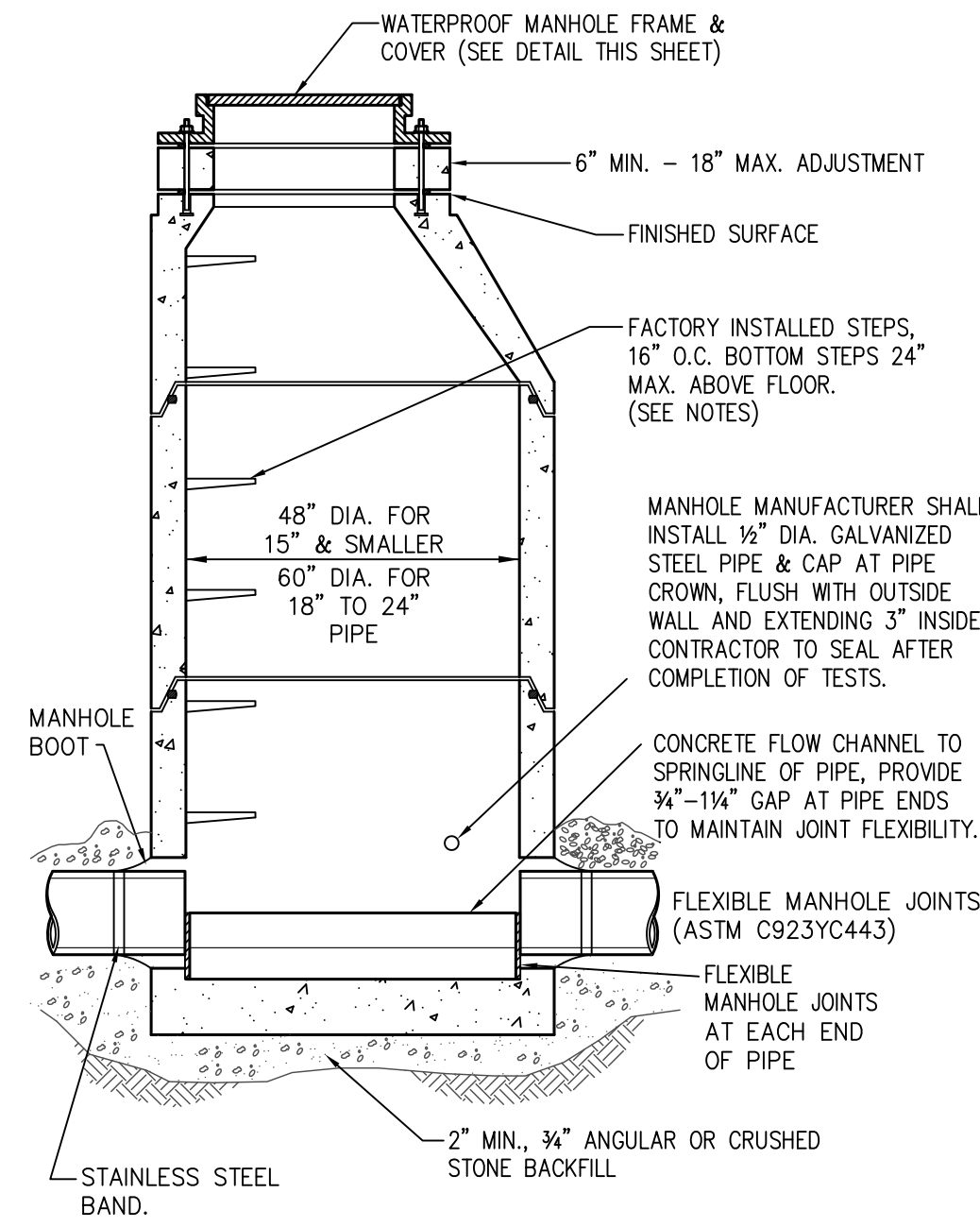


PROVIDE 60" TO 48" TRANSITION SECTION WHEN 60" BASE IS REQUIRED.

ALL JOINTS ARE "MODIFIED GROOVE TONGUE" WITH RUBBER GASKET. THE JOINTS & GASKETS SHALL CONFORM TO ASTM SPEC. C-443



SANITARY MANHOLE
(FOR 24" AND SMALLER PIPE)

ALL JOINTS ARE "MODIFIED GROOVE TONGUE" WITH RUBBER GASKET. THE JOINTS & GASKETS SHALL CONFORM TO ASTM SPECS. C-443

12" CONCRETE ENCASMENT FROM M.H. WALL TO FIRST JOINT, SO THAT THE JOINT REMAINS FLEXIBLE. BEDDING TO BE POURED TO UNDISTURBED GROUND TYPICAL FOR ALL MANHOLE CONNECTIONS.

PRECAST OR POURED CONCRETE BASE. 4000 P.S.I. AT 28 DAYS; IF PRECAST BASE IS USED, PLACE 2" MIN. SAND SUBBASE.

FACTORY INSTALLED STEPS, 16" O.C. BOTTOM STEPS 24" MAX. ABOVE FLOOR.

MANHOLE MANUFACTURER SHALL INSTALL 1/2" DIA. GALVANIZED STEEL PIPE & CAP AT PIPE CROWN, FLUSH WITH OUTSIDE WALL AND EXTENDING 3" INSIDE. CONTRACTOR TO SEAL AFTER COMPLETION OF TESTS.

CONCRETE FLOW CHANNEL TO SPRINGLINE OF PIPE. MANHOLE BOOT. FLEXIBLE MANHOLE JOINTS (ASTM C923YC443). FLEXIBLE MANHOLE JOINTS AT EACH END OF PIPE.

2" MIN. 3/4" ANGULAR OR CRUSHED STONE BACKFILL.

3/4" ANGULAR OR CRUSHED STONE BACKFILL AND BEDDING OF SANITARY M.H. AND VOIDS UNDER.

STAINLESS STEEL BAND.

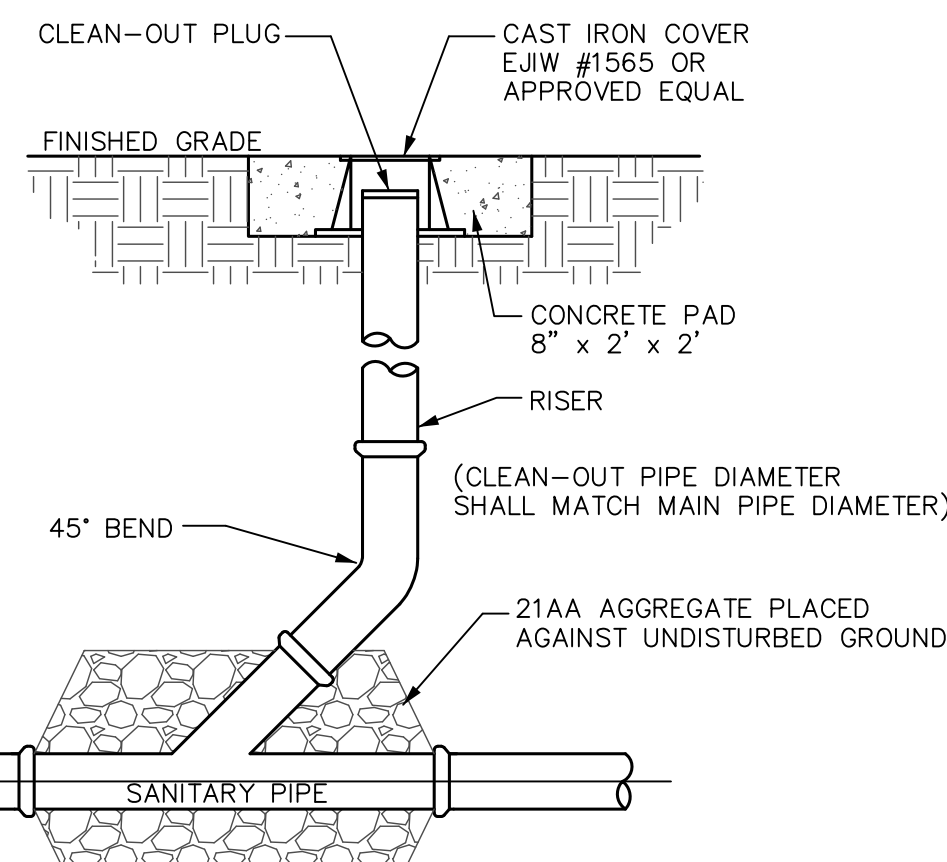
60" DIA. FOR 27"-30" PIPE. 72" DIA. FOR 36" & LARGER PIPE.

WATERPROOF MANHOLE FRAME & COVER (SEE DETAIL THIS SHEET). FINISHED SURFACE. 48" DIA. 32" VARIES. 32" VARIES.

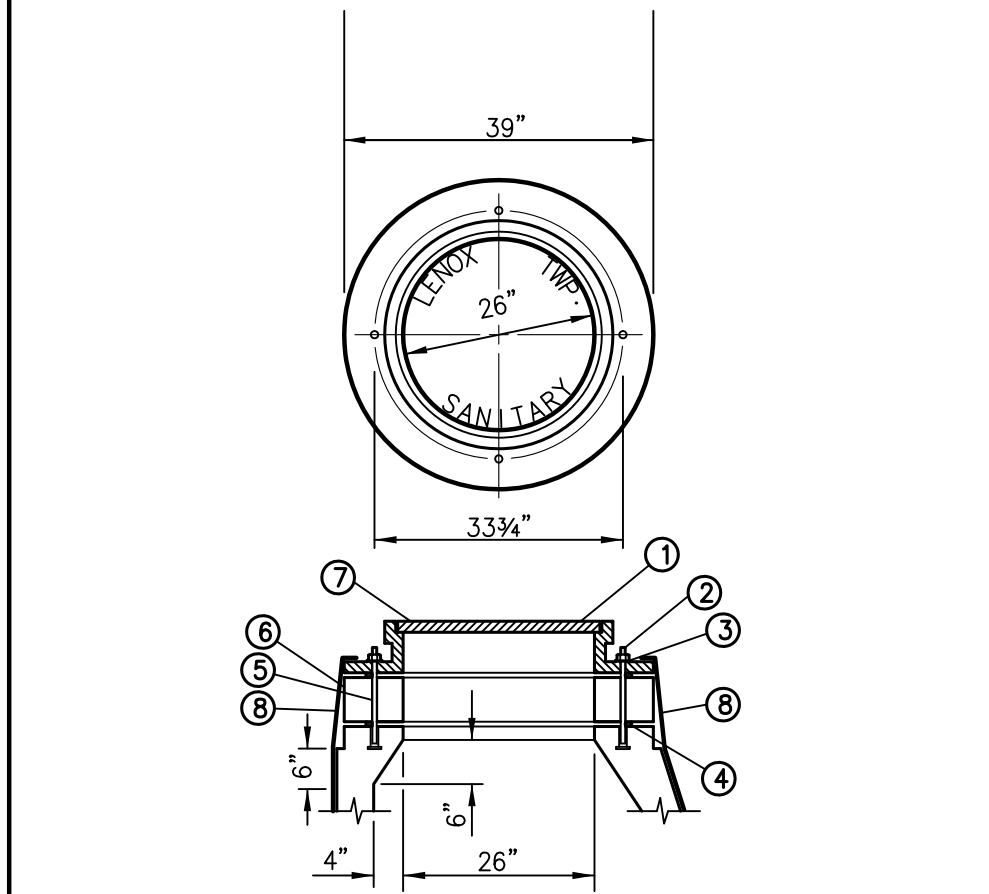
SANITARY MANHOLE
(FOR 27" AND LARGER PIPE)

NOTES:

1. ALL SEWER LEADS SHALL BE CONSTRUCTED WITH WYES AT CONNECTION TO MAIN UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP'S DPW.
2. ALL SEWERS SHALL BE CONSTRUCTED WITH 9 FEET MINIMUM COVER AT THE BUILDING.
3. CLEANOUTS SHALL BE PROVIDED AT ALL BENDS AND EVERY 100 FEET OF PIPE RUNS.
4. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE, WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
5. DISSIMILAR TYPES AND SIZES OF PIPES SHALL BE JOINED USING AN APPROVED ADAPTOR PER THE CURRENT STATE PLUMBING CODE.
6. A CLEAN-OUT (FOR INSPECTION PURPOSES) SHALL BE INSTALLED ON ALL 8" LEADS TO INDUSTRIAL BUILDINGS.

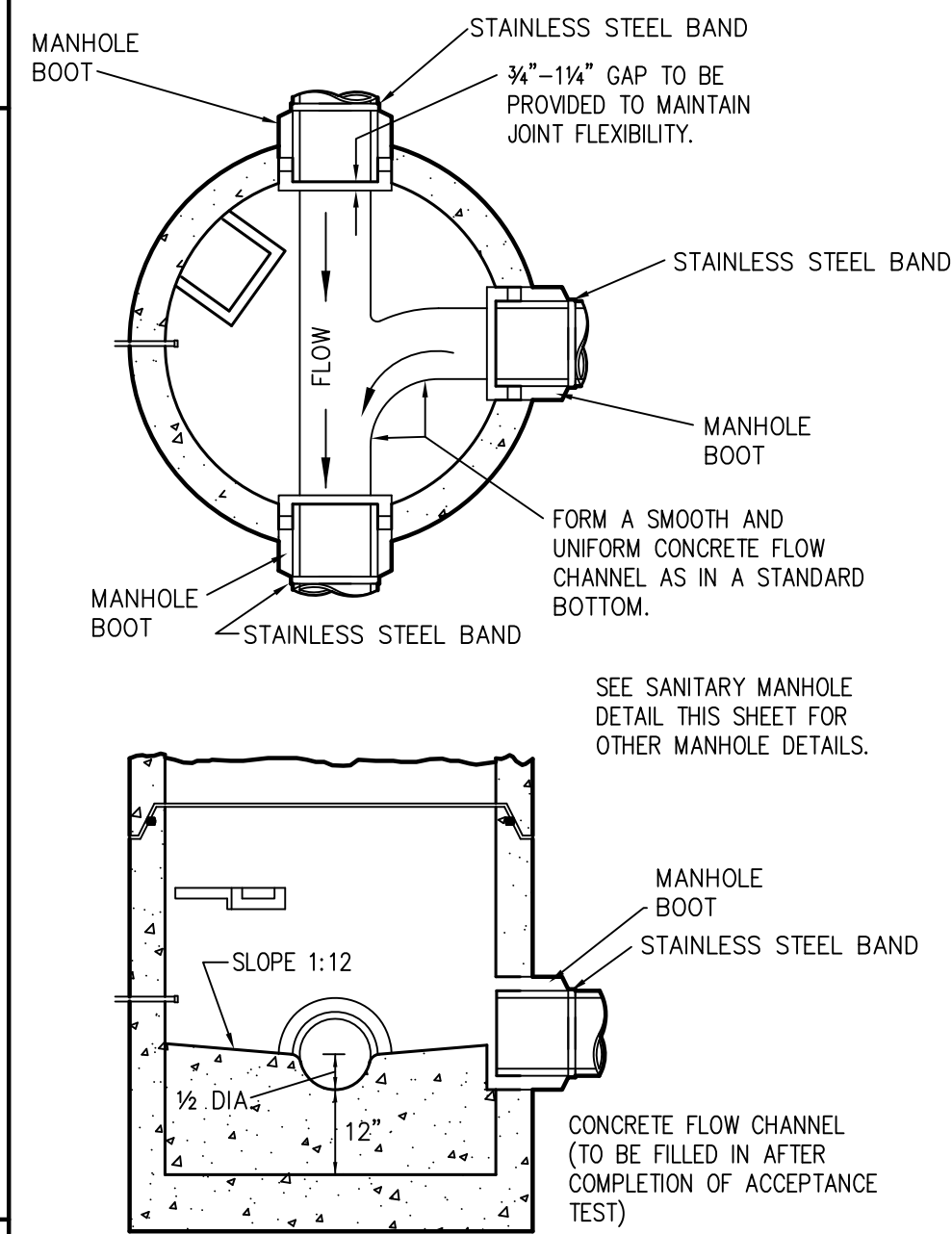


TYPICAL CLEAN-OUT DETAIL

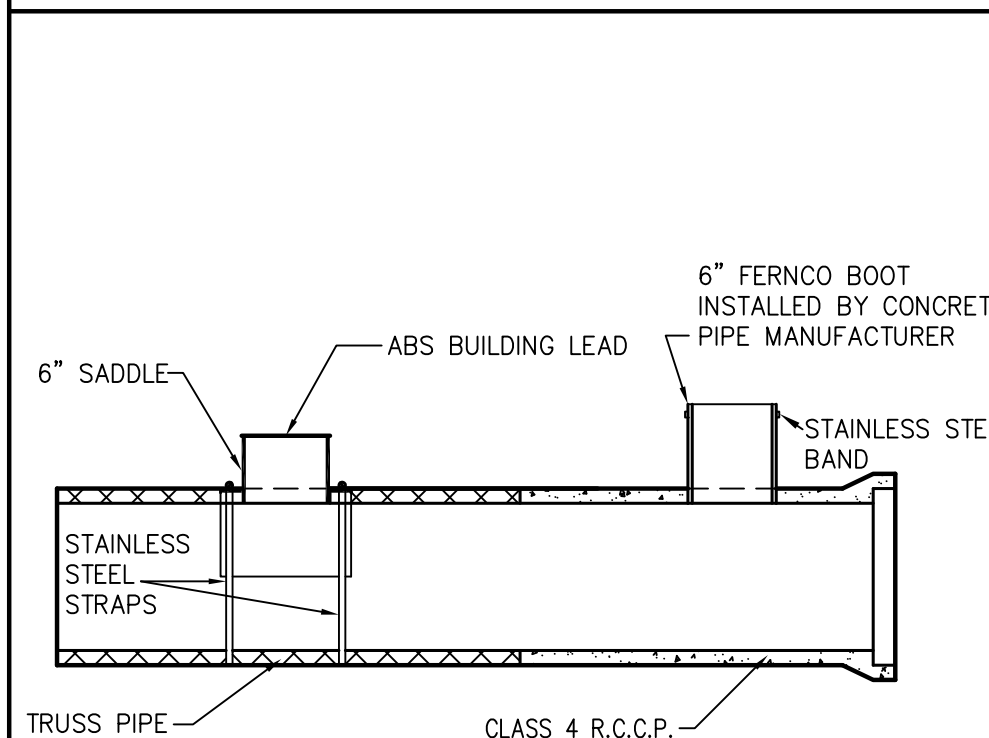


1. BOLTED WATERPROOF COVER EQUAL TO EAST JORDAN 1040 WITH PRESSURE TIGHT COVER WITH 1" ANCHOR BASE FLANGE HOLES, FOUR (4) AS SHOWN.
2. FOUR (4) CADMIUM COATED 9/16" THREADED STUDS, 3/4" X 2" X 1/16" FLAT WASHERS & NUTS.
3. FOUR (4) 3/4" X 2" X 1/16" NEOPRENE FLAT WASHERS.
4. RUBBER "O" RING 2 1/2" DIA. I.D. IS 3/16".
5. FOUR (4) 9/16" THREADED INSERTS CAST AS SHOWN.
6. GRADE RING, PROVIDE 6" MIN.-18" MAX. ADJUSTMENT.
7. COVERS EQUIPPED WITH 1/2" STAINLESS STEEL CAP SCREWS COUNTERSUNK FLUSH WITH COVER. TAPS IN COVERS & BOLTS PROVIDED BY MANUFACTURER & SHALL NOT BE FIELD TAPPED.
8. EXTERNAL SEAL SHALL BE MADE OF EPDM RUBBER WITH A MINIMUM THICKNESS OF 60 MILS AND SEALED WITH A NON-HARDENING BUTYL RUBBER MASTIC.

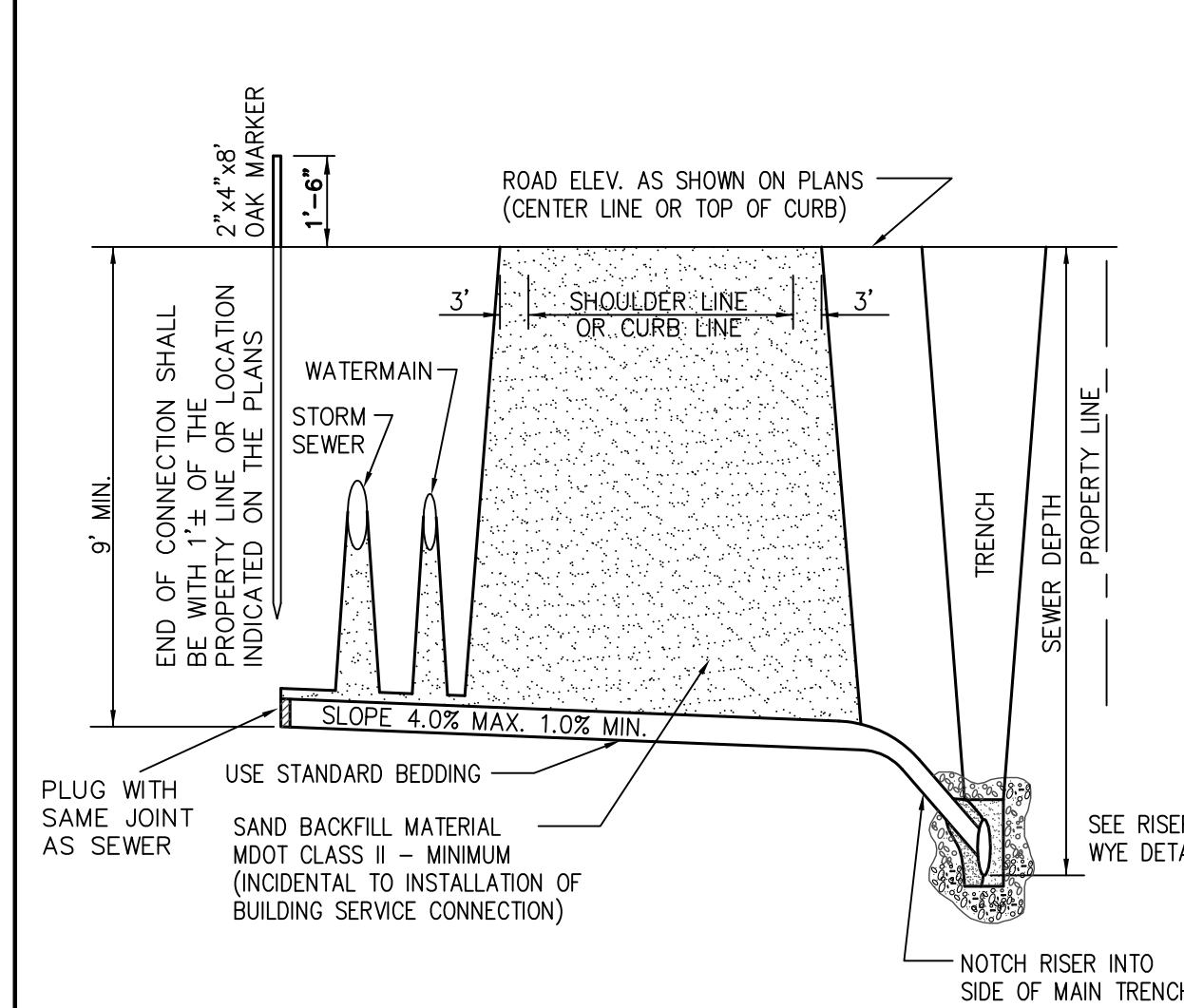
WATERPROOF MANHOLE FRAME & COVER



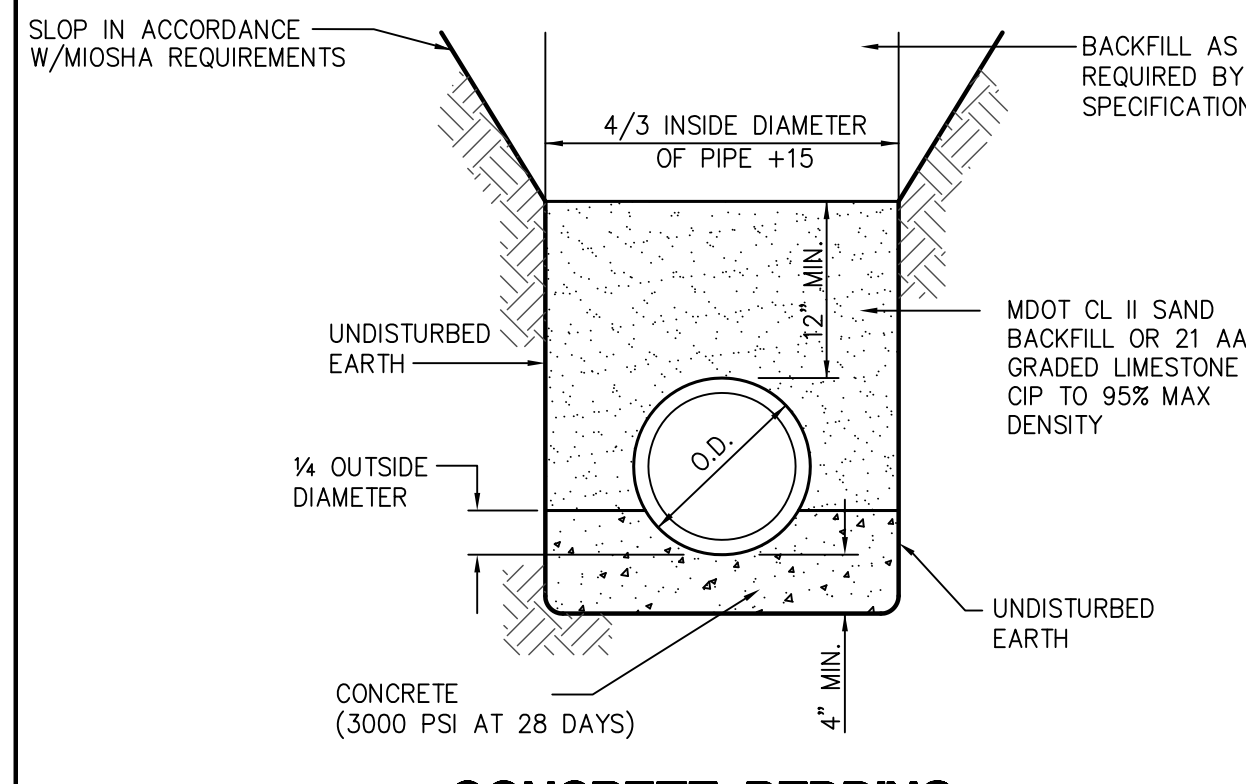
MANHOLE SUMP



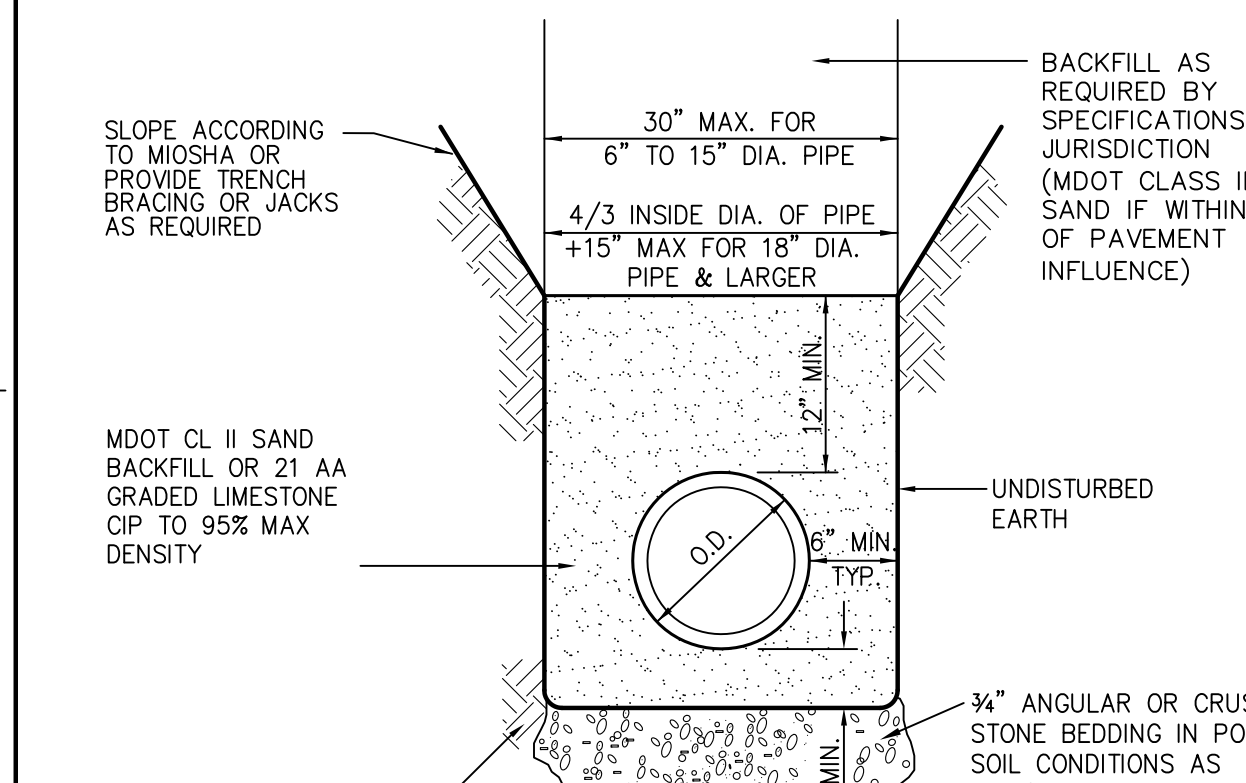
STANDARD WYE DETAIL FOR CONCRETE PIPE



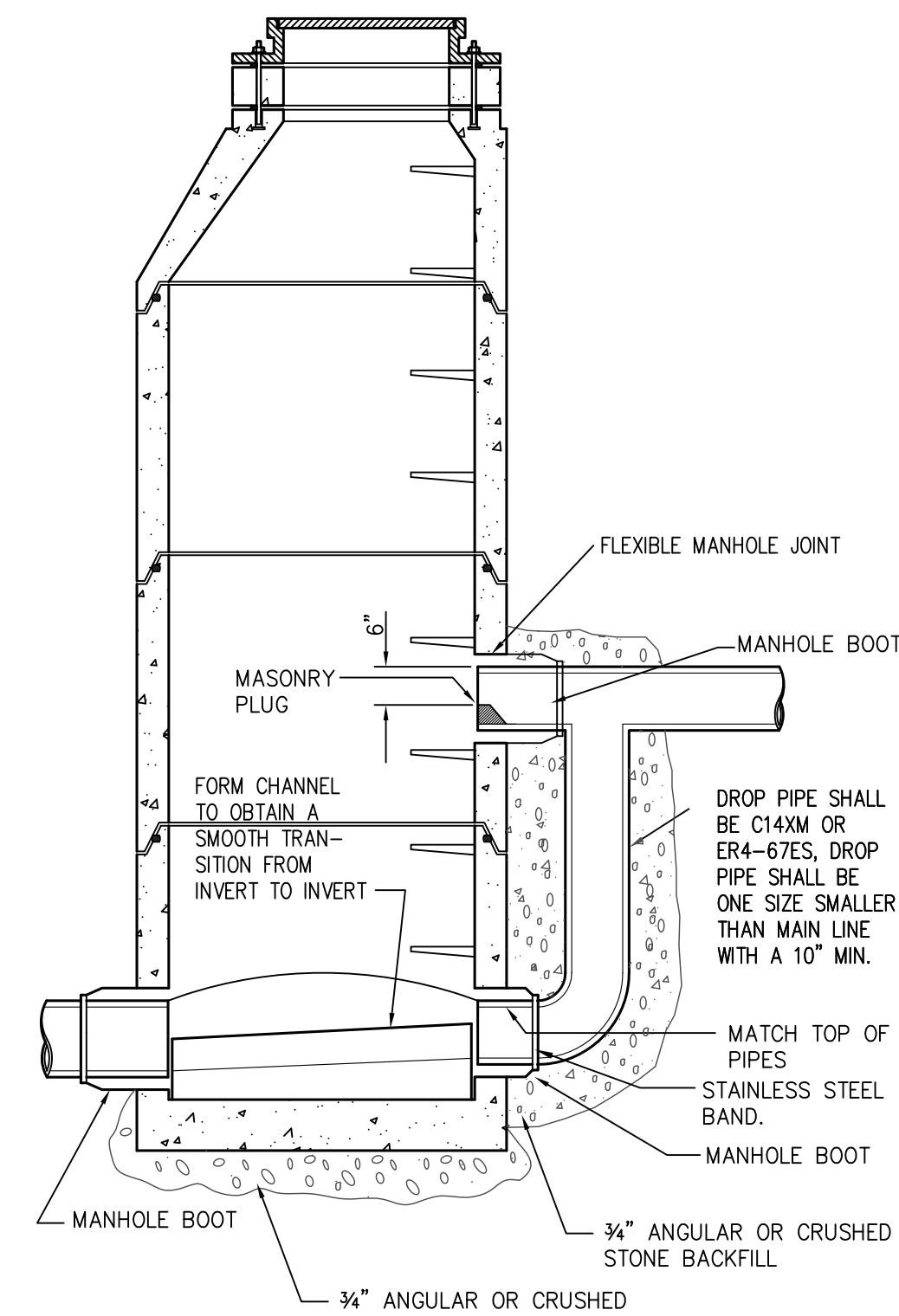
SANITARY BUILDING SERVICE CONNECTION



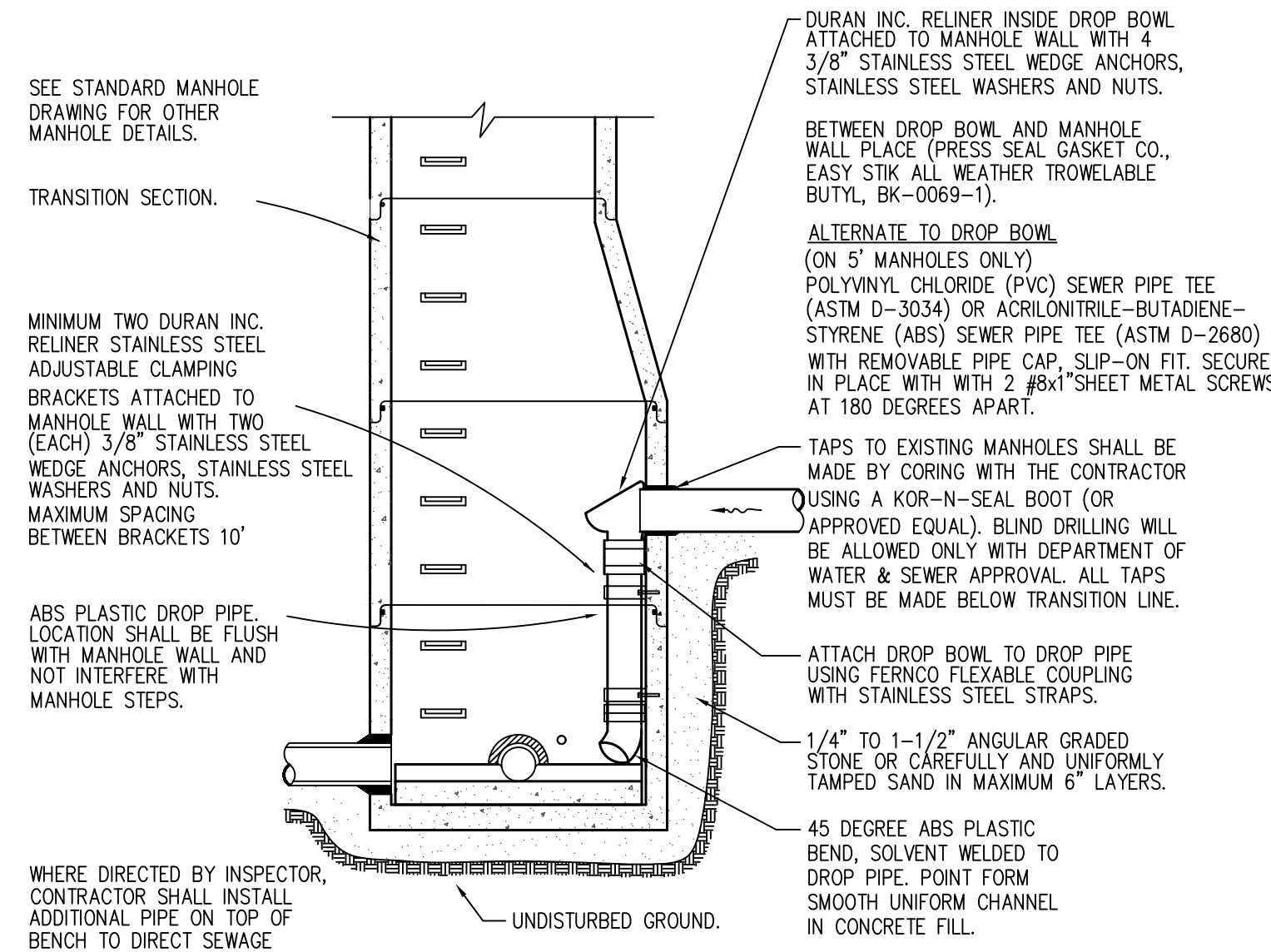
CONCRETE BEDDING



STANDARD BEDDING



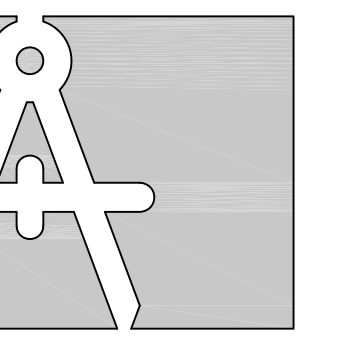
EXTERIOR DROP ASSEMBLY
(ONLY WITH DEPARTMENT OF WATER & SEWER APPROVAL)



INTERIOR DROP ASSEMBLY

GENERAL SANITARY SEWER NOTES

1. THE CONTRACTOR SHALL NOTIFY RICHMOND TOWNSHIP (586-727-8998), THE MACOMB COUNTY OFFICE OF PUBLIC WORKS, (586-469-5325), AND ALL OTHER AGENCIES HAVING JURISDICTION MIN THREE WORKING DAYS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY THE OWNER, IN WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVE WILL BE PRESENT.
3. PRIOR TO CONSTRUCTION OF ANY SANITARY SEWERS WHICH ARE TO BE CONNECTED TO THE MUNICIPAL SEWER SYSTEM, THE CONTRACTOR MUST HAVE IN HIS POSSESSION A COPY OF A PERMIT TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF THE WASTEWATER DISPOSAL SYSTEM OF THE MUNICIPALITY.
4. ALL SANITARY SEWER CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY.
5. ALL MANHOLES SHALL BE PRECAST CONCRETE, AND SHALL CONFORM TO ASTM SPEC. C-478.
6. ALL REINFORCED CONCRETE SEWER PIPE SHALL CONFORM TO THE ASTM SPECIFICATIONS C76 WITH CLASS DESIGNATION ON PLANS.
7. SEWER MAIN PIPE: MIN 10" TO 15" TRUSS PIPE WITH EITHER ABS GLUED JOINTS OR PVC GASKET JOINTS, GREATER THAN 15" REINFORCED CONCRETE C76 CLASS 4 W/ MODIFIED GROOVE TONGUED WITH RUBBER GASKET JOINTS OR PVC PROFILE PIPE.
8. ALL SANITARY SEWER BEDDING SHALL BE STANDARD BEDDING UNLESS OTHERWISE SHOWN ON THE PLANS.
9. MIN SEWER DIA IS 6-INCH SDR 23.5 OR SCHD 40 PVC W/ GLUED JOINTS. MIN PIPE SLOPE SHALL BE 1% OR 1/8" PER 1 FOOT (4% OR 1/2" PER 1 FOOT MAX). FOR 8-INCH AND GREATER DIA SEWERS, USE TRUSS PIPE W/ GLUED JOINTS OR PVC W/ PREMIUM NEOPRENE GASKET JOINTS. MIN PIPE SLOPE SHALL BE 0.8% OR 1/10" PER 1 FOOT (3% OR 3/8" PER 1 FOOT MAX).
10. ALL SANITARY SEWER WYE OPENINGS SHALL CONTAIN FACTORY INSTALLED PREMIUM JOINTS.
11. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWNSPOUT DRAINAGE, WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
12. NO SEWER INSTALLATION OR PORTION THEREOF SHALL HAVE INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER TWENTY FOUR (24) HOUR PERIOD.
13. AS PART OF THE FINAL INSPECTION, THE CONTRACTOR SHALL PROVIDE FOR TELEVISION INSPECTION OF THE SANITARY SEWER LINES IN ACCORDANCE WITH THE CURRENT DETAILED SPECIFICATIONS OF THE MUNICIPALITY.
14. AT ALL CONNECTIONS TO AN EXISTING SANITARY SEWER, OR EXTENSION THERETO, A TEMPORARY WATERTIGHT BULKHEAD WITH A CAPPED ONE (1) INCH DIAMETER PIPE TO PERMIT MEASURING INFILTRATION SHALL BE PROVIDED. A TEMPORARY 12 INCH DEEP MANHOLE SUMP SHALL ALSO BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION OR AT A LOCATION AS DIRECTED BY THE MUNICIPALITY AND/OR AS INDICATED ON THE PLANS, WHICH WILL BE FILLED IN TO FORM SMOOTH AND UNIFORM CONCRETE FLOW CHANNELS AFTER THE SUCCESSFUL COMPLETION OF ANY INFILTRATION- EXFILTRATION TESTS, AT WHICH TIME THE TEMPORARY WATERTIGHT BULKHEAD SHALL BE REMOVED.
15. WHEREVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES AT 4" CENTER TO CENTER AROUND THE PERIPHERY OF THE OPENING, TO CREATE A PLANE OF WEAKNESS JOINT, BEFORE BREAKING OUT SECTION. NON-SHRINK GROUT SHALL BE USED TO SEAL THE OPENING AND A CONCRETE COLLAR 12" THICK SHALL BE POURED AROUND THE PIPE AND SHALL BE EXTENDED TO THE FIRST JOINT.
16. STRUCTURE STEPS SHALL BE M.A. IND. POLYPROPYLENE PLASTIC WITH #3 DEFORMED BAR (DETAIL PSI) SPACED 16" OC FROM 24" ABOVE FLOOR TO 18" BELOW TOP OF COVER. IF THE STRUCTURE WALL IS PRECAST THE STEPS SHALL BE FACTORY INSTALLED.
17. AIR TEST SHALL, AT MINIMUM, BE PERFORMED ACCORDING TO ASTM C924 FOR CONCRETE AND ASTM F1417 FOR PLASTIC PIPE.
18. ALL EXCAVATION UNDER OR WITHIN A 1 ON 1 INFLUENCE OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II - MINIMUM).



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FAX: (586) 666-4642
Info@Tri-CountyEng.com
www.Tri-CountyEng.com



CLIENT NAME:
RICHMOND TOWNSHIP
MACOMB COUNTY

3 WORKING DAYS
800-482-7171



Know what's below.
Call before you dig.

PRIOR TO CONSTRUCTION, ALL EXISTING UTILITIES LOCATION AND DEPTH WITHIN THE PROJECT AREA SHALL BE FIELD VERIFIED. CALL MISS DIG SYSTEM 3 WORKING DAYS PRIOR TO CONSTRUCTION.

UTILITY INFORMATION SHOWN ON THIS DRAWING IS APPROXIMATE AND MAY BE DISCLOSED INFORMATION BY VARIOUS UTILITY COMPANIES, PUBLIC AGENCIES, OR OTHER SOURCES AND THIS MAY NOT NECESSARILY REFLECT ACTUAL FIELD LOCATIONS AND NO GUARANTEE IS GIVEN TO COMPLETENESS OR ACCURACY.

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PROJECT NAME:
RICHMOND TOWNSHIP

SANITARY SEWER
STANDARD DETAILS

PROJECT LOCATION:

SEC . . . T05N, R14E
RICHMOND TOWNSHIP
MACOMB COUNTY

Drawn By: TCCE
Checked By: TWP
Approved By: TWP

REVISIONS:

1. 12/17/21



SCALE VERIFICATION:

0 0.5 1
BAR IS ONE-INCH
ADJUST SCALE ACCORDINGLY IF NOT

SCALE:
NONE

DRAWING NO:
RichmondStdSAN

Sheet of