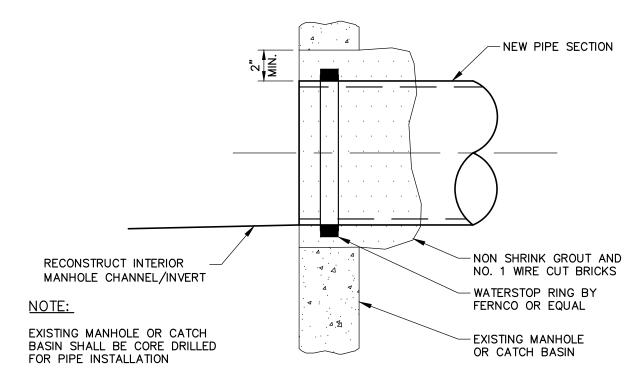
ALL MANHOLE COVERS SHALL BE SOLID AND SHALL HAVE ONE 7/8" DIAMETER DRILLED PICK HOLE, LOCATED 8" FROM THE CENTER OF THE COVER. ALL SANITARY MANHOLE COVERS SHALL HAVE "SEWER" CAST INTO THE COVER. ALL STORMWATER/DRAIN MANHOLE COVERS SHALL HAVE "DRAIN" CAST INTO THE COVER.

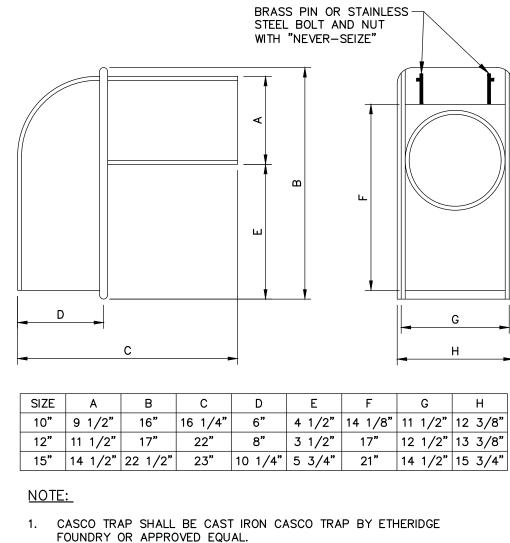
CAST IRON MANHOLE FRAME AND COVER





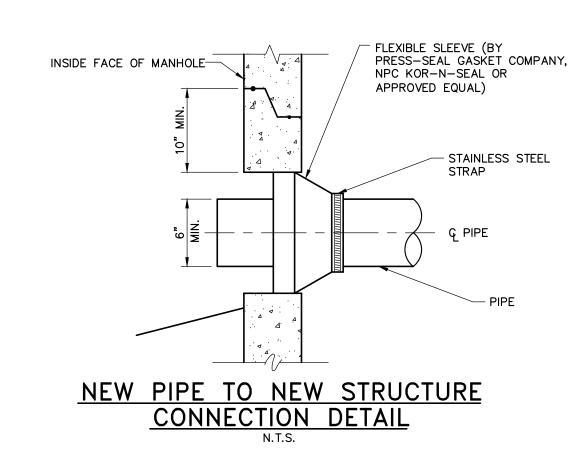
GENERAL NOTES FOR MANHOLES AND CATCH BASINS

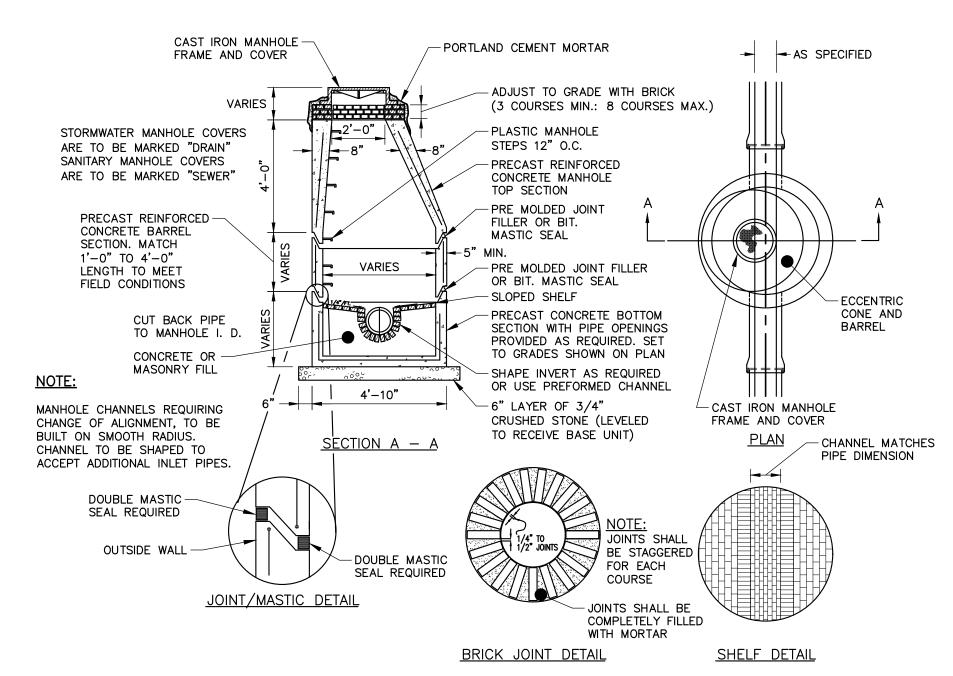
- 1. ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4000 LBS. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
- 2. PRECAST REINFORCED CONE BARREL MANUFACTURED PER ASTM SPEC. C-478.
- 3. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. 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.
- 4. 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.
- 5. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
- 6. CONTRACTOR SHALL SUBMIT ANTIFLOATATION CALCULATIONS FOR ALL MANHOLE AND CATCH BASIN STRUCTURES.
- 7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY <u>STATION</u>, <u>OFFSET</u>, AND <u>STRUCTURE ID</u> PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
- 8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED PICK HOLE.
- 9. EXISTING MANHOLES, CATCH BASINS, FRAMES, AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND SHALL REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
- 10. WHEN THE FLOW CHANGES DIRECTION IN A MANHOLE, THE CHANNEL ALIGNMENT SHALL FOLLOW A SMOOTH RADIUS. CHANNELS SHALL BE FORMED TO ACCEPT ALL INLET PIPES.
- 11. ON STORM AND SEWER MANHOLES, THE SHELF AND CHANNEL SHALL BE FORMED BY BRICK SET IN CEMENT MORTAR OR BY FACTORY PRE-CAST CONCRETE. SUCH PRE-CAST CONCRETE SHALL BE EPOXY COATED AND THE SHELF SHALL HAVE A PERMANENT NON-SKID SURFACE.



- 2. BOLT AND NUT REQUIRED WHERE HOOD WILL NOT OPEN COMPLETELY.
- 3. CASCO TRAP SHALL BE INSTALLED ON ALL CATCH BASIN OUTLET PIPES, INCIDENTAL TO COST OF CATCH BASIN

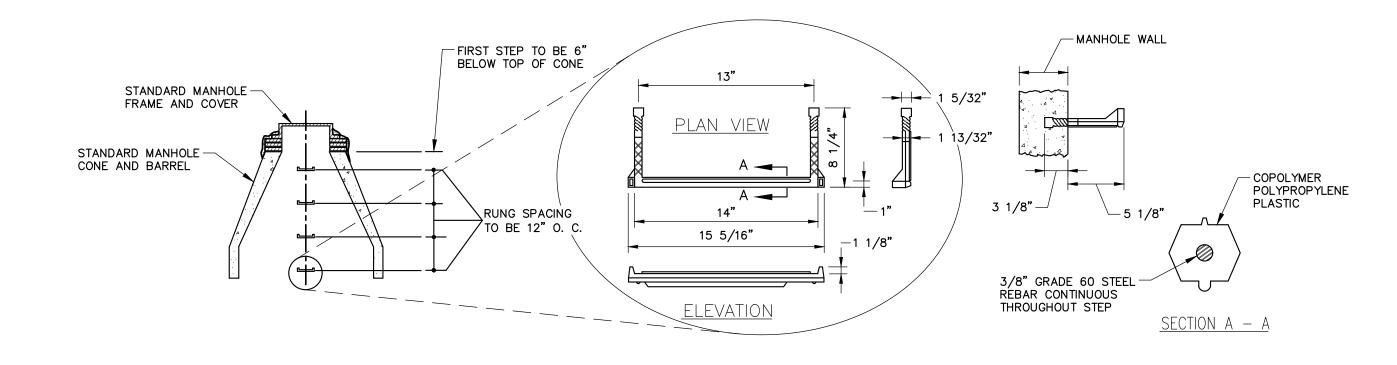
CASCO TRAP DETAIL

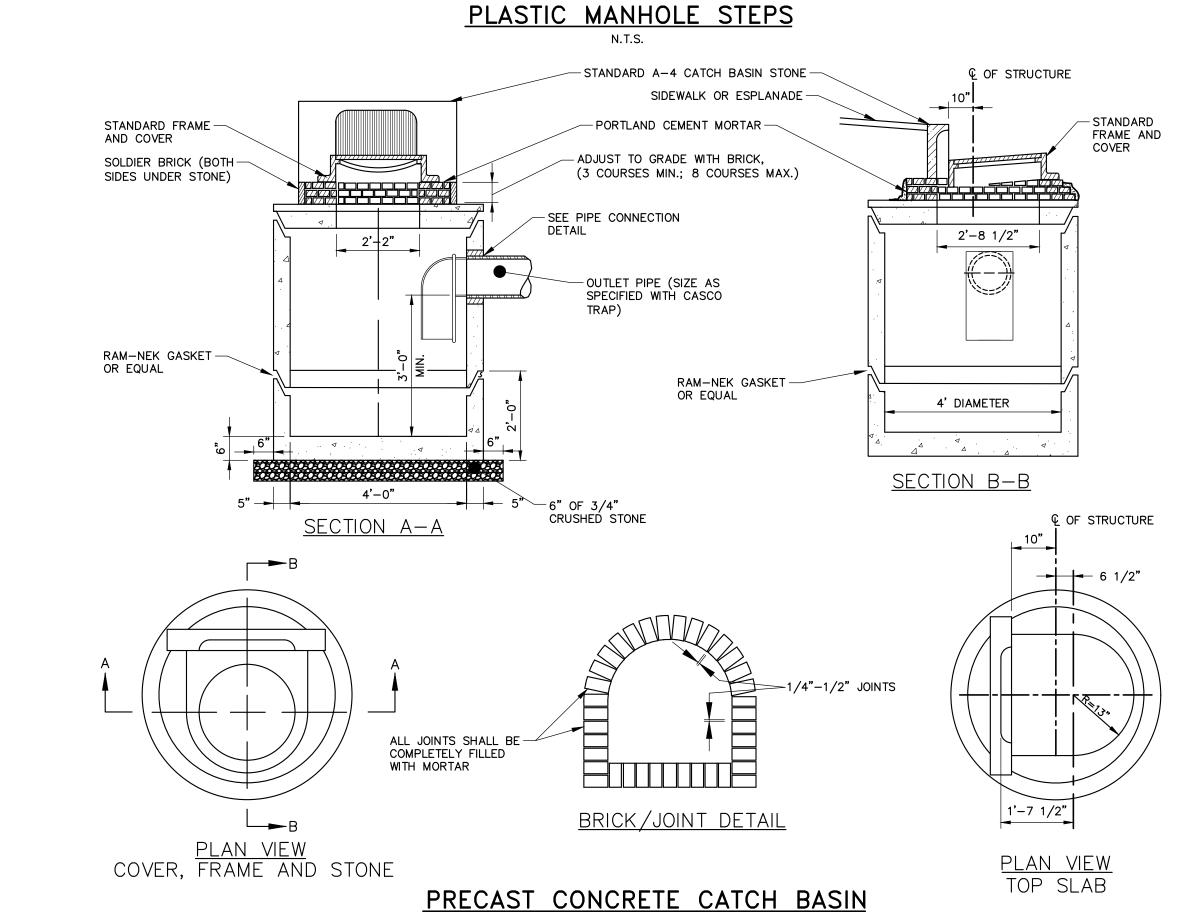


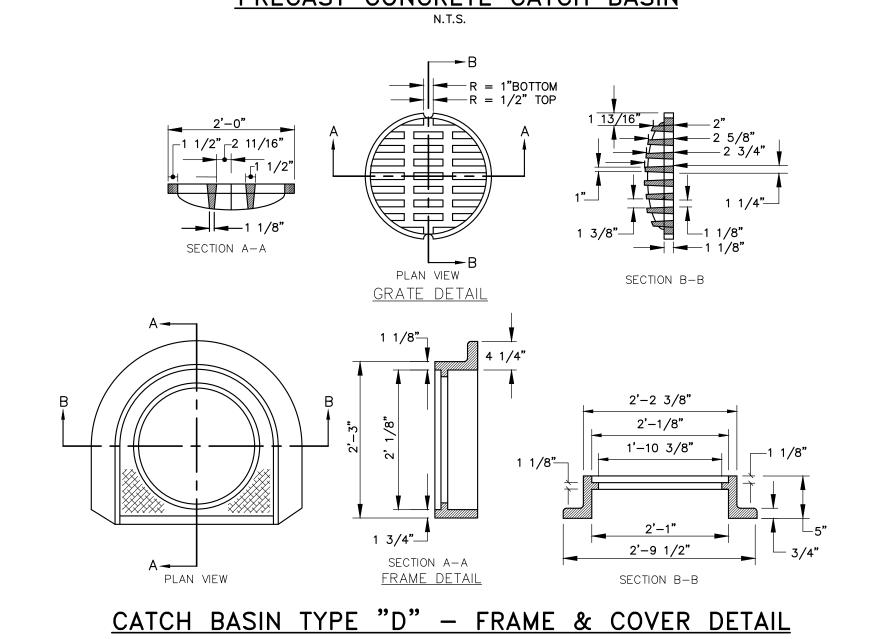


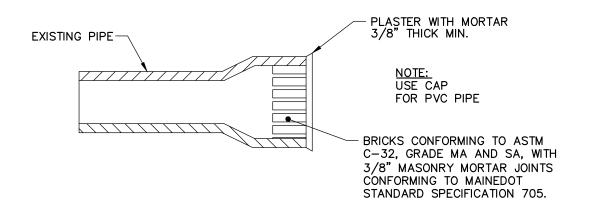
PRECAST CONCRETE MANHOLE

N.T.S.









MASONRY PLUG DETAIL

ARCHITECT 350 N SAINT PAUL ST, SUITE 100 DALLAS, TX 75201- 4240

STRUCTURAL ENGINEER BECKER STRUCTURAL ENGINEERS 75 YORK STREET PORTLAND, MAINE 04101 **OWNER** FATHOM CC, LLC

80 EXCHANGE STREET, SUITE 400 PORTLAND, MAINE 04101 **OWNER'S CONSTRUCTION MANAGER**

WRIGHT-RYAN CONSTRUCTION, INC. 10 DANFORTH STREET PORTLAND, MAINE 04101 **OWNER'S CIVIL ENGINEER WOODWARD & CURRAN** 41 HUTCHINS DRIVE

PORTLAND, MAINE 04102 **OWNER'S INTERIOR ARCHITECT** EALAIN STUDIO. 408 FORE STREET, SUITE 201 PORTLAND, MAINE 04101

OWNER'S LANDSCAPE ARCHITECT CARROLL ASSOCIATES LANDSCAPE ARCHITECT 217 COMMERCIAL STREET, SUITE 200 PORTLAND, MAINE 04101

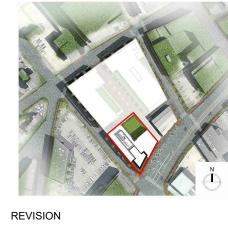
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THESE DOCUMENTS ARE PARTIALLY DEVELOPED FROM ARCHITECTURAL AND STRUCTURAL DRAWINGS PROVIDED BY OTHERS. ALL AS-BUILT CONDITIONS SHOULD BE FIELD VERIFIED.

> INTERIM REVIEW ONLY These documents are incomplete, and are released for interim review only and are not intended for regulatory approval, permit, or construction purposes. Arch. Reg. No.:

DATUM ELEVATION 12'-0" (MSL) = 0.72 NGVD1929 = 0.70 Portland City Datum



NO. DESCRIPTION

HKS PROJECT NUMBER

12/21/2018

CIVIL DETAILS 1