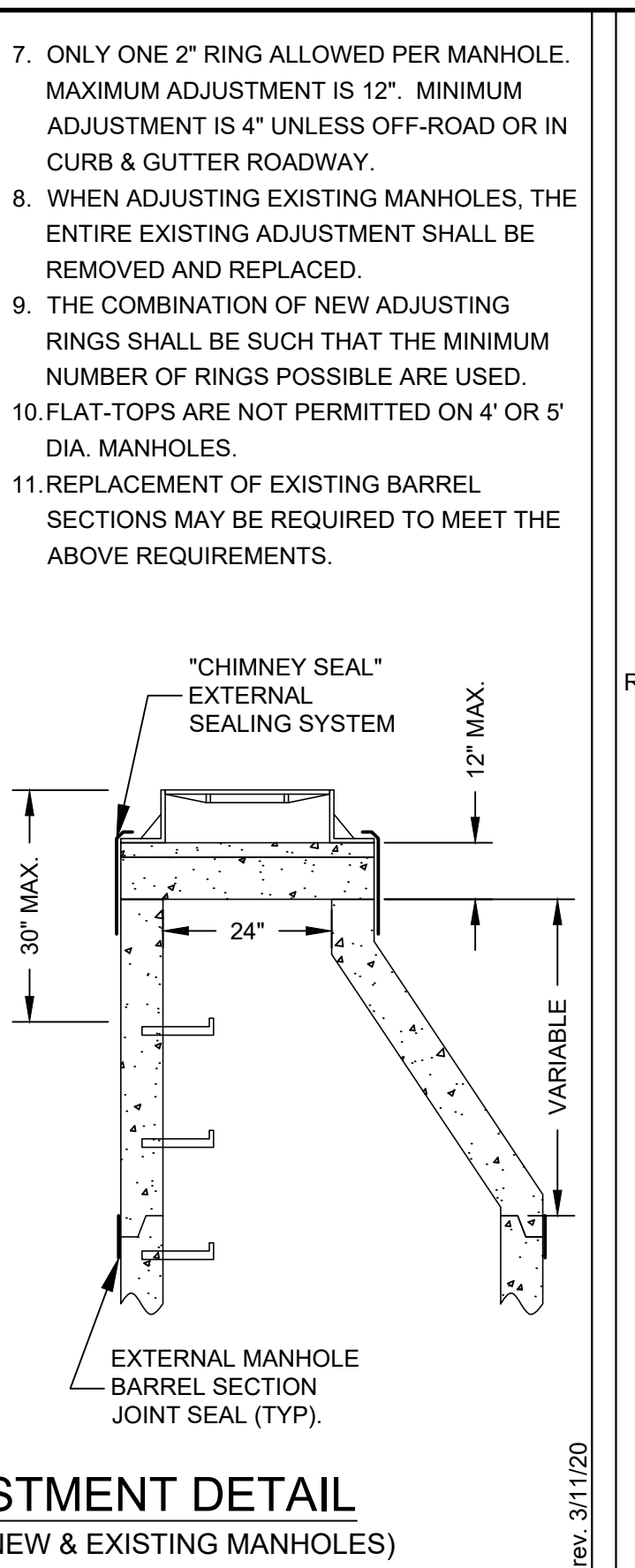


- NOTES:**
1. THE MAX. DROP FROM THE INVERT OF ANY PIPE TO THE CONCRETE CHANNEL UNDER THAT PIPE SHALL BE 8".
 2. MANHOLES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAY SHALL BE MARKED WITH A STEEL FENCE POST AS DIRECTED.
 3. ALL NEW MANHOLES SHALL BE VACUUM TESTED PER A.S.T.M. C-1244 PRIOR TO ACCEPTANCE.
 4. ALL BARREL JOINTS SHALL BE SEALED WITH 3 1/2" x 3/8" BITUMINOUS MATERIAL 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 F-477 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 F-477 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'. A DISTANCE GREATER THAN 2' WILL REQUIRE AN INSIDE DROP CONNECTION PER 'INSIDE DROP MANHOLE DETAIL'.
 12. MANHOLE STEPS SHALL BE NEENAH R-1982-F OR M.A. IND. PS-1 OR APPROVED EQUAL AT 16" CENTERS.

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

- NOTES:**
1. MANHOLE FRAME & LID SHALL BE NEENAH R-1670 OR EAST JORDAN E-1117 WITH NON-ROCKING & SELF-SEALING LID.
 2. LID SHALL HAVE 2" HIGH "SANITARY" LETTERING & A CONCEALED PICK HOLE.
 3. ALLOWABLE TYPES OF ADJUSTING RINGS INCLUDE PRECAST CONCRETE, HIGH DENSITY POLYETHYLENE (HDPE), & EXPANDED POLYPROPYLENE (EPP). THESE CAN BE USED IN CONJUNCTION WITH EACH OTHER, EXCEPT THAT A PRECAST RING SHALL NOT BE PLACED OVER AN HDPE OR 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 SEALER, INCLUDING FRAME TO CONCRETE JOINT. WHEN A FRAME REQUIRES PITCHING, A MIN. OF 3 SHIMS EQUALLY SPACED SHALL BE INSTALLED BETWEEN THE FRAME AND CONCRETE AND HYDRAULIC CEMENT SHALL BE USED TO FILL THE VOID BETWEEN THE FRAME & CONCRETE.
 5. FOR HDPE OR EPP ADJUSTING RINGS, THE MAX. AMOUNT OF ADJUSTMENT IS 3" FOR HDPE & 6" FOR EPP. HDPE & EPP RINGS SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. WHEN A FRAME REQUIRES PITCHING, THE TOP RING SHALL BE AN 'ADJUSTMENT' RING PER MANUFACTURER'S INSTRUCTIONS.
 6. NO TARRING OR GROUTING IS ALLOWED ON THE INSIDE OF MANHOLE OR ADJUSTMENT JOINTS.



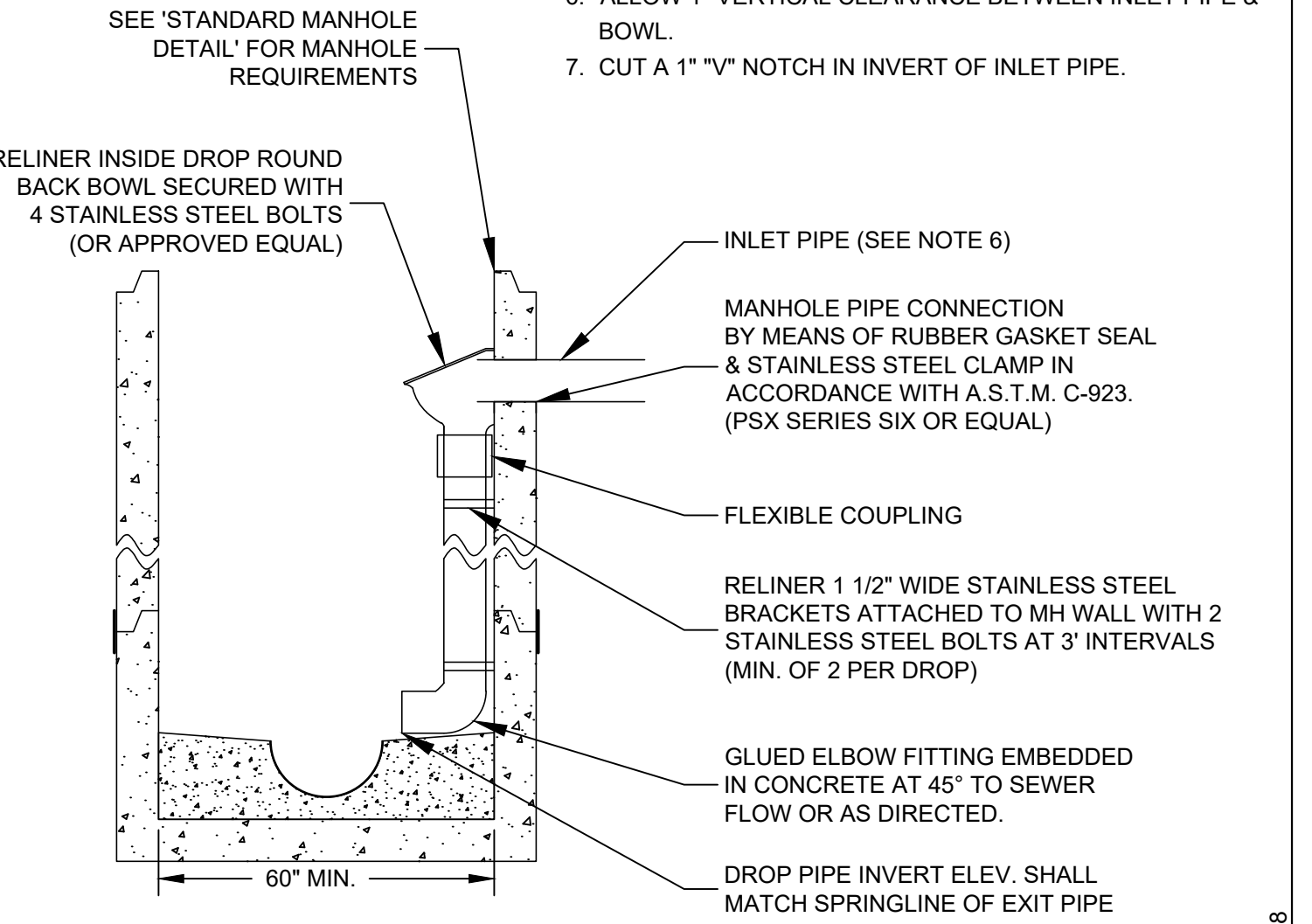
MANHOLE ADJUSTMENT DETAIL
(FOR ADJUSTMENT OF BOTH NEW & EXISTING MANHOLES)

DROP BOWL & DROP PIPE SIZING TABLE

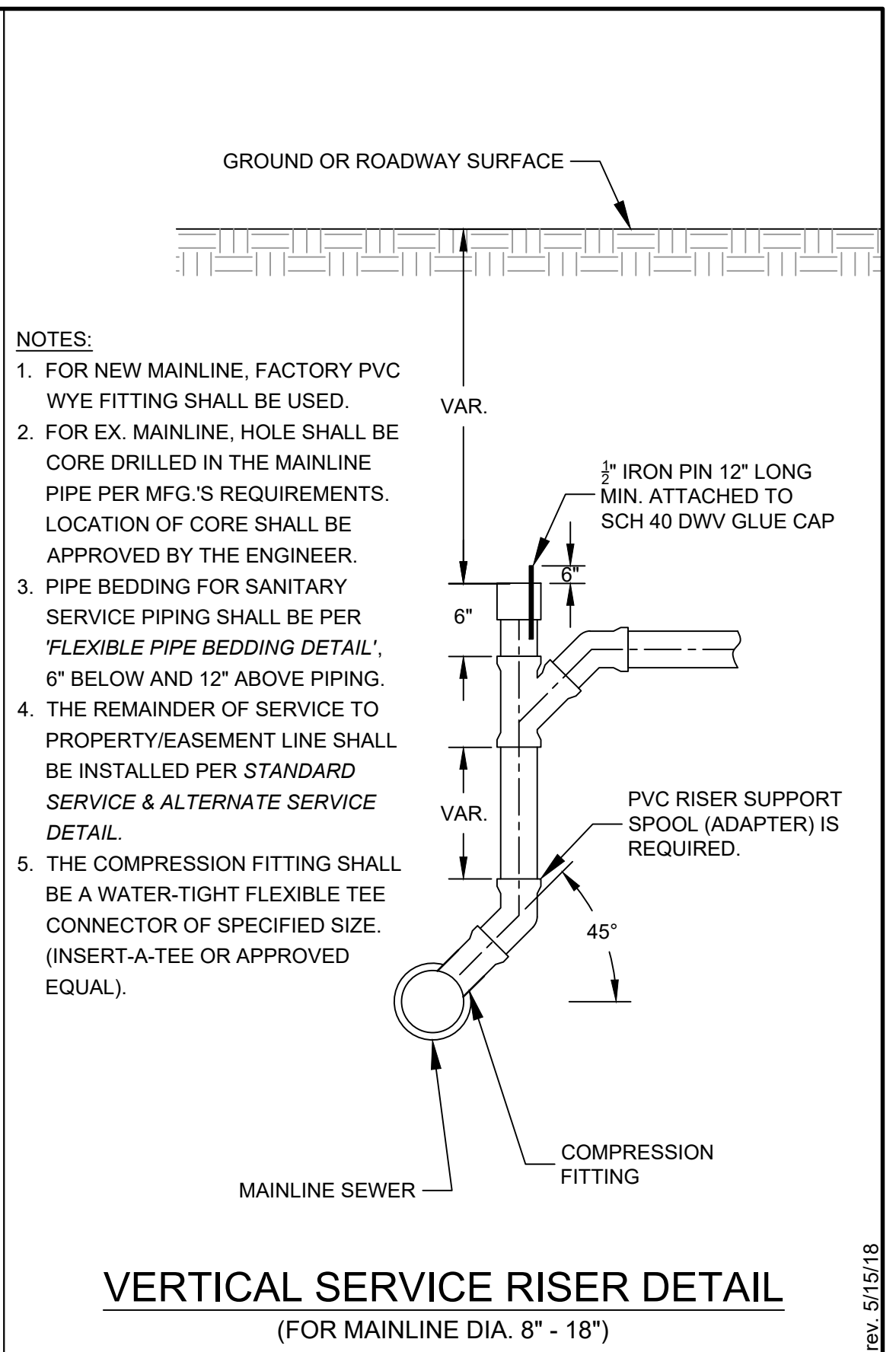
| INLET PIPE DIA. | DROP PIPE DIA. (MIN.) |
|-----------------|-----------------------|
| 4-6 INCH | 4 INCH |
| 8 INCH | 6 INCH |
| 10 INCH | 8 INCH |
| >10 INCH | * |

* PER MFG. OR AS DIRECTED BY RRWRD

- NOTES:**
1. INSIDE DROP TYPE MANHOLES SHALL BE 5" MIN. INSIDE DIA.
 2. ALL INSIDE DROP TYPE CONNECTIONS FOR SERVICES AND COLLECTOR SEWERS SHALL USE THE DROP AS PRODUCED BY RELINER-DURAN INC. OR EQUAL.
 3. SEE TABLE FOR DROP BOWL AND DROP PIPE SIZES.
 4. ALL INSIDE DROP PIPING SHALL BE PVC SDR35 ASTM-D3034.
 5. ATTACH THE ROUND BACK DROP BOWL AND EACH CLAMPING BRACKET TO THE MANHOLE WALL WITH 3/8" x 1" MIN. STAINLESS STEEL BOLTS AND EPOXY IMPREGNATED LUGS PER MFG. RECOMMENDATIONS.
 6. ALLOW 1" VERTICAL CLEARANCE BETWEEN INLET PIPE & BOWL.
 7. CUT A 1" V" NOTCH IN INVERT OF INLET PIPE.

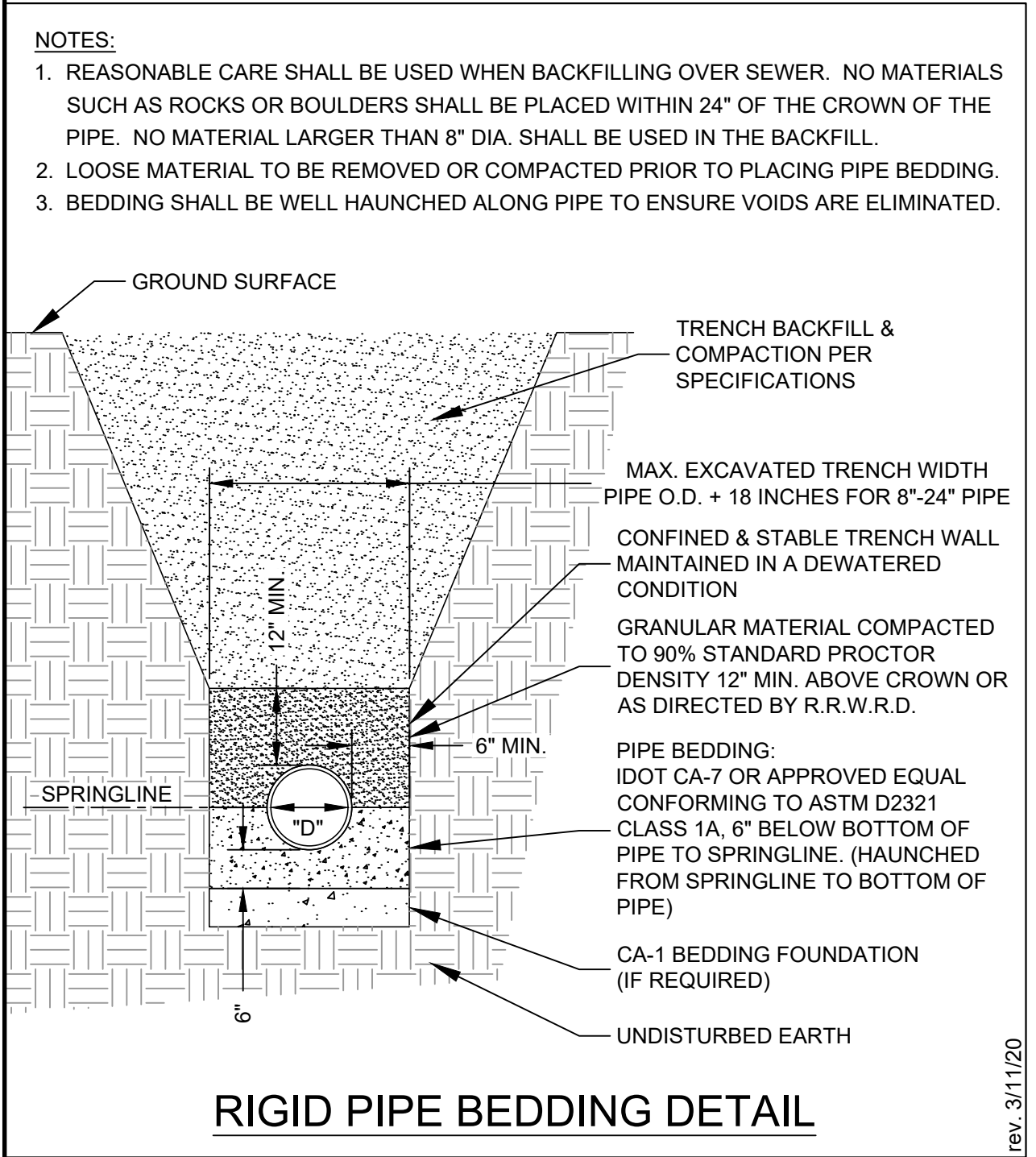


INSIDE DROP MANHOLE DETAIL
(*STANDARD MANHOLE DETAIL* SHALL APPLY)



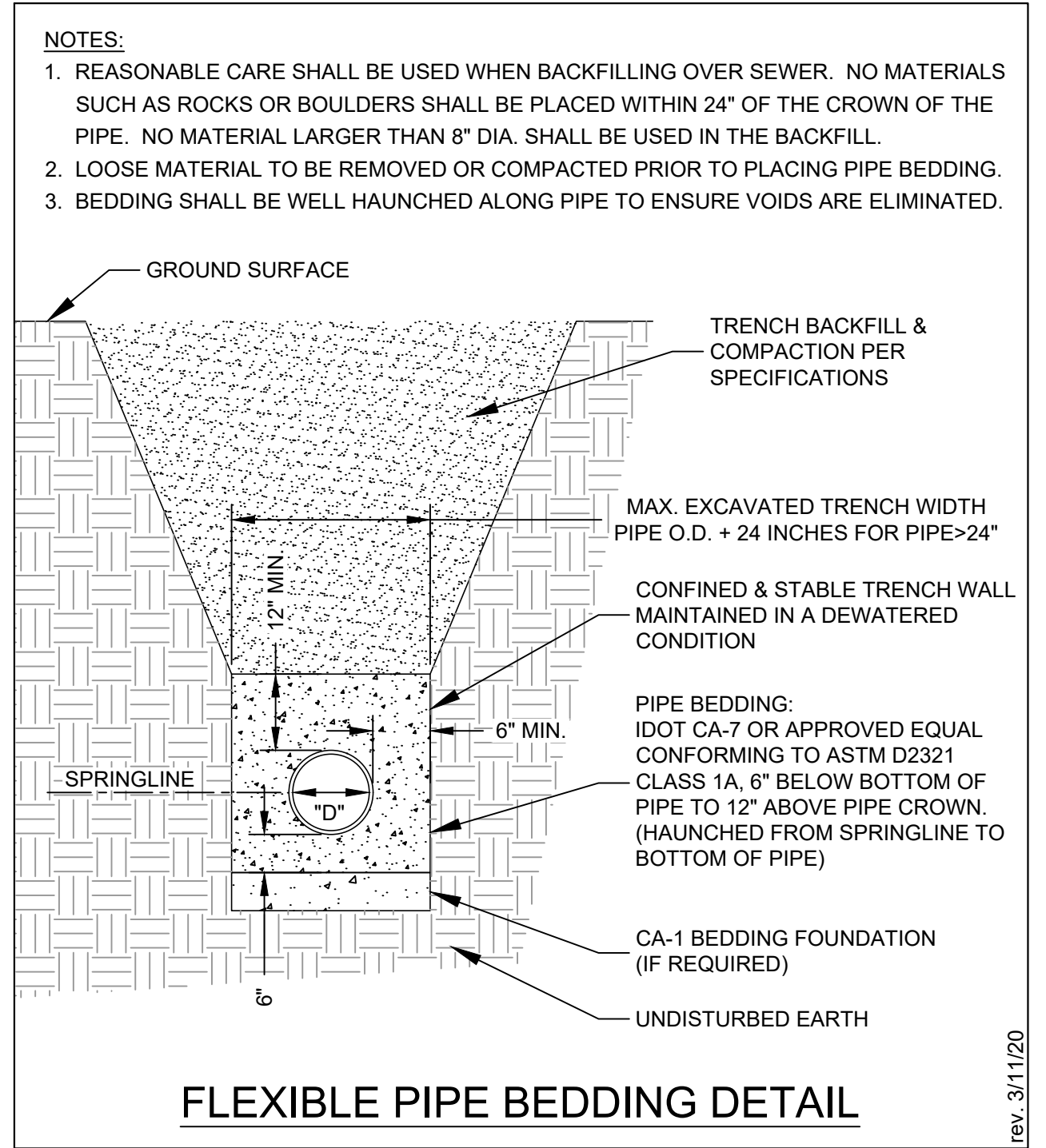
- NOTES:**
1. FOR NEW MAINLINE, FACTORY PVC WYE FITTING SHALL BE USED.
 2. FOR EX. MAINLINE, HOLE SHALL BE CORE DRILLED IN THE MAINLINE PIPE PER MFG.'S REQUIREMENTS. LOCATION OF CORE SHALL BE APPROVED BY THE ENGINEER.
 3. PIPE BEDDING FOR SANITARY SERVICE PIPING SHALL BE PER 'FLEXIBLE PIPE BEDDING DETAIL', 6" BELOW AND 12" ABOVE PIPING.
 4. THE REMAINDER OF SERVICE TO PROPERTY/EASEMENT LINE SHALL BE INSTALLED PER STANDARD SERVICE & ALTERNATE SERVICE DETAIL.
 5. THE COMPRESSION FITTING SHALL BE A WATER-TIGHT FLEXIBLE TEE CONNECTOR OF SPECIFIED SIZE. (INSERT-A-TEE OR APPROVED EQUAL).

VERTICAL SERVICE RISER DETAIL
(FOR MAINLINE DIA. 8" - 18")



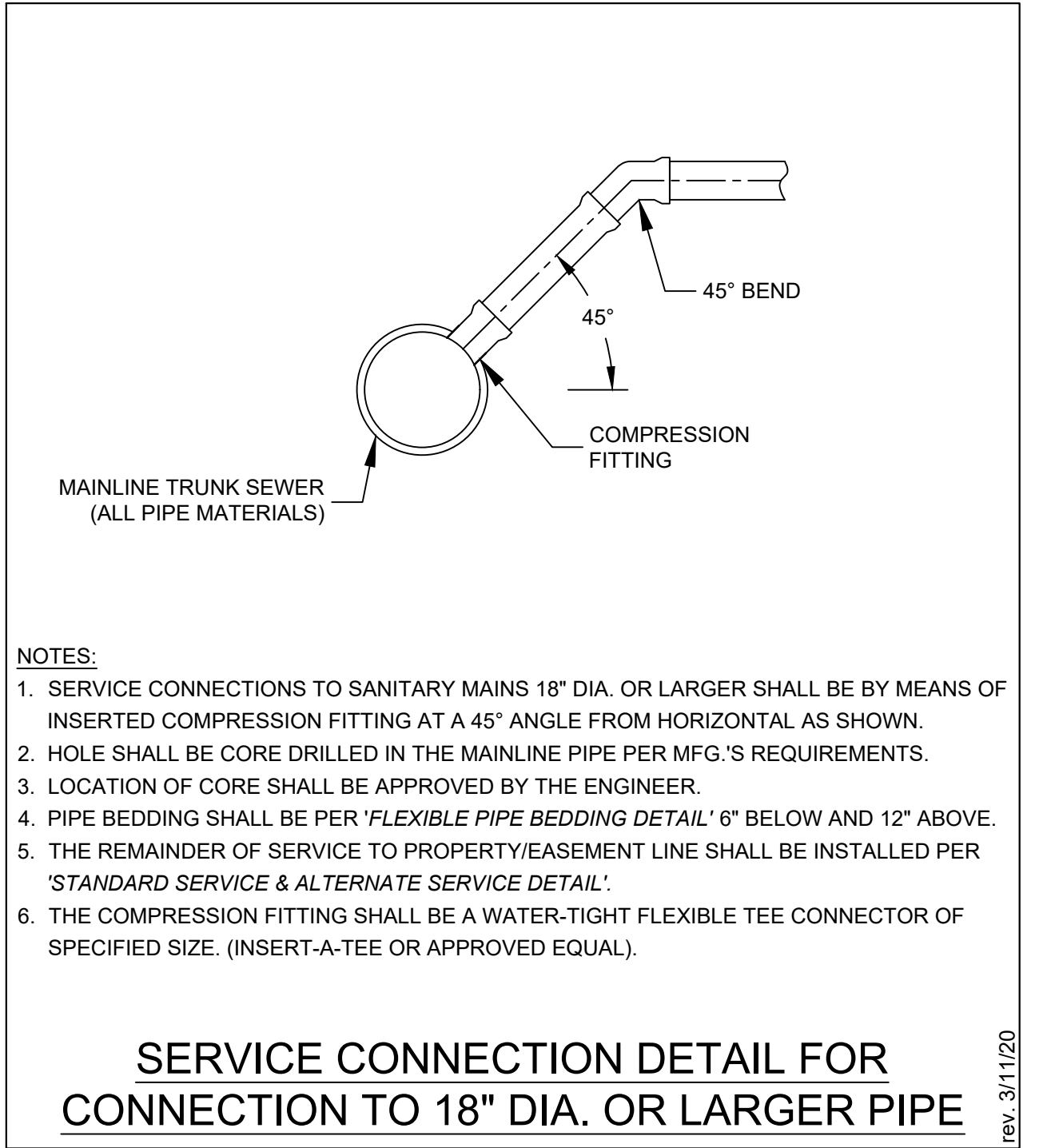
- NOTES:**
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.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

RIGID PIPE BEDDING DETAIL



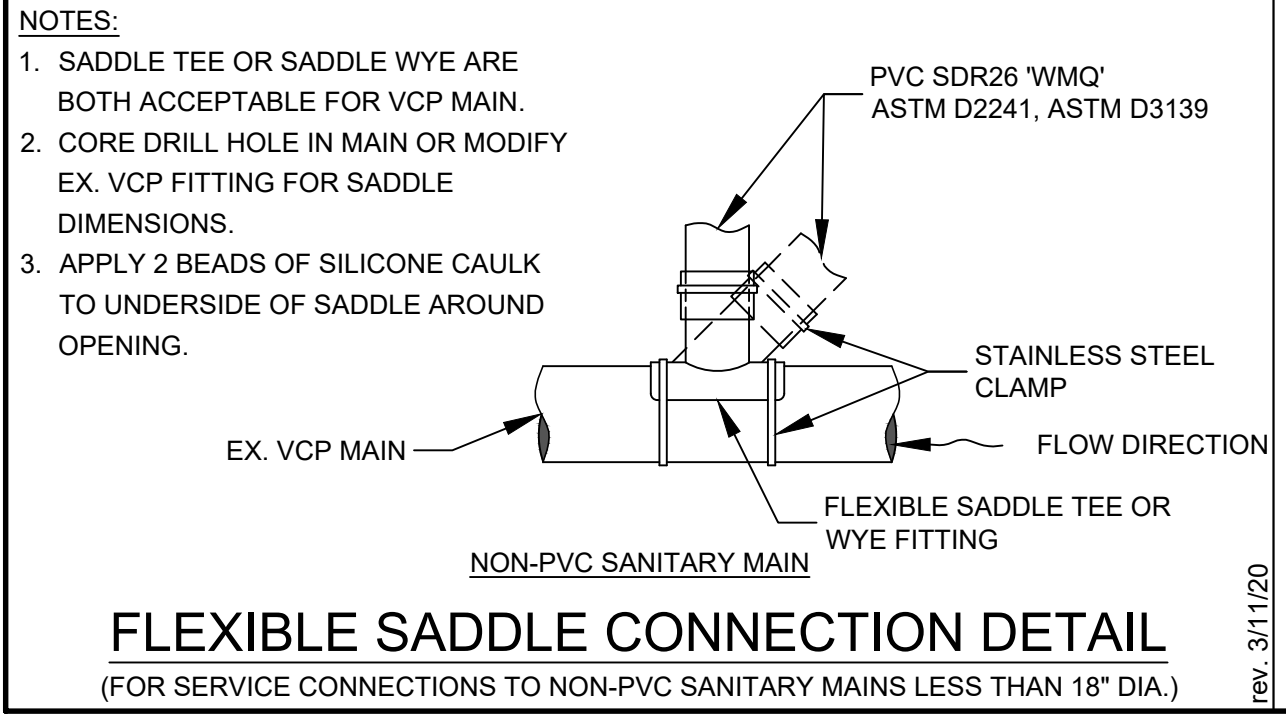
- NOTES:**
1. REASONABLE CARE SHALL BE USED WHEN BACKFILLING OVER SEWER. NO MATERIALS SUCH AS ROCKS OR BOULDERS SHALL BE PLACED WITHIN 24" OF THE CROWN OF THE PIPE. NO MATERIAL LARGER THAN 8" DIA. SHALL BE USED IN THE BACKFILL.
 2. LOOSE MATERIAL TO BE REMOVED OR COMPACTED PRIOR TO PLACING PIPE BEDDING.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

FLEXIBLE PIPE BEDDING DETAIL



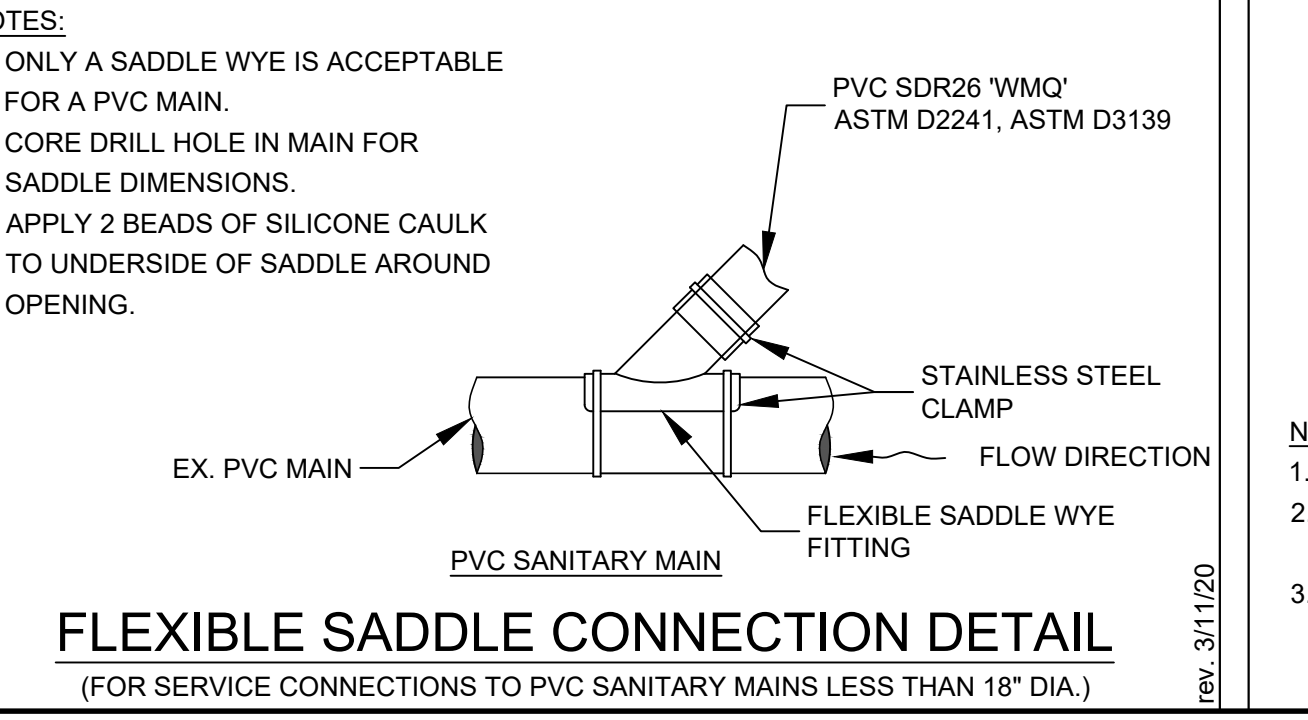
- NOTES:**
1. SERVICE CONNECTIONS TO SANITARY MAINS 18" DIA. OR LARGER SHALL BE BY MEANS OF INSERTED COMPRESSION FITTING AT A 45° ANGLE FROM HORIZONTAL AS SHOWN.
 2. HOLE SHALL BE CORE DRILLED IN THE MAINLINE PIPE PER MFG.'S REQUIREMENTS.
 3. LOCATION OF CORE SHALL BE APPROVED BY THE ENGINEER.
 4. PIPE BEDDING SHALL BE PER 'FLEXIBLE PIPE BEDDING DETAIL' 6" BELOW AND 12" ABOVE.
 5. THE REMAINDER OF SERVICE TO PROPERTY/EASEMENT LINE SHALL BE INSTALLED PER 'STANDARD SERVICE & ALTERNATE SERVICE DETAIL'.
 6. THE COMPRESSION FITTING SHALL BE A WATER-TIGHT FLEXIBLE TEE CONNECTOR OF SPECIFIED SIZE. (INSERT-A-TEE OR APPROVED EQUAL).

SERVICE CONNECTION DETAIL FOR CONNECTION TO 18" DIA. OR LARGER PIPE



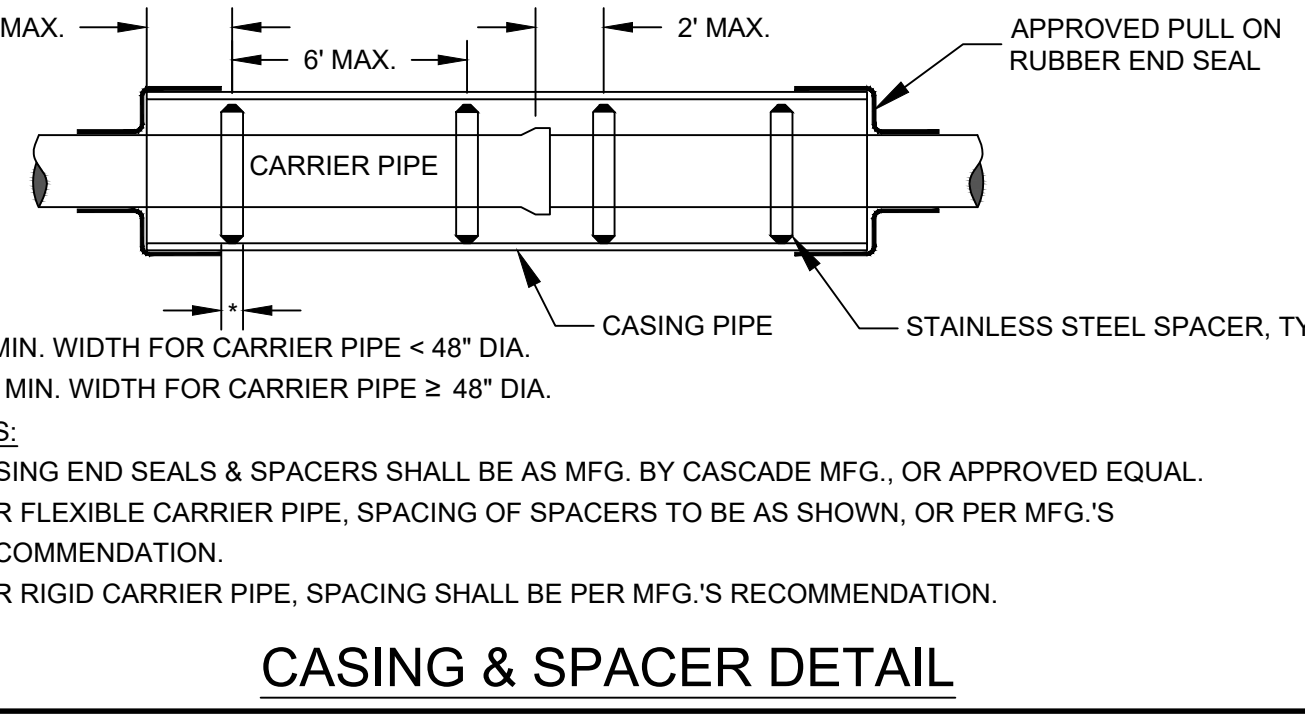
- NOTES:**
1. SADDLE TEE OR SADDLE WYE ARE BOTH ACCEPTABLE FOR VCP MAIN.
 2. CORE DRILL HOLE IN MAIN OR MODIFY EX. VCP FITTING FOR SADDLE DIMENSIONS.
 3. APPLY 2 BEADS OF SILICONE CAULK TO UNDERSIDE OF SADDLE AROUND OPENING.

FLEXIBLE SADDLE CONNECTION DETAIL
(FOR SERVICE CONNECTIONS TO NON-PVC SANITARY MAINS LESS THAN 18" DIA.)



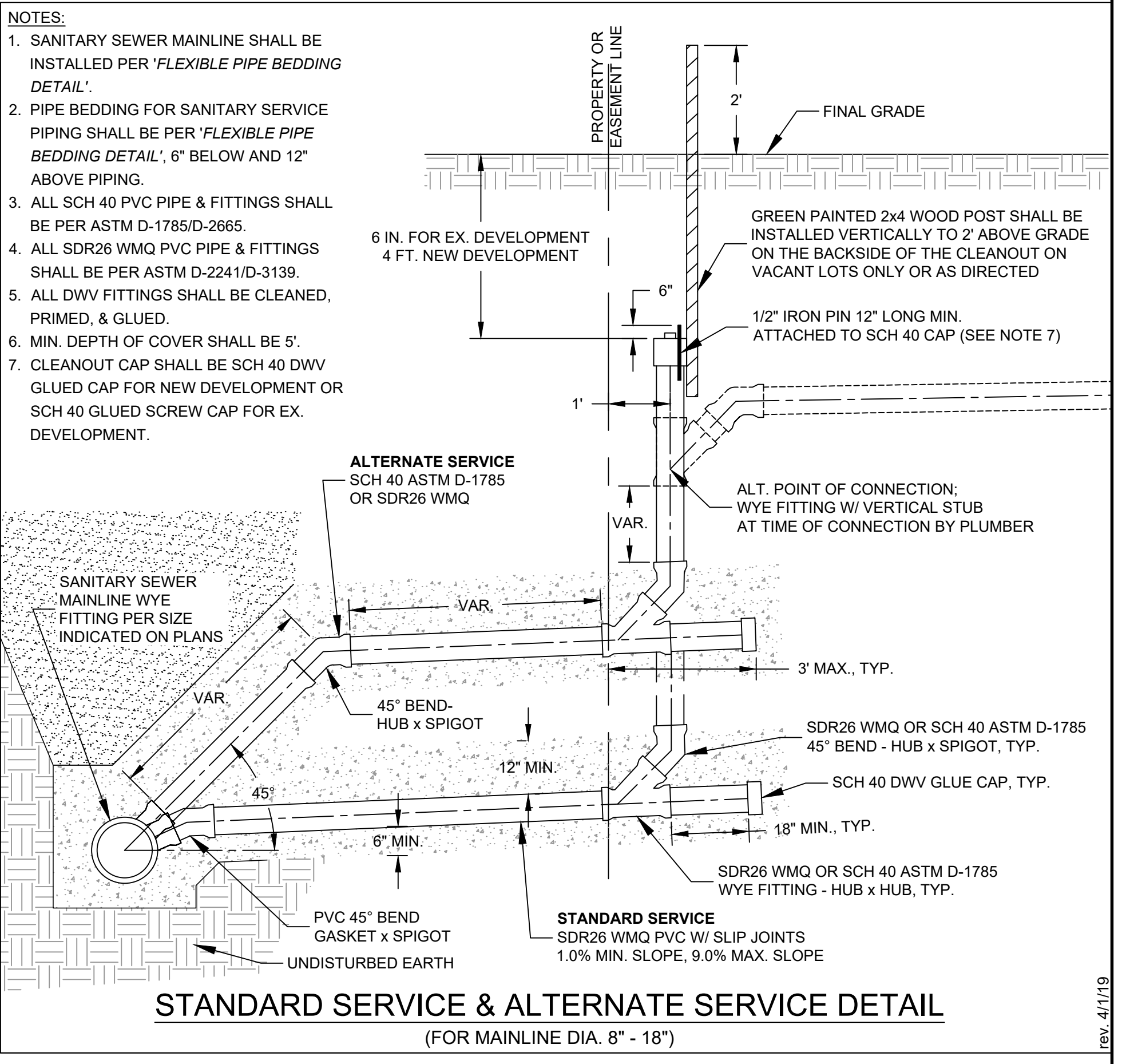
- NOTES:**
1. ONLY A SADDLE WYE IS ACCEPTABLE FOR A PVC MAIN.
 2. CORE DRILL HOLE IN MAIN FOR SADDLE DIMENSIONS.
 3. APPLY 2 BEADS OF SILICONE CAULK TO UNDERSIDE OF SADDLE AROUND OPENING.

FLEXIBLE SADDLE CONNECTION DETAIL
(FOR SERVICE CONNECTIONS TO PVC SANITARY MAINS LESS THAN 18" DIA.)



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

CASING & SPACER DETAIL



- NOTES:**
1. SANITARY SEWER MAINLINE SHALL BE INSTALLED PER 'FLEXIBLE PIPE BEDDING DETAIL'.
 2. PIPE BEDDING FOR SANITARY SERVICE PIPING SHALL BE PER 'FLEXIBLE PIPE BEDDING DETAIL', 6" BELOW AND 12" ABOVE PIPING.
 3. ALL SCH 40 PVC PIPE & FITTINGS SHALL BE PER ASTM D-1785/D-2665.
 4. ALL SDR26 WMQ PVC PIPE & FITTINGS SHALL BE PER ASTM D-2241/D-3139.
 5. ALL DWV FITTINGS SHALL BE CLEANED, PRIMED, & GLUED.
 6. MIN. DEPTH OF COVER SHALL BE 5'.
 7. CLEANOUT CAP SHALL BE SCH 40 DWV GLUED CAP FOR NEW DEVELOPMENT OR SCH 40 GLUED SCREW CAP FOR EX. DEVELOPMENT.

STANDARD SERVICE & ALTERNATE SERVICE DETAIL
(FOR MAINLINE DIA. 8" - 18")

Rock River Water Reclamation District

ROCK RIVER WATER RECLAMATION DISTRICT
STANDARD DETAIL SHEET
(NOT TO SCALE)

3501 KISHWAUKEE ST. P.O. BOX 7480
ROCKFORD, ILLINOIS 61109 PH. (815) 387-7660

ISSUE 3/11/2020

3/2/2020 Revisions:
Manhole Adjustment Detail: deleted previous note 5, added/modified notes 3,4,5,8,9.
Rigid Pipe Bedding Detail: added leader pertaining to trench wall.
Flexible Pipe Bedding Detail: added leader pertaining to trench wall.
Flexible Saddle Connection Details (2): added note below detail name.