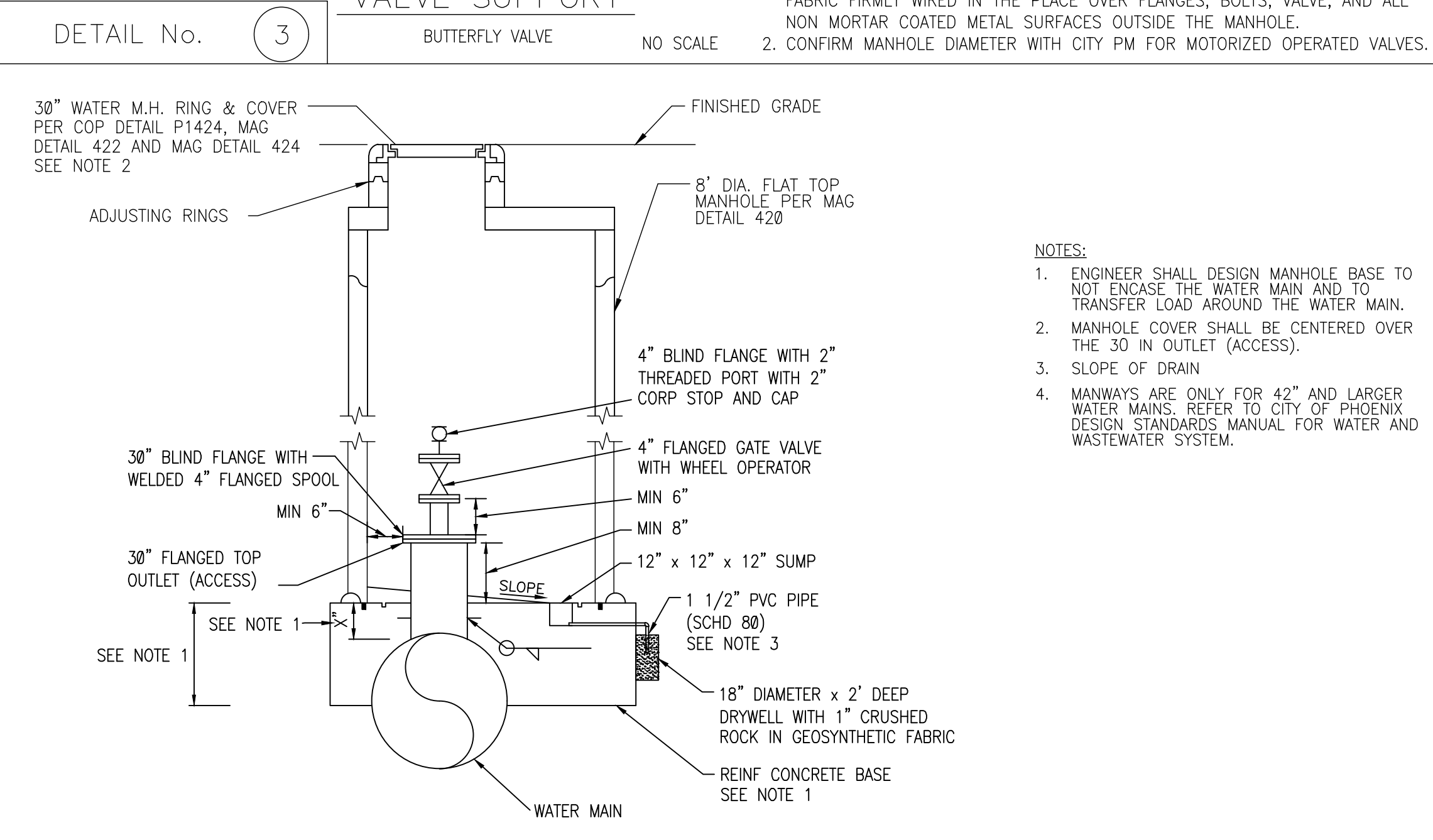
NO SCALE

NOTES:
1. ALL JOINTS FROM THE MAINLINE THROUGH THE FIRE HYDRANT SHALL BE RESTRAINED BY AN APPROVED JOINT RESTRAINT METHOD.



VALVE SUPPORT

NO SCALE



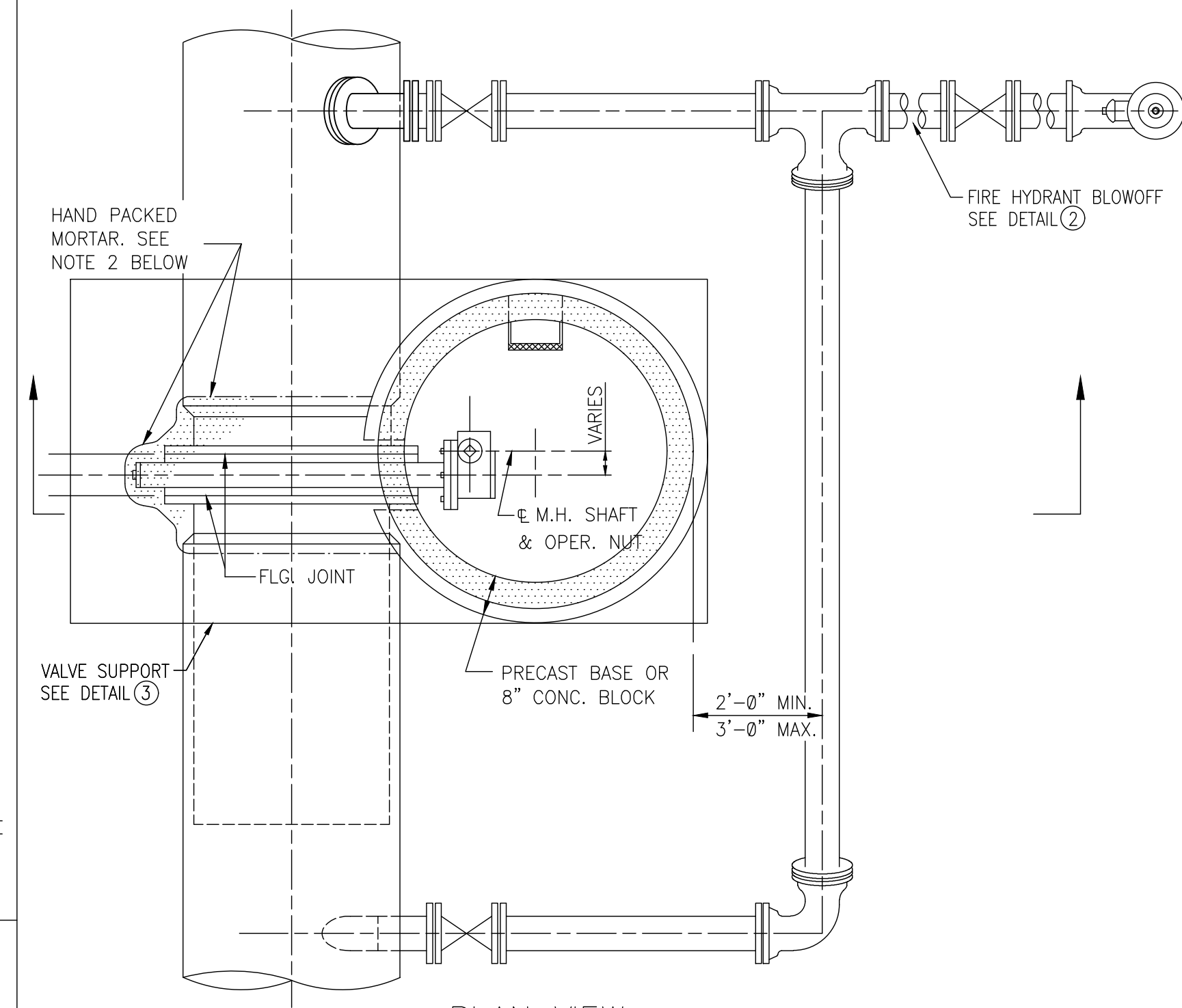
DETAIL No. 4

30\"/>

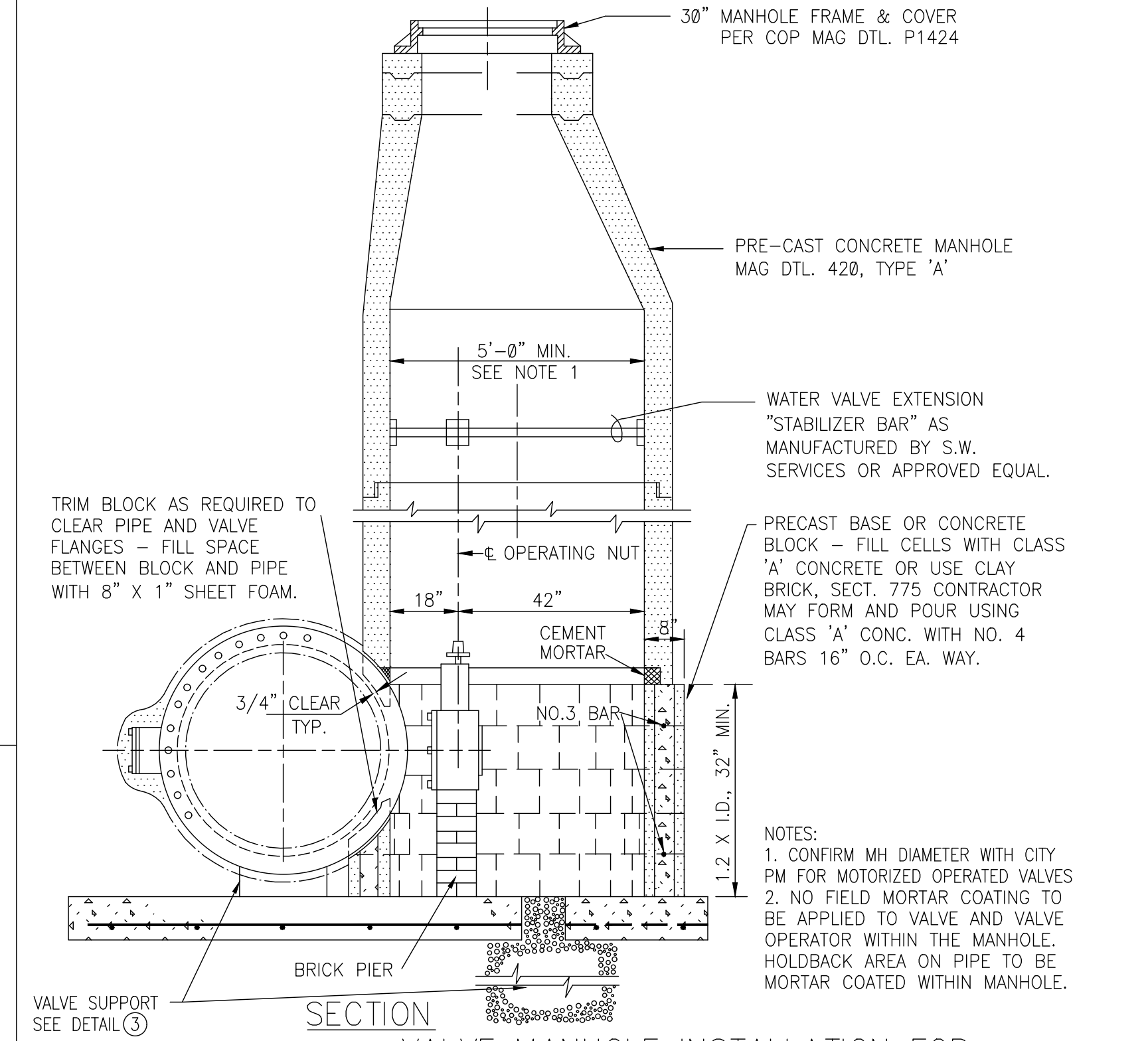
NO SCALE

USE OF THESE STANDARD DETAILS
THE USE OF THESE STANDARD DETAILS IN AN ENGINEERING DESIGN PROVIDES FOR MORE CONSISTENCY BY DEFINING KEY CHARACTERISTICS SUCH AS CONFIGURATION, DIMENSIONS AND MATERIAL REQUIREMENTS WITH DUE CONSIDERATION FOR SAFETY, OPERABILITY, MAINTAINABILITY, LONG TERM DURABILITY AND GENERAL GOOD PRACTICE. THE DETAILS REQUIRED FOR A PROJECT SHOULD BE INCORPORATED INTO PROJECT PLANS AFTER CAREFUL REVIEW BY THE DESIGN ENGINEER OF SPECIFIC PROJECT NEEDS. NOT ALL DETAILS HEREIN WILL APPLY TO ALL PROJECTS.
WHILE THE GOAL OF THESE STANDARD DETAILS IS TO PROVIDE A MINIMUM LEVEL OF QUALITY AND STANDARDIZATION, THEY ARE NOT INTENDED TO LIMIT CREATIVE OR INNOVATIVE DESIGNS WHICH MAY BETTER MEET PROJECT OBJECTIVES, RESULT IN BETTER QUALITY AND/OR COST SAVINGS. DEVIATIONS FROM THESE STANDARDS MUST BE APPROVED IN WRITING BY THE WATER SERVICES DEPARTMENT PROJECT MANAGER.
THESE DETAILS ARE NOT A SUBSTITUTE FOR GOOD ENGINEERING JUDGMENT. THESE STANDARD DETAILS ARE NOT TO BE CONSIDERED COMPLETE NOR IS IT A SUBSTITUTE FOR THE REQUIREMENTS OF APPLICABLE LAWS. UNIQUE CONDITIONS WILL ARISE THAT ARE OUTSIDE THE SCOPE OF THESE STANDARDS. WHEN THIS HAPPENS, PROFESSIONAL ENGINEERS ARE REQUIRED TO USE THEIR JUDGMENT TO AMEND THESE STANDARD DETAILS TO BEST MEET SITE-SPECIFIC PROJECT NEEDS IN ACCORDANCE WITH THE RULES SET FORTH BY THE STATE OF ARIZONA AND THE ARIZONA STATE BOARD OF TECHNICAL REGISTRATION.

ADDITIONAL DESIGN IS REQUIRED BY THE ENGINEER OF RECORD
THESE DETAILS APPLY TO EXISTING TRANSMISSION MAIN BEING EXPANDED, MODIFIED, UPGRADED, AND REHABILITATED AS WELL AS TO THE CONSTRUCTION OF NEW TRANSMISSION MAINS. THESE DETAILS ARE NOT INTENDED TO BE USED AS-IS FOR CONSTRUCTION. THE ENGINEER OF RECORD (EOR) SHALL REVIEW THESE DETAILS FOR INCORPORATION INTO THE PROJECTS PLANS AND COMPLETE THE ADDITIONAL DESIGN FOR PROJECT SPECIFIC AND SITE-SPECIFIC REQUIREMENTS. ADDITIONAL CONSIDERATIONS TO BE ADDRESSED BY THE EOR COULD INCLUDE, BUT ARE NOT LIMITED TO, GEOTECHNICAL CONDITIONS, CONNECTIONS TO EXISTING SYSTEMS, PRESENCE OF OTHER SUBSURFACE UTILITIES, DESIGN OF CORROSION PROTECTION SYSTEMS, ISOLATION OF DISSIMILAR METALS, WELDS, CLEARANCES REQUIRED FOR OPERATION AND MAINTENANCE, AND STRUCTURAL DESIGN (ENCASEMENTS, CONCRETE SLABS, PIPE SUPPORTS).
THE DETAILS ARE SPECIFIC TO STEEL, PRESTRESSED CONCRETE CYLINDER PIPE (PCCP), AND CONCRETE CYLINDER PIPE (CCP). IF DUCTILE IRON PIPE (DIP) IS TO BE USED FOR A PROJECT, ADDITIONAL FITTINGS AND OTHER MODIFICATIONS WILL BE REQUIRED FOR THESE DETAILS. THE EOR SHALL DEVELOP A COMPLETE DESIGN AND PROVIDE SUITABLE DRAWINGS TO THE CITY PROJECT MANAGER FOR REVIEW.



PLAN VIEW



VALVE MANHOLE INSTALLATION FOR NEW BUTTERFLY VALVE

NO SCALE



CITY OF PHOENIX, ARIZONA
WATER SERVICES DEPARTMENT

COP INDEX NO.

PROJECT TITLE

STANDARD DETAILS FOR 18" AND LARGER PIPE

DRN:	DATE:	SCALE:	SHEETS:
DRN:	DATE:		
CKD:	DATE:		

TO BE SEALED BY THE ENGINEER OF RECORD

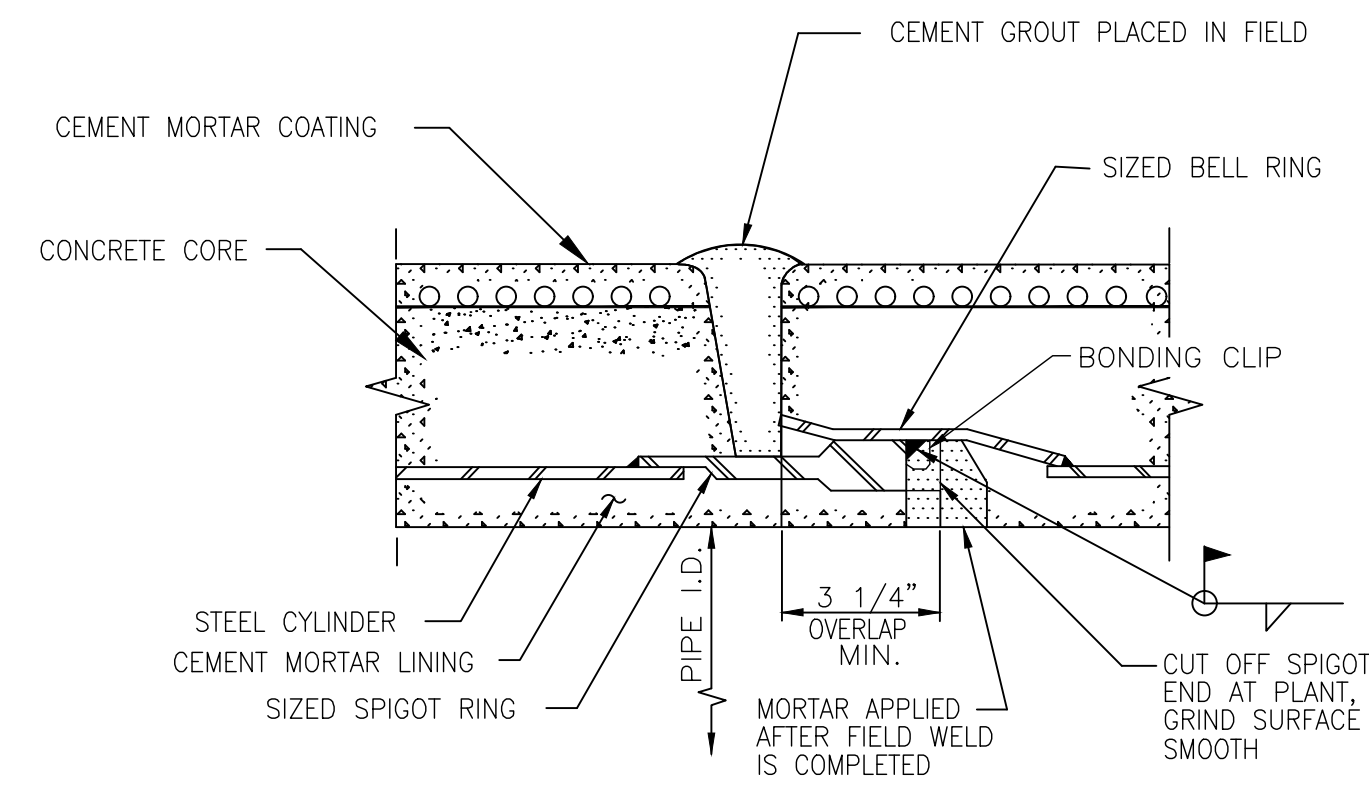
NO. OF

NO.	DESCRIPTION	REV. BY	CHK. BY	DATE

NO.	DESCRIPTION	REV. BY	CHK. BY	DATE

NO.	DESCRIPTION	REV. BY	CHK. BY	DATE
1	A940400.DWG	RSY	RM	10/94
2	REVISED ALL DETAILS	BC	CITY	9/25

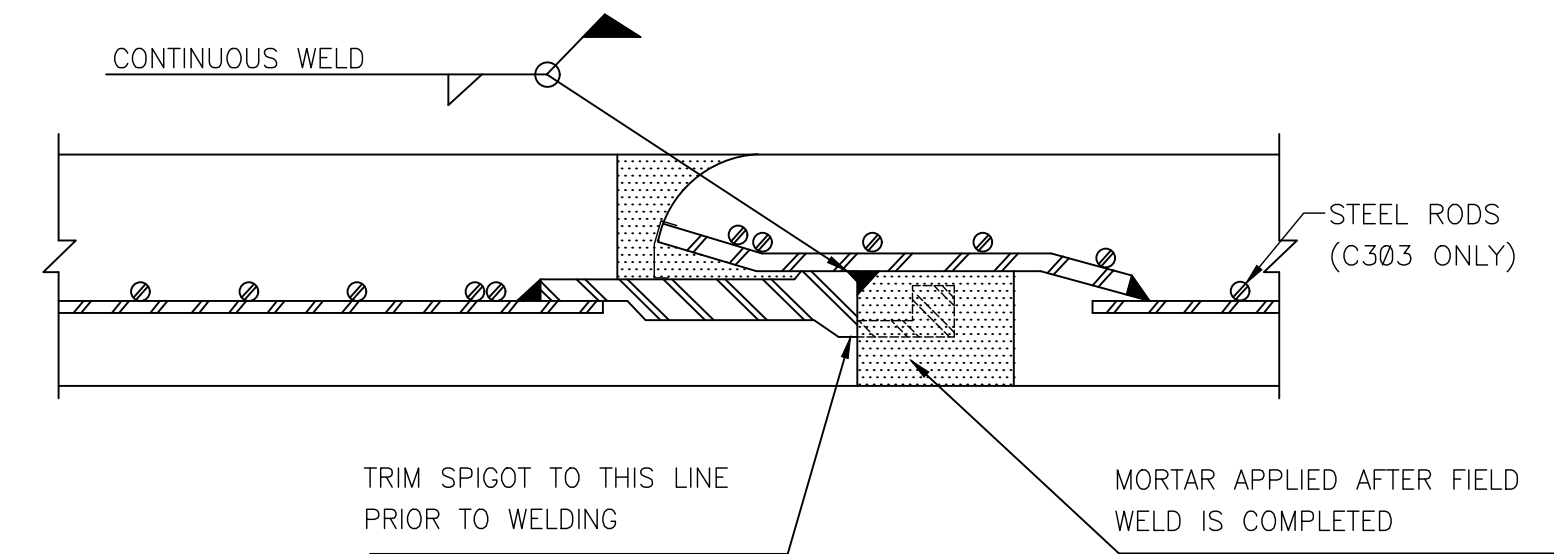
NO.	DESCRIPTION	REV. BY	CHK. BY	DATE



INTERNAL FIELD WELD JOINT WITH TRIMMED SPIGOT
AWWA C-301 (PCCP)

DETAIL No. 6

NO SCALE

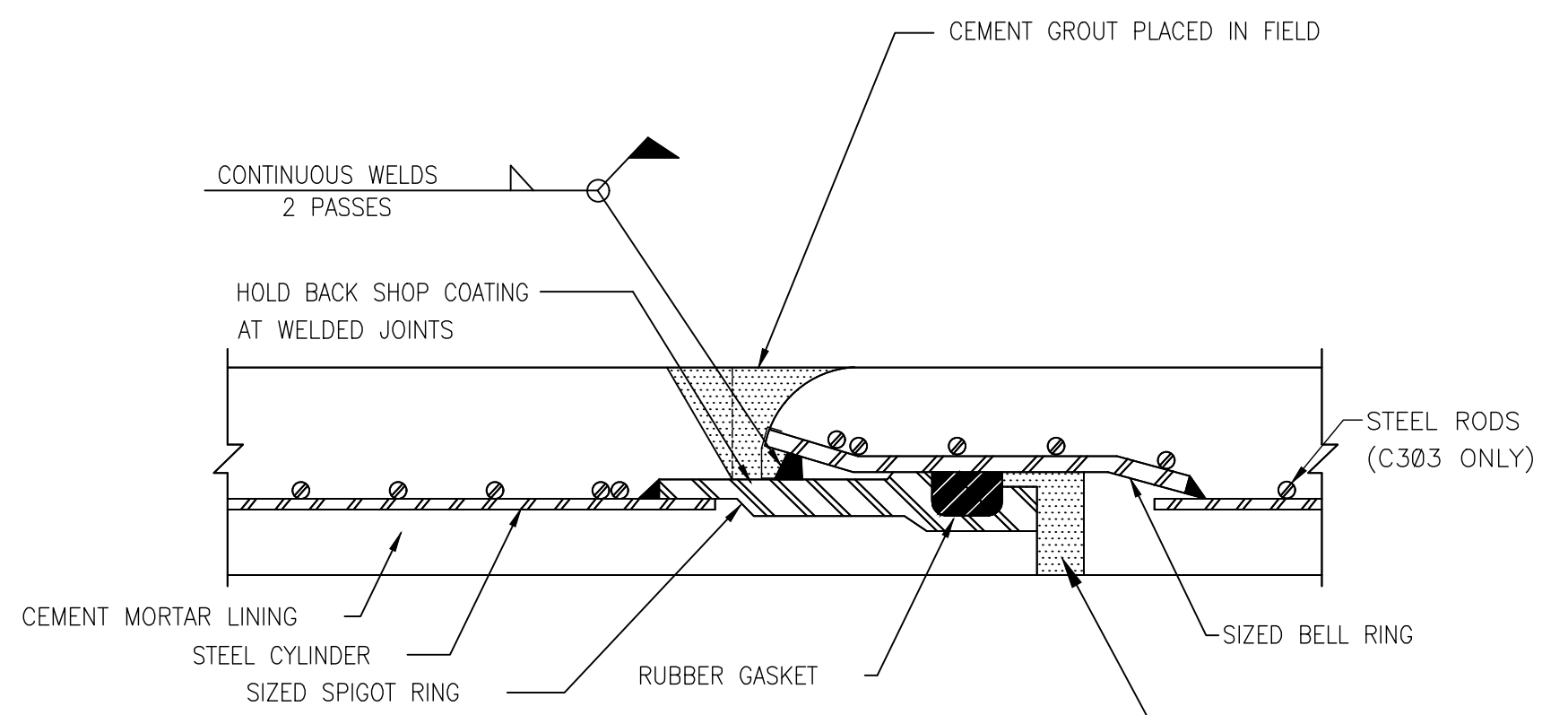


INTERNAL FIELD WELD JOINT WITH TRIMMED SPIGOT
AWWA C-303 (CCP AND STEEL)

DETAIL No. 7

NO SCALE

NOTE:
1. STEEL PIPE MAY HAVE FORMED JOINT VS CARNEGIE JOINT AS SHOWN.

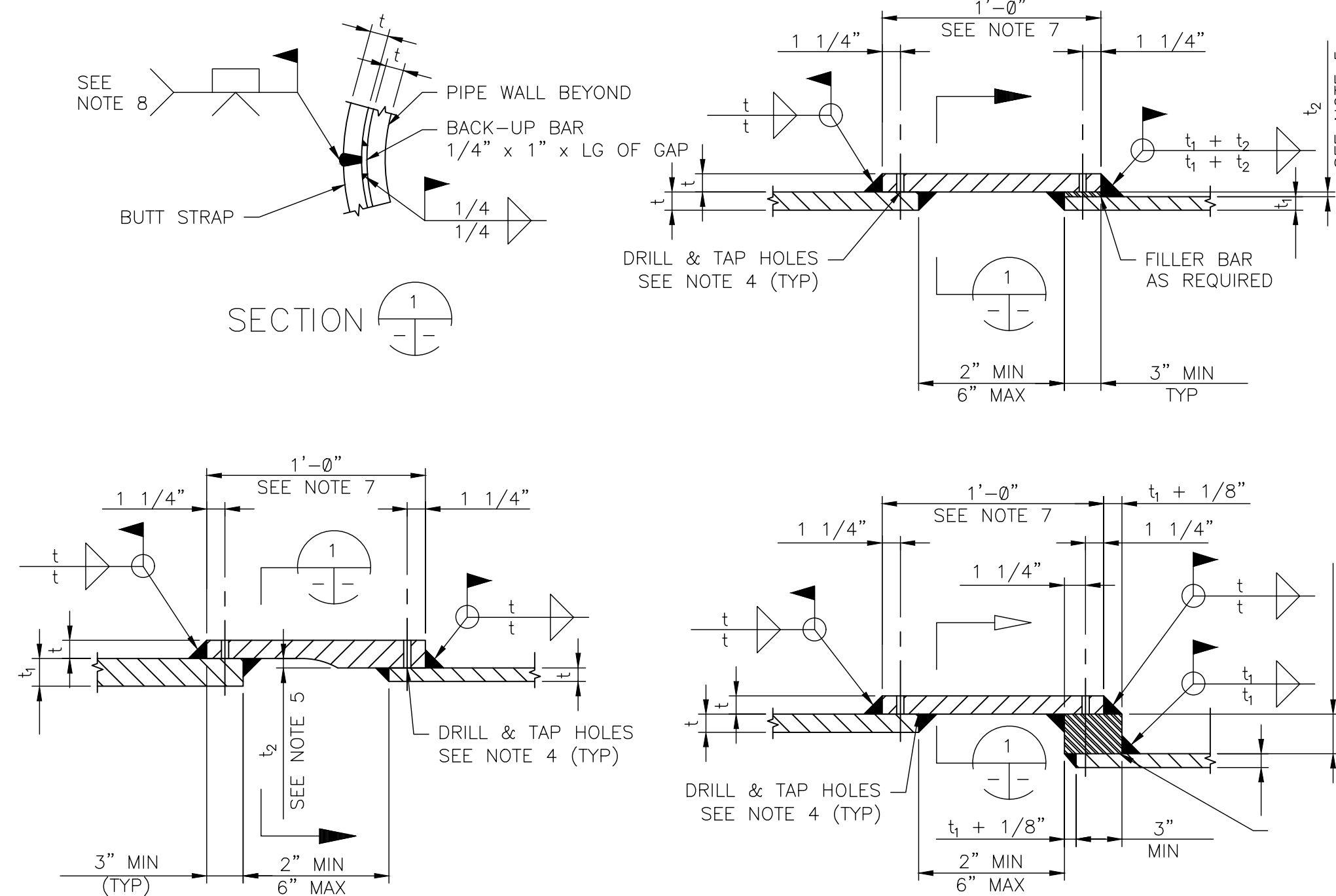


EXTERNAL FIELD WELD JOINT
AWWA C-303 (CCP AND STEEL)

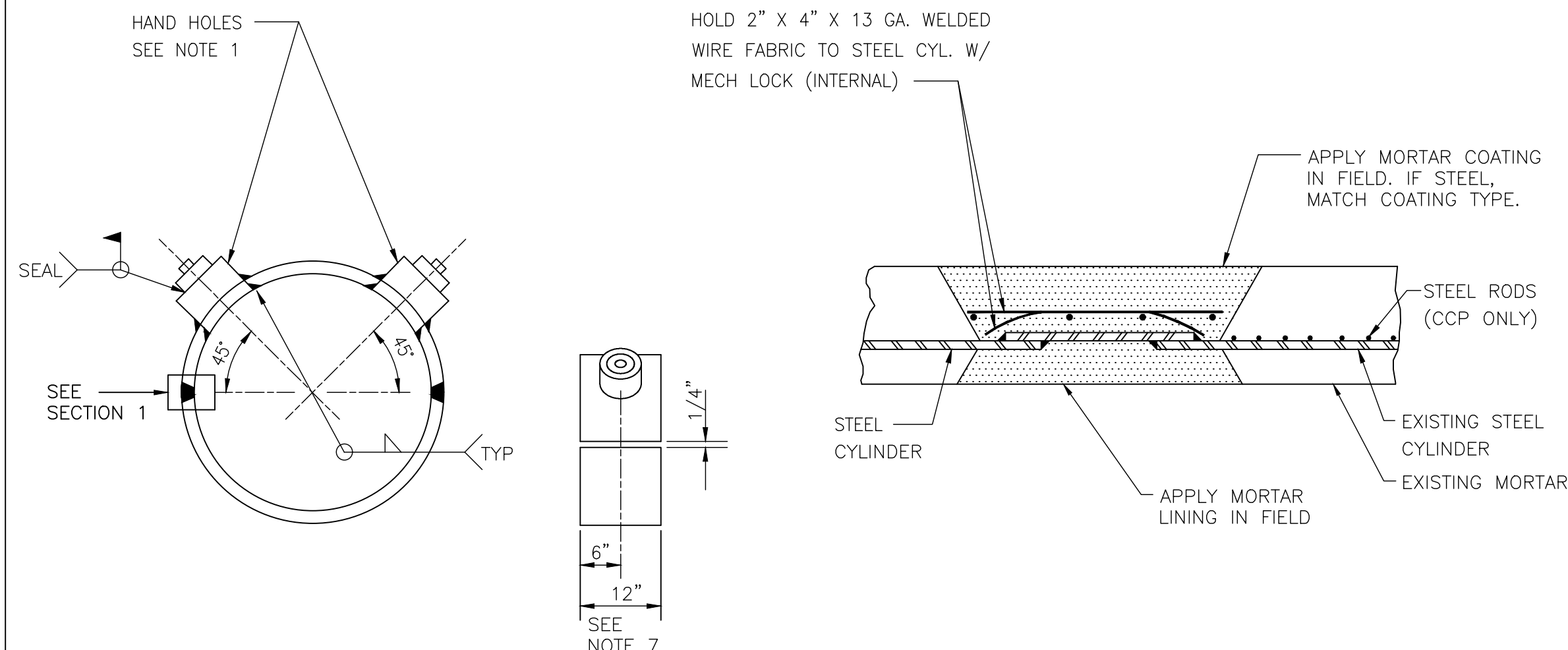
DETAIL No. 8

NO SCALE

NOTE:
1. STEEL PIPE MAY HAVE FORMED JOINT VS CARNEGIE JOINT AS SHOWN.



BUTT STRAP FIELD WELD DETAIL



BUTT STRAP HANDHOLD DETAIL

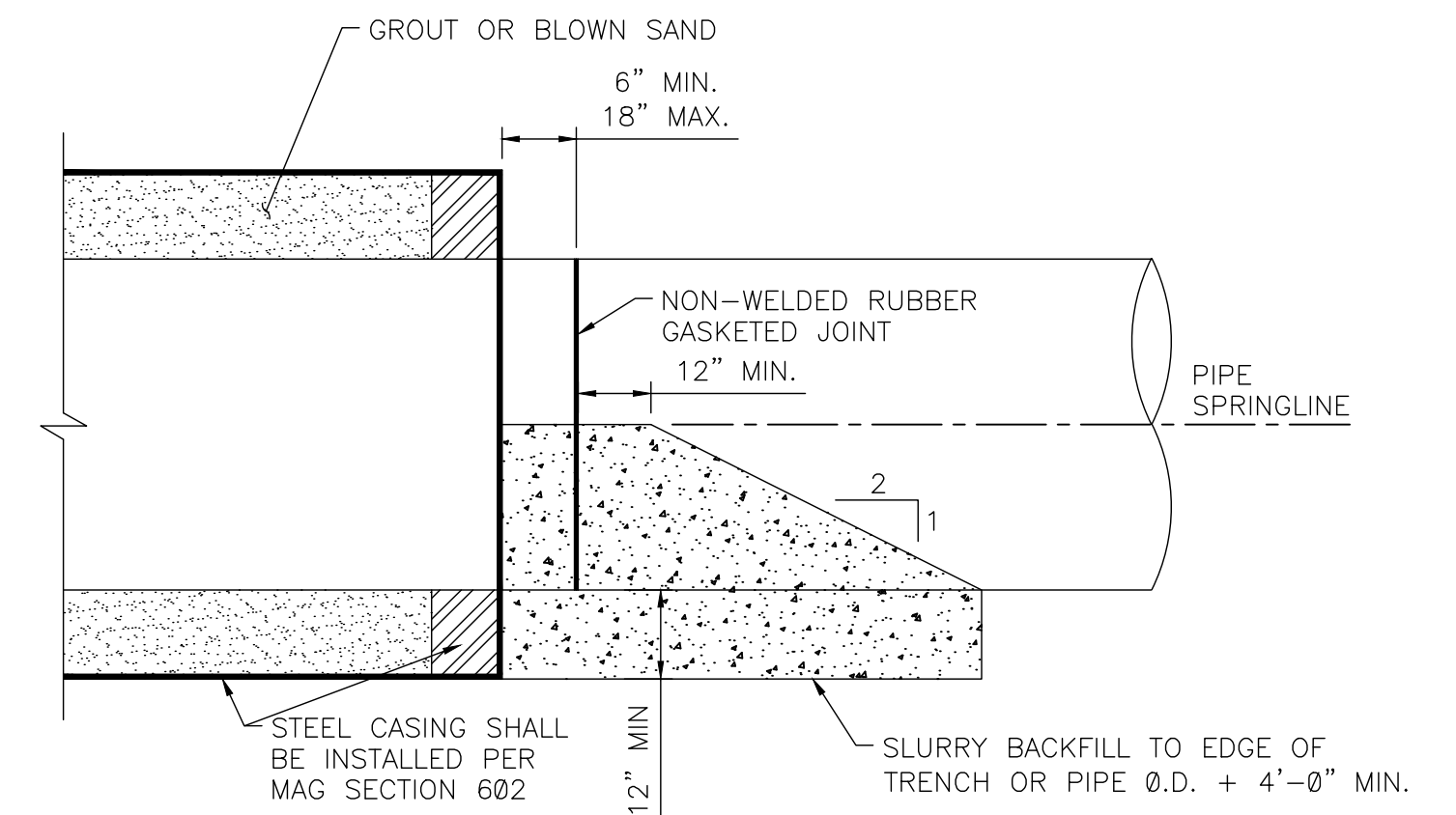
BUTT STRAP MORTAR DETAIL

NOTES:

- HAND HOLES SHALL BE REQUIRED AS NEEDED.
 - 18" PIPE - 1 HAND HOLE
 - 20" - 36" PIPE - 2 HAND HOLES
 - 42" - 48" PIPE - 3 HAND HOLES
 - 52" - 66" PIPE - 4 HAND HOLES
- PLUGS SHALL BE SEAL WELDED AFTER INTERNAL GROUTING
- HAND HOLES SHALL BE OMITTED IF INTERIOR OF PIPE IS ACCESSIBLE THROUGH NEARBY ACCESSWAY OR SIMILAR ACCESS POINT.
- FOR INSIDE DIAMETER, PLATE THICKNESS AND LOCATION OF WELDED LAP JOINTS FOR WELDED STEEL PIPE, SEE PROJECT PLAN AND PROFILE DRAWINGS.
- "t" INDICATES THE WALL THICKNESS OF THE STEEL PIPE, SEE PROJECT PLAN AND PROFILE DRAWINGS.
- PROVIDE 4-1/4" NPT HOLES EQUALLY SPACED. DRILL AND TAP HOLES PRIOR TO WELDING. CONTRACTOR TO PLUG WELD TAPPED HOLES ON COMPLETION OF SOAP AND AIR TEST AND PERFORM LIQUID PENETRANT TEST ON PLUG WELDS.
- "t₂" INDICATES OFFSET OF STEEL CYLINDER OD. IF "t₂" IS 1/4" OR LESS, USE JOINT TYPE I. IF "t₂" IS 1/2" OR GREATER, USE JOINT TYPE II. IF "t₂" IS GREATER THAN 1/4" AND LESS THAN 1/2", USE JOINT TYPE III.
- COATING AND LINING AT BUTT STRAP FIELD JOINTS SHALL BE THE SAME AS LAP WELDED FIELD JOINTS.
- BUTT STRAP FOR FIELD CLOSING SECTION SHALL BE 1'-0" MINIMUM WIDTH. BUTT STRAP TO BE FURNISHED IN TWO PIECES AND SHIPPED LOOSE FOR FIELD JOINING.
- INSPECT ALL WELDS IN ACCORDANCE WITH CITY OF PHOENIX GUIDE SPECIFICATION SECTION 33.05.24.
- OUTSIDE DIAMETER OF STEEL PIPE WITH FILLER BAR SHALL BE OUTSIDE DIAMETER OF CONCRETE PIPE CYLINDER +0"-1/8".

DETAIL No. 9

NO SCALE

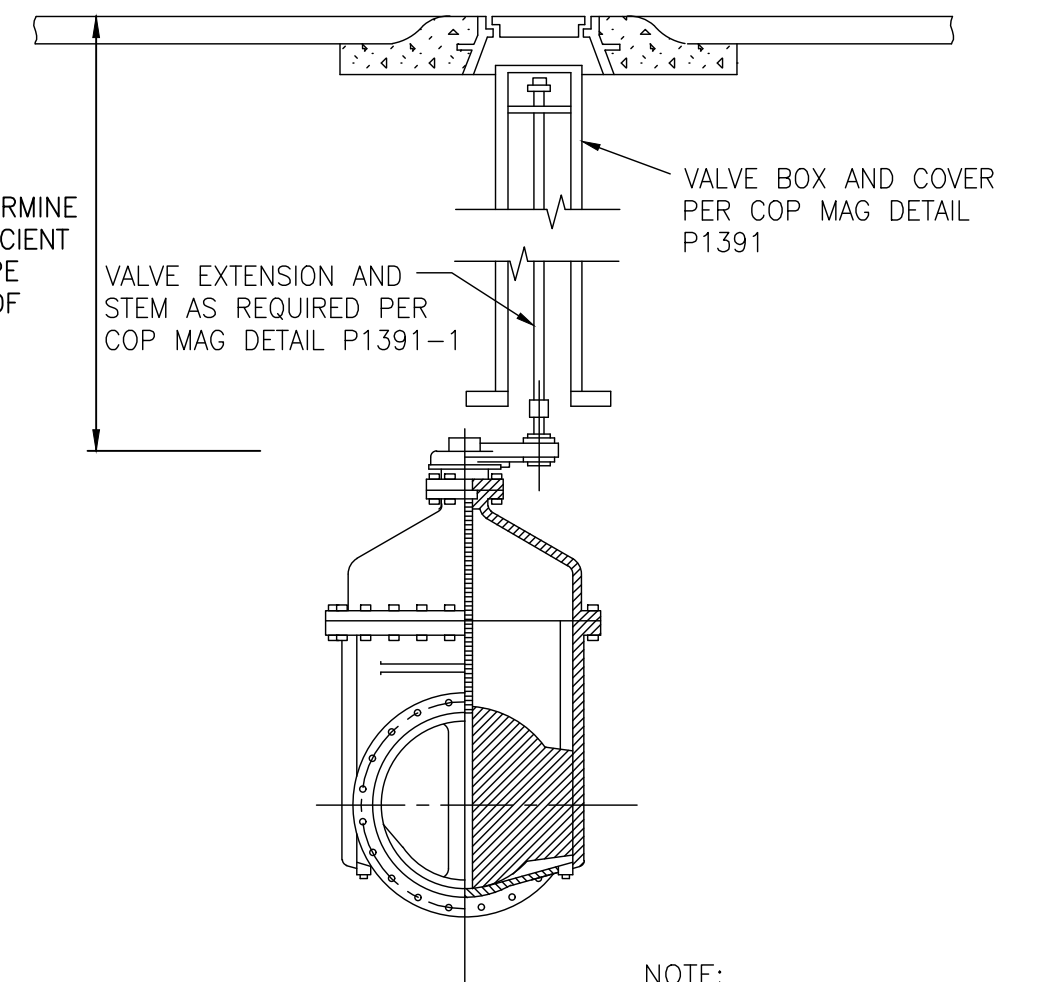


PIPE DETAILS AT END OF STEEL CASING

DETAIL No. 10

NO SCALE

ENGINEER TO DETERMINE IF COVER IS SUFFICIENT DEPENDING ON PIPE DEPTH AND SIZE OF VALVE



NOTE:
1. GATE VALVES SHALL BE INSTALLED IN THE VERTICAL POSITION.

GATE VALVES
16" TO 36"
ALL PIPE MATERIALS

DETAIL No. 11

NO SCALE



CITY OF PHOENIX, ARIZONA
WATER SERVICES DEPARTMENT

COP INDEX NO.

PROJECT TITLE

STANDARD DETAILS FOR 18" AND LARGER PIPE

TO BE SEALED BY THE ENGINEER OF RECORD

DRN:	DATE:	SCALE:	SHEETS:

NO. OF

