F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	1	27

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAYS

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

STATE ROUTE NO. 174 "As Built" 1979

PROJECT NO. 7421504 C. Thomas A.D.

PROJECT LENGTH 0.189 MILES

CONVENTIONAL SIGNS

COUNTY LINES	TRAVELLED WAY - PROPOSED
TOWN LINES	UNDERGROUND UTILITIES - EXISTING
PROPERTY LINES	UNDERGROUND UTILITIES - PROPOSED
R/W LINES - EXISTING	RAILROAD - SINGLE TRACK
R/W LINES - NEW - ACCESS CONTROL	RAILROAD - DOUBLE TRACK
R/W LINES - NEW - NO ACCESS CONTROL	UTILITY POLE - EXISTING
CULVERT - EXISTING	UTILITY POLE - JOINT OCCUPANCY
CULVERT - PROPOSED	PROPOSED UTILITY POLE - TEMPORARY
CURBING - EXISTING	PROPOSED UTILITY POLE - PERMANENT
CURBING - PROPOSED	TREES (hardwood, softwood)
TRAVELLED WAY - EXISTING	WOODS

SPECIFICATIONS

DESIGN- A.A.S.H.T.O. Standard Specifications for Highway Bridges 1973. With Interim Specifications 1974, 1975, 1976, 1977.

CONTRACT- State of Maine, State Highway Commission Standard Specifications Highways and Bridges, Revisions of June 1968.

DESIGN LOADING

LIVE LOADING ---------- HS20-44

MATERIALS

CONCRETE ---------- Concrete For Pile Fill = Class "Y"
Superstructure Concrete, Curbs and End Posts - Class "AA"
All Other Concrete Shall Be Class "A"

REINFORCING STEEL ---------- A.S.T.M. A615 Grade 60

STRUCTURAL STEEL ---------- W27x146, A.S.T.M. A572 GRADE 50

7/8" DIAMETER HIGH STRENGTH BOLTS ---------- A.S.T.M. 325

PILES ---------- A.S.T.M. A 252

ALL OTHER STRUCTURAL STEEL ---------- A.S.T.M. A36

BASIC ALLOWABLE STRESS

CONCRETE ---------- fc = 1200 psi n=10

REINFORCING STEEL ---------- fs = 24,000 psi

STRUCTURAL STEEL ---------- A.S.T.M. A 325 fv = 13,500 psi
A.S.T.M. A36 fs = 20,000 psi
A.S.T.M. A572, GRADE 50 fs = 27,000 psi

TRAFFIC DATA

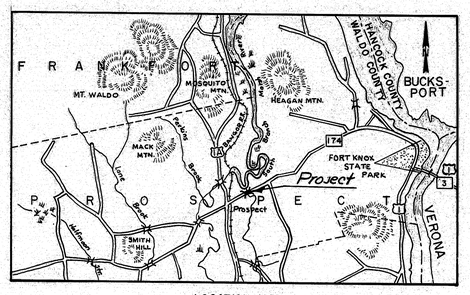
A.D.T. 1978	= 750
A.D.T. 1998	= 1125
D.H.V.	135
T(%) D.H.V.	5
D(%)	60
V	45 m.p.h.
18 kip Equiv. P2.0	19

HYDROLOGY DATA

DRAINAGE AREA = 3.8 Sq. Miles
Q50 = 800 c.f.s. PLUS TIDAL FLOW
MEAN HIGH TIDE = +5.5
MEAN TIDE LEVEL = 0.0
MEAN LOW TIDE = -5.5
EXTREME LOW WATER = -9.0
EXTREME HIGH TIDE = +15.0±

COAST GUARD PERMIT NO. 108-78
(Permit includes Construction of Special Detour)

ALL WORK CONTEMPLATED UNDER THIS CONTRACT SHALL BE GOVERNED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (REVISION OF JUNE 1968) AND SUPPLEMENTS THERTO, EXCEPT AS MODIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.



LOCATION MAP

SCALE IN MILES 0 1 2

INDEX OF SHEETS

BRIDGE STANDARDS

HIGHWAY STANDARDS

STATE OF MAINE RICHARD A. DETTEL SR. 1973

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

Roger L. Wallace — COMMISSIONER — DATE JULY, 16, 1976

Richard A. Dettel — CHIEF ENGINEER AND BUREAU DIRECTOR — DATE JULY, 16, 1976

"As Built" C. Thomas A.D.

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ENGINEER — DATE

JANUARY 1968

2634 2580

HH 25

173-24

B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742 (504)	2	27

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.10	Removal of Existing Superstructure (Property of Contractor)	Neg.	L.S.
203.20	Common Excavation	1550	C.Y.
203.26	Gravel Borrow	8400	C.Y.
206.08	Str. Earth Excav. - Abuts. & Ret. Walls	840	C.Y.
304.10	Aggregate Subbase Course - Gravel	2800	C.Y.
403.07	Hot Bit. Pavement, Grading B	420	Ton
403.08	Hot Bit Pavement, Grading C	190	Ton
410.161	Cover Coat Material Sand (Leveling)	40	C.Y.
501.24	Steel Pipe Piles	1440	L.F.
502.21	Structural Concrete, Abuts. & Retaining Walls	146	C.Y.
502.26	Structural Concrete, Roadway & Sidewalk Slabs on Steel Bridges	NEC	L.S.
502.31	Structural Concrete, Approach Slabs	NEC	L.S.
503.12	Reinforcing Steel, Fab & Delivered	25,500	Lb.
503.13	Reinforcing Steel, Placing	25,500	Lb.
504.70	Structural Steel, Fab & Delivered	NEC	L.S.
507.71	Structural Steel, Erection	NEC	L.S.
505.08	Shear Connectors	NEC	L.S.
506.14	Field Painting, Structural Steel	NEC	L.S.
509.141	Aluminum Bridge Railing, Type "A"	120	L.F.
510.10	Special Detour, 22 Ft. Roadway Width Veh. & Ped. Traffic Not Separated	NEC	L.S.
512.07	French Drains (Stone only)	10	C.Y.
514.06	Curing Box for Concrete Cylinders	1	Each
515.20	Protective Coating for Concrete Surface	330	S.Y.
606.26	Terminal Ends - Single Rail	4	Each
606.35	Guard Rail Delineator Posts	4	Each
606.53	Guard Rail Type 3 - Single Rail	200	L.F.
606.60	Guard Rail Type 3 - Circular, Greater than 15 foot Radius	50	L.F.
610.08	Plain Riprap	250	C.Y.
615.07	Loam	270	C.Y.
616.08	Sodding	480	S.Y.
618.14	Seeding, Method Number 2	43	Unit
618.15	Temporary Seeding	30	Lb.
619.12	Mulch	60	Unit
623.07	Survey Monuments	4	Each
629.05	Labor, Straight Time	220	M.Hr.
	Traffic Officers	40	M.Hr.
631.10	Air Compressor (Inc. operator)	10	Hour
631.11	Air Tool (Inc. op.)	10	Hour
631.12	All Purpose Excavator (Including op.)	10	Hour
631.13	Bulldozer (Inc. op.)	10	Hour
631.14	Grader (Inc. op.)	10	Hour
631.171	Truck - Small (Inc. op.)	20	Hour
631.22	Front End Loader (Inc. op.)	20	Hour
632.08	Warning Lights	6	Grp.
632.09	Portable Barricade	2	Each
631.07	Sprinkling	30	M.G.
637.05	Calcium Chloride	4	Ton
639.09	Field Office Type B	1	Each
656.30	Baled Hay in Place	100	Each
656.31	Sandbags, in place	70	Each
659.201	Seed and Application, Method A	12	Unit
659.10	Mobilization	NEC	L.S.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
	ESTIMATED QUANTITIES FOR LUMP SUM ITEMS.		
502.26	Str. Concrete, Roadway & Sidewalk Slabs on Steel Bridge	81	C.Y.
502.31	Structural Concrete Approach Slab	25	C.Y.
504.70	Structural Steel Fab & Delivered	47900	Lb.
504.71	Structural Steel, Erection	47900	Lb.
505.08	Shear Connectors	830	Lb.
506.14	Field Painting Structural Steel	47900	Lb.

"As Built" [illegible]

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

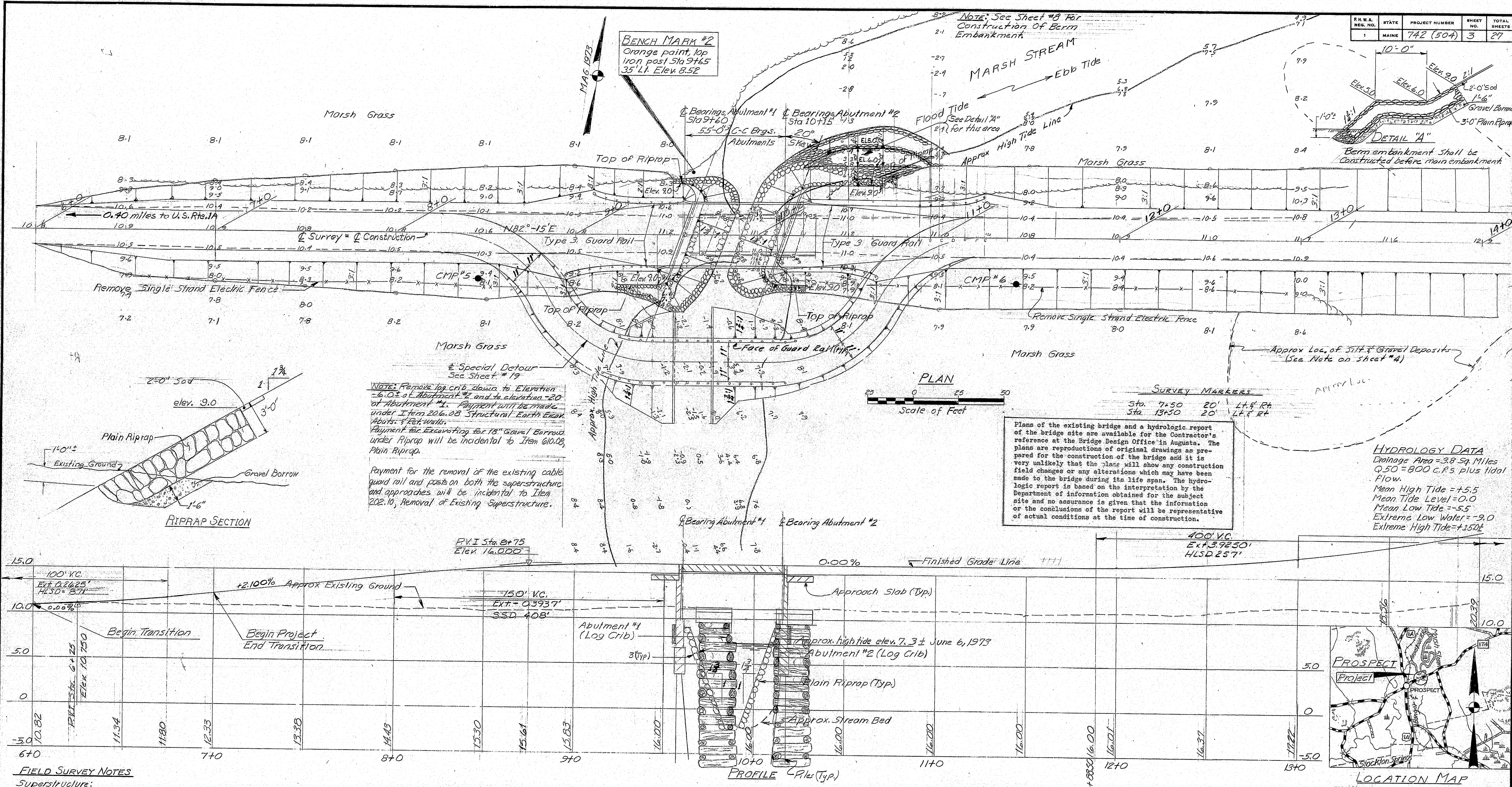
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

ESTIMATED QUANTITIES

SHEET 2 OF 27 AUGUSTA, MAINE Sept. 1978

203-1 2060

173-25


BENCH MARK #2
Orange paint, top iron post Sta 9+65 35' Lt. Elev. 8.52
MAG 1973
NOTE: See Sheet #8 for Construction of Berm Embankment.
MARSH STREAM
Ebb Tide
Flood Tide
See Detail "A" for this area
Approx High Tide Line
Marsh Grass
℄ Bearings Abutment #1 Sta 9+60
℄ Bearings Abutment #2 Sta 10+15
55'-0" C-C Brgs. Abutments
20° Skew
Top of Riprap
0.40 miles to U.S. Rte. 1A
℄ Survey = ℄ Construction
N82°-15'E
Type 3 Guard Rail
CMP #5
CMP #6
Remove Single Strand Electric Fence
Face of Guard Rail
℄ Special Detour See Sheet #19
Approx. High Tide Line
Approx Loc. of Silt & Gravel Deposits (See Note on sheet #4)
PLAN
Scale of Feet
SURVEY MARKERS
Sta. 7+50 20' Lt. & Rt.
Sta. 13+50 20' Lt. & Rt.
DETAIL "A"
10'-0"
Elev. 9.0
Elev. 6.0
Elev. 5.0
2'-0" Sod
1'-6" Gravel Borrow
3'-0" Plain Riprap
Berm embankment Shall be Constructed before main embankment.
RIPRAP SECTION
2'-0" Sod
elev. 9.0
3'-0"
Plain Riprap
Existing Ground
Gravel Borrow
1'-6"
HYDROLOGY DATA
Drainage Area = 3.8 Sq. Miles
Q50 = 800 c.f.s plus tidal flow.
Mean High Tide = +5.5
Mean Tide Level = 0.0
Mean Low Tide = -5.5
Extreme Low Water = -9.0
Extreme High Tide = +15.0±
℄ Bearing Abutment #1
℄ Bearing Abutment #2
P.V.I Sta. 8+75 Elev. 16.000
100' V.C. Ext. 0.2625' HLSD 871'
150' V.C. Ext. = 0.3937' SSD 408'
400' V.C. Ext. 3.9250' HLSD 257'
+2.100% Approx Existing Ground
0.00%
Finished Grade Line
Begin Transition
Begin Project End Transition
Approach Slab (Typ.)
Abutment #1 (Log Crib)
Approx. high tide elev. 7.3± June 6, 1973
Abutment #2 (Log Crib)
Plain Riprap (Typ.)
Approx. Stream Bed
Piles (Typ.)
PROFILE
6+0
7+0
8+0
9+0
10+0
11+0
12+0
13+0
LOCATION MAP
PROSPECT
Project
Scale of Miles

NOTE: Remove log crib down to Elevation -6.0± of Abutment #2 and to elevation -2.0 at Abutment #1. Payment will be made under Item 206.08 Structural Earth Excav. Abuts. & Ret. Walls.
Payment for Excavating for 18" Gravel Borrow under Riprap will be incidental to Item 610.08, Plain Riprap.

Payment for the removal of the existing cable guard rail and posts on both the superstructure and approaches will be incidental to Item 202.10, Removal of Existing Superstructure.

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.

FIELD SURVEY NOTES

Superstructure:
Wood plank deck with tar surface. Guard rail is wire cable with wood post supports. Bridge curb is wooden plank. Deck is in poor condition. Deck is supported by five steel I beams. I-Beams appear to be in satisfactory condition.
Substructure:
Two log crib abutments in poor condition. Crib work rests on stream bottom.
Utilities:
Central Maine Power Company
Continental Telephone Company of Maine
Foundation:
Soft mud 2'-3' Deep.
Approaches:
Tar

Notes:
1. Any necessary unwatering shall be incidental to contract items.
2. All utility facilities shall be adjusted by the respective utilities unless noted.
3. For easements, construction limits and right of way lines refer to Right of Way Map.

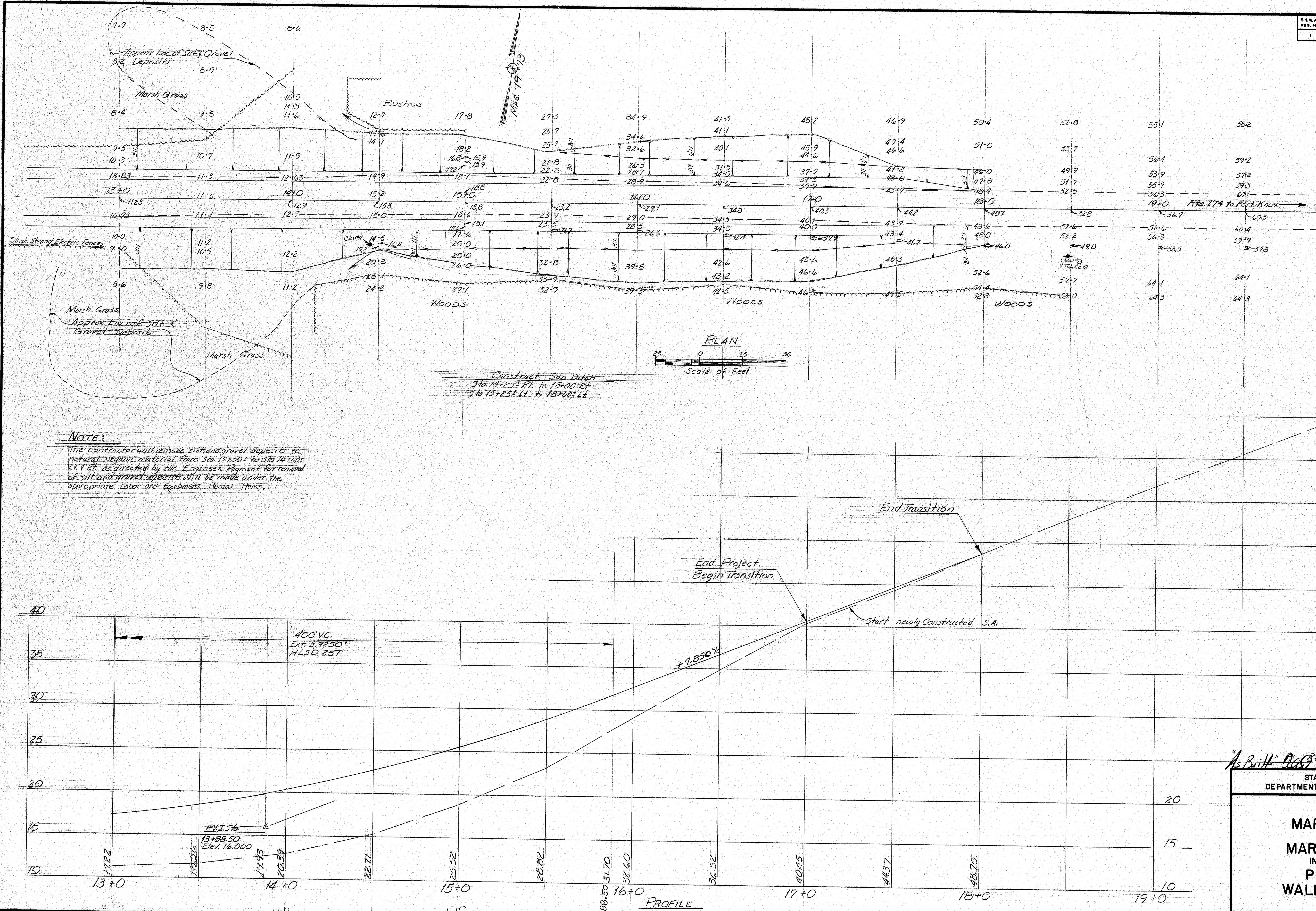
PLANS		BY	
	DESIGN-DETAILED	W. Lord	3-25-74
	CHECKED	G.W.M.	3-74
	REVISIONS		
	FIELD CHANGES		

Survey Checked GRW 8-8-73
Survey Plotted JTF 8-3-73

REFERENCE
Bridge Survey Notebook #7754

BRIDGE NO. 2510 "As Built" G.S.O.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY
SURVEY
SHEET 3 OF 27 AUGUSTA, MAINE June, 1973



NOTE:
The contractor will remove silt and gravel deposits to natural organic material from Sta. 12+50± to Sta. 14+00± Lt. & Rt. as directed by the Engineer. Payment for removal of silt and gravel deposits will be made under the appropriate Labor and Equipment Rental Items.

PLANS	BY	DATE
PROJECT DESIGN ENGINEER		
DESIGN - DETAILED	W. Lyons	3-25-76
CHECKED		3-76
REVISIONS		
FIELD CHANGES		

Plotted by [illegible] 3-5-76

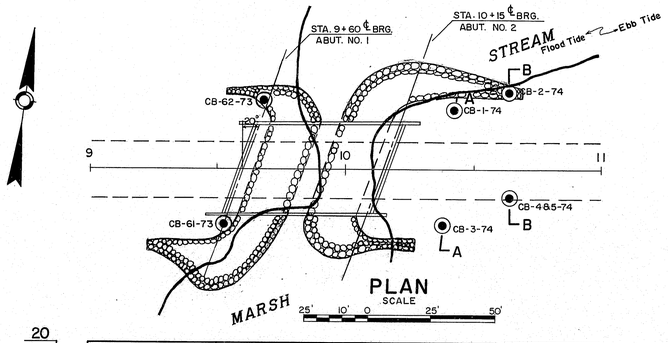
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

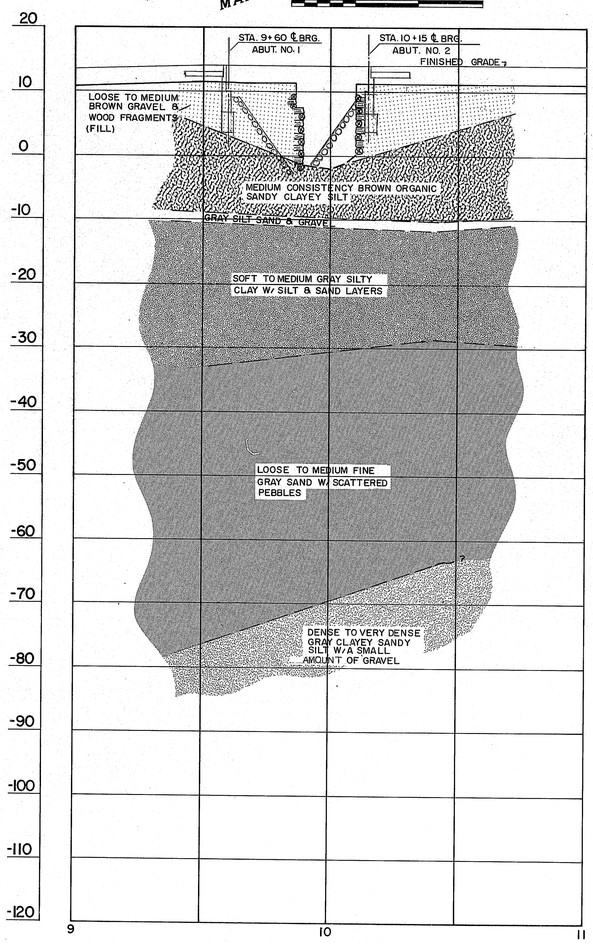
SURVEY
SHEET 4 OF 27 AUGUSTA, MAINE June, 1973

173-27

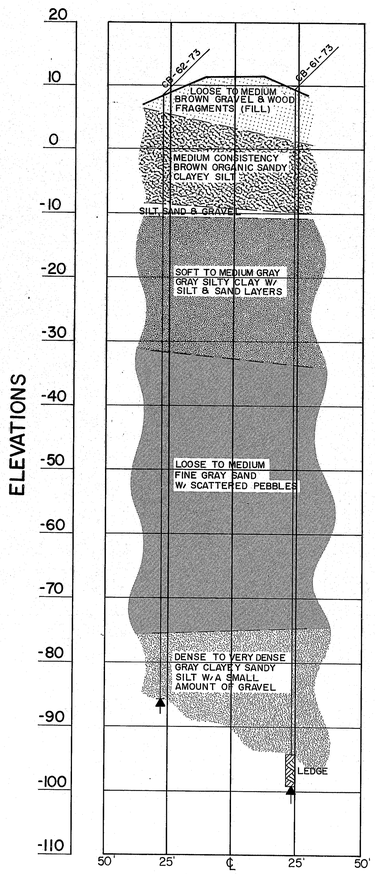
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	5	27



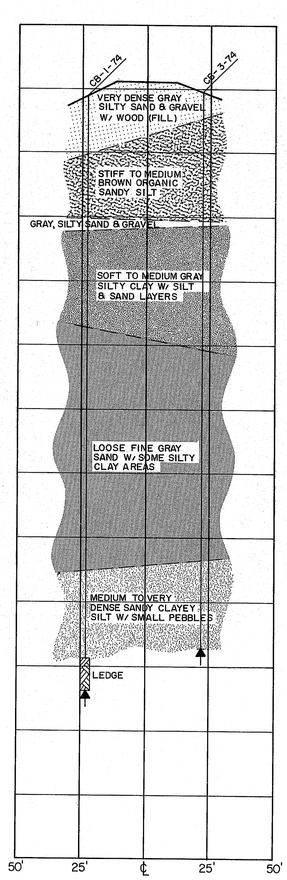
PLAN
SCALE 25' 10' 0 25' 50'



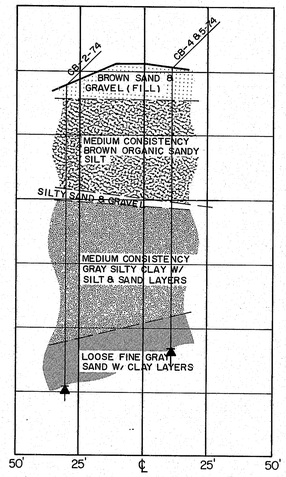
PROFILE
SCALE 25' 10' 0 25' 50'



STA. 9+60 ℄ ABUT. NO. 1
(SKEWED 20°)



SECTION A-A



SECTION B-B

PLANS

DESIGN - DETAILED	BY	DATE
CHECKED		
REVISIONS		
FIELD CHANGES		

JANUARY 1968

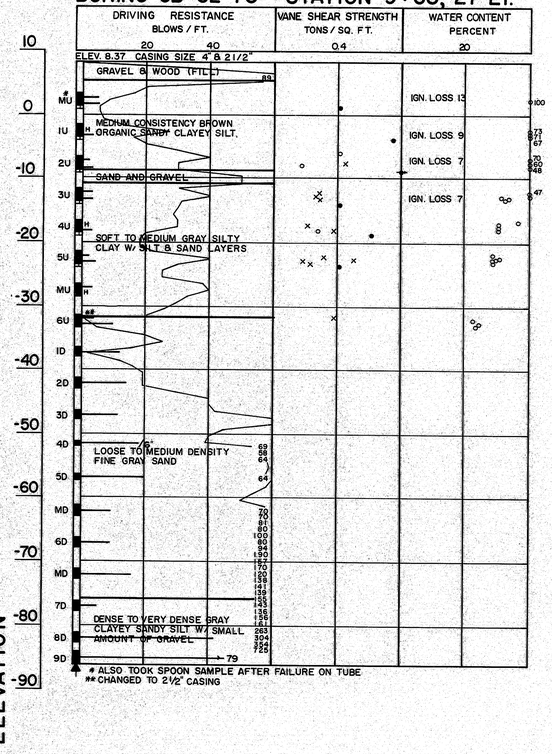
"As Built" 2d

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY
FOUNDATION SURVEY
SHEET 5 OF 27 AUGUSTA, MAINE Feb. 1976

173-28

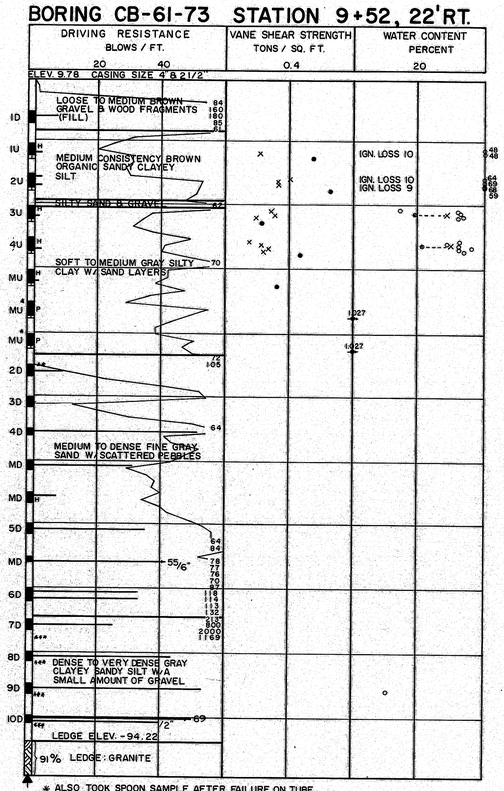
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	7421504)	6	27

BORING CB-62-73 STATION 9+68, 27' LT.



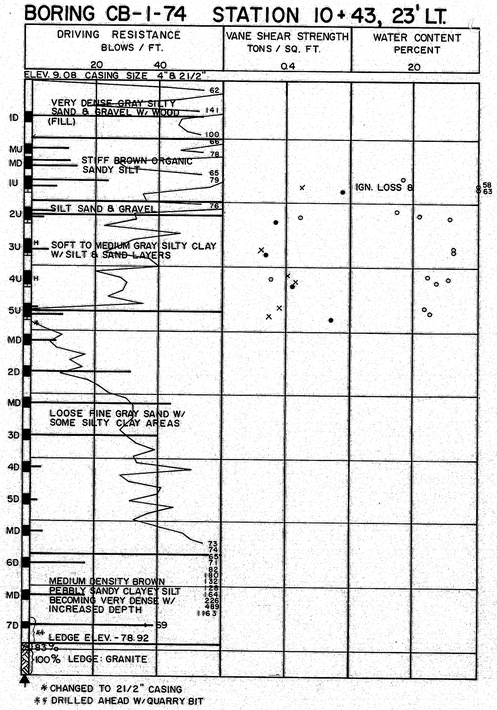
* ALSO TOOK SPOON SAMPLE AFTER FAILURE ON TUBE
** CHANGED TO 2½" CASING

BORING CB-61-73 STATION 9+52, 22'RT.



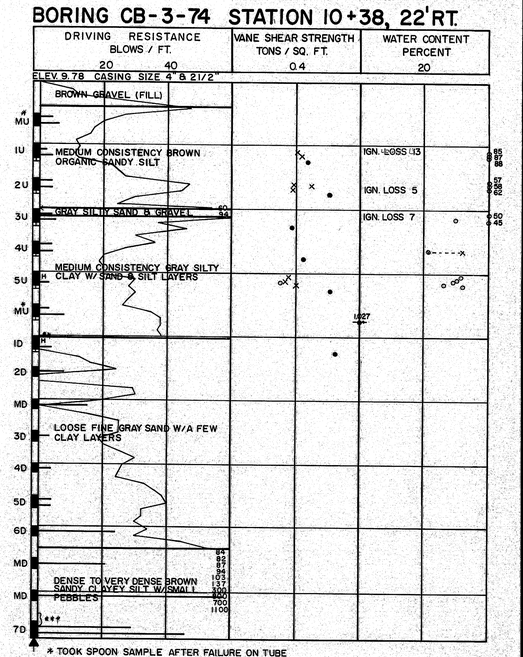
* ALSO TOOK SPOON SAMPLE AFTER FAILURE ON TUBE
** CHANGED TO 2½" CASING
*** DRILLED AHEAD W/ QUARRY BIT

BORING CB-1-74 STATION 10+43, 23' LT.



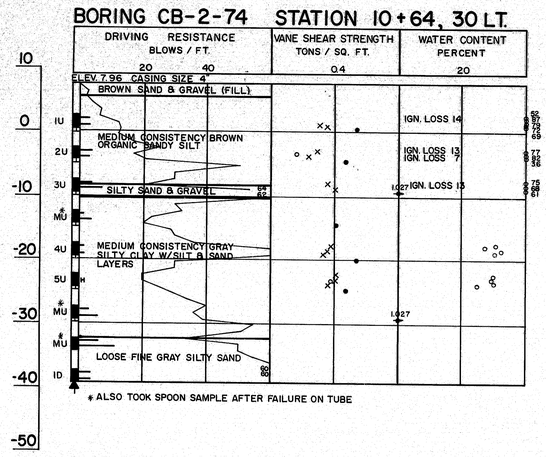
* CHANGED TO 2½" CASING
** DRILLED AHEAD W/ QUARRY BIT

BORING CB-3-74 STATION 10+38, 22'RT.



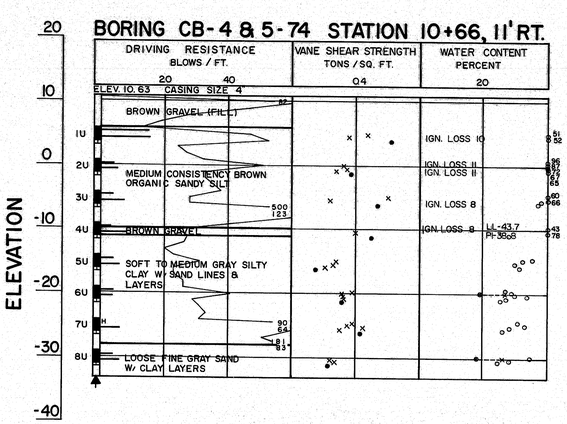
* TOOK SPOON SAMPLE AFTER FAILURE ON TUBE
** CHANGED TO 2½" CASING
*** DRILLED AHEAD W/ QUARRY BIT

BORING CB-2-74 STATION 10+64, 30 LT.



* ALSO TOOK SPOON SAMPLE AFTER FAILURE ON TUBE

BORING CB-4 & 5-74 STATION 10+66, 11' RT.



BORING NOTES

All samples and vanes are made ahead of casing
Water elevation
Number of blows required to drive extra heavy casing one foot with 400 ft. lbs. of energy per blow
Location of sample or sample attempt
Number and type of dry sample
ID S & H Sampler # 1290's
IC 2" O.D. 16 ga. seamless tubing
IU 3½" O.D. 16 ga. seamless tubing
IW Wash samples and number
MD Unsuccessful sample attempt and type of sampler
Number of blows required to drive spoon or tubing one foot with 350 ft. lbs. of energy per blow
H Sampling spoon or seamless tubing driven by static weight of drill rods and hammer
P Piston sampler
Field vane test
Bottom of boring (may not be bottom of soil strata)
Refusal of drill rods or casing (may not be ledge)
71% Locations cored by diamond bit and per cent recovery of rock

SHEAR NOTES

● Field vane shear strengths
× Laboratory vane shear strengths
—+— Shear strengths in excess of capacity of equipment
○ One half unconfined compressive strengths

WATER CONTENT NOTES

○ Natural water contents, given as per cent of dry weight
⊗---× Plastic and liquid limits
Ignition losses are given as per cent of dry weight

PLANS — DESIGN - DETAILED — CHECKED — REVISIONS — FIELD CHANGES — BY — DATE

Checked Sept

"As Built"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY
BORING DETAILS
SHEET 6 OF 27 AUGUSTA, MAINE Feb. 1976

173-29

JANUARY 1968 203-1 2060

Designed by: W. Lyons 3-76
Checked: R.W.H. 3-76

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED	R Pray	7-76
NO	TEMPLATE	R Pray	8-76
	AREAS		
	AREAS CHECKED		

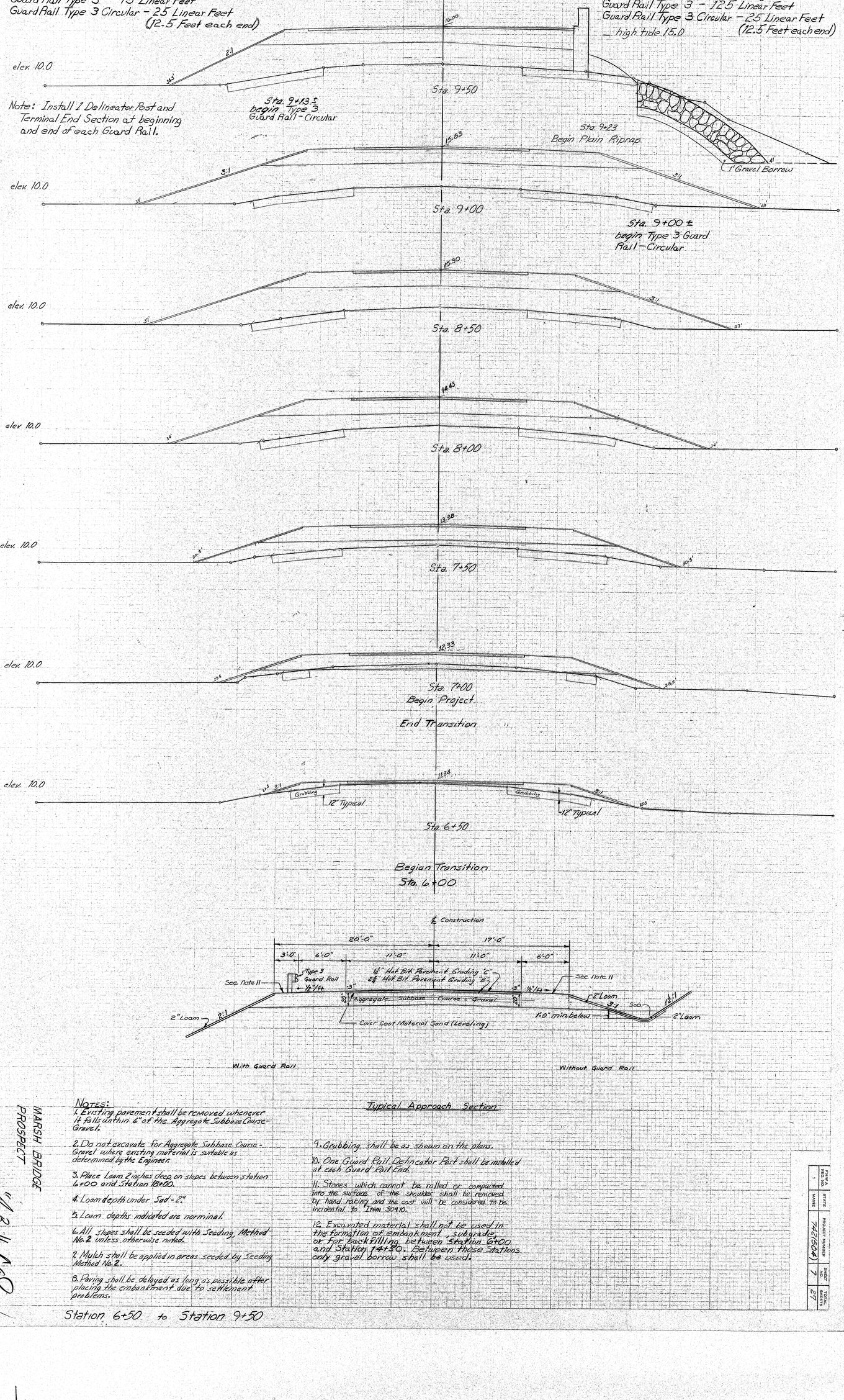
FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
NO	TEMPLATE		
	AREAS		
	AREAS CHECKED		

Guard Rail Length: Left
Guard Rail Type 3 - 75 Linear Feet
Guard Rail Type 3 Circular - 25 Linear Feet
(12.5 Feet each end)

Guard Rail Length: Right
Guard Rail Type 3 - 125 Linear Feet
Guard Rail Type 3 Circular - 25 Linear Feet
(12.5 Feet each end)

high tide 15.0

Note: Install 1 Delineator Post and Terminal End Section at beginning and end of each Guard Rail.



Typical Approach Section

Notes:

1. Existing pavement shall be removed whenever it falls within 6" of the Aggregate Subbase Course-Gravel.
2. Do not excavate for Aggregate Subbase Course-Gravel where existing material is suitable as determined by the Engineer.
3. Place Loam 2 inches deep on slopes between station 6+00 and Station 18+00.
4. Loam depth under Sod = 2".
5. Loam depths indicated are norminal.
6. All slopes shall be seeded with Seeding, Method No. 2 unless otherwise noted.
7. Mulch shall be applied in areas seeded by Seeding Method No. 2.
8. Paving shall be delayed as long as possible after placing the embankment due to settlement problems.
9. Grubbing shall be as shown on the plans.
10. One Guard Rail Delineator Post shall be installed at each Guard Rail End.
11. Stones which cannot be rolled or compacted into the surface of the shoulder shall be removed by hand raking and the cost will be considered to be incidental to Item 304.10.
12. Excavated material shall not be used in the formation of embankment subgrade or for backfilling between Station 6+00 and Station 14+50. Between these Stations only gravel borrow shall be used.

FED. ROAD PROJ. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	7421(04)	7	27

MARSH BRIDGE
PROSPECT

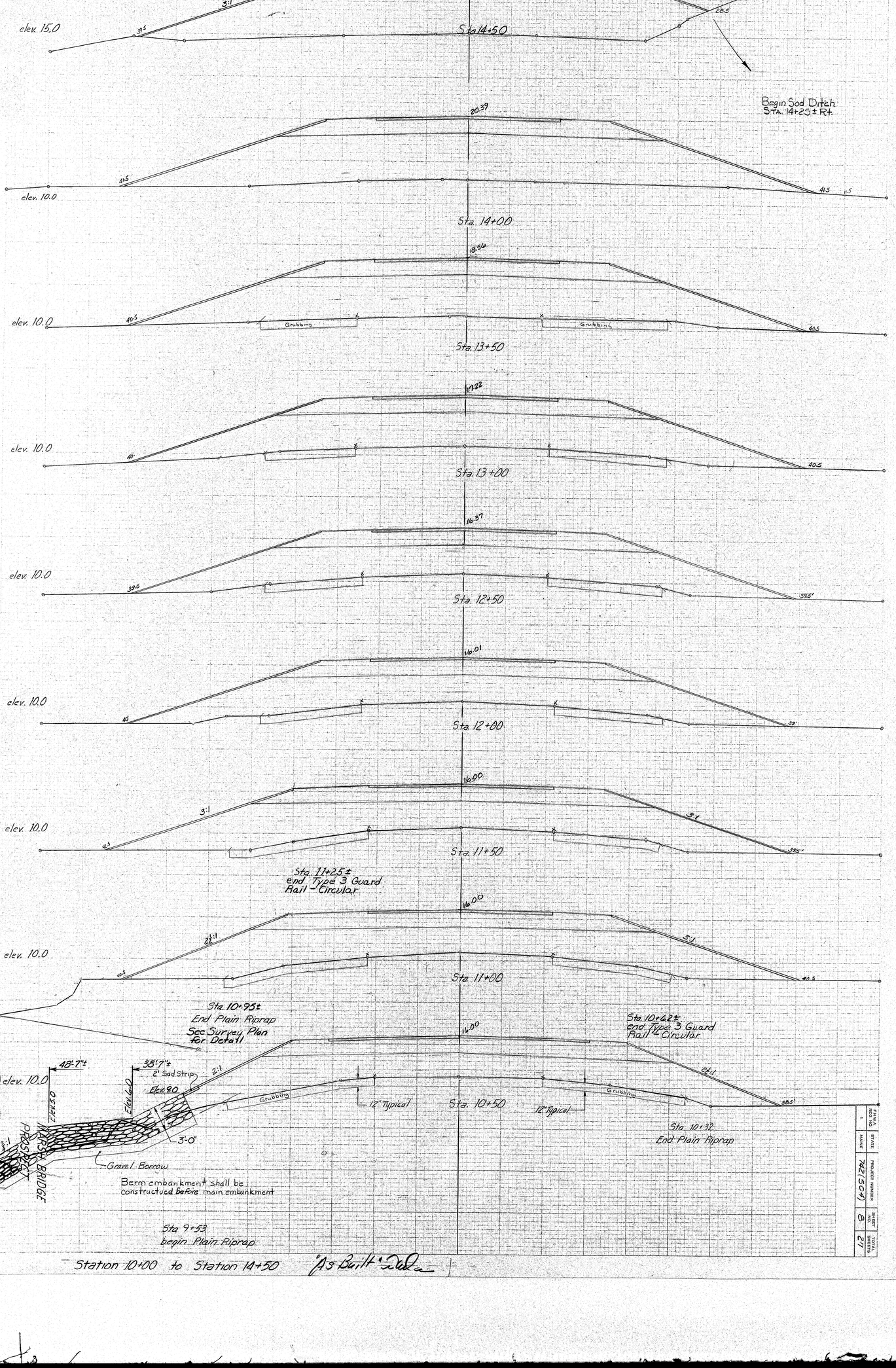
123-36 "As Built" Sht. No. 7

Station 6+50 to Station 9+50

Designed by: W. Lyons. 3-76
Checked: R.W.M. 3-76

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED	E Ploy	3-76
	PLOTTED	E Ploy	3-76
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
NO.	AREAS		
	AREAS CHECKED		



123-31

Station 10+00 to Station 14+50

"As Built" Data

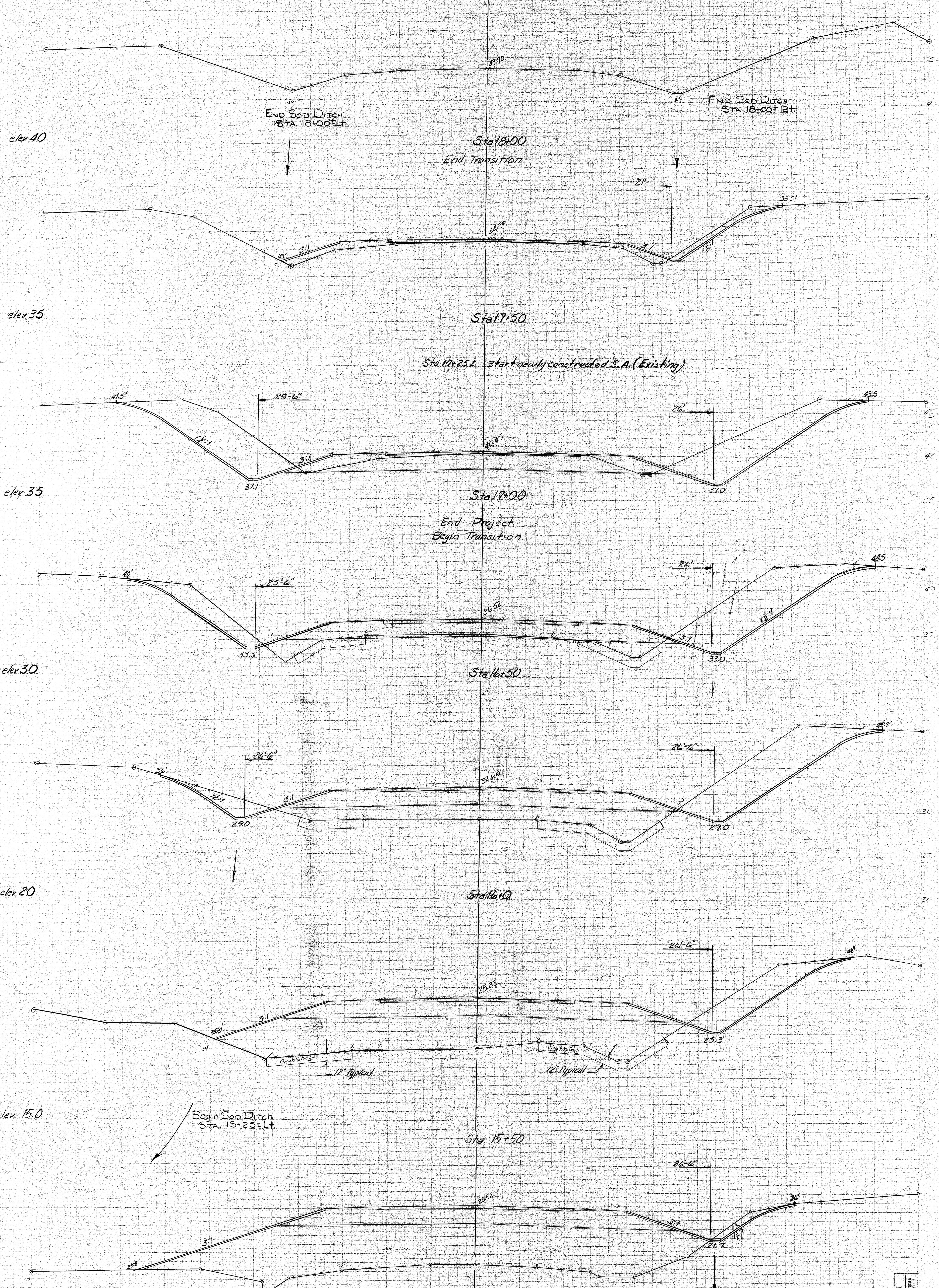
FEDERAL AID NO.	1
STATE	MAINE
PROJECT NUMBER	742(50)
SHEET NO.	8
TOTAL SHEETS	27

[redacted]

Designed by: W. Lyons 3-76
Checked: R.W.M. 3-76

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED	R. Bray	2-76
	TEMPLATE	R. Bray	2-76
	AREAS		
NO.	AREAS CHECKED		

FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
	PLOTTED		
	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	9	27

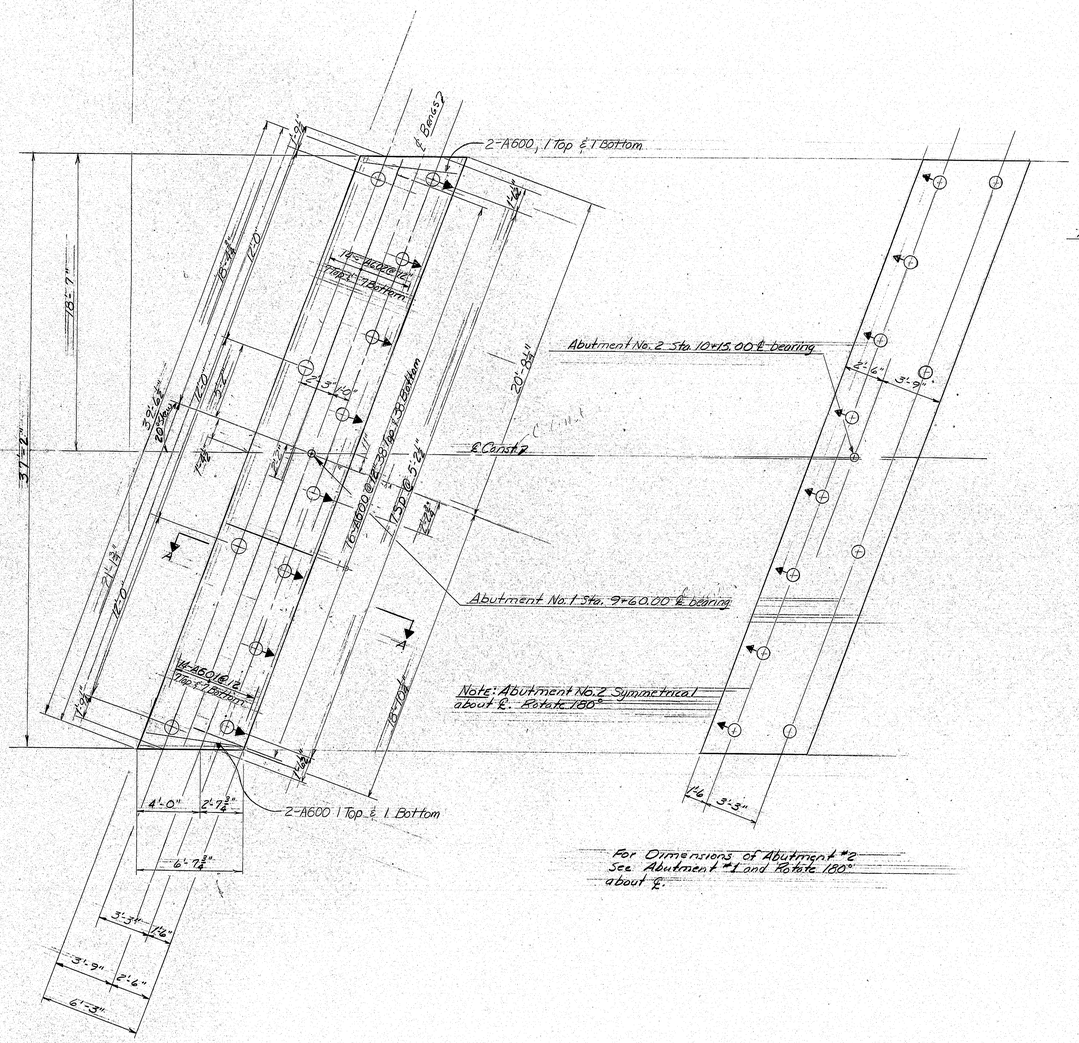
MARSH BRIDGE
PROSPECT

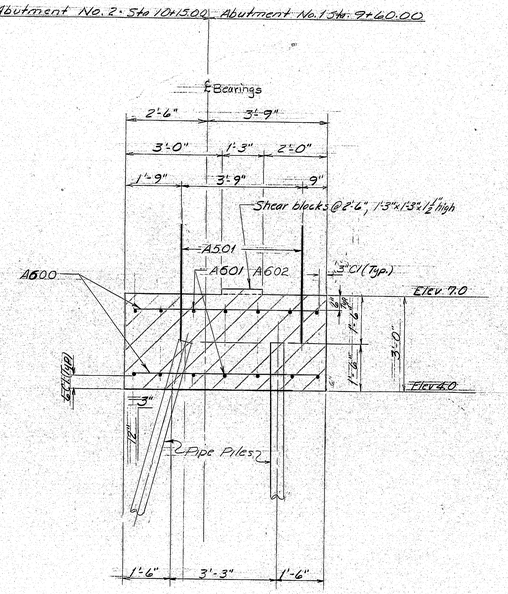
"As Built"

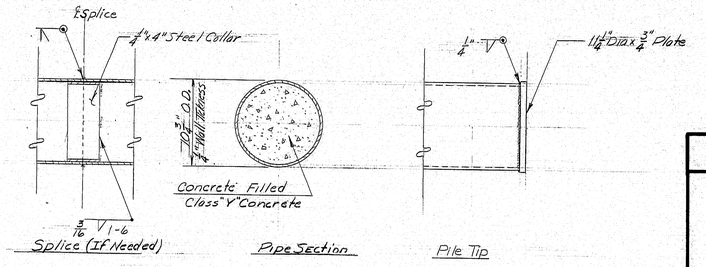
173-32
Sh. # 9

Station 15+00 to Station 15+50

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	10	27







STEEL PIPE PILE DETAILS

PILE NOTES

1. Pile shall be driven to length given.
2. All piles shall have a flat plate tip.
3. Pile marked thus ⊖→ shall be battered 3" per foot in the direction of the arrow.
4. Maximum pile load equals 29 tons.
5. Following are pile locations, number of piles required, size of piles and driven lengths.
   Abutment #1 12 - 10¾" dia. x 60'
   Abutment #2 12 - 10¾" dia. x 60'
6. Piles which are embedded into footing a distance of 1'-6" may vary between 1'-0" and 2'-0" however, payment shall be allowed only for the actual embedment length up to a maximum of 1'-6".
7. Piles shall conform to the requirements of Welded and Seamless Steel Pipe Piles ASTM Designation A252, Grade 2, with chemical requirements meeting A.S.T.M. designation A53 Grade B.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	[illegible]	4-76
CHECKED	R.W.M.	5-76
REVISIONS		
FIELD CHANGES		

JANUARY 1968

"As Built"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

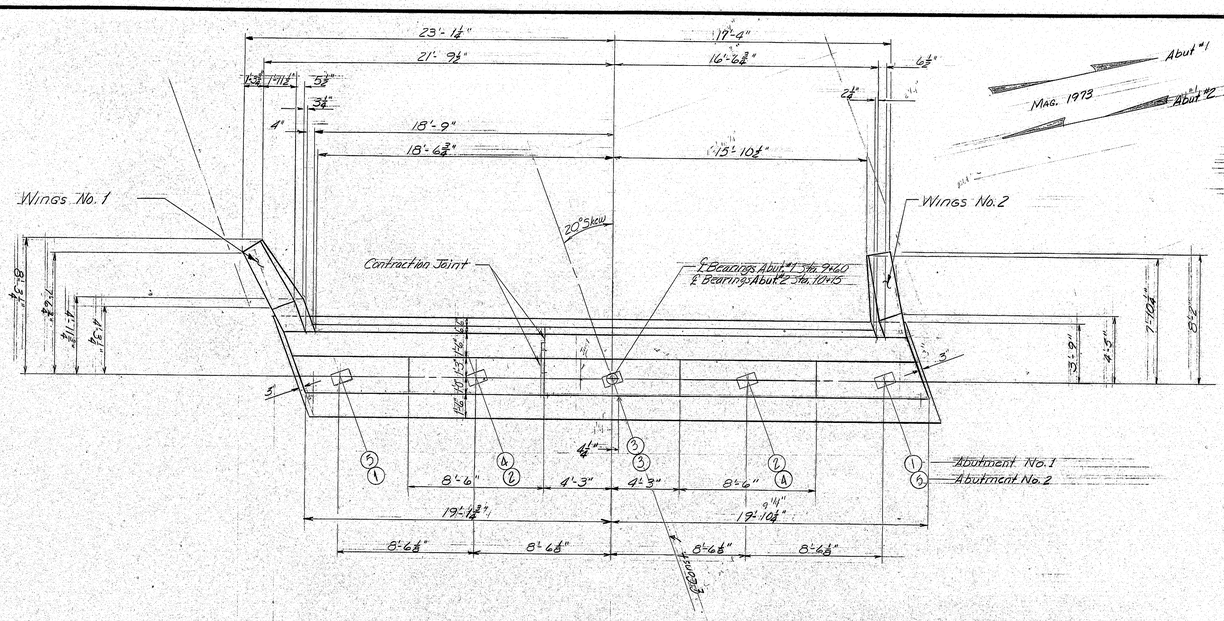
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

FOOTING & PILE PLAN

SHEET 10 OF 27 AUGUSTA, MAINE Sept. 1978

173-33

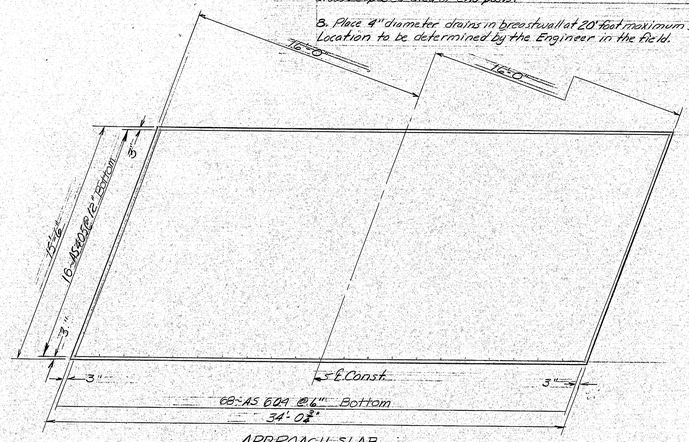
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	11	27



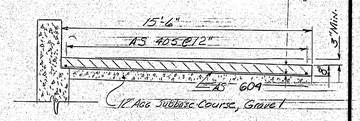
Plan

Standard Notes For Abutments

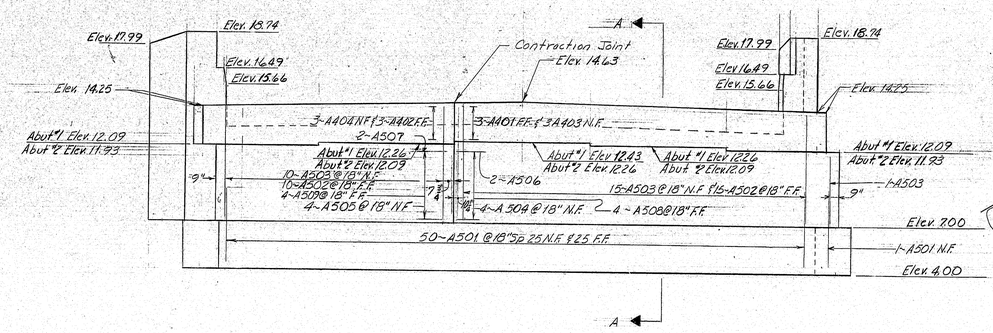
1. Chamfer all exposed edges of concrete a consistent dimension between ½" and ¾" inclusive, unless otherwise indicated.
2. Place reinforcing steel in bridge seats to clear anchor bolts.
3. Break bond at vertical contraction joints by a method approved by the Engineer.
4. Polyvinylchloride waterstops as shown on Standard Detail EBD-104-77 shall be placed in the vertical contraction joint.
5. Cover contraction joint on the back with two layers of heavy roofing, 10" wide. Coat the concrete and back of each layer as applied with plastic roofing cement. Recess the area covered ½".
6. Waterstops are not required in horizontal construction joints.
7. Protective coating for concrete surfaces shall be applied to the following areas: exposed areas of end posts.
8. Place 4" diameter drains in breastwall at 20 feet maximum spacing. Exact location to be determined by the Engineer in the field.
9. Reinforcing steel shall have 2 inches cover unless otherwise indicated.



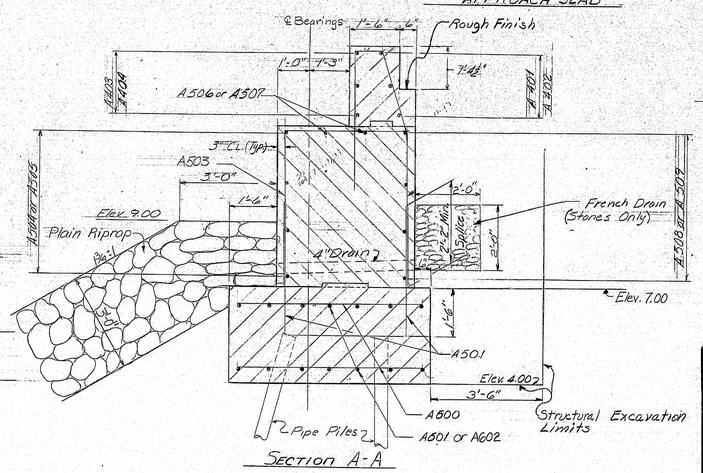
APPROACH SLAB



SECTION APPROACH SLAB



Elevation



Section A-A

"As Built" Dwg.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

ABUTMENT NO. 1 & 2

SHEET 11 OF 27 AUGUSTA, MAINE Sept. 1978

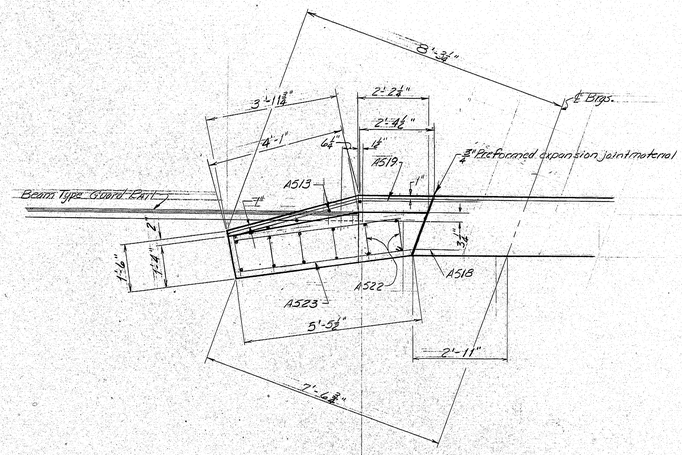
PROJECT DESIGN ENGINEER	BY	DATE
DESIGN - DETAILED	Ralph E. Ray	4-78
CHECKED	Ralph	5-78
REVISIONS		
FIELD CHANGES		

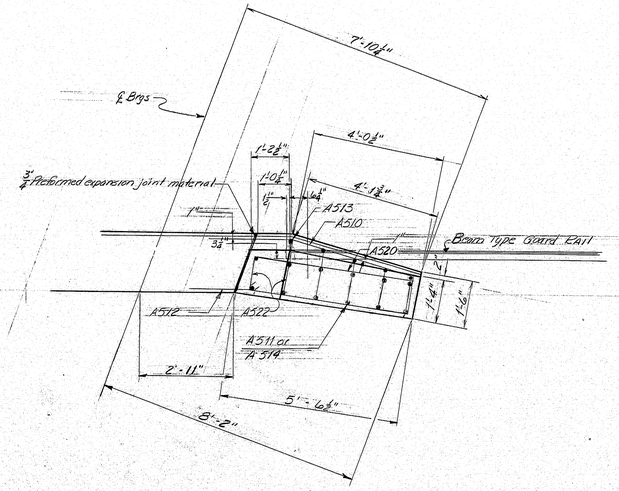
PLANS

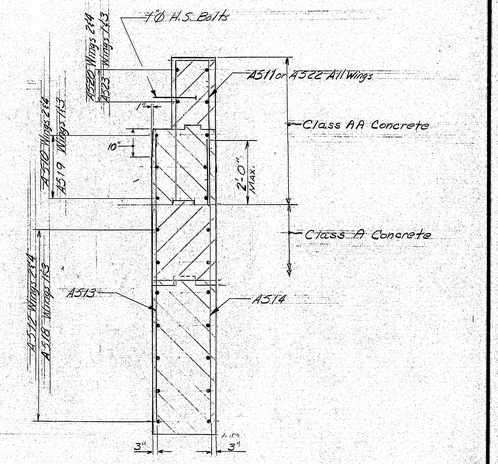
JANUARY 1968

173-34

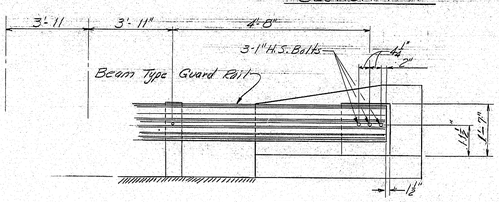
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	7421(50A)	12	27



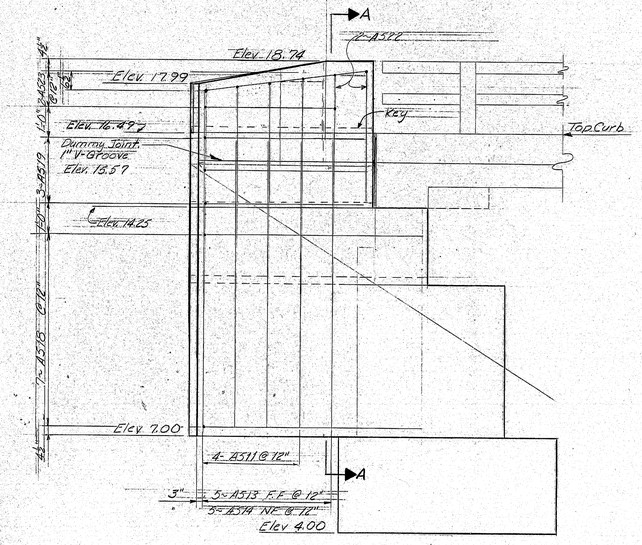




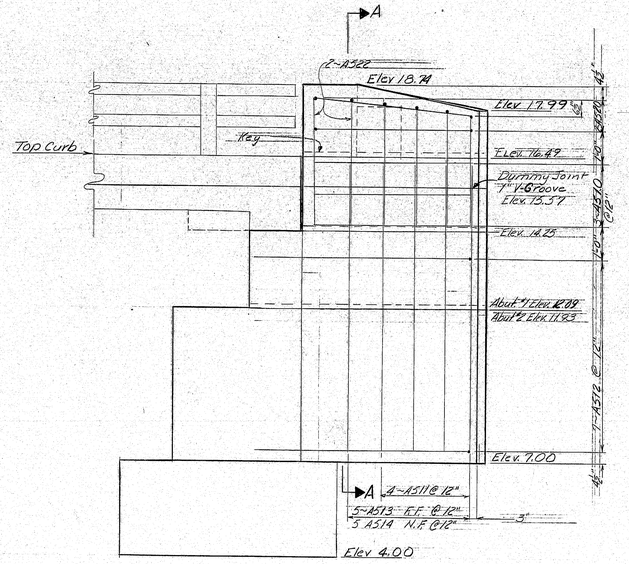
SECTION A-A



TYPICAL END POST DETAIL "As Built" Sad



WINGS No. 1



WINGS No. 2

For 1"ϕ H.S. Bolts See Standard Details Sheet ② Aug. 1969

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

WING DETAILS

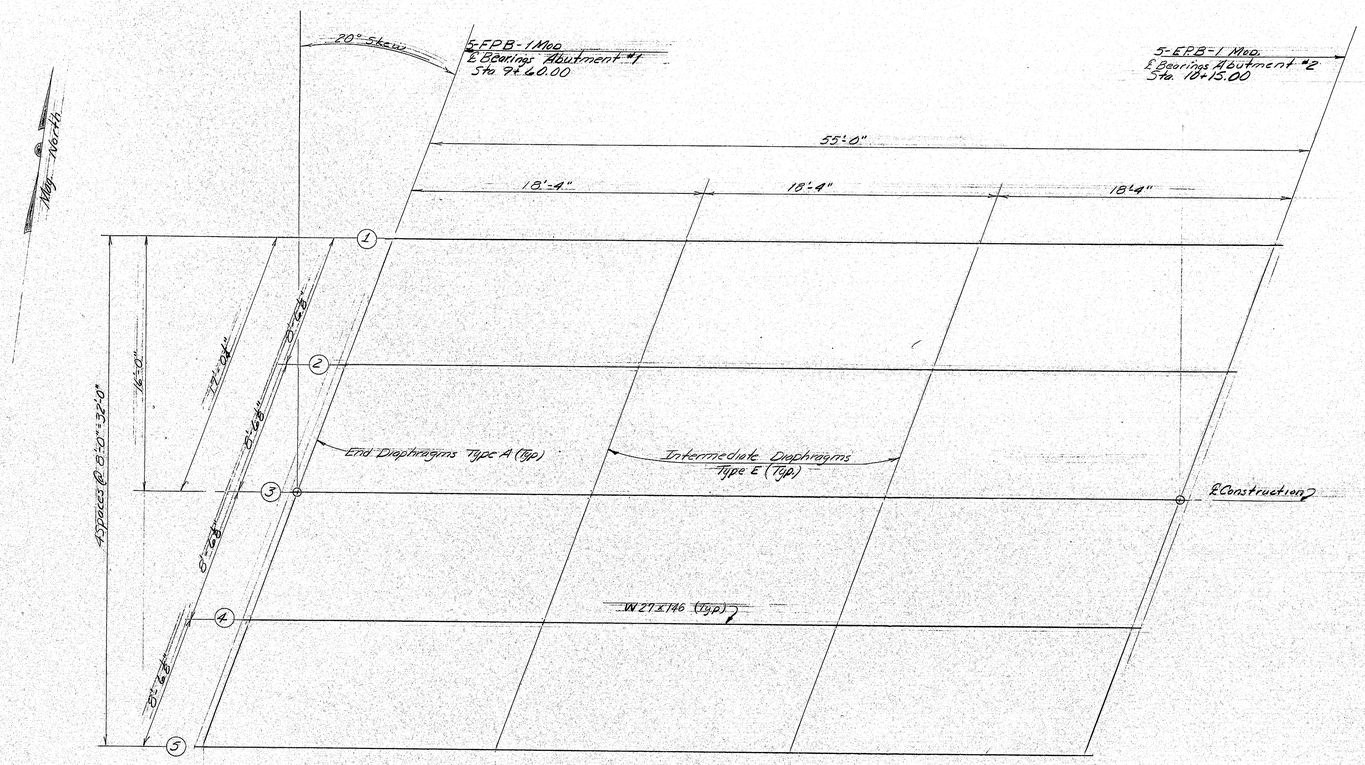
SHEET 12 OF 27 AUGUSTA, MAINE Sept. 1978

173-35

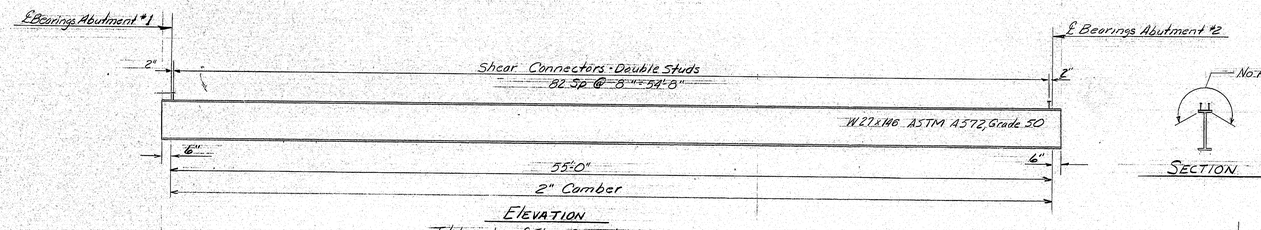
PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	W.J. McElroy	4-76
	CHECKED	R.W. Hall	5-76
	REVISIONS		
	FIELD CHANGES		

JANUARY 1968

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	13	27



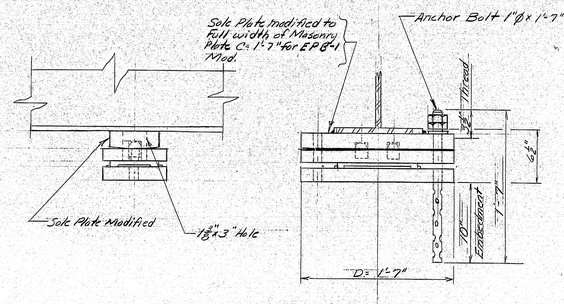
PLAN



ELEVATION

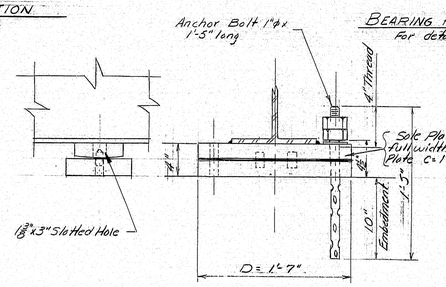
Total number of Shear Connectors = 830

SECTION



BEARING PEDESTALS EPB-1 MODIFIED

For details not shown refer to BD101-74



BEARING PEDESTALS EPB-1 MODIFIED

For details not shown refer to BD 101-74

STEEL CLASSIFICATION

ASTM A325 - H.S. Bolts ..... F_V 13,500 p.s.i.
ASTM A572 Grade 50 - W27x146 ..... F_t = 27,000 p.s.i.
ASTM A36 - All Other Structural Steel .... F_t = 20,000 psi.

REFERENCES

Bearing Pedestals	BD101-74
Shear Connectors	BD-104-77
Diaphragms	BD-113-78

STRUCTURAL STEEL NOTES

(1) Diaphragm connection plates may be either plumb or normal to the top flange.

"As Built" Data

For Bottom of Slab Elevations See Sheet No. 14

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

FRAMING PLAN

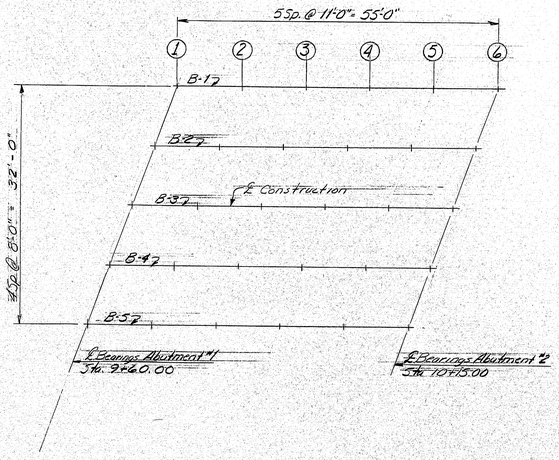
SHEET 13 OF 27 AUGUSTA, MAINE Sept. 1978

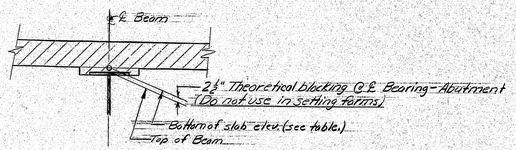
173-36

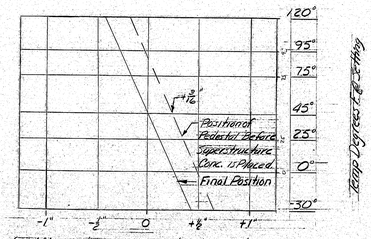
PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	W.J.P. & P.W.	4-76
	CHECKED	R.W.H.	5-76
	REVISIONS		
	FIELD CHANGES		

JANUARY 1968

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	14	27







(-) Minus dimensions indicate position change toward Abutment #2 backwall

Rocker Bearing Setting

This table of bearing settings compensates for longitudinal movement due to temperature changes and dead load deflection.

Note: Rocker setting data as shown shall be used as a guide only. No extra payment will be made for resetting of the rocker bearing, subsequent to the original setting, made by the contractor as required by Engineer to make the rocker setting conform with paragraph four (4) of Subsection 504.38.

Bottom Of Slab Elevations

Span Points		1	2	3	4	5	6
Beam	B-1 & B-5	14.88	14.95	14.99	14.99	14.95	14.88
Beam	B-2 & B-4	15.04	15.11	15.15	15.15	15.11	15.04
Beam	B-3	15.21	15.28	15.32	15.32	15.28	15.21

Dead Load Deflection Points (in feet)

Span Points	1	2	3	4	5	6
Superimp.	0.000	0.003	0.005	0.005	0.003	0.000
Steel	0.000	0.010	0.016	0.016	0.010	0.000
Fluid	0.000	0.065	0.105	0.105	0.065	0.000

Note: Before taking elevations on the tops of the beams for purpose of setting bottom of slab elevations, the welding of shear connectors to the beams and the diaphragm connections to the beams shall have been completed.

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	W.J.P.	4-76
	CHECKED	P.W.M.	5-76
	REVISIONS		
	FIELD CHANGES		

JANUARY 1968

"As Built"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

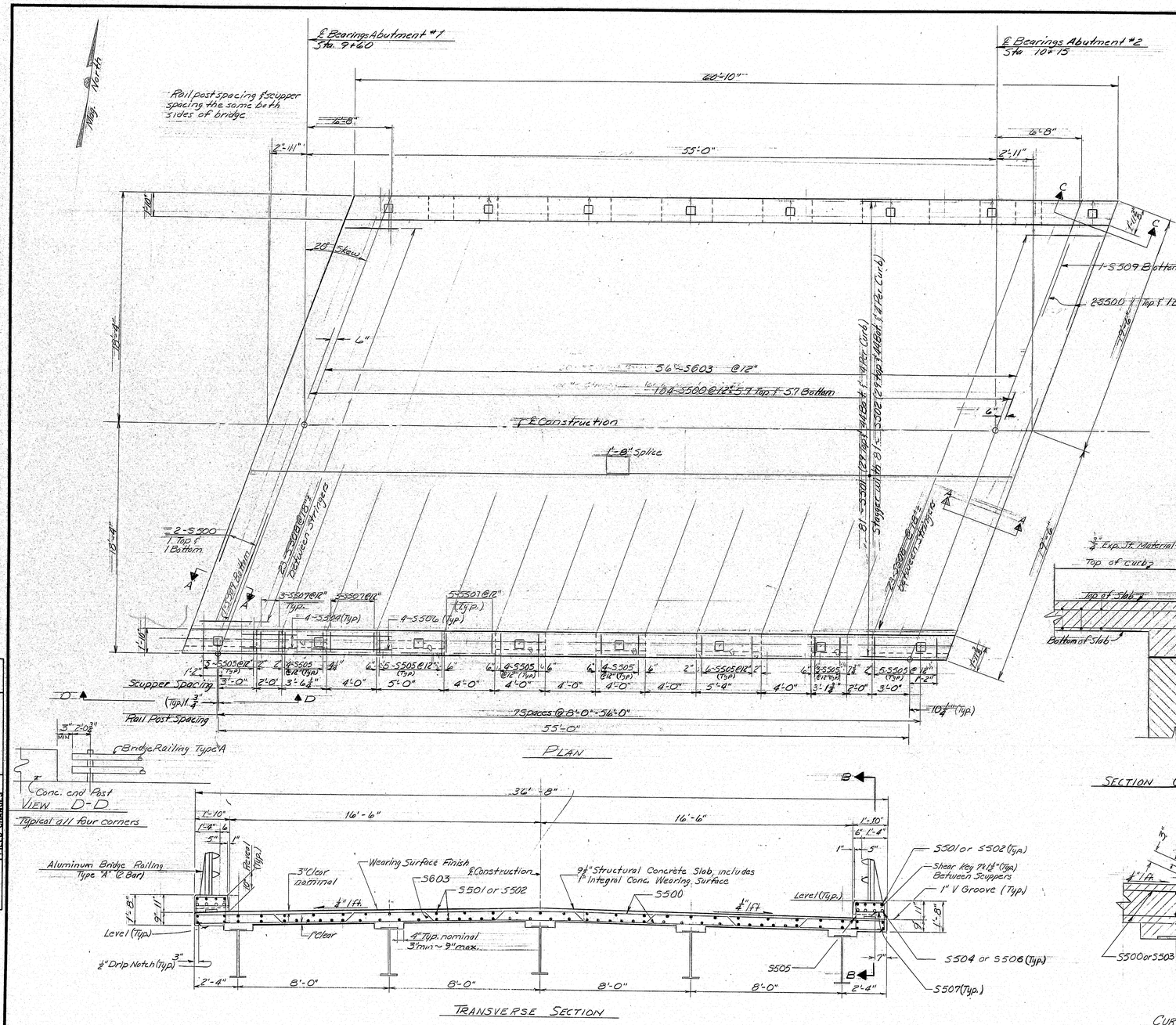
MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

BOTTOM OF SLAB ELEVATIONS

SHEET 14 OF 27 AUGUSTA, MAINE Sept. 1978

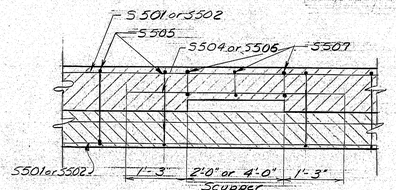
173-37

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	15	27

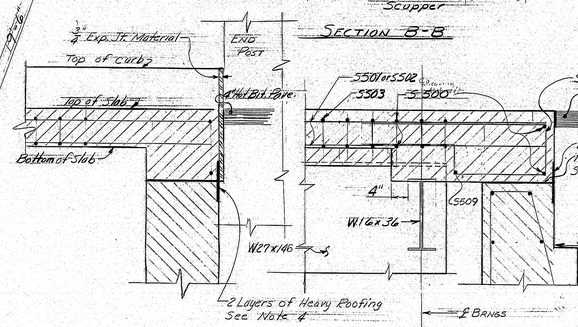


SUPERSTRUCTURE NOTES

(1.) Chamfer all exposed edges of concrete a consistent dimension between ½" and ¾" inclusive, unless otherwise indicated.
(2.) Reinforcing steel shall have a minimum cover of 2 inches unless otherwise indicated.
(3.) "Protective Coating for Concrete Surfaces" shall be applied to the following areas: Concrete wearing surface, the inside face and top of curb and outside fascia and under to the drip notch; all concrete inside of the scuppers, and ends of slab from top of slab to heavy roofing.
(4.) On the backface of Abutments & Superstructure Slab, cover the vertical and horizontal joints between the top of the backwall and the slab with 2 layers of Heavy Roofing, 10" wide. Coat the concrete and back of each layer of roofing as applied with plastic Flashing Cement. Recess the area covered 1 inch.
5. The superstructure slab shall be placed continuously. The contractor's method of placement shall be approved by the Engineer. Approved set retarding admixtures shall be used when authorized by the Engineer.

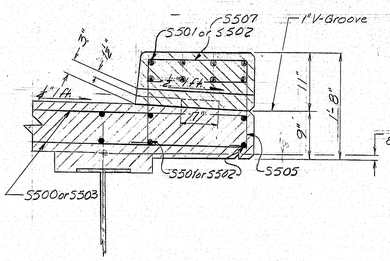


SECTION B-B



SECTION C-C

SECTION A-A



CURB DETAIL

References
For Aluminum Bridge Railing - Type "A" details see Standard Details BD114-77

"As Built" data

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

SUPERSRUCTURE

SHEET 15 OF 27 AUGUSTA, MAINE Sept. 1978

Station 173-38

PROJECT DESIGN ENGINEER	BY	DATE
PLANS	DESIGN - DETAILED	W.J.S. 2-76
	CHECKED	R.W.M. 5-76
	REVISIONS	
	FIELD CHANGES	

JANUARY 1968

REINFORCING STEEL SCHEDULE

STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
			Abutments #1 & #2
A401	6	22'-2"	
A402	6	15'-9"	
A403	6	22'-9"	
A404	6	15'-5"	
A504	8	23'-7"	
A505	8	14'-7"	
A506	4	22'-9"	
A507	4	15'-1"	
A508	8	22'-2"	
A509	8	16'-0"	
			Footing Abuts #1 & #2
A501	102	4'-1"	
A600	160	5'-9"	
A601	28	20'-0"	
A602	28	21'-2"	
			Approach Slabs
AS405	32	33'-6"	
AS601	136	15'-0"	

MARK	NO.	LENGTH	LOCATION

MARK	NO.	LENGTH	LOCATION
A513	20	8'-11"	Wings #1 & #2
A514	20	8'-10"	
S500	118	38'-8"	Slab
S501	81	30'-0"	"
S502	81	32'-2"	Slab
S504	16	4'-6"	Curb
S506	40	6'-6"	Curb
S509	2	33'-8"	Slab

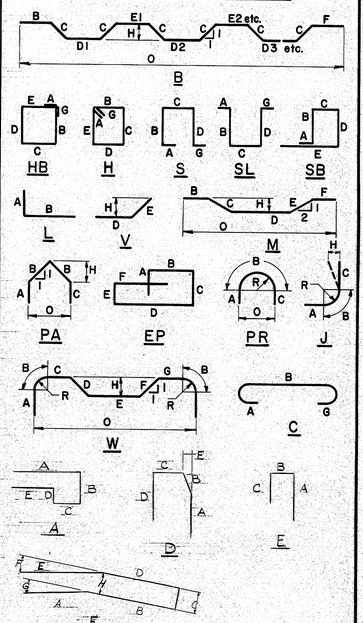
BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
						Abutment #1 & 2								
A502	50	12'-3"	D	4'-9"	2'-3"	10"	4'-5"	9"						
A503	52	8'-6"	L	3'-9"	4'-9"									
						Wings		#1 & #2						
A510	6	10'-10"	F	—	5'-1"	—	3'-11"	10"	2½"	—	1'-8½"			Wing #2 Only
A511	16	8'-0"	E	3'-7"	1'-0"	3'-5"								Both Wings
A512	19	13'-11"	F	1'-5"	5'-3"	1'-0"	3'-10"	2'-5"	10"	2"	1'-8½"			Wing #2 Only
A518	19	15'-2"	F	1'-5"	5'-3½"	1'-0"	3'-9"	3'-8"	1'-0"	24"	1'-8½"			Wing #1 Only
A519	6	11'-11"	F	0	5'-2"	1'-0"	3'-9½"	2'-0½"	7"	—	1'-8½"			Wing #1 Only
A520	4	12'-6"	H	4"	1'-0"	4'-11"	1'-0"	4'-11"	—	4"				Wing #2 Only
A522	8	8'-6"	E	3'-0"	1'-0"	3'-8"								Both Wings
A523	4	12'-8"	H	4"	1'-0"	5'-0"	1'-0"	5'-0"	—	4"				Wing #1 Only
						Superstructure								
S603	56	40'-1"	B		4'-4"	7¾" × 6	3'-5⅝" × 4	4'-1¾" × 3	1'-4"		5½"	38'-1¼"		Slab
S505	72	5'-1"	S	6"	1'-4"	1'-5"	1'-4"			6"				Stirrup Curb
S507	62	4'-2"	HB	4"	4"	1'-5"	4"	1'-5"		4"				Scupper Curb
S508	46	5'-5"	A	4'-1"	11"	1'-11"	5½"	2'-1½"						End of Slab

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

FHWA REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	16	27

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinf. bar.

Bending details and hooks shall conform to the recommendations of ACI Standard 315-65.

Reinforcing Bar: ASTM A615 Grade 60

GENERAL NOTES

1. First digit(s) following the letter of the Mark indicates size of reinf. bar.
   Mark (A502) bar size - #5
   Mark (AS1001) bar size - #10
   Mark (S603) bar size - #6
2. Letter of Marks A, S & AS locates bars of Abutment #1, Abutment #2, Superstructure and Approach Slab parts respectively.

As Built

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY

REINFORCING STEEL SCHEDULE

SHEET 16 OF 27 AUGUSTA, MAINE Sept. 1978

PLANS	BY	DATE
DESIGN - DETAIL	W.J.F.	2-76
CHECKED	R.W.H.	3-76
REVISIONS		
FIELD CHANGES		

173-39

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
		742(504)	17	~~29~~ 27

SYMBOLS

- ● I.P. (IRON PIPE or PIN)
- □S. (SEPTIC TANK) □C.P. (CESSPOOL)
- ○WELL ○SPRING
- W.L. WATER LINE or MAIN
- S.L. SEWER LINE
- C.D. CELLAR DRAIN
- UNDERGROUND WIRE or CABLE
- CONST. LIMIT LINE
- LIMITS of HWY. SLOPE EASEMENT
- GRADING LIMITS
- LIMITS of GRADING RIGHTS
- P.L. PROPERTY LINE
- EXISTING RIGHT OF WAY
- NEW R/W
- NEW R/W WITHIN EXISTING R/W

ITEM	FIGURED	PLOTTED	CHECKED
BASE LINE			
TOPOGRAPHY			
R/W LINES	J.R.F.	J.R.F.	A.C.G.
AREAS	J.R.F.	J.R.F.	P.A.T.
R/W MON.	J.R.F.	J.R.F.	W.E.B.
CO. RECORD			

REVISIONS			
NO.	DATE	DESCRIPTION	BY

MAG. 1973

STATE OF MAINE
(INLAND FISHERIES & WILDLIFE DEPT.)
PARCEL NO. (1-1)2
LAND = 0.66± AC.
SLOPE EASE. = 1050± S.F.(1)

REM. AREA = 9.35± AC.
TOTAL AREA = 10.00± AC.

STA. 7+00
BEGIN STATE PROJECT NO. 742(503)

MARSH GRASS

1250.00'
831'±

BEGIN B.L.
ROUTE NO. 174
TO PROSPECT VILLAGE

N 82°-15'-00" E
1350.00'

ELECTRIC FENCE

C.M.P. 5

822'±
1250.00'

MARSH GRASS

MARSH STREAM
EBB TIDE
FLOOD TIDE

CONST. LIMIT LINE
1050± S.F.

MARSH GRASS

826'±

823'±

C.M.P. 6

FENCE

MARSH GRASS

TEMPORARY ROAD

℄ OF TEMPORARY ROAD

0.20± AC.

EASEMENT

LIMIT LINE

STATE OF MAINE
(INLAND FISHERIES & WILDLIFE DEPT.)
PARCEL NO. (1-2)2
LAND = 0.69± AC.
TEMP. ROAD EASE. = 0.20± AC.(1)

REM. AREA = 16.36± AC.
TOTAL AREA = 17.00± AC.

Keep these with plastics
HR

EXISTING R/W
FROM STA. 5+50 TO STA. 19+00
SEE WALDO COUNTY RECORDS
VOL. 2, PG. 45
FROM STA. 9+63 TO STA. 10+37
SEE WALDO COUNTY RECORDS
VOL. 2, PG. 117

PLAN FILED IN PLAN BOOK	PAGE				
NO.	GRANTOR	COUNTY RECORD INSTRUMENT	DATE	BOOK	PAGE

○ SURVEY MONUMENT -⊖- R/W MONUMENT NOT INSTALLED -■- R/W MONUMENT INSTALLED

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
RIGHT OF WAY MAP

STATE HIGHWAY "742"
PROSPECT (MARSH BRIDGE)
STATE PROJECT NO. 742(503)
WALDO COUNTY

APPROVED:
DATE: 19
SCALE: 1 INCH = 25 FEET
SHEET NO. 1 OF 2 SHEETS
D.O.T. FILE NO. 14-114

ROGER L. MALLAR, COMMISSIONER
RICHARD A. LUETTICH, BUREAU DIRECTOR
CHIEF ENGINEER

173-40

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
		742(504)	18	~~27~~ 27

SYMBOLS

- ● I.P. (IRON PIPE or PIN)
- □ (S) SEPTIC TANK) ○ (C) CESSPOOL)
- ○ WELL ○ SPRING
- W.L. WATER LINE or MAIN
- S.L. SEWER LINE
- C.D. CELLAR DRAIN
- UNDERGROUND WIRE or CABLE
- COMTY. LIMIT LINE
- LIMITS of HWY. SLOPE EASEMENT
- GRADING LIMITS
- LIMITS of GRADING RIGHTS
- PL PROPERTY LINE
- EXISTING RIGHT OF WAY
- NEW R/W
- NEW R/W WITHIN EXISTING R/W

ITEM	FIGURED	PLOTTED	CHECKED
BASE LINE			
TOPOGRAPHY			
R/W LINES	J.R.F.	J.R.F.	A.C.G.
AREAS	J.R.F.	J.R.F.	P.A.T.
R/W MON.	J.R.F.	J.R.F.	W.E.B.
CO. RECORD			

REVISIONS			
NO.	DATE	DESCRIPTION	BY

STATE OF MAINE
(INLAND FISHERIES & WILDLIFE DEPT.)
PARCEL NO.(1-1)2
LAND=0.65±AC.
SLOPE EASE.=1050±S.F.(1)

REM. AREA=9.35±AC.
TOTAL AREA=10.00±AC.

ERNEST J. GODDARD
PARCEL NO. (3)
LAND TAKEN=0.33±AC.

REM. AREA=0.51±AC.
TOTAL AREA=0.84±AC.

N

P.I.

MARSH GRASS

BUSHES

STA. 17+00
END STATE PROJECT NO. 742(503)

831'±

826'±

823'±

822'±

1250.00'

419'±

425'±

426'±

428'±

N82°-15'-00"E 1350.00'

50'

34'±

16'±

12 13 14 15 16 17 18 19± END B.L.

ROUTE NO. 174
TO FORT KNOX

C.M.P.

MARSH GRASS

WOODS

STATE OF MAINE
(INLAND FISHERIES & WILDLIFE DEPT.)
PARCEL NO.(1-2)2
LAND=0.68±AC.
TEMP. ROAD EASE.=0.20±AC.(1)

REM. AREA=16.36±AC.
TOTAL AREA=17.00±AC.

MARY A. GRINDLE
ROYCE C. GRINDLE
JANICE F. GRINDLE
GREG A. GRINDLE
PARCEL NO. (2)
LAND TAKEN=0.33±AC.

REM. AREA=19.30±AC.
TOTAL AREA=19.63±AC.

EXISTING R/W
FROM STA. 5+50 TO STA. 19+00
SEE WALDO COUNTY RECORDS
VOL. 2, PG. 45
FROM STA. 9+63 TO STA. 10+37
SEE WALDO COUNTY RECORDS
VOL. 2, PG. 117

PLAN FILED IN PLAN BOOK ____ PAGE ____

NO.	GRANTOR	COUNTY RECORD INSTRUMENT	DATE	BOOK	PAGE

⊙ SURVEY MONUMENT ⊖ R/W MONUMENT NOT INSTALLED ■ R/W MONUMENT INSTALLED

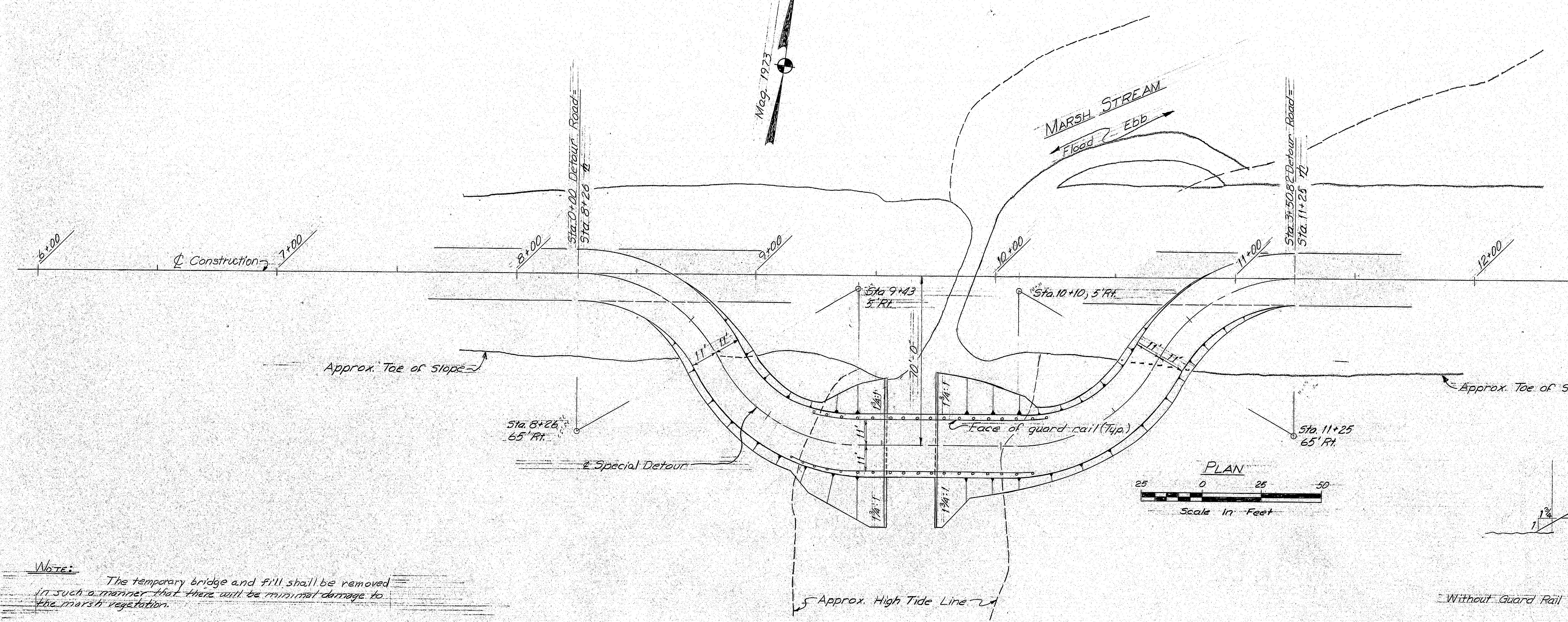
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS
RIGHT OF WAY MAP
STATE HIGHWAY "742"
PROSPECT (MARSH BRIDGE)
STATE PROJECT NO. 742(503)
WALDO COUNTY

APPROVED:
DATE: 19
SCALE: 1 INCH = 25 FEET
SHEET NO. 1 OF 2 SHEETS
D.O.T. FILE NO. 14-114

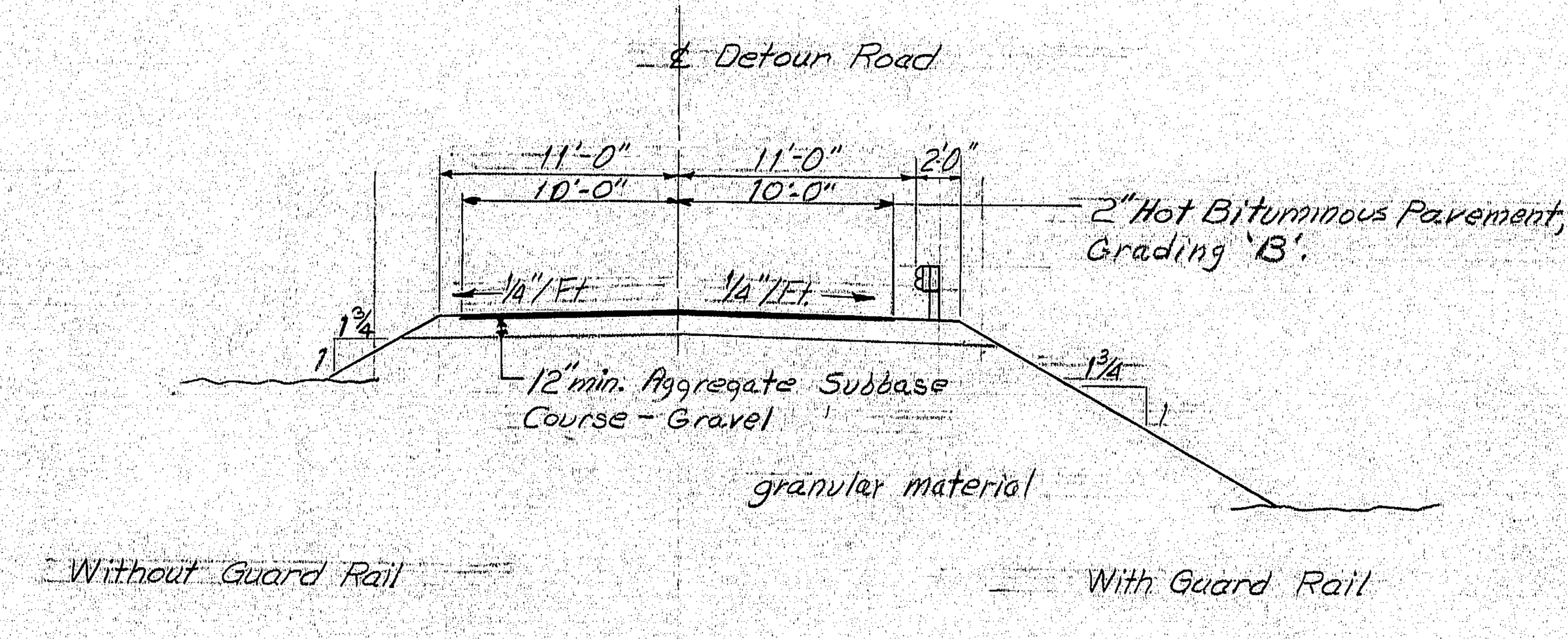
ROGER L. MALLAR
COMMISSIONER
RICHARD A. LUETTICH
BUREAU DIRECTOR
CHIEF ENGINEER

173-44

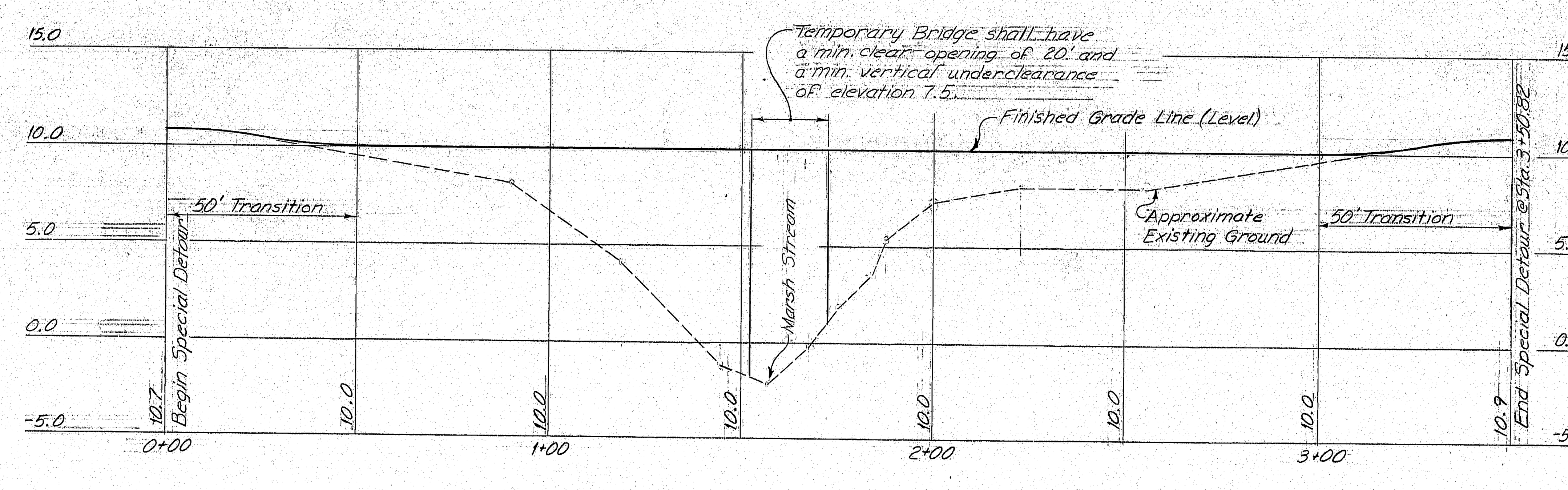
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	19	27



NOTE: The temporary bridge and fill shall be removed in such a manner that there will be minimal damage to the marsh vegetation.



TYPICAL DETOUR APPROACH SECTION



PROFILE

NOTE: Temporary fills shall be protected aganist washout as directed by the Engineer.

Fill material in the temporary detour shall be of a granular material.

Temporary Detour Pavement shall consist of 2" of Hot Bituminous Pavement, Grading 'B' meeting the gradation limits as specified in the Supplemental Specifications, Section 703, Aggregates, dated April 27, 1972.

Payment for all Hot Bituminous Pavement, Grading 'B' and Aggregate Subbase Course - Gravel necessary in the construction of the Special Detour will be included in the lump sum payment for Item 510.10 "Special Detour, 22 Foot Roadway Width Vehicular and Pedestrian Traffic Not Separated."

"As Built"

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

MARSH BRIDGE
OVER
MARSH STREAM
IN THE TOWN OF
PROSPECT
WALDO COUNTY
SPECIAL DETOUR

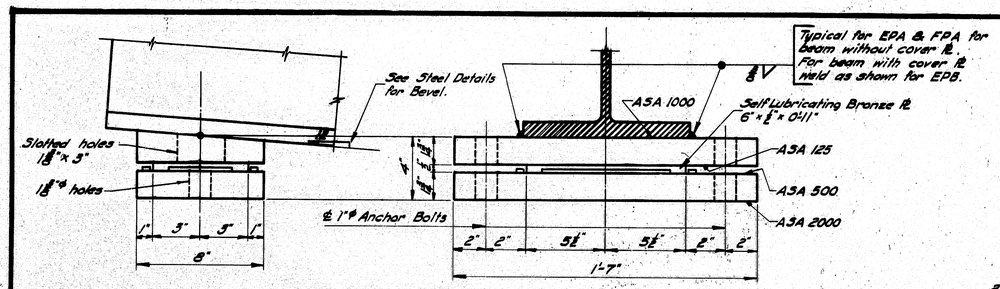
SHEET 19 OF 27 AUGUSTA, MAINE Sept. 1978

173-42

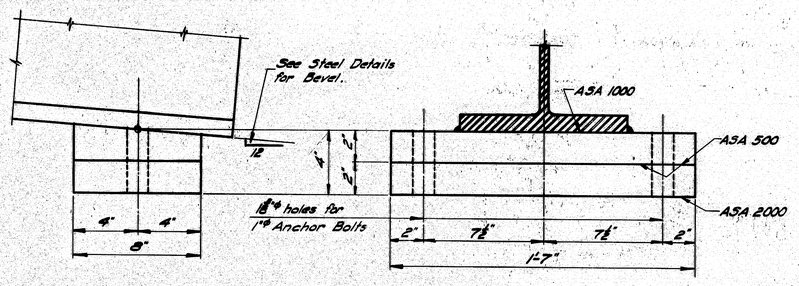
PLANS		BY	DATE
	PROJECT DESIGN ENGINEER		
	DESIGN-DETAILED		2-76
	CHECKED	K.W.H.	3-76
	REVISIONS		
	FIELD CHANGES		

JANUARY 1968

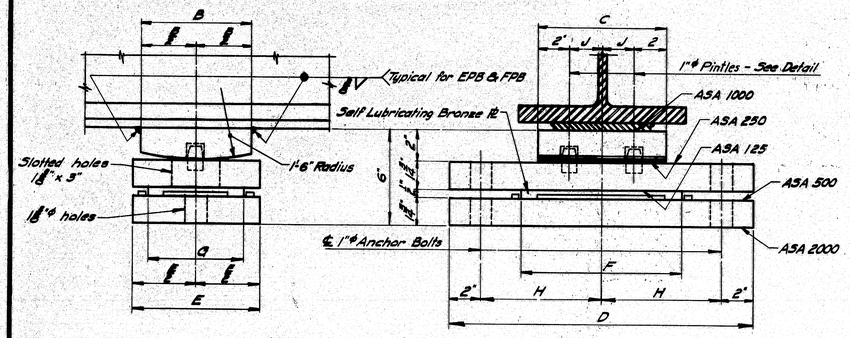
B.R.R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742-(504)	20	27



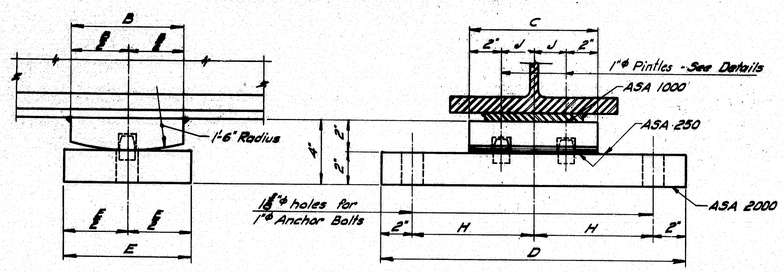
EXPANSION PEDESTAL - EPA



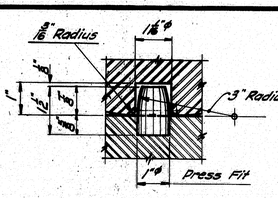
FIXED PEDESTAL - FPA



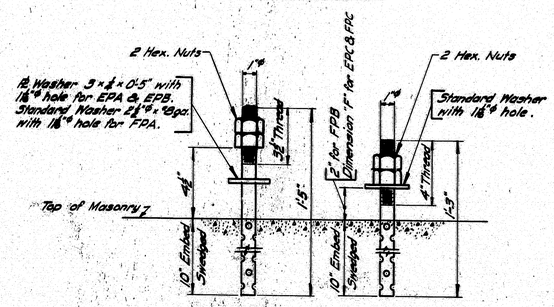
EXPANSION PEDESTAL - EPB



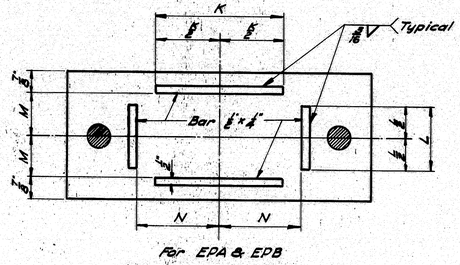
FIXED PEDESTAL - FPB



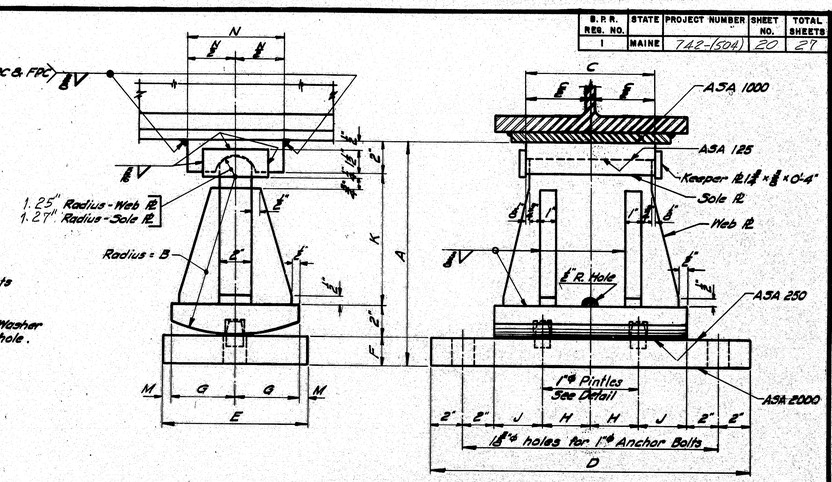
PINTLE DETAIL



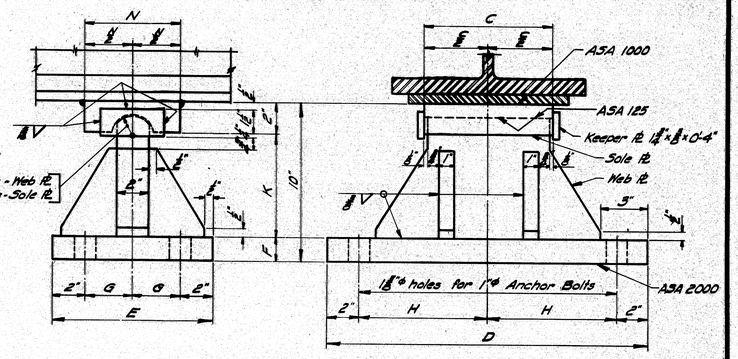
ANCHOR BOLT DETAIL



MASONRY PLATE



EXPANSION PEDESTAL - EPC



FIXED PEDESTAL - FPC

PEDESTALS — ALLOWABLE LOADS & DIMENSIONS														
Pedestal	Load	A	B	C	D	E	F	G	H	J	K	L	M	N
EPA	132 K	—	—	—	—	—	—	—	—	—	8"	4"	3 1/2"	5 1/2"
FPA	190 K	—	—	—	—	—	—	—	—	—	—	—	—	—
EPB-1	120 K	—	6"	8"	1'-7"	8"	10"	6"	7 1/2"	2"	8"	4"	3 1/2"	5 1/2"
EPB-2	165 K	—	7"	10"	1'-8"	9"	1'-0"	7"	8"	3"	10"	5"	3 1/2"	6 1/2"
EPB-3	226 K	—	8"	1'-1"	2'-0"	10"	1'-4"	8"	10"	4 1/2"	1'-2"	5"	4 1/2"	8 1/2"
FPB-1	120 K	—	6"	8"	1'-7"	8"	—	—	7 1/2"	2"	—	—	—	—
FPB-2	165 K	—	7"	10"	1'-8"	9"	—	—	8"	3"	—	—	—	—
FPB-3	226 K	—	8"	1'-2"	2'-0"	10"	—	—	10"	5"	—	—	—	—
EPC-1	70 K	2 1/2"	6"	8"	1'-8"	8"	1 1/2"	3 1/2"	5"	3"	4 1/2"	—	1"	6"
EPC-2	100 K	1 1/2"	8"	8"	1'-8"	8"	1 1/2"	3 1/2"	5"	3"	6 1/2"	—	1"	6"
EPC-3	130 K	1'-2"	10"	8"	1'-8"	9"	1 1/2"	4"	5"	3"	8 1/2"	—	1"	7"
EPC-4	160 K	1'-2"	10"	8"	1'-10"	9"	1 1/2"	4"	4"	5"	8 1/2"	—	1"	7"
EPC-5	190 K	1'-2 1/2"	10"	9"	2'-0"	10"	2"	4 1/2"	5"	5"	8 1/2"	—	1"	8"
EPC-6	220 K	1'-4 1/2"	1'-0"	10"	2'-0"	1'-0"	2 1/2"	5"	5"	5"	10 1/2"	—	1"	8"
EPC-7	250 K	1'-4 1/2"	1'-0"	1'-0"	2'-2"	1'-0"	2 1/2"	5"	5"	4"	10 1/2"	—	1"	8"
FPC-1	100 K	—	—	8"	1'-8"	9"	1 1/2"	2 1/2"	8"	—	6 1/2"	—	—	6"
FPC-2	160 K	—	—	8"	1'-8"	10"	1 1/2"	3"	8"	—	6 1/2"	—	—	7"
FPC-3	190 K	—	—	9"	2'-0"	10"	1 1/2"	3"	10"	—	6 1/2"	—	—	8"
FPC-4	220 K	—	—	10"	2'-0"	1'-0"	1 1/2"	4"	10"	—	6 1/2"	—	—	8"
FPC-5	250 K	—	—	1'-0"	2'-0"	1'-0"	2"	4"	10"	—	6"	—	—	8"

NOTE: At the location of bearing pedestals the concrete bridge seats shall be dressed one inch larger all around than size of masonry plates and to exact elevations shown on the plans. If dressed areas are below the surface of the surrounding bridge seat a small channel shall be cut to the edge of the bridge seat for drainage where required by the Engineer. Channels shall have a min. width of 2" and min. slope of 1/8 inch per foot. No separate payment for this work will be made as it shall be considered incidental to contract items.

A DESIGN SPECIFICATIONS

AASHTO, Standard Specifications for Highway Bridges. 1973, Interims 74, '75, '76

A A.S.T.M. STEEL CLASSIFICATION

(When structural steel is specified to be unpainted) All structural steel including anchor bolts shall be A588 unpainted.
(When structural steel is specified to be painted) All structural steel including anchor bolts shall be A36.

REVISIONS	DATE
A Change Specifications & Steel Classification	3-1-77

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

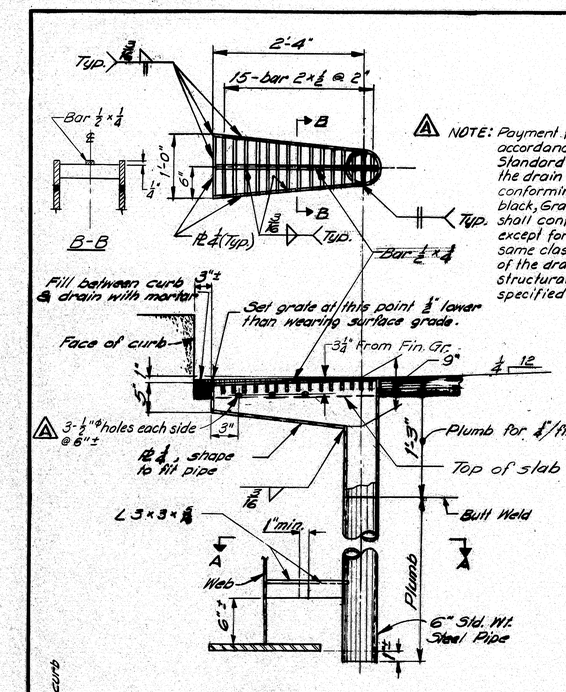
STANDARD DETAILS
(BD 101 -74)

BEARING PEDESTALS

SHEET 20 OF 27 AUGUSTA, ME. APRIL, 1974

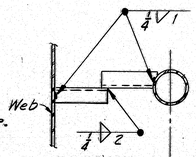
173-43

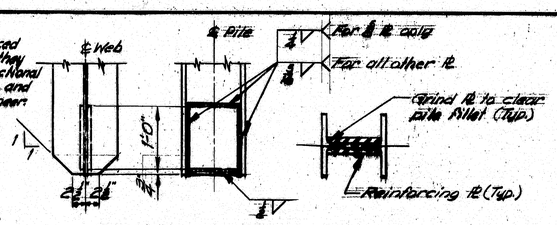
S.P.R. DIV. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	21	27



NOTE:
Alternate pointed reinforced pile tips may be used if they have at least the cross-sectional area of the pile tip shown, and are approved by the Engineer.

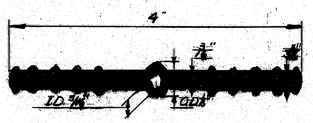
Ⓐ NOTE: Payment for the roadway drains shall be in accordance with subsection 502.20 of the Standard Specifications. The pipe portion of the drain shall be 6" standard weight pipe conforming to the specification for ASTM A53, black, Grade B, Type E or S. All bars and plates shall conform to the specification for ASTM A36 except for the L 3×3×⅜ which shall be of the same classification as the beam web. Painting of the drains will not be required when the structural steel is unpainted, unless otherwise specified in the contract drawings.



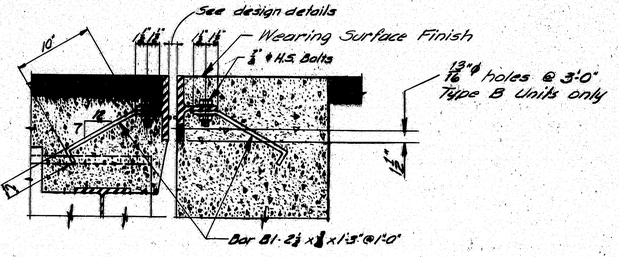


POINTED REINFORCED PILE TIP
Note: Plates may be shop or field welded

STEEL HP BEARING PILES	
PILE SIZE	REINF. ℔ SIZE
HP 10×42	8-⅜×½×1'-0"
HP 10×57	8-⅜×½×1'-0"
HP 12×53	10-⅜×½×1'-0"
HP 12×74	10-⅜×½×1'-0"
HP 14×73	12-⅜×½×1'-0"
HP 14×89	12-½×1×1'-0"



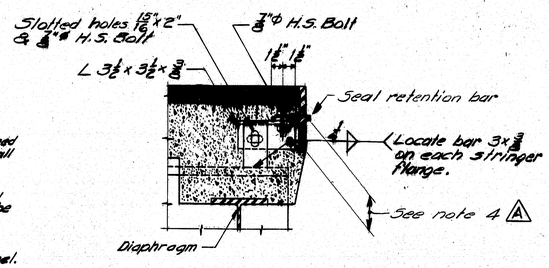
POLYVINYLCHLORIDE WATERSTOP



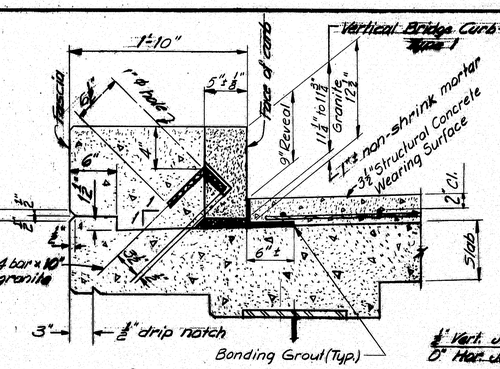
ARMORED JOINT UNIT TYPE A

ARMORED JOINT UNIT TYPE B

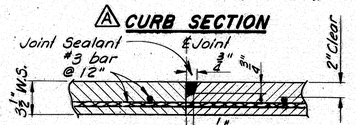
SECTION D-D



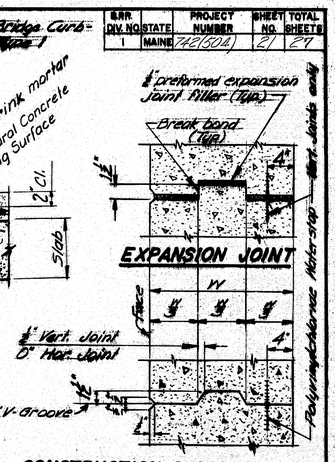
SECTION E-E
Shaming Adjustment Device Armored Joint Unit Type A only
After Unit is in final position weld ¾ bar to angle with ¾ fillet



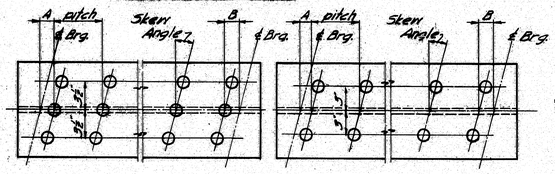
Ⓐ **CURB SECTION**



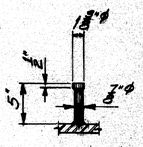
CONSTRUCTION JOINT



CONSTRUCTION & CONTRACTION JOINTS



TRIPLE STUDS **DOUBLE STUDS**



STUD DETAIL

NOTE
1. Studs shall be granular or solid flux filled and automatically and welded to top flange in the shop or field.
2. See the design details for Dimensions "A" & "B", stud pitch and skew angle for studs.

SHEAR CONNECTORS

NOTE Use only those items called for on design details. In case of conflict between these Standard Details and design details, the requirements of the design details shall be followed.

NOTE
1. Type A Armored Joint Units are intended to be used for attachment to superstructures. Type B Armored Joint Units are intended to be used for attachment to abutments. At armored joints over piers, two (2) Type A Armored Joint Units shall be used.
2. When more elements than two (2) are required by the design details, the elements of both units shall be field welded together in the same manner as shown in Section F-F.
3. Armored Joints to be paid for as Structural Steel.
Ⓐ 4. All structural steel shall be A36. When structural steel is specified to be unpainted, the armored joint shall receive three coats of shop paint, on exposed areas of flanges below seal retention bars.

ARMORED JOINT
An armored joint consists of two armored joint units. See note 1.

	REVISIONS	DATE
Ⓐ	Added holes and note to roadway drain.	3-1-77
	Add Note 4 to Armored Joint notes.	
	Eliminate Hot Bit Part.	
	Change curb and granite widths and added a concrete wearing surface	

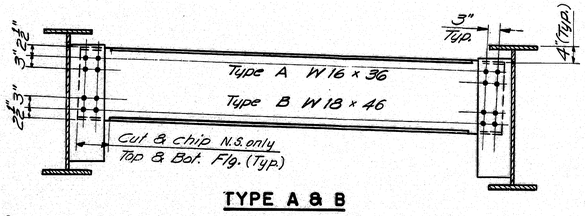
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 104-77)
ARMORED JOINT, DRAIN
SHEAR CONNECTORS
MISC. STRUCTURAL DETAILS

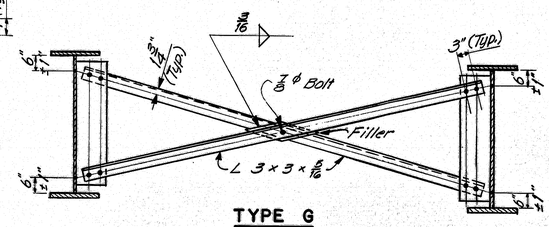
SHEET 21 OF 27 AUGUSTA, ME. FEB. 1977

173-44

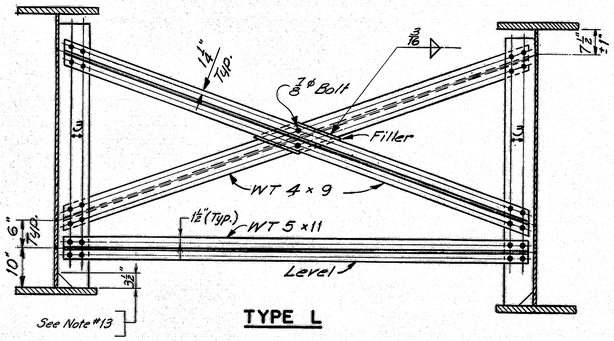
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	22	27



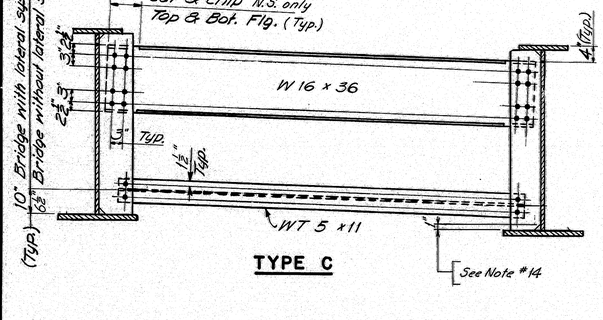
TYPE A & B



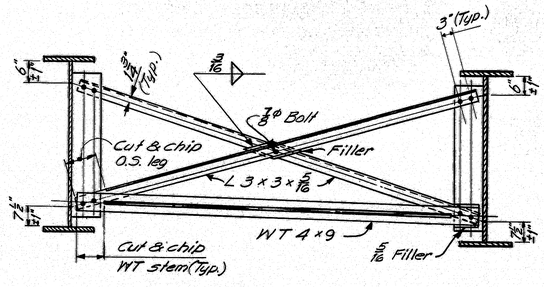
TYPE G



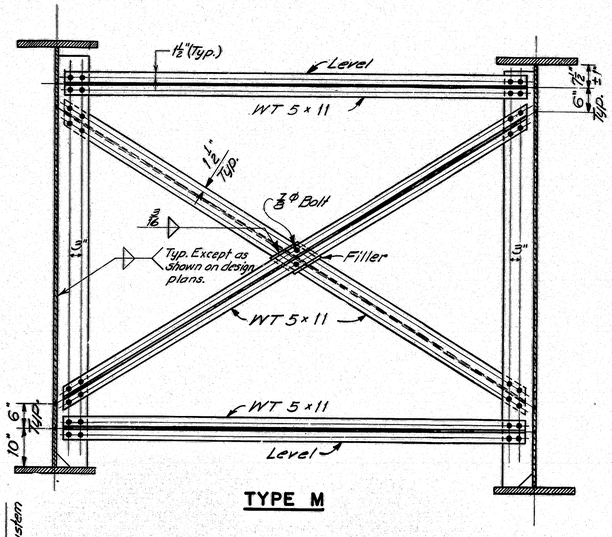
TYPE L



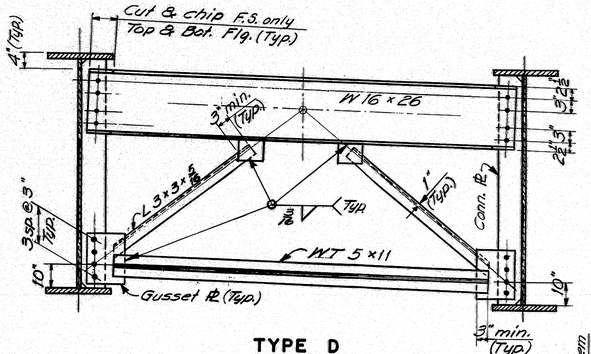
TYPE C



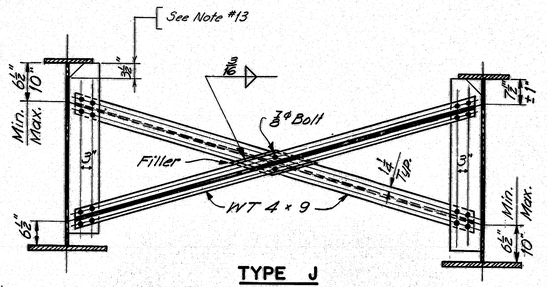
TYPE H



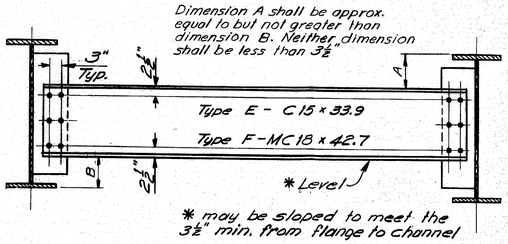
TYPE M



TYPE D

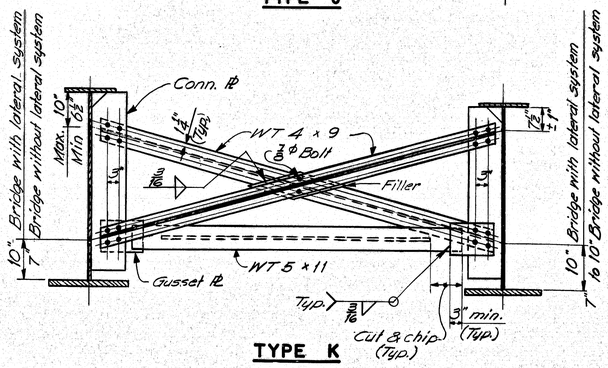


TYPE J



* may be sloped to meet the 3½" min. from flange to channel

TYPE E & F



TYPE K

FABRICATION NOTES

1.) All bolts shall be ⅞" Ø H.S. Bolts. Holes for bolts shall be 15/16" Ø and edge-distances shall be 1½" min. unless otherwise shown.

2.) Connection Plates and gusset plates shall have a minimum thickness of ⅜" and shall have sufficient width to provide erection clearances. For bearing stiffeners or intermediate stiffeners and for bent connection plates the plate size will be given on the design details.

3.) Connection Plates shall be fastened to web plates by fillet welds as shown. All fillet welds shall be the minimum size as specified in A.A.S.H.T.O. Standard Specifications for Highway Bridges, Art. 1.7.26, unless otherwise shown on design plans.

4.) Connection Plates shall be 3½" clear from flanges, except as indicated by notes 5 & 6.

5.) Connection Plates on welded beams and girders shall extend to the top flange in areas where the top flange is always in compression.

6.) Connection Plates shall extend to the bottom flange at points where lateral bracing is attached and on welded beams and girders in areas where the bottom flange is always in compression.

7.) When a connection plate is extended to a flange it shall fit within 1/16" except if the design details show it is to be welded.

8.) Bearing Stiffeners at end bearings shall extend to both top and bottom flanges and shall be welded to both flanges. Weld at bottom flange shall be a full penetration weld. Weld at top flange shall be a fillet weld both sides (see Note 3).

9.) Bearing Stiffeners at other than end bearings shall extend to both top and bottom flanges, shall be welded to the bottom flange with a full penetration weld and shall fit within 1/16" at top flange.

10.) Intermediate Stiffeners shall extend to both top and bottom flanges, shall be welded to the compression flange with a fillet weld on both sides (see Note 3) and shall fit within 1/16" at the tension flange.

11.) Use only those items called for on the design details. In case of conflict between these standard details and design details, the design details shall be followed.

12.) All dimensions shown as "__ ±1" are variable in order to allow a series of crossframes to have the same slopes and/or dimensions.

13.) All connection plates and stiffeners that are extended to a flange shall be clipped 3½/2", except as indicated by note 14.

14.) Bearing stiffeners at end bearings shall be clipped 1" at top and bottom. Bearing stiffeners at all other bearings and intermediate stiffeners shall be clipped 1" at the compression flange.

15.) For unpainted applications all steel for diaphragms and crossframes shall be A.S.T.M.-A588 or A242. For bridges specified to be painted the steel for diaphragms and connection plates shall be A.S.T.M.-A36, except other steel classifications may be used subject to the approval of the Engineer.

PLANS	DATE	BY
DESIGN - DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 113 - 78)

DIAPHRAGMS & CROSSFRAMES

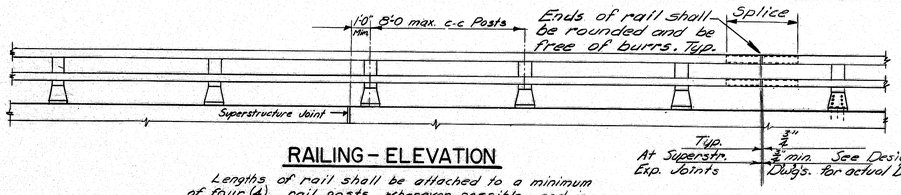
SHEET 22 OF 27 AUGUSTA, MAINE June 1978

173-45

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	'742(504)	23	27

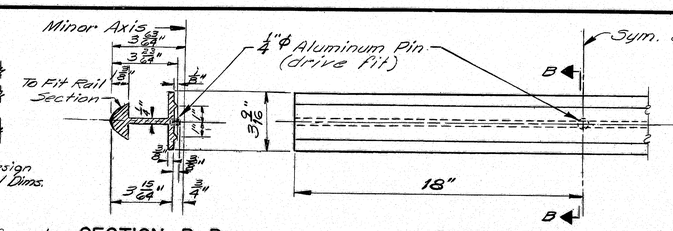
DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges 1973, and Interims 1974, '75, '76, '77



RAILING – ELEVATION

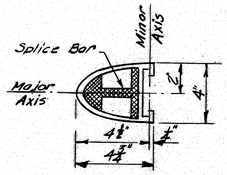
Lengths of rail shall be attached to a minimum of four (4) rail posts wherever possible, and in any case never less than two (2). Rail posts are to be set normal to grade unless otherwise shown on the Bridge Plans.



SECTION B-B

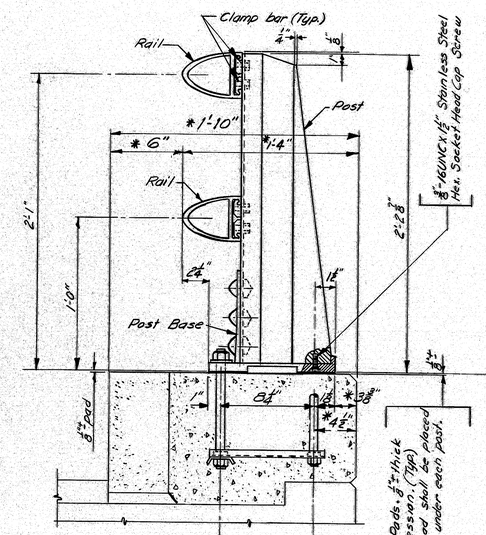
SPLICE BAR

Alternate splice bars may be substituted if approved by the Engineer



RAIL SECTION

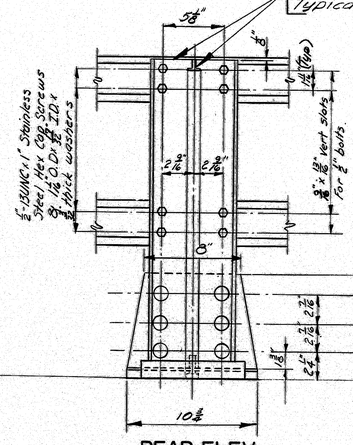
See "Rail Detail"



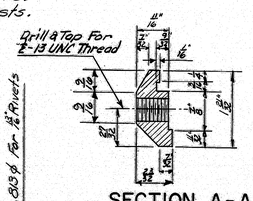
BRIDGE RAILING

(Assembly)

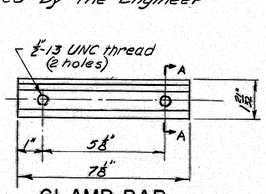
* Preferable minimum dimensions. For actual dimensions see Bridge Plan.



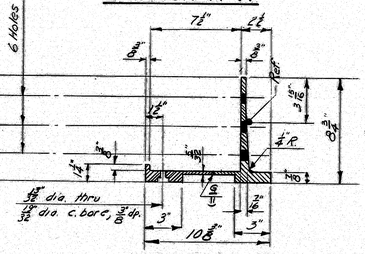
REAR ELEV.



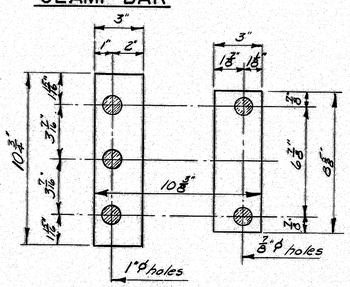
SECTION A-A



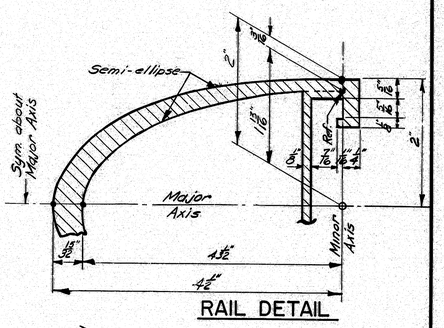
CLAMP BAR



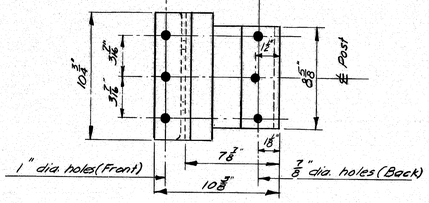
POST BASE SECTION



PREFORMED PADS

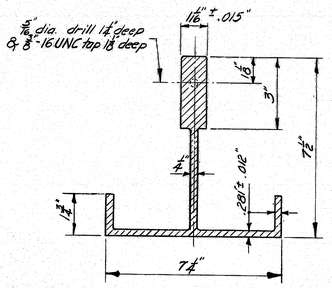


RAIL DETAIL

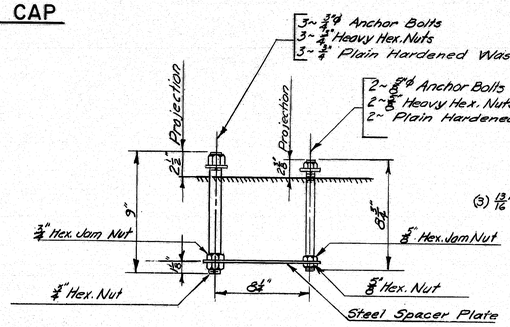


POST BASE

(Bottom View)

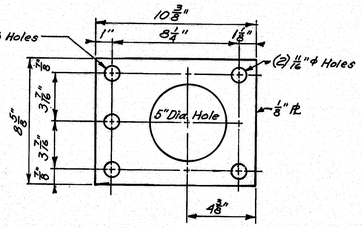


POST SECTION



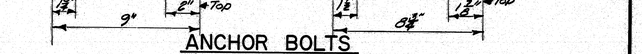
RAIL POST ANCHORAGE

(Assembly)



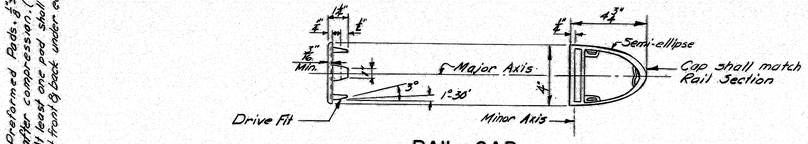
STEEL SPACER PLATE

(For Anchorage)



ANCHOR BOLTS

If cut threads are used, body diameter shall be not less than nominal diameter. If rolled threads are used, body diameter shall be not less than root diameter of the threads.



RAIL CAP

PLANS	DESIGN – DETAILED	BY	DATE
	DESIGN – DETAILED	K. Reeds/K. Leach	Jan 1981
	CHECKED		
	REVISIONS	W. Peterson	Jan 1982
	FIELD CHANGES		

JANUARY 1968

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 114-77)

ALUMINUM BRIDGE RAILING

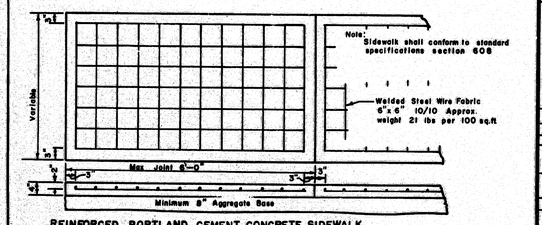
2 – BAR (SEMI-ELLIPSE)

TYPE "A"

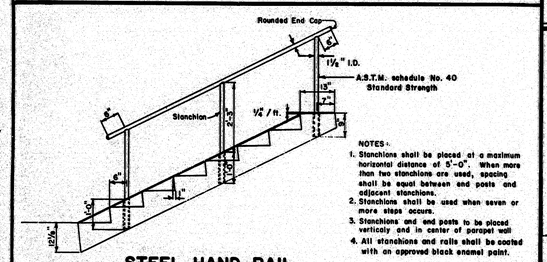
SHEET 23 OF 27 AUGUSTA, MAINE DEC. 1977

203-1 2080

173-46

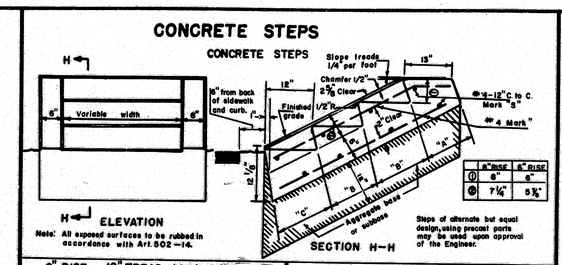


REINFORCED PORTLAND CEMENT CONCRETE SIDEWALK



STEEL HAND RAIL

5-A



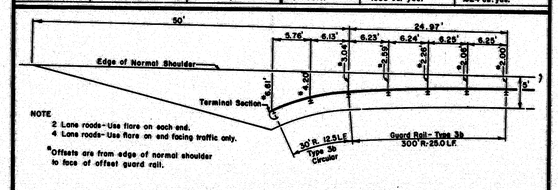
	a" RISE	b" RISE
①	6"	6"
②	7¼"	5⅞"

Mark	Size	Number	Length (Each)
R	#4 .668 lbs. per ft.	2 Each parapet 1 Each ft. of width	11" For "A" +13.4" For each "B" +12" For "C"
S	#4 .668 lbs. per ft.	2 For "A" 2 For each "B" 2 For "C"	4" Each parapet +12" per ft. of width

Mark	Size	Number	Length (Each)
R	#4 .668 lbs. per ft.	2 Each parapet 1 Each ft. of width	11" For "A" +16½" For each "B" +12" For "C"
S	#4 .668 lbs. per ft.	2 For "A" 2 For each "B" 2 For "C"	4" Each parapet +12" per ft. of width

Section	Steps per ft. of width	Parapet each wall
"A" Header	.030 cu. yds.	.015 cu. yds.
"B" Each intec step	.030 cu. yds.	.020 cu. yds.
"C" Footer	.030 cu. yds.	.020 cu. yds.

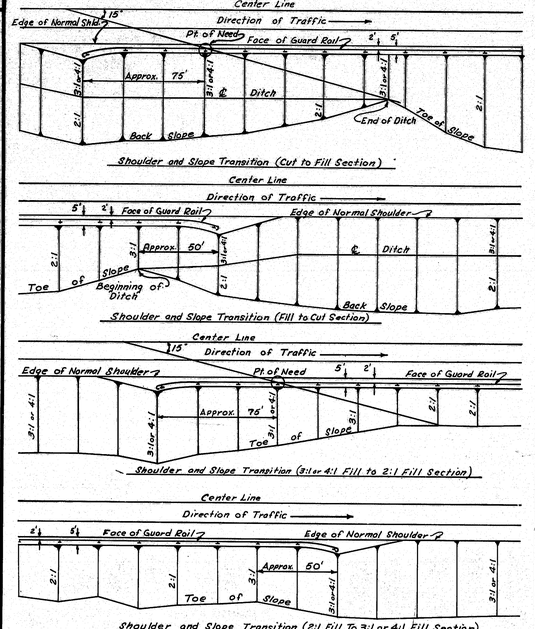
Section	Steps per ft. of width	Parapet each wall
"A" Header	.035 cu. yds.	.018 cu. yds.
"B" Each intec step	.035 cu. yds.	.024 cu. yds.
"C" Footer	.035 cu. yds.	.024 cu. yds.



GUARD RAIL END TRANSITION

5-B

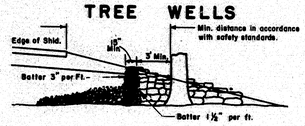
GUARD RAIL END SLOPE TRANSITIONS



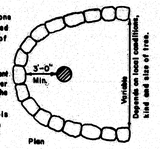
NOTE:
The Transitions are a design guide only.
These slope Transitions shall be used with Beam Type Guard Rail.

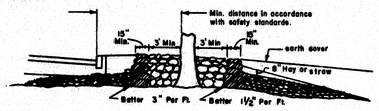
5-F

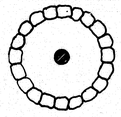
TREE WELLS



NOTES:
1. Selected ledge excavation, crushed stone or other porous material shall be used to fill around the old ground area of the tree from the tree wall to the perimeter of the branches.
2. An 8" layer of hay or straw to prevent infiltration of fines shall be placed over the rock fill except in areas under the roadway and shoulders.
3. If drainage away from the tree well is necessary, underdrain outlet pipe shall be used, and will be paid for under Item 608.10.



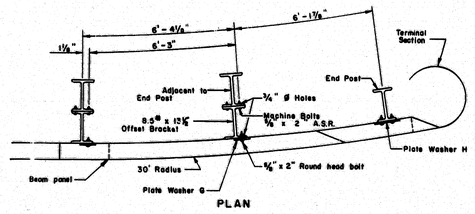




To be paid for under Item
610.09 Hand laid riprap.
608.10 6" Underdrain Outlet

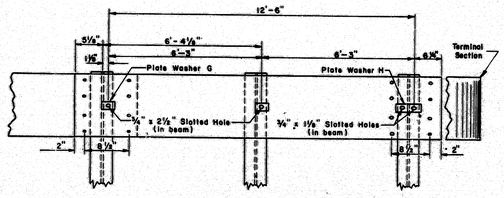
5-E

END BEAM ASSEMBLY - SPACING OF POSTS
GUARD RAIL TYPE 3a and 3b

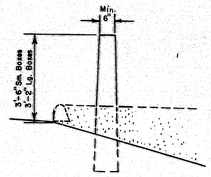


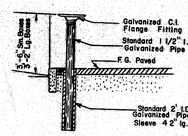
To be used in all locations except on the end away from traffic on 4 lane divided.

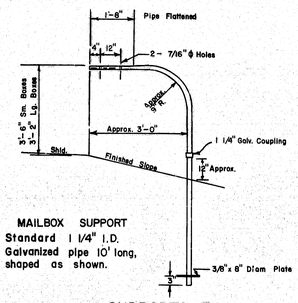
NOTE:
Offset Bracket shall be installed on all posts, except end post.



5-C



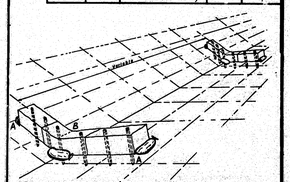




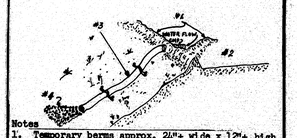
SUPPORTS FOR MAILBOXES

5-G

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	24	27



EROSION CHECK for DITCH



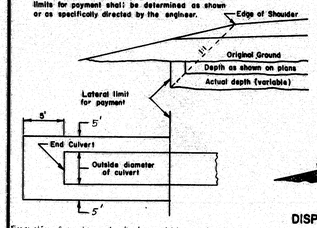
TEMPORARY BERM and SLOPE DRAIN

TEMPORARY EROSION CONTROL

5-D

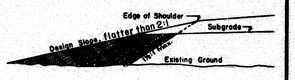
MUCK EXCAVATION
PAYMENT LIMITS

NOTE:
When muck is excavated to a depth greater or less than what is shown on the plans, the vertical limits for payment shall be determined as shown or as specifically directed by the engineer.

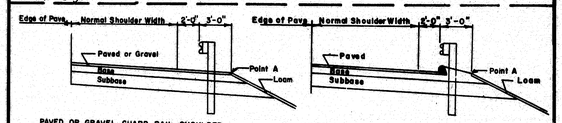


When directed by the engineer, waste material shall be used in this area, except that waste shall not be placed in fills designed with slopes of 2:1 or less. No additional payment will be made for this work.

Excavation for pipe culverts in grubbing and muck areas, Pay Earth Excav. or Muck Excav. as designated.



DISPOSAL OF WASTE MATERIALS



PAVED OR GRAVEL GUARD RAIL SHOULDER

PAVED GUARD RAIL SHOULDER WITH CURB

Point A = Normal Slope Break

LOCATION OF GUARD RAIL

5-H

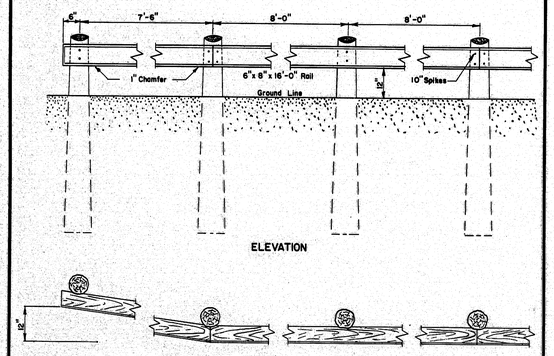
REVISIONS	
Plate 5-A	12-24-69
PLATE 5B	1-27-71
PLATE 5H	5-12-71
PLATE 5B	1-19-72
PLATE 5G	6-7-72
PLATE 5D	6-7-72
PLATE 5D+C	10-22-74
PLATE A.B.F.H	3-18-75
PLATE 5H	6-26-75
PLATE G	10-14-75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

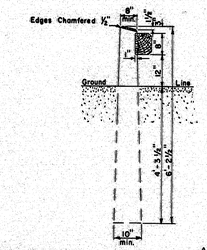
STANDARD DETAILS

GUARD RAIL, MUCK EXCAVATION
CONCRETE STEPS & SIDEWALK
GUYING TREES
TREE WELLS, EROSION CONTROL,
MAILBOX SUPPORTS. AUG. 1969 (5)

173-427



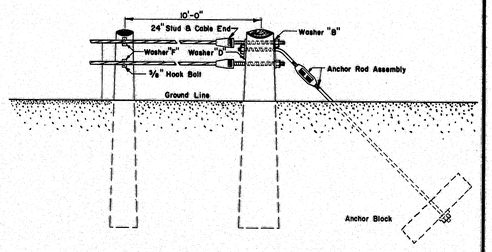
NOTE:
1. This guardrail should not be used adjacent to public highways. Location should be limited to driveways, dead ended roads, etc.
2. Unless otherwise specified, all exposed wood above ground, both posts and rails shall be painted with 2 coats of white paint.



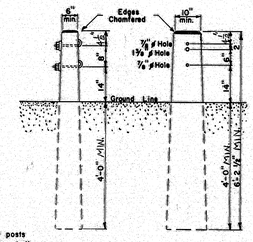
FOR TYPE 6 GUARD RAIL SEE STANDARD DETAIL SHEET 21

GUARD RAIL type "5"

A



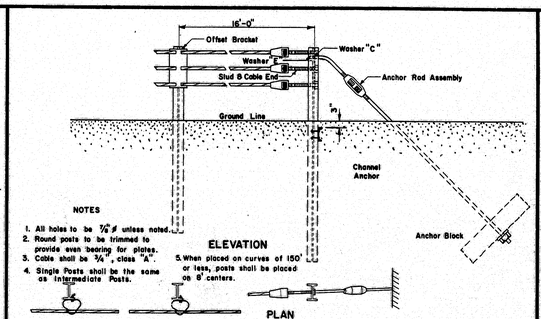
NOTES
1. Anchor posts shall be White Oak.
2. Alignment – see types 2a, 2b and 2c.
3. Posts to be trimmed to provide even bearing for plates.
4. Unless otherwise specified all wood above ground to be painted with 2 coats of white paint, – for type 1a.
5. Single Posts shall be the same as Intermediate Posts.
6. Cable shall be ¾" class "A".
7. When type 1, 1a, 2 and 2a wood posts are to be installed in paved areas or behind bituminous curb the posts shall be installed prior to the placing of pavement or bituminous curb.
8. Use of this guardrail should be limited to very low volume highways.
9. If the Contractor chooses to drive posts, then all posts on the project, whether driven or placed in dug holes shall be set with the larger diameter at the top



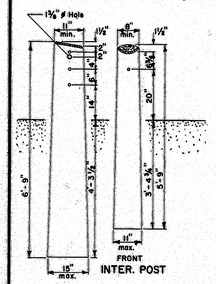
GUARD RAIL type "1a"-"1b"

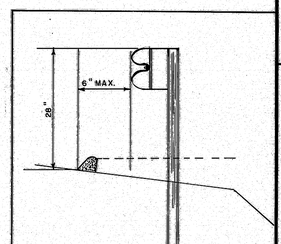
INTERMEDIATE POST ANCHOR POST

B



NOTES
1. All holes to be 7/8" ø unless noted.
2. Round posts to be trimmed to provide even bearing for plates.
3. Cable shall be ¾", class "A".
4. Single Posts shall be the same as Intermediate Posts.
5. When placed on curves of 150' or less, posts shall be placed on 8' centers.





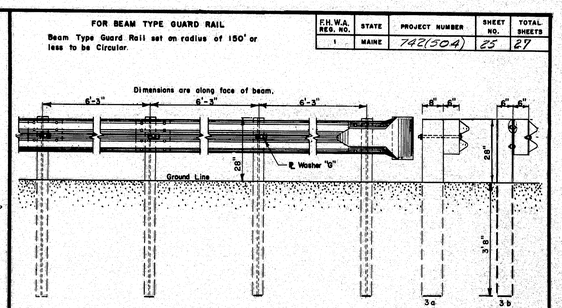
GUARD RAIL AT CURB SECTION

GUARD RAIL type "2a"

C

FOR BEAM TYPE GUARD RAIL
Beam Type Guard Rail set on radius of 150' or less to be Circular.

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	25	27

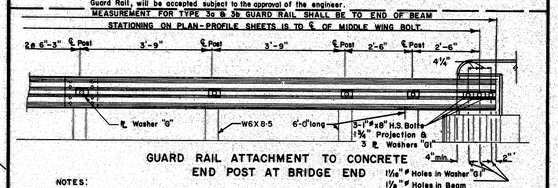


NOTE:
Intermediate post spacing shall be 6'-3" unless otherwise shown.

ELEVATION

1. Posts for type "3a" Guard Rail shall be 6"x8" and offset blocks for type "3a" Guard Rail shall be 6"x6".
2. Posts and offset brackets for type "3b" Guard Rail shall be W6 X 8·5 or alternate "C" post.
3. Steel posts punched with holes in addition to those specified, to accomodate other types of Guard Rail, will be accepted subject to the approval of the engineer.

MEASUREMENT FOR TYPE 3a & 3b GUARD RAIL SHALL BE TO END OF BEAM
STATIONING ON PLAN-PROFILE SHEETS IS TO ℄ OF MIDDLE WING BOLT.



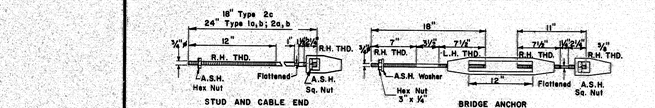
GUARD RAIL ATTACHMENT TO CONCRETE END POST AT BRIDGE END

1⅛" ø Holes in Washer "G"
1½" ø Holes in Beam

NOTES:
1. Where Bridge expansion is required at Connection, it will be detailed on the Construction Plans.
2. Guard Rail shall be connected to the structure as shown. Payment for the connection to the structure and additional posts shall be incidental to the Guard Rail Item.
3. Splice holes in Guard Rail Beam that are not used in connection, to be plugged with button head bolts or omitted.

GUARD RAIL type "3a" & "3b"

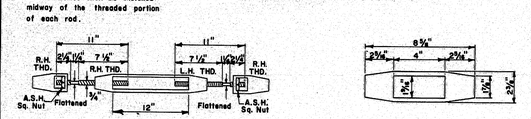
D



STUD AND CABLE END — BRIDGE ANCHOR

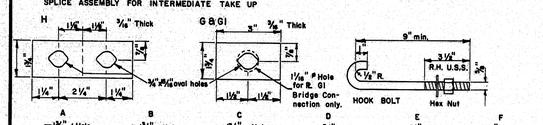
NOTES
1. Other designs may be used subject to the engineers approval.
2. All turnbuckles shall be installed midway of the threaded portion of each rod.

STANDARD FITTINGS



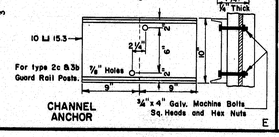
SPLICE ASSEMBLY FOR INTERMEDIATE TAKE UP

CABLE SPLICE



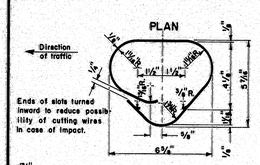
NOTES
1. All holes to be ⅞" ø unless otherwise noted.
2. Holes shall be drilled or punched before galvanizing.

PLATE WASHERS

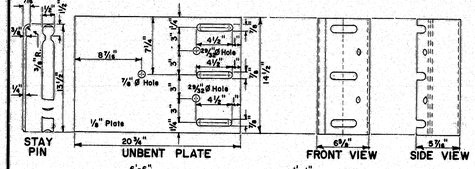


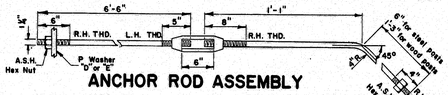
CHANNEL ANCHOR — ¾" x 4" Galv. Machine Bolts Sq. Heads and Hex Nuts

E

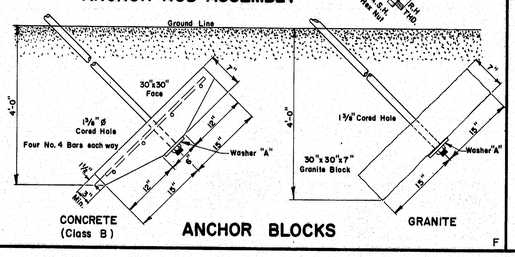


OFFSET BRACKET

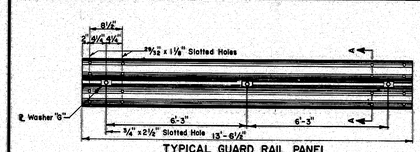




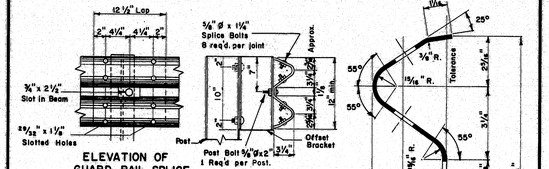
ANCHOR ROD ASSEMBLY



F



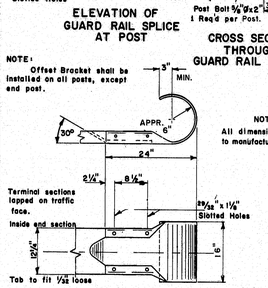
TYPICAL GUARD RAIL PANEL
NO. 12 MIN. GAUGE GUARD RAIL BEAM



ELEVATION OF GUARD RAIL SPLICE AT POST

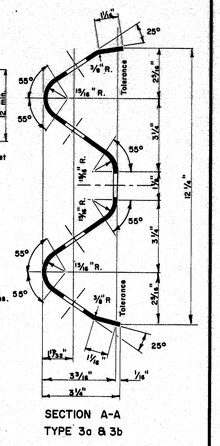
CROSS SECTION THROUGH GUARD RAIL SPLICE

NOTE:
Offset Bracket shall be installed on all posts, except end post.



GUARD RAIL - TERMINAL END SECTION

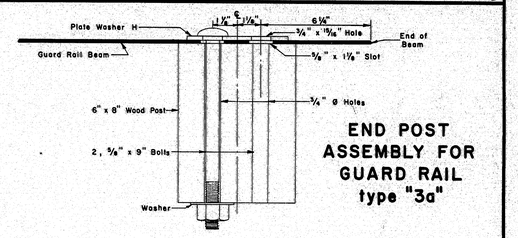
NOTE
All dimensions subject to manufacturing tolerances.



SECTION A-A
TYPE 3a & 3b

GUARD RAIL BEAM DETAIL

G



H

REVISIONS	
PLATE 'D'	11-22-71
— 11 —	2-17-72
PLATES C, D, G, H	10-22-74
PLATE C	10-14-75

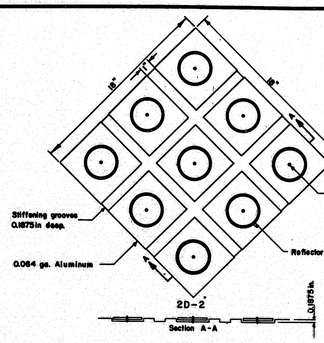
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

STANDARD DETAILS

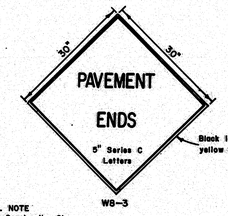
GUARD RAILS, ANCHOR ASSEMBLIES, PLATE WASHERS and STANDARD FITTINGS

AUG. 1969 (6)

173-98



HAZARD MARKER



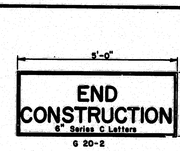
NOTE

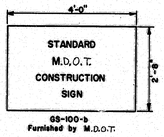
SIGNING IN AN AREA WHERE BLASTING IS NECESSARY SHALL BE PLACED AS OUTLINED IN THE "MANUAL", AND THE PRECAUTIONS OF SUBSECTION 107.12 OF THE STANDARD SPECIFICATIONS SHALL BE OBSERVED.

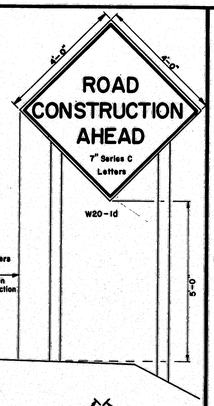
GENERAL NOTE
Construction Signs

1. Sign Borders: All signs shall have borders conforming to the sizes and spacing as shown below:
   a. 30"x30" Sign - 3/4" Border, 1/2" Space from sign edge.
   b. 2' x 5' Sign - 5/8" Border, 3/8" Space from sign edge.
   c. 3' x 4' Sign - 3/4" Border, 1/2" Space from sign edge.
   d. 4' x 4' Sign - 1 1/4" Border, 3/4" Space from sign edge.

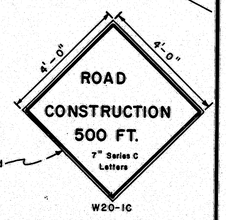
A







Erected in the same manner as W20-1d



CONSTRUCTION SIGNS

B

GENERAL NOTES - BARRICADES

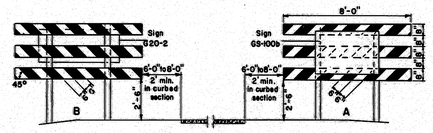
1. Unless otherwise designated, sign designation letters shall refer to the "Manual of Uniform Traffic Control Devices for Street and Highways," published by the U. S. Department of Transportation, Federal Highway Administration, 1971.
2. White stripes shall be of silver reflective sheeting bonded to 0.019 minimum gauge aluminum, 16 minimum gauge galvanized steel, or 1/4" plywood. Individual white sheets may be attached to an orange reflectorized background to form the orange and white stripes. At the Contractor's option the reflective sheeting and backing may extend the full width of the barricade with an opague film or paint applied to form the stripes.
3. All signs shall be of reflective sheeting on 5/8" thick plywood. The plywood shall conform to subsection 712.25, Standard Specifications, June 1968.
4. Pressure sensitive reflective sheeting will be an acceptable alternate to the reflective sheeting required by Standard Specifications.

NOTES - PORTABLE BARRICADES

1. Lumber sizes for portable barricades shall be 2" x 8" except posts which shall be 4" x 4" (nominal sizes).
2. The detour sign shall be an oversized M4-10 sign with a demountable "DETOUR" message which shall be made of screened reflective sheeting on 1/4" plywood, masonite, sheet steel or sheet aluminum.
3. Hazard markers shall be attached to the barricade with a bolt assembly of steel cadmium plated 5/16" bolt, lock washer and vandal resistant nuts.
4. When two W1-6 signs are required, R11-2, R11-3, or R11-4 signs shall be omitted.
5. Flashing lights housings shall be mounted to permit rotating in a vertical axis to allow for adjustment to face oncoming traffic.
6. Location of electric service and meter to be determined after the power source has been located.

NOTES-WING BARRICADES

1. Lumber sizes for wing barricades shall be 2" x 8" except posts which shall be 4" x 4" (nominal sizes).
2. Wing barricades will not be required unless specifically called for in the special provisions.
3. Location of signs and barricades will be determined by the Engineer.

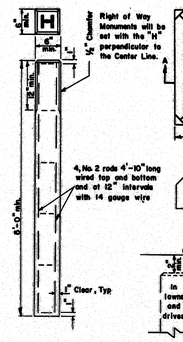


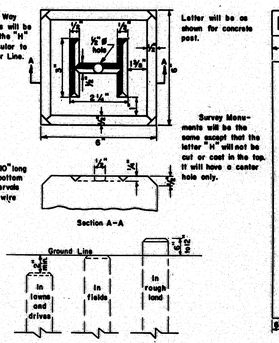
WING BARRICADES

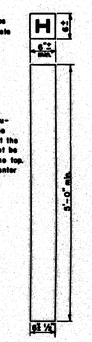
C

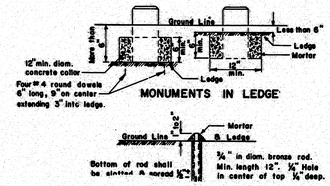
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(504)	26	27

RIGHT OF WAY & SURVEY MONUMENTS

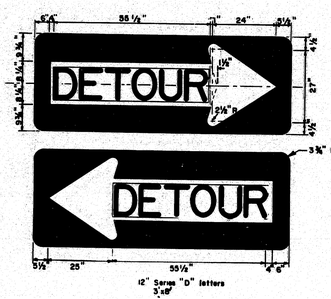






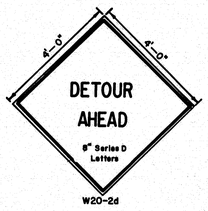


D



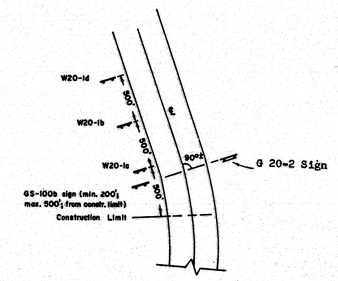
Detachable DETOUR message shall have 1" clearance from letters to edge on all sides.

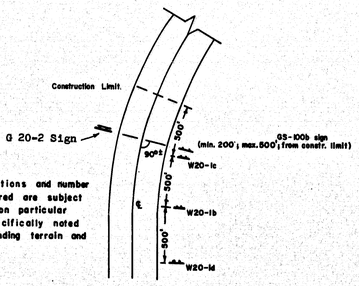
DETOUR SIGN
M 4-(L)



E

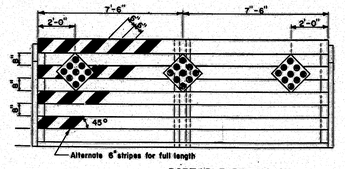
STANDARD SIGN LOCATIONS



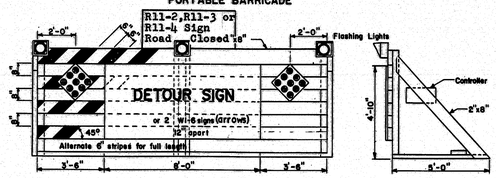


NOTE:
Standard locations and number of signs required are subject to variation on particular projects if specifically noted due to surrounding terrain and land use.

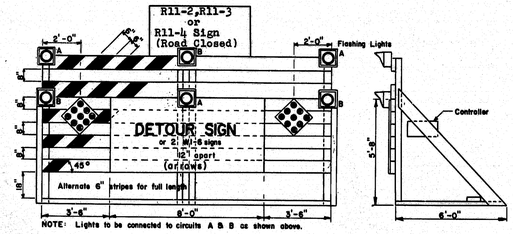
F



PORTABLE BARRICADE



PORTABLE BARRICADE WITH FLASHING LIGHTS (NORMAL SIZE)

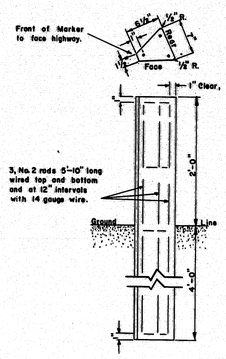


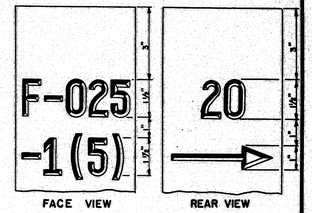
NOTE: Lights to be connected to circuits A & B as shown above.

OVERSIZED PORTABLE BARRICADE WITH FLASHING LIGHTS

BARRICADES

G





NOTES

1. Distance from roadway shall be 30' minimum.
2. When posts cannot be set on the exact station, the front of the post shall be painted black from the top to 3" down, and the offset distance marked on rear with an arrow pointing in direction of beginning or end of project.
3. All markings to be 1/4" deep and 3/16" wide.

PROJECT MARKERS

H

REVISION	
PLATE B	12-21-70
PLATES B, C, E & G	12-15-71
PLATE C	10-12-72
PLATES C & G	3-25-76

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

BARRICADES
WARNING SIGNS
MONUMENTS
PROJECT MARKERS

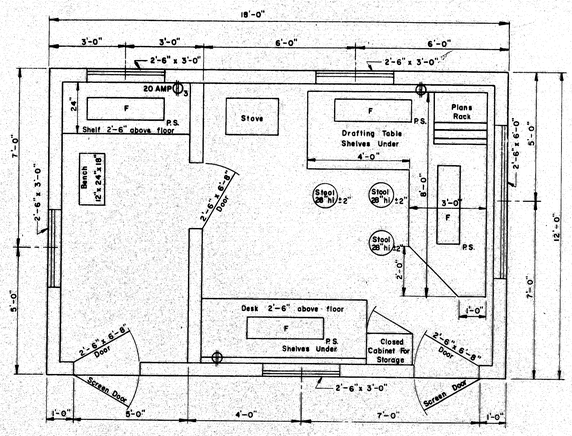
AUG. 1969

11

3190

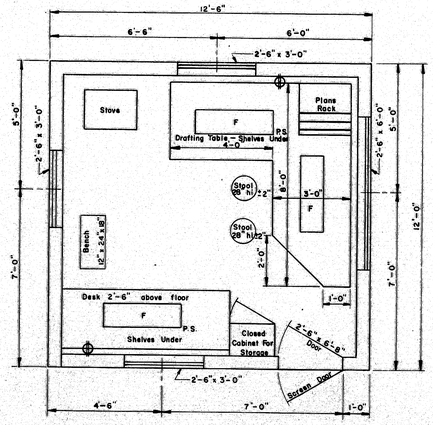
173-99

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	742(50A)	27	27



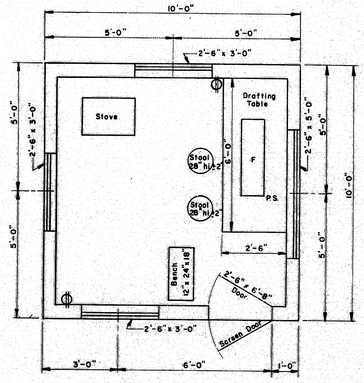
FLOOR PLAN
TYPE "A"

A



FLOOR PLAN
TYPE "B"

B



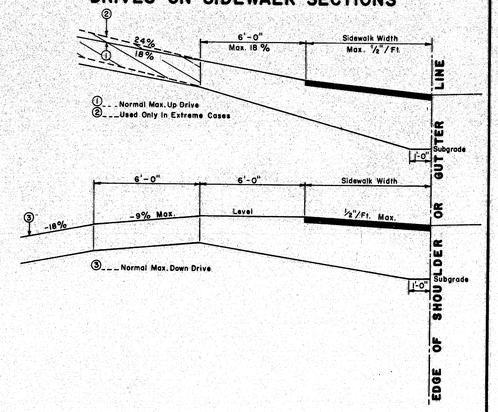
FLOOR PLAN
TYPE "C"

C

GENERAL NOTES

1. Drafting table shall be 3'-4" high at front edge and placed 2" from studs to allow prints to hang down behind table when in use.
2. Shelves under desk shall be constructed to received 11½" x 14" x 25" transfiles.
3. Windows shall be double hung.
4. Stovepipe shall not be in direct contact with combustible material, the pipe shall be surrounded with at least 6" of fireproof material.
5. Continuous 110 volt 60 cycle electric service shall be supplied.
6. The engineer may rearrange the items shown on the plan views during construction of the field office.
7. FURNISHINGS TO BE SUPPLIED:
   - 2 Straight back chairs for types A and B
   - 1 Bench for types A, B & C
   - 3 Stool for type A
   - 2 Stools for types B & C
8. SYMBOLS:
   - F — Florescent lights (2 light, rapid start 48" strips and 40 watt bulbs.)
   - P.S. — Pull switch
   - Duplex wall outlet — 15 amp unless otherwise noted
   - $\oplus_3$ Triplex Wall Outlet
9. For the Type "A" Field Office one clean 55 gal. drum shall be supplied, installed on a suitable rack and equipped with a spigot suitable for drawing off water. The drum shall be furished with water at all times.

DRIVES ON SIDEWALK SECTIONS

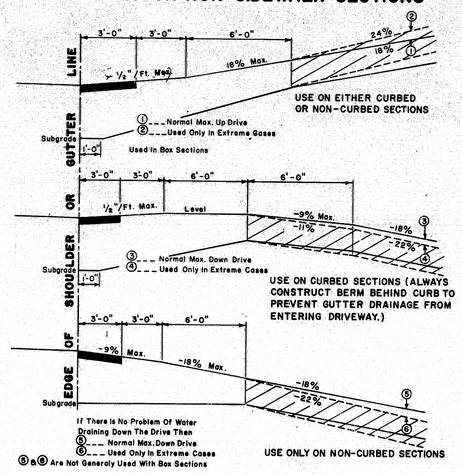


GENERAL NOTES
1. The sidewalk width shall be paved in all cases.
2. All residential or commercial drives 10% and over shall be paved.

NOTES ON MAXIMUM DRIVEWAY PROFILES
1. These profiles are a guide for the majority of cases, but should be field checked when the main line grade is steep (4% to 6% or greater) or the angle of approach to the drive is unusual.
2. Generally the majority of drives on a project will be built with flatter profiles than these maximum cases.
3. When grading drives which are flatter than the maximum profiles the following rule of thumb should be used, do not exceed a grade % change of more than 9% in a 6 foot increment of driveway length. This applies to both up and down profiles.

D

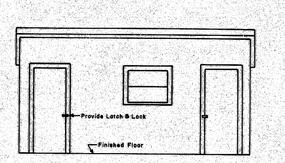
DRIVES ON NON-SIDEWALK SECTIONS



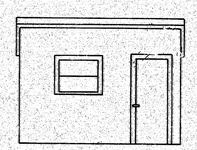
GENERAL NOTES
1. The first 3' shown as pavement shall be paved only when abuting a paved area.
2. All residential or commercial drives 10% and over shall be paved.

NOTES ON MAXIMUM DRIVEWAY PROFILES
1. These profiles are a guide for the majority of cases, but should be field checked when the main line grade is steep (4% to 6% or greater) or the angle of approach to the drive is unusual.
2. Generally the majority of drives on a project will be built with flatter profiles than these maximum cases.
3. When grading drives which are flatter than the maximum profiles the following rule of thumb should be used, do not exceed a grade % change of more than 9% in a 6 foot increment of driveway length. This applies to both up and down profiles.

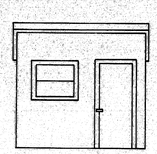
E



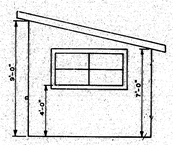
FRONT ELEVATION
TYPE "A"



FRONT ELEVATION
TYPE "B"



FRONT ELEVATION
TYPE "C"



SIDE ELEVATION
TYPES "A" "B" & "C"

F

REVISIONS	
PLATE 'D' 'E'	3-16-73

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

STANDARD DETAILS

DRIVEWAY DETAILS
FIELD OFFICES
TESTING LABORATORY

AUG. 1969 (12)

173-50 Sh. #27