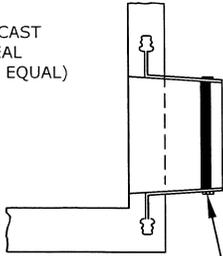
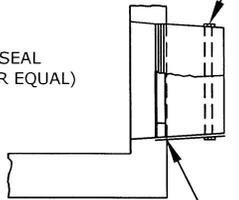


# DETAIL WATERTIGHT CONNECTIONS

INTEGRALLY CAST SLEEVE SEAL (LOCK JOINT OR EQUAL)



EXTERNAL STAINLESS STEEL TAKE UP CLAMPS

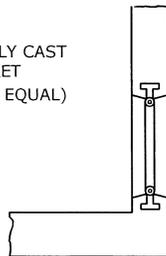


CORED SLEEVE SEAL (KOR-N-SEAL OR EQUAL)



INTERNAL EXPANDING LOCKING BAND (NON-MAGNETIC STAINLESS STEEL)

INTEGRALLY CAST GASKET (A-LOCK OR EQUAL)



SEE DETAIL OF REQUIRED WATERTIGHT CONNECTIONS

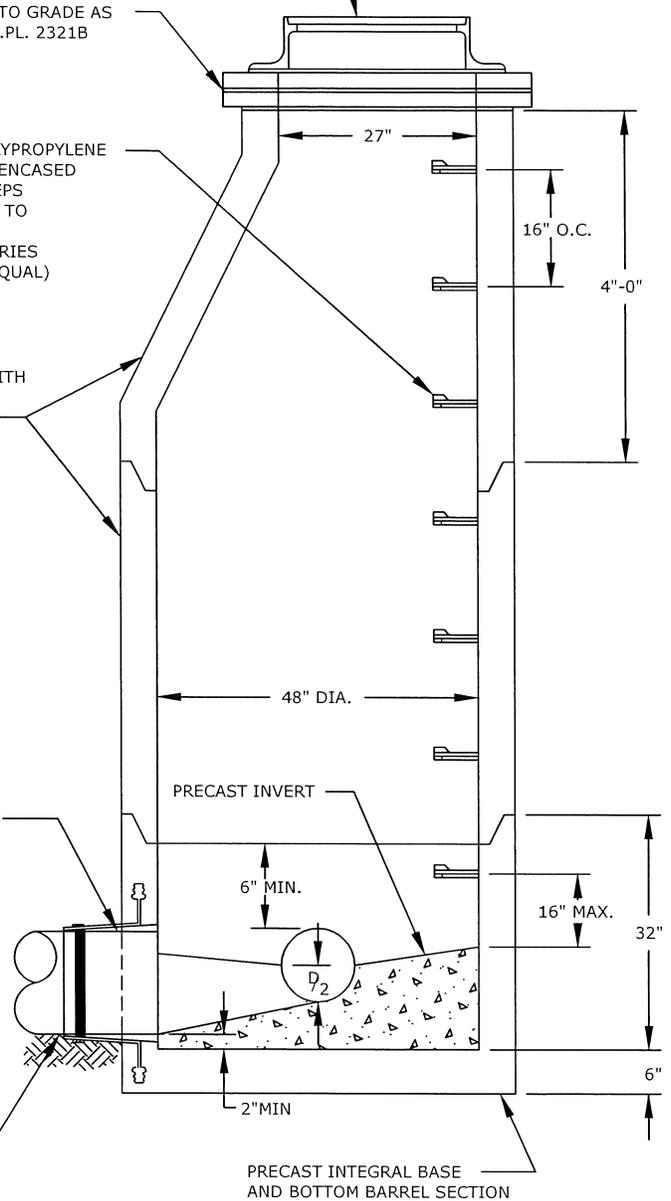
PIPE SHALL REST ON UNDISTURBED EARTH AND NOT BEAR DIRECTLY ON MANHOLE

ADJUST TO GRADE AS PER STD.PL. 2321B

12" WIDE POLYPROPYLENE (ASTM 2146) ENCASED MANHOLE STEPS CONFORMING TO ASTM C-487. (M.A. INDUSTRIES PS-I-PF, OR EQUAL)

ECCENTRIC CONE WITH PRECAST RISER SECTIONS AS REQ.

CASTINGS A & B (UNLESS NOTED OTHERWISE) STD. PLATES 2201E & 2202D



NOTES:

1. FOR CONSTRUCTION OF NEW SANITARY SEWER UP TO 18" I.D.
2. PRECAST RISER SECTIONS TO MEET ASTM C-478.
3. JOINTS BETWEEN PRECAST SECTIONS SHALL USE O-RING RUBBER GASKET CONFORMING TO ASTM C-443.
4. WATERTIGHT PIPE CONNECTIONS SHALL MEET ASTM C-923 & C-443 AND ALLOW FOR 10° DEFLECTION IN ANY DIRECTION.
5. EACH JOINT SHALL BE SEALED WITH AN EXTERNAL RUBBER SLEEVE SIMILAR TO THE INFI-SHIELD GATOR WRAP OR APPROVED EQUAL.
6. NO BELLS OR SPIGOTS SHALL PROTRUDE INTO ROUND STRUCTURES. SAWCUT PROTRUSIONS TO BE LESS THAN 3". PIPE PROTRUSIONS SHALL NOT RESTRICT ENTRY TO MANHOLE.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

*Aaron D. Hass*  
AARON D. HASS

Date 01-20-2026 Lic. No. 26424

APPROVED *2-19-2026*  
*Shakir*  
CITY ENGINEER

CITY OF ST. PAUL  
DEPARTMENT OF PUBLIC WORKS  
**MANHOLE, DESIGN TYPE I**

Date of Revision  
JAN. 2026

Standard Plate No.  
**2101F**