

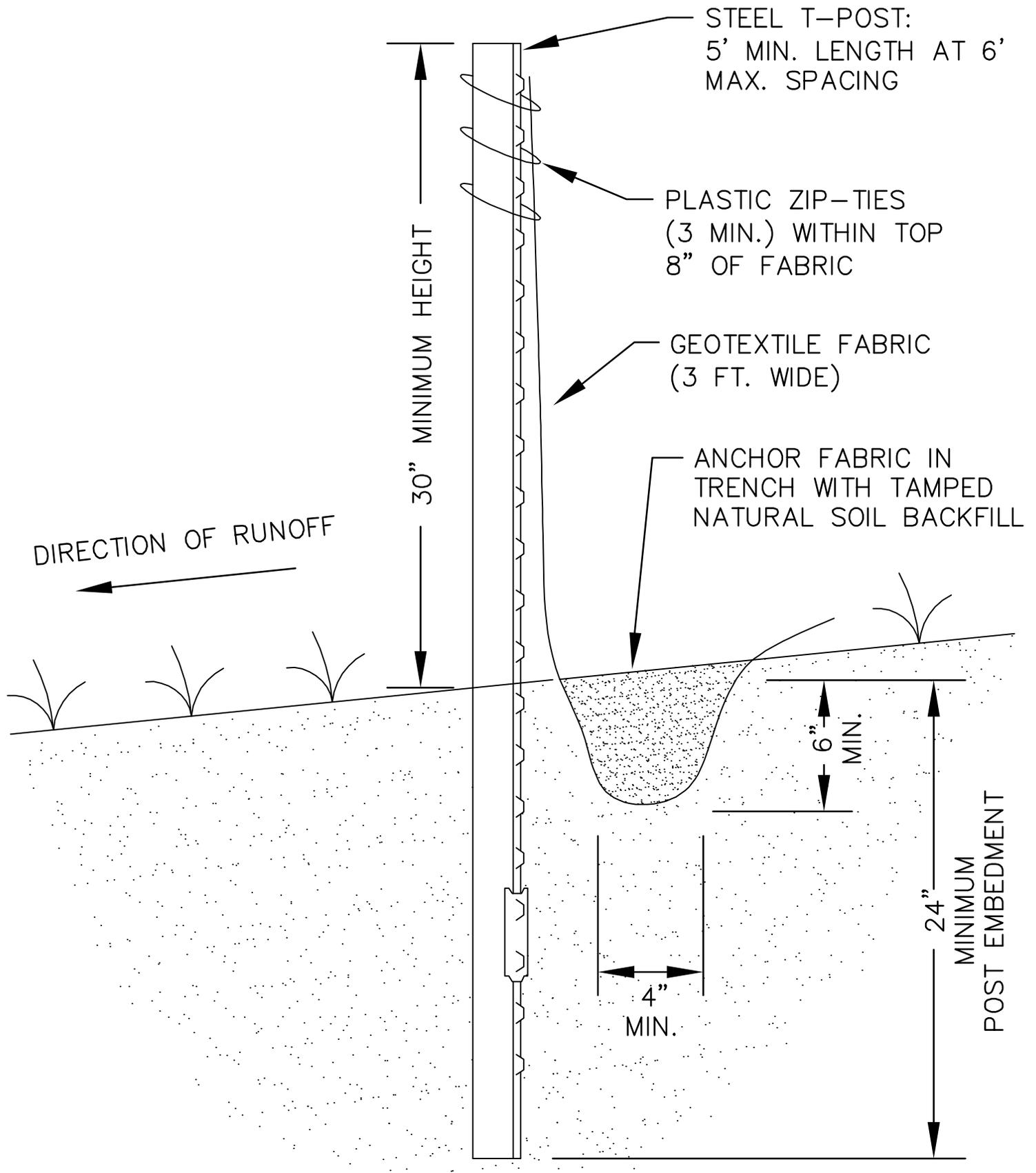
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

TEMPORARY WIMCO™
INLET PROTECTION
OR APPROVED EQUAL

City of Golden Valley

GV-EC-010



APPROVED DECEMBER 31, 2015

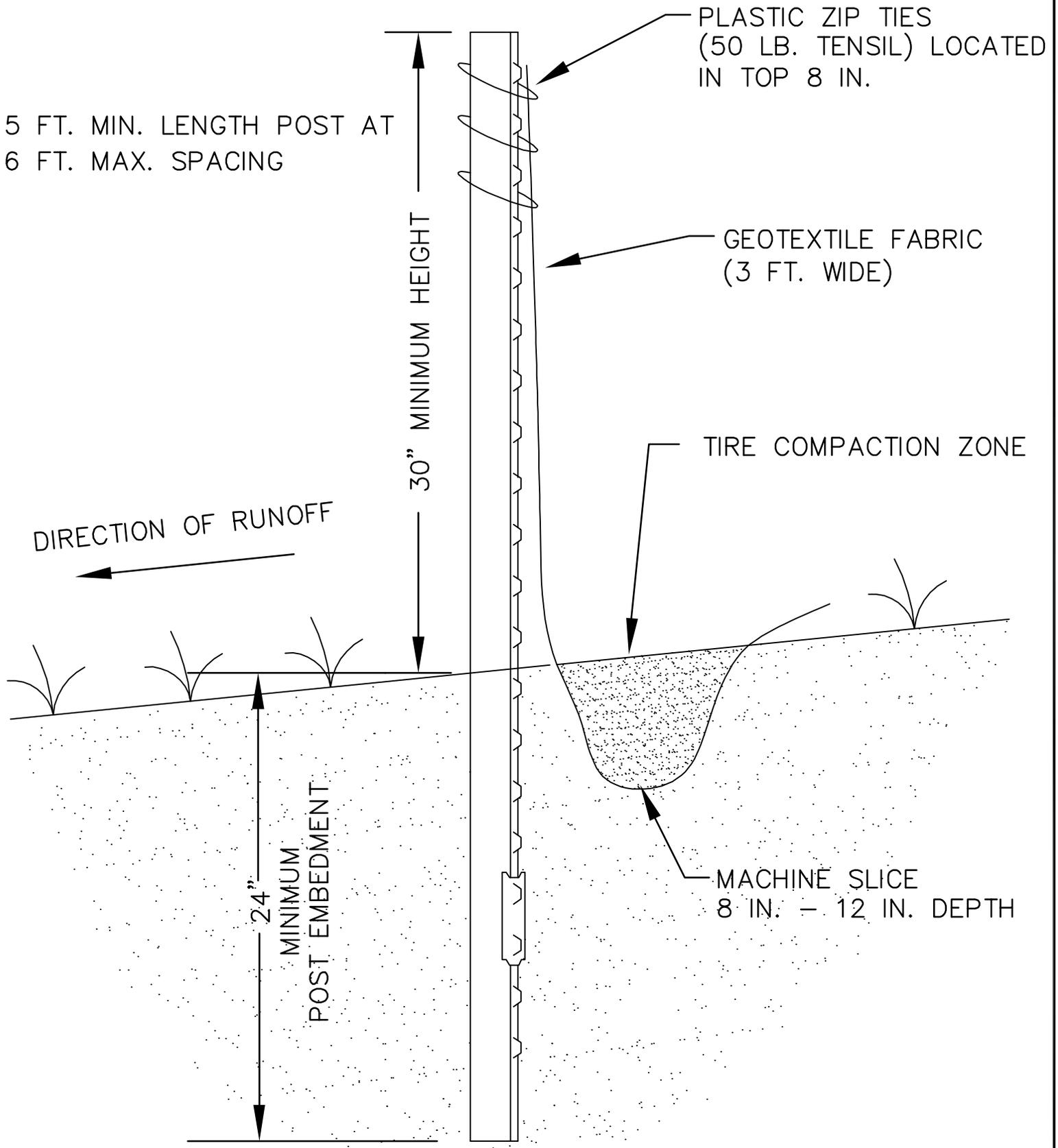
[Signature]

CITY ENGINEER REG 23110

INSTALLATION OF HEAVY
DUTY SILT FENCE

City of
Golden Valley

GV-EC-020



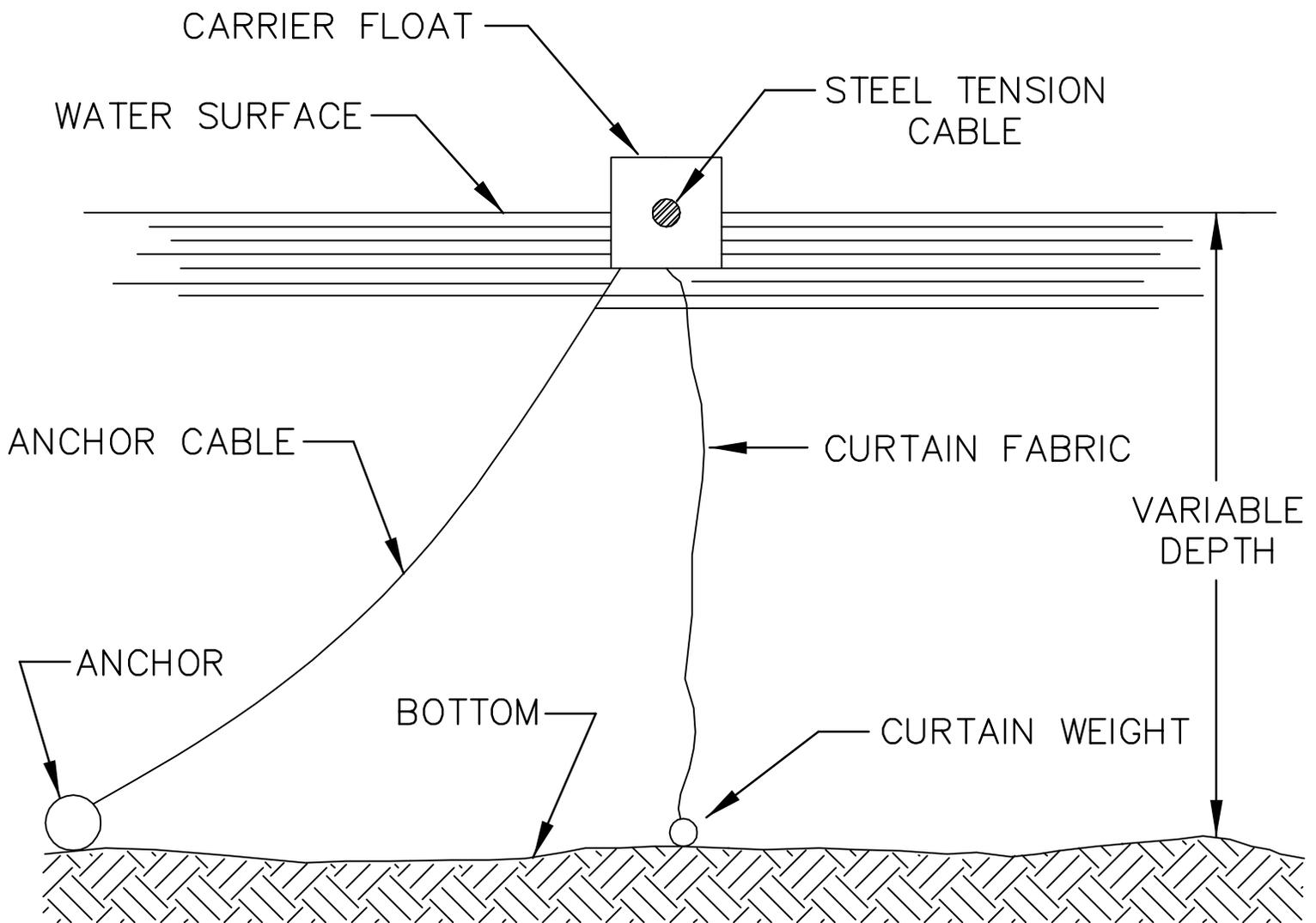
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

INSTALLATION OF MACHINE
SLICED SILT FENCE

City of
Golden Valley

GV-EC-030



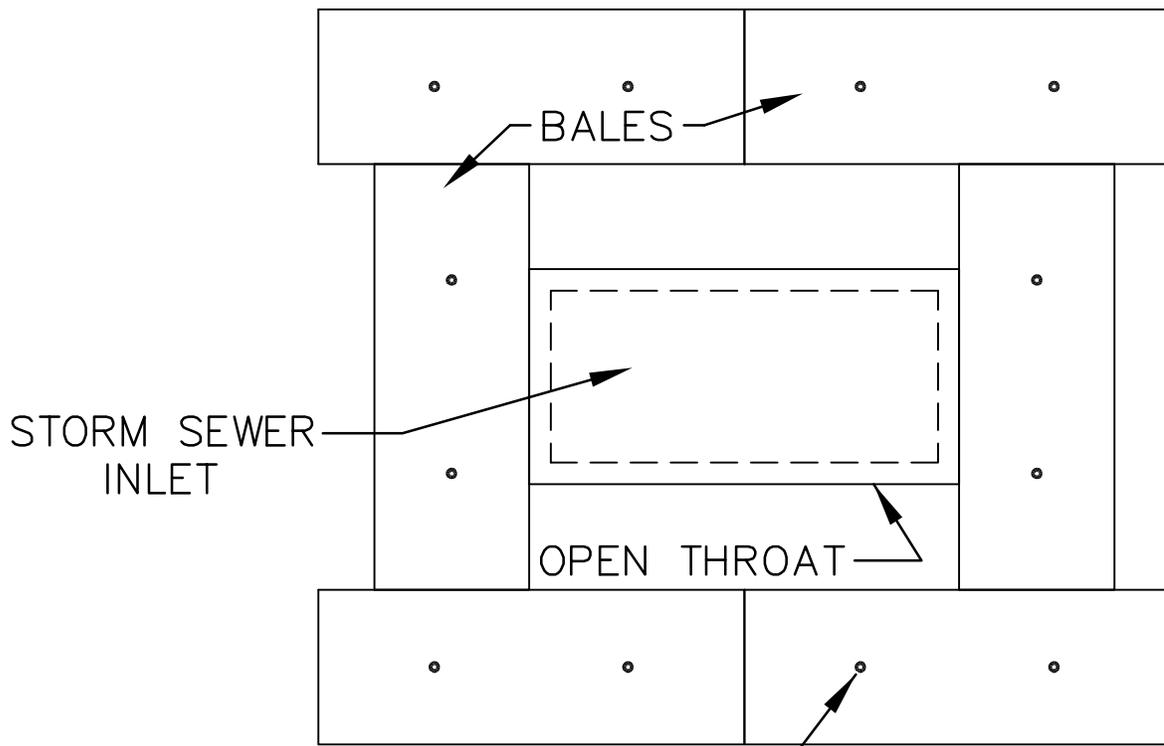
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

FLOTATION SILT
CURTAIN

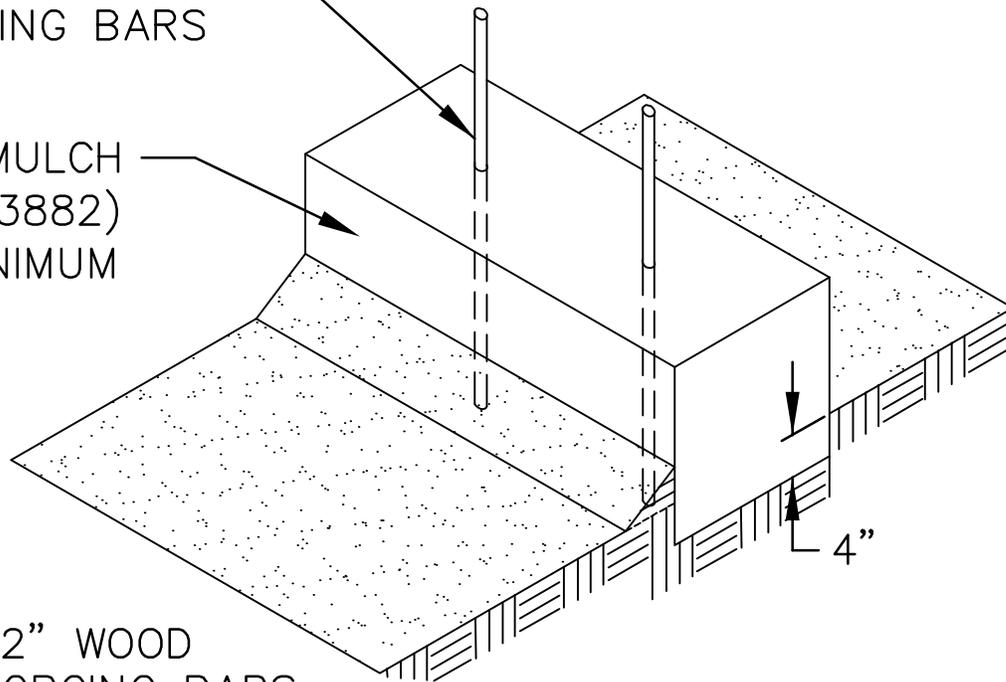
City of
Golden Valley

GV-EC-040



2" x 2" WOOD STAKES
OR REINFORCING BARS

BALE, TYPE 1 MULCH
(MNDOT SPEC. 3882)
14"x18"x36" MINIMUM



NOTE: TWO 2" x 2" WOOD
STAKES OR REINFORCING BARS
IN EACH BALE AND EMBEDDED IN
THE GROUND 10" MINIMUM DEPTH

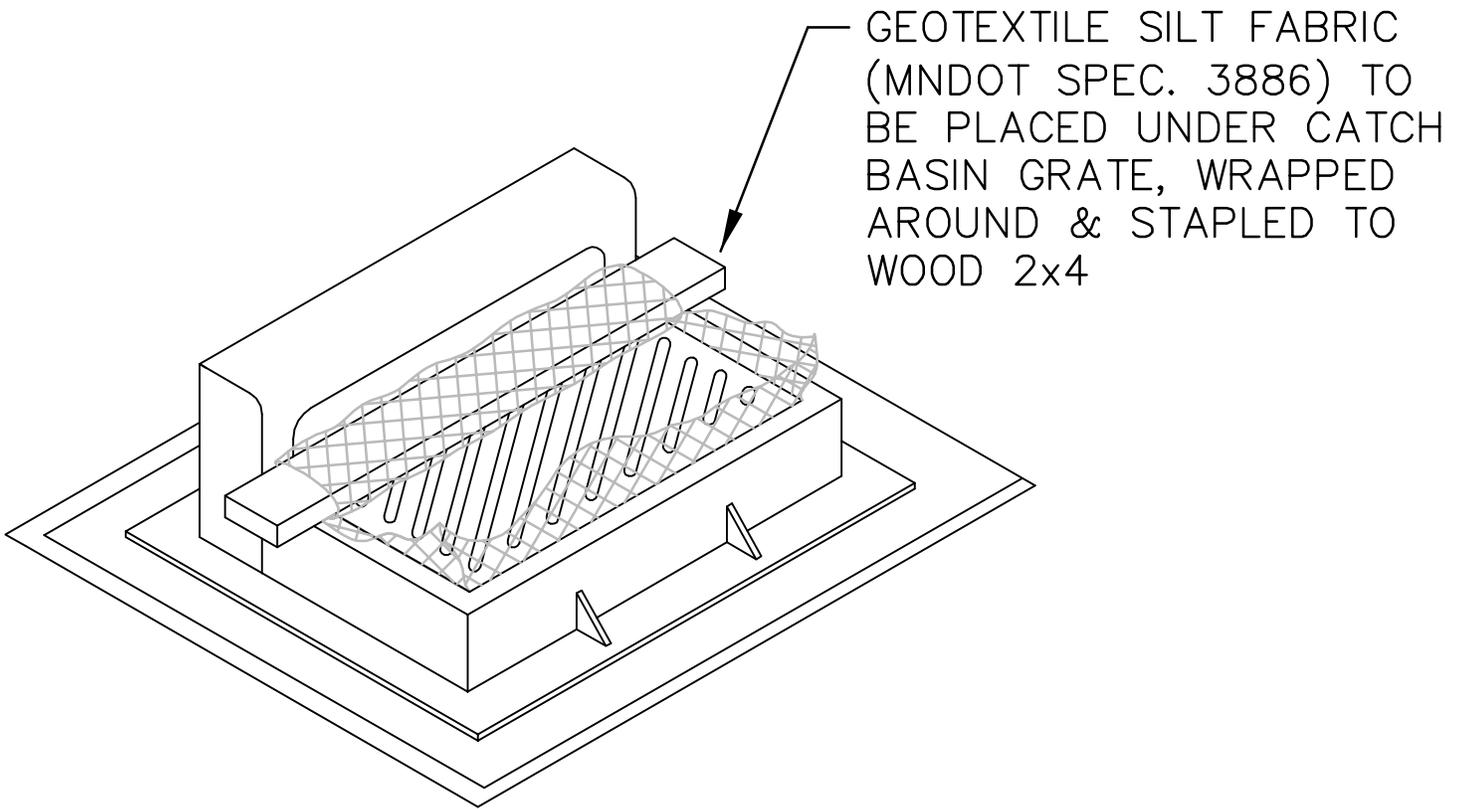
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

BALE CHECK TO
PROTECT STORM
SEWER INLETS

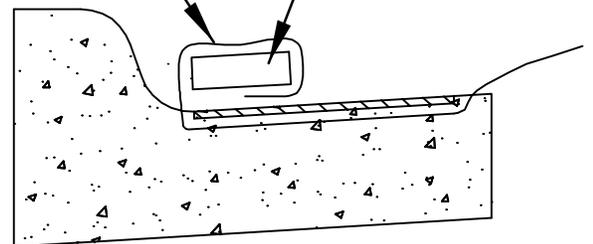
City of
Golden Valley

GV-EC-050



GEOTEXTILE SILT FABRIC (MNDOT SPEC. 3886)

WOOD 2x4



NOTE:
THE CONTRACTOR SHALL PLACE AND MAINTAIN EROSION CONTROL AROUND CATCH BASINS AS DIRECTED BY ENGINEER UNTIL TURF HAS BEEN ESTABLISHED

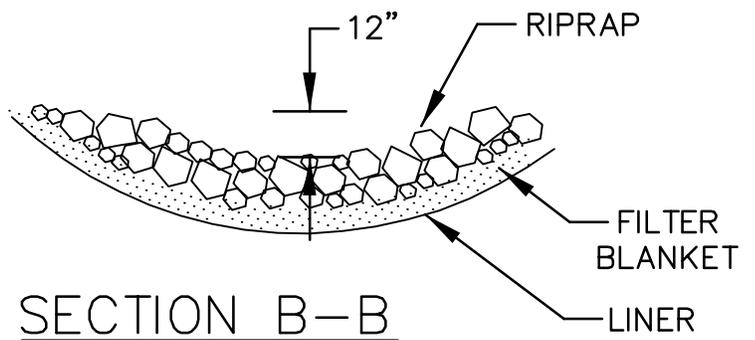
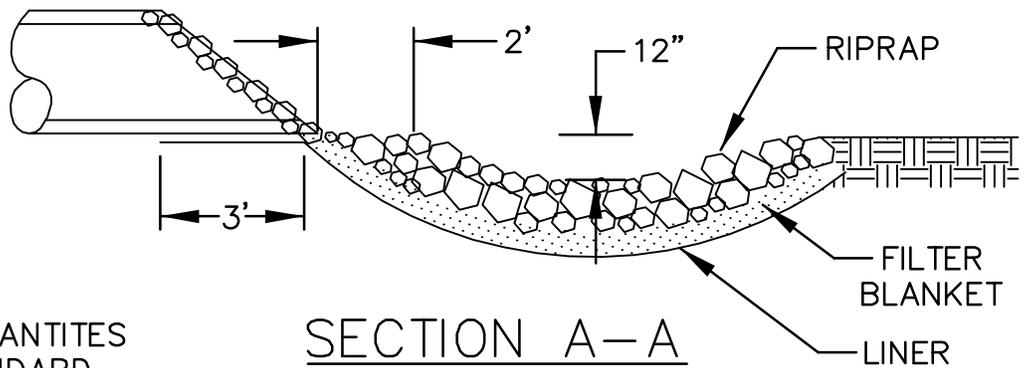
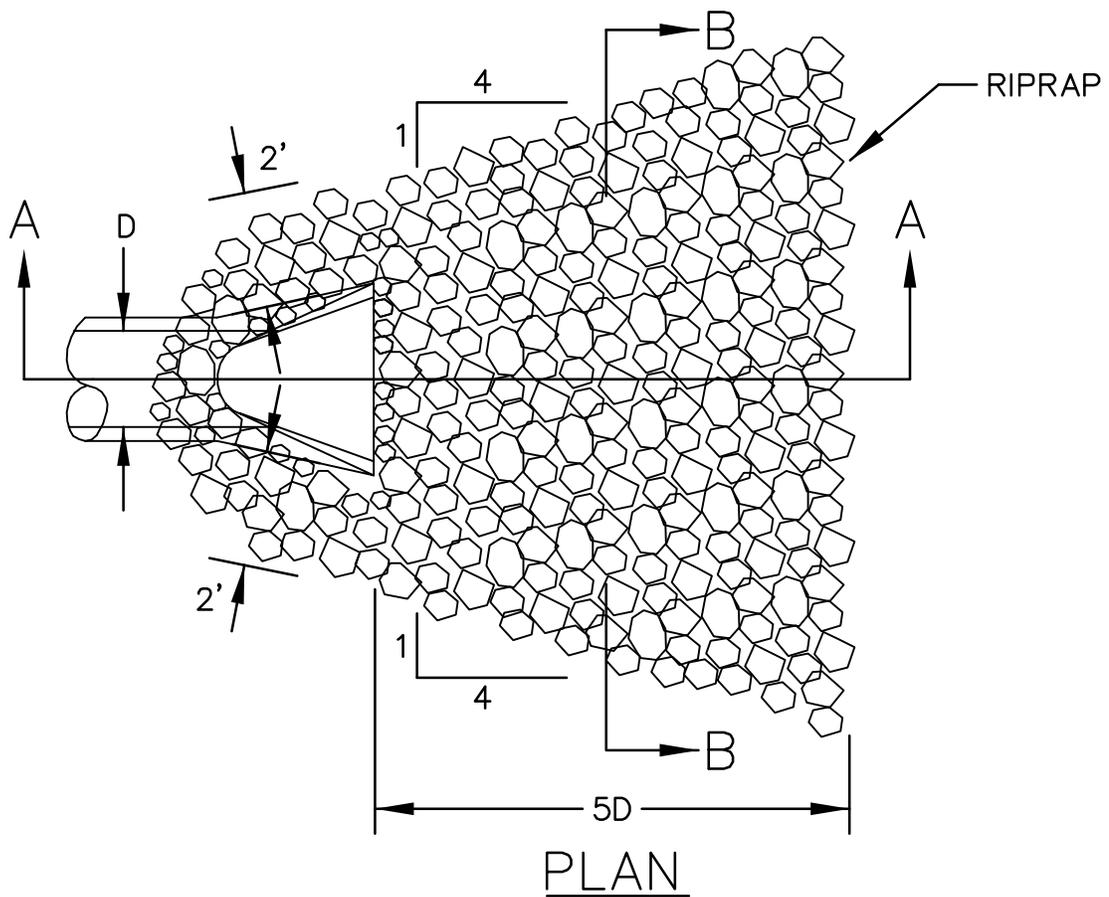
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

GEOTEXTILE CATCH
BASIN FILTER

City of
Golden Valley

GV-EC-060



NOTE:

FOR EXACT RIPRAP QUANTITIES REFER TO MNDOT STANDARD PLATES M3133B, 3133C, AND 3134C.

GRANULAR FILTER BLANKET OR GEOTEXTILE FABRIC, TYPE IV (MNDOT SPEC. 3733) REQUIRED UNDER RIPRAP.

APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

RIPRAP AT
OUTLETS

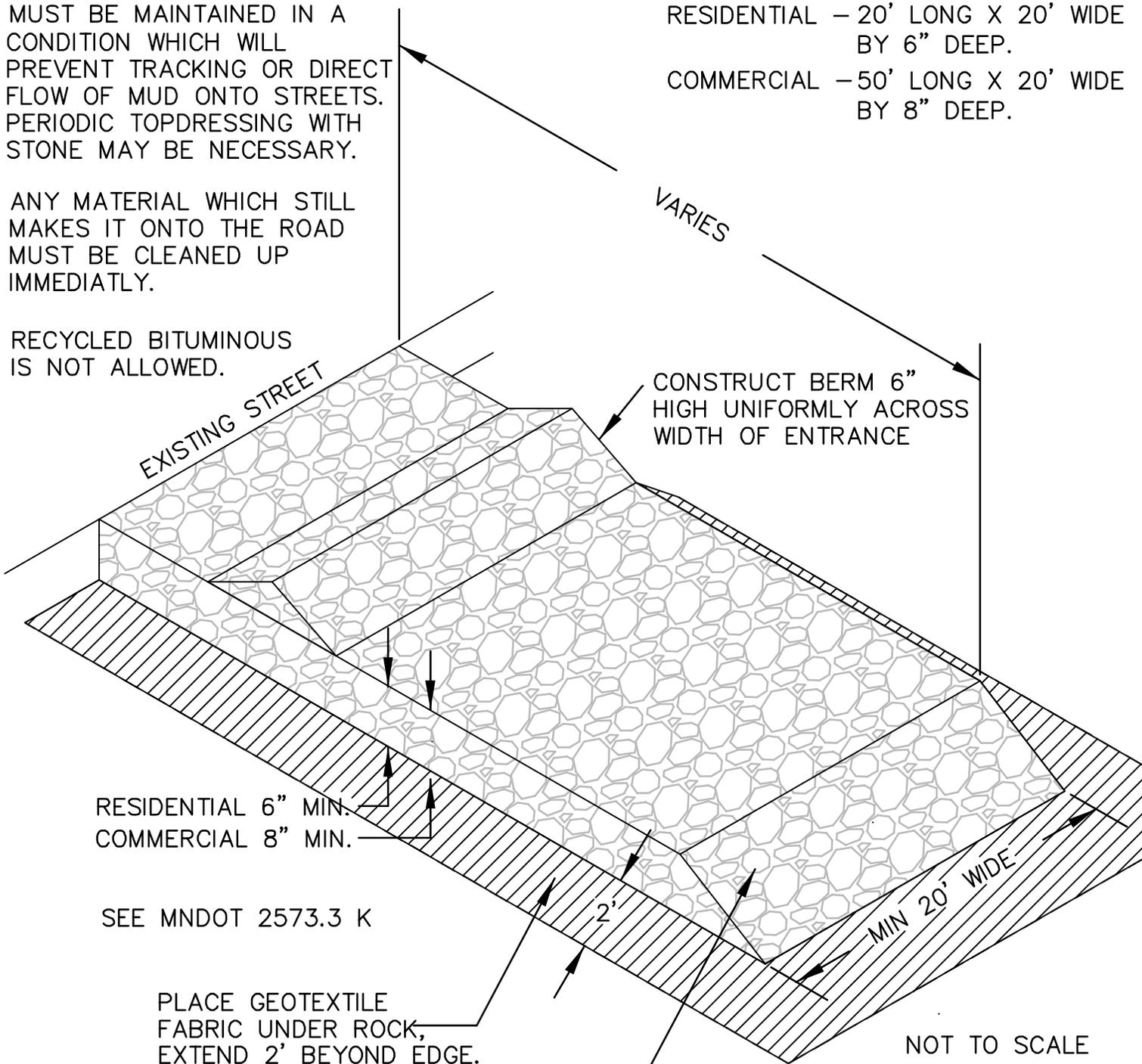
City of
Golden Valley
GV-EC-070

NOTES:

- A) MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF MUD ONTO STREETS. PERIODIC TOPDRESSING WITH STONE MAY BE NECESSARY.
- B) ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED UP IMMEDIATELY.
- C) RECYCLED BITUMINOUS IS NOT ALLOWED.

MINIMUM DIMENSIONS

- RESIDENTIAL – 20' LONG X 20' WIDE BY 6" DEEP.
- COMMERCIAL – 50' LONG X 20' WIDE BY 8" DEEP.



RESIDENTIAL 6" MIN.
COMMERCIAL 8" MIN.

SEE MNDOT 2573.3 K

PLACE GEOTEXTILE FABRIC UNDER ROCK, EXTEND 2' BEYOND EDGE.

1" TO 3" CRUSHED ROCK FOR RESIDENTIAL CONSTRUCTION ENTRANCE. (MNDOT CA-1 or CA-2 COURSE AGGREGATE)

3" TO 6" CRUSHED ROCK FOR COMMERCIAL CONSTRUCTION ENTRANCE. (MNDOT CA-1 or CA-2 COURSE AGGREGATE)

NOT TO SCALE

APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

**ROCK
CONSTRUCTION
ENTRANCE**

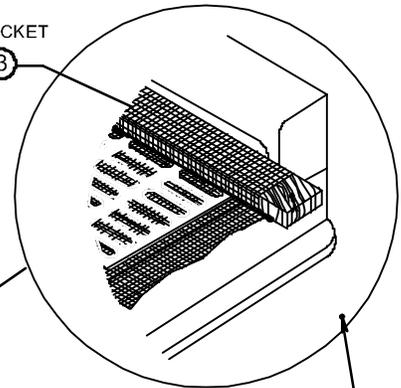
City of **Golden Valley**

GV-EC-080

INLET SPECIFICATIONS AS PER THE PLAN
DIMENSION LENGTH AND WIDTH TO MATCH

FLAP POCKET

③



USE REBAR OR STEEL ROD FOR REMOVAL
OR
FOR INLETS WITH CAST CURB BOX USE WOOD 2" X 4", EXTEND 10" BEYOND GRATE WIDTH ON BOTH SIDES, LENGTH VARIES. SECURE TO GRATE WITH WIRE OR PLASTIC TIES

①

③

GEOTEXTILE FABRIC, TYPE FF

FRONT, BACK, AND BOTTOM TO BE MADE FROM SINGLE PIECE OF FABRIC.

MINIMUM DOUBLE STITCHED SEAMS ALL AROUND SIDE PIECES AND ON FLAP POCKETS.

8"

4"

12"

12"

4" X 6" OVAL HOLE SHALL BE HEAT CUT INTO ALL FOUR SIDE PANELS.

FABRIC BAG

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE) ②

DO NOT INSTALL INLET PROTECTION IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4' FROM THE BOTTOM OF THE BAG.

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10' AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, WITH CURB BOX, AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2"X4'.

APPROVED DECEMBER 31, 2015

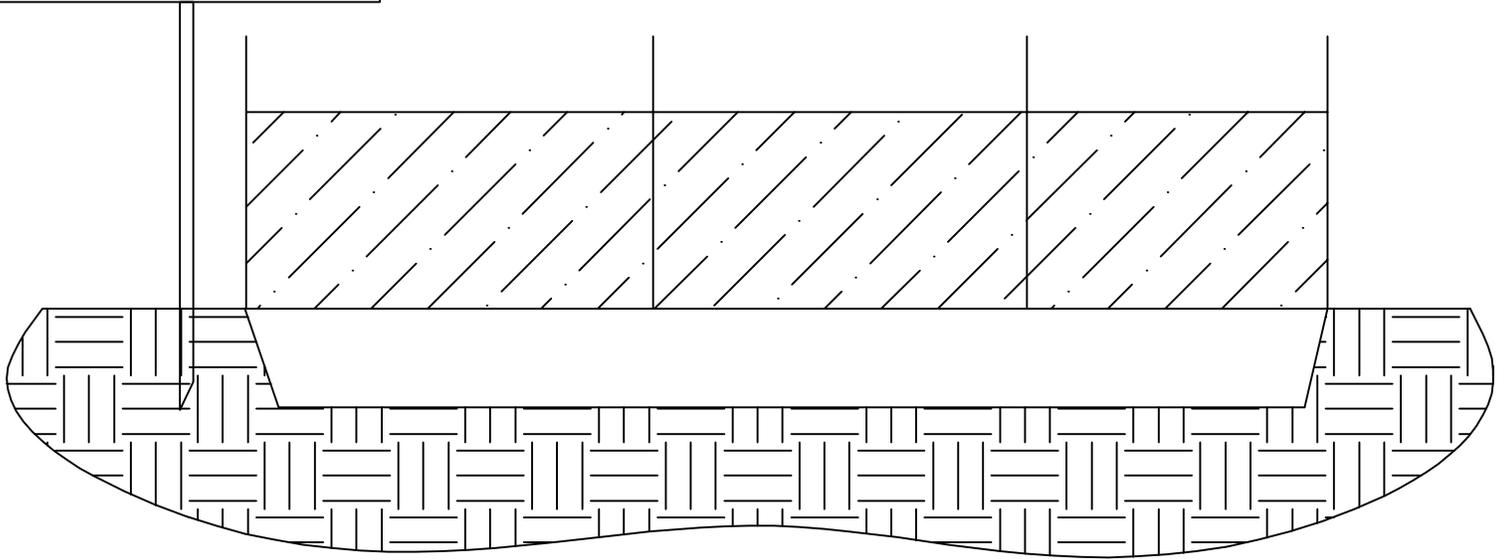
CITY ENGINEER REG 23110

FAST FLOW INLET
BAG TO PROTECT
STORM INLETS

City of Golden Valley
GV-EC-090

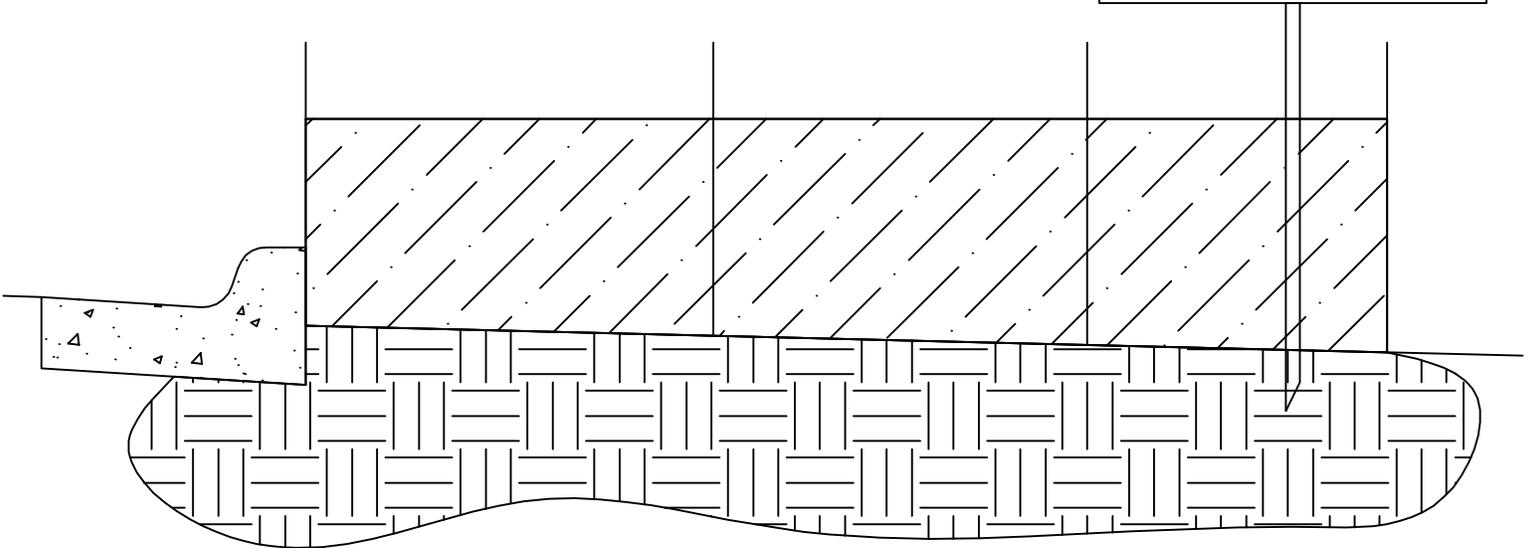
OPEN AREA:
THE AREA MUST BE CLEARLY MARKED, A MINIMUM
SIZE OF 10'x10' AND 6" BELOW EXISTING SURFACE.
THE PERIMETER MUST BE PROTECTED WITH SILT
FENCE (SEE DETAIL GV-EC-010)

CONCRETE WASHOUT
AREA



BEHIND CURB:
THE AREA MUST BE CLEARLY MARKED, A MINIMUM SIZE
OF 10'x10' AND 6" BELOW CURB, SLOPING AWAY FROM
THE STREET. THE PERIMETER MUST BE PROTECTED
WITH SILT FENCE (SEE DETAIL GV-EC-010)

CONCRETE WASHOUT
AREA



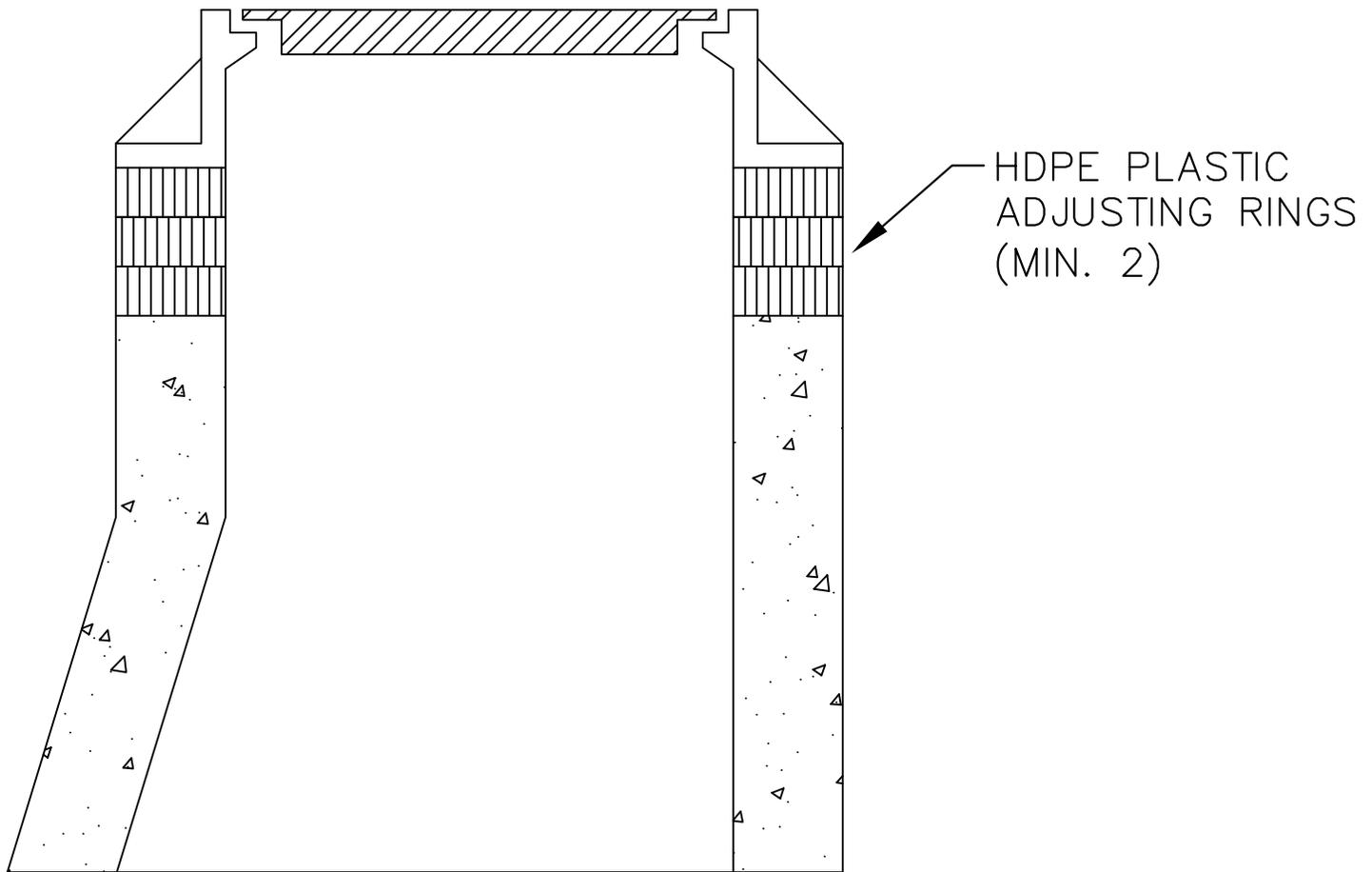
APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

CONCRETE
WASHOUT AREA

City of Golden Valley

GV-EC-100



NOTE:

MANHOLE OR CATCH BASIN ADJUSTING RINGS—ADJUSTING RINGS SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PRODUCED BY LADTECH OR AN APPROVED EQUAL. THE RINGS SHALL PROVIDE A MINIMUM ADJUSTMENT OF 4" USING MINIMUM OF 2 - 2" IMMEDIATELY UNDER THE CASTING RINGS AND USE A COMBINATION OF 2", 6" QND 12" RINGS TO ACHIEVE NEEDED HEIGHT. JOINTS BETWEEN STRUCTURE, RINGS AND CASTING SHALL BE SEALED WITH A CONTINUOUS BEAD OF BUTYL CAULK. SOLID REINFORCED CONCRETE ADJUSTING RINGS MAY BE USED IN SPECIAL SITUATIONS ONLY WITH PRIOR WRITTEN APPROVAL BY THE CITY ENGINEER.

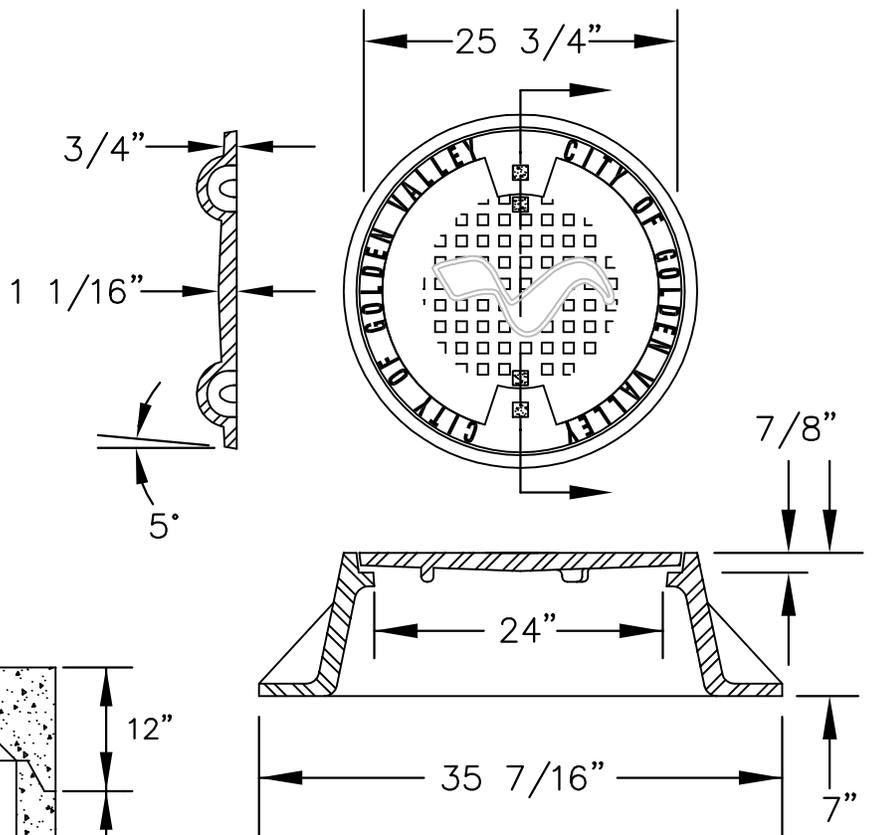
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**MANHOLE OR
CATCH BASIN
DETAIL**

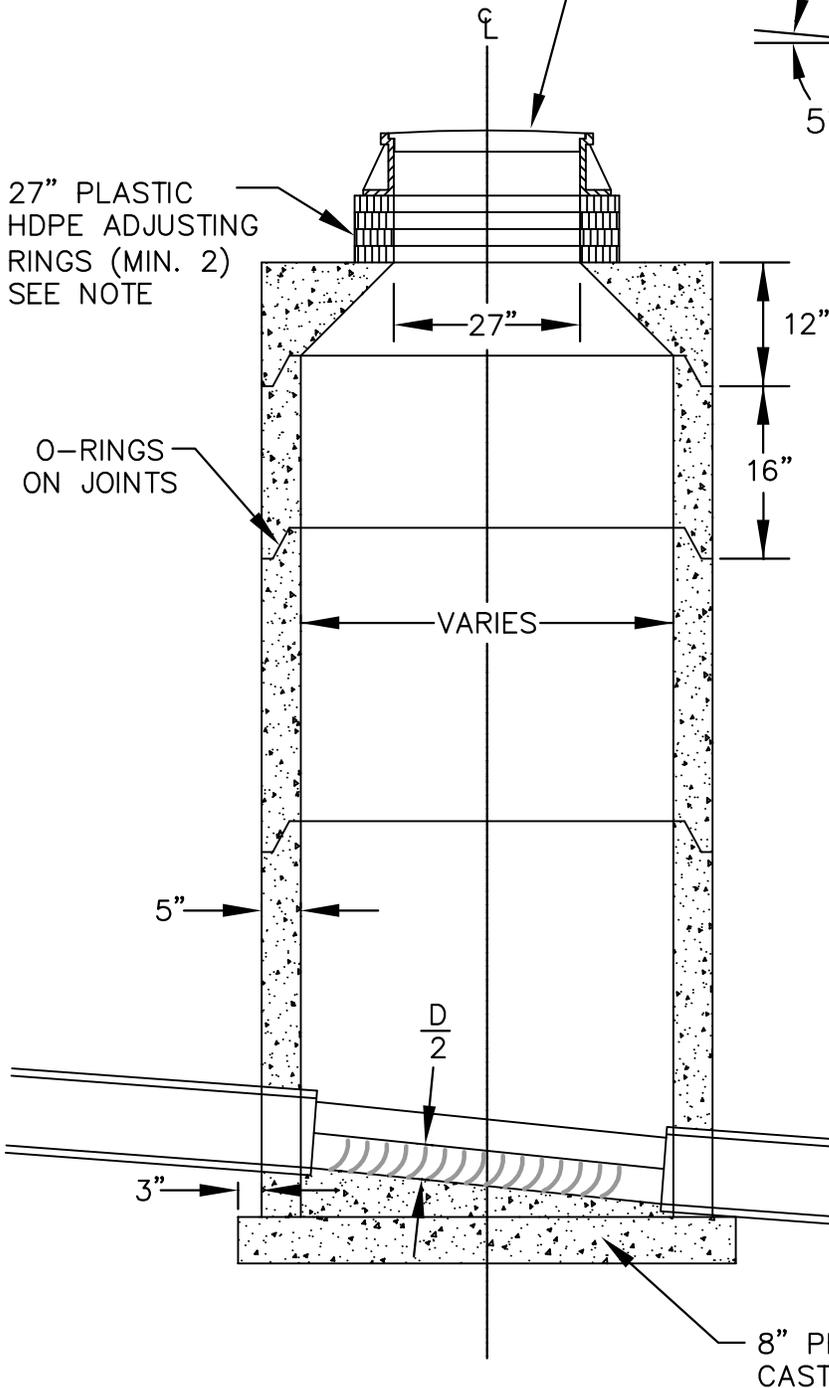
City of
Golden Valley
GV-SS-010

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



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

O-RINGS ON JOINTS



NOTE:

WHERE PVC PIPE IS USED THE MANHOLE SHALL BE FURNISHED WITH WATER TIGHT BOOT.

NO STEPS SHALL BE INSTALLED ON MANHOLES LESS THAN 15 FT. DEEP. OVER 15 FT. NON-CORROSIVE STEPS SHALL BE INSTALLED.

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

**STANDARD SANITARY
SEWER MANHOLE WITH
CASTING & COVER**

City of Golden Valley

GV-SS-020

NEENAH R-1733 SERIES
SOLID COVER, ESS BROS.
301, OR APPROVED EQUAL
(SEE DETAIL GV-SS-020)

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

ADAPT TO NEXT
LENGTH PIPE MATERIAL

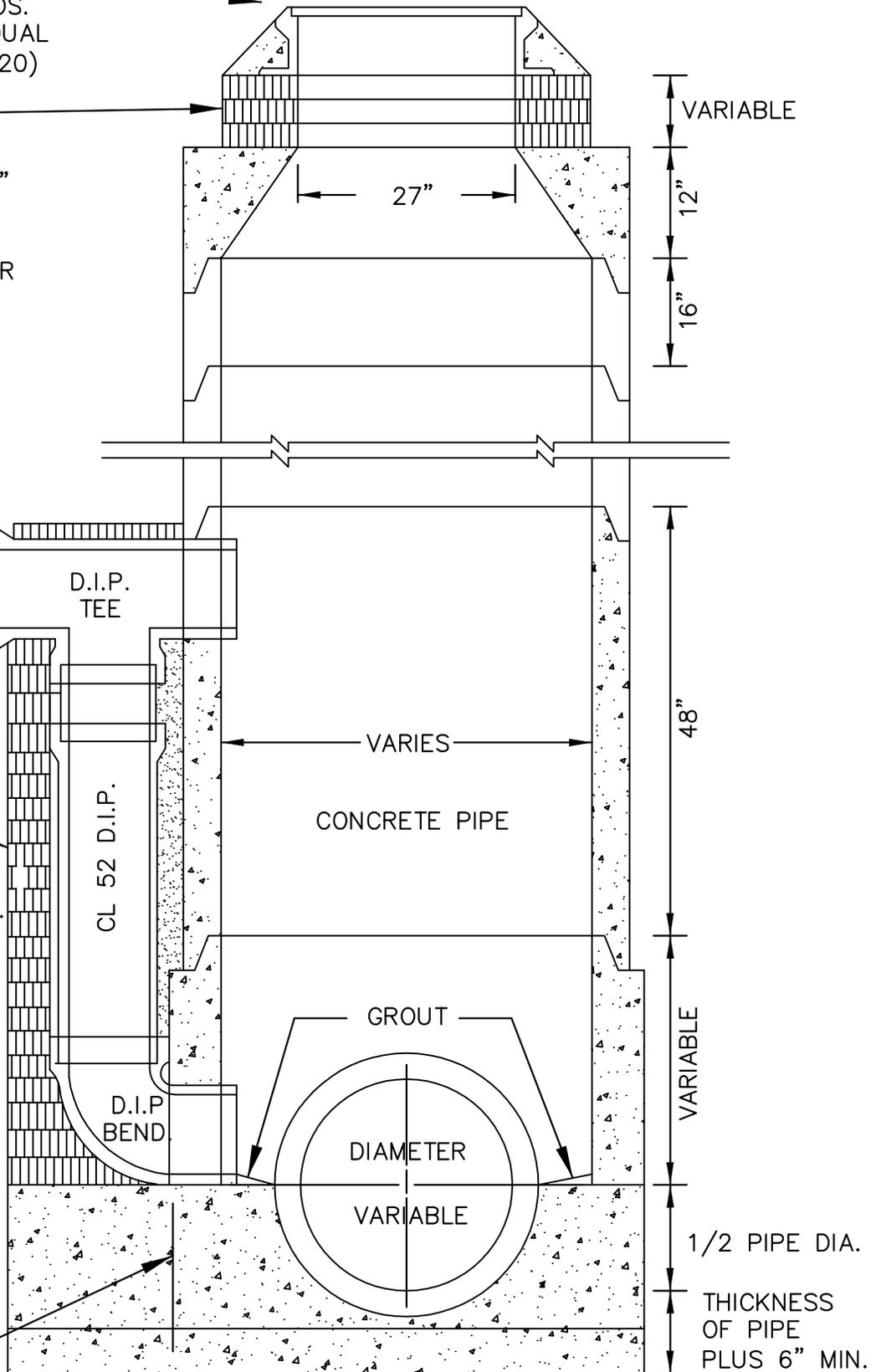
1ST 20 FT. OF PIPE
TO BE MIN. CL 52 D.I.P.

MINIMUM OF 4" OF BRICK,
CONCRETE HORSESHOE, OR
OTHER APPROVED MATERIAL;
AND CONCRETE ON ALL SIDES.

NOTE:
WHERE PVC PIPE IS USED
THE MANHOLE SHALL BE
FURNISHED WITH INTERPACE
BOOT OR APPROVED EQUAL.

NO STEPS SHALL BE
INSTALLED ON MANHOLES
LESS THAN 15 FT. DEEP.
OVER 15 FT. NON-CORROSIVE
STEPS SHALL BE INSTALLED.

CONCRETE BLOCK MAY BE
USED FOR FILLER OUTSIDE
OF MANHOLE LINE.



APPROVED JANUARY 1, 2018

[Signature]

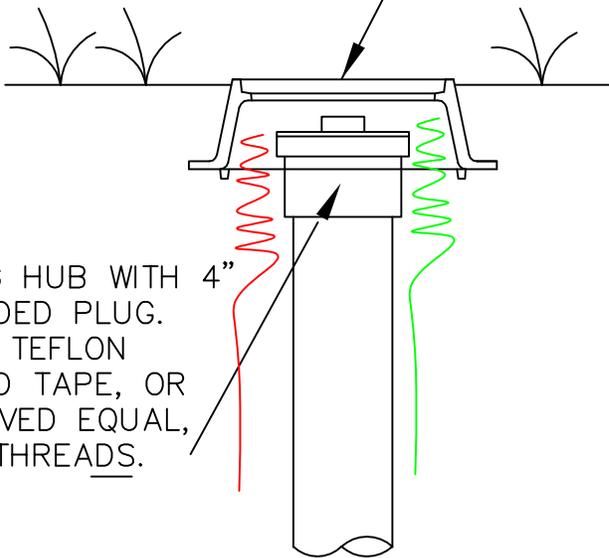
CITY ENGINEER REG 23110

**STANDARD MANHOLE
WITH DROP SECTION**

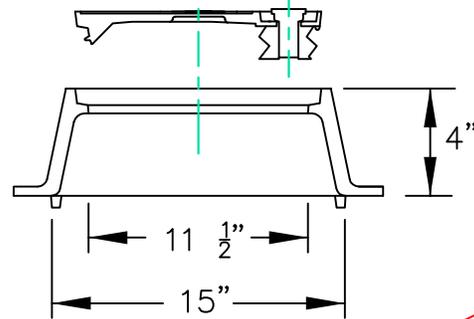
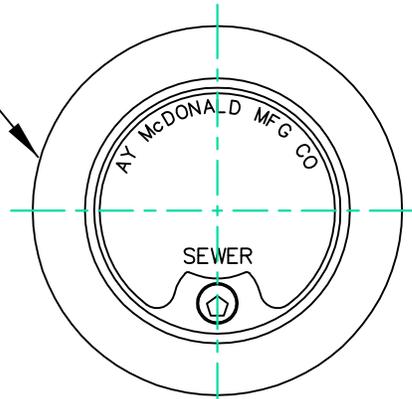
City of
Golden Valley

GV-SS-030

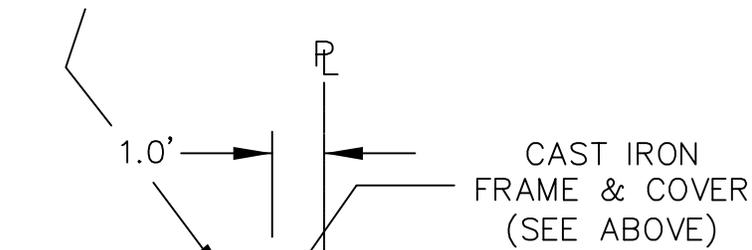
MCDONALD 74M "A"
 SERIES CAST IRON
 METER PIT
 FRAME AND COVER



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



INSTALL APPROVED FERROUS METAL CAP



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

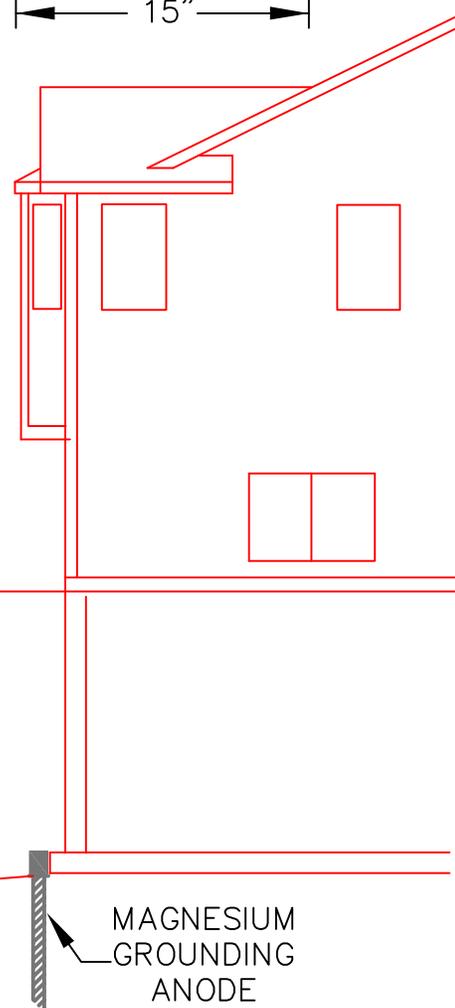
GROUND WIRE

FLOW

MAGNESIUM GROUNDING ANODE

PIPE MATERIAL AND SLOPE PER STATE PLUMBING CODE

MAGNESIUM GROUNDING ANODE



APPROVED JANUARY 1, 2018

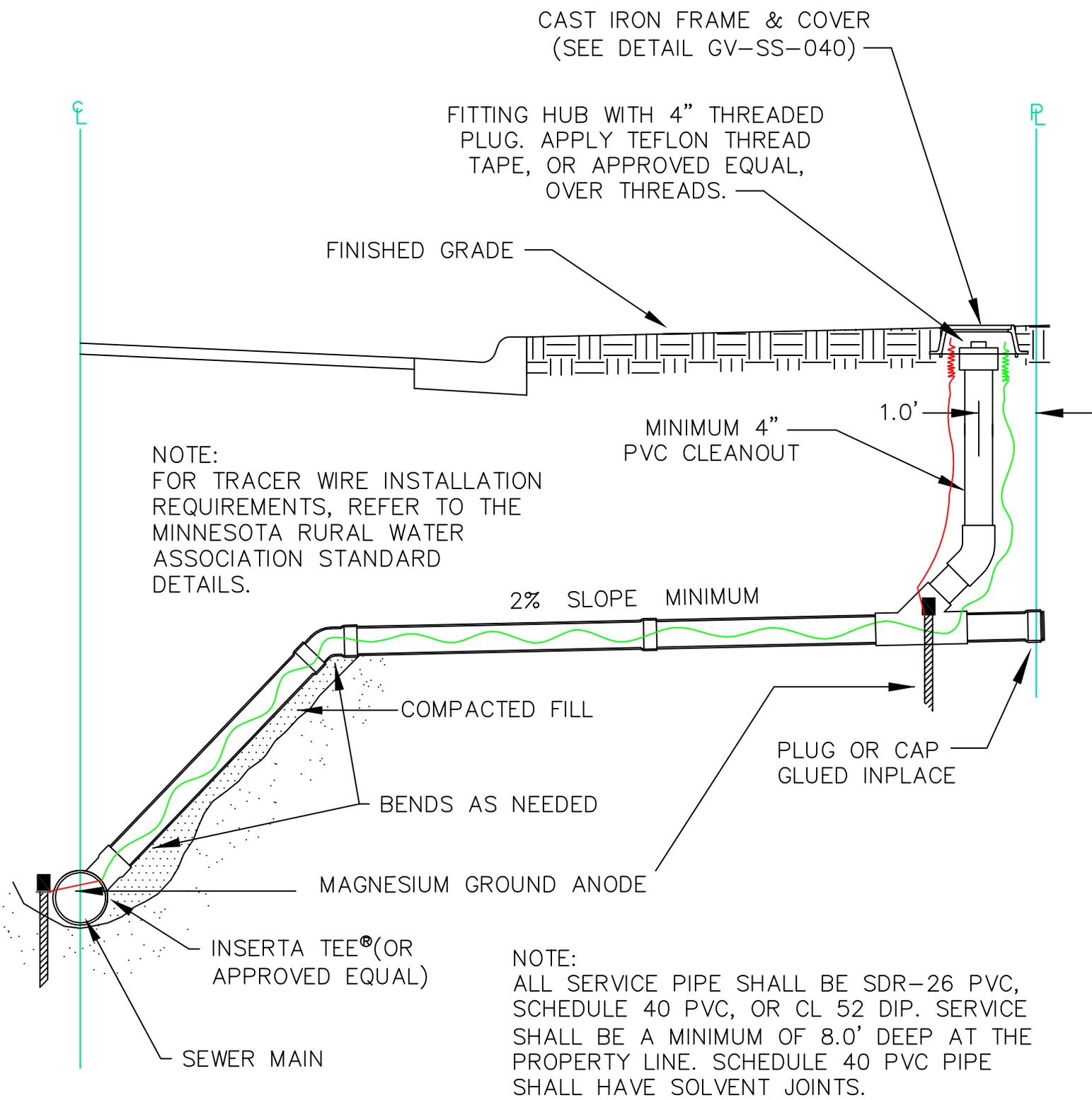
J. J. Cain

CITY ENGINEER REG 23110

SANITARY SEWER SERVICE
 PROPERTY LINE TO HOUSE

Golden Valley

GV-SS-040

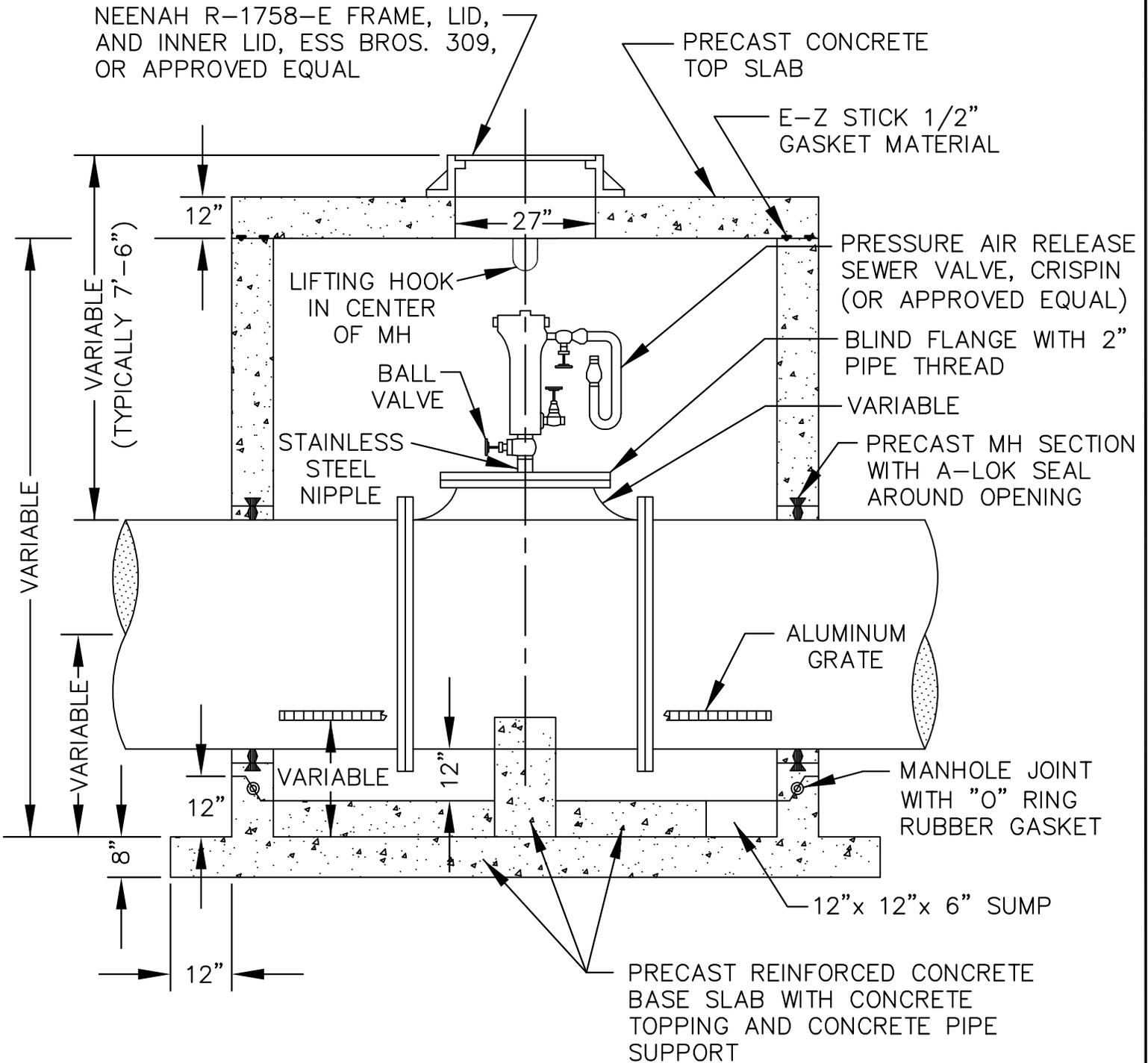


APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**SANITARY SEWER
SERVICE WITH RISER
(DEEP SERVICE)**

GV-SS-050



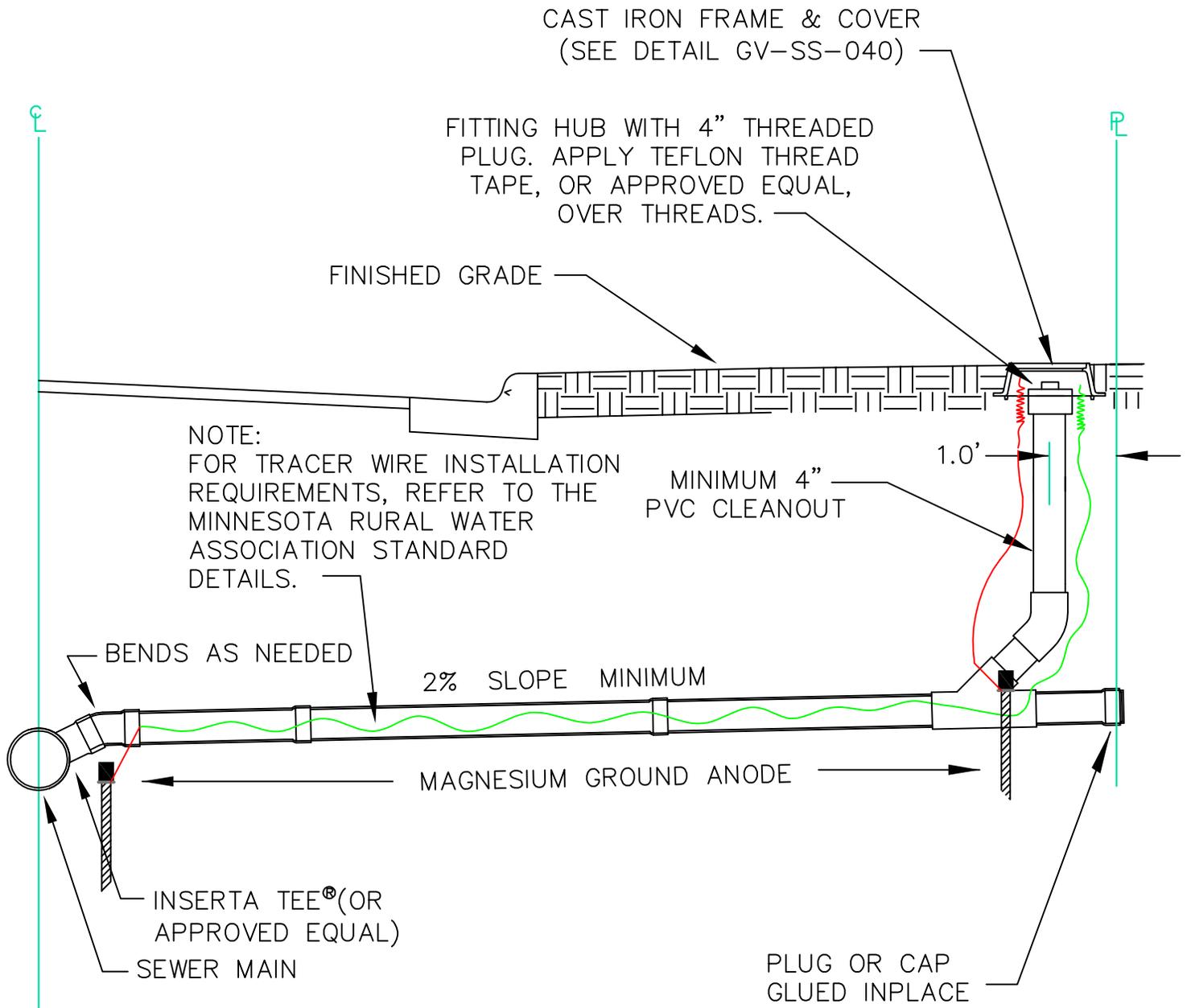
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**ACCESS/AIR RELEASE
MANHOLE**

City of
Golden Valley

GV-SS-060



NOTE:
ALL SERVICE PIPE SHALL BE SDR-26 PVC, SCHEDULE
40 PVC, OR CL 52 DIP. SERVICE SHALL BE A MINIMUM
OF 8.0' DEEP AT THE PROPERTY LINE. SCHEDULE 40
PVC PIPE SHALL HAVE SOLVENT JOINTS.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

SANITARY SEWER
SERVICE (MAIN TO
PROPERTY LINE)

GV-SS-070

CAST IRON FRAME & COVER
(SEE DETAIL GV-SS-040)

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

FINISHED GRADE

MINIMUM 4" PVC CLEANOUT (SEE
DETAIL GV-ST-050) PLACED AT
SERVICE PIPE TRANSITION OR 1'
BEYOND PROPERTY LINE,
WHICHEVER IS FARTHER
FROM STREET.

1.0'

EXISTING
SEWER
PIPE

TO HOUSE
→

6" X 4"
INCREASER

6" PVC

SHIELDED COUPLING
OR APPROVED EQUAL

SERVICE PIPE (6" TYP.)

LINER

MAIN

NOTE:
AT EACH TRANSITION WHERE PIPES CHANGE SIZE, THE CONTRACTOR
SHALL USE A MANUFACTURED TRANSITION ADAPTER APPROVED BY
THE MANUFACTURER OR THE ENGINEER.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

SANITARY SEWER SERVICE (CIPP) LINER (MAIN TO PROPERTY LINE)

City of Golden Valley

GV-SS-080

● GRADE LEVEL /
IN-GROUND ACCESS BOX

--- HDPE INSULATED
#12 AWG COPPER CLAD
STEEL - GREEN
(TYP)

× DRIVE-IN MAGNESIUM
GROUNDING ANODE (SEE
SEWER SERVICE DETAIL)

#12 AWG COPPER CLAD
STEEL - GREEN
(TYP)

TRACE WIRE SHALL BE
ROUTED AROUND
MANHOLES ON THE NORTH
AND/OR EAST SIDE

MAINLINE TO LATERAL
LUG CONNECTOR
(TYP)

GRADE LEVEL /
IN-GROUND ACCESS BOX
AND DRIVE-IN MAGNESIUM
GROUNDING ANODE (SEE
SEWER SERVICE DETAIL)

SEWER SERVICE (TYP)

DRIVE-IN MAGNESIUM
GROUNDING ANODE (TYP)

4-WAY CONNECTOR OR
TWO 3-WAY CONNECTORS
WITH SHORT JUMPER WIRE

MANHOLE (TYP)

NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

TRACE WIRE PLAN
(SEWER)

NO SCALE

APPROVED JANUARY 1, 2018



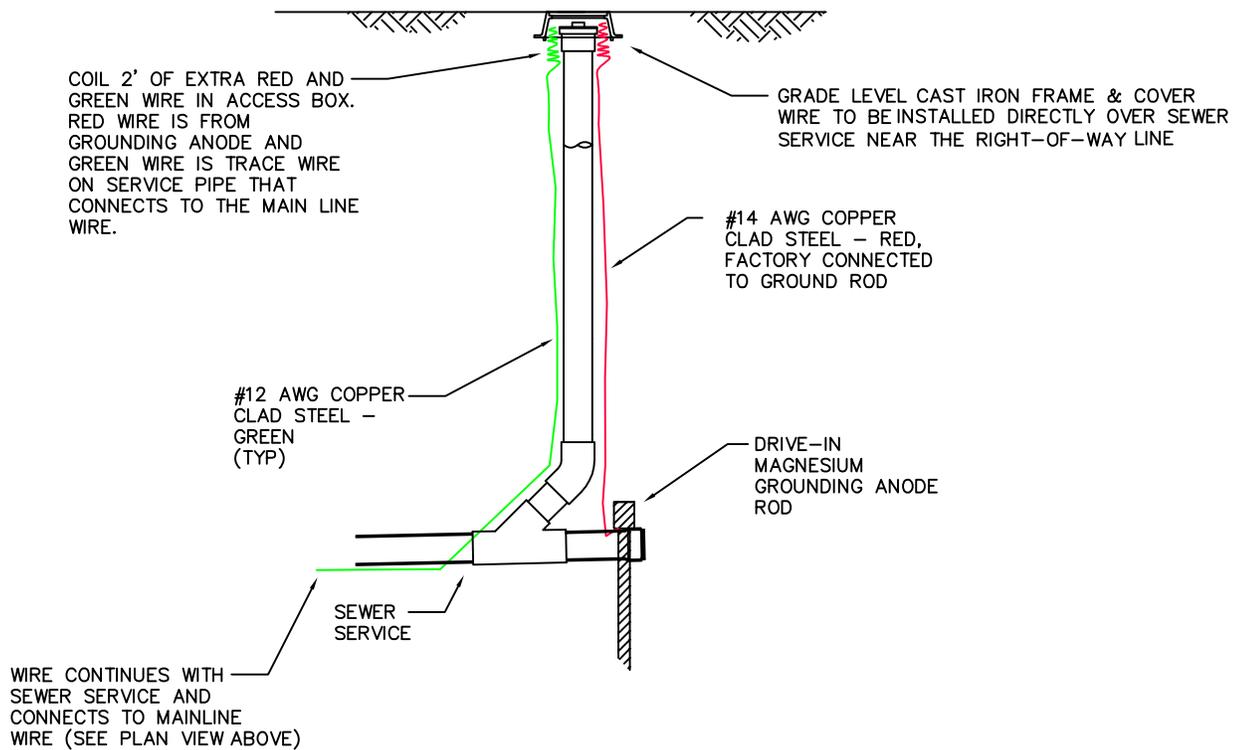
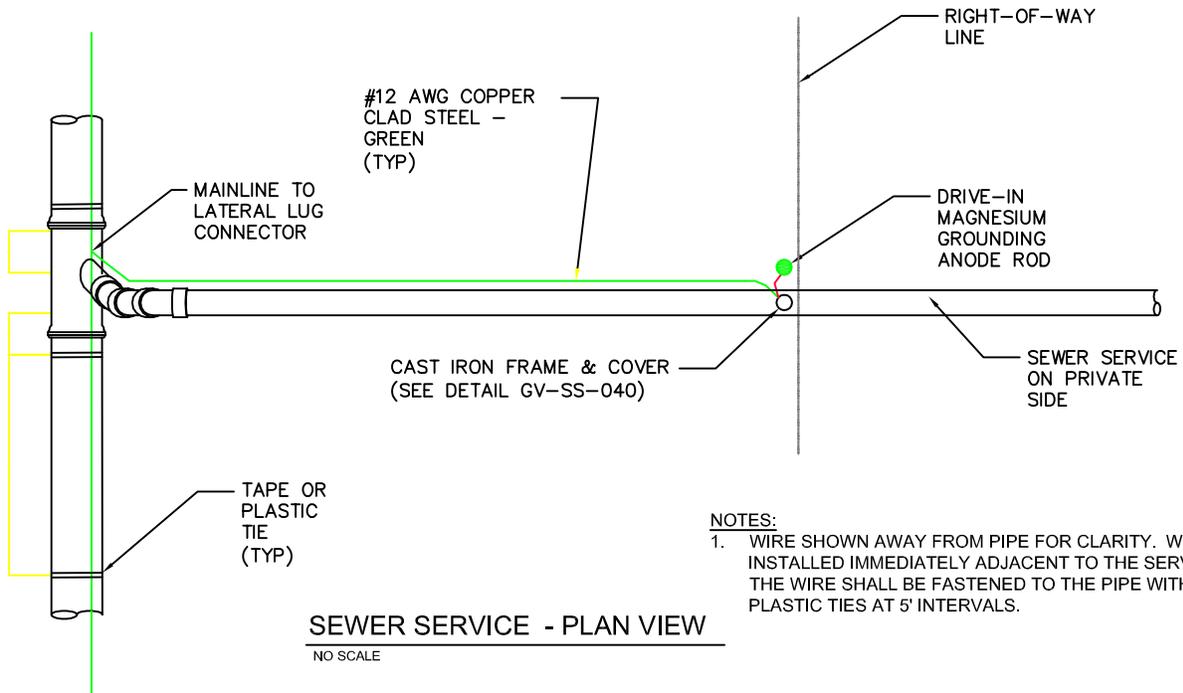
CITY ENGINEER REG 23110

TRACE WIRE PLAN (SEWER)

MINNESOTA RURAL WATER
ASSOCIATION STANDARD DETAIL



Golden Valley
GV-SS-090



APPROVED DECEMBER 31, 2015

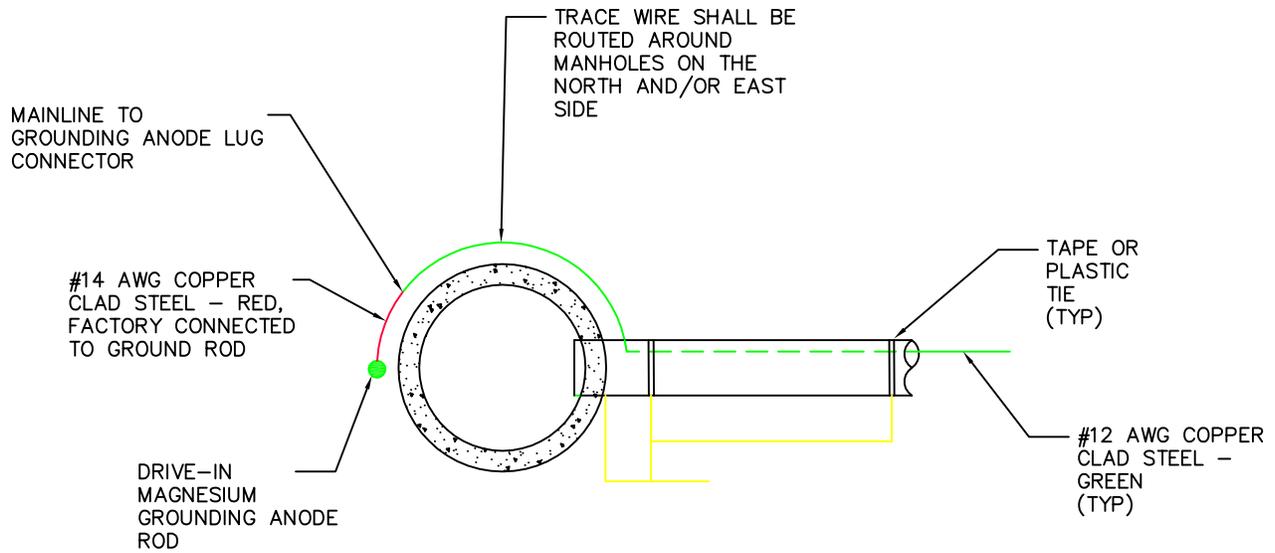
CITY ENGINEER REG 23110

**TRACE WIRE PLAN
(SEWER SERVICE)**

MINNESOTA RURAL WATER
ASSOCIATION STANDARD DETAIL

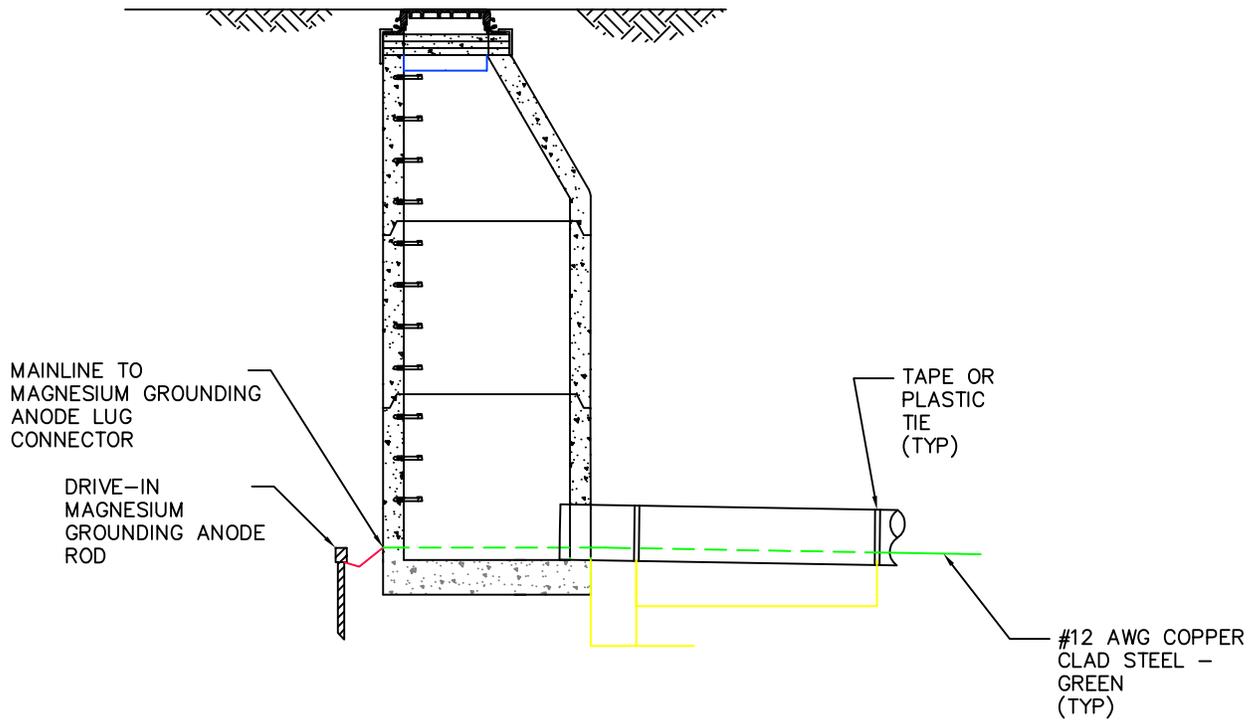


GV-SS-100



SEWER MANHOLE - PLAN VIEW

NO SCALE



SEWER MANHOLE - SECTION VIEW

NO SCALE

APPROVED DECEMBER 31, 2015

CITY ENGINEER REG 23110

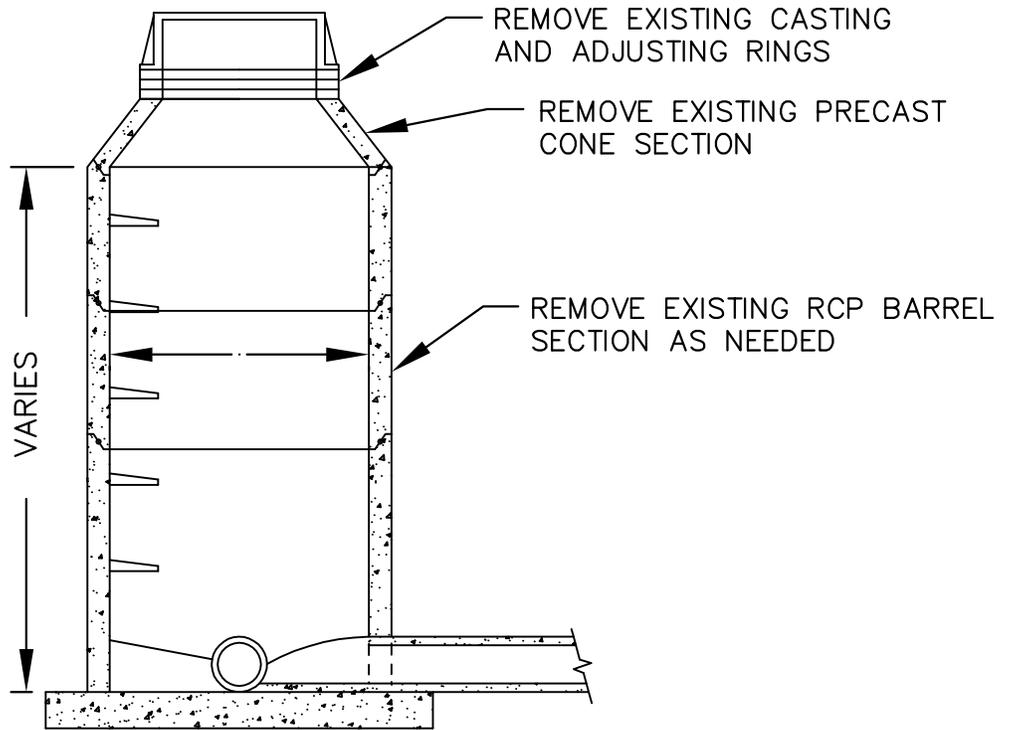
**TRACE WIRE PLAN
(SEWER MANHOLE)**

MINNESOTA RURAL WATER
ASSOCIATION STANDARD DETAIL



GV-SS-110

(EXISTING)



REMOVE EXISTING CASTING AND ADJUSTING RINGS

REMOVE EXISTING PRECAST CONE SECTION

REMOVE EXISTING RCP BARREL SECTION AS NEEDED

VARIES

FINISHED GRADE

RE-INSTALL EXISTING CASTING

REPLACE COVER WITH NEENAH 1733 SERIES SOLID COVER, ESS BROS. 301, WITH GOLDEN VALLEY LOGO, OR APPROVED EQUAL. SEE GV-SS-020

(RECONSTRUCTED)

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

PRE-CAST CONCRETE SLAB REINFORCED FOR STREET LOADING WITH, 27" OPENING

PLACE SLAB ON 1/2" MORTAR BED AND TROWEL JOINT SMOOTH

EACH NEW BARREL JOINT SHALL BE SEALED WITH INFI-SHIELD 6" EXTERNAL RUBBER SEAL WRAP OR APPROVED EQUAL.

RCP PIPE SAWED TO LENGTH

RUBBER GASKET AT ALL JOINTS

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

EXISTING RCP BARREL SECTION

VARIES

NOTE: MANHOLES SHOULD NOT HAVE STEPS UNLESS THEY EXCEED 15' IN DEPTH.

APPROVED JANUARY 1, 2018

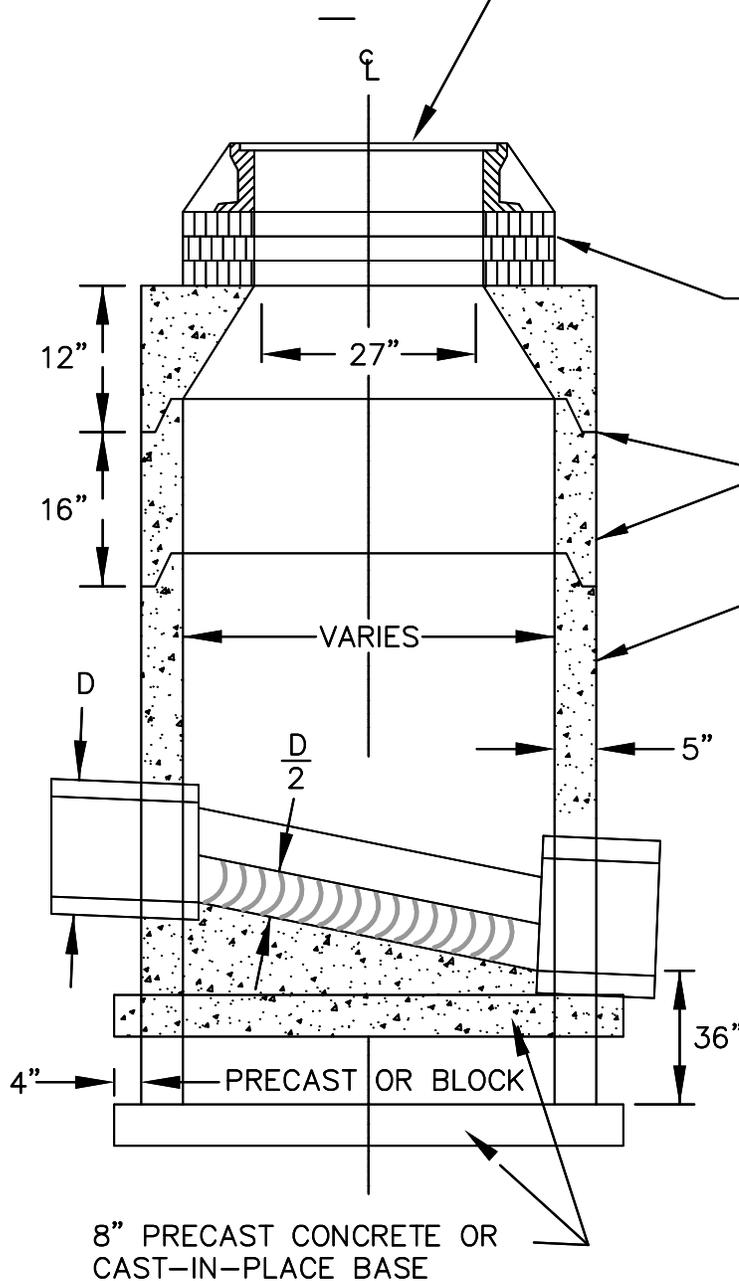
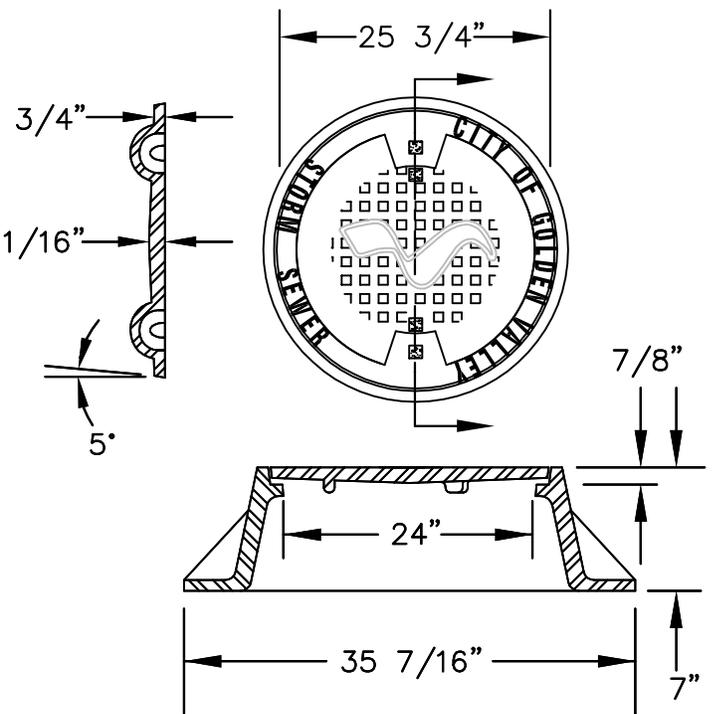
CITY ENGINEER REG 23110

SANITARY SEWER MANHOLE RECONSTRUCTION

City of Golden Valley

GV-SS-120

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

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

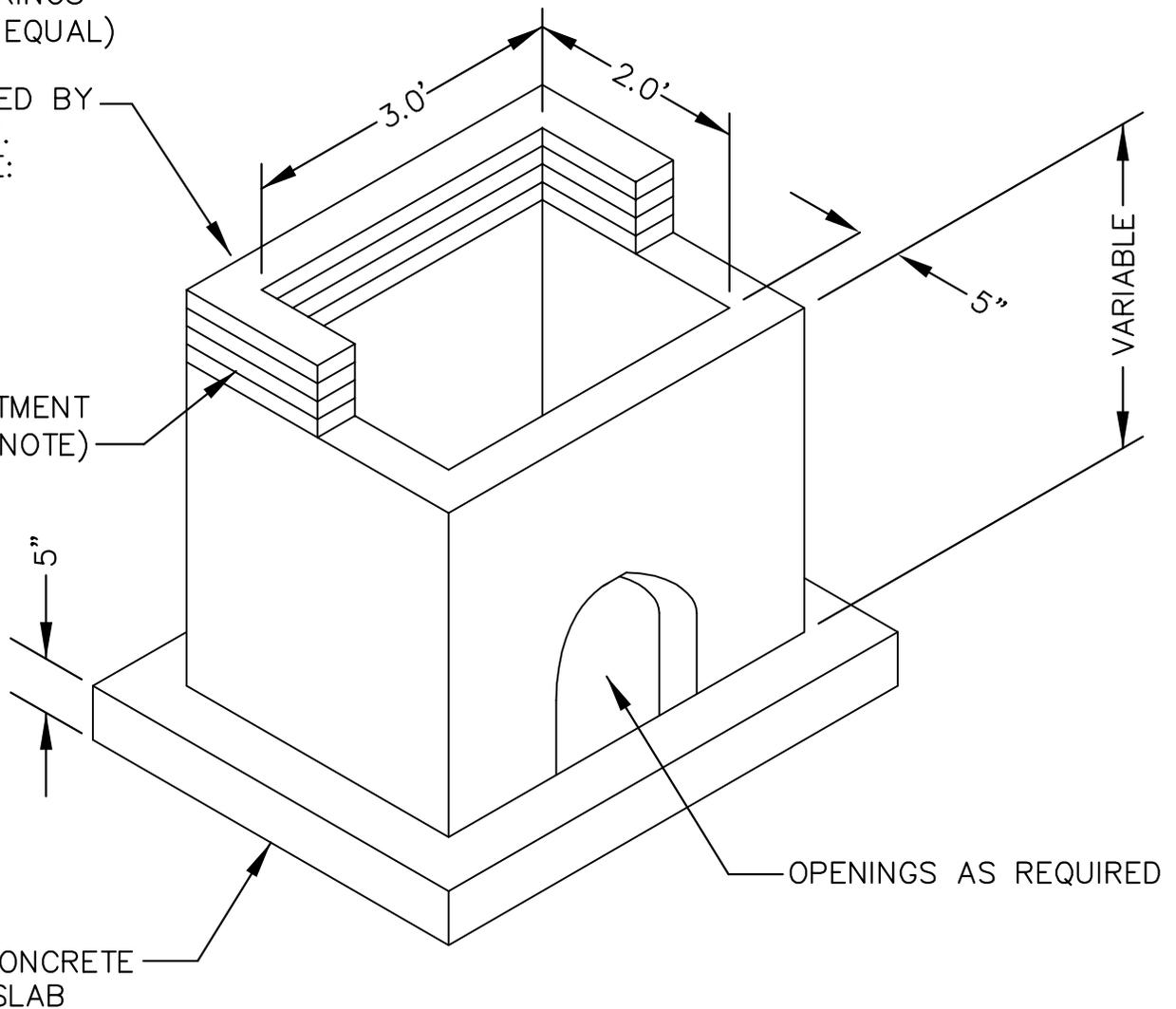
**STANDARD STORM
 SEWER MANHOLE DES
 4020 WITH CASTING &
 COVER**

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

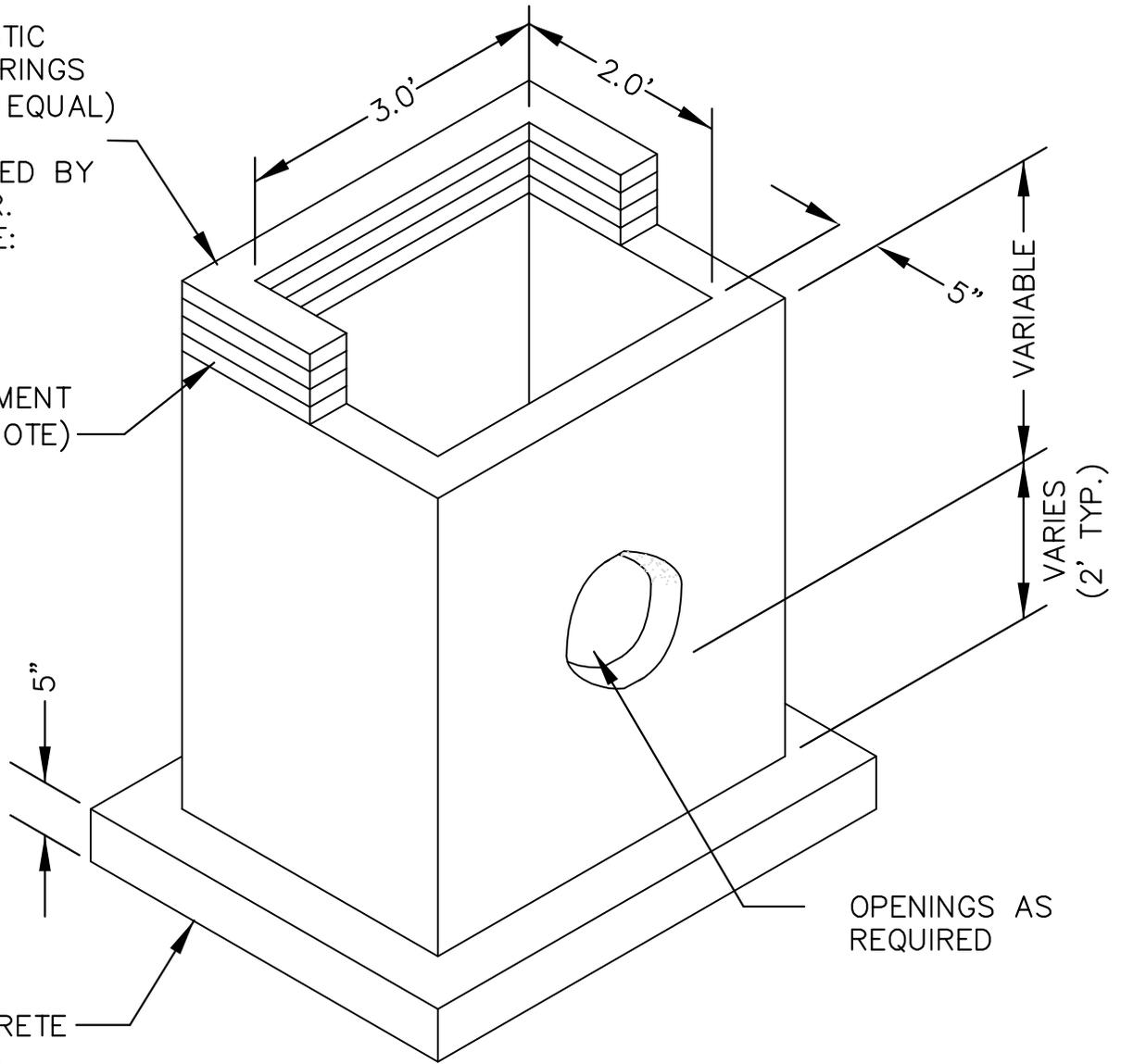
GV-ST-020

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

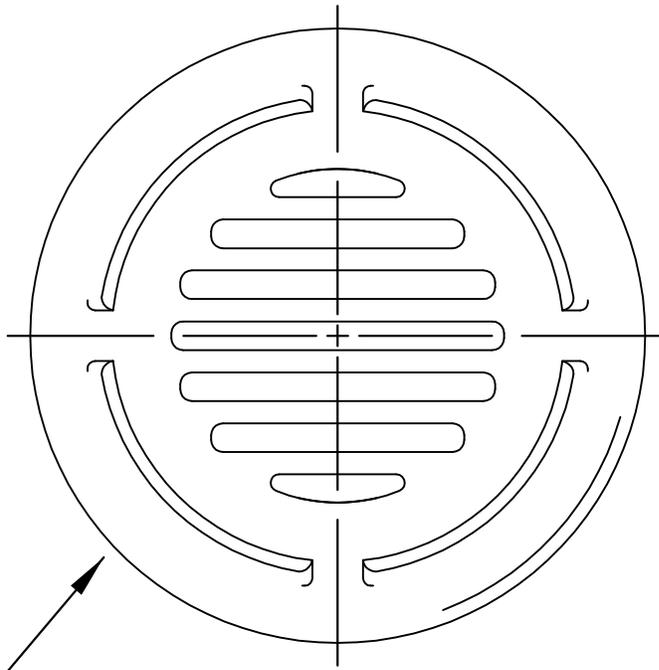
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

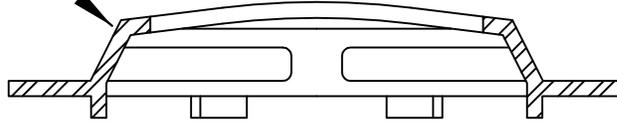
**CATCH BASIN
DESIGN K
WITH SUMP**

City of
Golden Valley

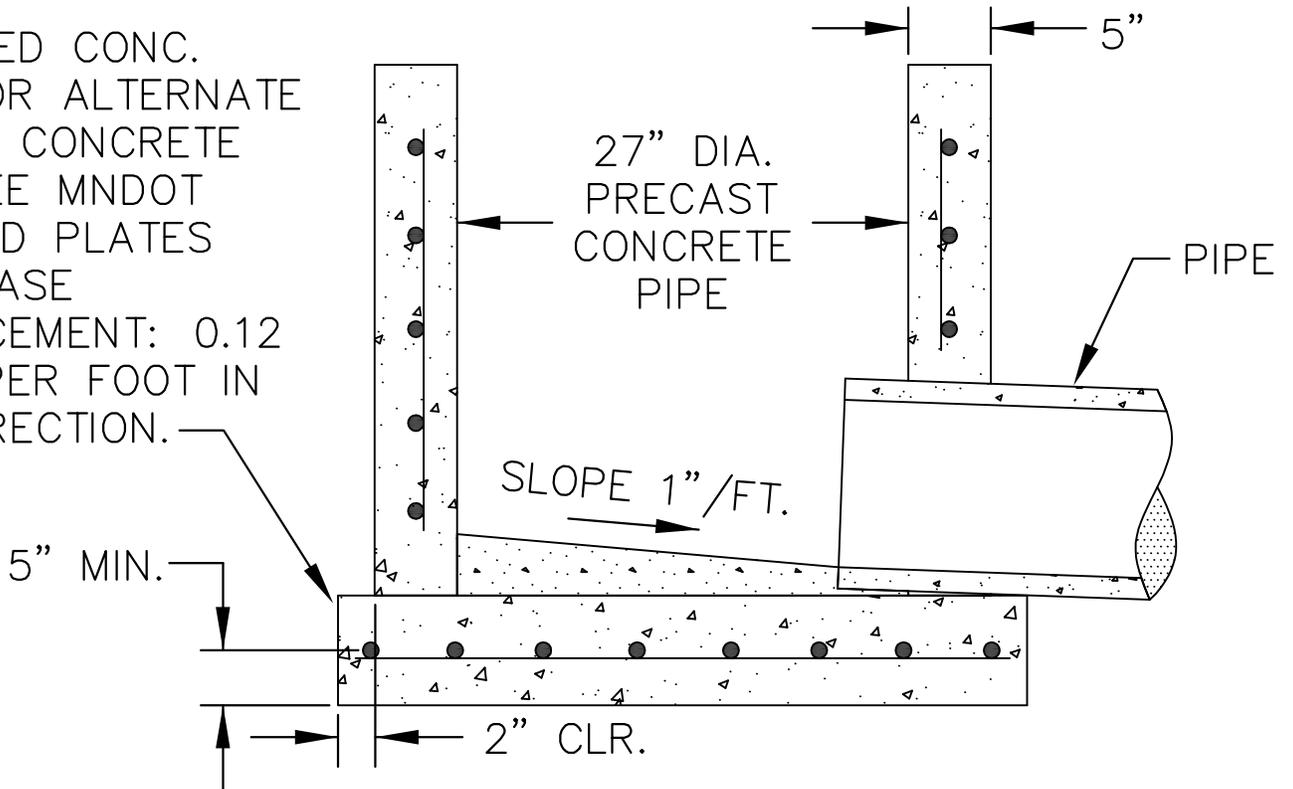
GV-ST-030



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.



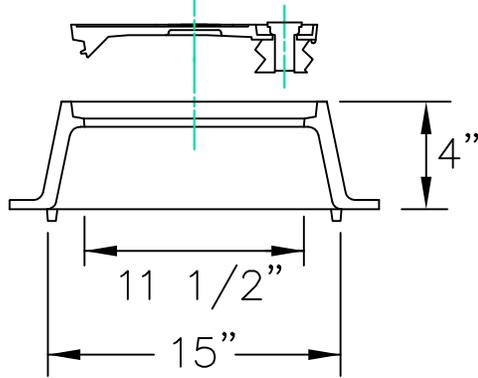
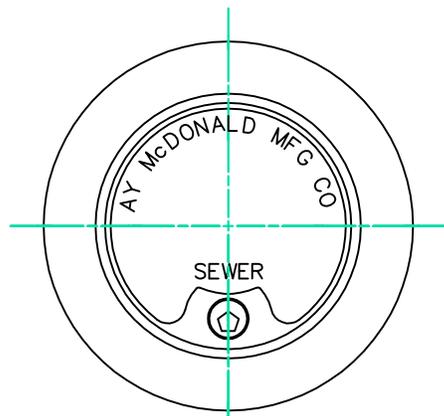
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**DRAINAGE STRUCTURE,
DESIGN MEDIAN DRAIN**

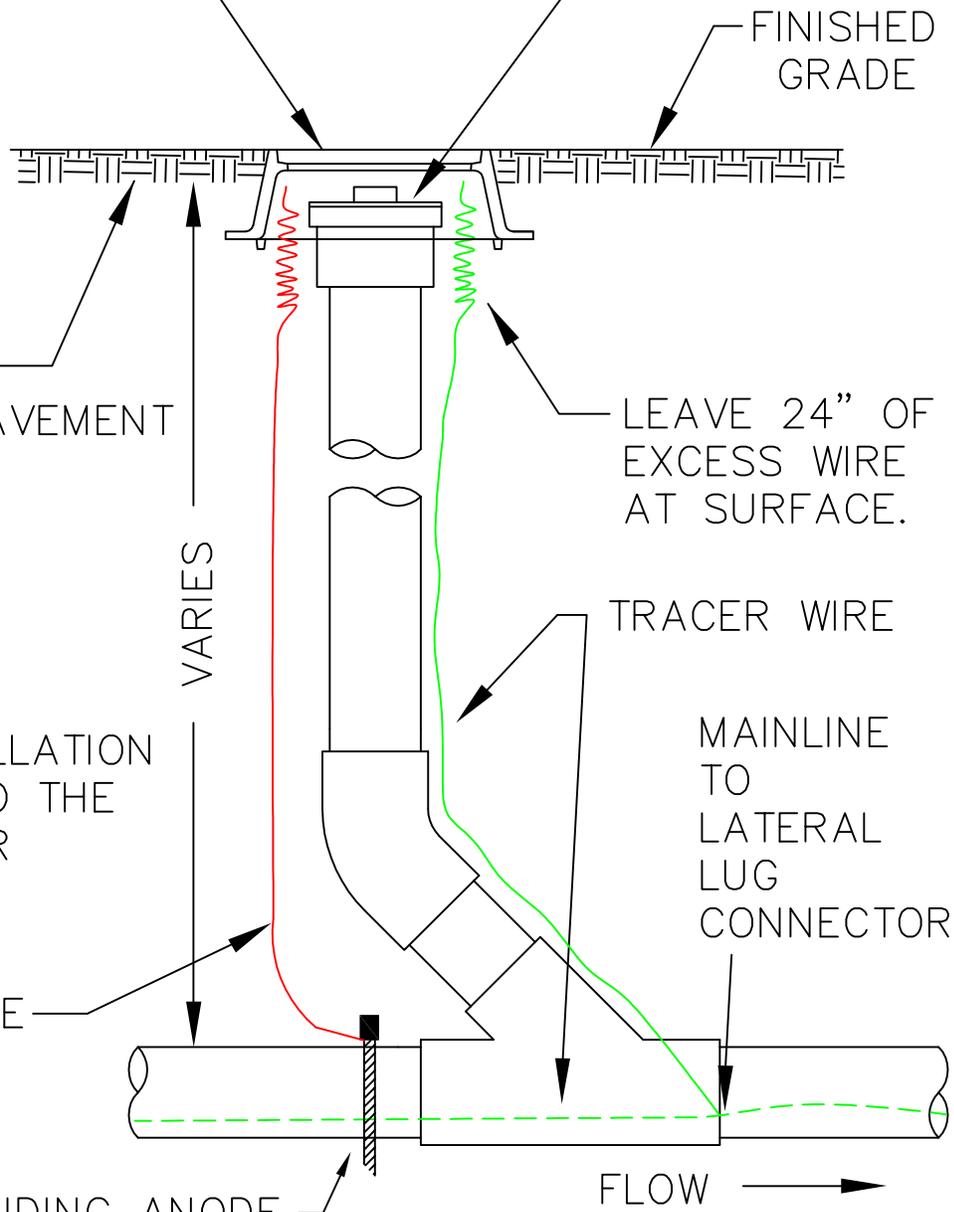
City of
Golden Valley

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

LEAVE 24" OF
EXCESS WIRE
AT SURFACE.

TRACER WIRE

MAINLINE
TO
LATERAL
LUG
CONNECTOR

GROUND WIRE

MAGNESIUM GROUNDING ANODE

FLOW →

NOTE:

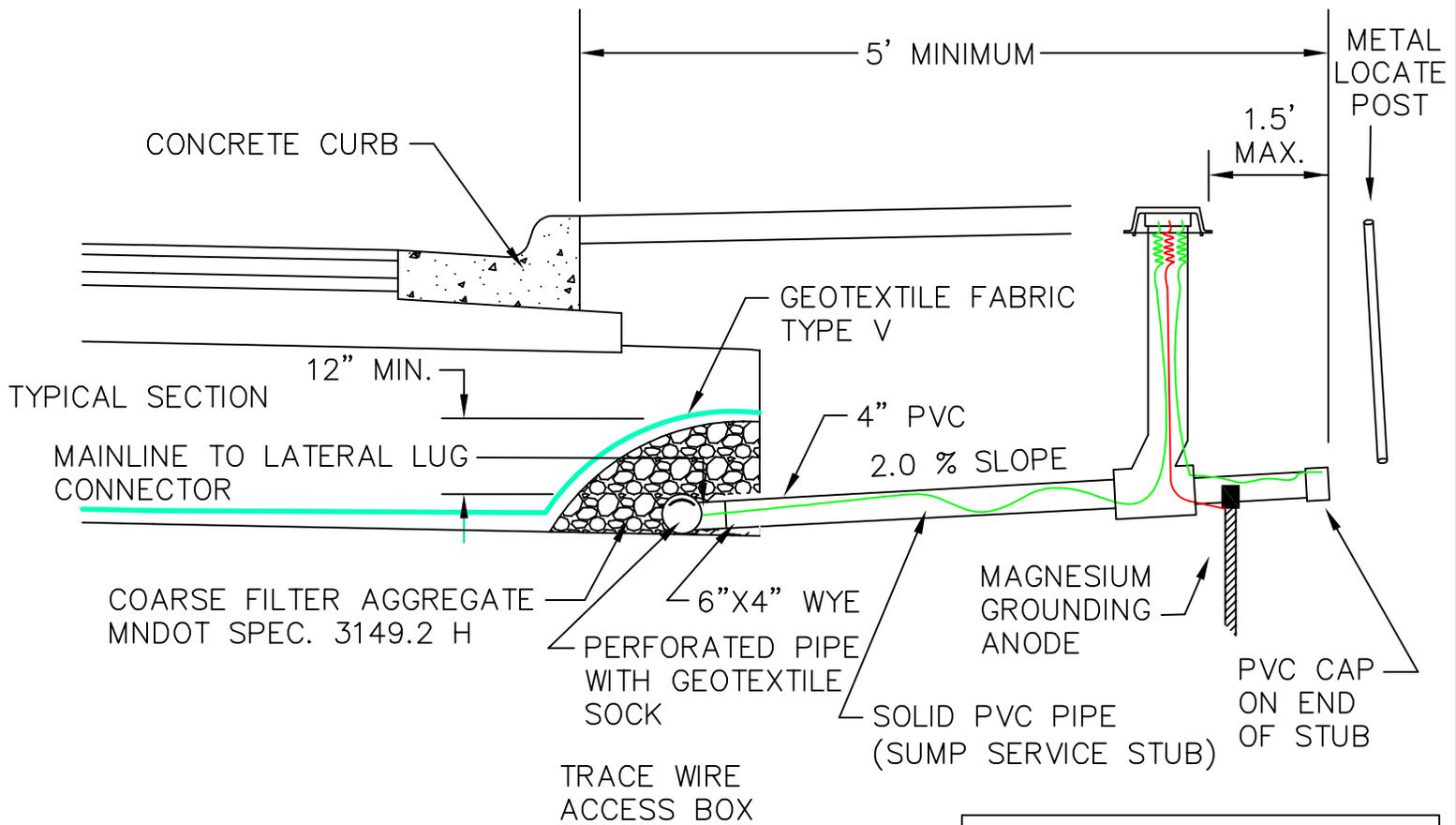
FOR TRACER WIRE INSTALLATION
REQUIREMENTS, REFER TO THE
MINNESOTA RURAL WATER
ASSOCIATION STANDARD
DETAILS.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

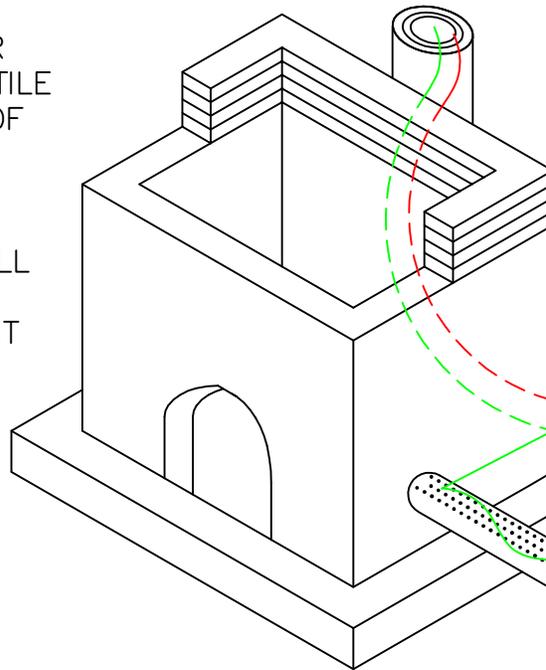
TYPICAL DRAINTILE
CLEANOUT ASSEMBLY

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.

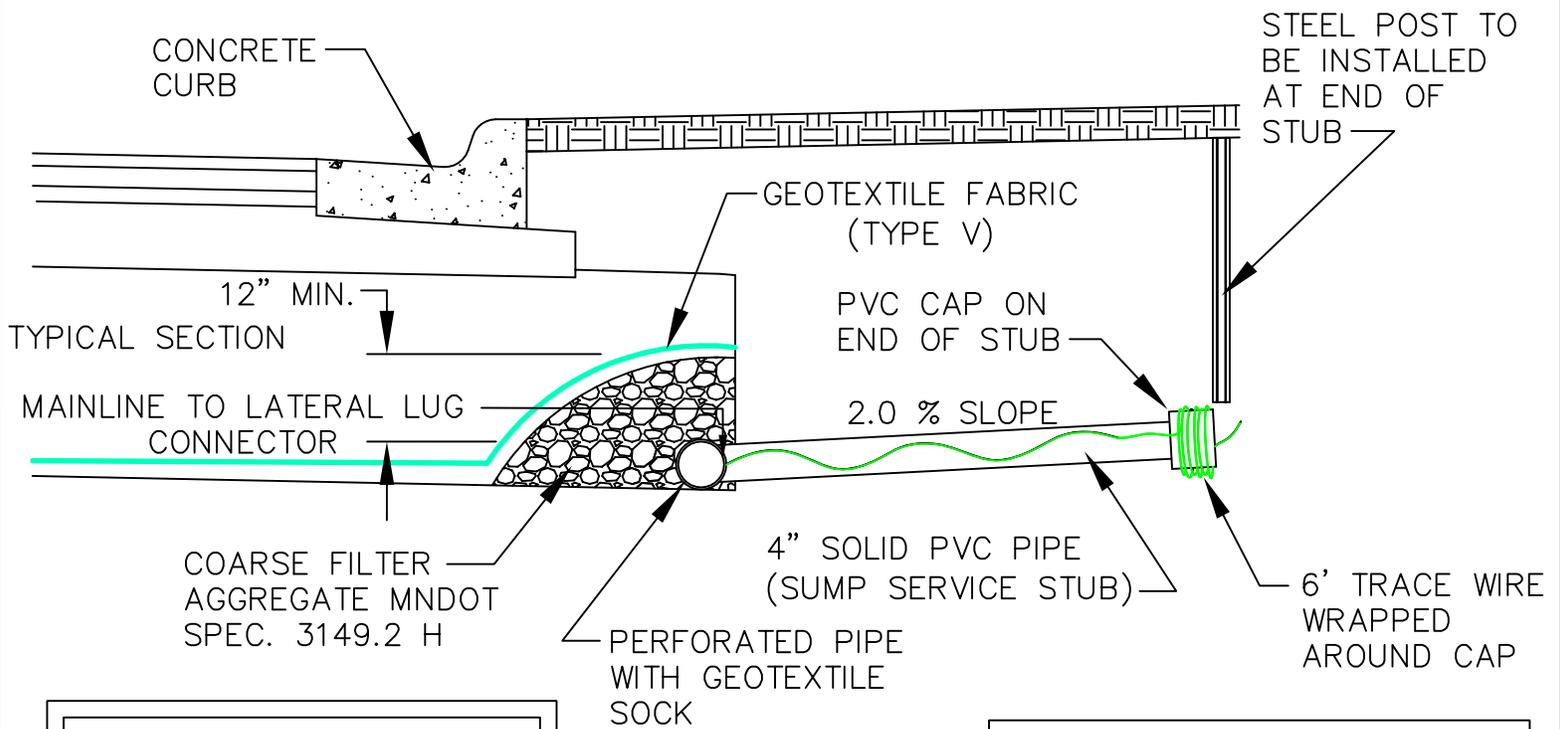
PERFORATED PIPE WITH GEOTEXTILE SOCK (SUB-GRADE DRAINAGE)
50 FT. TYP. UPSTREAM OF STRUCTURE
(OR AS DIRECTED BY ENGINEER)

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

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

GV-ST-060



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

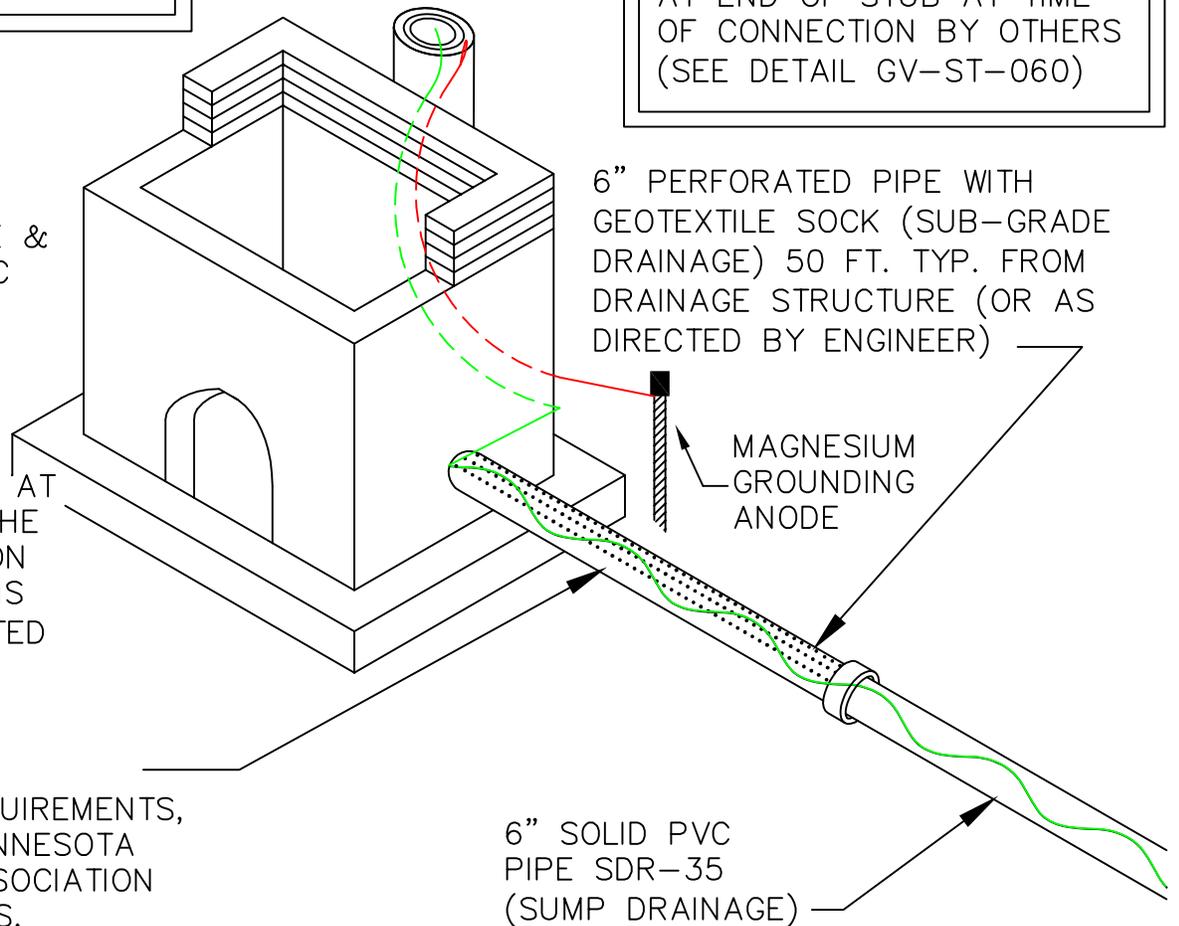
TRACE WIRE
ACCESS BOX

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.



APPROVED JANUARY 1, 2018

J. J. Cain

CITY ENGINEER REG 23110

SUB-GRADE & SUMP
DRAINAGE PIPES WITH
SERVICE STUB

Golden Valley

GV-ST-070

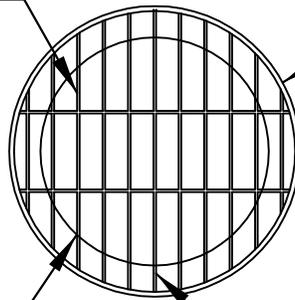
NO SCALE

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



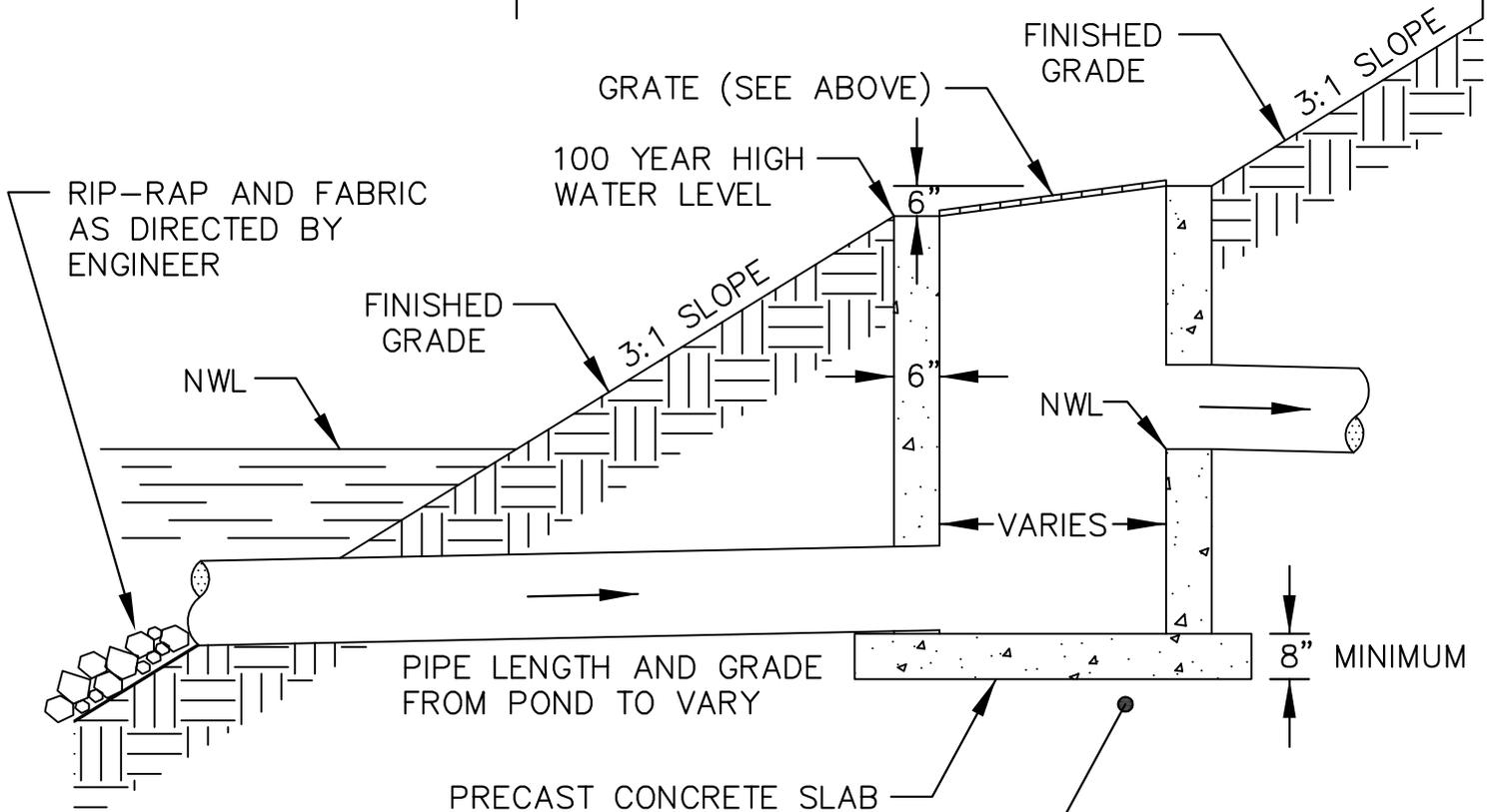
PROVIDE 1/4" PLATE WITH LOCKING CLASP. CLASP TO HAVE 1/2" PADLOCK HOLE.

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

PROVIDE 1/2" DIA. CONTINUOUS HINGE BAR

NO SCALE

POND BUFFER ZONE (VARIES)



RIP-RAP AND FABRIC AS DIRECTED BY ENGINEER

GRATE (SEE ABOVE)

FINISHED GRADE

3:1 SLOPE

100 YEAR HIGH WATER LEVEL

FINISHED GRADE

3:1 SLOPE

NWL

NWL

VARIES

PIPE LENGTH AND GRADE FROM POND TO VARY

8" MINIMUM

PRECAST CONCRETE SLAB

STRUCTURE BEDDING DEPTH TO VARY AS DIRECTED BY ENGINEER

STRUCTURE TO BE SCREENED BY PLANTINGS IN BUFFER ZONE.

APPROVED JANUARY 1, 2018

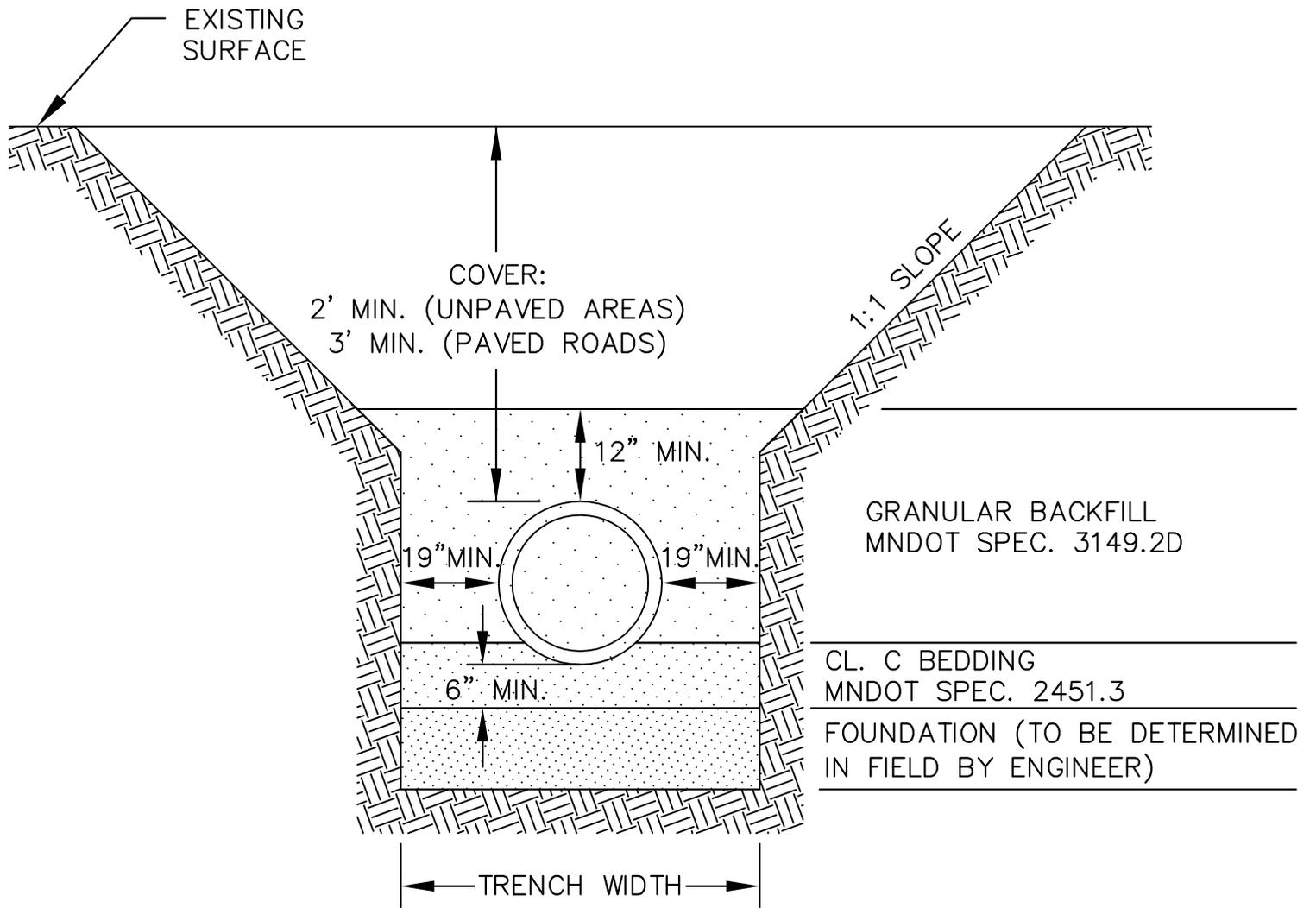
Handwritten signature of the City Engineer.

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"	

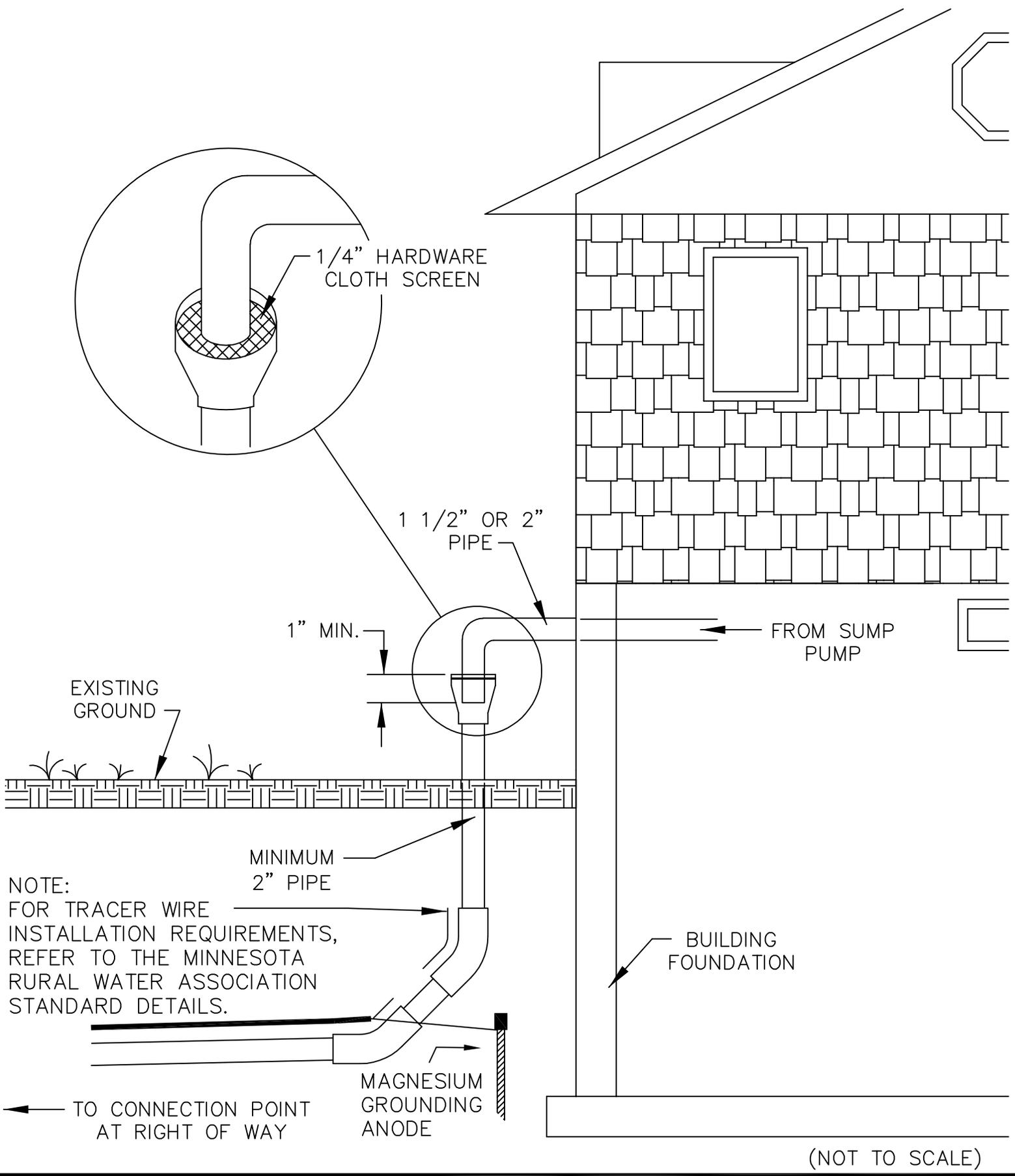
APPROVED JANUARY 1, 2018

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)

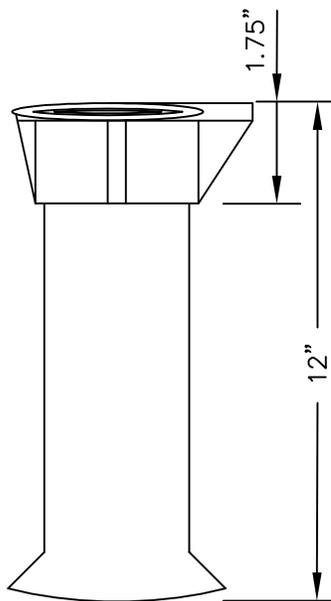
APPROVED FEBRUARY 1, 2020

J. B. Davis

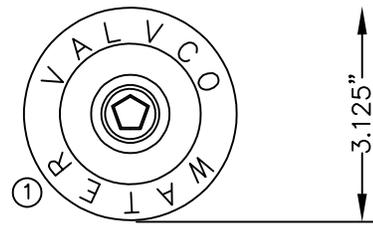
CITY ENGINEER REG 23110

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

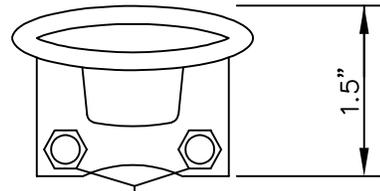
City of
Golden Valley
GV-ST-100



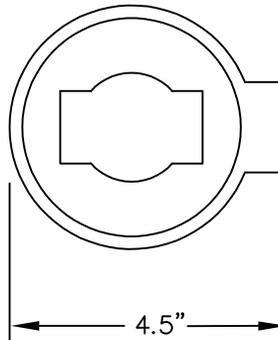
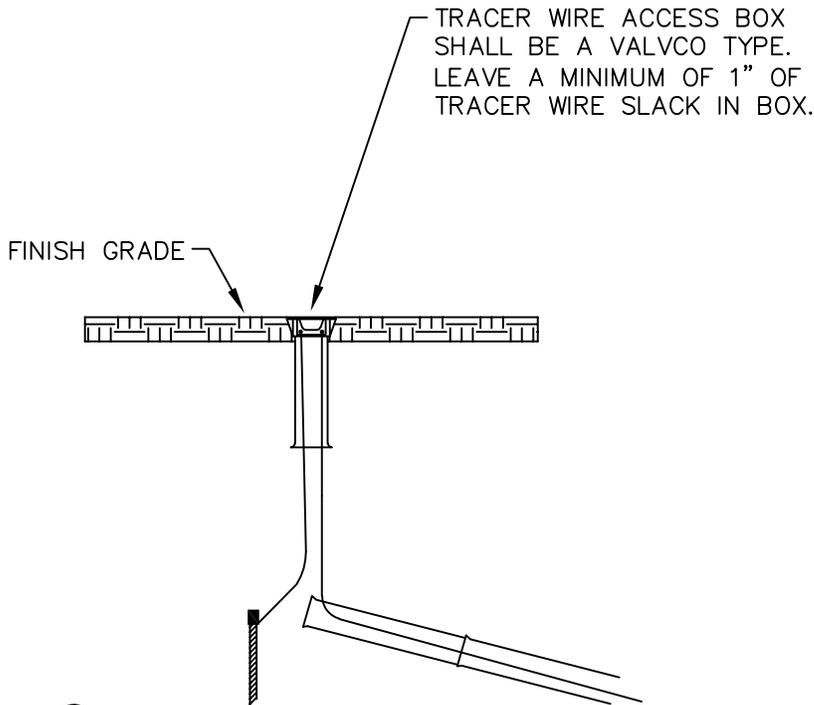
COMPLETE BOX SIDE VIEW



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.

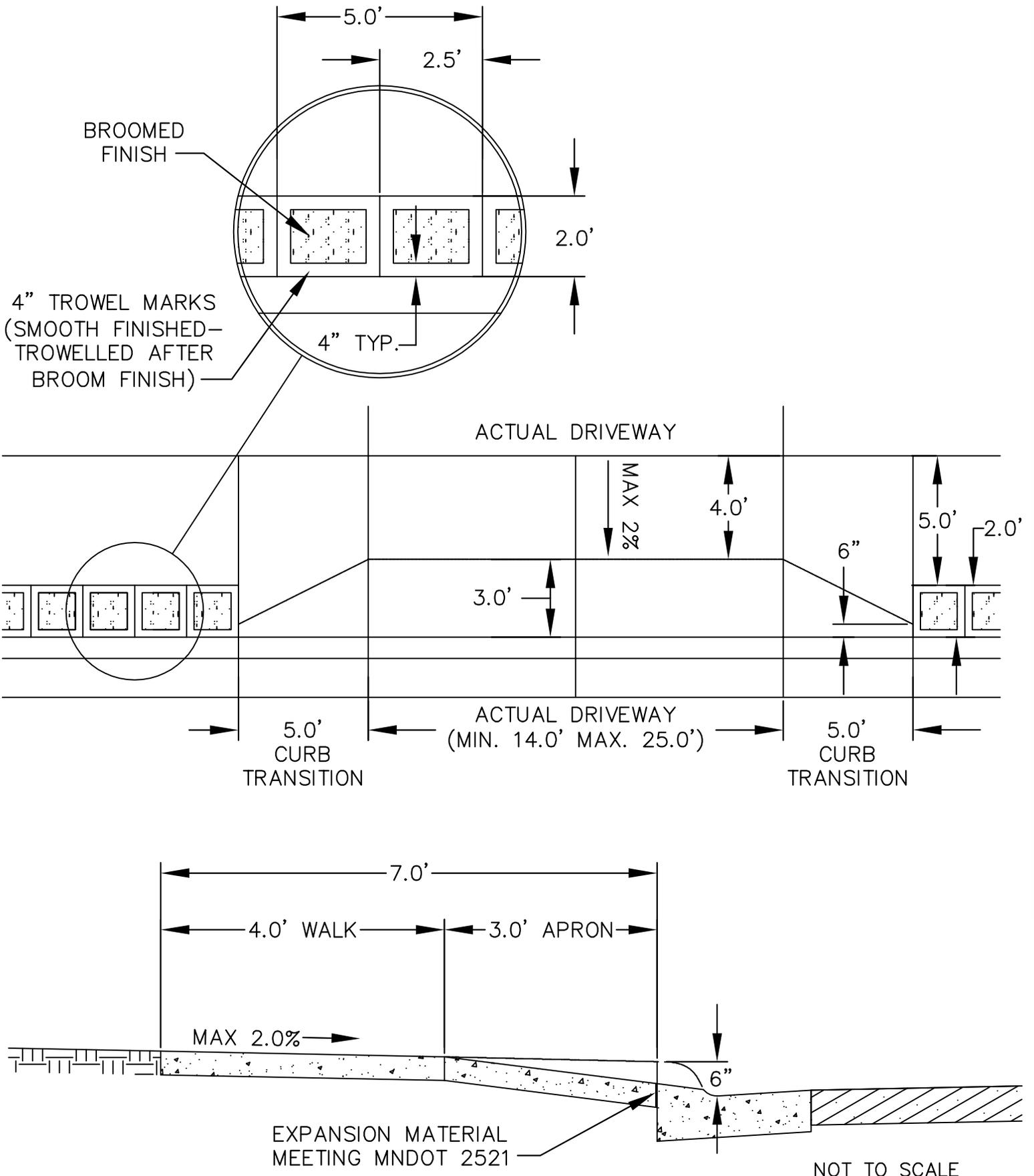
APPROVED JANUARY 15, 2020

CITY ENGINEER REG 23110

**TRACE WIRE
ACCESS BOX**

City of
Golden Valley

GV-ST-110



APPROVED JANUARY 1, 2018

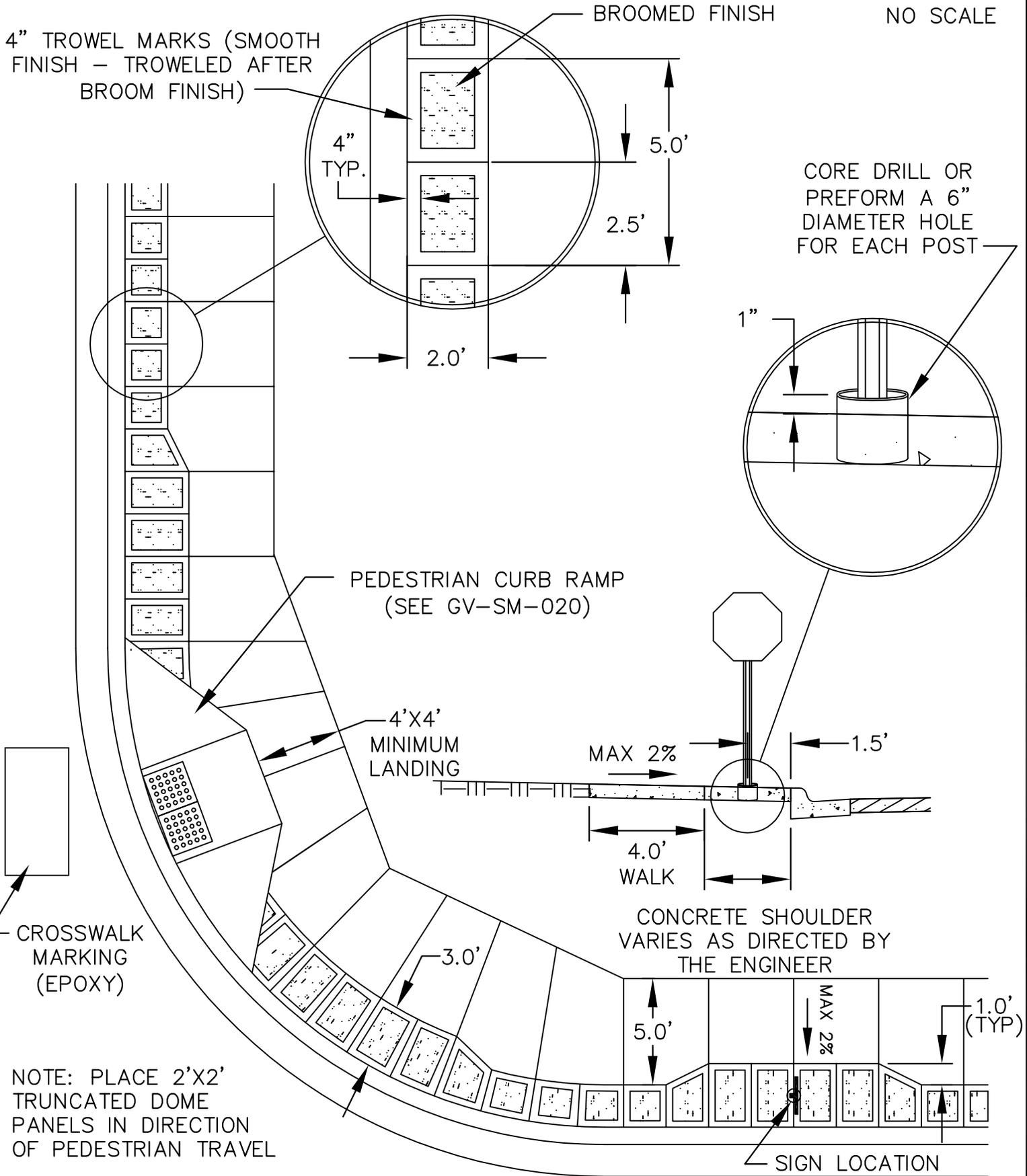
J. B. Cain

CITY ENGINEER REG 23110

**SIDEWALK WITH 2'
CONCRETE SHOULDER
(AT DRIVEWAY)**

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

NO SCALE



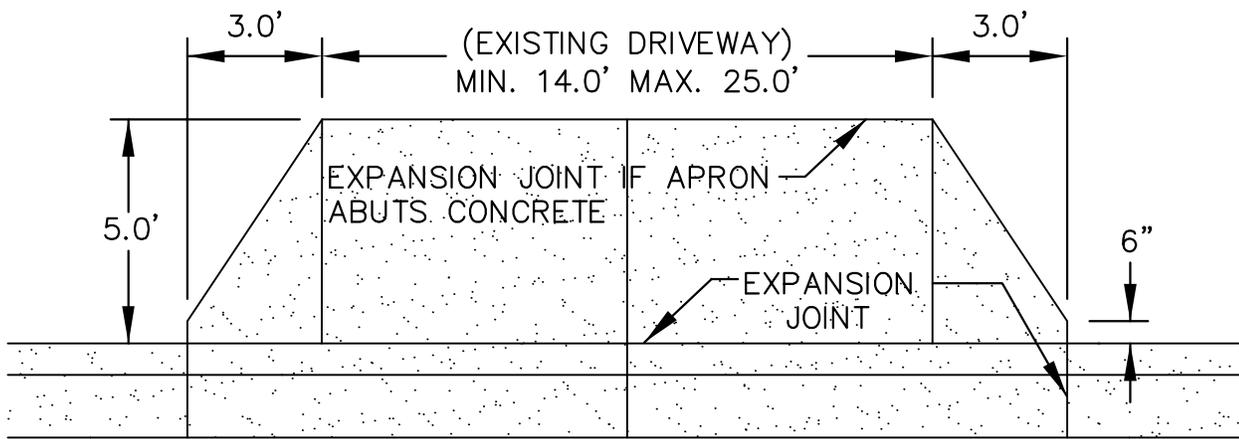
APPROVED JANUARY 1, 2018

J. B. Cairns

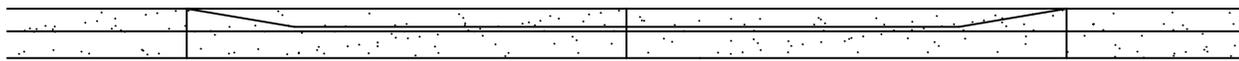
CITY ENGINEER REG 23110

SIDEWALK WITH 2' CONCRETE SHOULDER

City of Golden Valley
GV-STRT-020



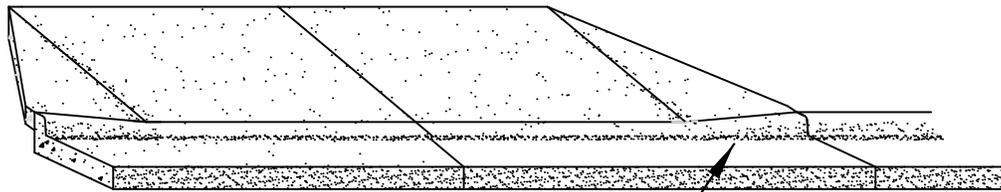
TOP VIEW



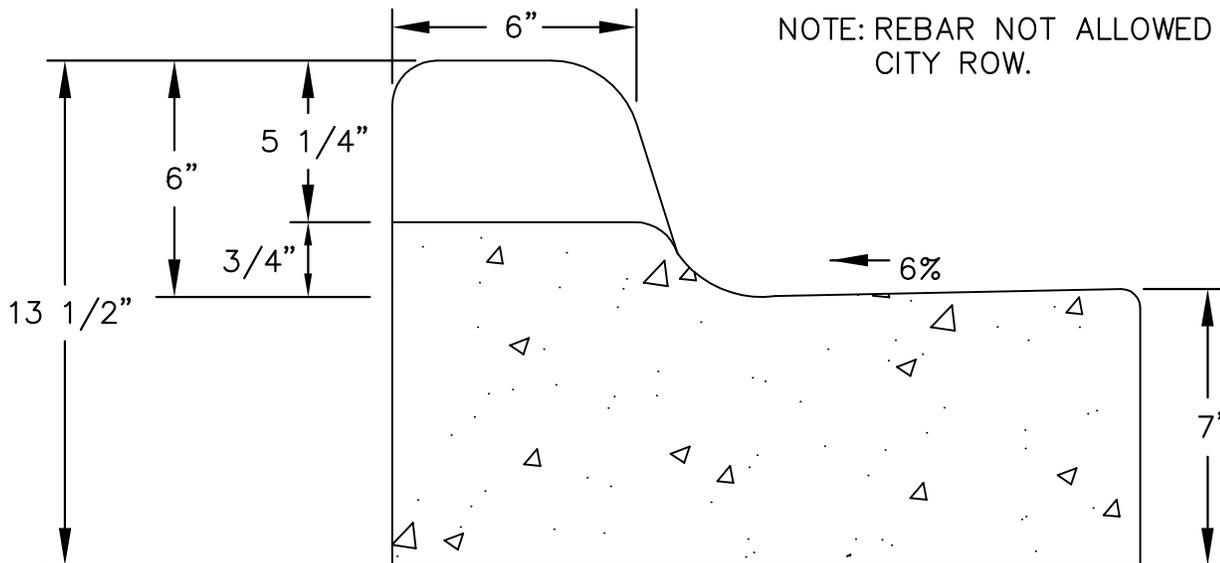
PROFILE VIEW

3.0' CURB
TAPER

3.0' CURB
TAPER



DROP CURB AT DRIVEWAYS



DROP CURB AT DRIVEWAY OPENINGS.
(TRANSITION TO BE MADE IN 3.0'.)

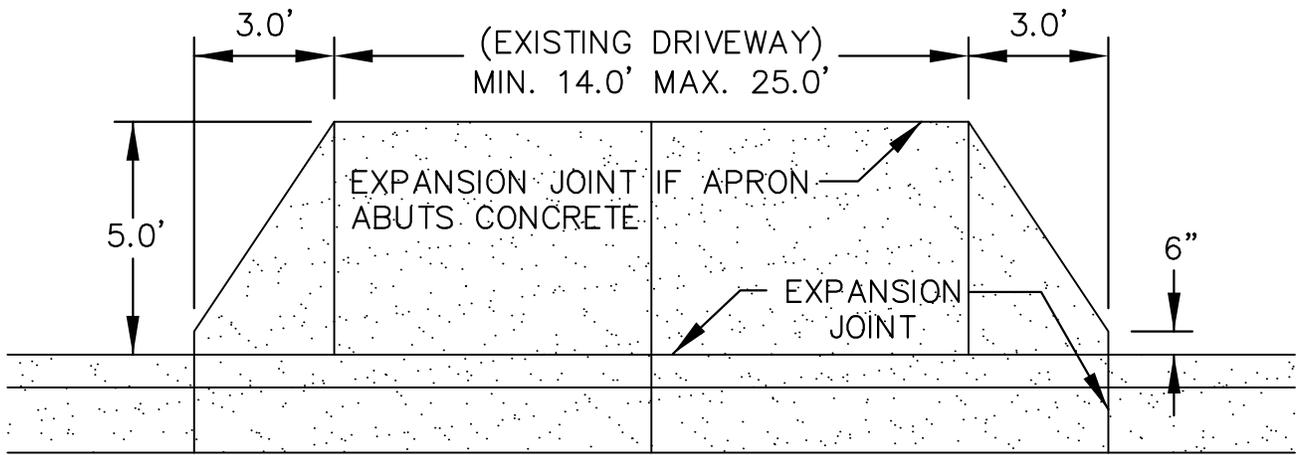
NOT TO SCALE

APPROVED JANUARY 1, 2018

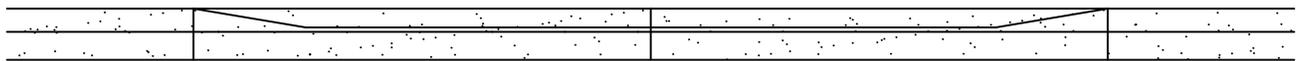
CITY ENGINEER REG 23110

**DRIVEWAY APPROACH
WITH CONCRETE APRON
(B618)**

City of
Golden Valley
GV-STRT-030



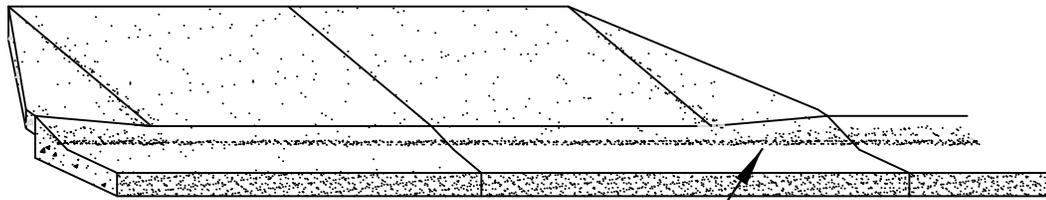
TOP VIEW



PROFILE VIEW

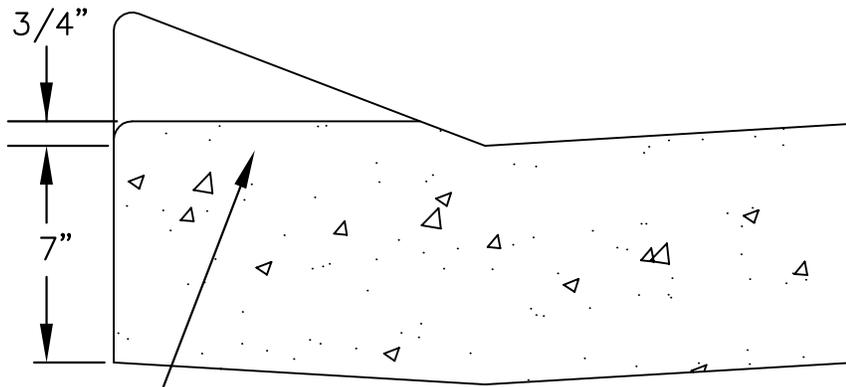
3.0' CURB TAPER

3.0' CURB TAPER



DROP CURB AT DRIVEWAYS

NOTE: REBAR NOT ALLOWED IN CITY ROW.



DROP CURB AT DRIVEWAY OPENINGS. (TRANSITION TO BE MADE IN 3 FT.)

APPROVED JANUARY 1, 2018

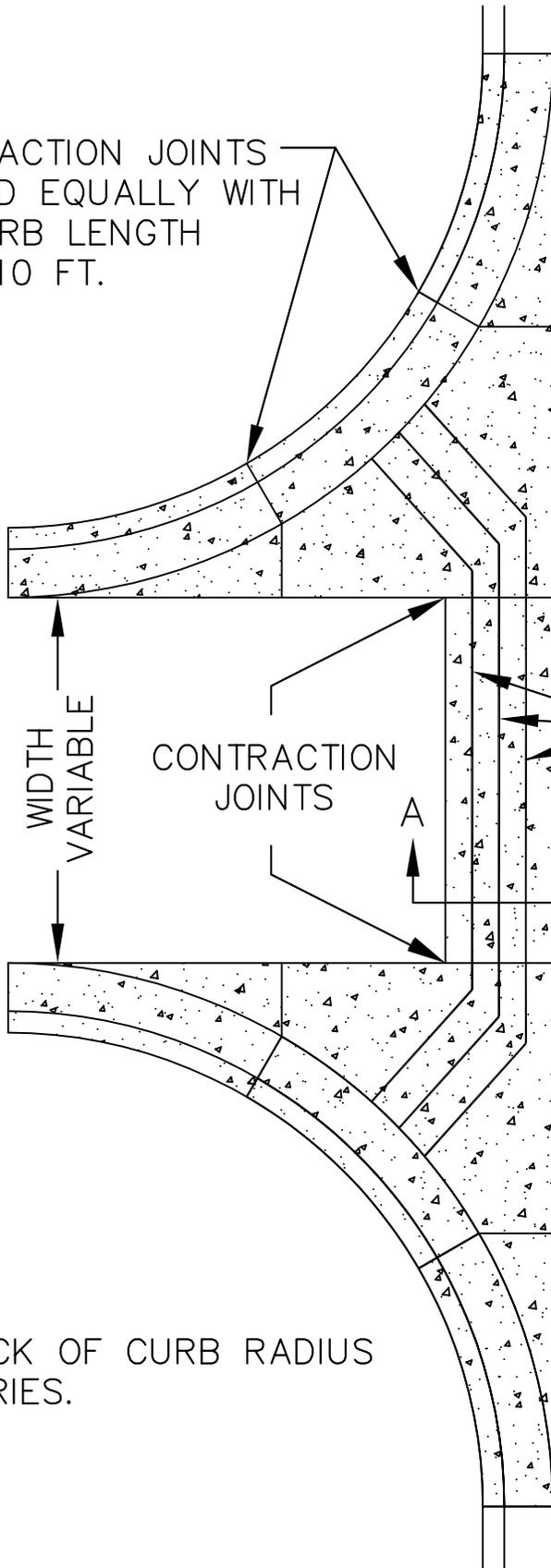
CITY ENGINEER REG 23110

**DRIVEWAY APPROACH
WITH CONCRETE
APRON (D412)**

City of Golden Valley
GV-STRT-040

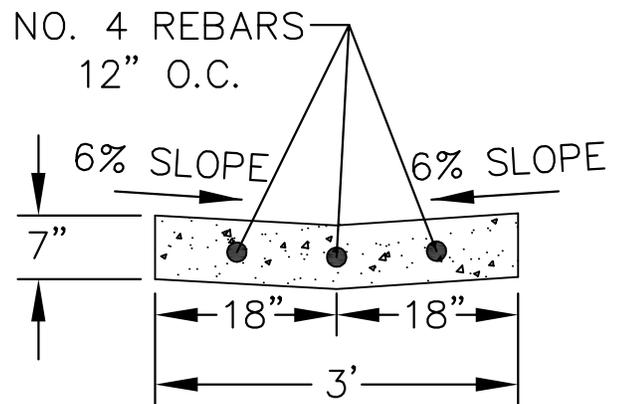
CONTRACTION JOINTS
SPACED EQUALLY WITH
NO CURB LENGTH
OVER 10 FT.

EXPANSION JOINT



NO. 4 REBAR TIED &
SUPPORTED ON BASKETS

SECTION AA
THRU GUTTER



BACK OF CURB RADIUS
VARIES.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**COMMERCIAL CROSS
GUTTER DRIVEWAY
H-PATTERN**

City of
Golden Valley
GV-STRT-050

CONTRACTION JOINTS
SPACED EQUALLY WITH
NO CURB LENGTH
OVER 10 FT.

EXPANSION JOINT
(TYP.)

3 NO. 4 EPOXY COATED REINFORCING
RODS CONTINUOUS IN CROSS GUTTER
FROM EXPANSION JOINT TO EXPANSION JOINT.

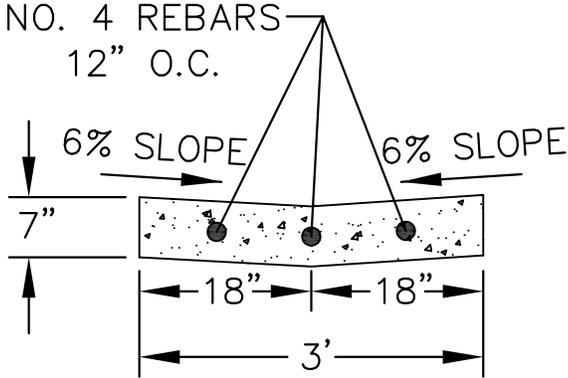
WIDTH
VARIABLE

CONTRACTION
JOINTS
(TYP.)



BACK OF CURB RADIUS
VARIES.

SECTION AA
THRU GUTTER



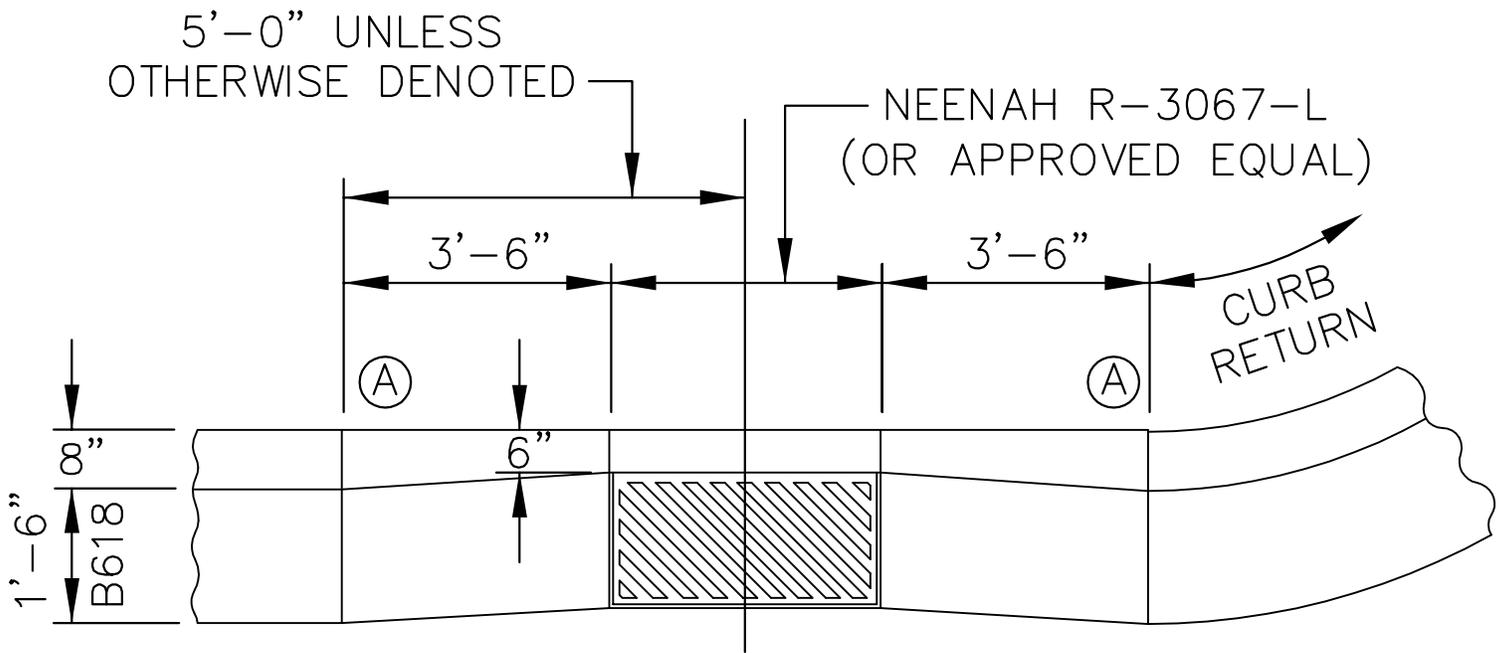
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**COMMERCIAL CROSS
GUTTER DRIVEWAY**

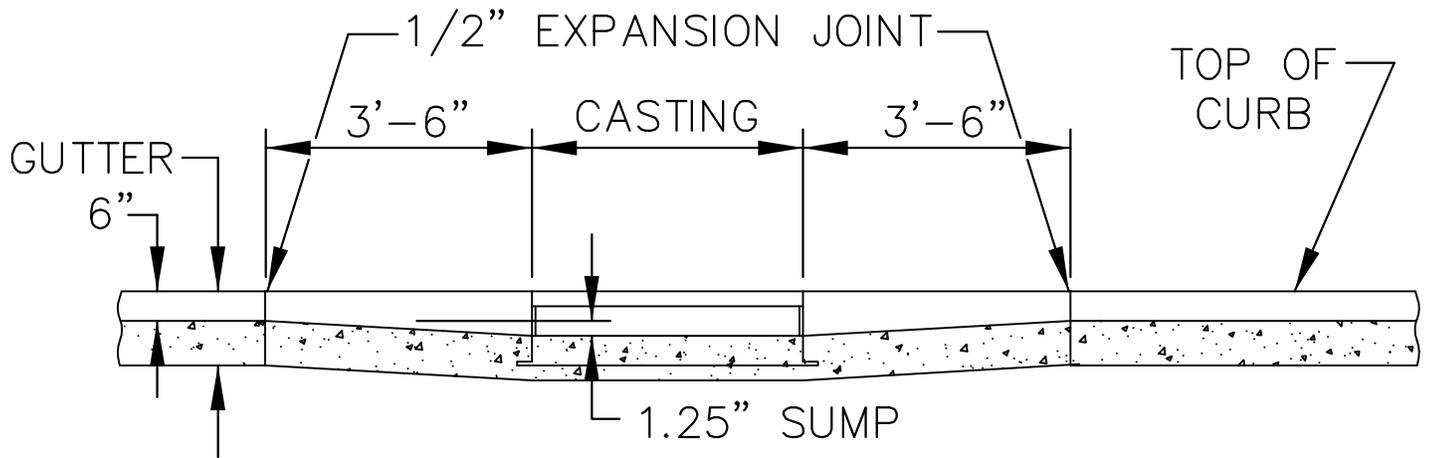
City of Golden Valley

GV-STRT-060



Ⓐ TAPER CONC. CURB & GUTTER TO MATCH CASTING

PLAN VIEW



SECTION

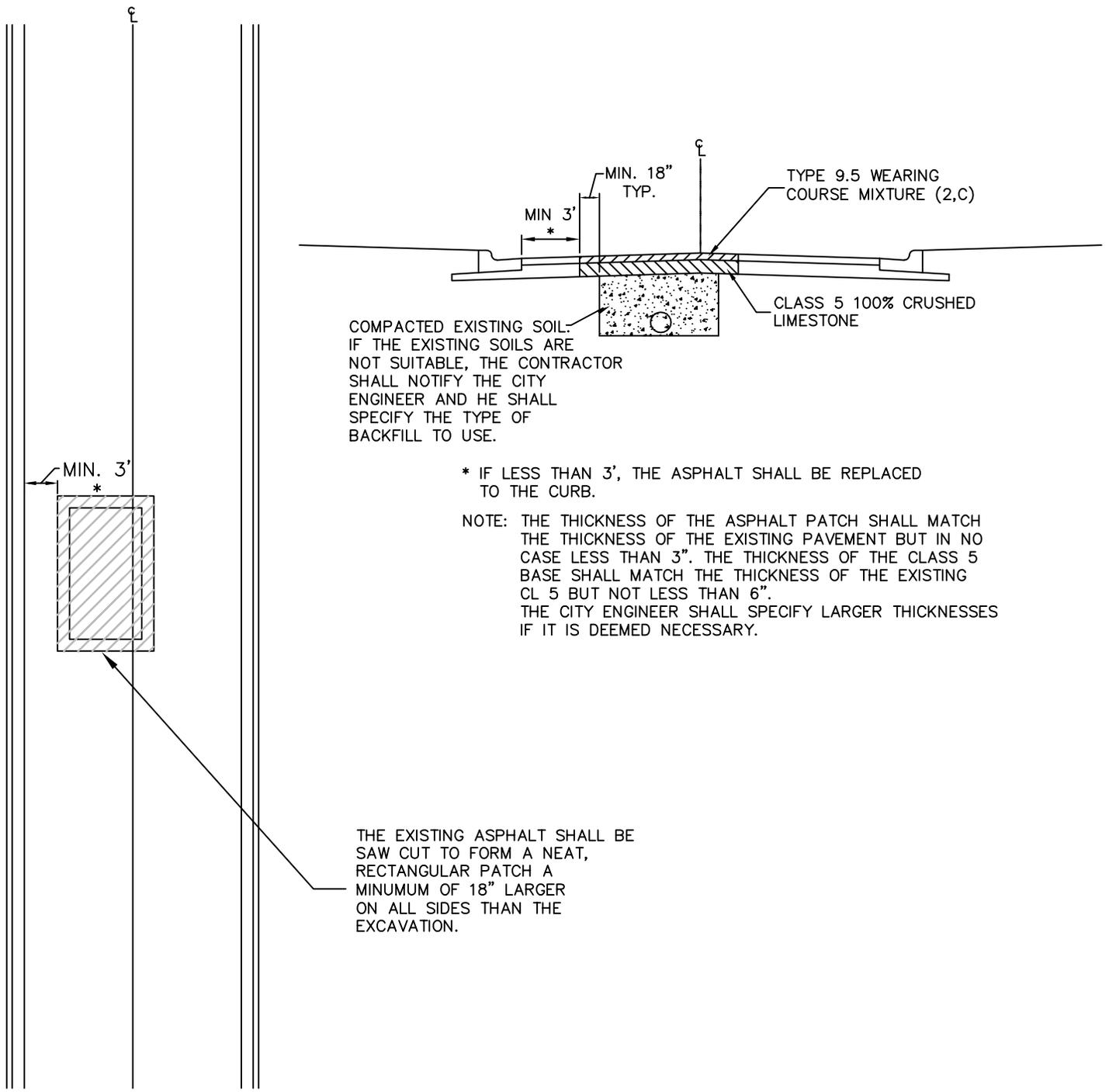
APPROVED JANUARY 1, 2018

J. B. Cain

CITY ENGINEER REG 23110

**CATCH BASIN
INSTALLATION FOR
B618 CURB & GUTTER**

City of Golden Valley
GV-STRT-070



EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT.

THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

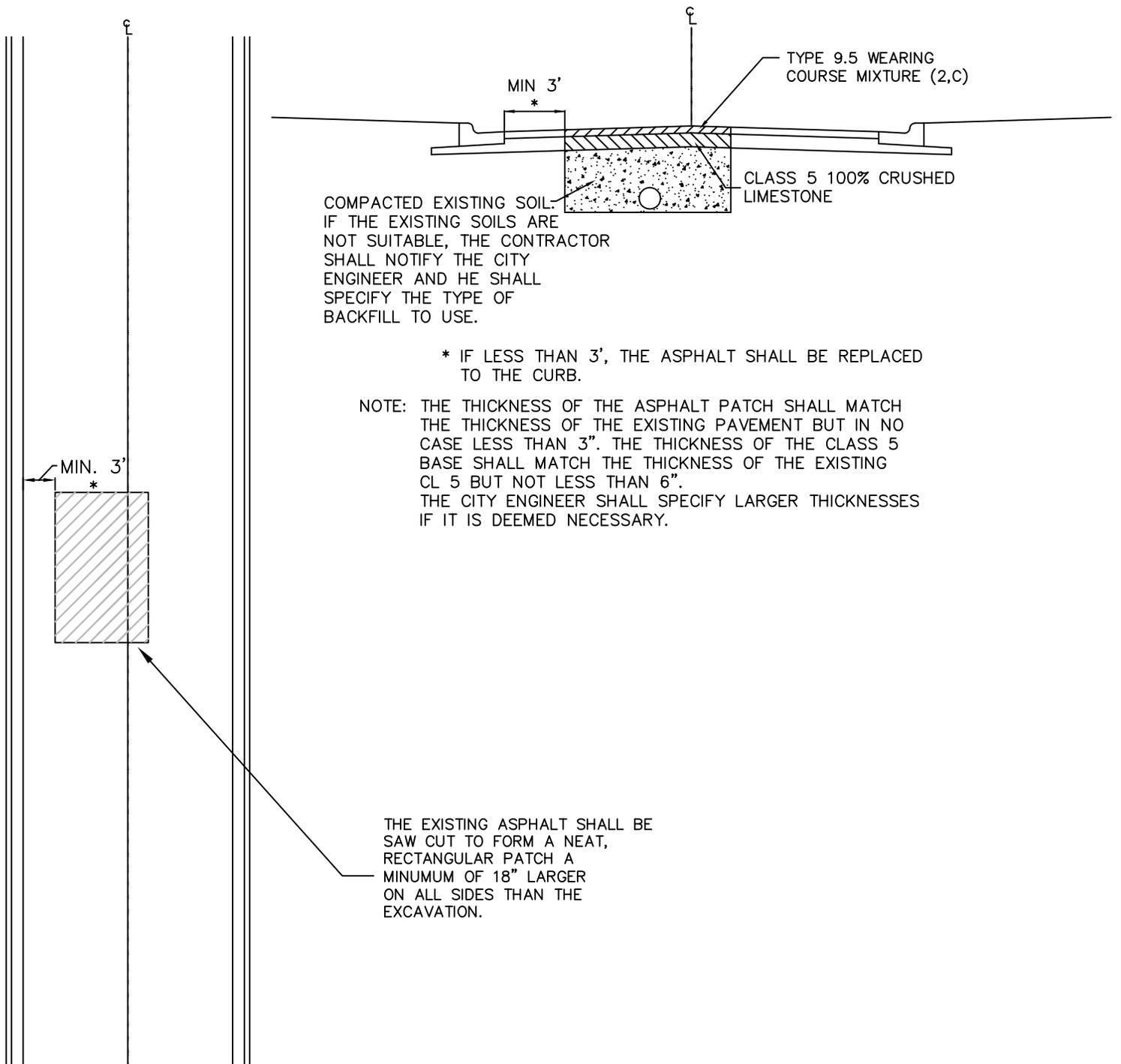
TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPE A UTILITY PATCH
IMPROVED STREET**

City of
Golden Valley
GV-STRT-080



COMPACTED EXISTING SOIL.
 IF THE EXISTING SOILS ARE NOT SUITABLE, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND HE SHALL SPECIFY THE TYPE OF BACKFILL TO USE.

* IF LESS THAN 3', THE ASPHALT SHALL BE REPLACED TO THE CURB.

NOTE: THE THICKNESS OF THE ASPHALT PATCH SHALL MATCH THE THICKNESS OF THE EXISTING PAVEMENT BUT IN NO CASE LESS THAN 3". THE THICKNESS OF THE CLASS 5 BASE SHALL MATCH THE THICKNESS OF THE EXISTING CL 5 BUT NOT LESS THAN 6". THE CITY ENGINEER SHALL SPECIFY LARGER THICKNESSES IF IT IS DEEMED NECESSARY.

THE EXISTING ASPHALT SHALL BE SAW CUT TO FORM A NEAT, RECTANGULAR PATCH A MINIMUM OF 18" LARGER ON ALL SIDES THAN THE EXCAVATION.

EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT.

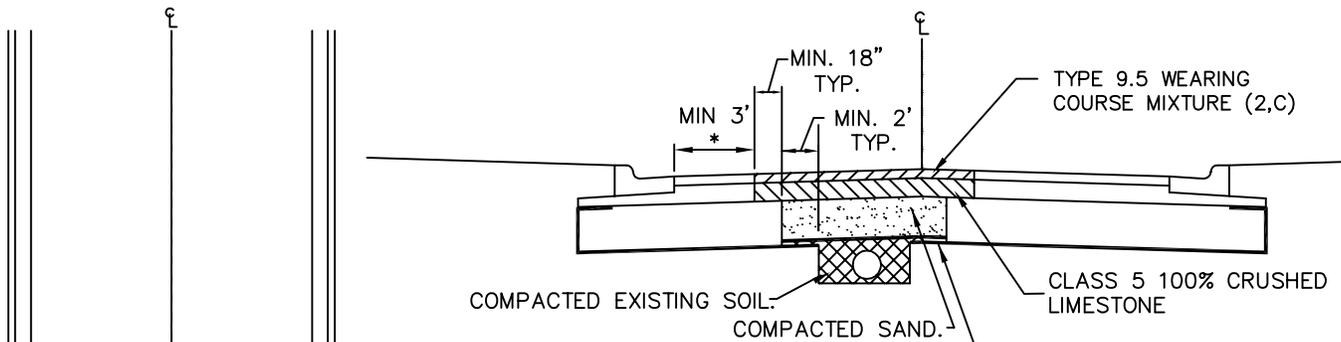
THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW THE UPPER 3'.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

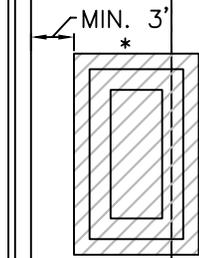
**TYPE B UTILITY PATCH
 UNIMPROVED STREET**



OVERLAP THE EXISTING GEOTEXTILE FABRIC A MINIMUM OF 2' WITH TYPE V GEOTEXTILE ON EACH SIDE OF THE EXCAVATION.

* IF LESS THAN 3', THE ASPHALT SHALL BE REPLACED TO THE CURB.

NOTE: THE THICKNESS OF THE ASPHALT PATCH SHALL MATCH THE THICKNESS OF THE EXISTING PAVEMENT BUT IN NO CASE LESS THAN 3". THE THICKNESS OF THE CLASS 5 BASE SHALL MATCH THE THICKNESS OF THE EXISTING CL 5 BUT NOT LESS THAN 6". THE CITY ENGINEER SHALL SPECIFY LARGER THICKNESSES IF IT IS DEEMED NECESSARY.



THE EXISTING ASPHALT SHALL BE SAW CUT TO FORM A NEAT, RECTANGULAR PATCH.

EXTREME CARE MUST BE TAKEN TO EXPOSE THE PORTION OF GEOTEXTILE FABRIC WHICH IS TO BE OVERLAPPED TO PREVENT DAMAGE TO THE EXISTING FABRIC. IF THE FABRIC IS DAMAGED, THE EXCAVATION MUST BE ENLARGED TO PROVIDE A MINIMUM OF 2' OF OVERLAP ON TO UNDAMAGED FABRIC.

EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE EXISTING GEOTEXTILE FABRIC AND BEFORE PLACEMENT OF SAND AND ALSO WHEN IT IS FILLED TO THE TOP OF THE CLASS 5, BEFORE

THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

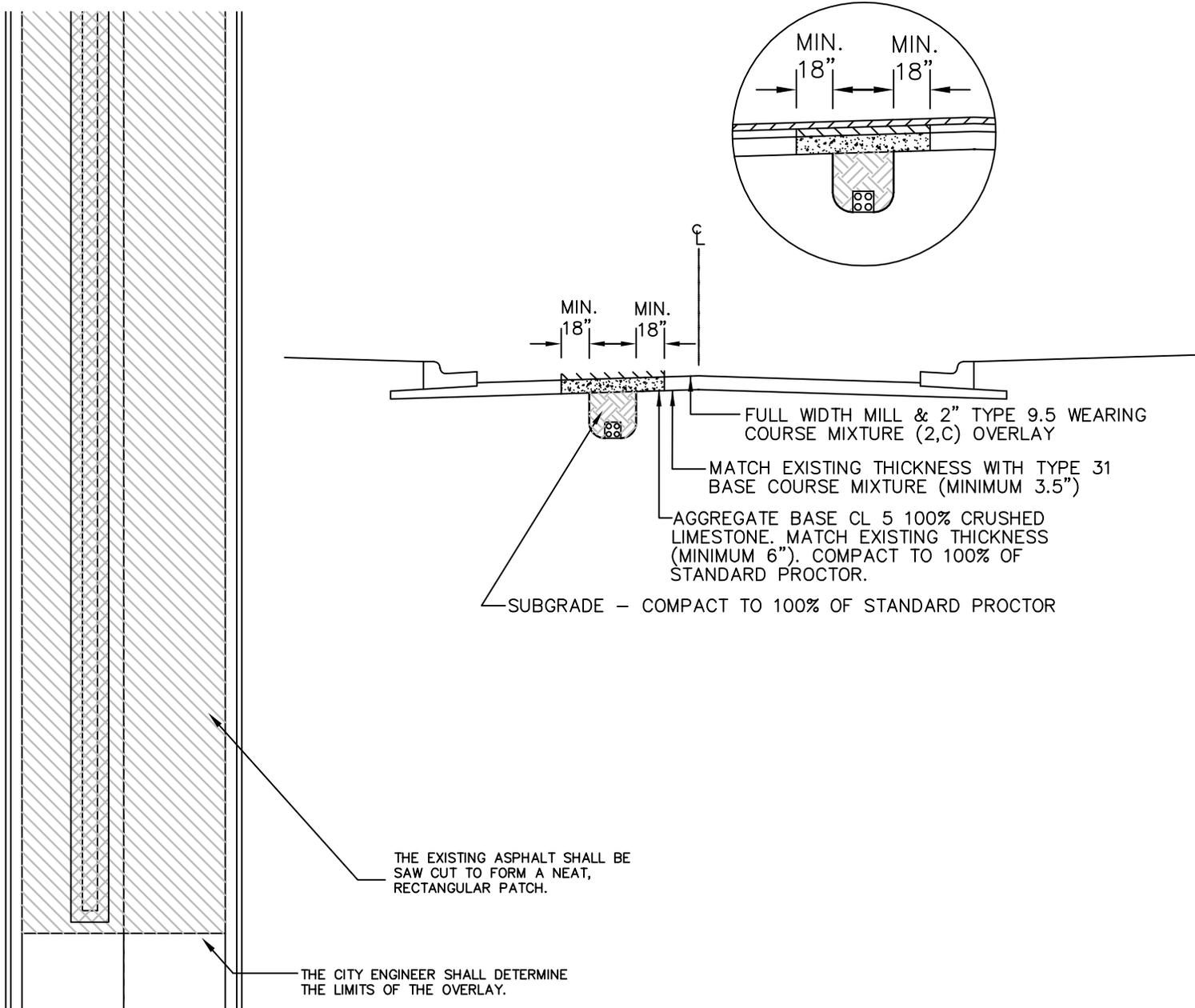
TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPE C UTILITY PATCH
IMPROVED STREET WITH
GEOTEXTILE FABRIC**

City of
Golden Valley
GV-STRT-100



EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT. ALSO WHEN THE EXISTING ASPHALT HAS BEEN MILLED AND READY FOR THE PLACEMENT OF THE ASPHALT WEAR COURSE.

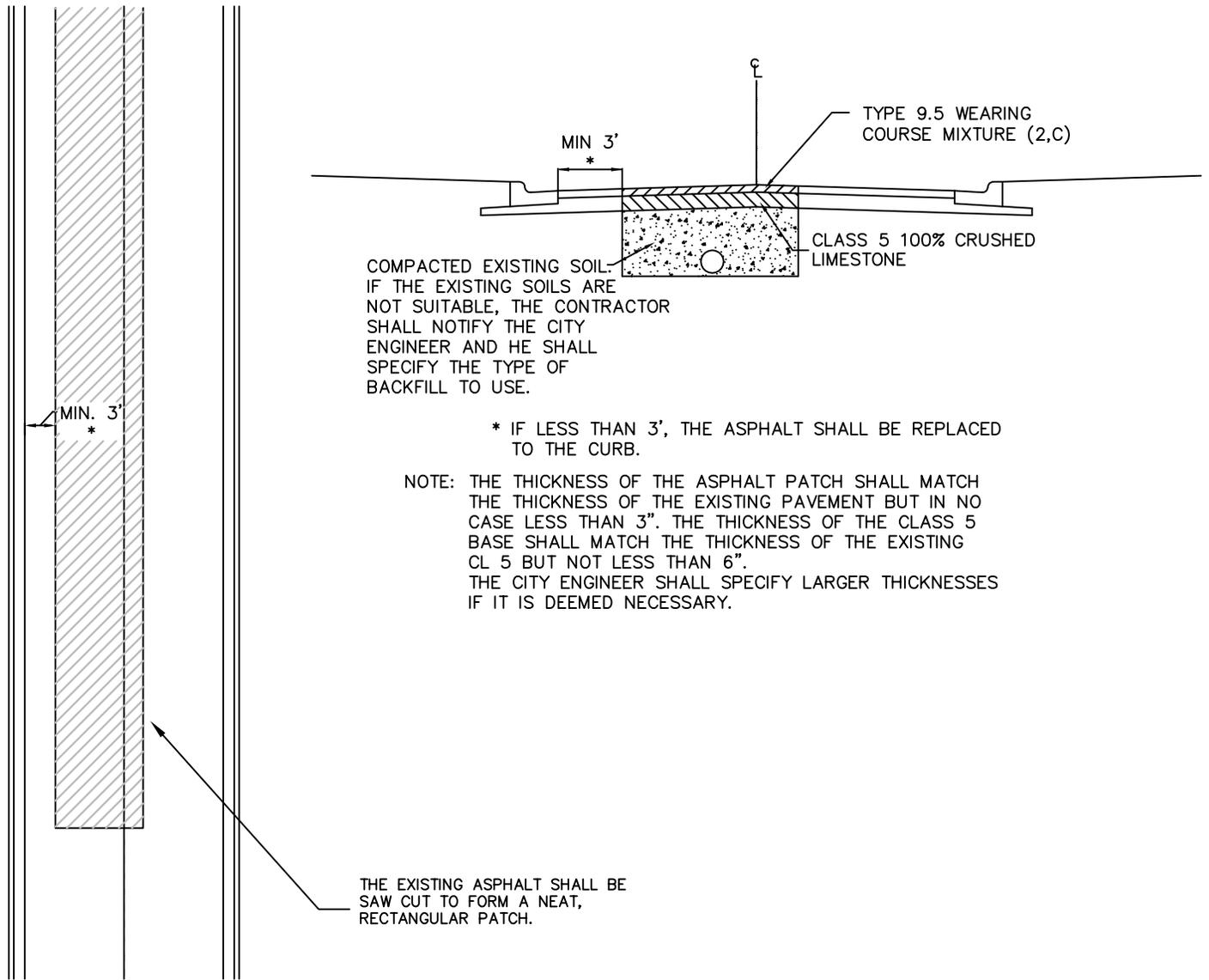
THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPE D UTILITY PATCH
IMPROVED STREET**

City of
Golden Valley
GV-STRT-110



EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT.

THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

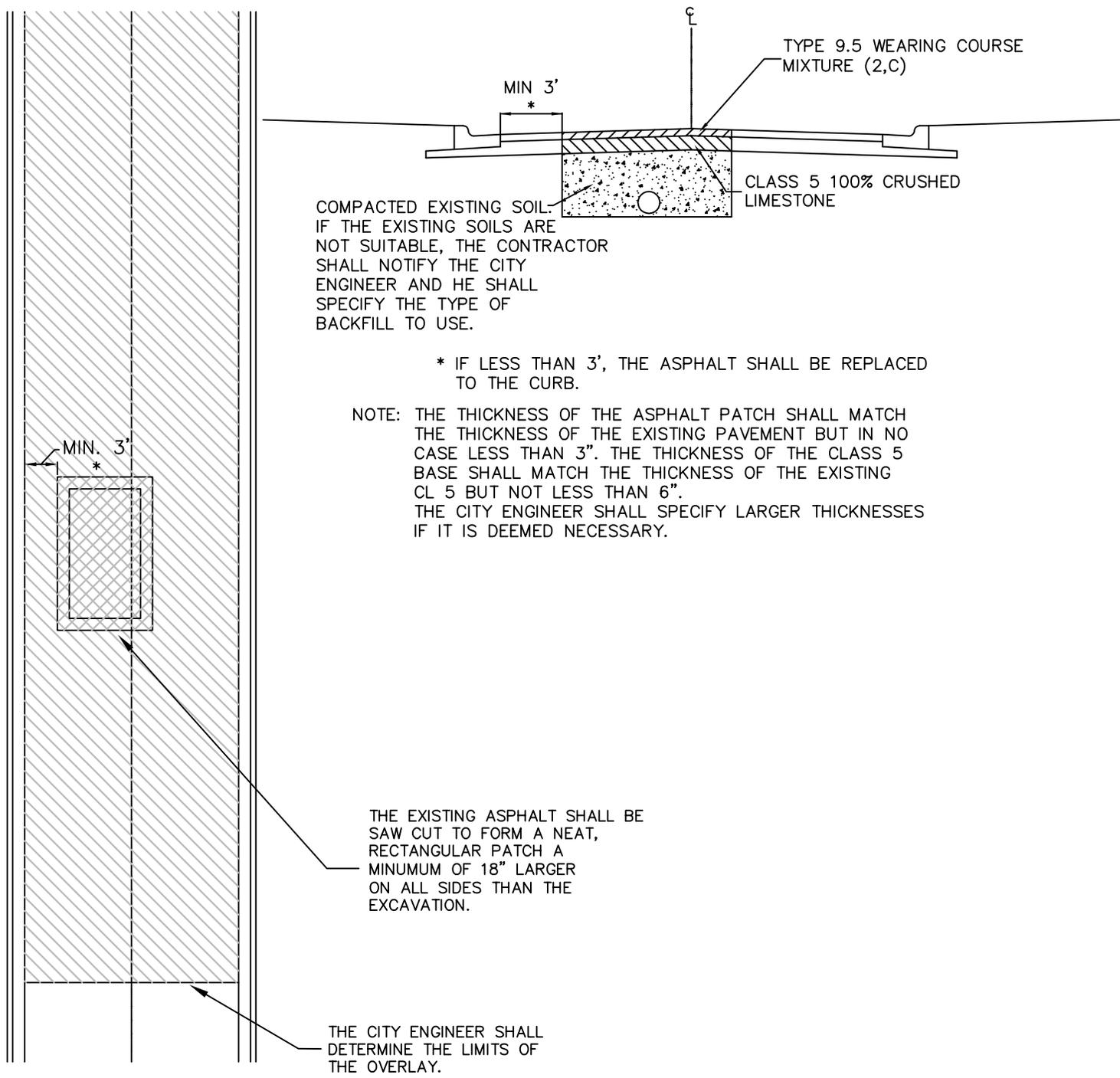
TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPE E UTILITY PATCH
UNIMPROVED STREET**

City of
Golden Valley
GV-STRT-120



COMPACTED EXISTING SOIL.
 IF THE EXISTING SOILS ARE NOT SUITABLE, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND HE SHALL SPECIFY THE TYPE OF BACKFILL TO USE.

* IF LESS THAN 3', THE ASPHALT SHALL BE REPLACED TO THE CURB.

NOTE: THE THICKNESS OF THE ASPHALT PATCH SHALL MATCH THE THICKNESS OF THE EXISTING PAVEMENT BUT IN NO CASE LESS THAN 3". THE THICKNESS OF THE CLASS 5 BASE SHALL MATCH THE THICKNESS OF THE EXISTING CL 5 BUT NOT LESS THAN 6". THE CITY ENGINEER SHALL SPECIFY LARGER THICKNESSES IF IT IS DEEMED NECESSARY.

THE EXISTING ASPHALT SHALL BE SAW CUT TO FORM A NEAT, RECTANGULAR PATCH A MINIMUM OF 18" LARGER ON ALL SIDES THAN THE EXCAVATION.

THE CITY ENGINEER SHALL DETERMINE THE LIMITS OF THE OVERLAY.

EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT.

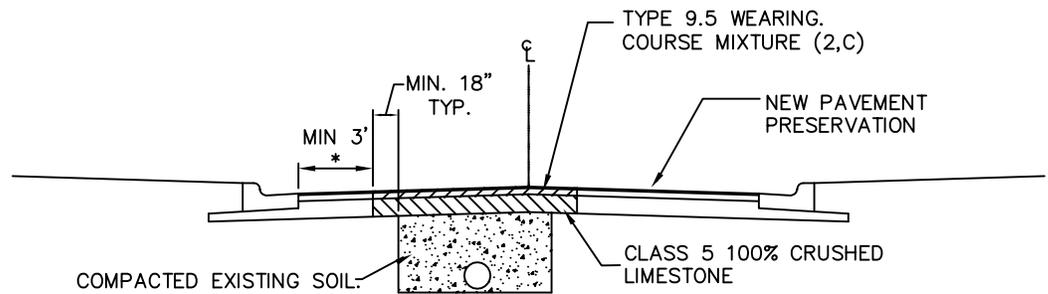
THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW THE UPPER 3'.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

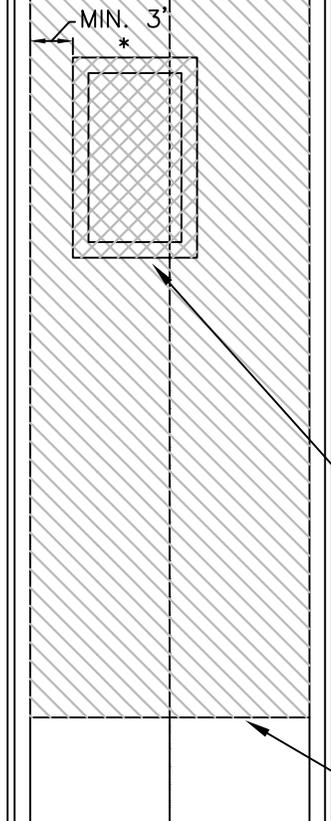
**TYPE G UTILITY PATCH
 IMPROVED STREET 0-5 YRS
 MILL AND OVERLAY**



COMPACTED EXISTING SOIL. IF THE EXISTING SOILS ARE NOT SUITABLE, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND HE SHALL SPECIFY THE TYPE OF APPROVED BACKFILL MATERIAL.

* IF LESS THAN 3', THE ASPHALT SHALL BE REPLACED TO THE CURB.

NOTE: THE THICKNESS OF THE ASPHALT PATCH SHALL MATCH THE THICKNESS OF THE EXISTING PAVEMENT BUT IN NO CASE LESS THAN 3". THE THICKNESS OF THE CLASS 5 BASE SHALL MATCH THE THICKNESS OF THE EXISTING CL 5 BUT NOT LESS THAN 6". THE CITY ENGINEER SHALL SPECIFY LARGER THICKNESSES IF IT IS DEEMED NECESSARY.



THE EXISTING ASPHALT SHALL BE SAW CUT TO FORM A NEAT, RECTANGULAR PATCH A MINIMUM OF 18" LARGER ON ALL SIDES THAN THE EXCAVATION.

THE CITY ENGINEER SHALL DETERMINE THE LIMITS OF PAVEMENT PRESERVATION.

EXCAVATIONS SHALL BE COMPACTED IN NO GREATER THAN 6" LIFTS.

AN INSPECTION BY THE CITY IS REQUIRED WHEN THE EXCAVATION HAS BEEN FILLED TO THE TOP OF THE CLASS 5 AND BEFORE PLACEMENT OF ASPHALT.

THE CONTRACTOR SHALL PROVIDE A SOIL DENSITY TEST ON THE COMPACTED SOILS FROM A TESTING COMPANY APPROVED BY THE CITY. TEST MUST BE IN COMPLIANCE WITH THE CURRENT MNDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

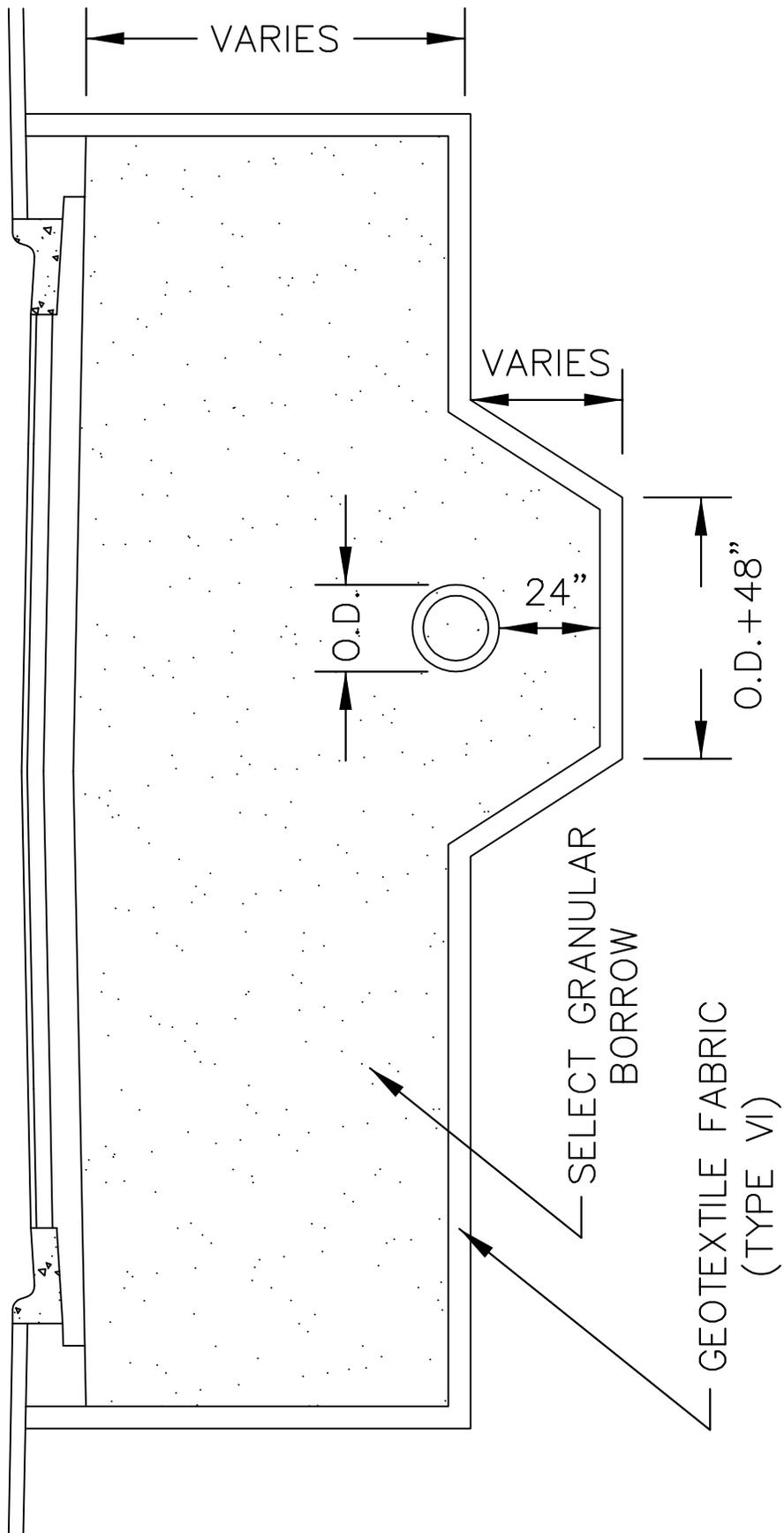
TWO SOIL DENSITY TESTS MUST BE PERFORMED; ONE IN THE UPPER 3' AND ONE BELOW THE UPPER 3'.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPE H UTILITY PATCH
IMPROVED STREET 5-10 YRS
PAVEMENT PRESERVATION**

City of **Golden Valley**
GV-STRT-140



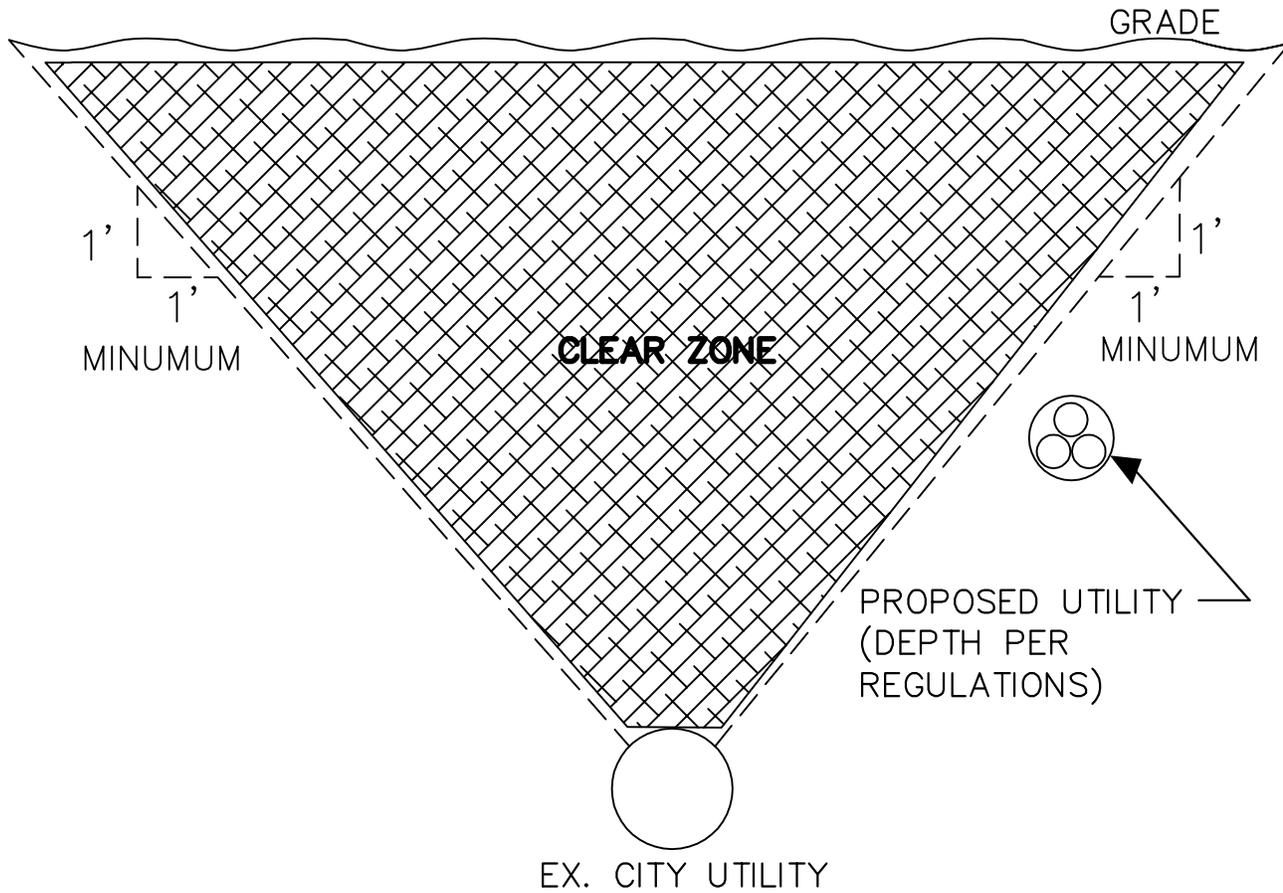
APPROVED JANUARY 1, 2018

J. B. Cain

CITY ENGINEER REG 23110

**SPECIAL EXCAVATION
FOR UTILITIES
WITHIN SUBCUT**

City of
Golden Valley
GV-STRT-150



NO PRIVATE FACILITIES ARE ALLOWED TO RUN PARALLEL TO PUBLIC FACILITIES IN THE CLEAR ZONE SHOWN ABOVE

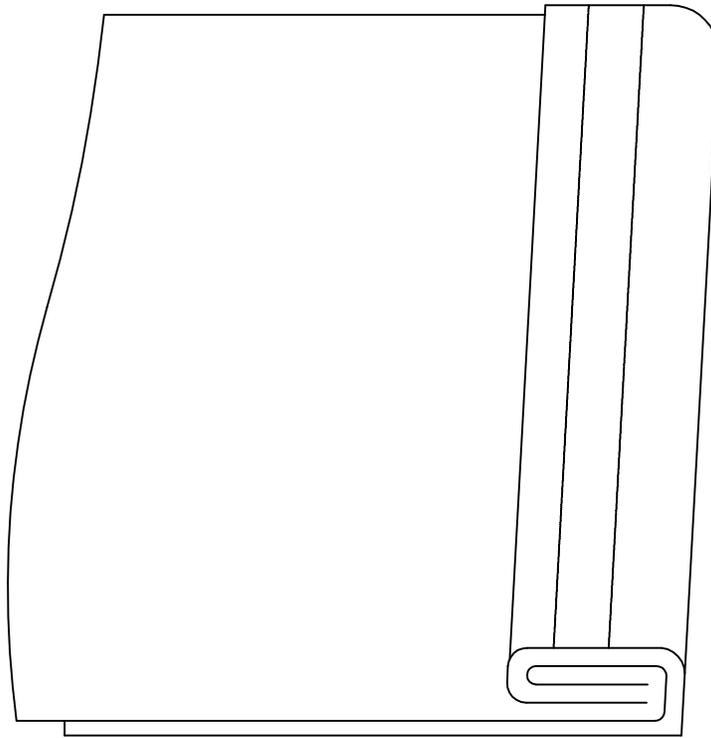
NOTE:
MINIMUM SEPARATION
1:1
RISE:RUN

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

STANDARD UTILITY SEPARATION

City
Golden Valley
GV-STRT-160



FOR USE WITH TYPE V
GEOTEXTILE FABRIC

THIS SEAM TYPE REQUIRES THE MATING OF TWO PARALLEL SECTIONS OF GEOTEXTILE WHICH ARE THEN TURNED TWICE IN THE SAME DIRECTION (HENCE "DOUBLE J") TO CREATE A THICKNESS OF 6 PLYS WHICH IS THEN SEWN WITH 2 ROWS OF STITCHES. THIS SEAM ALSO ENCAPSULATES THE SELVAGE SO THAT IT CANNOT BE USED AS A STITCHING SURFACE.

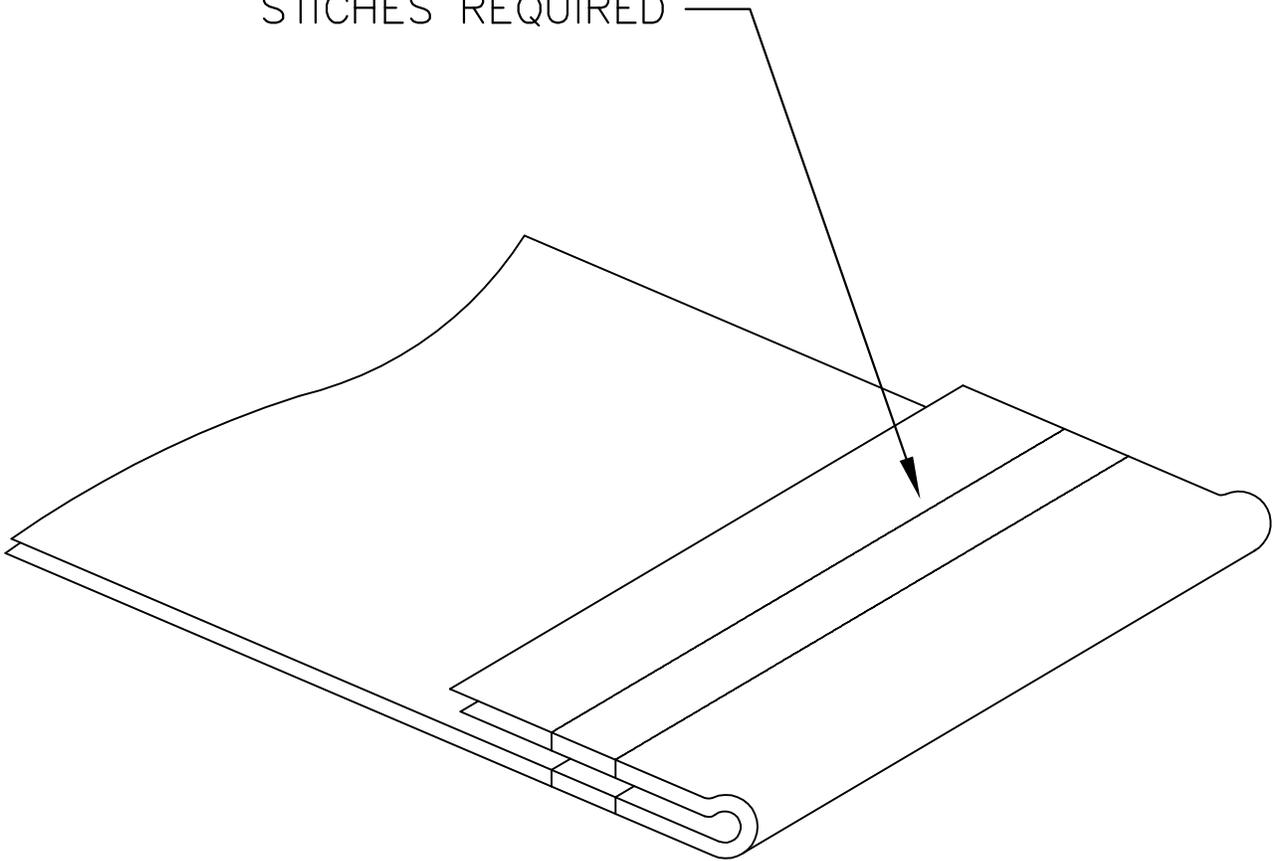
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**GEOTEXTILE
"DOUBLE J"
SEAM**

City of
Golden Valley
GV-STRT-170

TWO ROWS OF
STICHES REQUIRED



SEWN "J" SEAM

FOR USE WITH TYPE VI
GEOTEXTILE FABRIC.

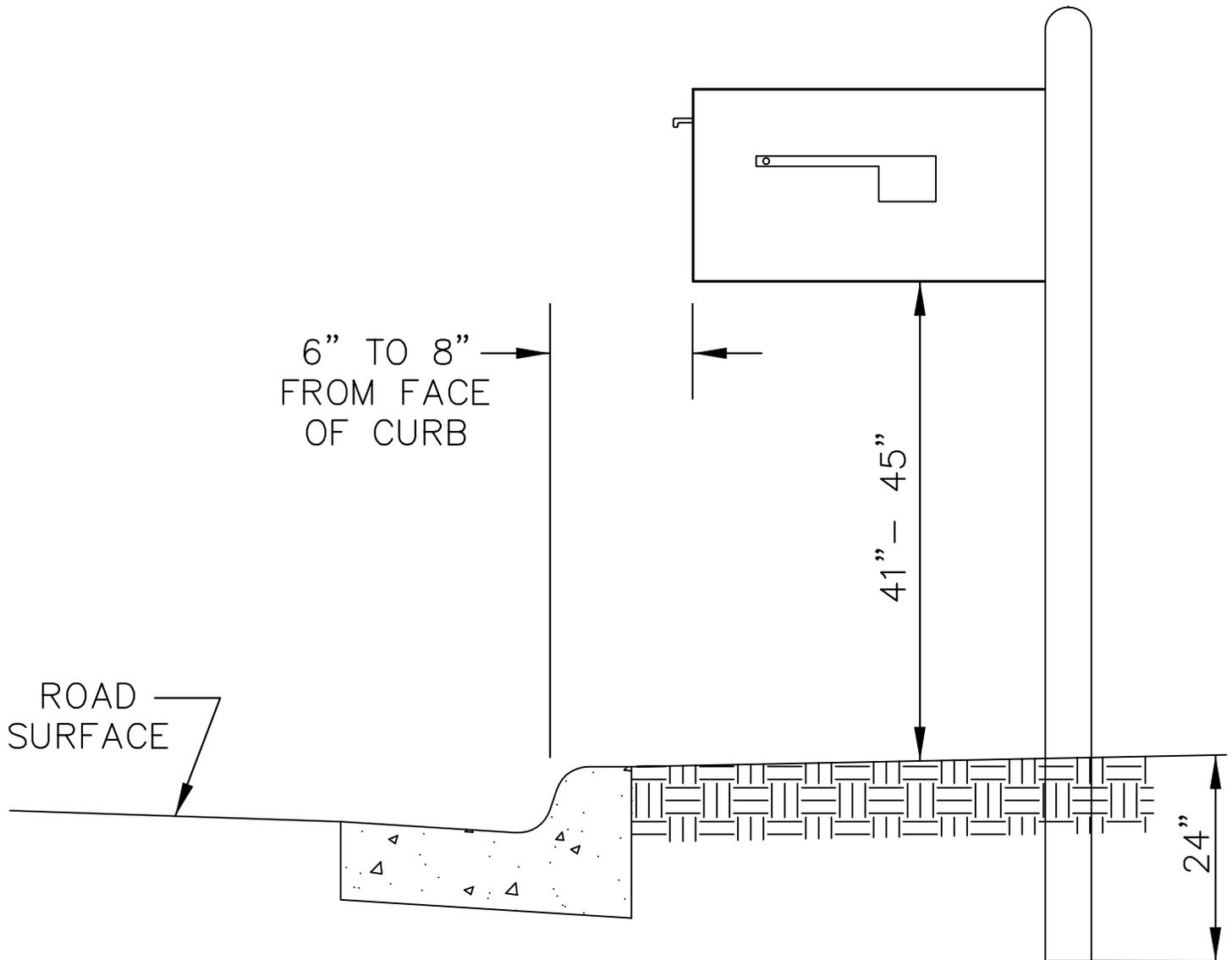
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**GEOTEXTILE
"J" SEAM**

City
of **Golden Valley**

GV-STRT-180



NOTE:
 BOTTOM OF MAILBOX SHOULD BE 41-45
 INCHES ABOVE GRADE. FACE OF MAILBOX
 SHOULD BE BETWEEN 6 AND 8 INCHES FROM
 FACE OF CURB.

MAILBOX AND POST SHOULD MEET CURRENT
 UNITED STATES POST OFFICE GUIDELINES.

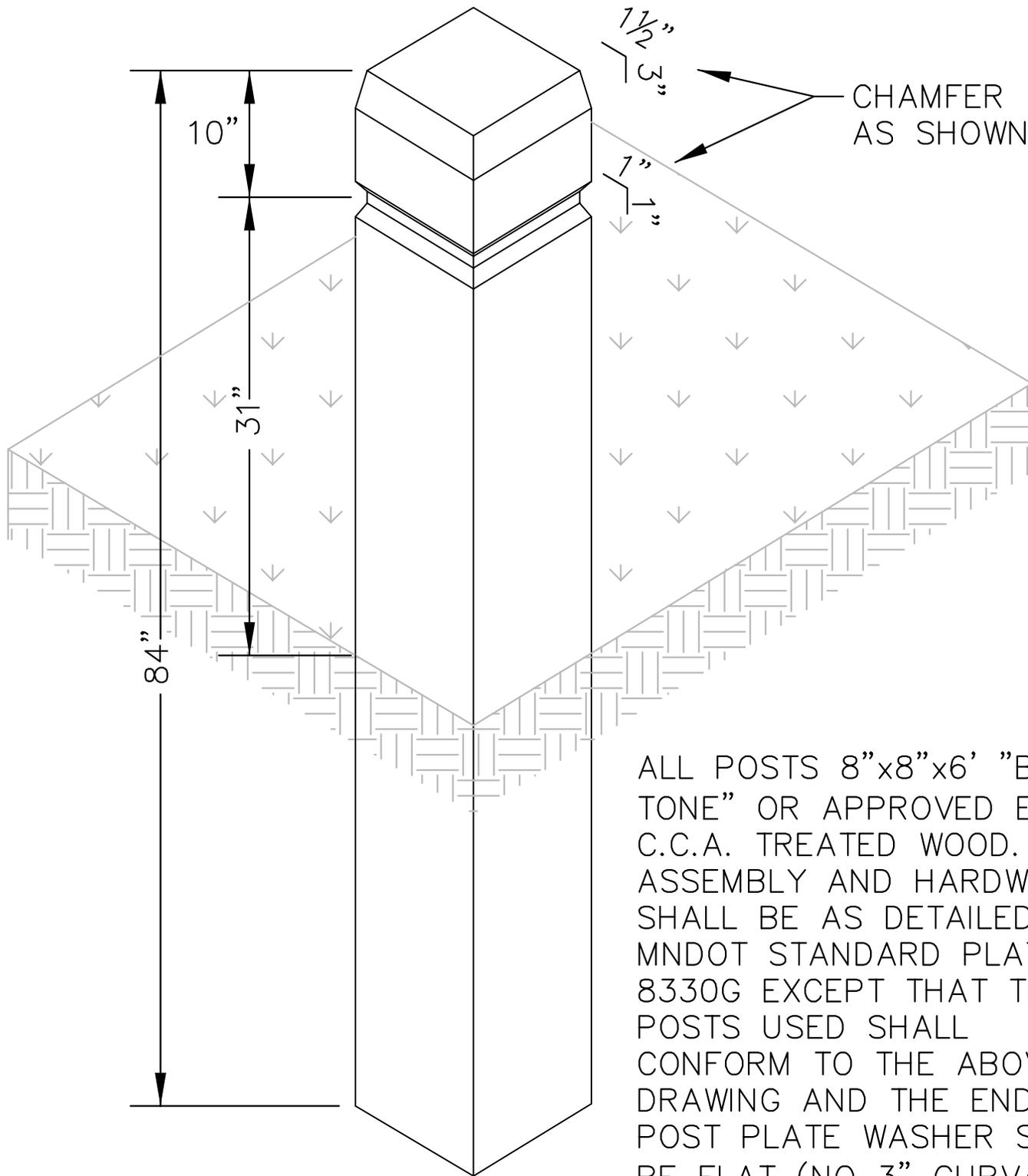
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPICAL MAILBOX
 PLACEMENT**

City of
Golden Valley

GV-STRT-190



CHAMFER
AS SHOWN

ALL POSTS 8"x8"x6' "BROWN TONE" OR APPROVED EQUAL, C.C.A. TREATED WOOD. ASSEMBLY AND HARDWARE SHALL BE AS DETAILED ON MNDOT STANDARD PLATE 8330G EXCEPT THAT THE POSTS USED SHALL CONFORM TO THE ABOVE DRAWING AND THE END POST PLATE WASHER SHALL BE FLAT (NO 3" CURVATURE) OF THE SAME DIMENSIONS SHOWN.

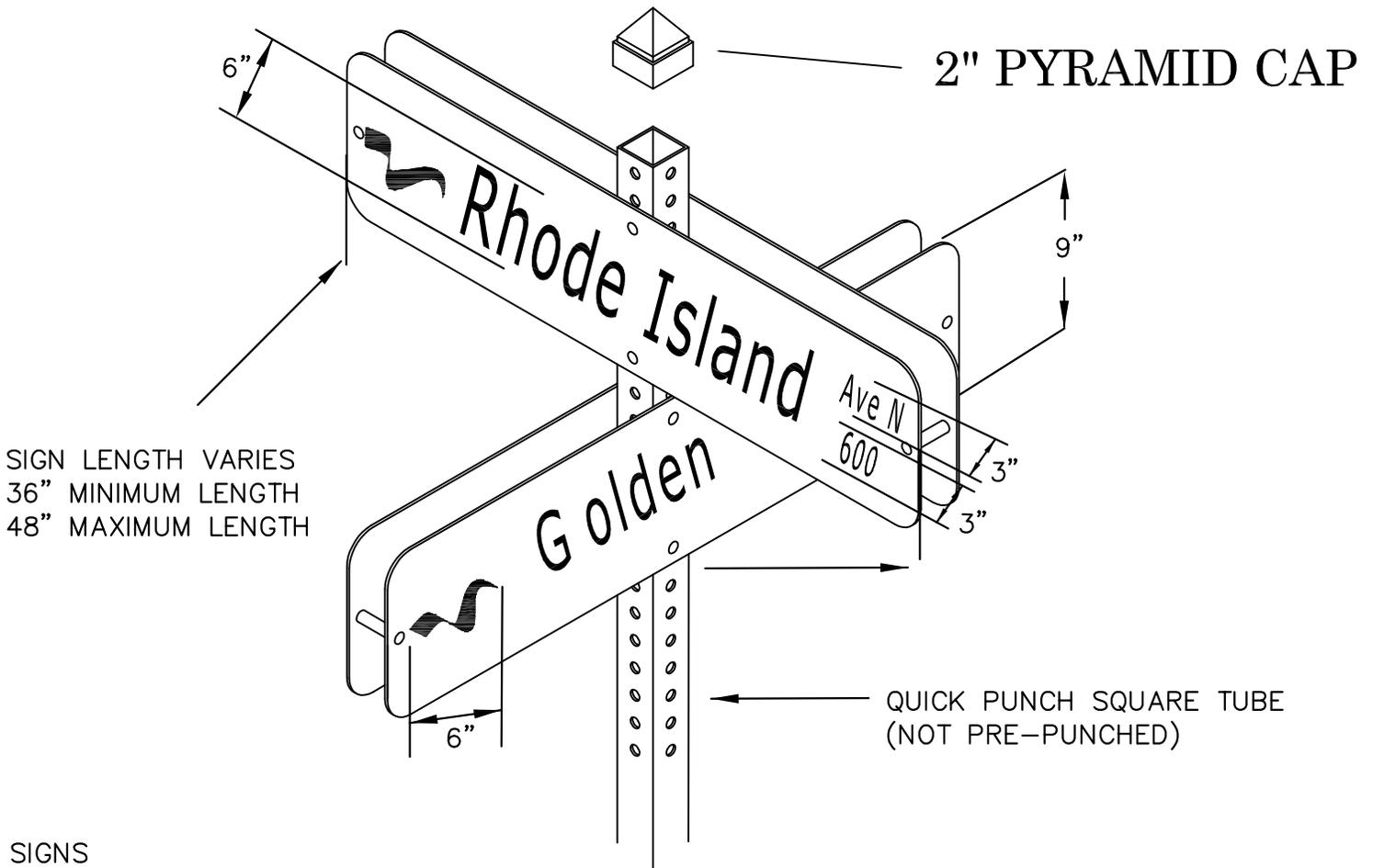
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**SPECIAL GUARD
RAIL POST**

City of
Golden Valley

GV-STRT-200



SIGNS

SIGNS SHALL BE MADE OF FLAT ALUMINUM THAT IS .080 THICK AND 9" HIGH WITH 1.5" RADIUS CORNERS AND TELESPEAR PUNCHING.

SIGNS SHALL BE SINGLE FACE DG3 DIAMOND GRADE SHEETING.

PUBLIC STREET SIGNS SHALL HAVE A GREEN BACKGROUND WITH WHITE LETTERING, .5" E 450 SERIES BORDER, AND 6" CITY LOGO ON LEFT.

SIGNS SHALL HAVE .75" OF GREEN BACKGROUND ON ALL SIDES OF THE SIGN LEGEND.

STREET NAMES SHALL BE 6" UPPER CASE AND 4.5" LOWER CASE USING CLEARVIEW ONE FONT WITH .375" MARGINS.

STREET SUFFIXES AND BLOCK NUMBERS SHALL BE 3" UPPER CASE AND 2.25" LOWER CASE USING CLEARVIEW ONE FONT WITH .375" MARGINS.

A 6" ARROW SHALL BE ON THE RIGHT IF APPLICABLE.

ALL SIGNS SHALL CONFORM TO ALL REQUIREMENTS OF THE CURRENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MN MUTCD).

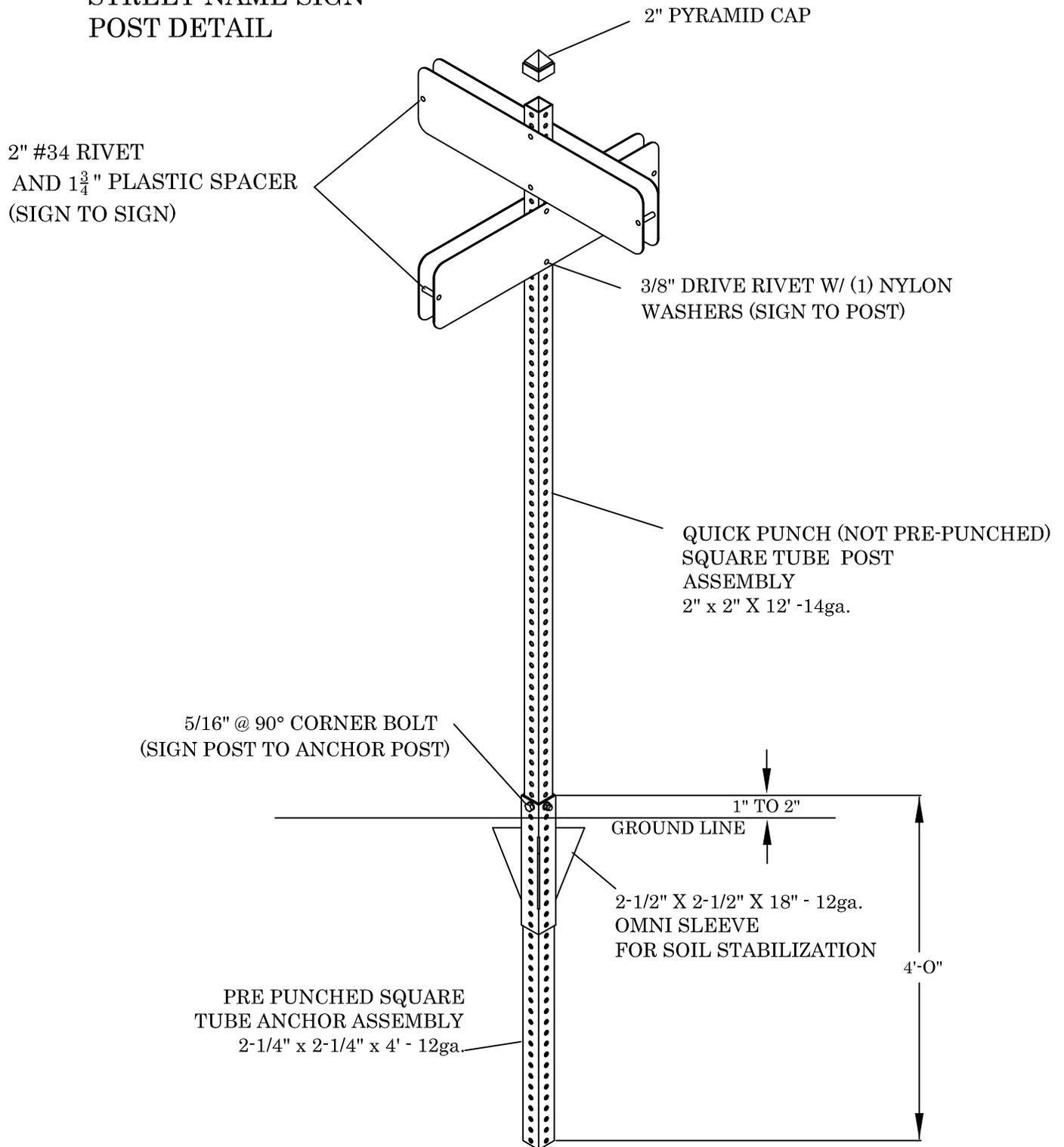
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPICAL
STREET SIGN**

City of
Golden Valley
GV-STRT-210

**QUICK PUNCH
SQUARE TUBE
STREET NAME SIGN
POST DETAIL**



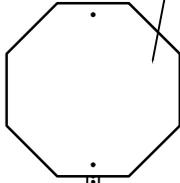
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**QUICK PUNCH SQUARE
TUBE STREET NAME
SIGN POST**

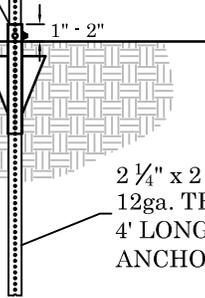
City of
Golden Valley
GV-STRT-220

30" x 30" WHITE ON RED
.100 ALUMINUM TYPE
IIIA SHEETING
DG3



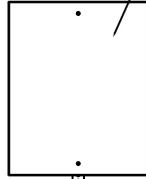
2" x 2" x 10' - 14ga.
TELESPAR
QUICK PUNCH

2 1/2" x 2 1/2" x 18" - 12ga.
TELESPAR
LONG OMNI
ANCHOR
SLEEVE

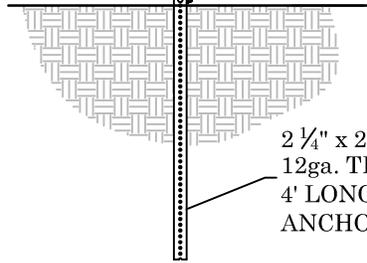


2 1/4" x 2 1/4" x 4'
12ga. TELESPAR
4' LONG SIGN
ANCHOR

24" x 30" .100 ALUMINUM
TYPE IIIA SHEETING
DG3

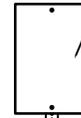


2" x 2" x 10' - 14ga.
TELESPAR
QUICK PUNCH

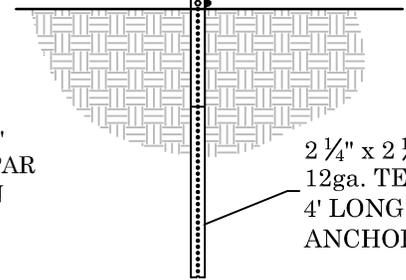


2 1/4" x 2 1/4" x 4'
12ga. TELESPAR
4' LONG SIGN
ANCHOR

12" x 18" .100 ALUMINUM
TYPE IIIA SHEETING
DG3

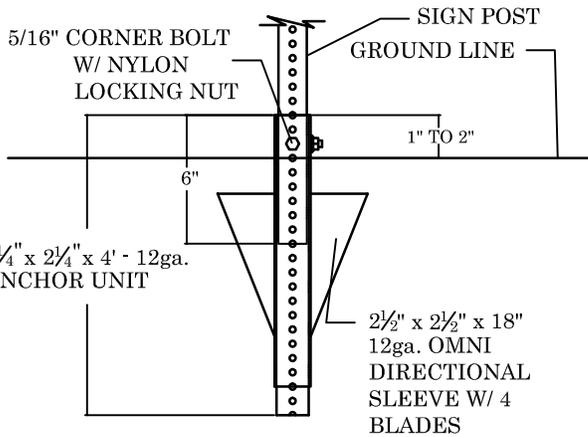


2" x 2" x 10' - 14ga.
TELESPAR
QUICK PUNCH



2 1/4" x 2 1/4" x 4'
12ga. TELESPAR
4' LONG SIGN
ANCHOR

OMNI ANCHOR
TOP VIEW

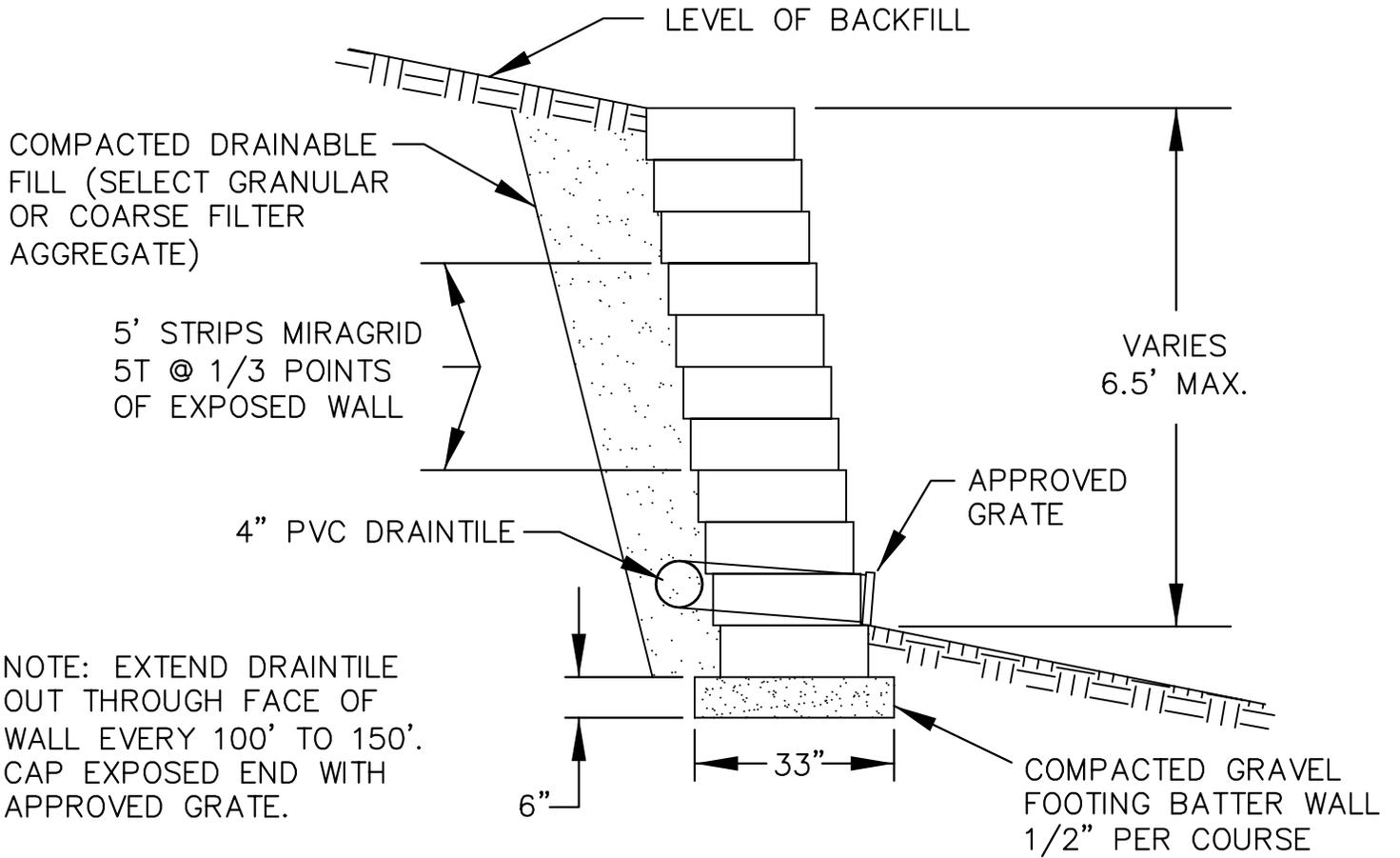


APPROVED JANUARY 1, 2018

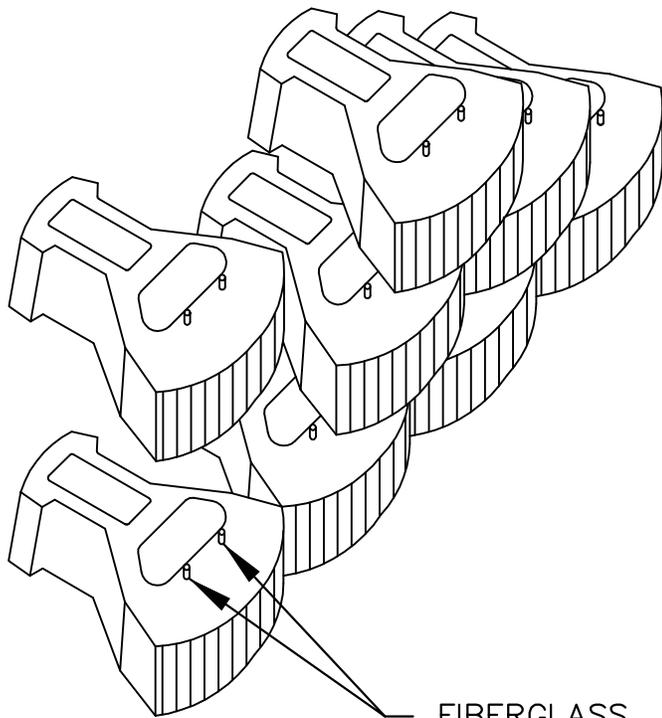
CITY ENGINEER REG 23110

**SQUARE TUBE SIGN
STANDARD WITH
OMNI BASE**

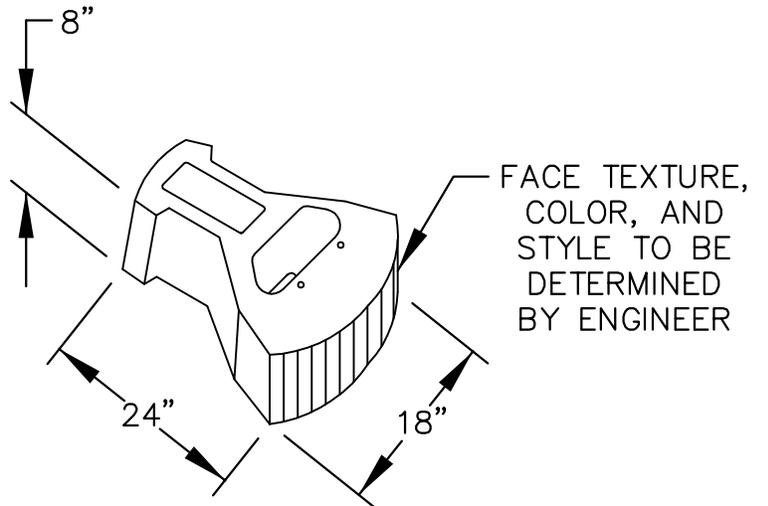
City of **Golden Valley**
GV-STRT-230



NOTE: INSTALL A MINIMUM OF ONE COURSE BELOW GRADE



FIBERGLASS PINS



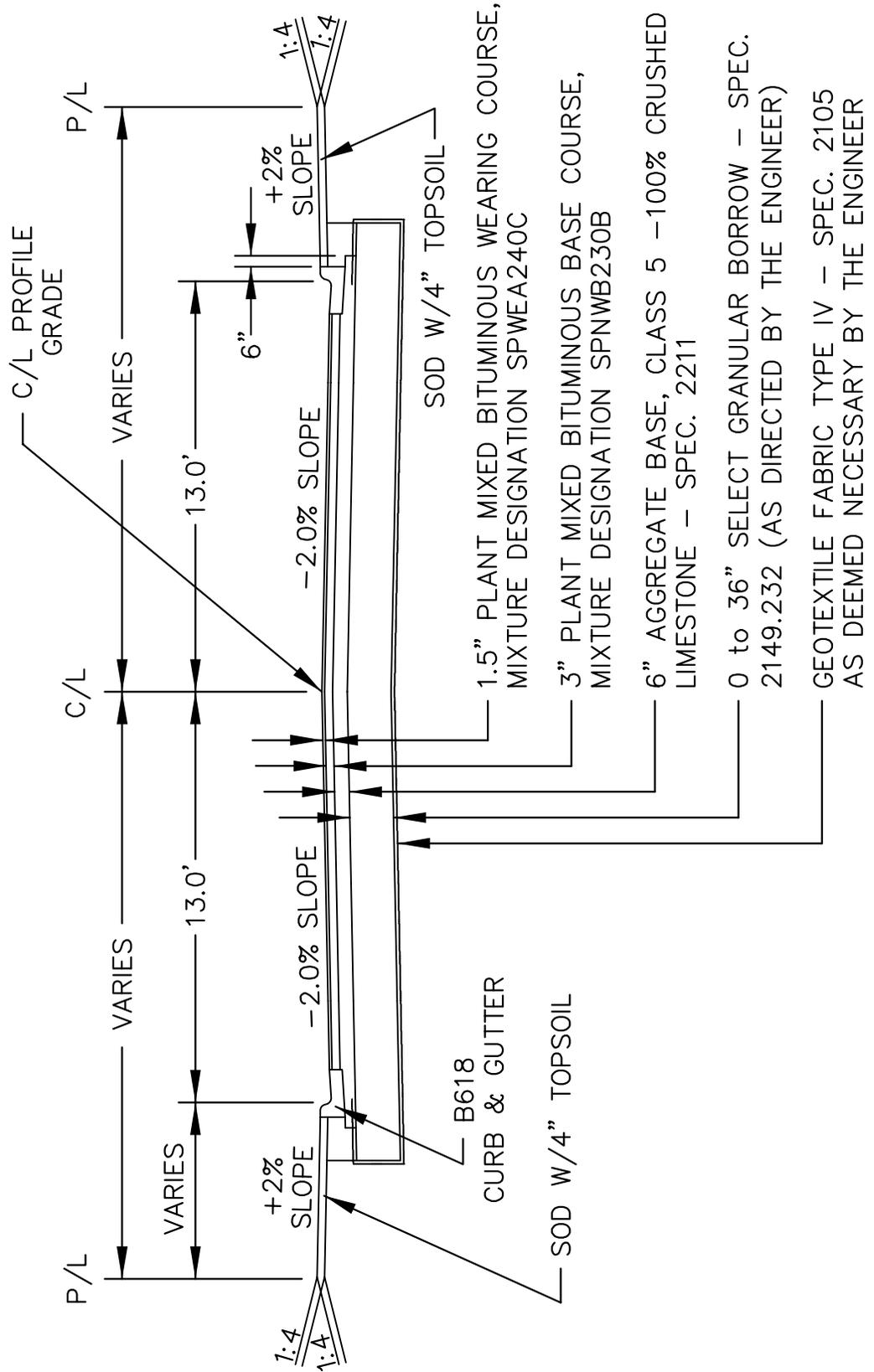
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**MODULAR BLOCK
RETAINING WALL**

City of
Golden Valley
GV-STRT-240

NOTE: THE ENGINEER SHALL MAKE FIELD DETERMINATIONS OF SUBGRADE SUITABILITY AND, IF NECESSARY, SHALL DIRECT THE CONTRACTOR TO VARY THE DEPTH OF COMMON EXCAVATION AND SELECT GRANULAR BORROW.



APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

TYPICAL LOCAL STREET SECTION

EZ SEE HYDRANT MARKER (72610 W-R 10501) W/RED REFLECTIVE TAPE 65" OVERALL LENGTH.

APPROVED MATERIALS:

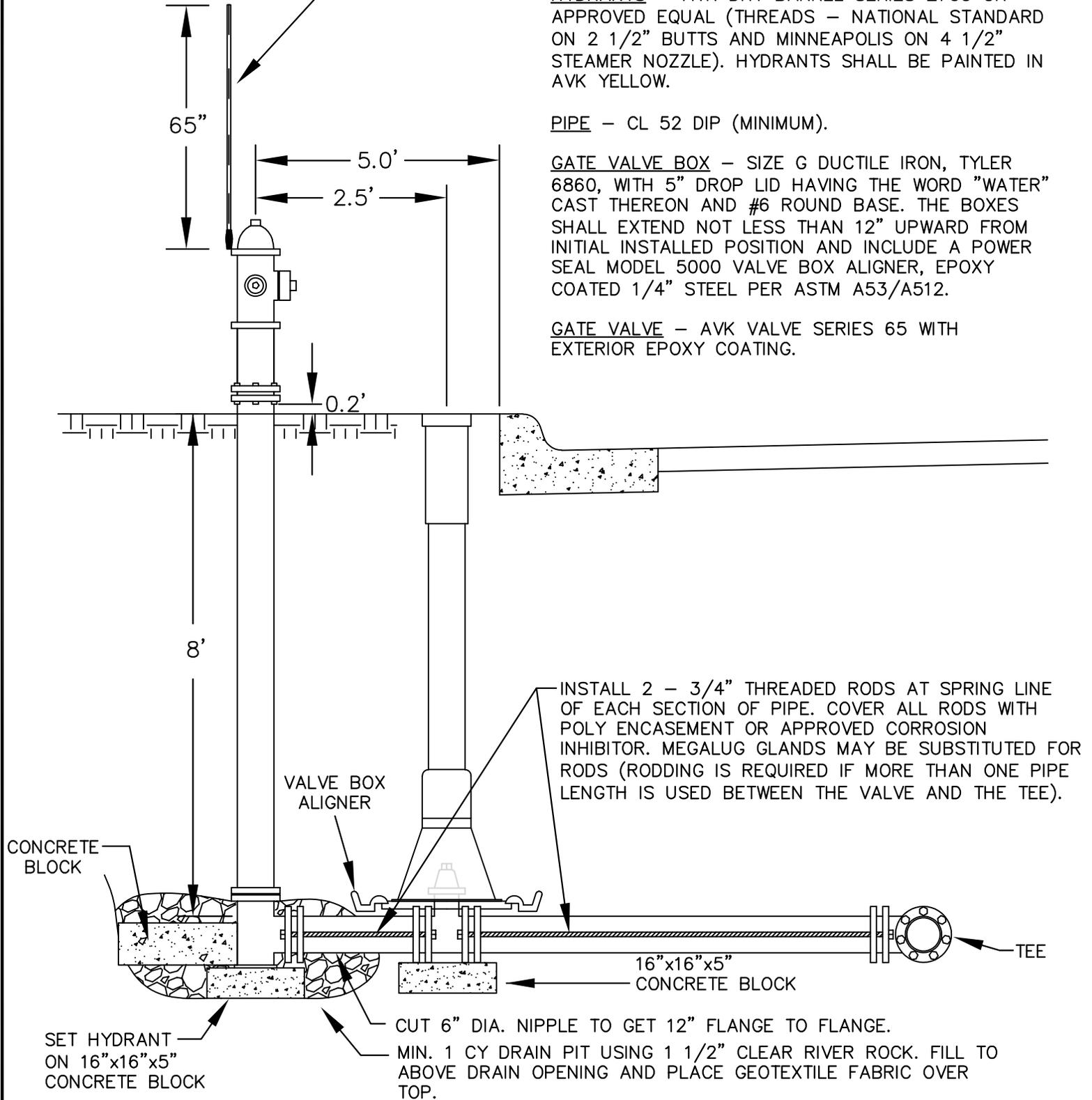
FITTINGS - ALL FITTINGS SHALL BE EPOXY COATED DUCTILE IRON AND BOLTED WITH EPOXY COATED STAINLESS STEEL OR COR-BLUE BOLTS AND NUTS.

HYDRANTS - AVK DRY BARREL SERIES 2700 OR APPROVED EQUAL (THREADS - NATIONAL STANDARD ON 2 1/2" BUTTS AND MINNEAPOLIS ON 4 1/2" STEAMER NOZZLE). HYDRANTS SHALL BE PAINTED IN AVK YELLOW.

PIPE - CL 52 DIP (MINIMUM).

GATE VALVE BOX - SIZE G DUCTILE IRON, TYLER 6860, WITH 5" DROP LID HAVING THE WORD "WATER" CAST THEREON AND #6 ROUND BASE. THE BOXES SHALL EXTEND NOT LESS THAN 12" UPWARD FROM INITIAL INSTALLED POSITION AND INCLUDE A POWER SEAL MODEL 5000 VALVE BOX ALIGNER, EPOXY COATED 1/4" STEEL PER ASTM A53/A512.

GATE VALVE - AVK VALVE SERIES 65 WITH EXTERIOR EPOXY COATING.



APPROVED JANUARY 1, 2018

[Signature]
CITY ENGINEER REG 23110

**TYPICAL HYDRANT
INSTALLATION**

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

EZ SEE HYDRANT MARKER (72610 W-R 10501) W/RED REFLECTIVE TAPE 65" OVERALL LENGTH.

APPROVED MATERIALS:

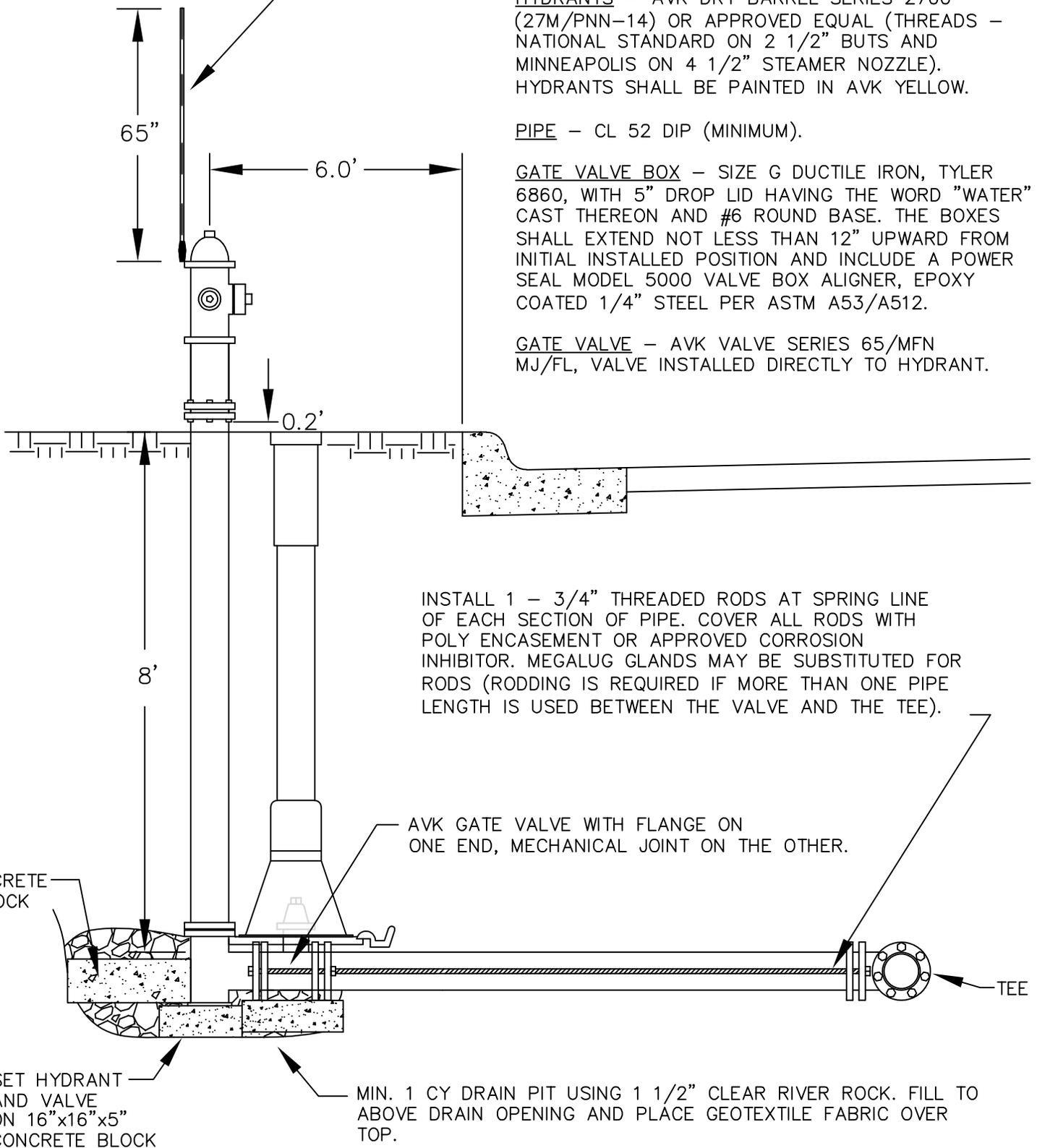
FITTINGS - ALL FITTINGS SHALL BE EPOXY COATED DUCTILE IRON AND BOLTED WITH EPOXY COATED STAINLESS STEEL OR COR-BLUE BOLTS AND NUTS.

HYDRANTS - AVK DRY BARREL SERIES 2700 (27M/PNN-14) OR APPROVED EQUAL (THREADS - NATIONAL STANDARD ON 2 1/2" BUTS AND MINNEAPOLIS ON 4 1/2" STEAMER NOZZLE). HYDRANTS SHALL BE PAINTED IN AVK YELLOW.

PIPE - CL 52 DIP (MINIMUM).

GATE VALVE BOX - SIZE G DUCTILE IRON, TYLER 6860, WITH 5" DROP LID HAVING THE WORD "WATER" CAST THEREON AND #6 ROUND BASE. THE BOXES SHALL EXTEND NOT LESS THAN 12" UPWARD FROM INITIAL INSTALLED POSITION AND INCLUDE A POWER SEAL MODEL 5000 VALVE BOX ALIGNER, EPOXY COATED 1/4" STEEL PER ASTM A53/A512.

GATE VALVE - AVK VALVE SERIES 65/MFN MJ/FL, VALVE INSTALLED DIRECTLY TO HYDRANT.



INSTALL 1 - 3/4" THREADED RODS AT SPRING LINE OF EACH SECTION OF PIPE. COVER ALL RODS WITH POLY ENCASEMENT OR APPROVED CORROSION INHIBITOR. MEGALUG GLANDS MAY BE SUBSTITUTED FOR RODS (RODDING IS REQUIRED IF MORE THAN ONE PIPE LENGTH IS USED BETWEEN THE VALVE AND THE TEE).

AVK GATE VALVE WITH FLANGE ON ONE END, MECHANICAL JOINT ON THE OTHER.

CONCRETE BLOCK

SET HYDRANT AND VALVE ON 16"x16"x5" CONCRETE BLOCK

MIN. 1 CY DRAIN PIT USING 1 1/2" CLEAR RIVER ROCK. FILL TO ABOVE DRAIN OPENING AND PLACE GEOTEXTILE FABRIC OVER TOP.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

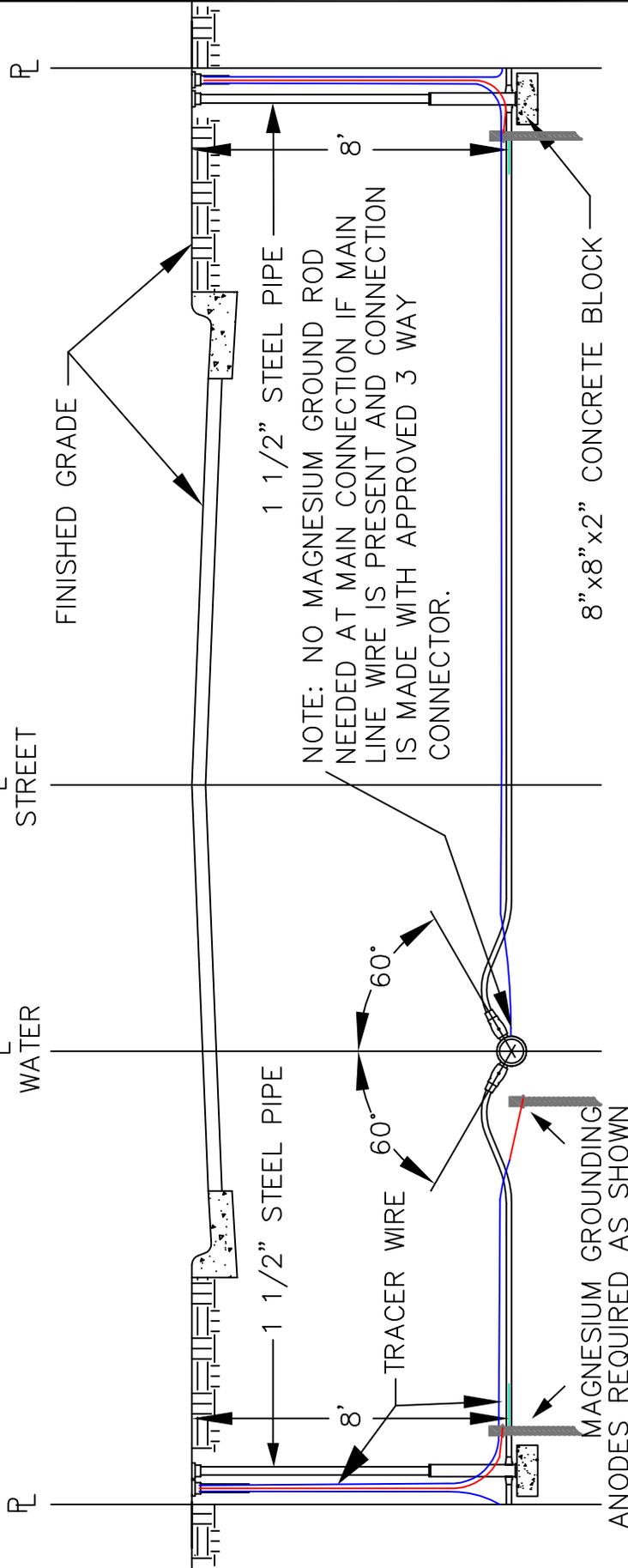
TYPICAL HYDRANT INSTALLATION

City of **Golden Valley**
GV-WM-015

NOTE:

FORM GOOSENECK 6" ABOVE TAP TO ALLOW FOR SETTLEMENT
 MAINTAIN A MINIMUM OF 8' OF COVER OVER SERVICE.

ANY SERVICE LARGER THAN 1" TO BE 1.5"/2" C-900 SDR 7 OR (4"STUB) TO PROPERTY
 LINE WITH 4" GATE VALVE AND FLANGED REDUCER.



NOTE: NO MAGNESIUM GROUND ROD
 NEEDED AT MAIN CONNECTION IF MAIN
 LINE WIRE IS PRESENT AND CONNECTION
 IS MADE WITH APPROVED 3 WAY
 CONNECTOR.

APPROVED MATERIALS FOR COPPER & (PLASTIC) PIPING:

CURB STOP – 1" CURB STOP AY MCDONALD 76104 OR (PLASTIC 76104--33)

CURB BOX – AY MCDONALD SERIES 5622A 8 CURB BOX COMPLETE W/5623LTW LID-- NO EXTENSION

CORPORATION STOP – 1" AY MCDONALD 74701B OR (PLASTIC 74701B--33)

TAPS – 1" SMITH-BLAIR SERIES 372 STAINLESS STEEL SERVICE SADDLE

WATER SERVICE – COPPER TYPE K OR C900 (PLASTIC W/ 1" SS INSERT AY MCDONALD 6136)
 W/TRACER WIRE AS SHOWN OR MINNESOTA RURAL WATER ASSOCIATION STANDARDS.

APPROVED JANUARY 1, 2018

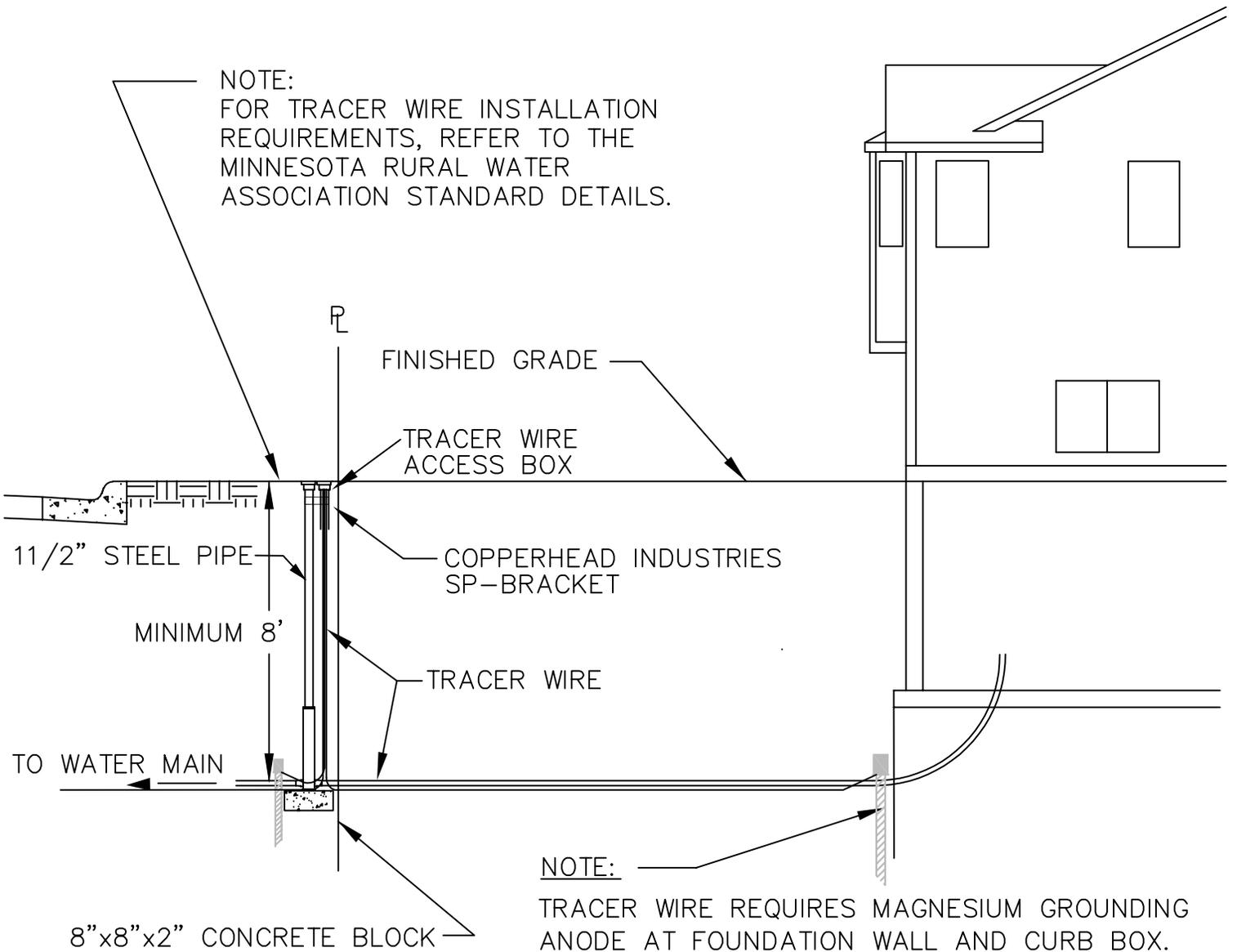
CITY ENGINEER REG 23110

TYPICAL WATER SERVICE
 (ON 6" TO 8" MAIN)



GV-WM-020

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



NOTE:
TRACER WIRE REQUIRES MAGNESIUM GROUNDING
ANODE AT FOUNDATION WALL AND CURB BOX.

APPROVED MATERIALS FOR COPPER & (PLASTIC) PIPING:

CURB STOP – 1" CURB STOP AY MCDONALD 76104 OR (PLASTIC 76104-33)

CURB BOX – CURB BOX AY MCDONALD SERIES 5622A 8 CURB BOX COMPLETE
W/ 5623LTW LID

PIPE MATERIAL – ACCORDING TO STATE PLUMBING CODE: COPPER AND PLASTIC
(PLASTIC PIPE REQUIRES 1" STAINLESS STEEL INSERT AY MCDONALD 6136)

TRACER BOX ACCESS BOX – SHALL INCLUDE SNAKEPIT BRACKET BY COPPERHEAD

APPROVED JANUARY 16, 2020

CITY ENGINEER REG 23110

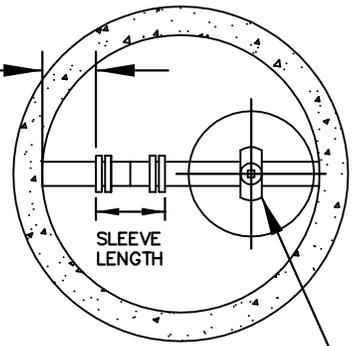
**TYPICAL WATER SERVICE
(PROPERTY LINE TO
HOUSE)**

City of
Golden Valley
GV-WM-030

TOP VIEW

MUST BE GREATER THAN SLEEVE LENGTH TO ALLOW FOR REMOVAL OF SLEEVE AND VALVE.

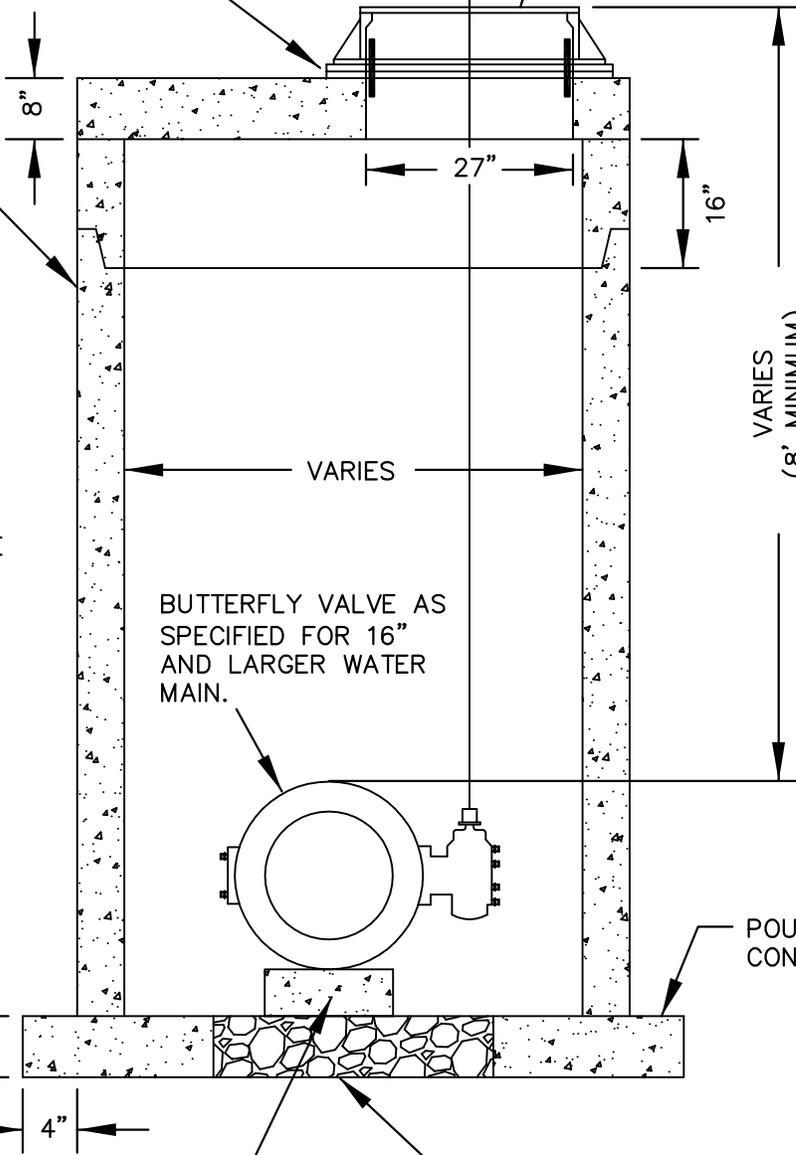
NEENAH R-1733 SERIES SOLID COVER, ESS BROS. 301, OR APPROVED EQUAL WITH "WATER" ON IT



CENTER VALVE IN COVER HOLE

PLASTIC HDPE ADJUSTING RINGS (MIN. 2 MAX. 5)

WALL SHALL BE PRECAST CONCRETE



NOTE:

THE MANHOLE SHALL BE SET SO THE OPERATING NUT IS CENTERED ON THE OPENING IN THE COVER.

THE WALL OPENING FOR PIPE SHALL HAVE A 2" MIN. CLEARANCE ALL AROUND.

PRECAST CONCRETE MANHOLE PIPE SHALL CONFORM TO A.S.T.M. C-478.

BUTTERFLY VALVE AS SPECIFIED FOR 16" AND LARGER WATER MAIN.

VARIES (8' MINIMUM)

POURED OR PRECAST CONCRETE BASE

CONCRETE BLOCK

PLACE ON MIN. 18" DEEP 1 1/2" ROCK SUMP

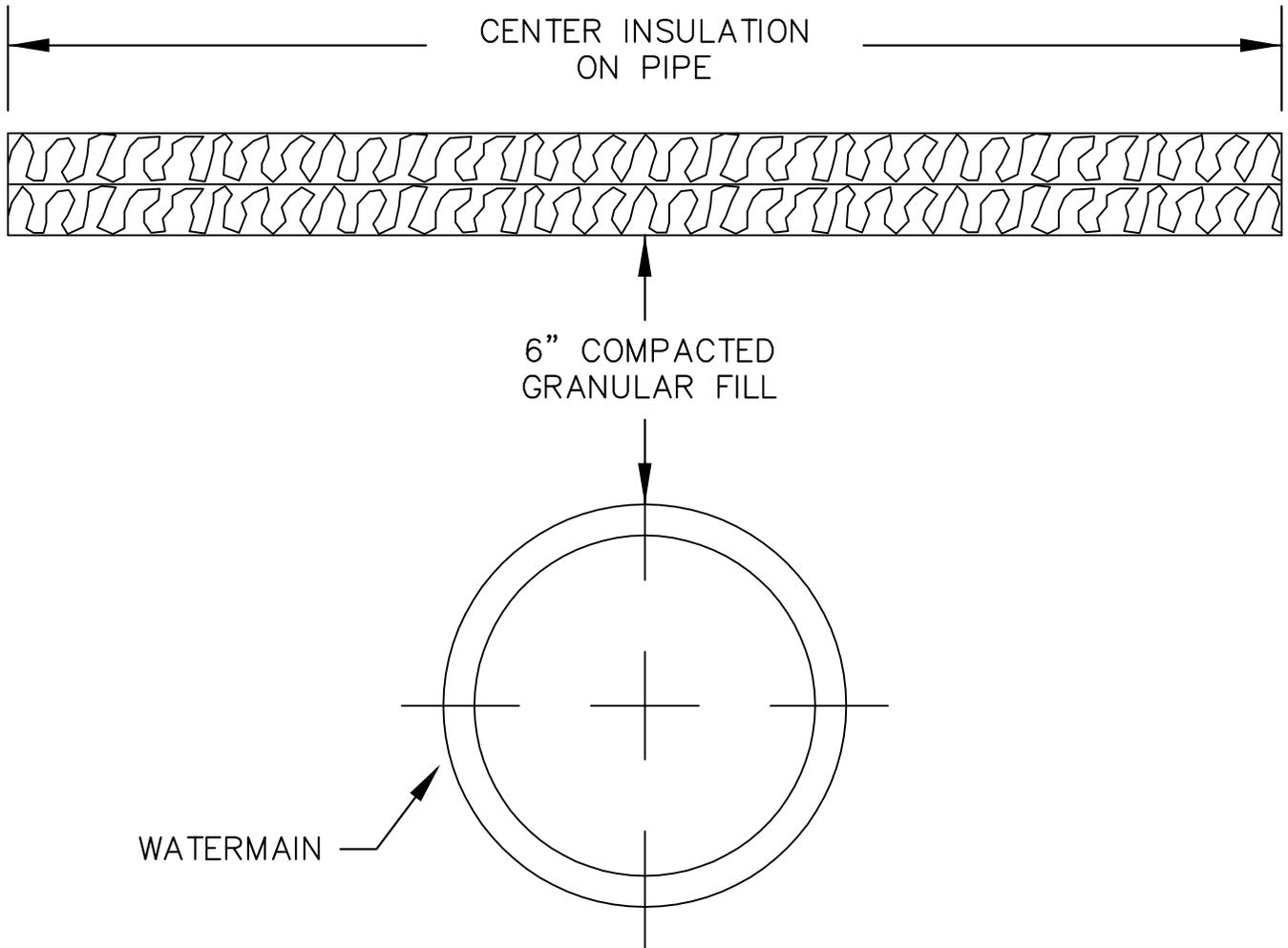
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

WATERMAIN VALVE MANHOLE

City of Golden Valley

GV-WM-040



NOTE:
 MINIMUM 2" PER FOOT UNDER 8' OF
 COVER – 2" THICK HIGH DENSITY
 POLYSTYRENE INSULATION (MINIMUM
 TOTAL R VALUE OF 20) LAYERS WITH
 JOINTS STAGGERED AND EXTENDING A
 MINIMUM OF 2' EACH WAY FROM
 WATERMAIN C/L OR AS DIRECTED BY
 THE ENGINEER.

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

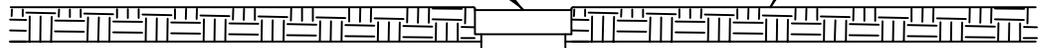
**WATERMAIN
 INSULATION**

City of
Golden Valley

GV-WM-050

SET 1/4" BELOW FINISHED
BITUMINOUS ELEVATION

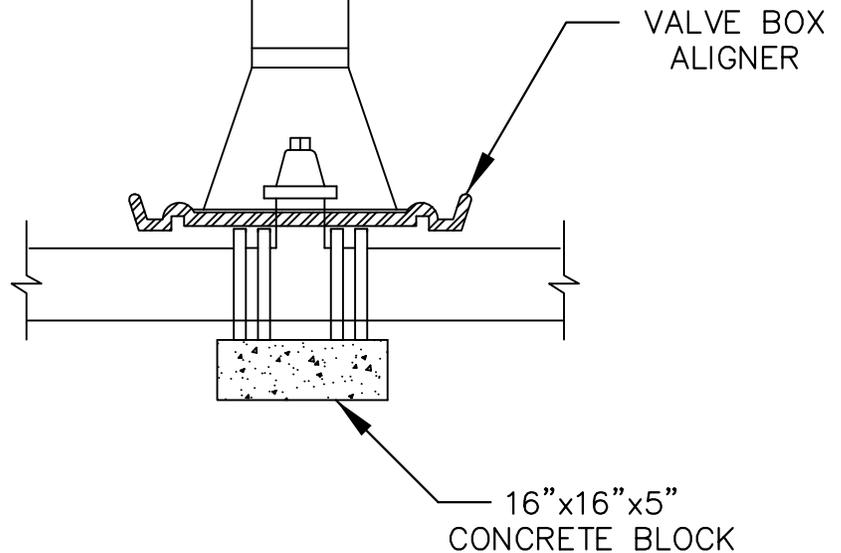
FINISHED
GRADE



FITTINGS – ALL FITTINGS SHALL BE EPOXY COATED DUCTILE IRON AND BOLTED WITH EPOXY COATED STAINLESS STEEL OR COR-BLUE BOLTS AND NUTS.

GATE VALVE – AVK VALVE SERIES 65 WITH EXTERIOR EPOXY COATING.

GATE VALVE BOX – SIZE G DUCTILE IRON, TYLER 6860, WITH 5" DROP LID HAVING THE WORD "WATER" CAST THEREON AND #6 ROUND BASE. THE BOXES SHALL EXTEND NOT LESS THAN 12" UPWARD FROM INITIAL INSTALLED POSITION AND INCLUDE A POWER SEAL MODEL 5000 VALVE BOX ALIGNER, EPOXY COATED 1/4" STEEL PER ASTM A53/A512.



APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TYPICAL GATE VALVE
INSTALLATION**

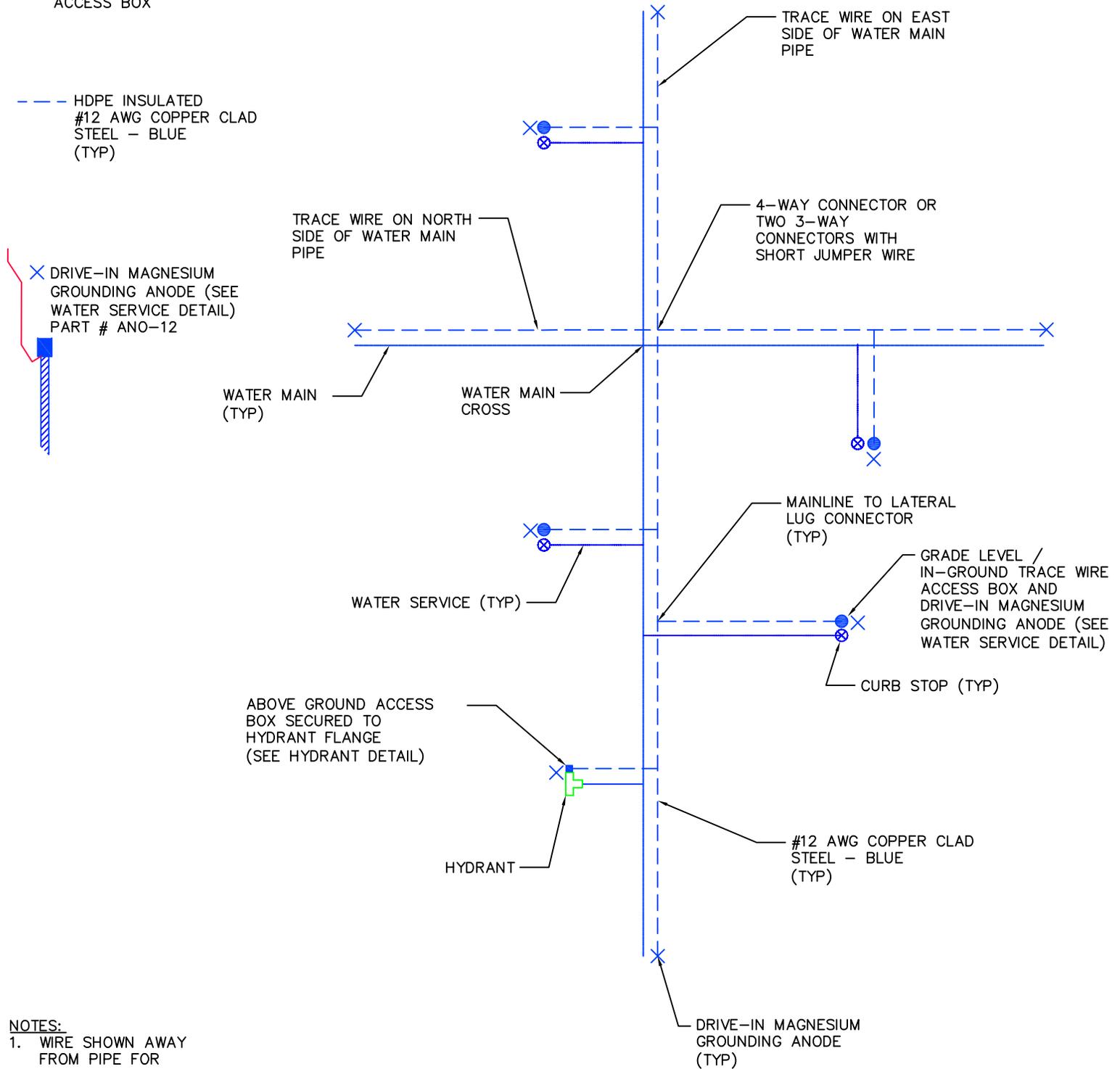
City of
Golden Valley

GV-WM-060

● GRADE LEVEL /
IN-GROUND TRACE WIRE
ACCESS BOX

--- HDPE INSULATED
#12 AWG COPPER CLAD
STEEL - BLUE
(TYP)

× DRIVE-IN MAGNESIUM
GROUNDING ANODE (SEE
WATER SERVICE DETAIL)
PART # ANO-12



NOTES:

1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

TRACE WIRE PLAN
(WATER)
NO SCALE

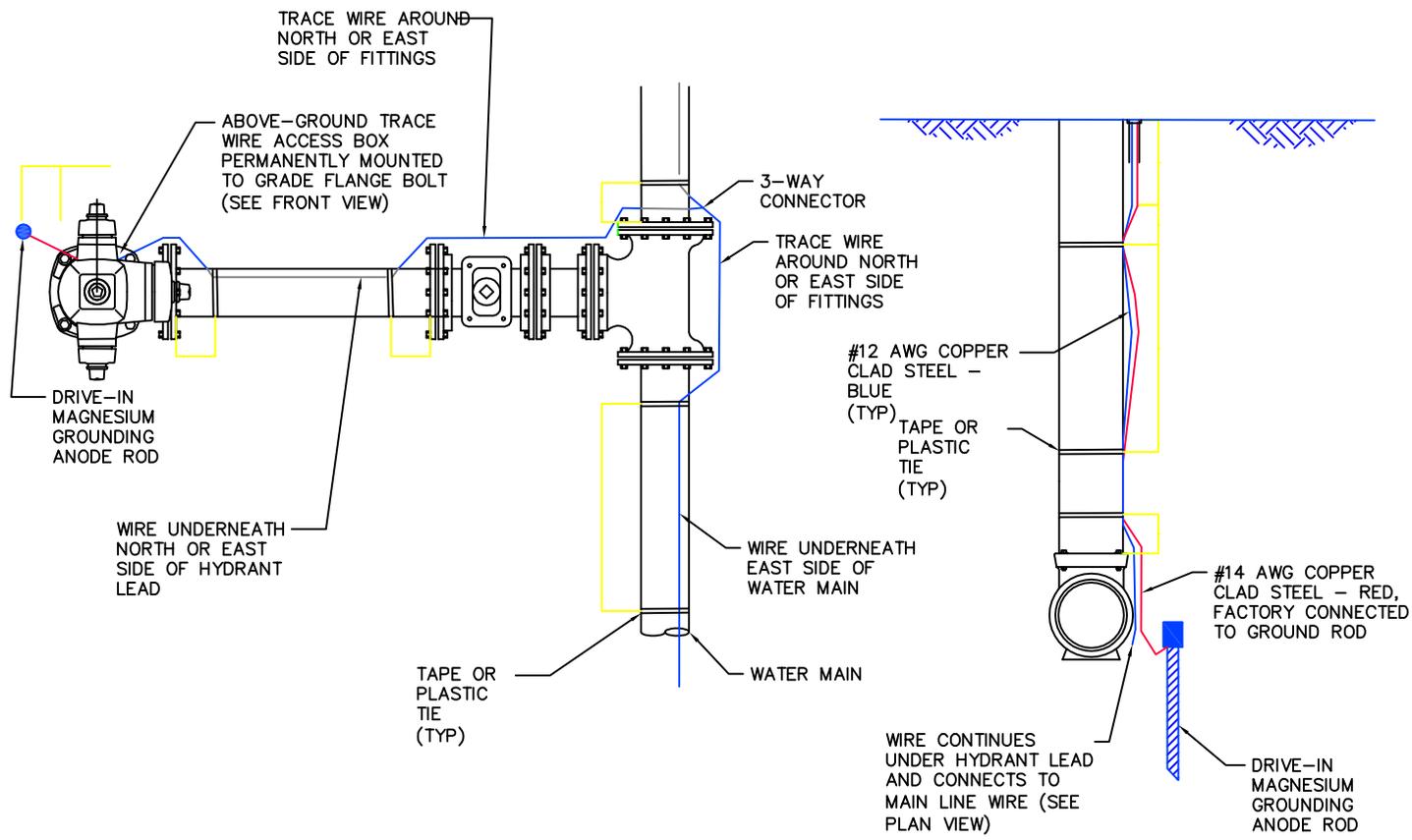
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**TRACER WIRE PLAN
(WATER)**

MINNESOTA RURAL WATER
ASSOCIATION STANDARD DETAIL





HYDRANT - PLAN VIEW

NO SCALE

HYDRANT - SECTION VIEW

NO SCALE

APPROVED DECEMBER 31, 2015

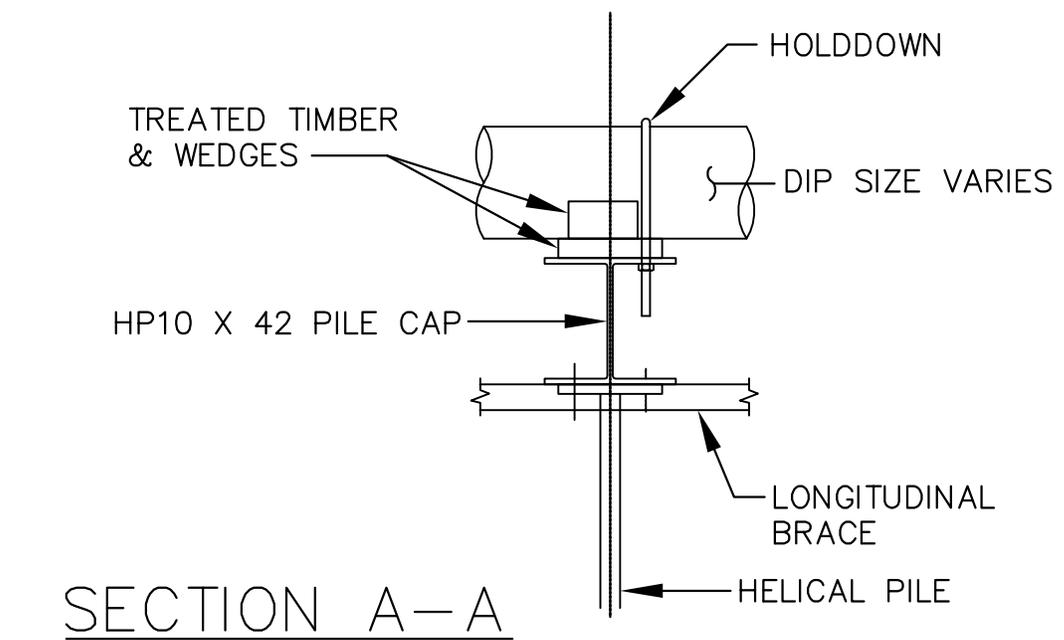
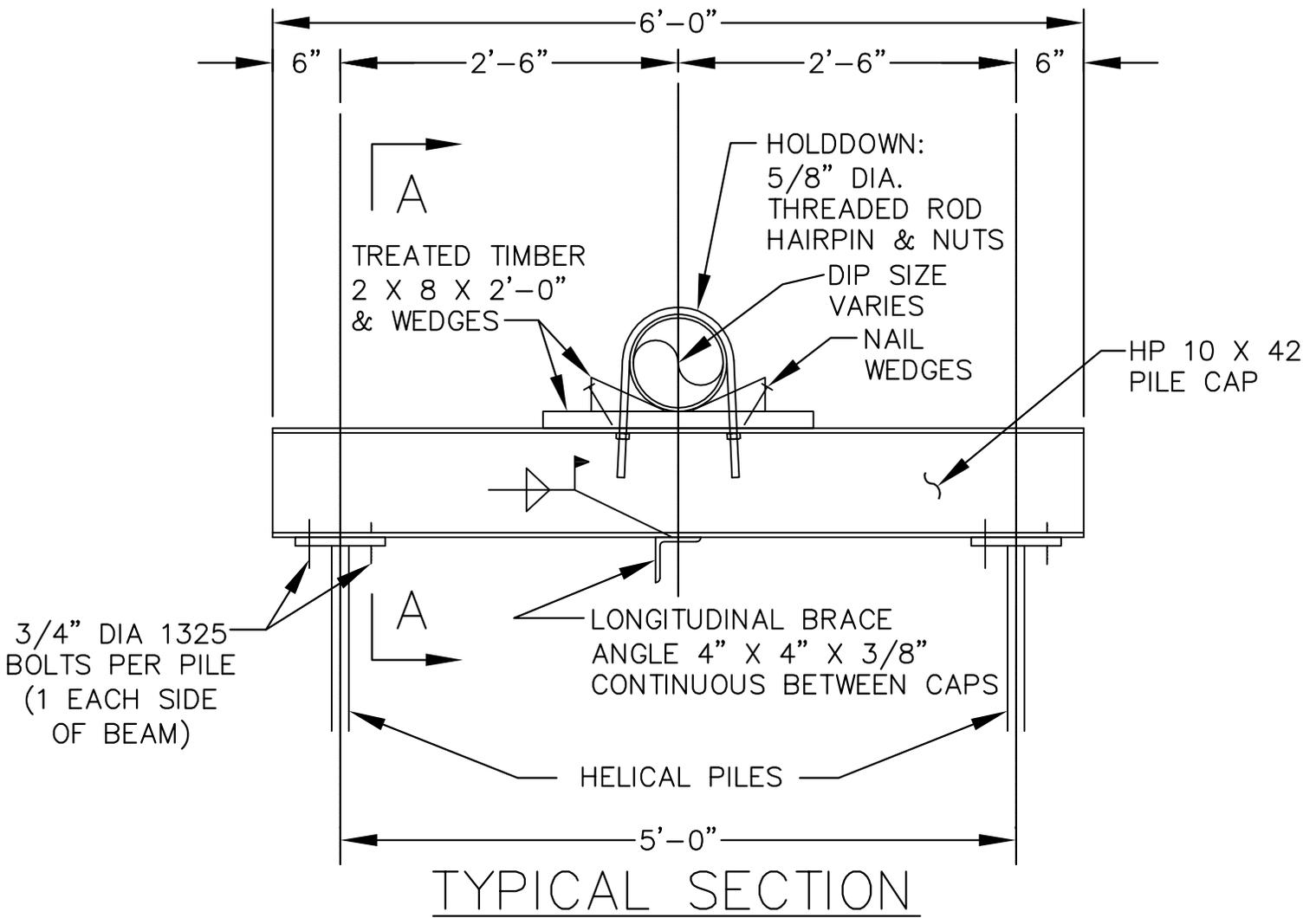
CITY ENGINEER REG 23110

TRACER WIRE PLAN
(HYDRANT)

MINNESOTA RURAL WATER
ASSOCIATION STANDARD DETAIL



GV-WM-080



NOTE:
 HELICAL PILE – SEE SPECIFICATIONS FOR DIMENSIONS, LENGTH & LOADS.

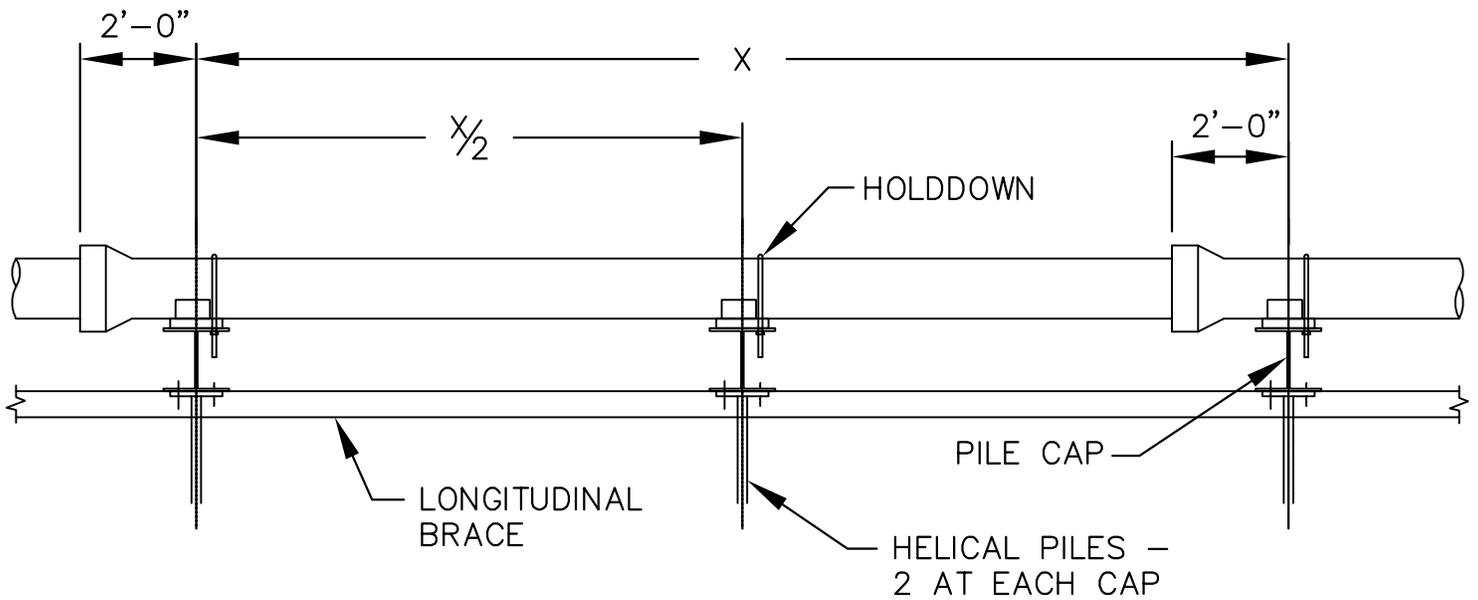
STEEL CAP, ANGLES AND RODS SHALL BE COVERED WITH AN APPROVED CORROSION INHIBITOR.

NOT TO SCALE

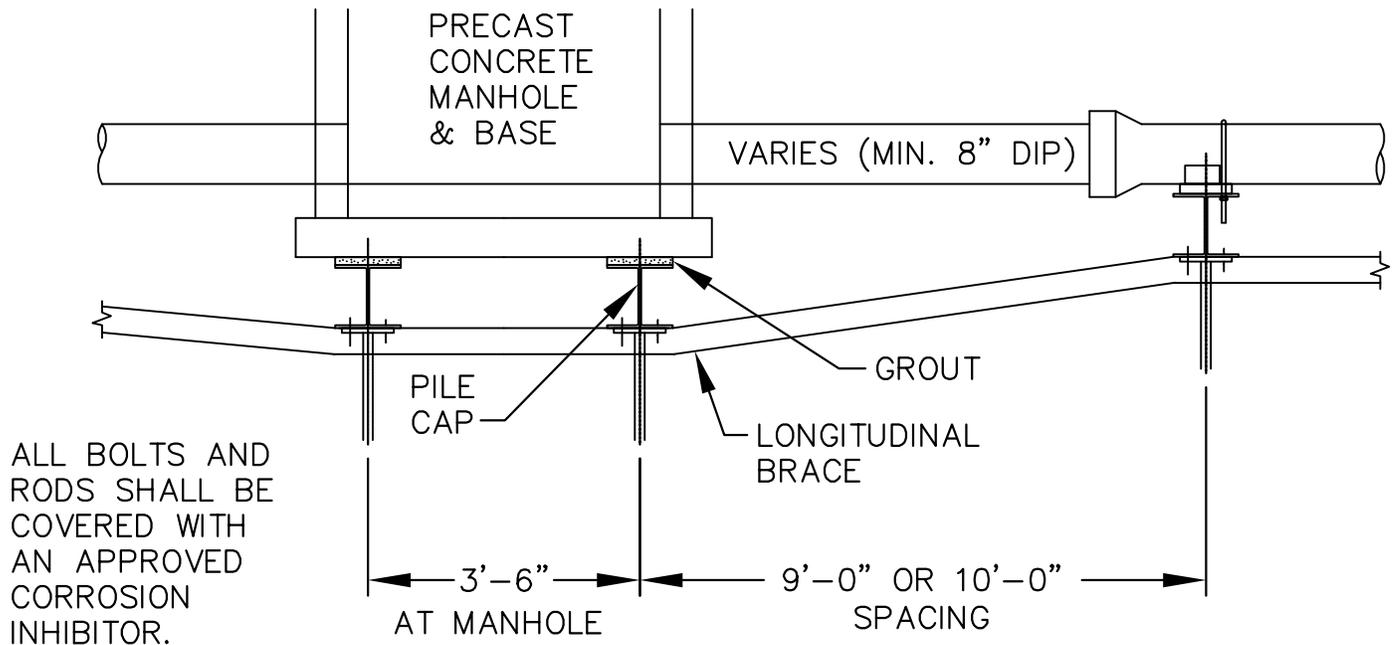
APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**PIPE SUPPORT PILING
(1 OF 2)**



ELEVATION



ELEVATION AT MANHOLE

NOT TO SCALE

APPROVED JANUARY 1, 2018

CITY ENGINEER REG 23110

**PIPE SUPPORT PILING
(2 OF 2)**

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