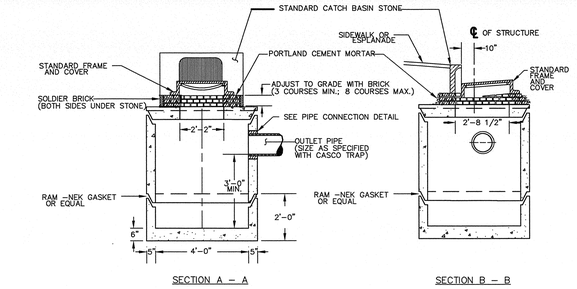
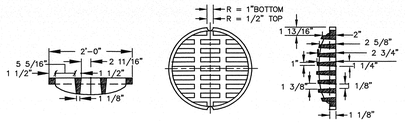
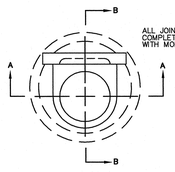


SECTION A – A

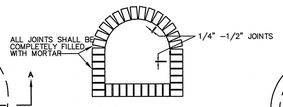
SECTION B – B



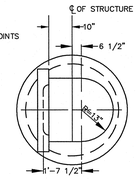
GRATE



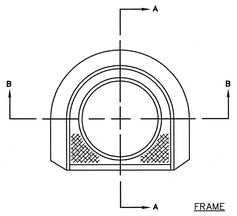
PLAN VIEW
COVER, FRAME AND STONE

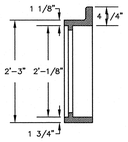


BRICK/JOINT DETAIL

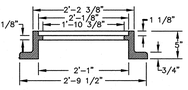


PLAN VIEW
TOP SLAB





SECTION A – A



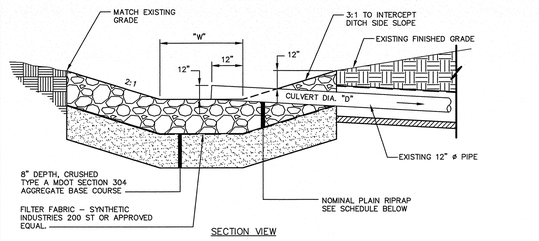
FRAME

GENERAL NOTES

1. ALL CONCRETE SHALL BE A CLASS "A" AND HAVE A MINIMUM ULTIMATE STRENGTH OF 4000 lbs. PER SQ. INCH AT THE END OF 28 DAYS, UNLESS OTHERWISE NOTED.
2. PRECAST REINFORCED CONE BARREL MANUFACTURE PER ASTM SPEC. C-478-67
3. SEWER BRICK TO CONFORM TO ASTM SPEC. DESIGNATE ON C-32-63, GRADE MA AND SA.
4. ALL MANHOLES SHALL HAVE A BITUMINOUS WATERPROOFING APPLIED TO THE EXTERIOR SURFACE. IF CONSTRUCTION OF BRICK MASONRY, THE SMOOTH MORTAR 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.
5. 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.
6. MANHOLES MAY BE CONSTRUCTED OF MASONRY, PRECAST REINFORCED CONCRETE, OR CAST IN PLACE.
7. ALL PRECAST MANHOLES AND CATCH BASINS SHALL BE IDENTIFIED BY STATION AND OFFSET PAINTED ON THE SIDE OF THE STRUCTURE BY THE MANUFACTURER.
8. STORM AND SEWER MANHOLES SHALL HAVE SOLID COVERS WITH ONE DRILLED HOLE.
9. EXISTING MANHOLE AND CATCH BASIN FRAMES AND COVERS SHALL BE SALVAGED BY THE CONTRACTOR, AND REMAIN THE PROPERTY OF THE CITY OF PORTLAND.
10. CASCO TRAPS SHALL BE PROVIDED WITHIN ALL CATCH BASINS WITH 12" OUTLETS.

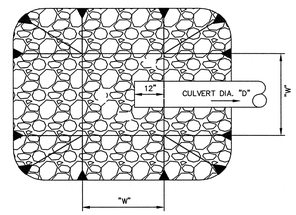
PRECAST CONCRETE CATCH BASIN TYPE "E"

N.T.S.



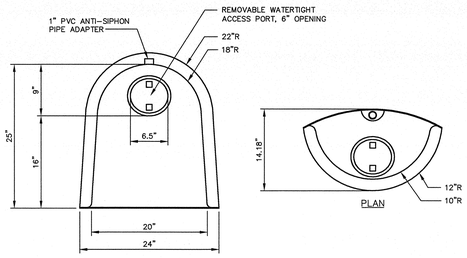
SECTION VIEW

SCHEDULE			
CULVERT DIAMETER (D)	WIDTH (W)	STONE D_{50}	RIPRAP THICKNESS
12"	3'	4"	9"



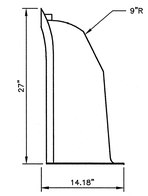
INLET APRON

N.T.S.



FRONT

PLAN

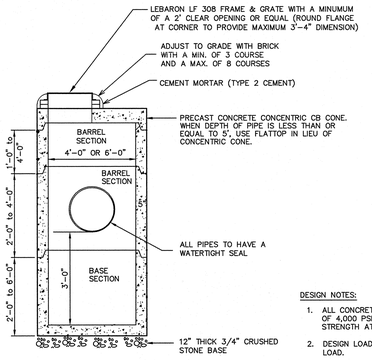


SIDE

NOTES:
1. FOR USE ON CATCH BASIN OUTLET PIPES LESS THAN 18" IN DIAMETER.
2. USE SNOUT MODEL #18r ON 12" & 15" PIPES TO PROVIDE UNRESTRICTED FLOW CAPACITY. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

THE SNOUT

N.T.S.



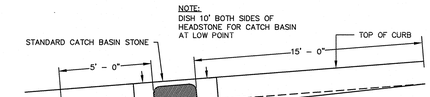
NOTE:
1. INLET HOODS SHALL BE PROVIDED ON CATCH BASIN OUTLET PIPES LESS THAN 18"ø

DESIGN NOTES:

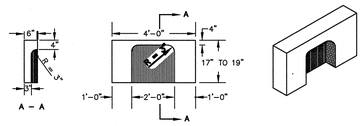
1. ALL CONCRETE TO HAVE A MIN. OF 4,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.
2. DESIGN LOAD FOR H-20 WHEEL LOAD.
3. CATCH BASIN TO CONFORM TO ASTM-C478 SPECIFICATIONS.
4. REINFORCE TO 0.12 IN SQ./LF..

PRECAST CATCH BASIN

N.T.S.

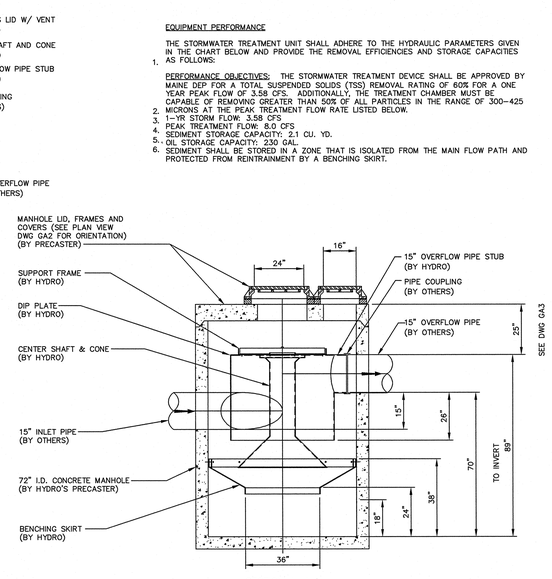


TYPICAL PAVEMENT GRADING ON SLOPES FOR CATCH BASIN AND INLET



CATCH BASIN INLET STONE

N.T.S.



PLAN VIEW

SECTION A–A

EQUIPMENT PERFORMANCE

THE STORMWATER TREATMENT UNIT SHALL ADHERE TO THE HYDRAULIC PARAMETERS GIVEN IN THE CHART BELOW AND PROVIDE THE REMOVAL EFFICIENCIES AND STORAGE CAPACITIES AS FOLLOWS:

PERFORMANCE OBJECTIVES: THE STORMWATER TREATMENT DEVICE SHALL BE APPROVED BY MAINE DEP FOR A TOTAL SUSPENDED SOLIDS (TSS) REMOVAL RATING OF 60% FOR A ONE YEAR PEAK FLOW OF 3.58 CFS. ADDITIONALLY, THE TREATMENT CHAMBER MUST BE CAPABLE OF REMOVING GREATER THAN 50% OF ALL PARTICLES IN THE RANGE OF 300-425 MICRONS AT THE PEAK TREATMENT FLOW RATE LISTED BELOW.

1. 1-YR STORM FLOW: 3.58 CFS
2. PEAK TREATMENT FLOW: 8.0 CFS
3. SEDIMENT STORAGE CAPACITY: 2.1 CU. YD.
4. OIL STORAGE CAPACITY: 230 GAL
5. SEDIMENT SHALL BE STORED IN A ZONE THAT IS ISOLATED FROM THE MAIN FLOW PATH AND PROTECTED FROM REENTRAINMENT BY A BENCHING SKIRT.

HYDRAULIC PARAMETERS

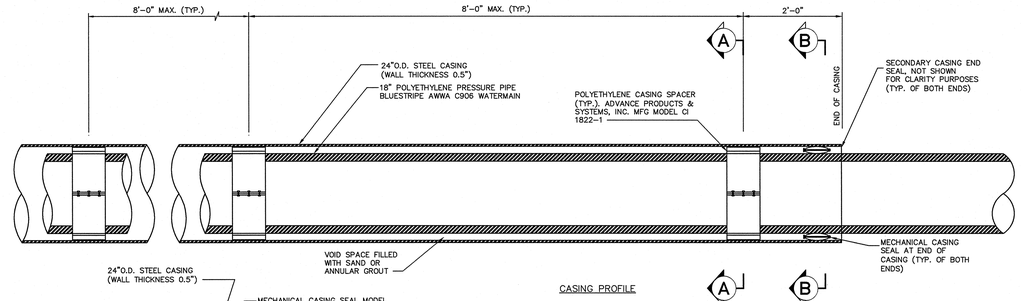
DEPTH OF FLOW IN OVERFLOW PIPE AT 8 cfs	11	INCHES
ESTIMATED HEADLOSS * AT 8 cfs	8	INCHES

*HEADLOSS IS DEFINED AS THE DIFFERENCE BETWEEN STATIC WATER LEVEL AT THE INLET OF THE DOWNSTREAM DEFENDER TO THE FREE WATER SURFACE IN THE OVERFLOW PIPE, ASSUMING FREE DISCHARGE.

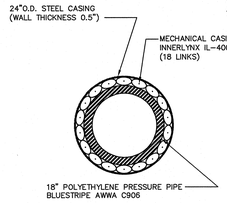
6' DIAMETER DOWNSTREAM DEFENDER OIL/WATER SEPARATOR

N.T.S.

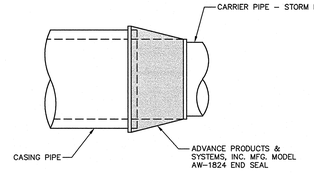
NOTE: CONFIRM ALL DIMENSIONS WITH PRODUCT MANUFACTURER.



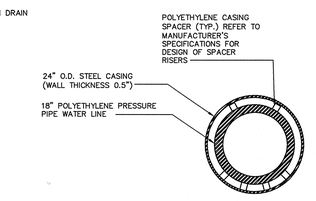
CASING PROFILE



MECHANICAL CASING SECTION B–B



SECONDARY CASING END SEAL DETAIL



SECTION A–A

NOTES:
1. CASING SPACERS SHALL BE MANUFACTURED BY ADVANCE PRODUCTS & SYSTEMS, INC. OR APPROVED EQUAL. CASING SPACER MODEL NUMBERS SHALL COMPLY WITH:

   18" WATER MAIN: CTR CI 1822-1

2. CARRIER PIPE CONNECTIONS SHALL BE FUSION WELDED AND TESTED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS. CASING PIPE CONNECTIONS SHALL BE WELDED.
3. STORM DRAIN CARRIER PIPE SHALL BE POLYETHYLENE PRESSURE PIPE FROM DMH #1 TO DMH #4. THE CASING PIPE SLEEVE SHALL BE STEEL AND EXTEND INTO THE GARAGE AT LEAST TWO FEET FROM THE INTERNAL BUILDING WALL AND CONTINUE FOR A LENGTH OF APPROXIMATELY 45 FEET SO THAT IT TERMINATES BEYOND THE BUILDING STEPS THAT LEAD TO MARGINAL WAY.
4. REFER TO PROJECT SPECIFICATIONS FOR INFORMATION REGARDING THE USE OF ALTERNATIVE MATERIALS.

SLEEVED STORM DRAIN

N.T.S.

SEAL
STATE OF MAINE
WILLIAM C. HASKELL
No. 8518
LICENSED
PROFESSIONAL ENGINEER

pizzagalli construction company

MITCHELL & ASSOCIATES
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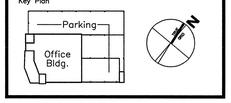
Gorrill-Palmer Consulting Engineers, Inc.
Traffic and Civil Engineering Services
15 Shaker Road 207-657-6910
Gray, ME 04039 FAX: 207-657-6912

Project Title

84 MARGINAL WAY
Portland, Maine

HA Project No. 06196

Key Plan



Mark	Date	Description
–	05.08.07	ISSUED FOR CONSTRUCTION
–	03.26.07	100% DESIGN DEVELOPMENT

Issue Dates

Drawing Status

ISSUED FOR CONSTRUCTION

Drawing Title

UTILITY AND DRAINAGE DETAILS

PA / PE: WCH | Drawn By: BVD

Drawing Number

10

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