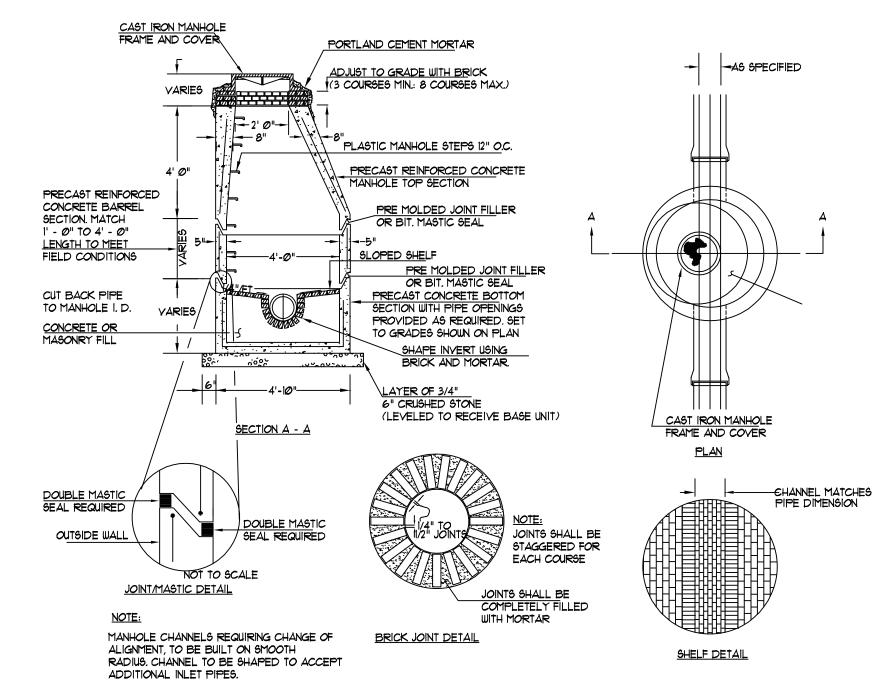
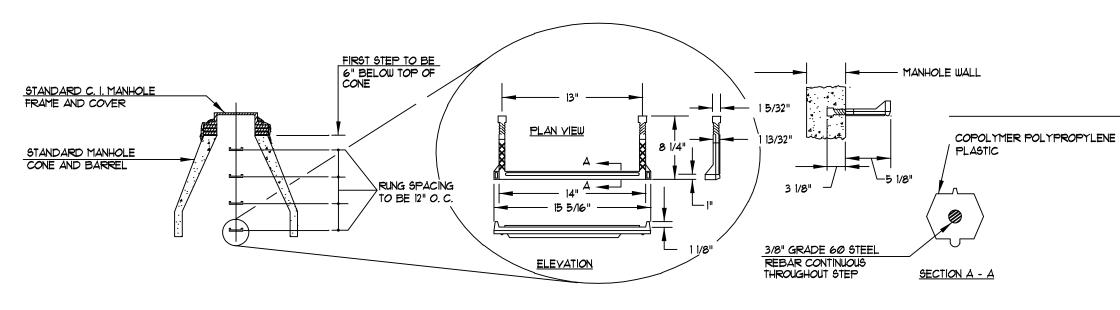


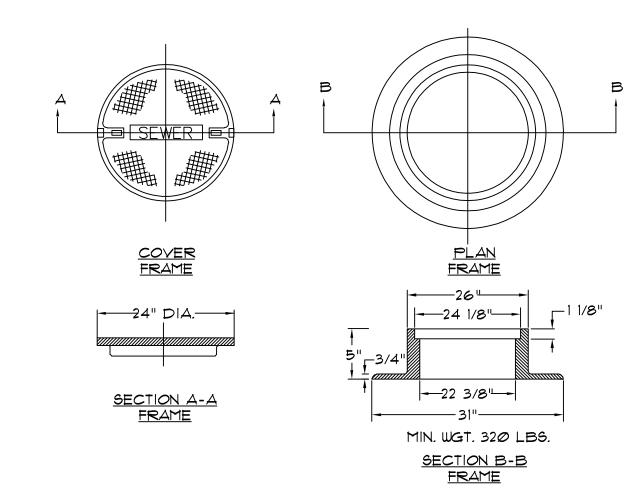
## TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET NOT TO SCALE



PRECAST CONCRETE MANHOLE TYPE "A" NOT TO SCALE



# PLASTIC MANHOLE STEPS



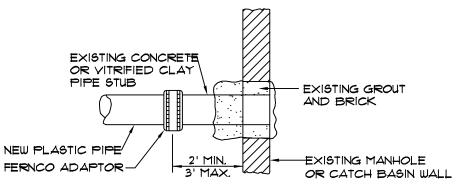
NOTE:

1. ALL SANITARY AND STORMWATER/DRAIN MANHOLE COVERS
SHALL BE 24" x 5". ALL SANITARY MANHOLE COVERS AND SHALL
TO THE COVER ALL STORMWATER/DRAIN HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.

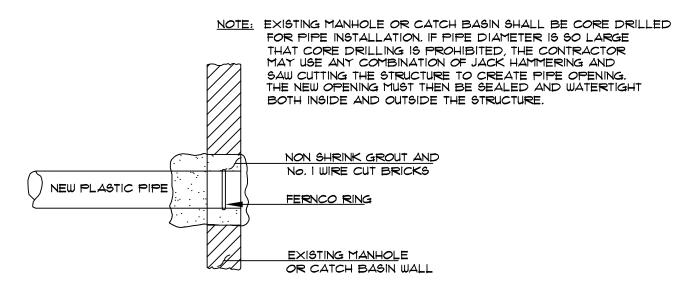
### CAST IRON MANHOLE COVER AND FRAME NOT TO SCALE

## MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000-169. PER SQ. INCH AT THE END OF 28 DAYS,

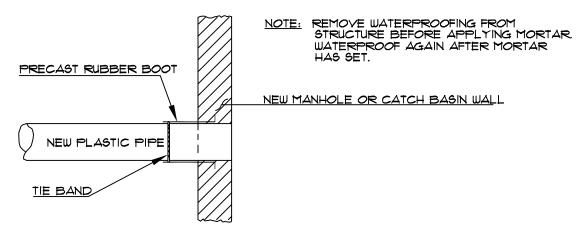
- UNLESS OTHERWISE NOTED. PRECAST REINFORCED CONE BARREL MANUFACTURED
  - PER ASTM SPEC. C-418-61.
- SEWER BRICK SHALL CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
- ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. 9. IF CONSTRUCTED OF BRICK MASONRY, SURFACE SHALL BE PLASTERED WITH A SMOOTH MORTAR FINISH 3/8" THICK. AFTER THE MORTAR HAS SET, THE SURFACE SHALL BE WATERPROOFED AS REQUIRED BY SUPPLEMENTAL SPECIFICATIONS SECTION 604.
- CASTINGS SHALL CONFORM TO ASTM DESIGNATION A48-CLASS 35. ALL PARTS OF CASTINGS, EXCEPT FINISHED SURFACE, SHALL RECEIVE A COAT OF COAL TAR PITCH VARNISH OR ASPHALTUM PAINT WHICH SHALL BE SMOOTH AND TOUGH BUT NOT BRITTLE.
- GENERAL NOTES FOR MANHOLES AND CATCH BASINS 6. MANHOLES MAY BE CONSTRUCTED OF MASONRY, ALL CONCRETE SHALL BE CLASS "A" AND HAVE A PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
  - ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION AND OFFSET, PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
  - EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF
  - ALL WORK WITHIN THE STREET RIGHT-OF-WAY SHALL CONFORM TO THE CITY OF PORTLAND TECHNICAL MANUAL STANDARDS.
  - 10. ALL CATCH BASIN OUTLET PIPES SHALL BE INSTALLED WITH AN OIL AND FLOATABLES SEPARATOR. THE SEPARATOR SHALL BE THE "SNOUT" OR AN APPROVED EQUAL AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - MANHOLE FRAME, GRATE AND COVERS SHALL COMPLY WITH CITY OF PORTLAND TECHNICAL STANDARDS AND REQUIREMENTS.



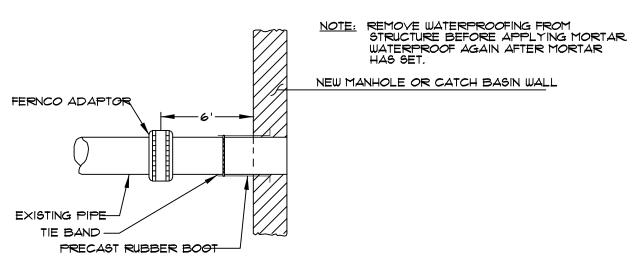
METHOD 4 - NEW PIPE TO EXISTING STRUCTURE STUB



METHOD 3 - NEW PIPE INTO EXISTING STRUCTURE

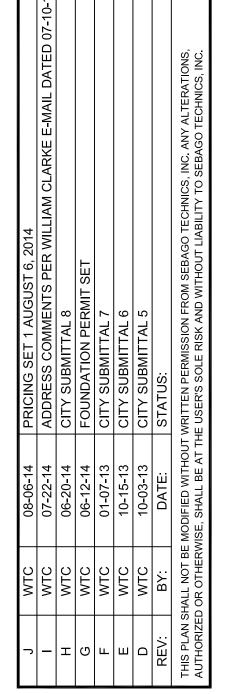


METHOD 2 - NEW CONSTRUCTION



METHOD 1 - EXISTING PIPE INTO NEW STRUCTURE

PLASTIC PIPE CONNECTION DETAIL NOT TO SCALE

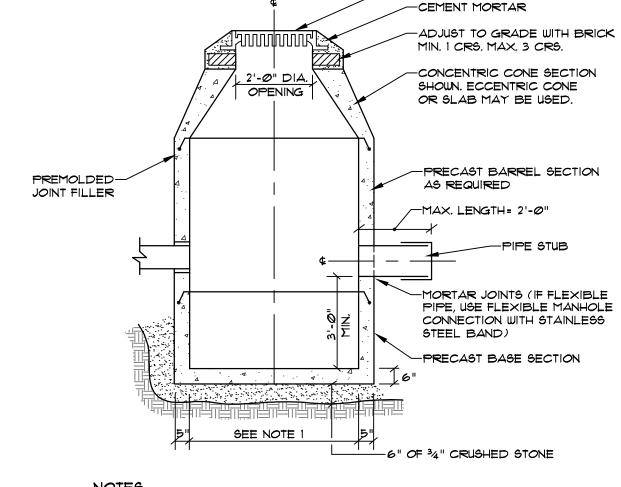


DETAILS
OF:
SEAPORT
NEWBURY / HAN
PORTLAND, MAIR
FOR:
113 NEWI

07-26-13 | AS SHOWN

SCALE

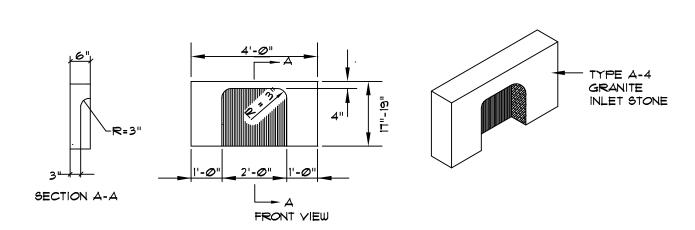
SHEET 10 OF 12



-SEE NOTES FOR CASTINGS

- 1. 4'-0" I.D. TYPICAL. SOME STRUCTURES MAY REQUIRE LARGER I.D.
- PROVIDE SHOP DRAWINGS.
- 2. DRAINAGE STRUCTURES TO BE DESIGNED FOR H-20 LOADING.
- 3. PIPE SIZES AND INVERTS AS NOTED ON PLANS.
- 4. CATCH BASIN FRAME AND GRATE TO BE EAST JORDAN FOUNDRY 5250, OR APPROVED EQUAL.
- 5. DRAINAGE MANHOLE FRAME AND COVER TO BE EAST JORDAN FOUNDRY 1122, TYPE A, OR APPROVED EQUAL. COVER SHALL BE
- 6. ALL DRAIN MANHOLES SHALL HAVE SHELVES AND CHANNELS INSTALLED.

## TYPICAL DRAINAGE MANHOLE/CATCH BASIN NOT TO SCALE



TYPE A-4 GRANITE CATCH BASIN INLET STONE DETAIL (FOR EXISTING BASIN AT HANCOCK STREET) NOT TO SCALE