

SANITARY SEWER DETAILS

MANHOLE FRAME & COVER SHALL BE AN ERGO HINGED MANHOLE ASSEMBLY BY EAST JORDAN IRONWORKS, UNIMPROVED AREAS REQUIRE A CONCRETE COLLAR AND A GREEN CARSONITE "SEWER" MARKER. SEE NOTE 4.

FIRST STEP
14" MIN.
18" MAX.

INFRA RISER AS MANUFACTURED BY EAST JORDAN IRONWORKS FOR PAVED AREAS

GROUT BETWEEN RINGS

POLYPROPYLENE MANHOLE STEPS NO. P-14938 LOCATED AT 12" O.C.

GROUT LIFT HOLES INSIDE AND OUTSIDE

MANHOLE DIAMETER
48": STANDARD
54": DEPTH \geq 20 FT

POLYPROPYLENE LADDER (3' MAXIMUM LENGTH)

SEE NOTE 1

CHANNEL
3/4 PIPE DIA

SLOPE SHELF TO CHANNEL AT 3/8"/FT

FLOW

GROUT FILL

SEE NOTE 3

SEE NOTE 4

FINISHED GRADE

SEE NOTE 6

4" X 24" PRECAST CONC. ADJUSTMENT RINGS 2 RINGS REQUIRED 4 RINGS MAXIMUM PLASTER INSIDE AND OUTSIDE FACE WITH 1/2" THICK GROUT

48" TO 24" OFFSET CONE

SEE NOTE 6

48" OR 54" (INSIDE DIAMETER) PRECAST MANHOLE

RUBBER GASKET SEALING RING (TYP)

SEE NOTE 6

RUBBER GASKET SEALING RING (TYP)

SHORT PIPE SECTION AT MANHOLE (5' MIN)

FOUNDATION GRAVEL 8-INCH MINIMUM

UNDISTURBED EARTH

NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (SLOPE=3/8"/FT) (48" MANHOLE) UNLESS OTHERWISE APPROVED BY THE CITY.
3. LARGER MANHOLES WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER BASED ON PIPE SIZE, NUMBER AND ORIENTATION OF PIPE(S).
4. INSTALL CONCRETE PAD W/GREEN "SEWER" CARSONITE MARKER IN UNPAVED AREAS. SEE DETAIL ABOVE.
5. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
6. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.
7. MANHOLES GREATER THAN 20 FEET DEEP SHALL BE A MINIMUM OF 54-INCHES INSIDE DIAMETER.

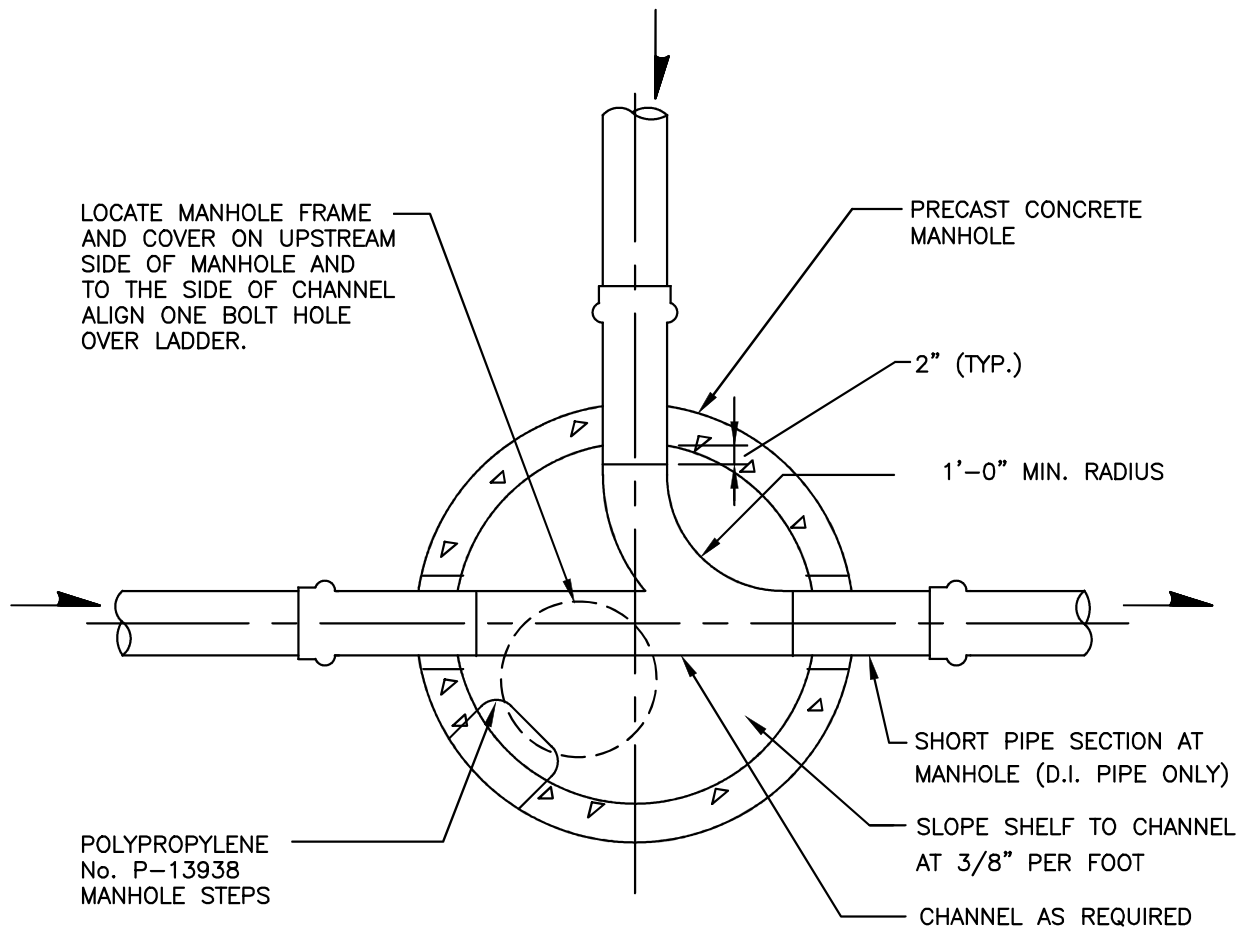


CITY OF GRANITE FALLS

TYPICAL PRECAST MANHOLE

DATE: 1/01/2021

DWG. NO.
TPMH



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE WITH A CONCRETE CORING MACHINE UNLESS OTHERWISE APPROVED BY THE CITY.

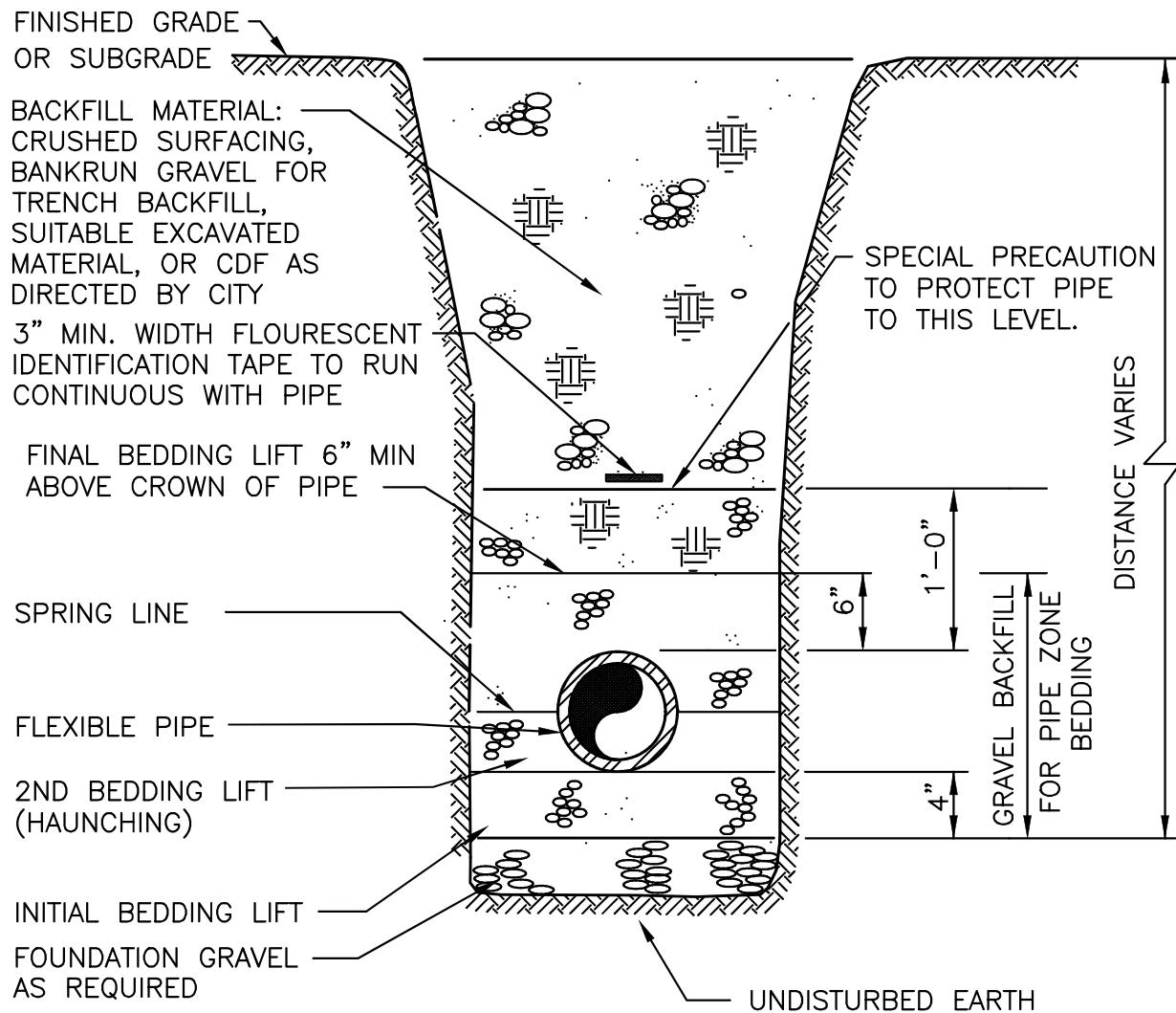


CITY OF GRANITE FALLS

TYPICAL MANHOLE PLAN VIEW

DATE: 1/01/2021

DWG. NO.
TMHP



NOTE:

BACKFILL MATERIAL AND COMPACTION SHALL BE IN CONFORMANCE WITH CITY STANDARDS AND/OR THE STATE OR COUNTY PERMIT REQUIREMENTS (AS MAY BE APPLICABLE);

MINIMUM REQUIREMENTS:

ALL GRANULAR BACKFILL SHALL BE COMPACTED TO 95% MODIFIED PROCTOR, ASTM D1557.

SANITARY SEWER PIPE WITH 20 FEET OR GREATER OF COVER SHALL BE PVC C900.

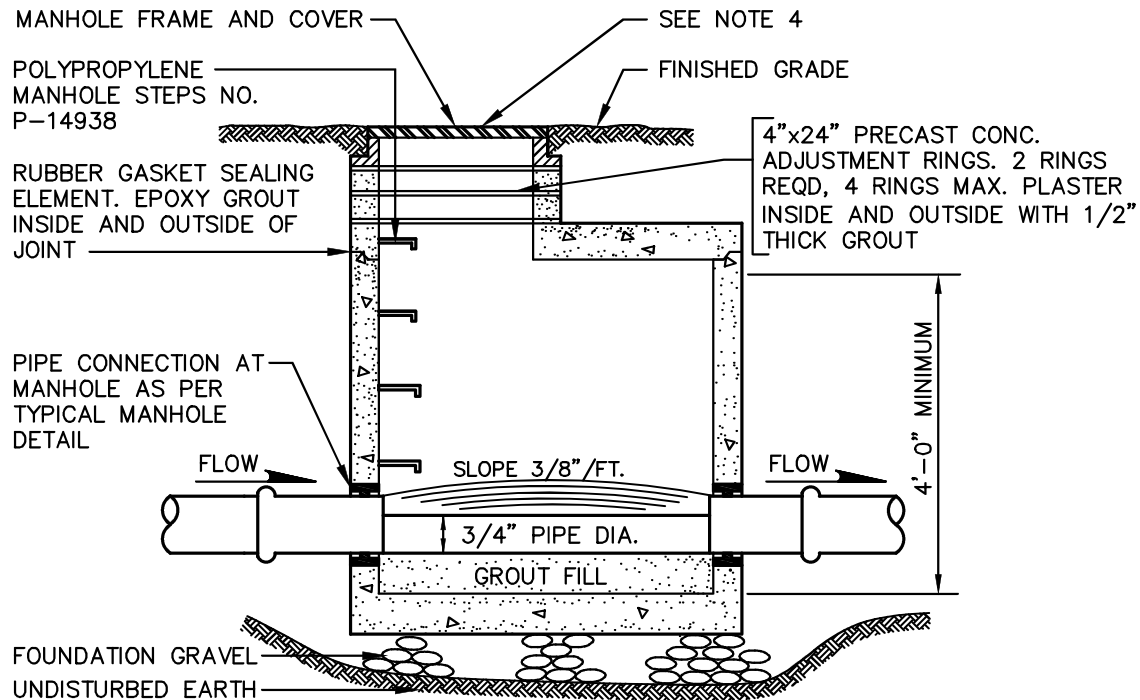


CITY OF GRANITE FALLS

TRENCH SECTION FOR
FLEXIBLE PIPE

DATE: 1/01/2021

DWG. NO.
SSTSFLXP



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL. ALL CONNECTIONS TO EXISTING MANHOLES SHALL BE MADE WITH A CONCRETE CORING MACHINE UNLESS OTHERWISE APPROVED BY THE CITY.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10'.
3. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
4. CONSTRUCT CONCRETE 5'x5' PAD WITH GREEN CARSONITE MARKER COLLAR IN UNPAVED AREAS PER DETAIL.
5. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

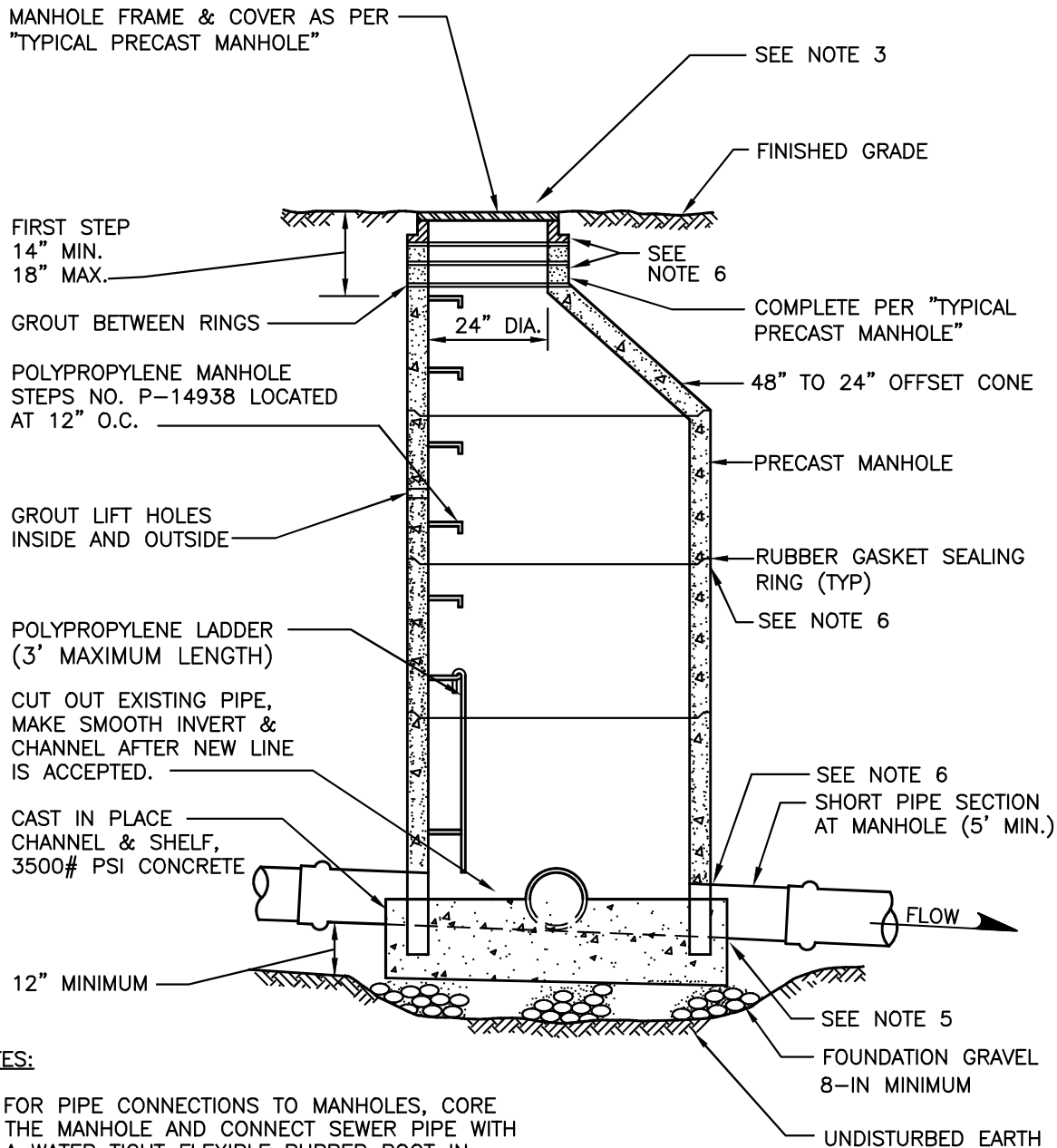


CITY OF GRANITE FALLS

SHALLOW PRECAST MANHOLE

DATE: 1/01/2021

DWG. NO.
TS-PMH



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (SLOPE=3/8"/FT) (48" MANHOLE) UNLESS OTHERWISE APPROVED BY CITY.
3. LARGER MANHOLES WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER BASED ON PIPE SIZE, NUMBER AND ORIENTATION OF PIPE(S).
4. INSTALL CONCRETE 5'x5' PAD WITH GREEN CARSONITE MARKER IN UNPAVED AREAS. SEE DETAIL.
5. PRE-CHANNELED MANHOLES ARE NOT ACCEPTABLE.
6. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (THOROC OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

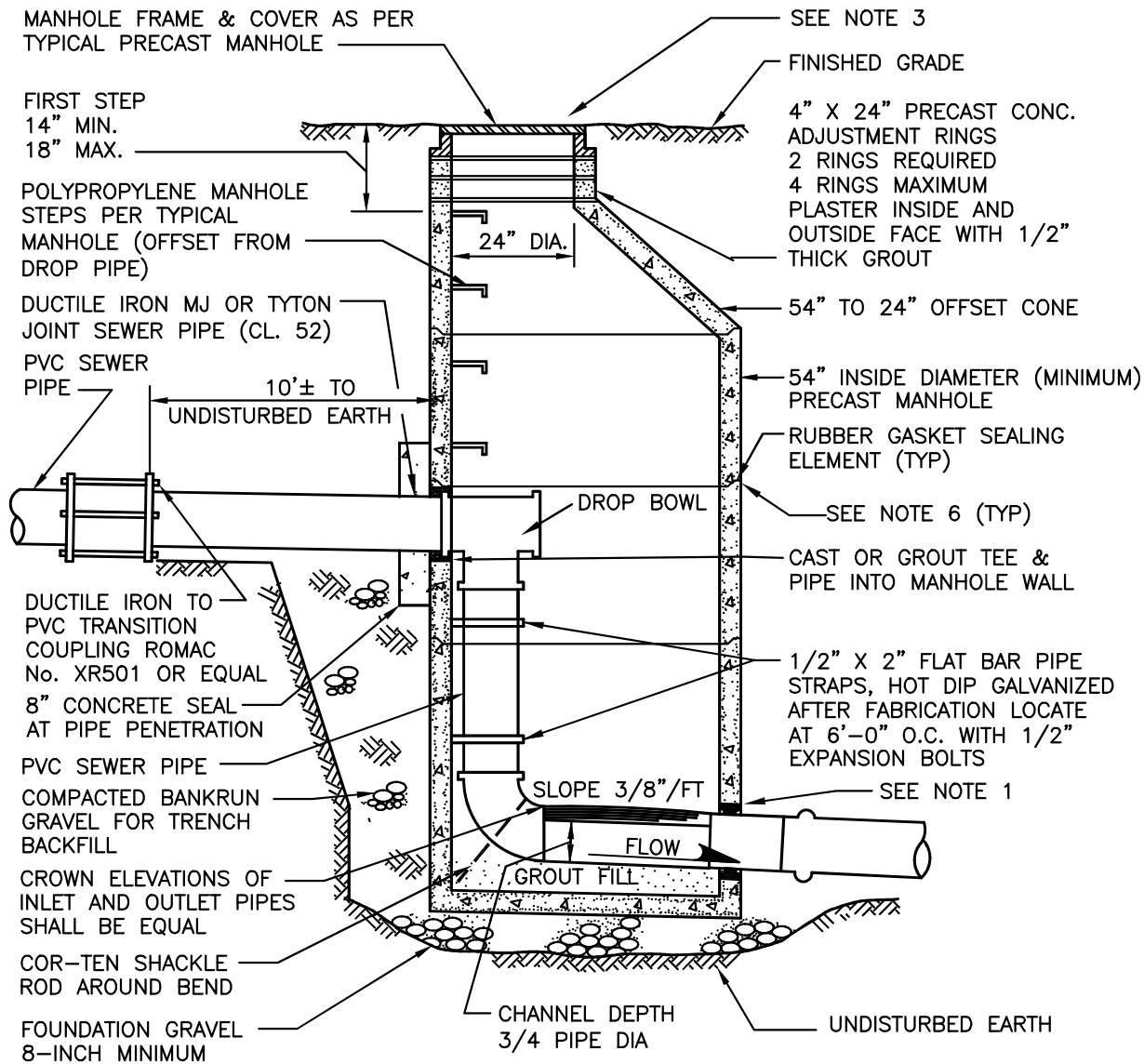


CITY OF GRANITE FALLS

TYPICAL SADDLE MANHOLE

DATE: 1/01/2021

DWG. NO.
TSMH



NOTES:

1. FOR PIPE CONNECTIONS, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (SLOPE=3/8"/FT) UNLESS OTHERWISE APPROVED BY CITY.
3. LARGER MANHOLES WILL BE REQUIRED AT THE DISCRETION OF THE CITY ENGINEER BASED ON PIPE SIZE, NUMBER AND ORIENTATION OF PIPE(S).
4. INSTALL CONCRETE 5'x5' PAD WITH GREEN CARSONITE MARKER IN UNPAVED AREAS. SEE DETAIL.
5. PRE-CHANNELED MANHOLE ARE NOT ACCEPTABLE.
6. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (THOROC OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.

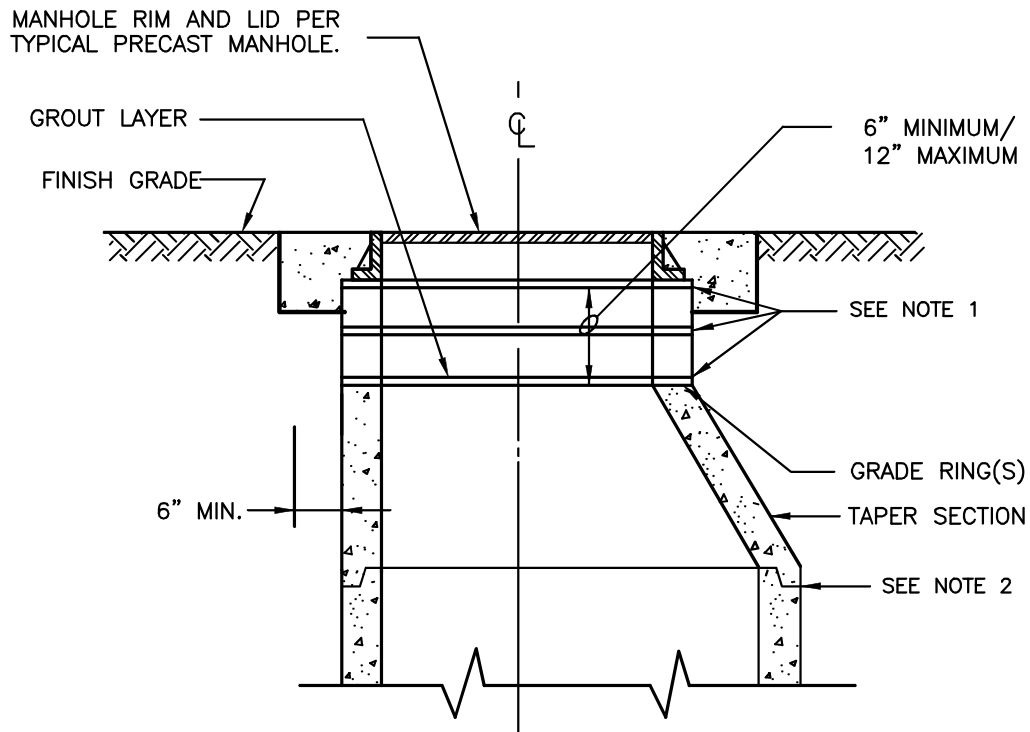


CITY OF GRANITE FALLS

INSIDE DROP MANHOLE

DATE: 1/01/2021

DWG. NO.
IDMH



SECTION

NOTES:

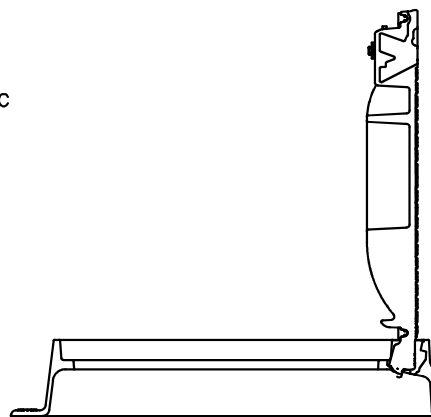
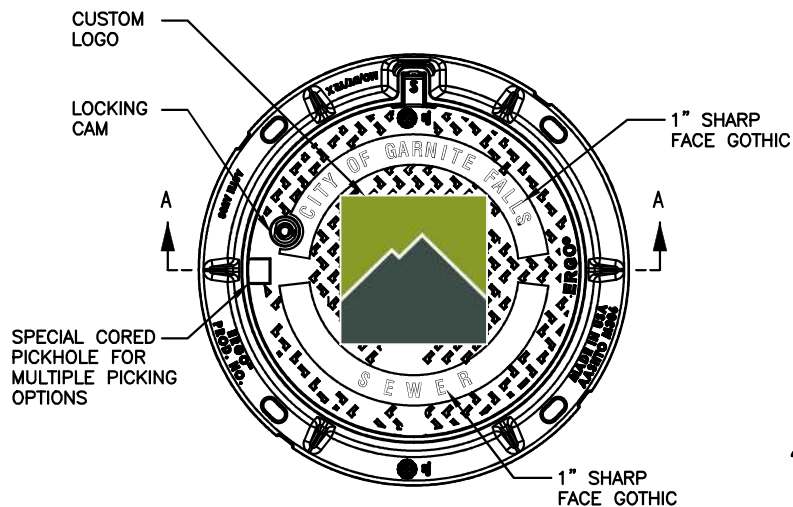
1. INSTALL CONCRETE 60"x60"x6" PAD W/GREEN "SEWER" CARSONITE MARKER IN UNIMPROVED AREAS OTHERWISE PROVIDE HMA PER STANDARDS.
2. THE INSIDE AND OUTSIDE OF ALL JOINTS SHALL BE THOROUGHLY COATED WITH EPOXY GROUT (THOROC OR EQUAL) TO BE APPLIED ACCORDING TO MANUFACTURERS SPECIFICATIONS.



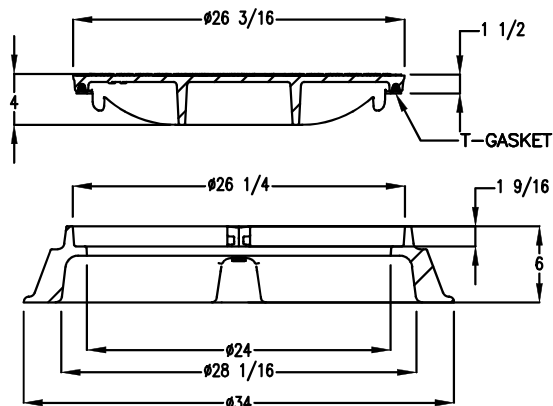
CITY OF GRANITE FALLS
MANHOLE FRAME & COLLAR
UNIMPROVED AREAS

DATE: 1/01/2021

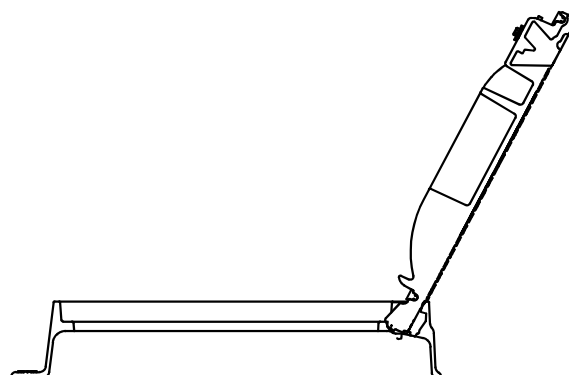
DWG. NO.
MHCLAR



SAFETY LOCK @ 90°



SECTION A-A



FULLY OPENED @ 120°

NOTES:

1. EAST JORDAN IRON WORKS
MODEL NO. 00104043L04
ERGO 24 WITH CITY LOGO
AND RAISED LETTERS
2. USE EAST JORDAN
INFRARISER FOR TOP 0.5
TO 3 INCHES BELOW LID
3. LID ORIENTATION SHOULD
OPEN TOWARDS ONCOMING
TRAFFIC IF PLACED IN
ROADWAY

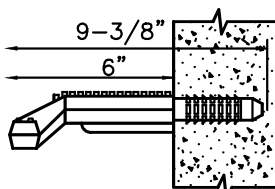
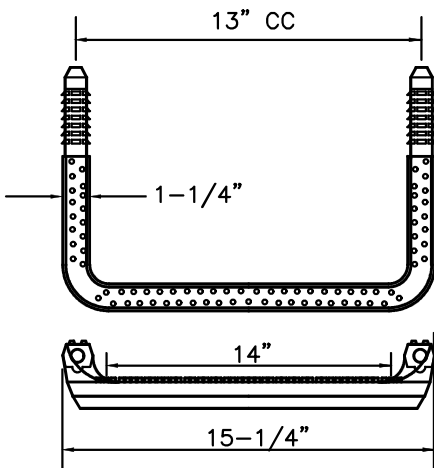


CITY OF GRANITE FALLS

MANHOLE LID
IMPROVED AREAS

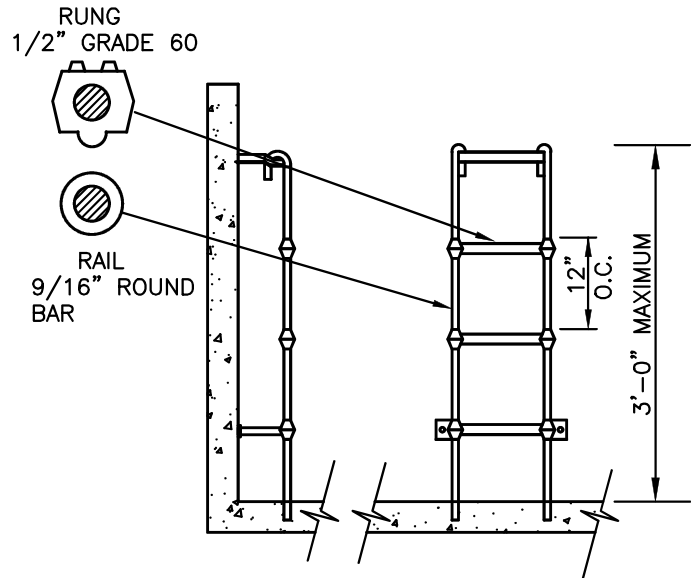
DATE: 1/01/2021

DWG. NO.
SSMH LID



POLYPROPYLENE STEP, LANE
NO. P-14938 OR EQUAL

**POLYPROPYLENE
MANHOLE STEPS**



LADDER SHALL CONFORM TO
POLYPROPYLENE ASTM D-4101
1/2" GRADE 60 REINFORCING
BAR A-615 9/16" COLD DRAWN
BAR C-1018

POLYPROPYLENE LADDER

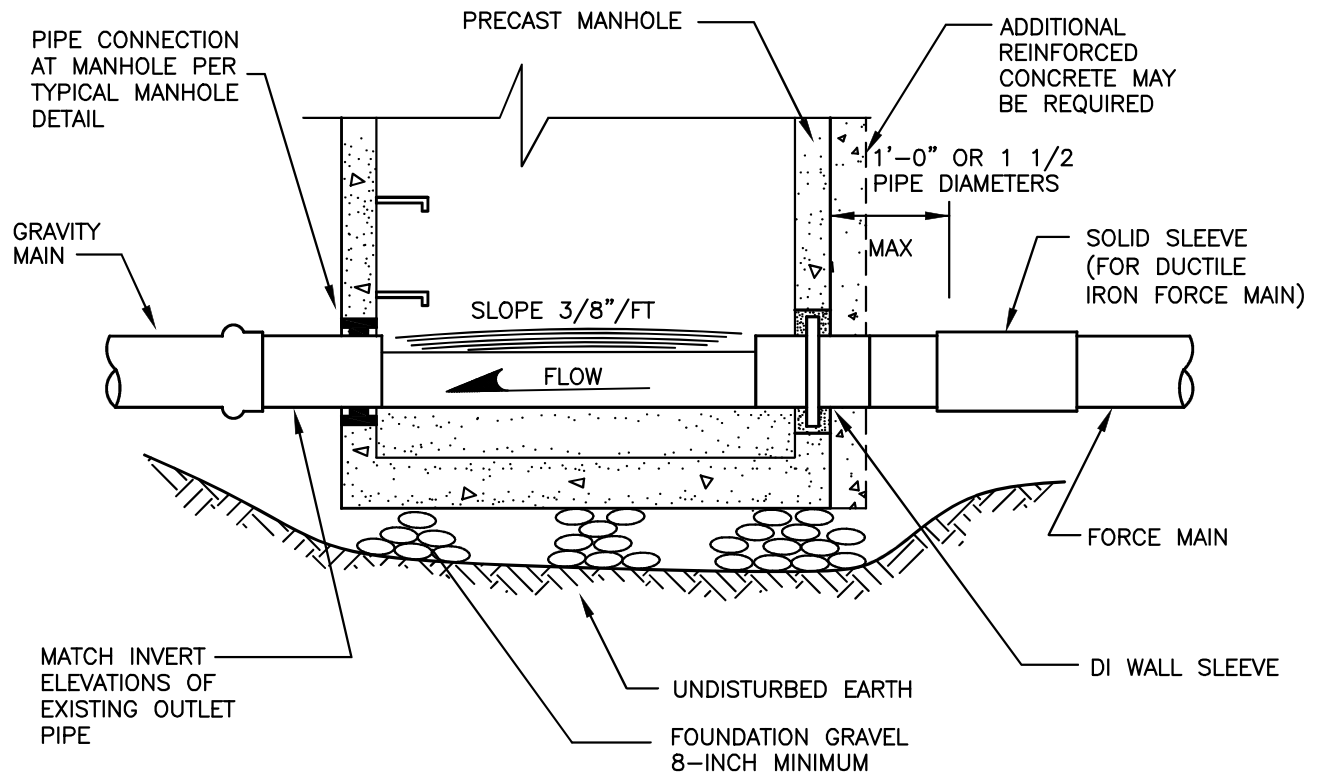


CITY OF GRANITE FALLS

POLYPROPELENE LADDER AND
MANHOLE STEPS

DATE: 1/01/2021

DWG. NO.
PLMHS



NOTES:

1. FOR PIPE CONNECTIONS TO MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10' (MIN), UNLESS OTHERWISE APPROVED.
3. ALIGN FORCE MAIN DISCHARGE WITH OUTLET PIPE.
4. ODOR CONTROL AND OR SPECIAL COATING MAY BE REQUIRED AT DISCHARGE MANHOLE.

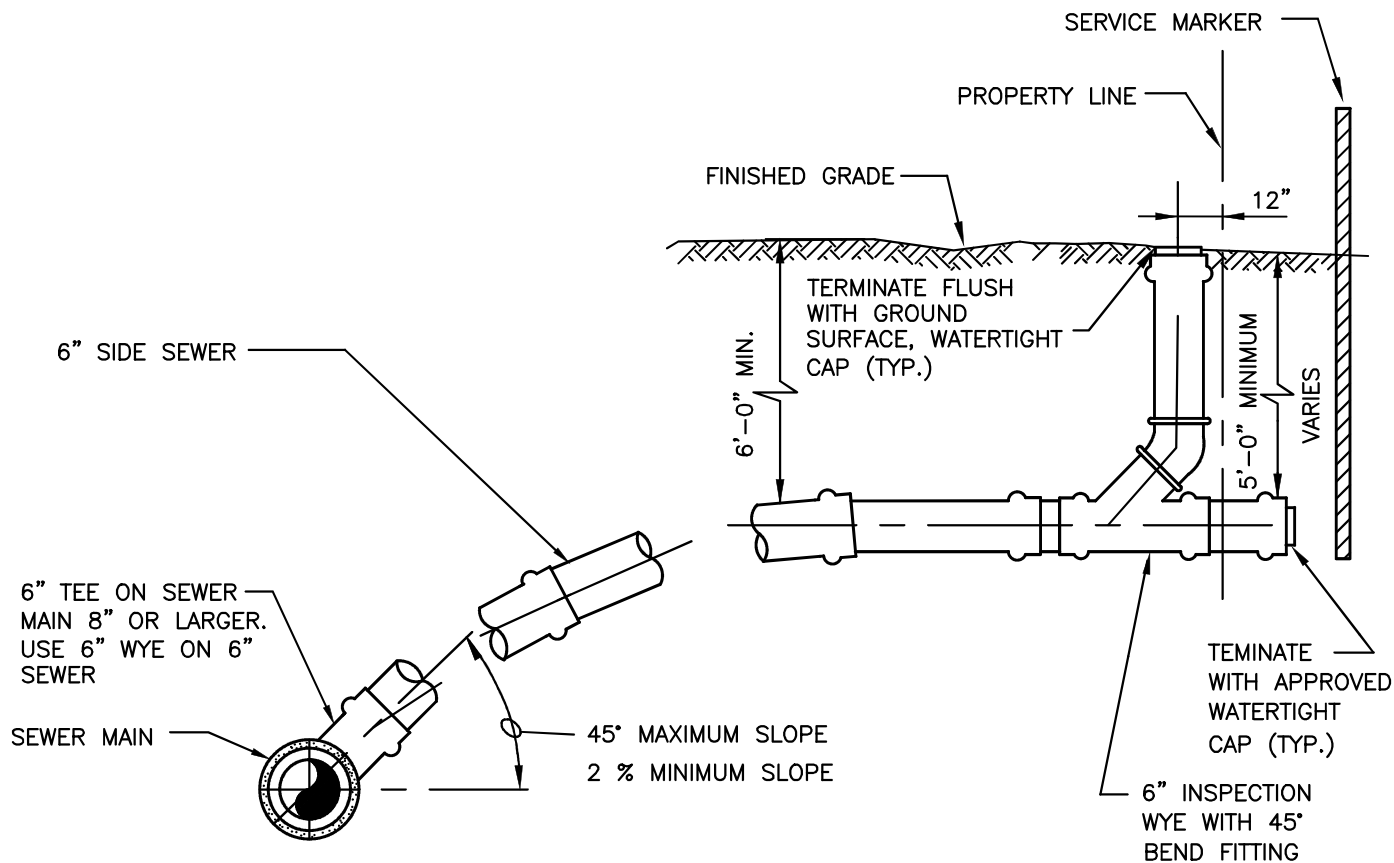


CITY OF GRANITE FALLS

FORCE MAIN DISCHARGE MANHOLE

DATE: 1/01/2021

DWG. NO.
FMDMH



NOTE:

1. PAINT PORTION OF SERVICE MARKER THAT IS ABOVE FINISHED GRADE WITH WHITE PAINT. STENCIL WITH BLACK LETTERS "S/S" USING 3" HIGH LETTERS. LOCATE SERVICE MARKER AT END OF EACH SERVICE. STENCIL TOTAL LENGTH OF 2x4.
2. TAP EXISTING SEWER MAIN WITH APPROVED CITY SADDLE. INSTALL NEW SIDE SEWER TEE ON NEW MAIN LINES. INSERT A TEE OR EQUAL.
3. WHEN TAPPED SERVICE IS PERMITTED, CONTRACTOR SHALL PROVIDE SEWER MAIN COUPON TO CITY STAFF.
4. PIPE BEDDING SHALL BE GRAVEL BACKFILL PER THE LATEST WSDOT STANDARD SPECIFICATIONS.

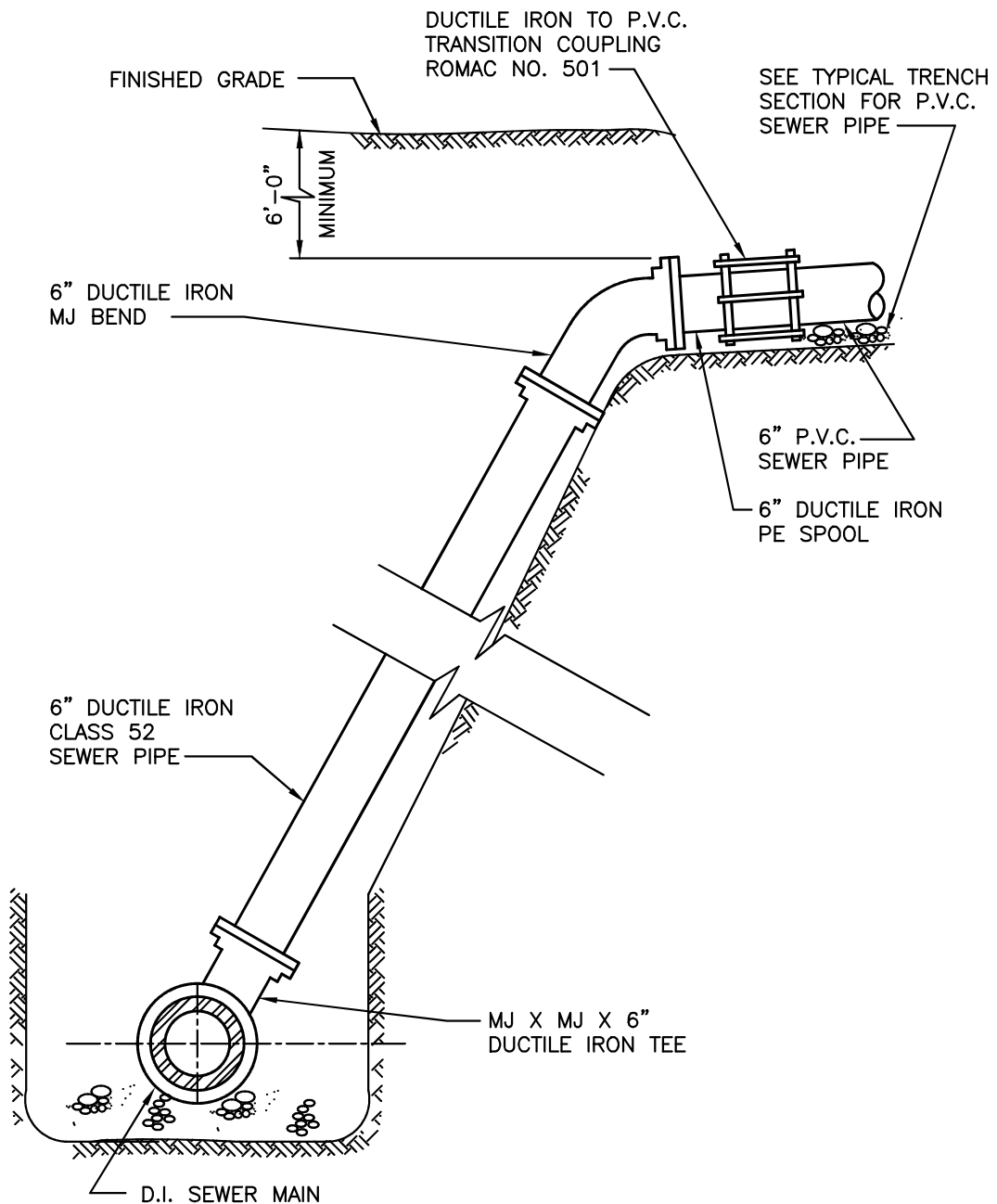


CITY OF GRANITE FALLS

NEW SIDE SEWER SERVICE

DATE: 1/01/2021

DWG. NO.
SSD



NOTE:

SEE TYPICAL TRENCH SECTION
FOR DUCTILE IRON SEWER PIPE
FLEXIBLE OR RIGID PIPE
AS APPROPRIATE



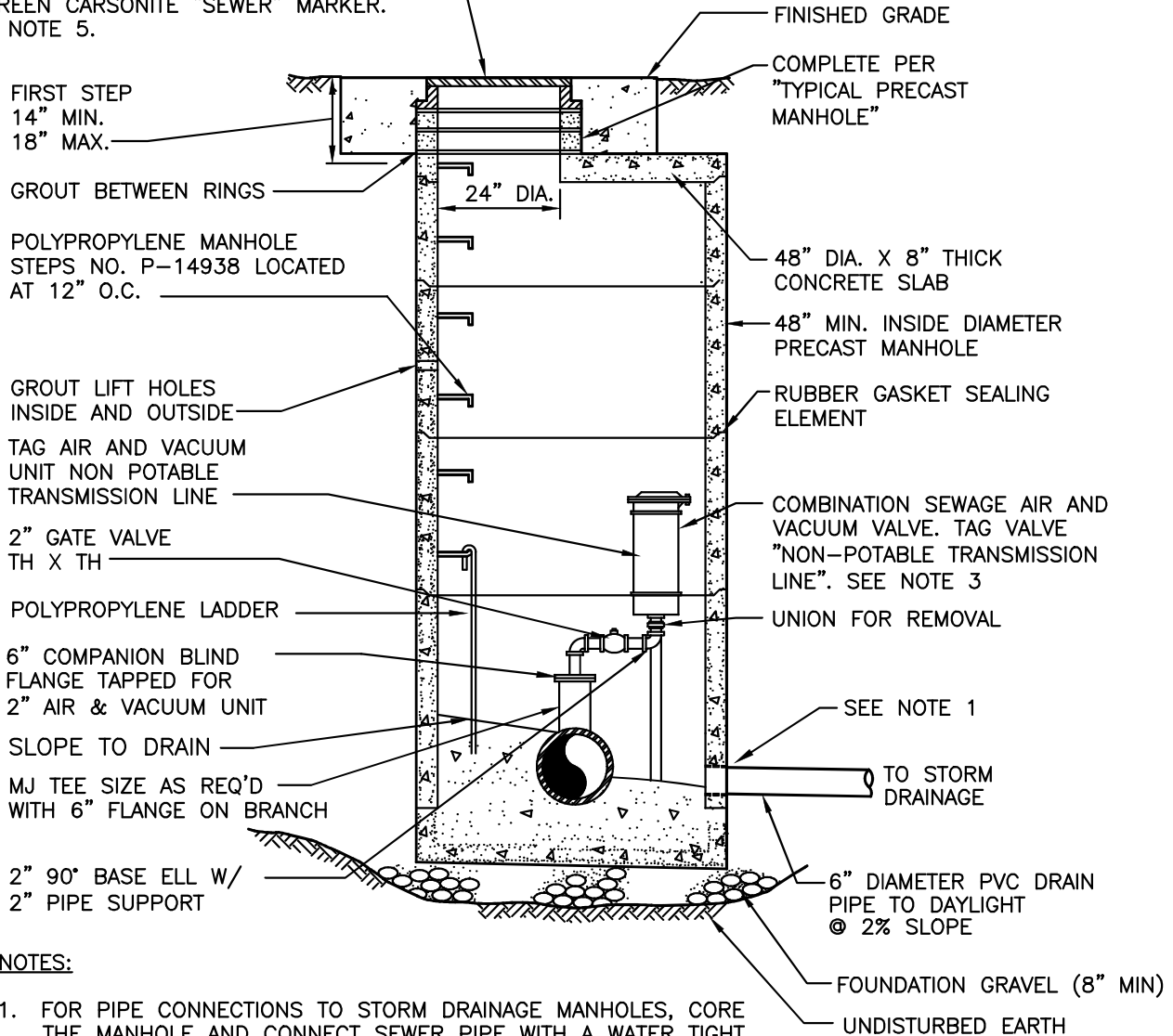
CITY OF GRANITE FALLS

STANDING SIDE SEWER

DATE: 1/01/2021

DWG. NO.
SSS

MANHOLE FRAME & COVER SHALL BE AN ERGO HINGED MANHOLE ASSEMBLY BY EAST JORDAN IRONWORKS, UNIMPROVED AREAS REQUIRE A CONCRETE COLLAR AND A GREEN CARSONITE "SEWER" MARKER. SEE NOTE 5.



NOTES:

1. FOR PIPE CONNECTIONS TO STORM DRAINAGE MANHOLES, CORE THE MANHOLE AND CONNECT SEWER PIPE WITH A WATER TIGHT FLEXIBLE RUBBER BOOT IN MANHOLE WALL, KOR-N-SEAL BOOT OR EQUAL.
2. DROP OF GRADE THRU MANHOLE SHALL BE 0.10', UNLESS OTHERWISE APPROVED.
3. "APCO, CRISPIN OR VALMATIC" HEAVY-DUTY COMBINATION AIR AND VACUUM VALVE W/ STAINLESS STEEL INTERNALS & EPOXY COATING. SEATS SHALL BE SUPPLIED FOR THE FOLLOWING WORKING PRESSURES: 20 PSI, 20-150 PSI W/ FLUSHING ATTACHMENTS.
4. PROVIDE ADEQUATE VERTICAL CLEARANCE TO REMOVE VALVE COMPONENTS W/O DISASSEMBLY.
5. INSTALL CONCRETE 60"x60"x12" PAD W/GREEN "SEWER" CARSONITE MARKER IN UNPAVED AREAS.



CITY OF GRANITE FALLS

VACUUM RELIEF ASSEMBLY

DATE: 1/01/2021

DWG. NO.
AVRA