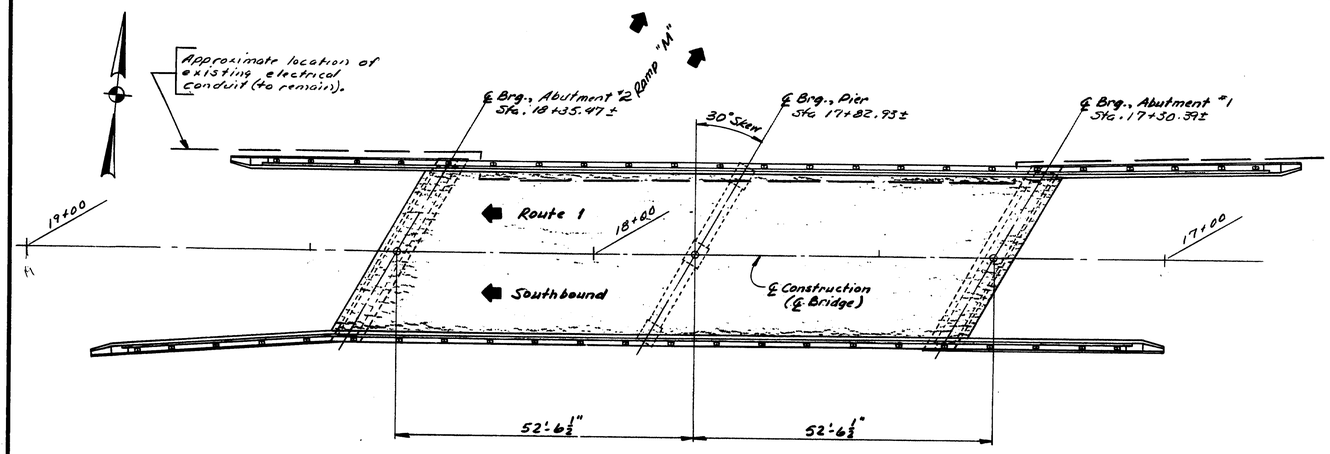
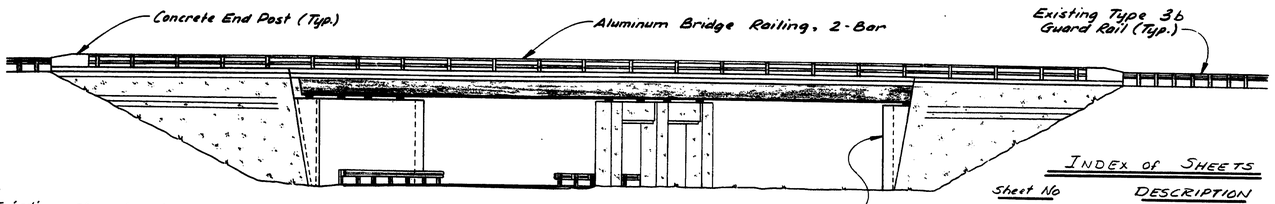
F.H.W.A. ROG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-01-1(75)	1	18

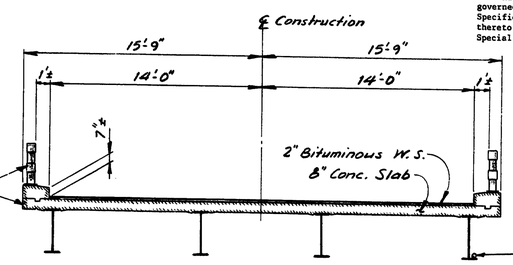


PLAN

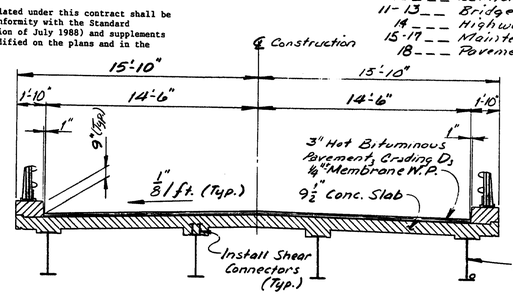


ELEVATION

Existing structural concrete slab, 2" bituminous wearing surface and metal railing to be removed. Payment will be made under Item 202.10 Removing Existing Superstructure. (Property of Contractor).



EXISTING TRANSVERSE SECTION



PROPOSED SECTION

Approximate location of existing electrical conduit (to remain).

NOTE:

All work contemplated under this contract shall be governed by and in conformity with the Standard Specifications (Revision of July 1988) and supplements thereto, except as modified on the plans and in the Special Provisions.

INDEX of SHEETS

Sheet No	DESCRIPTION
1	General Plan
2	Estimated Quantities
3	Sequence of Construction
4	Cross-Sections
5-7	Abutment Details
8-9	Superstructure Details
10	Reinforcing Steel Schedule
11-13	Bridge Standards
14	Highway Standards
15-17	Maintenance of Traffic
18	Pavement Markings

SPECIFICATIONS

DESIGN: Load Factor Design per AASHTO Standard Specifications for Highway Bridges 1989.

CONTRACT: State of Maine, Department of Transportation, Standard Specifications, Highways and Bridges, Revision of July 1988.

DESIGN LOADING

LIVE LOAD . . . . . HS 25

MATERIALS

CONCRETE: . . . . . Class "A"
REINF. STEEL: . . ASTM A615, Gr. 60
STRUCTURAL STEEL:
H.S. Bolts. . . ASTM A325, Type 1

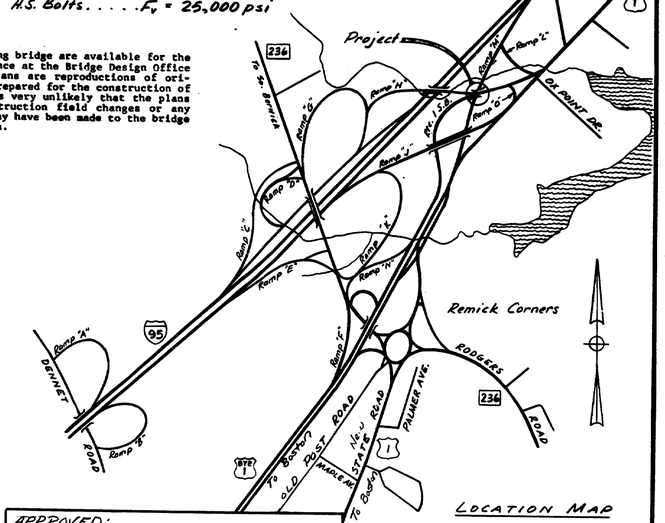
BASIC DESIGN STRESSES

CONCRETE: . . . . . f'_c = 3000 psi
REINF. STEEL: . . . f_y = 60,000 psi
STRUCTURAL STEEL:
H.S. Bolts. . . . . F_y = 25,000 psi

TRAFFIC DATA

AADT 1990 87,40
AADT 2010 13,980
DHV. 1538
T %. 4
D %. 100
18 Kip P2.0. 269
18 Kip P2.5. 264

Plans of the existing bridge 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.



LOCATION MAP

500 0 500 1000 1500
Scale of Feet
(1" = 700')

BRIDGE No 6222 303

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
GENERAL PLAN

SHEET 1 OF 18 AUGUSTA, MAINE

APPROVED:
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

COMMISSIONER — 4-19-85 DATE

CHIEF ENGINEER — 4-19-85 DATE

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1
APPROVED: 107-303
DIVISION ADMINISTRATOR DATE

STATE OF MAINE RICHARD A. [illegible] REGISTERED PROFESSIONAL ENGR.

AS-BUILT 1991 John Ayers

PROJECT DESIGN ENGINEER M.E.D.	BY	DATE
PLANS DESIGN - DETAILED	D. Donovan	May '84
CHECKED	W.E.D.	4-85
REVISIONS		
FIELD CHANGES		

BRUNING 44-132-4570-1

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
202.10	Rem. Existing Superstructure - Prop. of Contractor	1	LS
202.17	Removing Existing Structural Concrete	1	LS
403.10	Hot Bituminous Pavement, Grading D	150	T
403.121	Hot Bituminous Pavement, Grading E (Skimming)	195	T
409.15	Bituminous Tack Coat, Applied	26	G
502.21	Structural Concrete, Abuts & Retaining Walls	80	C.Y.
502.26	Struc. Conc. Rdwy & Sidewalk Slabs on Steel Bridges	1	L.S.
502.4911	Silica Fume Additive (6240#)	1	L.S.
503.12	Reinforcing Steel Fab & Delivered	33,000	Lb
503.13	Reinforcing Steel Placing	33,000	Lb
505.08	Shear Connectors	1	L.S.
506.19	Surface Preparation of Existing Structural Steel	1	L.S.
506.192	Field Painting Existing Structural Steel	1	L.S
507.092	Aluminum Bridge Railing, 2 Bar	354	L.F.
508.13	Membrane Waterproofing	1	L.S.
514.06	Curing Box For Concrete Cylinders	1	Ea.
515.21	Protective Coating for Concrete Surfaces	1	L.S.
518.21	Rehabilitation of Structural Concrete - Substructure	25	S.F.
526.301	Temporary Concrete Barrier, Type 1	1	L.S.
606.364	Guard Rail, Remove, Modify and Reset	425	L.F.
606.367	Replace Unusable Existing Guard Rail Posts	6	Ea.
606.77	Breakaway Cable Terminal	1	Ea.

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
615.07	Loam	10	C.Y.
616.08	Sodding	20	S.Y.
618.14	Seeding Method No 2	2	UN
619.12	Mulch	2	UN
627.61	4" Solid White Pavement Marking Line	300	L.F.
627.62	4" Broken White Pavement Marking Line	500	L.F.
627.63	4" Solid Yellow Pavement Marking Line	300	L.F.
627.67	Removing Pavement Markings	150	S.F.
627.69	Temp 4" Plastic Pave. Marking Line, Yellow or White	1300	L.F.
639.18	Field Office Type "A"	1	EA
639.22	Testing Facilities Bituminous Mixes	1	LS
639.23	Testing Facilities Concrete	1	LS
652.30	Flashing Arrow Board	1	Ea.
652.31	Type I Barricade	20	EA
652.33	Drum	5	EA
652.34	Cone	10	EA
652.35	Construction Signs	380	S.F.
652.361	Maintenance of Traffic Control Devices	1	LS
652.38	Flagger	300	M.H.
659.10	Mobilization	1	LS

Estimate of Lump Sum Quantities

502.26	Struc. Conc. Rdwy & Sidewalk Slab on Steel Bridges	126	C.Y.
505.08	Shear Connectors	1208	EA

PROJECT DESIGN ENGINEER: MEB	BY	DATE
DESIGN - DETAILED	E.M.N	2-85
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

F.A.P.S.S. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-01-1(95)	2	18

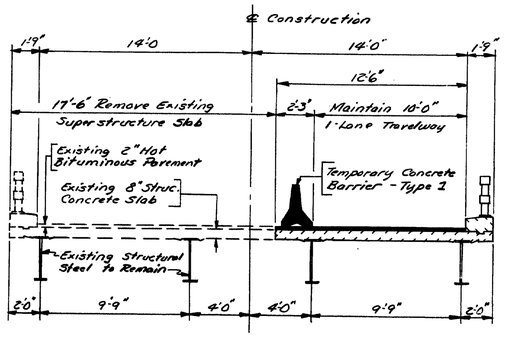
107-304 304

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

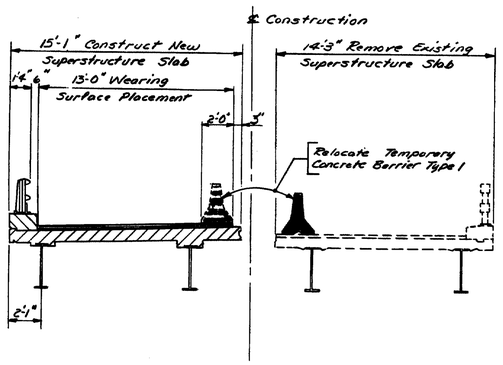
U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
ESTIMATED QUANTITIES

SHEET 2 OF 18 AUGUSTA, MAINE

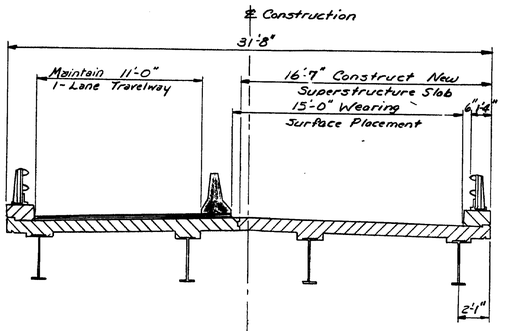
F.A.P. & BDG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BH-01-1(75)	3	18



STAGE-1



STAGE-2



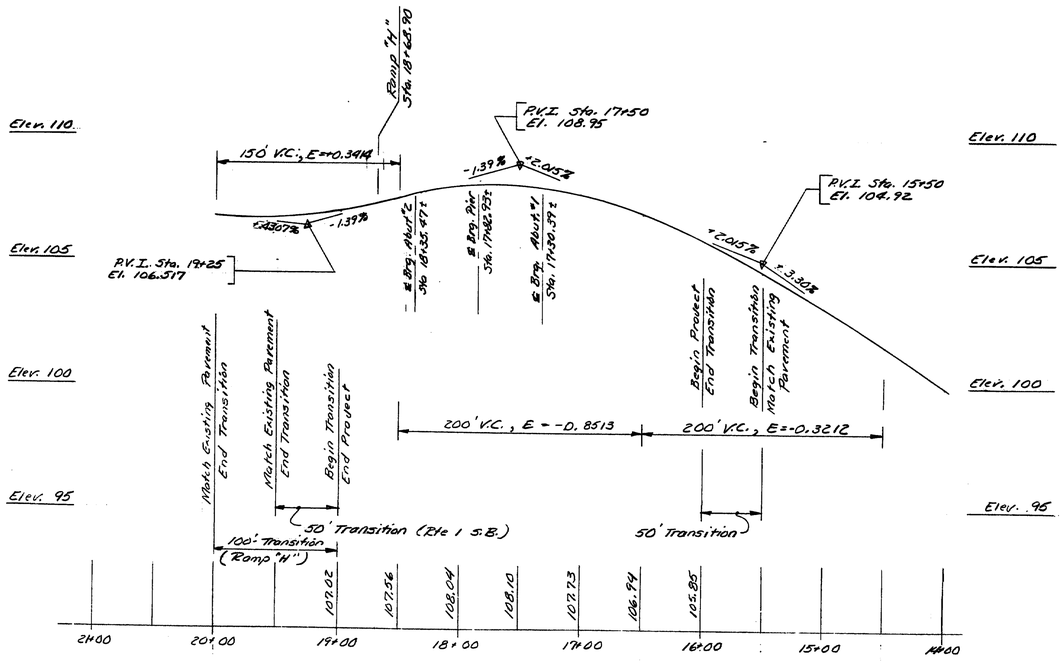
STAGE-3

SEQUENCE OF CONSTRUCTION

STAGE-1
Install traffic control devices,
Maintain 10'-0" one lane travelway,
Remove 17'-6" of existing superstructure slab, curb, railing and bituminous wearing surface.

STAGE-2
Install shear connectors,
Construct 15'-1" new superstructure slab, curb & railing,
Place membrane waterproofing & 13'-0" of 3" hot bituminous pavement wearing surface,
Relocate traffic control devices,
Maintain 11'-0" one lane travelway,
Remove 14'-3" of existing superstructure slab, curb, railing and bituminous pavement.

STAGE-3
Install shear connectors,
Construct 16'-7" new superstructure slab, curb & railing.
Place Membrane Waterproofing & 15'-0" of 3" hot bituminous pavement.



PROFILE ALONG ℄ CONSTRUCTION RTE. 1 S.B.

GENERAL CONSTRUCTION NOTES

1 - - - Place loam 2" deep, on slopes between station 15+50± and station 19+50± as directed by the Engineer.

2 - - - Sodded gutters shall be constructed, after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion.

3 - - - Clearing will be as directed by the Engineer. Payment shall be incidental to related contract items.

4 - - - All joints between existing and proposed hot bituminous pavement shall be butted unless otherwise directed by the Engineer. Payment will be considered incidental to related contract items.

PROJECT	DESIGN ENGINEER	DATE
PLANS	DESIGN - DETAILED: RLL BY: RLL	7-22
	CHECKED: K.V.N	7-25
	REVISIONS: WBD	4-25
	FIELD CHANGES:	

BRIDGING 44-132-457101

107-305

305

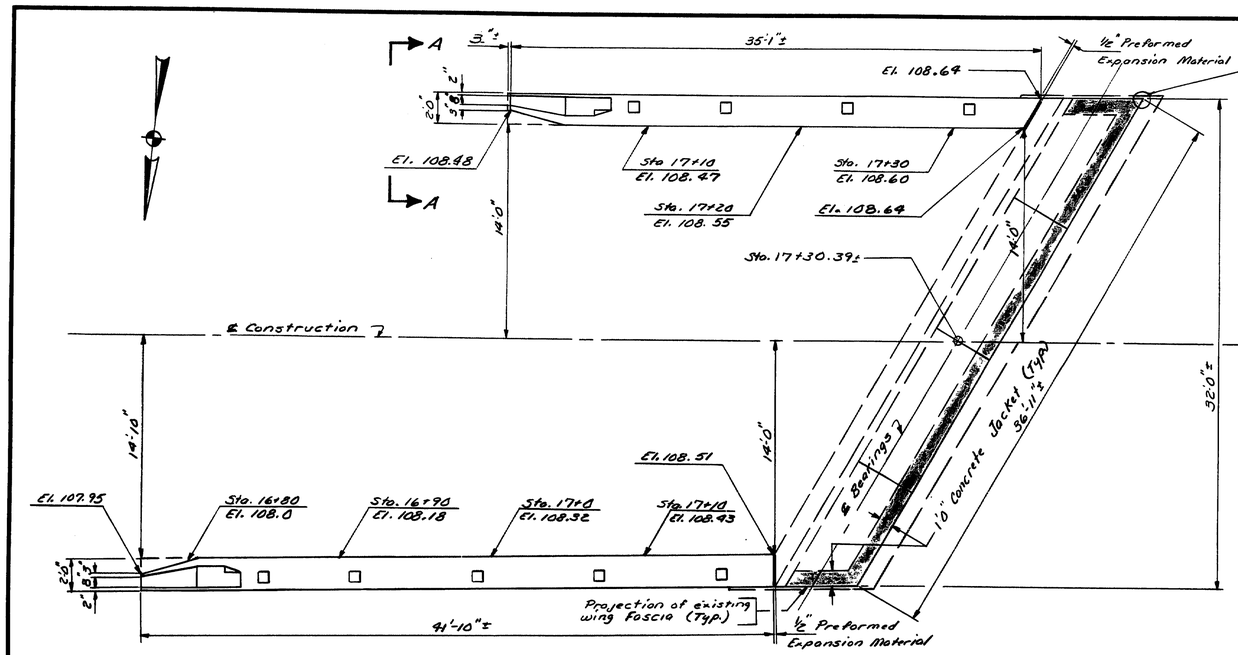
M.D.O.T. Field Survey Book No 9920

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

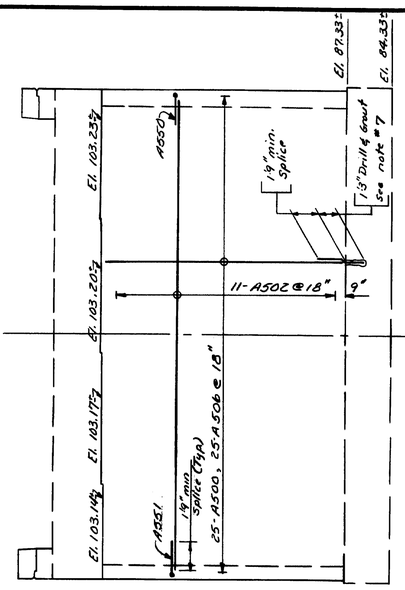
U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
SEQUENCE OF CONSTRUCTION

SHEET 3 OF 18 AUGUSTA, MAINE

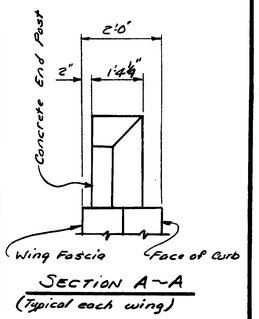
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BH-01-1(75)	5	18



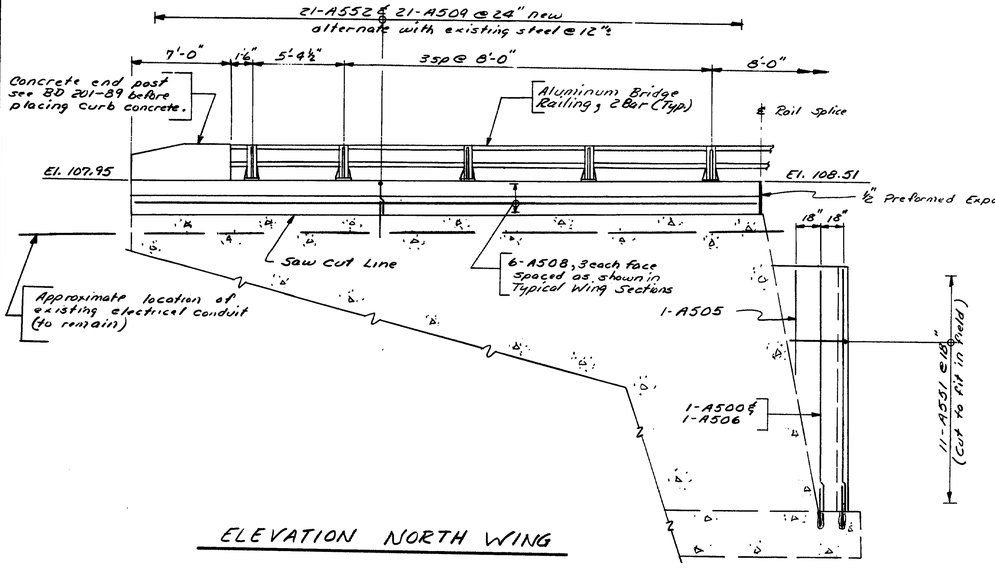
PLAN ABUTMENT NO. 1
EASTERLY ABUTMENT



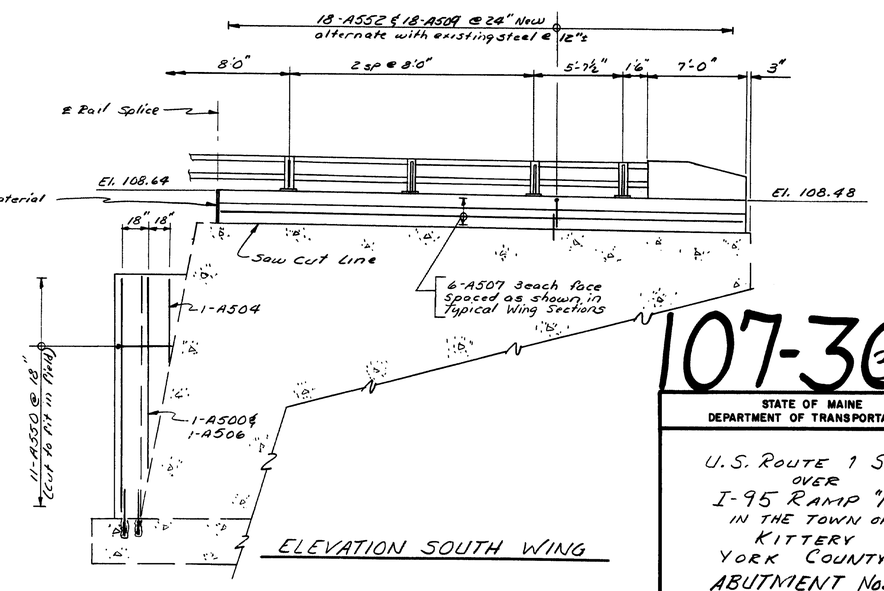
ELEVATION ABUTMENT NO. 1



SECTION A-A
(Typical each wing)



ELEVATION NORTH WING



ELEVATION SOUTH WING

PROJECT DESIGN ENGINEER MEB	BY	DATE
PLANS — DESIGN - DETAILED	R.V.N.	1-85
CHECKED	R.V.N.	2-85
REVISIONS	W.B.D.	4-86
FIELD CHANGES		

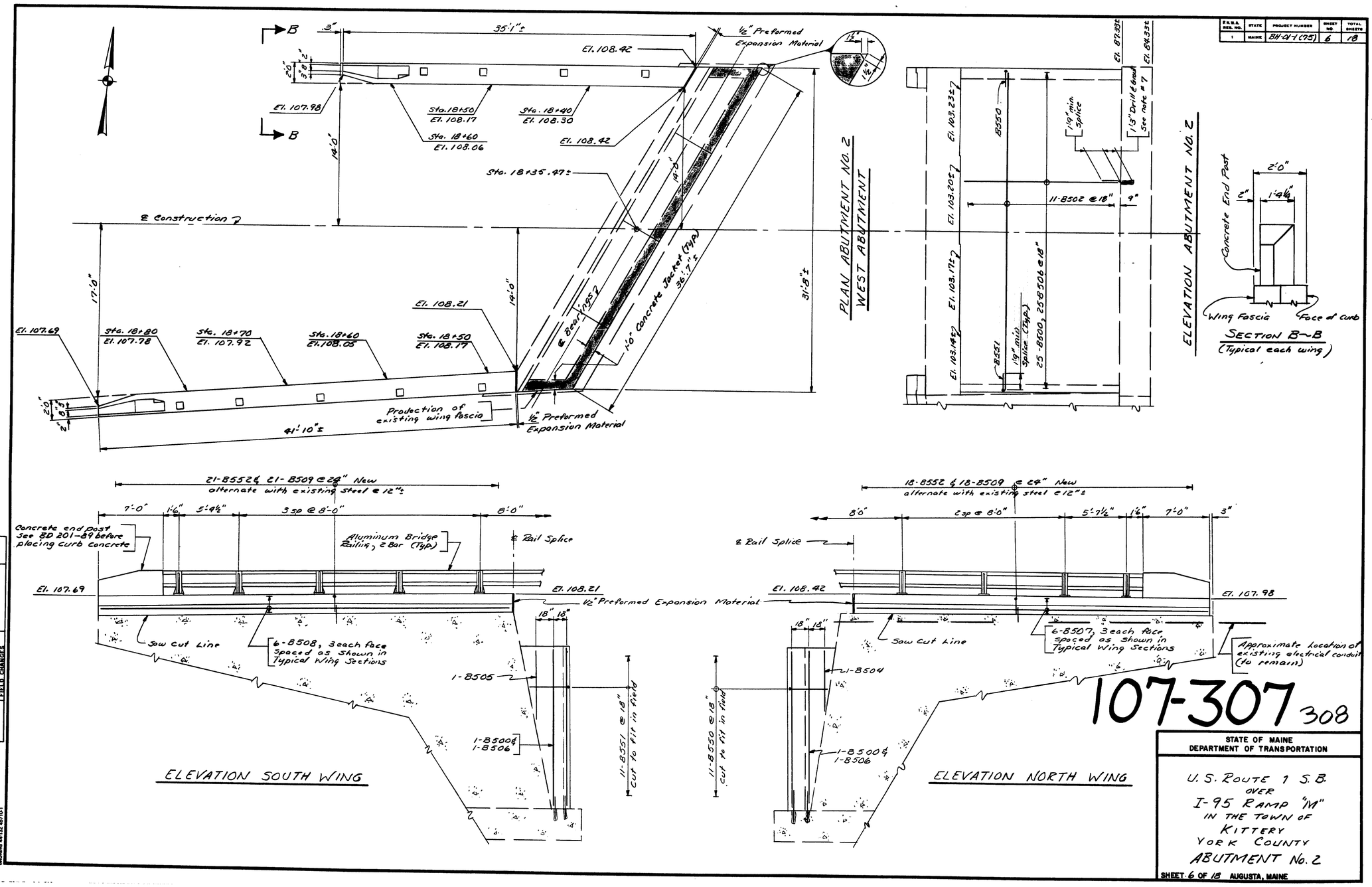
BRUNING 44-132 45710-1

107-306

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
ABUTMENT No. 1

SHEET 5 OF 18 AUGUSTA, MAINE



F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-01-1 (75)	6	18

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

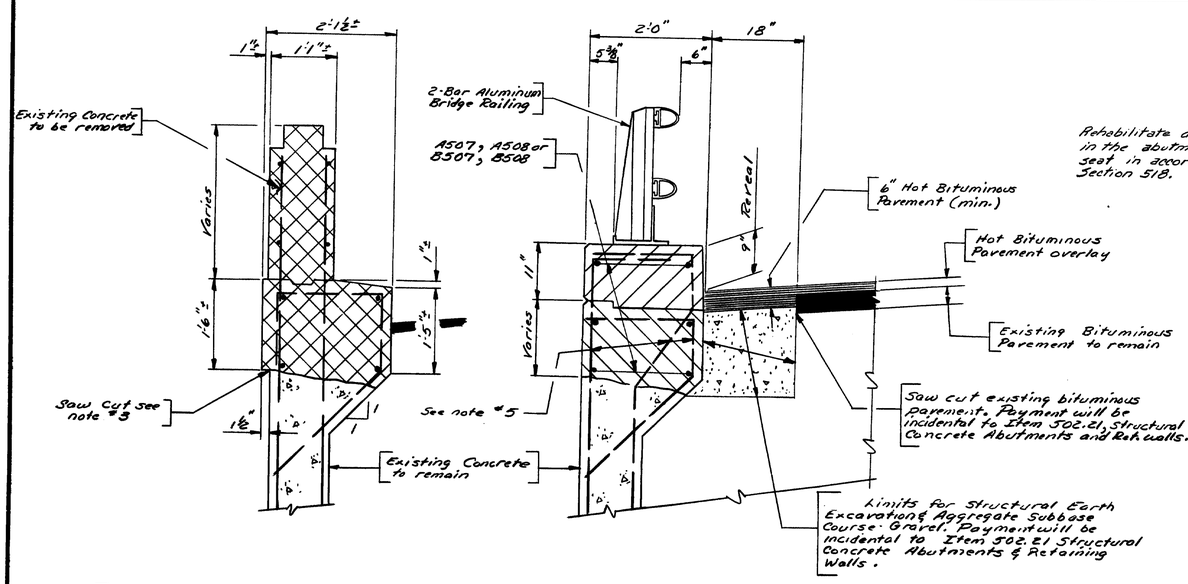
U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
ABUTMENT No. 2

SHEET 6 OF 18 AUGUSTA, MAINE

PROJECT DESIGN ENGINEER MEB
PLANS
DESIGN - DETAILED RVN RVN 1-85
CHECKED WBD 4-85
REVISIONS
FIELD CHANGES

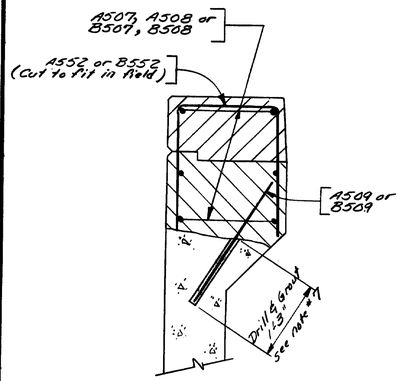
BRUNING 44-132 45710-1

F.H.W.A. REGN. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-01-1(175)	7	18

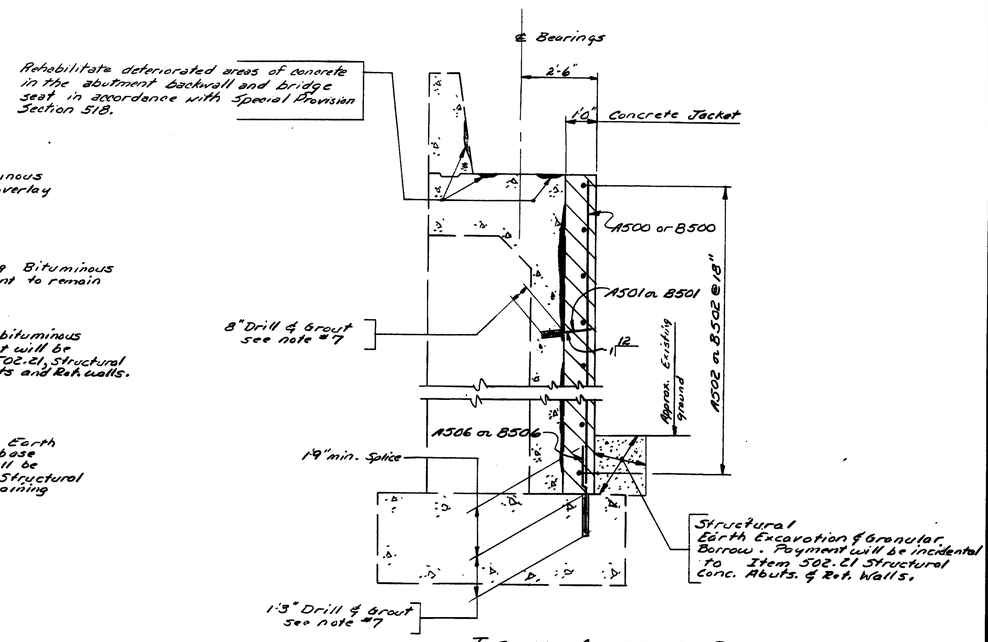


TYPICAL EXISTING WING SECTION

TYPICAL NEW WING SECTION
(Existing Vertical Reinforcing Steel)



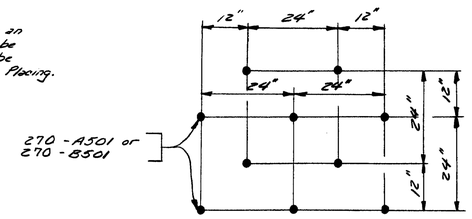
TYPICAL NEW WING SECTION
(New Vertical Reinforcing steel)



TYPICAL ABUTMENT SECTION

ABUTMENT NOTES

1. Reinforcing steel shall have two inches minimum cover unless otherwise indicated.
2. Protective coating for concrete surfaces shall be applied to all exposed surfaces of new concrete curbs and all exposed surfaces of concrete end posts.
3. Remove the existing 2'-1½" wide structural concrete curbs and 1'-1" wide structural concrete rail on wings down 1:6½ to the coping as shown on the plans. Saw cut the existing face of wings 1" deep before removing the tops of the wings as shown in the Typical Existing Section. Payment will be made under Item 202.17 Removing Existing Structural Concrete, which will include the saw cut.
4. The existing concrete shall be removed so as not to damage the existing vertical reinforcing steel. Any damaged vertical reinforcing steel shall be replaced at the contractors expense.
5. The existing reinforcing steel shall be bent to fit into the new concrete as shown in the sections. Payment for this work shall be incidental to Item 503.13 Reinforcing steel Placing.
6. Existing reinforcing steel that has been exposed from concrete removal that will been an exposed surface shall be removed to 2" below the finished surface and the holes shall be filled with an approved non-shrink grout.
7. Material used to grout the reinforcing steel shall be an approved non-shrink grout. No seperate payment will be made for drilling and grouting, and all such work will be considered incidental to Item 503.13, Reinforcing Steel Placing.
8. All concrete for wing curbs, end posts and concrete jacket will be paid for under Item 502.21, Structural Concrete Abutments and Retaining Walls.
9. Remove all deteriorated concrete in the breastwall area, as directed by the Engineer, prior to placement of concrete jacket. Payment for all labor & equipment will be incidental to Item 502.21, Structural Concrete Abutments and Retaining Walls.
10. All curb, end post, and Jacket concrete for the abutments shall contain a Silica Fume Additive.



ELEVATION DOWEL LAYOUT
(Typical all concrete surfaces to be jacketed)

309

PROJECT DESIGN ENGINEER M.C.G.	BY	DATE
DESIGN - DETAILED	R.V.U.	1-85
CHECKED	R.E.W.	4-85
REVISIONS		
FIELD CHANGES		

PLANS

BRUNING 44-132 42710-1

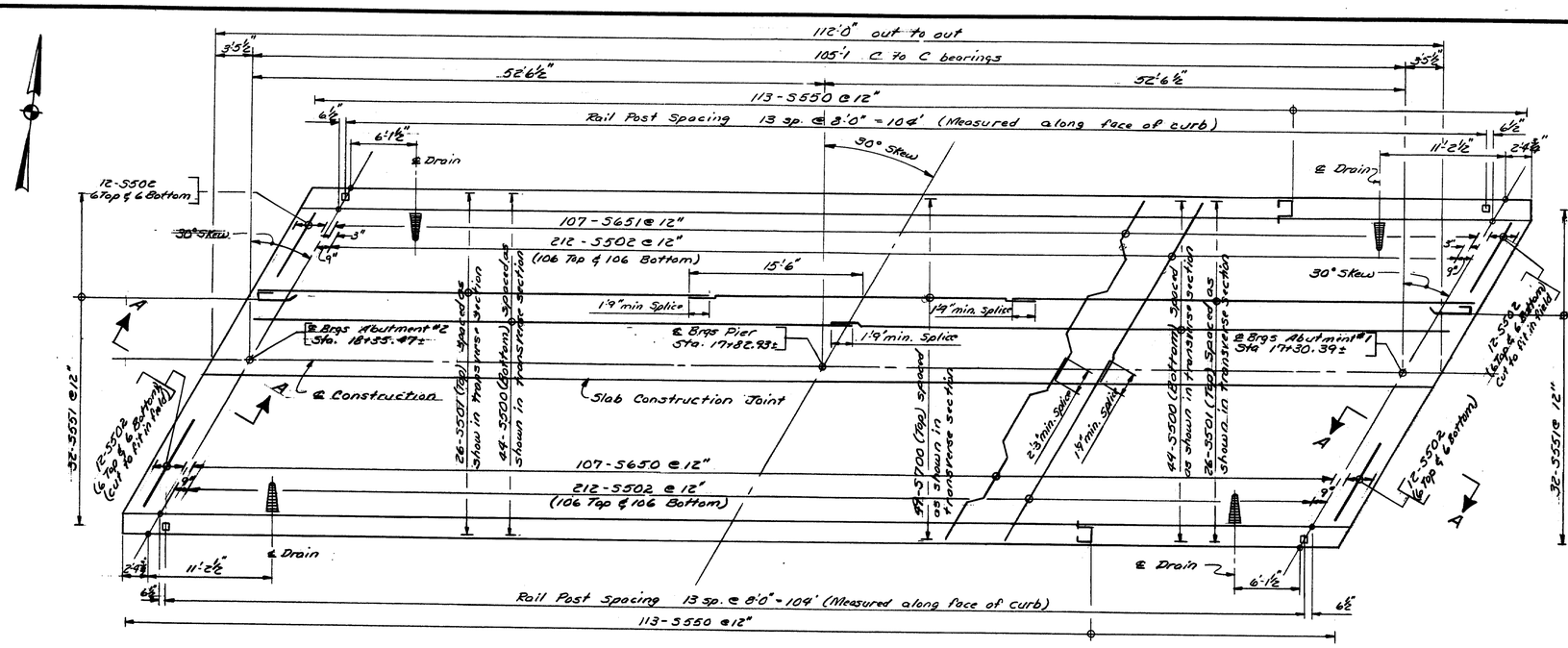
107-308

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

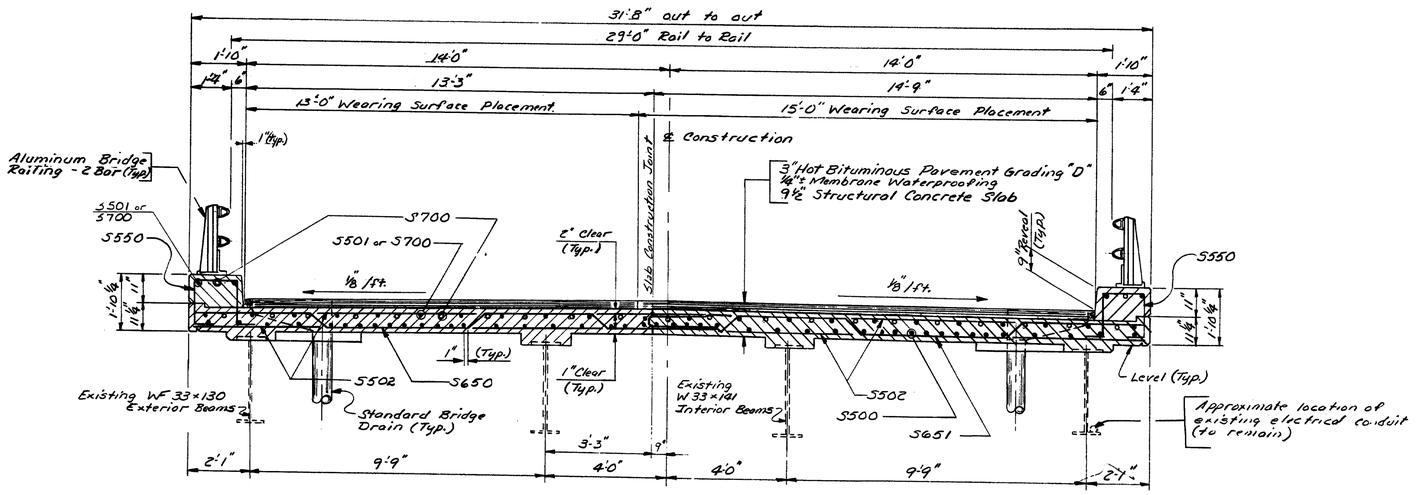
U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
ABUTMENT SECTIONS

SHEET 7 OF 18 AUGUSTA, MAINE

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BH-01-1 (75)	8	18



SUPERSTRUCTURE SLAB PLAN



TRANSVERSE SECTION

SUPERSTRUCTURE NOTES

1. Form a 1" V-groove on the fascia at the horizontal joint between the curb and slab.
2. Reinforcing steel shall have a minimum cover of 2" unless otherwise indicated.
3. Adjust reinforcing steel to fit around the drains in a manner approved by by the Engineer. Do not cut transverse reinforcing bars.
4. The superstructure slab concrete shall be placed in one continuous operation and the concrete shall be kept plastic the entire length of placement.
5. Protective coating for concrete surfaces shall be applied to the following areas:
   - Top and face of concrete curbs.
   - Fascia down to the drip notch.
6. All curb concrete shall contain a Silica Fume Additive.

PROJECT DESIGN ENGINEER MEB	BY	DATE
PLANS DESIGN - DETAILED	R.V.N.	10-84
CHECKED	W.B.D.	4-85
REVISIONS		
FIELD CHANGES		

107-309

310

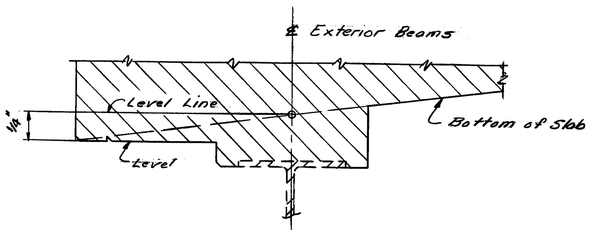
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

U. S. ROUTE 1 S. B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
SUPERSTRUCTURE SLAB

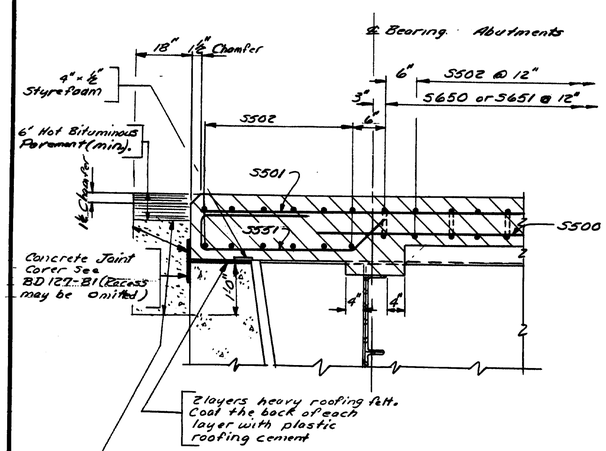
SHEET 8 OF 18 AUGUSTA, MAINE

BRUNING 44-132 45710-1

F.H.W.A. REGION NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BH-01-1(75)	9	18

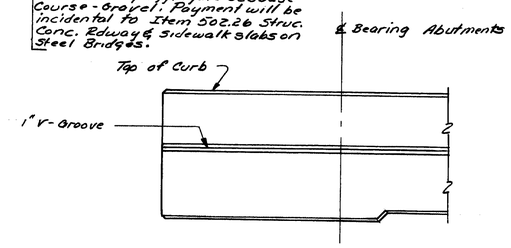


EXTERIOR HAUNCH DETAIL

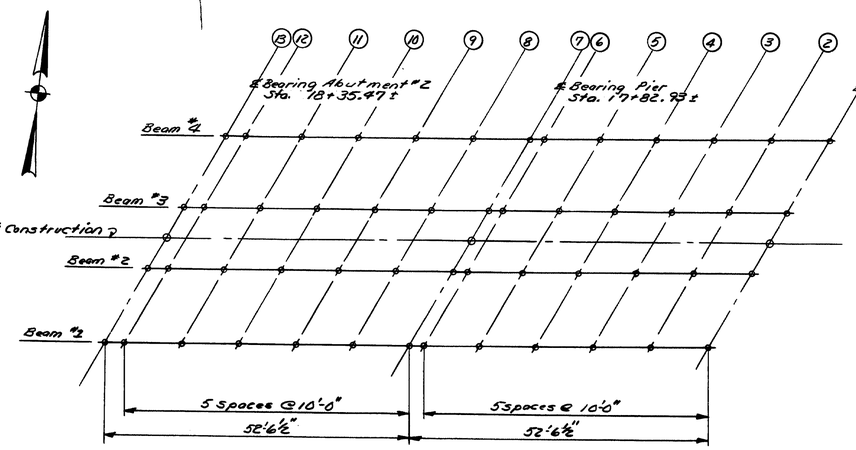


SECTION A~A

Pay Limits for Structural Earth Excavation & Aggregate Subbase Course - Gravel. Payment will be incidental to Item 502.26 Struc. Conc. Rdway & Sidewalk Slabs on Steel Bridges.



FASCIA DETAIL



BLOCKING LAYOUT

STRUCTURAL STEEL NOTES

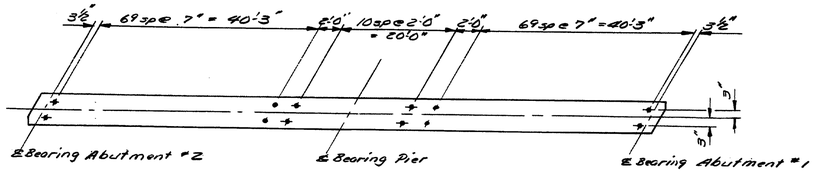
1. The entire existing structural steel, including bearings, shall be cleaned and painted in accordance with Section 506. The surface preparation of the existing structural steel will require removal of the entire old paint system.

2. The top flanges of the existing structural steel to be embedded in the new concrete, shall be cleaned of all paint, rust, and other foreign matter before placing concrete. Payment will be included under Item 506.17, Surface Preparation of Existing Structural Steel.

BOTTOM OF SLAB ELEVATIONS

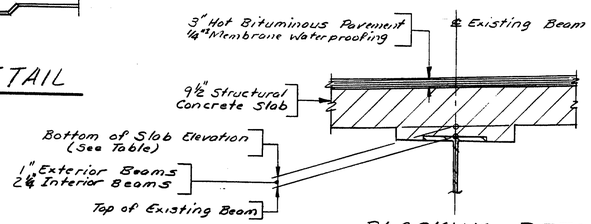
Beam \ Points	13	12	11	10	9	8	7	6	5	4	3	2	1
4	106.64	106.67	106.77	106.85	106.89	106.91	106.92	106.93	106.94	106.93	106.90	106.83	106.74
3	106.68	106.71	106.83	106.91	106.97	107.00	107.02	107.02	107.04	107.05	107.02	106.97	106.89
2	106.63	106.66	106.79	106.88	106.94	106.98	107.01	107.01	107.04	107.05	107.04	106.99	106.92
1	106.46	106.49	106.62	106.73	106.80	106.85	106.89	106.90	106.93	106.95	106.95	106.91	106.85

NOTE: Bottom of slab elevations are adjusted to compensate for dead load deflections and vertical curvature.

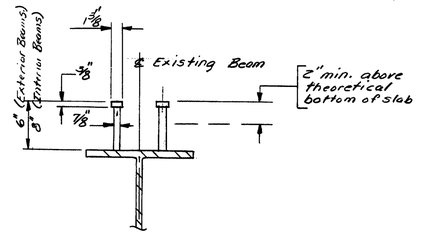


SHEAR CONNECTOR LAYOUT

Double studs 302 per beam, Total = 1208
604-6" Shear Connectors, 604-8" Shear Connectors



BLOCKING DETAIL



SHEAR CONNECTOR DETAIL

PROJECT DESIGN ENGINEER MEB	BY	DATE
PLANS — DESIGN - DETAILED	R.V.N.	12-86
CHECKED	W.B.D.	4-87
REVISIONS		
FIELD CHANGES		

DRAWING 44-132-4710-1

107-310

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 1 S.B.
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
BOTTOM OF SLAB ELEVATIONS & MISCELLANEOUS DETAILS
SHEET 9 OF 18 AUGUSTA, MAINE

REINFORCING STEEL SCHEDULE

STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
			-ABUTMENT #1-
A500	27	15'-8"	vertical
A501	270	1'-6"	dowel, vertical
A502	11	36'-7"	longitudinal
A504	1	8'-0"	vertical
A505	1	9'-0	vertical
A506	27	3'-0"	dowel, vertical
A507	6	34'-4"	horizontal wing
A508	6	40'-10"	horizontal wing
A509	39	2'-4"	wing dowel
EP400	24	2'-0"	- END POST - End Post
EP405	24	1'-10"	End Post

MARK	NO.	LENGTH	LOCATION
			~ ABUTMENT #2 ~
B500	27	15'-8"	vertical
B501	270	1'-6"	dowel, vertical
B502	11	36'-4"	longitudinal
B504	1	8'-0"	vertical
B505	1	9'-0"	vertical
B506	27	3'-0"	dowel, vertical
B507	6	34'-4"	horizontal wing
B508	6	40'-10"	horizontal wing
B509	39	2'-4"	wing dowel

MARK	NO.	LENGTH	LOCATION
			~SUPERSTRUCTURE~
S500	88	55'-0"	Longitudinal
S501	52	39'-0"	Longitudinal
S502	472	19'-0"	Transverse
S700	49	31'-0"	longitudinal

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
					- ABUTMENT No 2 -									
A550	11	5'9"	N	1'9"	4'0"						1'6"			Breastwall
A551	11	5'9"	V				4'0"	1'9"			1'6"			"
A552	39	5'4"	S	—	1'10"	1'8"	1'10"			—				Wings
					~ ABUTMENT No 2 ~									
B550	11	5'9"	N	1'9"	4'0"						1'6"			Breastwall
B551	11	5'9"	V				4'0"	1'9"			1'6"			"
B552	39	5'4"	S	—	1'10"	1'8"	1'10"			—				Wings
					~SUPERSTRUCTURE~									
S550	226	5'11"	S	0'6"	1'7"	1'9"	1'7"			0'6"				Curb
S551	64	5'8"	SJ	—	0'8"	2'8"	0'7"	1'9"			0'5¾"			End of Slab
S650	107	20'2"	BN		4'7"	0'9¼" x3	5'5⅛"	4'2⅛"	3'-1⅛"		0'6½"	19'6"		Transverse
S651	107	19'8"	BN		4'7"	0'9¼" x3	5'5⅛"	4'2⅛"	3'-1⅛"		0'6½"	19'0"		Transverse
					~ END POST ~									
EP401	16	4'11"	S	—	2'0"	0'11"	2'0"			~				End Post
EP402	8	4'6"	S	—	2'0"	0'6"	2'0"			~				"
EP500	16	7'-10"	S	—	5'6"	0'-7"	1'-9"			—				End Post
EP501	16	6'8"	SJ	—	3'-1"	2'-7"	1'-0"	—			0'-8"			"
EP502	16	4'-7"	S	—	1'-10"	0'-11"	1'-10"			—				"
EP503	8	4'-2"	S	—	1'-10"	0'-6"	1'-10"			—				"

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

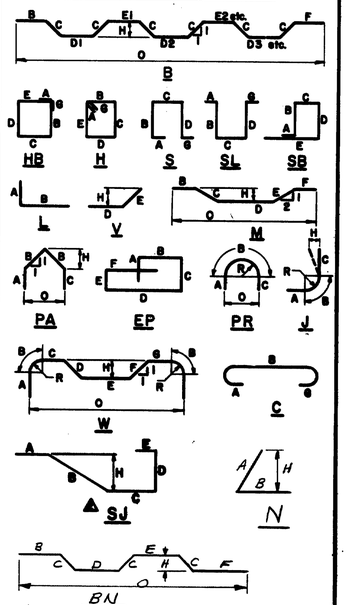
107-311

DESIGN - DETAIL	BY	DATE
CHECKED	RVN	2-85
REVISIONS FIELD CHANGES	WSD	4-85

PLANS

FHWA REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-01-1(675)	10	18

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinf. bar

Bending details and hooks shall conform to the recommendations of the current revision of ACI Standard 318.

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 (P1001) bar size - #10
   - Mark (S603) bar size - #6
2. Each truss bar, Type B, may be replaced by two (2) straight bars (one top & one bottom) of the same bar size as the truss bar. Payment in either case shall be based on truss bars as scheduled on plans.

312

2	New Bent Bar Type SJ	9-26-83
1	Revised ACI Standard	5-12-83
	REVISIONS	DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

U.S. ROUTE 1 S.B
OVER
I-95 RAMP "M"
IN THE TOWN OF
KITTERY
YORK COUNTY
REINFORCING STEEL SCHEDULE

SHEET 10 OF 18 AUGUSTA, MAINE