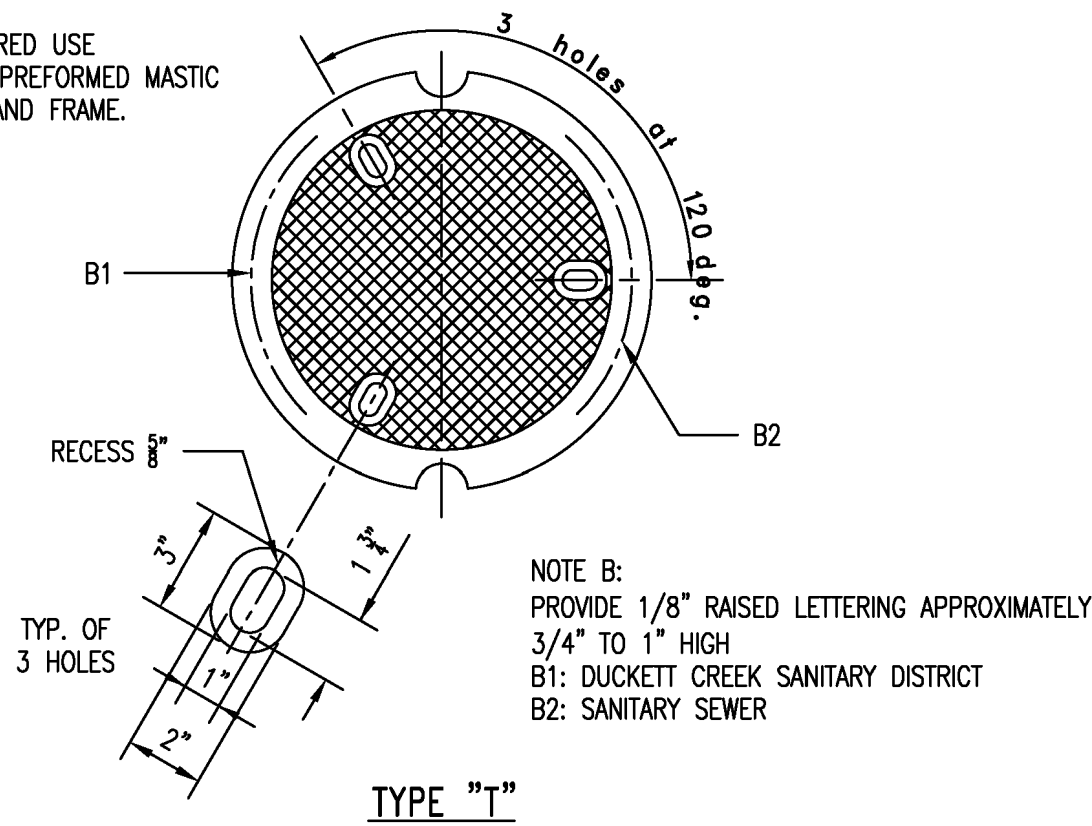
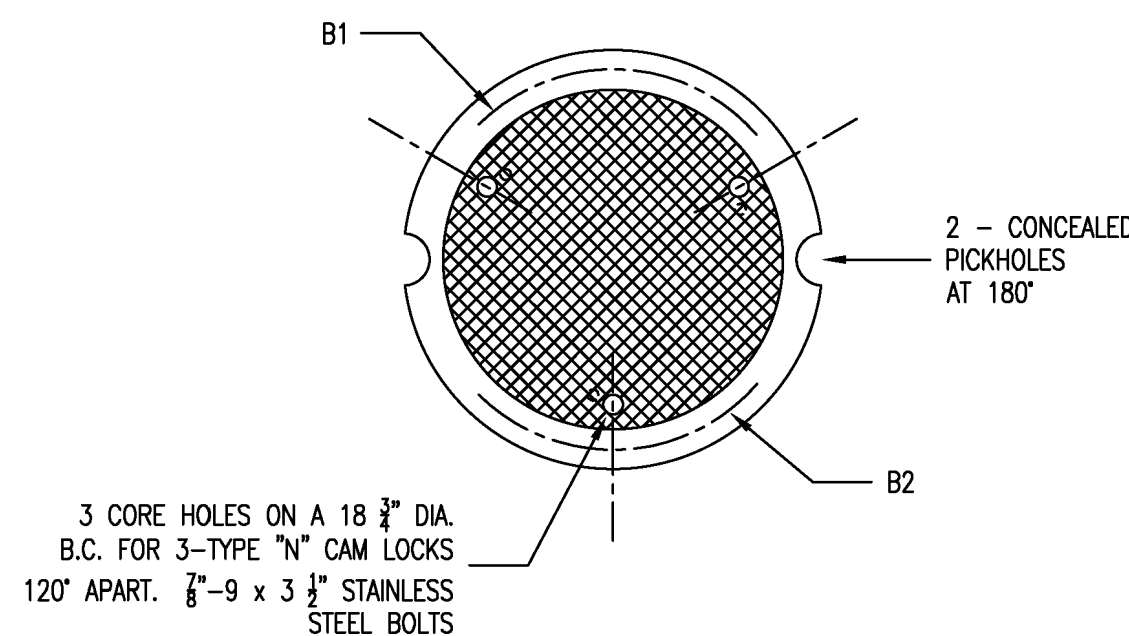


SECTION A-A

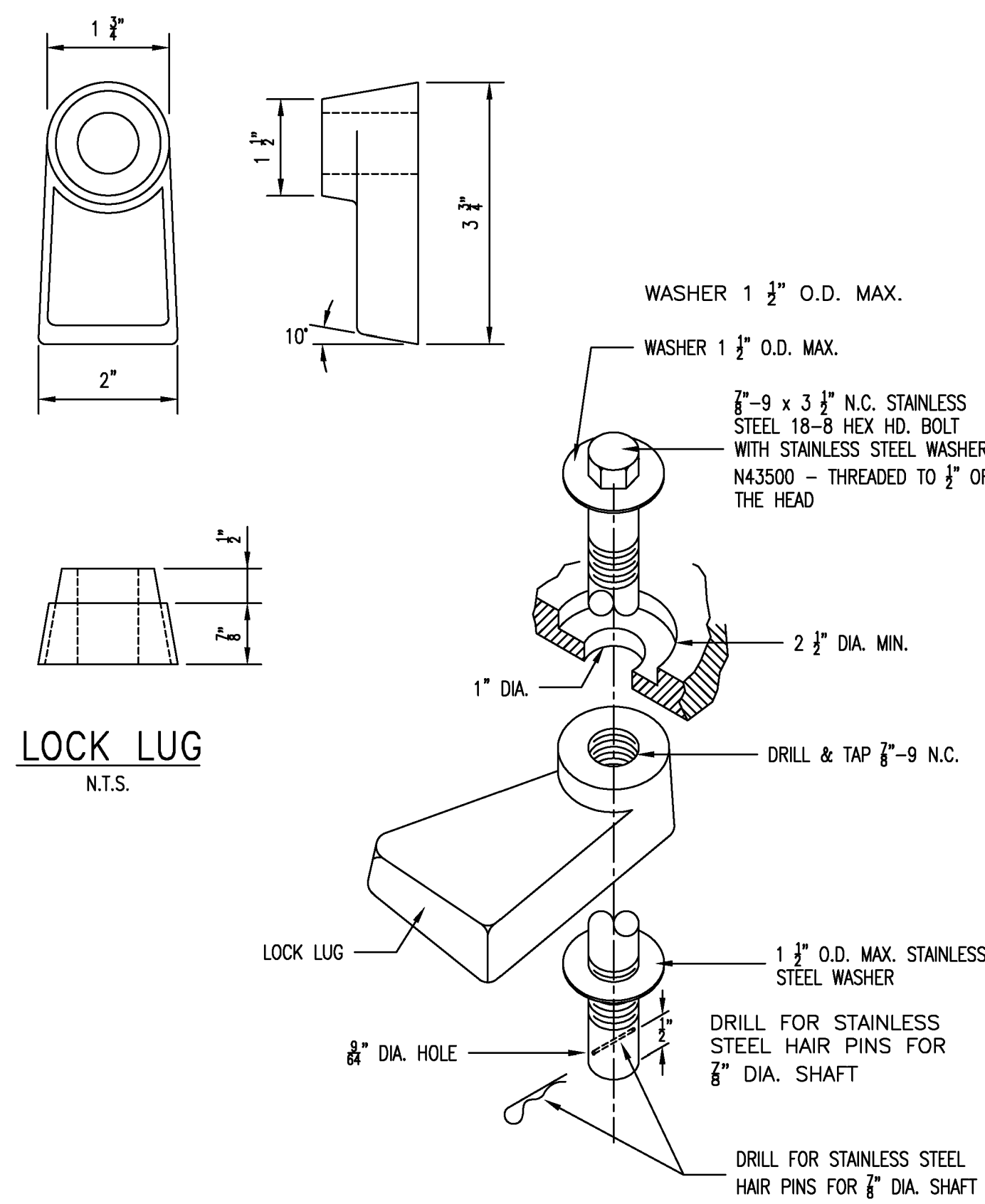
NOTE: IF WATER TIGHT COVER REQUIRED USE APPROVED BUTYL RUBBER PREFORMED MASTIC SEALANT BETWEEN COVER AND FRAME.



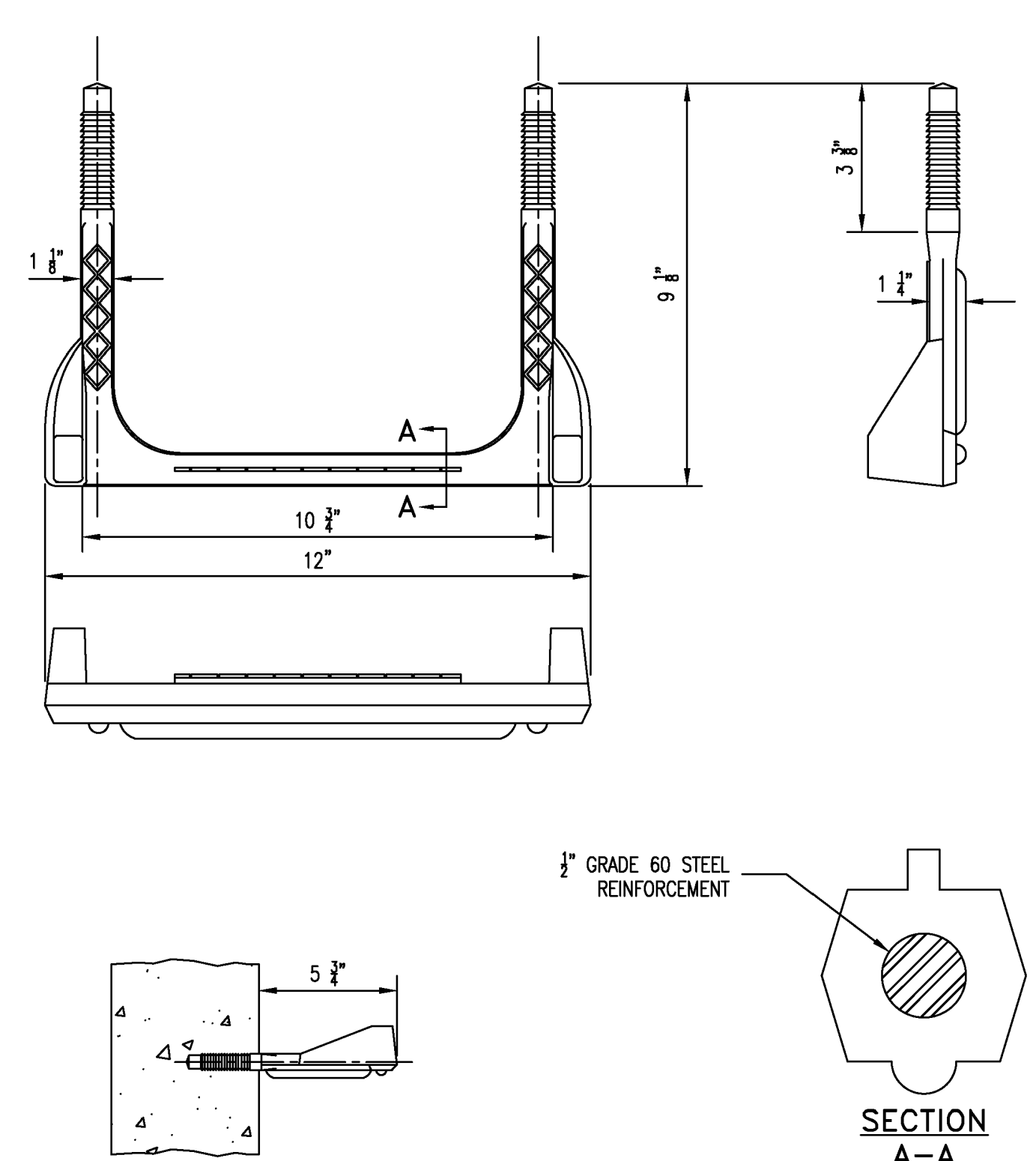
TYPE "T"



TYPE "N"



LOCK LUG  
N.T.S.



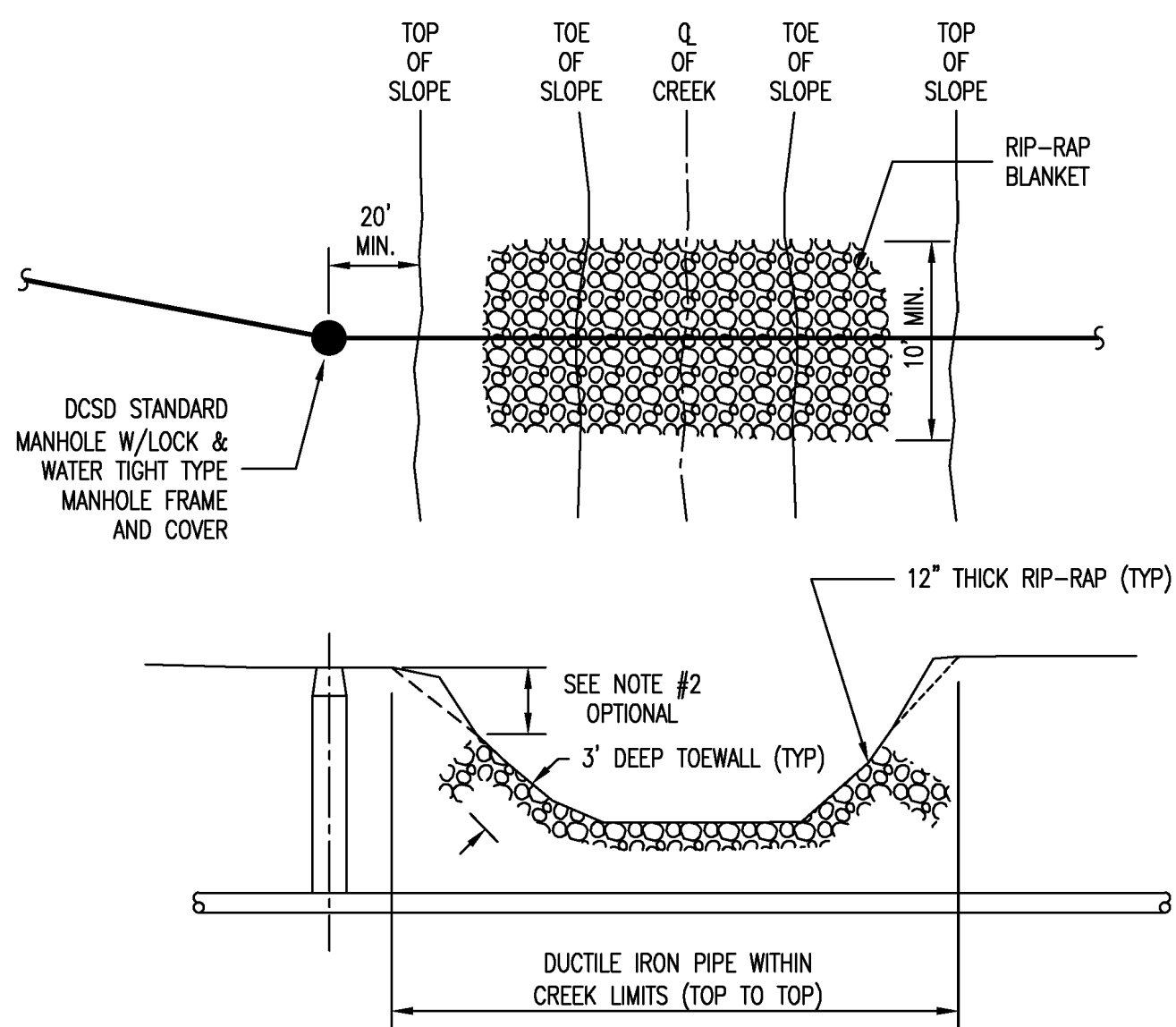
COPOLYMER POLYPROPYLENE PLASTIC

**Duckett Creek Sanitary District**  
 MANHOLE FRAME AND COVER  
 Down By: BSM, App By: KLA, Detail No: 12  
 Ckd By: MDOB, Date: DEC. 2015

**Duckett Creek Sanitary District**  
 CAST IRON MANHOLE COVERS (LOCK TYPE)  
 Down By: BSM, App By: KLA, Detail No: 14  
 Ckd By: MDOB, Date: DEC. 2015

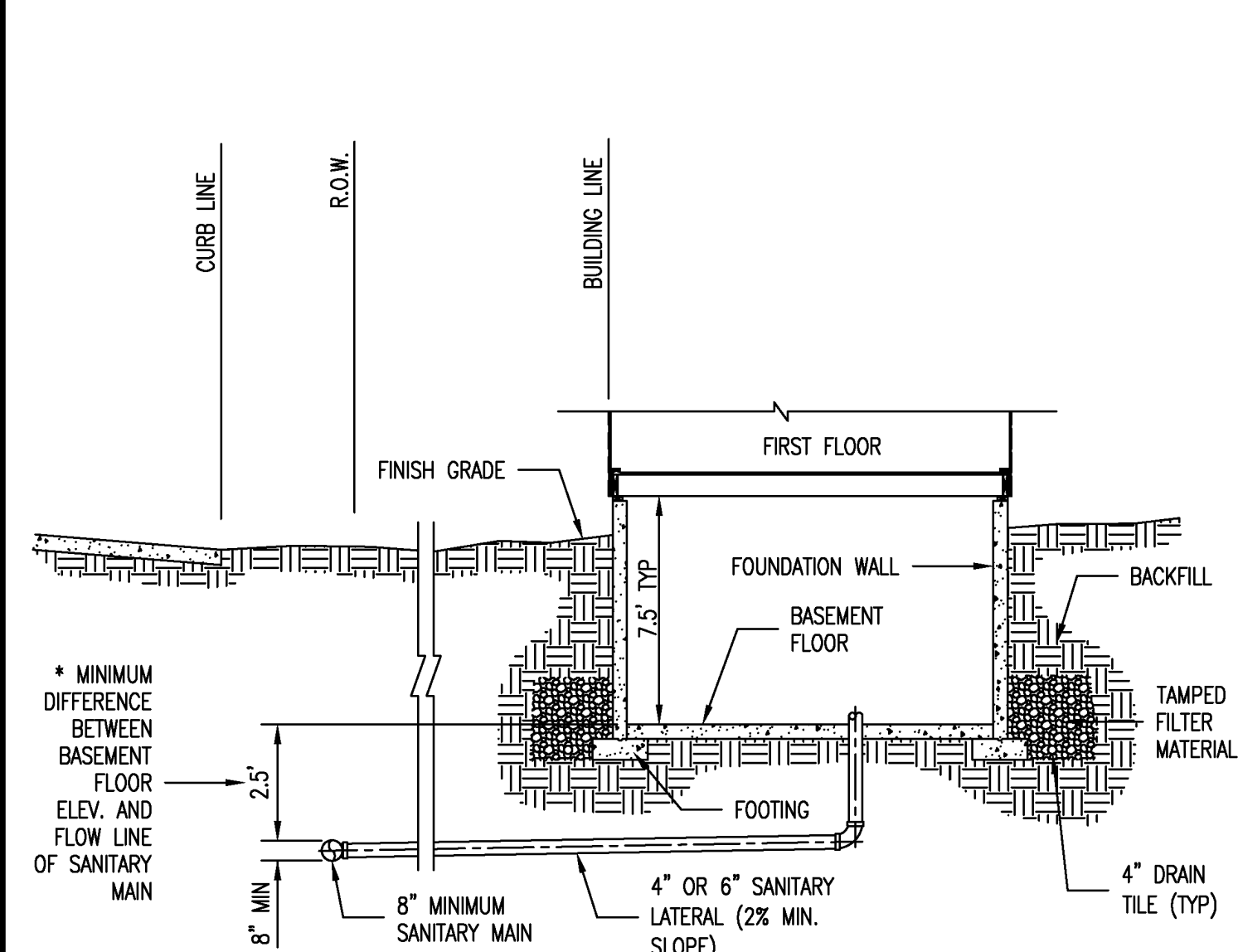
**Duckett Creek Sanitary District**  
 LOCKING DEVICE FOR TYPE "N" LOCK TYPEMAN HOLE COVER  
 Down By: BSM, App By: KLA, Detail No: 16  
 Ckd By: MDOB, Date: DEC. 2015

**Duckett Creek Sanitary District**  
 MANHOLE STEP FOR PRECAST MANHOLE  
 Down By: BSM, App By: KA, Detail No: 18  
 Ckd By: MDOB, Date: DEC. 2015



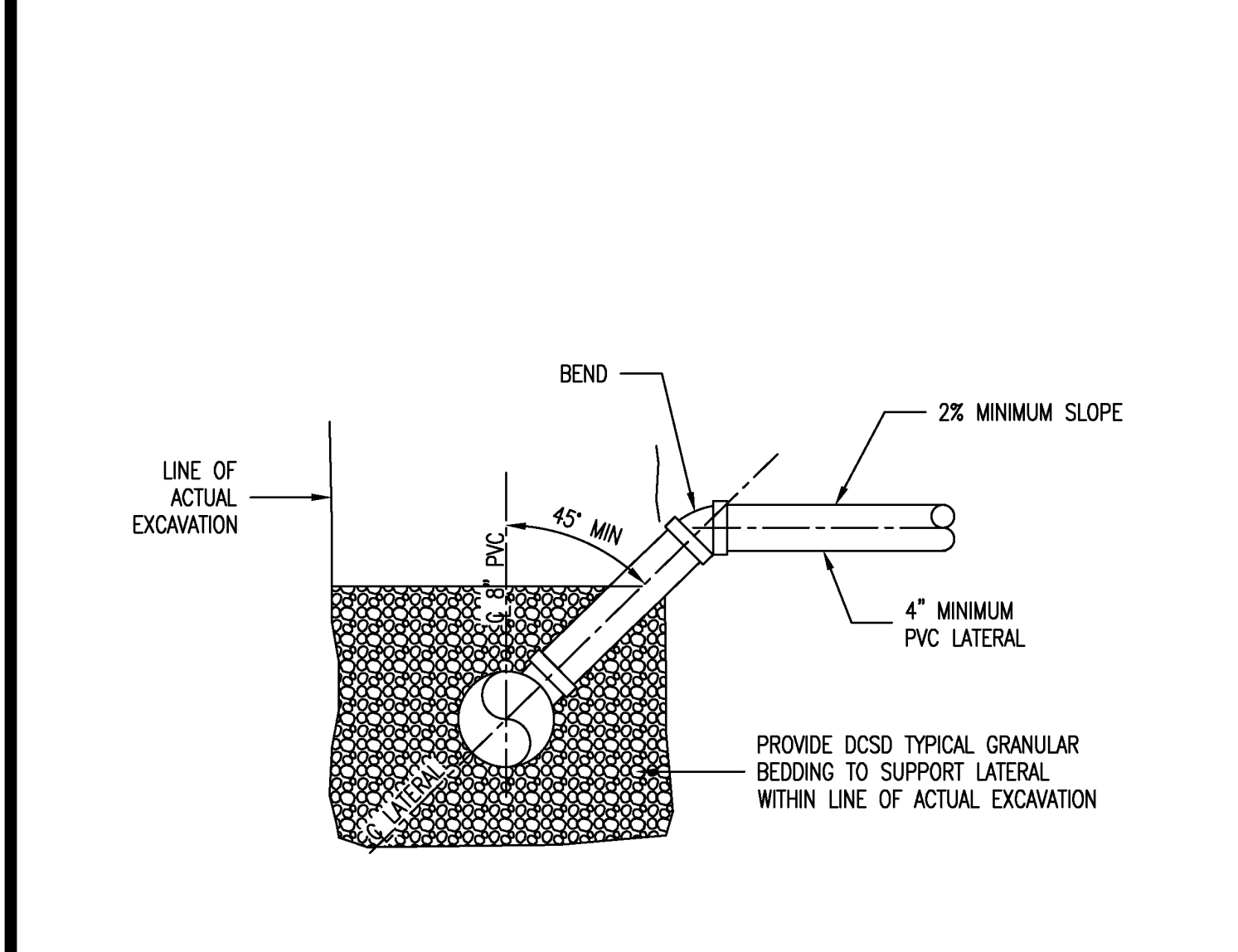
- NOTES:
- RIP-RAP IS REQUIRED AT ALL CREEK CROSSINGS WHERE THE EMBANKMENTS CROSSED ARE STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL RATIO SLOPE; AND ALSO WHERE THERE IS 3 FEET OR LESS COVER OVER THE TOP OF THE SEWER MAIN.
  - PLACE RIP-RAP ON LOWER 3/4 OF SLOPE, GRADE UPPER 1/4 OF SLOPE AT 1 VERTICAL TO 2 HORIZONTAL SLOPE FOR SOD OR 1 VERTICAL TO 2.5 HORIZONTAL SLOPE FOR SEED AND STRAW.
  - RIP-RAP TO BE "MSD 5" GRADATION, MINIMUM 12" THICK.
  - INCORPORATE A 3 FEET DEEP TOE WALL ON EMBANKMENT'S UPPER EDGE OF RIP-RAP.
  - TOP SURFACE OF RIP-RAP SHOULD NOT BE HIGHER THAN ADJACENT GROUND SURFACE.
  - IF PIPE HAS LESS THAN 12" COVER, A PAVED CHANNEL MAY BE REQUIRED.
  - DUCTILE IRON PIPE IS REQUIRED WITHIN THE CREEK LIMITS.
  - EXPOSED AREAS SHALL NOT REMAIN UNPROTECTED FOR MORE THAN SEVEN (7) DAYS FOR PROTECTION OF THE STREAM.

**Duckett Creek Sanitary District**  
 TYPICAL CREEK CROSSING  
 Down By: BSM, App By: KA, Detail No: 24  
 Ckd By: MDOB, Date: OCT. 2016



NOTE: DIFFERENCE IN DEPTH INCREASES WITH PIPE SIZE

**Duckett Creek Sanitary District**  
 TYPICAL SANITARY SEWER LATERAL PROFILE  
 Down By: BSM, App By: KLA, Detail No: 26  
 Ckd By: MDOB, Date: DEC. 2015



**Duckett Creek Sanitary District**  
 SANITARY SEWER LATERAL RISER DETAIL  
 Down By: BSM, App By: KA, Detail No: 27  
 Ckd By: MDOB, Date: DEC. 2015

**Installation Techniques - Link-Seal® Modular Seals**  
 Online Installation Video Visit [www.linkseal.com](http://www.linkseal.com)

- Center the pipe, cable or conduit in well opening or riser. Make sure the pipe is adequately supported on both ends. Link-Seal® modular seals are intended to support the weight of the pipe.
- Loosen rear pressure plate with nut just enough so links move freely. Connect both ends of Link-Seal® modular seal assembly at the 6 O'Clock position and work both sides up toward the 12 O'Clock position in the annular space.
- Check to be sure all bolt heads are facing the installer. Extra slack or sag is normal. Do not remove links if extra slack exists. Note: On smaller diameter pipe, links may need to be stretched.
- Slide belt assembly into annular space. For larger size belts, start inserting Link-Seal modular seal assembly at the 12 O'Clock position and work both sides up toward the 6 O'Clock position in the annular space.
- LS-200 thru LS-315 use a hand socket allen head or off-set wrench ONLY start at 12 O'Clock. Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner until links have been uniformly compressed. (Approx. 2 or 3 rotations)
- LS-325 thru LS-650 using a hand socket or off-set wrench ONLY start at 12 O'Clock. Do not tighten any bolt more than 4 turns at a time. Continue in a clockwise manner until links have been uniformly compressed. (Approx. 2 or 3 rotations)
- Make 2 or 3 more passes at 4 turns per bolt MAXIMUM, tightening all bolts clockwise until all sealing elements "bulge" around all pressure plates.
- If the seal doesn't appear to be correct using the instructions provided. Call PSI at 800-423-2410.

Link-Seal® Model	Tool Size/Type Req.
LS-200, LS-275	4mm, Allen
LS-300, LS-315	6mm, Allen
LS-325, LS-340, LS-360	13mm, Hex
LS-400, LS-410, LS-425, LS-475	17mm, Hex
LS-500, LS-525, LS-575	19mm, Hex
LS-600	30mm, Hex
LS-650	19mm, Hex

**Always Wear Safety Equipment When Using Link-Seal® Modular Seals!**

**Link-Seal® Modular Seal - Do's**

- Make sure pipe is centered.
- Install the belt with the pressure plates evenly spaced.
- Install the exact number of links indicated in sizing charts.
- Check to make sure pipe is supported properly during backfill operations. Note: Link-Seal modular seals are not intended to support the weight of the pipe.
- Make sure seal assembly and pipe surfaces are free from dirt.
- For tight fits, use non-polluting liquid detergent to assist installation.

**Link-Seal® Modular Seal - Don'ts**

- Don't install Link-Seal® modular seals where weld-beds or other irregular surfaces exist without consideration of the sealing requirements.
- Don't torque each bolt completely before moving on to the next.
- Don't use high speed power tools (450 rpm or more).
- Do not use power tools on Link-Seal modular seal 316 stainless steel bolts.
- Don't use grease in installing Link-Seal modular seals.
- Don't install the belt with the pressure plates aimed in irregular directions. (Staggered)

If the seal doesn't appear to be correct using the techniques provided, call PSI at 713-747-6943 or 800-423-2410.

636-594-0540 (tel.)  
 636-594-0512 (fax)  
 mail@ochran.com  
 630A E. Independence Dr.  
 Union, Missouri 63084

**UCHRAN**  
 Civil Engineering  
 Land Surveying  
 Architecture  
 Site Development  
 General Consulting  
 Master Planning

Missouri State Certificate of Authority Numbers:  
 Survey : 000380  
 Engineering : 001555  
 Architecture : 2002014240

Three working days prior to the start of any excavation call 1-800-423-2410 for utility location information.

All OSHA rules & regulations apply to all construction projects. All construction projects shall be strictly followed (i.e. trenching, blasting, etc.)

STATE OF MISSOURI  
 ELLIOTT R. REED  
 MISSOURI PROFESSIONAL ENGINEER  
 NUMBER PE-2006002845

THE STREETS OF CALEDONIA  
 PHASE II RESIDENTIAL  
 O'FALLON, MISSOURI

DATE: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 DRAWN BY: TUG  
 APPROVED BY: ERR  
 DATE: JAN. 13, 2021  
 SCALE: NO SCALE  
 PROJ. NO.: 17-6821  
 DWG. NO.: C14.09

OWNER/DEVELOPER:  
 DD LAND DEVELOPMENT, LLC  
 10407 BAUR BLVD, SUITE B  
 ST. LOUIS, MO 63132

Drawing name: F:\17-6821 - 260-Acre Tract along Hwy 40, O'Fallon, MO\AutoCad Drawings\6821 - Plan Sheets\Construction Drawings\PH2 Residential\Phase 2.dwg Tab: C14.09 Plotted on: Jan 13, 2021 - 3:53pm Plotted by: jmayor