REEL 304

ORONO

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	1	43

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

PLANS

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
PROJECT NO. BH-1401(9)
PROJECT LENGTH 0.156 MILES

SPECIFICATIONS

DESIGN: Load Factor Design per AASHTO Standard Specifications for Highway Bridges 1989 and Interim Specifications 1990 and 1991.
CONTRACT: State of Maine, Department of Tranportation, Standard Specifications, Highways and Bridges, Revision of October 1990.

DESIGN LOADING

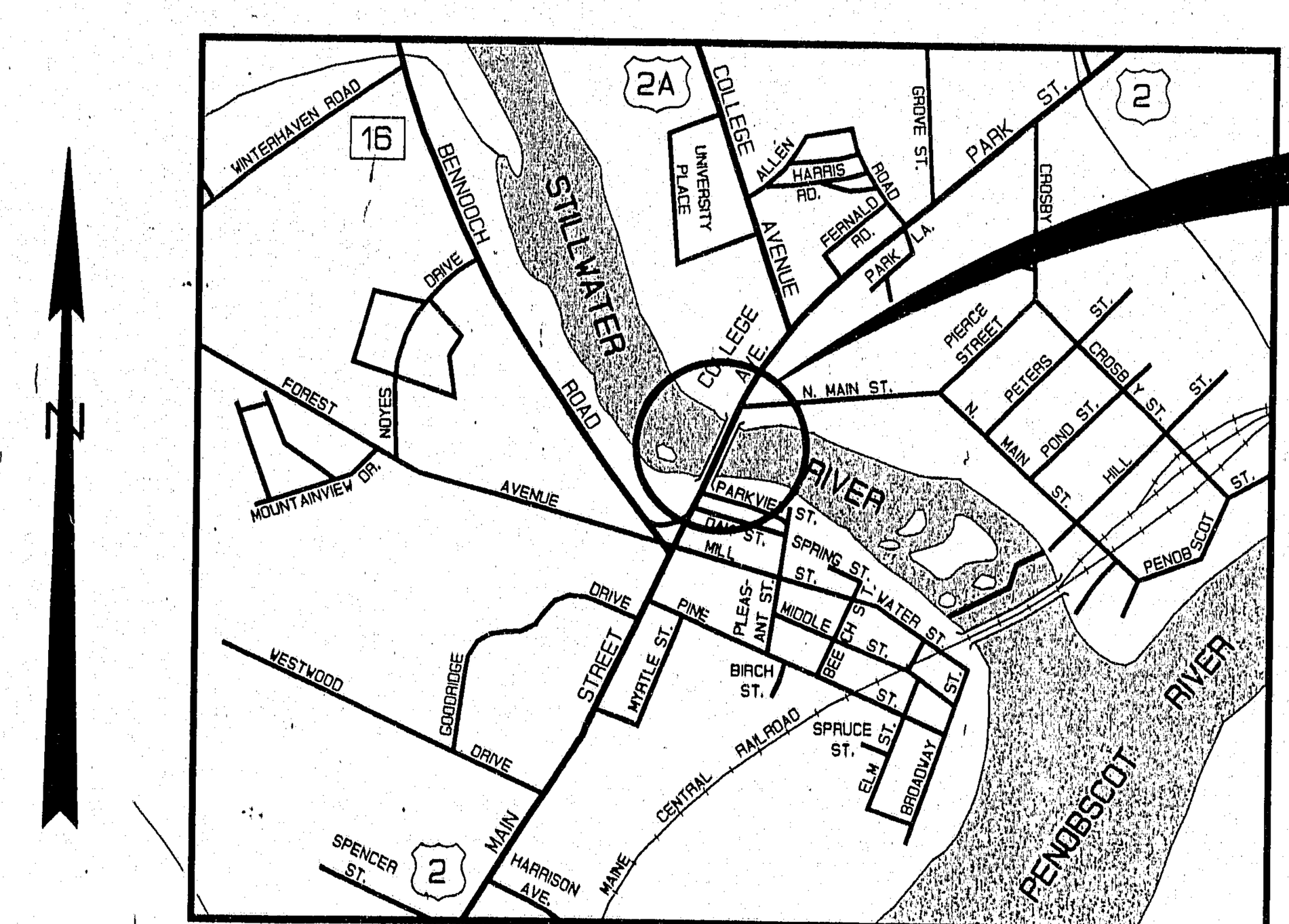
LIVE LOAD: HS20

MATERIALS

CONCRETE: All Class A
REINFORCING STEEL: ASTM A615 Grade 60
STRUCTURAL STEEL: All Material ASTM A36
High Strength Bolts ASTM A325 Type 1

BASIC DESIGN STRESSES

CONCRETE: f'c = 3000 psi
REINFORCING STEEL: fy = 60,000 psi
STRUCTURAL STEEL:
ASTM A36 Fy = 36,000 psi
ASTM A325 Fv = 25,000 psi



LOCATION MAP

1000 0 1000 2000
Scale in Feet

INDEX OF SHEETS

SHEET NO.	*DESCRIPTION*
1.	TITLE SHEET
2.	ESTIMATED QUANTITIES
3.	GENERAL PLAN
4.	TYPICAL SECTIONS
5.	PROFILE ℄ CONSTRUCTION
6.	GENERAL PLAN WITH DETOUR
7.-8.	PROFILE ℄ DETOUR
9.	ABUTMENT 1
10.	ABUTMENT 2
11.-12.	STRUCTURAL STEEL
13.	MISC. STRUCTURAL STEEL DETAILS
14.-15.	SUPERSTRUCTURE PLAN
16.-17.	SUPERSTRUCTURE DETAILS
18.	BRIDGE LIGHTING
19.	INSTRUMENT HOUSE & DETAILS
20.	4-BAR TRAFFIC RAIL
21.	PALE PANEL DETAILS
22.	4-BAR CONCRETE END POST
23.-24.	REINFORCING STEEL SCHEDULE
25.-28.	CROSS SECTIONS

Windbreak Details 24A-24C

STANDARD DETAIL SHEETS

29.	BD 302-89 EXPANSION DEVICE
30.	(HD-1)
31.	(HD-4)
32.	(HD-5)
33.	(HD-6)
34.-36.	(HD-10) thru (HD-12)
37.	(HD-14)
38.	(HD-16)
39.	T2 CONCRETE FOUNDATION
40.	T3 JUNCTION BOXES AND CONDUIT TRENCH
41.	T4 HIGHWAY LIGHTING
42.-43.	RIGHT-OF-WAY MAP

"Revised As Built" 1993 RB

109-40

260

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.

16MAR92-00.59.50

TRAFFIC DATA

A.A.D.T. 1991	20,390
A.A.D.T. 2011	37,030
D.H.V.	3,700
T.(%D.H.V.)	2
D.(%D.H.V.)	65
V.	25 mph
P.S.D.(%)	N/A
18' KIPS (p2.5)	253

NOTE

ALL WORK CONTEMPLATED UNDER THIS CONTRACT TO BE GOVERNED BY AND IN CONFORMITY WITH THE STANDARD SPECIFICATIONS (REVISION OF OCTOBER 1990) AND SUPPLEMENTALS THERETO AS MODIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

[signature] 3-16-1992
COMMISSIONER DATE

Richard A Coleman 3-16-1992
CHIEF ENGINEER DATE

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

REGION 1

APPROVED:

DIVISION ADMINISTRATOR DATE

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
111.50	SCHEDULE OF WORK	1	LS
201.12	SELECTIVE CLEARING AND THINNING	33	AC
202.10	REMOVING EXISTING SUPERSTUCTURE--PROP. OF CONTR.	1	LS
202.17	REMOVING EXISTING STRUCTURAL CONCRETE	1	LS
202.203	PAVEMENT BUTT JOINTS	530	SY
203.20	COMMON EXCAVATION	25	CY
304.10	AGGREGATE SUBBASE COURSE--GRAVEL	115	CY
403.07	HOT BITUMINOUS PAVEMENT, GRADING B	260	TONS
403.10	HOT BITUMINOUS PAVEMENT, GRADING D	340	TONS
403.101	HOT BIT. PVMT., GRD D (SIDEWALKS, SHIMS, DRIVES, INCIDENTALS)	140	TONS
403.121	HOT BITUMINOUS PAVEMENT, GRADING E (SHIMMING)	220	TONS
409.15	BITUMINOUS TACK COAT, APPLIED	70	GAL
502.219	STRUCTURAL CONCRETE, ABUTS & RET WALLS	1	LS
502.26	STRUC CONC RDWY & SW SLABS ON STL BRIDGES (965 CY)	1	LS
502.4711	SILICA FUME ADDITIVE (15300 LB)	1	LS
503.12	REINFORCING STEEL FABRICATED & DELIVERED	176,500	LB
503.13	REINFORCING STEEL PLACING	176,500	LB
504.70	STRUCTURAL STEEL FAB & DELIVERED: (242,000 LB)	1	LS
504.71	STRUCTURAL STEEL ERECTION (242,000 LB)	1	LS
505.08	SHEAR CONNECTORS (6440 EA)	1	LS
506.19	CONTAINMENT AND POLLUTION CONTROL	1	LS
506.19	DISPOSAL OF HAZARDOUS OR TOXIC MATERIAL	1	LS
507.0945	ALUMINUM BRIDGE RAILING, 4 BAR WITH PALES	900	LF
508.13	MEMBRANE WATERPROOFING (1418 SY)	1	LS
510.127	SPECIAL DETOUR, 24' RDWY WIDTH VEH. & PED. TRAF. SEPARATE	1	LS
514.06	CURING BOX FOR CONCRETE CYLINDERS	1	EACH
515.21	PROTECTIVE COATING FOR CONCRETE SURFACES	1	LS
520.21	EXPANSION DEVICE--GLAND SEAL	2	EACH
526.301	TEMPORARY CONCRETE BARRIER TYPE I (260 LF)	1	LS
527.32	PORTABLE CRASH BARRELS	12	EA
540.10	BRIDGE INSTRUMENTATION	1	LS
604.16	ADJUSTING MANHOLE OR CATCH BASIN TO GRADE	7	EACH
606.17	GUARD RAIL TYPE 3b--SINGLE RAIL	925	LF
606.22	GUARD RAIL TYPE 3b--OVER 15 FOOT RADIUS	50	LF
606.25	TERMINAL CONNECTOR	4	EA
606.265	TERMINAL END--SINGLE RAIL--GALVANIZED STEEL	2	EACH
606.35	GUARD RAIL DELINEATOR POST	6	EACH
606.775	BREAKAWAY CABLE TERMINAL-GALVANIZED	4	EA
609.11	VERTICAL CURB TYPE 1	184	LF
609.132	VERTICAL BRIDGE CURB TYPE 1B	900	LF

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	QUANTITY	UNIT
609.23	TERMINAL CURB TYPE 1	14	EACH
609.31	CURB TYPE 3	421	LF
609.38	RESET CURB TYPE 1	431	LF
610.08	PLAIN RIPRAP	25	CY
610.18	STONE DITCH PROTECTION	10	CY
614.18	APPLYING FERTILIZER TO EXISTING GRASSED AREAS	108	LB
615.07	LOAM	160	CY
616.08	SODDING	118	SY
618.13	SEEDING METHOD NUMBER 1	7	UNIT
618.14	SEEDING METHOD NUMBER 2	30	UNIT
618.15	TEMPORARY SEEDING	10	LB
618.16	CROWN VETCH SEED	5	LB
618.20	ANNUAL RYE	4	LB
618.25	APPLIED WATER	4	MG
619.12	MULCH	50	UNIT
621.138	SMALL DECIDUOUS TREE GRP A FLORIBUNDA CRABAPPLE (1½"-2"CAL)	2	EA
621.273	LARGE DECIDUOUS TREES GRP A (2"-2½" CAL) RED MAPLE	8	EA
	GREEN ASH (SUMMIT)	10	EA
621.397	DWARF EVERGREENS GRP C (18"-24") JAPANESE SPREADING YEW	18	EA
621.546	DECIDUOUS SHRUBS GRP A (2"-3") REGAL PRIVET	141	EA
621.547	DECIDUOUS SHRUBS GRP B (2"-3") AMERICAN CRANBERRY BUSH	112	EA
	RED OSIER DOGWOOD	81	EA
626.11	PRECAST CONCRETE JUNCTION BOX	5 3	EACH
626.21	METALLIC CONDUIT	400 169	LF
626.33	30 INCH FOUNDATION	2	EACH
626.31	18 INCH FOUNDATION	6	EACH
627.61	4 INCH SOLID WHITE PAVEMENT MARKING LINE	1700	LF
627.63	4 INCH SOLID YELLOW PAVEMENT MARKING LINE	1700	LF
627.67	REMOVING PAVEMENT MARKINGS	275	SF
627.66	TEMP. 4" PAINTED PAVEMENT MARKING LINE, YELLOW OR WHITE	3300	LF
629.05	HAND LABOR, STRAIGHT TIME	8	MH
631.12	ALL PURPOSE EXCAVATOR (INCLUDING OPERATOR)	4	HOUR
631.172	TRUCK--LARGE (INCLUDING OPERATOR)	5	HOUR
634.16	HIGHWAY LIGHTING	1	LS
634.21	CONVENTIONAL LIGHT STANDARD	7 9	EACH
637.07	SPRINKLING	41	MG
637.08	CALCIUM CHLORIDE	5	TONS
638.01	EMBEDDED WORK IN STRUCTURES	1	LS
639.18	FIELD OFFICE TYPE A	1	EACH
639.22	TESTING FACILITIES BITUMINOUS MIXES	1	LS
639.23	TESTING FACILITIES CONCRETE	1	LS
645.116	REINSTALL REGULATORY, WARNING, CONFIRMATION AND ROUTE MARKER ASSEMBLY SIGN	2	EACH
652.31	TYPE I BARRICADE	15	EACH
652.311	TYPE II BARRICADE	5	EACH
652.33	DRUM	5	EACH
652.34	CONE	15	EACH
652.35	CONSTRUCTION SIGNS	350	SF
652.361	MAINTENANCE OF TRAFFIC CONTROL DEVICES	1	LS
652.38	FLAGGER	500	MH
656.50	BALED HAY, IN PLACE	24	EACH
656.51	SANDBAG, IN PLACE	24	EACH
656.55	DUMPED STONE	8	CY
656.631	15" TEMPORARY SILT FENCE	75	LF
656.632	30" TEMPORARY SILT FENCE	600	LF
659.10	MOBILIZATION	1	LS
660.21	ON-THE-JOB TRAINING (BID)	1000	MH

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	2	43

GENERAL CONSTRUCTION NOTES

1. Remove all existing pavement from paved driveway from Sta. 7+92± to Sta. 8+79± left and repave as directed by the Engineer in the field.
2. For easements, construction limits and right-of-way lines refer to Right-of-Way Map.
3. Place a 1'-6" wide strip of sod on the side slopes along the top of the riprap.
4. The clearing limits shown on the plans are approximate. The exact limits will be established in the field by the Engineer. Payment for clearing will be incidental to contract items.
5. Place loam, 2" deep, on slopes as directed by the Engineer in the field.
6. Do not excavate for Aggregate Subbase Course where existing material is suitable as determined by the Engineer. Payment for shaping and compacting of the existing subbase and layers of new subbase 6" or less thick, in areas where the Engineer directs the Contractor not to excavate to the subgrade line shown on the plans, will be made in accordance with subsection 104.03, Extra Work.
7. One guardrail delineator post shall be installed at each guardrail end.
8. Breakaway cable terminals shall be installed concurrently with the placement of each section of beam guardrail.
9. All hardware used on Cable Guardrail which is to be removed, shall be carefully salvaged by the Contractor and will remain the property of the Department. Associated guardrail cable and posts shall become property of the Contractor.
10. Sodded gutters shall be constructed, after paving and shoulder work is completed, where it is apparent that runoff will cause continual erosion.
11. Guardrail posts shall be cut to length in the field, as required to clear obstructions by a minimum of 6 inches. Cut posts shall be imbedded 9 inches in a concrete base 2'-0" square by 1'-0" thick. The concrete mix shall be as approved by the Engineer. Any costs for cutting posts and constructing bases will be considered incidental to guardrail items.
12. The removal of the existing approach slab under the sidewalk will not be paid for directly, but will be considered incidental to related contract items.
13. Structural excavation and backfill for abutments will not be paid for directly, but will be considered incidental to related contract items.
14. The approaches to the temporary detour shall be paved with 2" of hot bituminous pavement. Pavement will be paid for under Item 403.07, Hot Bituminous Pavement, Grading B. The bituminous curb for the temporary detour will be paid for under Item 609.31, Curb Type 3.
15. All guard rail items necessary for the temporary detour shall be considered incidental to Item 510.12, Special Detour.
16. The lighting on the temporary detour shall be installed in accordance with Section 634 of the Standard Specifications and as detailed on the plans. Payment for all labor, materials, and incidentals necessary to complete this work will be considered incidental to Item 510.12, Special Detour.
17. The luminaire to be used for the permanent highway lighting system shall be a 250 watt HPS Retractocap Luminaire, Cat. No. RPAK250 12SLN or an approved equal. These luminaires may be used for the temporary detour lighting, but any damage to them shall be repaired at the Contractor's expense.
18. Removal of the existing concrete bridge deck will be paid for under Item 202.10, Removing Existing Superstructure, Property of Contractor. This work will include, but not be limited to, removal of existing exterior beams removal of existing angles necessary to modify floorbeams, and modifications of existing structural steel.

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1 Revisions as of 5/9/92

STATE OF MAINE 261
DEPARTMENT OF TRANSPORTATION

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

ESTIMATED QUANTITIES

SHEET 2 OF 43 AUGUSTA, MAINE March, 1992

PROJECT DESIGN ENGINEER: BY: R.C.Booth DATE: 12/13/91
DESIGN DETAILED: K.Y.Norwood 5/9/92
CHECKED:
QUANTITIES:
FIELD CHANGES:

PLANS

SMAY92-01D120

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1901(9)	3	43

PROJECT DESIGN ENGINEER	BY	DATE
PLANS	DESIGN - DETAILED	M.McNally
	CHECKED	S.Cebrun
	REVISIONS	JAC
	FIELD CHANGES	S.Cebrun

Survey Plotted by M.H.W 6/91

BEARINGS ARE TRUE MERIDIAN

Selective Clearing & Thinning
38 - Red Osier Dogwood
1.5' Sod Strip (typ.)
5-Green Ash
Existing Riprap (typ.)
5-Red Maple
18-American Cranberry Bush
50-Regal Privet
Clump of Naples 5-6'
2 Story Wood Apartment Building
Gravel Drive
Paved Drive
Deck
Conc. Walk
Shrubs
Lilac
Rebars Flush in Ter
Planters
Existing Granite Curb (□ = Reset) typ.
To ORONO
Route 2
New Type 36 Guardrail w/BCT(typ)
New Granite Curb
Gas Pumps
Bangor Hydro-Elect.
Conc. Pad
SUNOCO
2 Story Wood Building w/ Apartments
Bituminous Curb
Paved Parking
3 Vent Pipes
Access Lids to Underground Tanks
28 Regal Privet
Selective Clearing & Thinning
Mixed Growth
To Be Removed
Bottom of Slope
31 - American Cranberry Bush
Top slope
Guy Wire Anchor
Elec. & Tele
Stone Ditch, Construct As Directed By Engineer
M.H. Sewer
Water Gate
Catch Basin
To Be Reset (typ.)
Precast Concrete Junction Box
Bear. Abut. #1 Sta. 10+00 (Exp.)
Pier #1 Sta. 10+75 (Exp.)
Pier #2 Sta. 11+75 (Exp)
Pier #3 Sta. 12+75 (Fixed)
Pier #4 Sta. 13+75 (Exp.)
N23°-22'-35.3"E
℄ Construction
100'-0"
450'-0"
N.E.T. 4 - 4" Fiberglass Conduits (Under Bridge)
N.E.T. 6 - 4" PVC Conduits
Bridge Lighting 1" Galvanized Steel Conduit
510.02'
495.18'
15 Red Osier Dogwood
27-American Cranberry Bush
32-Regal Privet
Construct Pedestrian Ramp Sta. 14+95± Left & Right
Selective Clearing & Thinning
Bangor Hydro 4-6" PVC Conduits
Cable Vision Inc. 1-4" PVC Conduit
Bridge Lighting 1" Gal. Steel Conduit
40 Galvanized Steel Pole w/6' Arm
250 W High Pressure Sodium Luminaire Cat. No. RPAK 250-12SLN
20' Aluminum Pole With 35 W HPS Shoebox Luminaire
Concrete Foundation
18"
Precast Concrete Junction Box (typ.)
Clusters of Large Maples
PLAN
Scale of Feet
STILLWATER RIVER
FLOW
2 Story Wood Apartment Bldg.
8" Maple
IP
Support Pole
Conc. Walk
Deck
Paved Drive
Planters
8+00
BEGIN PROJECT - MATCH EXISTING
Sta. 8+13.76
Elect
Tele.
Stop Sign
Granite R/W Monument
Gas Pumps
Conc. Pad
Concrete Wall w/ Guardrail
Oak Street
SUNOCO
2 Sty. Wood Build. w/ Apartments
END PROJECT - MATCH EXISTING Sta. 16+36.29
Concrete Steps
Guy Wire Anchors
Hedge
Telephone
Paved Sidewalk
Granite Curb (typ.)
W.G.
16+00
17+00
Elec. & Tele.
Guy Wire Anchor
18" Maple
Sign
Street Sign
Stop Sign
Service Pole
Precast Conc. Junction Box
Stumps
Gran. Slope Ret. Wall
Granite Edging
15" Oak
18" Oak
Paved Sidewalk
North Main St.
Existing Cable G.R.
Concrete Steps
M.H. Sewer
3-Red Maple
13" Bass. wood
8" Maple
Selective Clearing & Thinning
5-Green Ash
Top of Slope
30" Temporary Silt Fence (typ.)
24" Maple
Light Growth To Be Removed & Replaced
Bottom of Slope
35 - Multiflora Rose
Type 36 Guardrail With Terminal End
Paved Sidewalk
Existing Granite Curb To Be Reset (typ.)
15+00
16+00
New Granite Curb
Bangor Hydro - Electric
Service Pole
Street Sign
Stop Sign
Granite Edging
TO OLD TOWN
Existing Cable Guardrail
To Be Removed
Clearing Limit (typ.)
31 - Regal Privet
Bottom of Slope
36 - American Cranberry Bush
2 - Crabapple Pribunda
WEBSTER PARK
18 - Japanese Spreading Yew
Mowed Grass
New Type 36 G.R. With B.C.T.
Existing Concrete Steps
Bridge # 2278
Survey Book # US 184-1
Light Growth To Be Removed
Bangor - Hydro Electric
Precast Concrete Junction Box (typ.)
Clusters of Large Maples
Mowed Grass

Traverse Line Ties

19" Maple
15" Maple
Conc. Cover
Sidewalk
Pole #3
R.R. Spike, Flush, Chiseled X
Manhole Chisel Mark in Rim
Sewer II Control Point
R.R. Spike Flush, Chiseled X
Sunoco Sign Chisel Mark in Bolt
PK Nail Set in 1st Joint in Curb
Cable Guardrail
Pole #1
WLY Corner I Beam Post
PK Nail in Curb
Hotel Entrance
Chisel Mark in Catch Basin

109-42

As Built 1993

△ Revision As of 5-11-92
△ Revision As of 6-12-92

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
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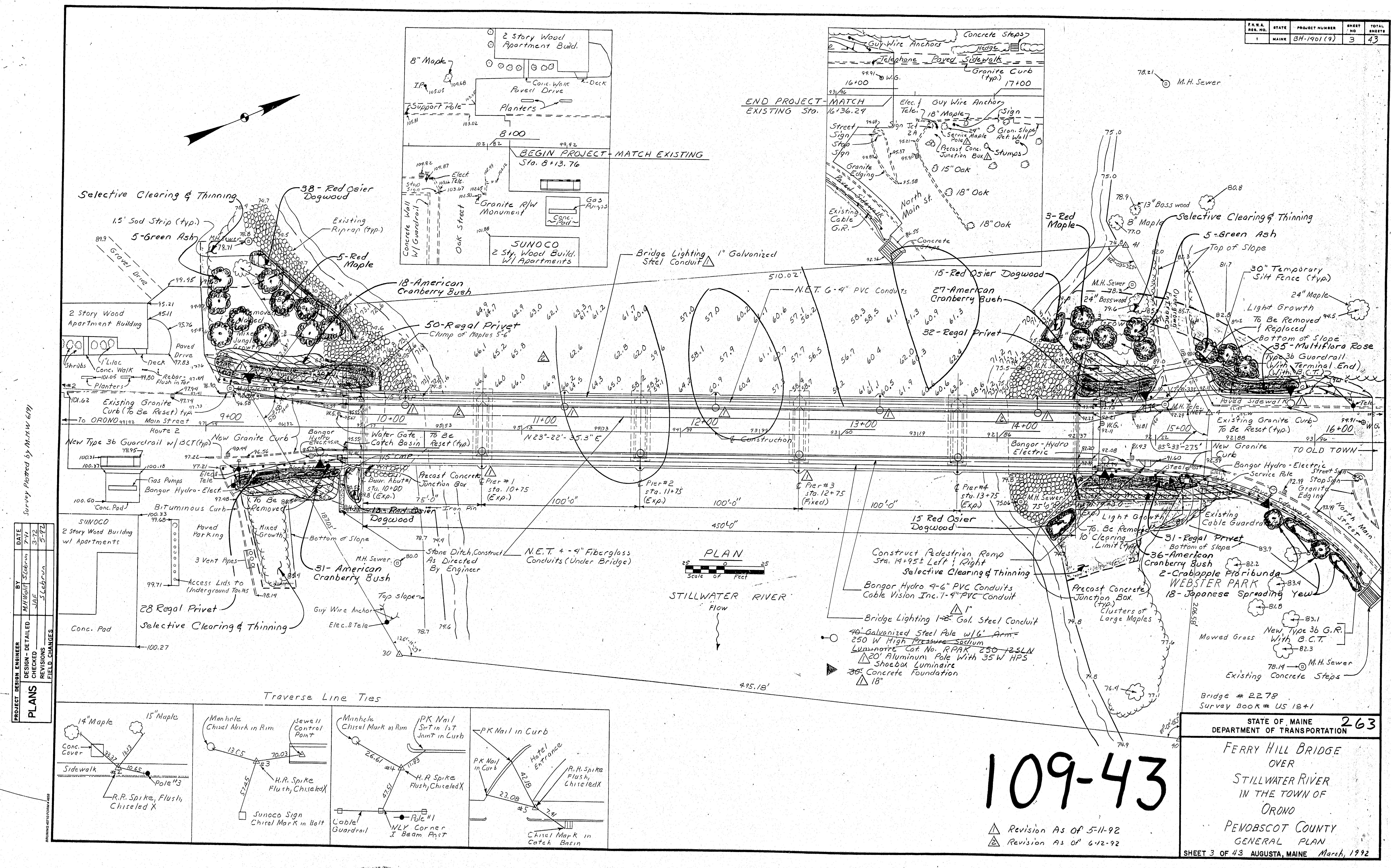
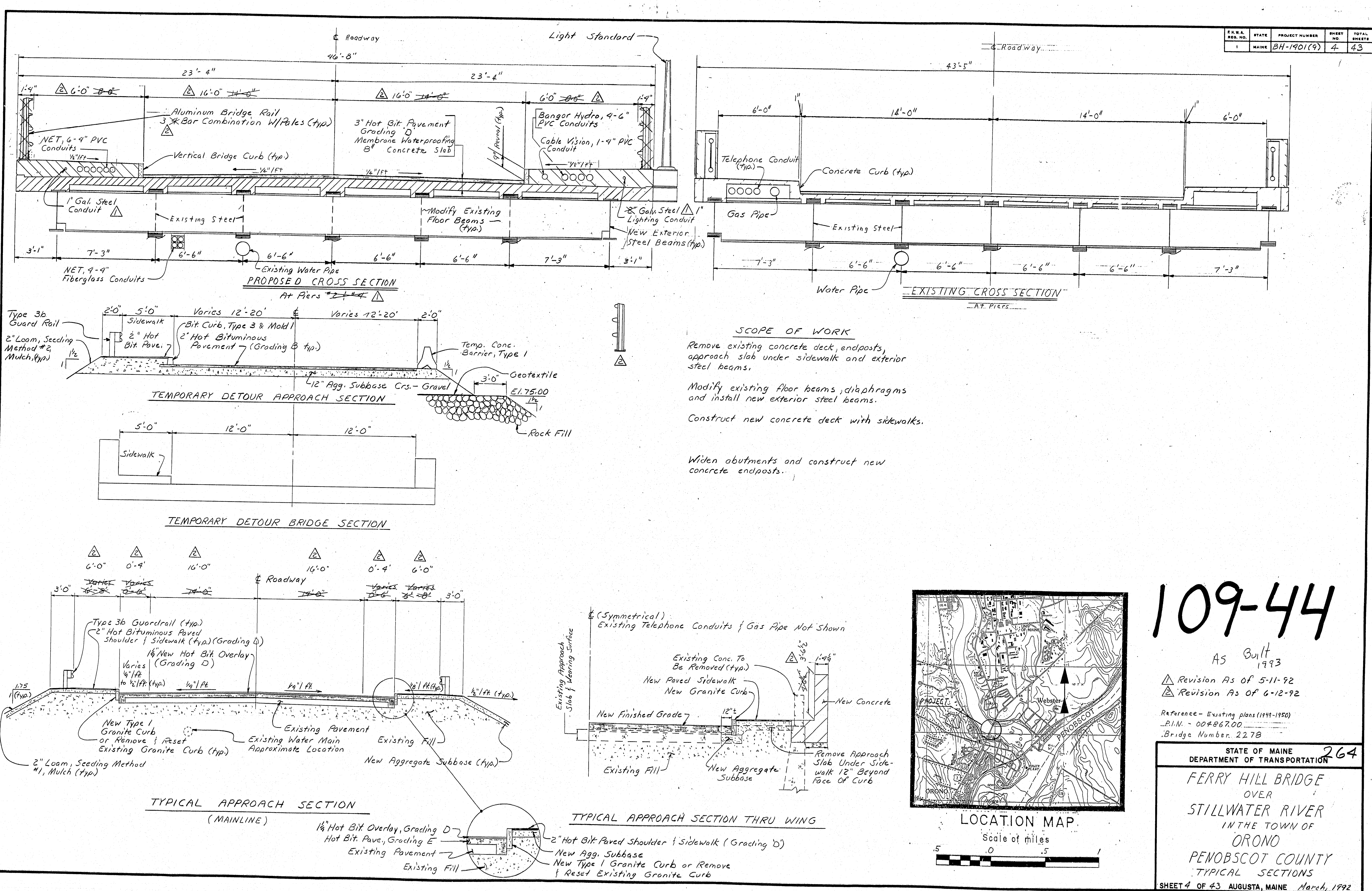
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
GENERAL PLAN

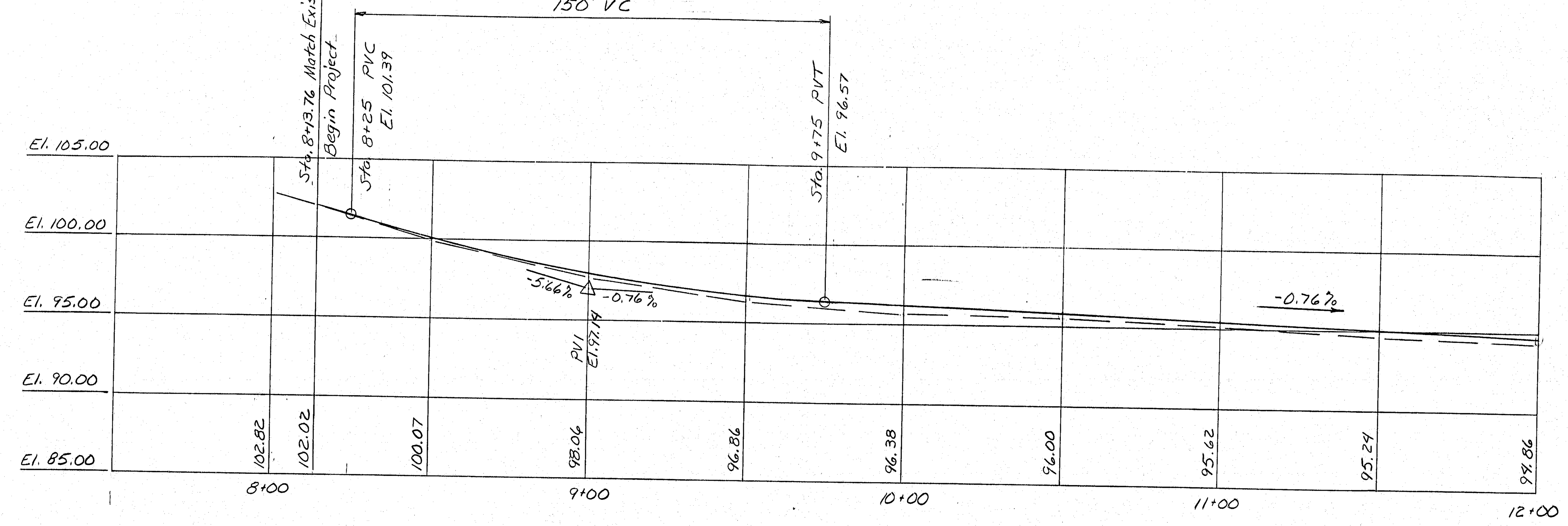
SHEET 3 OF 43 AUGUSTA, MAINE March, 1992

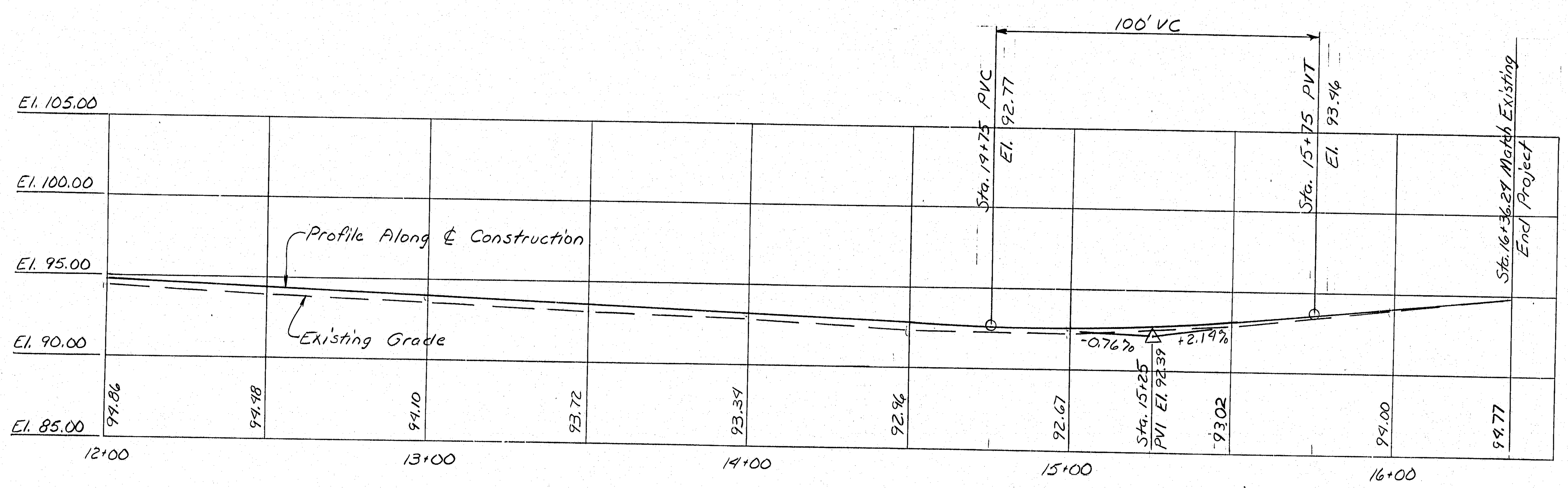

F.H.W.A. REG. NO. 1 | STATE MAINE | PROJECT NUMBER BH-1901(9) | SHEET NO. 3 | TOTAL SHEETS 43
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
263
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
GENERAL PLAN
SHEET 3 OF 43 AUGUSTA, MAINE March, 1992
109-43
Revision As of 5-11-92
Revision As of 6-12-92
Bridge # 2278
Survey Book # US 18+1
PLAN
STILLWATER RIVER
Flow
BEGIN PROJECT - MATCH EXISTING
Sta. 8+13.76
END PROJECT - MATCH
EXISTING Sta. 16+36.24
TO ORONO
Main Street
Route 2
TO OLD TOWN
N 23°-22'-35.3" E
Pier #1 sta. 10+75 (Exp.)
Pier #2 sta. 11+75 (Exp.)
Pier #3 sta. 12+75 (Fixed)
Pier #4 sta. 13+75 (Exp.)
100'-0"
450'-0"
SUNOCO
2 Story Wood Building w/ Apartments
WEBSTER PARK
North Main Street
Oak Street
Traverse Line Ties
Survey Plotted by M.H.W 6/91
PROJECT DESIGN ENGINEER
PLANS
DESIGN - DETAILED M.H.Wight
CHECKED JBF
REVISIONS
FIELD CHANGES



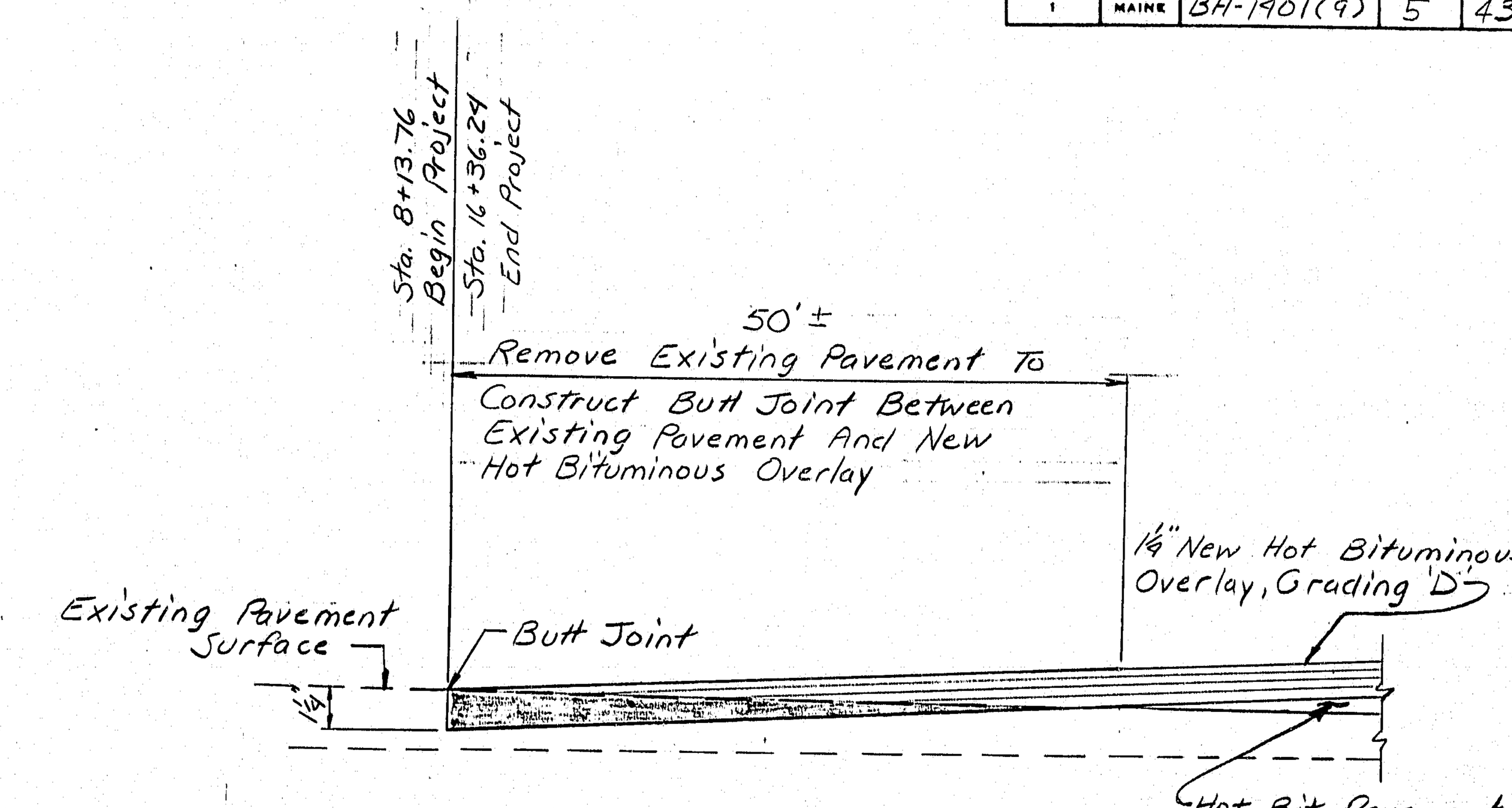
F.H.W.A. REG. NO. 1 | STATE MAINE | PROJECT NUMBER BH-1901(9) | SHEET NO. 4 | TOTAL SHEETS 43
PROPOSED CROSS SECTION
At Piers
Aluminum Bridge Rail 3 Bar Combination W/Poles (typ.)
3" Hot Bit. Pavement Grading D Membrane Waterproofing 8" Concrete Slab
Bangor Hydro, 4-6" PVC Conduits
Cable Vision, 1-4" PVC Conduit
NET, 6-4" PVC Conduits
Vertical Bridge Curb (typ.)
Light Standard
1" Gal. Steel Conduit
Existing Steel
Modify Existing Floor Beams (typ.)
Galv. Steel Lighting Conduit
New Exterior Steel Beams (typ.)
NET, 4-4" Fiberglass Conduits
Existing Water Pipe
EXISTING CROSS SECTION
At Piers
Telephone Conduit (typ.)
Concrete Curb (typ.)
Gas Pipe
Existing Steel
Water Pipe
TEMPORARY DETOUR APPROACH SECTION
Type 3b Guard Rail
2" Loam, Seeding Method #2, Mulch (typ.)
Sidewalk
2" Hot Bit. Pave.
Bit. Curb, Type 3 & Mold I
2" Hot Bituminous Pavement (Grading B typ.)
Temp. Conc. Barrier, Type I
12" Agg. Subbase Crs. - Gravel
Geotextile
El. 75.00
Rock Fill
TEMPORARY DETOUR BRIDGE SECTION
SCOPE OF WORK
Remove existing concrete deck, endposts, approach slab under sidewalk and exterior steel beams.
Modify existing floor beams, diaphragms and install new exterior steel beams.
Construct new concrete deck with sidewalks.
Widen abutments and construct new concrete endposts.
TYPICAL APPROACH SECTION
(MAINLINE)
Type 3b Guardrail (typ.)
2" Hot Bituminous Paved Shoulder & Sidewalk (typ.) (Grading D)
1¼" New Hot Bit. Overlay (Grading D)
New Type I Granite Curb or Remove & Reset Existing Granite Curb (typ.)
Existing Water Main Approximate Location
Existing Pavement
Existing Fill
New Aggregate Subbase (typ.)
2" Loam, Seeding Method #1, Mulch (typ.)
1¼" Hot Bit. Overlay, Grading D
Hot Bit. Pave, Grading E
Existing Pavement
Existing Fill
2" Hot Bit. Paved Shoulder & Sidewalk (Grading D)
New Agg. Subbase
New Type I Granite Curb or Remove & Reset Existing Granite Curb
TYPICAL APPROACH SECTION THRU WING
℄ (Symmetrical) Existing Telephone Conduits & Gas Pipe Not Shown
Existing Approach Slab & Wearing Surface
Existing Conc. To Be Removed (typ.)
New Paved Sidewalk
New Granite Curb
New Concrete
New Finished Grade
Existing Fill
New Aggregate Subbase
Remove Approach Slab Under Sidewalk 12" Beyond Face Of Curb
LOCATION MAP
Scale of miles
PROJECT
PENOBSCOT
ORONO
109-44
As Built 1993
Revision As of 5-11-92
Revision As of 6-12-92
Reference - Existing plans (1949-1950)
P.I.N. - 004867.00
Bridge Number 2278
PROJECT DESIGN ENGINEER | PLANS | DESIGN-DETAILED MHW 7-91 | CHECKED JAF 3-92 | REVISIONS S.Lebrun 5-92 | FIELD CHANGES
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
264
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
TYPICAL SECTIONS
SHEET 4 OF 43 AUGUSTA, MAINE March, 1992

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1901(9)	5	43

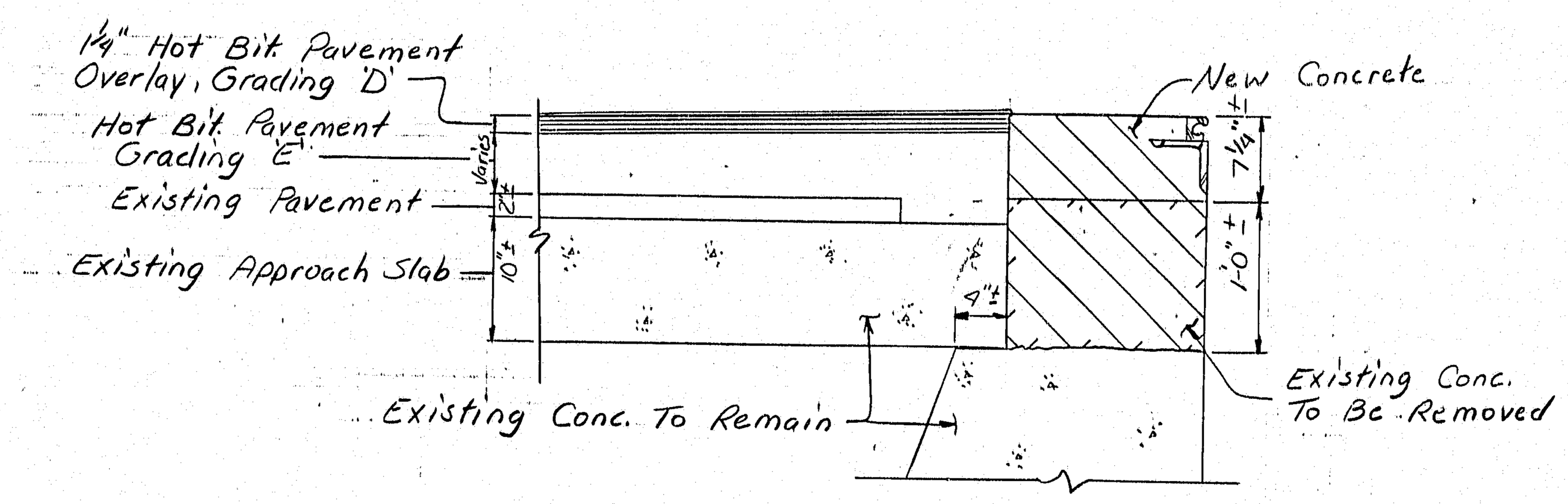




PROFILE ℄ CONSTRUCTION



PAVEMENT BUTT JOINTS
(Roadways)



PAVEMENT DETAIL AT ABUTMENT

109-45

TERMINAL CURB TYPE 1

Station	Offset	To	Station	Offset
8+11 ±	20' ± Lt.		8+15 ±	20' ± Lt.
8+79 ±	20' ± Lt.		8+83 ±	20' ± Lt.
9+08 ±	20' ± Lt.		9+12 ±	20' ± Lt.
8+35 ±	20' ± Rt.		8+39 ±	20' ± Rt.
8+35 ±	26' ± Rt.		8+39 ±	26' ± Rt.
8+55 ±	20' ± Rt.		8+59 ±	20' ± Rt.
8+55 ±	26' ± Rt.		8+59 ±	26' ± Rt.
9+01 ±	20' ± Rt.		9+05 ±	20' ± Rt.
14+89 ±	~~16~~' ± Lt. 17.4		14+93 ±	~~16~~' ± Lt. 17.4
14+97 ±	~~17~~' ± Lt. 17.75		15+01 ±	~~17~~' ± Lt. 18
15+09 ±	~~19~~' ± Lt. 18.7		15+13 ±	19' ± Lt. (2)
15+36 ±	20' ± Lt.		15+40 ±	20' ± Lt.
14+89 ±	~~14~~' ± Rt. 16		14+93 ±	~~14~~' ± Rt. 16
14+97	~~14~~' ± Rt. 16		15+01 ±	~~14~~' ± Rt. 16

RESET CURB TYPE 1

Remove From **

Station	Offset	To	Station	Offset	Length
8+11 ±	20' ± Lt.		8+79 ±	20' ± Lt.	68' ±
9+08 ±	20' ± Lt.		9+16 ±	20' ± Lt.	8' ±
9+75 ±	15' ± Lt.		9+89 ±	14' ± Lt.	14' ±
8+33 ±	21' ± Rt.		8+58 ±	20' ± Rt.	25' ±
9+01 ±	20' ± Rt.		9+25 ±	20' ± Rt.	24' ±
9+75 ±	15' ± Rt.		9+89 ±	14' ± Rt.	14' ±
14+61 ±	14' ± Lt.		14+87 ±	15' ± Lt.	26' ±
15+36 ±	20' ± Lt.		16+36 ±	20' ± Lt.	100' ±
14+60 ±	14' ± Rt.		15+01 ±	15' ± Rt.	41' ±
15+44 ±	21' ± Rt.		16+41 ±	78' ± Rt.	115' ±

Reset To **

Station	Offset	To	Station	Offset	Length	Radius
8+15 ±	20' ± Lt.		8+79 ±	20' ± Lt.	64' ±	
9+12 ±	20' ± Lt.		9+20 ±	20' ± Lt.	8' ±	
9+20 ±	20' ± Lt.		9+25 ±	20' ± Lt.	5' ±	
9+25 ±	20' ± Lt.		9+34 ±	19.3 ~~19~~' ± Lt.	9' ± (2)	
8+39 ±	20' ± Rt.		8+55 ±	20' ± Rt.	16' ±	
9+05 ±	20' ± Rt.		9+25 ±	20' ± Rt.	20' ±	
9+25 ±	20' ± Rt.		9+62 ±	17 ~~15~~' ± Rt.	37' ±	
14+51 ±	16 ~~14~~' ± Lt.		14+75 ±	16 ~~14~~' ± Lt.	24' ±	
(2) 15+40 ±	20' ± Lt.		16+36 ±	20' ± Lt.	96' ±	
14+51 ±	16 ~~14~~' ± Rt.		14+89 ±	16 ~~14~~' ± Rt.	38' ±	
15+44 ±	21' ± Rt.		16+35 ±	74' ± Rt.	106' ±	193' ±
16+35 ±	74' ± Rt.		16+41 ±	81' ± Rt.	8' ±	

** Includes 4 Existing Catch Basin Headers

TERMINAL END - SINGLE RAIL - GALV. STEEL

Station	Offset
15+04.75 ±	38' ± Lt.
15+31.5 ±	42' ± Lt.

BREAKAWAY CABLE TERMINAL

Station	To	Station
9+17.5 ± Rt.		9+42.5 ± Rt.
9+17.5 ± Lt.		9+42.5 ± Lt.
15+72.5 ± Lt.		15+97.5 ± Lt.
16+11 ± Rt.		16+30 ± Rt.

NEW VERTICAL CURB TYPE 1

Station	Offset	To	Station	Offset	Length	Radius
(2) 9+34 ±	19.3 ~~19~~' ± Lt.		9+75 ±	16 ~~14~~' ± Lt.	41' ±	
9+75 ±	16 ~~14~~' ± Lt.		9+99 ±	16 ~~14~~' ± Lt.	24' ±	
8+39 ±	26' ± Rt.		8+55 ±	26' ± Rt.	16' ±	
9+62 ±	17 ~~15~~' ± Rt.		9+75 ±	16 ~~14~~' ± Rt.	13' ±	
9+75 ±	16 ~~14~~' ± Rt.		9+99 ±	16 ~~14~~' ± Rt.	24' ±	
(2) 14+75 ±	16 ~~14~~' ± Lt.		14+89 ±	17.4 ~~16~~' ± Lt.	14' ±	
~~15+01 ±~~	~~14' ± Rt.~~		~~15+44 ±~~	~~21' ± Rt.~~	~~44' ±~~	~~193' ±~~
15+01 ±	18 ~~17~~' ± Lt.		15+09 ±	18.7 ~~19~~' ± Lt.	8' ±	

Sta.	Offset	to	Sta.	Offset	Length	Radius
15+01 ±	16' ± Rt.	to	15+21 ±	16' ± Rt.	20' ±	
15+21 ±	16' ± Rt.	to	15+44 ±	21' ± Rt.	24' ±	193' ±

Replace Bituminous Curb As Directed By The Engineer At Sta. 9+10 ± Rt.

GUARD RAIL TYPE 3b

Station	Offset	To	Station	Offset	Length
9+42.5 ±	23' ± Lt.		9+92.5 ±	22' ± Lt.	50' ±
9+42.5 ±	23' ± Rt.		9+92.5 ±	22' ± Rt.	50' ±
14+57.5 ±	22' ± Lt.		14+88.75 ±	22' ± Lt.	31.25' ±
15+47.5 ±	26' ± Lt.		15+72.5 ±	26' ± Lt.	25' ±
14+57.5 ±	22' ± Rt.		15+20 ±	22' ± Rt.	62.5' ±
15+20 ±	22' ± Rt.		16+11 ±	60' ± Rt.	100' ± *

GUARD RAIL TYPE 3b - OVER. 15 FOOT RADIUS

Station	Offset	To	Station	Offset	Length	Radius
14+88.75 ±	22' ± Lt.		15+04.75 ±	38' ± Lt.	25' ±	16' ±
15+31.5 ±	42' ± Lt.		15+47.5 ±	26' ± Lt.	25' ±	16' ±

* 6' Offset From Face of Curb

As Built 1983

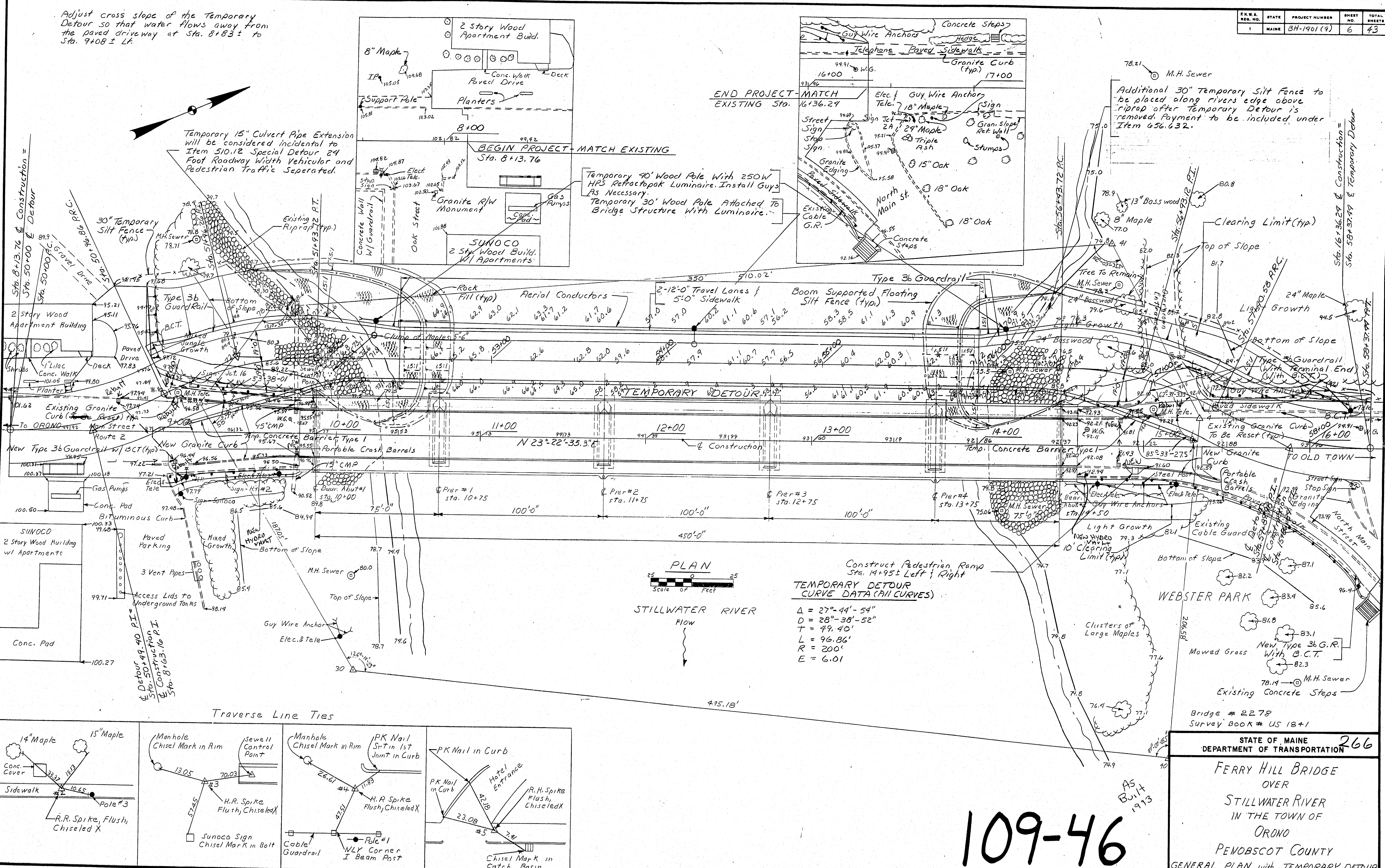
(2) Revisions as of 6/19/92

PLANS	BY	DATE
PROJECT DESIGN ENGINEER		
DESIGN - DETAILED	MHW / S.Lebrun	10-91
CHECKED	JAF	3-92
REVISIONS		
FIELD CHANGES	R.J.Nimon	6/92

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 265

FERRY HILL BRIDGE
STILLWATER RIVER
ORONO
PENOBSCOT COUNTY
PROFILE ℄ CONSTRUCTION

SHEET 5 OF 43 AUGUSTA, MAINE March, 1992



F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1901(9)	6	43

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	MHW Sidebar	7-91
CHECKED	JAF	3-92
REVISIONS		
FIELD CHANGES		

PLANS

Survey Plotted by M.H.W 6/91

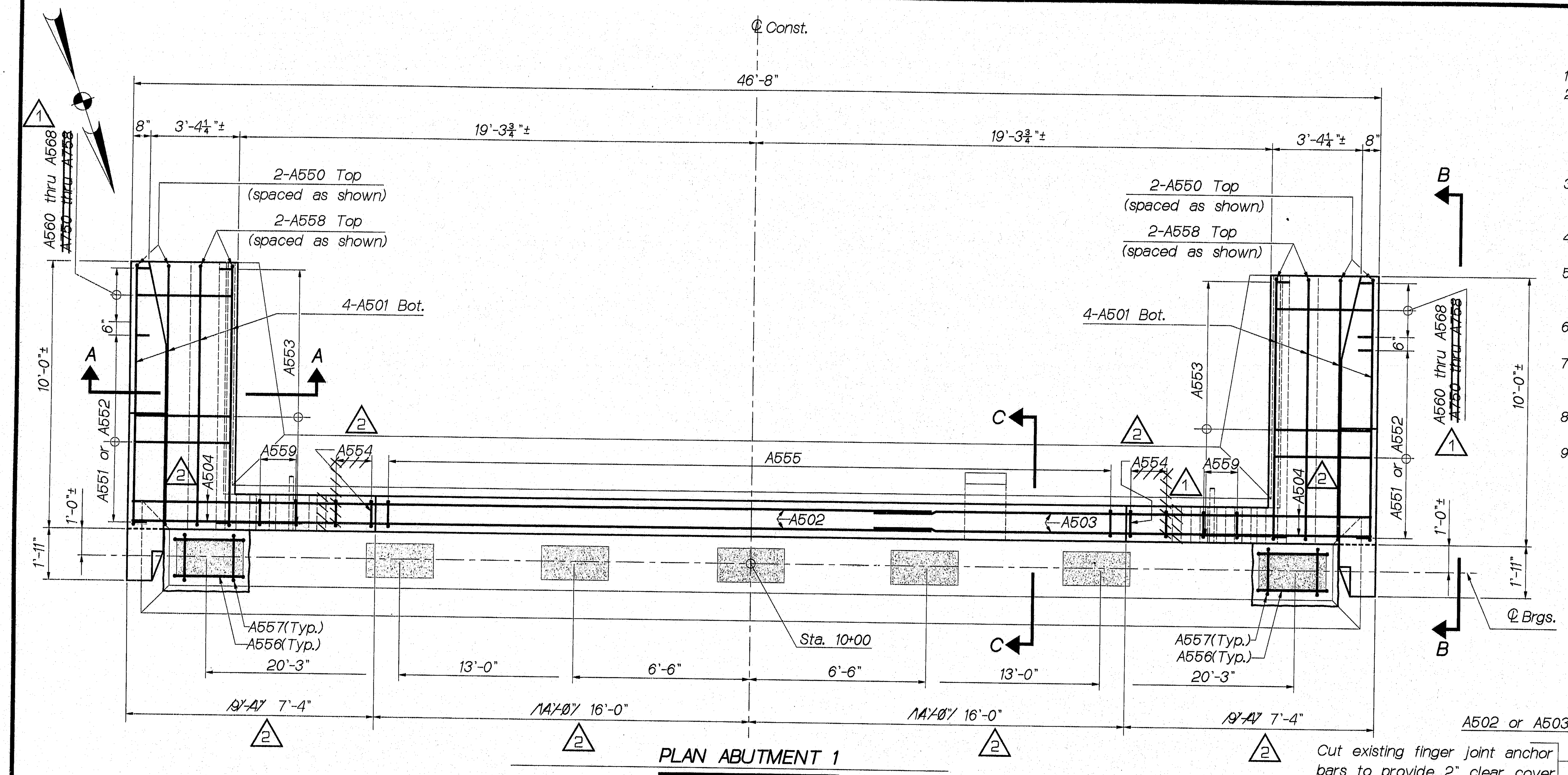
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 266

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
GENERAL PLAN with TEMPORARY DETOUR
SHEET 6 OF 43 AUGUSTA, MAINE March, 1992

As Built 1993

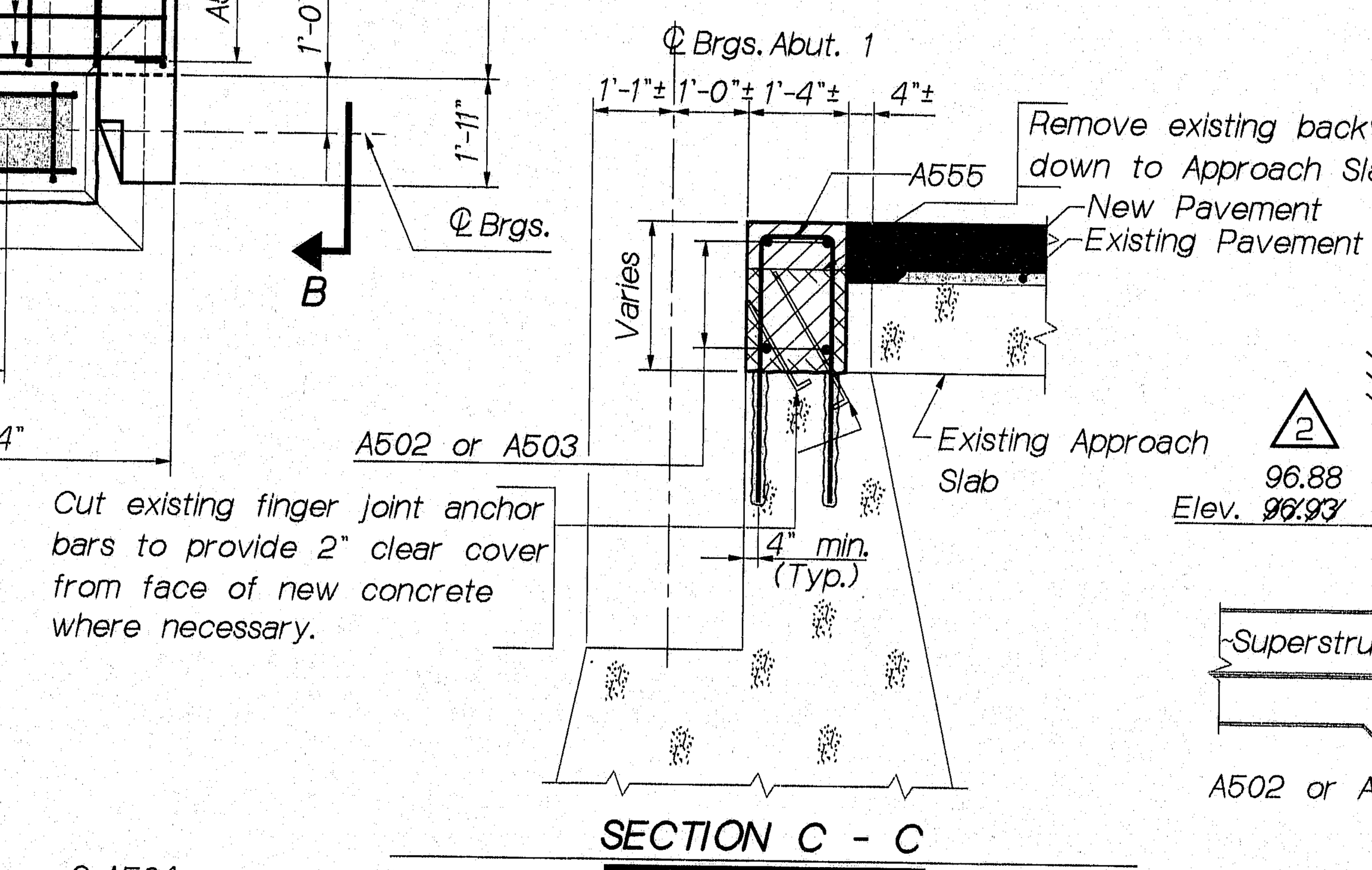
109-46

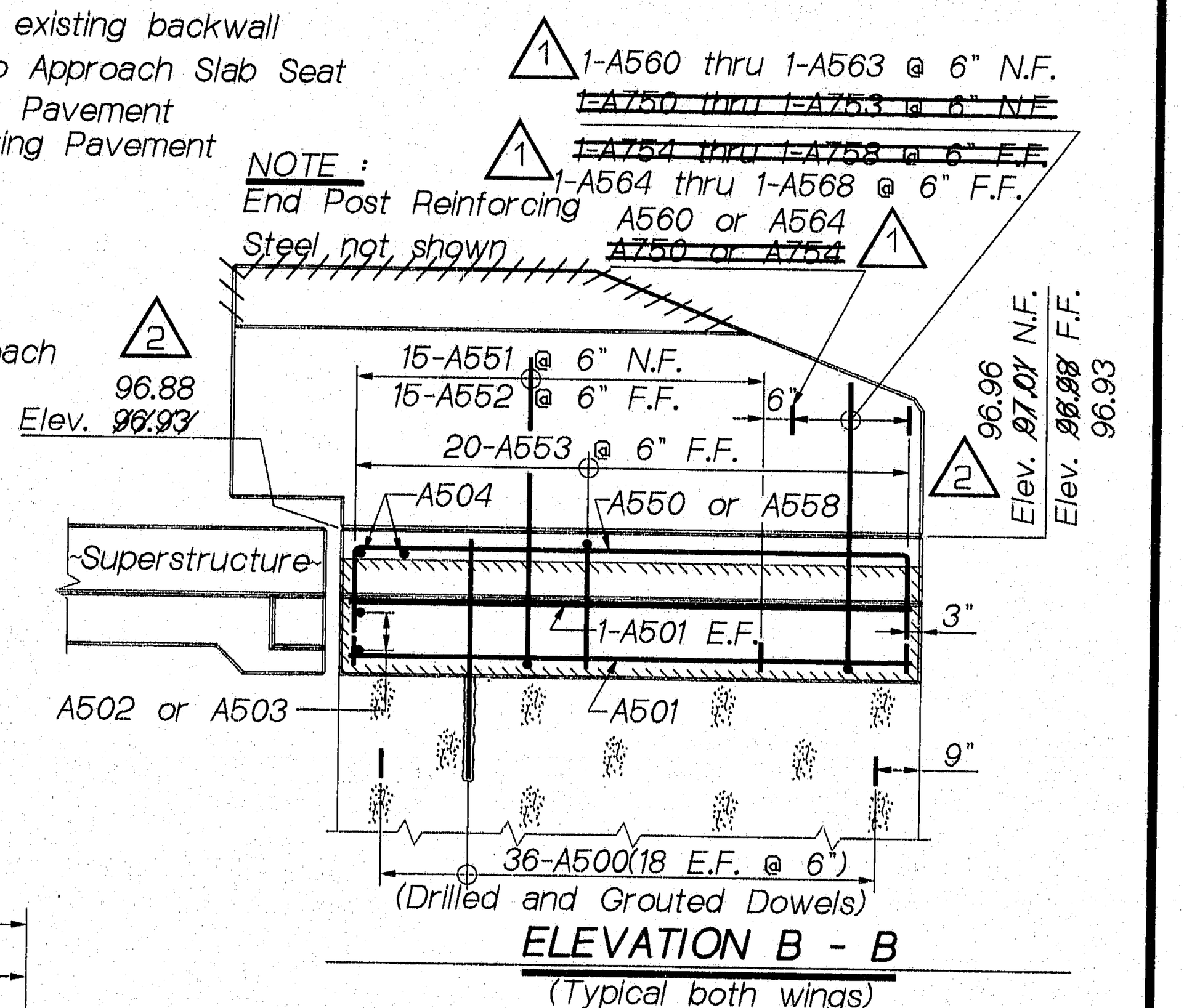
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	9	43

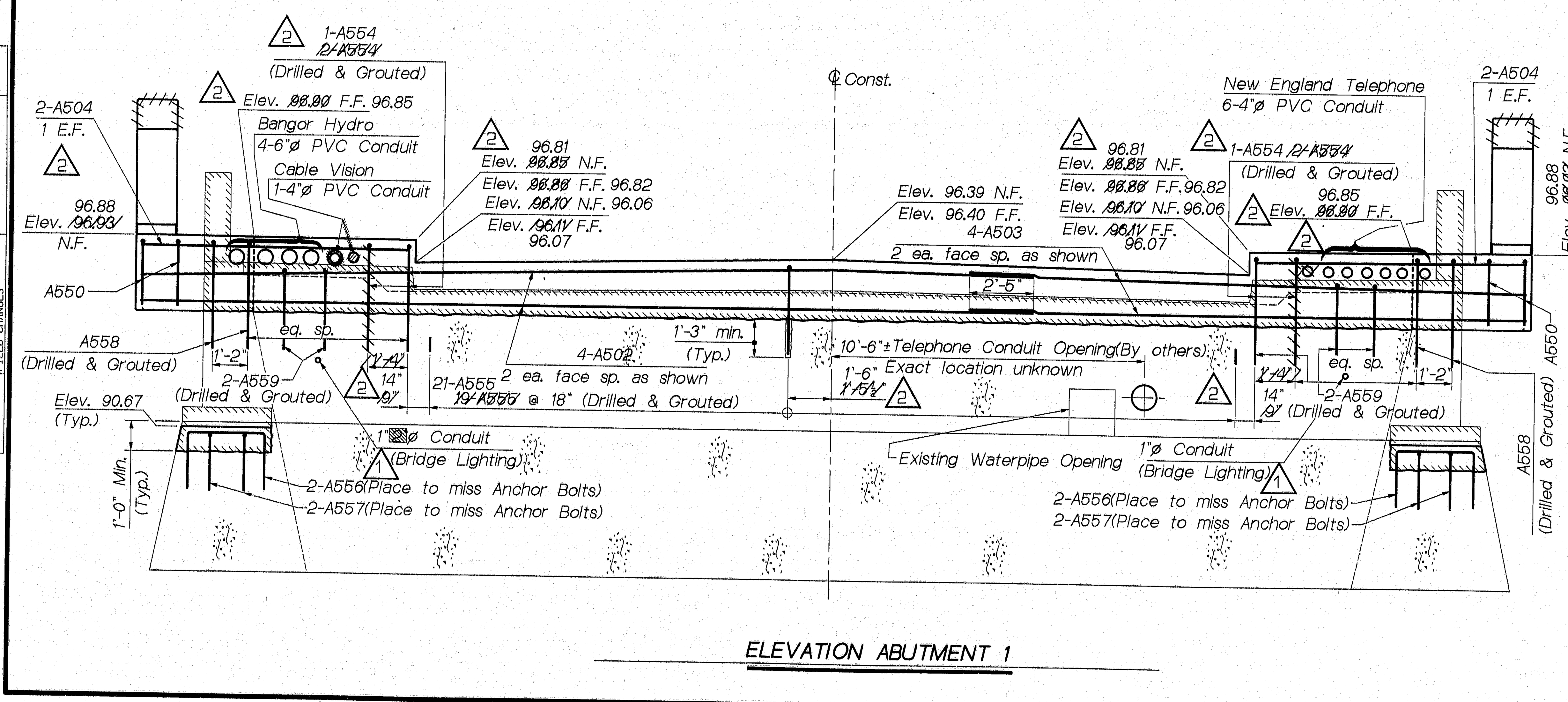


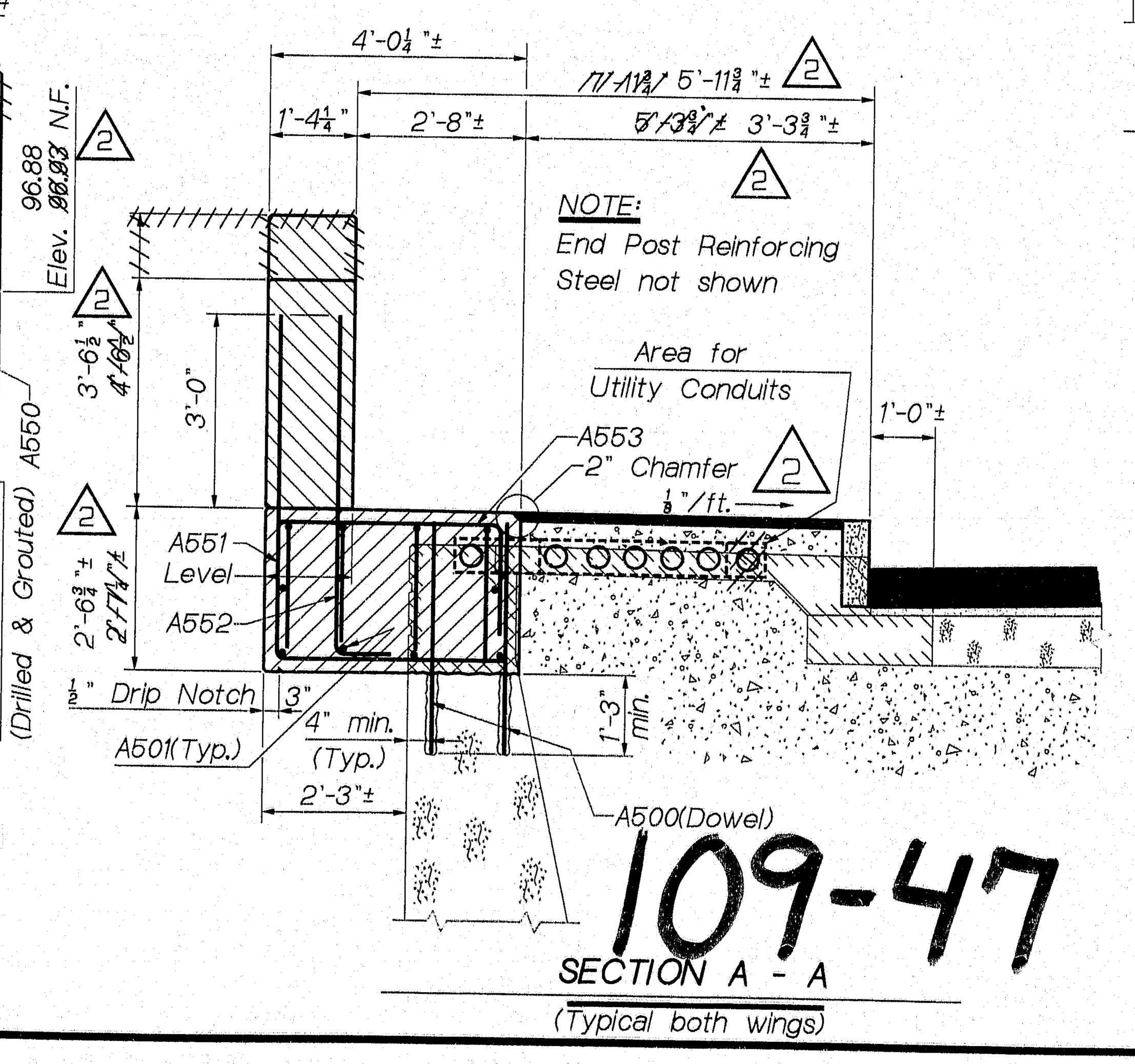
ABUTMENT NOTES

1. Reinforcing steel shall have 2 inches cover unless otherwise indicated.
2. Protective coating for concrete surfaces shall be applied to the following areas:
   - Top of concrete curb and sidewalk.
   - Top of abutment backwalls and 1'± below top of backwalls on the back side.
   - All exposed surfaces of Concrete End Posts.
   - Fascias down to the drip notch.
3. Approved Bonding Agent shall be applied to all existing concrete surfaces to be in contact with the new concrete. Payment will be incidental to Item 502.219, Structural Concrete, Abutments and Retaining Walls.
4. Saw cut along wingwall fascia to maintain a straight concrete removal line. Payment will be incidental to Item 202.17, Removing Existing Structural Concrete.
5. The existing concrete shall be removed so as not to damage the existing reinforcing steel and and anchor bars. Any damaged existing reinforcing steel shall be replaced at the contractors expense.
6. All grout shall contain a non-shrink additive. Payment for grout will be considered incidental to Item 503.13 Reinforcing Steel, Placing.
7. The existing bearing pedestals for the exterior beams, which are to be removed and reset, shall be secured by 2 - 1"ø swedged anchor bolts with 10" embedment length. Payment for anchor bolts will be considered incidental to Item 503.12, Reinforcing Steel, Fabricated and Delivered.
8. Removal of existing concrete for the abutments will be paid for under Item 202.17, Removing Existing Structural Concrete.
9. Silica Fume Additive shall be used for capping top of abutments.









LEGEND

- New concrete
- Existing concrete to remain
- Existing concrete to be removed
- 1 Revision as of 5/9/92
- 2 Revision as of 6/17/92

As Built 1993

109-47

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	R.Booth	2/13/92
CHECKED		
REVISIONS	R.Booth/ R.J.Nixon	5/9/92
FIELD CHANGES		

PLANS

19JUN92-010100

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

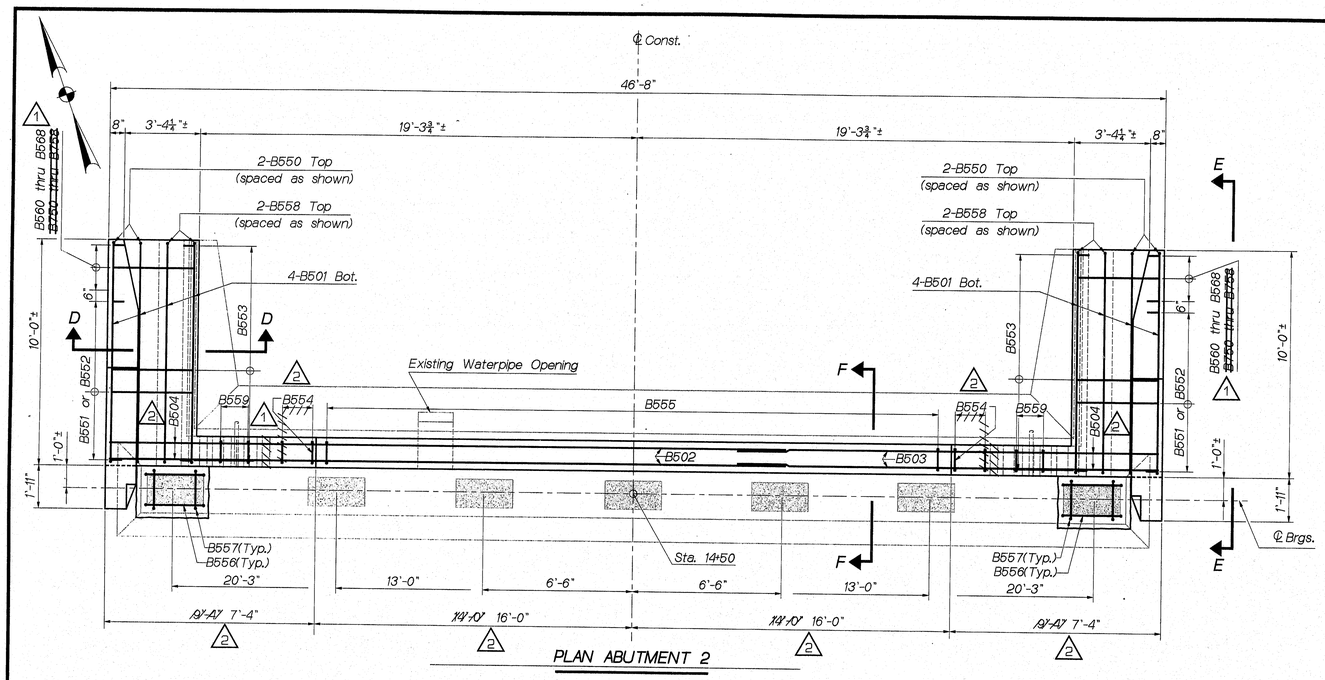
269

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

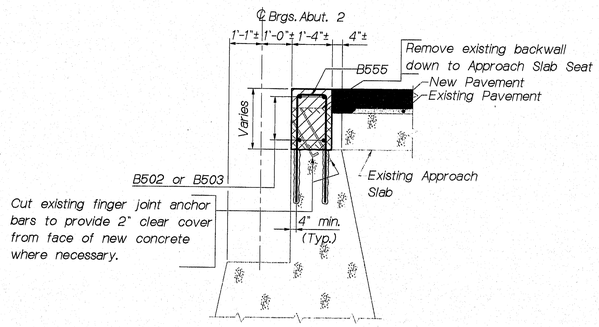
ABUTMENT 1

SHEET 9 OF 43 AUGUSTA, MAINE March, 1992

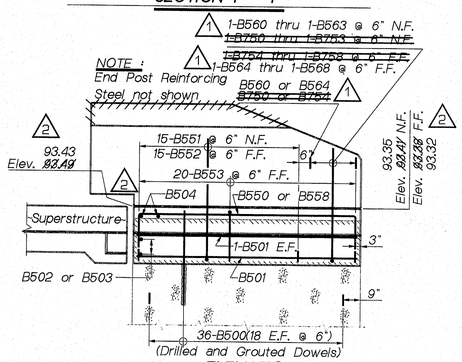
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	10	43



PLAN ABUTMENT 2

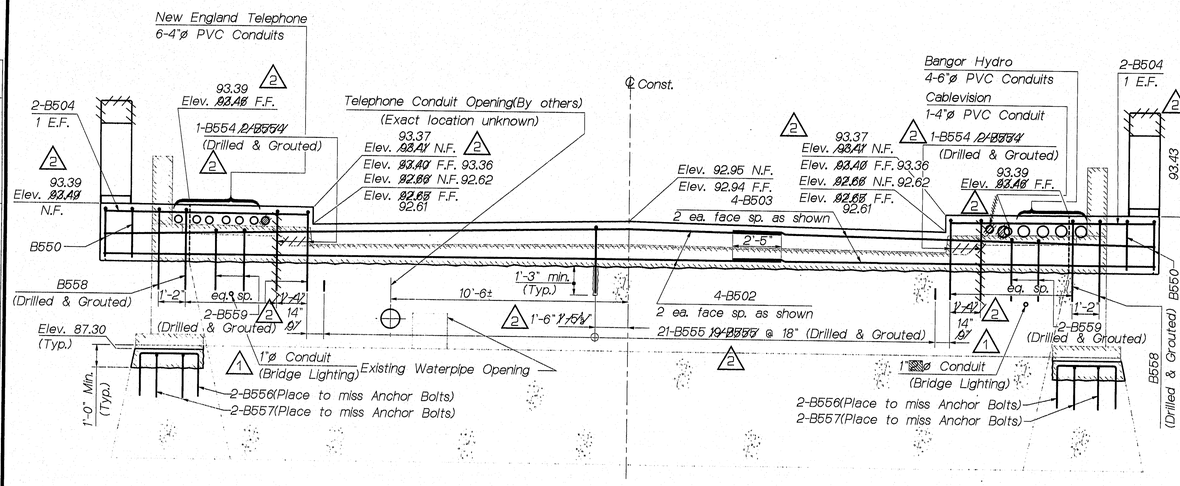


SECTION F - F

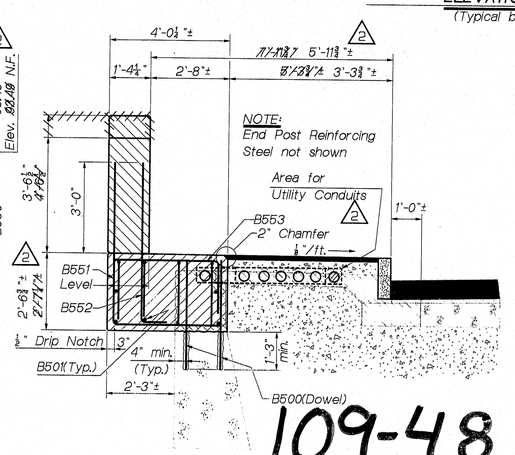


ELEVATION E - E

(Typical both wings)



ELEVATION ABUTMENT 2



SECTION D - D

(Typical both wings)

LEGEND

- New concrete
- Existing concrete to remain
- Existing concrete to be removed
- 1 Revision as of 5/8/92
- 2 Revision as of 6/17/92

As Built 1993

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	RCBooth	2/05/92
CHECKED	RCBooth / RJKimon	5/8/92
REVISIONS		
FIELD CHANGES		

PLANS

19JUN92-010100

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

270

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

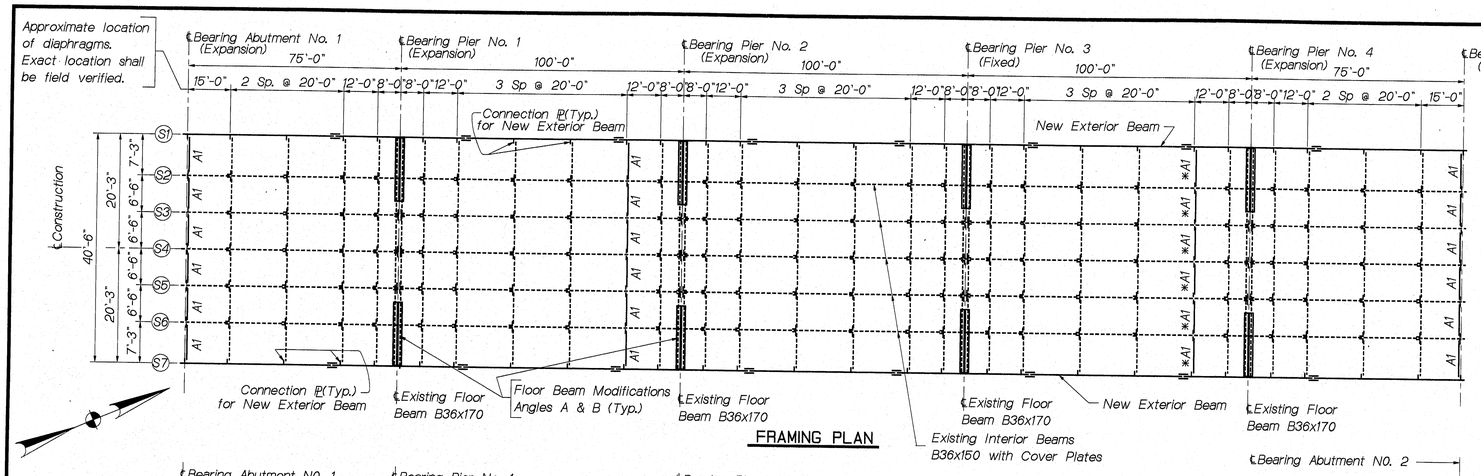
ABUTMENT 2

109-48

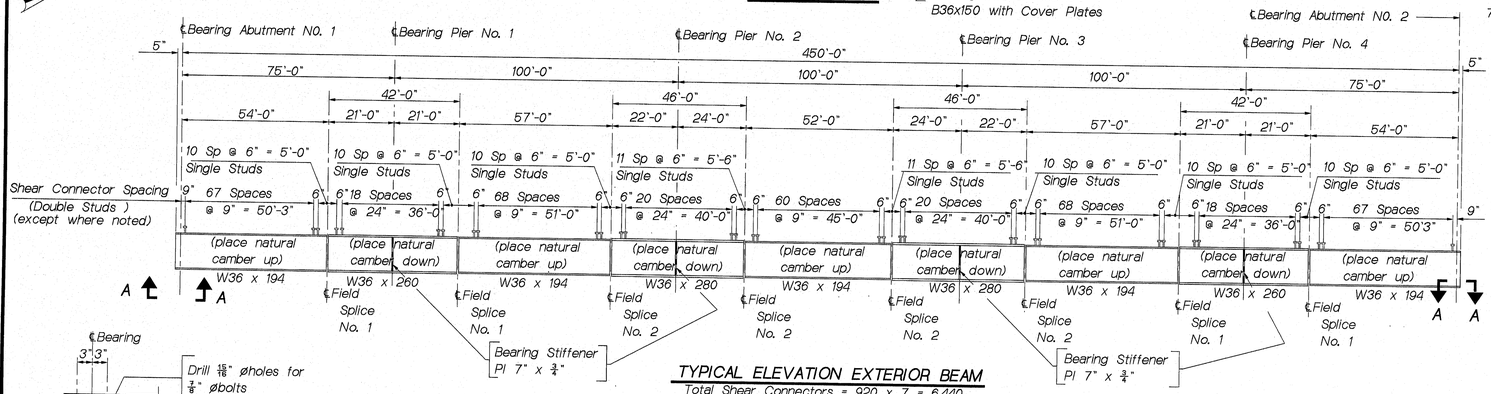
SHEET 10 OF 43 AUGUSTA, MAINE March, 1992

PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	11	43



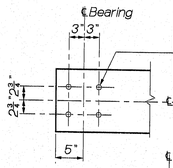
FRAMING PLAN



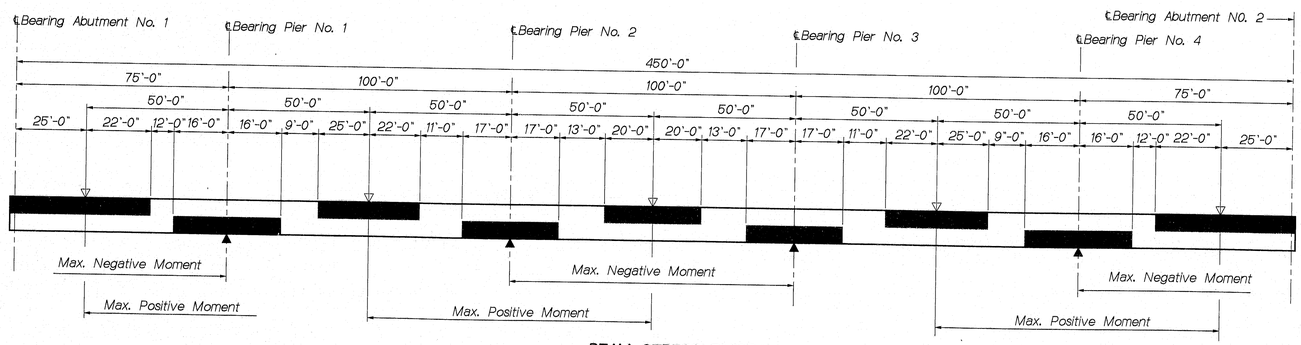
TYPICAL ELEVATION EXTERIOR BEAM

Total Shear Connectors = 920 x 7 = 6,440

NOTE: Shear connector spacing for existing interior beams is the same as spacing for the new exterior beam.



VIEW A - A



BEAM STRESS DIAGRAM

STRUCTURAL STEEL NOTES

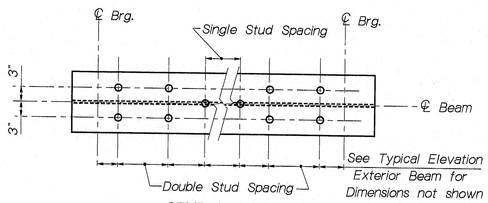
1. Bearing stiffeners shall be plumb after erection and dead loading of the structure. Intermediate web stiffeners may be either plumb or normal to the top flange.
2. Filler plates may be steel conforming to the requirements of ASTM A36 and mill tests will not be required for filler plates.
3. It is anticipated that the bearings at Abutment 1 and Abutment 2 will move $\frac{1}{8}$" away from the fixed bearings due to the placement of the superstructure concrete. No seperate payment will be made for resetting the bearings to the final position if an adjustment is required.
4. Splice connections shall be made with $\frac{7}{8}$"ø ASTM A325 High Tensile Strength Bolts with $\frac{15}{16}$"ø holes.
5. Remove and reset existing bearings. Exterior beams Abutment No. 1 and Abutment No. 2.
6. At locations marked with an asterisk (*A1) the designated diaphragms shall be changed to a type A1 diaphragm as required to accommodate the Contractor's deck placement sequence. No extra compensation will be allowed for any diaphragms so substituted, and any additional cost will be considered incidental to the contract items.
7. New structural steel shall recieve one shop coat of paint in accordance with Section 504 and Special Provision 506. Payment will not be made directly but will be considered incidental to Item 504.70, Structural Steel, Fabricated and Delivered.

BASIC DESIGN STRESSES

STRUCTURAL STEEL: ASTM A36 _____ Fy = 36,000 psi.
ASTM A325 _____ Fv = 25,000 psi.

MATERIALS

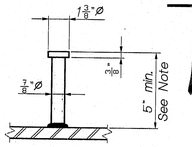
STRUCTURAL STEEL: All Material _____ ASTM A36
High Strength Bolts ASTM A325 - (Type 1)



STUD LAYOUT

109-49

As Built 1993



STUD DETAIL

NOTE: Studs shall project at least two inches above the bottom of the slab.

NOTE: Shaded areas always in compression all other areas are in tension or have stress reversals.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

271

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

STRUCTURAL STEEL

SHEET 11 OF 43 AUGUSTA, MAINE March, 1992

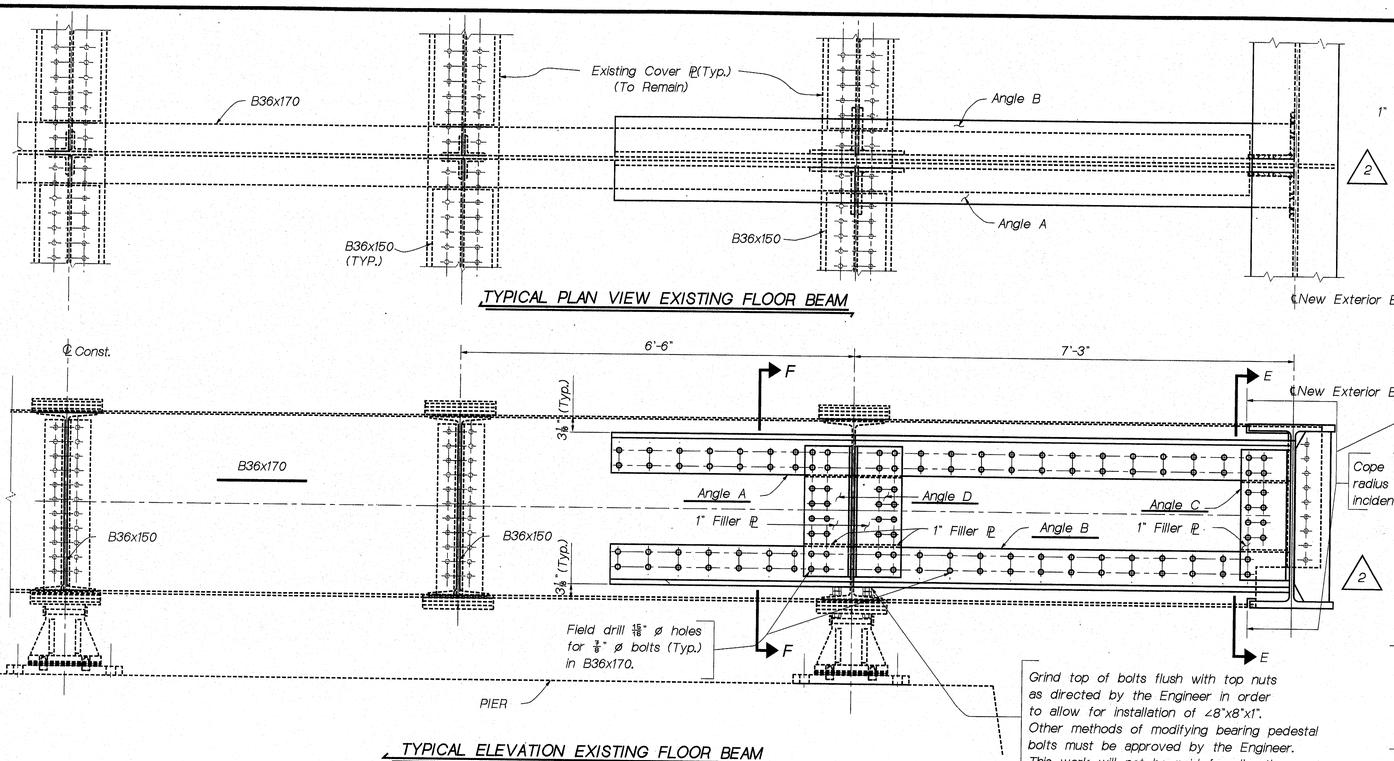
PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	MAINE R.NORMAND	10/91
CHECKED	JAF	3-92
REVISIONS		
FIELD CHANGES		

PLANS

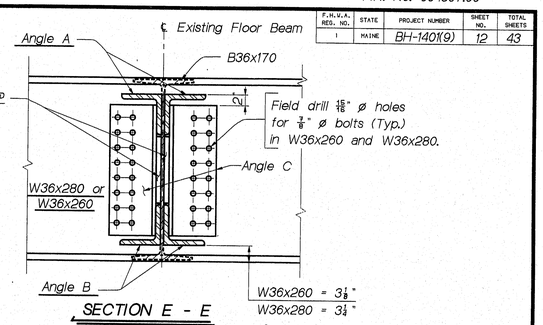
30MAR92-010020

PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	12	43



TYPICAL PLAN VIEW EXISTING FLOOR BEAM

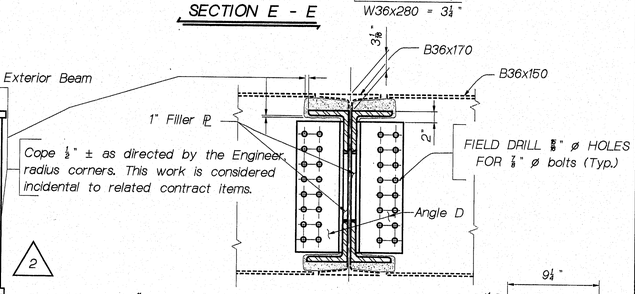


SECTION E - E

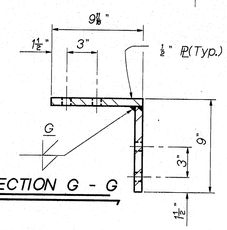
TYPICAL ELEVATION EXISTING FLOOR BEAM

Grind top of bolts flush with top nuts as directed by the Engineer in order to allow for installation of ∠8"x8"x1". Other methods of modifying bearing pedestal bolts must be approved by the Engineer. This work will not be paid for directly but shall be considered incidental to related contract items.

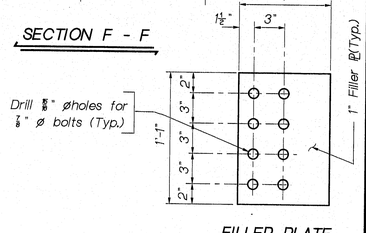
Cope ½" ± as directed by the Engineer. radius corners. This work is considered incidental to related contract items.

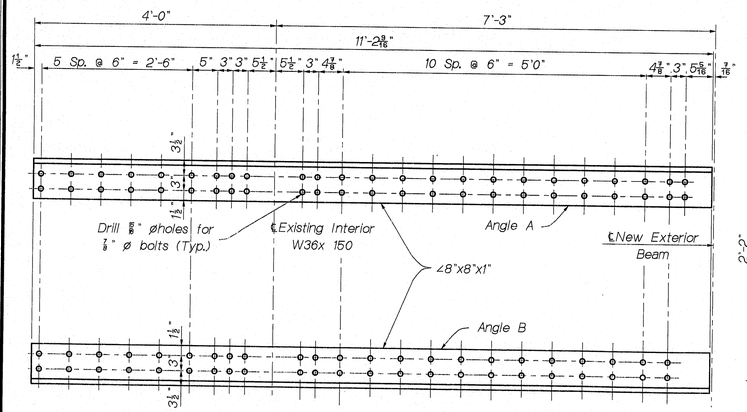


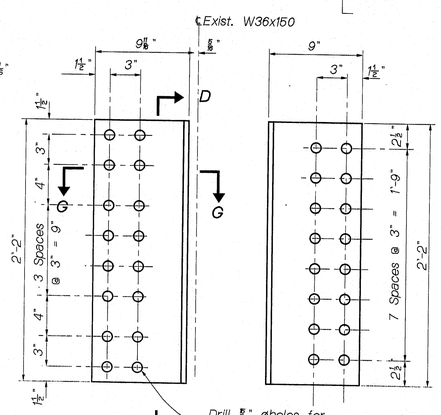
SECTION F - F



SECTION G - G

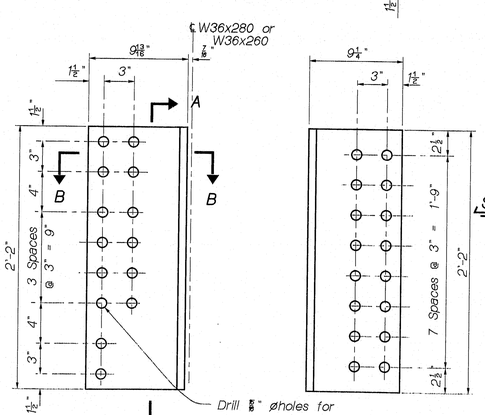






ANGLE D

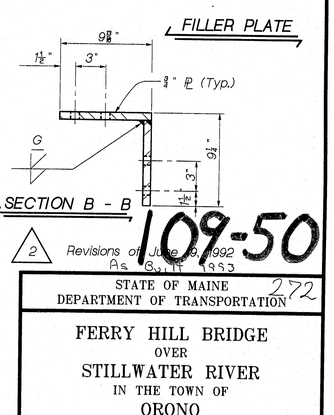
SECTION D - D



ANGLE C

SECTION A - A

FILLER PLATE



SECTION B - B

2 Revisions of June 16, 1992 As Built 1993

109-50

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	JE.NORMAND	10/91
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

19JUN92-01D100

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

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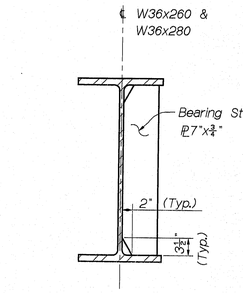
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
STRUCTURAL STEEL

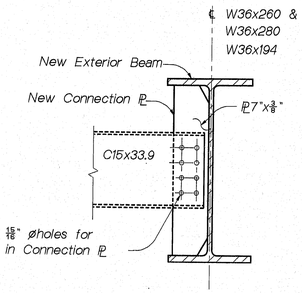
SHEET 12 OF 43 AUGUSTA, MAINE March, 1992

PIN. NO. 004867.00

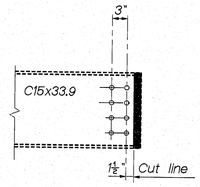
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	13	43



BEARING STIFFENER DETAIL

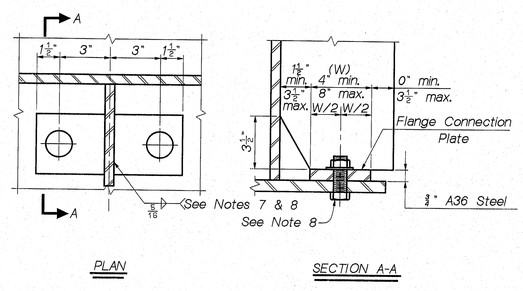


CONNECTION PLATE DETAIL



C15 MODIFICATION

Existing to be modified



PLAN

SECTION A-A

TENSION-FLANGE CONNECTION

DIAPHRAGM AND CROSSFRAME FABRICATION NOTES

1) All bolts shall be ⅞"Ø H.S. Bolts. Hole sizes for bolts shall conform to Section 504.23 of the Standard Specifications, 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 clearance. Connection plates shall have a minimum width of 7".

3) Depending on the skew-angle, stiffeners and connection plates shall be welded to the web plates with either fillet welds or a single bevel groove weld. Fillet welds shall be the minimum size specified by the AWS Structural Welding Code D1.5, table 2.2, unless otherwise shown. Fit-up shall meet the requirements of AWS D1.5, Art. 3.3, Assembly.

4) All stiffeners and connection plates shall extend to both the top and bottom flanges and shall be welded to the flanges with a fillet weld on both sides of the plate, except as indicated by note 5 and/or 6. Fillet weld size shall be as specified under note 3.

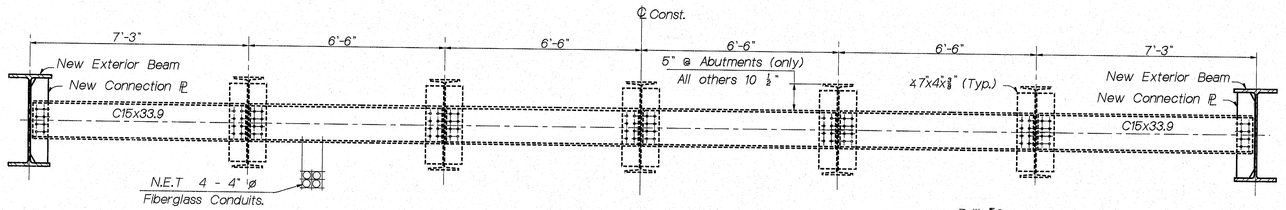
5) Connection plates and stiffeners used as connection plates shall be connected to flanges in tension and stress reversal areas with the "Tension-Flange Connection" detail. All other stiffeners shall fit within 1/16" (tight fit) at flanges in tension and stress reversal areas and shall not be welded.

6) Bearing stiffeners shall be machined to have full bearing, and shall have a fillet weld on each side.

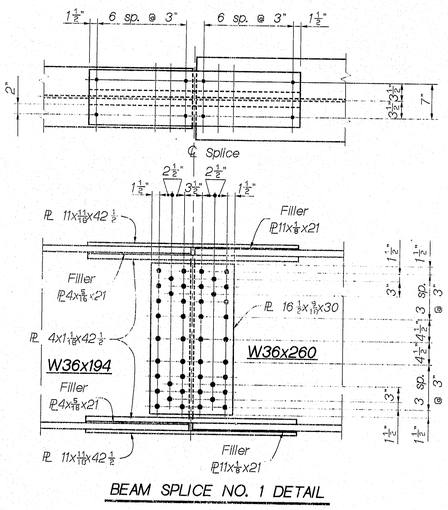
7) All fillet welds which connect stiffeners or connection plates to either a flange or web plate, shall be started and stopped approximately ½"inch from the ends or edges of the plate.

8) Bolt tension-flange connection plate to flange before welding stiffener or diaphragm connection plate to it.

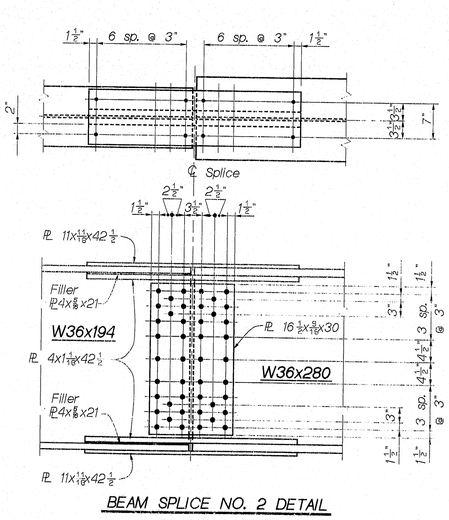
9) All holes in new steel that are to be matched to holes in existing steel shall be drilled in the field. Edge distance to bolt shall be 1⅛" minimum, unless otherwise noted.



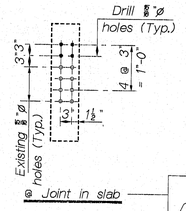
TYPICAL DIAPHRAGM DETAIL

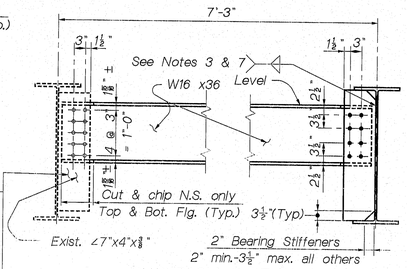


BEAM SPLICE NO. 1 DETAIL



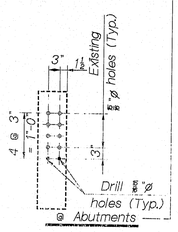
BEAM SPLICE NO. 2 DETAIL

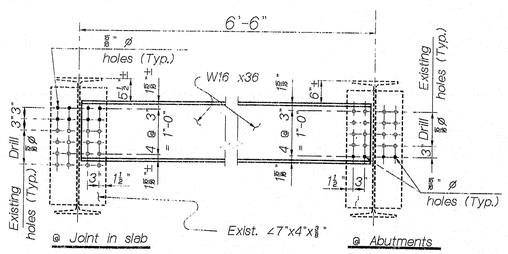




DIAPHRAGM TYPE A1

(S1-S2) and (S6-S7)





DIAPHRAGM TYPE A1

(S2 Thru S6)

109-51

As Built 1993

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	M.Hinx / R.NORMAND	10/91
CHECKED	J.M.F.	3-92
REVISIONS		
FIELD CHANGES		

PLANS

19MARB2-00.59.40

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 273

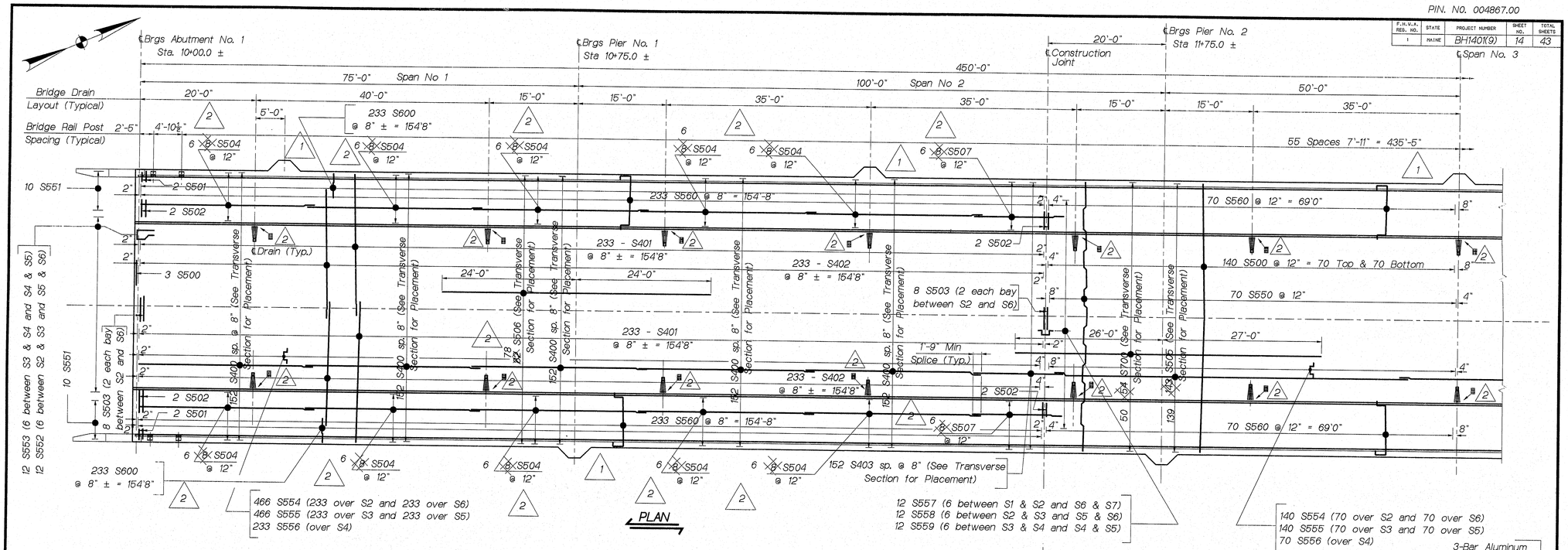
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

MISC. STRUCTURAL STEEL DETAILS

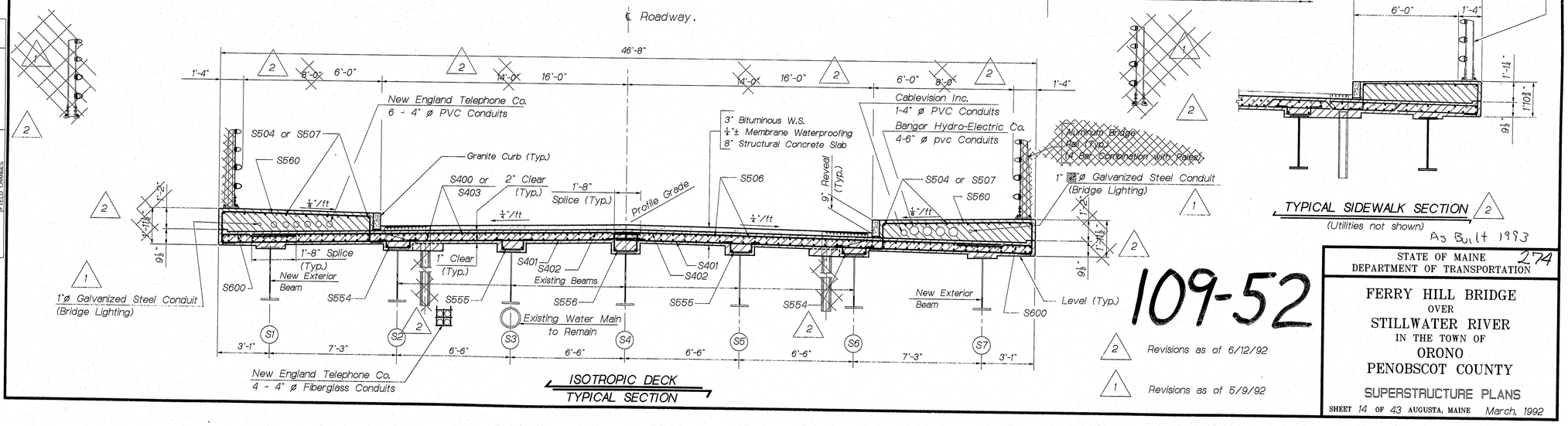
SHEET 13 OF 43 AUGUSTA, MAINE March, 1992

PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH1401(9)	14	43



PLAN



ISOTROPIC DECK
TYPICAL SECTION

TYPICAL SIDEWALK SECTION
(Utilities not shown)

As Built 1993

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	R.V.Normand	10/91
CHECKED		
REVISIONS	R.V.Normand	5/9/92
FIELD CHANGES		

PLANS

18JUN92-D1D100

2 Revisions as of 6/12/92

1 Revisions as of 5/9/92

109-52

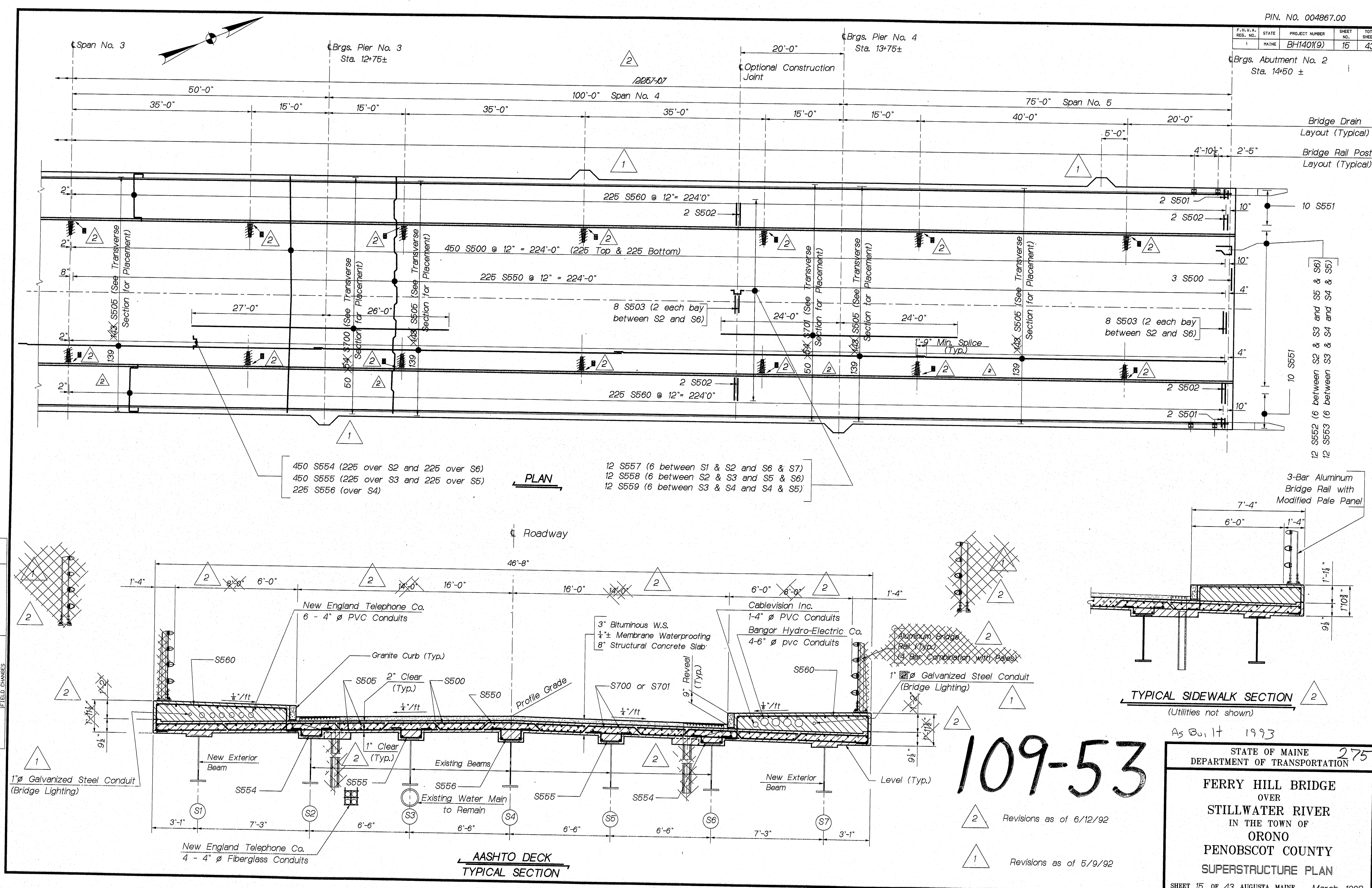
274

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

SUPERSTRUCTURE PLANS

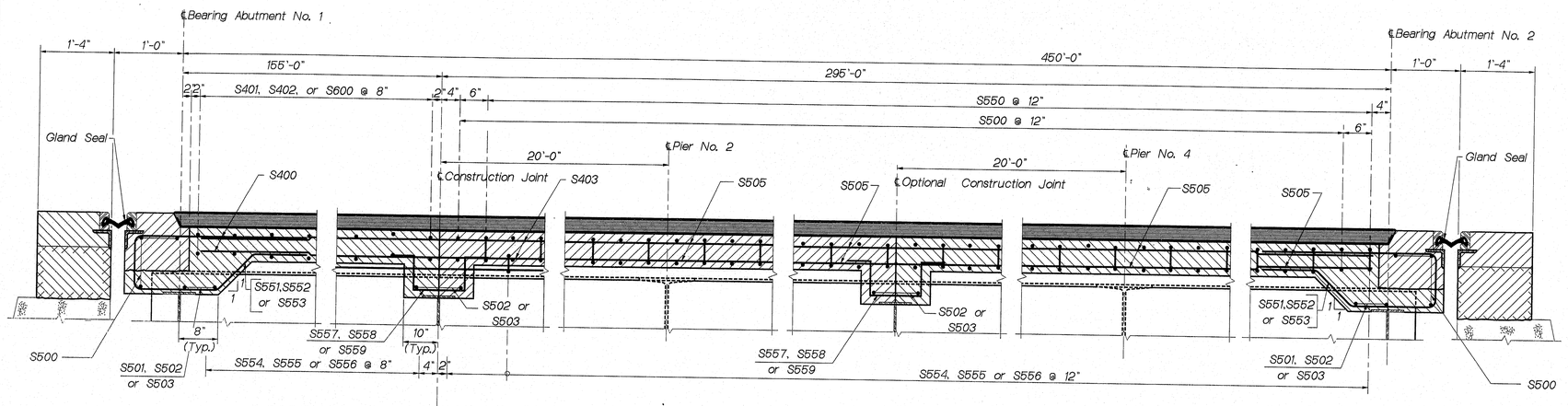
SHEET 14 OF 43 AUGUSTA, MAINE March, 1992



PIN. NO. 004867.00
F.H.W.A. REG. NO. 1
STATE MAINE
PROJECT NUMBER BH1401(9)
SHEET NO. 15
TOTAL SHEETS 43
℄ Span No. 3
℄ Brgs. Pier No. 3 Sta. 12+75±
℄ Brgs. Pier No. 4 Sta. 13+75±
℄ Optional Construction Joint
℄ Brgs. Abutment No. 2 Sta. 14+50 ±
225'-07
50'-0"
100'-0" Span No. 4
75'-0" Span No. 5
Bridge Drain Layout (Typical)
Bridge Rail Post Layout (Typical)
225 S560 @ 12" = 224'0"
2 S502
2 S501
10 S551
450 S500 @ 12" = 224'-0" (225 Top & 225 Bottom)
225 S550 @ 12" = 224'-0"
3 S500
8 S503 (2 each bay between S2 and S6)
S505 (See Transverse Section for Placement)
S700 (See Transverse Section for Placement)
S701 (See Transverse Section for Placement)
1'-9" Min. Splice (Typ.)
12 S552 (6 between S2 & S3 and S5 & S6)
12 S553 (6 between S3 & S4 and S4 & S5)
450 S554 (225 over S2 and 225 over S6)
450 S555 (225 over S3 and 225 over S5)
225 S556 (over S4)
PLAN
12 S557 (6 between S1 & S2 and S6 & S7)
12 S558 (6 between S2 & S3 and S5 & S6)
12 S559 (6 between S3 & S4 and S4 & S5)
℄ Roadway
46'-8"
New England Telephone Co. 6 - 4" ø PVC Conduits
Granite Curb (Typ.)
2" Clear (Typ.)
1" Clear (Typ.)
Profile Grade
3" Bituminous W.S.
¼"± Membrane Waterproofing
8" Structural Concrete Slab
S700 or S701
9" Reveal (Typ.)
Cablevision Inc. 1-4" ø PVC Conduits
Bangor Hydro-Electric Co. 4-6" ø pvc Conduits
Aluminum Bridge Rail (Typ.) (4 Bar Combination with Poles)
1" ø Galvanized Steel Conduit (Bridge Lighting)
New Exterior Beam
Existing Beams
Existing Water Main to Remain
Level (Typ.)
1"ø Galvanized Steel Conduit (Bridge Lighting)
New England Telephone Co. 4 - 4" ø Fiberglass Conduits
AASHTO DECK TYPICAL SECTION
3-Bar Aluminum Bridge Rail with Modified Pale Panel
TYPICAL SIDEWALK SECTION
(Utilities not shown)
As Built 1993
109-53
Revisions as of 6/12/92
Revisions as of 5/9/92
PLANS
PROJECT DESIGN ENGINEER
DESIGN-DETAILED R.V.Normand 1/92
CHECKED
REVISIONS R.V.Normand 5/9/92
FIELD CHANGES
18JUN92-010100
STATE OF MAINE DEPARTMENT OF TRANSPORTATION 275
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY
SUPERSTRUCTURE PLAN
SHEET 15 OF 43 AUGUSTA, MAINE March, 1992

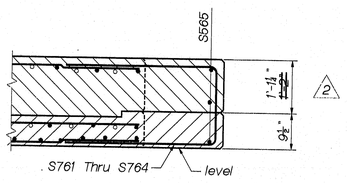
PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH1401(9)	16	43

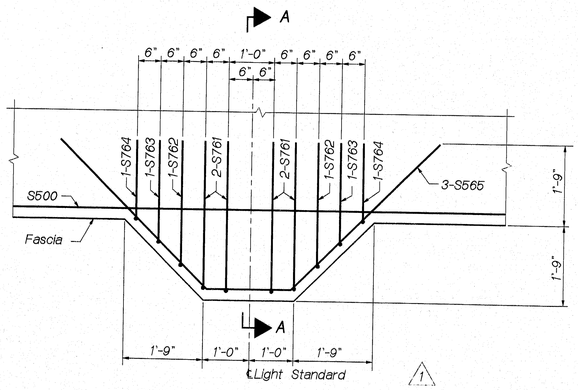


ISOTROPIC DECK AASHTO DECK

TYPICAL LONGITUDINAL SECTION



SECTION A - A



PLAN LIGHT STANDARD BASE

SUPERSTRUCTURE NOTES

1 ——— Form a 1" V-groove on the fascias at the horizontal joint between the curb and the 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 the Engineer. Do not cut transverse reinforcing bars.
4 ——— Mortar for bedding and for joints in the granite curb shall contain an approved non-shrink additive.
5 ——— Protective coating for concrete surfaces shall be applied to the following areas:
Top of sidewalks.
Fascias down to the drip notch.
Top of blockout at ends of Superstructure Slab
6 ——— All curb and sidewalk concrete shall contain a Silica Fume Additive.
7 ——— The superstructure slab concrete placement shall start at abutment 1 and shall terminate at the construction joint 20' before pier 2. Successive placements shall proceed from the end of the previous placement and terminate at abutment 2 with the Contractor having the option of a construction joint near pier 4. The placement sequence of the superstructure slab concrete shall be approved by the Engineer.
8 ——— Concrete in a placement shall be kept plastic one complete span behind the span being placed. A minimum of five days shall elapse between successive partial placements.

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN DETAILED	R.F.Normand	1/92
DRAWN		
CHECKED	R.F.Normand	5/9/92
REVISIONS		
FIELD CHANGES		

PLANS

22JUN92-010040

2 Revisions as of 6/17/92
1 Revisions as of 5/9/92
As Built 1993

109-54

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 276

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

SUPERSTRUCTURE DETAILS

SHEET 16 OF 43 AUGUSTA, MAINE March, 1992

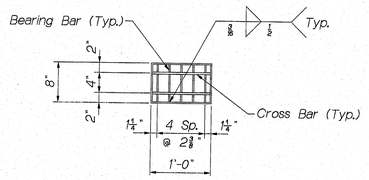
PIN. NO. 004867.00

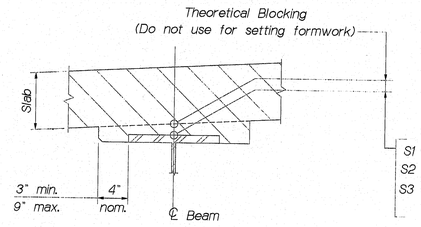
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	17	43

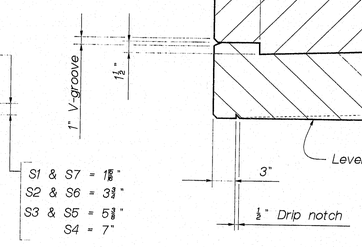
BOTTOM OF SLAB ELEVATIONS

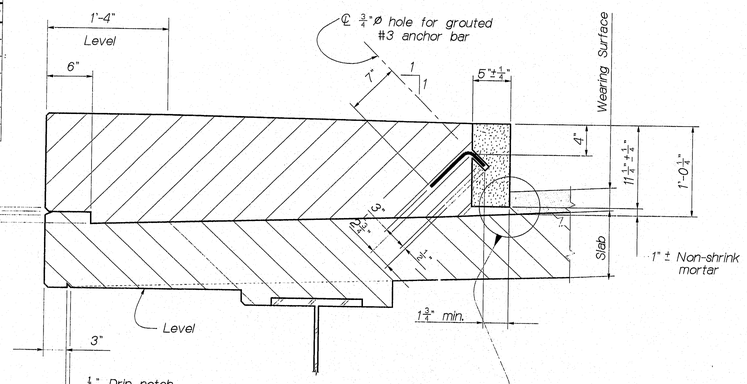
	℄Brgs. Abut. No.1	10'	20'	30'	40'	50'	60'	70'	℄Brgs Pier No.1	10'	20'	30'	40'	50'	60'	70'	80'	90'	℄Brgs Pier No.2	10'	20'	30'	40'	50'	60'	70'	80'	90'	℄Brgs Pier No.3
S1	95.02	94.98	94.93	94.86	94.77	94.67	94.58	94.49	94.45	94.39	94.34	94.29	94.24	94.17	94.08	93.98	93.88	93.77	93.69	93.62	93.57	93.52	93.47	93.40	93.31	93.22	93.11	93.01	92.93
S2	95.17	95.13	95.08	95.01	94.92	94.82	94.73	94.64	94.60	94.54	94.49	94.44	94.39	94.32	94.23	94.14	94.03	93.93	93.84	93.77	93.72	93.67	93.62	93.55	93.47	93.37	93.26	93.16	93.08
S3	95.31	95.27	95.21	95.14	95.06	94.96	94.86	94.77	94.74	94.67	94.62	94.58	94.52	94.46	94.37	94.27	94.16	94.06	93.98	93.91	93.85	93.81	93.75	93.68	93.60	93.50	93.40	93.30	93.22
S4	95.44	95.40	95.35	95.28	95.19	95.10	95.00	94.91	94.87	94.81	94.76	94.71	94.66	94.59	94.51	94.41	94.30	94.20	94.11	94.04	93.99	93.94	93.89	93.82	93.74	93.64	93.53	93.43	93.35
S5	95.31	95.27	95.21	95.14	95.06	94.96	94.86	94.77	94.74	94.67	94.62	94.58	94.52	94.46	94.37	94.27	94.16	94.06	93.98	93.91	93.85	93.81	93.75	93.68	93.60	93.50	93.40	93.30	93.22
S6	95.17	95.13	95.08	95.01	94.92	94.82	94.73	94.64	94.60	94.54	94.49	94.44	94.39	94.32	94.23	94.14	94.03	93.93	93.84	93.77	93.72	93.67	93.62	93.55	93.47	93.37	93.26	93.16	93.08
S7	95.02	94.98	94.93	94.86	94.77	94.67	94.58	94.49	94.45	94.39	94.34	94.29	94.24	94.17	94.08	93.98	93.88	93.77	93.69	93.62	93.57	93.52	93.47	93.40	93.31	93.22	93.11	93.01	92.93

	℄Brgs Pier No.3	10'	20'	30'	40'	50'	60'	70'	80'	90'	℄Brgs Pier No.4	10'	20'	30'	40'	50'	60'	70'	℄Brgs. Abut. No.2
S1	92.93	92.86	92.81	92.77	92.72	92.65	92.57	92.47	92.36	92.26	92.17	92.10	92.04	91.99	91.93	91.85	91.76	91.66	91.60
S2	93.08	93.01	92.96	92.92	92.87	92.80	92.72	92.62	92.51	92.41	92.32	92.25	92.19	92.14	92.08	92.00	91.91	91.81	91.75
S3	93.22	93.15	93.10	93.05	93.00	92.94	92.85	92.75	92.65	92.54	92.46	92.38	92.33	92.27	92.21	92.14	92.05	91.94	91.89
S4	93.35	93.28	93.24	93.19	93.14	93.07	92.99	92.89	92.78	92.68	92.59	92.52	92.46	92.41	92.35	92.28	92.18	92.08	92.02
S5	93.22	93.15	93.10	93.05	93.00	92.94	92.85	92.75	92.65	92.54	92.46	92.38	92.33	92.27	92.21	92.14	92.05	91.94	91.89
S6	93.08	93.01	92.96	92.92	92.87	92.80	92.72	92.62	92.51	92.41	92.32	92.25	92.19	92.14	92.08	92.00	91.91	91.81	91.75
S7	92.93	92.86	92.81	92.77	92.72	92.65	92.57	92.47	92.36	92.26	92.17	92.10	92.04	91.99	91.93	91.85	91.76	91.66	91.60

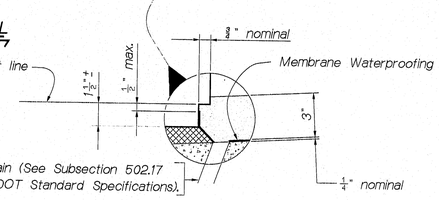




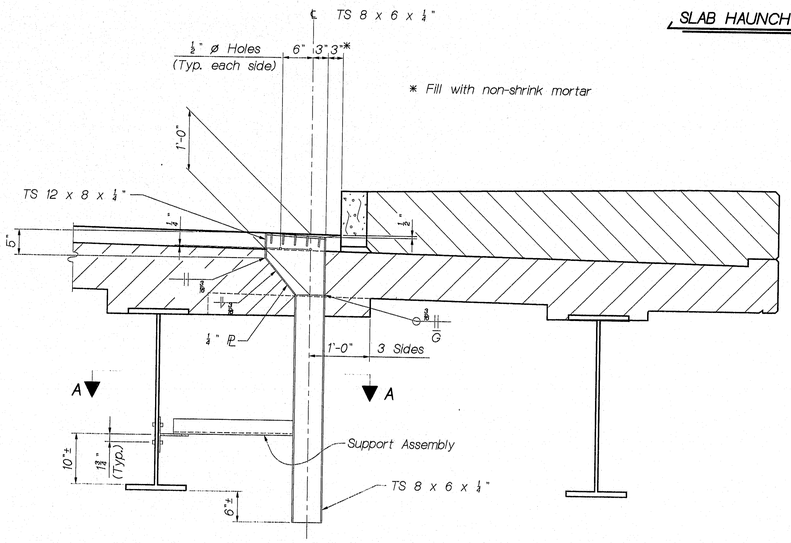




SLAB OVERHANG & CURB DETAIL

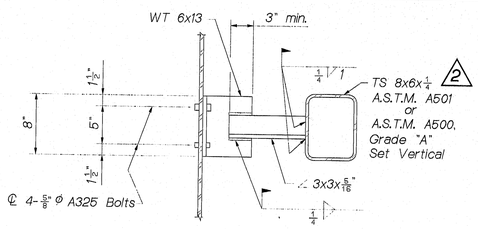


VERTICAL BRIDGE CURB TYPE 1B



SLAB HAUNCH & BLOCKING DETAIL

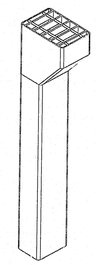
BRIDGE DRAIN (2)



SECTION A - A

NOTES:

1. ____ At the option of the Contractor, the TS 12 x 8 x ¼" may be replaced by ¼" thick plates.
2. ____ Grating shall be a commercial heavy-duty grating with 2" x ⅛" bearing bars, and ⅜"ø cross bars.
3. ____ Plates shall be A.S.T.M. A36, ¼" thick.
4. ____ WT 6x13 shall be of the same material as the beam web, and shall be paid for under the Structural Steel pay items.
5. ____ If the minimum thickness of concrete below the drain is 2" or less, the haunch shall be extended as shown.
6. ____ The Bridge Drain and ∠3x3 shall be galvanized to ASTM A123.
7. ____ Payment for Bridge Drain shall be as specified under subsection 502.19 of the Standard Specifications.



ISOMETRIC VIEW BRIDGE DRAIN

109-55

As Built 1993

(2) Revisions of Bridge Drain 6/19/92

PROJECT DESIGN ENGINEER	BY	DATE
PLANS	P.NORMAND	7/92
DESIGN DETAILED	R.J.Nixon	6/92
CHECKED		
REVISIONS		
FIELD CHANGES		

22-JUN92-0100.40

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 277

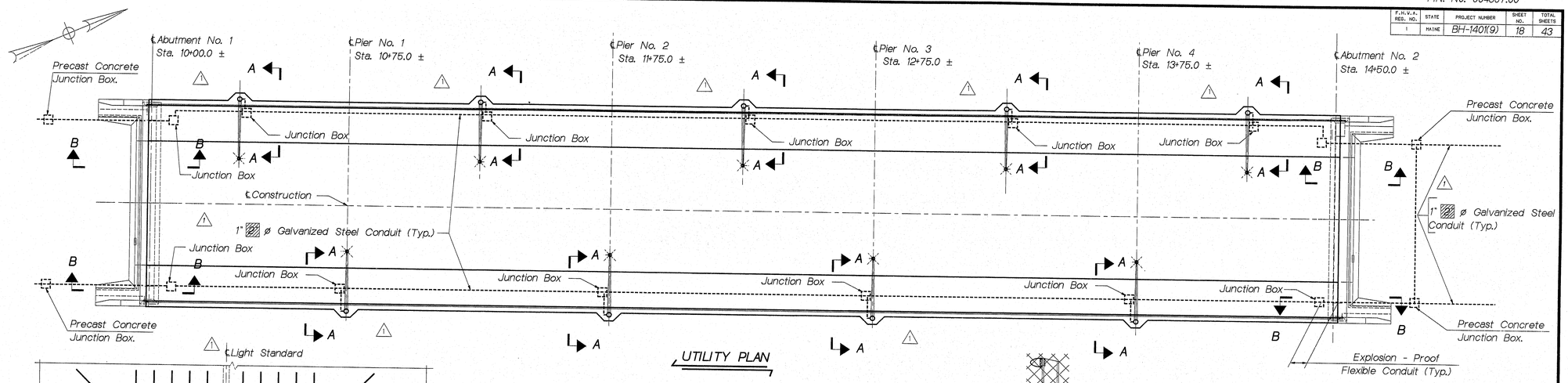
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

SUPERSTRUCTURE DETAILS

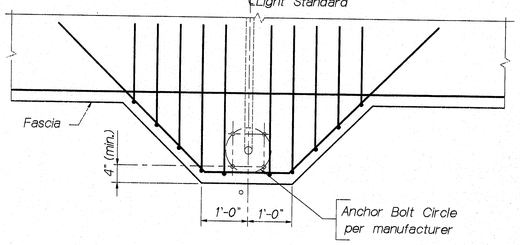
SHEET 17 OF 43 AUGUSTA, MAINE March, 1992

PIN. NO. 004867.00

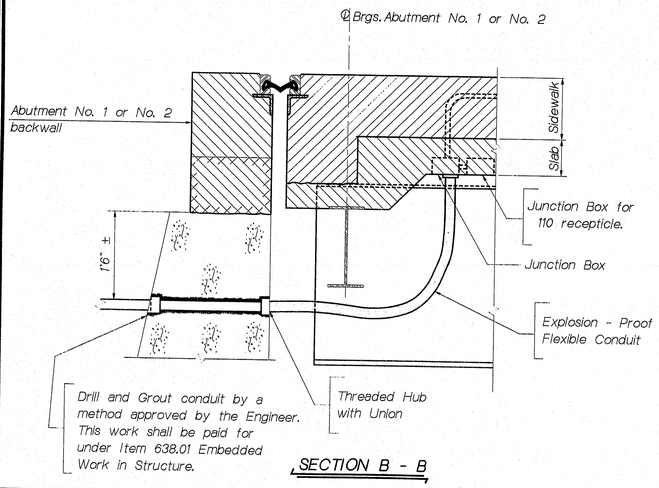
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	18	43



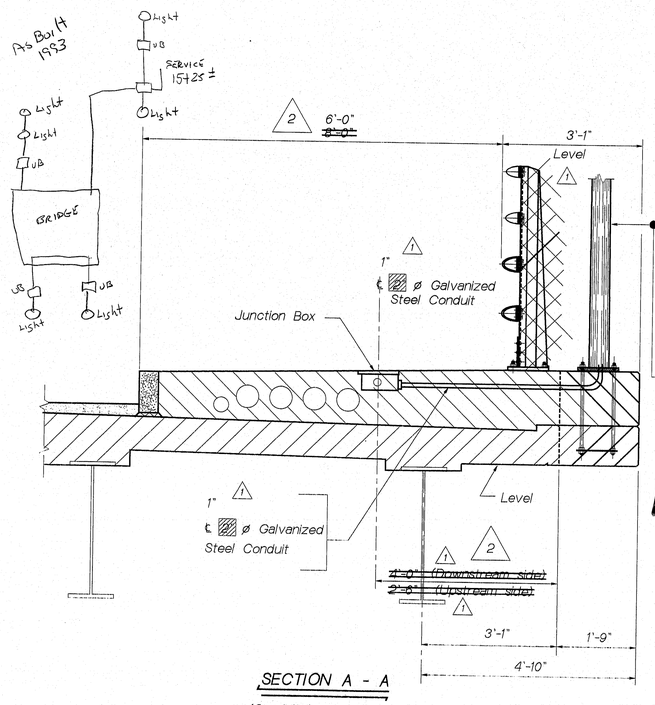
UTILITY PLAN



PLAN LIGHT STANDARD BASE

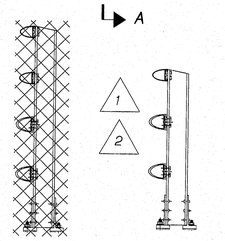


SECTION B - B



SECTION A - A

(Conduit in downstream sidewalk shown)



40'-0" Galvanized Steel Pole W. 6' Arm - 250 W. High Pressure Sodium Luminaire Cat. No. RPAK 250 12SLN.

109-56

UTILITY NOTES

1)_____The utilities involved in this contract are as follows:
Bangor Hydro - Electric Company.
New England Telephone Company.
Cable Vision Inc.
Orono Veazie Water District.
Town of Orono Sewer

2)_____The Contractor shall install the utilities in the sidewalk however, the utilities will provide all necessary hardware required for installation. Installing conduits and related hardware will not be paid for directly but shall be considered incidental to the various contract items.

3)_____Telephone conduits hanging from diephragms will be provided and installed by utility.

4)_____Exact location of utilities will be determined in field by the Engineer.

5)_____The existing gas pipe in the upstream sidewalk of the bridge and within 10' ±of the abutment backwalls shall be removed by the Contractor. The exact limit of removal shall be determined by the Engineer. The ends of the gas pipe are to be sealed by a method approved by the Engineer. The fire department shall be notified 48 hours in advance before work is begun. The Contractor shall provide certification that the gas pipe has been purged to the fire department. The removal of the gas pipe will not be paid for directly. but will be considered incidental to related contract items and shall become the property of the Contractor.

6)_____The existing telephone conduits shall be removed by the contractor and shall become the property of the Contractor. The removal of the telephone conduit will not be paid for directly, but will be considered incidental to related contract items.

2 Revisions as of 6/17/92

1 Revisions as of 5/9/92

As Built 1993

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN DETAILED	R.NORMAND	2/92
	CHECKED		
	REVISIONS	R.NORMAND	5/9/92
	FIELD CHANGES		

22JUN92-0100.40

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

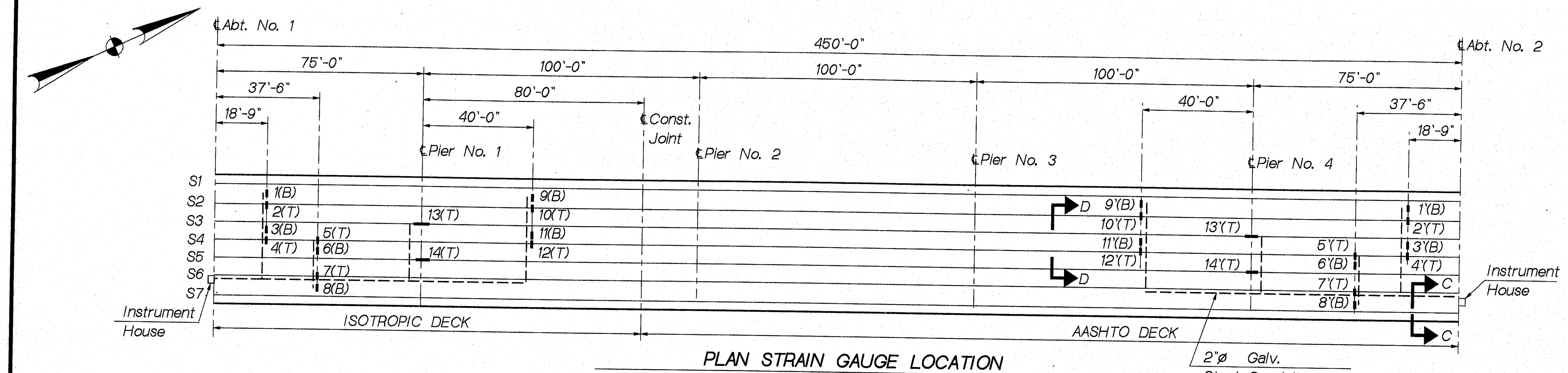
279

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

BRIDGE LIGHTING

SHEET 18 OF 43 AUGUSTA, MAINE March, 1992

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	19	43

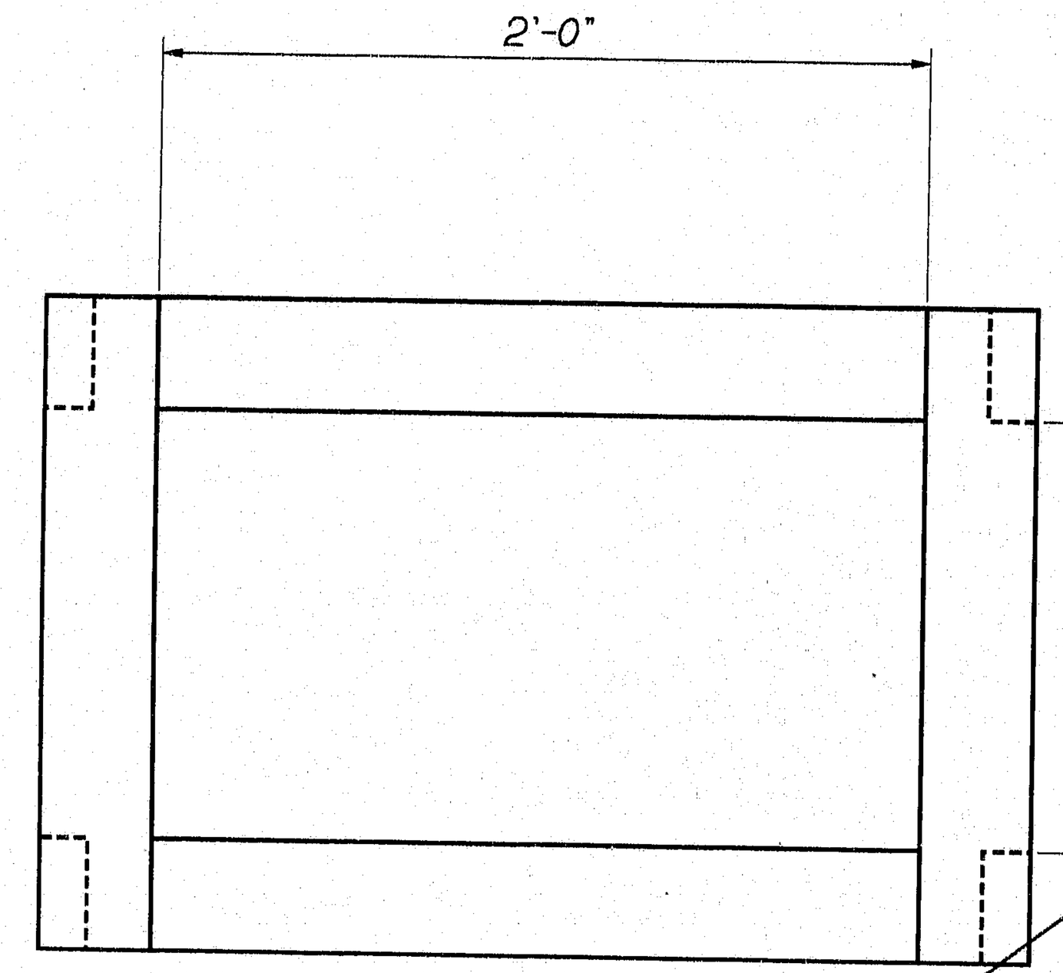


PLAN STRAIN GAUGE LOCATION

B = Bottom Mat T = Top Mat

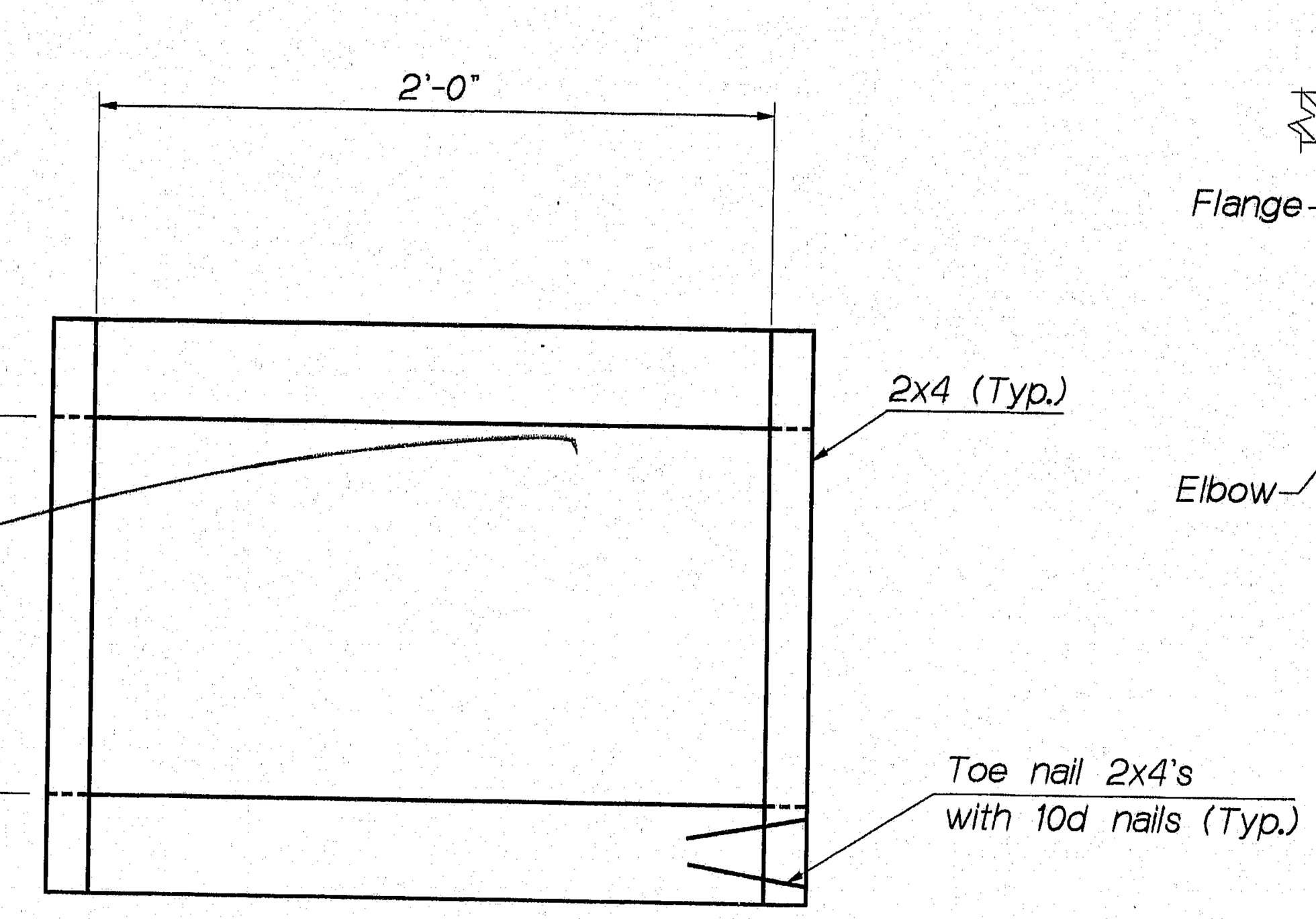
INSTRUMENTATION NOTES

1. The instrument house shall be anchored to the abutment with 4-¾"ø expansion bolts as directed by the Engineer.
2. The 2" ø Galvanized Steel Conduit shall be attached at 10' intervals to the longitudinal steel stringer. Conduit running transversely shall be attached to each beam. The method of attachment shall be approved by the Engineer. No drilling or welding to the beam flanges will be allowed.
3. Install expansion couplings in the conduit at 40' intervals. The exact locations to be determined by the Engineer in the field.
4. The 2" ø Galvanized Steel Conduit shall be attached to the underside of the structural concrete deck by a method approved by the Engineer.. Expansion bolts with 2¼" maximum embedment length or inserts placed with the concrete deck and bolts shall be used to attach the conduit to the concrete slab.

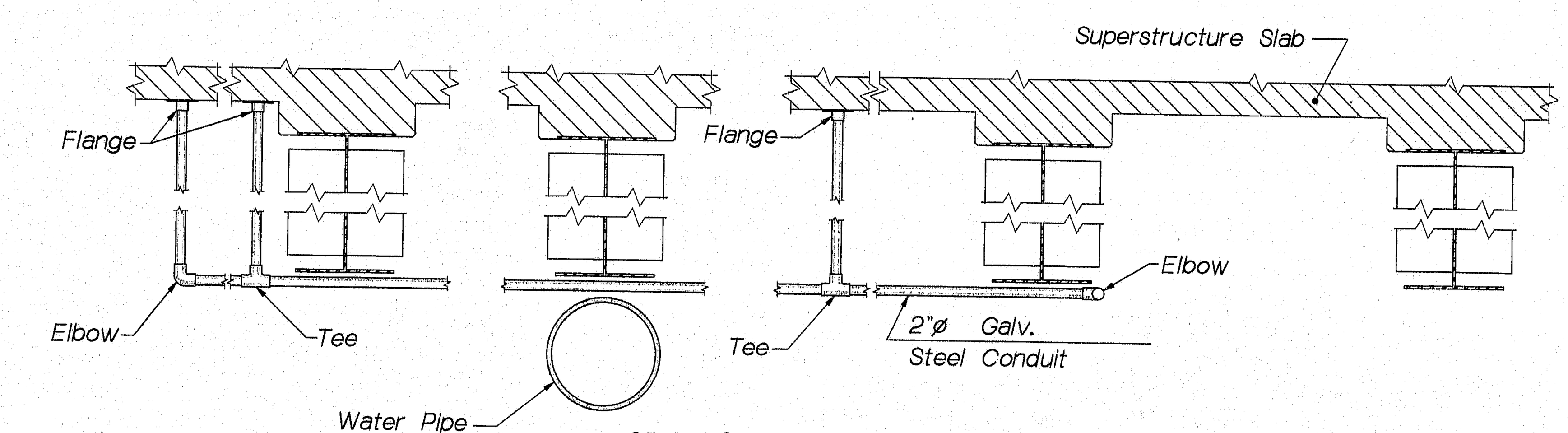


FRONT FRAME

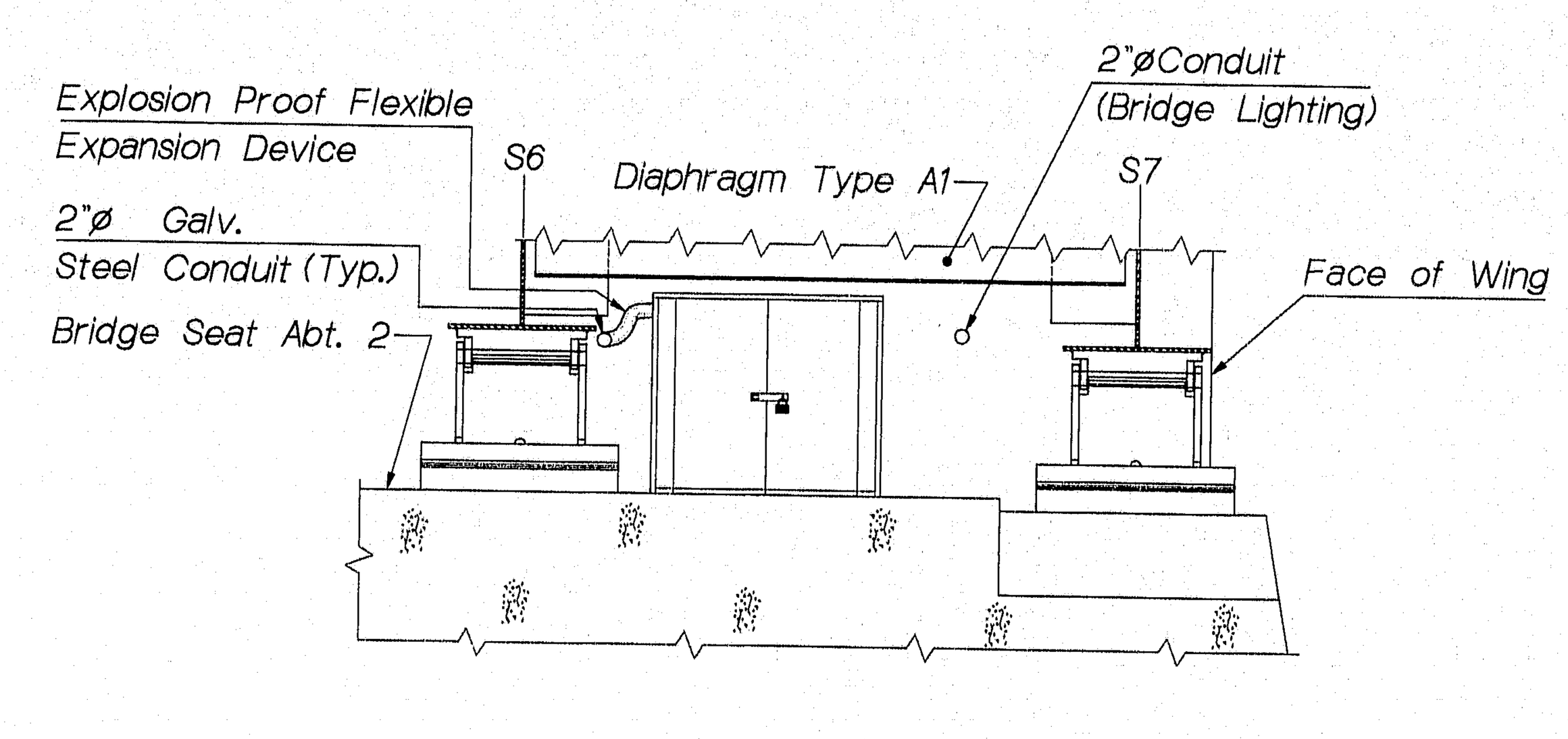
(Rear is similar)



SIDE FRAME

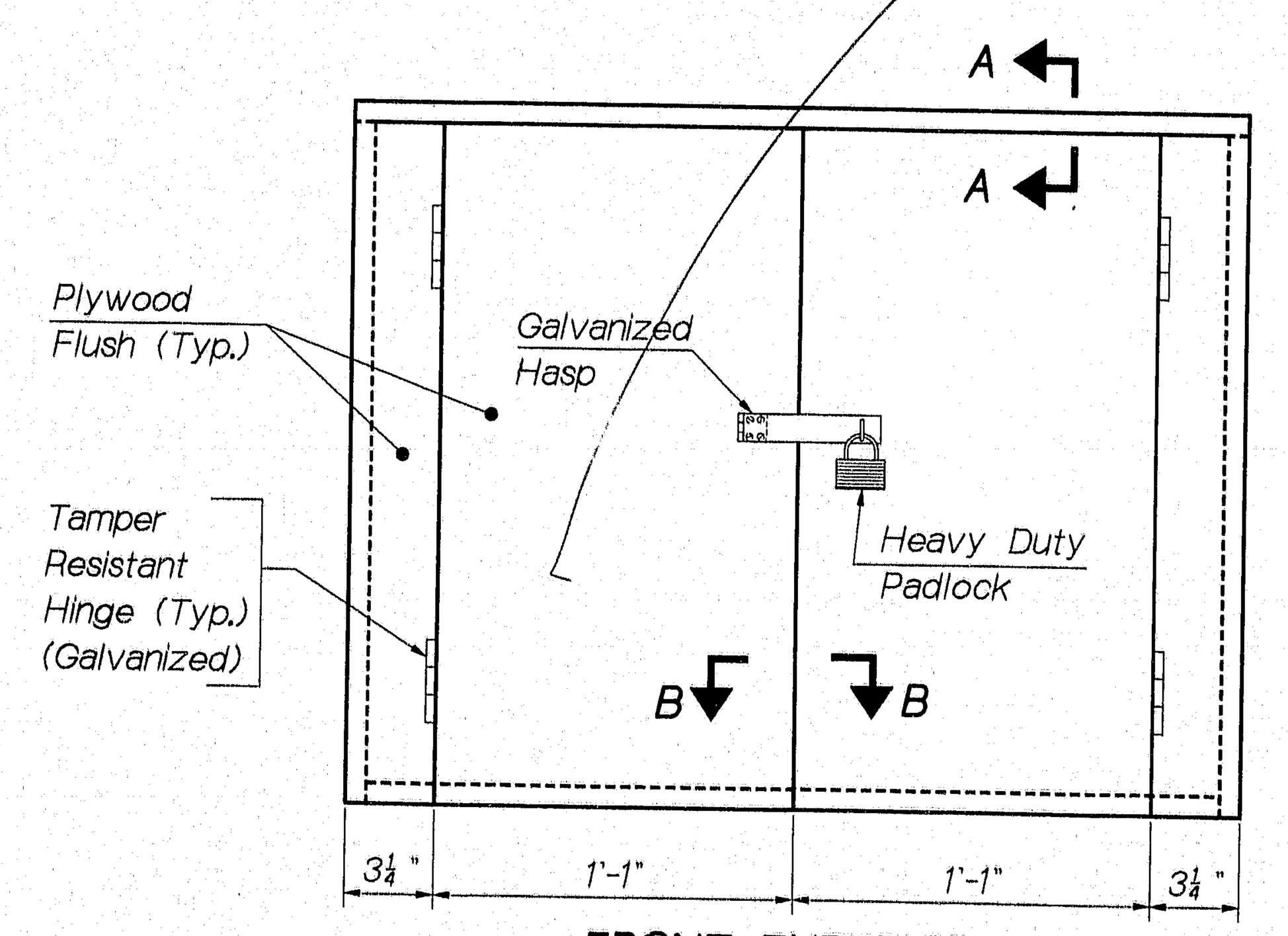


SECTION D - D

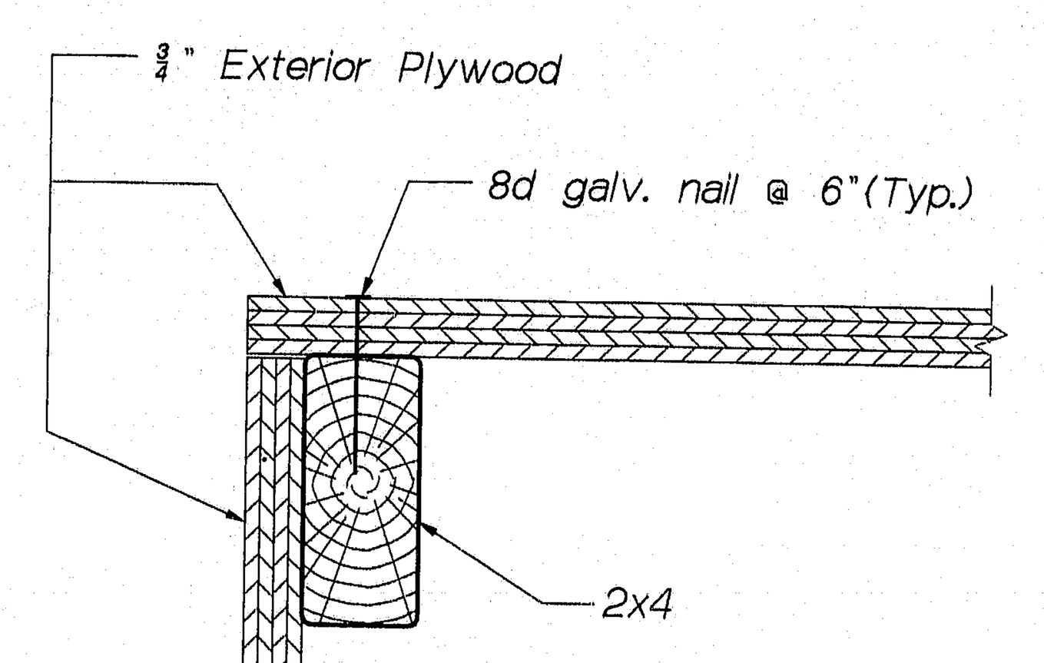


ELEVATION C - C

As Built 1993

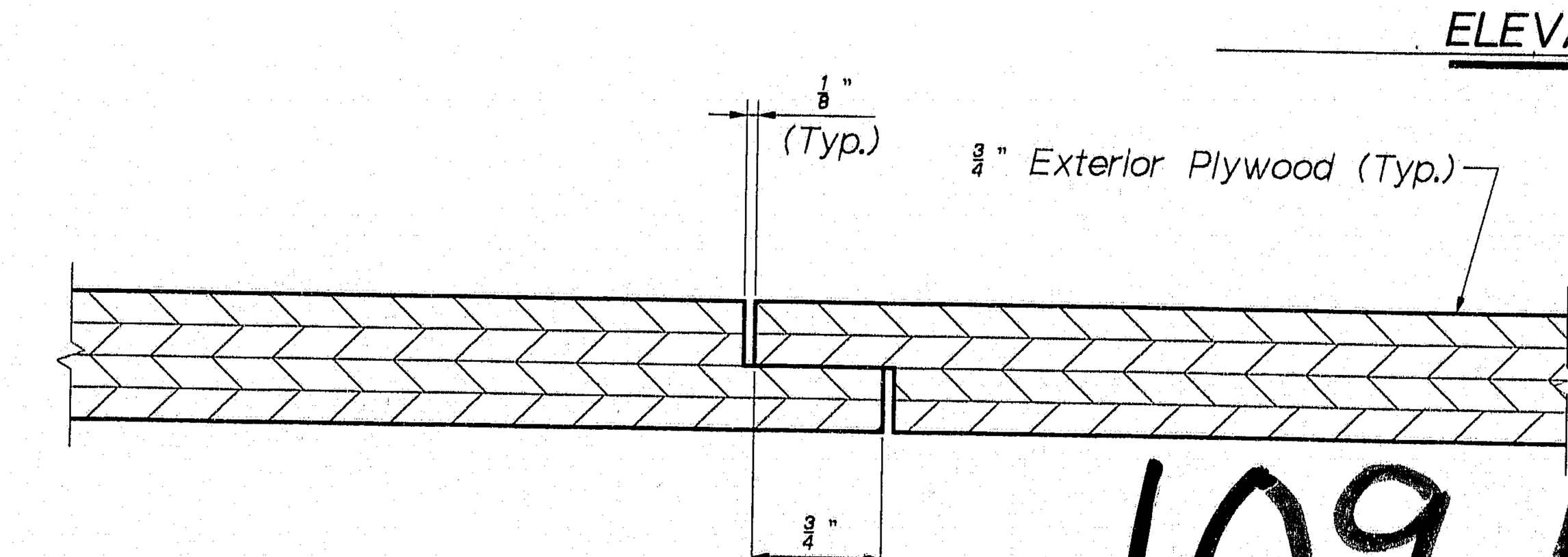


FRONT EXTERIOR



SECTION A - A

USED Pre fab metal house hung from Beam



SECTION B - B

109-57

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	MWW / RGBooth	3/12/92
CHECKED	JAF	3-12
REVISIONS		
FIELD CHANGES		

PLANS

30MAR92-010020

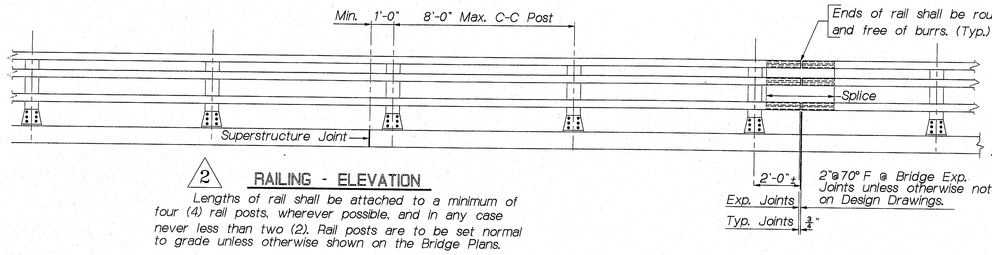
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 280

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

INSTRUMENT HOUSE & DETAILS

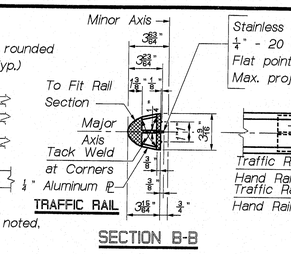
SHEET 19 OF 43 AUGUSTA, MAINE March, 1992

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	20	43

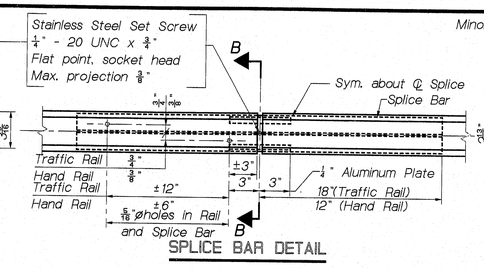


2 RAILING - ELEVATION

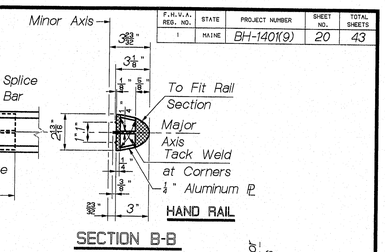
Lengths of rail shall be attached to a minimum of four (4) rail posts, wherever possible, and in any case never less than two (2). Rail posts are to be set normal to grade unless otherwise shown on the Bridge Plans.



SECTION B-B



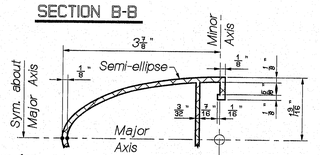
SPLICE BAR DETAIL

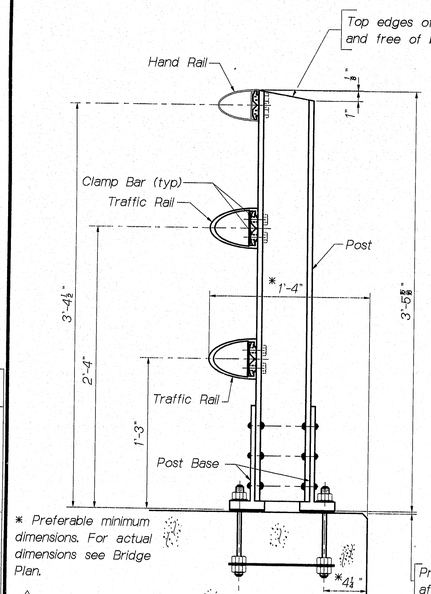


SECTION B-B

* Alternate dimensions may be used if approved by the Engineer.

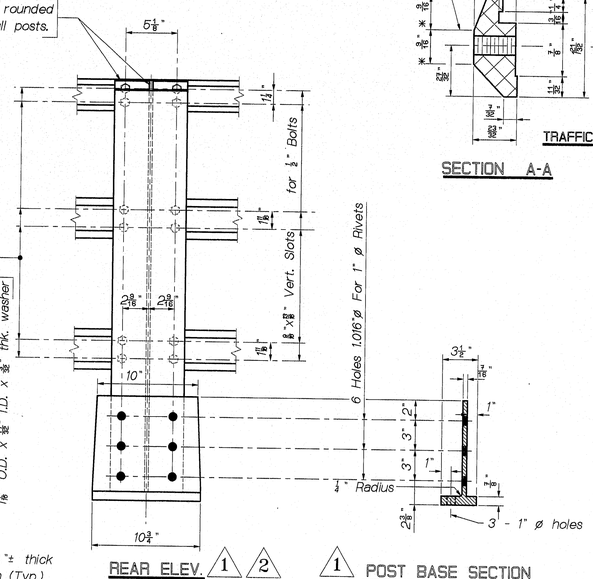
Drill 2 - ⅝" ø holes and install 2 - ⅜" x 1", Type F, Hex. Washer Head Tapping Screws (Stainless)





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

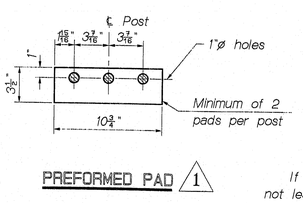
1 2 BRIDGE RAILING (ASSEMBLY)



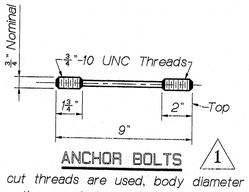
REAR ELEV. 1 2

1 POST BASE SECTION (2 - Required per post)

1 2 POST BASE (Bottom View)



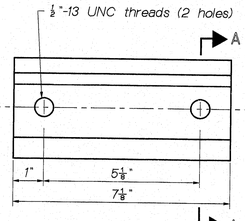
PREFORMED PAD 1



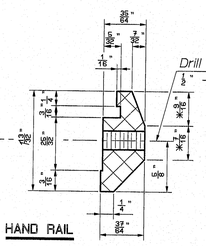
ANCHOR BOLTS 1

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 the pitch diameter of the threads.

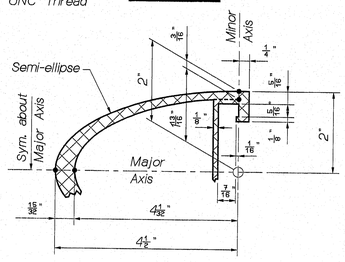
SECTION A-A

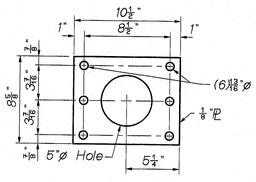


CLAMP BAR

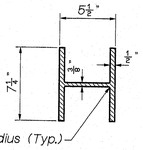


SECTION A-A

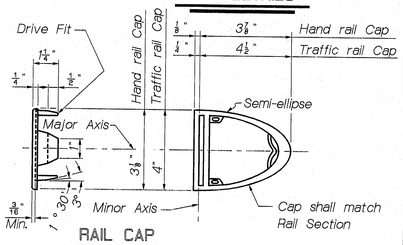




STEEL SPACER PLATE 1 (For Anchorage)

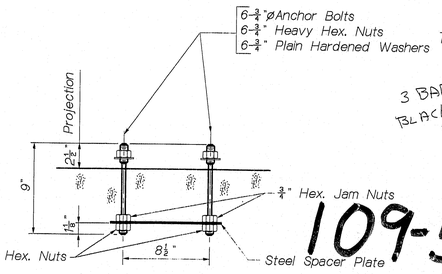


1 RAIL POST SECTION



RAIL CAP

RAIL DETAILS



1 RAIL POST ANCHORAGE (Assembly)

NOTE : If there is a conflict between these Standard Details and the Design Drawings, the requirements of the Design Drawings shall be followed.

3 BAR RAIL BLACK 1993

2 Revisions as of 6/12/92

1 Revisions as of 5/8/92

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	KF	1/92
DRAWN	R.J.Nixon	1/92
CHECKED		
REVISIONS	R.J.Nixon	5/92
FIELD CHANGES		

PLANS

22-JUN92-0100.dwg

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 281

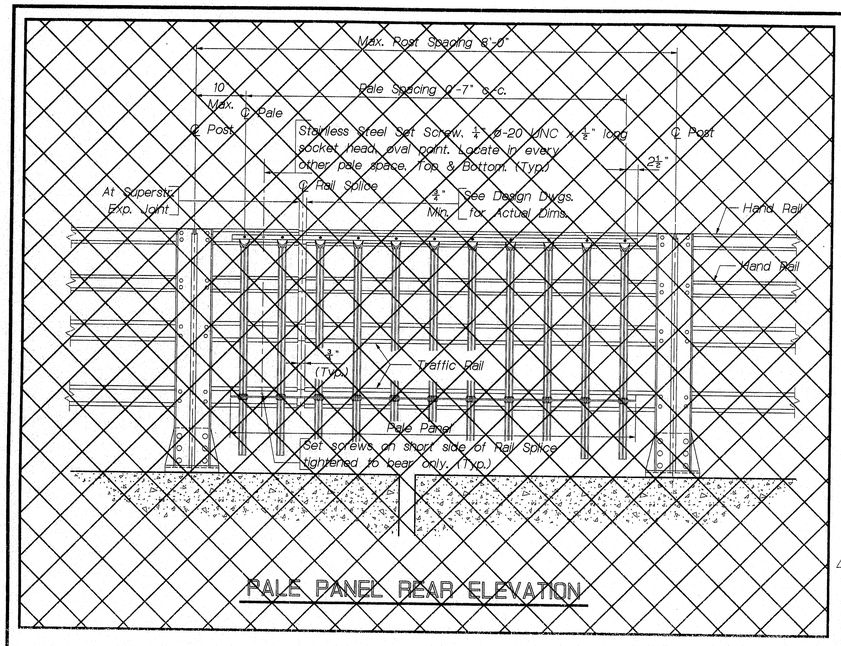
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

2 3-BAR TRAFFIC RAIL

SHEET 20 OF 43 AUGUSTA, MAINE March, 1992

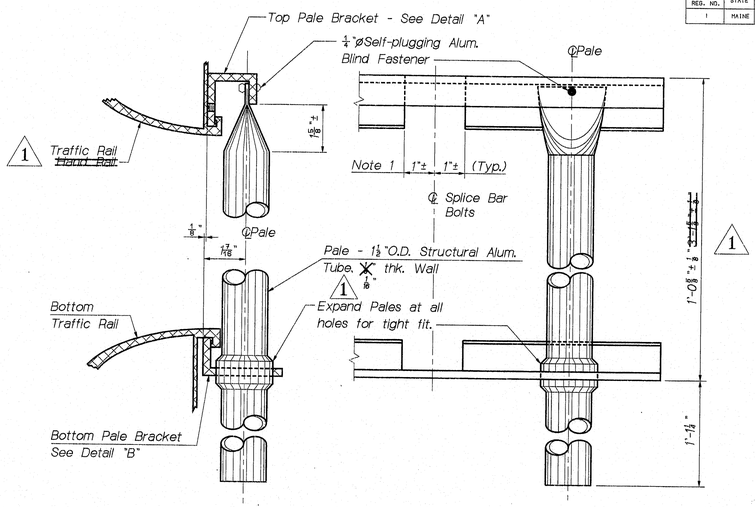
109-58

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	21	43



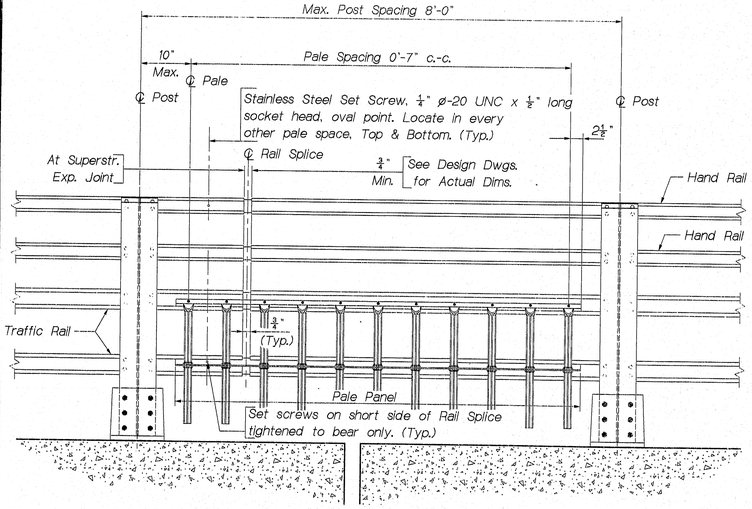
PALE PANEL REAR ELEVATION

1

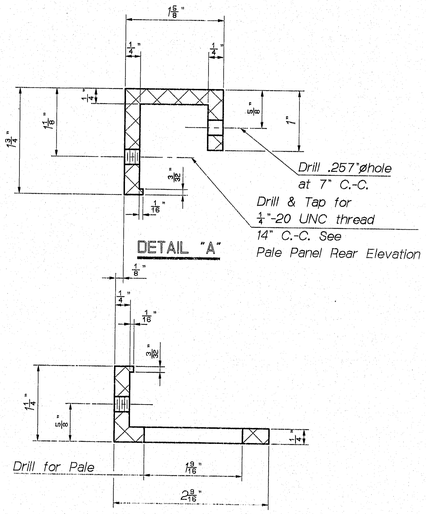


PALE PANEL [4 - BAR TRAFFIC RAIL]

NOTE 1. Remove vertical leg and horizontal leg of pale panel extrusions to a depth of ⅜" at all splice bar bolt locations.



PALE PANEL REAR ELEVATION 1



DETAIL "B"

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	R.J.Nixon	1/92
CHECKED		
REVISIONS	R.J.Nixon	5/92
FIELD CHANGES		

PLANS

13MAY92-0100.00

109-59

1 Revisions as of 5/8/92

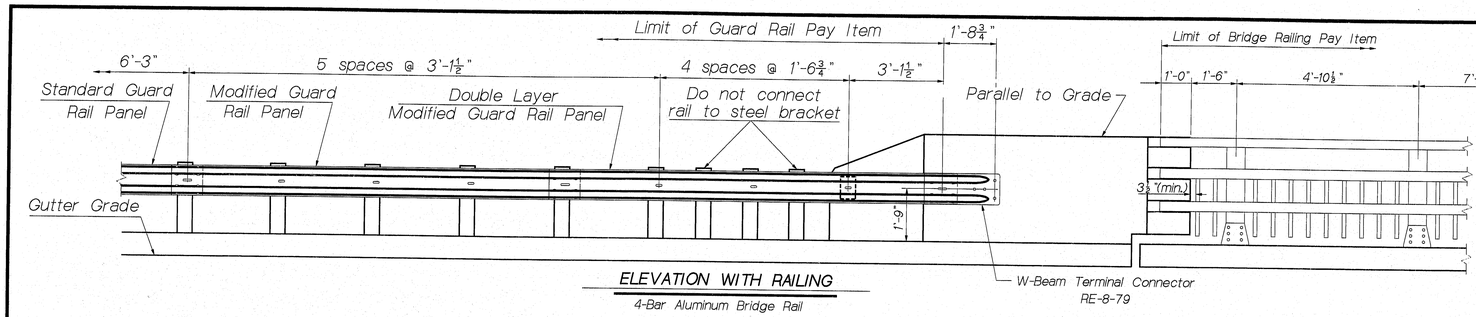
STATE OF MAINE 284
DEPARTMENT OF TRANSPORTATION

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

PALE PANEL DETAILS

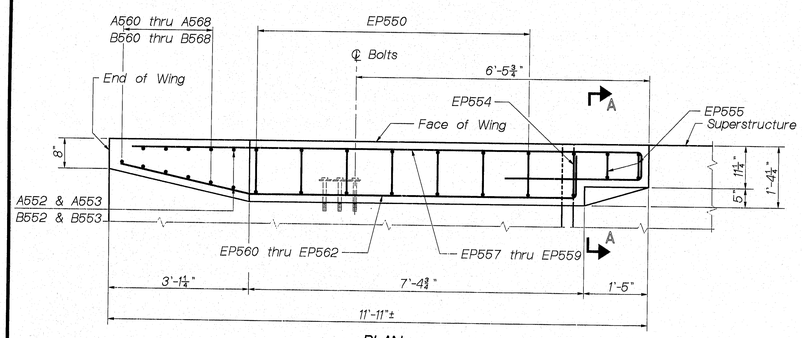
SHEET 21 OF 43 AUGUSTA, MAINE March, 1992

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	22	43

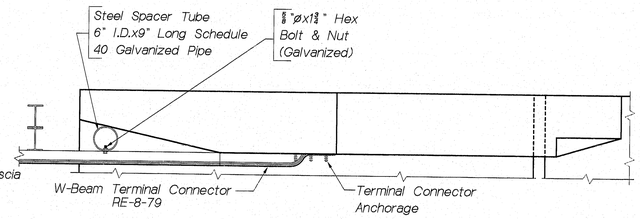


ELEVATION WITH RAILING

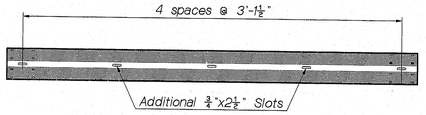
4-Bar Aluminum Bridge Rail



PLAN

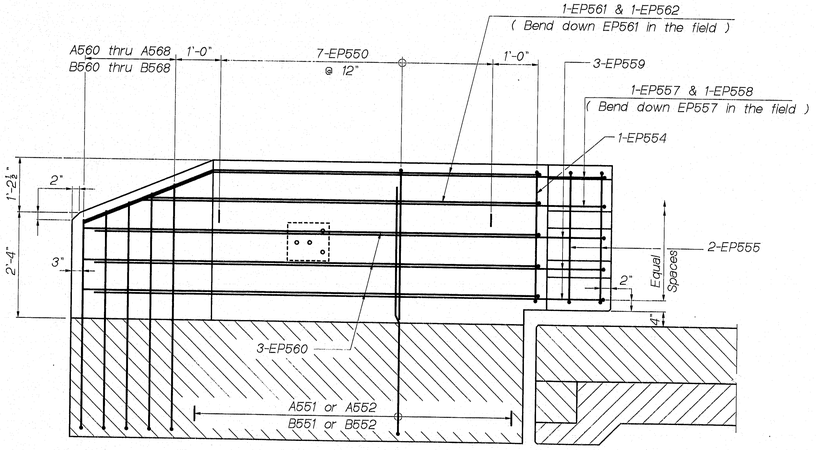


PLAN END POST & GUARD RAIL

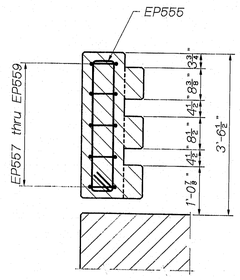


MODIFIED GUARD RAIL PANEL

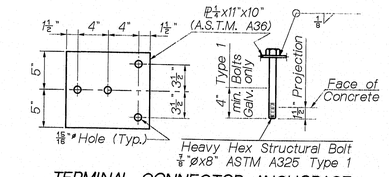
RE-3-(4@3'-1½"=12'-6")-73



ELEVATION



SECTION A - A



TERMINAL CONNECTOR ANCHORAGE

NOTES

1. Nuts and washers for ⅞" ø anchor bolts shall be incidental to Guard Rail Pay Items. Nuts shall conform to A.S.T.M. A563, Grade DH, galvanized in accordance with A.S.T.M. A153, or Grade C3, plain.
2. Additional holes in the Modified Guard Rail Panel may be made by drilling, punching or any other method that produces a neat, clean hole of the required size. Burning of holes will not be allowed.
3. Spacer Tube shall conform to the requirements of A.S.T.M. A53, galvanized, Grade B Type E or S. Hex bolt and nut on spacer tube shall conform to A.S.T.M. A307. Payment for spacer tube, bolt and nut shall be incidental to the Guard Rail pay item.
4. Reinforcing Steel shall have 2" min. concrete cover.
5. After installation of Guard Rail is complete, upset the thread on the anchor bolts in three places around each bolt, at the junction of the nut and the exposed thread, with a center punch or similar tool.
6. Terminal Connector Anchorage shall be incidental to the applicable concrete pay item.
7. End Post shall be constructed normal to grade unless otherwise shown on the Design Drawings.
8. All accessories (posts, bolts, nuts etc.) shall be as detailed for Standard Type 3 Guard Rail, except as otherwise detailed.
9. Concrete shall be Class A with a silica fume additive.

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	R.J.NIMON	2/92
CHECKED		
REVISIONS	R.J.NIMON	6/92
FIELD CHANGES		

PLANS

22JUN92-D100.40

109-60

Revised End Post Sheet as of 6/15/92

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
285

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

3-BAR CONCRETE END POST

SHEET 22 OF 43 AUGUSTA, MAINE March, 1992

REINFORCING STEEL SCHEDULE

STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
ABUTMENT NO. 1			
A500	72	3'-5"	DOWEL (WINGS)
A501	12	9'-8"	WINGS
A502	4	30'-0"	BACKWALL
A503	4	18'-9"	BACKWALL
A504	4	7'-0"	BACKWALL
ABUTMENT NO. 2			
B500	72	3'-5"	DOWEL (WINGS)
B501	12	9'-8"	WINGS
B502	4	30'-0"	BACKWALL
B503	4	18'-9"	BACKWALL
B504	4	7'-0"	BACKWALL

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
ABUTMENT NO. 1														
A550	4	14'-2"	S	—	2'-3"	9'-8"	2'-3"	—	—	—	—	—	—	WINGS
A551	30	9'-1"	L	5'-5"	3'-8"	—	—							
A552	30	6'-2"		5'-5"	0'-9"									
A553	40	5'-5"		3'-8"	1'-9"									
A554	2 ~~#~~	8'-2"	S	—	3'-8"	0'-10"	3'-8"							BACKWALL
A555	21 ~~#10~~	7'-0"			3'-1"	0'-10"	3'-1"							BACKWALL
A556	4	6'-8"			2'-0"	2'-8"	2'-0"							BRIDGE SEAT
A557		5'-7"			2'-0"	1'-7"	2'-0"							BRIDGE SEAT
A558		16'-8"			3'-8"	9'-4"	3'-8"							WINGS
A559		6'-2"			2'-8"	0'-10"	2'-8"							BACKWALL
A560	~~A750~~	2	L	5'-4"	3'-8"	—	—	—	—	—	—	—	—	WINGS
A561	~~A751~~			5'-2"										
A562	~~A752~~			5'-0"										
A563	~~A753~~			4'-9"										
A564	~~A754~~			5'-4"	0'-9"									
A565	~~A755~~			5'-2"										
A566	~~A756~~			5'-0"										
A567	~~A757~~			4'-9"										
A568	~~A758~~			4'-7"										
ABUTMENT NO. 2														
B550	4	14'-2"	S	—	2'-3"	9'-8"	2'-3"	—	—	—	—	—	—	WINGS
B551	30	9'-1"	L	5'-5"	3'-8"	—	—							
B552	30	6'-2"		5'-5"	0'-9"									
B553	40	5'-5"		3'-8"	1'-9"									
B554	2 ~~#~~	8'-2"	S	—	3'-8"	0'-10"	3'-8"							BACKWALL
B555	21 ~~#10~~	7'-0"			3'-1"	0'-10"	3'-1"							BACKWALL
B556	4	6'-8"			2'-0"	2'-8"	2'-0"							BRIDGE SEAT
B557		5'-7"			2'-0"	1'-7"	2'-0"							BRIDGE SEAT
B558		16'-8"			3'-8"	9'-4"	3'-8"							WINGS
B559		6'-2"			2'-8"	0'-10"	2'-8"							BACKWALL
B560	~~B750~~	2	L	5'-4"	3'-8"	—	—	—	—	—	—	—	—	WINGS
B561	~~B751~~			5'-2"										
B562	~~B752~~			5'-0"										
B563	~~B753~~			4'-9"										
B564	~~B754~~			5'-4"	0'-9"									
B565	~~B755~~			5'-2"										
B566	~~B756~~			5'-0"										
B567	~~B757~~			4'-9"										
B568	~~B758~~			4'-7"										
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

△2 △1

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN-DETAILED	RDBooth	2/92
CHECKED	R.J.Nixon	5/92
REVISIONS		
FIELD CHANGES		

18JUN92-010100

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	23	43

TYPE-BENDING DIAGRAMS

S

L

All dimensions are out to out of reinforcing 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 the 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 and 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.

	REVISIONS	DATE
△2	Revision as of	6/92
△1	Bar number change	5/92

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

287

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

REINFORCING STEEL SCHEDULE

SHEET 23 OF 43 AUGUSTA, MAINE March, 1992

109-61

REINFORCING STEEL SCHEDULE

STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
SUPERSTRUCTURE			
S400	760	30'-0"	LONGITUDINAL SLAB
S401	466	24'-0"	TRANSVERSE SLAB
S402	466	21'-6"	TRANSVERSE SLAB
S403	152	18'-4"	LONGITUDINAL SLAB
S500	596	46'-4"	TRANSVERSE SLAB
S501	8	2'-9"	TRANSVERSE HAUNCH
S502	16	6'-11"	↓
S503	32	6'-2"	
2 S504	~~60~~ 80	30'-0"	LONGITUDINAL SWLK
2 S505	~~595~~ 775	60'-0"	LONGITUDINAL SLAB
2 S506	~~78~~ 80	48'-0"	LONG'L. @ PIER 1
2 S507	~~12~~ 16	18'-4"	LONGITUDINAL SWLK
S600	466	4'2"	TRANSVERSE SLAB
2 S700	~~100~~ 106	53'-0"	LONG'L. @ PIER 2,3
2 S701	~~50~~ 54	48'-0"	LONG'L. @ PIER 4

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
ENDPOST														
1 EP550	~~EP750~~	~~28~~ 26	7'-6"	S	—	3'-4"	0'-10"	3'-4"	—	—	—	—	—	ENDPOST
EP551	~~EP751~~		8'-4"			3'-9"		3'-8"						
2 EP552	~~EP752~~	↓	9'-2"			4'-2"		4'-2"						
EP553	~~EP753~~	16	9'-6"	↓	↓	4'-4"	↓	4'-4"	↓	↓	↓	↓	↓	↓
EP554	~~EP754~~	4	~~8'-4"~~ 10'-4"	H	0'-6"	0'-10"	~~2'-10"~~ 3'-10"	0'-10"	~~2'-10"~~ 3'-10"	0'-6"				
EP555	~~EP755~~	8	~~7'-6"~~ 9'-6"	H	0'-6"	0'-5"	~~2'-10"~~ 3'-10"	0'-5"	~~2'-10"~~ 3'-10"	0'-6"				
EP556	~~EP756~~	4	15'-2"	S	—	11'-7"	0'-7"	3'-0"	—	—				
EP557	~~EP757~~	4	~~15'-3"~~ 17'-7"	S	—	~~11'-8"~~ 13'-8"	0'-7"	3'-0"	—					
EP558	~~EP758~~	↓	~~13'-10"~~ 15'-8"	↓		10'-3"	↓	↓			↓			
EP559	~~EP759~~	12	14'-10"			11'-3"								
EP560	~~EP760~~	12	11'-2"	SJ		2'-11"	7'-3"	1'-0"			7½"			
EP561	~~EP761~~	4	11'-4"			3'-1"	7'-3"				7½"			
EP562	~~EP762~~	↓	~~9'-9"~~ 7'-7"			1'-6"	7'-3"				4"			
EP563	~~EP763~~		5'-6"	↓	↓	1'-3"	7'-3"	↓	↓	↓	3½"	↓	↓	↓

SUPERSTRUCTURE

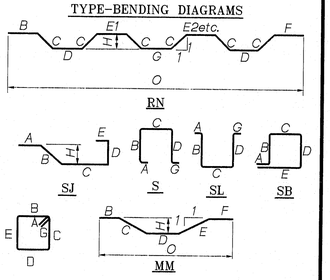
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
S550	295	48'-4"	RN	—	4'-7"	0'-7"	3'-5"	2'-8"	4'-7"	3'-0"	0'-5"	46'-4"	—	TRANSVERSE SLAB
						×12	×2	×5		×4				
S551	40	7'-3"	SJ	1'-3"	0'-10"	1'-2"	1'-0"	3'-0"	—	—	0'-7"	—	—	HAUNCH @ ABUT'S
S552	24	7'-10"			1'-1"		1'-2"	3'-2"			0'-9"			
S553	24	8'-2"			1'-2"		1'-3"	3'-4"			0'-10"			
S554	1056	2'-10"	SL	0'-6"	0'-3"	1'-4"	0'-3"	—		0'-6"				HAUNCH or BLOCKING
S555	↓	3'-2"			0'-5"		0'-5"							HAUNCH or BLOCKING
S556	528	3'-6"			0'-7"		0'-7"							HAUNCH or BLOCKING
S557	24	3'-6"			0'-7"		0'-7"							HAUNCH (OPT. C.J.)
S558		3'-10"			0'-9"		0'-9"							
S559	↓	4'-0"			0'-10"		0'-10"							↓
2 S560	1056	~~10'-6"~~ 12'-6"	S		~~1'-6"~~ 1'-8"	~~5'-7"~~ 6'-7"	1'-5"							SIDEWALK
S751	8	8'-4"	SB	—	—	3'-4"	1'-8"	3'-4"		—				LIGHT BASE
S752	4	7'-4"				2'-10"		2'-10"						
S753		6'-4"				2'-4"		2'-4"						
S754	↓	5'-4"				1'-10"	↓	1'-10"						
S565	6	11'-2"	MM	↓	↓	4'-8"	1'-10"	4'-8"		↓	3'-4"			↓
S761	36	8'-4"	SB	—	—	3'-4"	1'-8"	3'-4"		—				LIGHT BASE
1 S762	18	7'-4"				2'-10"		2'-10"						
S763		6'-4"				2'-4"		2'-4"						
S764	↓	5'-4"				1'-10"	↓	1'-10"						
S565	27	11'-2"	MM	↓	↓	4'-8"	1'-10"	4'-8"		↓	3'-4"			↓

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

109-62

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	24A	43

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinforcing 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 the 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 and 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.

2	Revisions as of	6/15/92
1	Revisions as of	5/9/92
	REVISIONS	DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

288

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

REINFORCING STEEL SCHEDULE

SHEET 24 OF 43 AUGUSTA, MAINE March, 1992

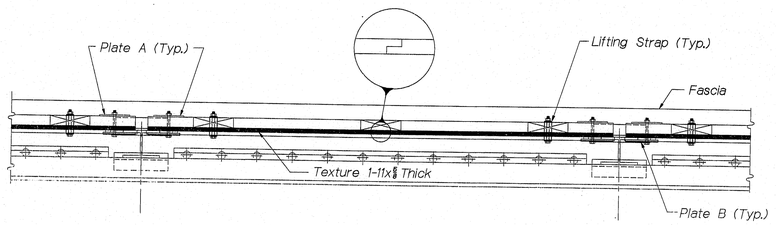
PROJECT DESIGN ENGINEER	BY	DATE
DESIGN-DETAILED	RCBooth	2/92
CHECKED	R.Y.N. / R.J.Nason	5/92
REVISIONS		
FIELD CHANGES		

PLANS

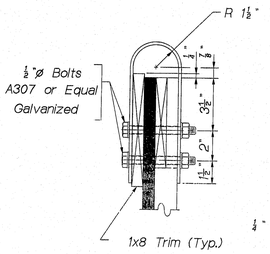
19JAN92-010100

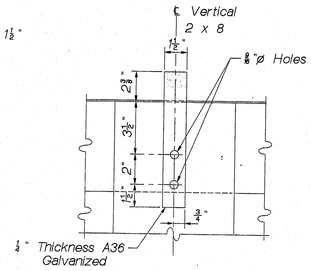
PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401(9)	24B	13

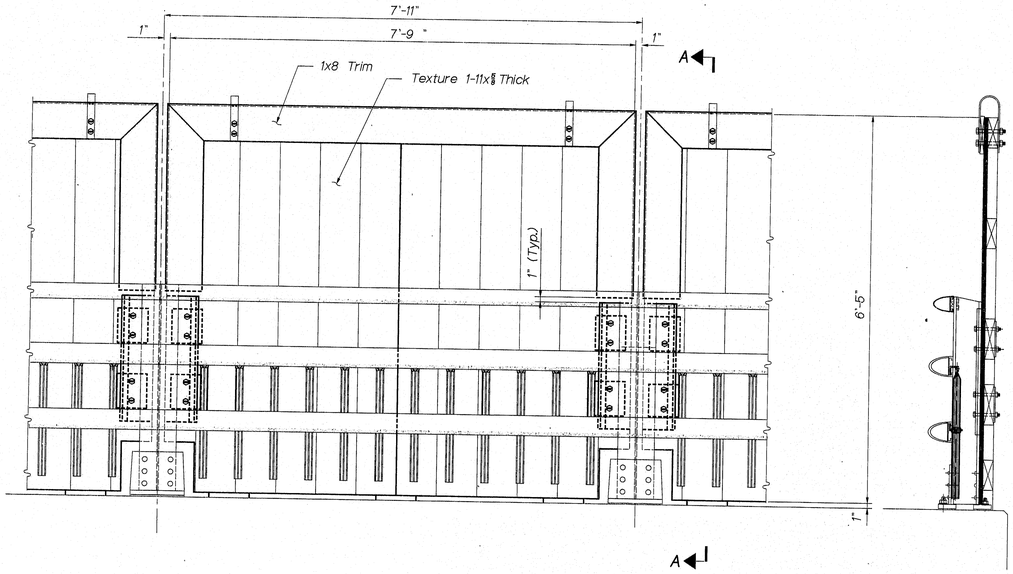


PLAN



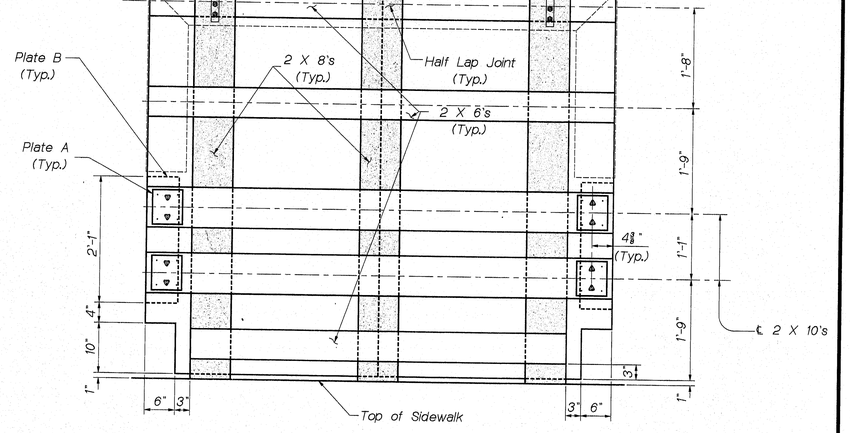


LIFTING STRAP

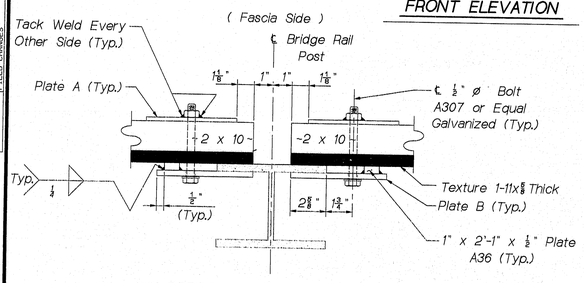


FRONT ELEVATION

SECTION A - A
(Upstream Side)



REAR ELEVATION



WINDBREAK CONNECTION DETAIL

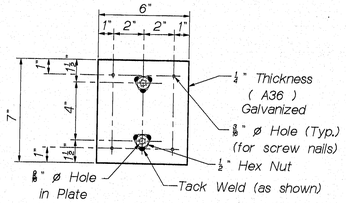


PLATE A

Note: Use Zinc plated Hardened Screw Nails with flat heads, 2" long, or equivalent.

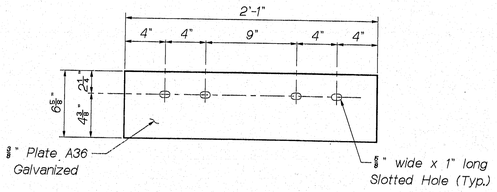


PLATE B

PROJECT DESIGN OWNER | BY | DATE
DESIGN-DETAILED | R.J.Nixon | 6/92
CHECKED
REVISIONS
FIELD CHANGES

PLANS

06JL192-12.9&00

109-63

STATE OF MAINE 289
DEPARTMENT OF TRANSPORTATION

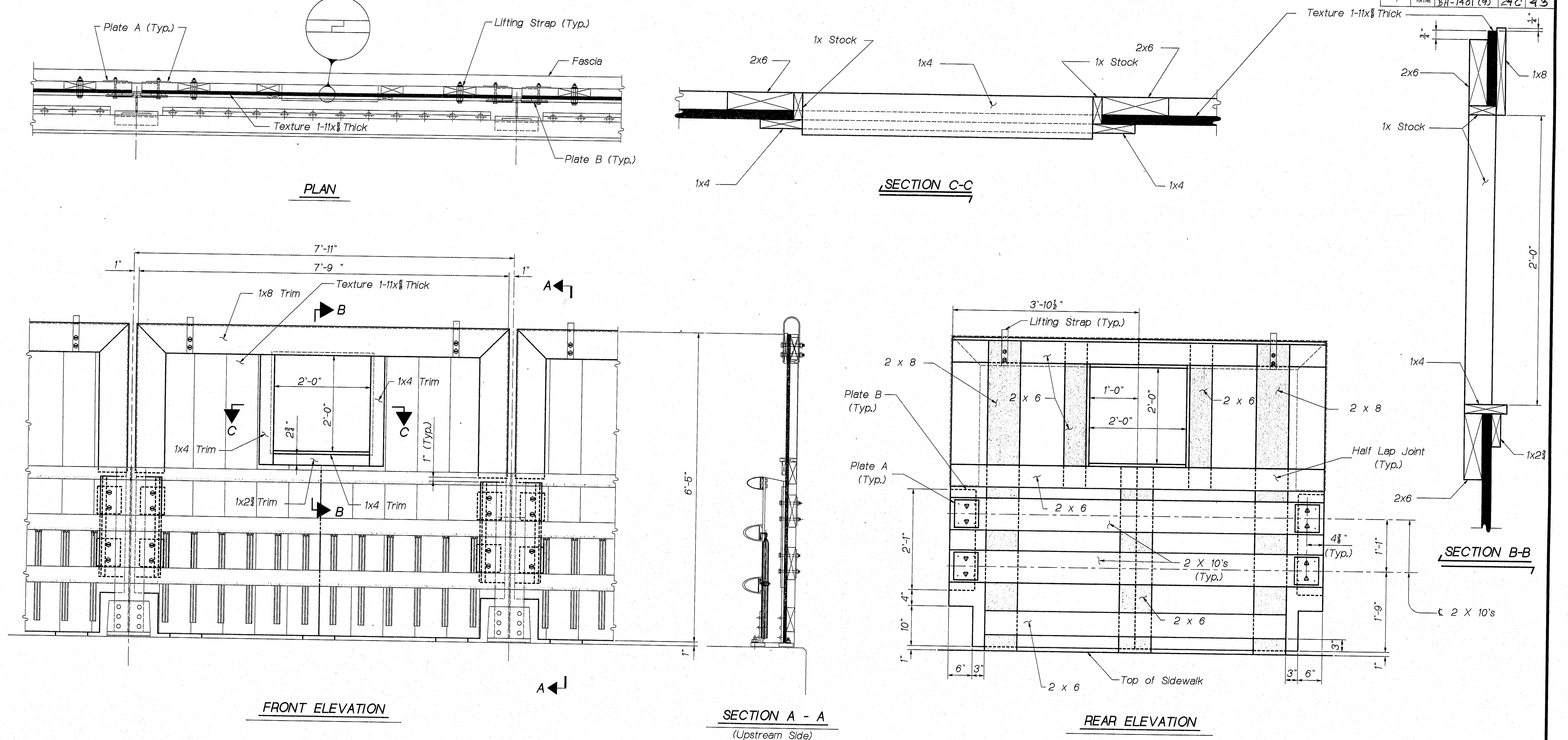
FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

WINDBREAK

SHEET ✕ OF ✕ AUGUSTA, MAINE July 6, 1992

PIN. NO. 004867.00

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-1401 (9)	24C	43



NOTES

1) The 2x timber frame and 1x stock material shall consist of select structural grade Southern Yellow Pine or equivalent. All timber framing and 1x stock material shall be treated in accordance with AWPA C5 with Chromated Copper Arsenate with a minimum retention of 0.40 PCF.

2.) The plywood panels shall be American Plywood Association 303 Siding Texture 1-11 ⅝" thickness with grooves at 8" on center.

3.) All wood surfaces shall be stained with a suitable exterior stain having a light gray color. A primer coat and 2 finish coats shall be applied in accordance with the manufacturer's recommendations, and as approved by the Engineer. Pressure treated timber shall be air dried a minimum of 21 days prior to staining.

4.) All metal hardware shall be hot dipped galvanized in accordance with ASTM A123.

5.) Windbreak panels shall be securely assembled using galvanized wood screws unless noted otherwise. There shall be a minimum of four wood screws at each half lap joint in the 2x frame, eleswhere the wood screws shall be spaced a maximum distance of 9" apart. The heads of the screws shall be driven flush with the surface of the wood.

6.) The Contractor shall construct 52 windbreak panels (2 extra) without windows and 5 windbreak panels with windows. The windbreak is to be located on the upstream side of the bridge.

PLANS — DESIGN-DETAILED / CHECKED / REVISIONS / FIELD CHANGES — BY R.V.Norwand — DATE 6/92

17JLY92-010050

109-64

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION 290

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

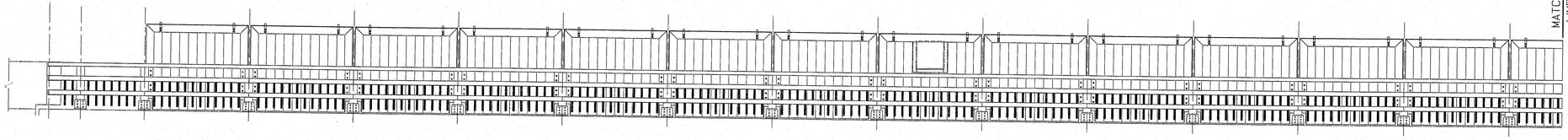
WINDBREAK-WINDOW

SHEET X OF X AUGUSTA, MAINE July 6, 1992

PIN. 004867.00

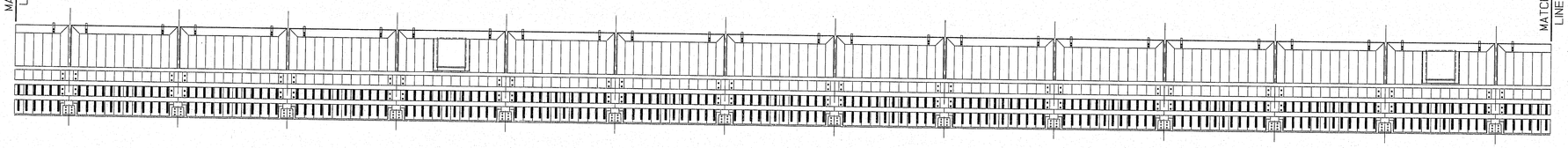
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BH-140(69)	24D	43

℄ Brgs.
Abutment No. 1



MATCH LINE 1

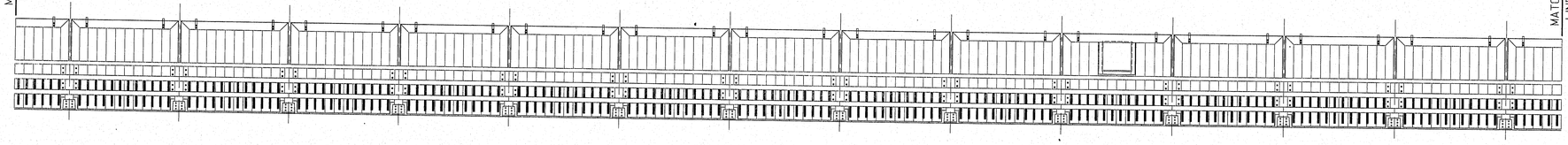
ELEVATION



MATCH LINE 1

MATCH LINE 2

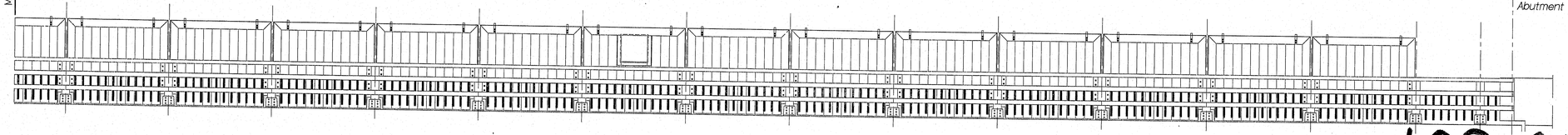
ELEVATION



MATCH LINE 2

MATCH LINE 3

ELEVATION



MATCH LINE 3

℄ Brgs.
Abutment No. 2

ELEVATION

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN DETAILED	R.J. NEWSOM	6/92
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

28JUN92-010040

109-65

291

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

FERRY HILL BRIDGE
OVER
STILLWATER RIVER
IN THE TOWN OF
ORONO
PENOBSCOT COUNTY

FULL ELEVATION WINDBREAK

SHEET 3 OF 3 AUGUSTA, MAINE

SYMBOLS
● I.P. (IRON PIPE or PIN)
□ S. (SEPTIC TANK) ○ C. (PICESSPOOL)
○ 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		K.J.C.	
TOPOGRAPHY		K.J.C.	
R/W LINES			
AREAS	K.J.C		D.S.G.
EXIST. R/W		K.J.C.	

REVISIONS			
NO.	DATE	DESCRIPTION	BY

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

PHILIP E. FOLGER, JR.
JUDITH M. FOLGER
ITEM NO. (1)
GRADING RIGHTS = 990± S.F. (1)
TEMPORARY ROAD EASE. = 0.07± AC. (1)

TOTAL AREA = 0.67± AC.

INHABITANTS OF THE TOWN OF ORONO
ITEM NO. (2-1)2
TEMPORARY ROAD EASE. = 0.20± AC. (1)

TOTAL AREA = 0.45± AC.

STA. 8+13.76 BEGIN
STATE PROJECT NO. 004867.00

PHILIP E. FOLGER, JR.

JAMES D. SWETT
ITEM NO. (3)
GRADING RIGHTS = 500± S.F. (1)
TEMP. CLEARING RIGHTS = 290± S.F. (1)

CAMROC, INC.
ITEM NO. (4)
DRAINAGE EASE. = 0.07± AC. (1)
TEMP. CLEARING RIGHTS = 1,220± S.F. (1)
GRADING RIGHTS = 1,060± S.F. (1)

U.S. ROUTE 2
MAIN STREET

OAK STREET

STILLWATER

RIVER

TEMPORARY ROAD

N 23°-22'-35.3"E 950.00'

PLAN FILED IN PLAN BOOK	PAGE D155	DEC 94

NO.	GRANTOR	COUNTY RECORD INSTRUMENT	DATE	BOOK	PAGE
		COND.	4/27/92	5051	46

REFERENCES:
U.S. ROUTE 2, BEGINNING OF PROJECT TO RIVER, RIVER TO END OF PROJECT.
PENOBSCOT COUNTY VOL. 1, PAGE 424.
ALSO SEE:
MAIN STREET AND NORTH MAIN STREET
S.H.C. FILE NO. 10-69

STATE OF MAINE
RICHARD A. COLEMAN
1559
REGISTERED
PROFESSIONAL ENGINEER

● — RAILROAD SPIKE ▲ — CONTROL MONUMENTS

MAINE DEPARTMENT OF TRANSPORTATION - CENTERLINE CONTROL
MAINE STATE COORDINATE SYSTEM — ZONE

℄ CONTROL MONUMENTS			TRAV. CONTROL POINTS		
STATION	NORTH	EAST	NUMBER	NORTH	EAST

00486700 FERRY HILL BRIDGE OVER STILLWATER RIVER

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

STATE HIGHWAY "1"
ORONO PENOBSCOT COUNTY
STATE PROJECT NO. 004867.00

APPROVED:
DATE: MARCH 1992
SCALE: 1 INCH = 25 FEET
DANA F. CONNORS COMMISSIONER
SHEET NO. 1 OF 2 SHEETS
D.O.T. FILE NO. 10-348
RICHARD A. COLEMAN CHIEF ENGINEER

MANSFIELD 16438

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS

SYMBOLS

- ● I.P. (IRON PIPE or PIN)
- □ST. (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		K.J.C.	
TOPOGRAPHY		K.J.C.	
R/W LINES			
AREAS	K.J.C.		D.S.G.
EXIST. R/W		K.J.C.	

REVISIONS NO.	DATE	DESCRIPTION	BY

UNIVERSITY MOTOR INN, INC.
ITEM NO. (5)
CONST. AND MAINT. EASE. = 1,210± S.F.(2)
TEMP. ROAD EASE. = 0.35±AC.(1)

TOTAL AREA = 4.15± AC.

INHABITANTS OF THE TOWN OF ORONO
ITEM NO. $(2-2)_2$
GRADING RIGHTS = 1,435± S.F. (1)
TEMP. CLEARING RIGHTS = 2,500± S.F. (1)

STA. 16+36.24 END
STATE PROJECT NO. 004867.00

RIVER

STILLWATER

TEMPORARY ROAD

EASEMENT

LIGHT GROWTH

0.35± AC.

MAINT. & CONST. EASE. 935± S.F.

EASEMENT 935± S.F.

GRANITE CURB

GUARDRAIL

GUY

TELEPHONE

M.H. SEWER

W.G.

N 23°-22'-35.3" E

950.00'

TO OLD TOWN

U.S. ROUTE 2

PAVED SIDEWALK

NORTH MAIN STREET

GRADING 1,435± S.F.

LIMIT LINE

2,500± S.F. LIGHT GROWTH

SELECTIVE CLEARING

LAWN

CLUSTERS OF LARGE MAPLES

WEBSTER PARK

CONCRETE STEPS

13" BASSWOOD
8" MAPLE
24" BASSWOOD
24" MAPLE
TRIPLE ASH
15" OAK
18" OAK
STUMP
GRAN RET
SLOPE WALL

PLAN FILED IN PLAN BOOK	PAGE	D 156	DEC 94

NO.	GRANTOR	COUNTY RECORD INSTRUMENT	DATE	BOOK	PAGE
		COND.	4/27/92	5051	46

REFERENCES:
U.S. ROUTE 2, BEGINNING OF PROJECT TO RIVER, RIVER TO END OF PROJECT
PENOBSCOT COUNTY VOL. 1, PAGE 424.
ALSO SEE:
MAIN STREET AND NORTH MAIN STREET
S.H.C. FILE NO. 10-69

STATE OF MAINE
RICHARD A. COLEMAN
1559
REGISTERED
PROFESSIONAL ENGINEER

● — RAILROAD SPIKE ▲ — CONTROL MONUMENTS

MAINE DEPARTMENT OF TRANSPORTATION - CENTERLINE CONTROL					
MAINE STATE COORDINATE SYSTEM — ZONE					
℄ CONTROL MONUMENTS			TRAV. CONTROL POINTS		
STATION	NORTH	EAST	NUMBER	NORTH	EAST

004867.00 FERRY HILL BRIDGE OVER STILLWATER RIVER

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

RIGHT OF WAY MAP

STATE HIGHWAY "1"
ORONO PENOBSCOT COUNTY
STATE PROJECT NO. 004867.00

APPROVED:
DATE: MARCH 1992
SCALE: 1 INCH = 25 FEET
DANA F. CONNORS COMMISSIONER
SHEET NO. 2 OF 2 SHEETS
D.O.T. FILE NO. 10-348
RICHARD A. COLEMAN CHIEF ENGINEER

MASERFACE 144438