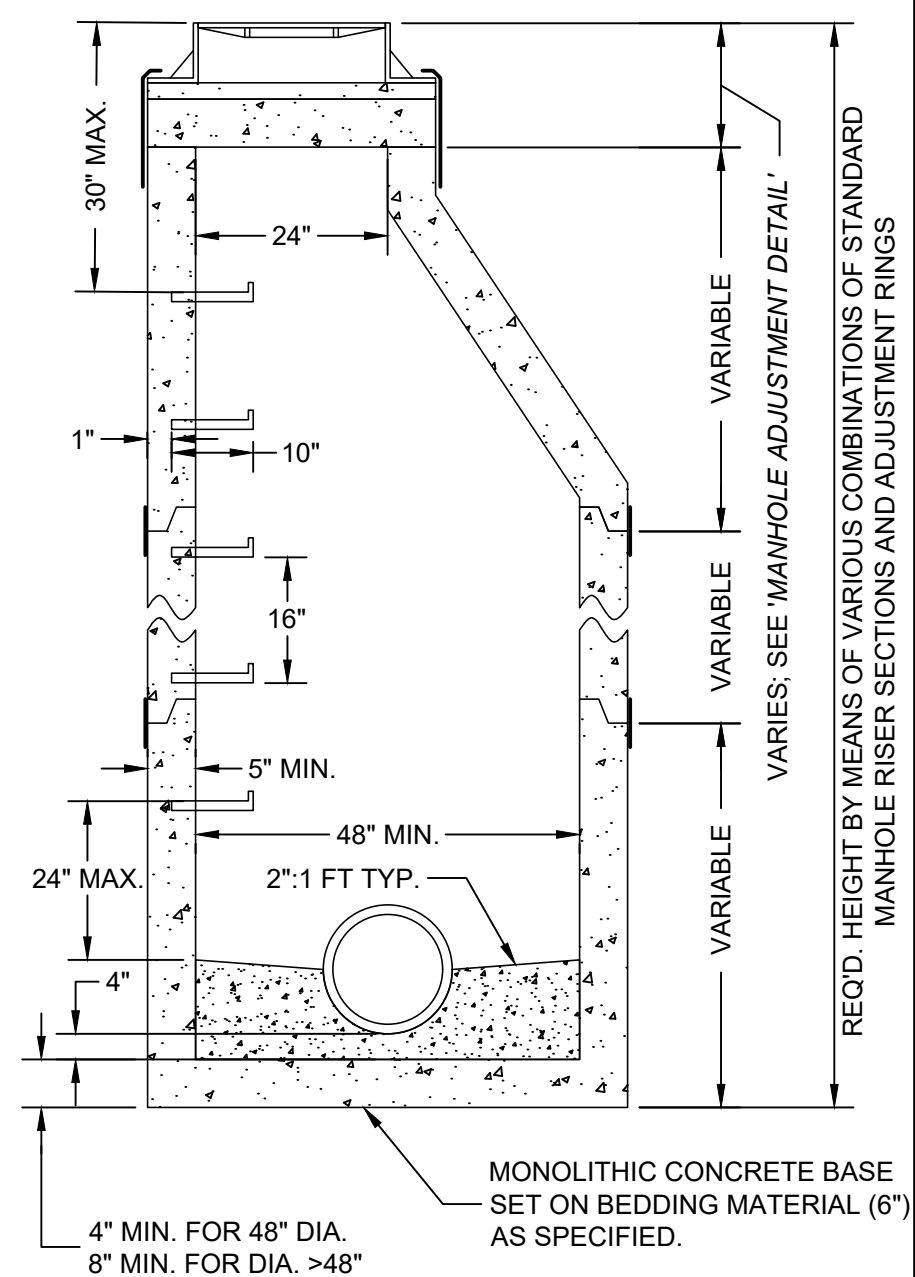


- NOTES:**
1. THE MAX. DROP FROM THE INVERT OF ANY PIPE TO THE CONCRETE CHANNEL UNDER THAT PIPE SHALL BE 8".
 2. MANHOLES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE MARKED WITH A STEEL FENCE POST AS DIRECTED.
 3. ALL NEW MANHOLES SHALL BE VACUUM TESTED PER A.S.T.M. C-1244 PRIOR TO ACCEPTANCE.
 4. ALL BARREL JOINTS SHALL BE SEALED WITH 3 1/2" x 3/8" PRE-FORMED RUBBER BUTYL JOINT SEALANT ON THE LOWER SHIPLAP.
 5. ALL BARREL JOINTS SHALL BE SEALED WITH AN EXTERNAL BARREL SEAL CENTERED ON THE JOINT (MAR MAC MACWRAP, OR APPROVED EQUAL).
 6. MANHOLE STRUCTURE SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE MANHOLE RISER SECTIONS IN ACCORDANCE WITH A.S.T.M. C478-90 OR THE LATEST DESIGNATION.
 7. PRECAST FLAT TOPS ARE NOT APPROVED FOR USE.
 8. SEE 'MANHOLE ADJUSTMENT DETAIL' FOR ADJUSTMENT REQUIREMENTS.
 9. PIPE CONNECTIONS TO NEW MANHOLES SHALL BE MADE BY MEANS OF EITHER RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM C-923 CAST INTEGRALLY IN MANHOLE WALL, OR RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923. FOR PIPE CONNECTIONS WITH A DEPTH OF >20 FT., A RUBBER GASKET SEAL (A-LOK OR APPROVED EQUAL) CONFORMING TO ASTM C-923 CAST INTEGRALLY IN MANHOLE WALL SHALL BE USED.
 10. PIPE CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE BY MEANS OF CORE DRILLING MANHOLE WALL AND INSTALLING RUBBER GASKET SEAL AND STAINLESS STEEL CLAMP (PSX SERIES SIX OR APPROVED EQUAL) CONFORMING TO ASTM C-923.
 11. THE MAXIMUM DISTANCE FROM ANY INLET PIPE INVERT TO THE OUTLET PIPE INVERT SHALL BE 2'. DISTANCES GREATER THAN 2' WILL REQUIRE AN INSIDE DROP CONNECTION PER 'INSIDE DROP CONNECTION DETAIL'.
 12. MANHOLE STEPS SHALL BE NEENAH R-1982-F OR M.A. IND. PS-1 OR APPROVED EQUAL INSTALLED AT 16" CENTERS, ORIENTED ABOVE THE OUTLET PIPE UNLESS OTHERWISE SPECIFIED. FOR MANHOLES WITH INSIDE DROP ASSEMBLIES, STEPS IN THE MANHOLE BASE SECTION SHALL BE INSTALLED IN THE FIELD AND NOT CAST IN PLACE. IN THIS CASE, THE ORIENTATION OF THE CONE SHALL BE AS DIRECTED BY FRSA.

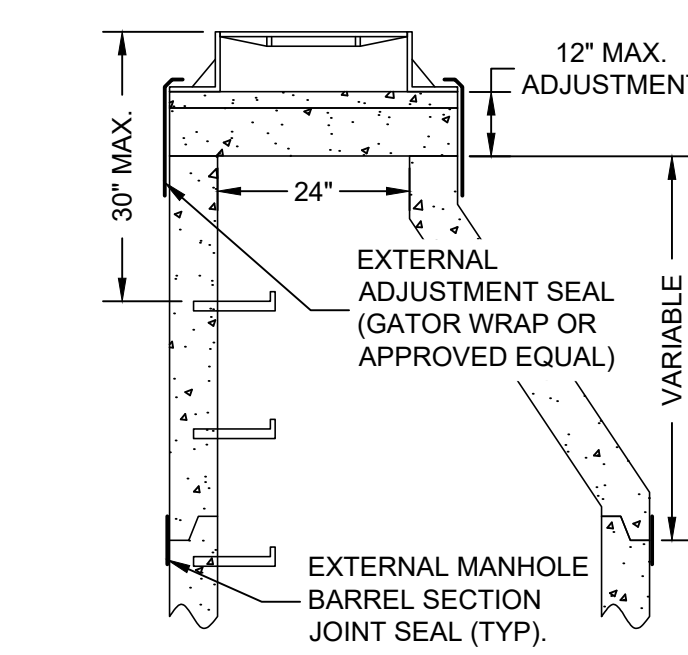


STANDARD MANHOLE DETAIL
(*MANHOLE ADJUSTMENT DETAIL* SHALL APPLY)

- NOTES:**
1. MANHOLE FRAMES & LIDS SHALL BE PER THE TABLE BELOW.
 2. FOR MANHOLES CONNECTED TO MAINS 18" DIAMETER OR LARGER, OR FOR MANHOLES LOCATED IN FLOOD PRONE AREAS, FRAMES & LIDS SHALL BE THE BOLT DOWN TYPE.
 3. ALLOWABLE TYPES OF ADJUSTING RINGS INCLUDE PRECAST CONCRETE (4" HEIGHT MIN.), & EXPANDED POLYPROPYLENE (EPP). THESE CAN BE USED IN CONJUNCTION WITH EACH OTHER, EXCEPT THAT A PRECAST RING SHALL NOT BE PLACED OVER AN EPP RING.
 4. FOR PRECAST ADJUSTING RINGS, ALL ADJUSTING RING JOINTS AS WELL AS THE FRAME TO ADJUSTING RING JOINT SHALL BE SEALED WITH TWO 1" BEADS OF PRE-FORMED RUBBER BUTYL JOINT SEALANT. WHEN A FRAME REQUIRES PITCHING, EPP TAPER RINGS SHALL BE USED PER NOTE 5.
 5. FOR EPP ADJUSTING RINGS, RINGS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. WHEN A FRAME REQUIRES PITCHING, THE TOP RING SHALL BE A TAPERED ADJUSTMENT RING PER MANUFACTURER'S INSTRUCTIONS.
 6. NO TARRING OR GROUTING IS ALLOWED ON THE INSIDE OF MANHOLE OR ADJUSTMENT JOINTS.
 7. MAXIMUM MANHOLE ADJUSTMENT IS 12". MINIMUM ADJUSTMENT IS 4" UNLESS OFF-ROAD OR IN CURB & GUTTER ROADWAY.
 8. MANHOLE FRAMES SHALL BE SET 1/4" MIN. TO 3/8" MAX. BELOW PAVED SURFACES, AND AT FINAL GRADE IN TURF AREAS.
 9. WHEN ADJUSTING EXISTING MANHOLES, THE ENTIRE EXISTING ADJUSTMENT SHALL BE REMOVED AND REPLACED.

APPROVED FRAME & LID TABLE

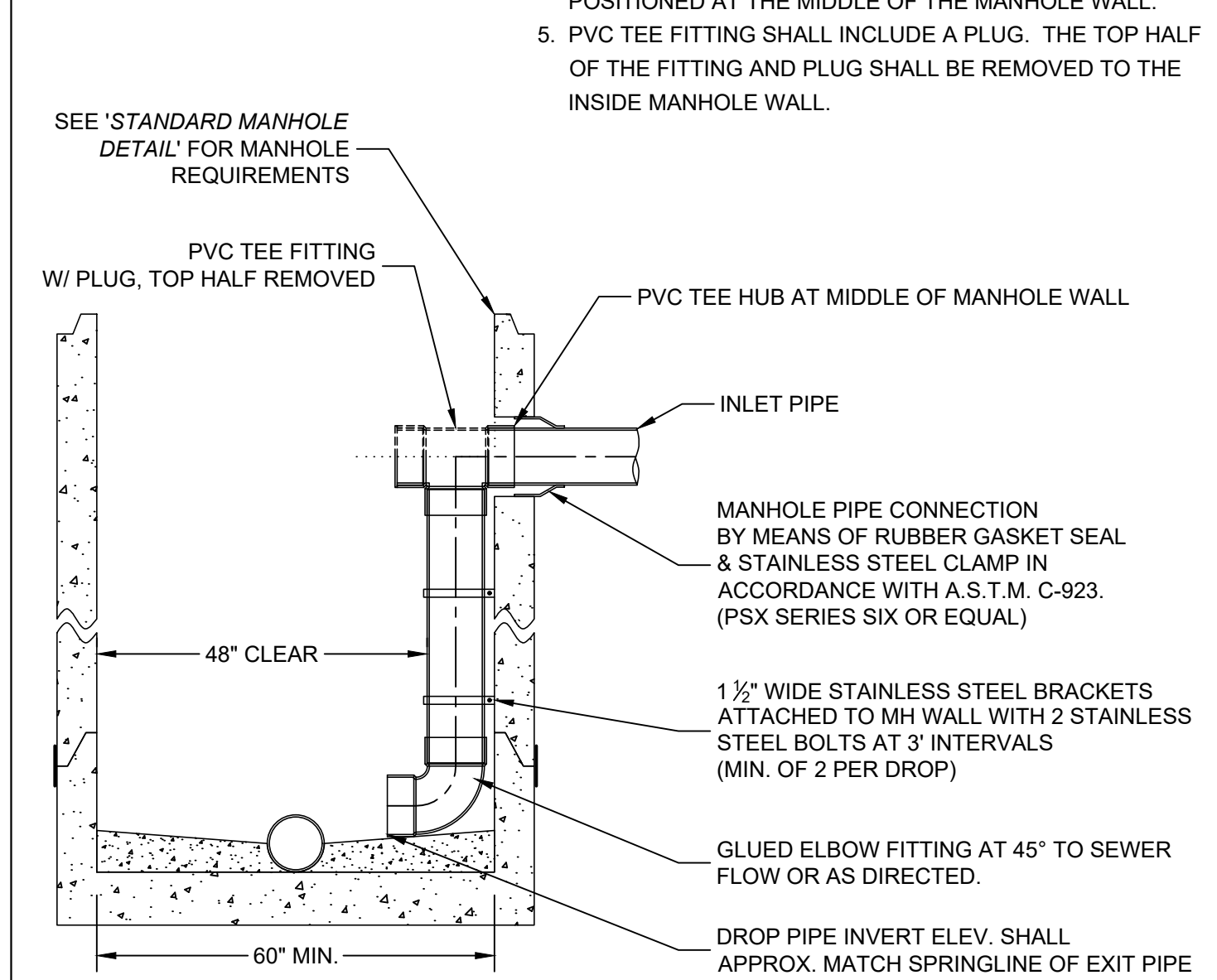
TYPE	NEENAH FRAME	NEENAH LID	EAST JORDAN FRAME	EAST JORDAN LID
REGULAR	1670-2004	R-1670-0358	00111711	00111732
LOW PROFILE	1670-2008	R-1670-0358	---	---
BOLT DOWN	1915JT08	---	---	---



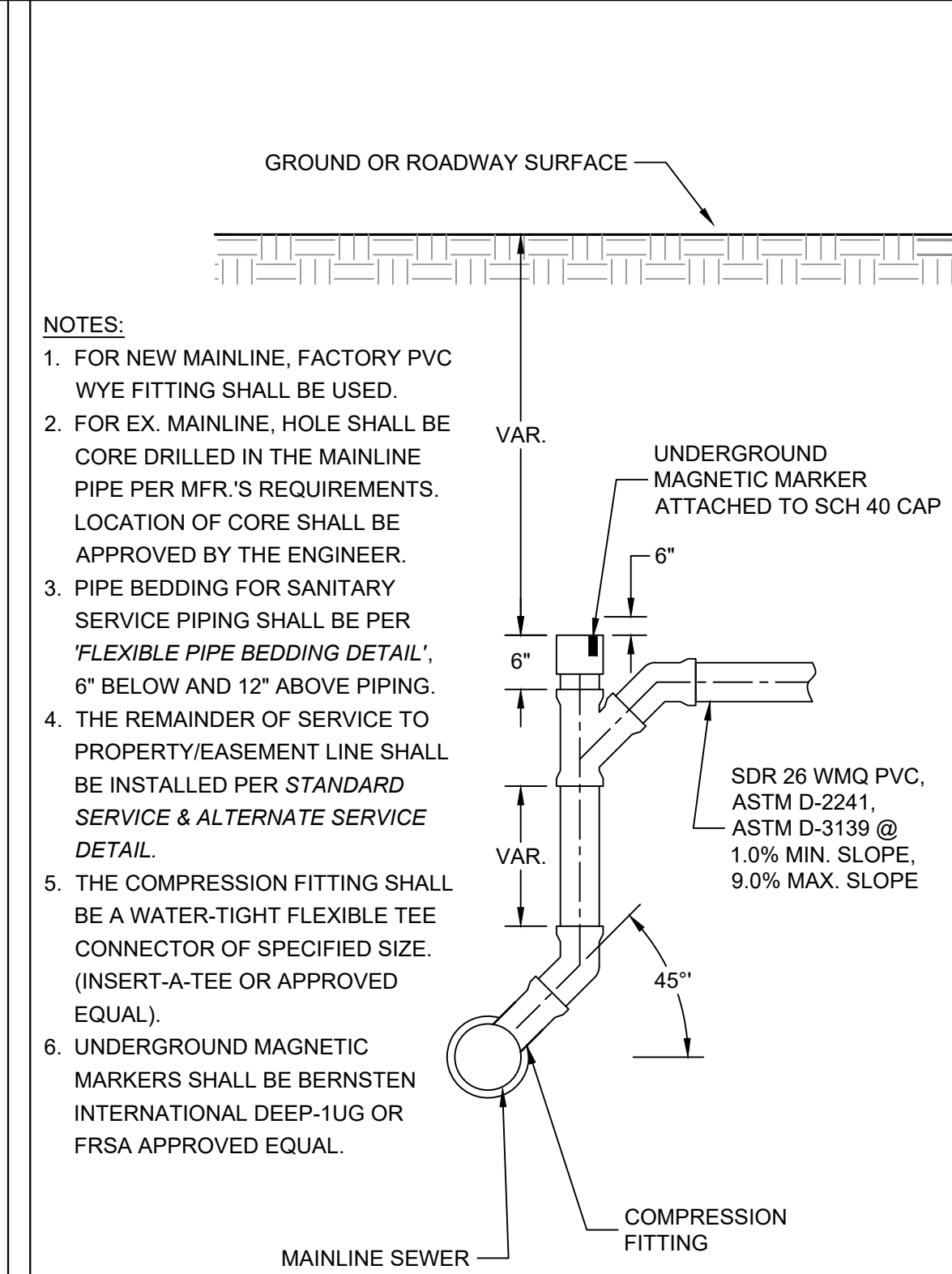
MANHOLE ADJUSTMENT DETAIL
(FOR ADJUSTMENT OF BOTH NEW & EXISTING MANHOLES)

MANHOLE & DROP PIPE SIZING TABLE

INLET PIPE DIA.	MANHOLE I.D.	DROP PIPE DIA.
4-6 INCH	60 INCH	4 INCH
8 INCH	60 INCH	8 INCH
10 INCH	60 INCH	8 INCH
12 INCH	60 INCH	8 INCH
> 12 INCH	AS DIRECTED BY FRSA	

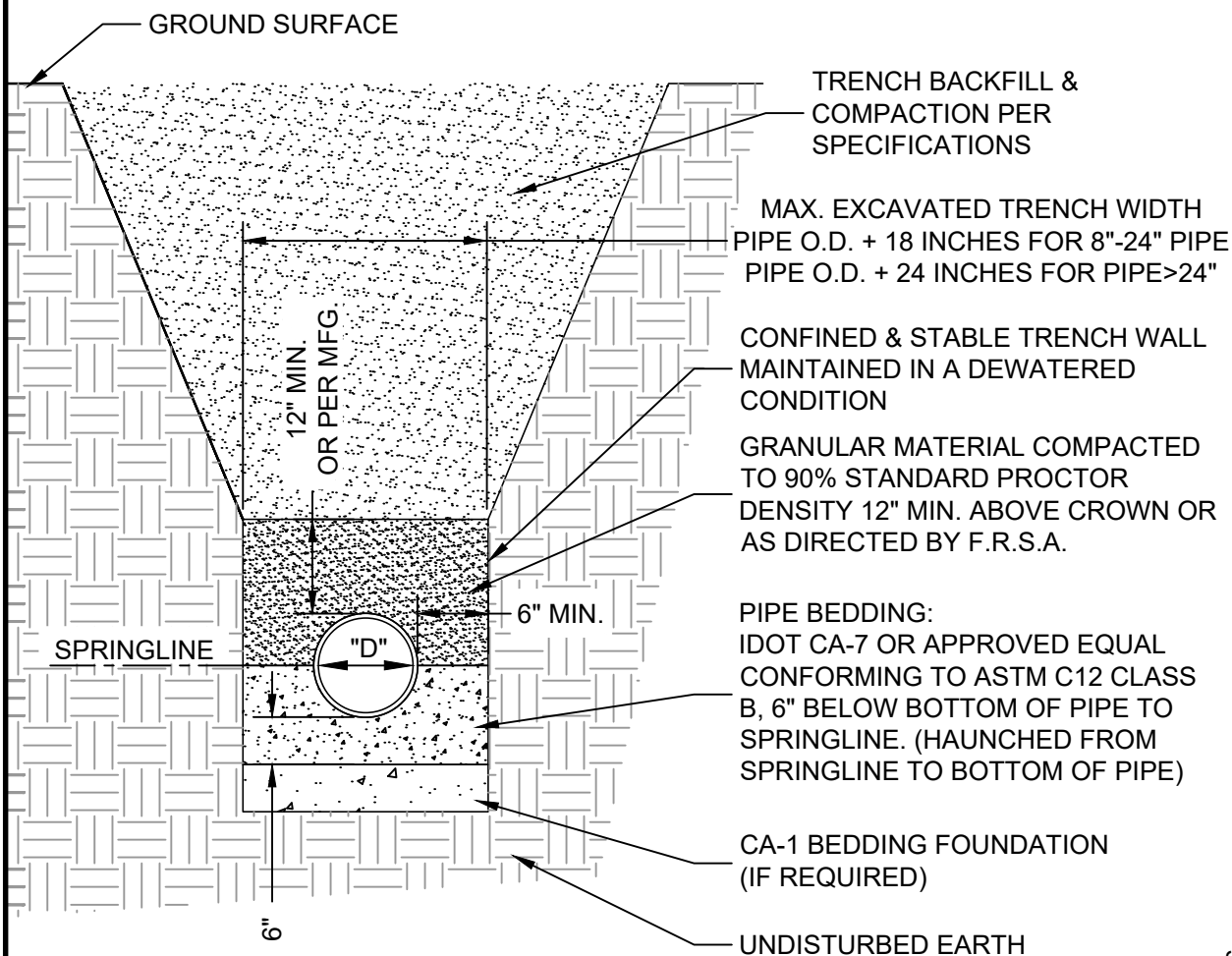


INSIDE DROP CONNECTION DETAIL
(*STANDARD MANHOLE DETAIL* SHALL APPLY)



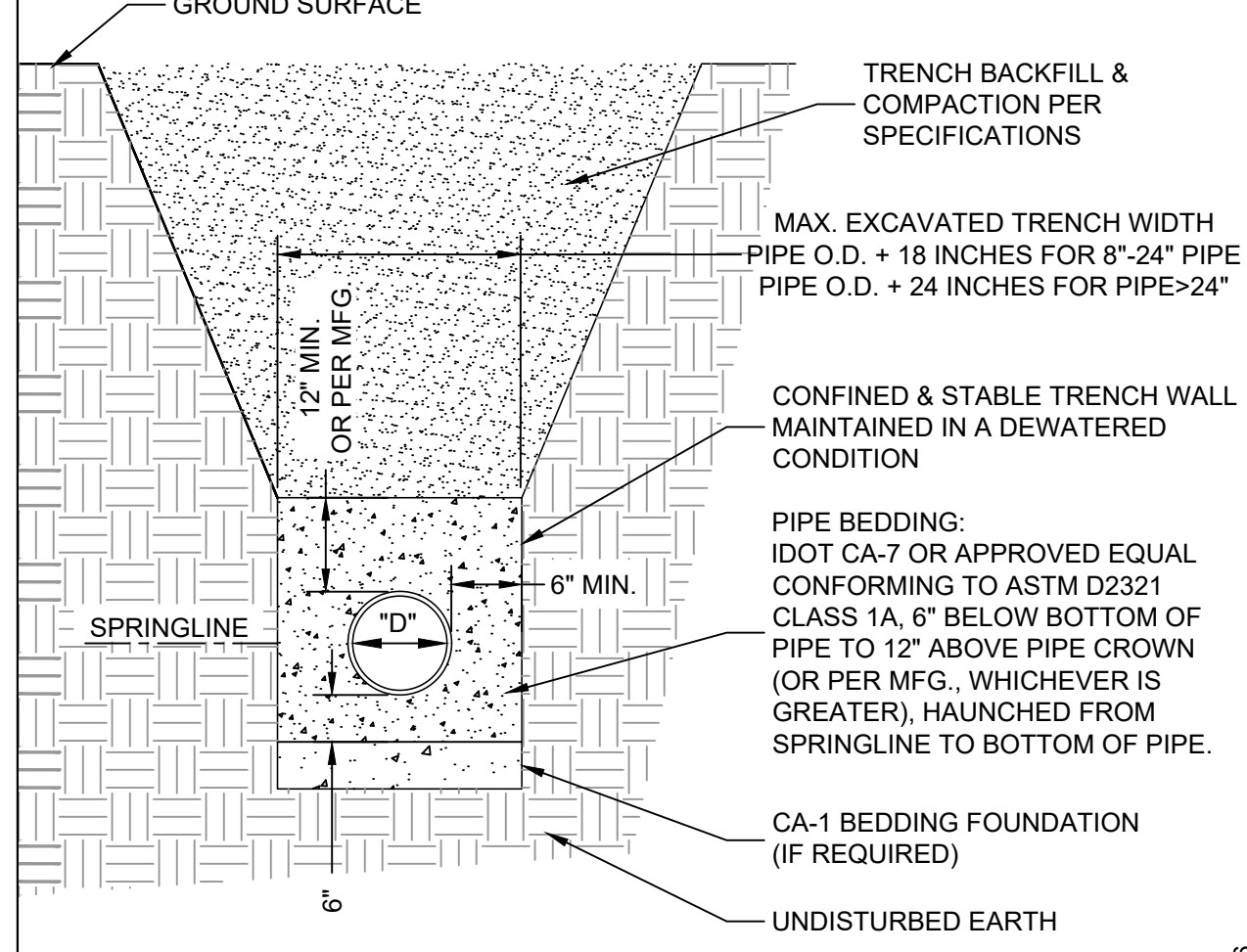
VERTICAL SERVICE RISER DETAIL

- NOTES:**
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL SHALL BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.
 3. BEDDING SHALL BE WELL HAUNCHED ALONG PIPE TO ENSURE VOIDS ARE ELIMINATED.

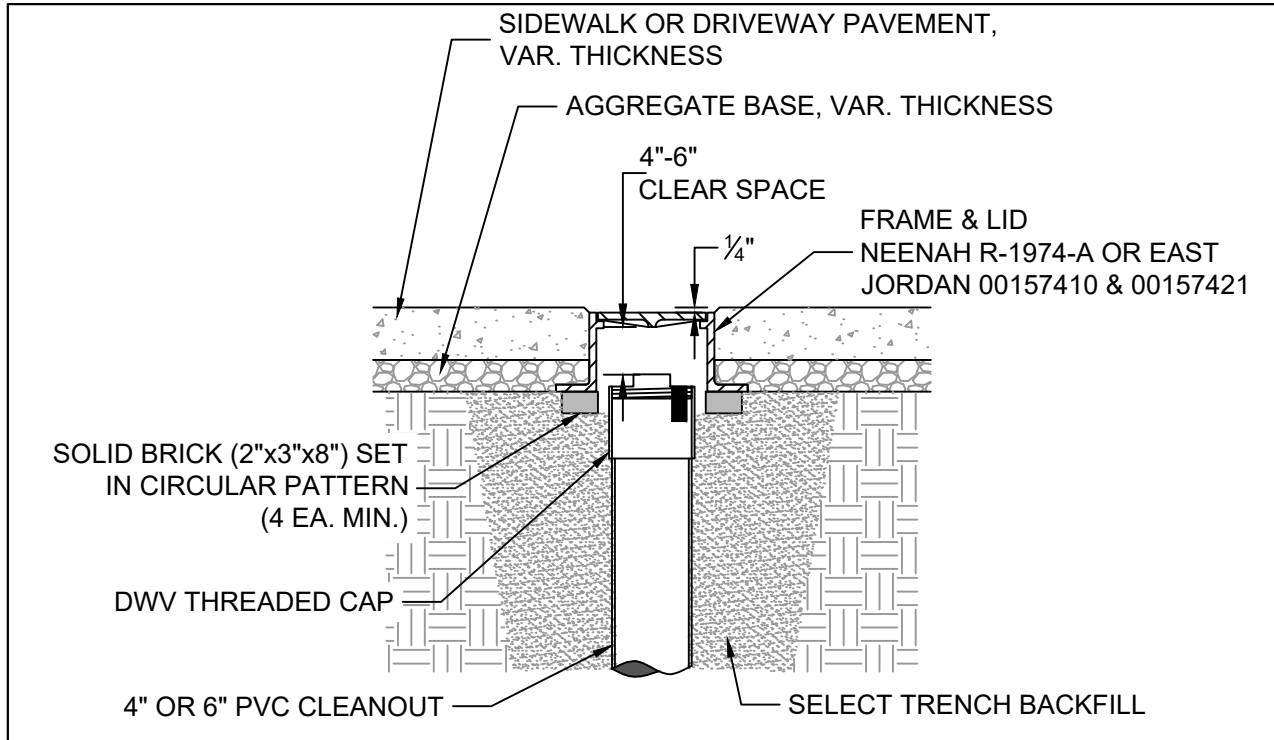


RIGID PIPE BEDDING DETAIL

- NOTES:**
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.
 3. BEDDING SHALL BE WELL HAUNCHED ALONG PIPE TO ENSURE VOIDS ARE ELIMINATED.

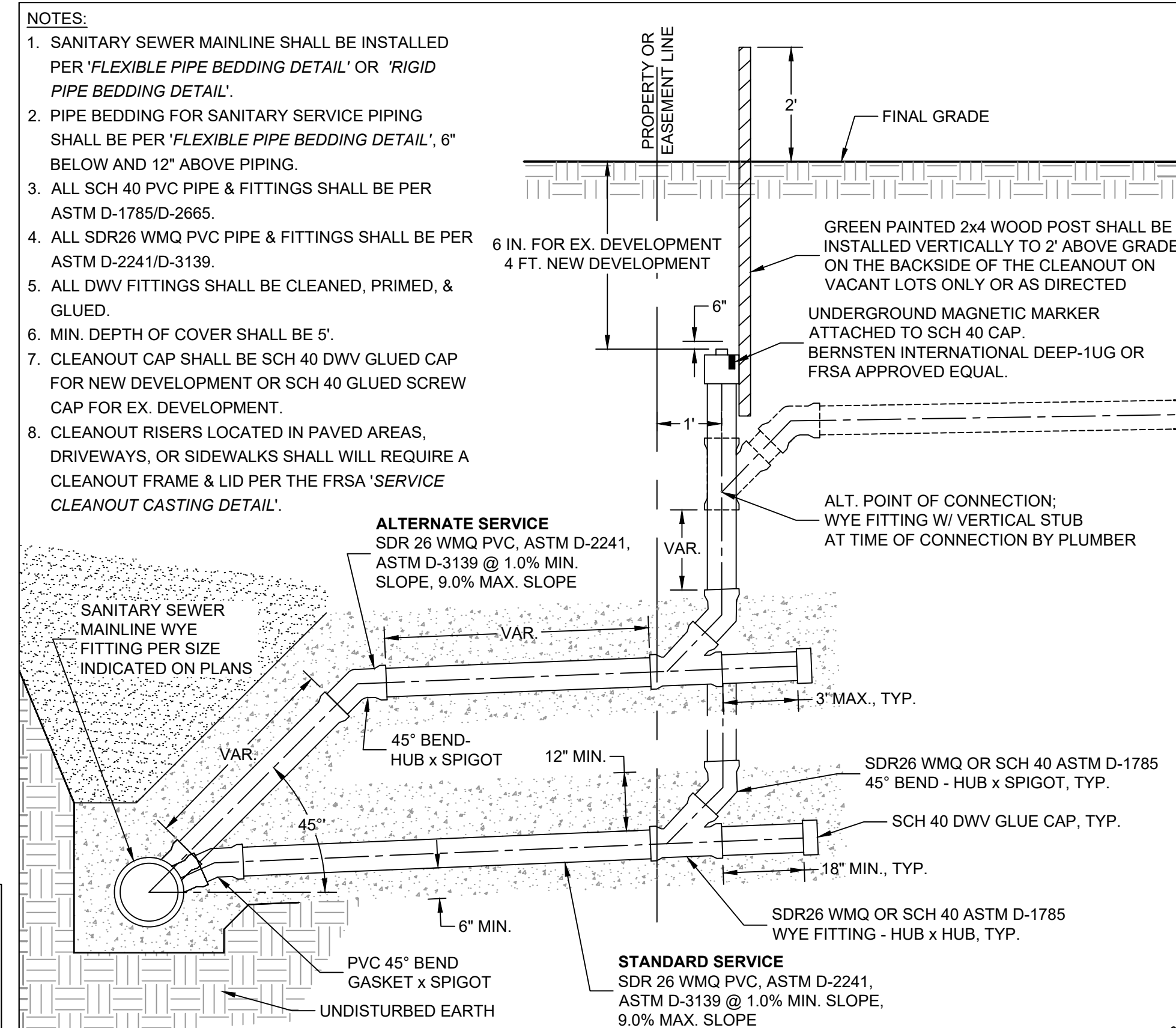


FLEXIBLE PIPE BEDDING DETAIL



- NOTES:**
1. SERVICE CLEANOUT CASTINGS ARE REQUIRED FOR ALL CLEANOUTS LOCATED IN PAVED AREAS, DRIVEWAYS, OR SIDEWALKS.
 2. THE LOCATION OF THE CLEANOUT SHALL BE APPROVED BY FOUR RIVERS SANITATION AUTHORITY (FRSA).
 3. THE FRAME SHALL BE SET ON BRICKS THAT ARE PLACED IN A CIRCULAR PATTERN THE ENTIRE CIRCUMFERENCE OF THE FRAME. THE BRICKS SHALL BE SET ON COMPACTED TRENCH BACKFILL.
 4. THE FRAME SHALL BE SET TO AN ELEVATION THAT PROVIDES 4"-6" CLEAR SPACE BETWEEN THE TOP OF THE CLEANOUT CAP AND THE BOTTOM OF THE CASTING LID.
 5. THE CONTRACTOR SHALL ENSURE THAT THE CLEANOUT CAP CAN BE UNSCREWED AND REMOVED AND REPLACED WITHOUT HINDRANCE.
 6. THE FRAME SHALL BE SET 1/4" MIN. TO 3/8" MAX. BELOW FINAL PAVEMENT ELEVATION.

SERVICE CLEANOUT CASTING DETAIL

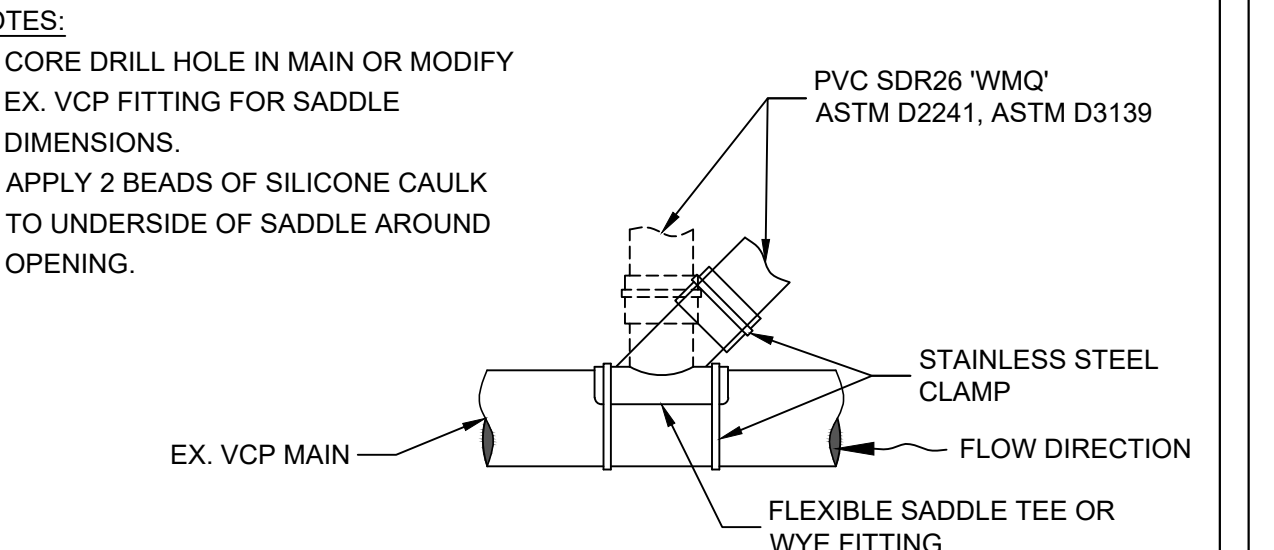


STANDARD SERVICE & ALTERNATE SERVICE DETAIL

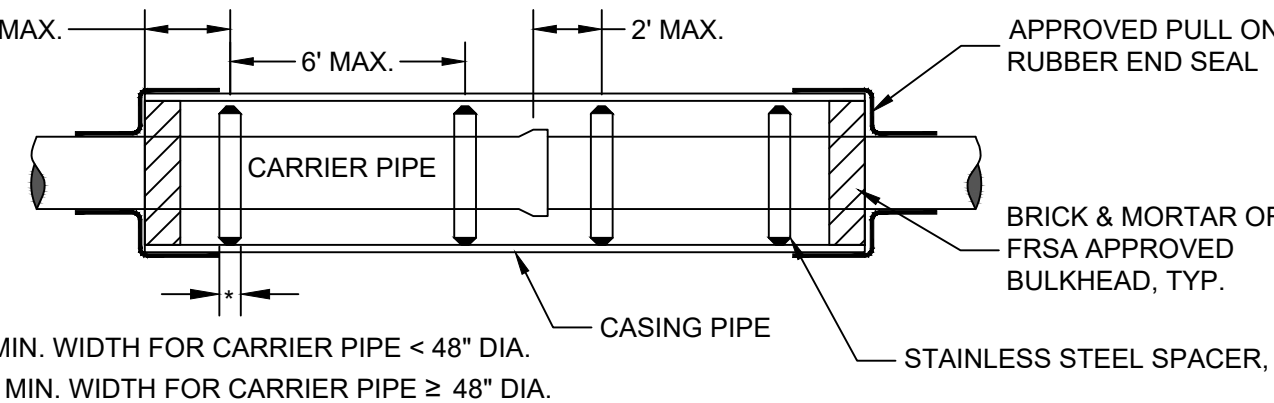
ACCEPTABLE SERVICE / MAIN CONNECTION TABLE

TYPE OF MAIN	TYPE OF CONNECTION	DETAIL
NEW, <18" DIA	FACTORY PVC WYE	STANDARD SERVICE DETAIL *
NEW, ≥18" DIA	FACTORY PVC WYE COMPRESSION FITTING	VERTICAL SERVICE RISER DETAIL
EXIST, <18" DIA	VCP	FLEXIBLE SADDLE
	NON-VCP	COMPRESSION FITTING
	ALL	CUT-IN FACTORY WYE
EXIST, ≥18" DIA	ALL	COMPRESSION FITTING

* ALL MAINS ≥13" DEEP SHALL HAVE AN ALTERNATE OR VERTICAL SERVICE RISER.
** REQUIRES FRSA APPROVAL.



FLEXIBLE SADDLE CONNECTION DETAIL



- NOTES:**
1. CASING END SEALS & SPACERS SHALL BE AS MFD. BY CASCADE MFG., OR APPROVED EQUAL.
 2. FOR FLEXIBLE CARRIER PIPE, SPACING OF SPACERS TO BE AS SHOWN, OR PER MFR.'S RECOMMENDATION.
 3. FOR RIGID CARRIER PIPE, SPACING SHALL BE PER MFR.'S RECOMMENDATION.

CASING & SPACER DETAIL

FOUR RIVERS SANITATION AUTHORITY (FRSA) STANDARD DETAILS
(NOT TO SCALE)
3501 KISHWAUKEE ST.
ROCKFORD, ILLINOIS 61109 PH. (815) 387-7660

Sheet No. of
ISSUE 04/01/2026

01/01/2021 Revisions: Manhole Adjustment Detail: Revised notes 1 & 2 with acceptable frames & lids. Modified notes 3, 5, & 7. Added note 8. Revised Rock River Reclamation District to 'Four Rivers Sanitation Authority'. Added Drop Connection Detail. Revised note 6 & 7. Added note 8. Service Cleanout Casting Detail. Added this detail.