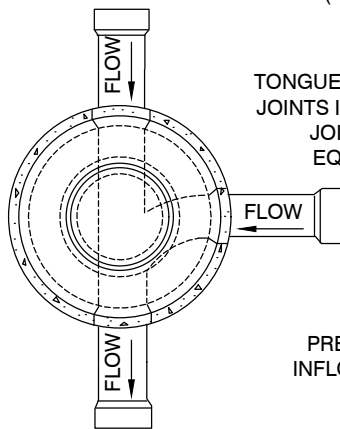
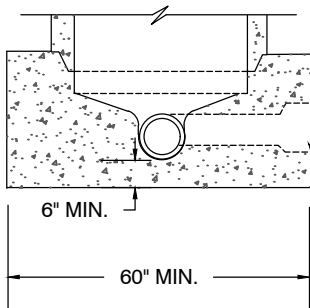


NOTE:  
FOR USE WHEN MANHOLE IS NOT  
LOCATED IN PAVEMENT.

## FIELD COLLAR DETAIL



TOP VIEW



SECTION  
SIDE VIEW

6" MIN. CONCRETE COLLAR  
2" BELOW MIN. TOP OF CONE  
5.0' MIN. DIA.

PRECAST R.C. CONCENTRIC CONE  
(ECCENTRIC CONE FOR DIA. 60"  
OR LARGER)

TONGUE & GROOVE JOINTS, SET ALL  
JOINTS IN "RAMNECK" OR "CONSEAL"  
JOINT SEALING COMPOUND OR  
EQUAL (PER MANUFACTURER'S  
RECOMMENDATIONS)

PRECAST MANHOLE BASE WITH  
INFLOW & OUTFLOW COUPLINGS  
CAST IN AT ENGINEERED  
INVERTS, ANGLE & SLOPE

APPROVED ELASTOMERIC SEALS  
CONFORMING TO ASTM F-477 OR  
ASTM C923 TO ENSURE WATER  
TIGHTNESS

SMALLER LATERAL SEWER FLOW  
CHANNELS ARE TO BE BROUGHT  
INTO MAIN LINE CHANNELS WITH  
THE ELEVATION OF PIPE CROWN  
MATCHING THE CROWN OF THE MAIN  
INFLOW

SEE "DETAIL B", TYPICAL TRENCH  
SECTION FOR ADJACENT PAVEMENT  
REQUIREMENTS

24" DIA.  
CLEAR  
OPENING

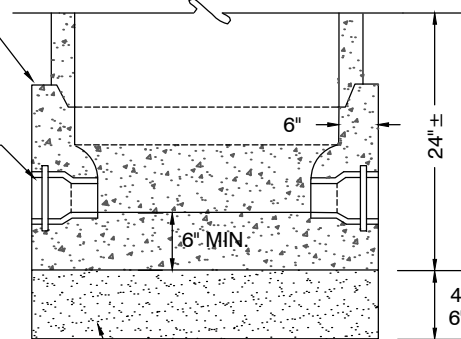
SET C.I. FRAME 1/8"  
BELOW AC

MAX. OF TWO 4" HIGH  
GRADE RINGS  
(FOR NEW CONSTRUCTION)

PRECAST R.C. RISER  
(BARREL) SECTIONS

4" MIN.

48" DIA. MIN.



COMPACTED SUBGRADE (90% MDD)

GRADED BEDDING MATERIAL AS DESCRIBED  
ON TYPICAL TRENCH SECTION, "DETAIL B"  
(OR 12" MIN OF 3/4" GRAVEL)

## TYPICAL SECTION

NOTE: SEE "DETAIL A-3", STANDARD MANHOLE  
NOTES.

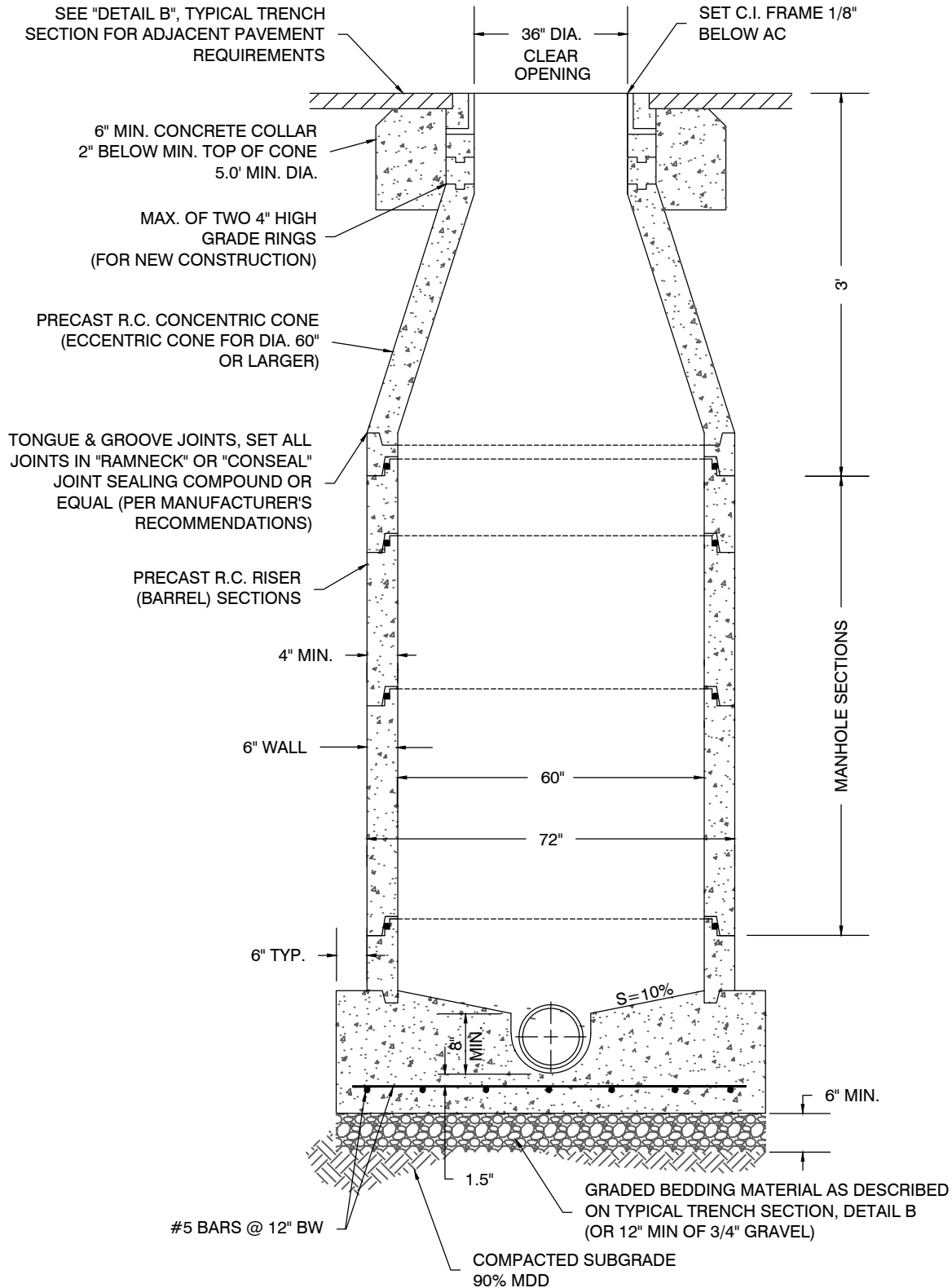
# DETAIL A-1 STANDARD MANHOLE

(≤ 15" GRAVITY SEWER)

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





SEE "DETAIL A-3" STANDARD MANHOLE NOTES.

## DETAIL A-2 CONCENTRIC MANHOLE

(≥ 15" GRAVITY SEWER)

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024



NOTES:

1. CONTRACTOR SHALL CONTACT AND COORDINATE WITH M.G.S.D. AND ALL OTHER UTILITIES 48 HOURS PRIOR TO CONSTRUCTION.
2. ALL CONSTRUCTION SHALL CONFORM TO M.G.S.D. STANDARDS AND NO BACKFILLING WILL BE ALLOWED UNTIL INSPECTED AND APPROVED BY M.G.S.D.
3. MANHOLE SHALL BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE SECTIONS CONFORMING TO ASTM DESIGNATION C478 AND FULLY SEALED TO BE WATERTIGHT.
4. EXCAVATION FOR MANHOLE MUST BE MADE TO A MINIMUM OF ONE FOOT OUTSIDE OF THE MANHOLE WALL TO PROVIDE FOR ADEQUATE WORKSPACE. SPACE OUTSIDE OF THE MANHOLE SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL IN UNIFORM LAYERS NOT EXCEEDING 8" IN DEPTH. EACH LAYER SHALL BE THOROUGHLY COMPACTED TO THE DENSITY OF THE EARTH IN THE ADJACENT TRENCH SECTIONS (MIN. 90% IN EXISTING OR PROPOSED STREET OR ALLEY RIGHTS-OF-WAY).
5. CAST IRON FRAME AND COVER SHALL BE 24-INCH DIAMETER (CLEAR OPENING) AND SHALL BE MANUFACTURED FROM GRAY CAST IRON CONFORMING TO ASTM DESIGNATION: A-48, CLASS 30, AND DESIGNED FOR A MINIMUM HS-20 TRAFFIC LOADING. COVERS AND FRAMES SHALL BE MATCH-MARKED IN PAIRS AND SEATING SURFACES MACHINED SO THAT COVER IS NON-ROCKING. COVERS SHALL HAVE TWO PICK HOLES, NO "THRU" HOLES, AND BE IDENTIFIED WITH "SEWER" CLEARLY DISPLAYED ON COVER.
6. ALL BASES MUST BE PRECAST UNLESS OTHERWISE APPROVED BY M.G.S.D.
7. CONCRETE FOR CAST-IN-PLACE MANHOLE BASE, IF APPROVED BY M.G.S.D. FOR USE, SHALL BE A MINIMUM 4000 PSI 28 DAY STRENGTH CLASS AA OR DA CONCRETE.
8. SEWER STUBS FOR FUTURE EXTENSION SHALL BE NO LESS THAN 18" AND NO MORE THAN 5 FEET IN LENGTH.
9. THE TOP OF INCOMING LATERAL SEWERS SHALL ENTER THE MANHOLE AT AN ELEVATION EQUAL TO THE TOP OF THE MAIN LINE. EXCEPTIONS ONLY BY PRIOR M.G.S.D. APPROVAL.
10. INVERTS SHALL BE FORMED DIRECTLY IN CONCRETE OF MANHOLE BASE AND SHALL BE SMOOTH AND ACCURATELY SHAPED TO A SEMI-CIRCULAR BOTTOM CONFORMING TO THE INSIDE OF THE ADJACENT SEWER SECTION.
11. WHERE MANHOLES ARE NOT LOCATED IN STREETS, PLACE TOP OF MANHOLE A MINIMUM OF 6" ABOVE EXISTING GROUND AS REQUIRED BY M.G.S.D., MGSD MAY REQUIRE DIFFERENT STANDARDS IN FLOOD PLAIN OR OTHER SPECIAL CIRCUMSTANCES. INSTALL THE CONCRETE COLLAR FROM A POINT 6" OUTSIDE THE TOP OF THE COVER FRAME AND EXTEND A MINIMUM OF 6 INCHES BELOW THE SURROUNDING GROUND OR 2" BELOW THE TOP OF THE CONE, WHICHEVER IS MORE RESTRICTIVE. TAPER THE CONCRETE COLLAR FROM TOP TO BOTTOM AT A 1:1 SLOPE OR FLATTER.
12. ALTERNATIVE METHODS OF RAISING THE LID & FRAME TO GRADE, OTHER THAN CONCRETE GRADE RINGS, SHALL BE APPROVED BY THE DISTRICT ON A CASE BY CASE BASIS PRIOR TO CONSTRUCTION.
13. CONCRETE COLLAR MATERIAL SHALL MEET REQUIREMENTS FOR CONCRETE EXPOSED TO FREEZE-THAW ENVIRONMENTS.
14. ALL JOINTS, COVERS, AND CONNECTIONS TO NEW OR EXISTING MANHOLES SHALL BE WATERTIGHT. MANHOLES SHALL BE VACUUM TESTED FROM TOP OF CONE PRIOR TO PAVING IN AREAS OF HIGH GROUNDWATER.
15. USE DETAIL A-2, CONCENTRIC MANHOLE, WHERE PIPE IS LARGER THAN 15" OR DEPTH TO INVERT EXCEEDS 15'.
16. USE OF A NON-STANDARD MANHOLE (ECCENTRIC OR DROP MANHOLE) OR CAST-IN-PLACE MANHOLE REQUIRES MGSD REVIEW AND APPROVAL.
17. POLYMER MANHOLES MAY BE REQUIRED IN FORCE MAIN APPLICATIONS.

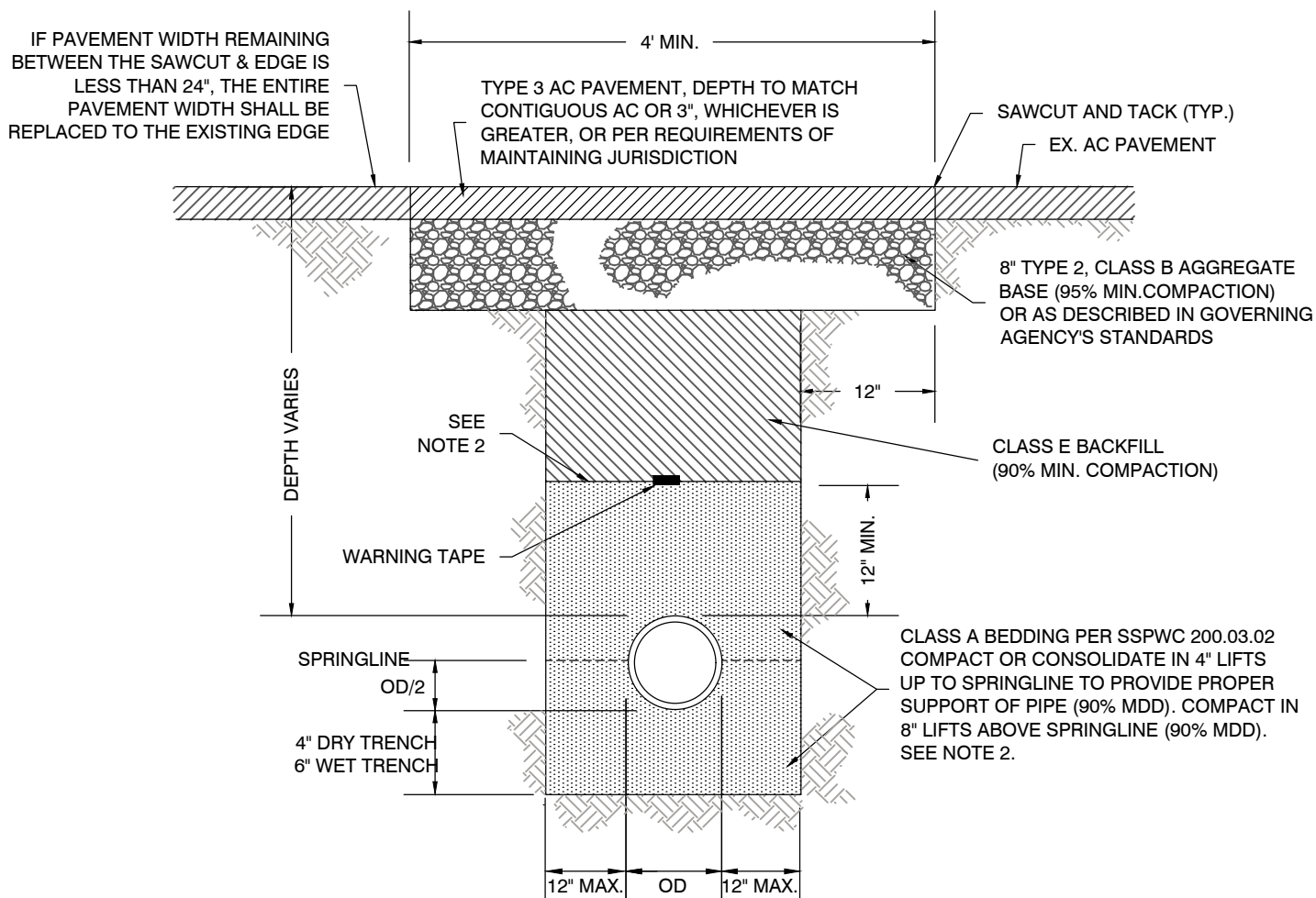
## DETAIL A-3

# STANDARD MANHOLE NOTES

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





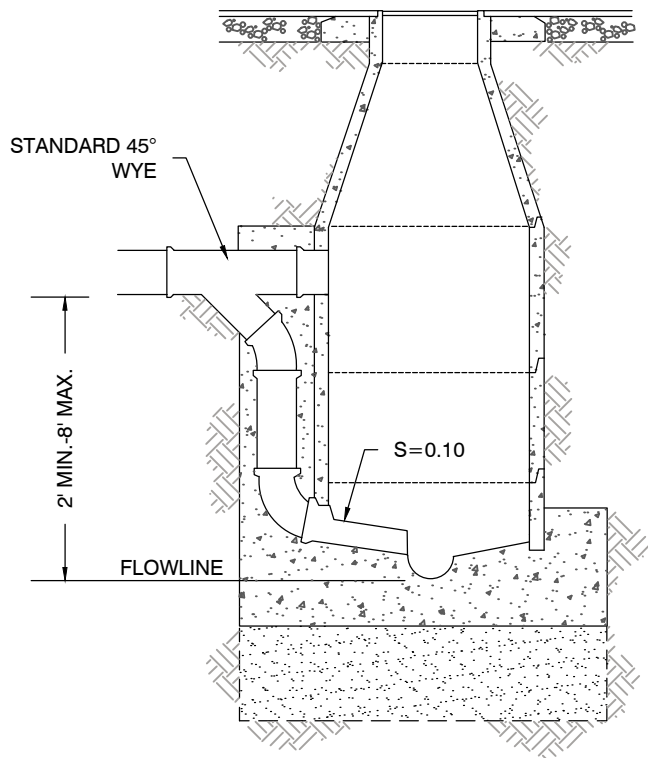
**NOTES:**

1. ALL REQUIREMENTS OF THE M.G.S.D. ORDINANCE MUST BE MET. SEE M.G.S.D. ORDINANCE FOR BACKFILL OF TRENCHES IN NON-TRAFFIC AREAS.
2. IN AREAS OF HIGH GROUND WATER, CLASS B, C, OR D BACKFILL CAN BE UTILIZED (WRAPPED ON ALL SIDES WITH MIRAFI 140N FILTER FABRIC, OR APPROVED EQUAL) IN LIEU OF CLASS A BEDDING. ANY OTHER VARIATION IN BEDDING GRADATIONS OR FILTER FABRIC INSTALLATION SHALL ONLY BE ALLOWED IF GRADATION OF ALTERNATIVE MATERIAL OR OTHER PROPOSED VARIATION IS SUBMITTED TO AND APPROVED BY THE M.G.S.D. ENGINEER PRIOR TO CONSTRUCTION.
3. TYPE 2 CLASS B AGGREGATE BASE SHALL CONFORM TO SECTION 200 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, AND SHALL BE MECHANICALLY COMPACTED IN CONFORMANCE WITH SECTION 305.01 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. IF GOVERNING AGENCY REQUIRES MORE STRINGENT AC PAVEMENT OR AGGREGATE BASE, FOLLOW REQUIREMENTS FOR AGENCY MAINTAINING PAVEMENT.
4. ALL BACKFILL AND BEDDING MATERIAL SHALL CONFORM TO SECTION 200 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. BEDDING AND BACKFILL SHALL BE MECHANICALLY COMPACTED IN CONFORMANCE WITH SECTION 305.10 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

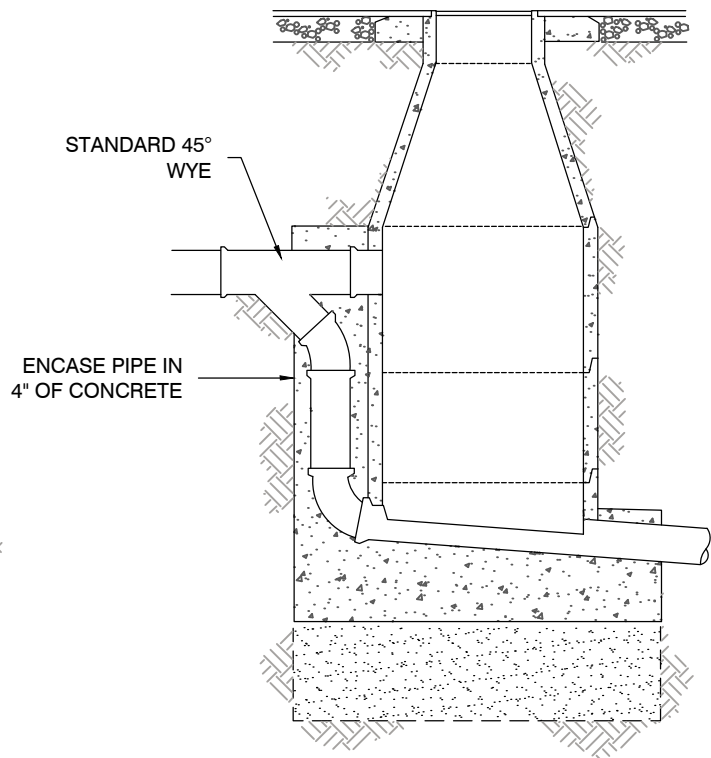
# **DETAIL B** **TYPICAL TRENCH SECTION** MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





LATERAL TO MAIN



MAIN TO MAIN

NOTES:

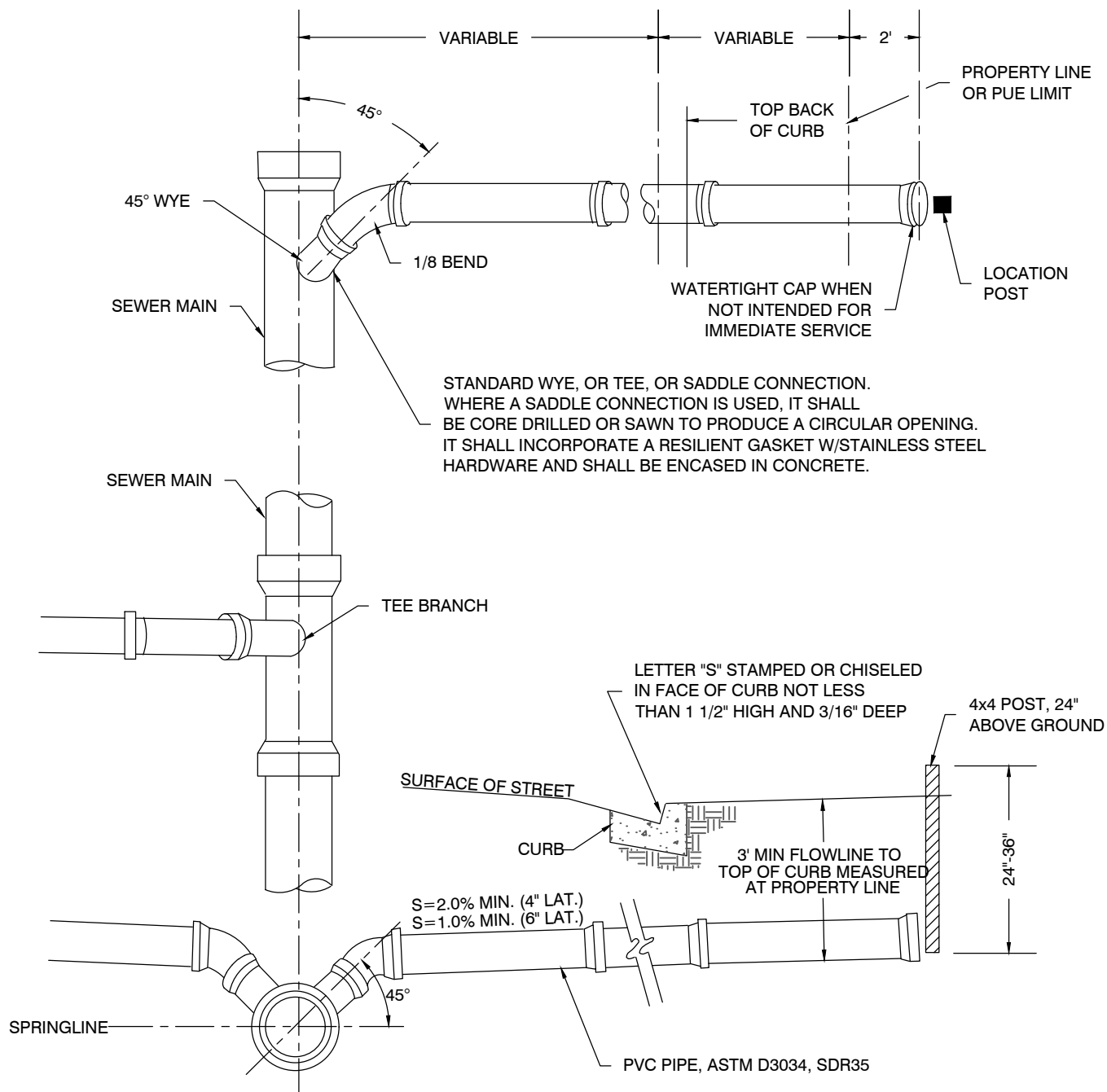
1. THE USE OF DROP MANHOLES IS NOT PREFERRED BY MGSD AND THE USE OF A DROP MANHOLE IS SUBJECT TO MGSD APPROVAL. SEWER INFRASTRUCTURE IS TO BE DESIGNED TO AVOID THE USE OF DROP MANHOLES WHENEVER POSSIBLE.
2. DROP MANHOLES ARE TO BE USED ON ALL SANITARY SEWERS WITH MORE THAN 2 FEET VERTICAL DROP AT MANHOLE (DROP SHALL NOT EXCEED 8 FEET AT ANY MANHOLE).
3. MAINS SHALL BE SLOPED TO FALL AT LEAST 0.1 FEET ACROSS MANHOLE SECTION.
4. ALL OTHER DIMENSIONS, NOTES AND REQUIREMENTS AS SHOWN ON THE STANDARD MANHOLE DETAIL SHALL APPLY TO DROP MANHOLES.
5. DIMENSIONS NOT SHOWN ARE DELINEATED ON STANDARD MANHOLE DETAIL.
6. ALL JOINTS AND CONNECTIONS TO NEW OR EXISTING MANHOLES SHALL BE WATERTIGHT.

# DETAIL C DROP MANHOLE

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





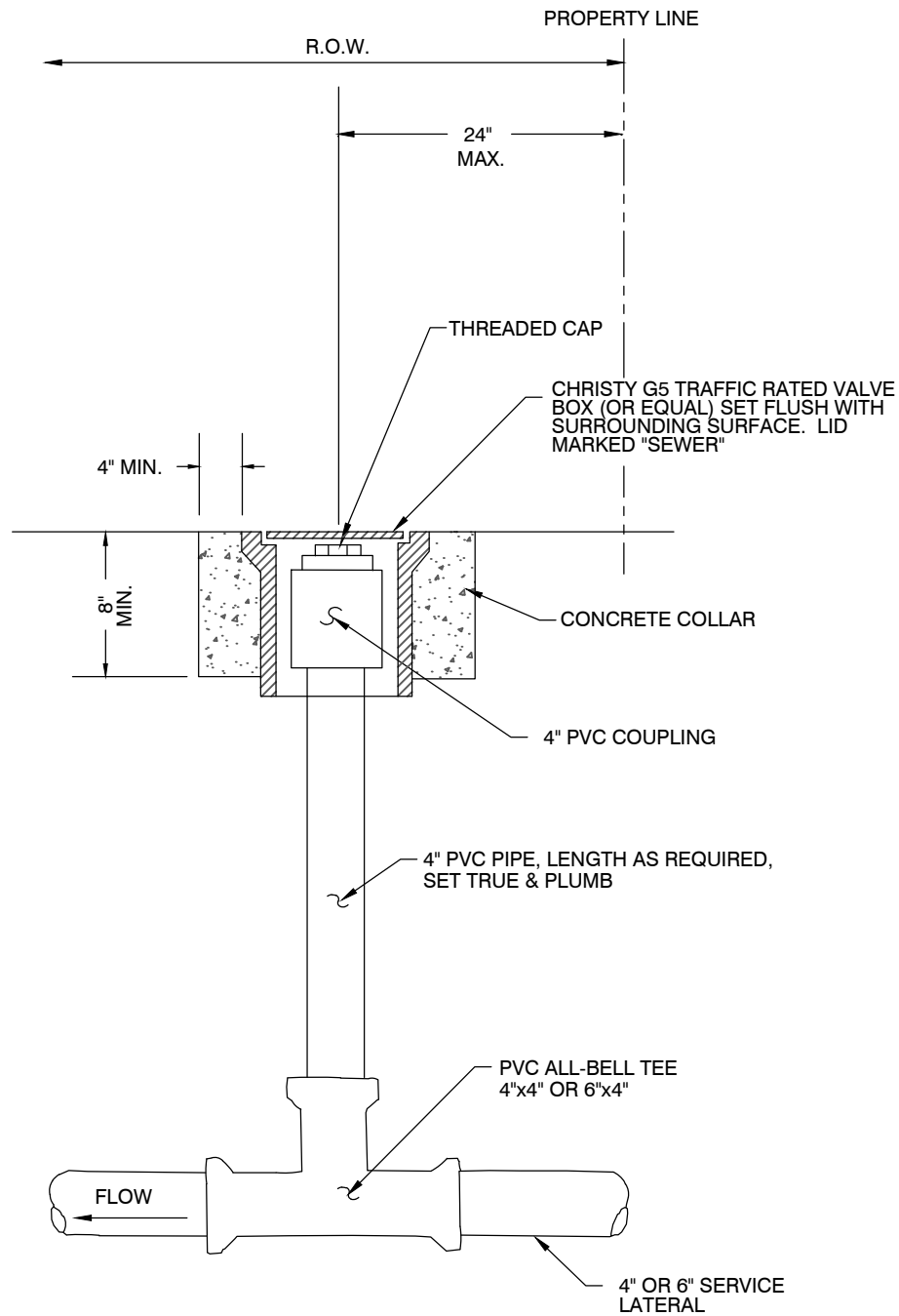
NOTES:

1. ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT.
2. ALL BUILDING SEWERS SHALL HAVE A MINIMUM GROUND COVER OF THREE FEET (3') OVER THE TOP OF THE PIPE UNLESS SPECIFICALLY APPROVED BY MGSD.
3. LATERALS SHALL NOT CONNECT TO THE SEWER MAIN DIRECTLY ON TOP, NOR SHALL THE LATERAL FLOWLINE BE SITUATED BELOW THE SPRINGLINE OF THE MAIN.

# DETAIL D TYPICAL SEWER LATERAL MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





NOTE: ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT.

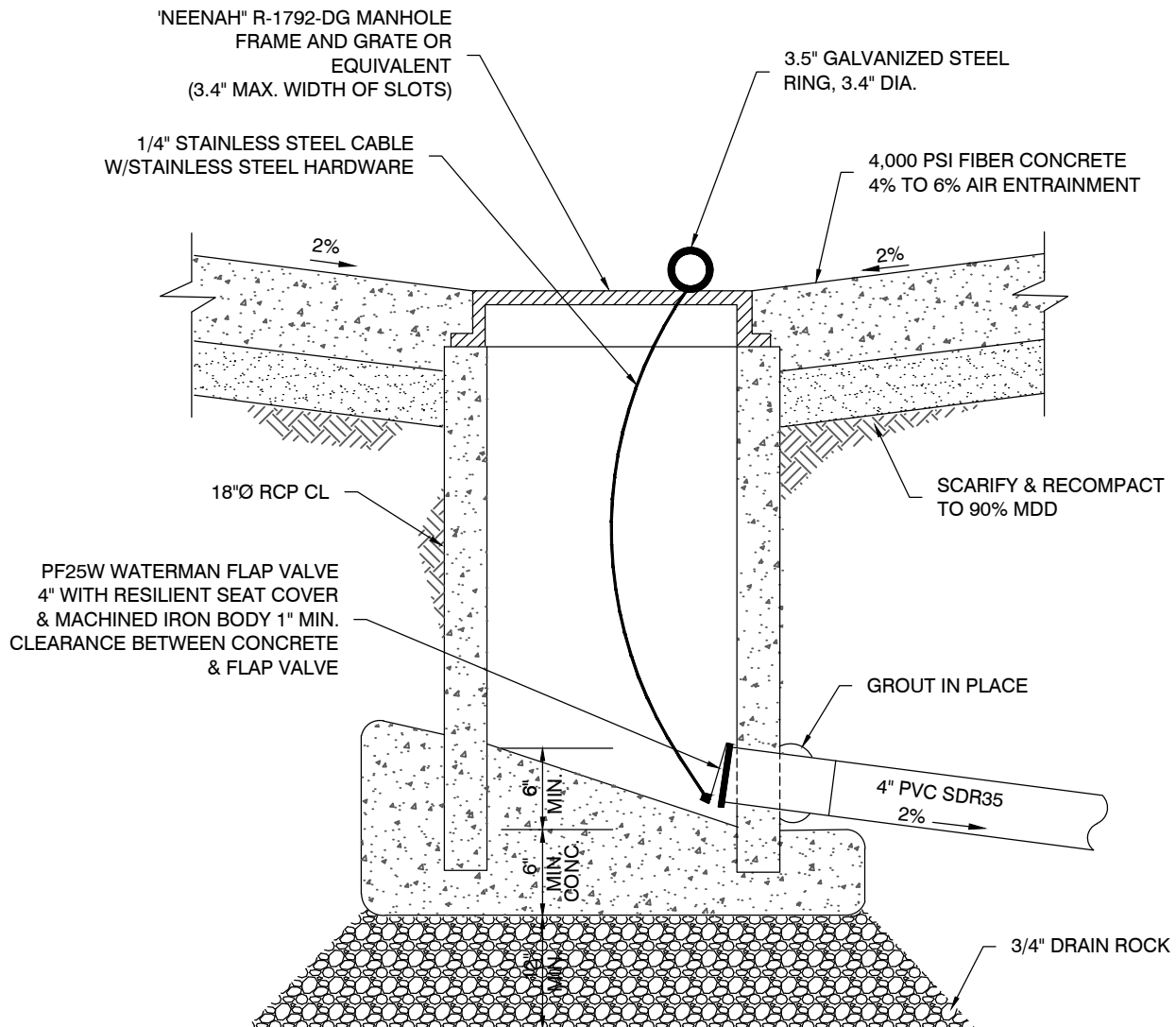
## DETAIL E

# LATERAL OBSERVATION TEE

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





NOTES:

1. DUMPSTER PAD DRAINS SHALL BE ROUTED THROUGH A GREASE INTERCEPTOR PRIOR TO DISCHARGE TO THE SANITARY SEWER WHEN A GREASE INTERCEPTOR IS REQUIRED ON THE SEWER SERVICE.

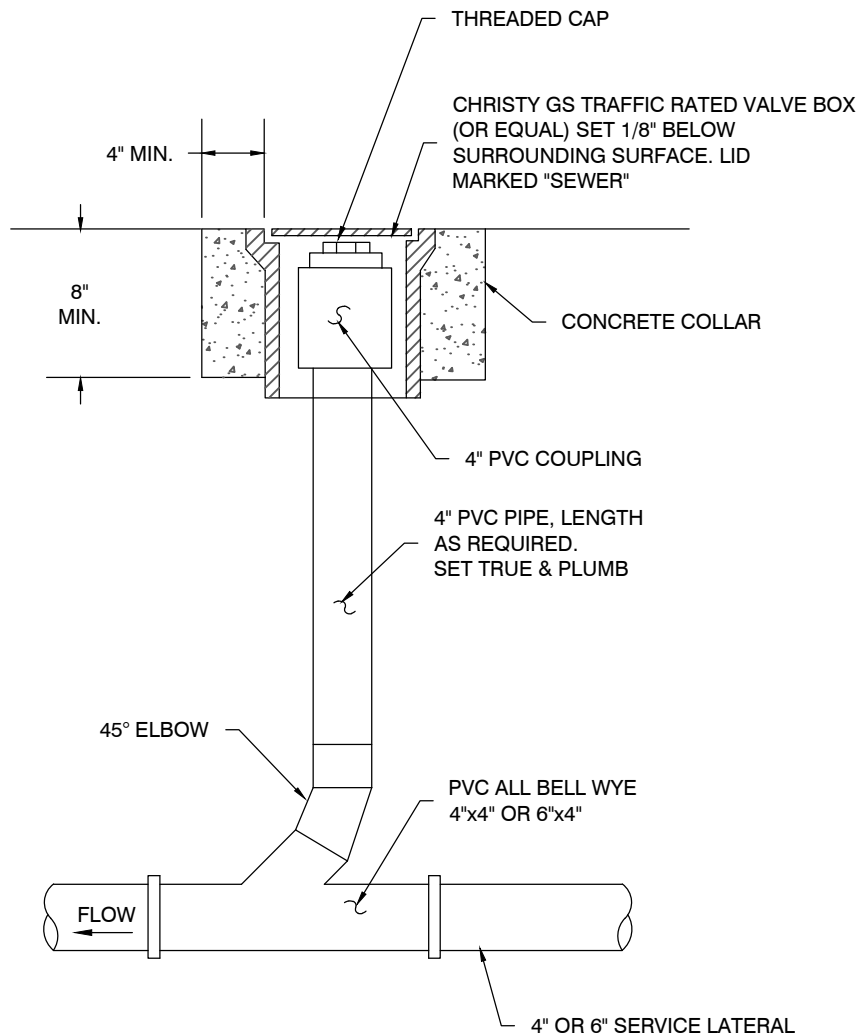
## DETAIL F DUMPSTER PAD DRAIN

MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024







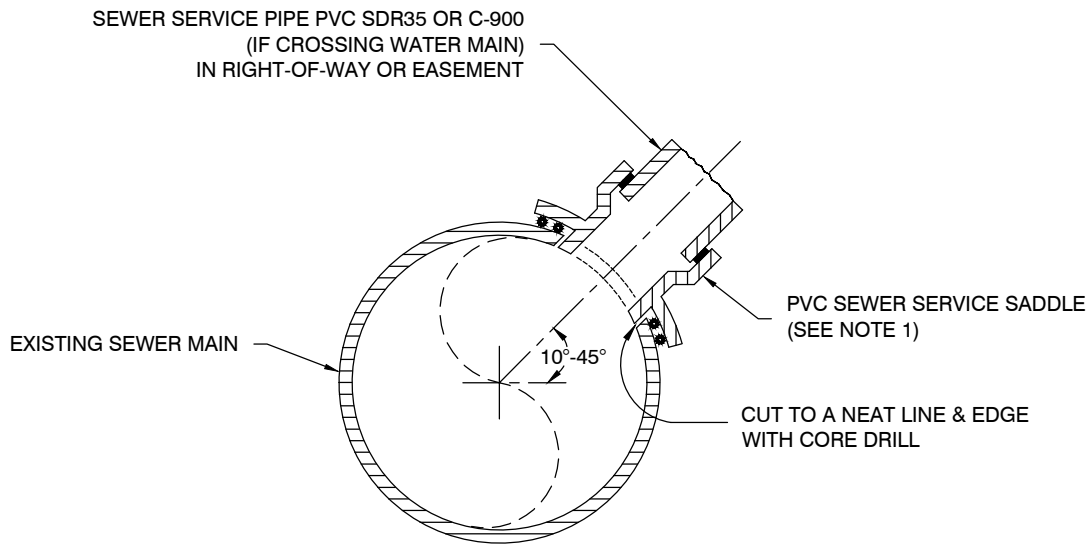
NOTES:

1. ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT.
2. CLEANOUTS TO BE PLACED AT EVERY ANGLE GREATER THAN, OR EQUAL TO 45°, EVERY 150' OF LATERAL, AND WITHIN 5' OF BUILDING AND IN ACCORDANCE WITH THE CURRENT EDITION OF THE UNIFORM BUILDING CODE. CLEANOUTS INSTALLED AT ANGLES SHALL BE LOCATED ON THE UPSTREAM SIDE OF THE ANGLE. CLEANOUTS SHALL BE LOCATED AS CLOSE AS PRACTICAL TO THE ANGLE BUT SHALL NOT EXCEED A DISTANCE OF 5' FROM THE ANGLE.
3. WHERE CLEANOUTS ARE NOT LOCATED IN STREETS, PLACE TOP OF CLEANOUT ABOVE EXISTING GROUND. UNLESS OTHERWISE REQUIRED BY M.G.S.D. INSTALL THE CONCRETE COLLAR FROM A POINT 4" OUTSIDE THE TOP OF THE COVER AND EXTEND A MINIMUM OF 8" BELOW THE SURROUNDING GROUND SURFACE.

# DETAIL G SEWER LATERAL CLEANOUT MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024

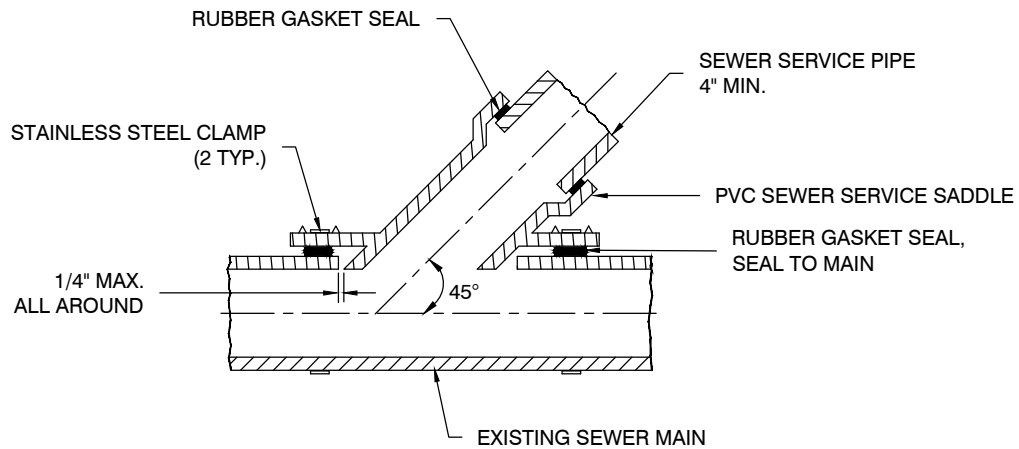




NOTES:

1. TO BE USED ONLY WHEN CONNECTING TO EXISTING MAIN..
2. ROMAC "CB" SEWER SADDLES OR EQUAL MAY BE USED ON SEWER MAINS.
3. SEWER SERVICE SADDLE SHALL BE ENCASED IN CONCRETE.

FRONT VIEW



SIDE VIEW

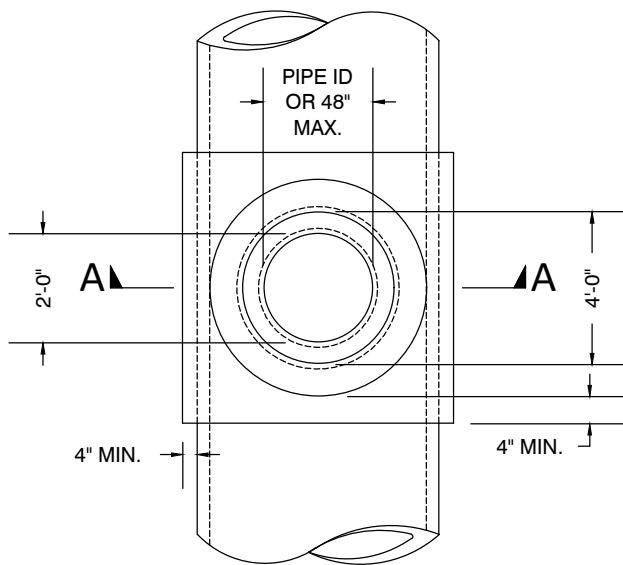
# DETAIL H

## SEWER SERVICE SADDLE

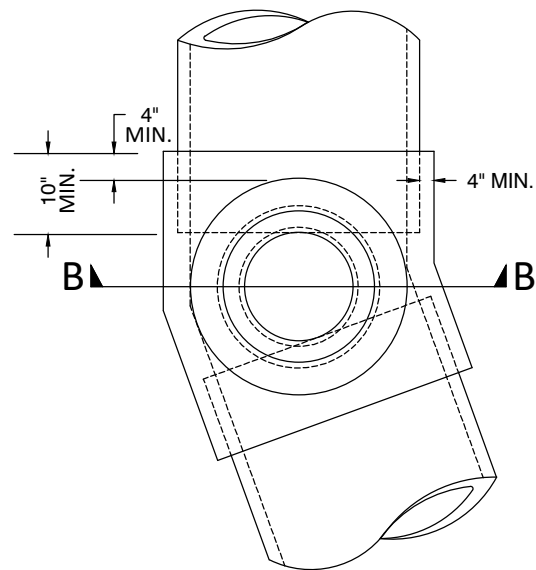
MINDEN - GARDNERVILLE SANITATION DISTRICT



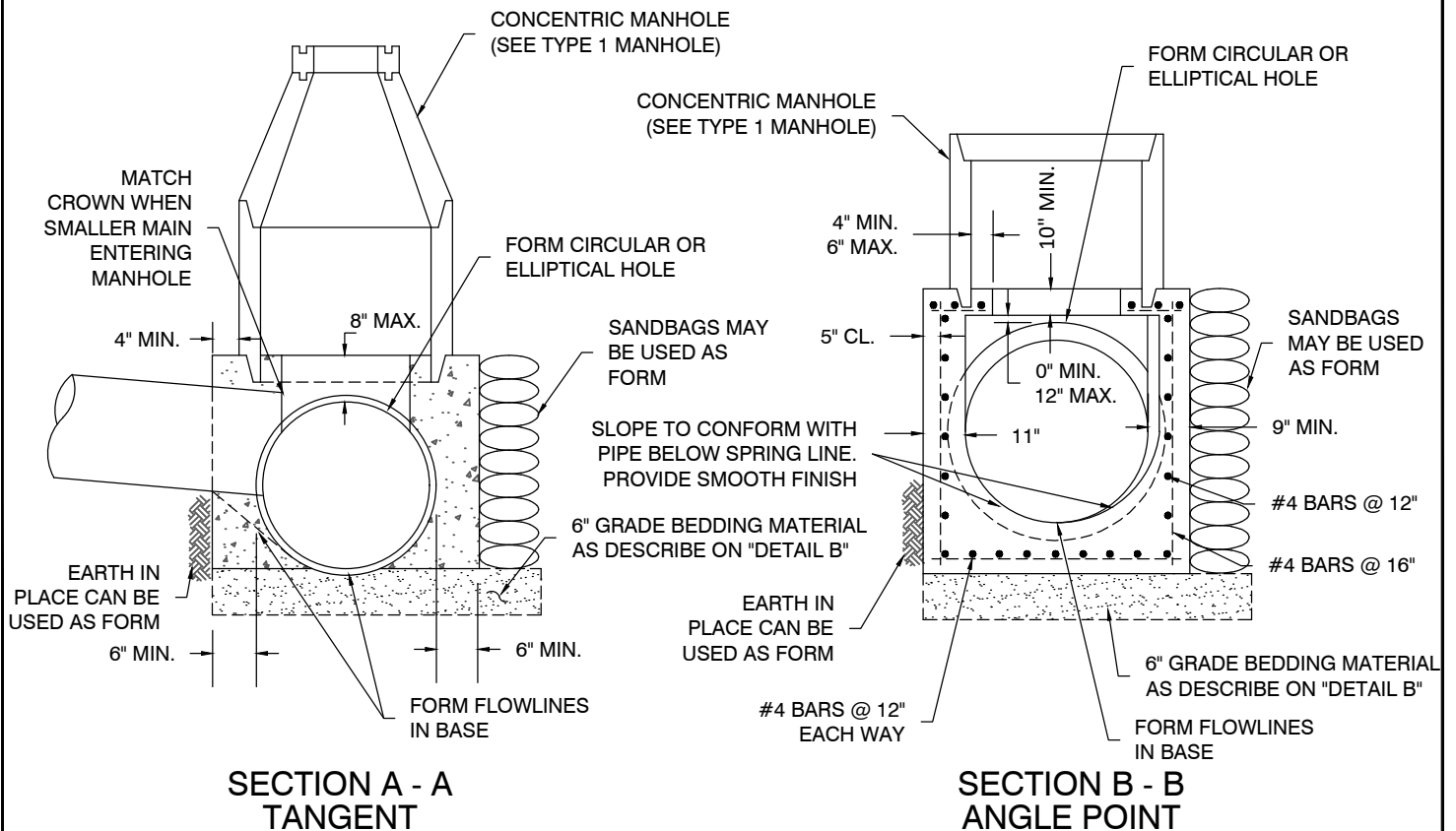




PLAN



PLAN



NOTES:

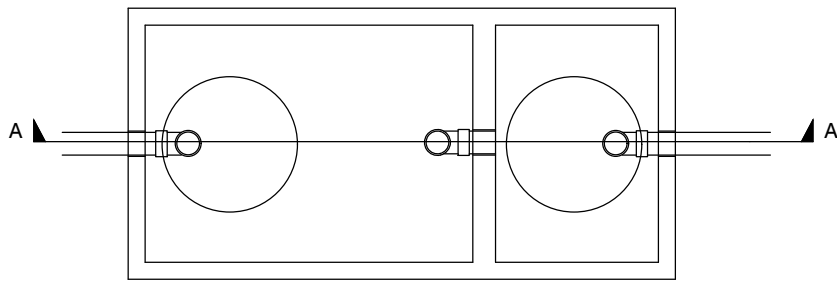
1. SEE "DETAIL A-3" STANDARD MANHOLE NOTES.

# DETAIL J TYPE 4 MANHOLE

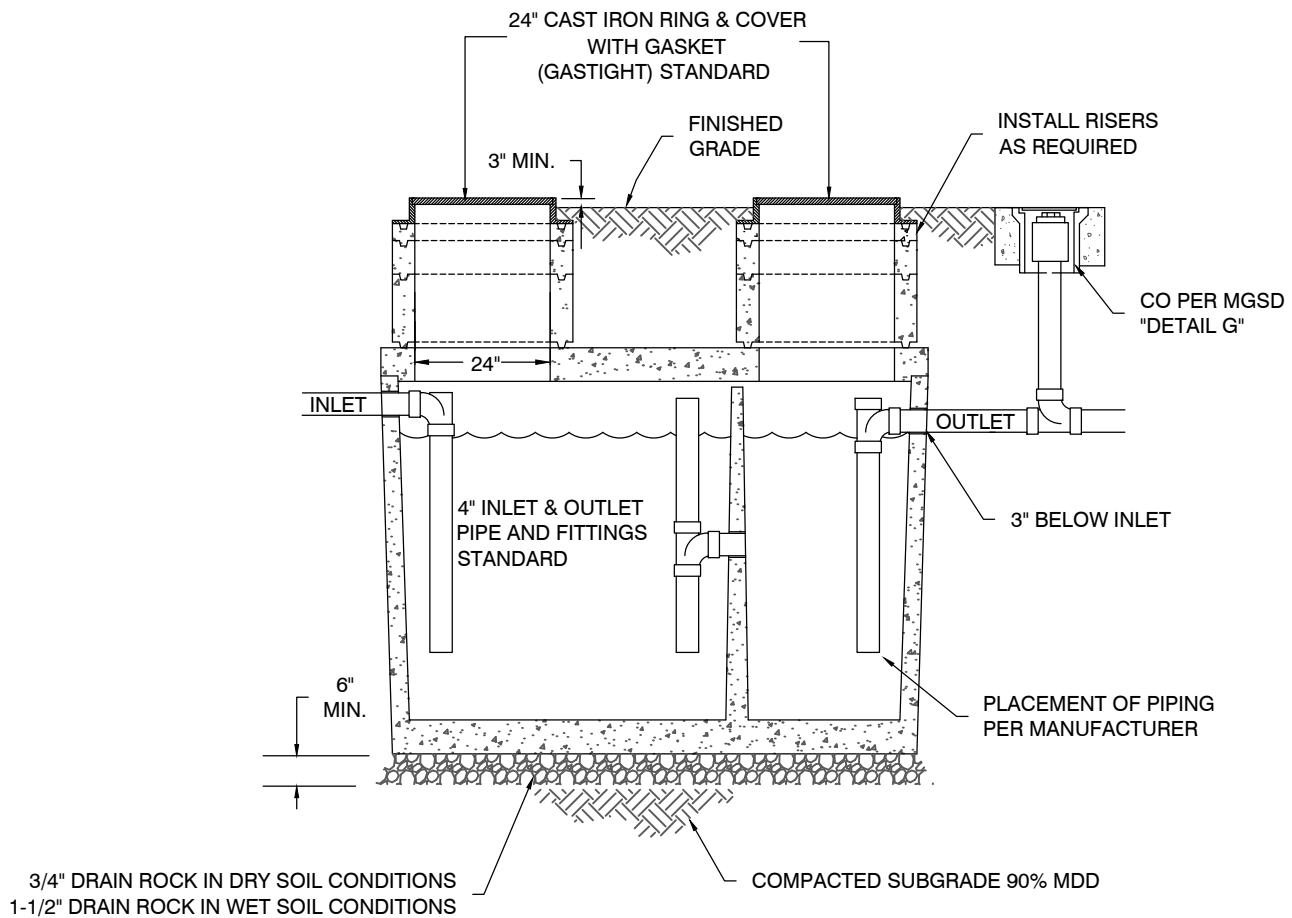
MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





**PLAN VIEW**  
(COVERS & RISERS REMOVED)



**SECTION A-A**

# **DETAIL K** **GREASE INTERCEPTOR** MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024



## NOTES:

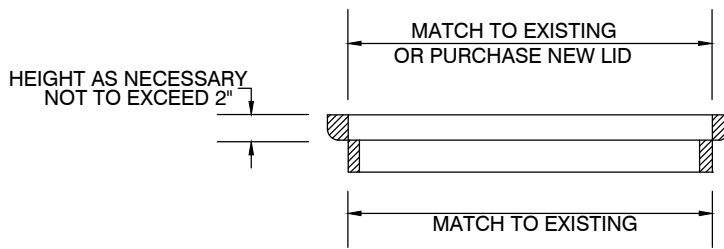
1. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION MEETING WITH AN MGSD REPRESENTATIVE PRESENT.
2. CONTRACTOR SHALL CONTACT AND COORDINATE WITH MGSD AND ALL OTHER UTILITIES 48 HOURS PRIOR TO CONSTRUCTION. ALL CONSTRUCTION SHALL CONFORM TO MGSD STANDARDS AND NO BACKFILLING WILL BE ALLOWED UNTIL INSPECTED AND APPROVED BY MGSD.
3. NEW SEWER LINES SHALL BE TESTED IN ACCORDANCE WITH THE MGSD ORDINANCE AND REQUIRED AIR TEST FOR ACCEPTANCE SHALL BE CONDUCTED AFTER ALL UTILITIES ARE INSTALLED.
4. ALL SANITARY SEWER LINES SHALL BE PVC SDR35. ALL SANITARY SEWER SERVICES SHALL BE 4" PVC SDR35 UNLESS OTHERWISE NOTED.
5. AN "S" SHALL BE STAMPED OR CHISELED IN THE CONCRETE CURB WHERE THE LATERAL CROSSES UNDER IT FROM THE MAIN..
6. UPON COMPLETION OF IMPROVEMENTS, REPRODUCIBLE RECORD DRAWINGS SHALL BE SUBMITTED TO MGSD AND APPROVED BY THE MGSD BOARD.
7. MGSD SHALL BE NOTIFIED PRIOR TO POURING CONCRETE COLLARS ON MANHOLE INSTALLATIONS OR MODIFICATIONS.

# DETAIL L GENERAL NOTES

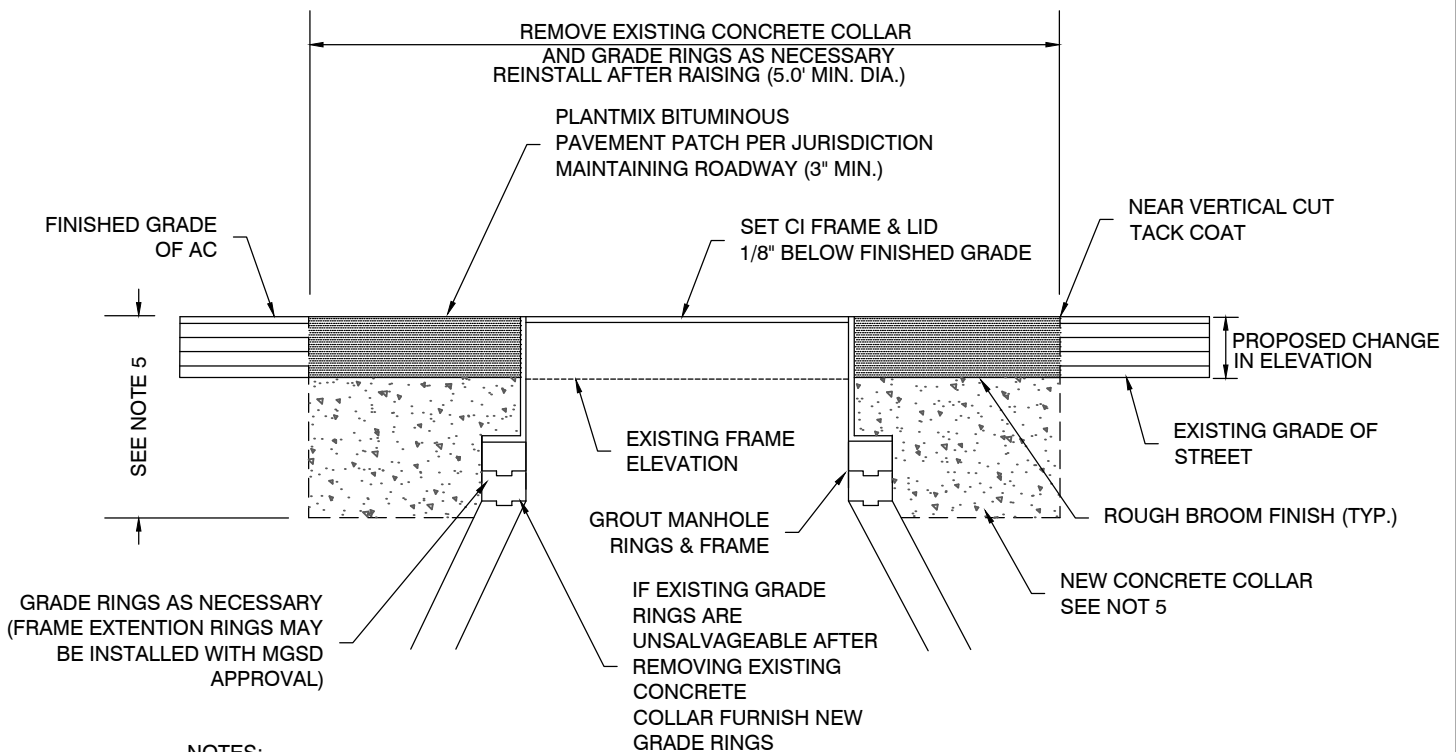
MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024





**ELEVATION**  
D&L FOUNDRY - SUBMIT PRIOR TO CONSTRUCTION  
**MANHOLE ADAPTER RING (RISER)**



**NOTES:**

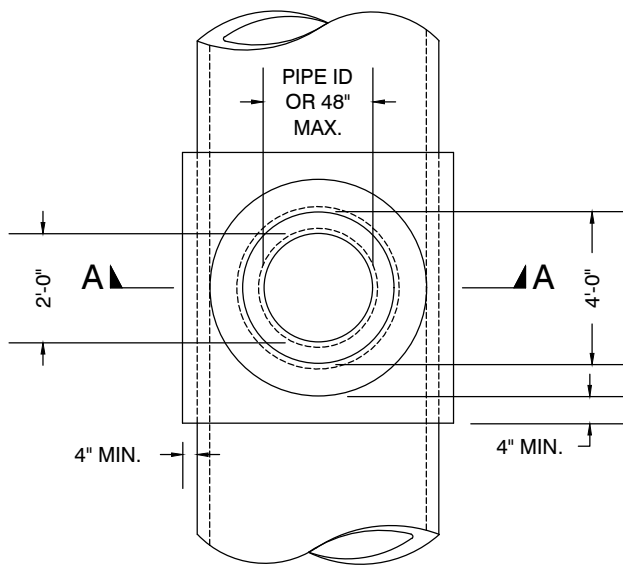
1. CONCRETE SHALL BE 4000 PSI AT 28 DAYS MIX.
2. CONTRACTOR MAY RAISE LIDS BEFORE OR AFTER OVERLAY AT HIS OPTION.
3. IF NEW BARREL SECTION IS ADDED ALL WORK SHALL CONFORM TO MGSD'S STANDARD MANHOLE "DETAIL A."
4. CONTRACTOR SHALL PREVENT DEBRIS FROM FALLING INTO SEWER AT ALL TIMES AND SHALL CLEAN ANY DEBRIS FROM MANHOLE AND LINES WHICH DOES FALL IN.
5. DEPTH OF CONCRETE COLLAR SHALL CONFORM TO MGSD'S STANDARD MANHOLE "DETAIL A."
6. THIS DETAIL IS NOT FOR NEW CONSTRUCTION. THIS DETAIL IS ONLY FOR RAISING EXISTING MANHOLES.
7. INTERIOR OF GRADES RINGS SHALL BE GROUTED TO THE TOP OF THE CONE SECTION.

**DETAIL M**  
**SANITARY SEWER**  
**MANHOLE RAISING**

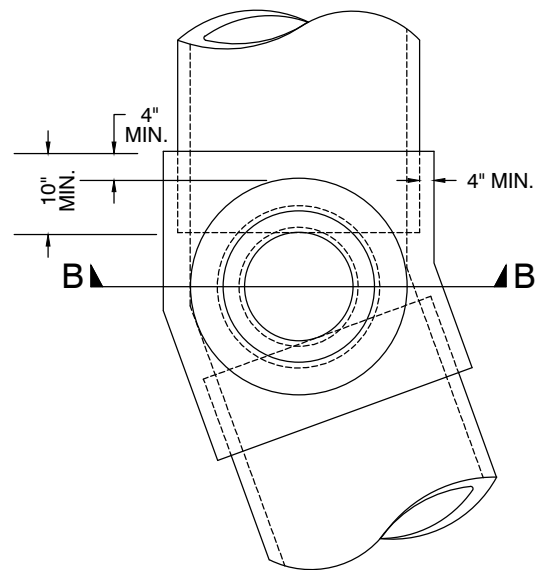
MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024

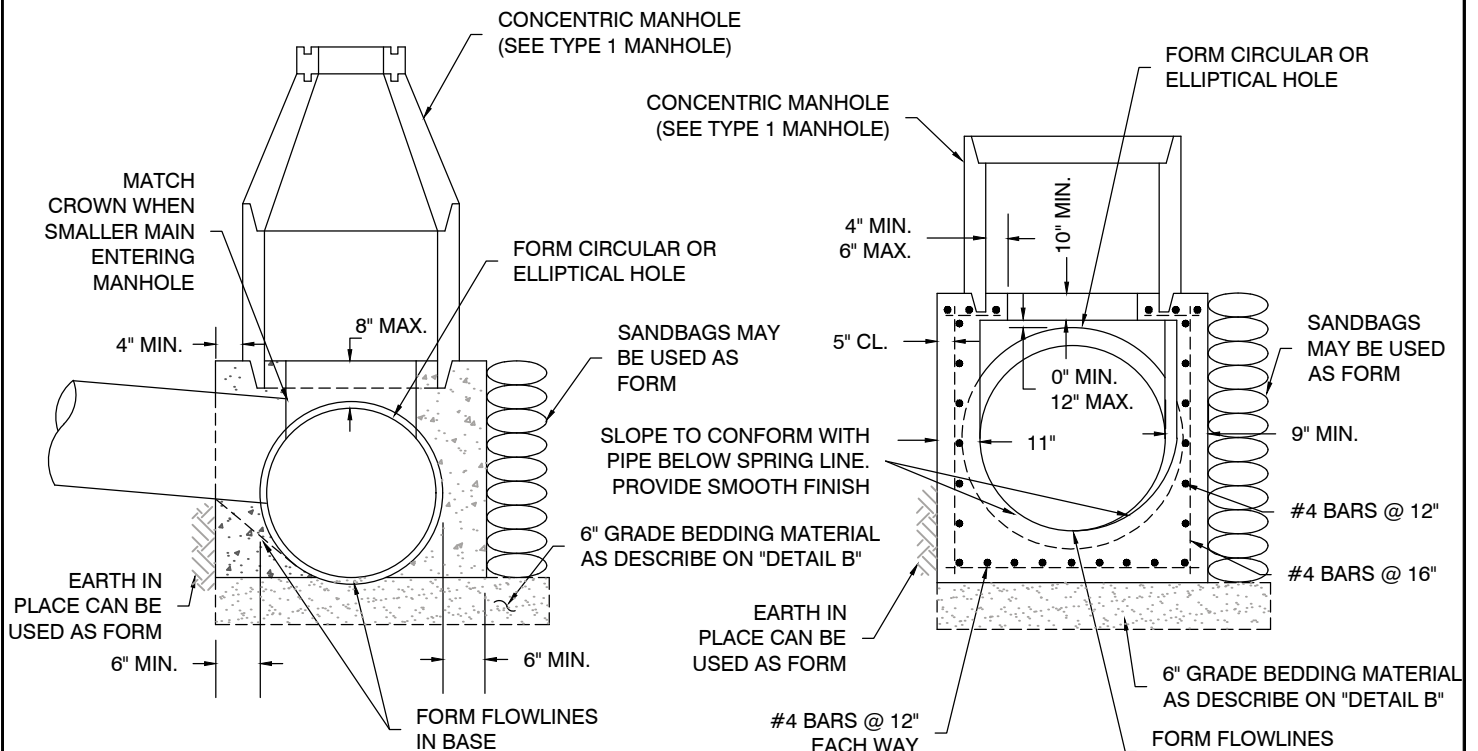




PLAN



PLAN



SECTION A - A  
TANGENT

SECTION B - B  
ANGLE POINT

NOTES:

1. SEE "DETAIL A-3" STANDARD MANHOLE NOTES.
2. APPROVED ELASTOMERIC SEALS CONFORMING TO ASTM F-477 OR C923 TO ENSURE WATER TIGHTNESS.
3. THE THICKNESS OF CONCRETE BENEATH THE PIPE ON THE BEDDING SHALL BE 8" MINIMUM.

# DETAIL N MANHOLE CONNECTION INTO EXISTING SEWER MAIN MINDEN - GARDNERVILLE SANITATION DISTRICT

DATE: MARCH 2024

