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.
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

VARIES

5"

D/2

D

3"

8" PRECAST CONC. OR CAST-IN-PLACE BASE

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
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. RINGSsealed
W/BUTYL CAULK. SEE
GV-SS-010

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.
Fitting Hub with 4" Threaded Plug. Apply Teflon Thread Tape, or Approved Equal, Over Threads.

Install Approved Ferrous Metal Cap

1.0'

CAST IRON FRAME & COVER (SEE ABOVE)

Ground Wire

Flow

Magnesium Grounding Anode

Pipe Material and Slope per State Plumbing Code

Note: For Tracer Wire Installation Requirements, Refer to the Minnesota Rural Water Association Standard Details.

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

SEWER

AY MCDONALD MFG CO

11 1/2"

15"

4"
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

1.0’

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

2% SLOPE MINIMUM

COMPACTED FILL

PLUG OR CAP GLUED INPLACE

BENDS AS NEEDED

MAGNESIUM GROUND ANODE

INSERTA TEE® (OR APPROVED EQUAL)

SEWER MAIN

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 WITH RISER (DEEP SERVICE)
NEENAH R-1758-E FRAME, LID, AND INNER LID, ESS BROS. 309, OR APPROVED EQUAL

PRECAST CONCRETE TOP SLAB

E-Z STICK 1/2" GASKET MATERIAL

PRESSURE AIR RELEASE SEWER VALVE, CRISPIN (OR APPROVED EQUAL)

BLIND FLANGE WITH 2" PIPE THREAD

VARIABLE

PRECAST MH SECTION WITH A-LOK SEAL AROUND OPENING

STAINLESS STEEL NIPPLE

LIFTING HOOK IN CENTER OF MH

BALL VALVE

ALUMINUM GRATE

MANHOLE JOINT WITH "O" RING RUBBER GASKET

12"x 12"x 6" SUMP

PRECAST REINFORCED CONCRETE BASE SLAB WITH CONCRETE TOPPING AND CONCRETE PIPE SUPPORT

VARIABLE (TYPICALLY 7'-6"

VARIABLE

VARIABLE

12"

12"

12"

12"

12"

12"

12"

12"

12"

12"

12"

12"

12"

12"
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

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

MINIMUM 4” PVC CLEANOUT

1.0’

BENDS AS NEEDED

2% SLOPE MINIMUM

MAGNESIUM GROUND ANODE

INSERTA TEE®(OR APPROVED EQUAL)
SEWER MAIN

PLUG OR CAP GLUED INPLACE

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 TEFLOM 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 FARHER
FROM STREET.

SERVICE PIPE (6" TYP.)

6" X 4" INCREASE

6" PVC

LINER

MAIN

SHIELDED COUPLING
OR APPROVED EQUAL

TO HOUSE

EXISTING SEWER
PIPE

1.0'

NOTE:
AT EACH TRANSITION WHERE PIPES CHANGE SIZE, THE CONTRACTOR
SHALL USE A MANUFACTURED TRANSITION ADAPTER APPROVED BY
THE MANUFACTURER OR THE ENGINEER.
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.
COIL 2' OF EXTRA RED AND GREEN WIRE IN ACCESS BOX.
RED WIRE IS FROM GROUNDING ANODE AND GREEN WIRE IS TRACE WIRE ON SERVICE PIPE THAT CONNECTS TO THE MAIN LINE WIRE.

NOTES:
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE SERVICE PIPE.
   THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 2' INTERVALS.

GRADE LEVEL CAST IRON FRAME & COVER WIRE TO BE INSTALLED DIRECTLY OVER SEWER SERVICE NEAR THE RIGHT-OF-WAY LINE

#14 AWG COPPER CLAD STEEL – RED, FACTORY CONNECTED TO GROUND ROD

#12 AWG COPPER CLAD STEEL – GREEN (TYP)

DRIVE-IN MAGNESIUM GROUNDING ANODE ROD

WIRE CONTINUES WITH SEWER SERVICE AND CONNECTS TO MAINLINE WIRE (SEE PLAN VIEW ABOVE)
TRACE WIRE SHALL BE ROUTED AROUND MANHOLES ON THE NORTH AND/OR EAST SIDE.

#14 AWG COPPER CLAD STEEL — RED, FACTORY CONNECTED TO GROUND ROD

DRIVE-IN MAGNESIUM GROUNDING ANODE ROD

#12 AWG COPPER CLAD STEEL — GREEN (TYP)

SEWER MANHOLE - PLAN VIEW
NO SCALE

SEWER MANHOLE - SECTION VIEW
NO SCALE

CITY ENGINEER REG 23110

MINNESOTA RURAL WATER ASSOCIATION STANDARD DETAIL

GV-SS-110
PRE-CAST CONCRETE SLAB REINFORCED FOR STREET LOADING WITH 27” OPENING

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

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

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

RCP PIPE SAWS TO LENGTH

RUBBER GASKET AT ALL JOINTS

EXISTING RCP BARREL SECTION

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