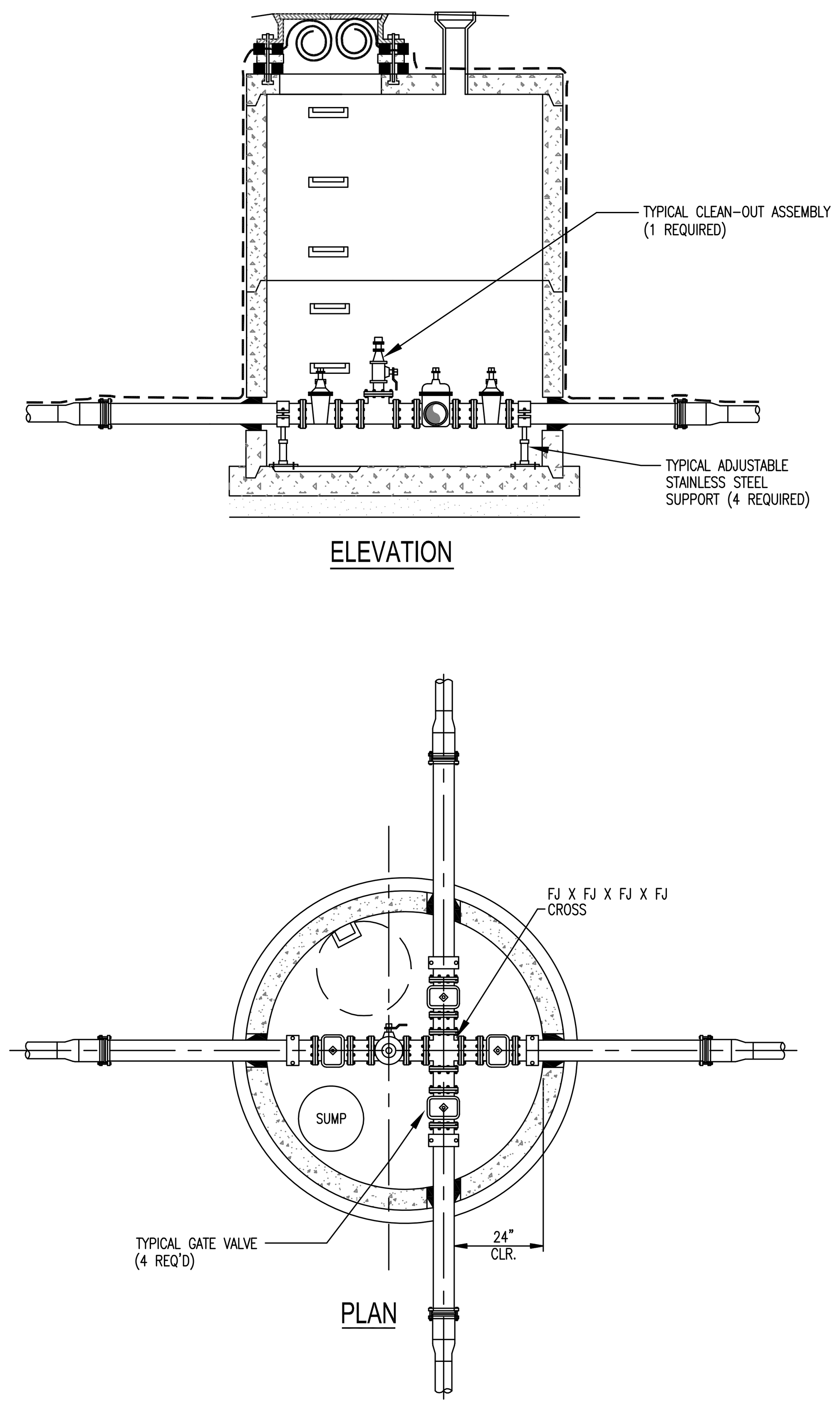
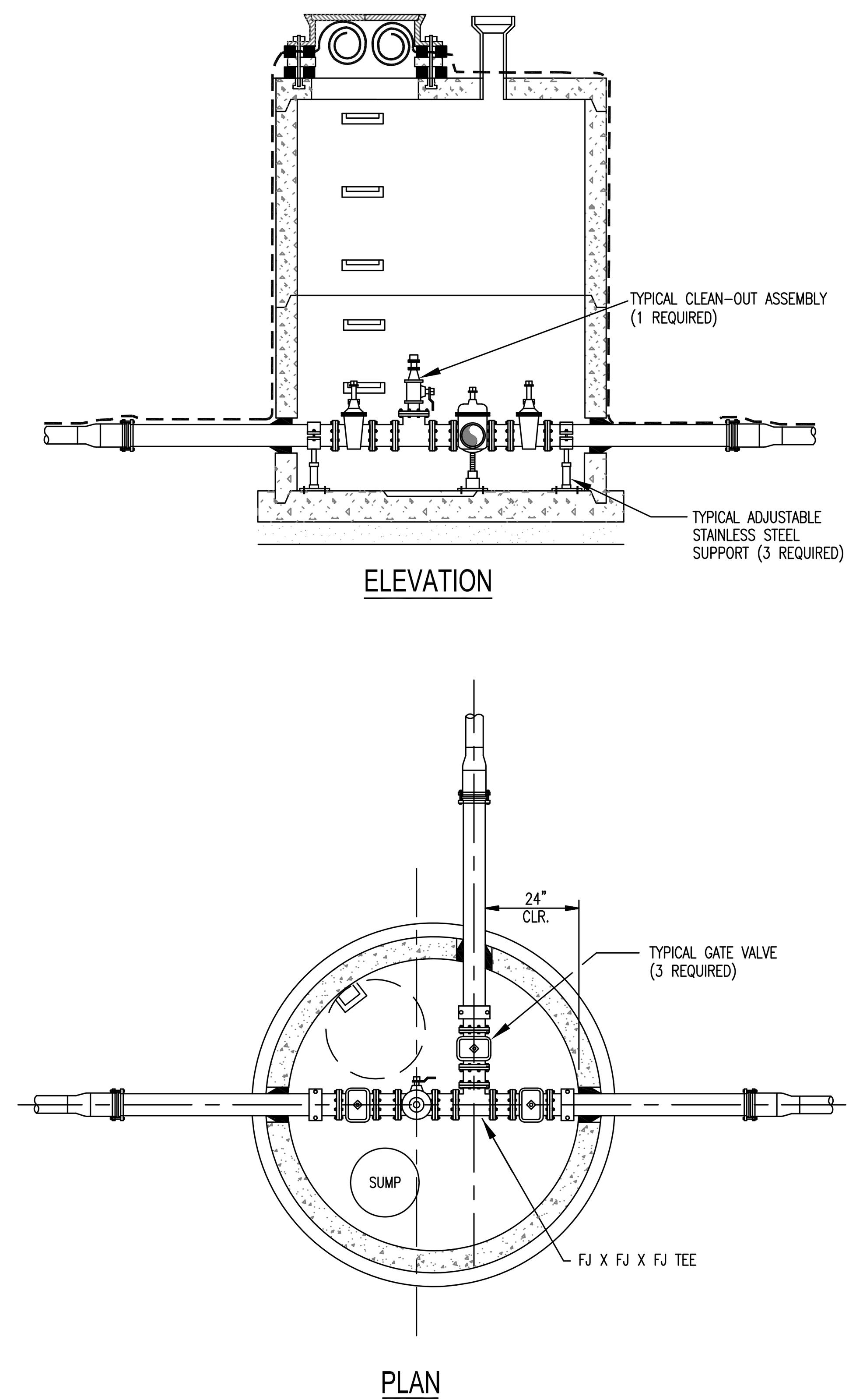


BRANCH FLUSHING CONNECTION (BFC)
4 WAY IN WELL



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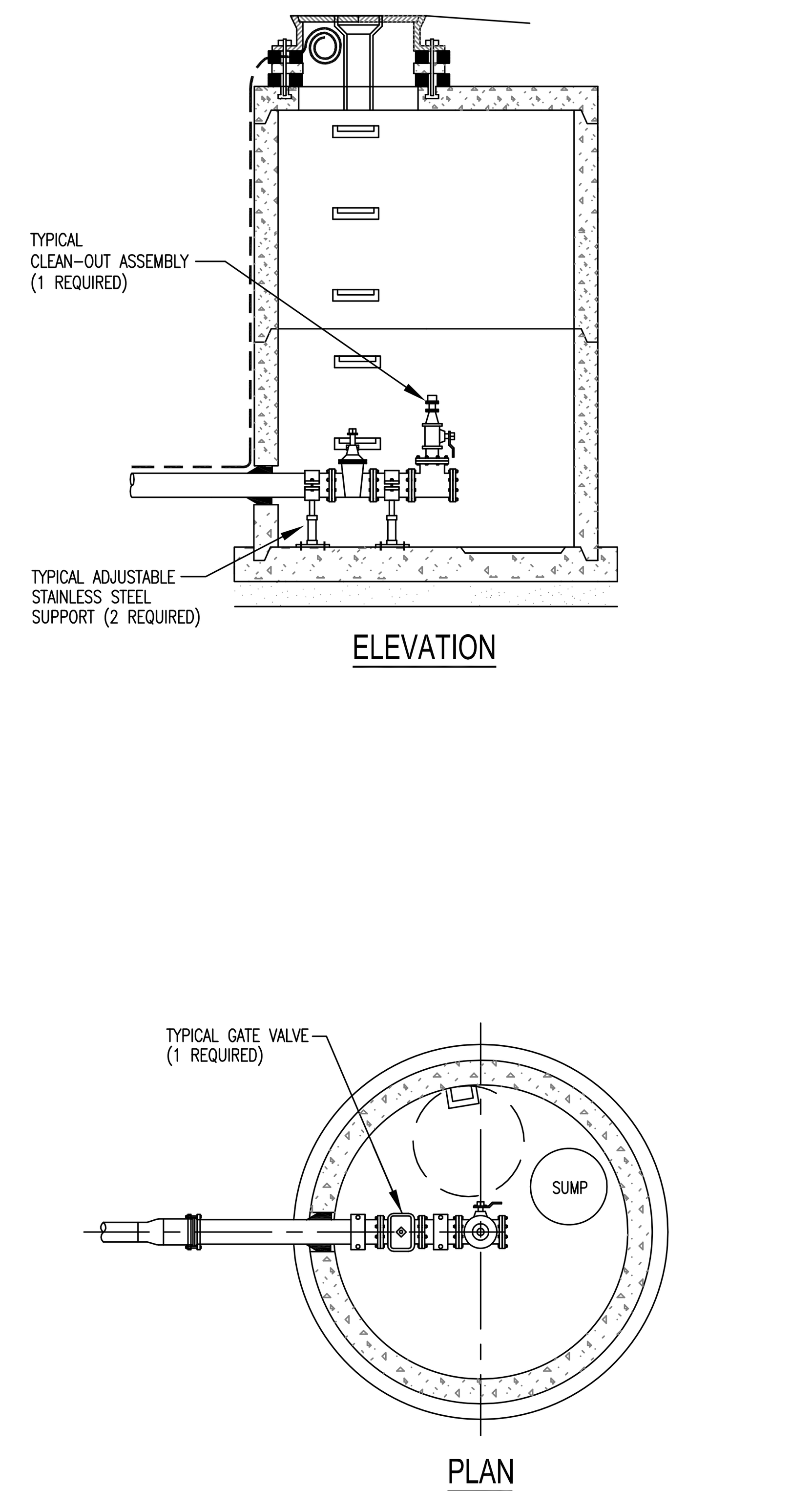

TERMINAL FLUSHING CONNECTION (TFC)
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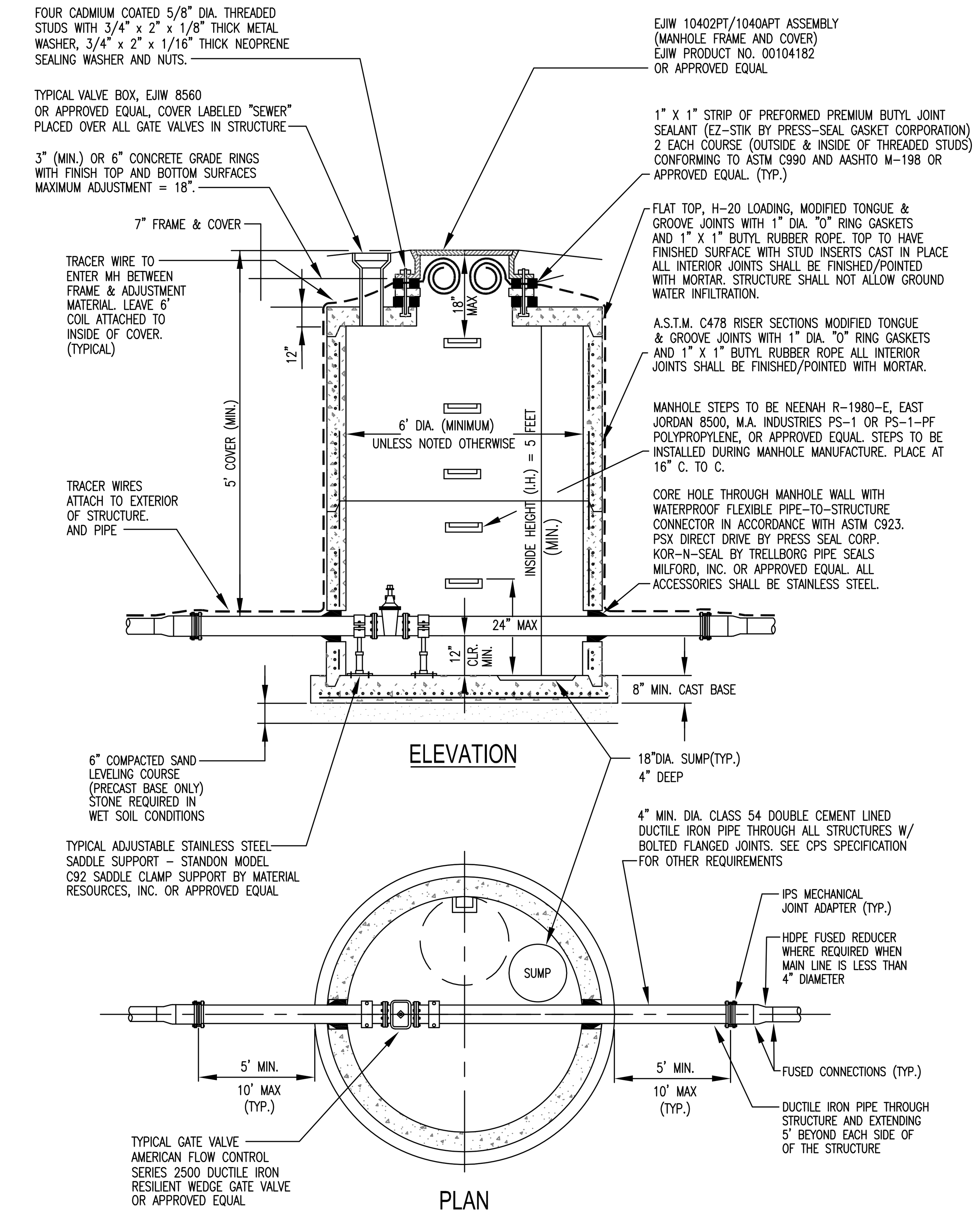
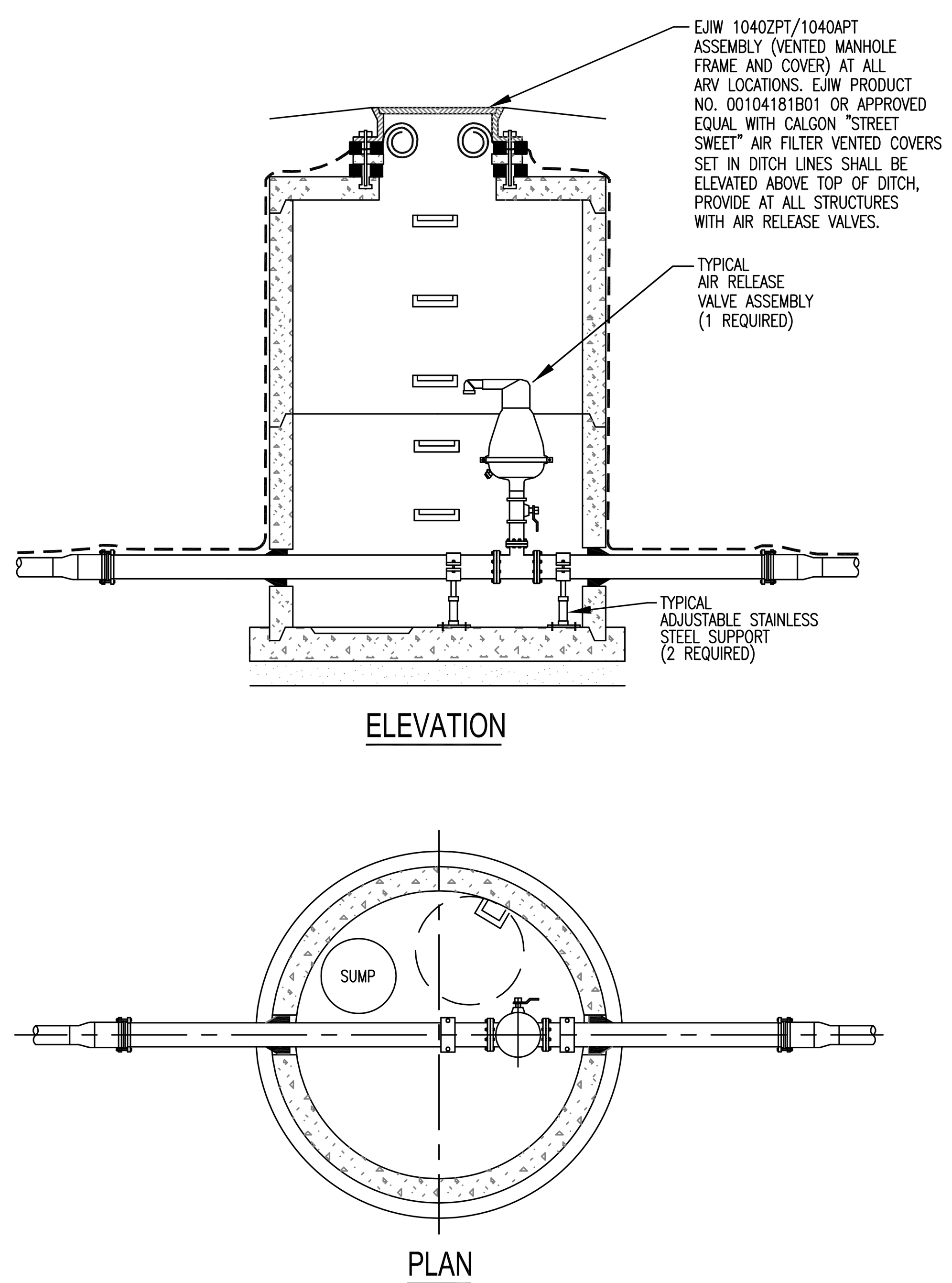
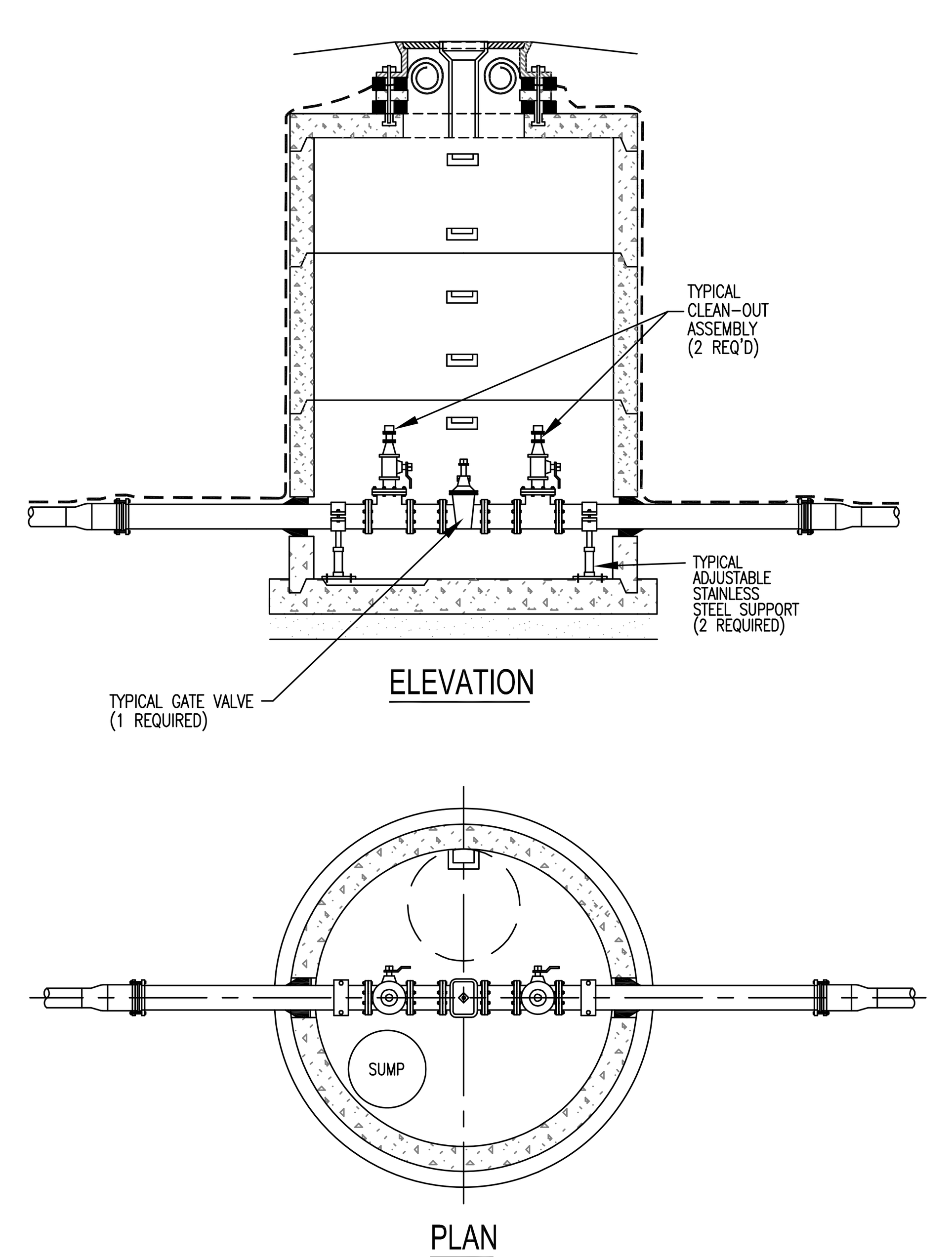


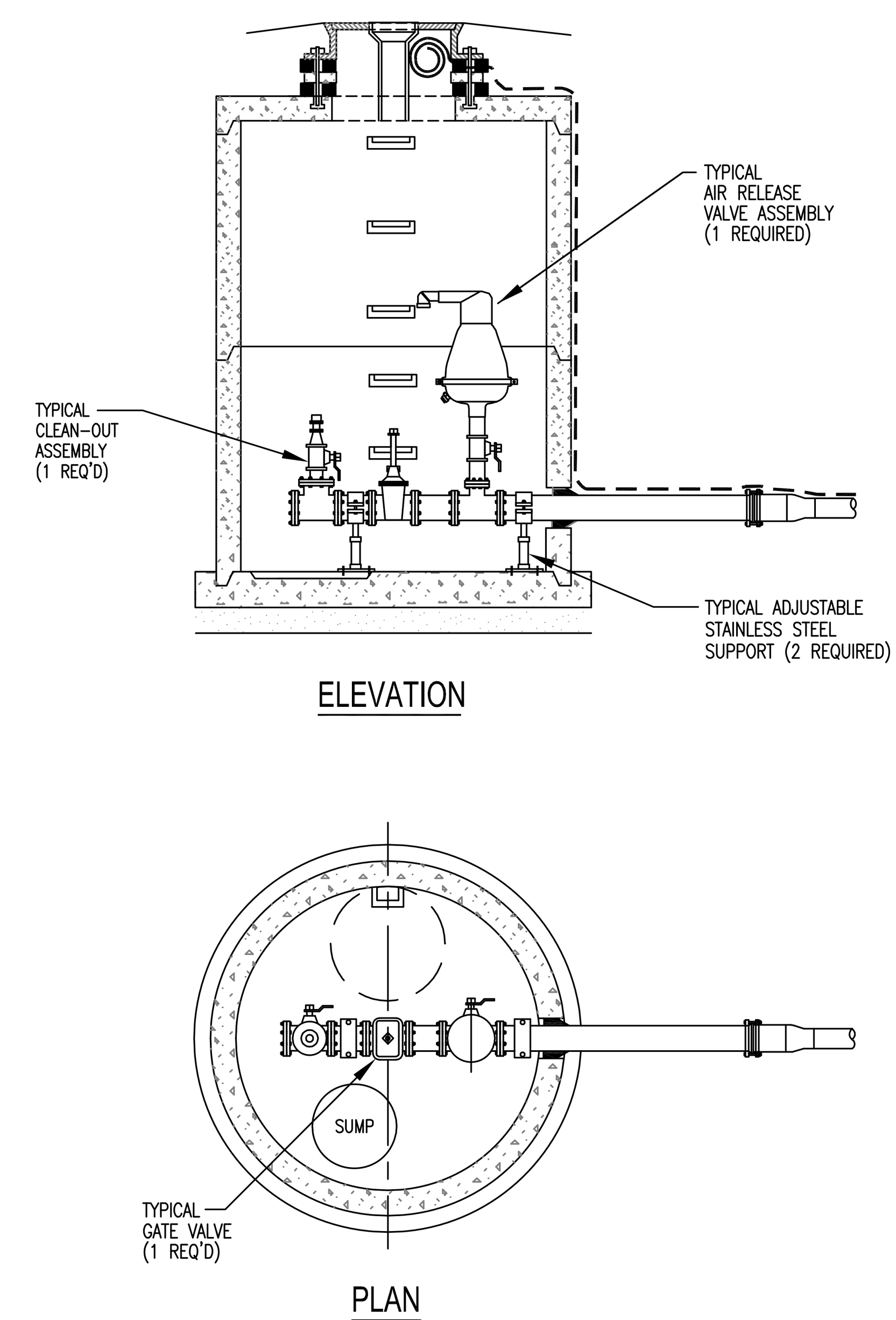
TYPICAL STRUCTURE DETAIL



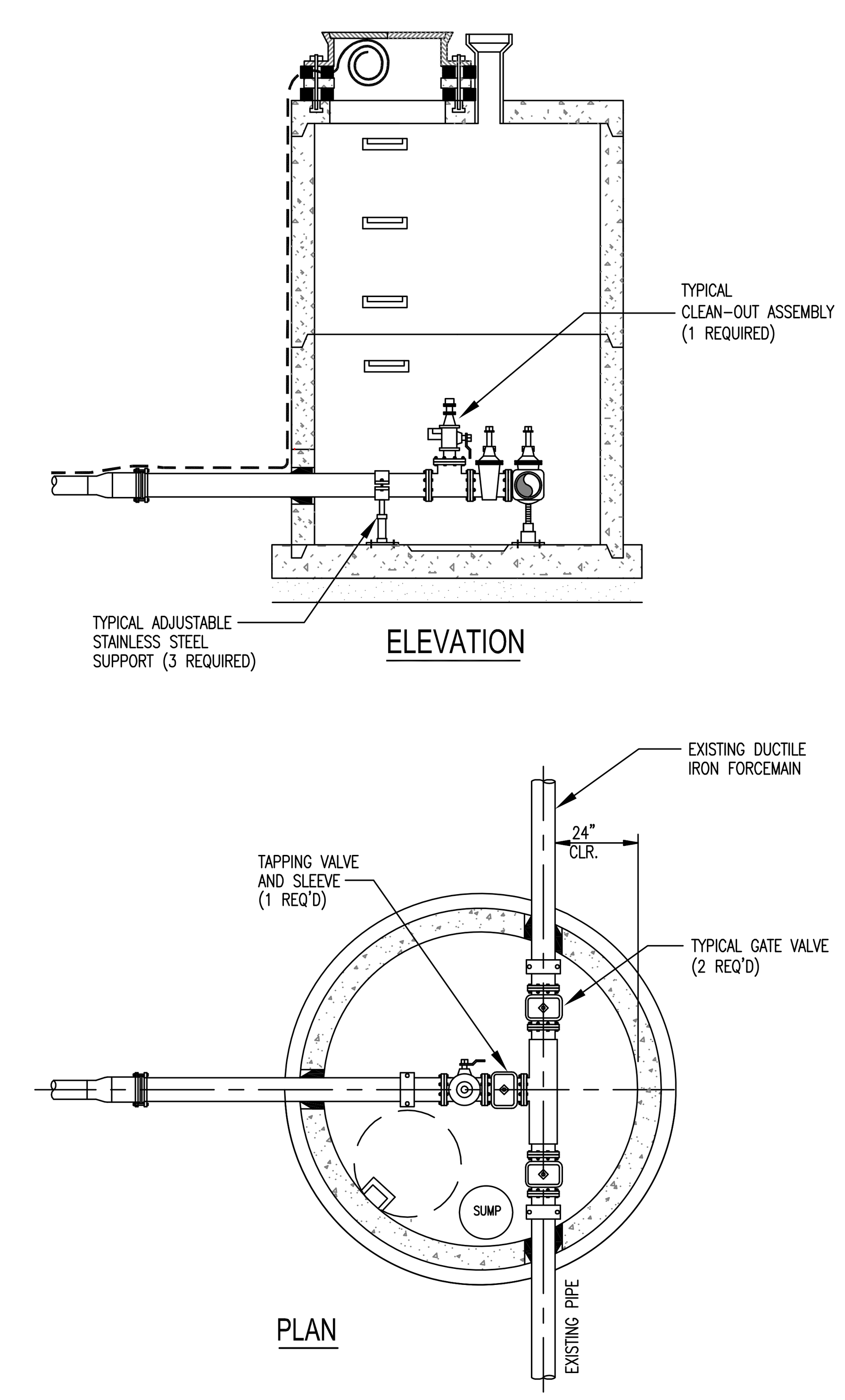
AIR/VACUUM RELEASE VALVE (ARV)
IN WELL



INTERMEDIATE FLUSHING CONNECTION (IFC)
IN WELL



TERMINAL FLUSHING CONNECTION WITH
AIR/VACUUM RELEASE VALVE (TFC/ARV)
IN WELL



TAPPING SLEEVE & VALVE (TSV)
IN WELL

LOW PRESSURE
SANITARY SEWER DETAILS
AND
NOTES

REVISION BLOCK

Data Source / Source Date: N/A

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WRC WATER RESOURCES COMMISSIONER Jim Nash

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48328-1907

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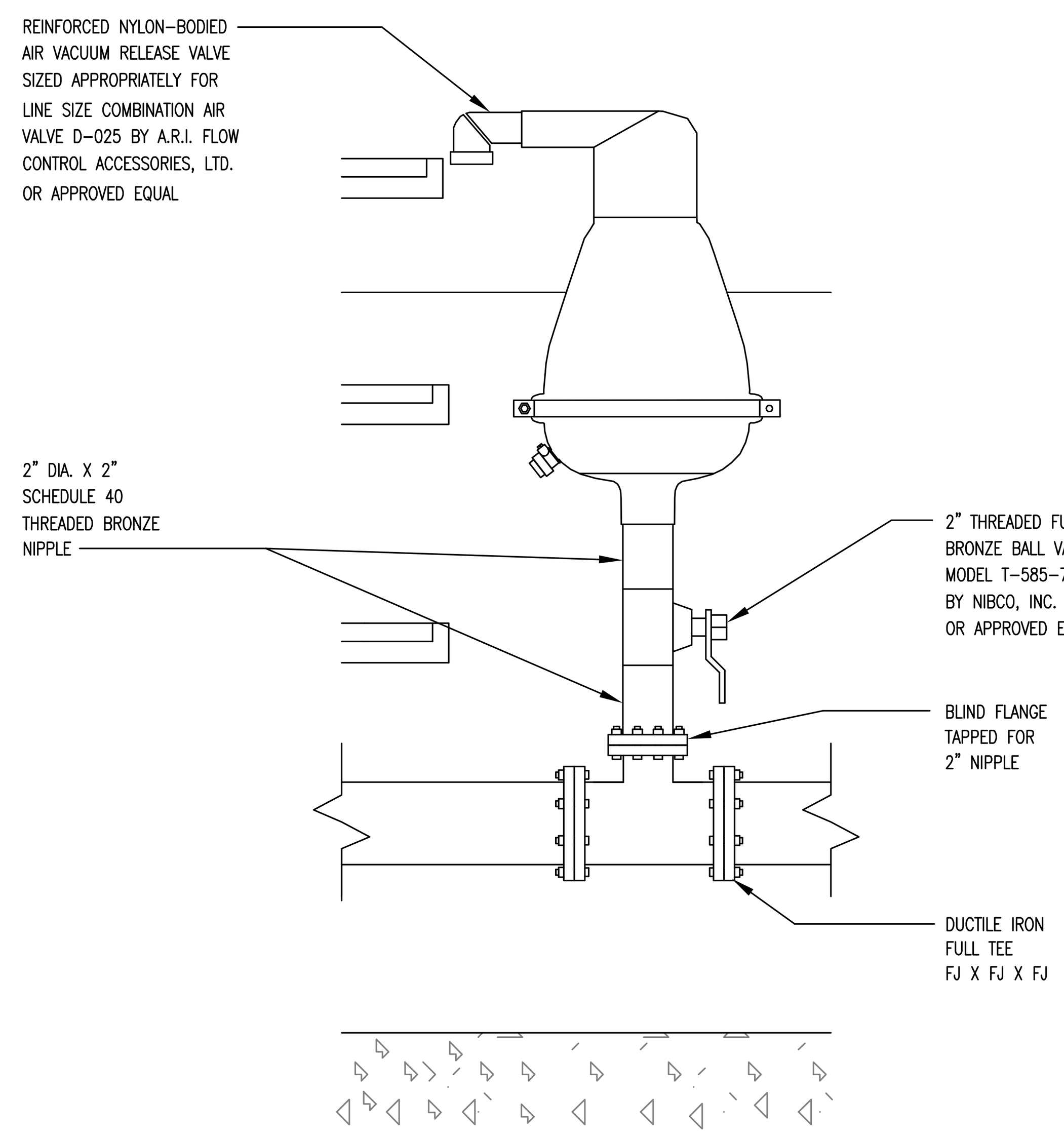
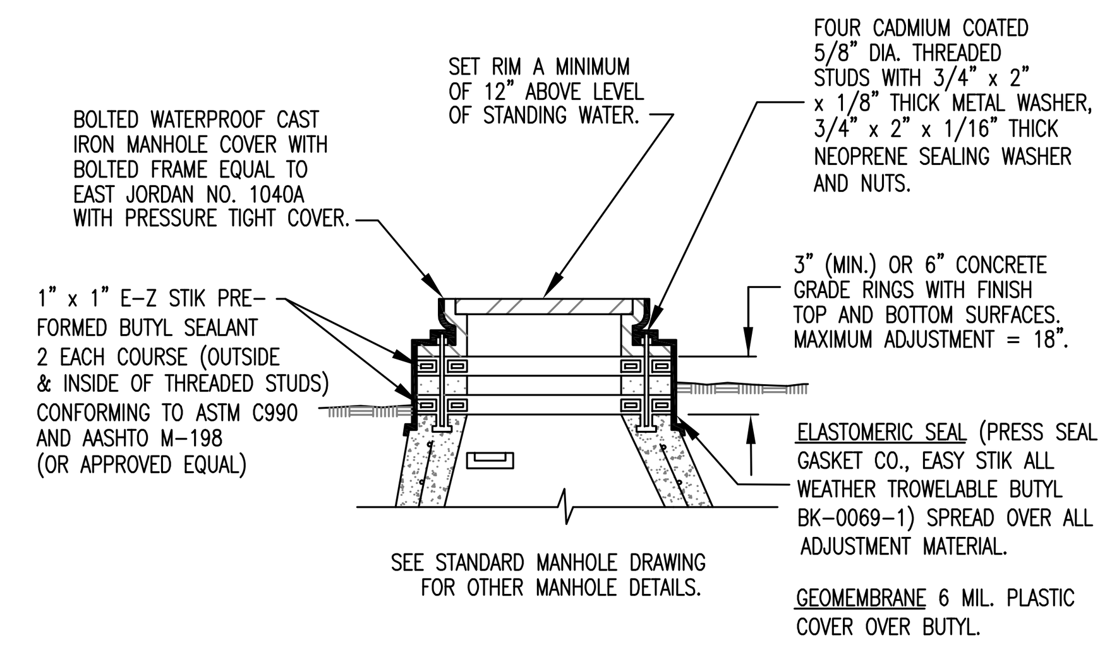
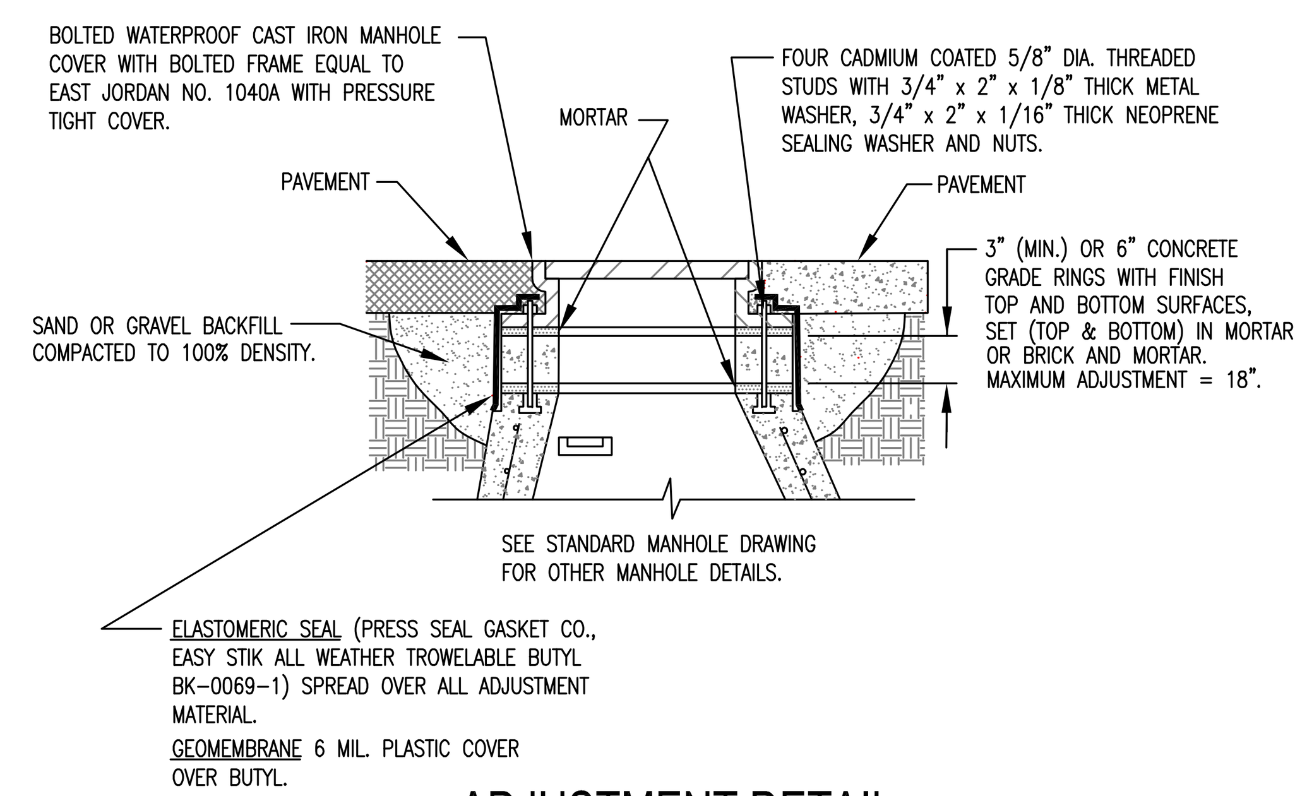


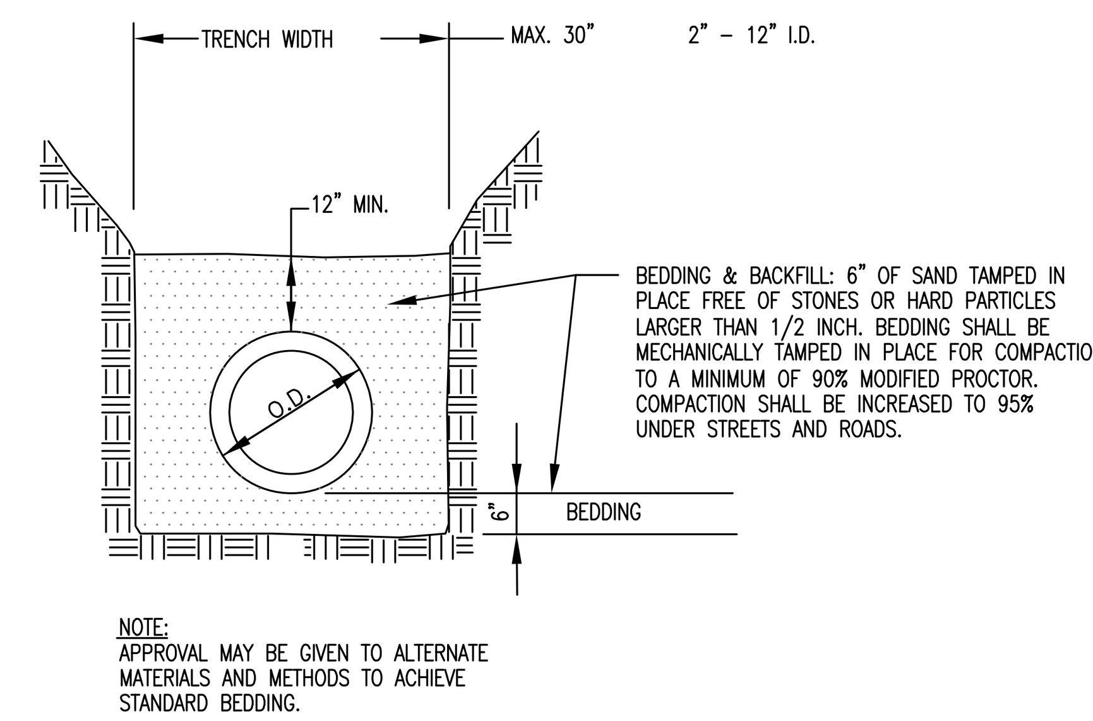
TYPICAL AIR VACUUM RELEASE VALVE ASSEMBLY



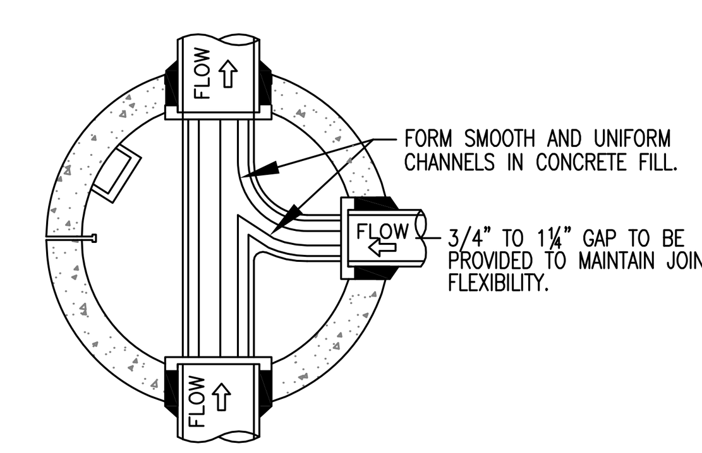
ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS

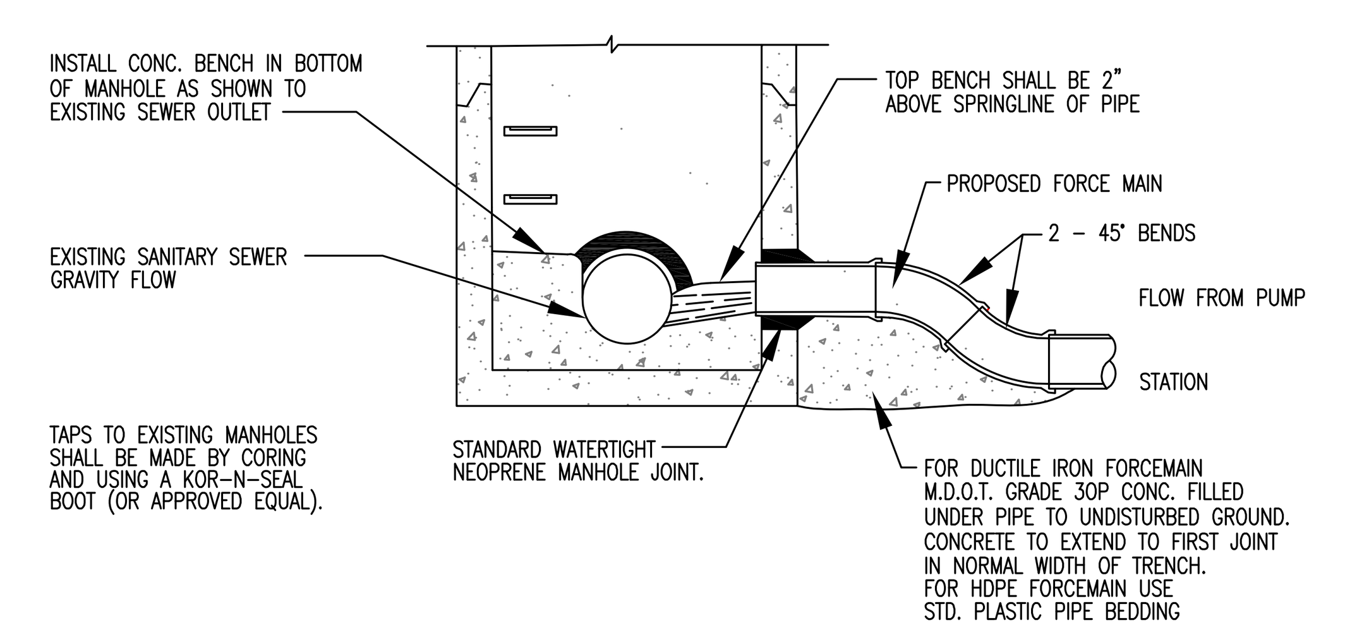


ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS



STANDARD EMBEDMENT





FORCEMAIN DISCHARGE TO GRAVITY SEWER MANHOLE

CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY THE LOCAL UNIT OF GOVERNMENT.

2. AT ALL CONNECTIONS TO WRC SEWERS OR EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. SANITARY SEWER PERMIT CHARGES ARE IN ACCORDANCE WITH THE WRC CURRENT SCHEDULE OF FEES AS MODIFIED FROM TIME TO TIME. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST. IN ACCORDANCE WITH THE WRC CURRENT SCHEDULE OF FEES AS MODIFIED FROM TIME TO TIME. THE CONTRACTOR SHALL ALSO HAVE POSTED WITH WRC A $5,000 SURETY BOND AND $500 CASH BOND DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND THE WRC 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY WRC PERSONNEL AND MUST BE SCHEDULED IN ADVANCE BY THE LOCAL UNIT OF GOVERNMENT, OR IT'S AGENT.

3. AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THERETO, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 24 INCHES.

4. TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. BLIND DRILLING IS ONLY PERMITTED WITH PRE-APPROVAL FROM THE WRC OFFICE.

5. IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX INCHES (6") BELOW THE FINISHED GRAVEL SURFACE. IF THE STRUCTURE CONTAINS AN ARV/AVV THEN ADDITIONAL VENTING THROUGH THE MANHOLE WALL TO GREENBELT AREA SHALL BE REQUIRED.

6. TWO 6-GAUGE SOLID OR STRANDED ANNEALED OR HARD COPPER TRACER WIRES WITH GREEN 45 MIL-THICK INSULATION (HMWPE) SHALL BE ATTACHED TO THE SEWER PIPE IN ACCORDANCE WITH CURRENT WRC SPECIFICATIONS. SPLICES SHALL BE MADE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. SPLICE SHALL THEN BE ATTACHED TO PIPE WITH TIES AND HEAT SHRINK-WRAPPED IN PLACE TO RE-ESTABLISH INSULATION ACROSS SPLICED LENGTH. ALL SPLICES SHALL REQUIRE TESTING OF THE ENTIRE LENGTH OF WIRE FOR CONTINUITY FROM STRUCTURE TO STRUCTURE. A MINIMUM LENGTH OF 6 FEET OF TRACER WIRE SHALL BE COILED AND LEFT ACCESSIBLE UNDER THE COVER OF ALL MANHOLES, SERVICE VALVE BOXES AND OTHER STRUCTURES AS DIRECTED BY THE ENGINEER. THE TRACER WIRE SHALL BE ATTACHED TO THE OUTSIDE OF THE MANHOLE DIRECTLY ABOVE THE PIPE AND SHALL ENTER THE MANHOLE BETWEEN THE MANHOLE COVER FRAME AND ADJUSTMENT MATERIAL. CONTRACTOR IS RESPONSIBLE FOR TESTING CONTINUITY OF TRACER WIRE FROM STRUCTURE TO STRUCTURE USING EQUIPMENT COMPATIBLE WITH OAKLAND COUNTY WATER RESOURCES COMMISSIONERS OFFICE OR LOCAL CITY/VILLAGE/TOWNSHIP MISS DIG LOCATING DEVICES. AT LEAST ONE OF THE TWO WIRES SHALL BE REQUIRED TO HAVE PASSED THE CONTINUITY TESTING REQUIREMENT.

7. ALL GRINDER DISCHARGE LINES SHALL BE 1.5" NOMINAL DIA. (COPPER TUBE SIZE C.T.S.) SDR 9 HDPE OR AN APPROVED EQUAL PIPE PER ASTM D2737 (STANDARD SPECIFICATION FOR POLYTHYLENE (PE) PLASTIC TUBING). MAINLINE FORCEMAINS TO BE HDPE SDR11 (IRON PIPE SIZE, I.P.S.)

8. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE, OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.

9. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.

10. AN 18 INCH MINIMUM VERTICAL SEPARATION AND 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN IN ACCORDANCE WITH RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES. (i.e. 10 STATES STANDARDS).

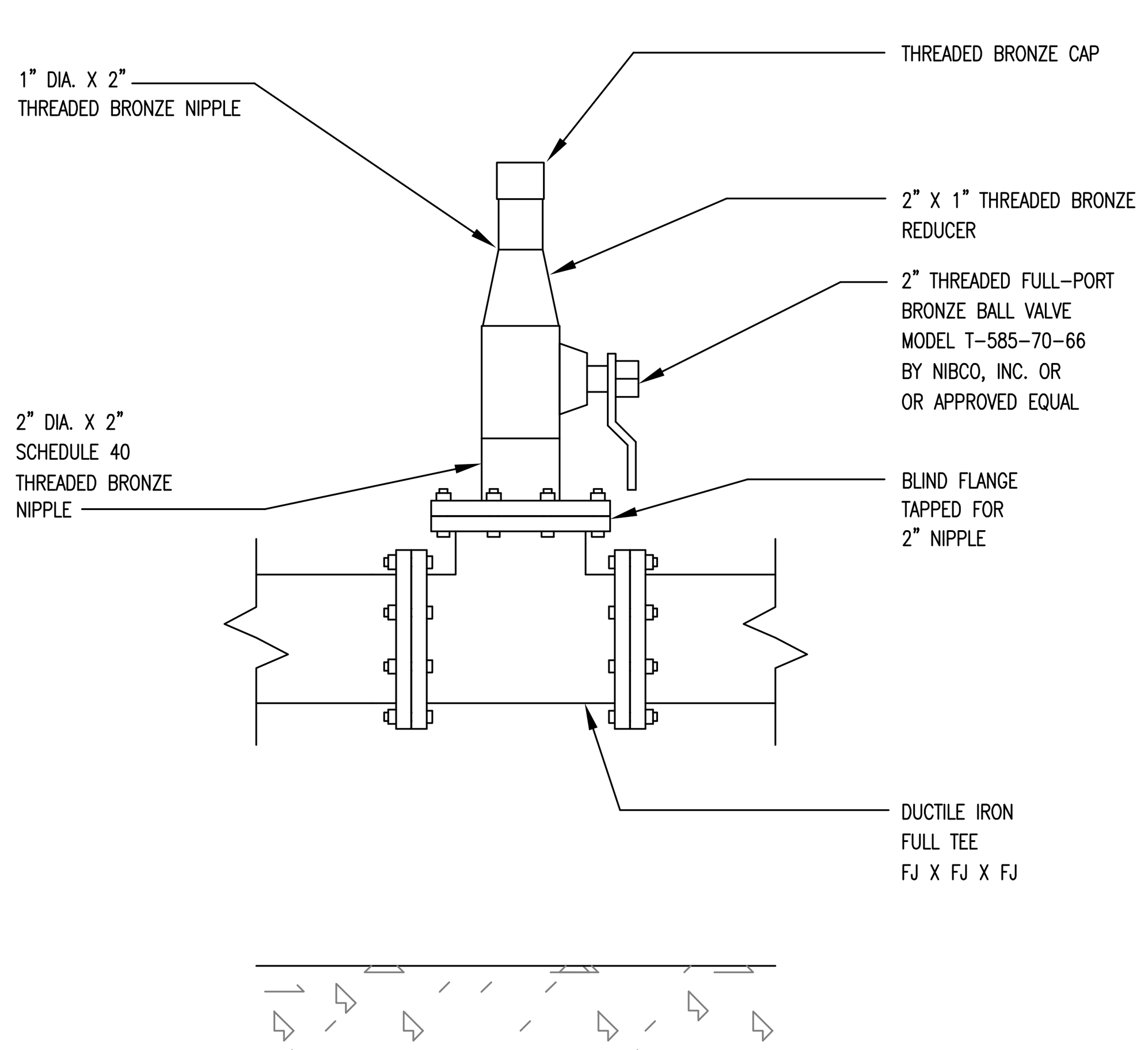
11. FOR PIPING INSTALLED USING OPEN-CUT EXCAVATION, EXCAVATION METHODS, CONTROL AND DISPOSAL OF WATER, PIPE SUPPORT, AND BEDDING AND BACKFILLING SHALL BE IN ACCORDANCE WITH THE OCWRC LOW PRESSURE SEWER SPECIFICATIONS.

12. ALL PIPE SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE OAKLAND COUNTY WATER RESOURCES COMMISSIONERS LOW PRESSURE SEWER SPECIFICATION (i.e. SECTION 33 33 00).

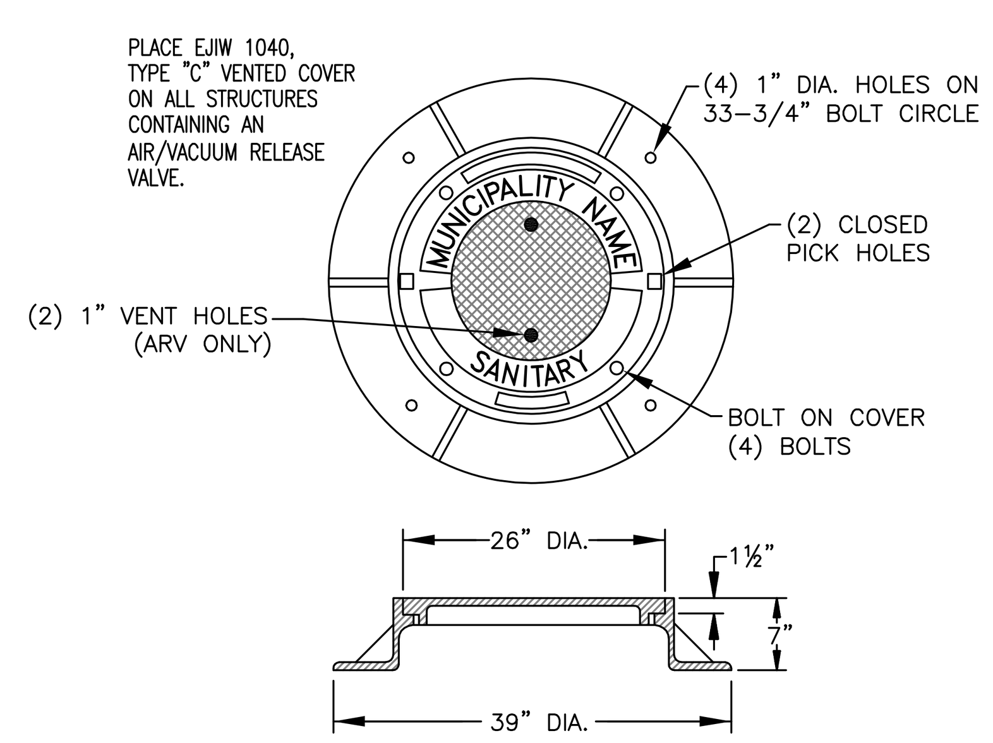
13. SEE OAKLAND COUNTY LOW PRESSURE SEWER SPECIFICATION (i.e. SECTION NO. 33 33 00) FOR ADDITIONAL REQUIREMENTS.

MANHOLE RIM ADJUSTMENT CHART

MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



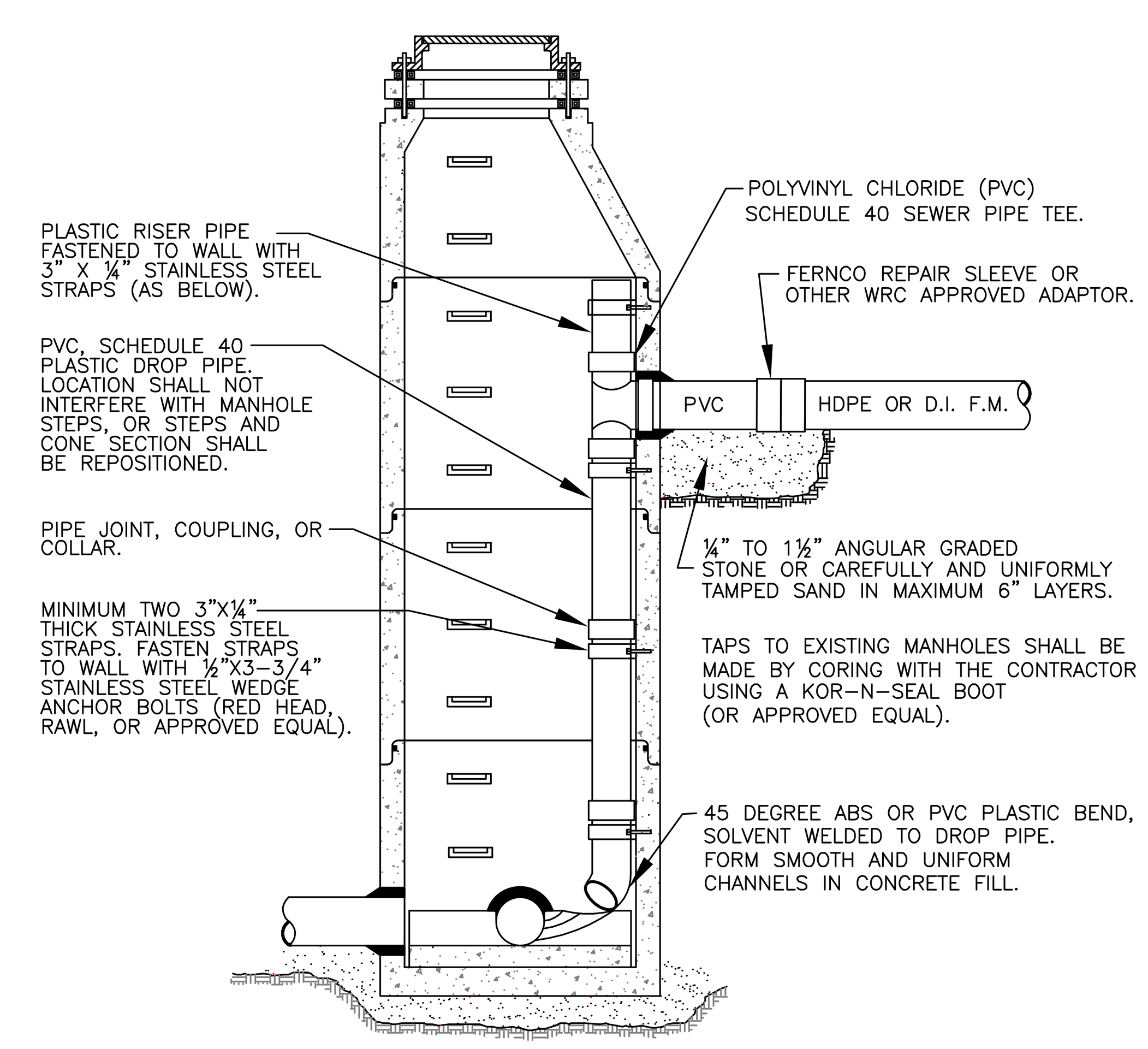
TYPICAL CLEAN OUT ASSEMBLY



EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LETTERED MANHOLE COVER FOR LOCAL MUNICIPALITIES

SEE STANDARD MANHOLE DRAWING FOR OTHER MANHOLE DETAILS.



FORCE MAIN INTERIOR DROP CONNECTION

NOTE: TO BE USED ONLY WHERE SPECIFICALLY AUTHORIZED AND NOT IN ANY MANHOLE IN WHICH AN INTERIOR DROP CONNECTION ALREADY EXISTS.

LOW PRESSURE SANITARY SEWER DETAILS AND NOTES

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WRC WATER RESOURCES COMMISSIONER Jim Nash
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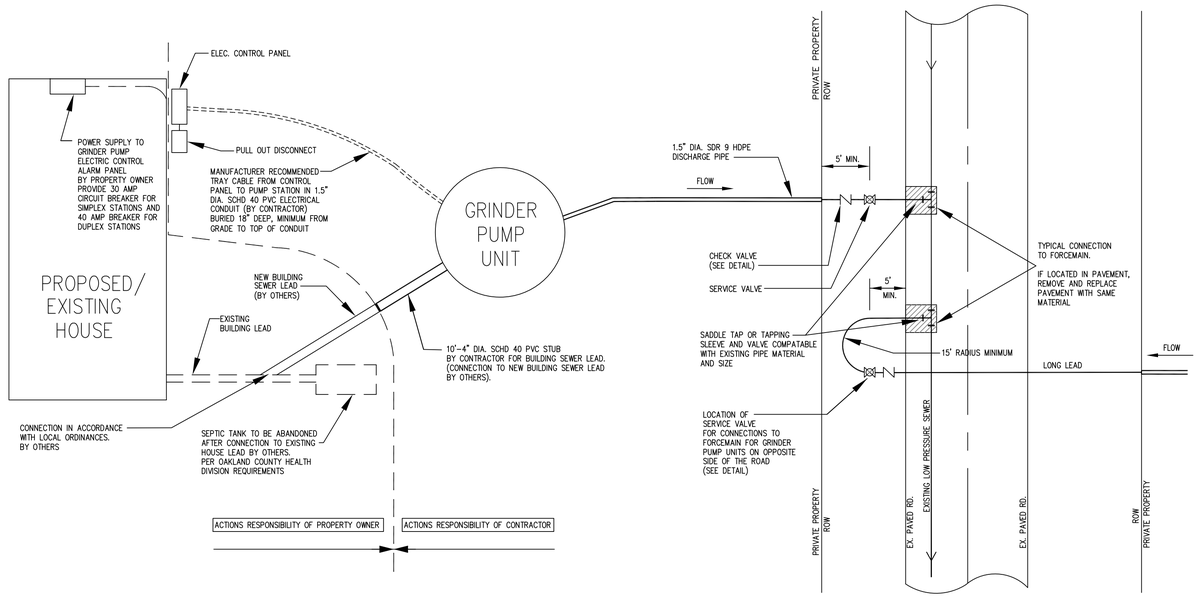
WATERFORD, MICHIGAN
48328-1907



PLAN VIEW

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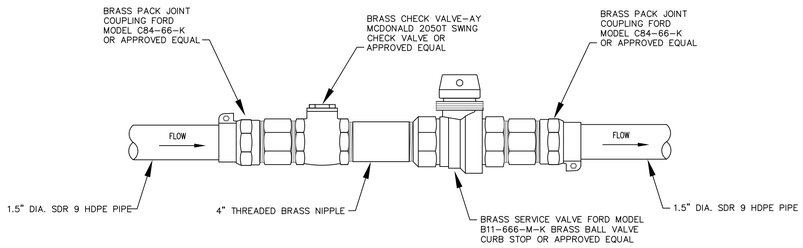

SERVICE VALVE DETAIL

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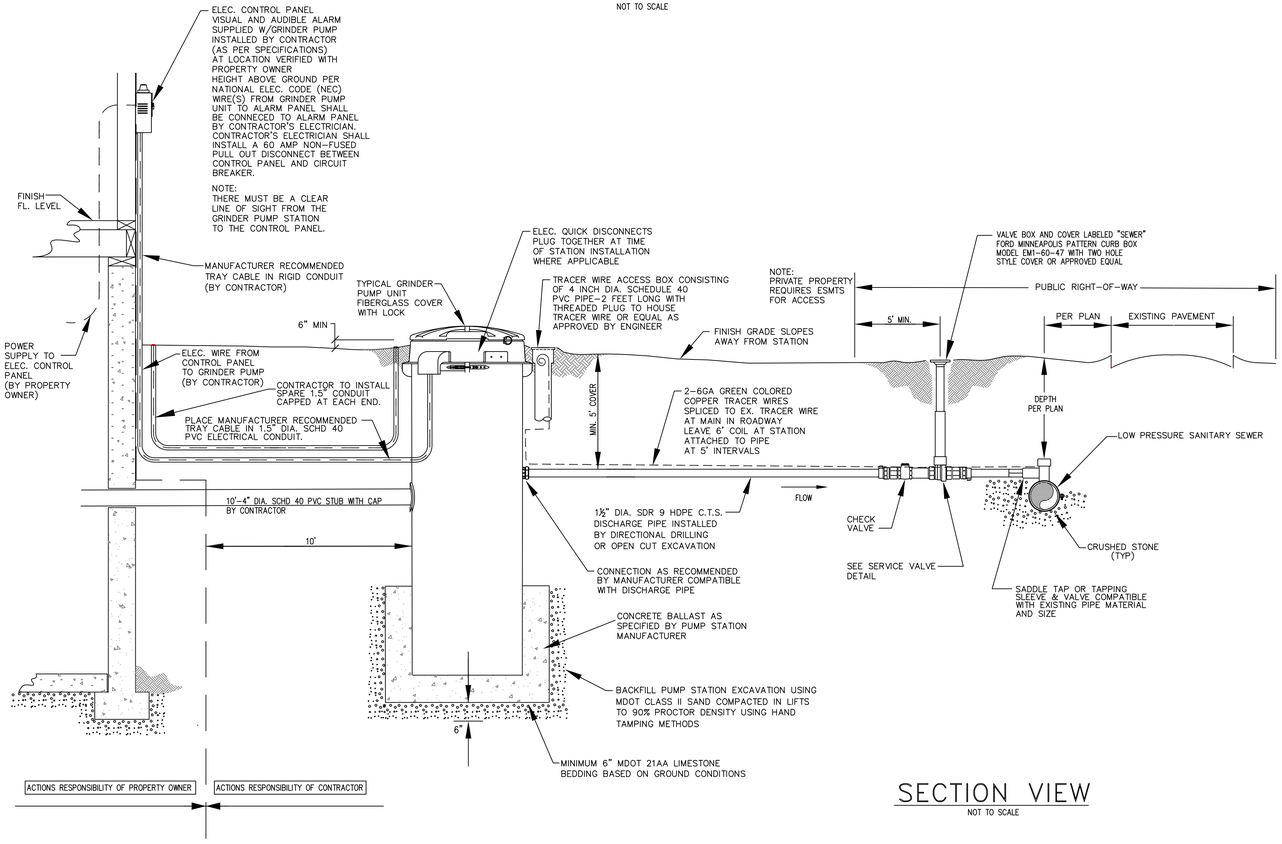

SECTION VIEW

NOT TO SCALE

TYPICAL INDIVIDUAL HOME GRINDER PUMP SERVICE

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DRAWN BY:	MAPPING

WRC WATER RESOURCES COMMISSIONER Jim Nash

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48328-1907

SHEET NO.: 3 OF 3