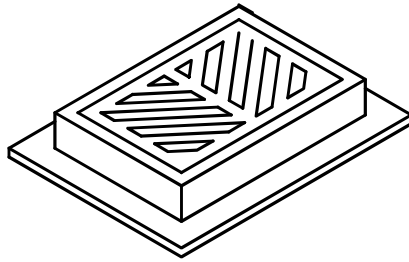
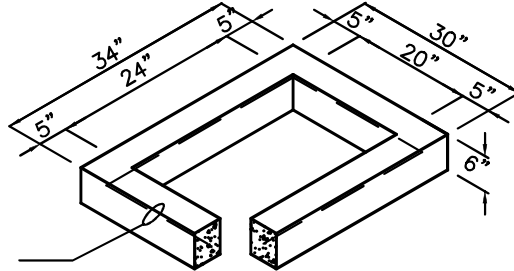


STORM DETAILS

FRAME AND GRATE

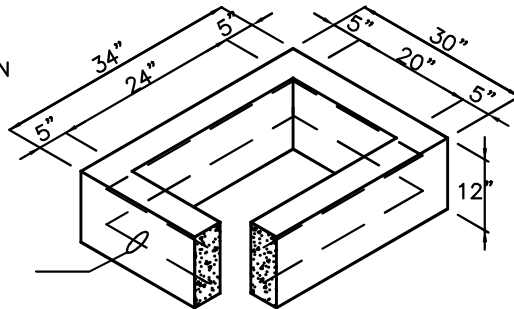


6" RISER SECTION



1 #3 BAR HOOP

12" RISER SECTION

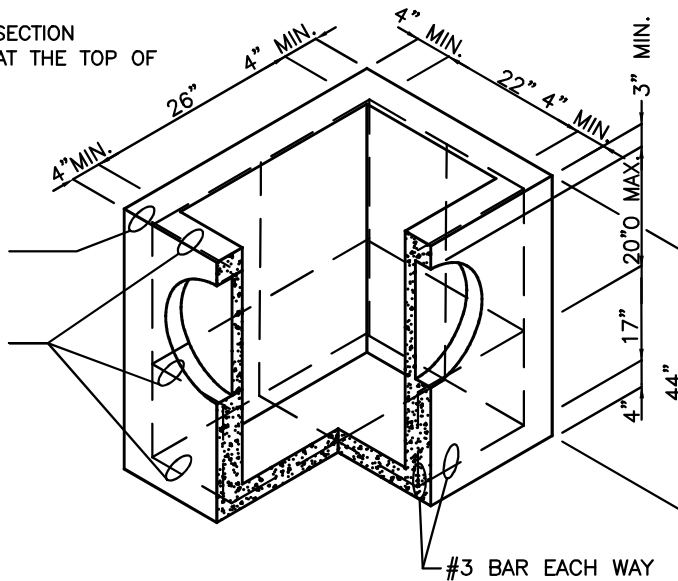


2 #3 BAR HOOPS

PRECAST BASE SECTION
(MEASUREMENT AT THE TOP OF
THE BASE)

#3 BAR EACH
CORNER

#3 BAR EACH
SIDE



NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 7-05 WSDOT/APWA STANDARD SPECIFICATIONS, UNLESS OTHERWISE SHOWN ON PLANS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIA. PLUS CATCH BASIN WALL THICKNESS.
6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIA. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH WSDOT STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-62ID. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
11. FOR CATCH BASINS IN PARKING LOTS REFER TO WSDOT/APWA STANDARD DWG. B-5.60-02.



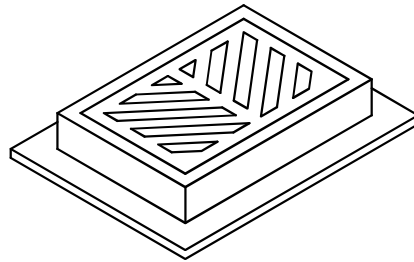
CITY OF GRANITE FALLS

CATCH BASIN - TYPE 1

DATE: 1/01/2021

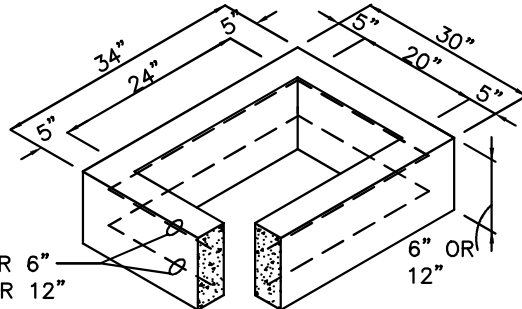
DWG. NO.
SW-4

FRAME AND GRATE



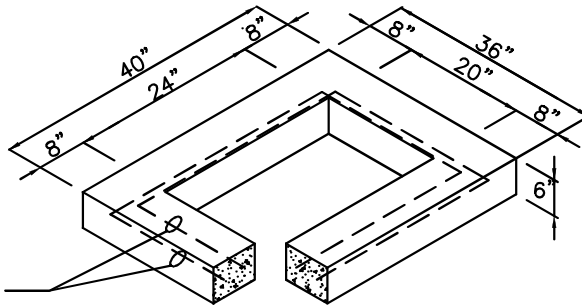
RISER SECTION

- 1 #3 BAR HOOP FOR 6"
- 2 #3 BAR HOOP FOR 12"



6" REDUCING SECTION

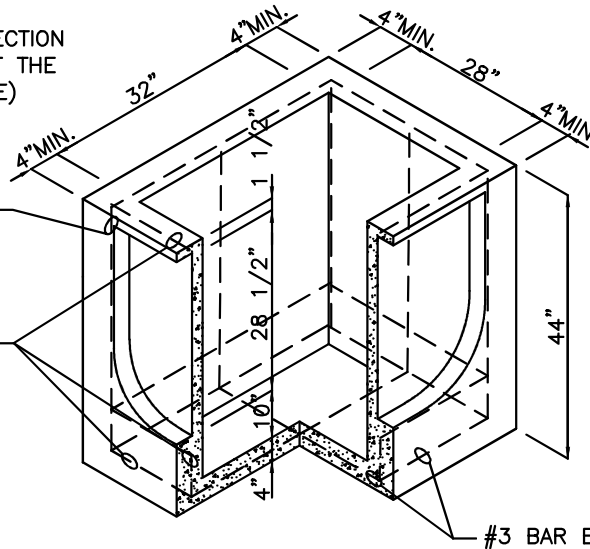
- 2 #3 BAR HOOP



PRECAST BASE SECTION (MEASUREMENT AT THE TOP OF THE BASE)

- #3 BAR EACH CORNER

- #3 BAR EACH SIDE



- #3 BAR EACH WAY

NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.
2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.
3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.
6. KNOCKOUTS MAY BE ON ALL 4 SIDES WITH MAX. DIAM. OF 28". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.
7. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
8. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-62ID. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
9. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
10. MAX. DEPTH FROM FINISHED GRADE TO PIPE INVERT SHALL BE 5'-0".
11. EDGE OF REDUCING SECTION OR BRICK SHALL NOT BE MORE THAN 2" FROM VERTICAL EDGE OF CATCH BASIN WALL.

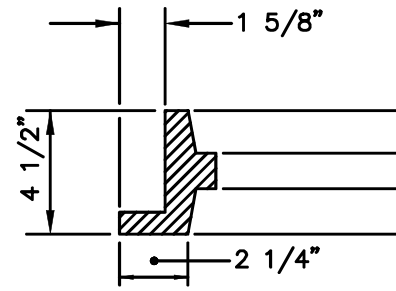
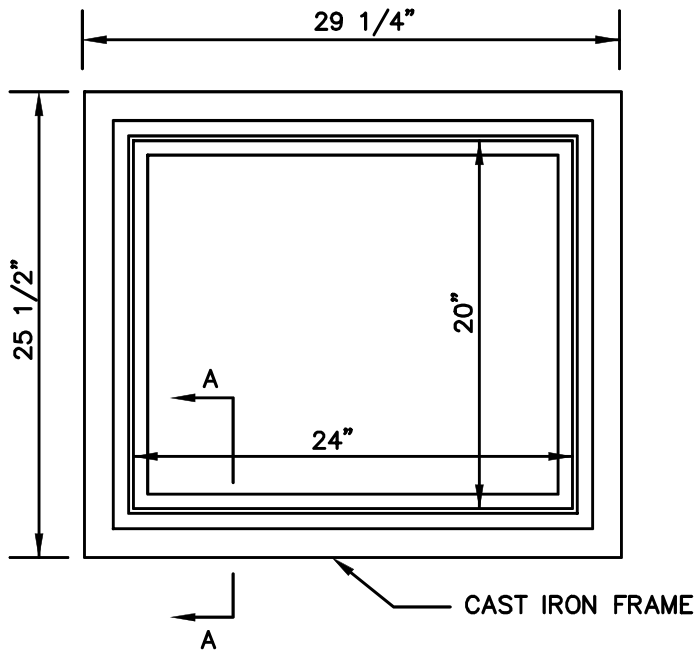


CITY OF GRANITE FALLS

CATCH BASIN - TYPE 1L

DATE: 1/01/2021

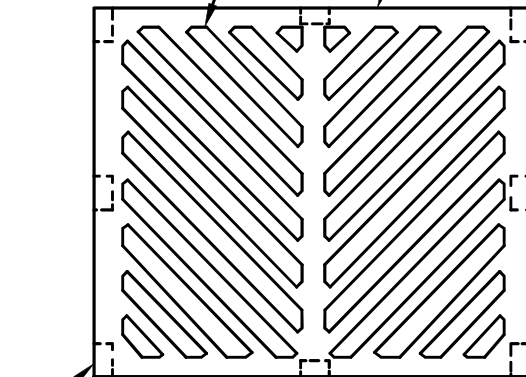
DWG. NO.
SW-5



SECTION A-A

1" OPENING (TYPICAL)
11 SLOTS EACH SIDE
AT 45°

DUCTILE IRON
GRATE



PAD 1 1/2" x 3/4" x 1/8"
THICK, 8 REQUIRED

NOTES:

1. MATERIAL SHALL CONFORM TO THE STANDARD SPECIFICATIONS PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND AMERICAN PUBLIC WORKS ASSOCIATION, WASHINGTON CHAPTER
2. WHEN ROAD PROFILE, EXCEED 6% "VANED" GRATES SHALL BE INSTALLED IN LIEU OF THE STANDARD FRAME AND GRATE, AT THE DISCRETION OF THE CITY



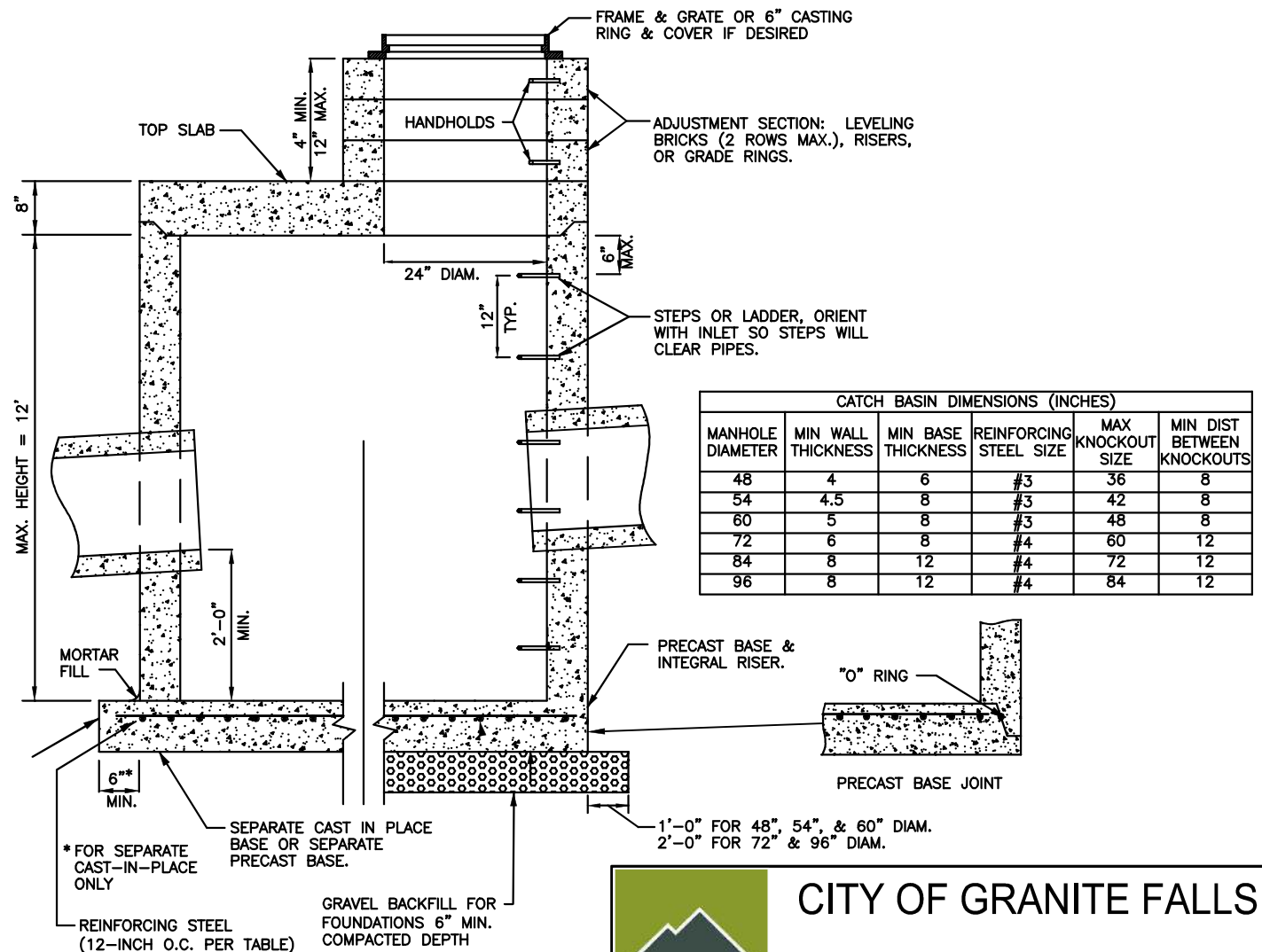
**CITY OF GRANITE FALLS
CATCH BASIN FRAME
AND GRATE**

DATE: 1/01/2021

DWG. NO.
STOM-3

NOTES:

- CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M199) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
- HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 6" MIN. CLEARANCE. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND TOP OF THE FINISHED GRADE.
- ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
- PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX. HOLE SIZE SHALL BE 36" FOR 48" CATCH BASIN, 42" FOR 54" C.B., 48" FOR 60" C.B., 60" FOR 72" C.B., 84" FOR 96" C.B. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" C.B.; 12" FOR 72" AND 96" C.B.
- CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 OF THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
- ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.
- MIN. SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT.
- FOR DETAILS SHOWING LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE OTHER STANDARD DETAILS.
- SEE THE STANDARD SPECIFICATIONS SEC. 7-05.3 FOR JOINT REQUIREMENTS.
- MANHOLE CONNECTION AS FOLLOWS:
 - FOR HDPE, D.I., PVC: USE KOR-N-SEAL OR SEALED COLLAR
 - FOR POLYETHYLENE (ADS), GROUT IN PLACE

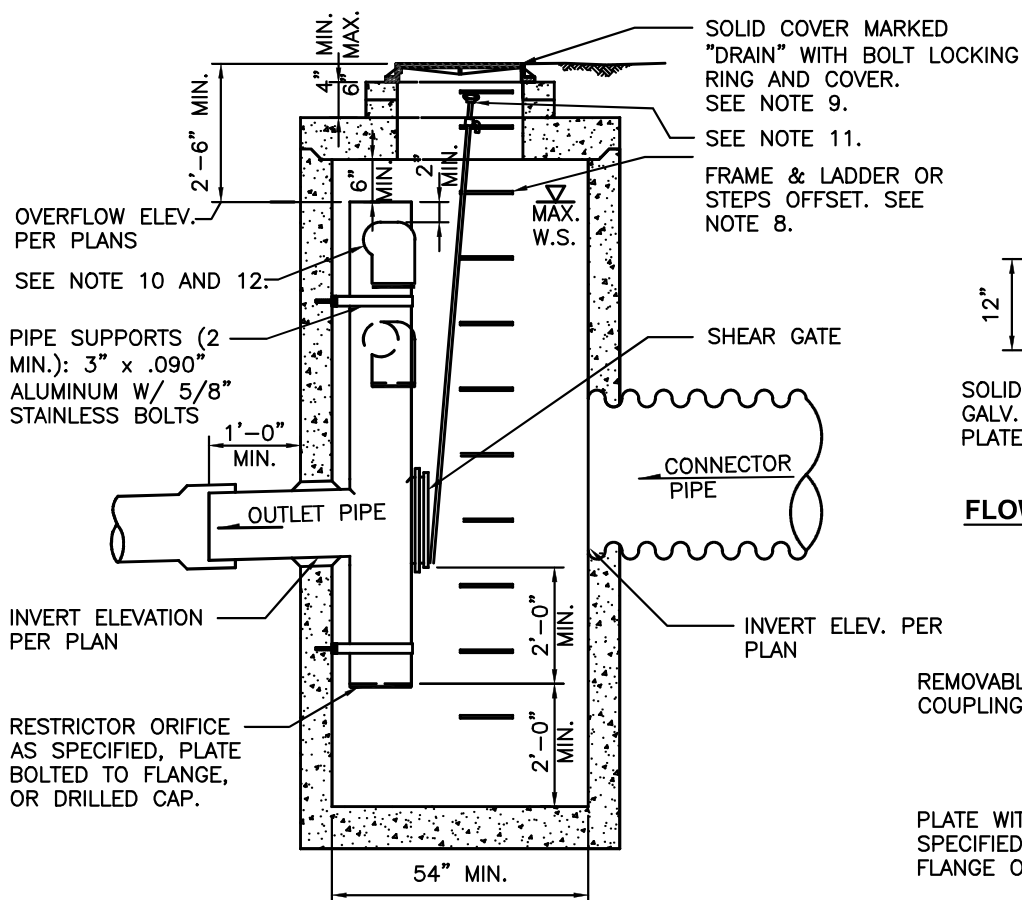


CITY OF GRANITE FALLS

CATCH BASIN TYPE II

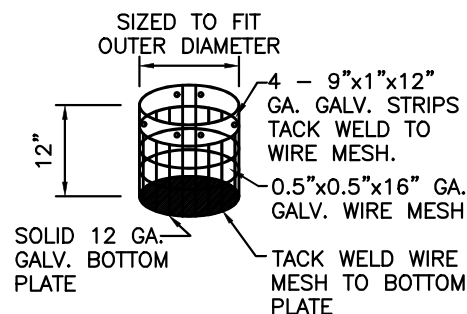
DATE: 1/01/2021

DWG. NO.
CB-TP2

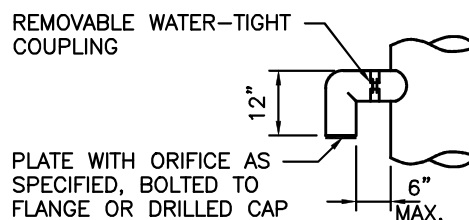


CATCH BASIN TYPE 2
DIAM. AS REQUIRED

NOTE:
ATTACH SCREEN TO CMP CROSS
W/ 6 1" METAL SCREWS—2 PER
STRAP, OR USE STAINLESS
STEEL PIPE CLAMP.



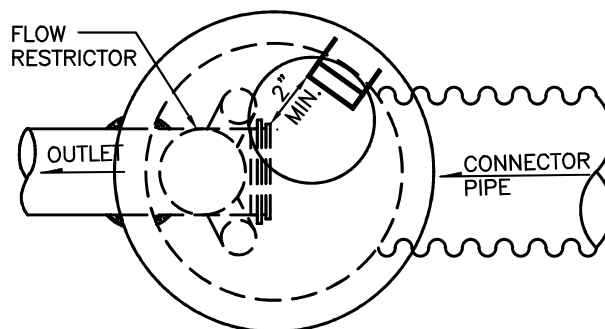
FLOW CONTROL SCREEN



ELBOW DETAIL

NOTES:

1. PIPE SIZES, INVERT ELEVATIONS, ORIFICE SIZES, OVERFLOW ELEVATIONS AND SLOPES; PER PLANS.
2. OUTLET CAPACITY: NOT LESS THAN COMBINED INLETS.
3. EXCEPT AS SHOWN OR NOTED, UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS FOR CATCH BASIN TYPE 2, 54" MIN. DIAM.
4. PIPE SUPPORTS AND RESTRICTOR SHALL BE OF SAME MATERIAL, AND BE ANCHORED AT 3' MAX. SPACING BY 5/8" DIAM. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED 2" IN WALL.
5. THE RESTRICTOR SHALL BE FABRICATED FROM .060" ALUMINUM, PVC, CPE, OR HDPE PIPE. METAL PARTS SHALL BE CORROSION RESISTANT. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
6. OUTLET SHALL BE CONNECTED TO CULVERT OR SEWER PIPE WITH SUITABLE COUPLER OR GROUTED INTO THE BELL OF CONCRETE PIPE.
7. THE VERTICAL RISER STEM OF THE RESTRICTOR SHALL BE THE SAME DIAM. AS THE HORIZONTAL OUTLET PIPE, WITH AN 8" MIN. DIAM.
8. FRAME AND LADDER OR STEPS OFFSET SO THAT:
 - A. SHEAR GATE IS VISIBLE FROM TOP.
 - B. CLIMB DOWN SPACE IS CLEAR OF RISER AND SHEAR GATE.
 - C. FRAME IS CLEAR OF CURB. ALL STEPS AND HANDHOLD SHALL BE MADE OF POLY PROPYLENE.
9. FOR POND APPLICATIONS SOLID COVER AND MANHOLE CONCRETE LID SHALL BE REPLACED WITH DEBRIS CAGE.
10. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE.



PLAN

11. SHEAR GATE HANDLE SHALL BE ATTACHED TO LADDER/ STEP LOCATED WITHIN 24" ACCESS SECTION.
12. IF NOTCHED WEIR IS USED IN LIEU OF ELBOW, BAFFLE SHALL NOT OBSTRUCT ACCESS TO THE STRUCTURE.

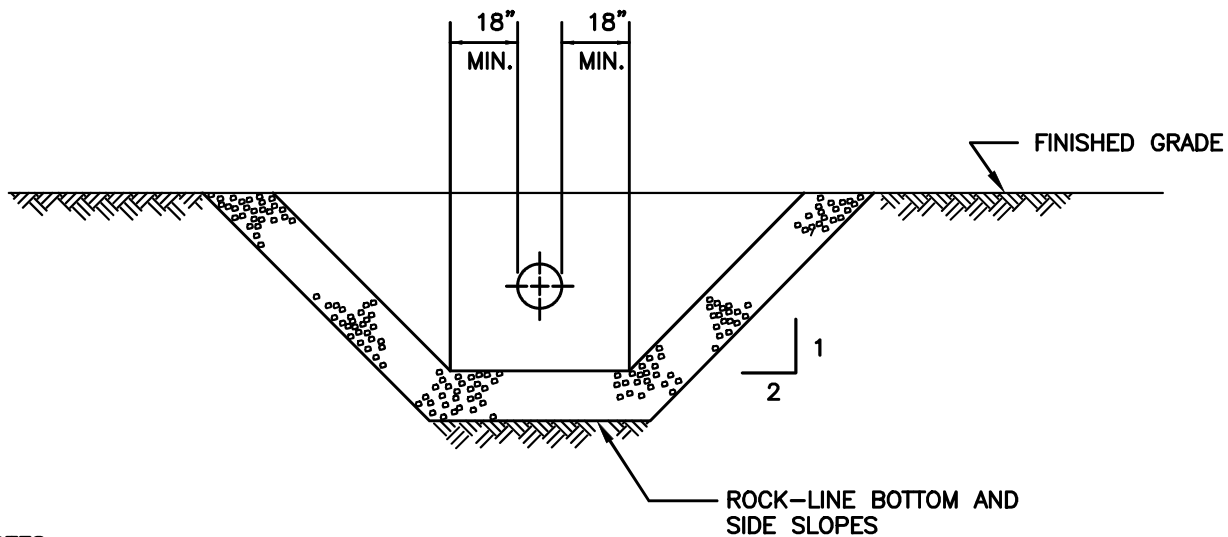
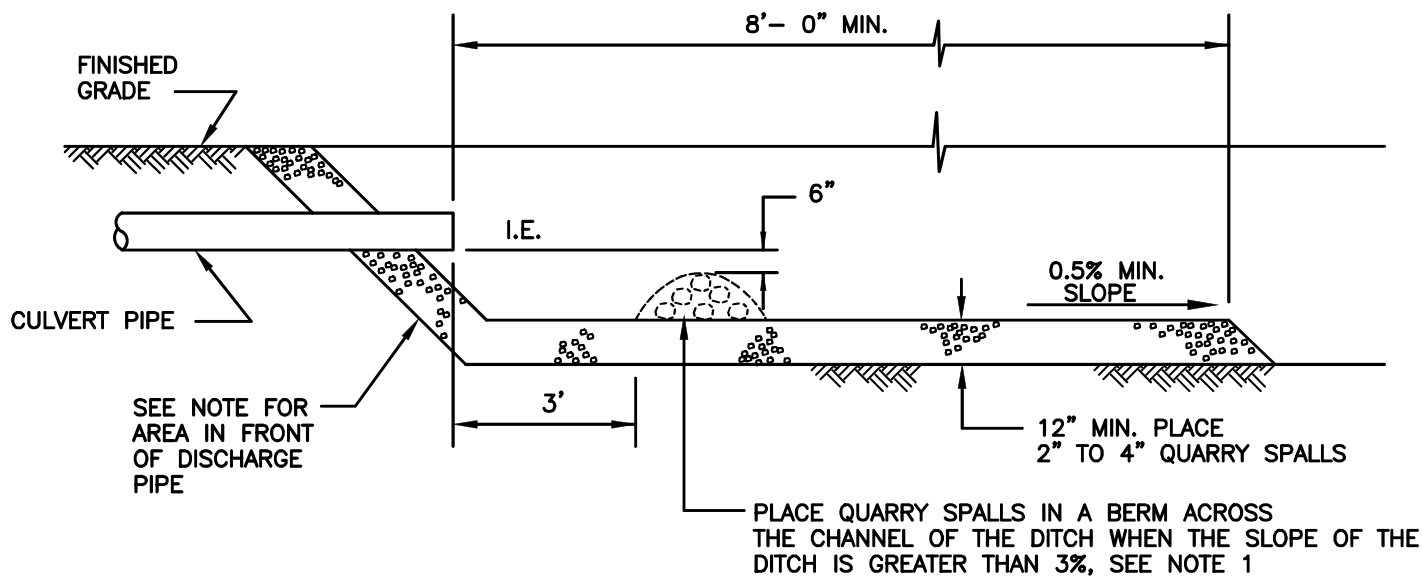


CITY OF GRANITE FALLS

FLOW RESTRICTOR
TEE TYPE

DATE: 1/01/2021

DWG. NO.
SW-20



NOTES:

1. PLACE QUARRY SPALLS IN FRONT OF CULVERT DISCHARGE, ENGINEER SHALL SIZE QUARRY SPALL BERM

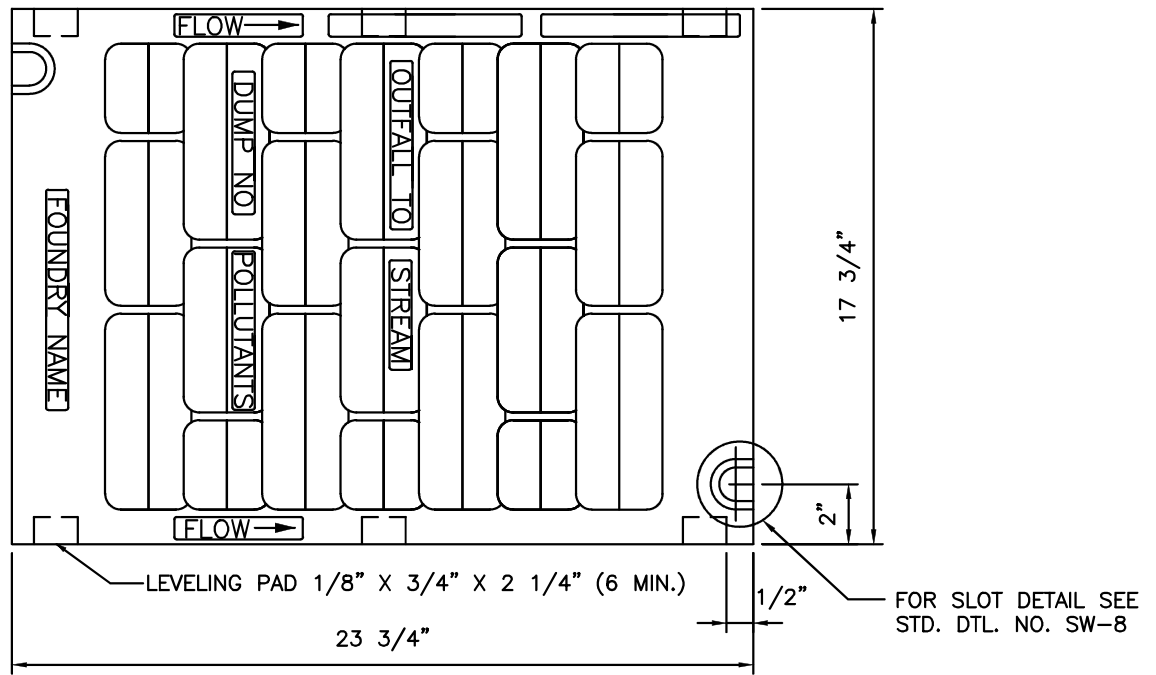


CITY OF GRANITE FALLS

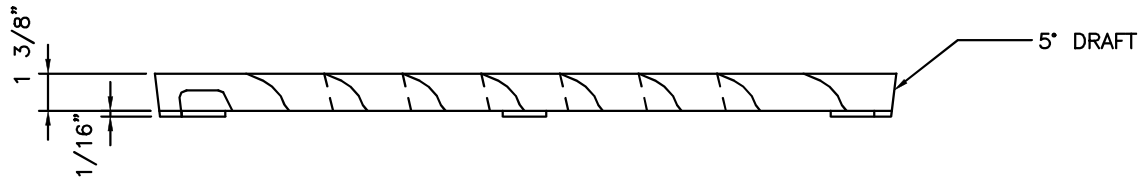
RIPRAP AND ENERGY DISSIPATION
FOR DITCH

DATE: 1/01/2021

DWG. NO.
DTCH-2



PLAN



ELEVATION

NOTES:

1. SELF-LOCK VANED GRATE MANUFACTURER SUBJECT TO APPROVAL BY ENGINEER.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. NOTE SLOT DETAIL. PROVIDE WHERE REQUIRED. ALL LIDS OUTSIDE OF ROADWAY TO BE LOCKED.
3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" IN RAISED LETTERS SHALL BE LOCATED ON GRATE AS SHOWN, OR ON BORDER AREA.
5. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
6. WELDING IS NOT PERMITTED.
7. EDGES SHALL HAVE 0.125" RADIUS, 0.125" CHAMBER OR COMPLETE DEBURRING.
8. USE A BI-DIRECTIONAL VANED GRATE IN SAG VERTICAL CURVES.

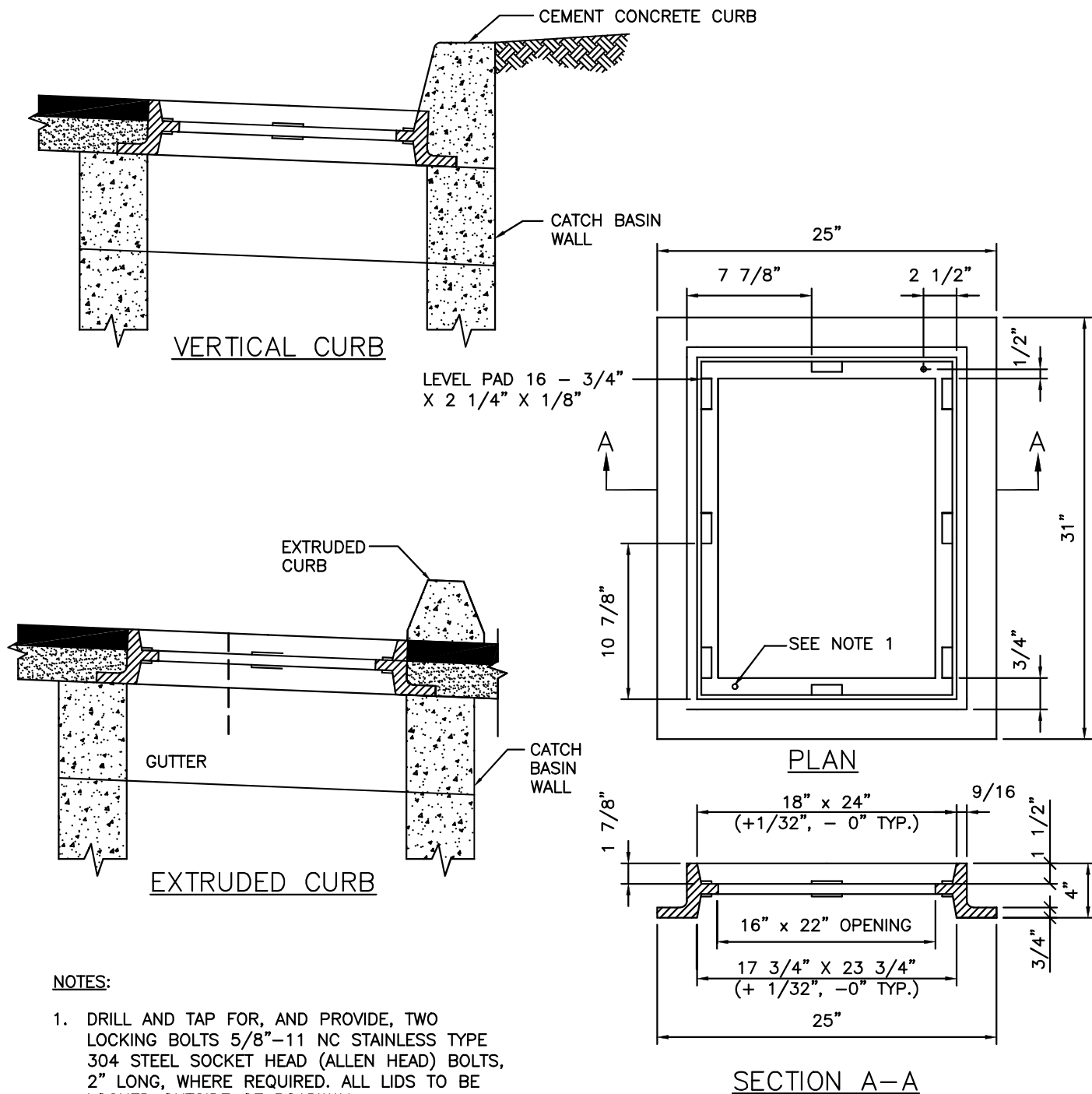


CITY OF GRANITE FALLS

VANED GRATE

DATE: 1/01/2021

DWG. NO.
SW-9



NOTES:

1. DRILL AND TAP FOR, AND PROVIDE, TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG, WHERE REQUIRED. ALL LIDS TO BE LOCKED OUTSIDE OF ROADWAY.
2. FRAME MATERIAL IS CAST IRON PER ASTM A48 CLASS 30 OR BETTER.
3. SET FRAME TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.

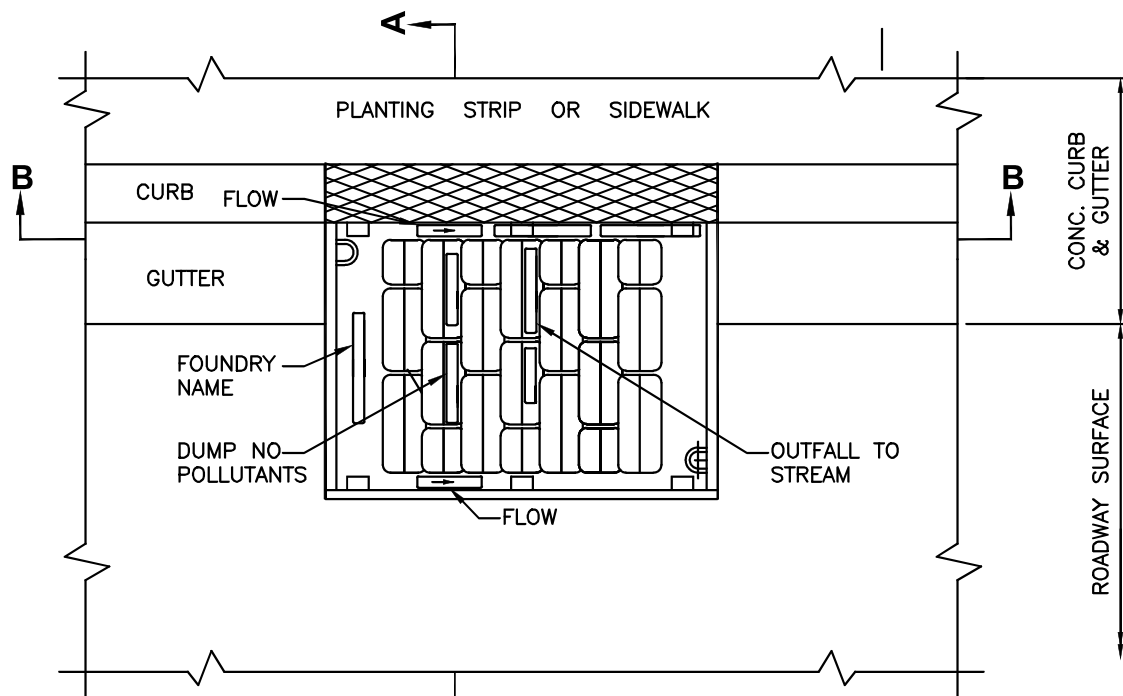


CITY OF GRANITE FALLS

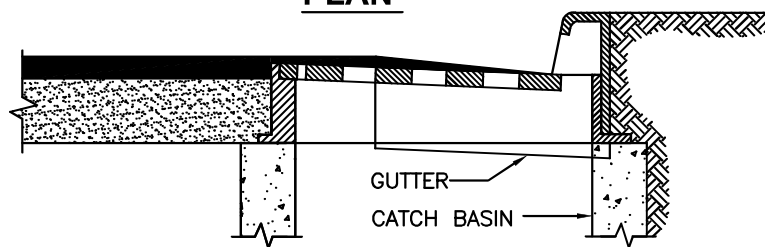
STANDARD FRAME INSTALLATION

DATE: 1/01/2021

DWG. NO.
SW-10



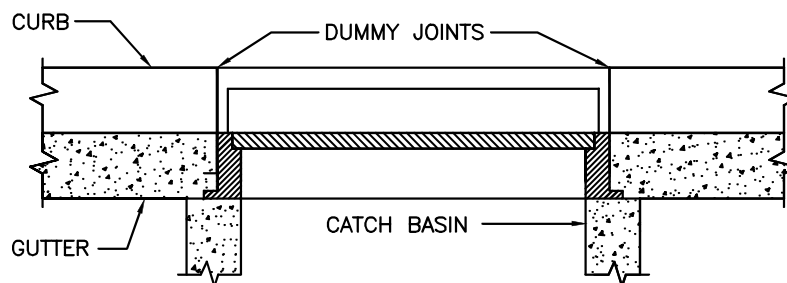
PLAN



SECTION A-A

NOTES:

1. SET TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.
2. THROUGH CURB INLET TO BE USED IN SAG CURVES.



SECTION B-B

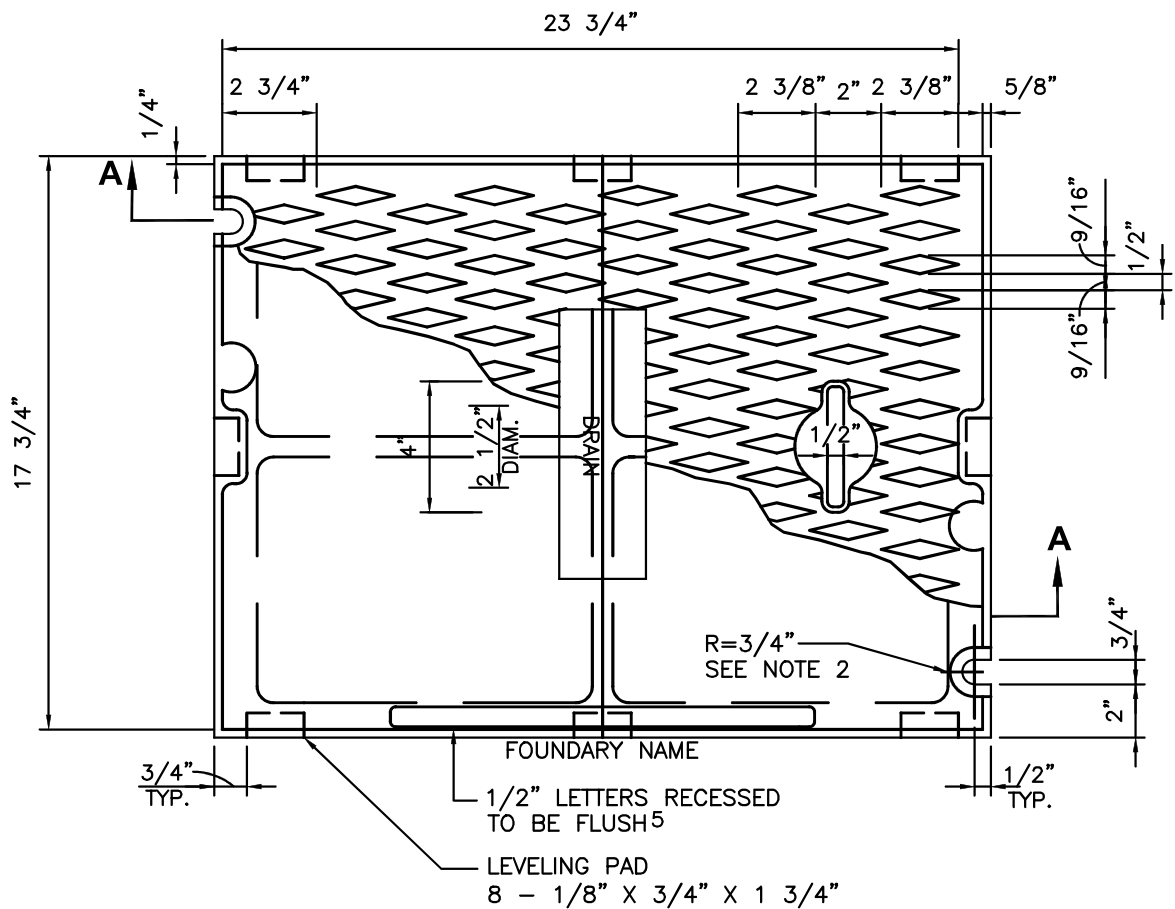


CITY OF GRANITE FALLS

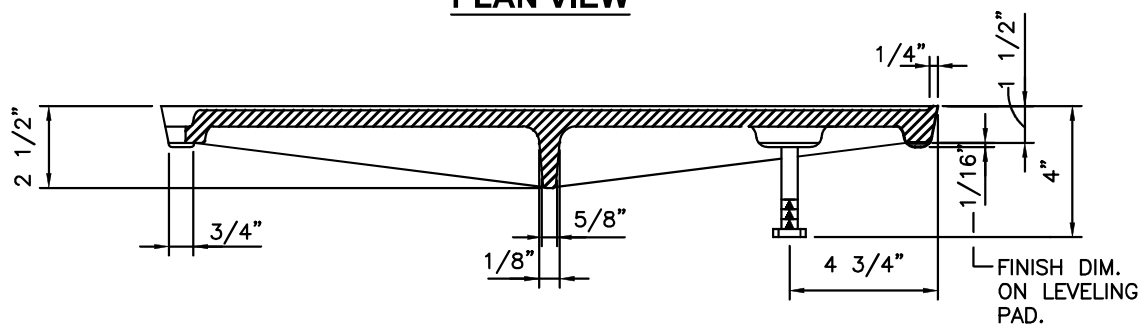
THROUGH VERTICAL CURB INLET
FRAME & GRATE

DATE: 1/01/2021

DWG. NO.
SW-12



PLAN VIEW



SECTION A-A

NOTES:

1. USE WITH FRAME DRILLED AND TAPPED FOR LOCKING BOLTS.
2. USE WITH TWO LOCKING BOLTS 5/8"—11 NC STAINLESS STEEL TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG.
3. COVER MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.
4. SHALL CONFORM TO SEC. 7.05 OF THE STANDARD SPECIFICATIONS.
5. COVER SHALL HAVE THE WORD "DRAIN" IN 2-INCH RAISED LETTERS.

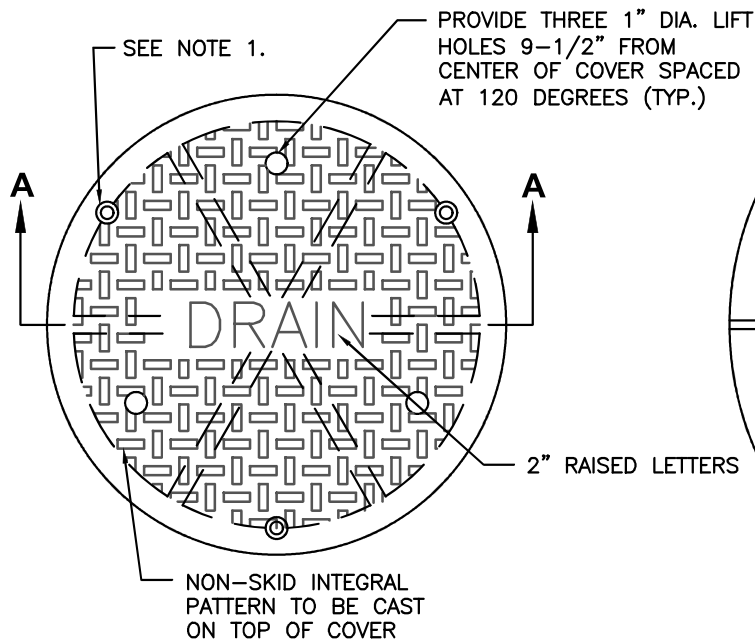


CITY OF GRANITE FALLS

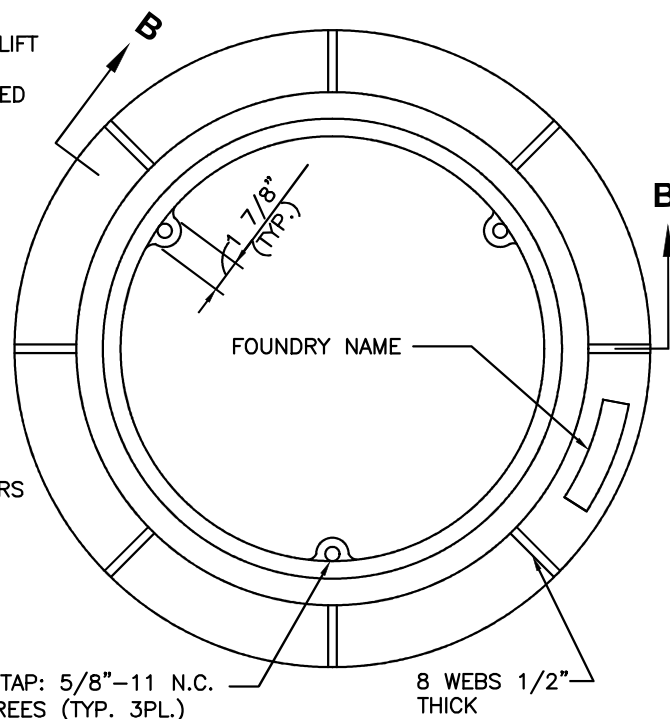
SOLID STORM DRAIN COVER

DATE: 1/01/2021

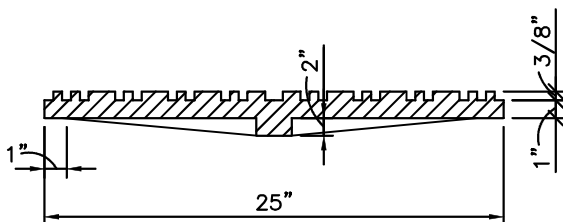
DWG. NO.
SW-7



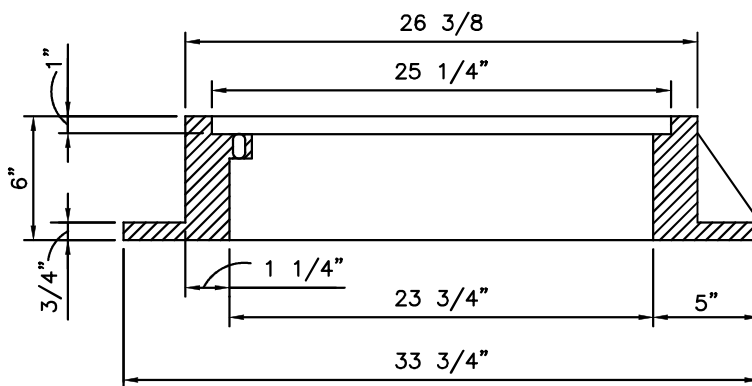
COVER PLAN



RING PLAN



SECTION A-A



SECTION B-B

GENERAL NOTES:

MANHOLE RING AND COVER SHALL BE OLYMPIC FOUNDRY MH30A D/T, OR EQUAL.

COVER NOTES:

1. USE WITH THREE LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. DRILL HOLES SPACED 120°, TO MATCH HOLES IN RING.
2. COVER MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80-55-06.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
4. APPROXIMATE WEIGHT OF COVER IS 150 LBS.
5. RATING - H20.

RING NOTES:

1. DRILL AND TAP THREE 5/8"-11 NC HOLES THROUGH RING AT 120°.
2. RING MATERIAL IS GREY IRON, ASTM A-48 CLASS 30.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS, AS MODIFIED HEREIN.
4. APPROXIMATE WEIGHT OF RING IS 215 LBS.
5. RATING - H20.

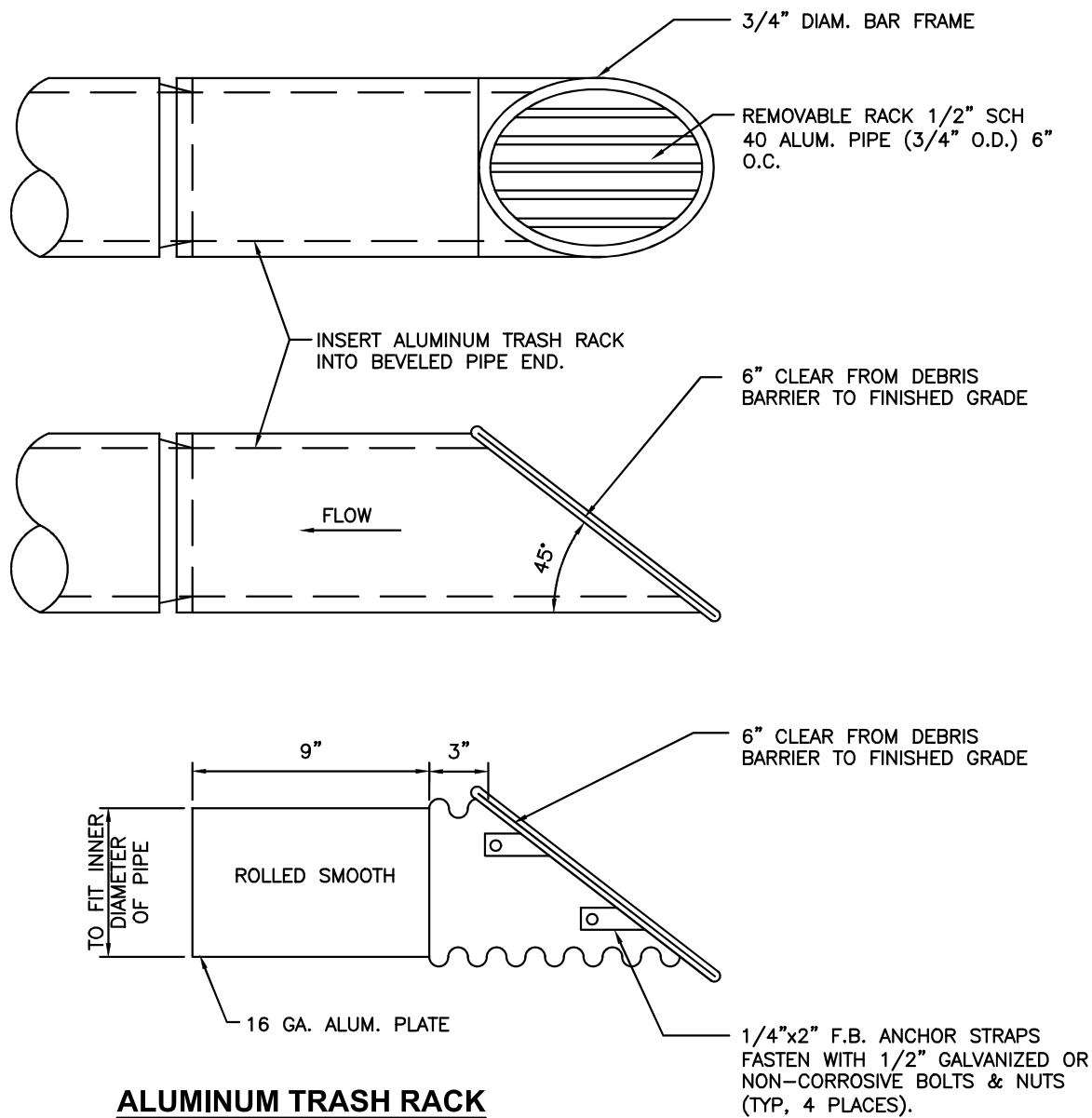


CITY OF GRANITE FALLS

24" BOLT-LOCKING MANHOLE AND RING COVER

DATE: 1/01/2021

DWG. NO.
SW-13



NOTES:

1. ALL STEEL PARTS MUST BE GALVANIZED & ASPHALT COATED (TREATMENT 1 OR BETTER).
2. CONTRACTOR TO VERIFY DIMENSIONS.



CITY OF GRANITE FALLS

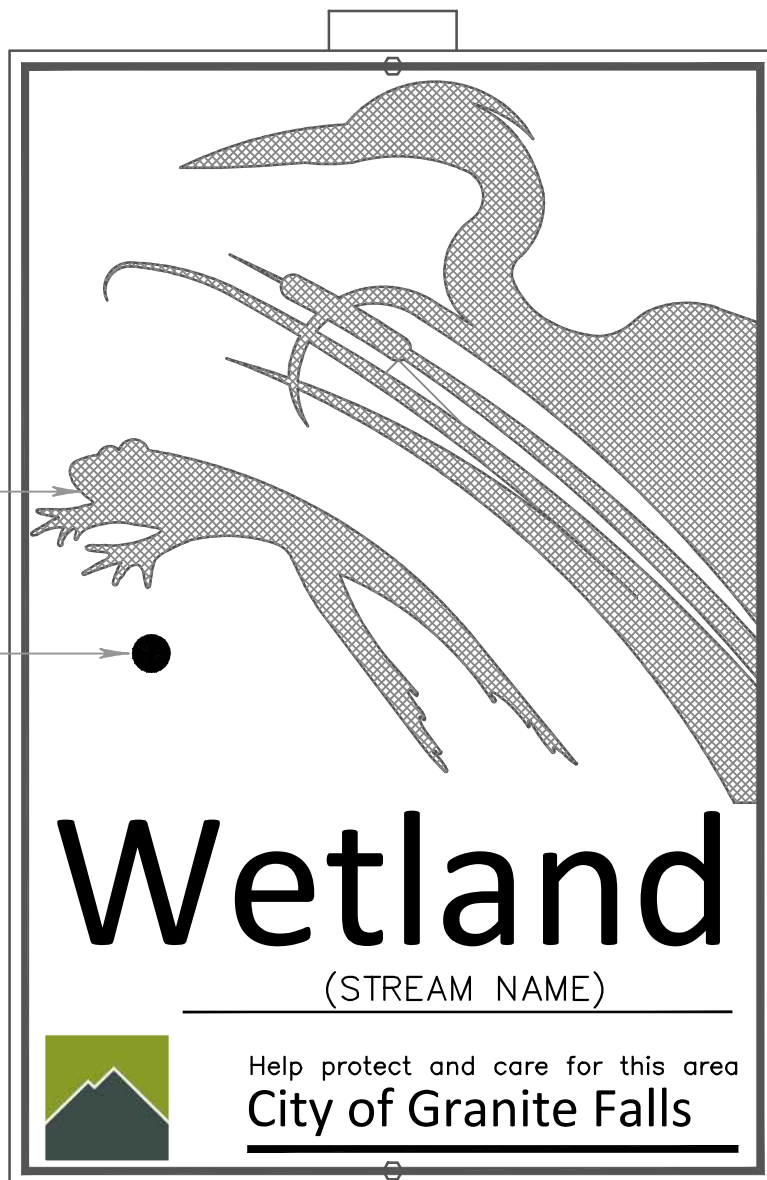
TRASH RACK
DEBRIS BARRIER

DATE: 1/01/2021

DWG. NO.
SW-17

FOREGROUND
COLOR: TEAL

BACKGROUND
COLOR: BEIGE



SIGN SIZE: 24"X36"

8'-4X4 CEDAR OR
PRESSURE-TREATED
POST SET 3' IN GROUND
OR 2X2 UNISTRUT
(SEE STREET DETAILS)

NOTES:

1. ATTACH SIGN TO POST WITH TWO (2) 5/16 GALVANIZED LAG BOLTS WITH WASHERS.
2. THE WETLAND SIGN SHALL BE POSTED AT THE BOUNDARY BETWEEN THE SENSITIVE AREA BUFFER, SETBACK AREA OR SETBACK TRACT AND THE BUILDING SETBACK AREA.
3. SIGN SHALL BE STATIONED IN A PROMINENT LOCATION, I.E.: AT THE CLOSEST POINT TO THE PROPOSED DEVELOPMENT. SIGN MAY ALSO BE ATTACHED TO FENCES.
4. REPLACE "WETLAND" WITH "STREAM" IF APPLICABLE.



CITY OF GRANITE FALLS

WETLAND SIGN INSTALLATION

DATE: 1/01/2021

DWG. NO.
SW-28