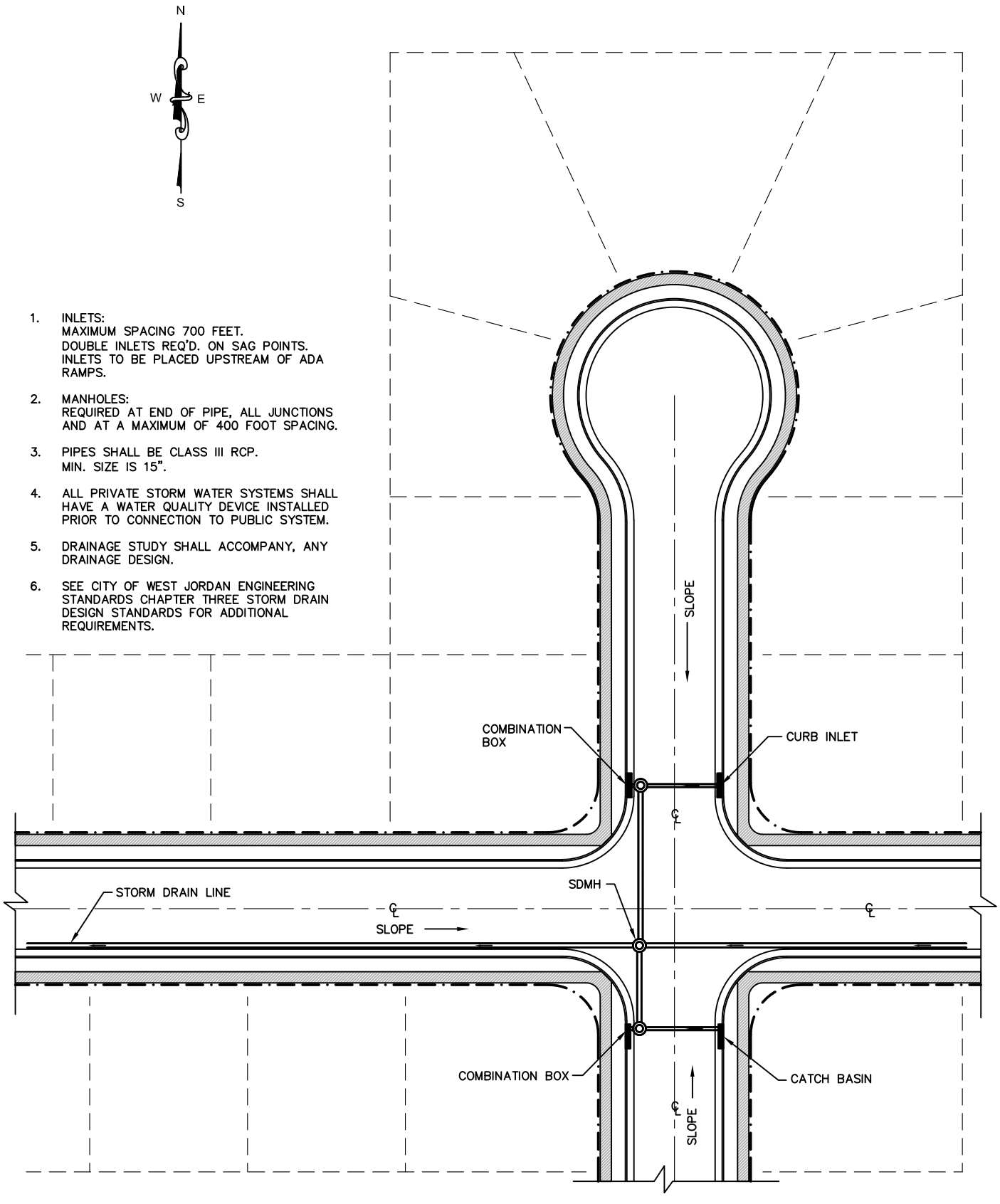


1. INLETS:
   MAXIMUM SPACING 700 FEET.
   DOUBLE INLETS REQ'D. ON SAG POINTS.
   INLETS TO BE PLACED UPSTREAM OF ADA RAMPS.
2. MANHOLES:
   REQUIRED AT END OF PIPE, ALL JUNCTIONS AND AT A MAXIMUM OF 400 FOOT SPACING.
3. PIPES SHALL BE CLASS III RCP.
   MIN. SIZE IS 15".
4. ALL PRIVATE STORM WATER SYSTEMS SHALL HAVE A WATER QUALITY DEVICE INSTALLED PRIOR TO CONNECTION TO PUBLIC SYSTEM.
5. DRAINAGE STUDY SHALL ACCOMPANY, ANY DRAINAGE DESIGN.
6. SEE CITY OF WEST JORDAN ENGINEERING STANDARDS CHAPTER THREE STORM DRAIN DESIGN STANDARDS FOR ADDITIONAL REQUIREMENTS.

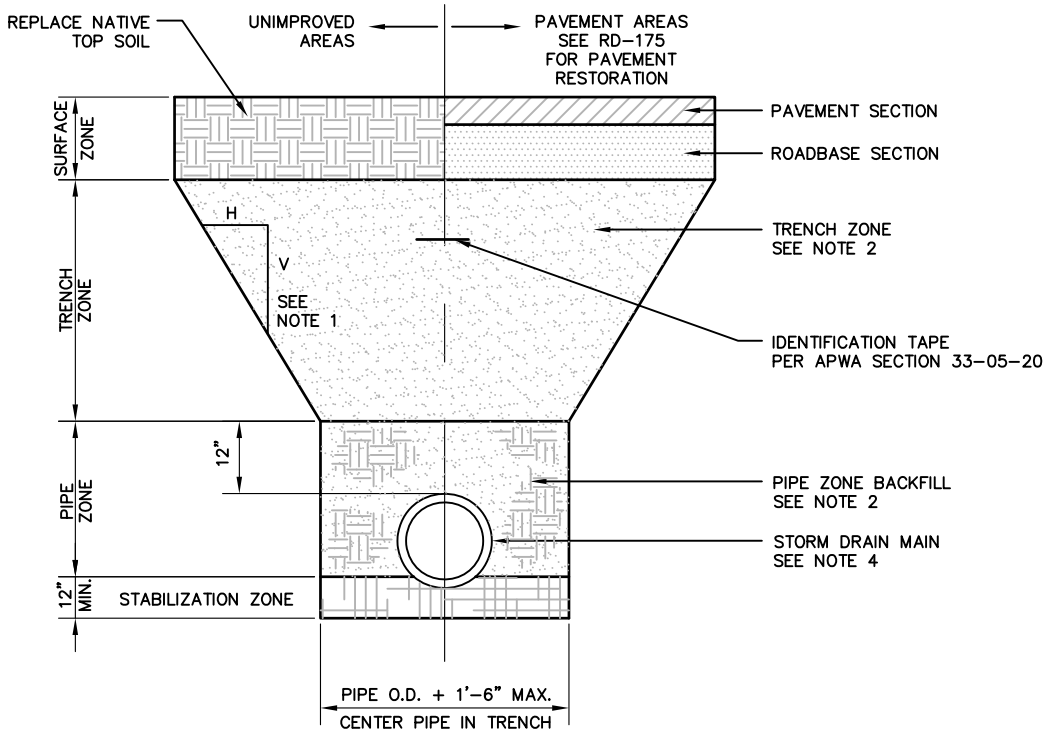
DRAWING UPDATED FEBRUARY 2020

City of West Jordan, Utah

WEST JORDAN UTAH

RESIDENTIAL STORM DRAIN INSTALLATION

PLAN
SD-01



1. EXCAVATION: TRENCH EXCAVATION PER APWA SECTION 31-23-16 AND SIDE SLOPES SHALL BE ACCORDANCE WITH OSHA AND UOSH SAFETY STANDARDS AND WITH APWA SECTION 31-41-00 AND ALL STATE AND FEDERAL LAWS FOR TRENCH SAFETY.

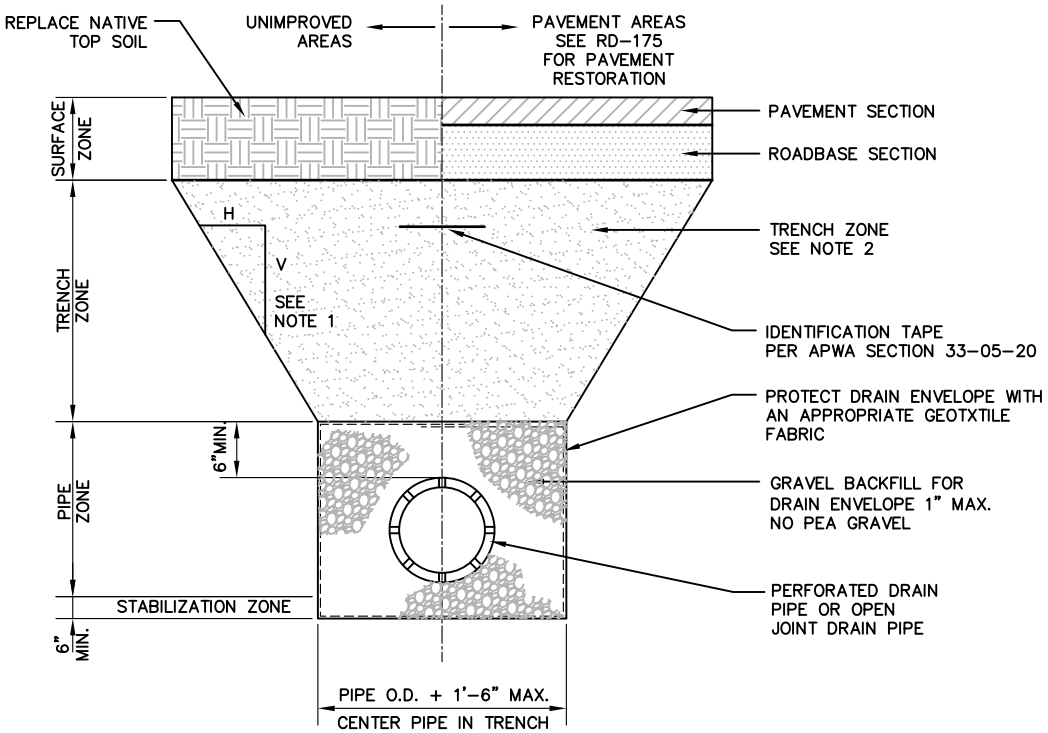
2. BACKFILL: MAX LIFT THICKNESS BEFORE COMPACTION IS EIGHT (8) INCHES. BACKFILL OPERATIONS SHALL COMPLY WITH APWA SECTION 33-05-20 "BACKFILLING TRENCHES". BACKFILL MATERIALS SHALL COMPLY WITH APWA SECTION 31-05-13 "COMMON FILL" AND APWA SECTION 32-11-23. "AGGREGATE BASE COURSES" WITH MATERIAL SELECTION AS FOLLOWS:

	UNIMPROVED AREAS	PAVEMENT AREAS
STABILIZATION ZONE	1" MINUS CRUSHED ROCK	1" MINUS CRUSHED ROCK
PIPE ZONE	UNTREATED BASE COURSE GRADE 3/4" MINUS ROCK	UNTREATED BASE COURSE GRADE 3/4" MINUS ROCK
TRENCH ZONE	CLASSIFIED AS A-1a W/15% MAX FINES	CLASSIFIED AS A-1a W/15% MAX FINES
SURFACE ZONE	NATIVE TOP SOIL REPLACE VEGETATION TO PRE-CONSTRUCTION CONDITION	UNTREATED BASE COURSE GRADE 3\4 PAVEMENT RESTORATION PER WJ ROAD AND BRIDGE STANDARDS RD-175

3. COMPACTION: COMPACTION OF BACKFILL MATERIALS SHALL COMPLY WITH APWA 31-23-26 "COMPACTION" AND THE FOLLOWING: SUBMISSION OF QUALITY ASSURANCE COMPACTION TEST RESULT DATA MAY BE REQUESTED BY ENGINEER AT ANY TIME. CONTRACTOR IS TO PROVIDE RESULTS WITHIN 24 HOURS OF PLACEMENT OF 200 LINEAR FEET OR 25 SQUARE FEET.

4. INSTALLATION OF PIPE: INSTALL PIPE PER APWA SECTION 33-41-00 "DRAINAGE SYSTEMS". INSTALL PIPE ON STABLE FOUNDATION WITH UNIFORM BEARING. SHAPE TRENCH BY HAND TO FIT BOTTOM QUADRANT OF PIPE ALLOWING SPACE FOR PIPE BELLS.

5 PAVEMENT RESTORATION: DO NOT INSTALL ASPHALT OR CONCRETE SURFACING UNTIL TRENCH COMPACTION IS ACCEPTED "IN WRITING" BY ENGINEER.



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	UNIMPROVED AREAS	PAVEMENT AREAS
STABILIZATION ZONE	1" MINUS CRUSHED ROCK	1" MINUS CRUSHED ROCK
PIPE ZONE	1" MINUS CRUSHED ROCK	1" MINUS CRUSHED ROCK
TRENCH ZONE	CLASSIFIED AS A-1a W/15% MAX FINES	CLASSIFIED AS A-1a W/15% MAX FINES
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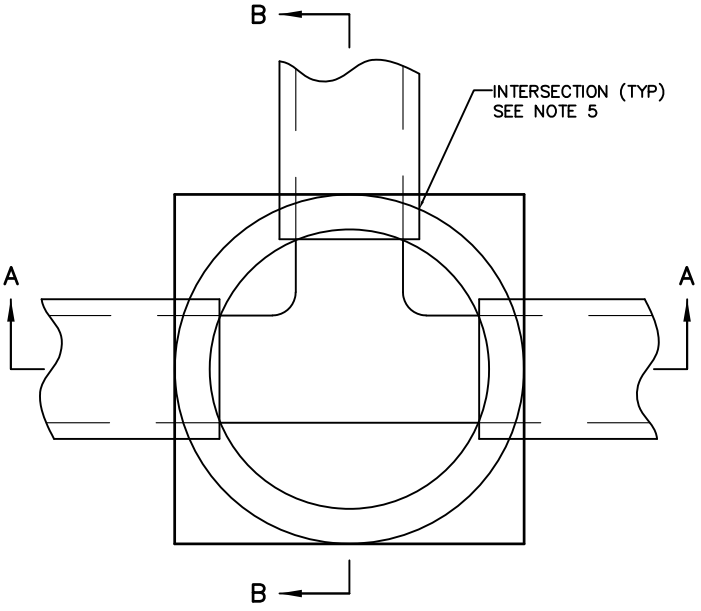


CAST–IN–PLACE BASE

1. SELECT FILL:
USE UNTREATED AGGREGATE CLASS A BASE COURSE GRADE 1 OR GRADE 3/4 PER APWA SECTION 32–11–23.
USE OF SEWER ROCK OR RECYCLED AGGREGATE REQUIRES ENGINEER'S WRITTEN APPROVAL.

2. BACKFILL:
INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 31–23–23.

3. CONCRETE:
CLASS 4,000 PER APWA SECTION 03–30–04 FOR BOTH PRECAST AND CAST–IN–PLACE APPLICATIONS. APPLY A SEALING/CURING COMPOUND PER APWA SECTION 03–39–00.

4. REDUCING RISER:
WHEN DEPTH OF MANHOLE FROM THE PIPE INVERT TO FINISH GRADE EXCEEDS 6'–7", USE A REDUCING RISER SECTION. (SEE PLAN SD–06).

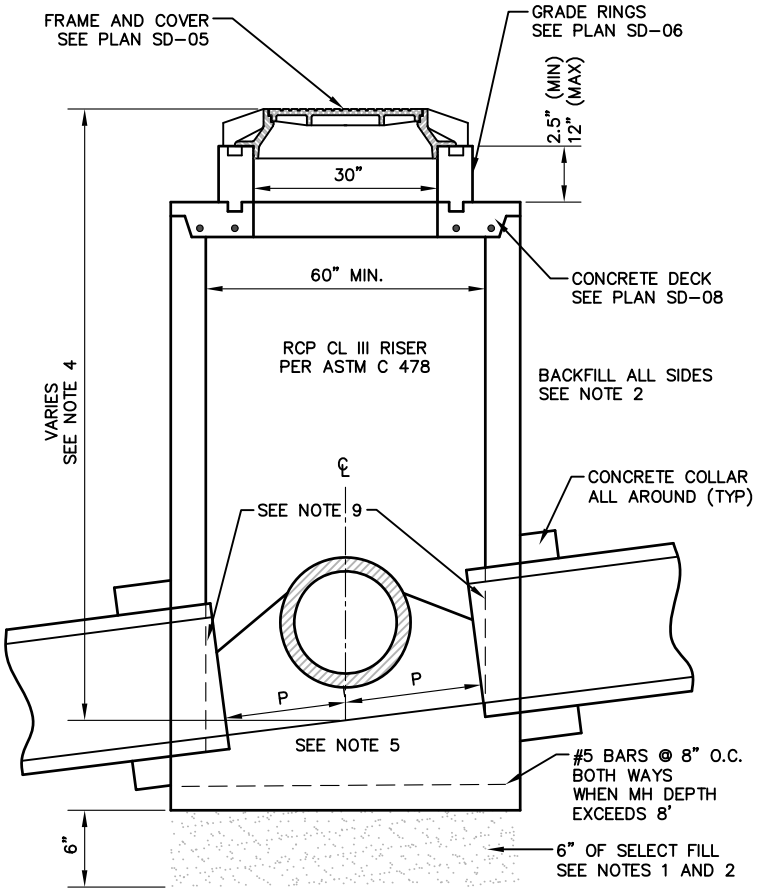
5. DISTANCE 'P':
'P' VARIES AS PER SIZE OF PIPES, SUCH THAT THE HORIZONTAL INSIDE DIAMETER OF THE PIPE INTERSECTS THE INSIDE DIAMETER OF THE RISERS.

6. JOINTS: PLACE FLEXIBLE GASKET–TYPE SEALANT IN ALL MANHOLE JOINTS.

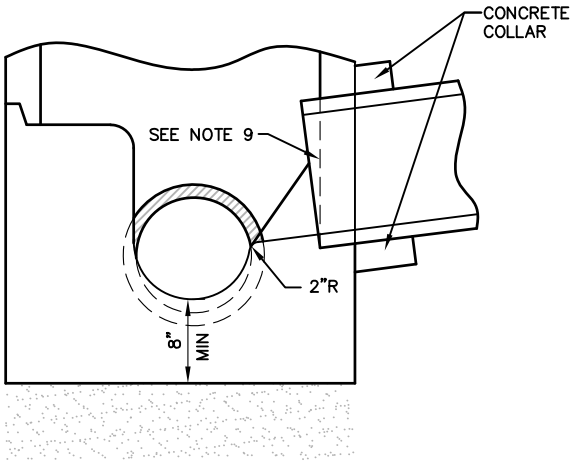
7. BASE OF MANHOLE:
POUR IN ONE CONTINUOUS OPERATION.

8. FINISH:
PROVIDE SMOOTH AND NEAT FINISHES ON THE INTERIOR OF CONES, SHAFTS, AND RINGS. IMPERFECT MOLDINGS OR HONEYCOMBS WILL NOT BE ACCEPTED.

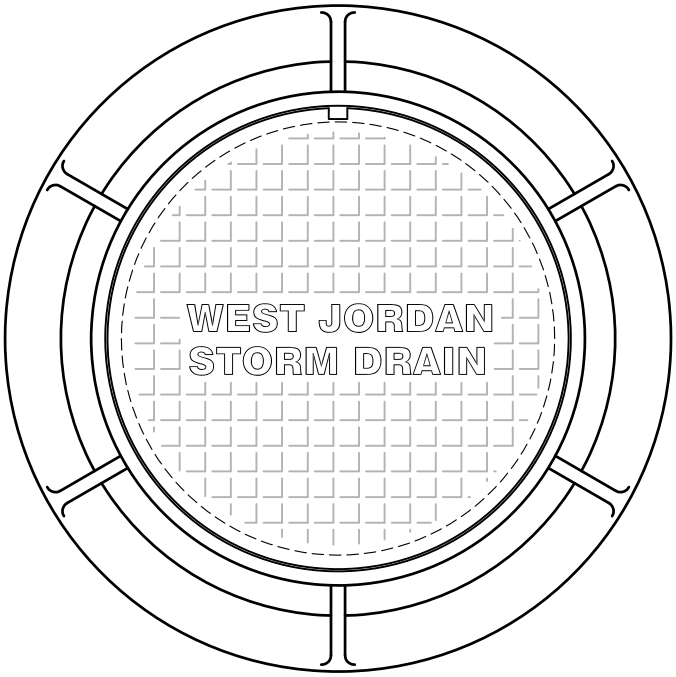
9. FINISH PIPE END SECTION TO SET FLUSH WITH ADJACENT WALL.

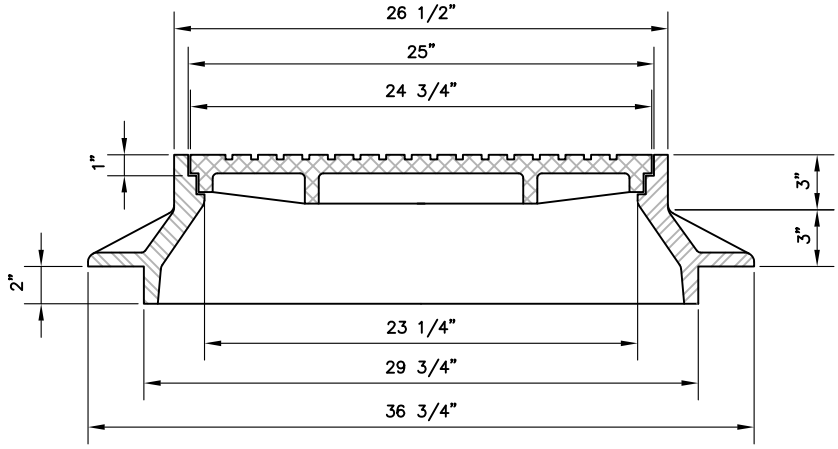


SECTION A–A

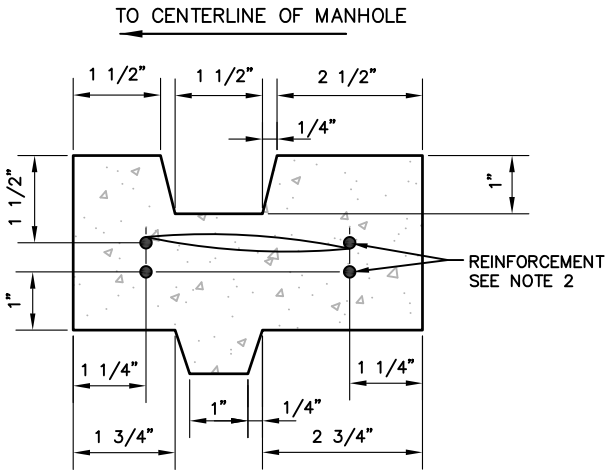


SECTION B–B

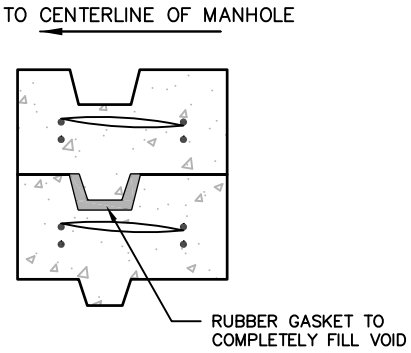




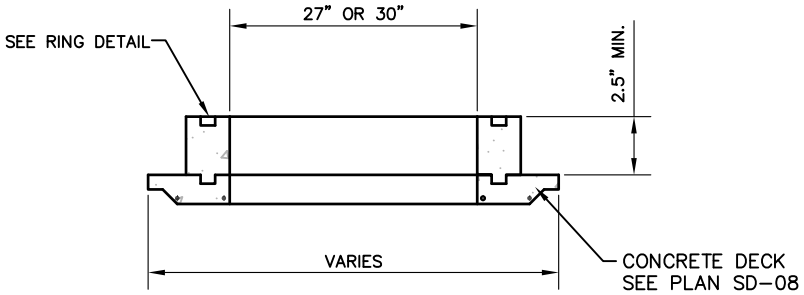
1. CASTINGS:
   GREY IRON CLASS 30 MINIMUM PER ASTM A 48.
2. COATINGS:
   EXCEPT MACHINED SURFACES, COAT ALL METAL PARTS WITH ASPHALTUM PAINT.
3. INSCRIPTIONS:
   CAST THE WORDS "STORM DRAIN" AND "WEST JORDAN" ON THE COVER FLUSH WITH THE SURFACE FINISH.
4. HEAT NUMBER:
   PLACE FOUNDRY AND HEAT NUMBER ON THE INSIDE OF THE FRAME AND ON THE BOTTOM OF THE COVER.
5. FIT:
   GIVE THE FRAME AND COVER A MACHINE FINISH SO THE COVER WILL NOT ROCK.
6. MANHOLE STRUCTURES:
   SEE PLAN SD-04
7. FRAME AND COVER SHALL BE PLACED OVER OUTLET PIPE IN COMBINATION BOXES



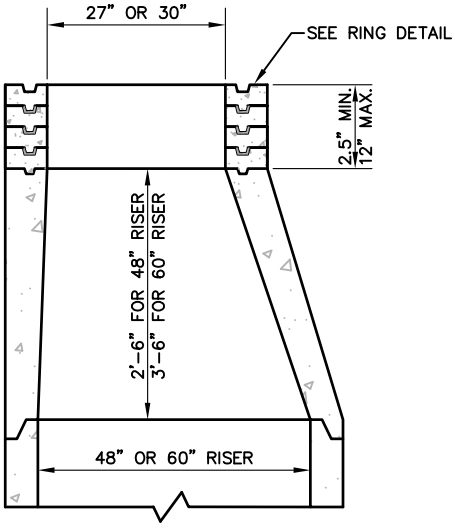
RING DETAIL



GASKET DETAIL



DECK SECTION



CONE SECTION

1. CONCRETE:
   CLASS 4,000 PER APWA SECTION 03-30-04 FOR BOTH PRECAST AND CAST-IN-PLACE APPLICATIONS. APPLY A SEALING/CURING COMPOUND PER APWA SECTION 03-39-00 OR USE AN ACCEPTABLE ALTERNATE CURING METHOD.

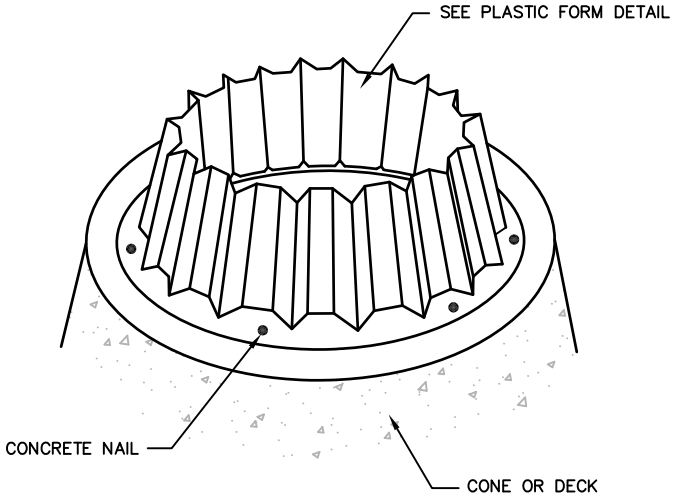
2. REINFORCEMENT:

A. 2 1/2" HIGH RINGS: USE TWO 1/4" ROUND STEEL HOOPS TIED WITH NO. 14 AWS GAUGE WIRE, 8" ON CENTER.

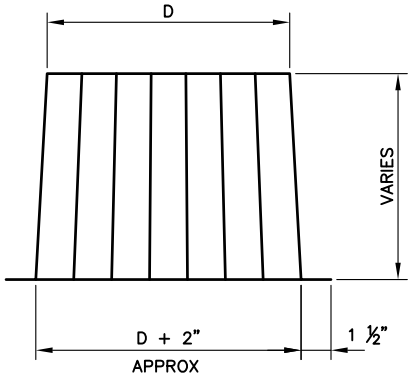
B. 6" AND 8" HIGH RINGS: USE FOUR 1/4" ROUND STEEL HOOPS, TIED WITH NO. 14 AWS GAUGE WIRE, 8" ON CENTER.

3. JOINTS:
   SEATING RINGS WITH A COMPRESSIBLE GASKET FOR NON-PRESSURIZED APPLICATIONS.

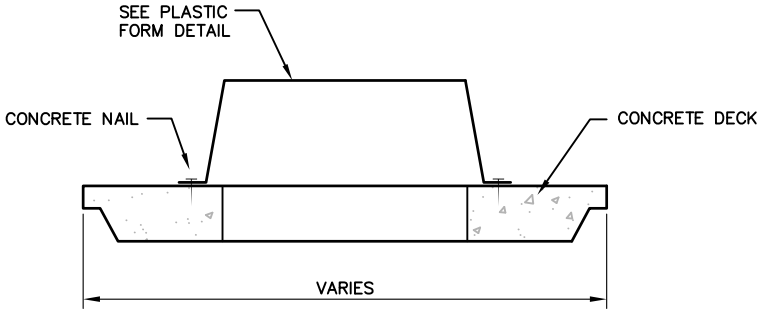
4. ALTERNATE METHOD:
   CONTRACTOR MAY USE PLASTIC FORM METHOD AS DESCRIBED IN "SD-7.2 & 2017 APWA PLAN 360.2 TO RAISE FRAME TO GRADE.



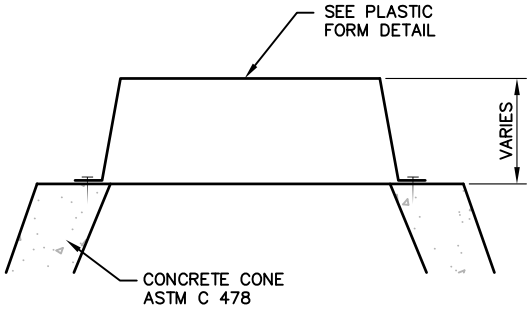
PLASTIC FORM OBLIQUE



PLASTIC FORM DETAIL



DECK SECTION

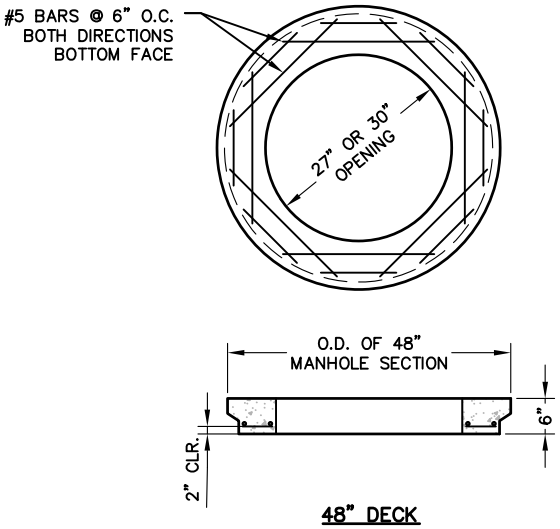


CONE SECTION

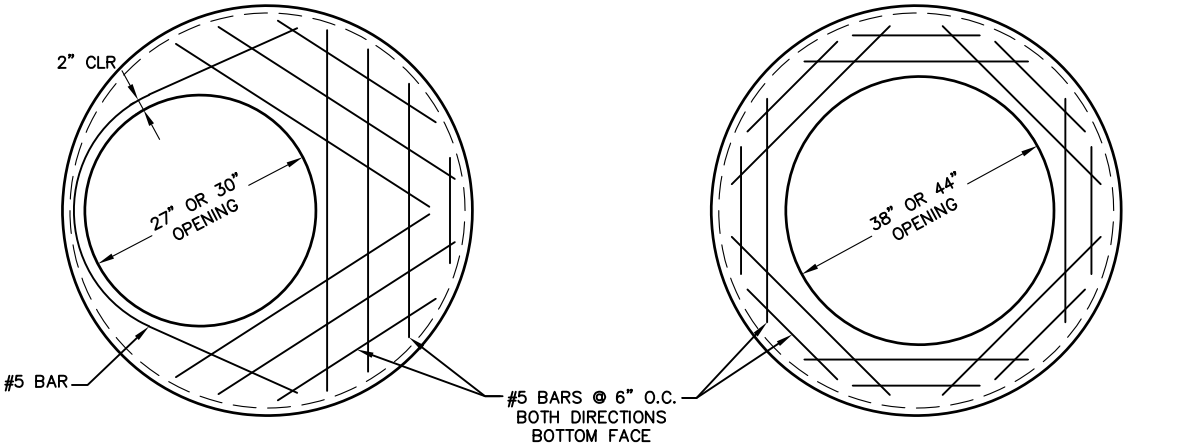
1. GENERAL:
   A. THE PLASTIC FORM IS USED TO KEEP CONCRETE IN THE ANNULAR SPACE WHEN FABRICATING COVER COLLARS FOR STORM DRAIN MANHOLES, SANITARY SEWER MANHOLES OR OTHER UTILITIES.

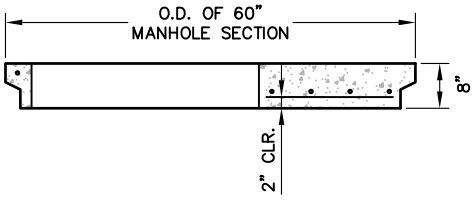
2. PRODUCTS;
   A. CONCRETE NAILS: CONTRACTOR'S CHOICE.

3. EXECUTION:
   A. ADJUST PLASTIC FORM HEIGHT SO THAT THE TIP OF THE MANHOLE FRAME AND COVER MATCHES LONGITUDINAL SLOP AND CROSS SLOPE OF THE PAVEMENT SURFACE, AND COVER IS ½ INCH LOWER THAN THE PAVEMENT SURFACE.

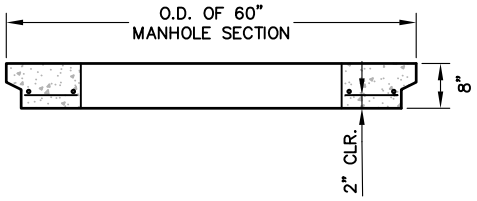


48" DECK





60" DECK



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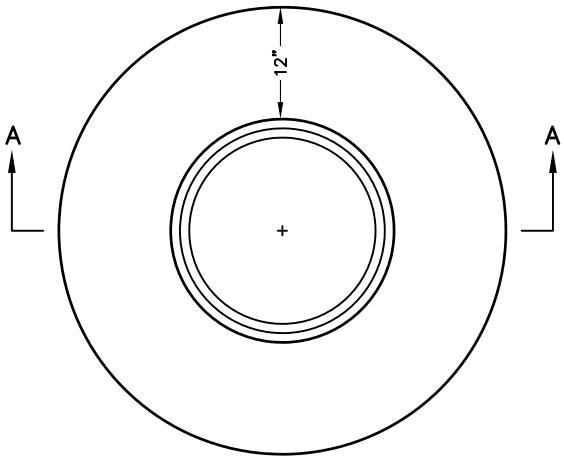
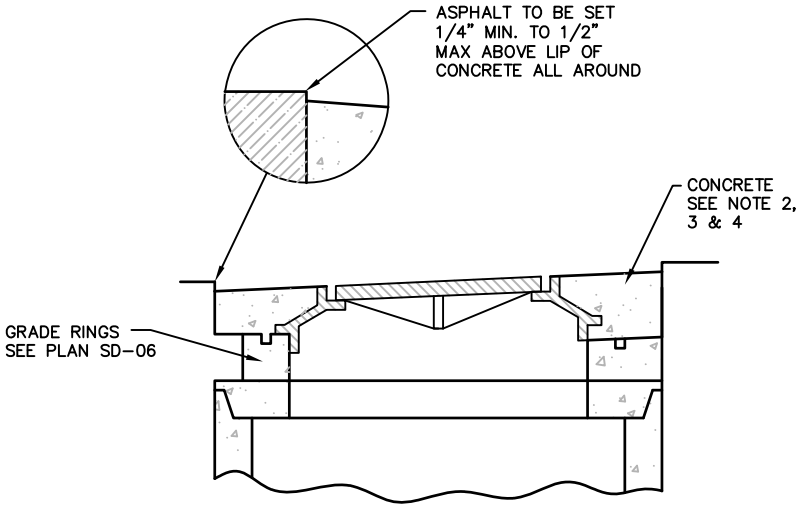


PLAN



SECTION A-A

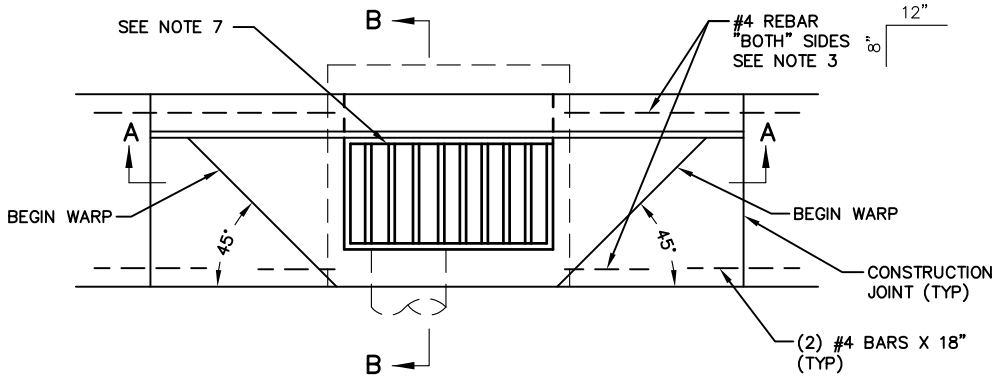
1. ADJUST TO GRADE:
   ADJUST INCIDENTAL STRUCTURE TO GRADE PER APWA SECTION 33-05-14.

1. CONCRETE:
   CLASS 4,000 PER APWA SECTION 33-30-04. APPLY A SEALING/CURING COMPOUND PER APWA SECTION 03-39-00 OR USE AN ACCEPTABLE ALTERNATE CURING METHOD.

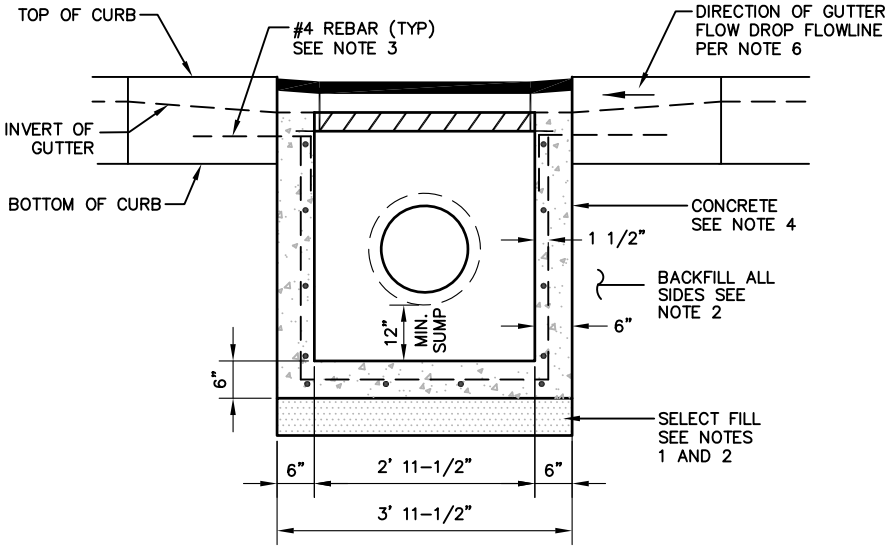
2. JOINTS:
   PROVIDE A NEAT STRAIGHT JOINT BETWEEN EXISTING AND NEW ASPHALT CONCRETE SURFACES. PROVIDE CONCENTRIC CIRCLE OR STRAIGHT EDGE CUT. CLEAN EDGES OF ALL DIRT, OIL AND LOOSE DEBRIS.

3. PROVIDE STEEL PLATING AND TRAFFIC CONTROL DEVICES TO PROTECT FROM TRAFFIC AND INCLEMENT WEATHER FOR 7 DAYS ON COLLECTOR AND ARTERIAL ROADS. PLACE CONES ON RESIDENTIAL ROADS.

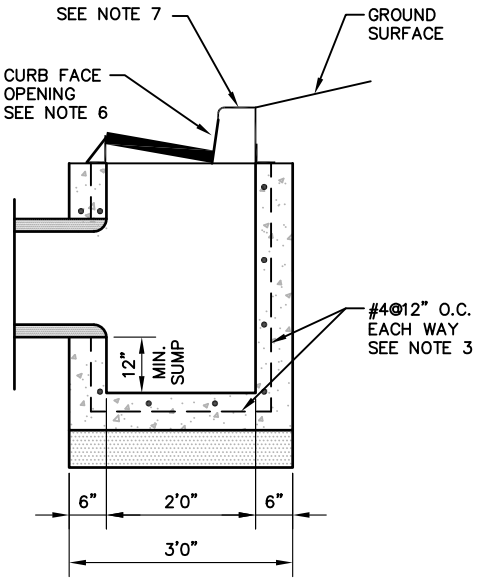
4. PREVENT ANY LOOSE DEBRIS FROM FALLING INTO OPEN COVER. NOTIFY WEST JORDAN UTILITY IMMEDIATELY IF DEBRIS FALLS INTO STRUCTURE



TYPE A – CURB INLET WITH SINGLE GRATE



SECTION A–A



SECTION B–B

1. SELECT FILL:
   USE UNTREATED BASE COARSE GRADE 1 OR GRADE 3/4 PER APWA SECTION 32 11 23. USE OF SEWER ROCK OR RECYCLED AGGREGATE REQUIRES ENGINEER'S WRITTEN APPROVAL.

2. BACKFILL:
   INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 31 23 23.

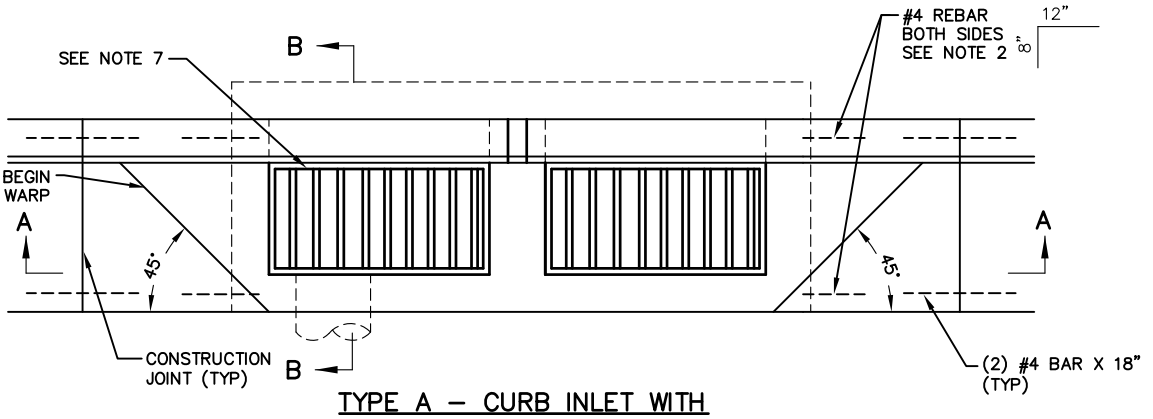
3. REINFORCEMENT:
   USE ASTM A 615, GRADE 60, DEFORMED STEEL REBAR PER APWA SECTION 03 20 00.

4. CONCRETE:
   CLASS 4,000 PER APWA SECTION 03 30 04. PLACE PER APWA SECTION 03 30 10. APPLY SEALING/CURING COMPOUND PER APWA SECTION 03 39 00.

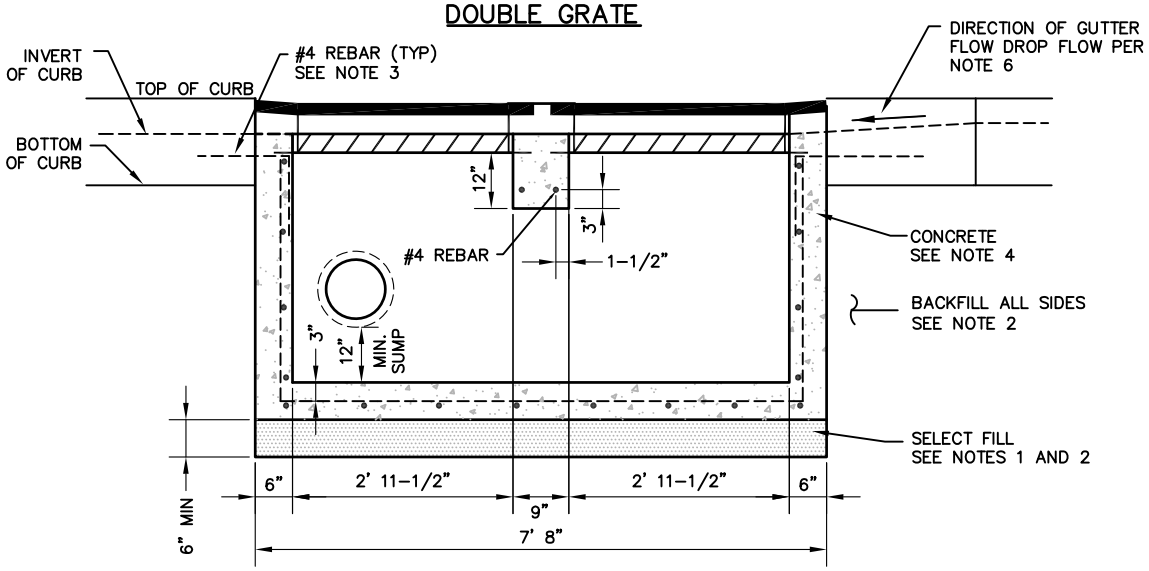
5. PIPE LATERALS:
   THE DRAWING SHOWS ALTERNATE CONNECTIONS TO THE INLET BOX. REFER TO CONSTRUCTION DRAWINGS FOR CONNECTION LOCATIONS.

6. CURB FACE OPENING:
   MAKE OPENING 4 INCHES HIGH. PROVIDE AT LEAST A 2 INCH DROP FROM THE GUTTER FLOWLINE TO THE INVERT OF THE CURB FACE OPENING.

7. D&L SUPPLY I–3517 FOR <2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY" D&L SUPPLY I–3518 >2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY". EQUIVALENT ONLY BY WRITTEN APPROVAL FROM CITY ENGINEER.



TYPE A – CURB INLET WITH DOUBLE GRATE



SECTION A–A

1. SELECT FILL:
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2. BACKFILL:
   INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 31 23 23.

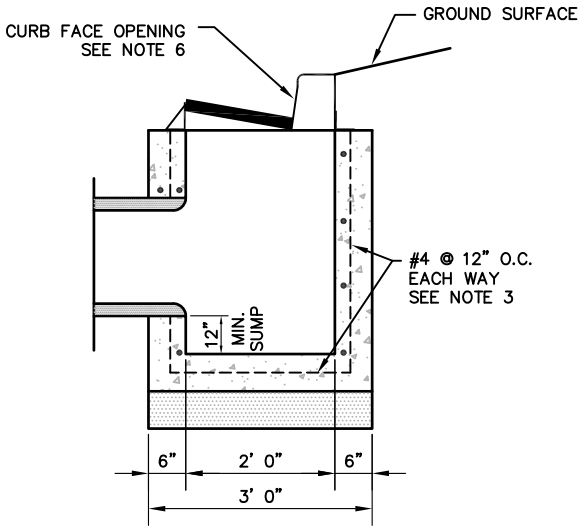
3. REINFORCEMENT:
   USE ASTM A 615, GRADE 60, DEFORMED STEEL REBAR PER APWA SECTION 03 20 00.

4. CONCRETE:
   CLASS 4,000 PER APWA SECTION 03 30 04. PLACE PER APWA SECTION 03 30 10. APPLY SEALING/CURING COMPOUND PER APWA SECTION 03 39 00.

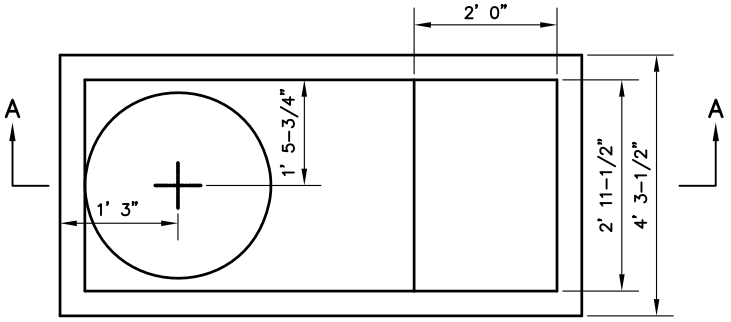
5. PIPE LATERALS:
   THE DRAWING SHOWS ALTERNATE CONNECTIONS TO THE INLET BOX. REFER TO CONSTRUCTION DRAWINGS FOR CONNECTION LOCATIONS.

6. CURB FACE OPENING:
   MAKE OPENING 4 INCHES HIGH. PROVIDE AT LEAST A 2 INCH DROP FROM THE GUTTER FLOWLINE TO THE INVERT OF THE CURB FACE OPENING.

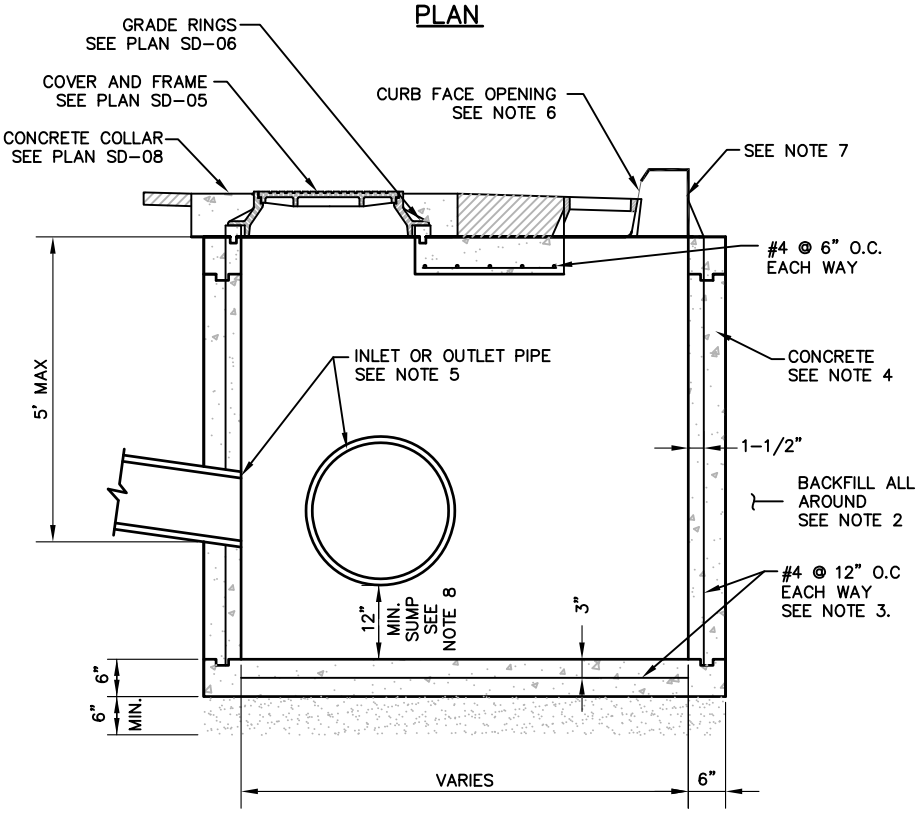
7. D&L SUPPLY I–3517 FOR <2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY" D&L SUPPLY I–3518 >2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY". EQUIVALENT ONLY BY WRITTEN APPROVAL FROM CITY ENGINEER.



SECTION B–B

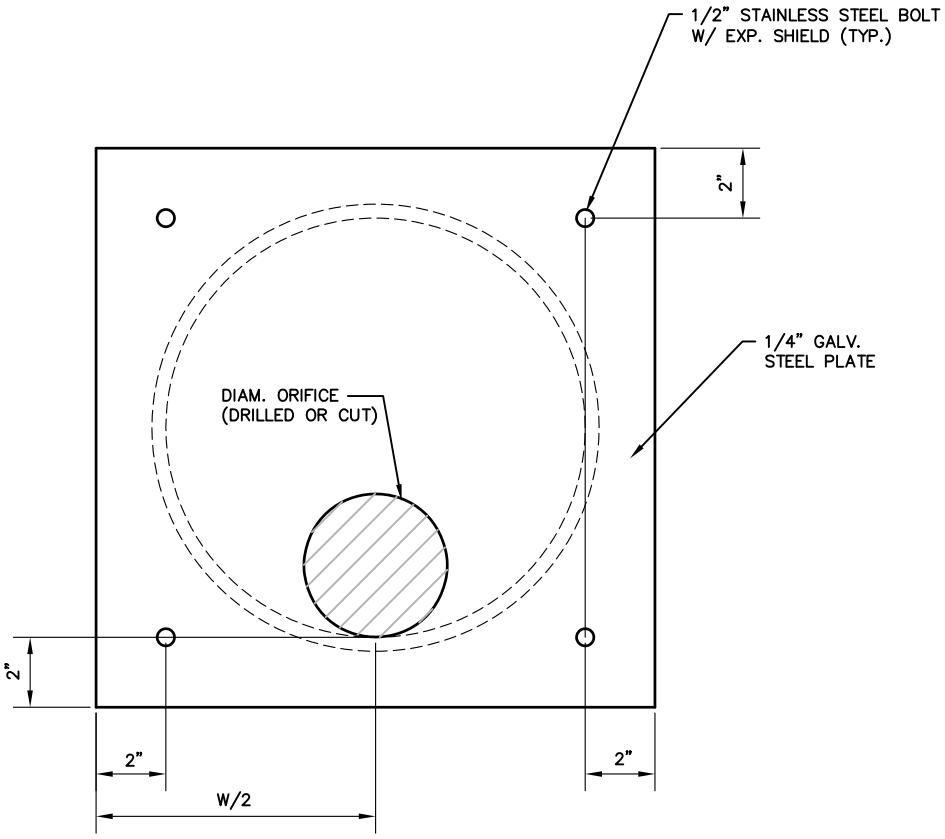


PLAN



SECTION A–A

1. SELECT FILL: USE UNTREATED BASE COARSE GRADE 1 OR GRADE 3/4 PER APWA SECTION 32 11 23. USE OF SEWER ROCK OR RECYCLE AGGREGATE REQUIRES ENGINEER'S WRITTEN APPROVAL.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 33 05 20.
3. REINFORCEMENT: USE ASTM A 615, GRADE 60, DEFORMED STEEL REBAR. SEE APWA SECTION 03 20 00 REQUIREMENTS.
4. CONCRETE: CLASS 4,000 PER APWA SECTION 03 30 04. PLACE PER APWA SECTION 03 20 00. APPLY SEALING / CURING COMPOUND PER APWA SECTION 03 39 00.
5. PIPE LATERALS: THE DRAWING SHOWS ALTERNATE CONNECTIONS TO THE CATCH BASIN. REFER TO CONSTRUCTION DRAWINGS FOR CONNECTION LOCATIONS.
6. CURB FACE OPENING: MAKE OPENING 4 INCHES HIGH. PROVIDE AT LEAST A TWO INCH DROP FROM THE GUTTER FLOWLINE TO THE INVERT OF THE CURB FACE OPENING.
7. D&L SUPPLY I–3517 FOR <2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY" D&L SUPPLY I–3518 >2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY". EQUIVALENT ONLY BY WRITTEN APPROVAL FROM CITY ENGINEER.
8. SUMP SHALL BE GRADED SO THAT LOW POINT IS ADJACENT TO DISCHARGE PIPE.
9. COVER AND FRAME SHALL LOCATED DIRECTLY ABOVE DISCHARGE PIPE.



FLOW RESTRICTOR PLATE

1. STEEL:
   ASTM A 36 STEEL.

2. BOLTS:
   USE 1/2 INCH STAINLESS STEEL BOLTS AND 1/8 INCH STAINLESS STEEL WASHERS.

3. COATING:
   COAT ALL METAL PARTS WITH ASPHALTUM PAINT.