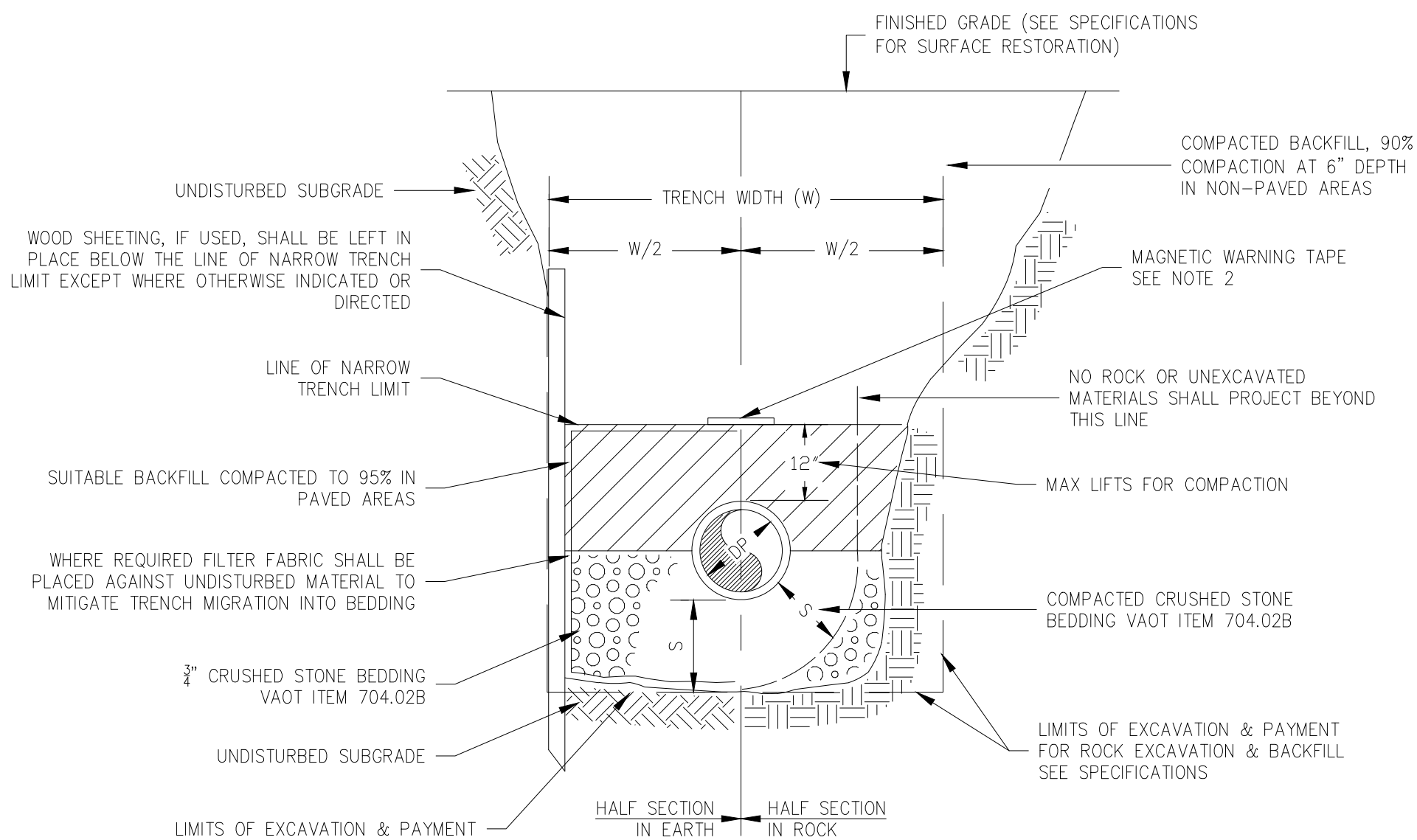


DEPTH OF STRUCTURE 4'-FT & 5'-FT DIAMETER	TIME	
	MIN.	SEC.
0'-10'	2	0
10'-15'	2	30
15'-20'	3	0
20'-25'	3	30

D-1 TYPICAL SANITARY MANHOLE DETAIL
SCALE: NONE

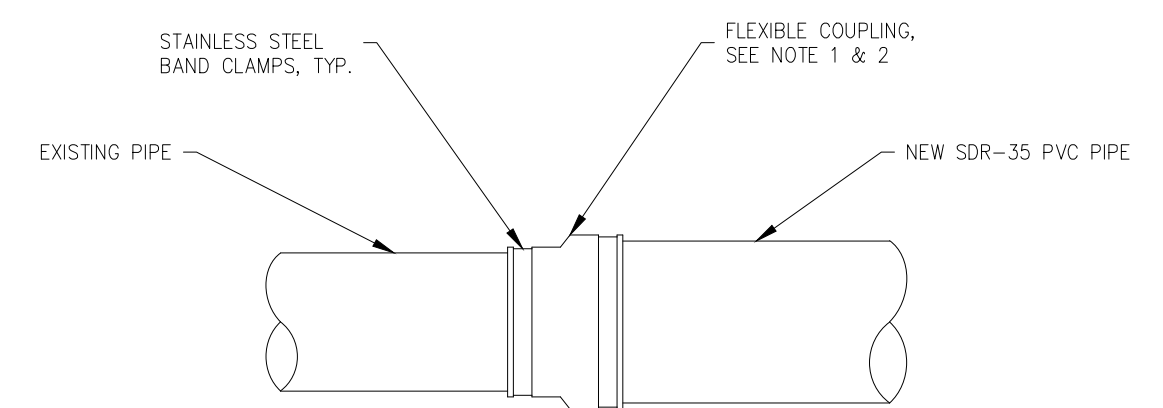


DEPTH TO INVERT	DIAMETER OF PIPE (DP)	MAXIMUM TRENCH WIDTH BELOW LINE OF NARROW TRENCH LIMIT (SHEETED OR UNSHEETED) (W)	MINIMUM CLEARANCE (S)
0'-12"	TO 18"	5'	6"
OVER 12"	TO 18"	7'	6"

TABLE A

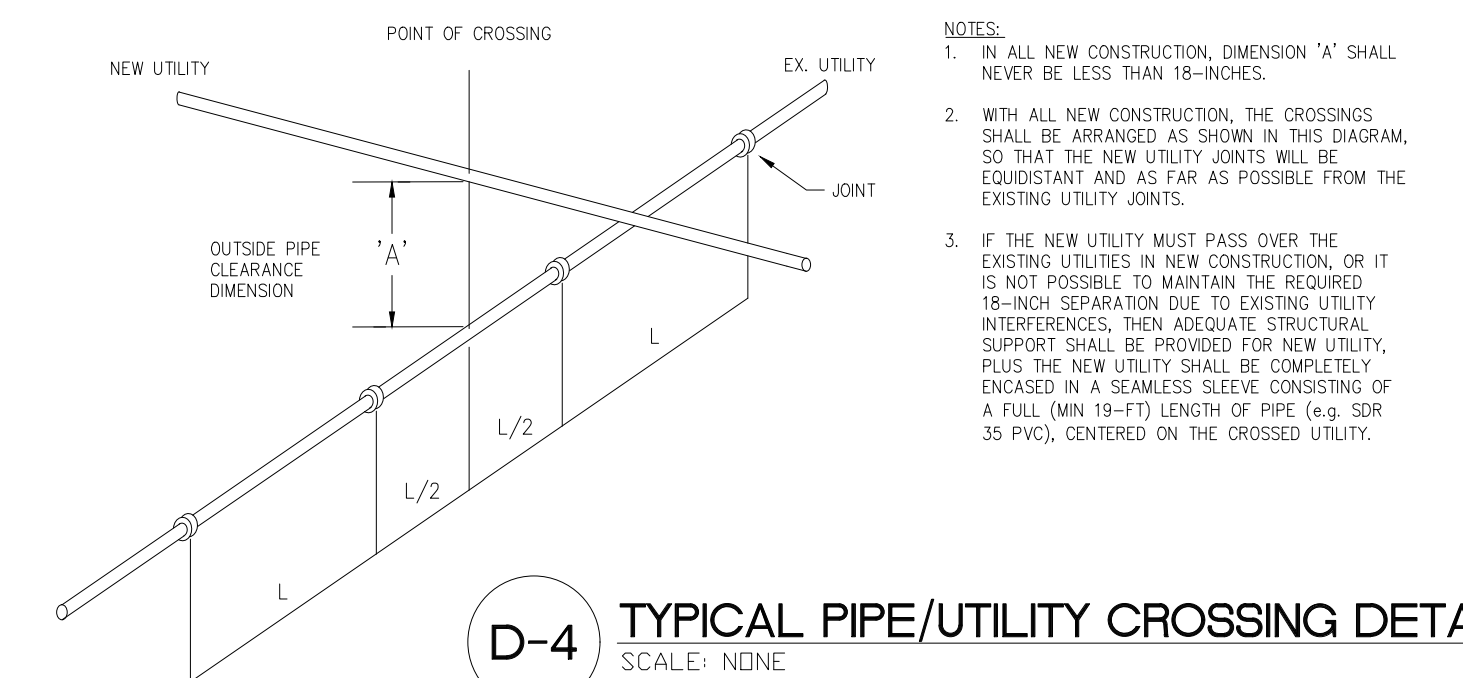
- NOTE:
- SEE TABLE A FOR "W", "DP", & "S" DIMENSIONS.
 - MAGNETIC WARNING TAPE SHALL BE INSTALLED AT 1-FT ABOVE THE TOP OF THE PIPE. THE TAPE SHALL BE 6-IN IN WIDTH AND SHALL HAVE THE WORDS "BURIED SEWER LINE BELOW".
 - NO MECHANICAL TAMPERS SHALL BE USED WITHIN 3-FT OF TOP OF PIPE.
 - BEDDING SHALL PROVIDE A FIRM, STABLE, CONTINUOUS AND UNIFORM SUPPORT FOR THE FULL LENGTH OF THE PIPE.

D-2 TYPICAL PIPE TRENCH DETAIL
SCALE: NONE



- NOTES:
- FLEXIBLE COUPLINGS SHALL BE SIZED BASED ON THE EXISTING PIPE SIZE AND MATERIAL AND THE CONNECTION SIZE TO THE NEW SDR-35 PVC PIPE. FLEXIBLE COUPLINGS SHALL BE MANUFACTURED BY FERROCO OR EQUAL.
 - FLEXIBLE COUPLINGS FOR CONNECTION TO EXISTING VITRIFIED CLAY PIPE (VCP) SHALL BE FERROCO STRONG BACK 6000 RC OR APPROVED EQUAL.
 - FLEXIBLE COUPLINGS SHALL BE PLACED ON EACH OF THE PIPE TO ENSURE PROPER SEATING WITHIN THE CONNECTION. THE SS STRAPS SECURING THE COUPLING TO THE PIPE SHALL BE FULLY SEATED AROUND THE HOST PIPE TO ENSURE NO MOVEMENT OF THE COUPLING CAN OCCUR FOLLOWING INSTALLATION AND BACKFILL OPERATIONS.

D-3 TYPICAL FLEXIBLE COUPLING CONNECTION DETAIL
SCALE: NONE

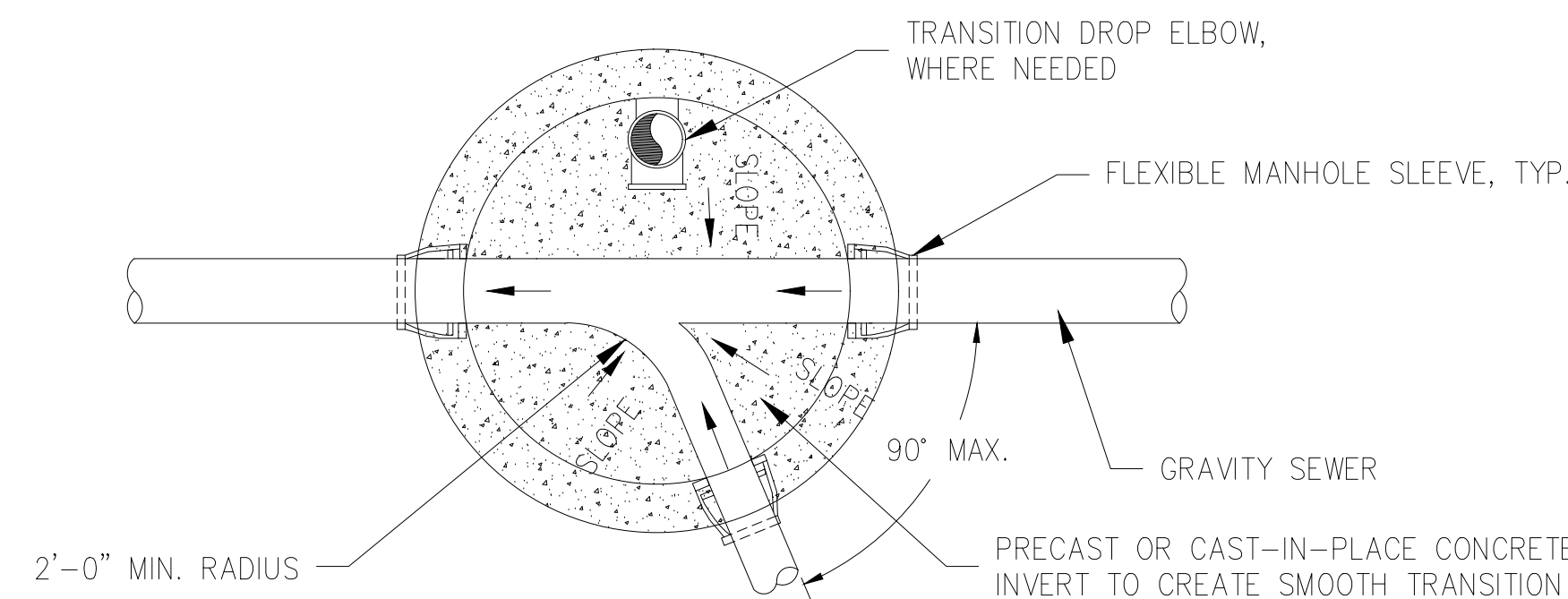


- NOTES:
- IN ALL NEW CONSTRUCTION, DIMENSION 'A' SHALL NEVER BE LESS THAN 18-INCHES.
 - WITH ALL NEW CONSTRUCTION, THE CROSSINGS SHALL BE ARRANGED AS SHOWN IN THIS DIAGRAM, SO THAT THE NEW UTILITY JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE EXISTING UTILITY JOINTS.
 - IF THE NEW UTILITY MUST PASS OVER THE EXISTING UTILITIES IN NEW CONSTRUCTION, OR IT IS NOT POSSIBLE TO MAINTAIN THE REQUIRED 18-INCH SEPARATION DUE TO EXISTING UTILITY INTERFERENCES, THEN ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR NEW UTILITY. PLUS THE NEW UTILITY SHALL BE COMPLETELY ENCASED IN A SEAMLESS SLEEVE CONSISTING OF A FULL (MIN 19-FT) LENGTH OF PIPE (e.g. SDR 35 PVC), CENTERED ON THE CROSSED UTILITY.

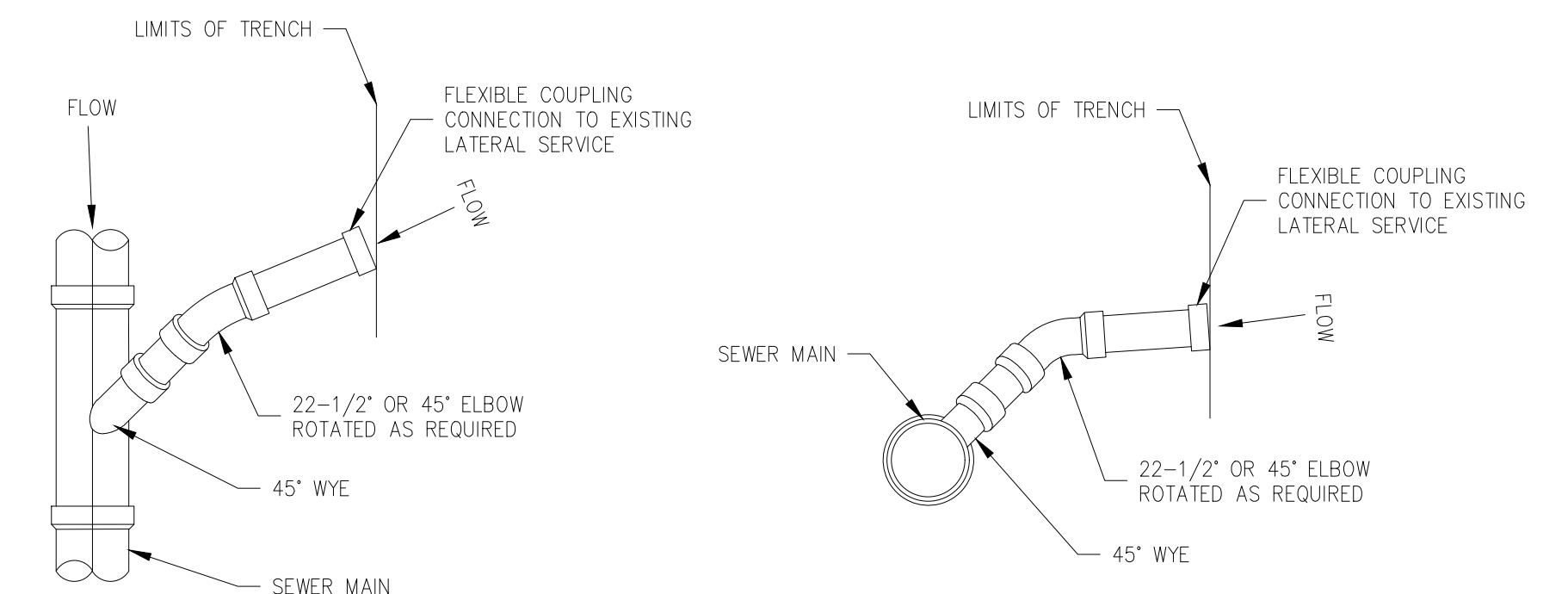
D-4 TYPICAL PIPE/UTILITY CROSSING DETAIL
SCALE: NONE

MANHOLE SPECIFICATIONS:

- MANHOLES SHALL HAVE PRECAST CONCRETE BASES, PRECAST RISER SECTIONS AND PRECAST INVERT CHANNELS UNLESS OTHERWISE SPECIFIED OR APPROVED BY THE WATER RESOURCES DEPARTMENT. MANHOLE STRUCTURE SHALL BE CAPABLE OF MEETING OR EXCEEDING AASHTO H-20 LOADING.
- PRECAST CONCRETE BASES ARE TO BE MONOLITHIC AND SHALL BE SET ON A LEVEL FOUNDATION OF CRUSHED STONE AT LEAST 12-INCHES THICK.
- PRECAST BASES SHALL BE MANUFACTURED WITH THE WALL OPENINGS OF THE MINIMUM SIZE TO RECEIVE ALL CONNECTING PIPES.
- PROVIDE SMOOTH SWEEPING TRANSITIONS BETWEEN INVERTS OF INTERSECTION PIPE. REFER TO INVERT DETAIL WITHIN THIS SHEET.
- CONNECTION OF PIPES TO MANHOLES SHALL BE MADE USING MANHOLE SLEEVES SHALL BE LOCK-JOINT FLEXIBLE MANHOLE SLEEVES, KOR-N-SEAL JOINT SLEEVES OR EQUAL.
- JOINTS SHALL BE SEALED WITH A BUTYL RUBBER-BASED SEALANT CONFORMING TO ASTM C478.
- FRAME AND COVERS SHALL BE CAST IRON MINIMUM CLASS 30 CONFORMING TO ASTM A48 WITH DIAMOND COVER SURFACE DESIGN. CASTINGS SHALL BE CAPABLE OF MEETING OR EXCEEDING AASHTO H-20 LOADING; CASTINGS SHALL BE MANUFACTURED BY NEENAH FOUNDRY CO., E.L. LEBARON FOUNDRY CO, OR EQUAL. CASTINGS SHALL HAVE THE WORD "SEWER" IN TOP COVER.
- GRADE ADJUSTMENTS SHALL BE MADE USING COMPOSITE RISER SECTIONS, "PRO-RING" BY CRETEX OR EQUAL. A MINIMUM OF 2-INCH AND A MAXIMUM OF 12-INCH OF ADJUSTMENT SHALL BE PROVIDED.
- MANHOLE FRAMES AND COVERS SHALL BE SET IN ACCORDANCE WITH THE COMPOSITE RISER SECTIONS INSTALLATION PROCEDURE. FRAME AND COVER SHALL BE SET AT LEAST 1/2" BELOW FINISH PAVEMENT GRADE.
- MANHOLE STEPS SHALL BE COPOLYMER POLYPROPYLENE PLASTIC MANHOLE STEPS CONFORMING TO ASTM D4101-82. STEPS SHALL BE CAPABLE OF RESISTING A MINIMUM HORIZONTAL PULLOUT LOAD OF 2,500 LBS, APPLIED TO CENTER OF RUNG AND A MINIMUM LIVE LOAD OF 300LB. STEPS SHALL BE INSTALLED AT 12-INCH ON CENTER VERTICAL, 10-INCHES MINIMUM WIDTH AND A MINIMUM PROJECTION OF 4-INCHES UNLESS OTHERWISE NOTED.
- ALL LIFTING HOLES AND OTHER DEFECTS SHALL BE PLUGGED WITH A PORTLAND CEMENT AND SAND MIXTURE PRIOR TO TESTING AND BACKFILLING.
- INTERNAL DROP SERVICES ARE REQUIRED WHEN INLET PIPES ARE 24-INCHES OR HIGHER THAN THE INVERT CHANNEL OF THE MANHOLE. INTERNAL DROP SHALL BE BY "INSIDE DROP SYSTEM" BY RELINER OR EQUAL. INTERNAL DROP DEVICE SHALL BE ANCHORED TO WALL PER MANUFACTURERS INSTALLATION PROCEDURES.
- MANHOLE STRUCTURE SHALL BE VACUUM TESTED AFTER INSTALLATION BUT PRIOR TO BACKFILLING. THE MANHOLE SHALL PASS THE VACUUM TEST IF THE VACUUM HOLDS 10-INCH Hg OR DROPS LOWER THAN 9-INCH Hg WITHIN THE FOLLOWING TIMES:



D-5 TYPICAL SANITARY MANHOLE INVERT DETAIL
SCALE: NONE



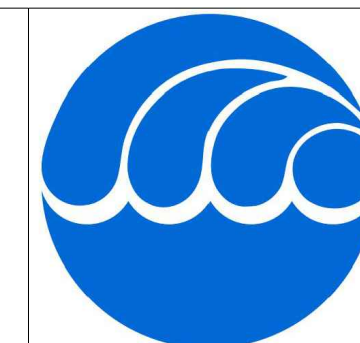
- NOTES:
- ALIGN WYE SO AS THE SERVICE END IS DIRECTED UPSTREAM TO THE SEWAGE FLOW.
 - EACH NEW SERVICE LATERAL TO BE PRESSURE TESTED ALONG WITH SEWER. REINSTATEMENT OF AN EXISTING SEWER LATERAL DOES NOT REQUIRE PRESSURE TESTING.
 - EXTEND EACH SERVICE LATERAL TO THE LIMITS SHOWN ON THE DRAWINGS AND RESTRAIN FOR FUTURE CONNECTION.
 - FLEXIBLE COUPLINGS SHALL BE SIZED BASED ON THE EXISTING PIPE SIZE AND MATERIAL AND THE CONNECTION SIZE TO THE NEW SDR-35 PVC PIPE. FLEXIBLE COUPLINGS SHALL BE MANUFACTURED BY FERROCO OR EQUAL.
 - PVC FITTINGS SHALL BE PUSH-ON TYPE GASKETED JOINTS.
 - MAINTAIN A CONSTANT SLOPE FROM WYE TO END CAP. MINIMUM SLOPE SHALL BE 1/4"/FT FOR 4" SERVICES AND 0.006 FT/FT FOR 6" SERVICES.
 - PROVIDE INSULATION AS FOLLOWS:
 - FOR FLOWED AREAS WHERE 5' OF COVER CANNOT BE MAINTAINED.
 - FOR UNFLOWED AREAS WHERE 4' OF COVER CANNOT BE MAINTAINED.
 - INSULATION SHALL CONSIST OF A MINIMUM 4" THICK INSULATION BOARD. INSULATION BOARD SHALL BE "STYROFOAM" BRAND SM EXTRUDED POLYSTYRENE FOAM INSULATION BOARD MANUFACTURED BY DOW CHEMICAL, OR APPROVED EQUAL.

D-6 TYPICAL SANITARY SEWER SERVICE CONNECTION DETAIL
SCALE: NONE

THE STANDARDS ARE TO BE USED BY ENGINEERING PROFESSIONALS FOR PROJECTS WITHIN THE CITY. THE STANDARD DETAILS MAY NEED TO BE MODIFIED WITH CITY APPROVAL TO MEET PROJECT SPECIFIC APPLICATIONS. THE STANDARDS DO NOT COVER ALL ASPECTS OF WATER RESOURCES INFRASTRUCTURE AND IT IS THE RESPONSIBILITY OF THE DESIGNER TO ENSURE CONSTRUCTION DETAILS ARE COMPLETE FOR SPECIFIC APPLICATIONS. THE CITY IS NOT RESPONSIBLE FOR THE USE OF THESE STANDARDS FOR APPLICATIONS THAT ARE NOT APPROPRIATE. THE STANDARD DETAILS WILL BE PERIODICALLY UPDATED. IT IS THE RESPONSIBILITY OF THE DESIGNER TO CONFIRM THE STANDARDS THEY ARE USING ARE THE MOST RECENT VERSIONS.

1	REV A - INITIAL RELEASE	OCT 2023

BURLINGTON PUBLIC WORKS
Water Resources
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BURLINGTON, VT 05401
(802) 863-4501
WATER-RESOURCES@BURLINGTONVT.GOV



TYPICAL SEWER
INFRASTRUCTURE DETAILS

DESIGNED AEW	RFS NO.
DRAWN AEW	SCALE NTS
CHECKED	DRAWING NO.
DATE OCTOBER 2023	SHEET 1 OF 1