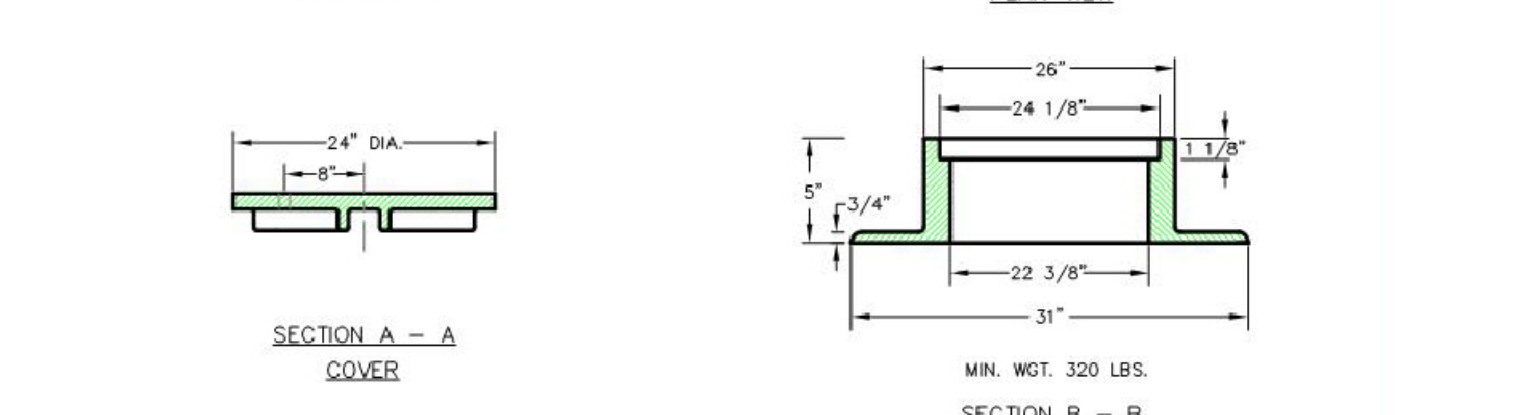
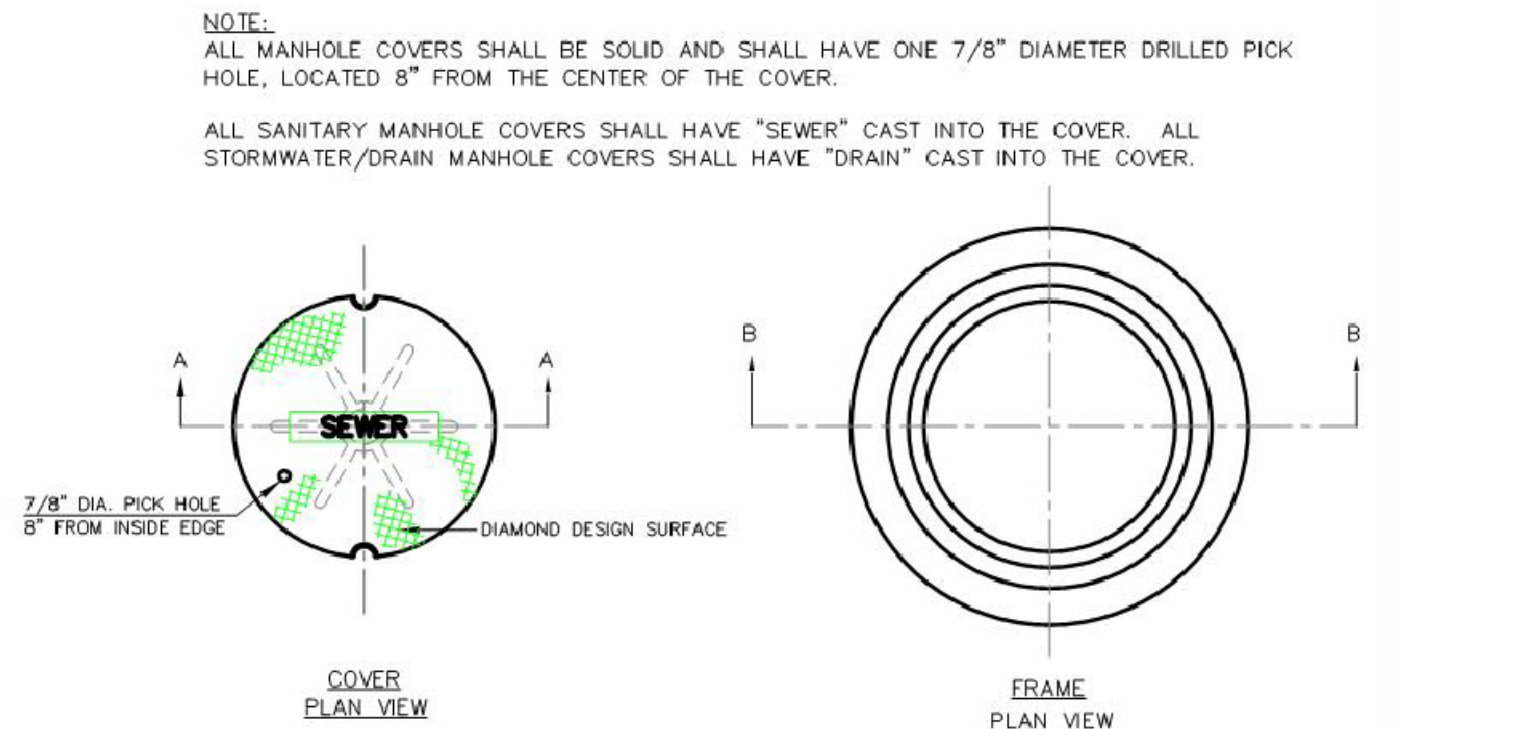


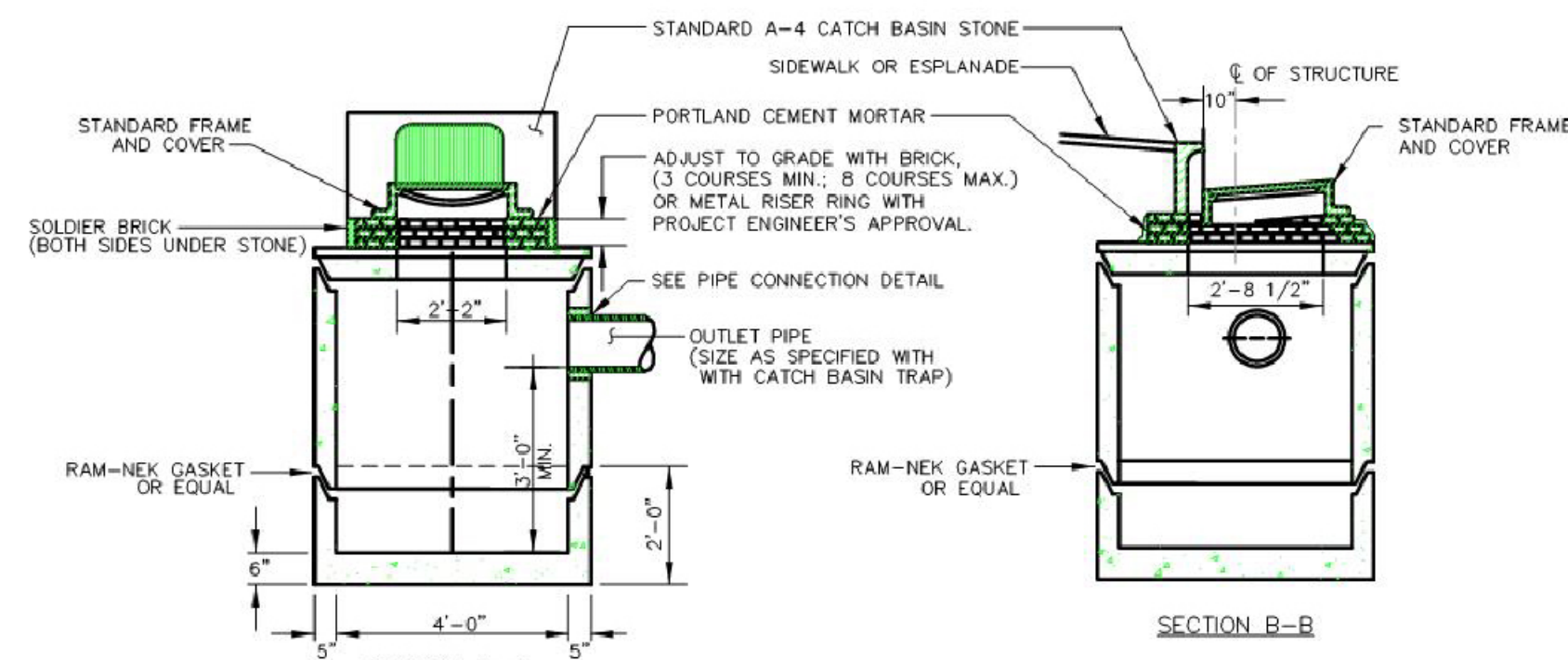
PRECAST CONCRETE MANHOLE
NOT TO SCALE



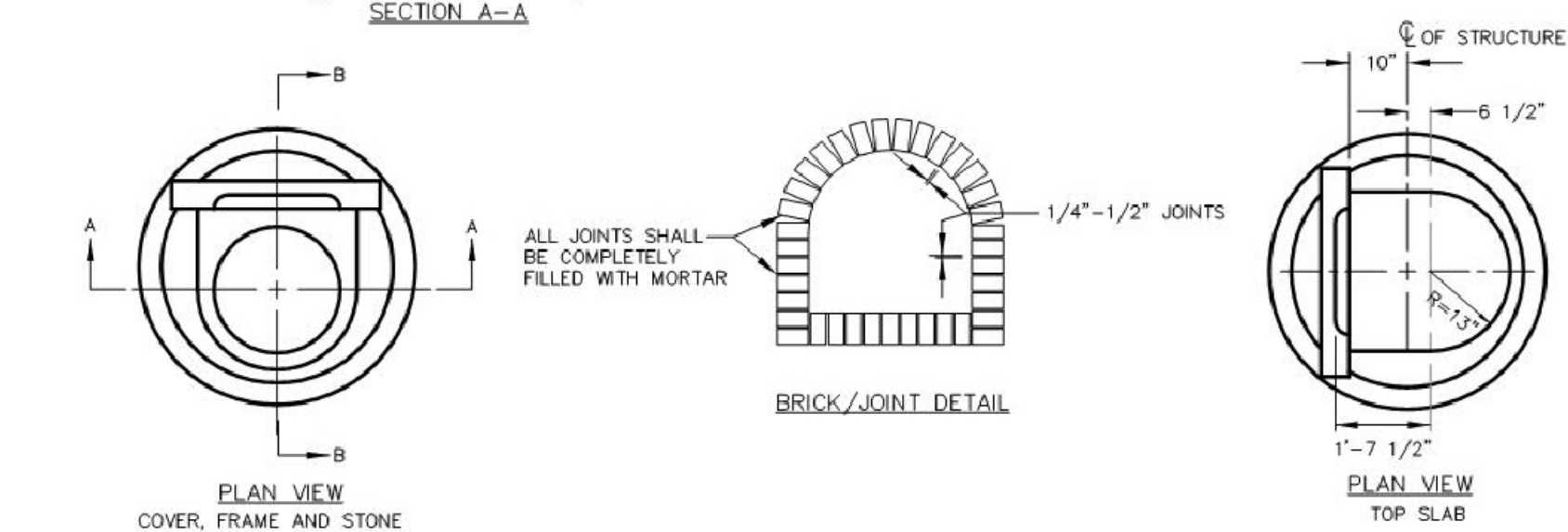
CAST IRON MANHOLE COVER AND FRAME
NOT TO SCALE

GENERAL NOTES FOR MANHOLES AND CATCH BASINS

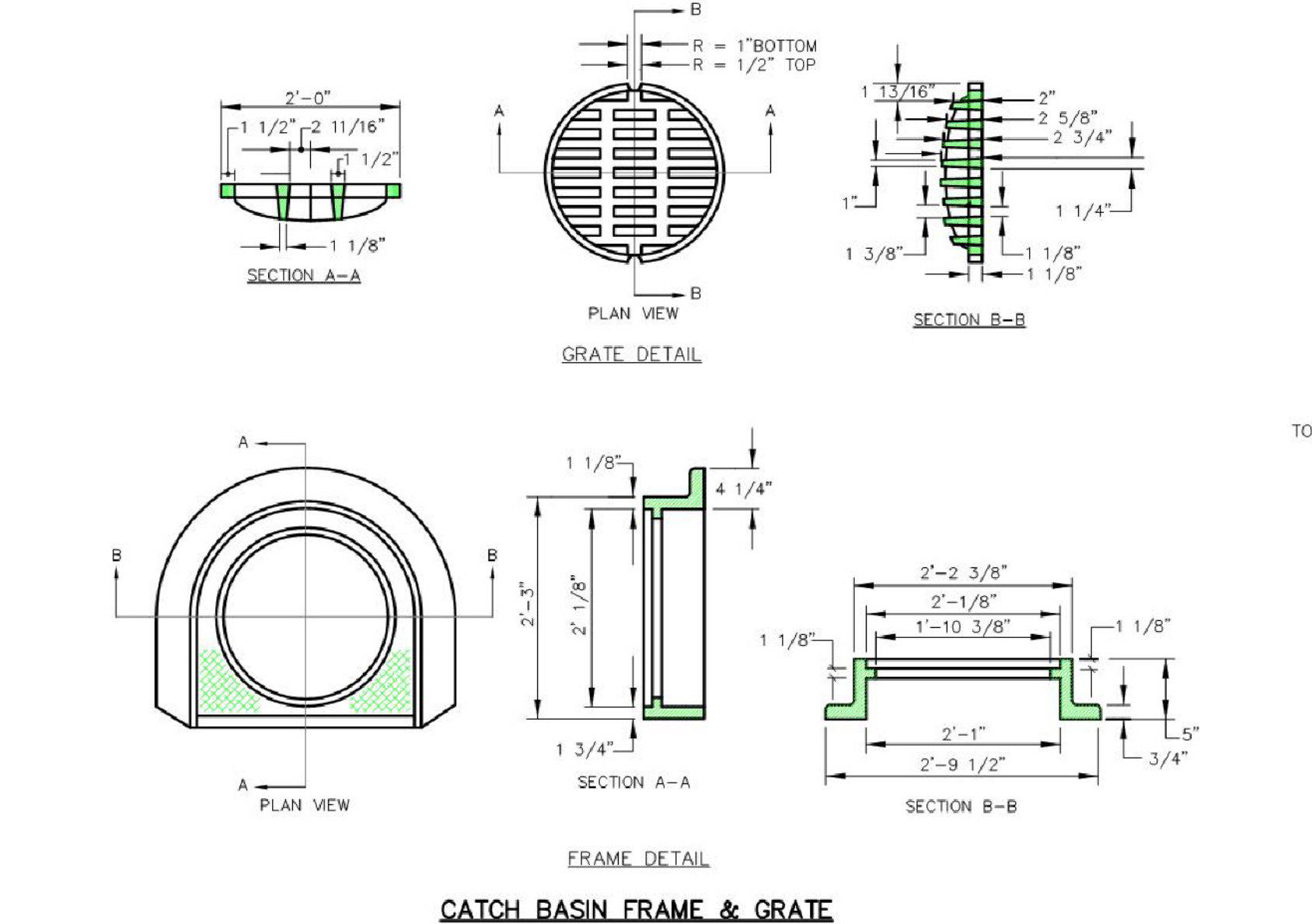
- ALL CONCRETE SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
- MANHOLES MAY BE CONSTRUCTED OF PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
- PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
- ALL STORM AND SEWER MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE LOCATED 8" FROM THE CENTER OF THE COVER.
- ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/RAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.
- ALL MANHOLE RISERS SHALL BE ETHERIDGE 24" OR APPROVED EQUAL.
- SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
- ALL SANITARY MANHOLES SHALL HAVE A WATERPROOFING COATING APPLIED TO THE EXTERIOR SURFACE.
- CATCH BASIN FRAMES FOR TYPE A4 CATCH BASIN CURB INLETS SHALL BE ETHERIDGE DR5A OR APPROVED EQUAL.
- CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35.
- EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
- ALL CATCH BASIN OUTLETS SHALL BE INSTALLED WITH A CASCO TRAP. SEE FIGURE II-09.



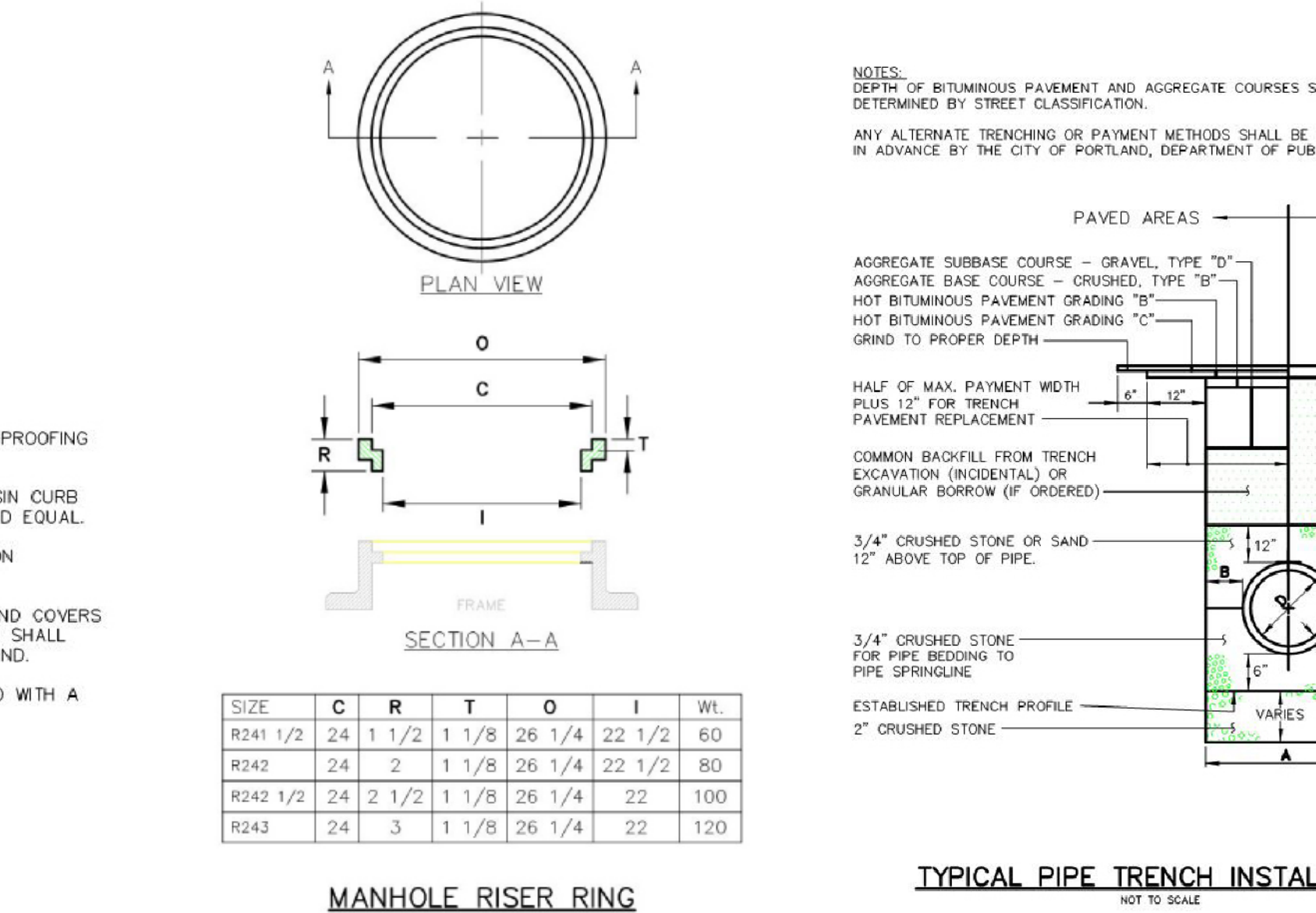
PRECAST CONCRETE CATCH BASIN - TYPE "F"
NOT TO SCALE



PRECAST CONCRETE CATCH BASIN - TYPE "F"
NOT TO SCALE

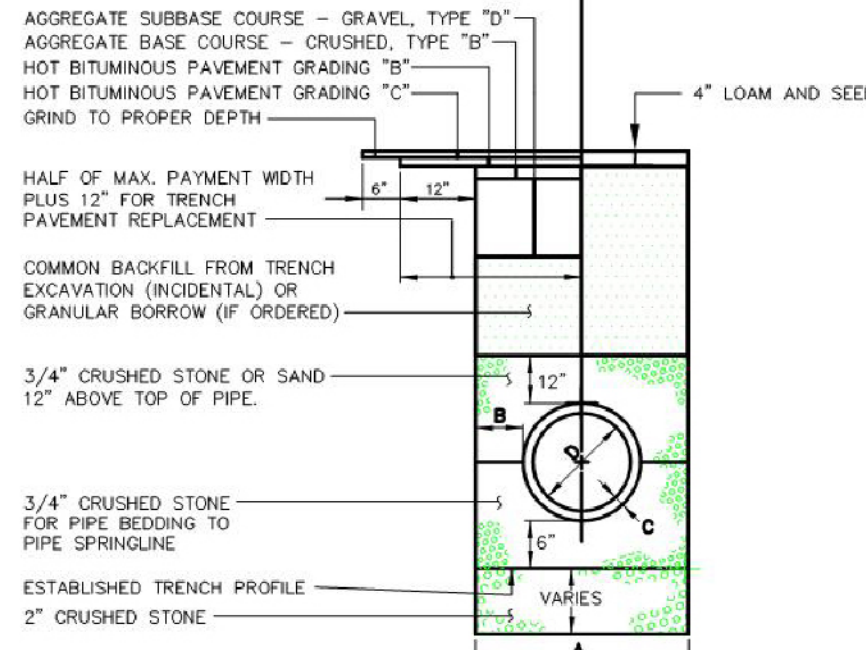


CATCH BASIN FRAME & GRATE



MANHOLE RISER RING
NOT TO SCALE

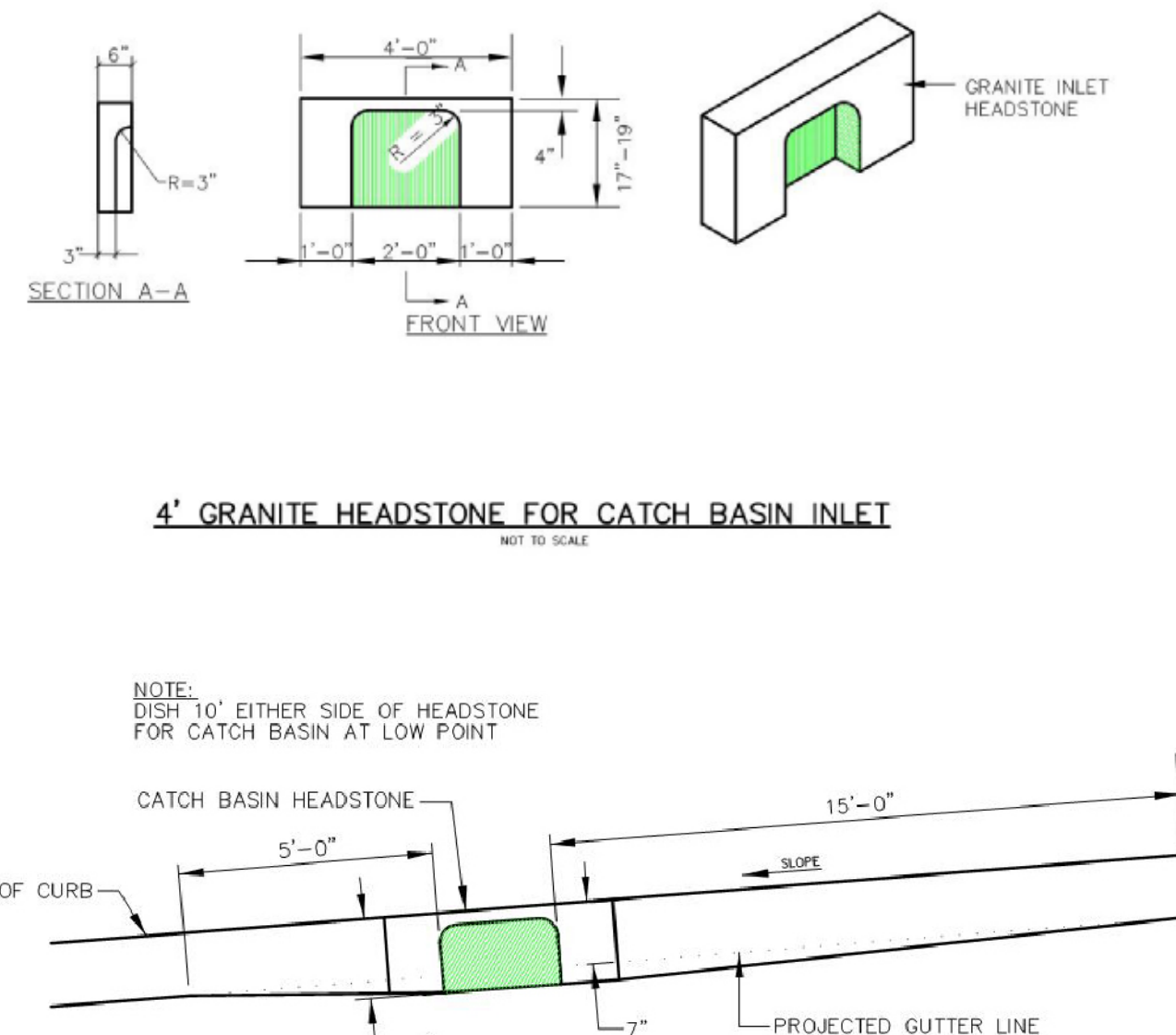
NOTES:
DEPTH OF BITUMINOUS PAVEMENT AND AGGREGATE COURSES SHALL BE DETERMINED BY STREET CLASSIFICATION.
ANY ALTERNATE TRENCHING OR PAVEMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY OF PORTLAND, DEPARTMENT OF PUBLIC SERVICES.



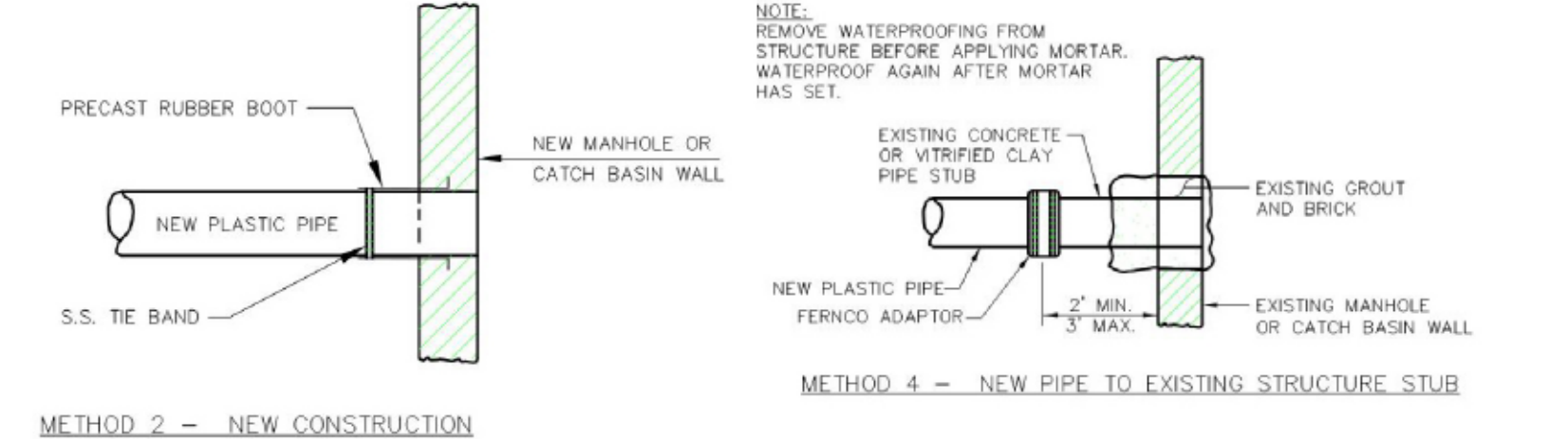
TYPICAL PIPE TRENCH INSTALLATION
NOT TO SCALE

NOTES:
1. ALTERNATIVE CONSTRUCTION METHODS OR PAVEMENT METHODS SHALL BE APPROVED IN ADVANCE BY THE CITY.
2. IN PAVED AREAS, DEPTH OF GRAVEL AND HOT MIX ASPHALT PAVEMENT SHALL MATCH THE GREATER OF EXISTING CONDITIONS OR THE REQUIREMENTS FOR THE CORRESPONDING STREET CLASSIFICATION.
3. DIMENSION B SHALL BE SUFFICIENT TO ALLOW CRUSHED STONE BEDDING TO BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE, BUT IN ALL CASES DIMENSION B SHALL BE AT LEAST 9".
4. DIMENSION A IS THE MAXIMUM WIDTH ALLOWED FOR CALCULATING PAY QUANTITIES UNDER GRANULAR BORROW, CRUSHED STONE, STRUCTURAL EARTH EXCAVATION, AND STRUCTURAL ROCK EXCAVATION. DIMENSION A SHALL BE BASED ON PIPE DIAMETER, D, AS SET FORTH IN THE FOLLOWING TABLE.

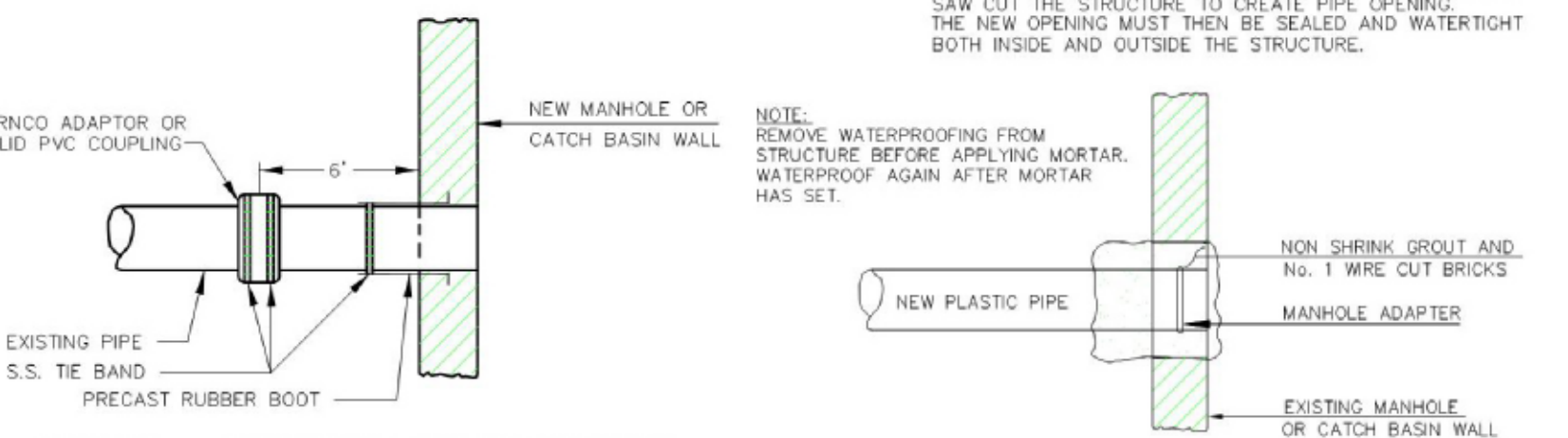
TYPICAL PIPE INSTALLATION - NOTES
NOT TO SCALE



TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET
NOT TO SCALE

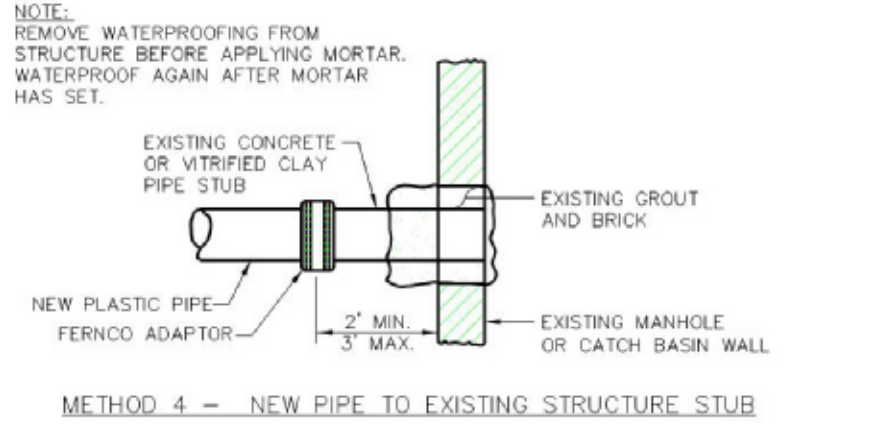


METHOD 2 - NEW CONSTRUCTION



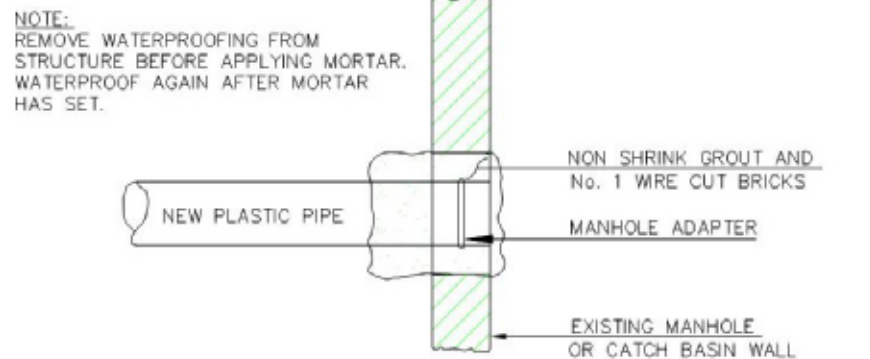
METHOD 1 - EXISTING PIPE INTO NEW STRUCTURE

PLASTIC PIPE CONNECTIONS



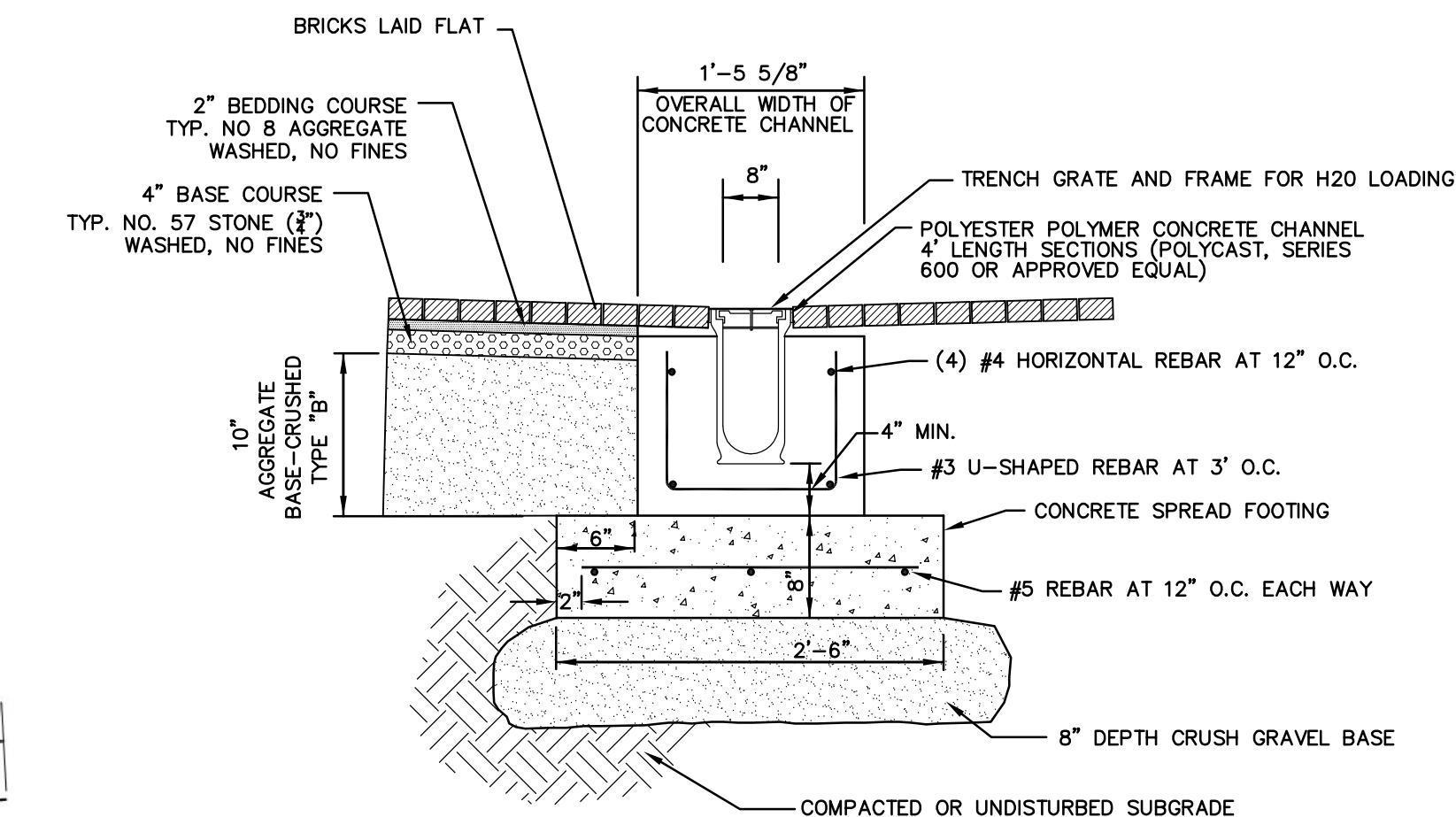
METHOD 4 - NEW PIPE TO EXISTING STRUCTURE STUB

NOTE: EXISTING MANHOLE OR CATCH BASIN SHALL BE CORE DRILLED FOR PIPE INSTALLATION. IF PIPE DIAMETER IS SO LARGE THAT CORE DRILLING IS PROHIBITED, THE CONTRACTOR MAY SAW CUT THE STRUCTURE TO CREATE PIPE OPENING. THE NEW OPENING MUST THEN BE SEALED AND WATER TIGHT BOTH INSIDE AND OUTSIDE THE STRUCTURE.



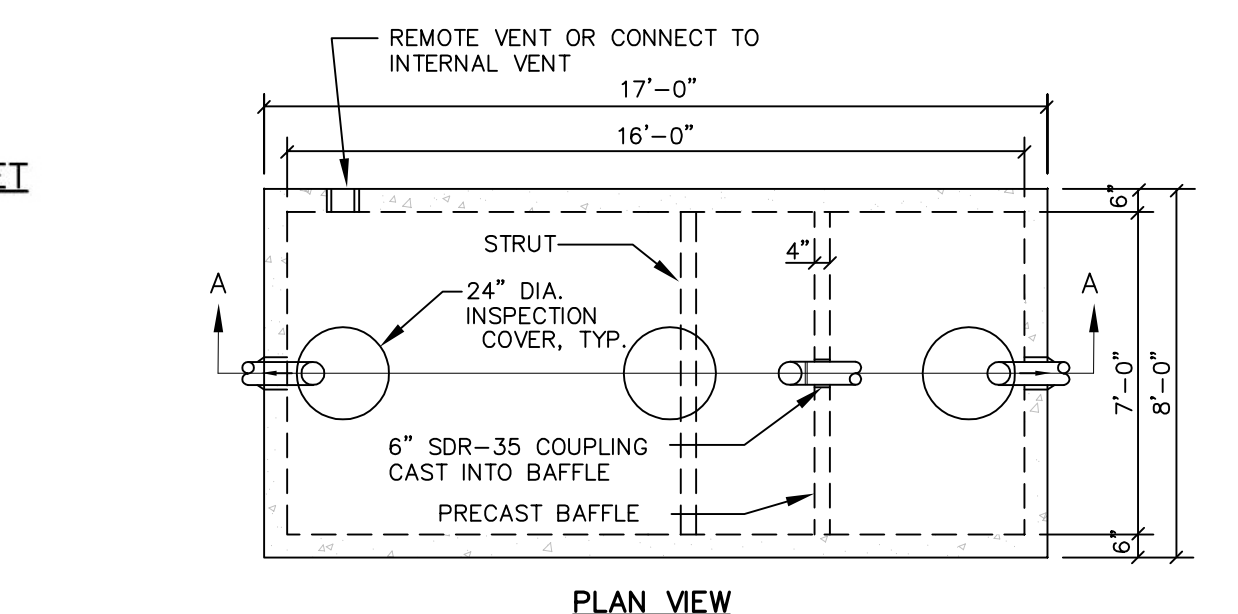
METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE

PLASTIC PIPE CONNECTIONS

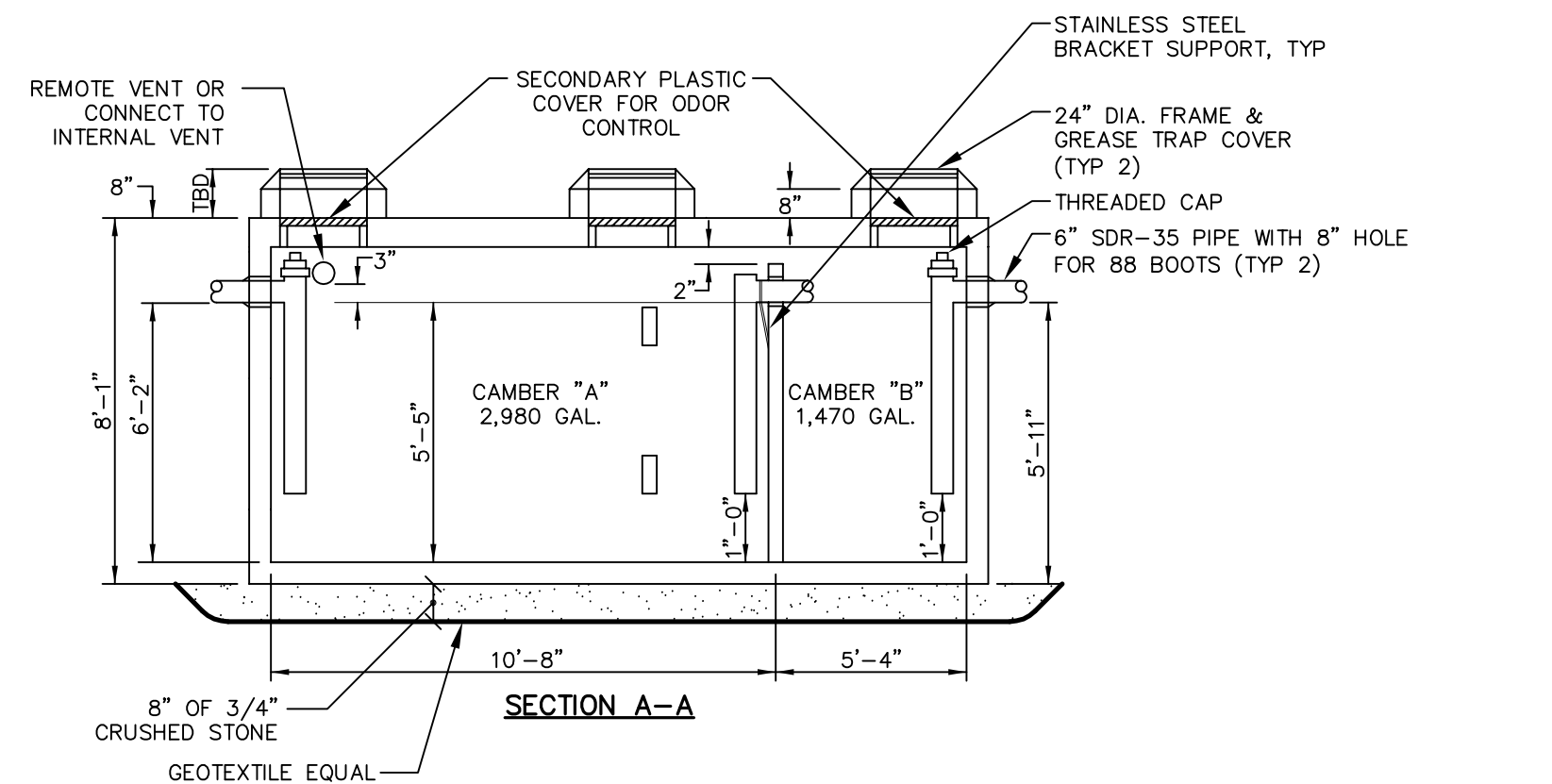


- NOTES:
1. SITE SUBCONTRACTOR SHALL SUBMIT SHOP DRAWINGS.
2. DEPTH OF CONCRETE CHANNEL VARIES TO SLOPE DRAIN

TRENCH DRAIN
Not To Scale



PLAN VIEW



SECTION A-A

- NOTES:
1. 5,000 PSI CONCRETE AT 28 DAYS.
2. H-20 LOADING
3. JOINTS SEALED BUTYL RUBBER JOINT SEALANT (ASSHTO M-19)
4. ALL TEES/Baffles TO BE PROVIDED BY PRECAST.
5. THIS STRUCTURE MUST DISCHARGE TO A CITY OF PORTLAND STANDARD MANHOLE (CONTROL/SAMPLING MH)

GREASE TRAP DETAIL - 4,500 GALLON TANK
NOT TO SCALE

DATE	REVISION DESCRIPTION	BY
01-02-13 <td>REVISED PER CITY COMMENTS <td>BJB</td> </td>	REVISED PER CITY COMMENTS <td>BJB</td>	BJB
01-15-13 <td>REVISED PER CITY COMMENTS <td>BJB</td> </td>	REVISED PER CITY COMMENTS <td>BJB</td>	BJB

COPECHED
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11 CORPORATE DRIVE, BELMONT, NH 03320
PHONE (603) 527-5050 FAX (603) 527-5191

SANITARY SEWER & STORM DRAIN DETAILS

PROJECT: COMMERCIAL & MAPLE STREET MIXED USE DEVELOPMENT
DATE: 10-22-12
SCALE: 1"=20"
DRAWN BY: BJB
C12
SHEET: 11 OF 14

