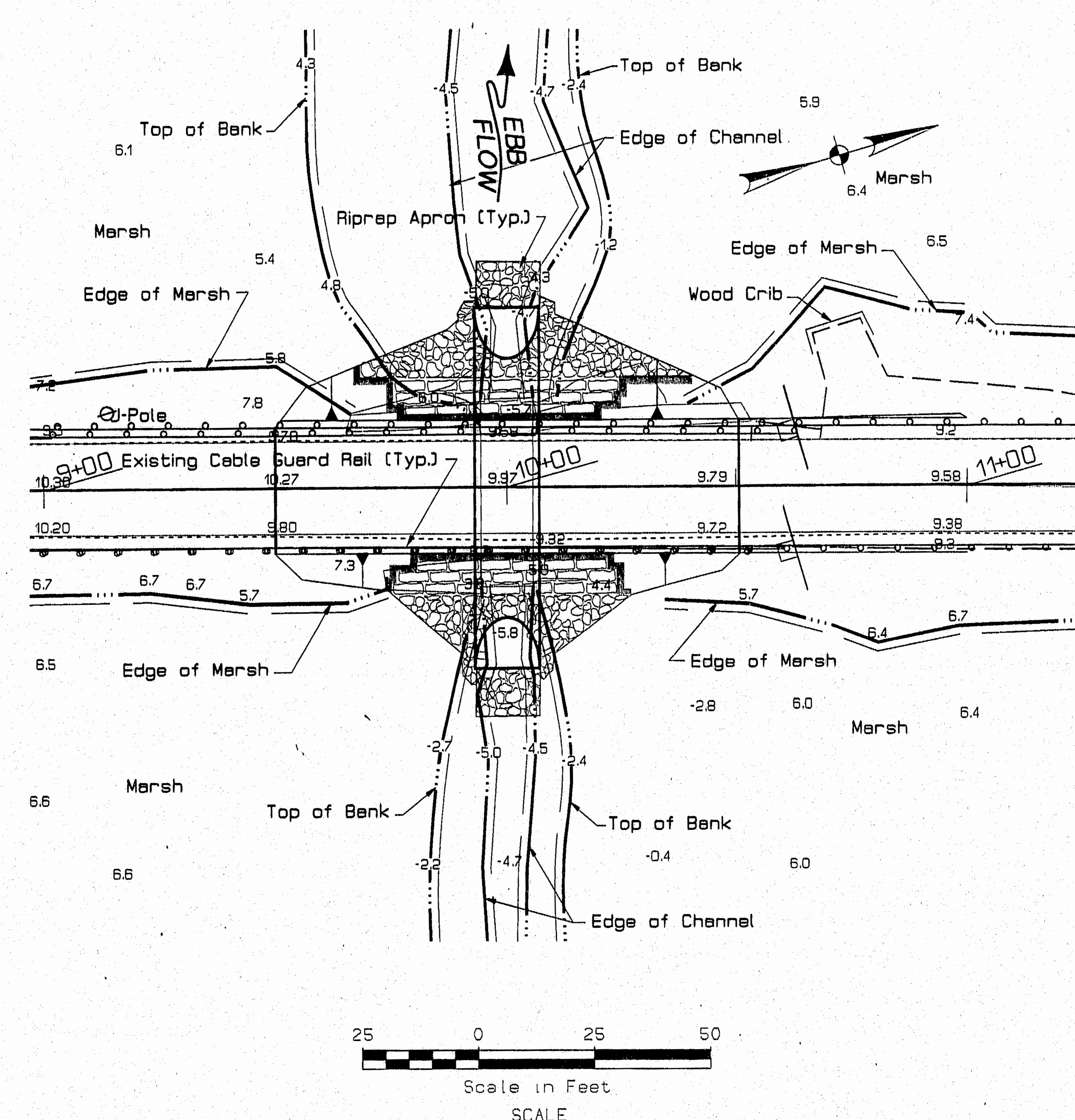
REEL 304

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	5587.00	1	7

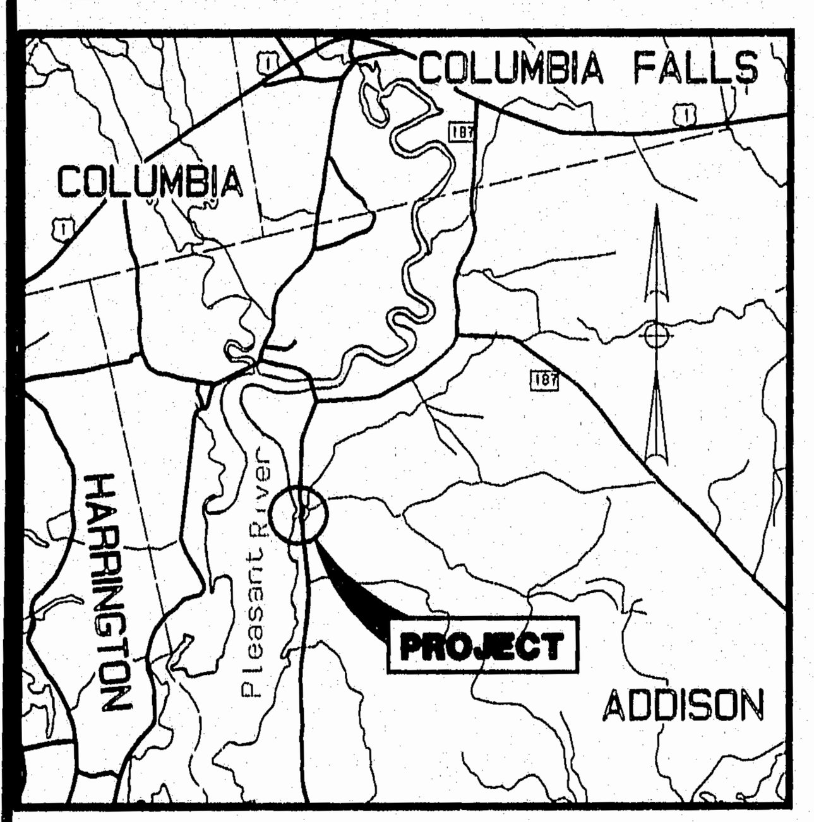
ADDISON

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
203.20	COMMON EXCAVATION	200	CY
203.26	GRAVEL BORROW	250	CY
304.10	AGGREGATE SUBBASE COURSE--GRAVEL	225	CY
460.22	HOT BITUMINOUS PAVEMENT	37	TONS
509.122	STRUCTURAL PLATE PIPE ARCH STATE SUPPLIED:	1	LS
	170 INCH SPAN BY 118 INCH RISE (8,000 LB)		
511.07	COFFERDAM	1	LS
606.17	GUARD RAIL TYPE 3b--SINGLE RAIL	750	LF
606.22	GUARD RAIL TYPE 3b--OVER 15 FOOT RADIUS	50	LF
606.265	TERMINAL END--SINGLE RAIL--GALVANIZED STEEL	4	EACH
606.35	GUARD RAIL DELINEATOR POST	4	EACH
610.08	PLAIN RIPRAP	150	CY
615.07	LOAM	10	CY
616.08	SODDING	27	SY
618.14	SEEDING METHOD NUMBER 2	1	UNIT
618.15	TEMPORARY SEEDING	5	LB
619.12	MULCH	1	UNIT
620.55	STABLIZATION GEOTEXTILE (SEWN SEAMS)	160	SY
637.07	SPRINKLING	1	MG
637.08	CALCIUM CHLORIDE	1	TONS
639.19	FIELD OFFICE TYPE B	1	EACH
652.31	TYPE I BARRICADE	10	EACH
652.312	TYPE III BARRICADE	2	EACH
652.33	DRUM	5	EACH
652.34	CONE	10	EACH
652.35	CONSTRUCTION SIGNS	350	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLAGGER	200	MH
656.50	BALED HAY, IN PLACE	10	EACH
656.51	SANDBAG, IN PLACE	10	EACH
656.632	TEMPORARY SILT FENCE (30 inch)	100	LF
659.10	MOBILIZATION	1	LS



Plan

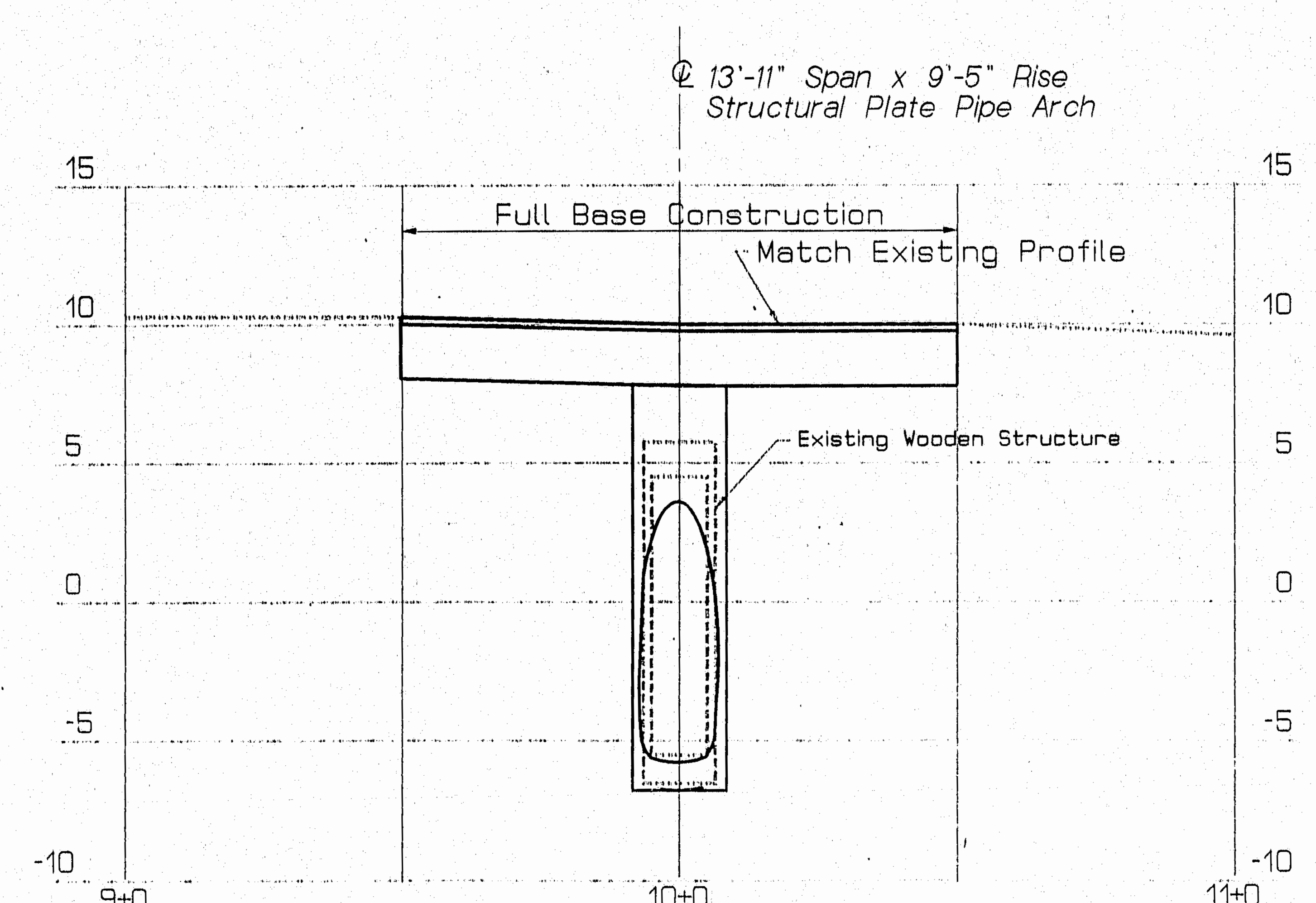


LOCATION MAP

1 0 1 2
Scale in Miles

Utilities

Bangor Hydro Electric(overhead)
New England Telephone Co.(overhead)
Community Cable One Management(overhead)



Profile

INDEX OF SHEETS

HIGHWAY STANDARD DETAILS

HD-6 ___ REV. 10/92 _______ TYPE 3 GUARDRAIL
HD-7 ___ REV. 10/92 _______ EROSION CONTROL
HD-10 ___ REV. 10/92 _______ MAINTENANCE OF TRAFFIC
HD-11 ___ REV. 10/92 _______ MAINTENANCE OF TRAFFIC
HD-12 ___ REV. 10/92 _______ MAINTENANCE OF TRAFFIC

General Construction Notes

1.- All utility facilities shall be adjusted by the respective utilities unless otherwise noted.

2.- During construction the road will be closed to traffic for a period specified in the Special Provisions.

3.- All embankment material, except as otherwise shown, placed below water, shall meet the requirements of Subsection 703.19, Material for Underwater Backfill.

4.- Place loam, 2" deep, on slopes between Station 9+50 and Station 10+50.

5.- Do not excavate for Aggregate Subbase Coarse where existing material is suitable as determined by the Engineer. Payment for shaping and compacting of the existing subbase and layers of new subbase 6" or less thick, in areas where the Engineer directs the Contractor not to excavate to the subgrade line shown on the plans, will be made in accordance with Subsection 104.03, Extra Work.

6.- Payment for removing and resetting existing granite slope protection considered incidental to related contract items.

7.- A cofferdam shall be constructed to install the pipe arch. It shall consist of a downstream barrier to prevent saltwater from flooding the area and a barrier to prevent the streamflow from flooding the area. The streamflow shall be pumped over the road while the area is excavated and backfilled and the pipe arch is installed.

8.- Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking. No separate payment will be made for hand raking and the cost will be considered incidental to Item 304.10.

9.- All borrow shall be Gravel Borrow.

Project Completed: 10-93

As Builts Done:
W. Hinckley 6-6-94

108-240

SPECIFICATIONS

DESIGN: Load Factor Design per AASHTO Standard Specifications for Highway Bridges 1992.

CONTRACT: State of Maine, Department of Tranportation, Standard Specifications, Highways and Bridges, Revision of October 1990.

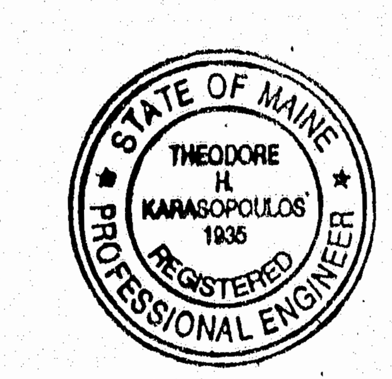
DESIGN LOADING

LIVE LOAD: HS25

Plans of the existing bridge and a hydrologic report of the bridge site are available for the Contractor's reference at the Bridge Design Office in Augusta. The plans are reproductions of original drawings as prepared for the construction of the bridge and it is very unlikely that the plans will show any construction field changes or any alterations which may have been made to the bridge during its life span. The hydrologic report is based on the interpretation by the Department of information obtained for the subject site and no assurance is given that the information or the conclusions of the report will be representative of actual conditions at the time of construction.

NOTE:

All work contemplated under this contract to be governed by and in conformity with the Standard Specifications (Revision of October 1990) and supplementals thereto as modified on the plans and in the Special Provisions.



PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN-DETAILED		6-93
CHECKED		
REVISIONS		
FIELD CHANGES		

24JUN93-010020

APPROVED
State of Maine
Department of Transportation
COMMISSIONER 6-24-93 DATE
CHIEF ENGINEER 6-24-93 DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 177

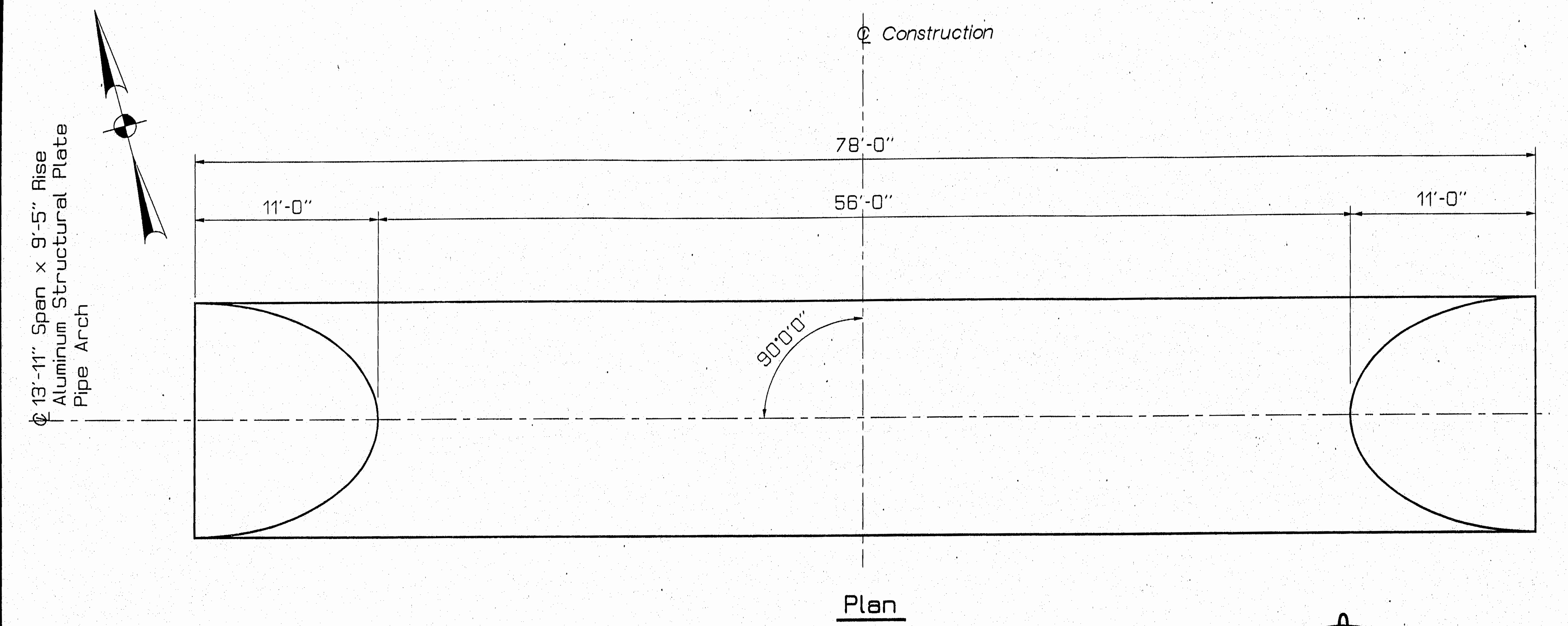
LOT NORTON BRIDGE
OVER
KNOWLES BROOK
IN THE TOWN OF
ADDISON
WASHINGTON COUNTY

TITLE SHEET

SHEET OF AUGUSTA, MAINE May 1993

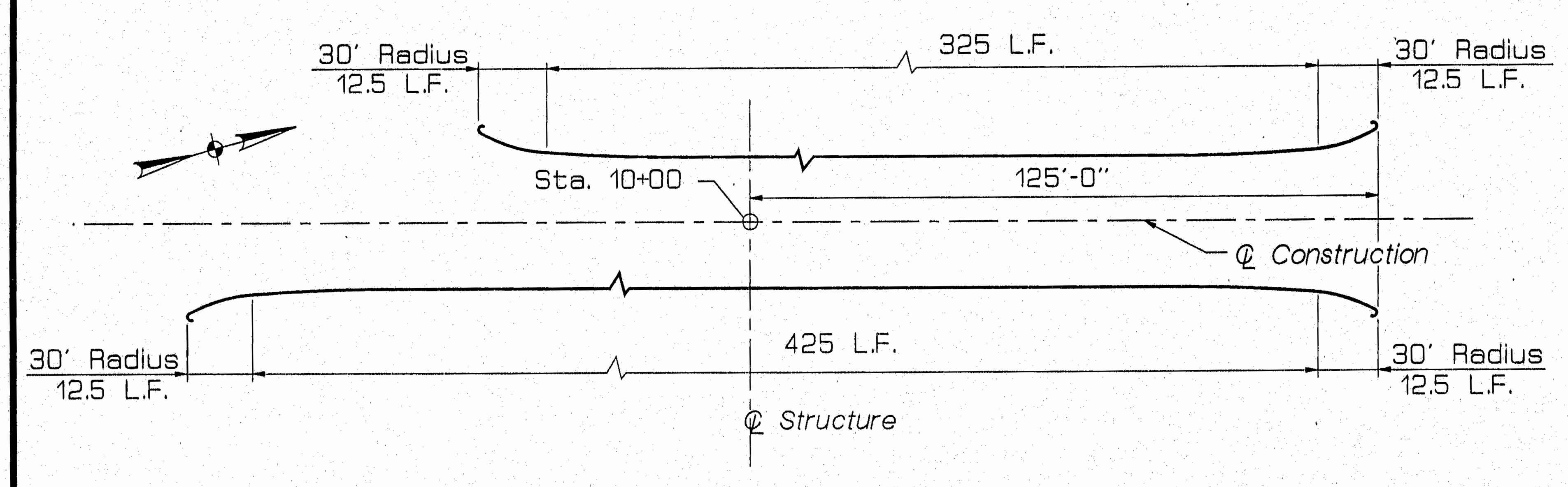
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	5587.00	2	7

ADDISON

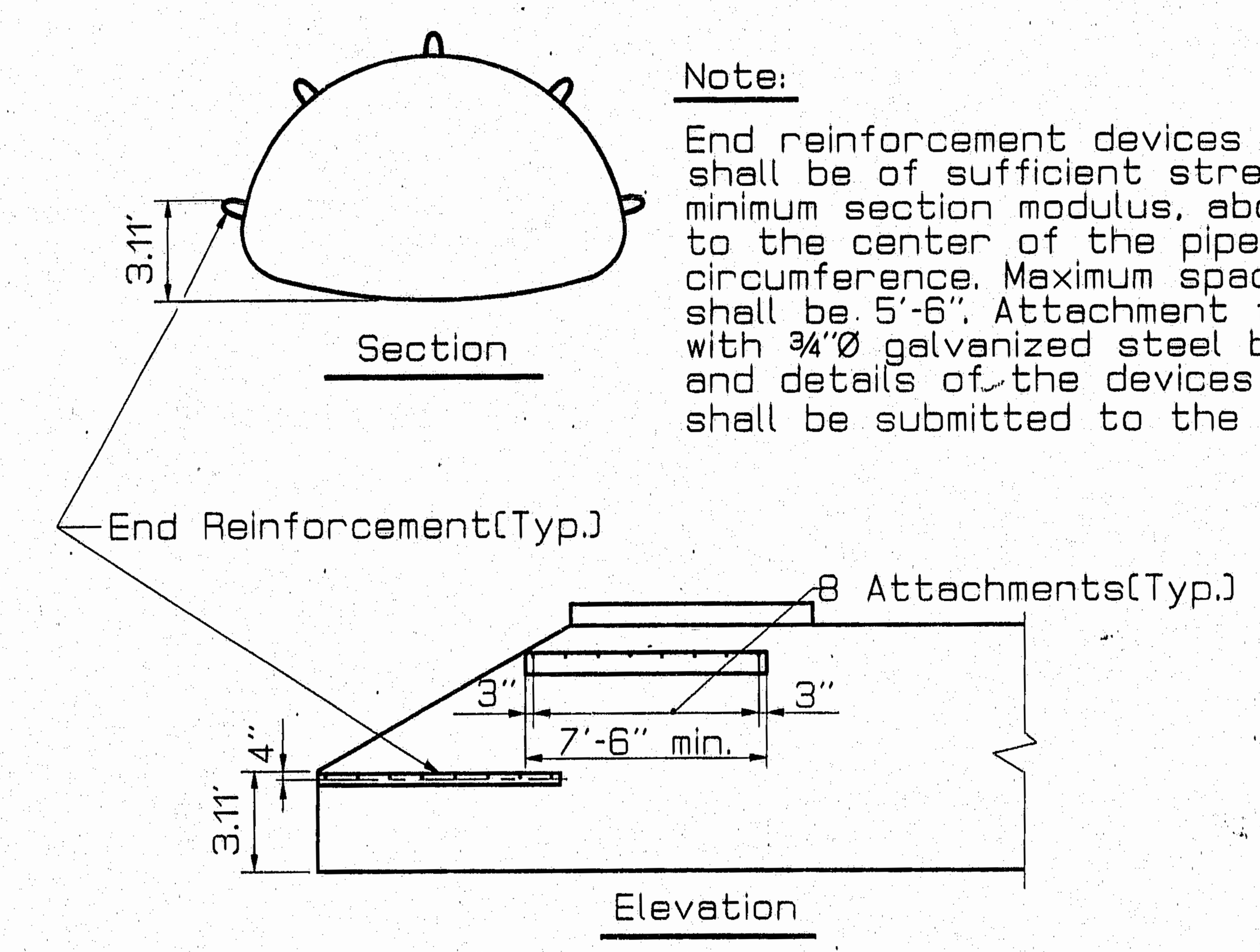


Structural Plate Pipe Notes

1. - One 167 inch span x 113 inch rise Aluminum Alloy Structural Plate Pipe Arch required. All plates shall be 0.15 inch thick.
2. - Plain riprap adjecent to the pipe shall be carefully placed so as not to damage the pipe and so that the finished slope will match the ends of the pipe.
3. - Place a 1.5' wide strip of sod along the top of the plain riprap and granite slope protection.
4. - One guardrail delineator post and one terminal end shall be installed at each guardrail end.

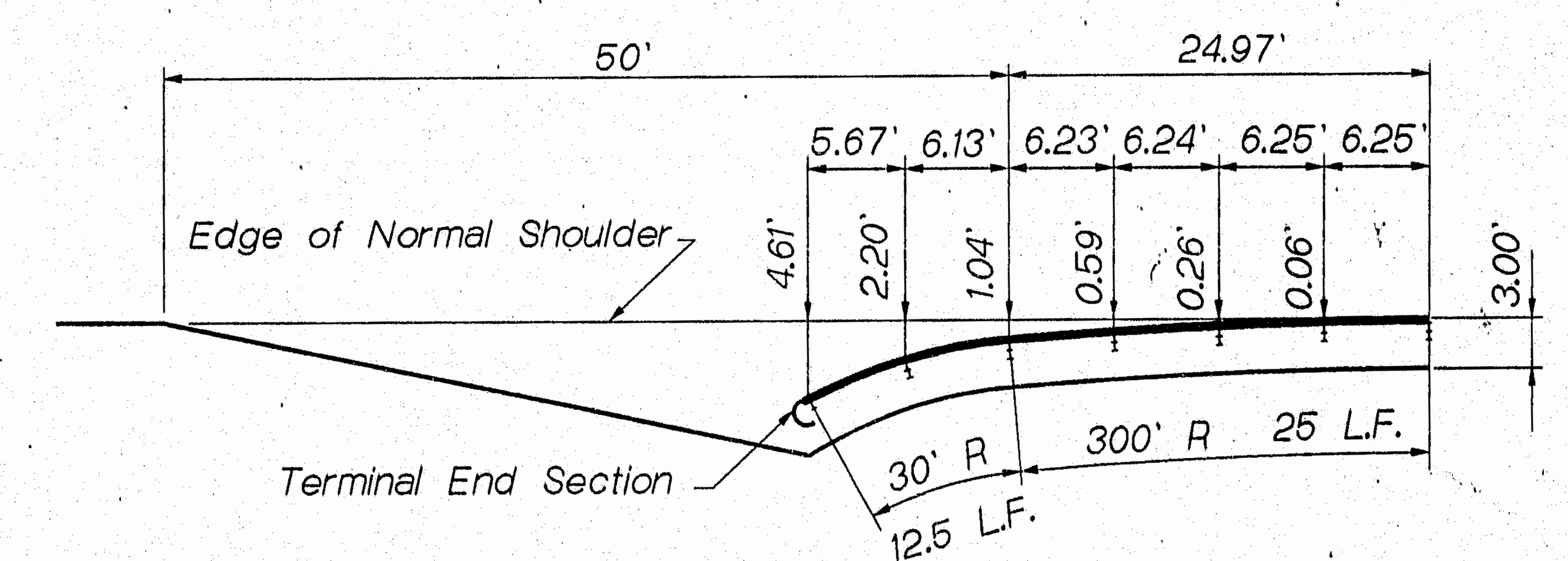


Guard Rail Layout



Note:
End reinforcement devices shall be aluminum and shall be of sufficient strength to provide a minimum section modulus, about an axis perpendicular to the center of the pipe of 1.10 in³/ft. of pipe circumference. Maximum spacing of the devices shall be 5'-6". Attachment to the pipe shall be with ¾"Ø galvanized steel bolts. Section properties and details of the devices and method of attachment shall be submitted to the Engineer for approval.

End Reinforcement of Aluminum Pipe Arch



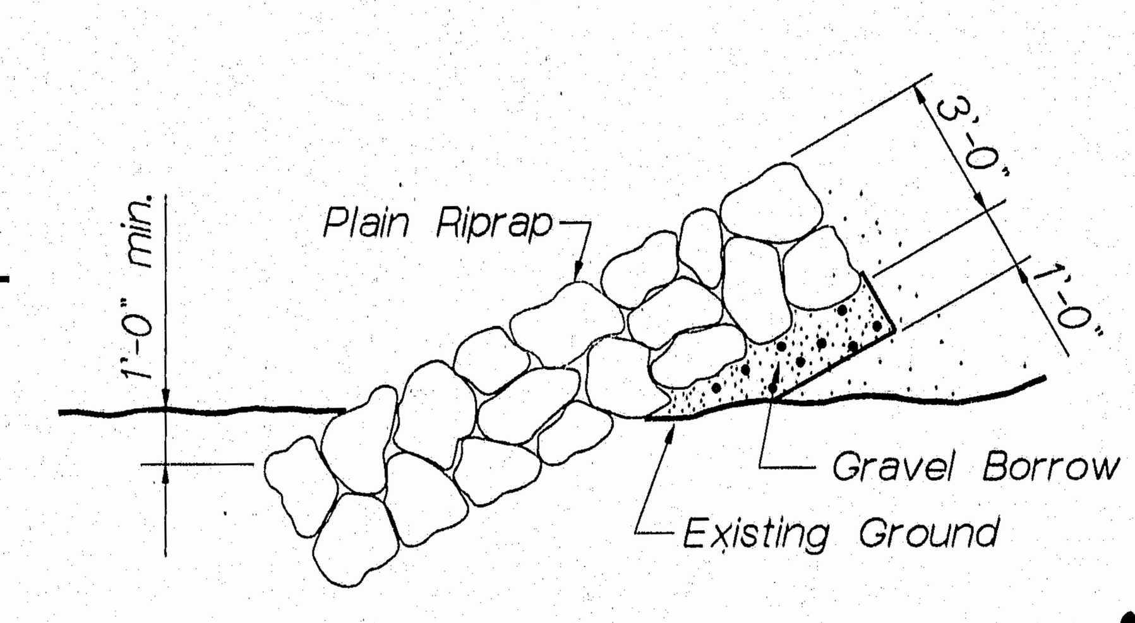
Guard Rail End Transition

NOTE: Offsets are from edge of Normal Shoulder to face of offset guard rail.

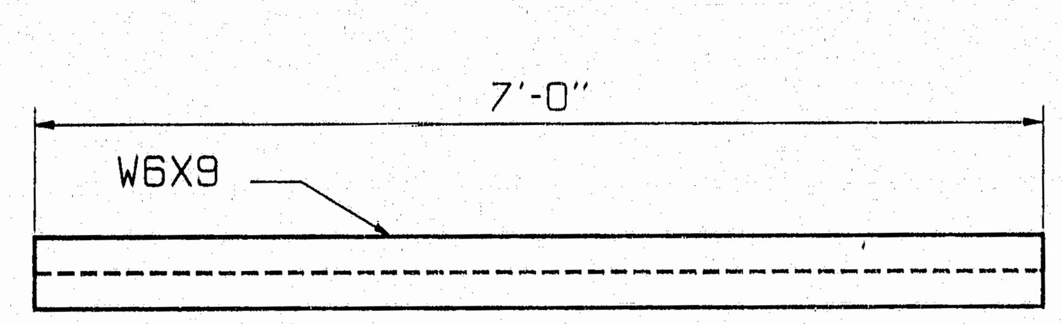
Hydrologic Data

Drainage Area (square miles)	2.51
Design Discharge(Q50)	312 cf
Check Discharge(Q100)	368 cf
Headwater Elevation(Q100)	11.2(LT)*
Headwater Elevation(Q50)	11.7(LT)*
Discharge Velocity(50)	10.0 fps(LT)
Discharge Velocity(100)	10.5 fps(LT)
Design Velocity	6.8 fps(LT)
Mean High Water Elev.	5.9
Mean Tide Level	0.0
Mean Low Water	-5.9
LT=Low Tide	

* Headwater elevation overtop existing road

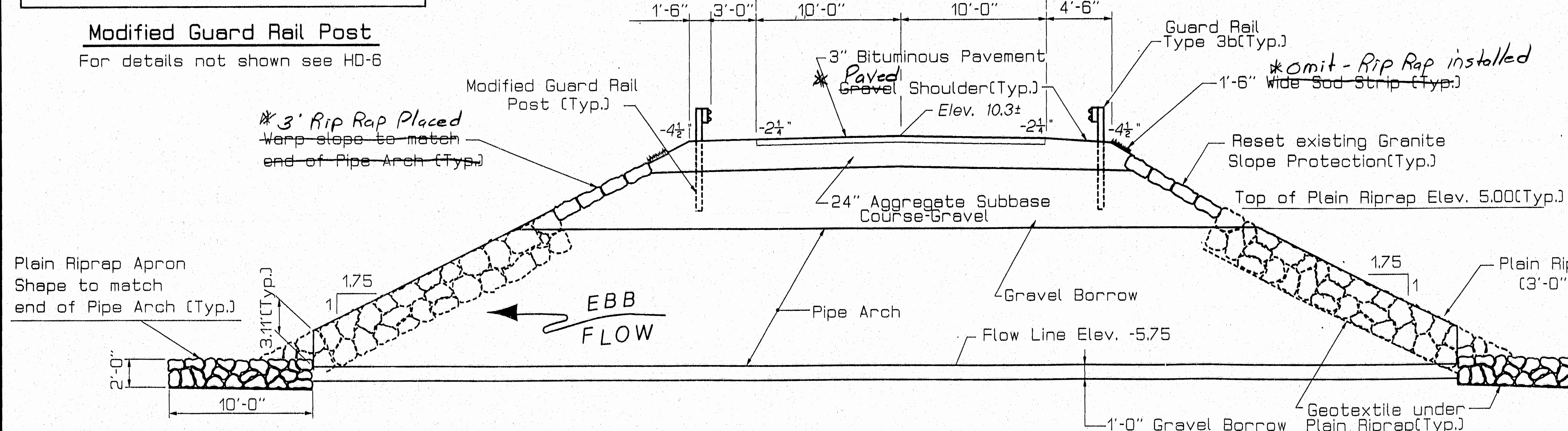


TYPICAL PLAIN RIPRAP SECTION



Modified Guard Rail Post

For details not shown see HD-6

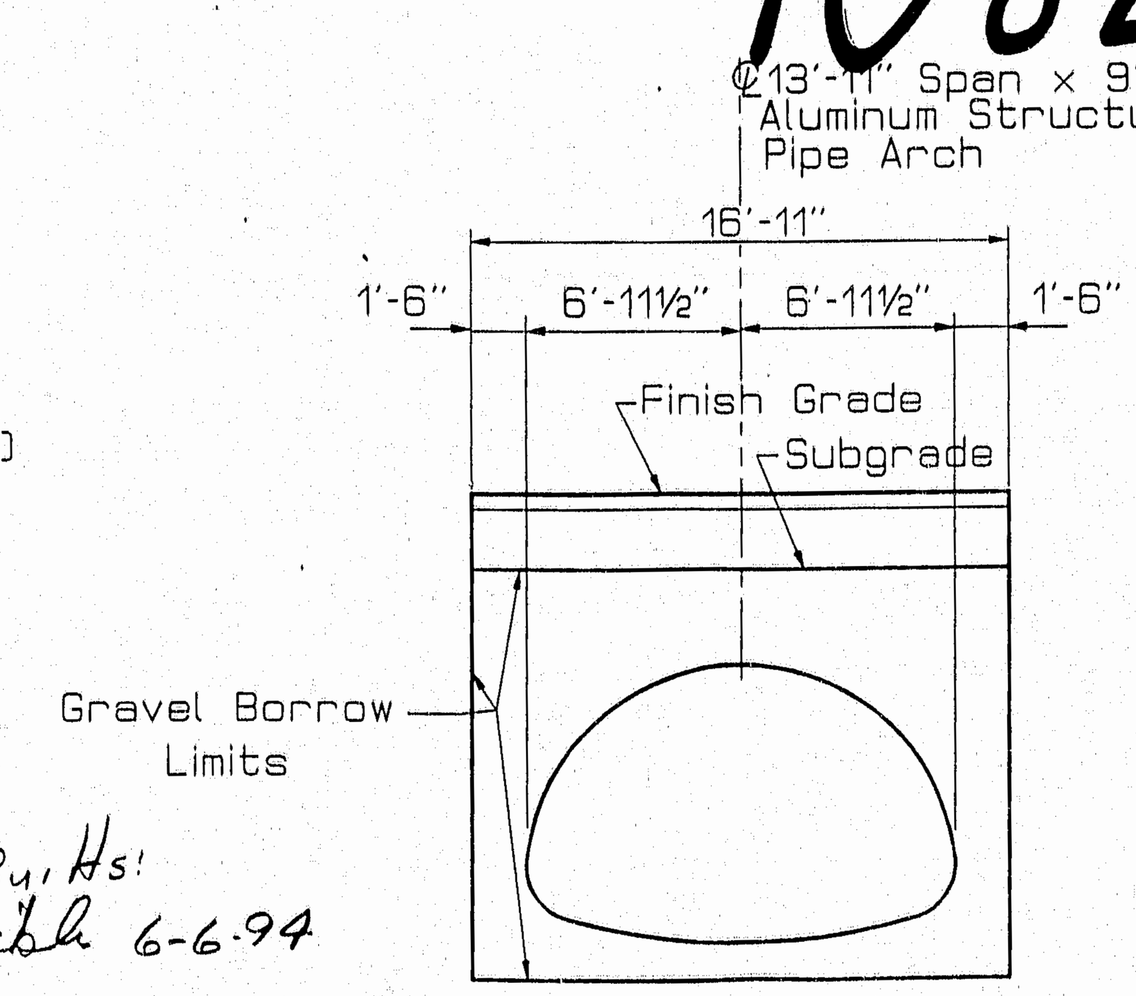


NOTE: Inlet and outlet flow line elevations shown are approximate. The actual inlet and outlet elevations shall be approximately 6" below natural streambed.

Elevation

108-241

As Builts! W Hinckle 6-6-94
* changes



Section

Traffic Data

AADT 1993	720
AADT 2003	1010
DHV	12
Trucks (%)	8
D (%)	60
Velocity	45 mph
18 kip eq P2.0	24
18 kip eq P2.5	27

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

LOT NORTON BRIDGE
OVER
KNOWLES BROOK
IN THE TOWN OF
ADDISON
WASHINGTON COUNTY

ALUMINUM STRUCTURAL PLATE PIPE ARCH

SHEET OF AUGUSTA, MAINE May 1993

	BY	DATE
PROJECT DESIGN ENGINEER		
DESIGN-DETAILED		5-93
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

24JUN93-0100.20