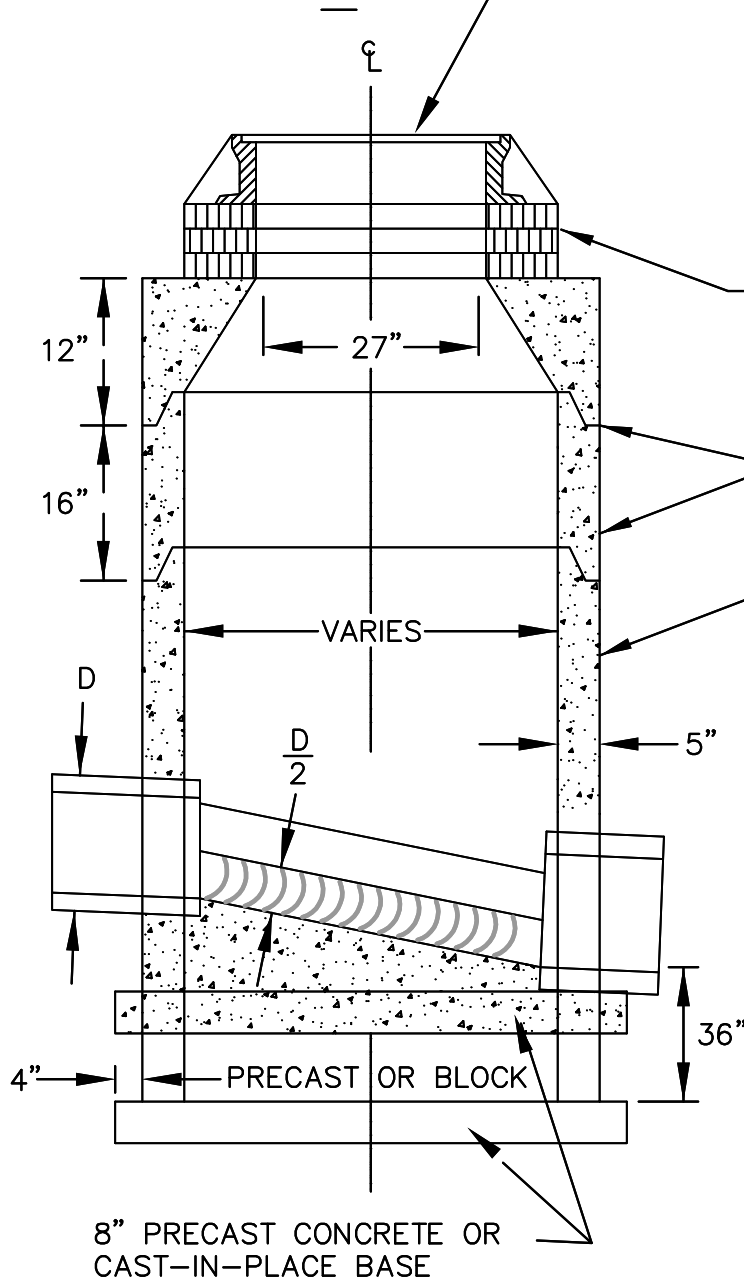
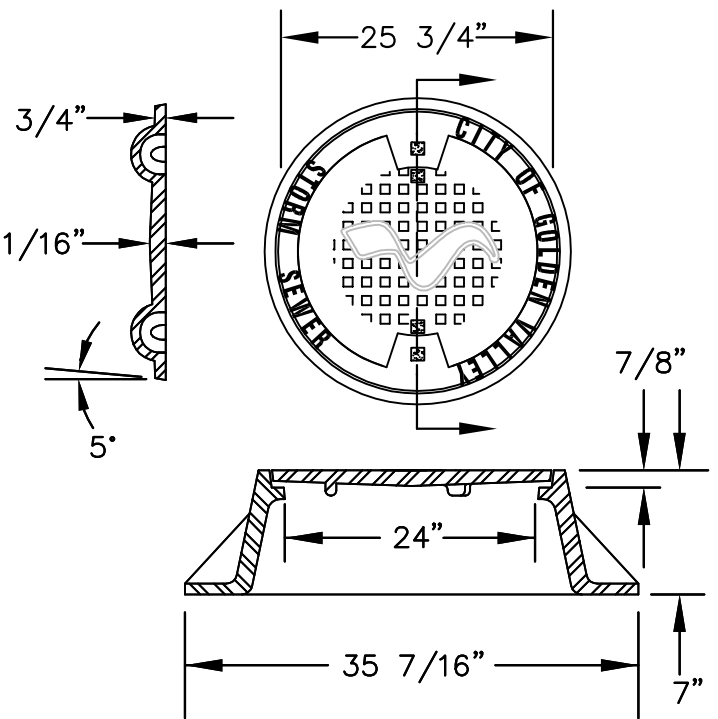


NEENAH R-1733 SERIES SOLID COVER (SEE RIGHT), ESS BROS. 301, OR APPROVED EQUAL



27" HDPE PLASTIC ADJUSTING RINGS (MIN. 2) SEE NOTE:

O-RINGS ON JOINTS

PRECAST OR BLOCK DESIGN 4020

NOTE: WHERE PVC PIPE IS USED THE CONTRACTOR SHALL FURNISH MANHOLE WITH WATER TIGHT BOOT.

NOTE: DASHED LINE DENOTES SUMP, IF SPECIFIED, IN MANHOLE

NOTE:  
 PLASTIC HDPE ADJUSTING RINGS (MIN. 2)  
 USE A COMBINATION OF 2", 6" AND 12" RINGS TO ACHIEVE NEEDED HEIGHT.  
 INCLUDE MIN. 2-2" RING IMMEDIATELY UNDER THE CASTING. RINGS SEALED W/BUTYL CAULK. SEE GV-SS-010

8" PRECAST CONCRETE OR CAST-IN-PLACE BASE

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

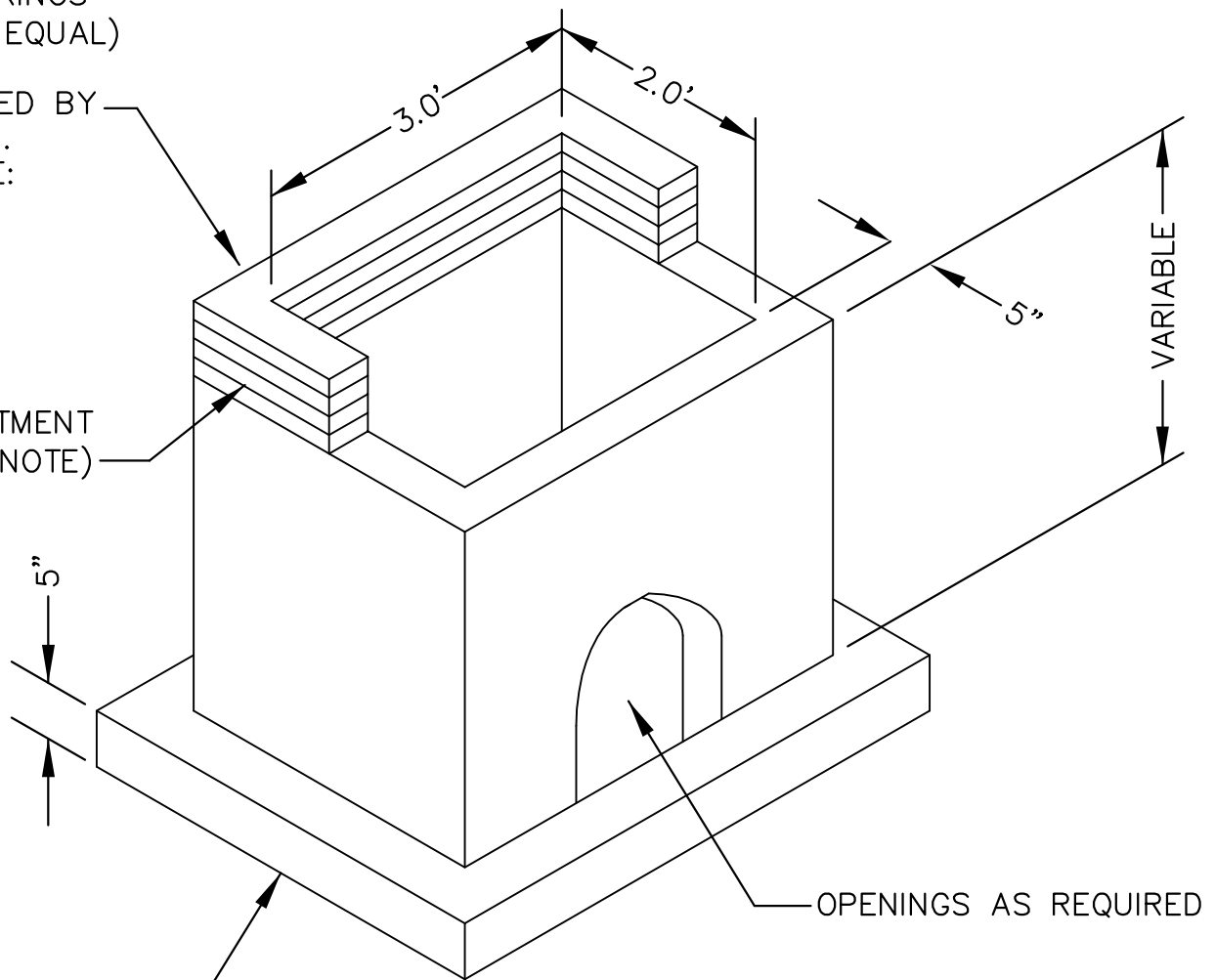
**STANDARD STORM  
 SEWER MANHOLE DES  
 4020 WITH CASTING &  
 COVER**

City of **Golden Valley**  
**GV-ST-010**

HDPE PLASTIC  
ADJUSTMENT RINGS  
(OR APPROVED EQUAL)  
MIN. 2  
OR AS DIRECTED BY  
ENGINEER.  
SEE NOTE:

SEAL ADJUSTMENT  
RINGS (SEE NOTE)

PRECAST CONCRETE  
BASE SLAB



NOTE:

CASTINGS SHALL BE NEENAH R3067-L WITH "L" TYPE GRATE.

IF MORE THAN 5 - 2" RINGS ARE NEEDED CONTRACTOR SHALL USE A COMBINATION OF 2", 6" AND 12" RINGS TO ACHIEVE NEEDED HEIGHT.

REINFORCING AND CONCRETE ARE TO BE IN ACCORDANCE WITH ASTM SPECIFICATION C478.

NOTE:

PLASTIC HDPE ADJUSTING RINGS (MIN. 2) USE A COMBINATION OF 2", 6" AND 12" RINGS TO ACHIEVE NEEDED HEIGHT. INCLUDE MIN. 2-2" RING IMMEDIATELY UNDER THE CASTING. RINGS SEALED W/BUTYL CAULK. SEE GV-SS-010

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**CATCH BASIN  
DESIGN K**

City of  
**Golden Valley**

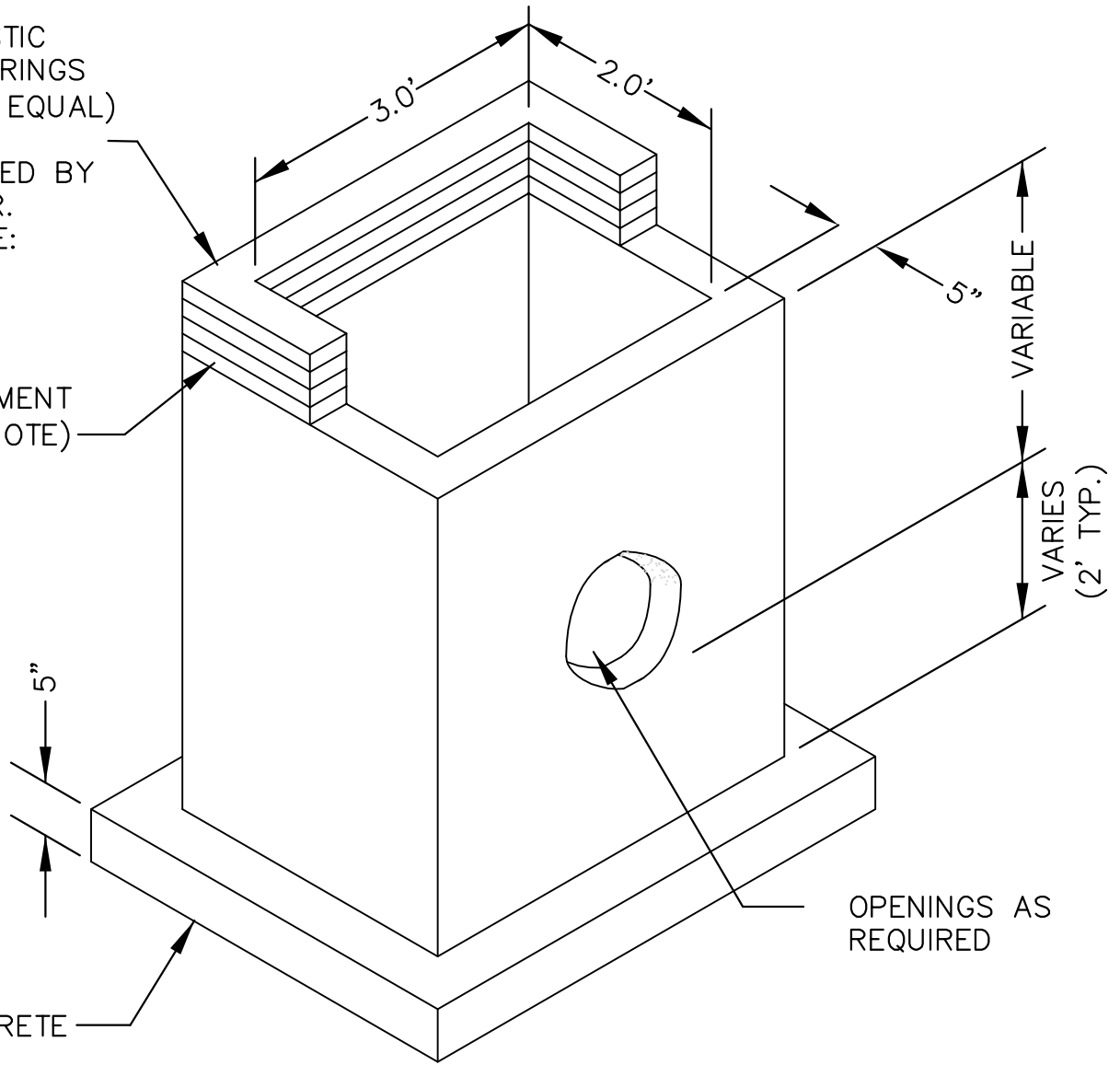
**GV-ST-020**

HDPE PLASTIC  
ADJUSTMENT RINGS  
(OR APPROVED EQUAL)

MIN. 2  
OR AS DIRECTED BY  
ENGINEER.  
SEE NOTE:

SEAL ADJUSTMENT  
RINGS (SEE NOTE)

PRECAST CONCRETE  
BASE SLAB



NOTE:

CASTINGS SHALL BE NEENAH R3067-L WITH "L" TYPE GRATE.

IF MORE THAN 5 - 2" RINGS ARE NEEDED CONTRACTOR SHALL USE A COMBINATION OF 2", 6" AND 12" RINGS TO ACHIEVE NEEDED HEIGHT.

RINGS SHALL BE SEALED USING APPROVED FLEX-SEAL UTILITY SEALANT AND APPLICATION SHALL FOLLOW DETAIL GV-SS-010.

REINFORCING AND CONCRETE ARE TO BE IN ACCORDANCE WITH ASTM SPECIFICATION C478.

NOTE:

PLASTIC HDPE ADJUSTING RINGS (MIN. 2) USE A COMBINATION OF 2", 6" AND 12" RINGS TO ACHIEVE NEEDED HEIGHT. INCLUDE MIN. 2-2" RING IMMEDIATELY UNDER THE CASTING. RINGS SEALED W/BUTYL CAULK. SEE GV-SS-010

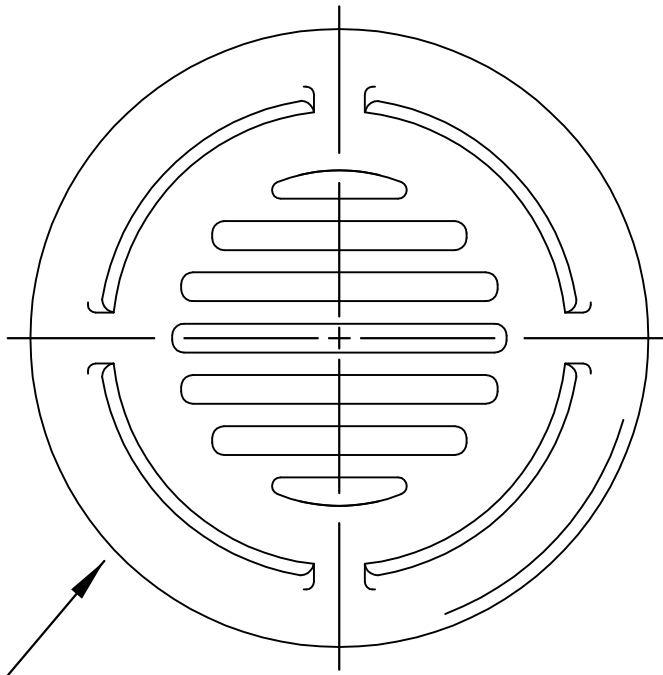
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

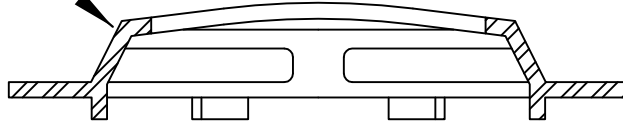
**CATCH BASIN  
DESIGN K  
WITH SUMP**

City of  
**Golden Valley**

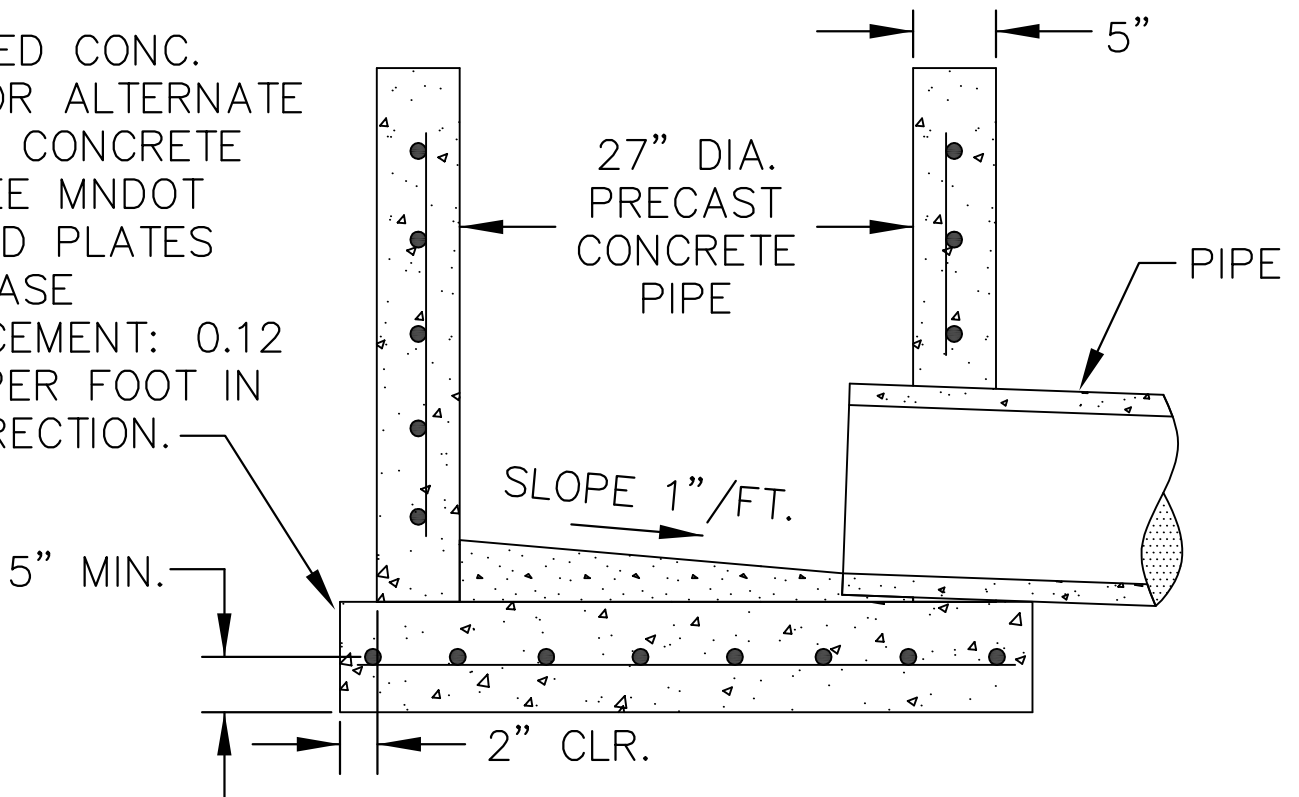
**GV-ST-030**



NEENAH R-4342 DITCH  
GRATE, STOOL TYPE



8" POURED CONC.  
BASE. FOR ALTERNATE  
PRECAST CONCRETE  
BASE, SEE MNDOT  
STANDARD PLATES  
INDEX. BASE  
REINFORCEMENT: 0.12  
SQ. IN. PER FOOT IN  
EACH DIRECTION.



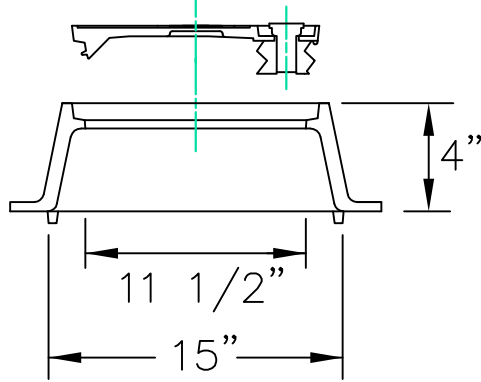
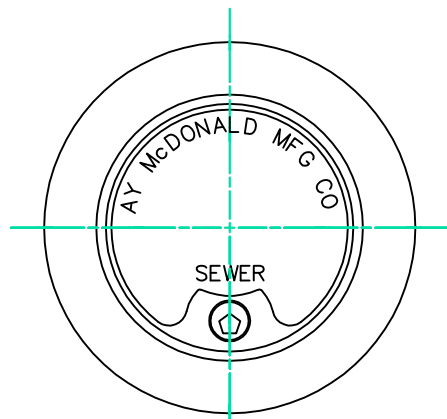
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**DRAINAGE STRUCTURE,  
DESIGN MEDIAN DRAIN**

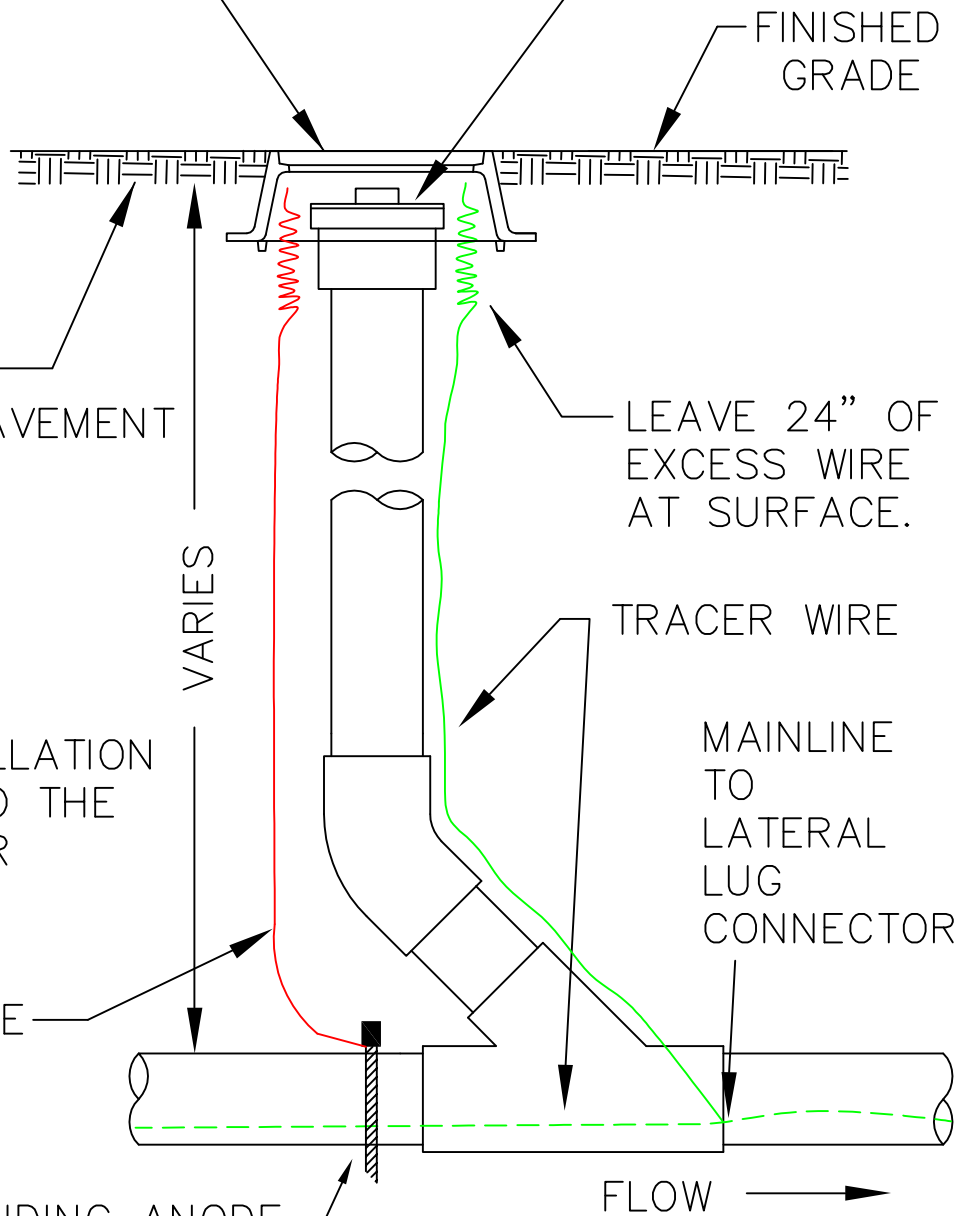
City of  
**Golden Valley**

**GV-ST-040**



MCDONALD 74M  
"A" SERIES CAST  
IRON METER PIT  
FRAME AND  
COVER

FITTING HUB WITH 4"  
THREADED PLUG.  
APPLY TEFLON THREAD  
TAPE, OR APPROVED  
EQUAL, OVER  
THREADS.



4" TOPSOIL  
OR DRIVEWAY PAVEMENT

FINISHED  
GRADE

LEAVE 24" OF  
EXCESS WIRE  
AT SURFACE.

TRACER WIRE

MAINLINE  
TO  
LATERAL  
LUG  
CONNECTOR

GROUND WIRE

MAGNESIUM GROUNDING ANODE

FLOW →

NOTE:

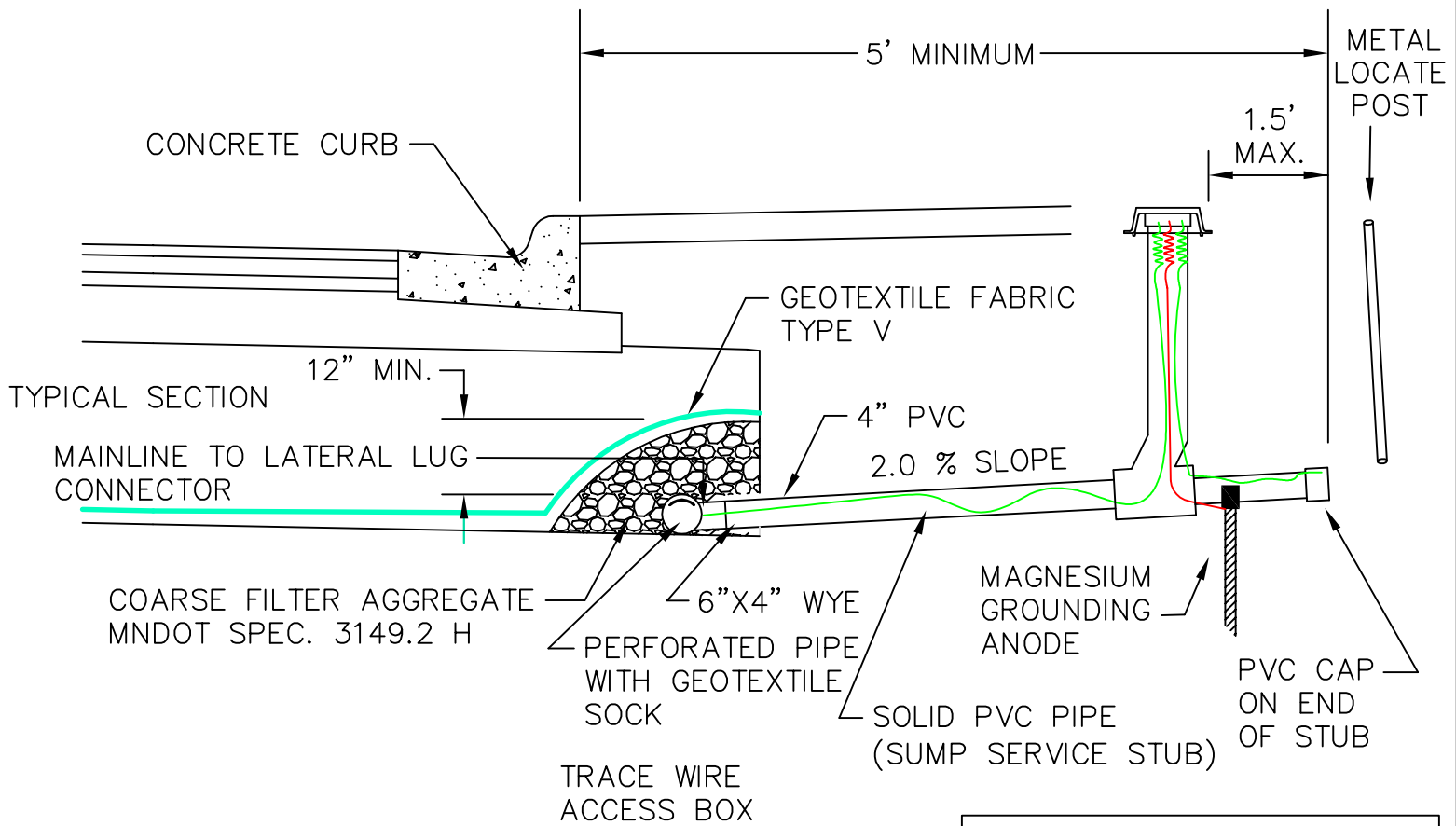
FOR TRACER WIRE INSTALLATION  
REQUIREMENTS, REFER TO THE  
MINNESOTA RURAL WATER  
ASSOCIATION STANDARD  
DETAILS.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

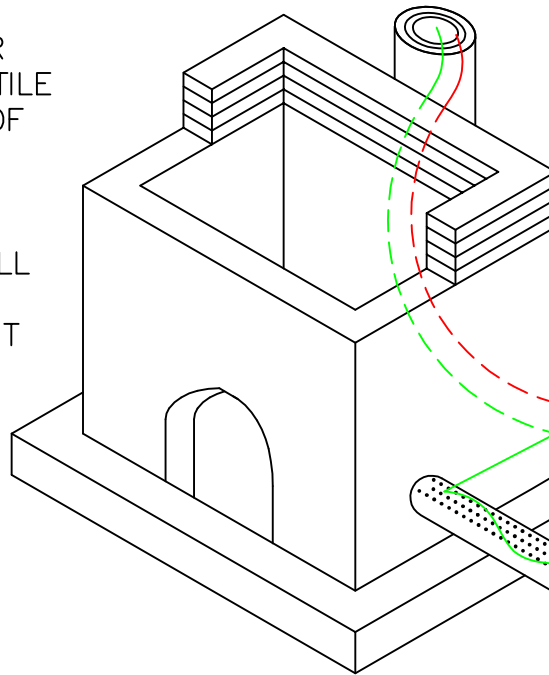
TYPICAL DRAINTILE  
CLEANOUT ASSEMBLY

GV-ST-050



NOTE:  
EXTEND COARSE FILTER AGGREGATE & GEOTEXTILE FABRIC FULL LENGTH OF PERFORATED PIPE

PERFORATED PIPE SHALL BE PLACED AT THE BOTTOM OF THE STREET EXCAVATION WITH PERFORATIONS UP (OR AS DIRECTED BY ENGINEER)



FOR TRACER WIRE BOX (SEE DETAIL GV-ST-110)

NOTE:  
FOR TRACER WIRE INSTALLATION REQUIREMENTS, REFER TO THE MINNESOTA RURAL WATER ASSOCIATION STANDARD DETAILS.

PERFORATED PIPE WITH GEOTEXTILE SOCK (SUB-GRADE DRAINAGE) 50 FT. TYP. UPSTREAM OF STRUCTURE (OR AS DIRECTED BY ENGINEER)

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**SUB-GRADE & SUMP  
DRAINAGE PIPE WITH  
SERVICE STUB &  
CLEANOUT**

**GV-ST-060**

CONCRETE CURB

STEEL POST TO BE INSTALLED AT END OF STUB

12" MIN.  
TYPICAL SECTION

GEOTEXTILE FABRIC (TYPE V)

PVC CAP ON END OF STUB

MAINLINE TO LATERAL LUG CONNECTOR

2.0 % SLOPE

COARSE FILTER AGGREGATE MNDOT SPEC. 3149.2 H

4" SOLID PVC PIPE (SUMP SERVICE STUB)

6' TRACE WIRE WRAPPED AROUND CAP

PERFORATED PIPE WITH GEOTEXTILE SOCK

FOR TRACE WIRE BOX (SEE DETAIL GV-ST-110)

TRACE WIRE ACCESS BOX

NOTE:  
CLEANOUT TO BE INSTALLED AT END OF STUB AT TIME OF CONNECTION BY OTHERS (SEE DETAIL GV-ST-060)

NOTE:  
EXTEND COARSE FILTER AGGREGATE & GEOTEXTILE FABRIC FULL LENGTH OF PERFORATED PIPE ONLY

PERFORATED PIPE SHALL BE PLACED AT THE BOTTOM OF THE STREET EXCAVATION WITH PERFORATIONS UP (OR AS DIRECTED BY ENGINEER)

NOTE:  
FOR TRACER WIRE INSTALLATION REQUIREMENTS, REFER TO THE MINNESOTA RURAL WATER ASSOCIATION STANDARD DETAILS.

6" PERFORATED PIPE WITH GEOTEXTILE SOCK (SUB-GRADE DRAINAGE) 50 FT. TYP. FROM DRAINAGE STRUCTURE (OR AS DIRECTED BY ENGINEER)

MAGNESIUM GROUNDING ANODE

6" SOLID PVC PIPE SDR-35 (SUMP DRAINAGE)

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

SUB-GRADE & SUMP DRAINAGE PIPES WITH SERVICE STUB

GV-ST-070

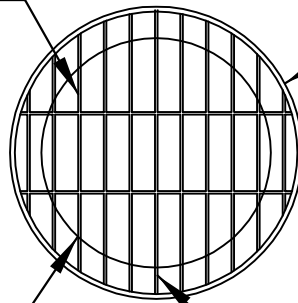
NO SCALE

GRATE TO BE HOT DIPPED GALVANIZED AND TO COME IN TWO SECTIONS

PROVIDE 6-1/2" SS ANCHOR BOLTS WITH CLIPS

1 1/2" x 3/8" STEEL BARS @ 4" O.C.

1 1/2" x 3/8" OUTER RING



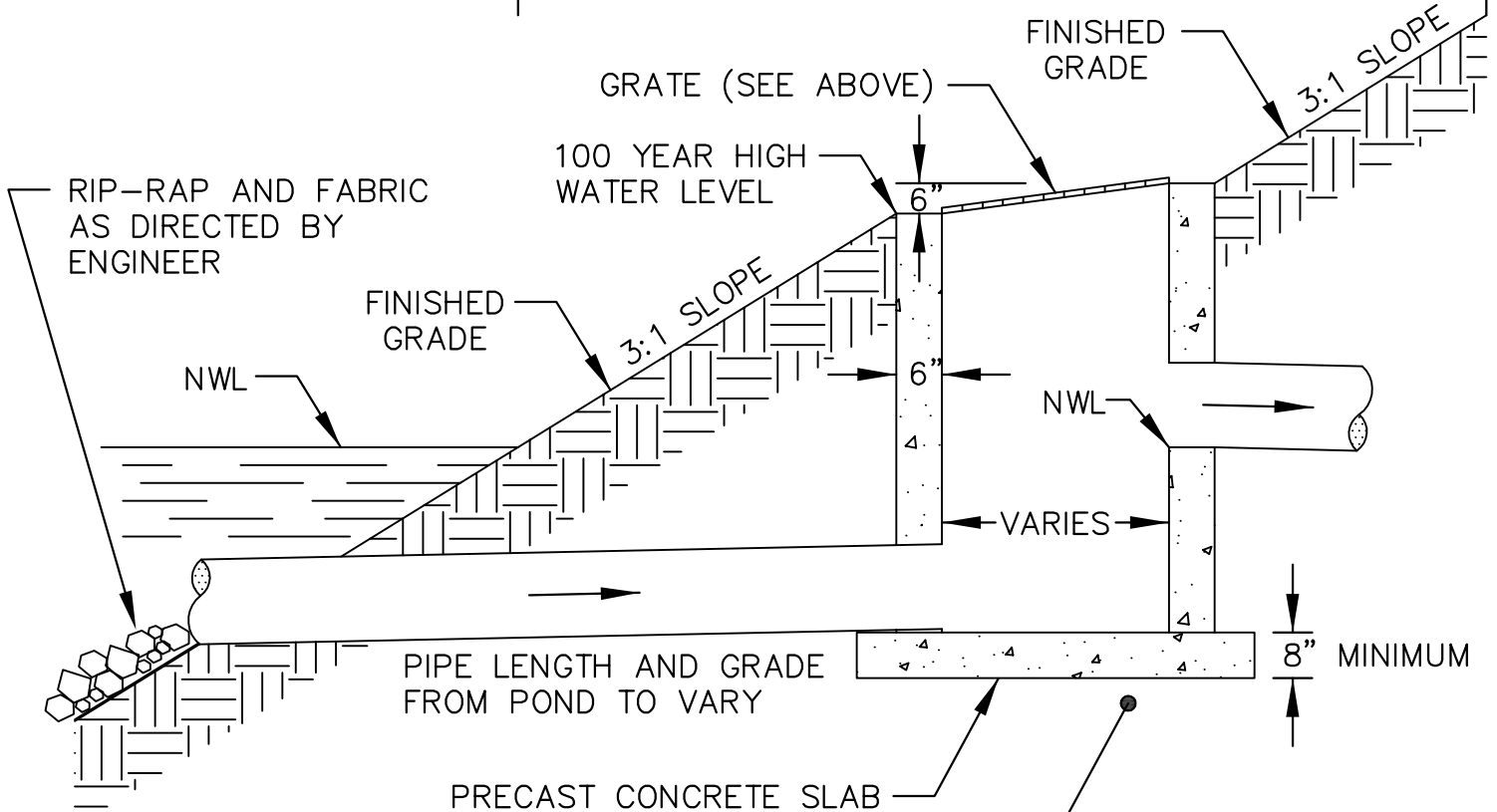
PROVIDE 1/4" PLATE WITH LOCKING CLASP. CLASP TO HAVE 1/2" PADLOCK HOLE.

1/4" x 1/4" STEEL BAR WELD TO EACH MEMBER

PROVIDE 1/2" DIA. CONTINUOUS HINGE BAR

NO SCALE

POND BUFFER ZONE (VARIES)



STRUCTURE TO BE SCREENED BY PLANTINGS IN BUFFER ZONE.

STRUCTURE BEDDING DEPTH TO VARY AS DIRECTED BY ENGINEER

APPROVED JANUARY 1, 2018

A handwritten signature in black ink, likely belonging to the City Engineer.

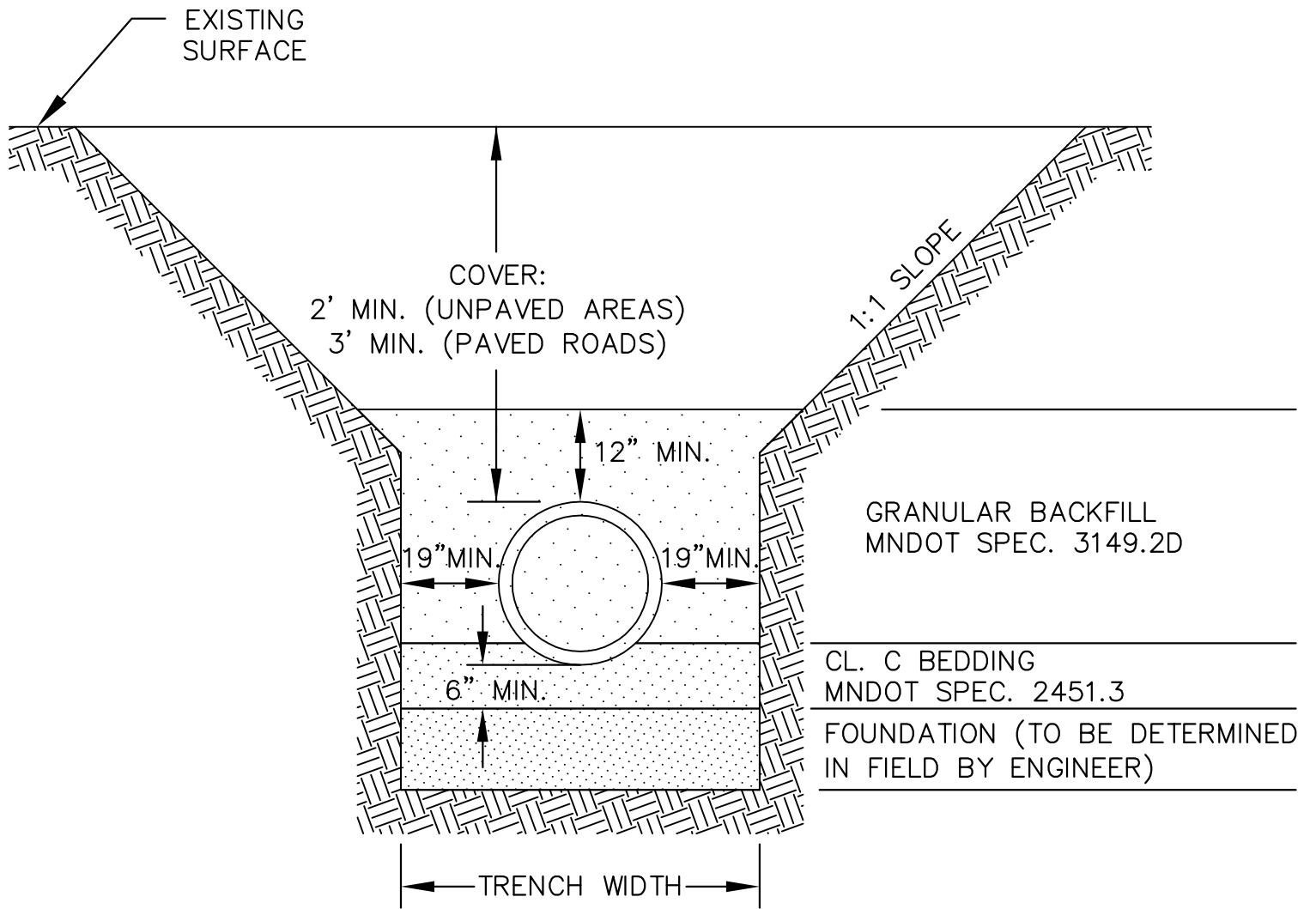
CITY ENGINEER REG 23110

### OUTLET CONTROL SKIMMER STRUCTURE WITH GRATE

City of Golden Valley

GV-ST-080





**CORRUGATED POLYETHYLENE PIPE  
(AASHTO M294)**

NOMINAL PIPE DIAMETER (INCHES)	MAXIMUM COVER (FEET)	TRENCH WIDTH (COVER ≤ 10 FT.) (INCHES)	TRENCH WIDTH (COVER ≥ 10 FT.) (INCHES)
12"	20'	50"	50"
15"	20'	54"	54"
18"	15'	58"	64"
24"	15'	64"	86"
30"	15'	72"	110"
36"	15'	78"	128"
42"	10'	84"	
48"	10'	92"	

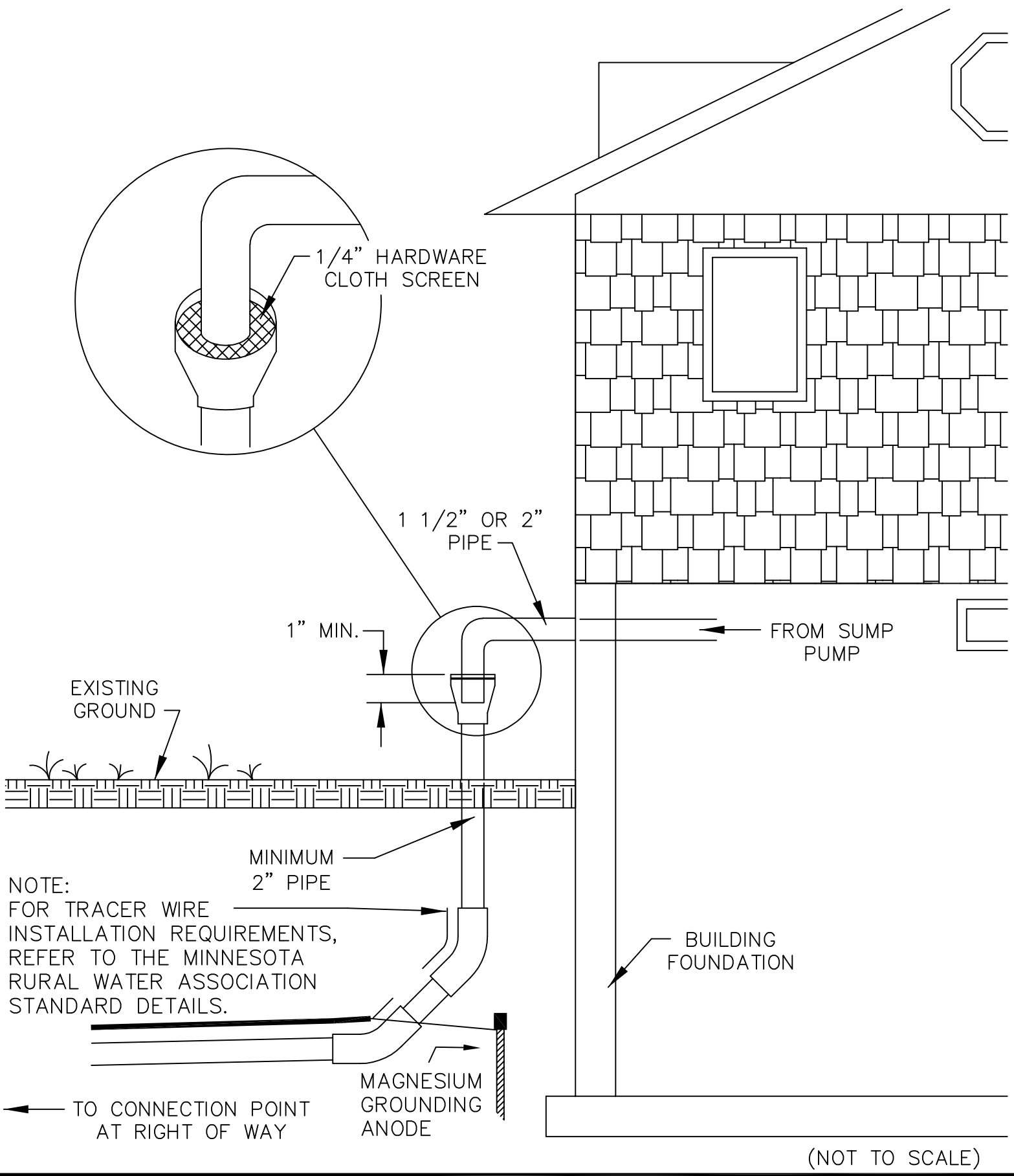
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**INSTALLATION OF  
CORRUGATED  
POLYETHYLENE PIPE**

City of  
**Golden Valley**

**GV-ST-090**



NOTE:  
 FOR TRACER WIRE  
 INSTALLATION REQUIREMENTS,  
 REFER TO THE MINNESOTA  
 RURAL WATER ASSOCIATION  
 STANDARD DETAILS.

(NOT TO SCALE)

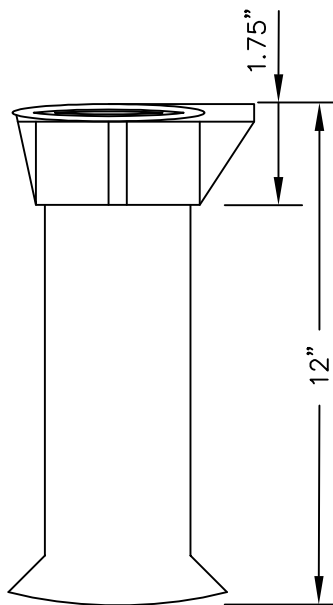
APPROVED FEBRUARY 1, 2020

*J. B. Lewis*

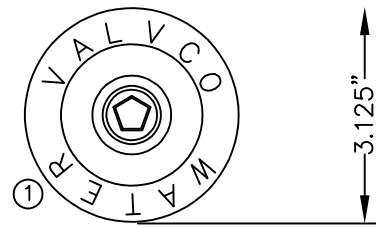
CITY ENGINEER REG 23110

**SUMP PUMP OVERFLOW  
 (REQUIRED) ASSEMBLY  
 AT HOUSE**

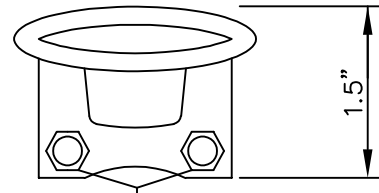
City of  
**Golden Valley**  
**GV-ST-100**



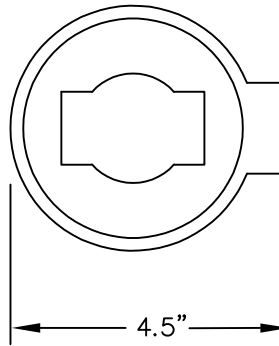
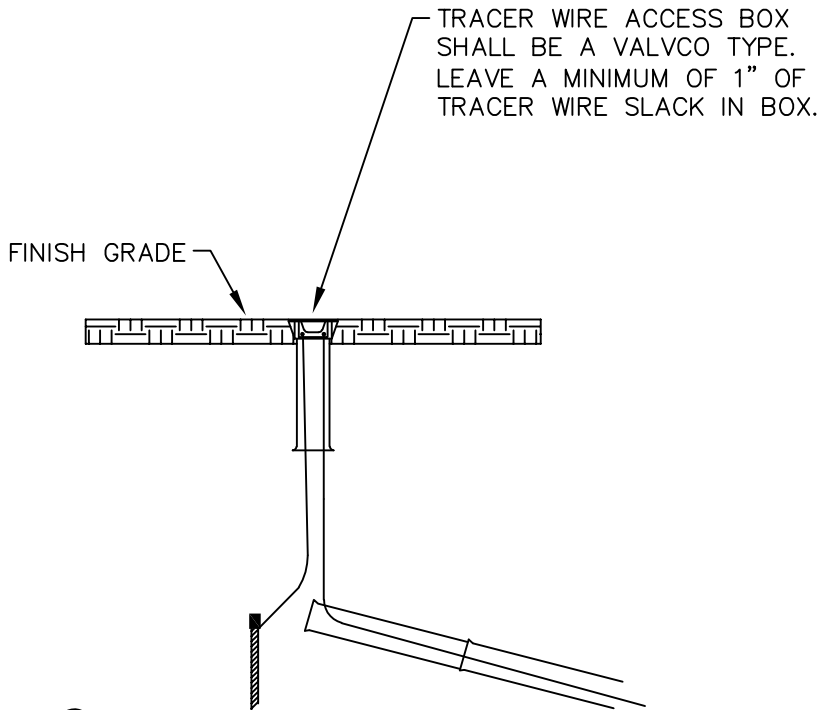
COMPLETE BOX SIDE VIEW



LID TOP VIEW



STAINLESS STEEL  
TERMINAL BOLTS  
LID SIDE VIEW



COLLAR VIEW TOP

① TRACER WIRE ACCESS BOX SHALL BE MANUFACTURED WITH THE FOLLOWING TEXT AND COLOR

- WATER = BLUE
- STORM SEWER = GREEN
- SANITARY SEWER = GREEN
- ALL OTHER OTHER UTILITIES SHALL HAVE NO TEXT AND BE PAINTED BY THE CONTRACTOR IN THE FIELD WITH ENAMEL PAINT CONSISTENT WITH THE AMERICAN PUBLIC WORKS ASSOCIATION COLOR CODE.

NOTES:

CASTING CONFORMS TO: ASTM SPECIFICATION A-48 CLASS 30

ABS SHAFT CONFORMS TO: ASTM SPECIFICATIONS D-1788

TRACER WIRE ACCESS BOXES SHALL BE MANUFACTURED BY CP TEST SERVICES - VALVCO, INC. AND SHALL INCLUDE AN SP-BRACKET MANUFACTURED BY COPPERHEAD INDUSTRIES.

APPROVED JANUARY 15, 2020

CITY ENGINEER REG 23110

**TRACE WIRE  
ACCESS BOX**

City of  
**Golden Valley**

**GV-ST-110**