F.H.W.A. REGN. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	1	71

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

BUREAU OF HIGHWAYS

NORTH AND SOUTH CHANNEL BRIDGES
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

MAINE FEDERAL AID URBAN
PROJECT NO. BRF-U-025-2(23)
PROJECT LENGTH 0.201 MILES

As Built 7-8-77 DAE

CONVENTIONAL SIGNS

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

SPECIFICATIONS

DESIGN — AASHO Standard Specifications for Highway Bridges 1973 and interim specifications 1974.

CONTRACT — State of Maine, State Highway Commission, Standard Specifications, Highways and Bridges, Revision of June 1968.

DESIGN LOADING

LIVE LOAD = HS 20-44

MATERIALS

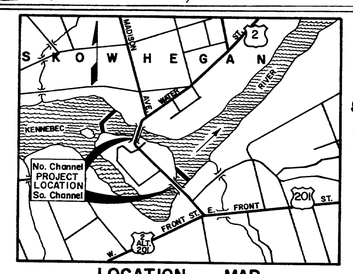
CONCRETE . . . . . Seal Class S
All Other class A

REINFORCING STEEL . . . . . ASTM A615, Grade 60

BASIC ALLOWABLE STRESSES

CONCRETE f_c=1200 psi n=10

REINFORCING STEEL f_s=24,000 psi



LOCATION MAP

600 0 600 1200
Scale of Feet

NOTE: Names of Bridges were changed to "Margaret Chase Smith Bridges North & South" by a resolve of the Legislature in July 1977. (H.P. 1807-L.D. 1897)
RBQ 6-11-81

INDEX OF SHEETS

1. TITLE SHEET
2.-3. TOTAL ESTIMATED QUANTITIES
4. FOUNDATION SURVEY - NORTH CHANNEL
5. FOUNDATION SURVEY - SOUTH CHANNEL
6. BORING DETAILS - SOUTH CHANNEL
7-25. NORTH CHANNEL BRIDGE
26-39. SOUTH CHANNEL BRIDGE
40. HIGHWAY BETWEEN BRIDGES
41. NORTH CHANNEL APPROACH
42. TYPICAL SECTIONS
43. DRAINAGE
44. WHEEL CHAIR RAMPS
45. CONSTRUCTION NOTES
46. PROFILE
47-55. CROSS SECTIONS
56-58. RIGHT-OF-WAY MAPS

STANDARD DETAILS - BRIDGE

59. BD 100-71 BEARING PEDESTALS
60. BD 104-73 ARMORED JOINTS, DRAINS, SHEAR CONNECTORS
61. BD 105-74 EXPANSION DAMS
62. BD 113-72 DIAPHRAGMS & CROSS FRAMES
63. BD 115-73 ALUMINUM RAILING
64. BD 116-73 PALE PANEL & HEAVY DUTY POST
65. BD 118-73 ALUMINUM APPROACH RAILING

STANDARD DETAILS - HIGHWAY

66. (1) CATCH BASINS AND MANHOLES
67. (2) METAL SLUICE, UNDERDRAINS
68. (3) CURB, DITCHES, SLOPES
69. (10) FENCING
70. (11) BARRICADES, WARNING SIGNS
71. (12) DRIVEWAY DETAILS, FIELD OFFICES

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

TRAFFIC DATA

		No. Channel	So. Channel
A.D.T.	1975	14,365	14,340
A.D.T.	1995	30,015	29,740
D.H.V.		3,300	3,270
T. (%)		7	7
D. (%)		50	50
V.		25	25
P.S.D. (%)		0	0
18 KIPS		1153	1153

HYDROLOGIC DATA

	North Channel	South Channel
Drainage Area	3,950 sq. miles	3,950 sq. miles
Q 50	80,640 cfs	47,360 cfs
Design High Water	152.5 ft.	162.5 ft.
Velocity	18.2 fps	7.8 fps

NOTE: The drainage area (3950 sq. miles) is the total area for both the North and South Channel Bridges.

APPROVED:

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
Roger L. Mallar
COMMISSIONER
DATE Dec. 1977

Richard A. Guillette
CHIEF ENGINEER / BUREAU DIRECTOR
DATE Dec. 1975

COAST GUARD PERMIT REQUIRED

UNITED STATES
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 1

APPROVED:

DIVISION ENGINEER DATE

167-122

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	2	71

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	No. Channel QUANTITY	So. Channel QUANTITY	Approaches QUANTITY	TOTAL QUANTITY
201.14	Removing Single Trees over 24" to 48", Tops only	Each	—	—	1	1
201.19	Removing Stumps, 9" to 24"	Each	—	—	1	1
201.20	Removing Stumps, 24" to 48"	Each	—	—	1	1
202.0801	Removal of Building No. 1	L.S.	—	—	1	1
202.1001	Removal of Existing Superstructure, (Property of Contractor)	L.S.	1	—	—	1
202.1002	Removal of Existing Superstructure, (Property of Contractor)	L.S.	—	1	—	1
202.13	Removal of Existing Railings (Retained by Department)	L.F.	—	146	—	146
203.20	Common Excavation	C.Y.	—	—	3250	3250
203.25	Granular Borrow	C.Y.	260	—	—	260
206.06	Str. Earth Excav.-Drainage & Minor Strs.	C.Y.	—	—	180	180
206.07	Str. Rock Excav.-Drainage & Minor Strs.	C.Y.	—	—	80	80
206.08	Str. Earth Excav.-Abuts. & Rel. Walls	C.Y.	60	130	—	190
206.09	Str. Rock Excav.-Abuts. & Rel. Walls	C.Y.	160	140	—	300
206.10	Str. Earth Excav.-Piers	C.Y.	—	390	—	390
301.09	Plant Mix Bituminous Base Course, Grading B	Ton	—	—	460	460
304.10	Aggregate Subbase Course-Gravel	C.Y.	—	—	2970	2970
305.10	Pre-mixed Bituminous Base	C.Y.	—	—	160	160
403.07	Hot Bit. Pavement, Grading B	Ton	—	—	290	290
403.08	Hot Bit. Pavement, Grading C	Ton	—	—	210	210
403.101	Hot Bit. Pavement, Grading D (Sidewalks, Drives, Etc.)	Ton	—	—	180	180
403.121	Hot Bituminous Pavement, Grading E (Shimming)	Ton	—	—	25	25
410.161	Cover Coat Material, Sand (Levelling)	C.Y.	—	—	30	30
502.21	Structural Concrete, Abuts. & Retaining Walls	C.Y.	256	165	—	421
502.23	Structural Concrete, Piers	C.Y.	—	210	—	210
502.24	Structural Concrete, Piers (Placed Under Water)	C.Y.	—	530	—	530
502.2601	Structural Concrete, Roadway & Sidewalk Slabs on Steel Bridges	L.S.	1	—	—	1
502.2602	Structural Concrete, Roadway & Sidewalk Slabs on Steel Bridges	L.S.	—	1	—	1
502.2901	Structural Concrete, Wearing Surface on Bridges	L.S.	1	—	—	1
502.2902	Structural Concrete, Wearing Surface on Bridges	L.S.	—	1	—	1

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	No. Channel QUANTITY	So. Channel QUANTITY	Approaches QUANTITY	TOTAL QUANTITY
503.12	Reinforcing Steel, Fdn. & Deck	L.B.	62,510	119,510	—	182,110
503.13	Reinforcing Steel, Piling	L.B.	62,510	119,510	—	182,110
504.7101	Structural Steel, Erection	L.S.	1	—	—	1
504.7102	Structural Steel, Erection	L.S.	—	1	—	1
505.0801	Shear Connectors	L.S.	1	—	—	1
505.0802	Shear Connectors	L.S.	—	1	—	1
507.09	Steel Pipe Hand Railing	L.F.	27	—	—	27
507.143	Aluminum Bridge Railing, Type "C"	L.F.	315	701	—	1016
507.154	Aluminum Approach Railing, Type "D"	L.F.	54	38	—	92
510.1201	Special Detour, 22± Foot Roadway Width Vehicular & Pedestrian Traffic Separated	L.S.	1	—	—	1
510.1202	Special Detour, 24 Foot Roadway Width Vehicular & Pedestrian Traffic Separated	L.S.	—	1	—	1
511.07	Cofferdams	L.S.	—	1	—	1
512.06	French Drains	C.Y.	19	—	—	19
514.06	Curing Box for Concrete Cylinders	Each	0.3	0.7	—	1
515.20	Protective Coating for Concrete Surfaces	S.Y.	940	1565	—	2505
603.159	12 Inch Culvert Pipe, Option III	L.F.	—	—	190	190
604.072	Catch Basins Type A1-C	Each	—	—	1	1
604.082	Catch Basins Type A2-C	Each	—	—	2	2
604.161	Altering Catch Basins	Each	—	—	2	2
604.19	Adjusting Manholes & Catch Basins to Grade	Each	—	—	1	1
604.252	Catch Basins, Type A5-C	Each	—	—	1	1
605.09	6 Inch Underdrain Type "B"	L.F.	—	—	302	302
607.15	Chain Link Fence-4 Feet	L.F.	—	—	6	6
607.17	Chain Link Fence-6 Feet	L.F.	58	—	—	58
607.23	Remove and Reset Fence	L.F.	—	—	50	50
607.36	Bracing Assembly, Type 1-Chain Link Fence-6 Feet	Each	3	—	—	3

PROJECT DESIGN ENGINEER

	BY	DATE
DESIGN-DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
AND
SOUTH CHANNEL BRIDGE
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ESTIMATED QUANTITIES

SHEET OF AUGUSTA, MAINE

167-123

JANUARY 1969

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-J-025-2(23)	3	71

ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	No. Branch QUANTITY	So. Branch QUANTITY	Approaches QUANTITY	TOTAL QUANTITY
607.57	Bridging Handrail by Type III-Chain Link Fence Feet	Each	2	—	—	2
609.11	Vertical Curb - Type 1	L.F.	—	—	649	649
609.12	Vertical Curb - Circular - Type 1	L.F.	—	—	65	65
609.13	Vertical Bridge Curb - Type 1	L.F.	272	698	—	970
609.14	Vertical Bridge Curb - Circular - Type 1	L.F.	—	12	—	12
609.23	Terminal Curb, Type 1	Each	—	—	35	35
609.33	Curb Type 33	L.F.	—	—	12	12
615.07	Loam	C.Y.	—	—	25	25
616.08	Sodding	S.Y.	—	—	45	45
618.13	Seeding, Method Number 1	Unit	—	—	4	4
619.12	Mulch	Unit	—	—	14	14
623.06	Right-of-Way Monuments	Each	—	—	1	1
623.08	Bronze Pin Markers	Each	—	—	11	11
623.102	Remove, Store and Reset Monument	L.S.	—	—	1	1
629.05	Labor, Straight Time	M.Hr.	10	10	20	40
	Traffic Officers	M.Hr.	—	—	85	85
631.10	Air Compressor (inc. operator)	Hour	5	5	5	15
631.11	Air Tool (inc. op.)	Hour	5	5	5	15
631.12	All Purpose Excavator (including op.)	Hour	—	—	10	10
631.171	Truck-small (inc. op.)	Hour	5	5	10	20
631.22	Front End Loader (inc. op.)	Hour	—	—	10	10
632.08	Warning Lights	Grp.	1	1		2
633.09	Portable Barricade	Each	2	2	—	4
637.07	Sprinkling	M.G.	—	—	30	30
637.08	Calcium Chloride	Ton			3	3
639.08	Field Office, Type A	Each	0.3	0.7	—	1
639.11	Testing Facilities, Soils	L.S.	—	—	1	1
639.12	Testing Facilities, Bit. Mixes	L.S.	—	—	1	1
657.201	Seed and Application, Method A	Unit	—	—	10	10
659.10	Mobilization	L.S.	0.3	0.7	—	1
660.21	On-the-job Training	M.Hr.	600	1400		2000
816.13	5" Cast Iron Gravity Sewer Pipe	L.S.	1			1
817.21	4" Cast Iron Pressure Sewer Pipe	L.S.		1		1
817.211	4" Temporary Pressure Sewer Pipe	L.S.		1		1

ESTIMATED QUANTITIES OF LUMP SUM ITEMS

ITEM NO.	DESCRIPTION	UNIT	No. Branch QUANTITY	So. Branch QUANTITY	Approaches QUANTITY	TOTAL QUANTITY
502.2601	Structural Concrete, Roadway & Sidewalk Slab on Steel Bridge	C.Y.	250	—	—	250
502.2602	Structural Concrete, Roadway & Sidewalk Slab on Steel Bridge	C.Y.	—	405	—	405
502.2901	Structural Concrete, Wearing Surface on Bridges	C.Y.	56	—	—	56
502.2902	Structural Concrete, Wearing Surface on Bridges	C.Y.	—	90	—	90
504.7101	Structural Steel, Erection	Lb.	298,000	—	—	298,000
504.7102	Structural Steel, Erection	Lb.	—	358,000	—	358,000
505.0801	Shear Connectors	Lb.	1152	—	—	1152
505.0802	Shear Connectors	Lb.	—	2660	—	2660

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

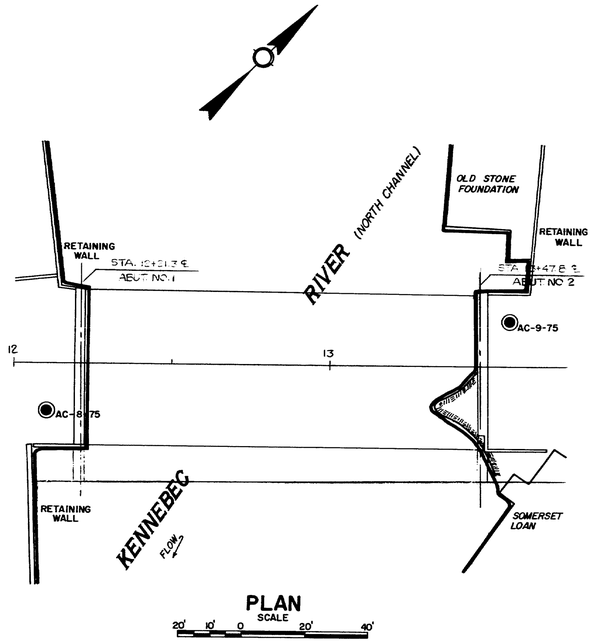
NORTH CHANNEL BRIDGE
AND
SOUTH CHANNEL BRIDGE
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ESTIMATED QUANTITIES

SHEET OF AUGUSTA, MAINE

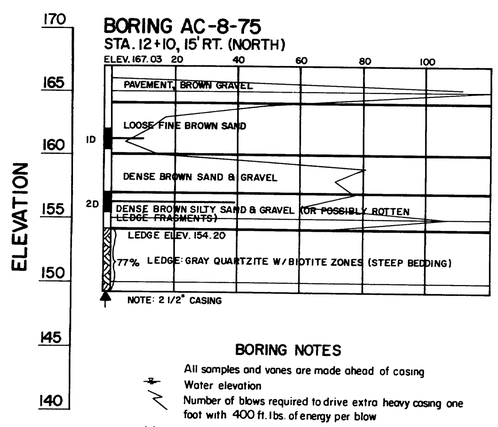
167-124

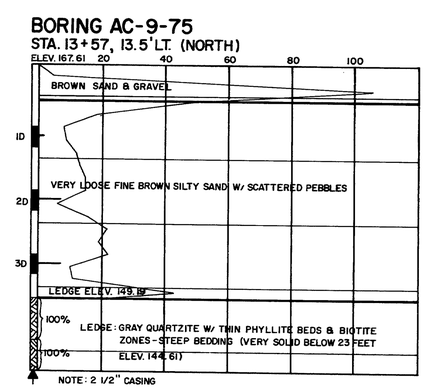
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-125-2(29)	4	71



PLAN

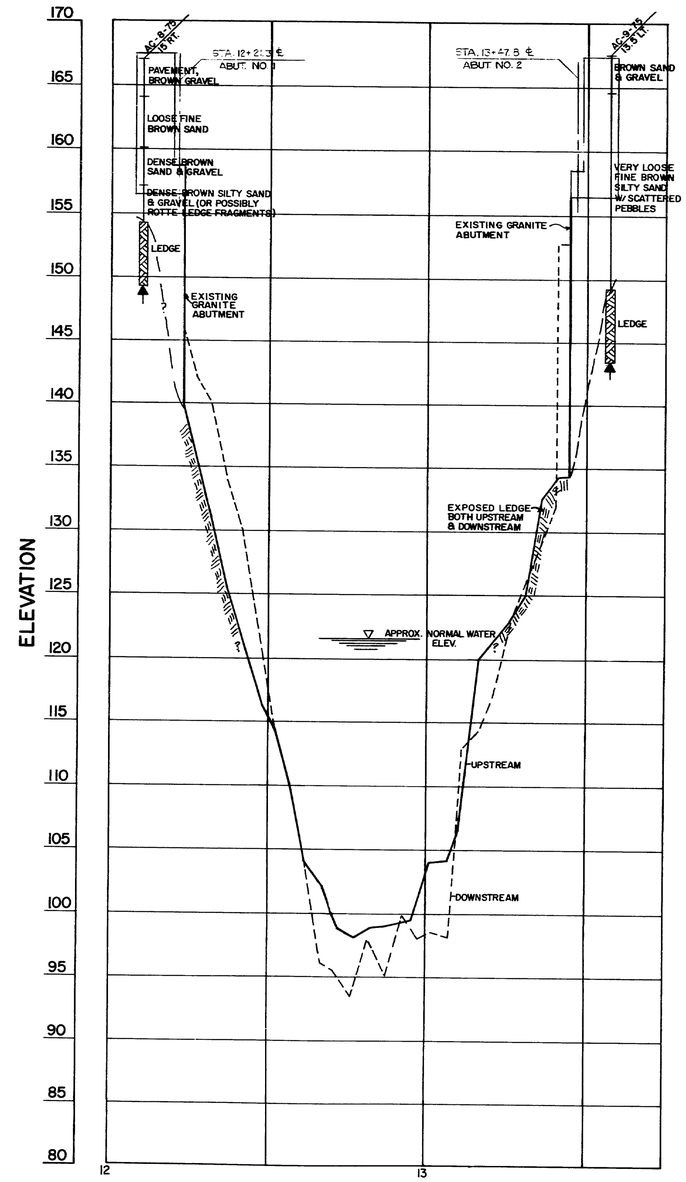
SCALE 20' 10' 0 20' 40'





BORING NOTES

- All samples and vanes are made ahead of casing
- Water elevation
- Number of blows required to drive extra heavy casing one foot with 400 ft. lbs. of energy per blow
- Location of sample or sample attempt
- Number and type of dry sample
- 1D S & H Sampler # 1290's
- Number of blows required to drive spoon or tubing one foot with 350 ft. lbs. of energy per blow
- Bottom of boring (may not be bottom of soil strata)
- 77% Locations cored by diamond bit and per cent recovery of rock.



PROFILE NORTH CHANNEL

SCALE

HORIZ. 20' 10' 0 20' 40'

VERT. 5 0 5 10'

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE

OVER THE

KENNEBEC RIVER

IN THE TOWN OF

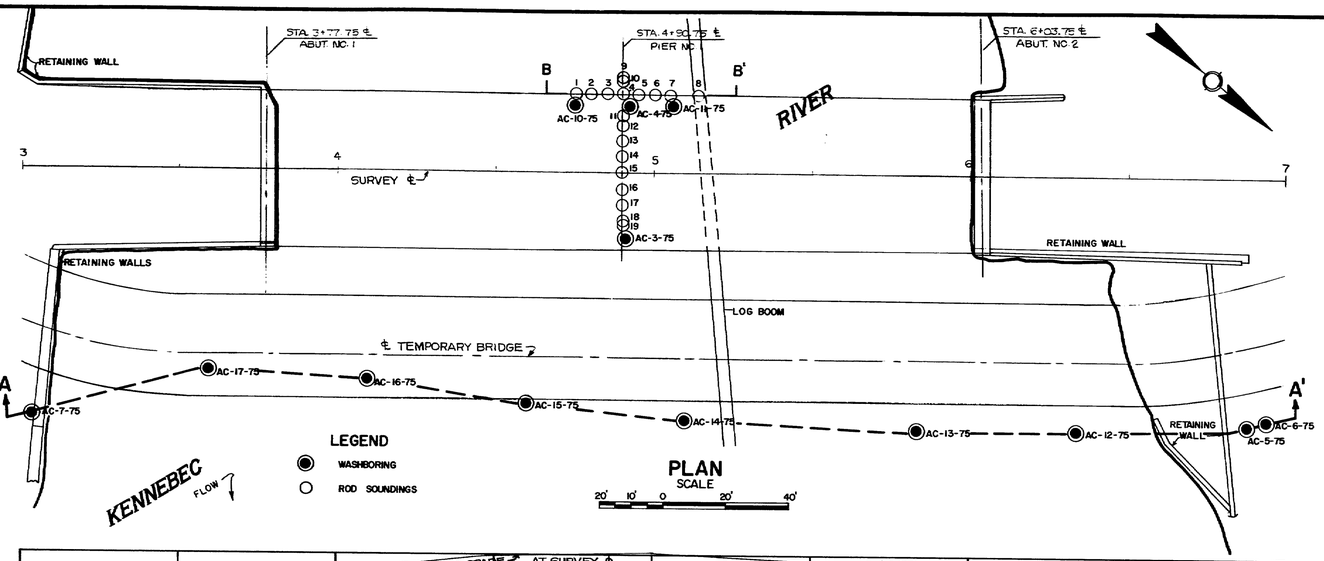
SKOWHEGAN
SOMERSET COUNTY

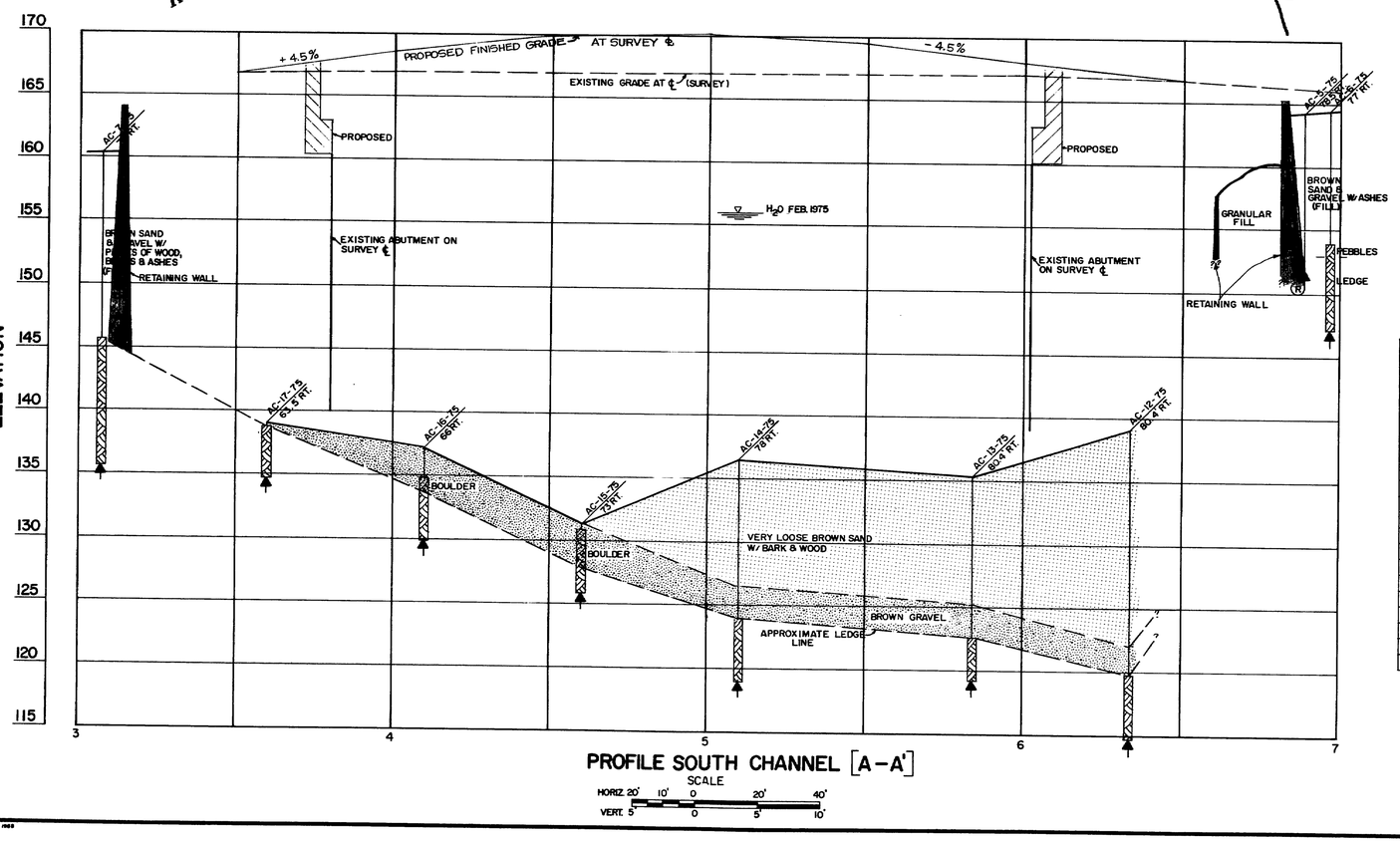
FOUNDATION SURVEY

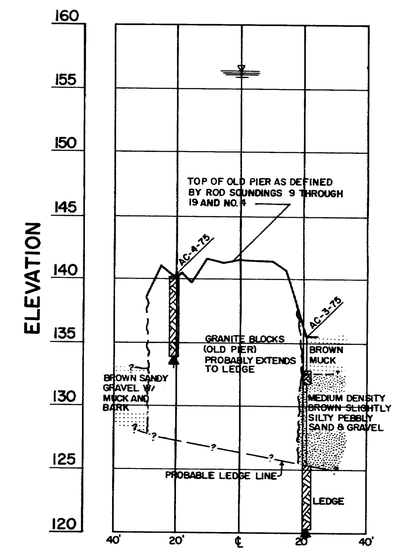
SHEET OF AUGUSTA, MAINE

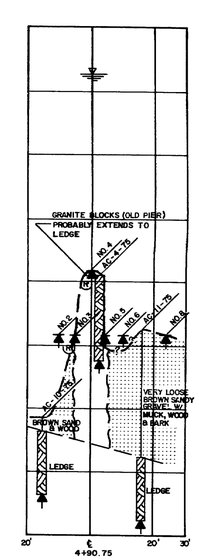
167-125

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	5	71









NOTE: ROD SOUNDINGS NO. 2, 5 & 6 DID NOT ENCOUNTER BOTTOM W/ 20 FEET OF RODS

ROD SOUNDING NO.	STATION & OFFSET	REFUSAL ELEVATIONS
1.	4+75, 25' LT.	N
2.	4+80, 25' LT.	N
3.	4+85, 25' LT.	135.86
4.	4+90, 25' LT.	140.96
5.	4+95, 25' LT.	N
6.	5+00, 25' LT.	N
7.	5+05, 25' LT.	N
8.	5+14, 25' LT.	HIT RIVER BOTTOM AT ELEV. 135.86 (NO REFUSAL)
9.	4+90, 30' LT.	N
10.	4+90, 29' LT.	137.86
11.	4+90, 18' LT.	140.36
12.	4+90, 15' LT.	139.86
13.	4+90, 10' LT.	141.66
14.	4+90, 5' LT.	141.26
15.	4+90, ℄	141.56
16.	4+90, 5' RT.	141.46
17.	4+90, 10' RT.	141.46
18.	4+90, 15' RT.	140.66
19.	4+90, 16' RT.	N

N – NO BOTTOM WITH 20' OF RODS (ELEV. 135.86)

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY
FOUNDATION SURVEY

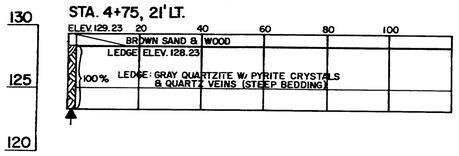
SHEET OF AUGUSTA, MAINE

167-126

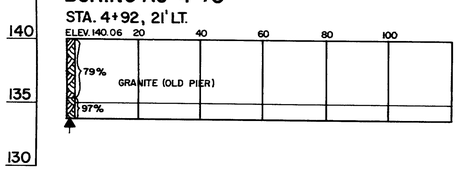
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	6	71

PIER NO. 1

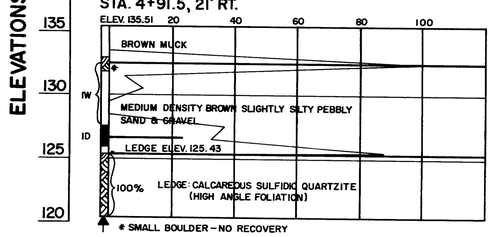
BORING AC-10-75
STA. 4+75, 21' LT.



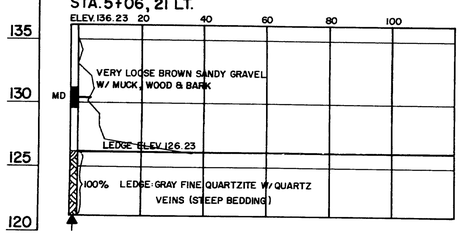
BORING AC-4-75
STA. 4+92, 21' LT.



BORING AC-3-75
STA. 4+91.5, 21' RT.

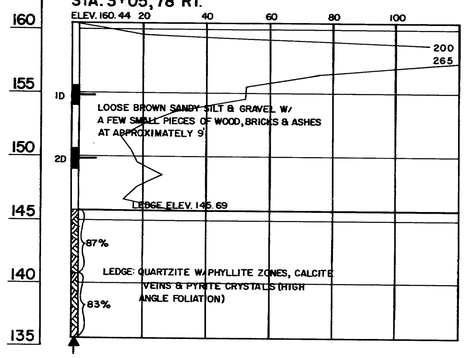


BORING AC-11-75
STA. 5+06, 21' LT.

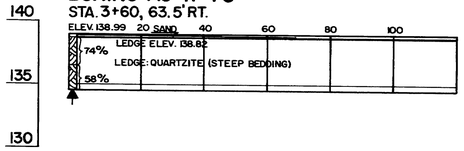


TEMPORARY BRIDGE BORINGS

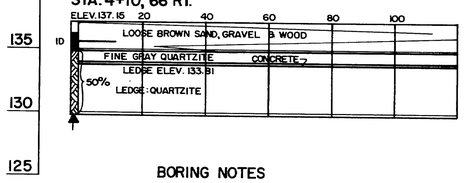
BORING AC-7-75
STA. 3+05, 78' RT.



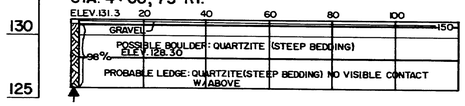
BORING AC-17-75
STA. 3+60, 63.5' RT.



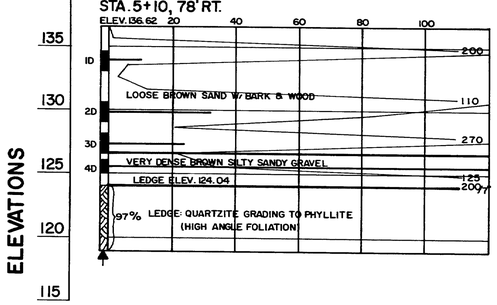
BORING AC-16-75
STA. 4+10, 66' RT.



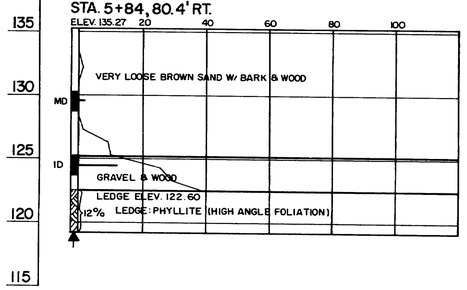
BORING AC-15-75
STA. 4+60, 73' RT.



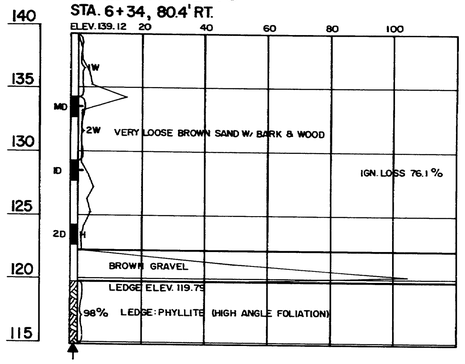
BORING AC-14-75
STA. 5+10, 78' RT.



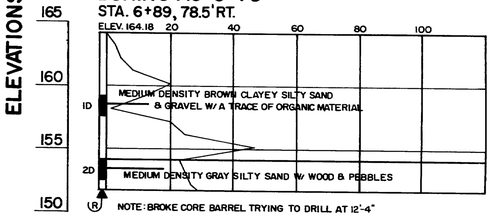
BORING AC-13-75
STA. 5+84, 80.4' RT.



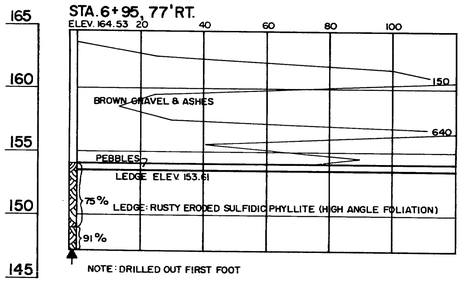
BORING AC-12-75
STA. 6+34, 80.4' RT.



BORING AC-5-75
STA. 6+89, 78.5' RT.



BORING AC-6-75
STA. 6+95, 77' RT.



BORING NOTES

- All samples and vanes are made ahead of casing
- Water elevation
- Number of blows required to drive extra heavy casing one foot with 400 ft. lbs. of energy per blow
- Location of sample or sample attempt
- Number and type of dry sample
- ID — S & H Sampler # 1290's
- IW — Wash sample and number
- MD — Unsuccessful sample attempt and type of sampler
- Number of blows required to drive spoon or tubing one foot with 350 ft. lbs. of energy per blow
- H — Sampling spoon or seamless tubing driven by static weight of drill rods and hammer
- Bottom of boring (may not be bottom of soil strata)
- (R) Refusal of drill rods or casing (may not be ledge)
- 77% Locations cored by diamond bit and per cent recovery of rock

Note: Washborings were made with 2 1/2" casing

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN – DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

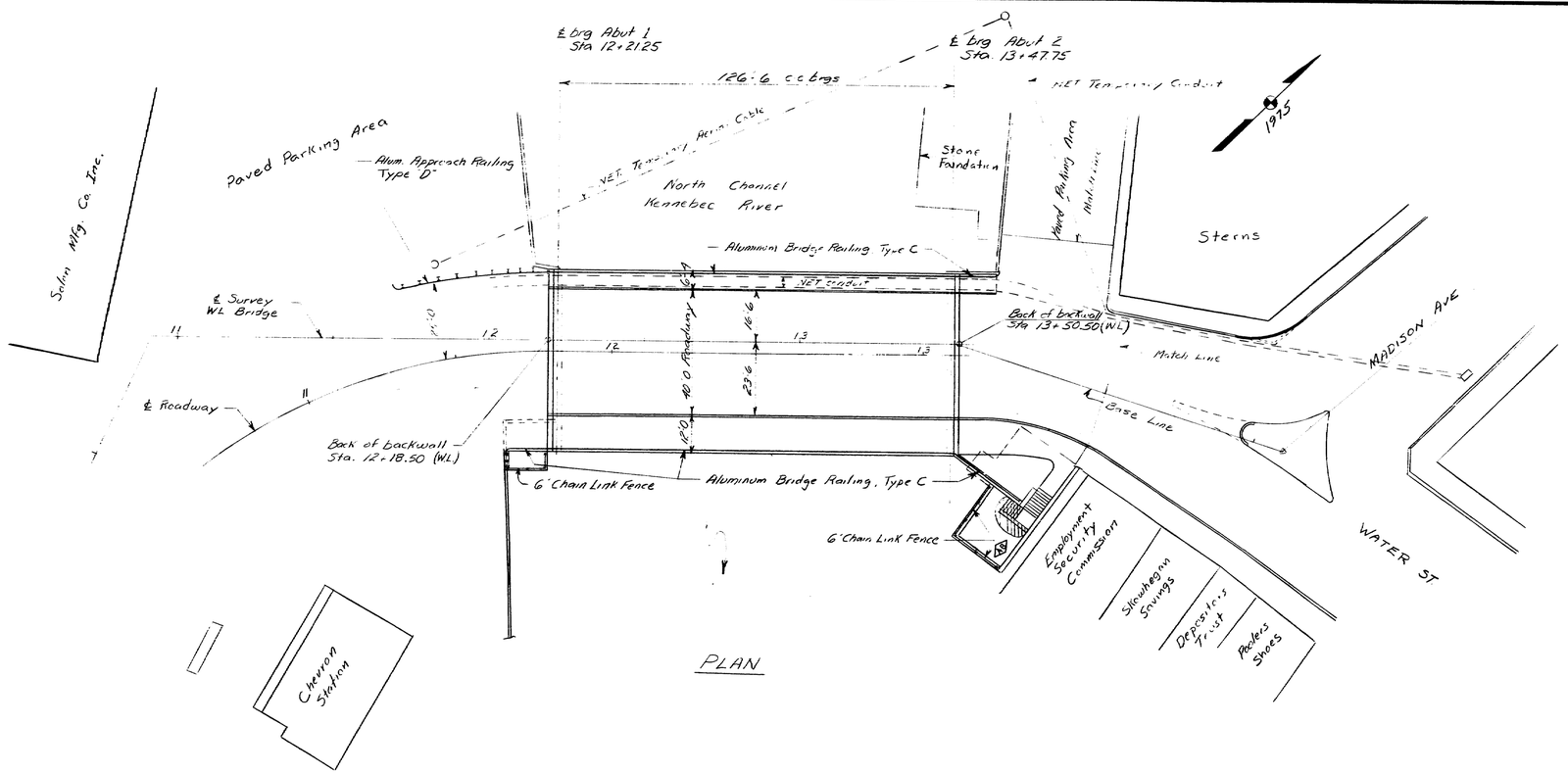
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

BORING DETAILS

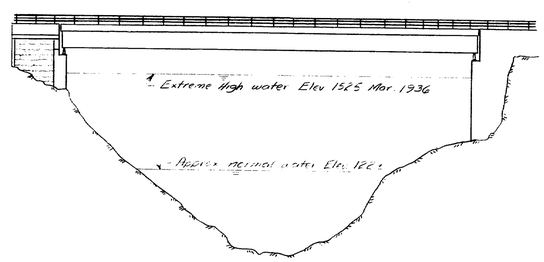
SHEET OF AUGUSTA, MAINE

167-127

F.A. NO. BER. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
3	MAINE	BRF-U-025-2(83)	7	71



PLAN



ELEVATION
(Bridge profile - level)

CONSTRUCTION NOTES

1. All utility plant shall be adjusted by the respective utilities unless otherwise noted.
2. Refer to the Right of Way Map for construction limits and Right of Way information.
3. Removal of existing masonry abutments and retaining walls will be paid for at the contract unit price for Structural Excavation Abutments and Retaining Walls.
4. Removal of existing railings on approach retaining walls will be considered incidental to contract items and become the property of the Contractor.
5. All work incidental to maintenance of vehicular and pedestrian traffic will be paid under Special Detour, 22± Foot Roadway Width, Vehicular and Pedestrian Traffic Separated, Item 510.1201. See Special Provisions.
6. Removal of existing superstructure will be paid under Removal of Existing Superstructure (Property of Contractor), Item 202.10.
7. Sidewalk concrete on approaches, slab concrete at Abutment 1 extension and concrete in Scenic Overlook will be paid under Structural Concrete, Abutments and Retaining Walls, Item 502.21
8. All utility openings in the abutments shall be sealed in a manner approved by the Engineer.
9. Remove 14'± of beam type guard rail at downstream approach to Abutment 1 as directed by the Engineer. This work shall be considered incidental to contract items.

INDEX OF NORTH CHANNEL BRIDGE PLANS

General Plan	7
Survey	8
Special Detours	9
Special Detours Details	10
Abutment No. 1	11
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Sewer Relocation	25

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN - DETAILED	JET	11/75
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

43 As Built 7-5-77 CAG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

GENERAL PLAN

SHEET OF AUGUSTA, MAINE

167-128

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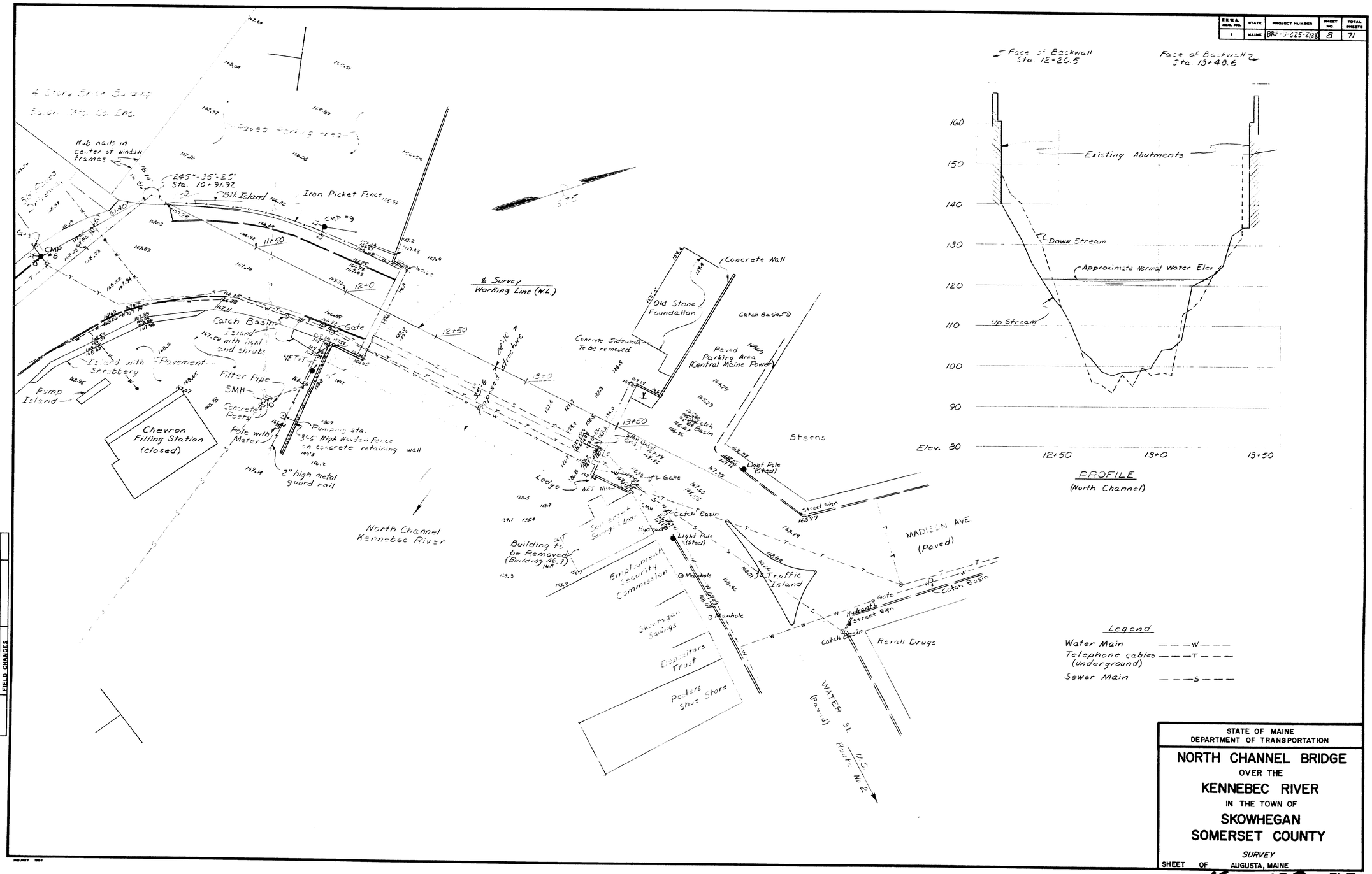


PROJECT DESIGN ENGINEER	BY	DATE
DESIGN - DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

PLANS

Survey Plotted DMD 3/3/75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

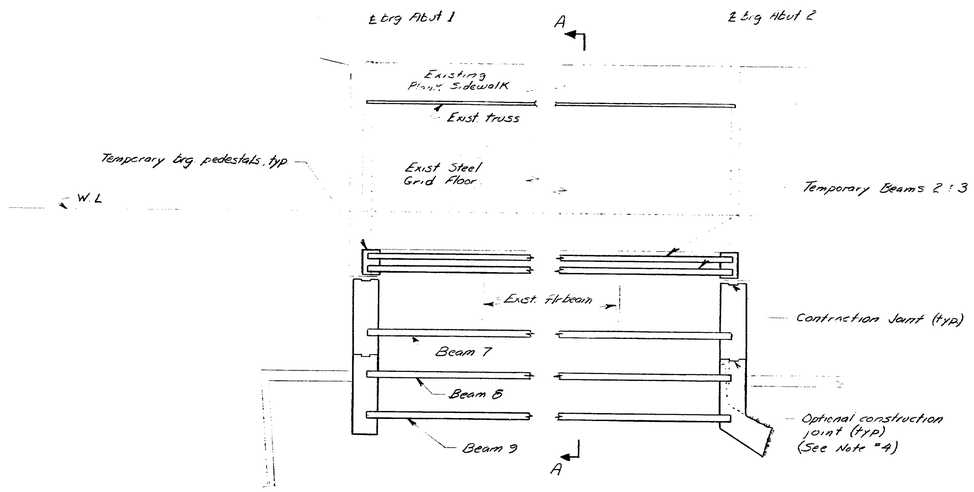
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SURVEY

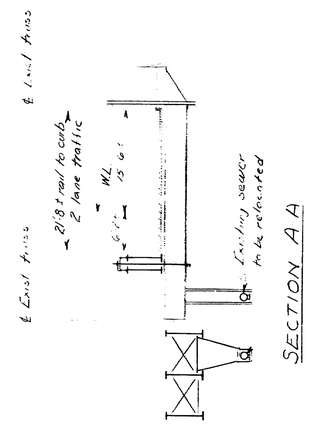
SHEET OF AUGUSTA, MAINE

167-129

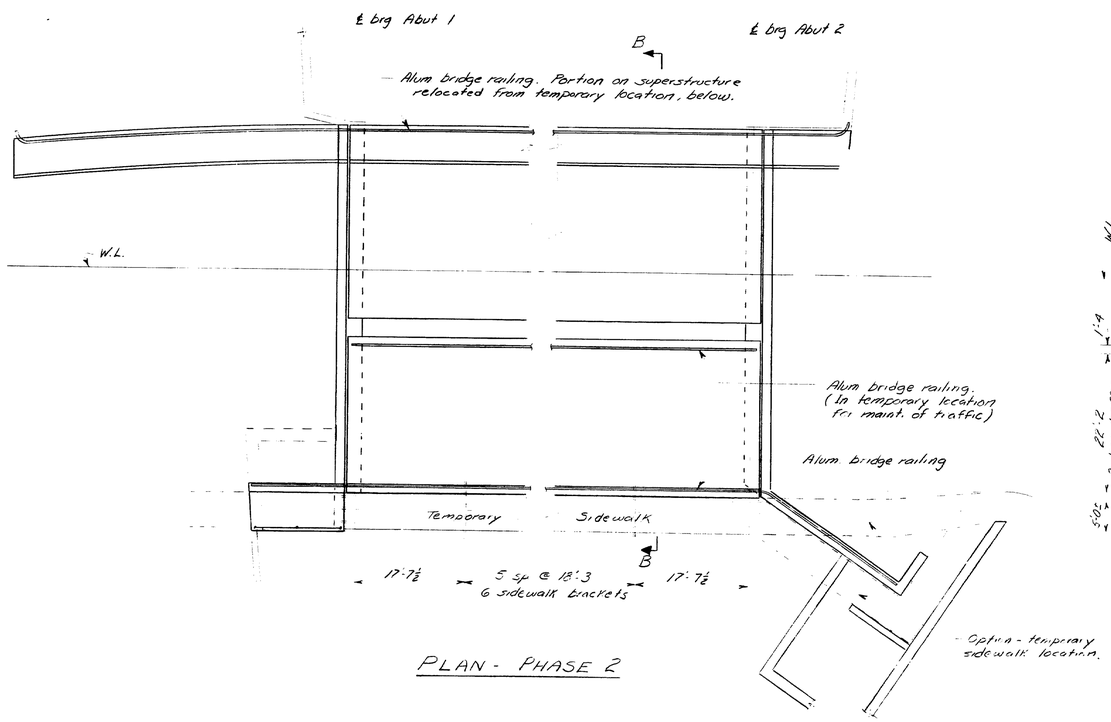
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	9	71



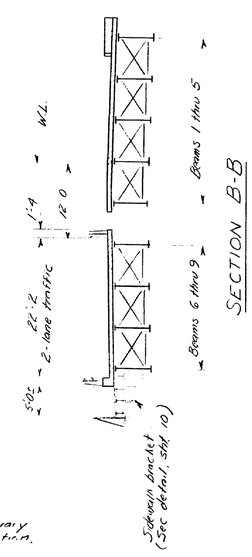
PLAN - PHASE 1



SECTION A-A



PLAN - PHASE 2



SECTION B-B

NOTES - SPECIAL DETOURS

1. Two lanes of traffic shall be maintained at all times.
2. Construction shall conform to the following sequence, in order to maintain traffic at all times. This sequence is an outline only and is not all inclusive. This sequence shall not be altered without prior approval of the Engineer.

Phase 1

a) Establish required approach work for Phase 1 (U.S) traffic.
b) Construct temporary bearing pedestals.
c) Remove D.S grid floor and erect Temporary Beams 2 & 3.
d) Remove existing D.S. sidewalk, D.S. truss, and portions of existing D.S. abutments.
e) Construct D.S. breastwalls for beams 6, 7, 8 & 9.
f) Erect beams 7, 8 & 9, (including diaphragms and crossframes) and relocate existing sewer. (See sheet 25.)
g) Sever existing flrrbeams and remove remaining D.S. superstructure.
h) Erect beam 6.
i) Construct D.S. superstructure and abutment backwalls for Phase 2 traffic.
j) Erect bridge railings and temporary sidewalk.

Phase 2

l) Establish required approach work for Phase 2 traffic.
m) Remove existing U.S. superstructure, Beams 2 & 3, and U.S portions of existing abutments.
n) Construct U.S. abutments and superstructure
o) Place center strip of slab.
p) Place U.S. wearing surface
q) Remove bridge railing from temporary location location and install U.S. bridge railing.
r) Remove temporary guard rail and re-direct two lane traffic to U.S. portion providing a minimum of 24' roadway (not shown).
s) Remove temporary sidewalk
t) Construct D.S sidewalk and place D.S. wearing surface.

3. See Special Provisions, Section 510, Special Detour, 22± foot Roadway Width, Vehicular & Pedestrian Traffic Separated.
4. As an alternate to the construction sequence in Phase 1, the existing downstream sidewalk may be removed before erection of temporary beams 2 and 3 allowing for the substructure construction for beams 8 and 9. The construction of the substructure for Beams 6 and 7 require truss removal.

See sheet 10 for Temporary Bearing Pedestal
See sheet 10 for Temporary Sidewalk
See sheet 18 for Temporary Floorbeam Support
See sheet 20 for temporary railing location

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JET	11/75
CHECKED	JET	11/75
REVISIONS	RWF	11/75
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

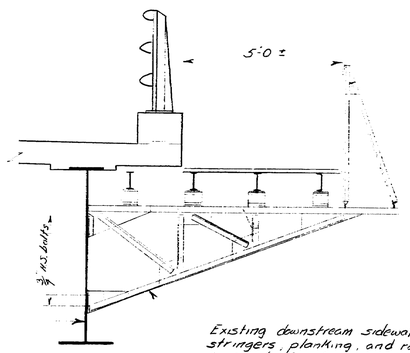
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SPECIAL DETOURS

SHEET OF AUGUSTA, MAINE

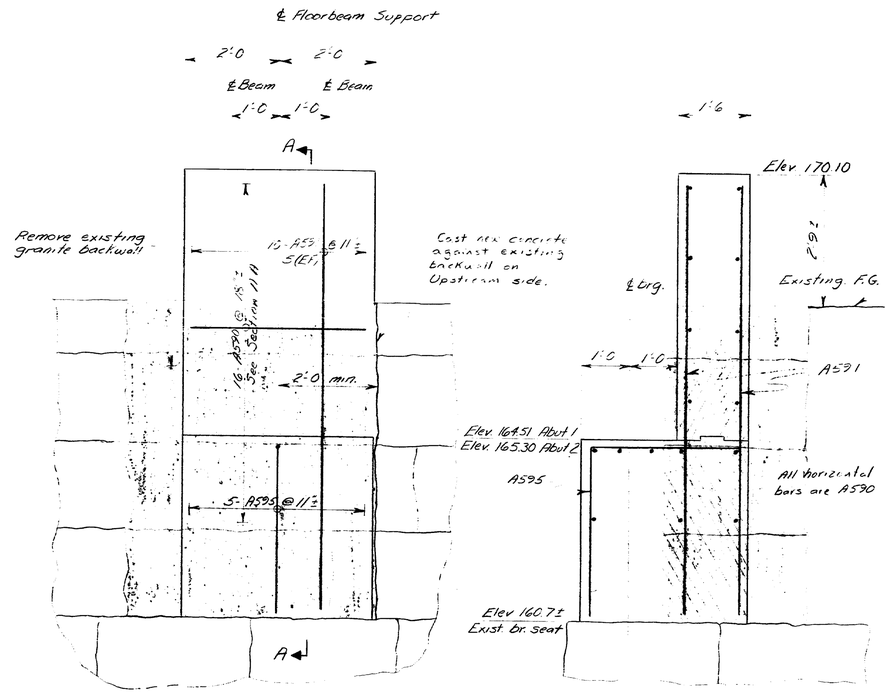
167-130

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	10	71



Existing downstream sidewalk bracket, stringers, planking, and railing relocated for temporary sidewalk

SIDEWALK BRACKET DETAIL



ELEVATION

SECTION A-A

TEMPORARY PEDESTAL

Abutment 1 shown
Abutment 2 opposite hand

NOTES - TEMPORARY SIDEWALK

1. All work done on the temporary sidewalk shall comply with Section 510 - Special Detours. Payment will be made under Pay Item 510.1201.

2. The existing downstream sidewalk brackets and stringers may be used in the temporary sidewalk. The cantilevered portion of Abutment #1 may serve as support for the stringers. The Contractor must provide for stringer support at Abutment #2. The existing brackets and stringers will be considered structurally adequate.

3. There shall be no steps in the temporary sidewalk.

NOTES - TEMPORARY PEDESTAL

1. The temporary concrete pedestals shall be in place a minimum of five days prior to erection of steel.

2. Concrete for temporary concrete pedestals and the removal of temporary pedestals will be included for payment under Item 510.1201. Reinforcing steel fabricated, delivered and placed will be paid for under Items 503.12 and 503.13 respectively.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JCT	11/95
CHECKED	JCT	11/95
REVISIONS	MWF	
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

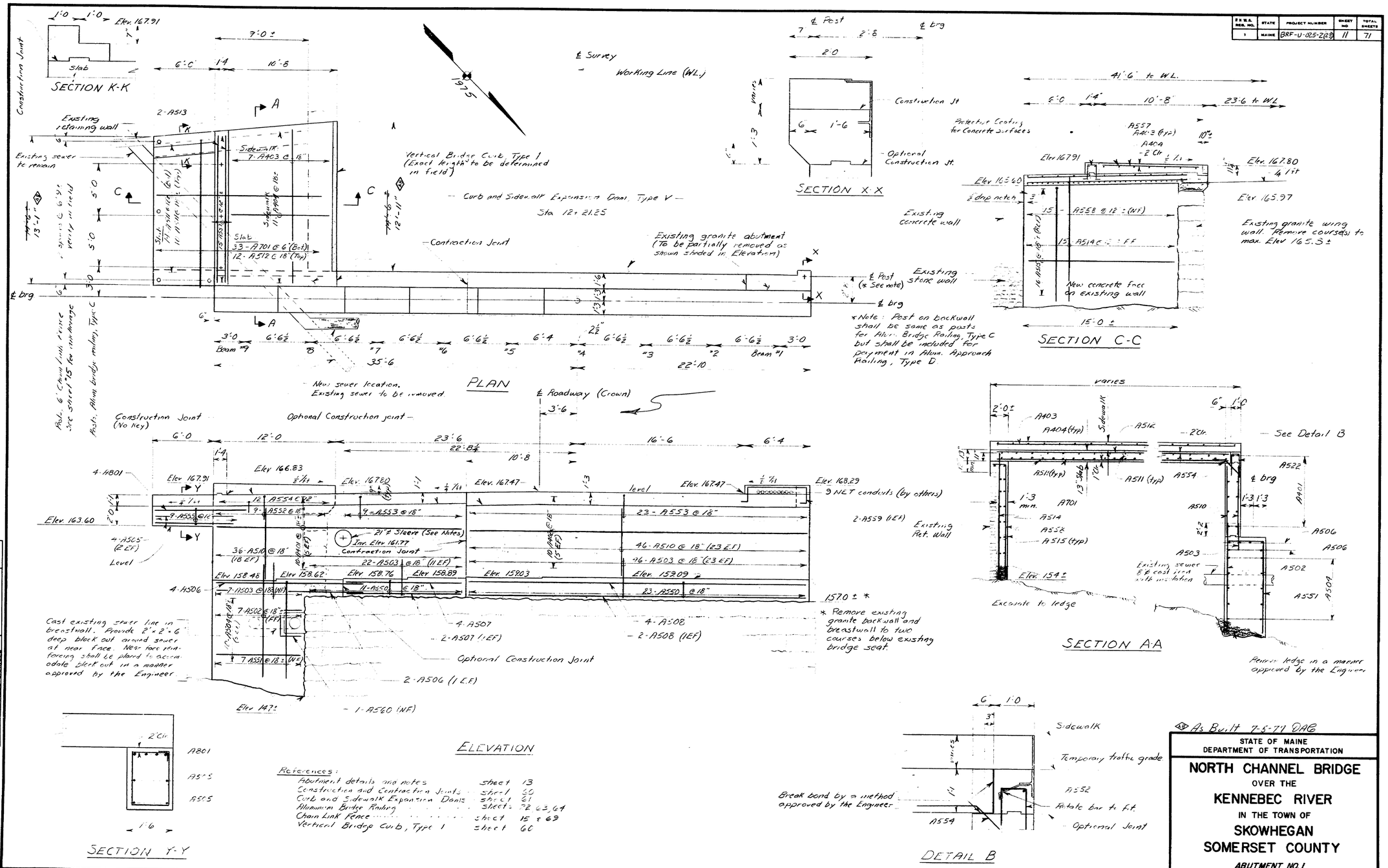
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SPECIAL DETOURS DETAILS

SHEET OF AUGUSTA, MAINE

167-131

JANUARY 1988



References:

Abutment details and notes	sheet	13
Construction and Contraction Joints	sheet	60
Curb and Sidewalk Expansion Dams	sheet	61
Aluminum Bridge Railing	sheets	72, 63, 64
Chain Link Fence	sheet	15 & 69
Vertical Bridge Curb, Type 1	sheet	60

S.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	11	71

As Built 7-5-77 DAG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

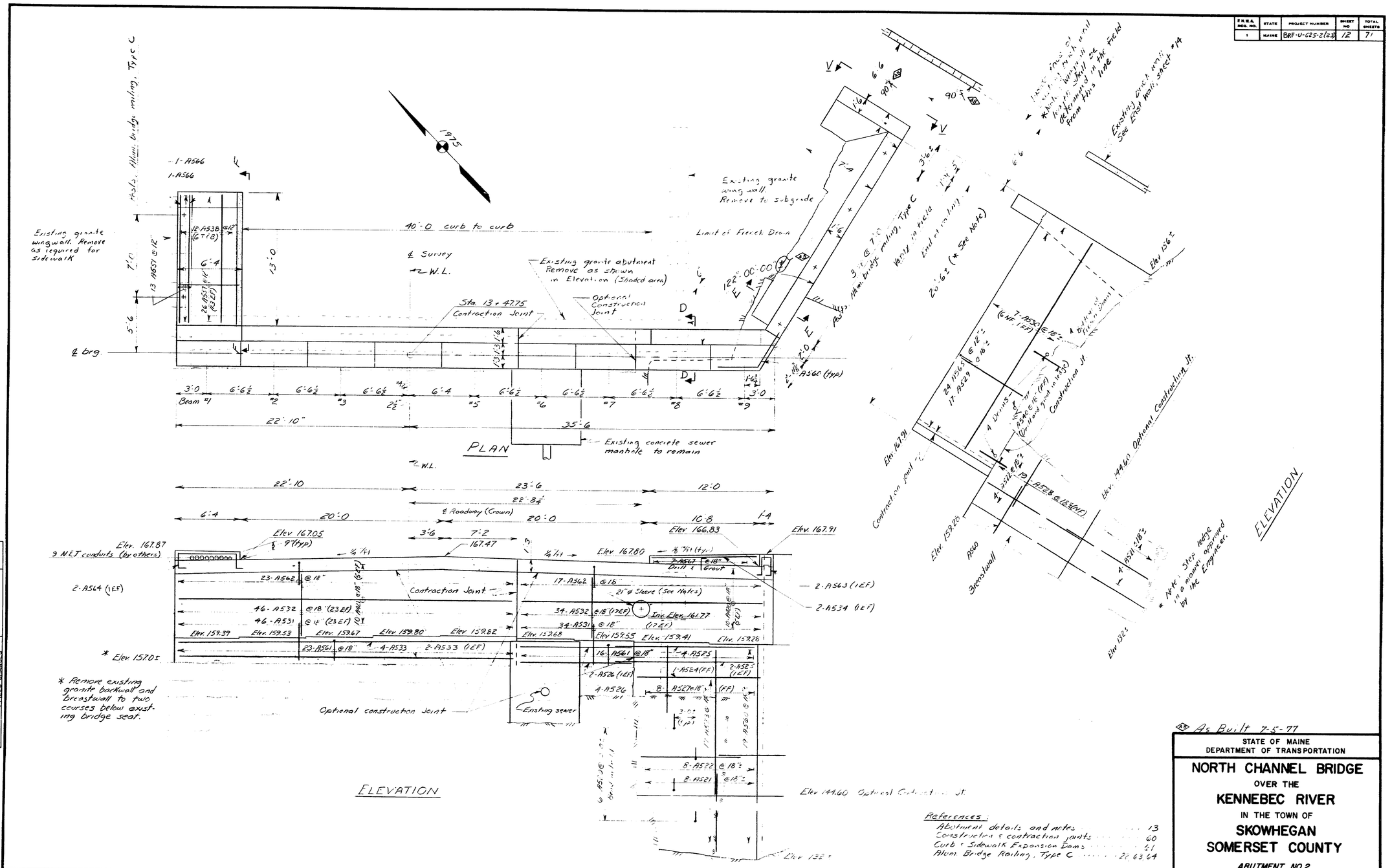
ABUTMENT NO. 1

SHEET OF AUGUSTA, MAINE

167-132

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	JET	11/75
CHECKED	MYF	11/76
REVISIONS		
FIELD CHANGES		

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	12	71



References:

Abutment details and notes	13
Construction & contraction joints	60
Curb & Sidewalk Expansion Dams	41
Alum. Bridge Railing, Type C	20 63 64

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	JET	11/75
CHECKED	JET	11/75
REVISIONS	AWF	
FIELD CHANGES		

As Built 7-5-77

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

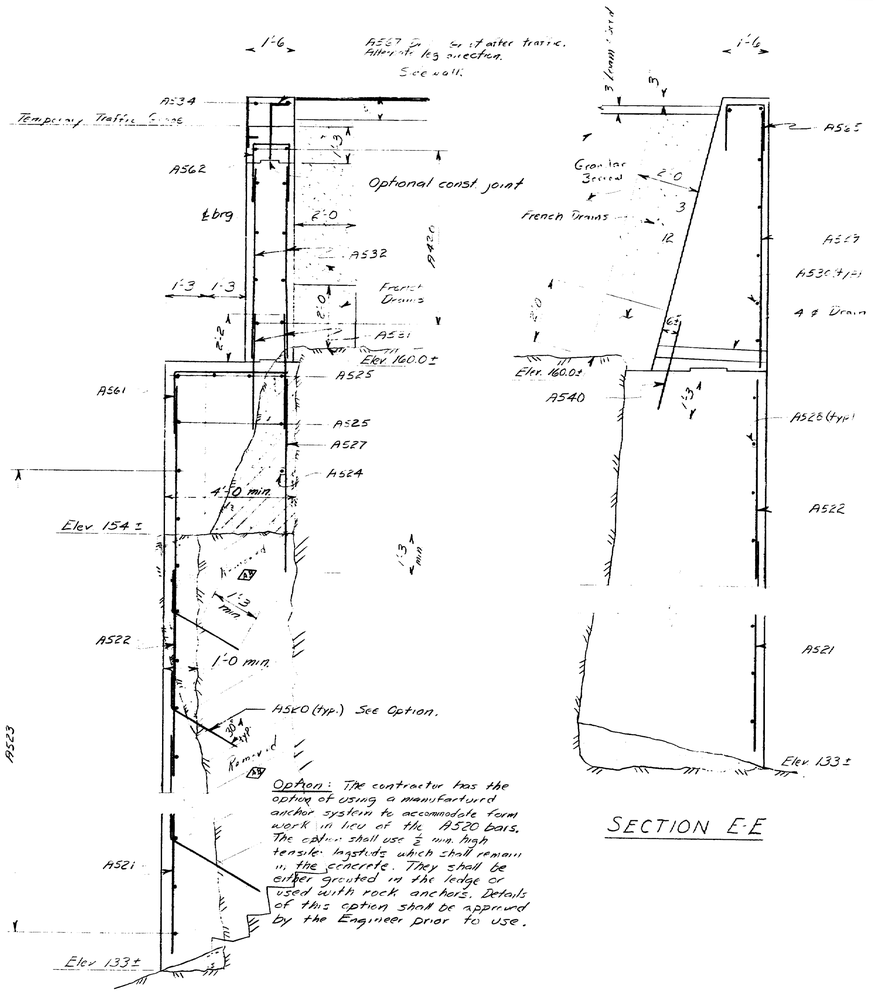
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ABUTMENT NO.2

SHEET OF AUGUSTA, MAINE

167-133

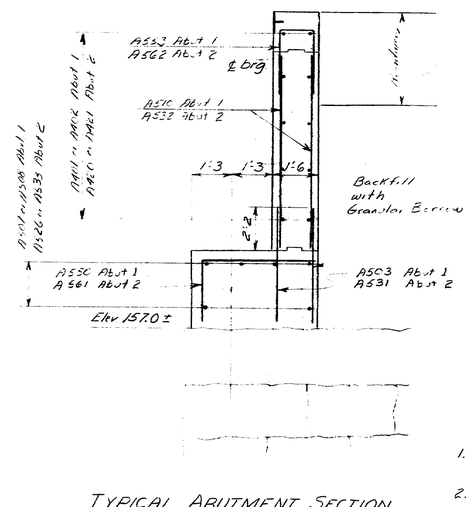
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-525-2(23)	13	71



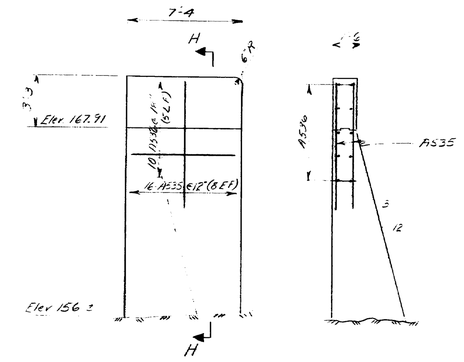
Option: The contractor has the option of using a manufactured anchor system to accommodate form work in lieu of the A520 bars. The option shall use ⅝ in. high tensile lagstuds which shall remain in the concrete. They shall be either grouted in the ledge or used with rock anchors. Details of this option shall be approved by the Engineer prior to use.

SECTION D-D

SECTION E-E



TYPICAL ABUTMENT SECTION
@ EXISTING ABUTMENTS



VIEW V-V

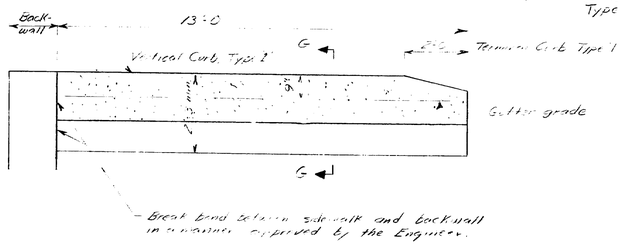
SECTION H-H

ABUTMENT NOTES

1. Chamfer all exposed edges of concrete ½ inch unless otherwise noted.
2. Reinforcing steel shall have 2 inches cover unless otherwise indicated.
3. Place reinforcing steel in bridge seats to clear anchor bolts.
4. Break bond at vertical contraction joints by a method approved by the Engineer. Place polyvinylchloride waterstops in all vertical contraction joints. Waterstops are not required in horizontal construction joints.
5. Exact location of 4" ⌀ drains in Abutment 2 to be determined by the Engineer in the field.
6. Top of backwalls shall have a Wearing Surface finish.
7. Protective Coating for Concrete Surfaces shall be applied to the finished backwalls & sidewalks and as otherwise shown.
8. Reinforcing steel splices shall be a minimum of 20 inches for #5 bars unless otherwise shown.
9. Exact locations of 4" ⌀ drains will be determined by the Engineer in the field.
10. Welding of reinforcing steel will be allowed in the top 2 feet of the abutment backwall.
11. Beams shall be erected prior to backfilling of abutments above Elev 162.

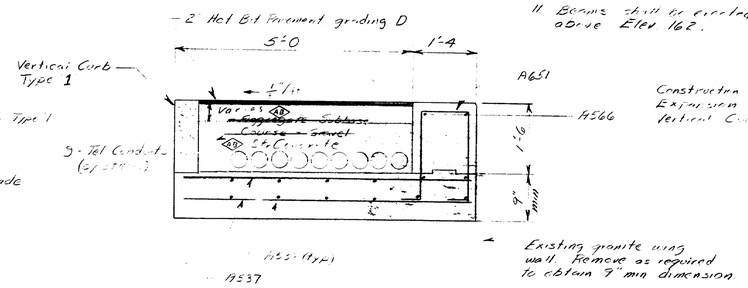
ABUTMENT NOTES (CONT.)

12. The 21" ⌀ sleeve in abutment backwalls will be supplied by Skowhegan Water Company and shall be installed by the Contractor. Installation will be considered incidental to Item 502.21.
13. Grout for reinforcing steel and anchor bolts shall contain an approved non-shrink additive.
14. Polyethylene sheets or an approved impervious coating shall be placed on and around the abutment bearing areas prior to setting the bearing pedestals and shall extend underneath the masonry plates. The abutment breastwalls shall be protected from rust staining by leaving forms in place temporarily or by covering with same materials after removal of forms. The protection materials shall remain in place at least until the completion of the placement of the Structural Concrete Slab. Removal of the stains will not be required unless, in the opinion of the Engineer, the Contractor has not made satisfactory effort to prevent staining.



- Break bond between sidewalk and backwall in a manner approved by the Engineer.

VIEW F-F



Existing granite wing wall. Remove as required to obtain 7' min dimension.

SECTION G-G

REFERENCES

Construction & Contraction Joints 60
Expansion Joints 61
Vertical Curb 68

As Built 7-5-77 DAG

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN-DETAILED	JET	JET	11/75
CHECKED	RJC	11/75
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

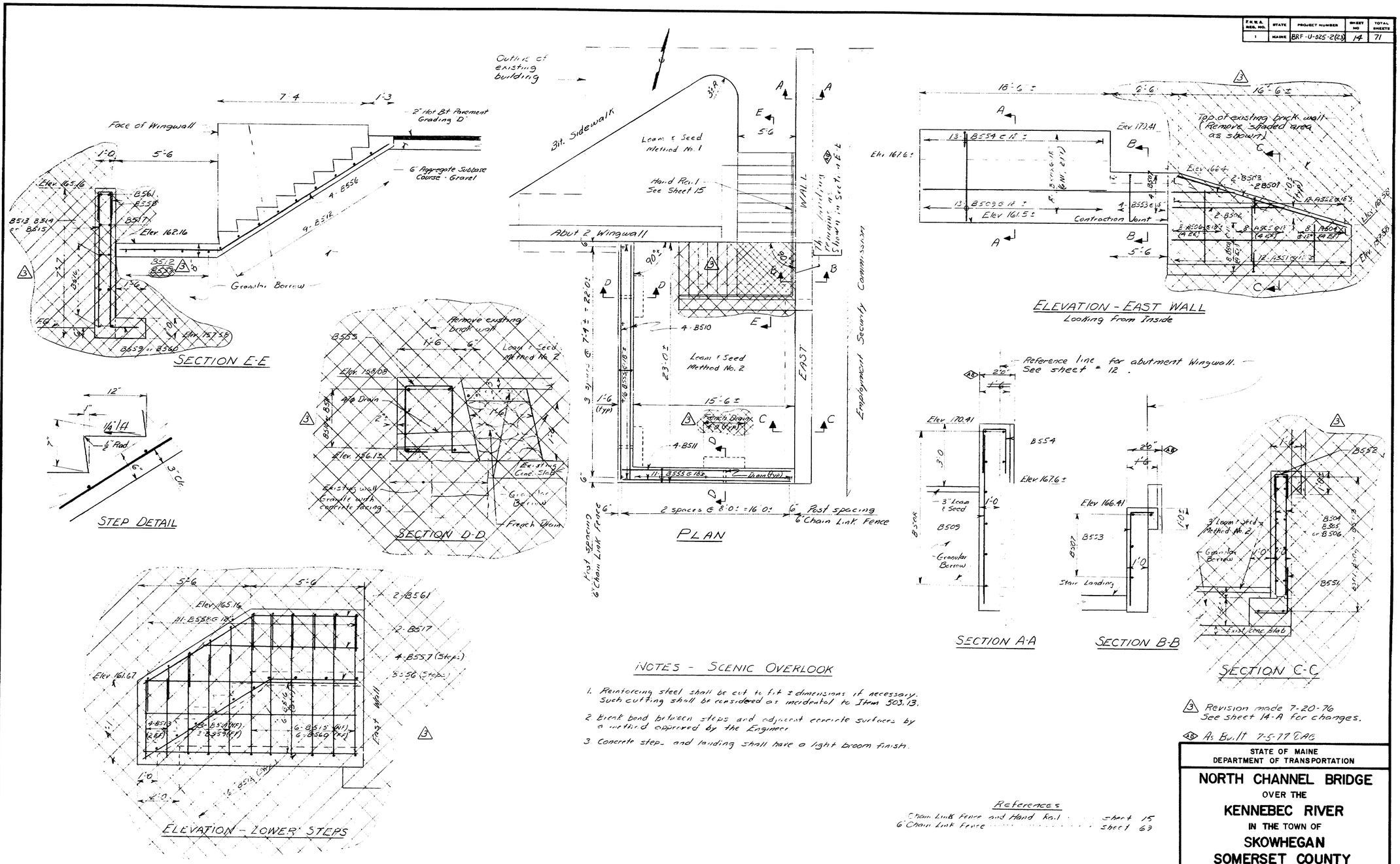
ABUTMENT DETAILS

SHEET OF AUGUSTA, MAINE

167-134

JANUARY 1968

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	14	71



NOTES - SCENIC OVERLOOK

1. Reinforcing steel shall be cut to fit ± dimensions if necessary. Such cutting shall be considered as incidental to Item 503.13.
2. Break bond between steps and adjacent concrete surfaces by a method approved by the Engineer.
3. Concrete steps and landing shall have a light broom finish.

References

Chain Link Fence and Hand Rail ..... Sheet 15
6' Chain Link Fence ..... Sheet 63

3 Revision made 7-20-76 See sheet 14-A for changes.

4 As Built 7-5-77 DAG

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN-DETAILED	JET	JET	11/75
CHECKED	RIVE	11/75
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

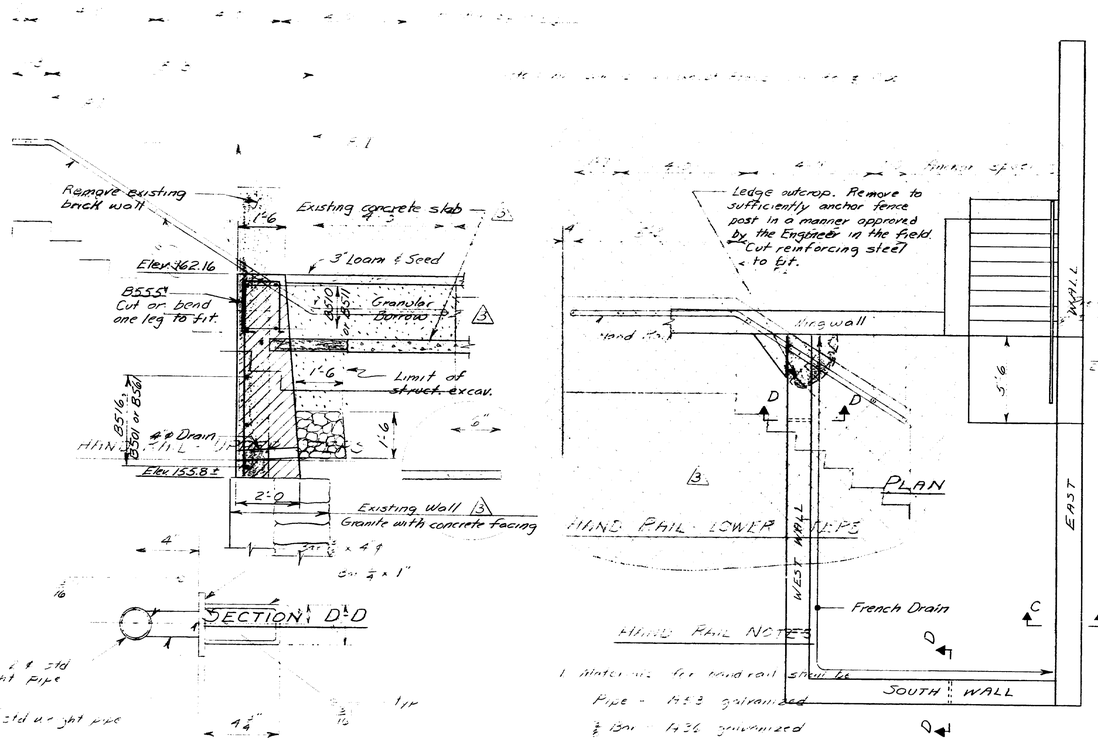
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SCENIC OVERLOOK

SHEET OF AUGUSTA, MAINE

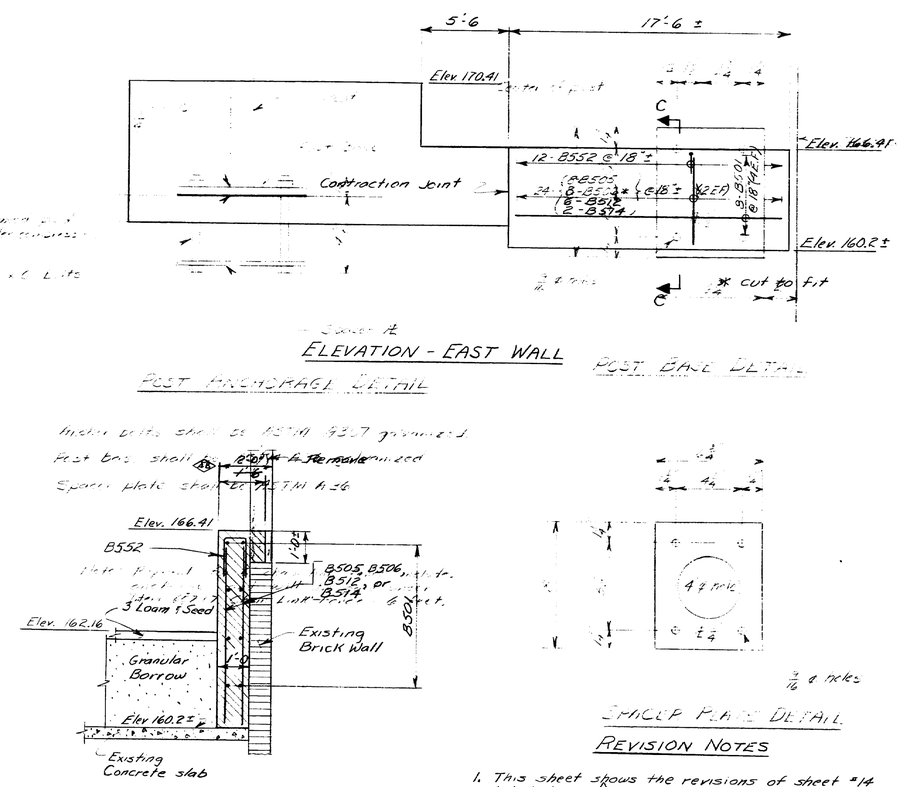
167-135

FED. RD. DIST. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-005-2(25)	14A	—



HAND RAIL NOTES

1. Material for hand rail shall be
Pipe - A53 galvanized
⅜ Bar - A36 galvanized
¼ Bar - A36
2. Anchors shall be cast in concrete



REVISION NOTES

1. This sheet shows the revisions of sheet #14 labeled as △3. See sheet #14 for details

△3 Revision made 1-17-76

REVISIONS	BY	DATE
DESIGN DETAILED	JET	7-75
DESIGN CHECKED	JET	7-75
REVISIONS	RJL	7-75
FIELD CHANGES		

PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

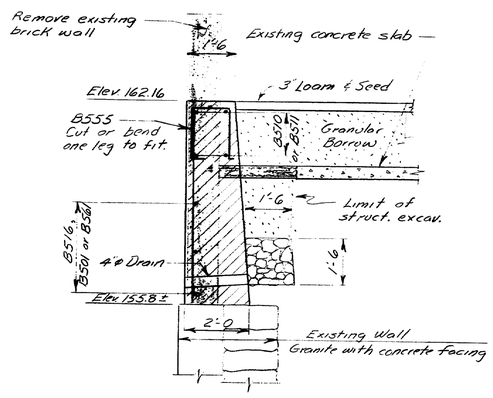
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

RECEIVED OSBORN & VIERLOADS

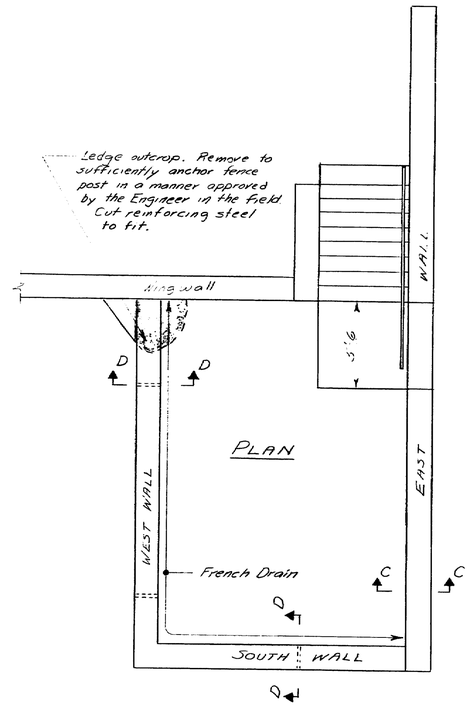
SHEET OF AUGUSTA, MAINE

137-130

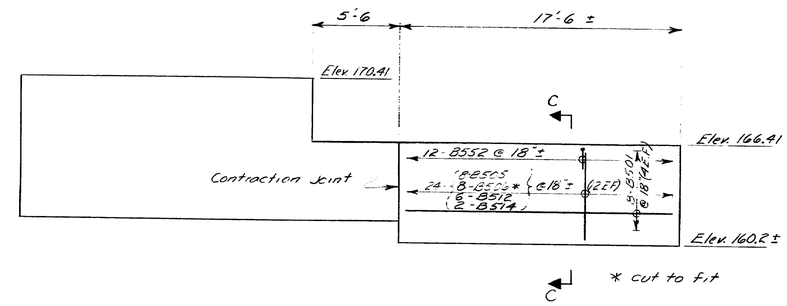
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025 283	14-A	



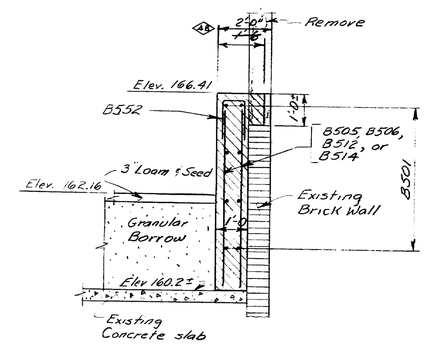
SECTION D-D



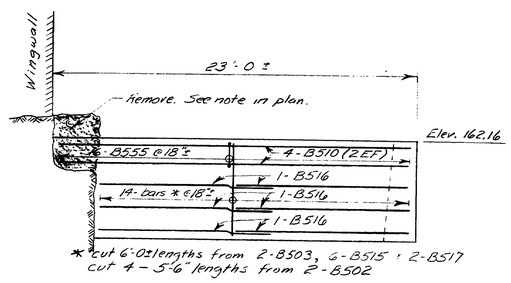
PLAN



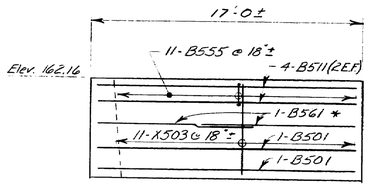
ELEVATION - EAST WALL



SECTION C-C



ELEVATION - WEST WALL



* straighten in field

ELEVATION - SOUTH WALL

REVISION NOTES

1. This sheet shows the revisions of sheet #14 labeled as 3. See sheet #14 for details not revised.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JET	7/78
CHECKED	JET	7/78
REVISIONS	RJL	
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

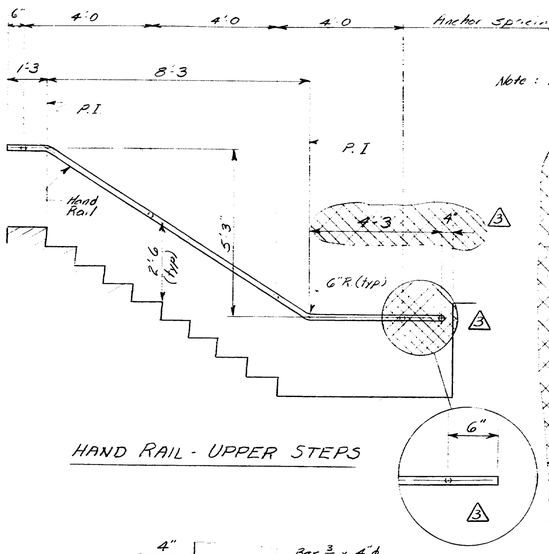
REVISED SCENIC OVERLOOK

SHEET OF AUGUSTA, MAINE

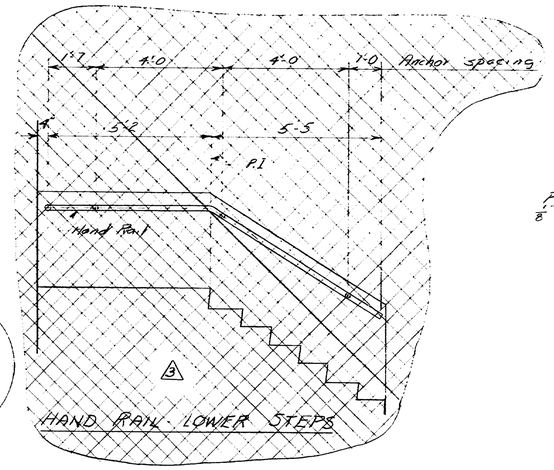
167-136

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	15	71

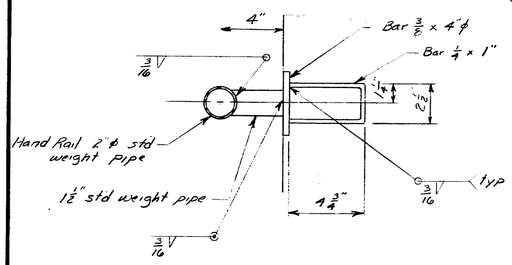
Note: All dimensions (except Radius) are to ℄ Pipe.



HAND RAIL - UPPER STEPS



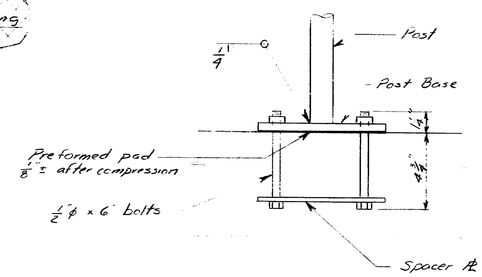
HAND RAIL - LOWER STEPS



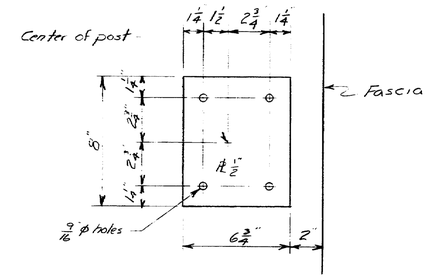
HAND RAIL SECTION @ ANCHOR

HAND RAIL NOTES

1. Materials for hand rail shall be:
   - Pipe - A53 galvanized
   - 3/8 Bar - A36 galvanized
   - 1/4 Bar - A36
2. Anchors shall be cast in concrete
3. Hand rail shall be continuous. Not more than one splice shall be used.
4. Ends of railings shall be plugged. Provide 1/4" ϕ holes in bottom of railing at intervals of four feet ± at at 1 inch from lower end of railing.
5. Payment for hand railing includes anchors and will be paid for under Item 507.09, Steel Pipe Hand Railing.
6. All welds shall be ground smooth and galvanized.



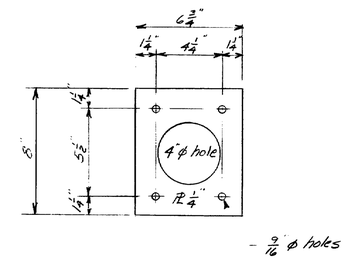
POST ANCHORAGE DETAIL



POST BASE DETAIL

Anchor bolts shall be ASTM A307 galvanized.
Post base shall be ASTM A36 galvanized.
Spacer plate shall be ASTM A36

Note: Payment for 6' chain link fence includes anchorage and will be paid under Item 607.17 Chain Link Fence - 6 feet.



SPACER PLATE DETAIL

ANCHORAGE FOR 6' CHAIN LINK FENCE

3 Revision made 7-20-76

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	JET	11/75
CHECKED	JET	11/75
REVISIONS	MVF	
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

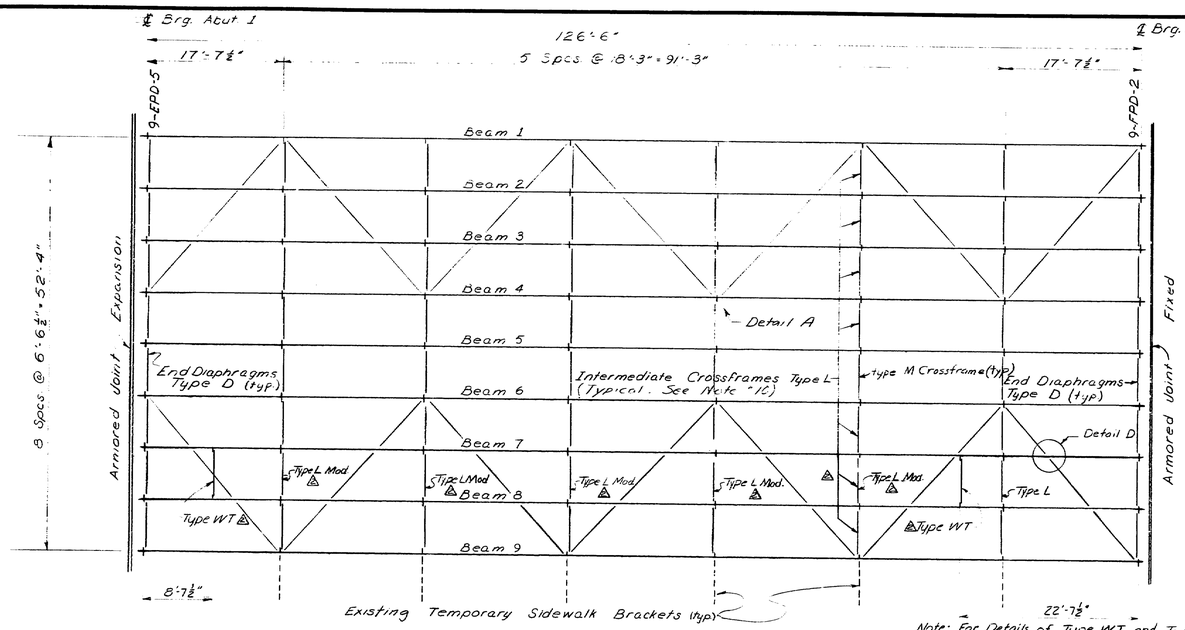
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SCENIC OVERLOOK DETAILS

SHEET OF AUGUSTA, MAINE

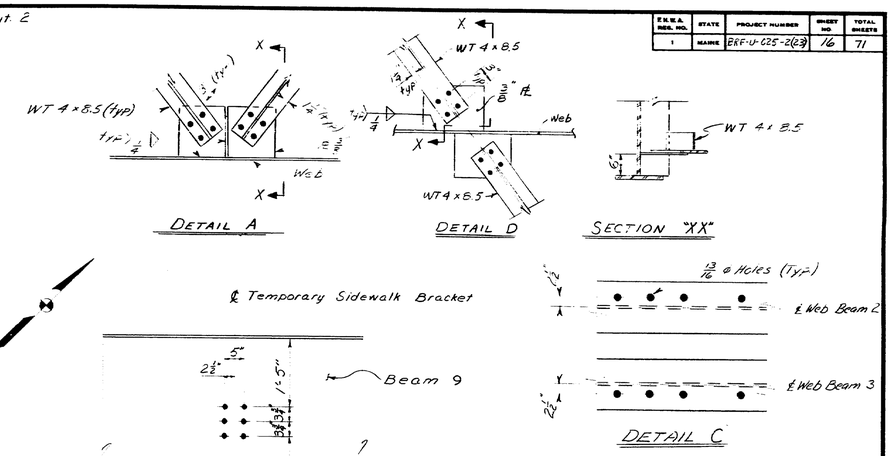
167-137

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	16	71



FRAMING PLAN

Note: For Details of Type WT and Type L Mod. see Sheet #3

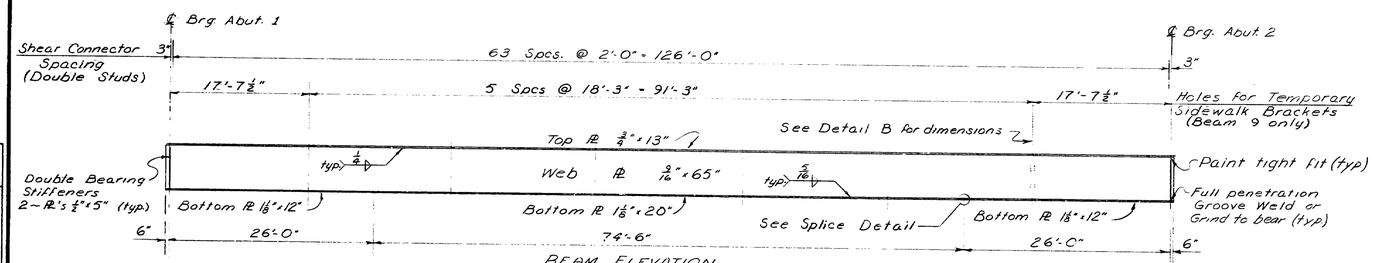


DETAIL B

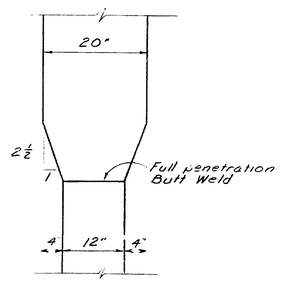
Plug holes with corrosion resistant carriage bolts after use.

FABRICATION NOTES

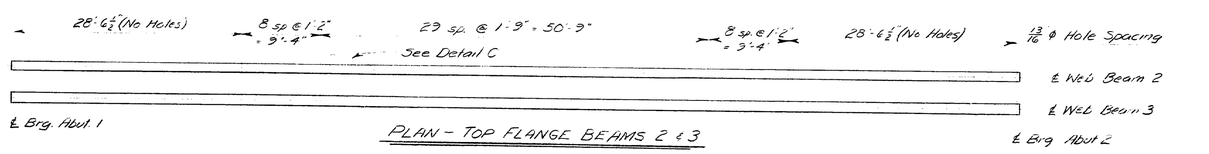
1. All structural steel shall be ASTM A588 unless otherwise noted.
2. All dimensions are horizontal or vertical.
3. All bolts shall be ⅞" ø A325 Type 3, unless otherwise noted. Holes for bolts shall be 15/16" dia. unless otherwise noted.
4. Camber ordinates, as shown on this sheet, are computed to compensate for all dead load deflections.
5. No transverse butt weld splices in the flange plates or web plates within 10 feet from the ℄ of span will be allowed.
6. Sections of flange plates or web plates between transverse butt weld splices shall be not less than 20 feet in length.
7. Butt weld splices in flanges shall be not closer than one foot from transverse welds in the web plates.
8. Bearing stiffeners shall be plumb after erection and dead loading of the structure.
9. Crossframe or diaphragm connection plates may be either plumb or normal to the top flange.
10. See sheet #4 for crossframe connection plates for beams 2 & 3.
11. Structural steel will be supplied and delivered by the Department and shall be erected under this contract. Shop details of the structural steel will be supplied to the Contractor.



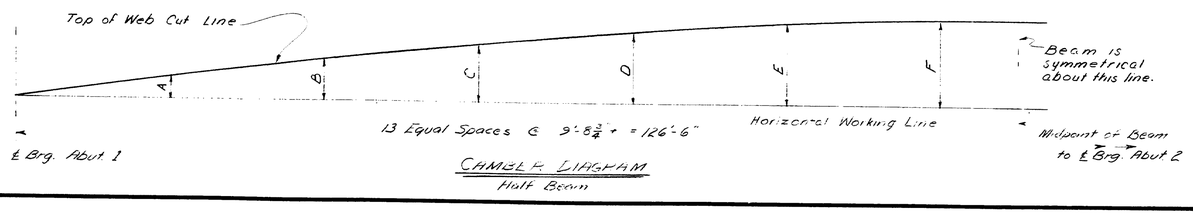
BEAM ELEVATION



SPLICE DETAIL



PLAN - TOP FLANGE BEAMS 2 & 3



CAMBER DIAGRAM

Half Beam

CAMBER (inches)						
Beam	A	B	C	D	E	F
1, 2, 3, 4, 6 & 7	1 3/8	2 9/16	3 11/16	4 1/2	5 1/16	5 3/8
5	1 3/16	2 5/16	3 1/4	4	4 1/2	4 13/16
8 & 9	1 7/16	2 1/4	3 15/16	4 13/16	5 7/16	5 3/4

Revision Made 10-28-75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

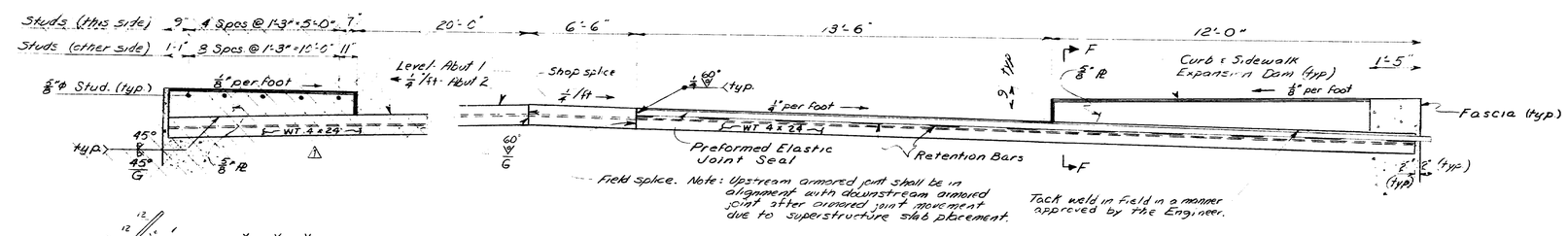
STRUCTURAL STEEL

SHEET OF AUGUSTA, MAINE

167-138.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JET	3/75
CHECKED	DMW	5/75
REVISIONS	EBC	
FIELD CHANGES		

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-225-2,23)	17	71



Armored Joint Elevation

The Expansion Dam is not to be welded to the 5/8" armored joint plates

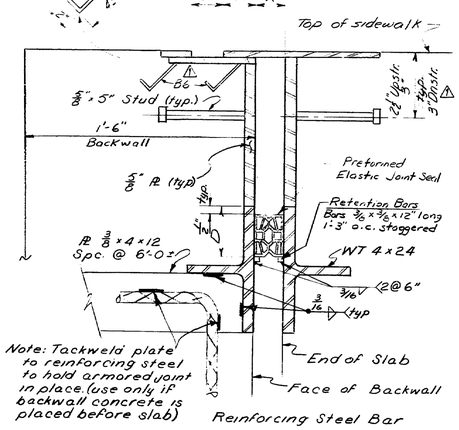
Ref: For armored joint details not shown see Standard Details sheet BD 104-73. For curb and sidewalk expansion dam details not shown, see Standard Details sheet BD 105-74

Armored Joint Seal Notes

1. The seals furnished shall be as follows:

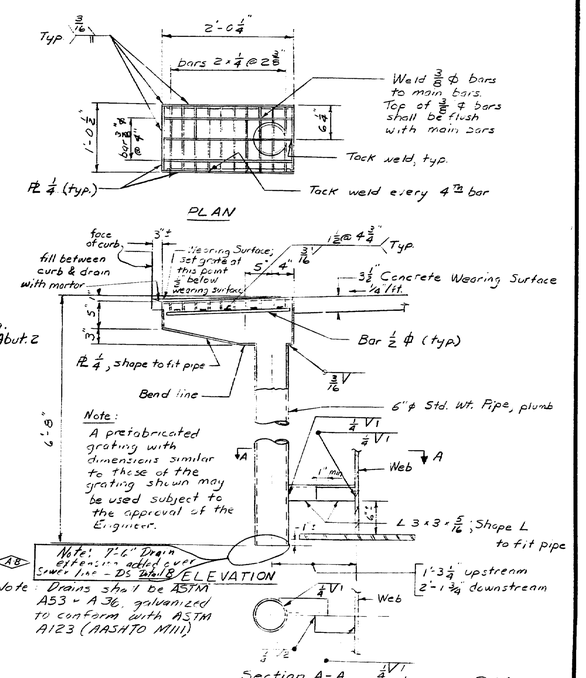
Location	Movement Rating
Abut. 1	1.5"
Abut. 2	0.875"

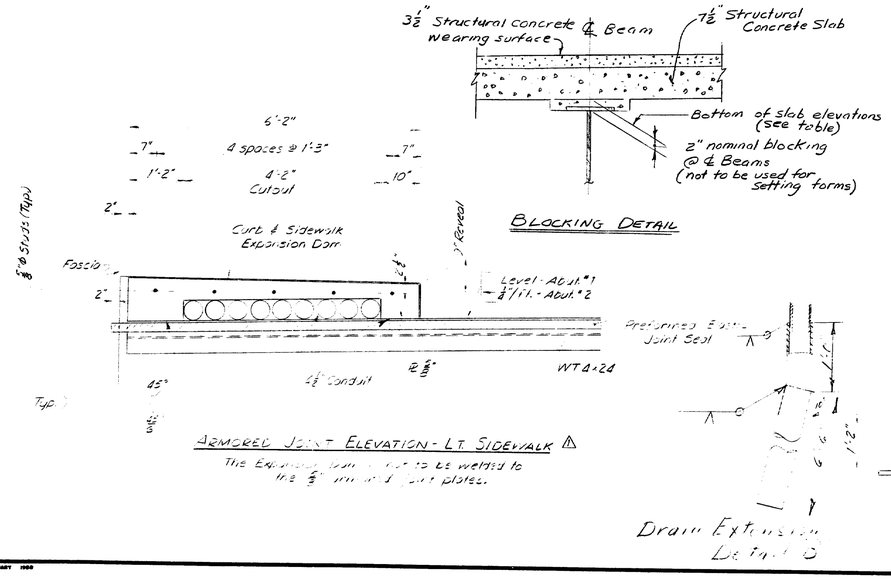
2. The seal characteristics shall be submitted to the engineer for approval prior to the fabrication of the armored joint and the dimensions "X & D" will be established by the Engineer at the time based on the characteristics of the approved seal.
3. The maximum joint opening shall be 3" at -30°F measured parallel to ℄ Construction.
4. The seal will be supplied by the Department. The Contractor shall splice the seal in a manner approved by the Engineer. The seal shall be protected from damage due to field welding.



Section "FF"

BLOCKING ELEVATIONS														
POINT / BEAM	℄ Brg Abut. 1	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	℄ Brg. Abut. 2
Beam 1	166.56	166.61	166.66	166.69	166.72	166.72	166.69	166.65	166.58	166.50	166.40	166.28	166.16	166.07
Beam 2	166.56	166.63	166.68	166.73	166.76	166.77	166.76	166.72	166.67	166.60	166.51	166.40	166.29	166.21
Beam 3	166.56	166.64	166.70	166.76	166.80	166.82	166.82	166.79	166.75	166.69	166.61	166.51	166.41	166.34
Beam 4	166.56	166.65	166.72	166.79	166.84	166.87	166.88	166.87	166.84	166.79	166.71	166.64	166.55	166.48
Beam 5	166.50	166.58	166.65	166.71	166.76	166.80	166.81	166.81	166.79	166.75	166.69	166.63	166.55	166.50
Beam 6	166.36	166.46	166.54	166.61	166.67	166.71	166.72	166.72	166.70	166.65	166.59	166.51	166.42	166.36
Beam 7	166.23	166.32	166.40	166.48	166.53	166.57	166.59	166.58	166.56	166.51	166.45	166.38	166.29	166.23
Beam 8	166.09	166.19	166.27	166.35	166.40	166.44	166.46	166.46	166.43	166.39	166.32	166.24	166.15	166.09
Beam 9	165.95	166.05	166.14	166.21	166.27	166.31	166.32	166.32	166.29	166.25	166.19	166.11	166.02	165.95

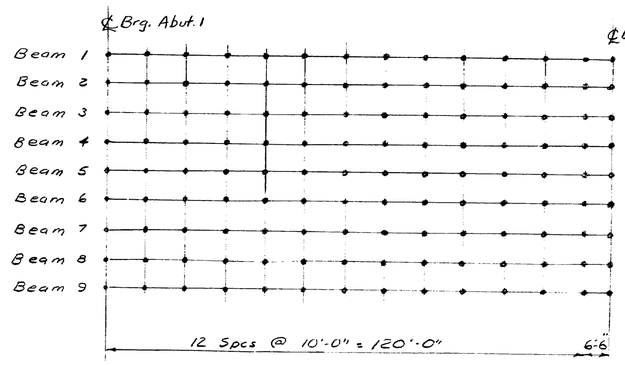




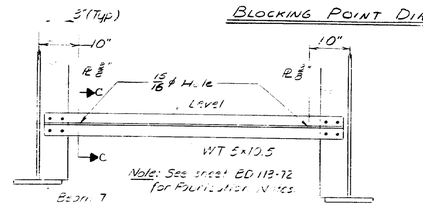
Blocking Detail

Armored Joint Elevation - Lt. Sidewalk

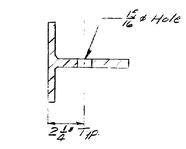
The Expansion Dam is not to be welded to the 5/8" armored joint plates.



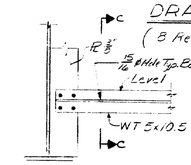
Blocking Point Diagram



(2 Required)
Type WT
See Sheet #2 for Location.



Section C-C



Type L Mod.
See Type L Standard Detail BD 113-72 For Details Not Shown

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JCT	3/75
CHECKED	DMD	3/75
REVISIONS	EBC	5/75
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

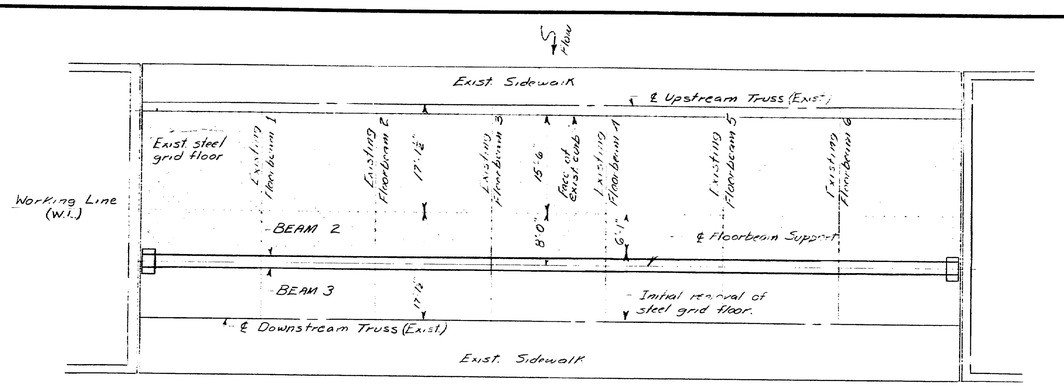
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ARMORED JOINT DETAILS

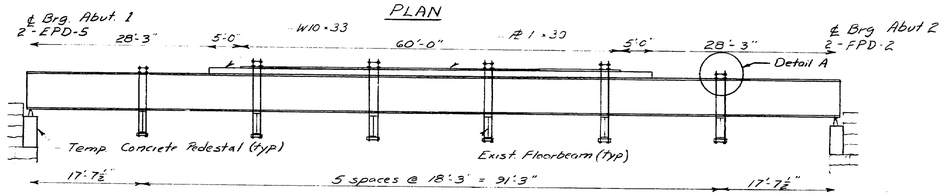
SHEET OF AUGUSTA, MAINE

167-139

F.H.W.A. REGN. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(63)	18	71

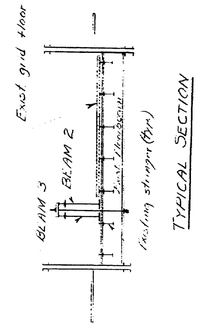


PLAN

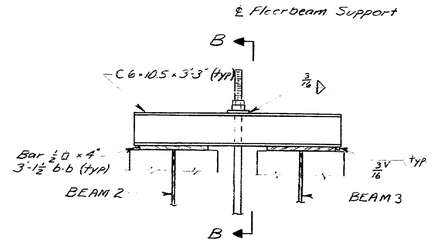


ELEVATION

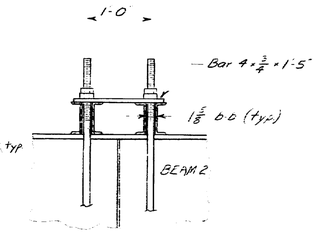
TEMPORARY FLOORBEAM SUPPORT



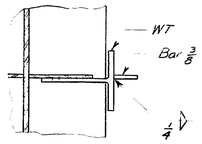
TYPICAL SECTION



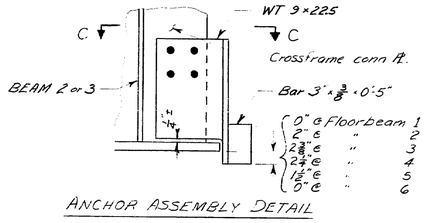
DETAIL A



SECTION BB



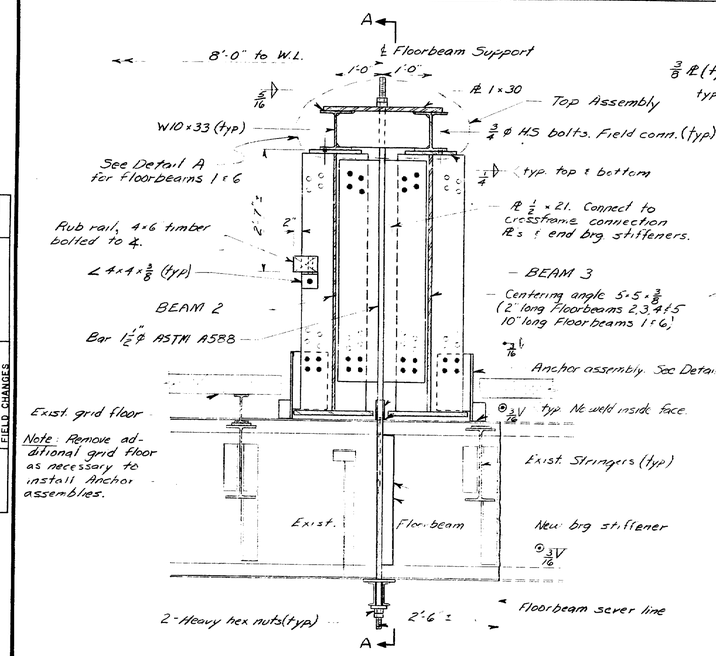
SECTION CC



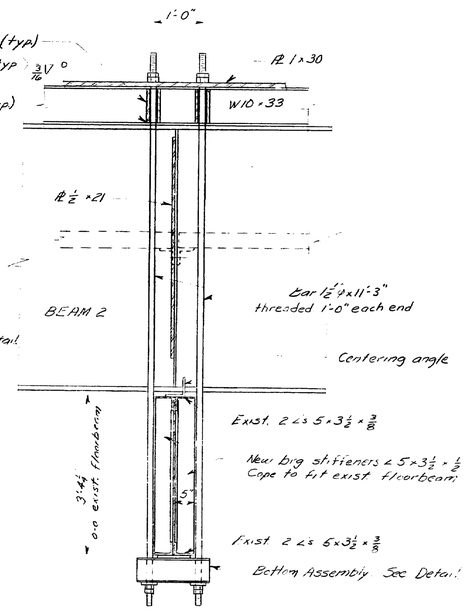
ANCHOR ASSEMBLY DETAIL

NOTES : TEMPORARY FLOORBEAM SUPPORT

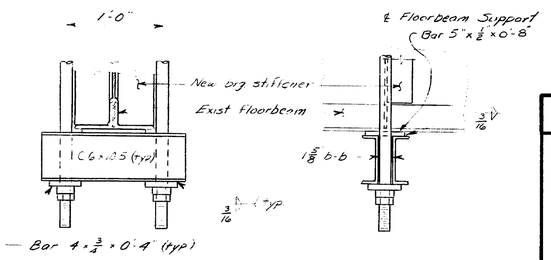
1. BEAM 2, BEAM 3, and associated bearing pedestals shall be re-used in the final construction (See Framing Plan sheet 2) The anchor bolts shall not be re-used.
2. All structural steel for temporary floorbeam support shall be ASTM A36 except BEAMS 2 & 3, and as otherwise noted
3. Bolts shall be ⅞" ø HS ASTM A325 unless otherwise noted. Bolts used in temporary connections shall not be re-used.
4. Field welding will not be allowed to Beams 2 & 3 except tack welding of the sole plates to the Beams is required. Tack welds shall be removed with care and ground flush before re-use in the final construction.
5. The temporary support system shall be erected in the sequence as follows:
   a) Weld centering angles and new bearing stiffeners to existing floorbeams
   b) Erect beams 2 and 3, connection plates and timber rail.
   c) Erect top assembly to temporary beams.
   d) Erect hanger rods and bottom assemblies, tightening to firm contact only with the floorbeams.
   e) The hanger rods shall be further tightened sequentially as follows:
      1). 3 turns of the nuts at floorbeams 3 and 4.
      2) 2½ turns of the nuts at floorbeams 2 and 5.
      3) 1½ turns of the nuts at floorbeams 1 and 6.
   f) Erect anchor assemblies
   g) Sever floorbeams 1 and 6. Tighten hanger rods coincidentally at floorbeams 1 and 6 to bring floorbeams 1 and 6 to firm contact only with anchor assemblies. Weld anchor assemblies to floorbeams.
   h) Repeat g) for floorbeams 2 and 5.
   i) Repeat g) for floorbeams 3 and 4.
6. Structural steel and related materials in the temporary support system that will not be re-used in final construction shall become the property of the Contractor.



FLOORBEAM SUPPORT DETAIL



SECTION AA



BOTTOM ASSEMBLY DETAIL

PLANS	BY	DATE
DESIGN - DETAILED	JEP	4/75
CHECKED	JCT	4/75
REVISIONS	EBC	5/75
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

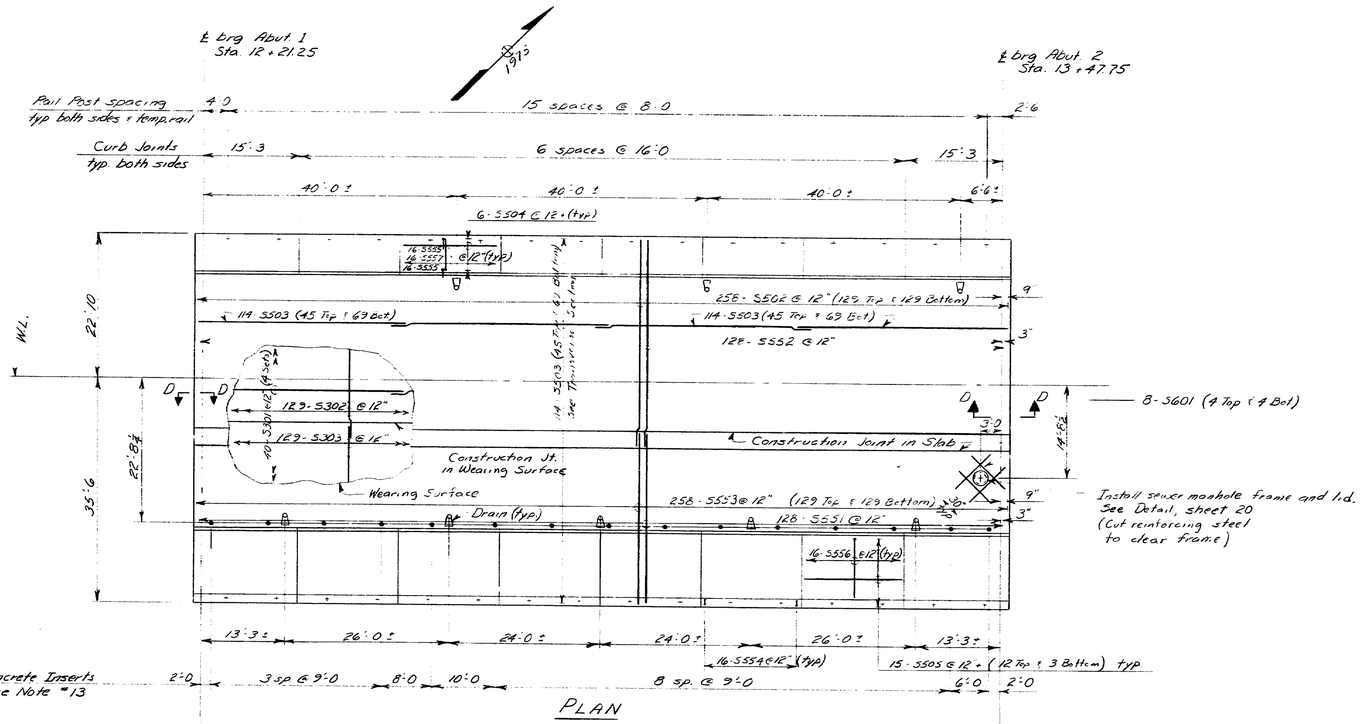
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

TEMPORARY SUPPORT SYSTEM

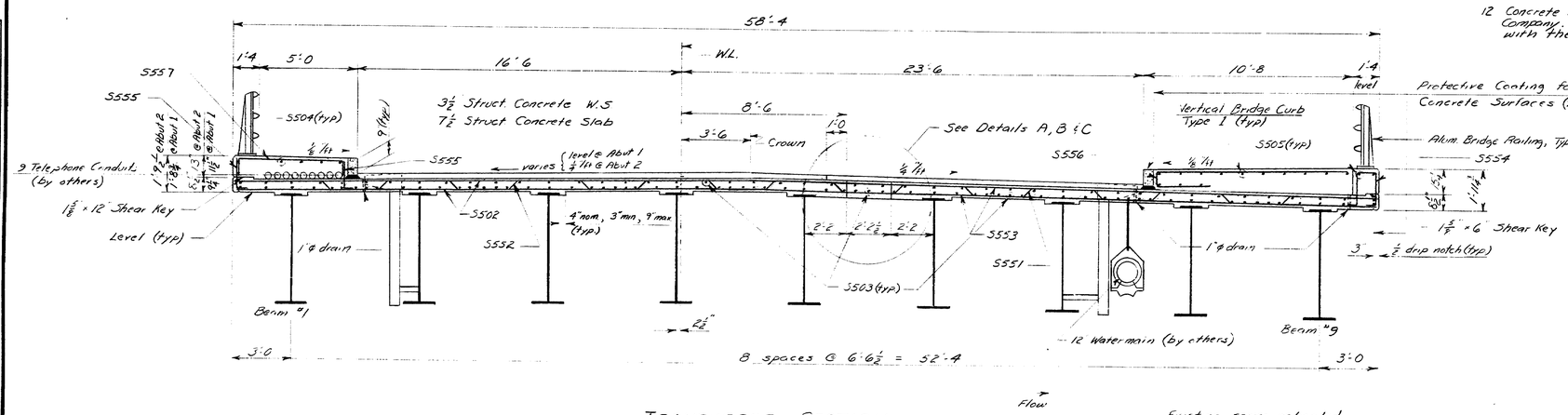
SHEET OF AUGUSTA, MAINE

167-140

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	19	71



PLAN



TRANSVERSE SECTION

Existing sewer relocated See sheet 25.

SUPERSTRUCTURE NOTES

1. Chamfer all exposed edges of concrete ½ inch unless otherwise noted.
2. Form a 1 inch V-groove on the outside faces of each contraction joint in the curbs and at the joint between the curb and slab.
3. Break the bond in contraction joints in the concrete curbs by a method approved by the Engineer. Do not break the bond in the longitudinal construction joints in the slab and wearing surface.
4. Provide joints in the Vertical Bridge Curb, Type 1, at each contraction joint in the concrete curb.
5. Reinforcing steel shall have a minimum cover of 2 inches unless otherwise specified.
6. Place 1 inch diameter plastic tube drains at 10 foot intervals along the curbs as described in 502.17 of the Standard Specifications.
7. The slab and wearing surface shall be placed continuously between longitudinal joints.
8. Mortar for bedding and for joints in the granite curbs shall contain an approved non-shrink additive.
9. Apply Protective Coating for Concrete Surfaces to the wearing surface, sidewalks, and the fascias to the drip notch.
10. The slab shall have a light broom finish.
11. During traffic maintenance on superstructure slab prior to Wearing Surface placement, a ramp of bituminous material shall be provided from the slab to finished grades of armored joints, deck drains and sewer manhole. Ramp shall be a minimum of 24 inches long. Construction, maintenance, and removal of the ramps shall be considered incidental to Item 510.1201.
12. Concrete inserts will be supplied by the Skowhegan Water Company. The Contractor shall install the inserts flush with the bottom of slab.
13. The Contractor will be allowed to drill holes in the webs of the exterior beams for the purpose of attaching form support brackets. Location of the holes shall be approved by the Engineer. After use, all holes shall be filled with corrosion resistant carriage bolts.

References
Superstructure details 20
Alum. Bridge Railing Type C ... 22, 63, 64
Vertical Bridge Curb, Type 1 .. 60

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	JET	11/75
	CHECKED	JET	11/75
	REVISIONS		
	FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

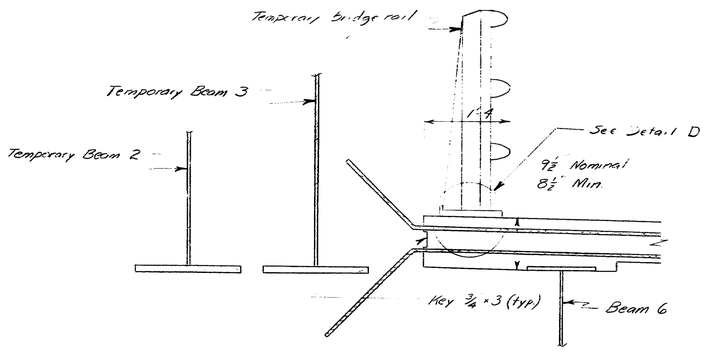
NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SUPERSTRUCTURE

SHEET OF AUGUSTA, MAINE

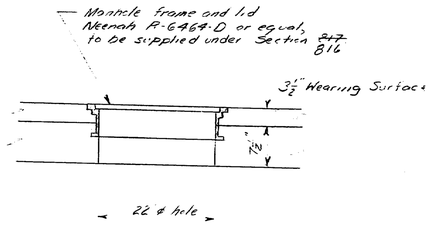
167-141

F.A.H.S. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	20	71

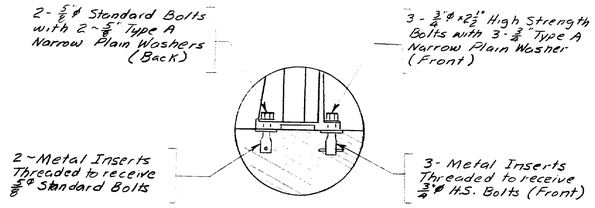


DETAIL A

(Showing bars S553 during Phase 1.



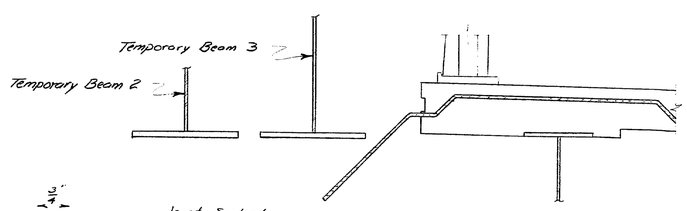
SEWER MANHOLE DETAIL



DETAIL D

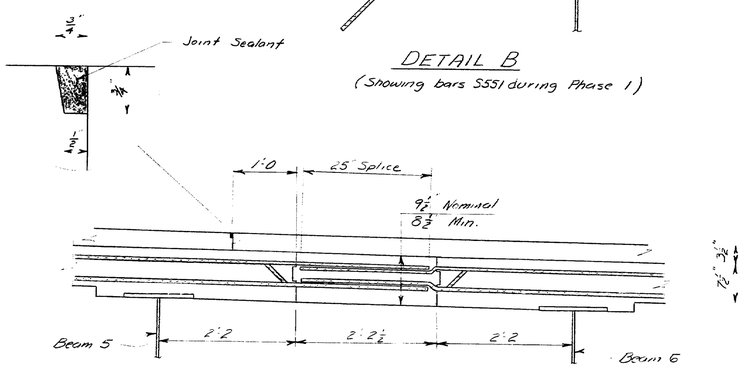
NOTES - TEMPORARY BRIDGE RAIL

1. The new upstream bridge railing shall be installed as temporary bridge rail on the superstructure slab.
2. The metal inserts for ¾ ϕ bolts, shown in Detail D shall have a minimum working load of 2500 pounds and a minimum ultimate strength of 9000 pounds. Other configurations of metal inserts may be used if approved by the Engineer.
3. The contractor may substitute another system of Temporary Bridge Rail of similar strength as approved by the Engineer.
4. The temporary bridge railing shall be included for payment under Item 510.1201.



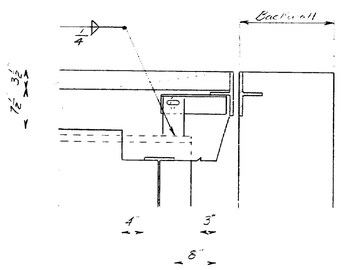
DETAIL B

(Showing bars S551 during Phase 1)



DETAIL C

Note: Bars S551 & S553 are to be bent in the field in a manner approved by the Engineer.



SECTION D-D

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	JET	11/73
CHECKED	JET	11/73
REVISIONS	MVF	
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SUPERSTRUCTURE DETAILS

SHEET OF AUGUSTA, MAINE

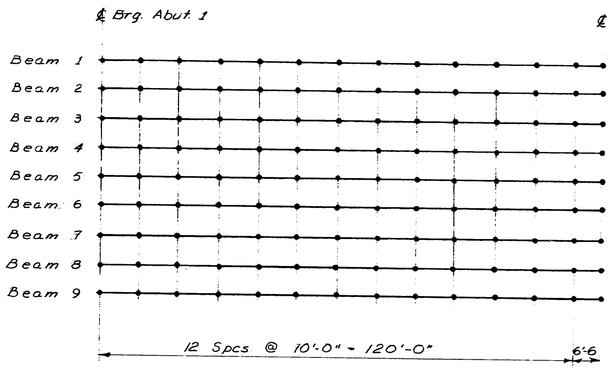
167-142

F.A.P.N.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	21	71

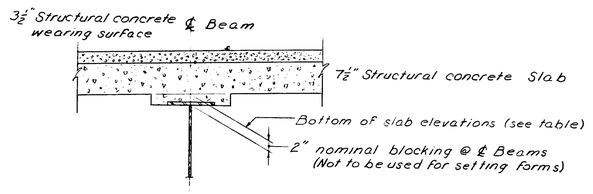
BLOCKING ELEVATIONS

POINT / BEAM	℄ Brg. Abut. 1	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	110'	120'	℄ Brg. Abut. 2
Beam 1	166.11	166.20	166.29	166.36	166.42	166.46	166.47	166.47	166.44	166.40	166.34	166.26	166.17	166.11
Beam 2	166.25	166.34	166.43	166.50	166.55	166.59	166.61	166.61	166.58	166.54	166.47	166.40	166.31	166.25
Beam 3	166.38	166.48	166.56	166.63	166.69	166.73	166.75	166.74	166.72	166.67	166.61	166.53	166.45	166.38
Beam 4	166.52	166.61	166.70	166.77	166.83	166.86	166.88	166.88	166.85	166.81	166.75	166.67	166.58	166.62
Beam 5	166.54	166.62	166.69	166.75	166.80	166.84	166.85	166.85	166.83	166.79	166.73	166.67	166.59	166.54
Beam 6	166.40	166.50	166.58	166.65	166.71	166.75	166.76	166.76	166.74	166.69	166.63	166.55	166.46	166.40
Beam 7	166.27	166.36	166.44	166.52	166.57	166.61	166.63	166.62	166.60	166.55	166.49	166.42	166.33	166.27
Beam 8	166.13	166.23	166.31	166.39	166.44	166.48	166.50	166.50	166.47	166.43	166.36	166.28	166.19	166.13
Beam 9	165.99	166.09	166.18	166.25	166.31	166.35	166.36	166.36	166.33	166.29	166.23	166.15	166.06	165.99

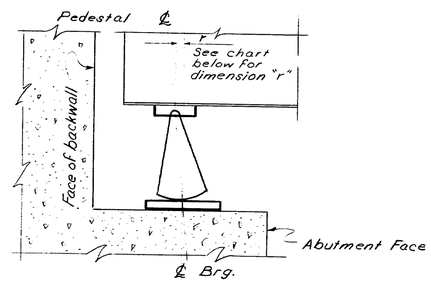
Void
A.H.K. 8 Aug. 1976



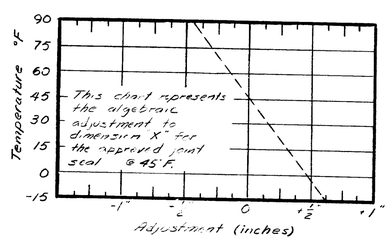
BLOCKING POINT DIAGRAM



BLOCKING DETAIL



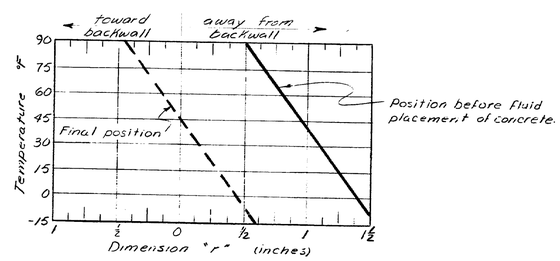
PEDESTAL SETTING DETAIL



ARMORED JOINT ADJUSTMENT - ABUT 1

Note: It is anticipated that the armored joint will open ⅜" due to superstructure dead loads at Abut 1 and open 15/16" due to superstructure dead loads at Abut 2.

Note: Movements due to superstructure dead loads are critical. The contractor is responsible for setting the bearing pedestals in the final position after superstructure dead loads.



EXPANSION PEDESTAL - SETTING CHART

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	LET	
	CHECKED	DMD	
	REVISIONS	EBC	
	FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

BOTTOM OF SLAB ELEVATIONS

SHEET OF AUGUSTA, MAINE APRIL 1975

167-143

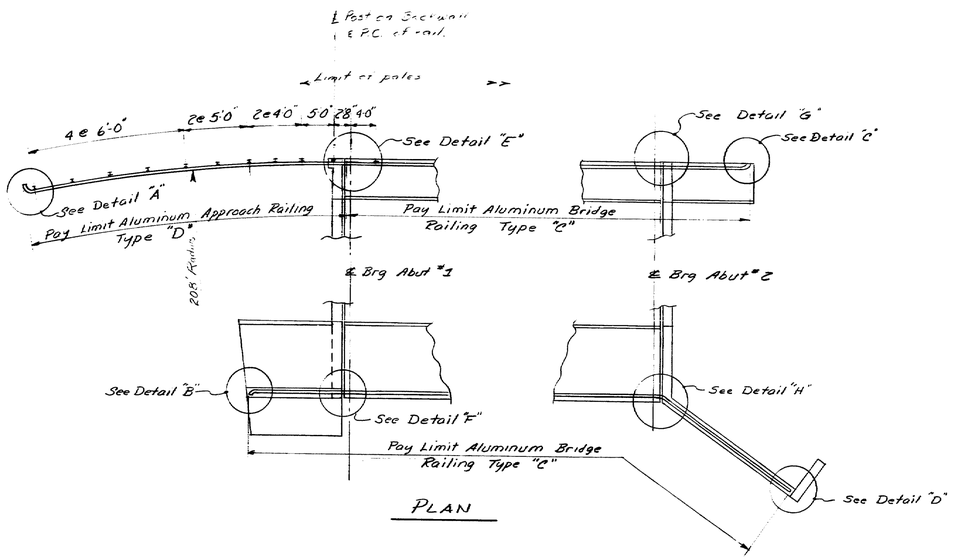
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	22	71

NOTE:

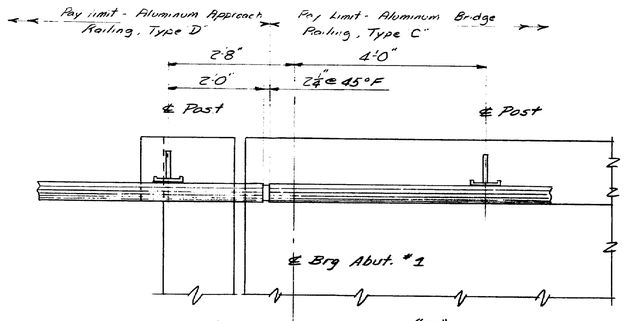
1 — Poles on Aluminum Approach Railing, Type "D" will be considered incidental to Pay Item 507.153

2 — All plus or minus (±) dimensions are to be verified in field

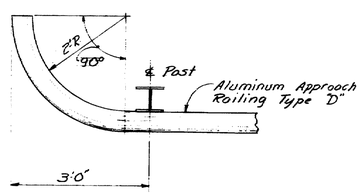
3 — Post on backwall in Detail "E" shall be same as post for Aluminum Bridge Railing, Type "C," but shall be included for payment in Aluminum Approach Railing, Type "D".



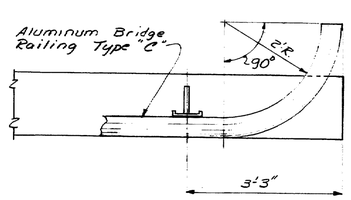
PLAN



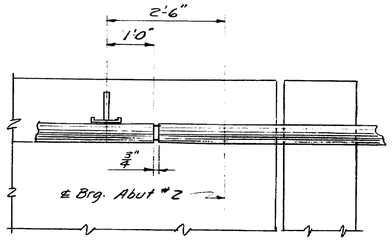
DETAIL "E"



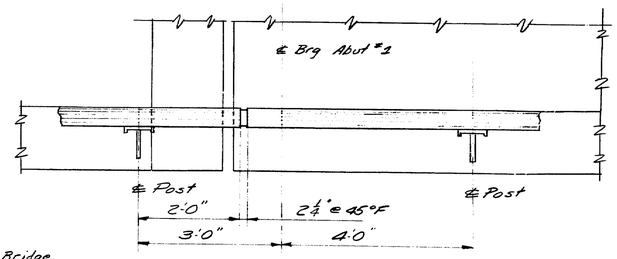
DETAIL "A"



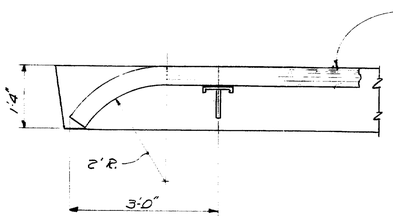
DETAIL "C"



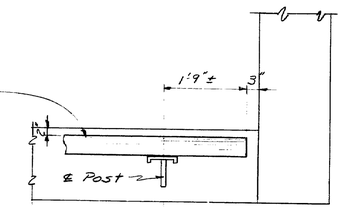
DETAIL "G"



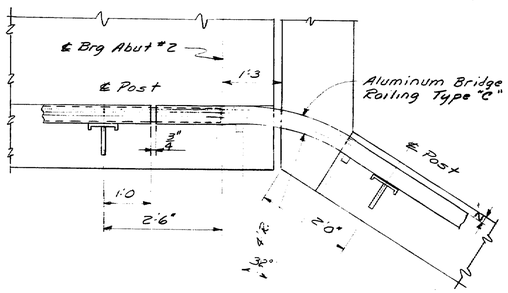
DETAIL "F"



DETAIL "B"



DETAIL "D"



DETAIL "H"

References:
Aluminum Bridge Railing, Type C 63
Pole Panels 64
Aluminum Approach Railing, Type D 65

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	JET	11-7-75
	CHECKED	RVN	11-7-75
	REVISIONS	MYF	11/75
	FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ALUMINUM RAILING

SHEET OF AUGUSTA, MAINE

167-144

FHWA REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	23	71

REINFORCING STEEL SCHEDULE

STRAIGHT BARS

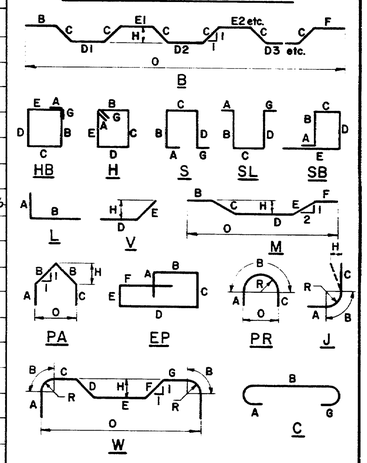
MARK	NO.	LENGTH	LOCATION
			Abutment No. 1
A401	10	24'-6"	Backwall
A402	10	33'-2"	Backwall
A403	7	15'-0"	Sidewalk
A404	11	9'-10"	Sidewalk
A502	7	12'-10"	Breastwall
A503	75	3'-8"	Bridge Seat
A504	10	8'-0"	Breastwall
A505	4	8'-0"	Backwall
A506	6	14'-5"	Bridge Seat
A507	6	11'-9"	Bridge Seat
A508	6	33'-2"	Bridge Seat
A510	80	7'-0"	Bridge Seat
			Abutment No. 2
A420	10	23'-6"	Backwall
A421	10	33'-2"	Backwall
A520	6	4'-0"	Dowels Breastwall
A521	12	16'-0"	Breastwall
A522	12	14'-6"	Breastwall
A523	17	9'-6"	Breastwall
A524	1	12'-0"	Breastwall
A525	6	14'-5"	Breastwall
A526	6	11'-0"	Bridge Seat
A527	8	6'-7"	Brestwall
A528	19	5'-6"	Brestwall
A529	17	7'-6"	Wing
A530	7	24'-6"	Wing
A531	80	4'-6"	Bridge Seat
A532	80	6'-2"	Backwall
A533	6	33'-2"	Bridge Seat
			Temporary Pedestals
A590	32	3'-8"	Temp. Ped.
A591	20	9'-0"	Temp. Ped

MARK	NO.	LENGTH	LOCATION
			Abutment No. 1
A511	24	16'-0"	Abut. Slab
A512	12	14'-0"	Abut. Slab
A513	2	14'-6"	Curb
A514	15	12'-6"	Ret. Wall
A515	16	14'-6"	Ret. Wall
A701	33	14'-0"	Abut. Slab
A801	4	10'-0"	Backwall
			Abutment No. 2
A534	2	10'-4"	Sidewalk
A535	16	8'-0"	Wing
A536	10	7'-0"	Wing
A537	26	6'-0"	Sidewalk
A538	12	12'-6"	Sidewalk
540	14	4'-0"	Wing-dowels

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
					Abutment No. 1									
A550	34	5'-6"	L	1'-10"	3'-8"									Bridge Seat
A551	7	14'-8"	L	3'-8"	11'-0"									Breastwall
A552	9	6'-4"	S		2'-10"	8"	2'-10"							Backwall
A553	32	6'-10"	S		2'-10"	1'-2"	2'-10"							Backwall
A554	19	3'-10"	V				2'-4"	1'-6"			1'-0 3/4"			Backwall & Slab
A555	9	6'-8"	HB	6"	1'-8"	1'-2"	1'-8"	1'-2"		6"				Backwall
A557	15	5'-7"	SL	6"	1'-9 1/2"	1'-0"	1'-9 1/2"			6				Abut. Slab Curb
A558	15	13'-2"	L	1'-8"	11'-6"									Ret. Wall
A559	2	10'-3"	S	6"	1'-8"	5'-11"	1'-8"			6"				Backwall
					Abutment No. 2									
A560	19	8'-0	V				4'-0"	4'-0"			3'-4 3/4"			Breastwall
A561	39	5'-10"	L	2'-2"	3'-8"									Bridge Seat
A562	40	6'-6"	S		2'-10"	1'-2"	2'-10"							Backwall
A563	2	6'-0"	S	6"	2'-0"	1'-0"	2'-0"			6"				Curb
A564	2	10'-3"	S	6"	1'-8"	5'-11	1'-8"			6"				Backwall
A565	24	4'-8"	S		1'-9"	1'-2"	1'-9"							Wing Wall
A566	2	13'-8"	V				10'-10"	1'-10"			4 1/2"			Sidewalk
A651	13	5'-8"	S	6"	1'-10"	1'-0"	1'-0"			6"				Side Walk
A567	7	2'-8	L	6"	2'-2									Backwall, sidewalk
					Temporary Pedestals									
A595	10	6'-8	L	3'-2"	3'-6"									

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinf. bar

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

Reinforcing Bar: ASTM A615 Grade 60

GENERAL NOTES

1. First digit(s) following the letter of the Mark indicates size of reinf. bar.
   Mark (A 502) bar size - #5
   Mark (P 1001) bar size - #10
   Mark (S 603) bar size - #6
2. Letter of Marks A, P & S locates bars of Abutments, Piers, and Superstructure parts respectively.

PLANS	BY	DATE
DESIGN - DETAIL		
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

REINFORCING STEEL SCHEDULE

SHEET OF AUGUSTA, MAINE

167-145

REINFORCING STEEL SCHEDULE

FHWA REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	24	71

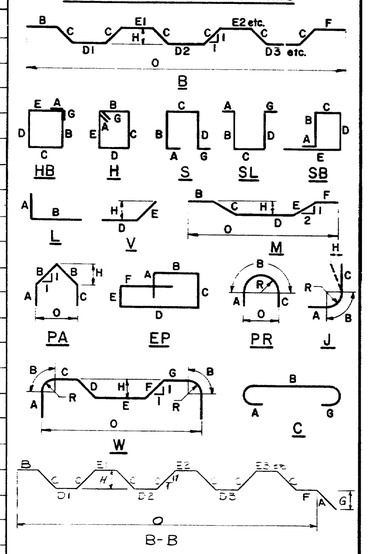
STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
			Scenic Overlook
B501	10	16'-0"	Eastwall
B502	2	11'-0"	Eastwall
B503	2	6'-0"	Eastwall
B504	8	3'-10"	Eastwall
B505	8	5'-6"	Eastwall
B506	8	7'-3"	Eastwall
B507	4	7'-9"	Eastwall
B508	8	18'-0"	Eastwall
B509	13	8'-5"	Eastwall
B510	4	22'-6"	Cap
B511	4	16'-6"	Cap
B512	15	5'-2"	Steps
B513	4	3'-9"	Steps
B514	3	5'-0"	Steps
B515	6	7'-0	Steps
B516	6	10'-8"	Steps
B517	2	8'-0	Steps
			Superstructure
S502	258	33'-4"	Slab
S503	456	33'-4"	Slab
S504	48	15'-8"	Curb
S505	120	15'-8"	Curb
S601	8	8'-0"	Slab
S301	160	33'-1	Wearing Surface
S302	129	25'-4	Wearing Surface
S303	129	15'-10	Wearing Surface

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
					Scenic Overlook									
B551	12	3'-4"	L	1'-8	1'-8									Eastwall
B552	12	4'-8"	S		2'-0"	8	2'-0"							Eastwall
B553	4	5'-8"	L	1'-2"	4'-6"									Eastwall
B554	13	6'-0"	S		2'-5"	1'-2"	2'-5"							Eastwall
B555	27	5'-4	S	6"	1'-7"	1'-2"	1'-7"			6"				Cap
B556	4	15'-2"	V				5'-4"	9'-10"			5'-3 3/8"			Steps
B557	6	11'-7"	V				4'-4"	7'-3"			3'-11			Steps
B558	11	4'-8	S		2'-0"	8"	2'-0"							Steps
B559	3	6'-6"	L	5'-0"	1'-6"									Steps
B560	6	8'-6"	L	7'-0"	1'-6"									Steps
B561	2	11'-7	V				5'-3	6'-4			3'-4			Steps
					Superstructure									
*S551	128	27'-11"	B-B	2'-0"	4'-5"	6 1/2	2'-7 7/8"	3'-2"	4"	1'-5"	4 1/2"	24'-9"		Slab
						x7	x3	x3						
S552	128	34'-10"	B-B		4'-5"	6 1/2	2'-7 7/8"	3'-2"	2'-4 1/2"		4 1/2"	33'-4"		Slab
						x9	x4	x4						
*S553	258	26'-9"	V				24'-9"	2'-0"			1'-5 11/16"			Slab
S554	128	5'-2"	S	6"	1'-7"	1'-0"	1'-7"			6"				Slab & Curb
S555	256	1'-11"	L	6"	1'-5"									Slab & Curb
S556	128	13'-1"	S		2'-6"	9"	9'-10"							Curb
S557	128	7'-0	S		9"	5'-6	9"							Sidewalk
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinf. bar

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

* Reinforcing Bar: ASTM A615 Grade 60, except as noted. See note #3.

GENERAL NOTES

1. First digit(s) following the letter of the Mark indicates size of reinf. bar.
   Mark (A 502) bar size - #5
   Mark (P 1001) bar size - #10
   Mark (S 603) bar size - #6
2. Letter of Marks A, P & S locates bars of Abutments, Piers, and Superstructure parts respectively.
3. *Bars S551 and S553 shall be ASTM A615 Grade 40.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

REINFORCING STEEL SCHEDULE

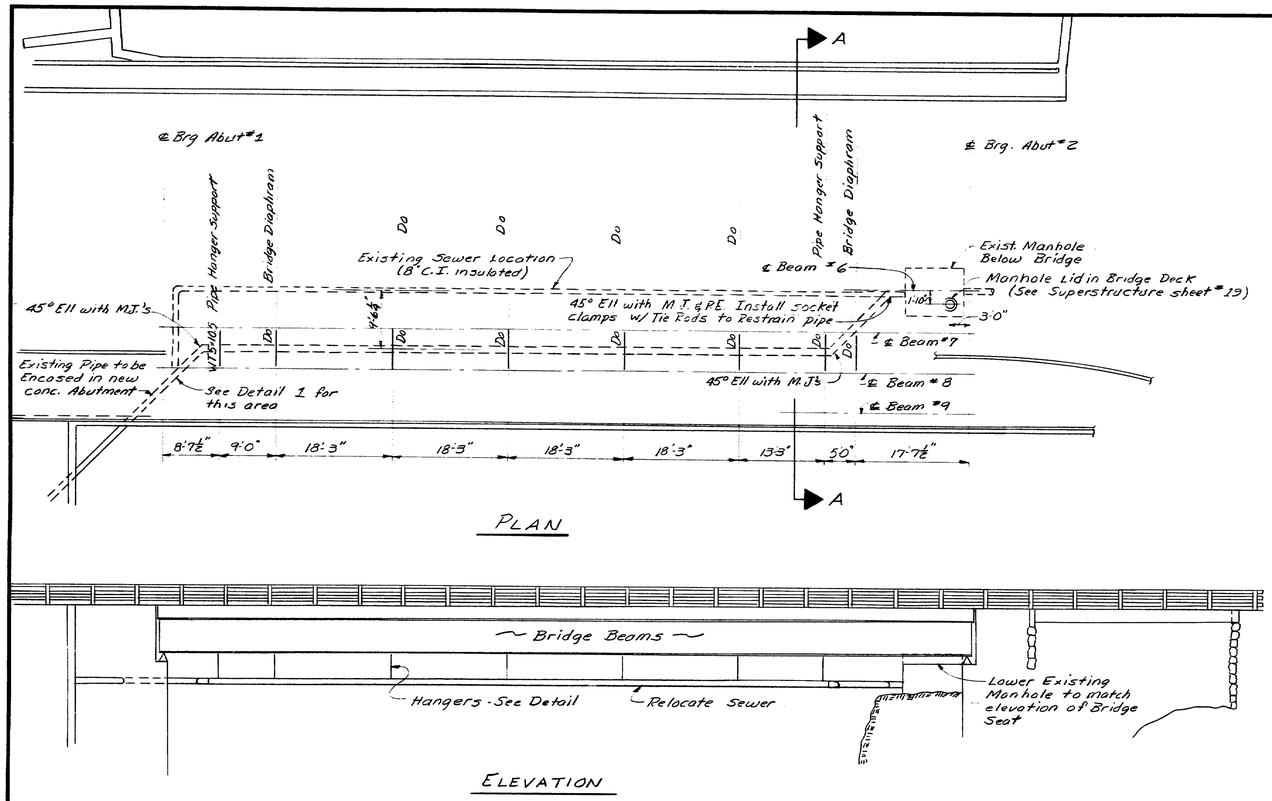
SHEET OF AUGUSTA, MAINE

167-146

PLANS

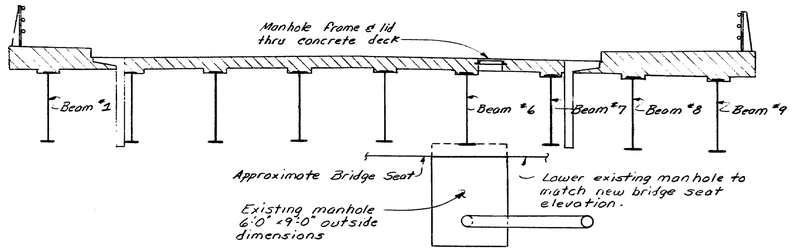
	BY	DATE
DESIGN - DETAIL		
CHECKED		
REVISIONS		
FIELD CHANGES		

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	25	71

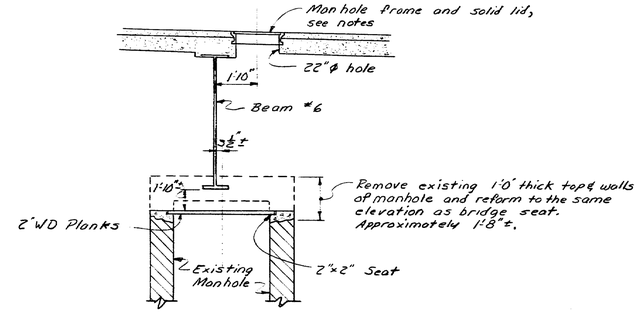


PLAN

ELEVATION



SECTION A-A



MANHOLE DETAIL

GENERAL NOTES

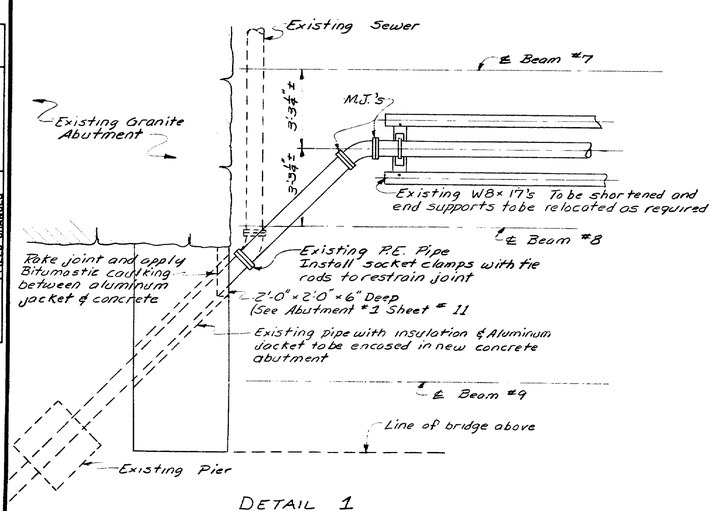
Sewer Relocation must be coordinated with construction of bridge. The top of the manhole is to be lowered and after placement of the 3 downstream beams the sewer is relocated to permit removal of the existing bridge.

Structural Steel Supports, incl. hangers and beams, are to be wire brushed and one 5 mil coat of carbomastic 15, or equal applied, all per point mfr's recommendations

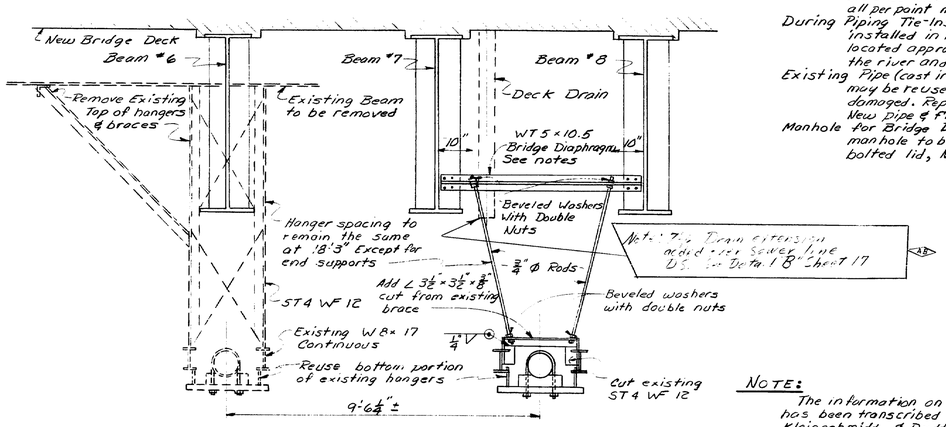
During Piping Tie-Ins and Relocation, it is recommended that a pump be installed in manhole and a 4" temporary line be run to a manhole located approx. 350' away behind Poolers Shoe Store, or run across the river and emptied into the existing 8" Gravity line.

Existing Pipe (cast iron class 150 push on joints w/mechanical joint fittings) may be reused along with any insulation and jacketing that is not damaged. Replace damaged sections with material of equal quality. New pipe & fittings to be cast iron class 150.

Manhole for Bridge Deck is to be furnished as part of this work; manhole to be heavy duty pressure type, water tight with C/S bolted lid, Neenah No R-6464-D or equal.



DETAIL 1



EXISTING HANGER

NEW HANGER

HANGER DETAILS

NOTE:
The information on this plan has been transcribed from Kleinschmidt & Dutting plan B-933.

As Build 7-8-77 DAC

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

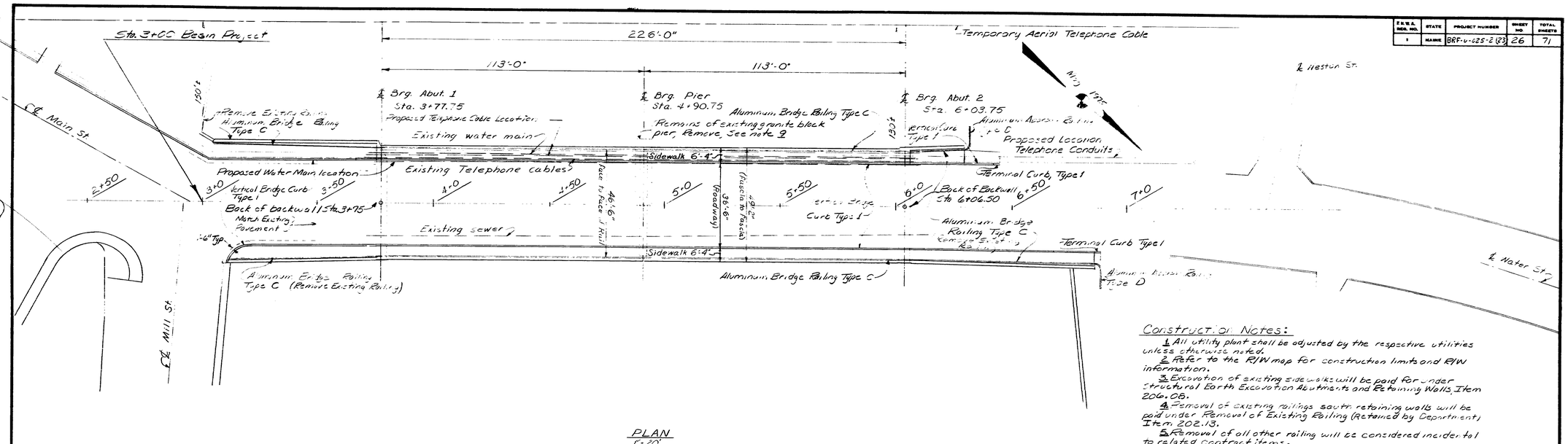
SEWER RELOCATION

SHEET OF AUGUSTA, MAINE

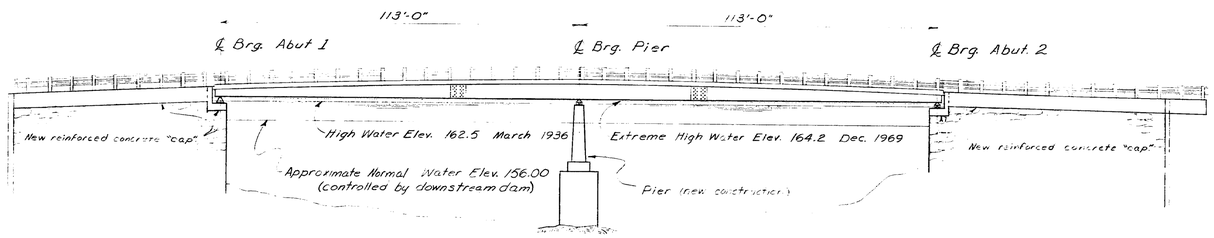
167-147

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

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2 (23)	26	71



PLAN
1"=20'



ELEVATION
Scale 1"=20'

50 40 30 20 10 0 25 50

Construction Notes:

1. All utility plant shall be adjusted by the respective utilities unless otherwise noted.
2. Refer to the R/W map for construction limits and R/W information.
3. Excavation of existing sidewalks will be paid for under Structural Earth Excavation Abutments and Retaining Walls, Item 206.08.
4. Removal of existing railings south retaining walls will be paid under Removal of Existing Railing (Retained by Department) Item 202.13.
5. Removal of all other railing will be considered incidental to related contract items.
   Removal of Existing Superstructure will be paid under Removal of Existing Superstructure (property of contractor) Item 202.1002
6. The temporary bridge and temporary approaches will be paid under Special Detour, 24 foot roadway with vehicular and pedestrian traffic separated, Item 510.1202
7. Install 6'-0"± of chain link fence (4' high, Item 607.16, between The existing chain link fence and the end of bridge rail at station 3+0± Left. Actual length of fence to be determined by the Engineer.
8. Remove and reset 3'-0"± of chain link fence at sta 3+0± left parallel with sidewalk to match end of bridge rail. Payment to be incidental to related contract Items.
9. Pier excavation will be paid under Structural Earth Excavation Piers, Item 206.10. Limit of excavation will be the pay limits for Seal concrete. This unit price will be for all material encountered.
10. All utility openings in the abutments shall be sealed in a manner approved by the Engineer.
11. All approach sidewalk concrete will be paid under Item 502.21, Structural Concrete Abutments and Retaining walls.

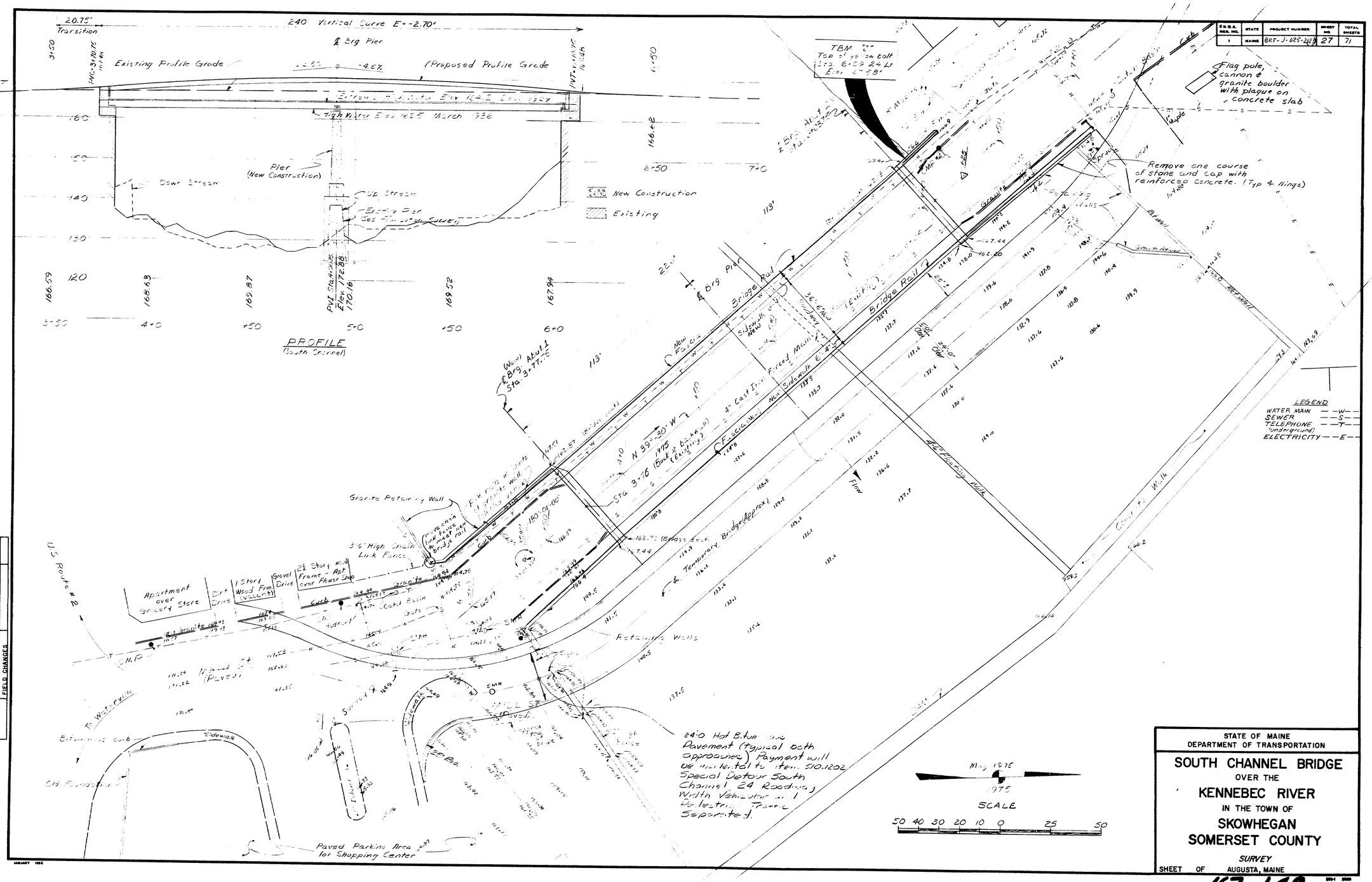
PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	EBC DMD	3/11/75
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY
GENERAL PLAN

SHEET OF AUGUSTA, MAINE MARCH 1975

167-148



F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-J-025-2(23)	27	71

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SURVEY

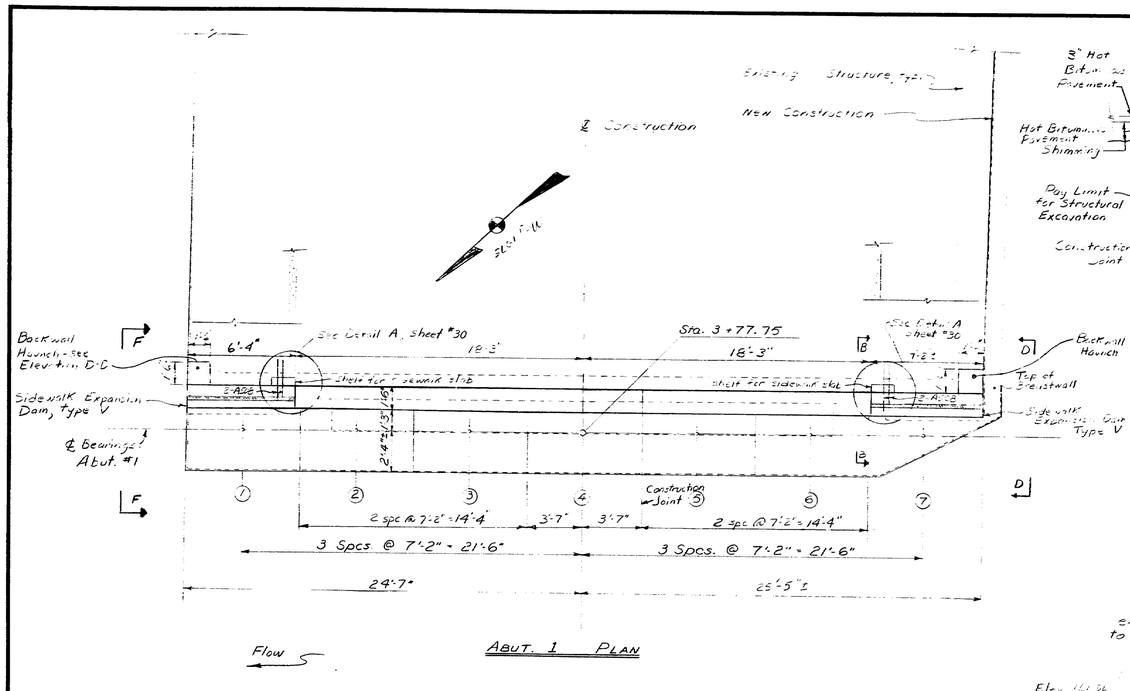
SHEET OF AUGUSTA, MAINE

167-149

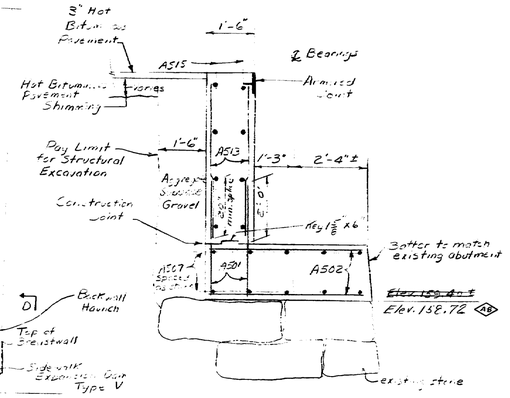
PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	DMD	3/3/75
CHECKED		
REVISIONS	FJJ	11-75
FIELD CHANGES		

Survey Plotted

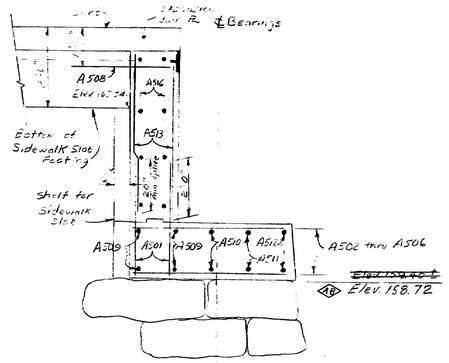
F.E.D.A. RDS. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	28	71



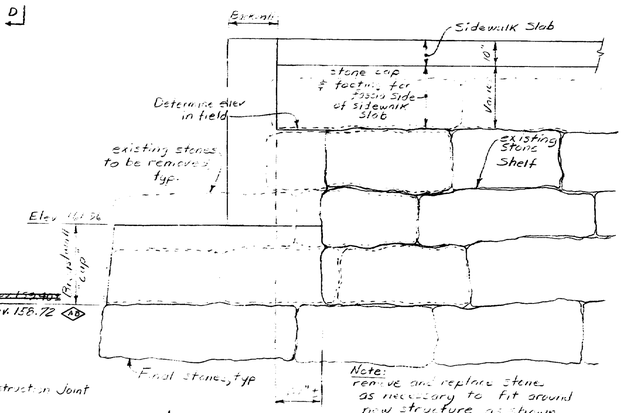
ABUT. 1 PLAN



SECTION A-A



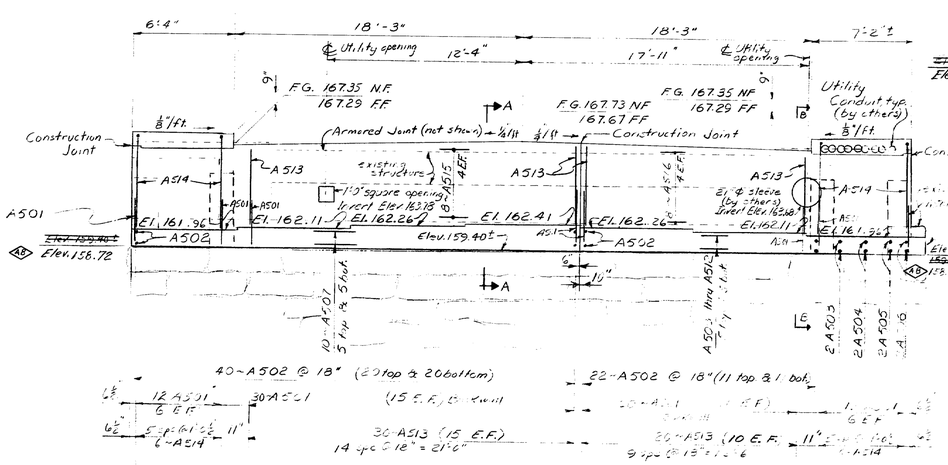
SECTION B-B



Note: remove and replace stones as necessary to fit around new structure as shown.

ELEVATION D-D

(Elevation E-F is opposite hand)



ABUT. 1 ELEVATION

Remove the existing breastwall and two courses of the stones from the existing Abutment. Breastwall and replace with a reinforced concrete cap. Construct the new concrete cap to the exposed faces of the existing granite abutment, typ.

Notes:

1. Chamfer all exposed edges of concrete, a consistent dimension between 1/2" & 3/4" inclusive, unless otherwise indicated.
2. Break the bond at vertical and curb construction joints by a method approved by the Engineer.
3. Reinforcing steel shall have a minimum cover of 2" unless otherwise noted.
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 exposed surfaces of all new concrete.
6. For Armored Joint Detail see sheet #35.
7. Place reinforcing steel in the bridge seats to clear bearing plate anchor bolts.
8. For details of construction and contraction joints see Standard Sheet BD 104-73.
9. See BD 100-71 for treatment at the Bridge Seat bearing areas.
10. 21" ϕ sleeve to be supplied by the utility installation to be incidental to item 502.21, Structural Concrete Abutments and Retaining Walls.

Abutment Protection Note:

The outboard bridge seats and breastwalls shall be protected from rust staining by temporarily leaving the forms in place or by covering the concrete after removal of the forms. Polyethylene sheets or other approved impervious coating shall be placed over and around the bearing areas prior to setting the bearing pedestals and shall extent underneath the masonry plates such that water will run off the pedestals onto the sheets. The protective coating shall remain in place at least until completion of the structural concrete slab placement. Removal of stains will not be required unless in the opinion of the Engineer the contractor has not made satisfactory effort to prevent staining.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	EBC	
CHECKED	DMD	
REVISIONS	RJL	11-76
FIELD CHANGES		

As Built 7-5-77 DAG

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

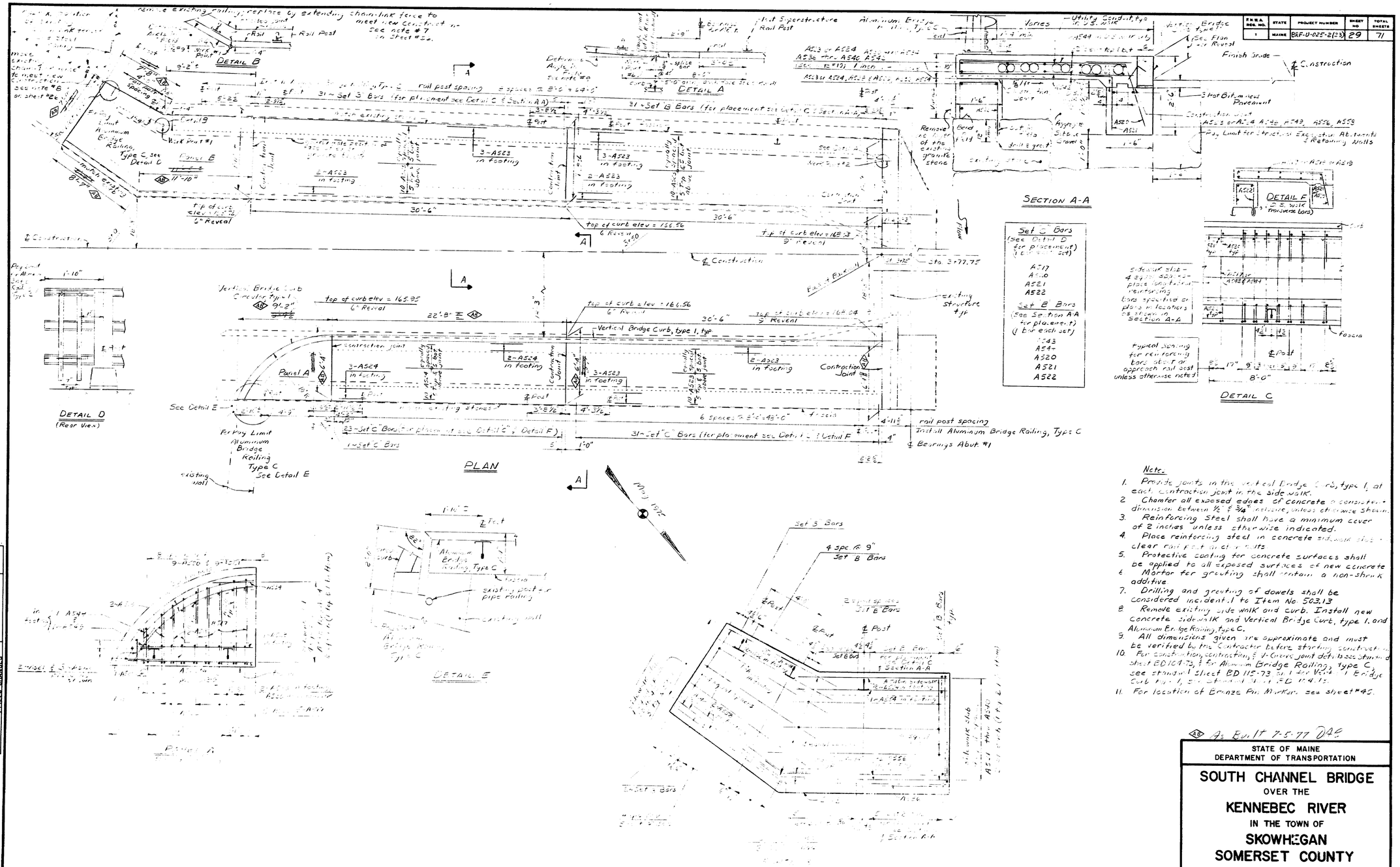
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

PART - ABUTMENT NO. 1

SHEET OF AUGUSTA, MAINE

167-150

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	29	71



PROJECT DESIGN ENGINEER	BY	DATE
DESIGN DETAILED	E.R.	1/1/72
CHECKED	D.K.W.	1/1/72
REVISIONS		
FIELD CHANGES		

PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

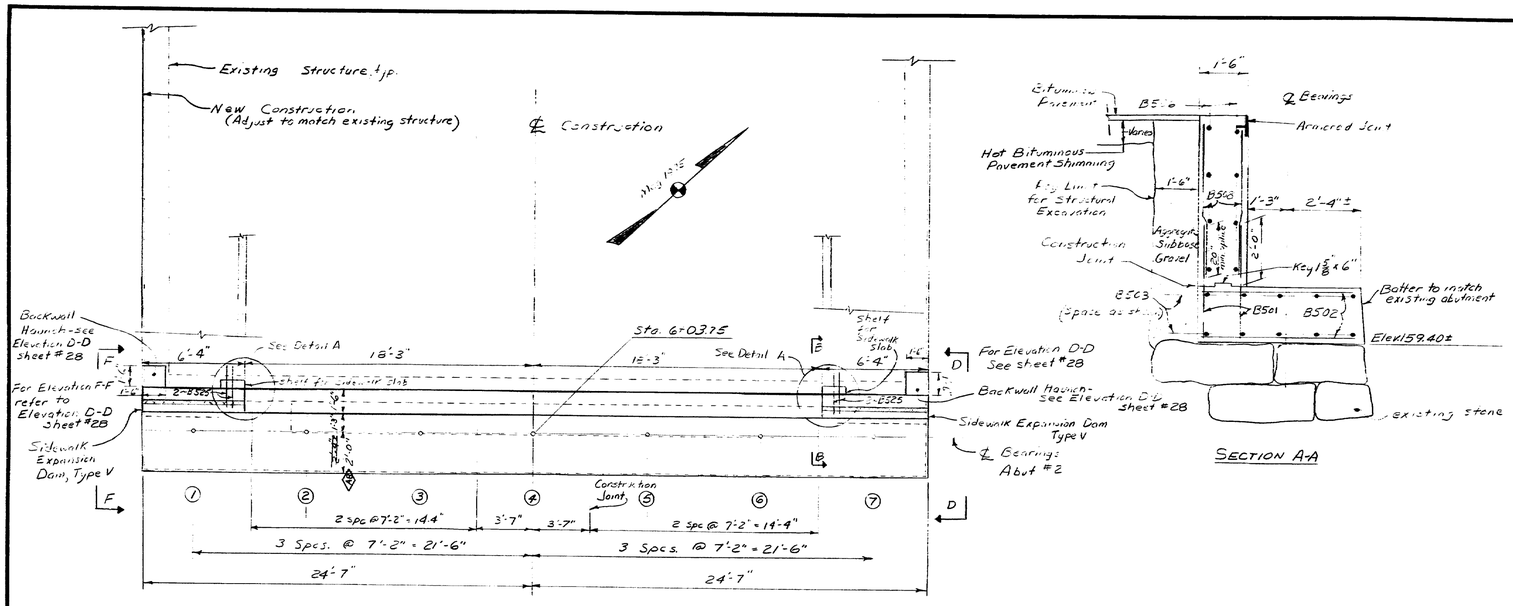
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ABUTMENT NO. 1 SIDEWALKS

SHEET OF AUGUSTA, MAINE

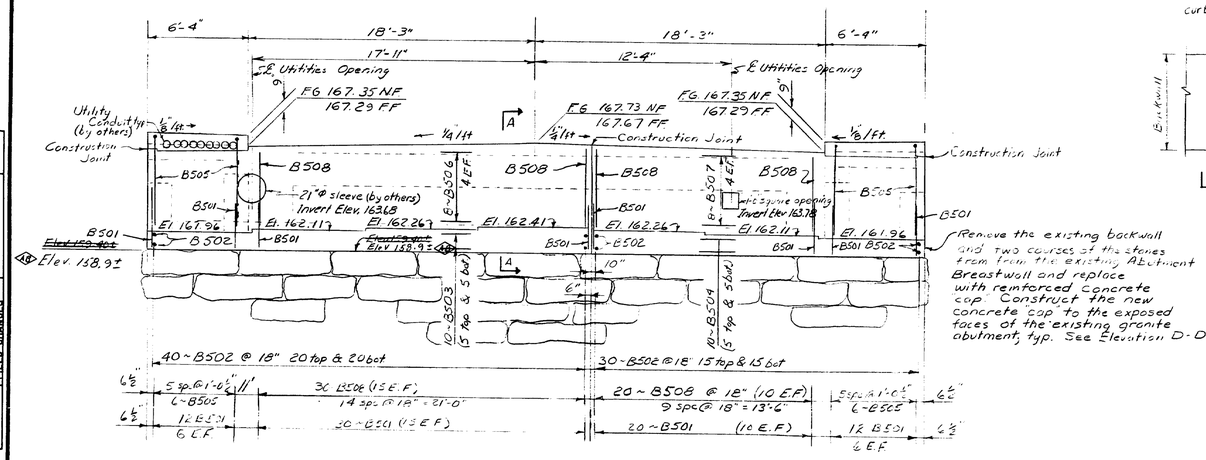
167-151

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-J-025-2(23)	30	71

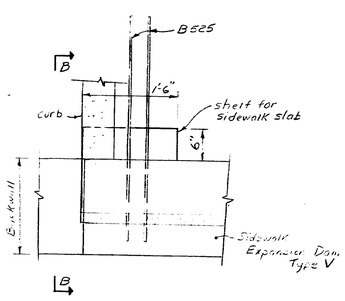


ABUTMENT No. 2 PLAN

SECTION A-A



ABUTMENT No. 2 ELEVATION



DETAIL A

Notes:

1. Chamfer all exposed edges of concrete a consistent dimension between 1/2" & 3/4" inclusive, unless otherwise indicated.
2. Break bond at vertical and curb contraction joints by a method approved by the Engineer.
3. Reinforcing steel shall have a minimum cover of 2" unless otherwise noted.
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 exposed surfaces of all new concrete.
6. For Armored Joint Detail see sheet #35.
7. Place reinforcing steel in the bridge seats to clear bearing plate anchor bolts.
8. For details of construction and contraction joints see Standard Sheet BD 104-73.
9. For Section B-B see sheet #28.
10. See BD 100-71 for treatment at the Bridge Seal bearing areas.
11. For abutment protection, refer to note, sheet 28

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	EBC	
	CHECKED	DMD	
	REVISIONS	RJL	11-75
	FIELD CHANGES		

As Built 7-5-77 DAE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

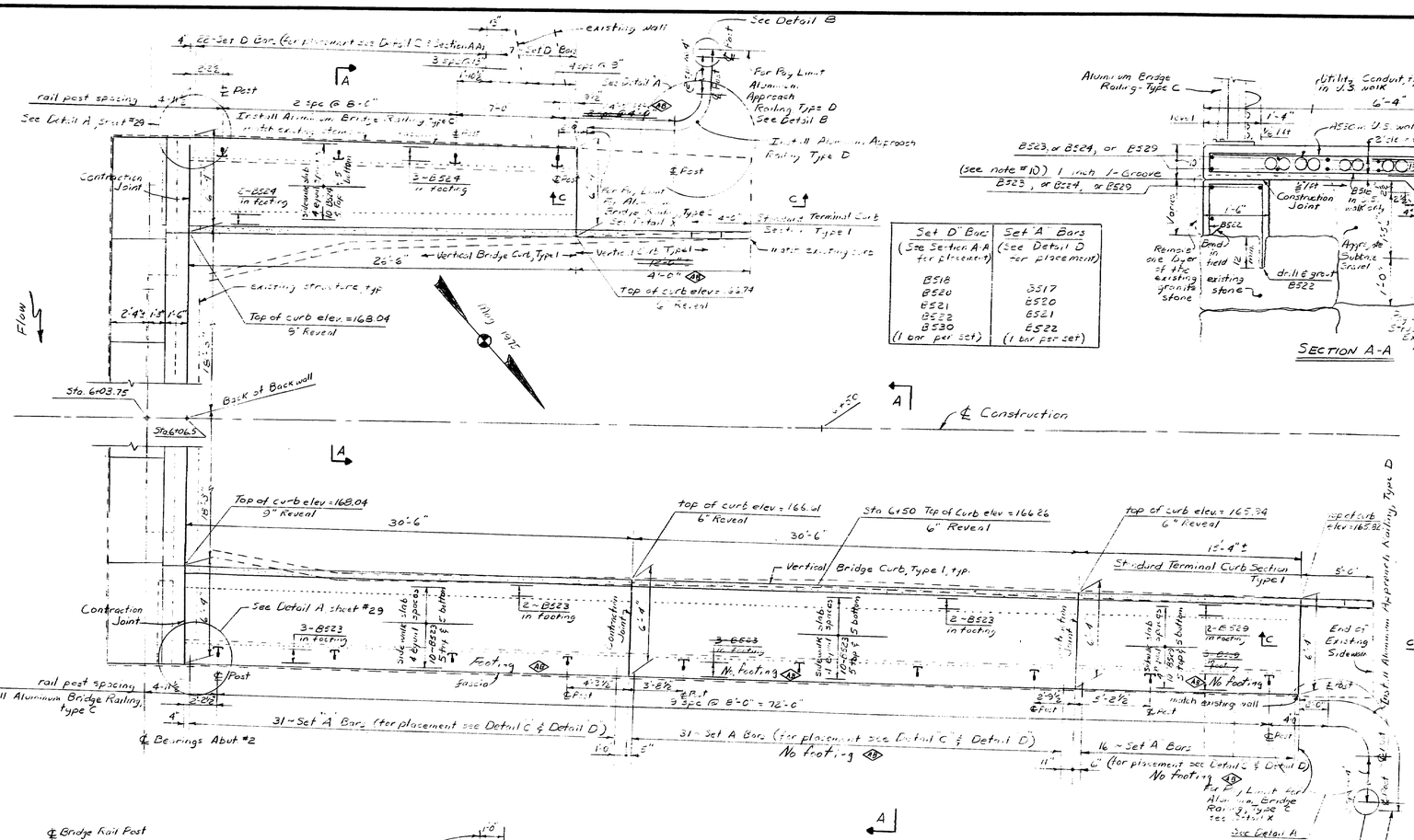
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

PART- ABUTMENT NO. 2

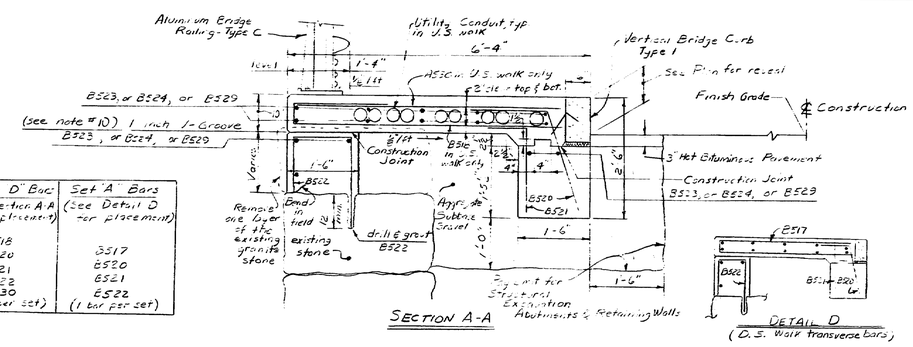
SHEET OF AUGUSTA, MAINE

167-152

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	31	71

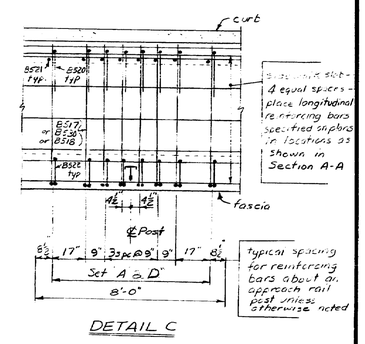


Set "D" Bars (See Section A-A for placement)	Set "A" Bars (See Detail D for placement)
B518	B517
B520	B520
B521	B521
B522	B522
B530	
(1 bar per set)	(1 bar per set)



SECTION A-A

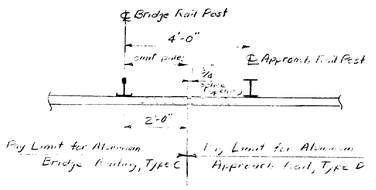
DETAIL D
(D.S. walk transverse bars)



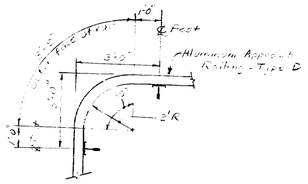
DETAIL C

Notes:

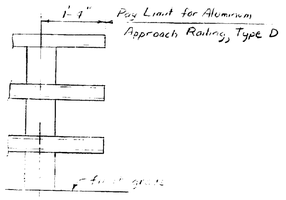
1. Provide joints in the Vertical Bridge Curb, Type 1 at each contraction joint in the sidewalk.
2. Remove existing sidewalk and curb. Install new concrete sidewalk and Vertical Bridge Curb, Type 1, and Aluminum Bridge Railing, type C, and Aluminum Approach Railing, type D.
3. All dimensions given are approximate and must be verified by the Contractor before starting construction.
4. Chamfer all exposed edges of concrete a consistent dimension between 1/2" & 3/4" inclusive unless otherwise shown.
5. Reinforcing steel shall have a minimum cover of 2 inches unless otherwise indicated.
6. Place reinforcing steel in sidewalk slab to secure rail Anchor Bolts.
7. Protective coating for concrete surfaces shall be applied to all exposed surfaces of new concrete.
8. Mortar for grouting shall contain a non-shrink additive.
9. For location of Bronze Pin Markers see sheet #45.
10. Drilling and grouting of dowels shall be considered incidental to Item No 503.13
11. For detail of Aluminum Bridge Railings, type C, see standard sheet BD 115-73, and for Aluminum Approach Railing, type D, see standard sheet BD 115-73, and see standard sheet BD 109-73 for detail of Vertical Bridge Curb, type 1, and contraction, construction & V-Groove joints.



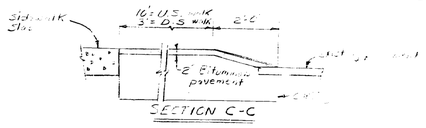
DETAIL X



DETAIL A



DETAIL B



SECTION C-C

As Built 7-5-77 ℄ 46

PROJECT DESIGN ENGINEER	BY	DATE
DESIGN - DETAILED	FBC	9-4-75
CHECKED	DEW	11-75
REVISIONS	PJL	
FIELD CHANGES		

PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

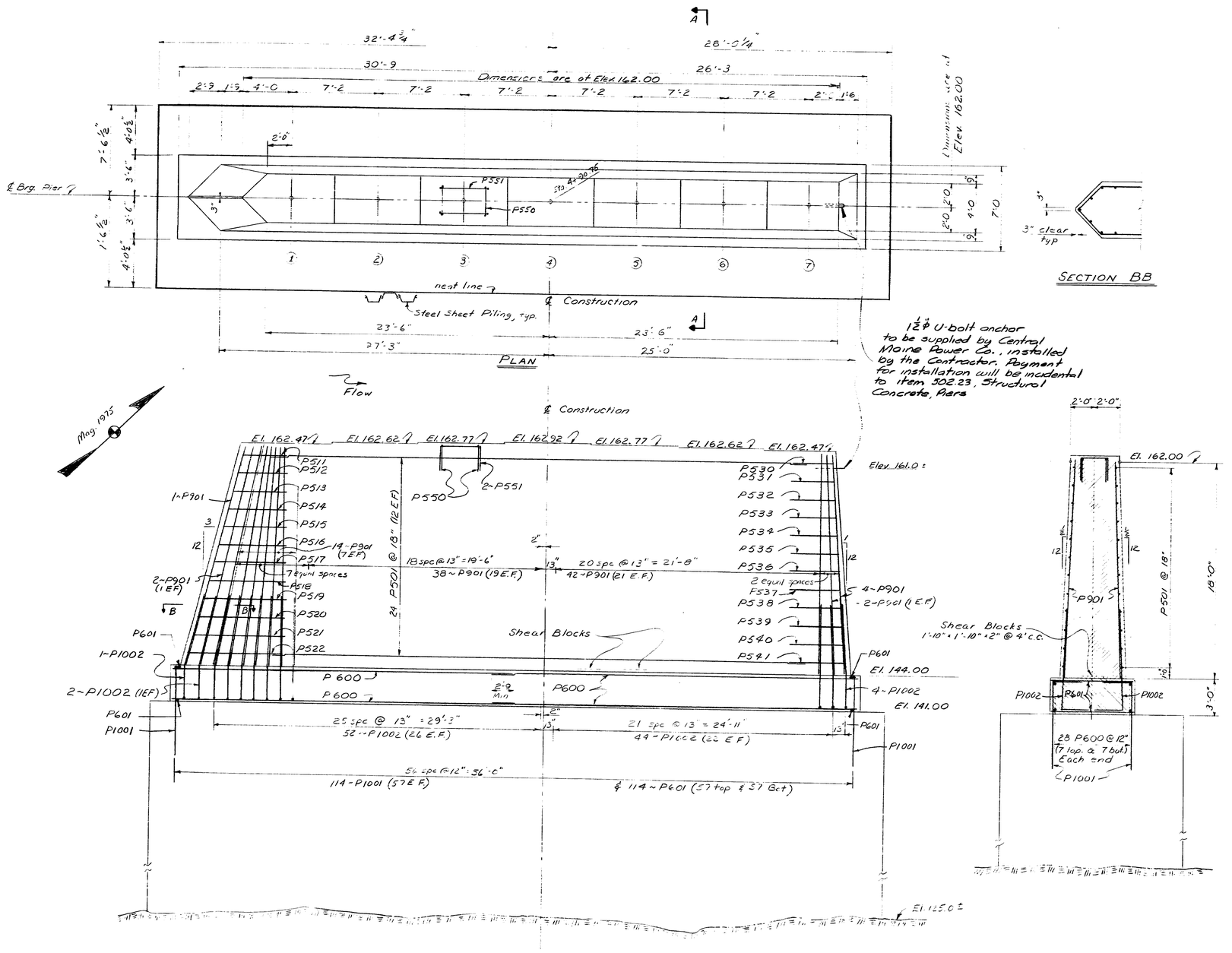
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ABUTMENT NO. 2 SIDEWALKS

SHEET OF AUGUSTA, MAINE

167-153

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	32	71



SECTION BB

SECTION "AA"

PIER NOTES

1 ~ Chamfer all exposed edges of concrete ½ inch unless otherwise indicated.

2 ~ Reinforcing Steel shall have 3 inches minimum cover unless otherwise indicated

3 ~ Place reinforcing steel on bridge seats to clear anchor bolts.

4 ~ For details of construction and contraction joints see Standard Sheet BD 104-73.

5 ~ The method of placing dowels in the concrete seal shall be approved by the Engineer.

6 ~ Maximum calculated footing pressure equals 6.66 tons per square foot.

7 ~ Seal concrete dimensions are predicated on use of MP-116, DP-2, I-27 or equivalent steel sheet piling with appropriate standard rolled corners. Pay dimensions shall be to the neat lines shown plus five inches all around. Any sheet piles used shall not encroach beyond the concrete seal neat line.

8 ~ The depth of the seal is set for a water elevation of 162. If the water elevation at the time of construction is higher, the depth of the seal will be adjusted by the Engineer.

9 ~ The concrete for the pier seal shall be class S, paid for under Item 502.24.

DESIGN CRITERIA

Critical AASHO Loading – Group IX
Buoyancy – Water level assumed at elev. 162
Stream Flow – Velocity of 11 feet per second skewed at 15° to the longitudinal centerline of the pier.
Wind – 100 mph or 50 psf
Ice – 6" thick producing 400 psi. Ice pressure skewed at 15° to longitudinal centerline of pier, with water El. 162.

Note: Payment for Pier Excavation will be made under Item 206.10 - Structural Earth Excavation, Piers. Limit of excavation will be the pay limits for Seal Concrete. This unit price will be for all material encountered.

Pier Protection Note:
Pier surfaces above water and pier bearing areas shall be protected from rust staining. Polyethylene sheets, or other approved impervious coating, shall be placed on and around the bearing areas prior to setting the bearing pedestals, and shall extend underneath the masonry plates such that water will run off the pedestals onto the sheets. The protective covering shall remain in place at least until completion of the structural concrete slab placement. Removal of stains will not be required unless, in the opinion of the Engineer, the Contractor has not made satisfactory effort to prevent staining.

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	EBC	4/22/75
	CHECKED	DMD	
	REVISIONS		
	FIELD CHANGES		

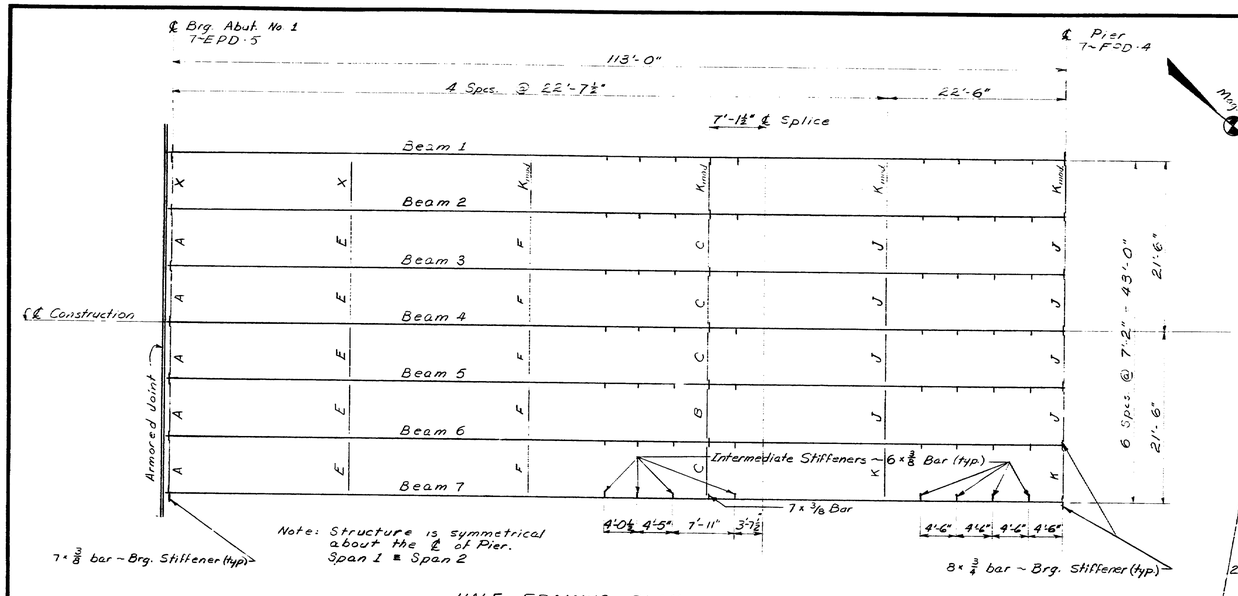
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY
PIER

SHEET OF AUGUSTA, MAINE

167-154

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	33	71

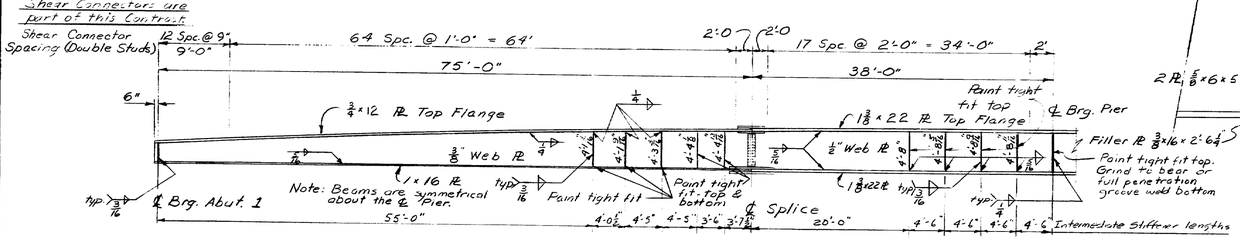


Note: Structure is symmetrical about the ℄ of Pier. Span 1 ≡ Span 2

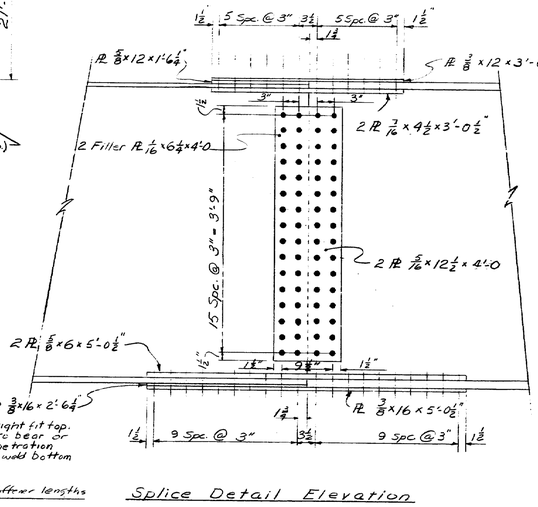
HALF FRAMING PLAN
Span 1

FABRICATION NOTES

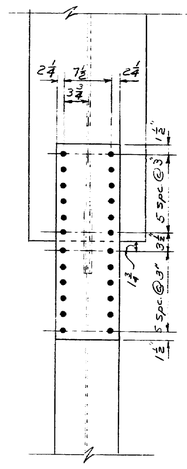
1. — All structural steel shall be ASTM A 709.
2. — All dimensions are horizontal or vertical.
3. — All bolts shall be ⅞" dia. A325 Type 3 H.S. Bolts. Holes for bolts shall be 15/16" dia..
4. — Camber ordinates, as shown on sheet #34, are computed to compensate for all dead load deflections and for the curvature of the finish grade profile.
5. — No transverse butt weld splices in the flange plates or web plates within 10 feet from the points of maximum stress will be allowed.
6. — Sections of flange plates or web plates between transverse butt weld splices or from field splices shall be not less than 20 feet in length unless otherwise noted on the plans.
7. — Two transverse welds per piece will be allowed in the web plates. Butt weld splices in flanges shall not be closer than one foot from transverse welds in the web plates.
8. — Bearing stiffeners, intermediate web stiffeners, crossframe or diaphragm connection plates shall be normal to the bottom flange of the beam.



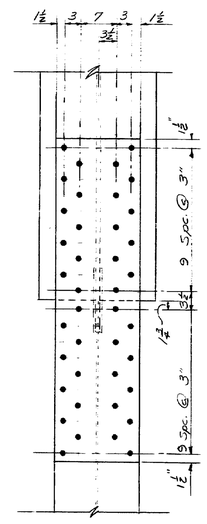
HALF BEAM ELEVATION
No. of shear connectors each beam = 380 ; Total No. = 2660
Total weight = 2660 lbs.



Splice Detail Elevation

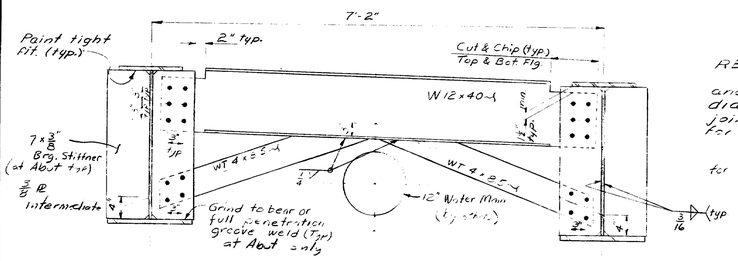


Top PLs



Bottom PLs

Splice Detail

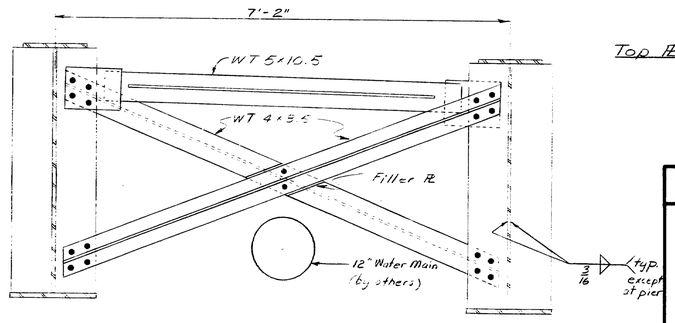


Diaphragm Type X

REF:
Refer to sheet #34 for blocking and camber details, stress type diagram, pedestal and expansion joint setting charts. See sheet #35 for armored joint details.

See Standard Details sheet BD 113-72 for Diaphragm & Crossframe details not shown.

Structural Steel will be supplied and delivered by the Department, and erected under this contract. Shop details of the Structural Steel will be supplied to the Contractor.



Crossframe Type K modified
See Standard Details for Type K

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN-DETAILED	EBC	3/19/72
CHECKED	DMD	
REVISIONS	JET	5/7/73
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

STRUCTURAL STEEL

SHEET OF AUGUSTA, MAINE

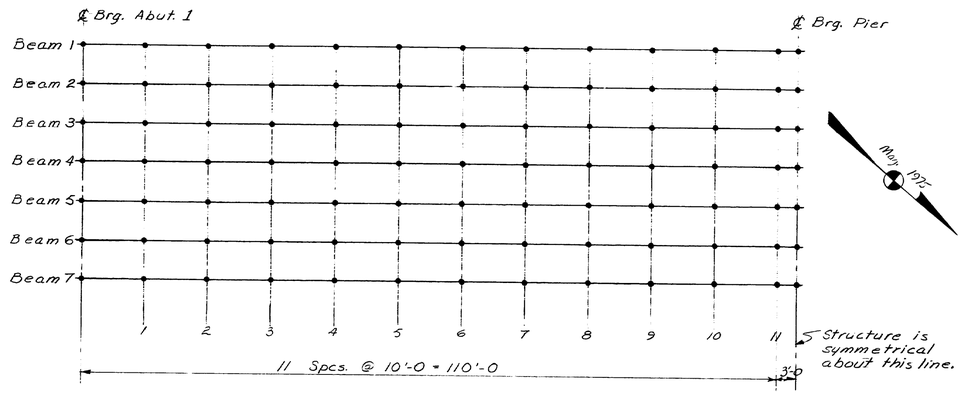
167-155

F.A.H.S.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	34	71

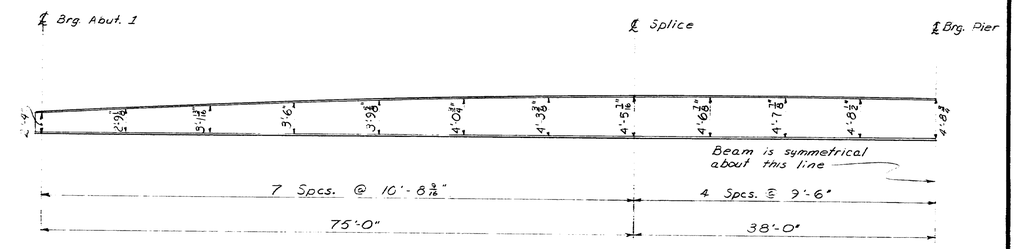
Bottom of Slab Elevations

Beam \ Point	℄ Abut.	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'	110'	℄ Pier
Beam 1	166.38	166.87	167.30	167.27	167.98	168.22	168.41	168.55	168.66	168.72	168.76	168.78	168.78
Beam 2	166.53	167.02	167.45	167.82	168.13	168.37	168.56	168.70	168.81	168.87	168.91	168.92	168.92
Beam 3	166.68	167.17	167.60	167.97	168.27	168.52	168.71	168.85	168.95	169.02	169.06	169.07	169.07
Beam 4	166.83	167.32	167.75	168.12	168.42	168.67	168.86	169.00	169.10	169.17	169.21	169.22	169.22
Beam 5	166.68	167.17	167.60	167.97	168.27	168.52	168.71	168.85	168.95	169.02	169.06	169.07	169.07
Beam 6	166.53	167.02	167.45	167.82	168.13	168.37	168.56	168.70	168.81	168.87	168.91	168.92	168.92
Beam 7	166.38	166.87	167.30	167.67	167.98	168.22	168.41	168.55	168.66	168.72	168.76	168.78	168.78

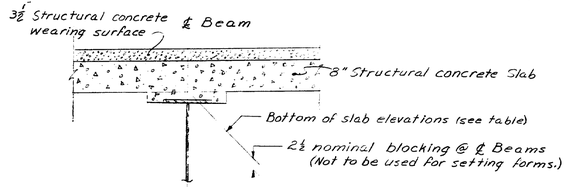
Note:
Bottom of slab elevations are adjusted to compensate for the dead load deflections.



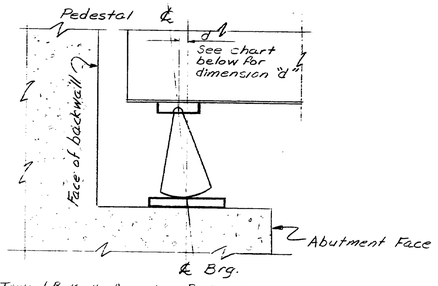
BLOCKING PLAN

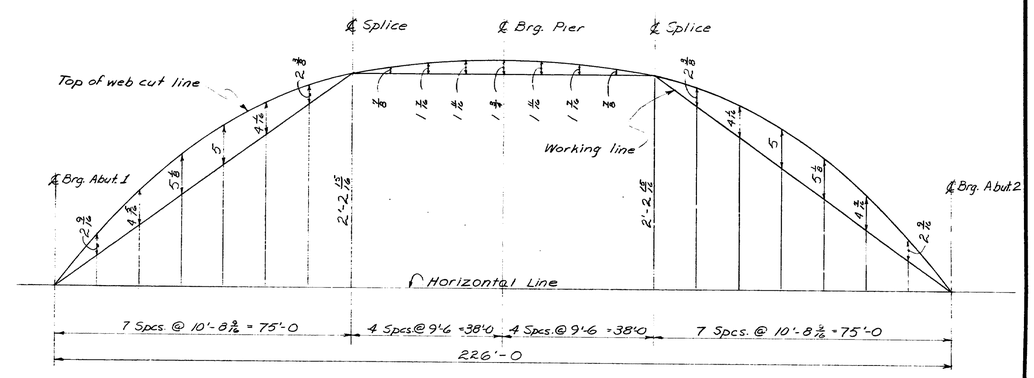


BEAM ELEVATION
Web Plate Depth
Final Profile

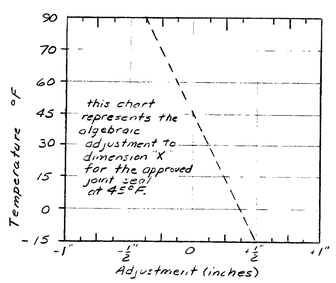


BLOCKING DETAIL

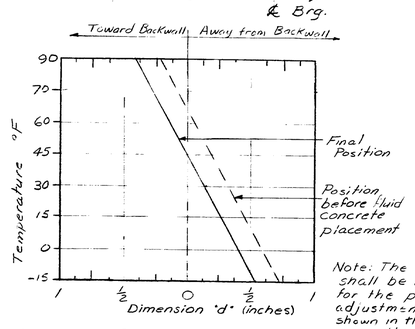




CAMBER DIAGRAM

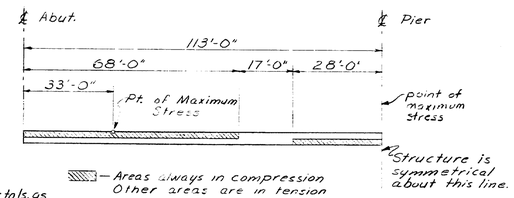


Armored Joint Adjustment Chart



Expansion Pedestal Setting Chart

Note: The contractor shall be responsible for the proper adjustment of the pedestals, as shown in the chart above, after the superstructure slab has been placed.



— Areas always in compression
Other areas are in tension or have Stress reversals

Stress Type Diagram

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN-DETAILED	E.R.G.	3/1/75
CHECKED	J.E.P.	
REVISIONS	D.M.D.	5/75
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

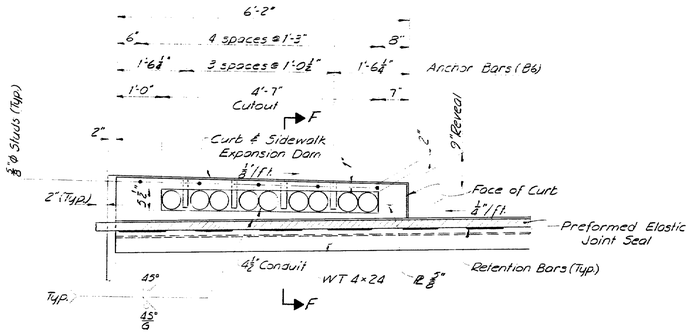
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

BOTTOM OF SLAB ELEVATIONS

SHEET OF AUGUSTA, MAINE

167-156

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	35	71

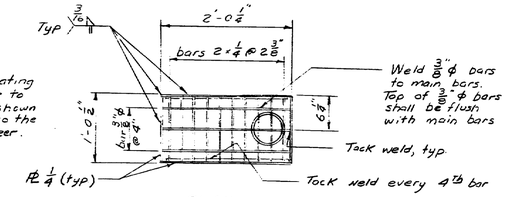


ARMORED JOINT ELEVATION ~ LT. SIDEWALK ⚠

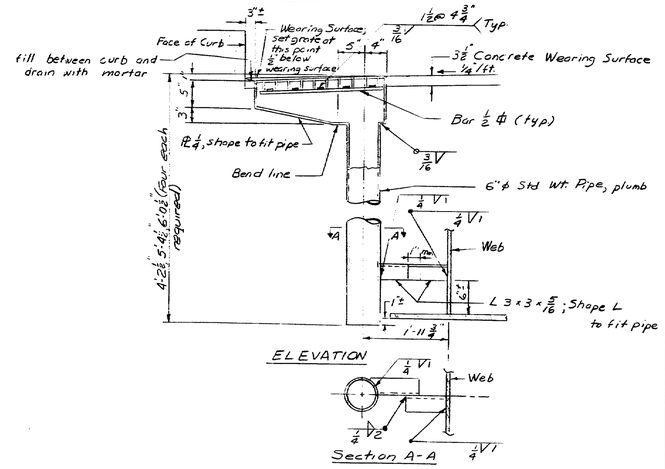
The Expansion Dam is not to be welded to the ⅝" armored joint plate.

Note

A prefabricated grating with dimensions similar to those of the grating shown may be used subject to the approval of the Engineer.



PLAN



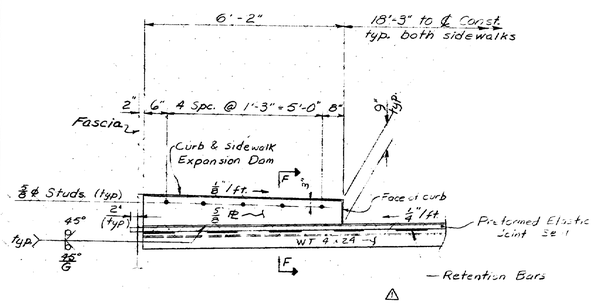
ELEVATION

Section A-A

DRAIN

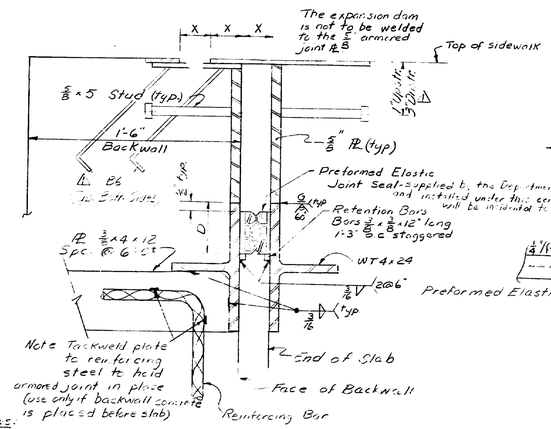
(12 required)

Drains shall be ASTM A53 + A36, galvanized to conform with ASTM A123 specification (AASHTO M 111)

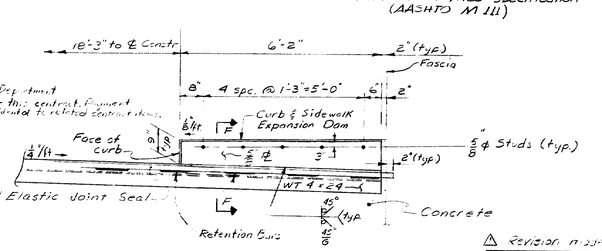


Armored Joint Elevation ~ Lt. Sidewalk

The Expansion Dam is not to be welded to the ⅝" armored joint plate. ⚠



SECTION F-F



Armored Joint Elevation ~ Rt. Sidewalk

The Expansion Dam is not to be welded to the ⅝" armored joint plate

⚠ Revision made 10-28-75

Notes:

1. The seals furnished shall be as follows:

Location	Movement Rating
Abut. 1	1.5
Abut. 2	1.5

2. The seal characteristics shall be submitted to the engineer for approval prior to the fabrication of the armored joint and the dimensions "X & D" will be established by the Engineer at that time, based on the characteristics of the approved seal.
3. The maximum joint opening shall be 3" at -30°F measured parallel to the ℄ Construction.
4. It is anticipated that the joint will open ¼ due to superstructure concrete bends.

REF.

For armored joint details not shown see Standard Details sheet BD 104-73. For Curb and Sidewalk Expansion Dam details refer to Standard Details sheet BD 105-74.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS — DESIGN - DETAILED	EBC	3/21/75
CHECKED	DMD	5/75
REVISIONS	JET	
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

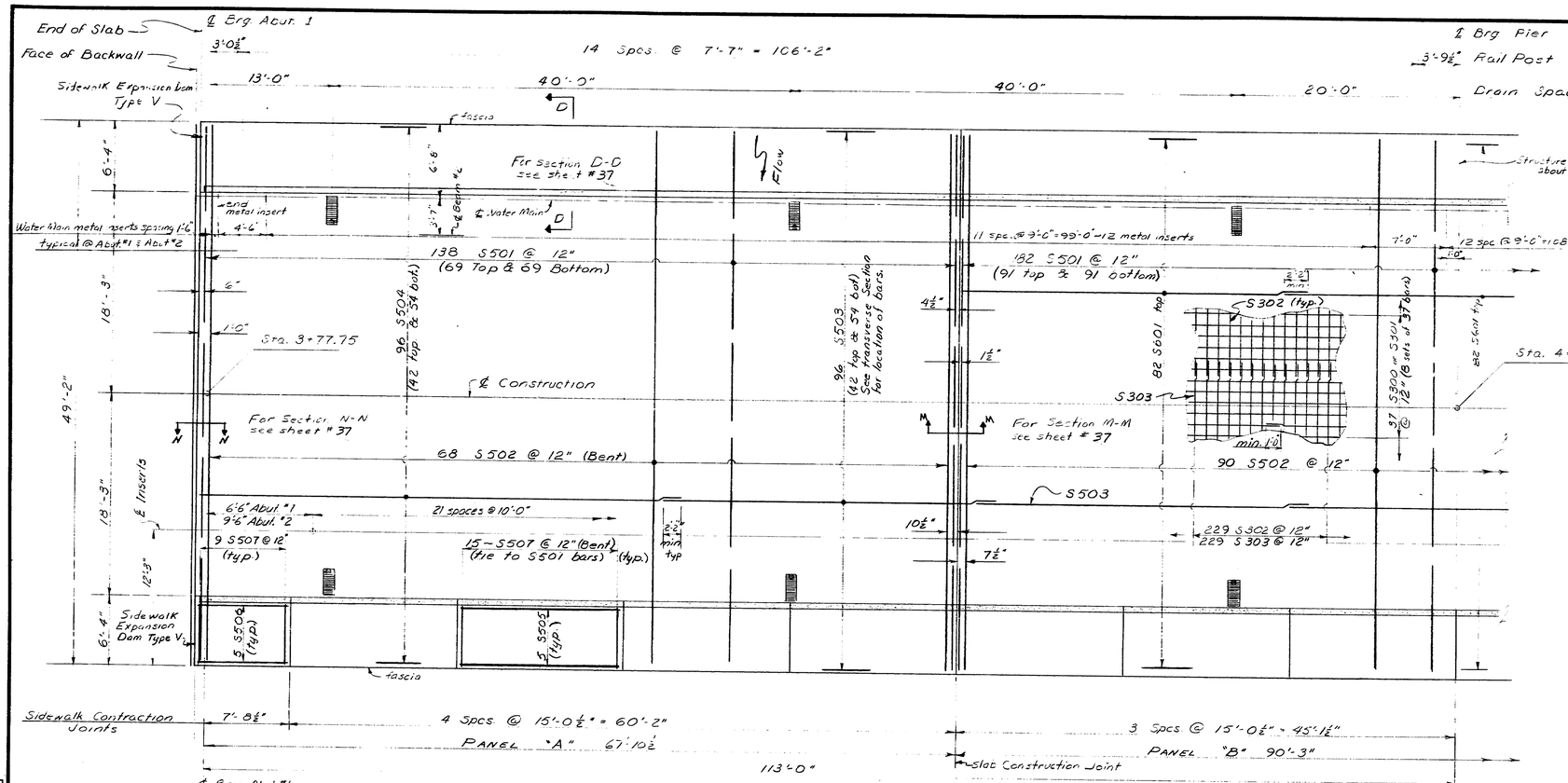
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

ARMORED JOINT DETAILS

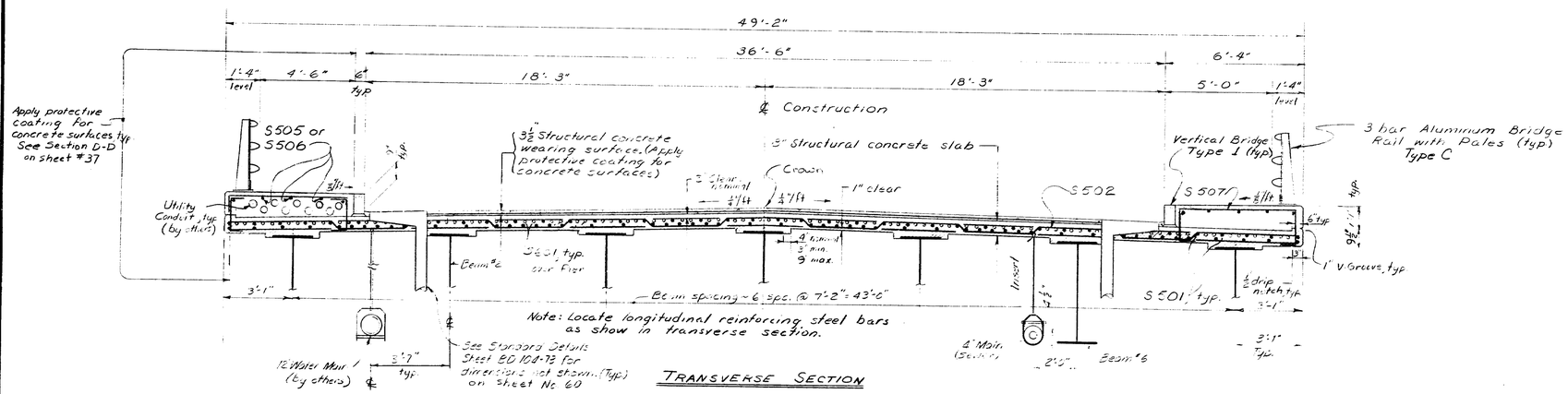
SHEET OF AUGUSTA, MAINE

167-157

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	36	71



SUPERSTRUCTURE PLAN



TRANSVERSE SECTION

NOTES:

1. Chamfer all exposed edges ½" unless otherwise indicated.
2. Form a 1" V-groove on the outside faces of each contraction joint in the sidewalk, at each construction joint in the slab and at the joint between the sidewalk and the slab. See Standard Detail BD 104-73.
3. Break the bond in contraction joints in the sidewalk by a method approved by the Engineer. Do not break the bond in construction joints in the superstructure slab.
4. Provide joints in the vertical Bridge curb, Type 1 at each contraction joint in the concrete sidewalk.
5. Reinforcing steel shall have a minimum cover of 2" unless otherwise noted.
6. The contractor will be allowed to drill holes in the webs of the exterior stringers for the purpose of attaching form support brackets. Location of holes shall be approved by the Engineer. After use, all holes shall be filled with corrosion resisting carriage bolts.
6. Mortar for bedding and for joints in the granite curb shall contain an approved non-shrink additive.
7. Adjust reinforcing steel to fit around drains in a manner approved by the Engineer. Do not cut transverse bars.
8. The superstructure may be placed either continuously or by panels as follows:

   Continuous Placement

   The contractors method of placement shall be approved by the Engineer. The concrete shall be kept plastic one (1) complete span back of the span being placed. The transverse slab joints and haunches shown shall be omitted. Approved set retarding admixtures shall be used when authorized by the Engineer.

   Panel Placement

   Panels "A" shall be placed before placing Panel "B". A minimum of 5 days shall elapse between placements of panels "A".
9. Metal inserts for the 12" water main are to be supplied by the utility. Metal inserts for the 4" Sewer Main shall be supplied under Section 817. Installation of all inserts shall be considered incidental to Item 502.26 Structural Concrete, Roadway and Sidewalk Slabs on Steel Bridges.

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	EBC D.M.D.	4-14-75
	CHECKED	RJL	11-75
	REVISIONS		
	FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

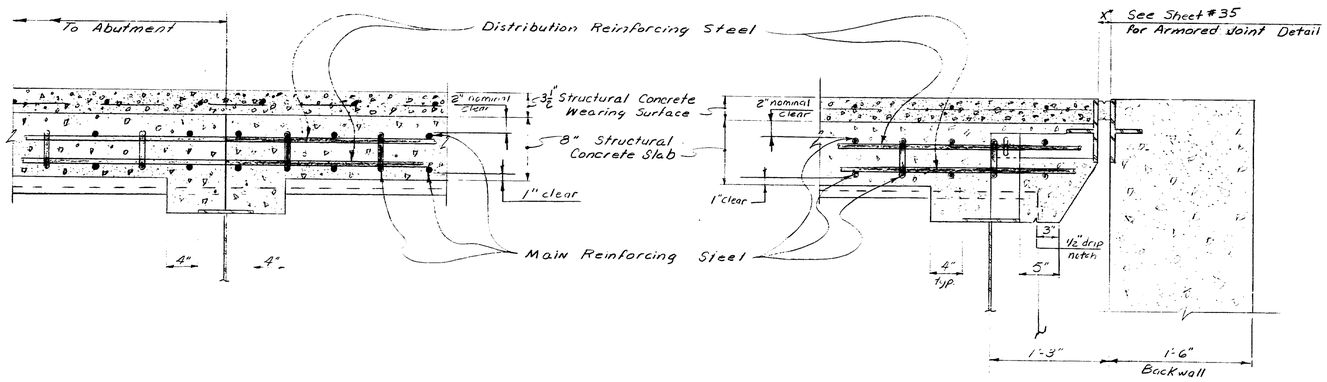
SUPERSTRUCTURE

SHEET OF AUGUSTA, MAINE 1975

167-158

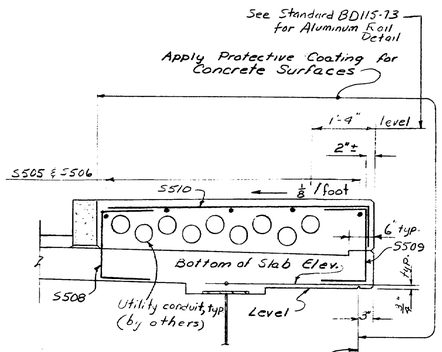
B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	37	71

PLANS		BY	DATE
	DESIGN - DETAILED	EBK	
	CHECKED	JVL	11-72
	REVISIONS		
	FIELD CHANGES		



SECTION MM

SECTION NN



SECTION D-D
(only sidewalk steel shown)

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SUPERSTRUCTURE DETAILS

SHEET OF AUGUSTA, MAINE 1975

JANUARY 1968

283-1 2966

167-159

REINFORCING STEEL SCHEDULE

FHWA REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	38	71

STRAIGHT BARS

MARK	NO.	LENGTH	LOCATION
ABUTMENT NO. 1			
A502	62	4'-7	A1 Breastwall
A503	2	3'-6	
A504	2	3'-0	
A505	2	2'-6	
A506	2	2'-0	
A507	10	27'-10	
A508	4	3'-0	Backwall
A509	4	22'-0	A1 Breastwall
A510	2	19'-6	
A511	2	17'-0	
A512	2	14'-6	A1 Breastwall
A513	50	4'-10	A1 Backwall
A515	8	27'-10	A1 Backwall
A516	8	20'-8	A1 Backwall
A501	74	3'-8	A1 Breastwall
A523	45	30'-0	A1 Sidewalk
A524	15	24'-6	
A528	1	7'-10	
A529	2	8'-4	
A530	2	8'-4	
A531	2	7'-9	
A532	2	6'-10	
A533	2	5'-10	
A534	2	4'-0	A1 Sidewalk
A536	2	12'-7	A1 Panel B
A537	2	11'-10	
A538	2	11'-3	
A539	2	10'-7	
A540	2	10'-0	
A542	10	9'-9	
A544	83	6'-4	A1 Panel B
A548	1	11'-6	A1 Panel A
A549	1	10'-10	A1 Panel A
A552	3	7'-5	A1 Panel B
A554	3	10'-0	
A556	2	12'-4	
A558	2	9'-8	A1 Panel B

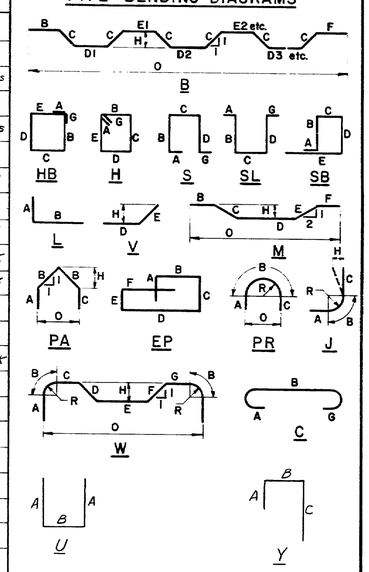
MARK	NO.	LENGTH	LOCATION
ABUTMENT NO. 2			
B501	74	3'-8	A2 Breastwall
B502	70	4'-7	A2 Breastwall
B503	10	27'-10	A2 Breastwall
B504	10	20'-8	A2 Breastwall
B506	8	27'-10	A2 Backwall
B507	8	20'-8	A2 Backwall
B508	50	4'-9	A2 Backwall
B523	30	30'-0	A2 Sidewalk
B524	15	26'-0	A2 Sidewalk
B529	15	14'-10	A2 Sidewalk
B530	29	5'-6	A2 U.S. Sidewalk
B525	4	3'-0	Backwall

MARK	NO.	LENGTH	LOCATION
SUPERSTRUCTURE			
S300	259	30'-0	Wearing Surface
S301	37	27'-0	
S302	229	17'-6	
S303	229	20'-0	Wearing Surface
S501	458	48'-10	Deck transverse
S503	480	30'-0	Deck long.
S504	192	45'-0	Deck long.
S505	140	14'-8	Sidewalk long.
S506	20	8'-4	Sidewalk @ ends
S601	246	30'-0"	Deck over Pier
PIER			
P501	24	46'-6	Pier Horiz. Bars
P600	28	30'-0"	Pier Distr. Slab
P601	114	6'-6	Pier Distr. Slab
P901	103	18'-3	Pier Shaft

BENT BARS

MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION
A518	2	8'-6	U	4'-0	0'-6"									
A514	12	12'-10	U	5'-10	1'-2									A1 Backwall
A517	60	11'-6	U	5'-6	0'-6"									A1 Sidewalks
A520	150	4'-2	V				2'-2	2'-0			1'-7½			A1 Sidewalks
A522	147	6'-8	Y	2'-0	1'-2	3'-0								A1 Sidewalks
A519	2	5'-8"		2'-7	0'-6									
B505	10	12'-10	U	5'-10	1'-2									A2 Backwall
B517	78	11'-6	U	5'-6	0'-6"									A2 Sidewalk
B520	107	4'-2	V				2'-2	2'-0			1'-7½			A2 Sidewalk
B522	107	6'-8	Y	2'-0	1'-2	3'-6								A2 Sidewalk
A543	83	8'-10	Y	2'-2	0'-6	6'-2								A1 U.S. Sidewalk
B518	29	8'-2	Y	2'-2	0'-6	5'-6								
S502	226	50'-10	B		4'-8	0'-7"	2'-10	3'-6	4'-8		0'-5"	48'-10		Deck transv.
S507	229	10'-2	S	0'-10"	1'-7	5'-6	1'-5			0'-10"				Deck Sidewalk
S508	229	3'-6"	U	1'-0"	1'-6"									
P511	1	10'-7"	PA	2'-10"	2'-5½"	2'-10"					1'-9"	3'-6½"		Pier Shaft
P512	1	11'-6"		3'-2"	2'-7"	3'-2"					1'-10"	3'-8"		
P513	1	12'-5"		3'-6"	2'-8½"	3'-6"					1'-11"	3'-9½"		
P514	1	13'-1"		3'-9½"	2'-9"	3'-9½"					1'-11½"	3'-11"		
P515	1	13'-10"		4'-1"	2'-10"	4'-1"					2'-0"	4'-0½"		
P516	1	14'-9"		4'-5"	2'-11½"	4'-5"					2'-1"	4'-2"		
P517	1	15'-8"		4'-9"	3'-1"	4'-9"					2'-2"	4'-3½"		
P518	1	16'-3"		5'-0"	3'-1½"	5'-0"					2'-2½"	4'-5"		
P519	1	17'-0"		5'-4"	3'-2"	5'-4"					2'-3"	4'-6½"		
P520	1	17'-11"		5'-8"	3'-3½"	5'-8"					2'-4"	4'-8"		
P521	1	18'-9"		6'-0"	3'-4½"	6'-0"					2'-4½"	4'-9½"		
P522	1	19'-7"	PA	6'-4	3'-5½"	6'-4					2'-5½"	4'-11"		
P530	1	9'-2"	U	2'-9½"	3'-6½"									
P531	1	9'-6"		2'-11"	3'-8"									
P532	1	9'-11"		3'-0½"	3'-9½"									
P533	1	10'-3"		3'-2"	3'-11"									
P534	1	10'-8"		3'-3½"	4'-0½"									
P535	1	11'-0"		3'-5"	4'-2"									
P536	1	11'-5"		3'-6½"	4'-3½"									
P537	1	11'-9"		3'-8"	4'-5"									
P538	1	12'-2"		3'-9½"	4'-6½"									
P539	1	12'-7"		3'-11½"	4'-8"									
P540	1	12'-11"		4'-0½"	4'-9½"									
P541	1	13'-3"		4'-2"	4'-11"									Pier Shaft
P550	14	6'-9"		2'-0	2'-9"									Pier Brg. Pads
P551	14	5'-9"	U	2'-0	1'-9"									Pier Brg. Pads
S509	229	3'-7"	U	1'-0"	1'-7"									
S510	229	6'-6"	L	1'-0	5'-6"									
A521	149	2'-6½"	L	0'-10"	1'-8½"									A1 Sidewalk
P1001	114	9'-5"	J	1'-10"	0'-8"	6'-11"					0		5"	Seal Dowels
P1002	103	11'-0"	J	1'-10"	0'-8"	8'-6					0		5"	Distr. Slab Dowel
B521	107	2'-6½"	L	0'-10"	1'-8½"									A2 Sidewalk
MARK	NO.	LENGTH	TYPE	A	B	C	D	E	F	G	H	O	R	LOCATION

TYPE-BENDING DIAGRAMS



All dimensions are out to out of reinf. bar

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

Reinforcing Bar: ASTM A615 Grade 60

GENERAL NOTES

1. First digit(s) following the letter of the Mark indicates size of reinf. bar.
   Mark (A502) bar size - #5
   Mark (P1001) bar size - #10
   Mark (S603) bar size - #6
2. Letter of Marks A, P & S locates bars of Abutments, Piers, and Superstructure parts respectively.

PLANS	BY	DATE
DESIGN - DETAIL	JEB	11-75
CHECKED	RJL	
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

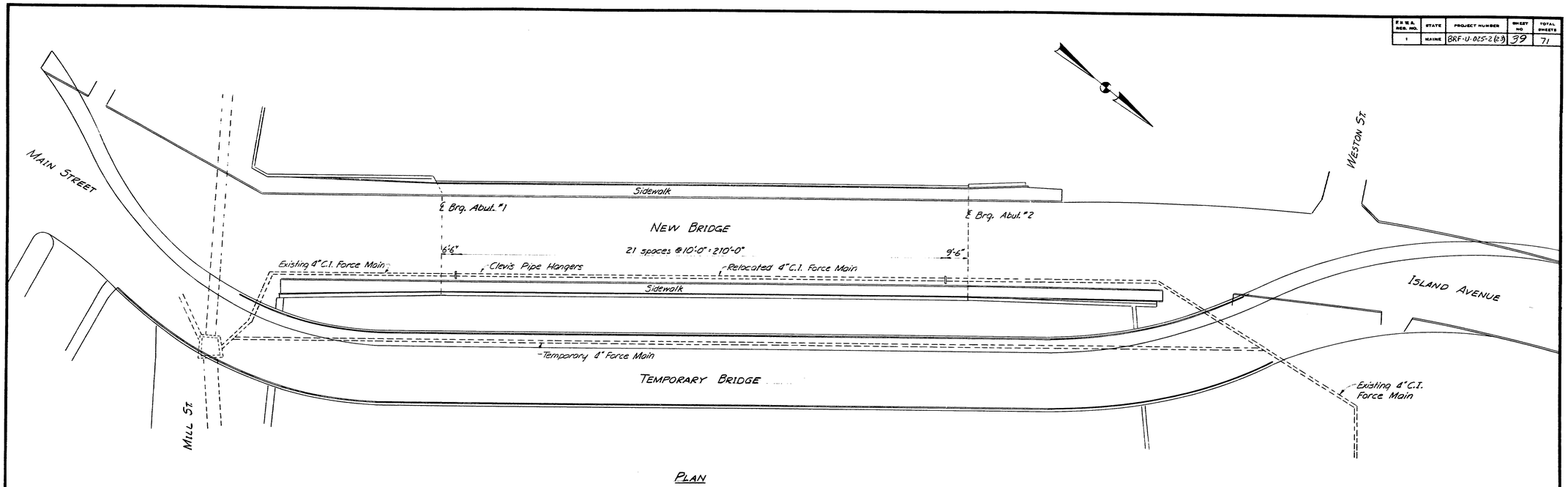
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

REINFORCING STEEL

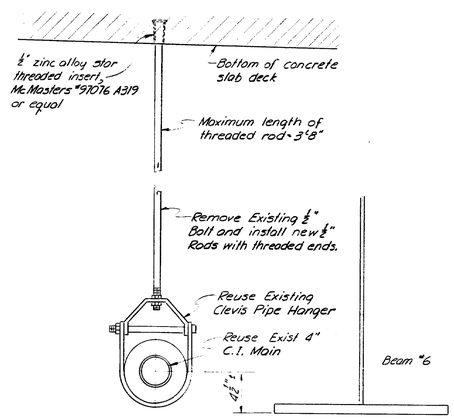
SHEET OF AUGUSTA, MAINE

167-160

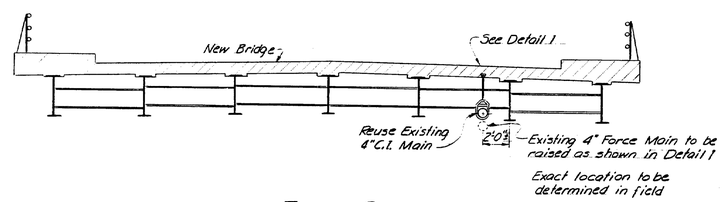
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	39	71



PLAN



DETAIL 1



TYPICAL SECTION

GENERAL NOTES

1. The relocation of the 4" cast iron force main shall be in accordance with Section 817 of the Special Provisions and will be paid for under Item 817.21, 4" Cast Iron Pressure Sewer Pipe.
2. The installation & removal of the temporary 4" force main across the temporary bridge shall be in accordance with Section 817 of the Special Provisions and will be paid under Item 817.211, 4" Temporary Pressure Sewer Pipe.
3. The existing 4" cast iron pipe, Class 150, push-on joints & mech. joint fittings may be reused. The 2" thick insulation with aluminum jacket may be reused if not damaged; damaged portions are to be replaced with material of equal quality.
4. Paint rods & hangers with one 3 mil coat of Carbomastic 15, or equal, applied per paint manufacturers recommendations.

5. Details were taken from Kleinschmidt + Dutting plan 8-929 sheet 1 of 2. Copies are available

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

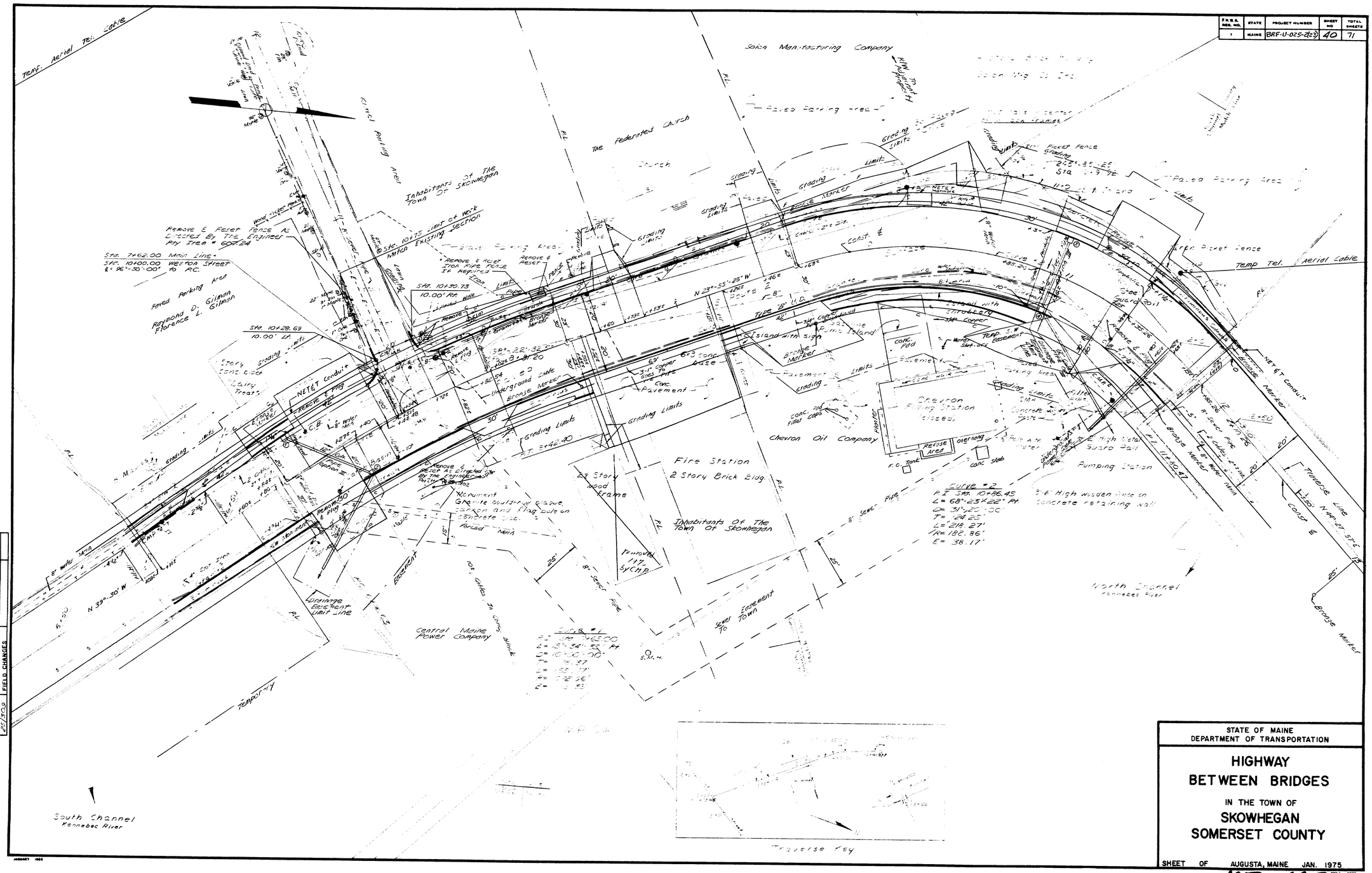
SOUTH CHANNEL BRIDGE
OVER THE
KENNEBEC RIVER
IN THE TOWN OF
SKOWHEGAN
SOMERSET COUNTY

SEWER RELOCATION

SHEET OF AUGUSTA, MAINE

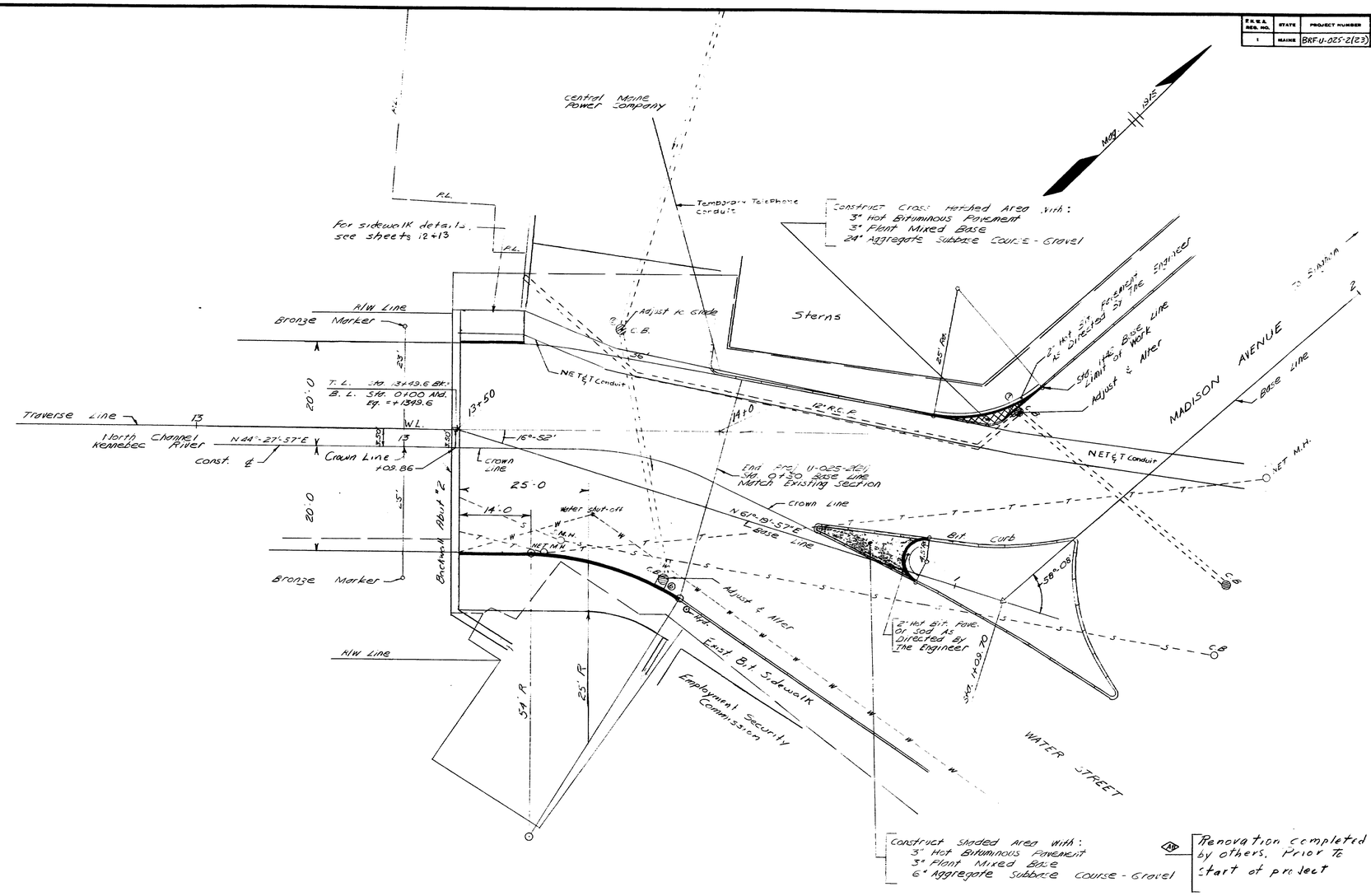
167-161

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(33)	40	71



167-162

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	41	71



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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

NORTH CHANNEL APPROACH

KENNEBEC RIVER

SKOWHEGAN

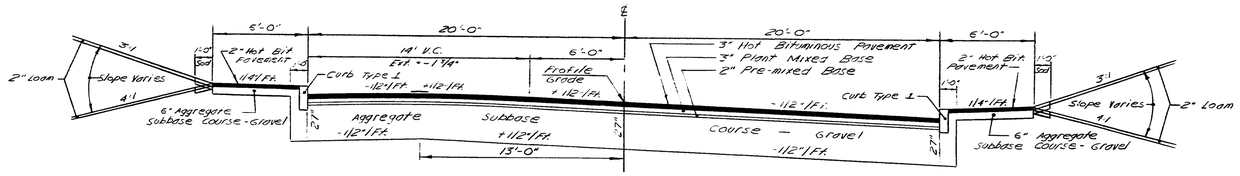
0 10 20 30 40
SCALE IN FEET

SHEET OF AUGUSTA, MAINE

169-163

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	42	71

3" HOT BITUMINOUS PAVEMENT*

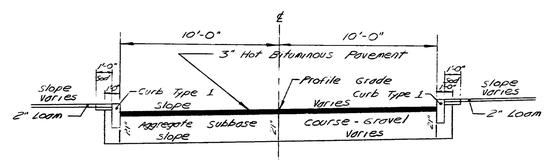


MAIN LINE

Aggregate Subbase Course - Gravel (Under Sidewalk) = 19.33 C.Y. Per 100 L.F.

2" Pre-mixed Bituminous Base (40' Wide) = 24.69 C.Y. Per 100 L.F.
27" Aggregate Subbase Course - Gravel (40' Wide) = 330.81 C.Y. Per 100 L.F.

Aggregate Subbase Course - Gravel (Under Sidewalk) = 19.33 C.Y. Per 100 L.F.



WESTON STREET

Aggregate Subbase Course - Gravel (22' Wide) = 142.08 C.Y. Per 100 L.F.

PROJECT DESIGN ENGINEER	BY	DATE
PLANS DESIGN - DETAILED	G.W.H.	G.W.H. 2/07/73
CHECKED		
REVISIONS		
FIELD CHANGES		

*Note:
The Pavement And Base Depths As Shown On The Plans Are Intended To Be Nominal.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS
SKOWHEGAN

0 4 8 12
SCALE IN FEET

SHEET OF AUGUSTA, MAINE

167-164

DRAINAGE

STATION	RCP SIZE	RCP LENGTH	RCP CLASS	BCCMP SIZE	BCCMP LENGTH	CMP SIZE	CMP LENGTH	Option III CULVERT PIPE SIZE	Option III CULVERT PIPE LENGTH	CATCH BASINS A1-C	A2-C	A5-C	B2	C1	C2	E	MAN HOLES	UNDERDRAINS 'B' LENGTH	UNDERDRAINS 'C' SIZE	UNDERDRAINS 'C' LENGTH	UNDERDRAINS 'B' OUTLET LENGTH	REMARKS
Main Line																						
Sta. 6+97 Lt.												1										
Sta. 7+25 Rt.											1											
Sta. 6+97 Lt. to Sta. 7+25 Rt.								12"	44'													
Sta. 6+78 Rt. to Sta. 7+25 Rt.								12"	52'													
Sta. 7+75 Rt. to Sta. 10+92 Rt.																		302'				
Sta. 10+94 Lt.										1												
Sta. 10+94 Rt.											1											
Sta. 10+94 Lt. to Sta. 10+94 Rt.								12"	34'													
Sta. 10+96 Rt. to Sta. 11+62 Rt.								12"	60'													
North Channel Approach																						
Sta. 0+24 Lt.																						Adjust C.B. to Grade
Sta. 0+46 Rt.																						Adjust & Alter C.B.
Sta. 1+35.5 Lt.																						Adjust & Alter C.B.

DRAINAGE CONT'D.

B. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	43	71

STATION	RCP SIZE	RCP LENGTH	RCP CLASS	BCCMP SIZE	BCCMP LENGTH	CMP SIZE	CMP LENGTH	CULVERT PIPE SIZE	CULVERT PIPE LENGTH	CATCH BASINS A1	A2	B1	B2	C1	C2	E	MAN HOLES	UNDERDRAINS 'B' LENGTH	UNDERDRAINS 'C' SIZE	UNDERDRAINS 'C' LENGTH	UNDERDRAINS 'B' OUTLET LENGTH	REMARKS

GENERAL NOTES

1. Utilities involved in this contract are:
   Central Maine Power Company
   New England Telephone and Telegraph Company
   Skowhegan Water Company
   Town of Skowhegan (Sewers)
   Town of Skowhegan (Fire Alarm)

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

2. Driveway fill side slopes shall be 4:1.

3. All entrances and yards shall be constructed of 2" Hot Bituminous Pavement and 12" Aggregate Subbase Course - Gravel.

4. Loam depths are as follows:
   Under sod..... 2"
   Seeding Method #1.... 2"

5. Place sod strip 1 ft. wide in the following locations:
   a. Behind curb adjacent to earth slopes.
   b. Behind sidewalks adjacent to earth slopes.

6. All earth slopes shall be loamed (2" depth) and seeded method #1. Mulch shall be applied when directed by the engineer.

7. The catch basins type A1-C and type A5-C on the North Channel Approach shall have the curb inlet cut to the same radius as adjacent circular curb. Payment to be incidental to Item 604.161, Altering Catch Basins.

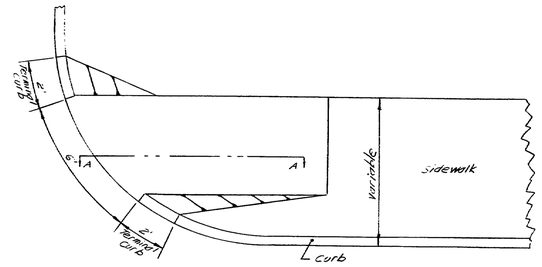
8. The two feet of Circular Curb Type 1 required to be cut for a curved terminal section as noted, will be paid for under Item # 609.23, Terminal Curb Type 1.

9. All excavation below subgrade for catch basins noted "remove & plug" shall be paid for under Common Excavation, Item # 203.20. All plugs shall be constructed of mortar as directed by the engineer. Payment shall be incidental to Item #203.20.

10. Warning lights shall be installed at the following locations:
    a. Beginning of project
    b. End of project

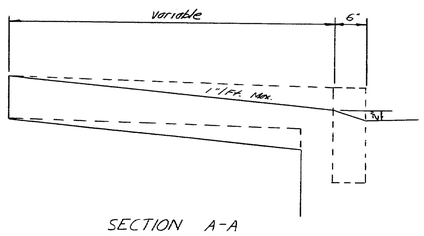
167-165 JAN 25

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	44	71



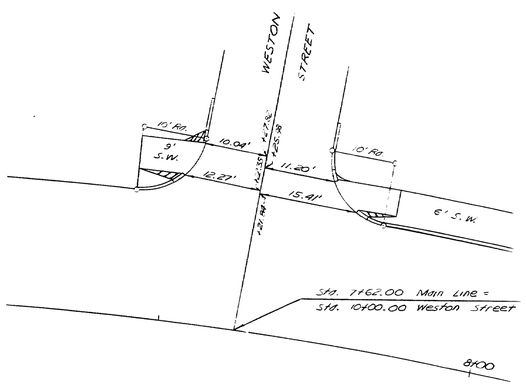
PLAN VIEW

3'



SECTION A-A

1'



LAYOUT PLAN

10'

GENERAL NOTES for WHEEL CHAIR RAMPS

1. There Shall Be A Minimum Of 6" Aggregate Subbase Course- Gravel Under The 2" Pavement On Wheel Chair Ramps.
2. When The Length Of The Wheel Chair Ramps Permit, The 2" Rise In The Width Of The Curb Should Be Omitted.
3. Cut Openings For Wheel Chair Ramps Shall Be 6'.

PROJECT DESIGN ENGINEER		BY	DATE
PLANS	DESIGN - DETAILED	G.W.H.	G.W.H.	Oct. 75
	CHECKED			
	REVISIONS			
	FIELD CHANGES			

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

WHEEL CHAIR RAMPS

WESTON STREET

SKOWHEGAN

SHEET OF AUGUSTA, MAINE

SKOWHEGAN 167-166

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	45	71

CONSTRUCTION NOTES

SUMMARY OF EXCAVATION

Common Excavation (From Cross Sections)	3242 C.Y.
Earth From Drives	625 C.Y.
Structural Excavation (U. D. Only)	34 C.Y.
Total Structural Rock Excavation	81 C.Y.
(1) Total Available Excavation	3986 C.Y.
(2) Total Fill 68 x 1.15	78 C.Y.
Waste = (1) Minus (2)	3908 C.Y.

Removing Single Tree & Stump, Over 24" to 48"

Station	Offset	Tree	Stump
8+05	26' Lt.	48" Elm	48"

Removing Stump, 9" to 24"

Station	Offset	Stump
8+55	30' Lt.	24" Elm

Drives & Entrances

Station	Opening
6+58 Lt.	42'
7+04 Rt.	30'
7+24 Lt.	42'
7+93 Rt.	30'
8+74 Lt.	20'
8+81.5 Rt.	69'
9+47 Rt.	42'
9+53 Lt.	20'
10+34 Lt.	42'
10+74 Lt.	30'
11+20 Lt.	30'
11+25 Rt.	42'

North Channel Approach

0+24 Lt.	36'

Sta. 7+50 Rt. Remove & Reset Monument As Directed By The Engineer. Pay Item #623.102

Sta. 8+37 Lt. Remove & Reset Sign. To Be Paid For Under Labor, Straight Time & Applicable Equipment Rental Item.

Drainage

① Sta. 6+37, 19' Lt., Const. Type A5-C Catch Basin
② Sta. 7+25, 19' Rt. Const. Type A2-C Catch Basin
③ to ② Install 12"x44' Culvert Pipe Option III
④ to Sta. 6+78, 46' Rt., Install 12"x52' Culvert Pipe Option III

⑤ Sta. 10+34, 19' Lt. Const. Type A1-C Catch Basin
⑥ Sta. 10+34, 19' Rt., Const. Type A2-C Catch Basin
⑦ to ⑥ Install 12"x34' Culvert Pipe Option III
⑧ to Sta. 7+75 Rt. Install 302' Type E U.D.
⑨ to Sta. 11+62, 47' Rt., Install 12"x60' Culvert Pipe Option III

Altering Catch Basin: (North Channel Approach)
⑤ Sta. 0+46 Rt.
⑦ Sta. 1+35.5 Lt.

Adjusting Catch Basin to Grade (North Channel Approach)
⑤ Sta. 0+24 Lt.

Remove & Reset Fence
Weston Street
Sta. 10+25± Lt. to Sta. 10+75± Lt., = 50 L.F.

Sta. 8+50± Lt. If Required Remove & Reset Iron Pipe Fence As Directed By The Engineer. To Be Paid For Under Labor, Straight Time.

Vertical Curb - Type 1

Main Line

Sta. 6+81, 20' Lt., to Sta. 7+02, 20' Lt.,	= 17.50 L.F.
Sta. 6+81, 26' Lt., to Sta. 7+02, 26' Lt.,	= 21.50 L.F.
Sta. 7+21, 20' Rt., to Sta. 7+75, 20' Rt.,	= 48.12 L.F.
Sta. 7+82.59, 20' Lt., to Sta. 8+62, 20' Lt.,	= 81.57 L.F.
Sta. 8+10, 20' Rt. to Sta. 8+45, 20' Rt.,	= 33.87 L.F.
Sta. 8+37, 27.5' Rt., to Sta. 8+47, 27.5' Rt.,	= 10.00 L.F.
Sta. 8+86, 20' Lt., to Sta. 9+41, 20' Lt.,	= 55.00 L.F.
Sta. 9+18, 20' Rt., to Sta. 9+24, 20' Rt.,	= 6.00 L.F.
Sta. 9+65, 20' Lt., to Sta. 10+13.5, 20' Lt.	= 53.81 L.F.
Sta. 9+22, 20' Rt., to Sta. 10+32, 20' Rt.,	= 109.11 L.F.
Sta. 9+77, 26' Rt., to Sta. 10+87, 27.5' Rt.,	= 95.00 L.F.
Sta. 10+35, 20' Lt., to Sta. 10+39, 20' Lt.,	= 4.00 L.F.
Sta. 10+89, 20' Lt., to Sta. 11+05, 20' Lt.,	= 13.75 L.F.
Sta. 11+35, 20' Lt., to Sta. 11+79, 20' Lt.,	= 48.81 L.F.
Sta. 11+51, 20' Rt., to Sta. 11+63, 20' Rt.,	= 10.69 L.F.

Weston Street

Sta. 10+28.69, 10' Lt., to Sta. 10+33, 10' Lt.,	= 4.31 L.F.
Sta. 10+30.73, 10' Rt., to Sta. 10+33, 10' Rt.,	= 2.27 L.F.

North Channel Approach

Sta. 0+07.5±, 22.5'± Rt., to Sta. 0+20.5±, 18'± Rt.,	= 14.00 L.F.

Vertical Curb - Circular - Type 1

Weston Street

Radius Point	Offset	Radius	Length
10+28.69	20' Lt.	10'	8.87'
10+30.73	20' Rt.	10'	11.88'

North Channel Approach

0+36.5±	70'± Rt.	54'	26.14'
0+83.6±	54.5'± Lt.	25'	18.25'

Note: Station and Offset Are At the Face of Curb, 1 Ft. From the End.

Terminal Curb, Type 1

Main Line

Station	Offset	Section
5+30	20' Lt.	Left
6+80	26' Lt.	Right
7+03	20' Lt.	Right
7+03	26' Lt.	Left
7+20	20' Rt.	Right
7+45.48	20'± Lt.	Left (10' Rd.)
7+75	20' Rt.	Left
8+09	20' Rt.	Right
8+46	20' Rt.	Left
8+63	20' Lt.	Right
8+85	20' Lt.	Left
9+17	20' Rt.	Right
9+25	20' Rt.	Left
9+42	20' Lt.	Right
9+64	20' Lt.	Left
9+71	20' Rt.	Right
9+86	26' Rt.	Right
10+14.5	20' Lt.	Right
10+54	20' Lt.	Left
10+60	20' Lt.	Right
10+88	27.5' Rt.	Left
10+88	20' Lt.	Left
11+00	20' Rt.	Left
11+06	20' Lt.	Right
11+34	20' Lt.	Left
11+50	20' Rt.	Right

Weston Street

10+21.5	16.5' Rt.	Left (10' Rd.)
10+21.8	12.9' Lt.	Right (10' Rd.)
10+26.9	10.8' Rt.	Right (10' Rd.)
10+28.82	10.0' Lt.	Left
10+34	10.0' Lt.	Right
10+34	10.0' Rt.	Left

Curb Type 3a

North Channel Approach

Radius Point	Offset	Radius	Length
0+93.5±	3'± Lt.	4.5'	12.5'

Right-of-Way Monuments

P.C. Sta. 6+86.63, 30' Rt.,	= 1 ea.

Bronze Pin Markers

Sta. 3+50.00, 23' Lt.,	= 1 ea.
Sta. 3+50.00, 23' Rt.,	= 1 ea.
P.C. Sta. 6+86.63, 23' Lt.,	= 1 ea.
P.T. Sta. 8+42.40, 23' Lt.,	= 1 ea.
P.T. Sta. 8+42.40, 23' Rt.,	= 1 ea.
P.C. Sta. 9+62.20, 23' Lt.,	= 1 ea.
P.C. Sta. 9+62.20, 30' Rt.,	= 1 ea.
P.T. Sta. 11+80.47, 23' Lt.,	= 1 ea.
P.T. Sta. 11+80.47, 25' Rt.,	= 1 ea.
Sta. 13+00.00, 23' Lt.,	= 1 ea.
Sta. 13+00.00, 25' Rt.,	= 1 ea.

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

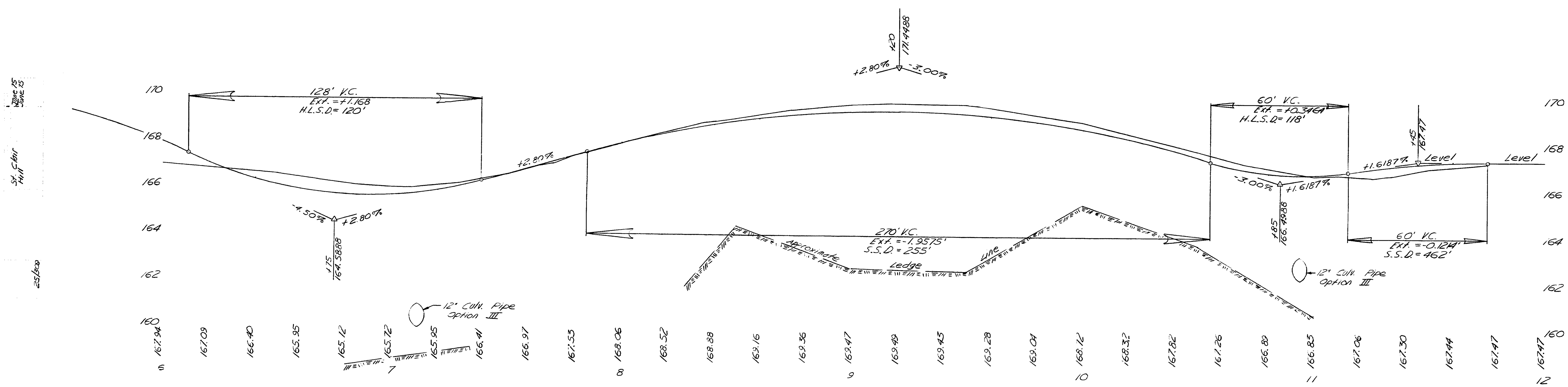
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION NOTES
&
SUMMARY OF EXCAVATION

SKOWHEGAN

SHEET OF AUGUSTA, MAINE

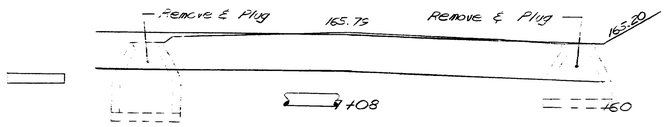
BRF-U-025-2(23) 46 71



Profile Sta. 6+00 to Sta. 12+00

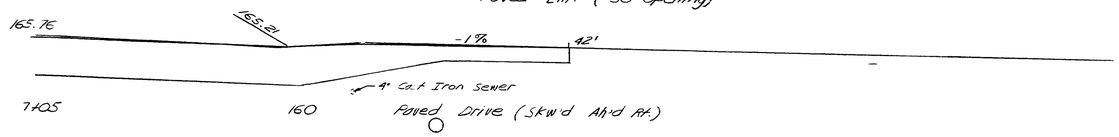
167-168 SKOWHEGAN 25

[redacted]

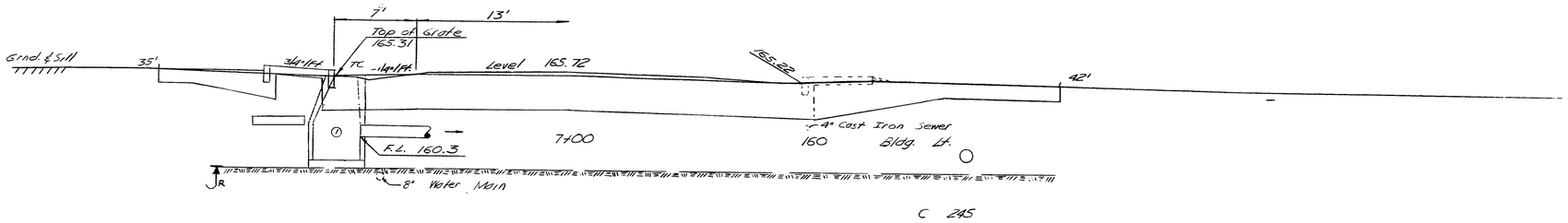


① ② Sta. 6+37, 17' Lt. to Sta. 7+25, 17' Rt.
Install 12" X 44' Culvert Pipe Option III

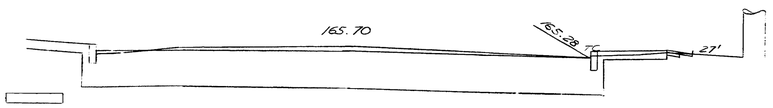
Sta. 7+04 Rt. Const.
Paved Ent. (30' Opening)



Sta. 6+97 19' Lt. Const.
Type A5-C Catch Basin

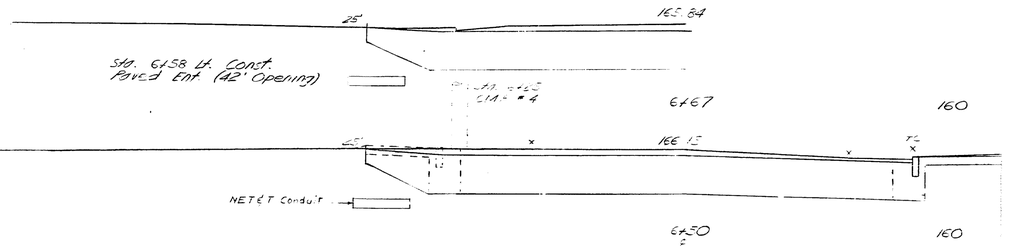


Sta. 6+78, 46' Rt. to Sta. 7+23, 19' Rt.
Install 12" X 52' Culvert Pipe Option III

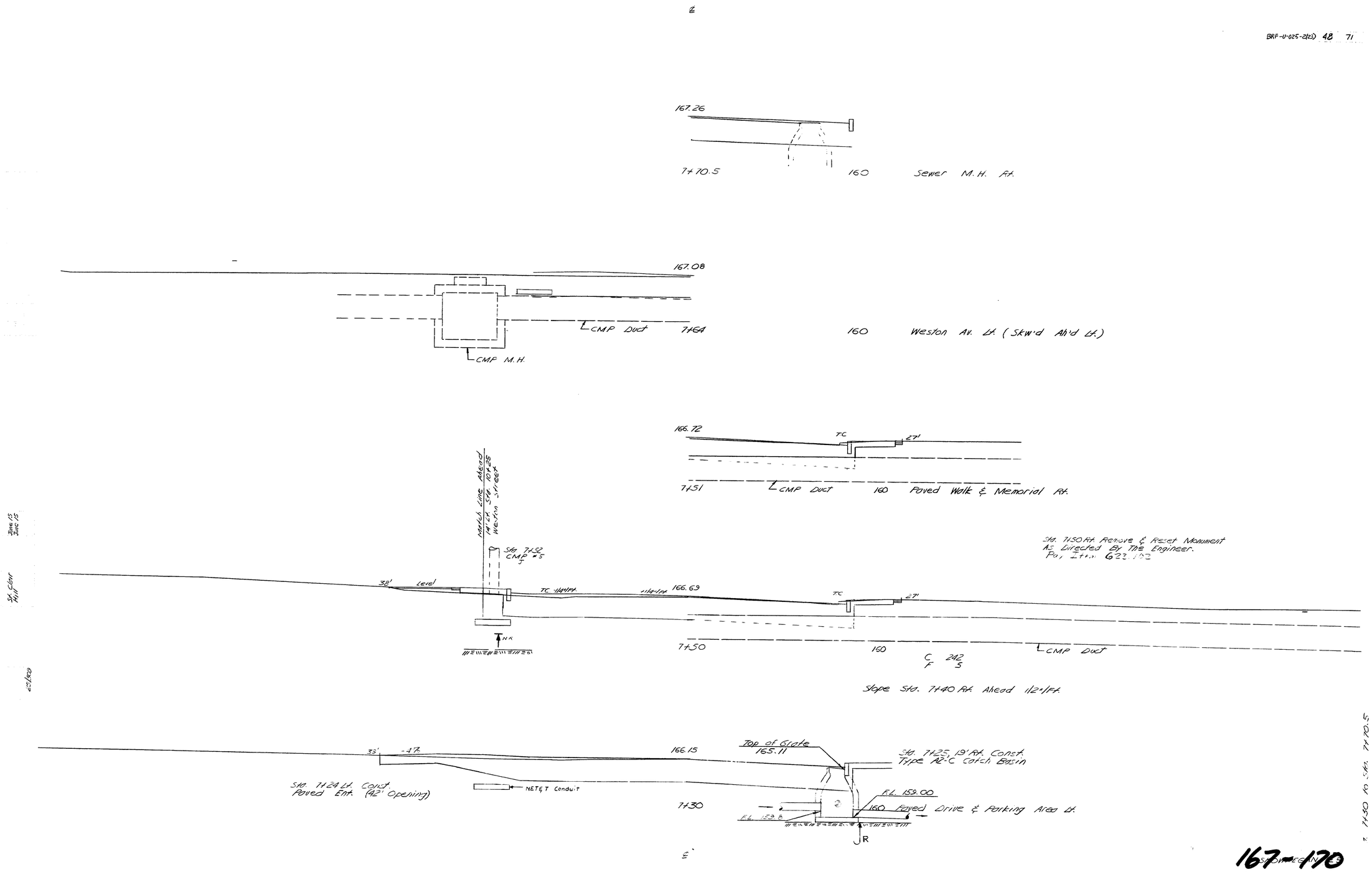


Outlet At Sta. 6+78, 46' Rt.
Elevation 158.50

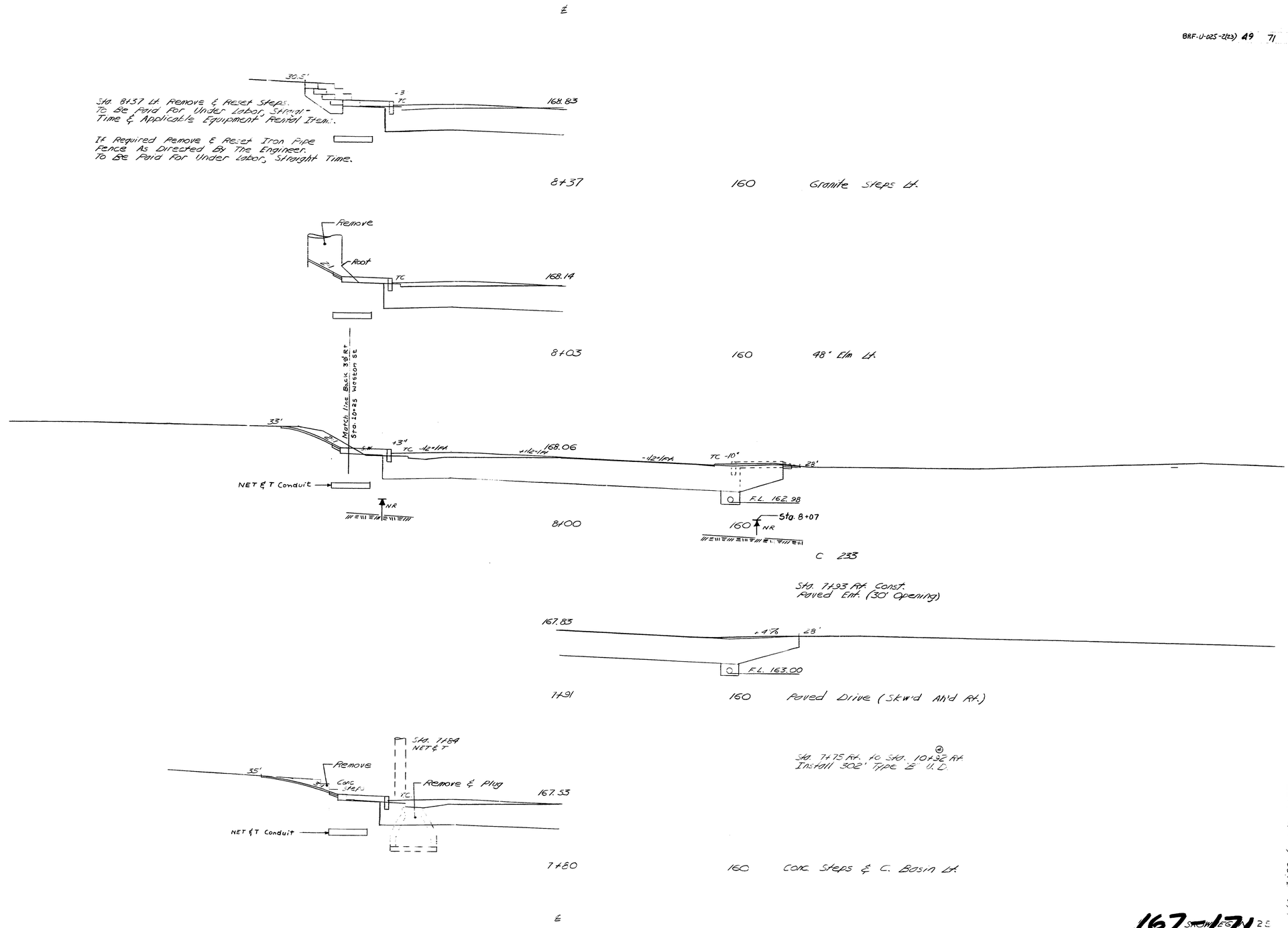
Slope Sta. 6+80 Rt. Back 1/4"/Ft.



167-169


167.26
7+70.5
160
Sewer M.H. Rt.
167.08
CMP Duct
7+64
160
Weston Av. Lt. (Skw'd Ah'd Lt.)
CMP M.H.
166.72
TC
27'
7+51
CMP Duct
160
Paved Walk & Memorial Rt.
Match Line Ahead
14' Lt. Sta. 10+25
Weston Street
Sta. 7+52
CMP #5
Sta. 7+50 Rt. Remove & Reset Monument
As Directed By The Engineer.
Pay Item 623.162
38'
Level
TC -1/4"/Ft.
+1/4"/Ft.
166.69
TC
27'
7+50
160
CMP Duct
C 242
F S
Slope Sta. 7+40 Rt. Ahead 1/2"/Ft.
33'
-4%
166.15
Top of Grate
165.11
Sta. 7+25, 19' Rt. Const.
Type A2-C Catch Basin
Sta. 7+24 Lt. Const.
Paved Ent. (42' Opening)
NET&T Conduit
F.L. 159.00
7+30
160
Paved Drive & Parking Area Lt.
F.L. 159.8
R
7+30 to Sta. 7+70.5

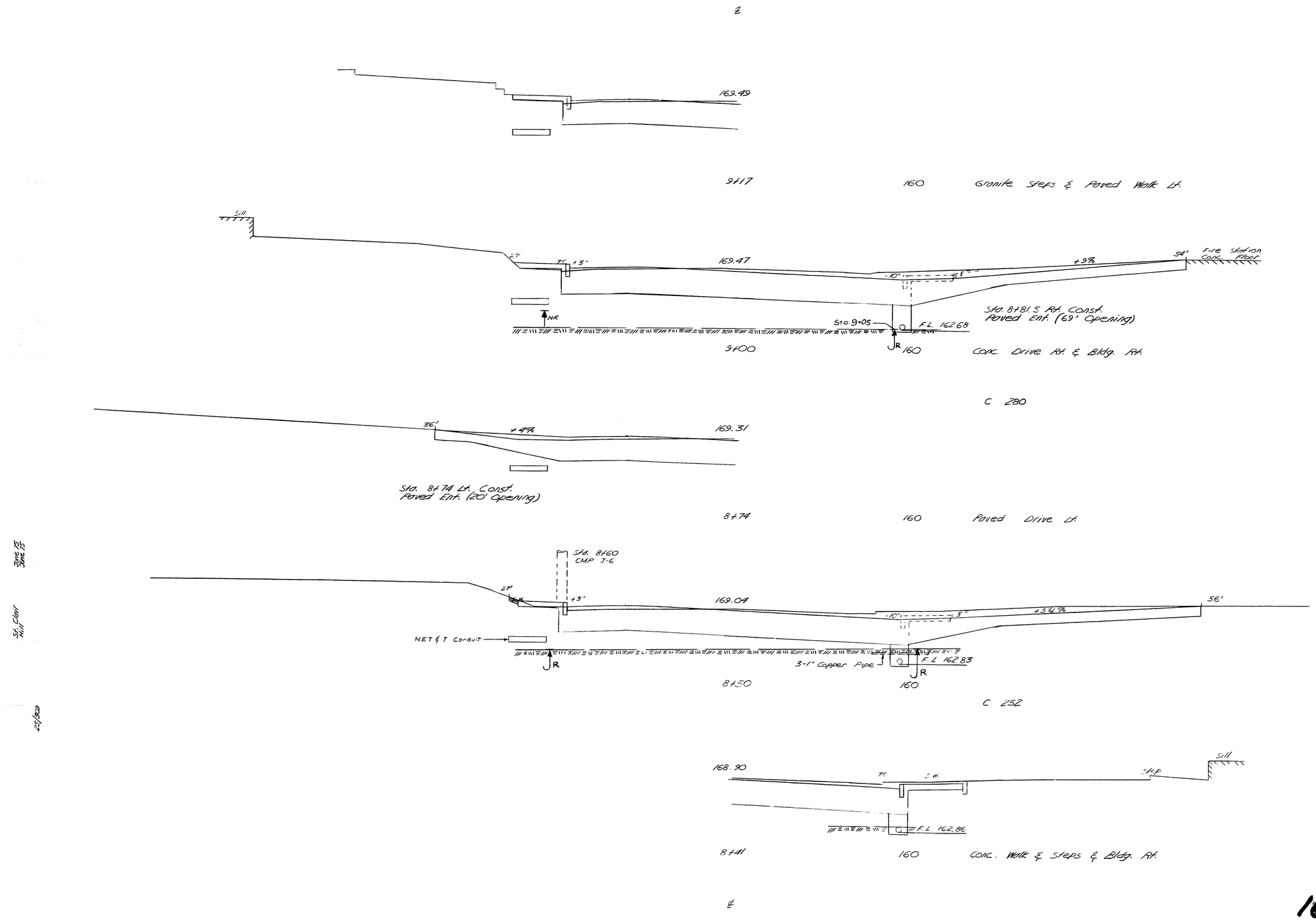
167-170



Sta. 7+80 to Sta. 8+37

June 15
June 15
St. Clair
Hill
25/300

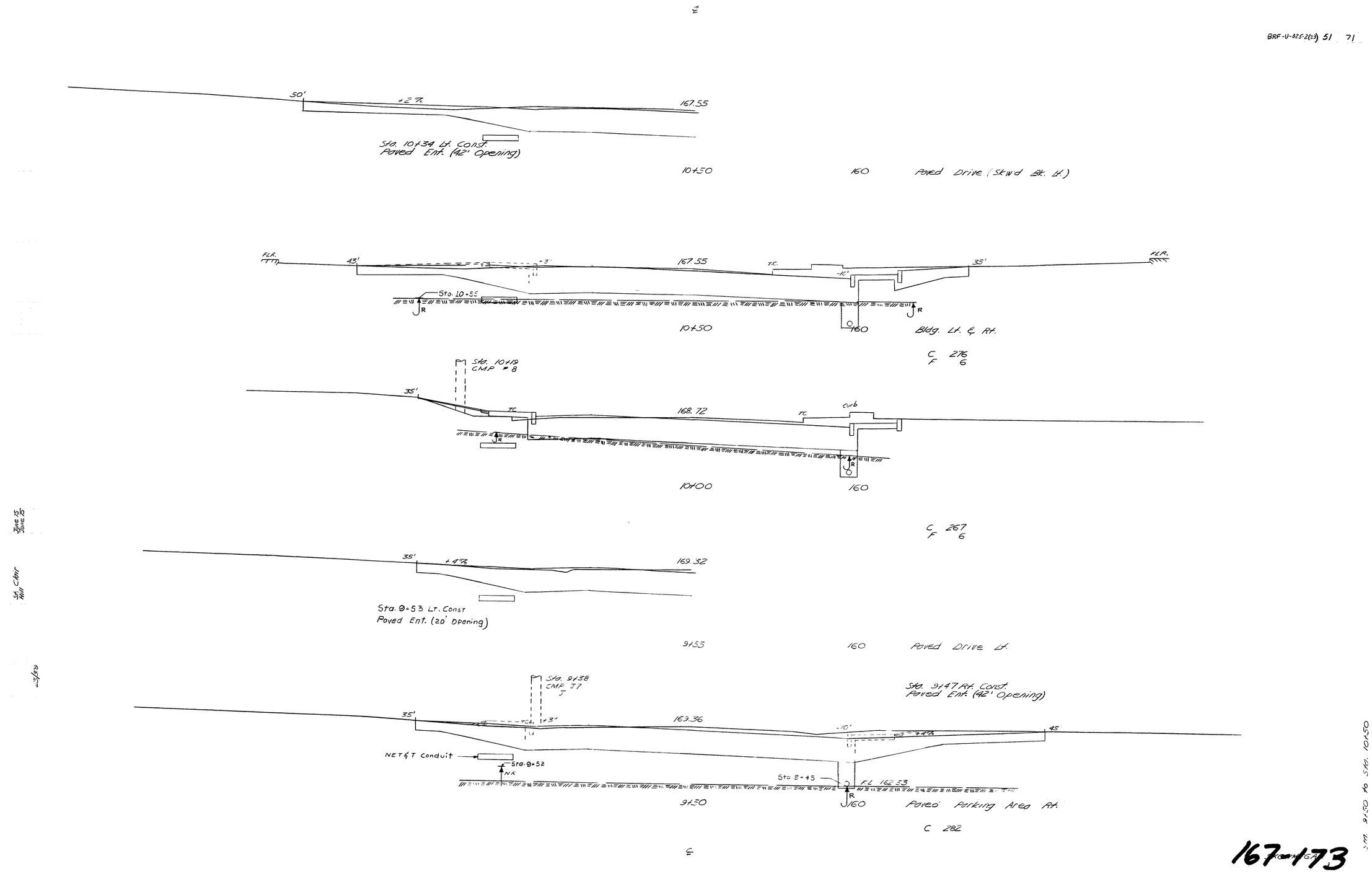
167-171



June 15
June 15
St. Clair
Hill
25/309

m. 8+41 to Sta. 9+17

167-172



June 15
June 25

St. Clair
Hill

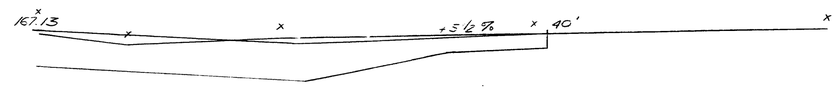
Sta. 9+50 to Sta. 10+50

167-173

BRF-U-025-2(23) 52 71

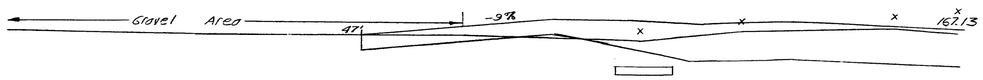
℄

Sta. 11+25 Rt. Const.
Paved Ent. (42' Opening)



11+25 160 Paved Drive & Parking Area Rt.

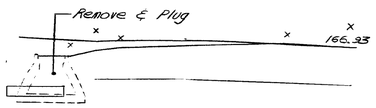
Sewer Pipe



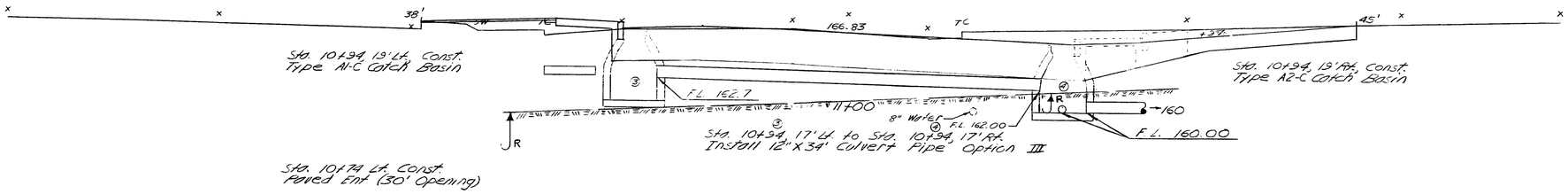
Sta. 11+20 Lt. Const.
Paved Ent. (30' Opening)

11+25 160 Paved Drive skw'd Sta. Lt.

Sta. 10+96, 13' Rt., to Sta. 11+62, 47' Rt.
Install 12"x60' Culvert Pipe Option III

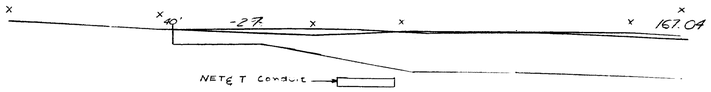


11+11 160 C. Basin Lt.



Sta. 10+74 Lt. Const.
Paved Ent. (30' Opening)

C 286
F 11



10+70 160 Paved Drive Lt.

℄

Sta. 10+70 to Sta. 11+25

167-174

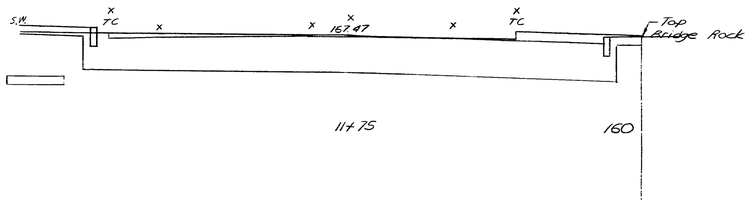
BRF-U-025-2(23) 53 71

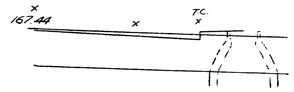
℄

Sta. 12+10, Traverse Line

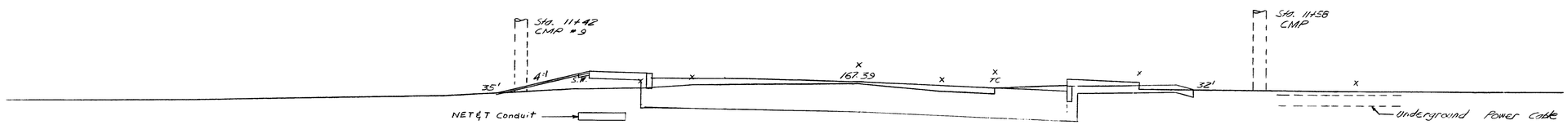
Pavement

C 119
F 14





11+61 160 M.H. Rt.

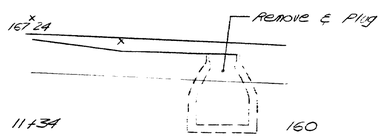


11+50 160

Sta. 11+62.47' Rt.
Outlet Elevation 159.50

C 249
F 23

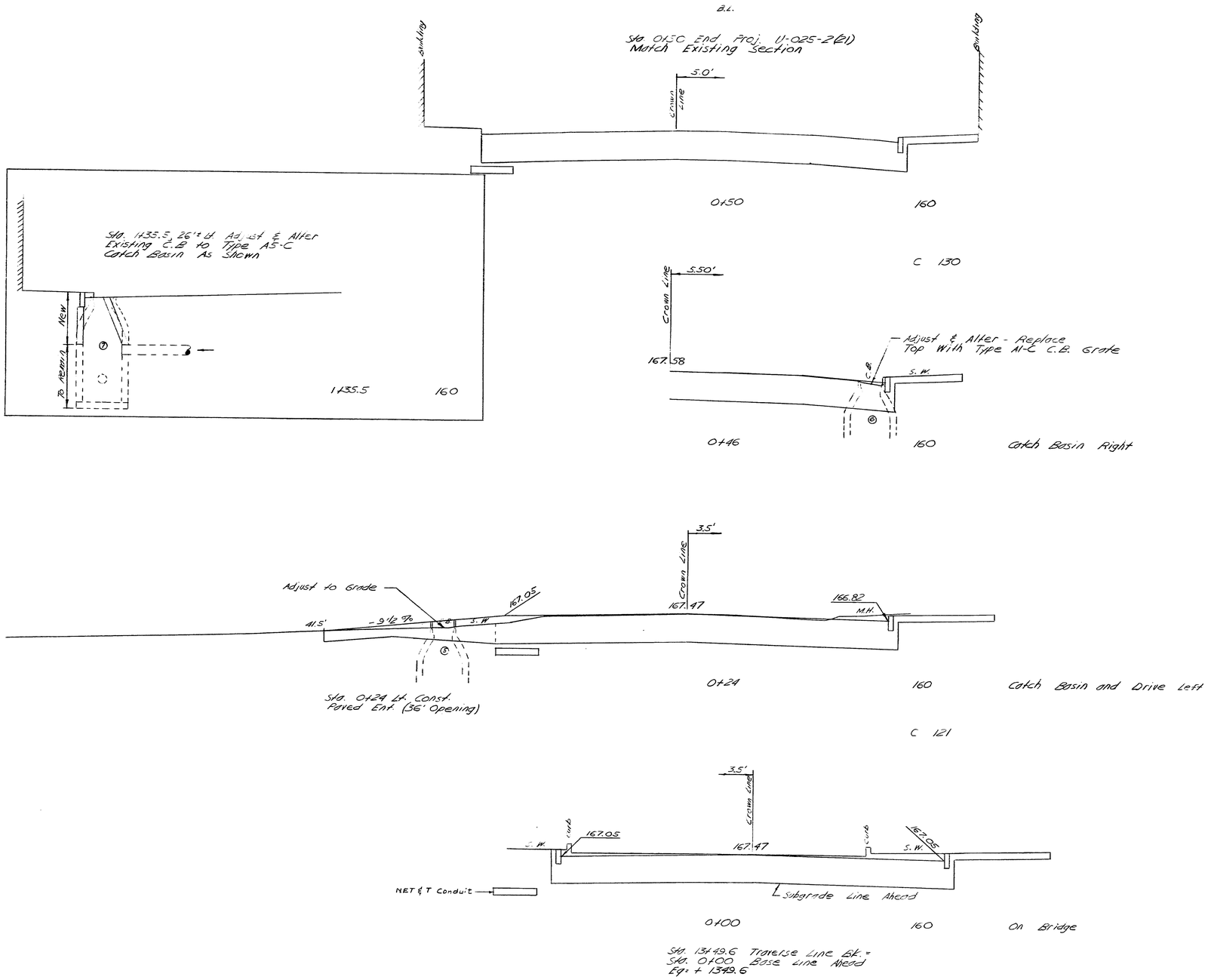
8" Sewer Pipe



11+34 160 C. Basin Rt

℄

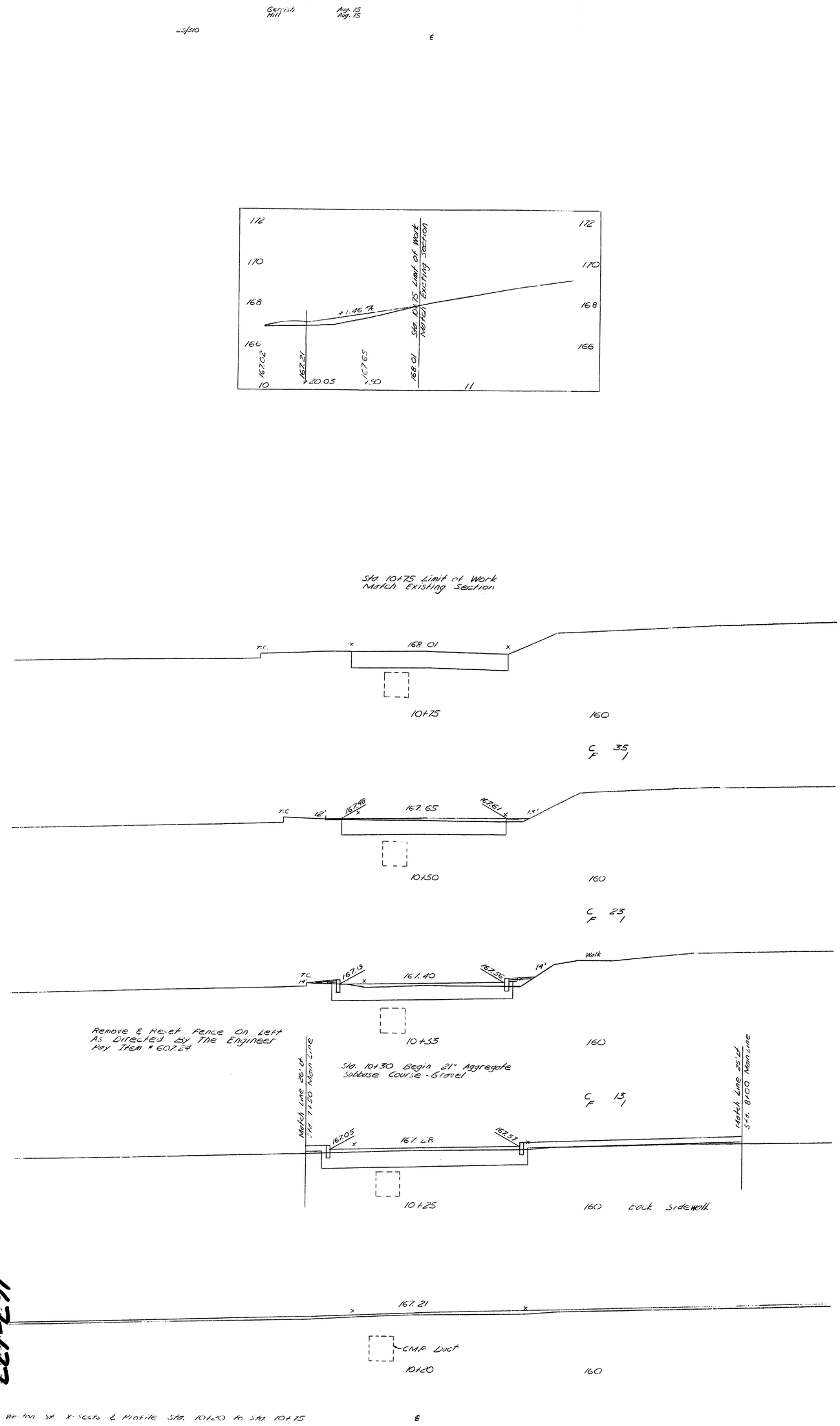
167-175



Bartlett Eng. Co. Od 75
Hill
55-12

Sta. 0+00 to Sta. 0+50 Madison Avenue Base Line

167-176

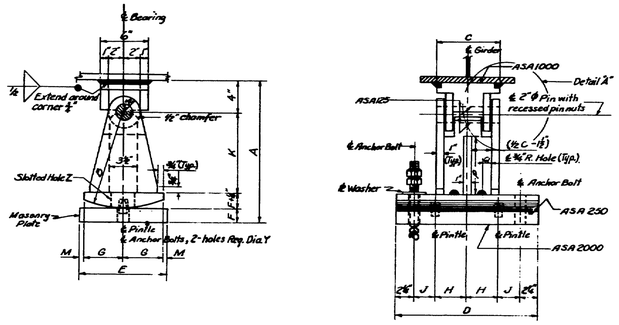


Weston St. X-Sects & Profile Sta. 10+20 to Sta. 10+75

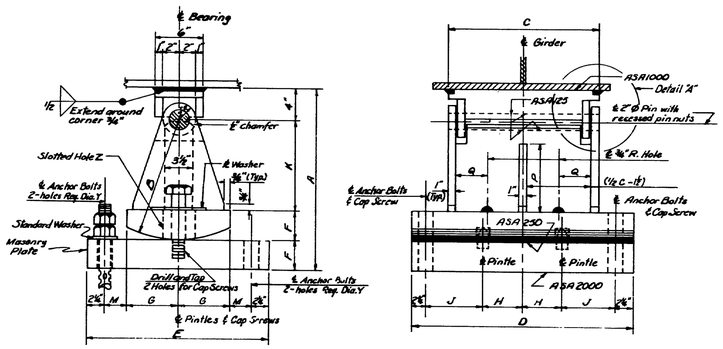
BRF-U-025-2(23) 55 71

167-177

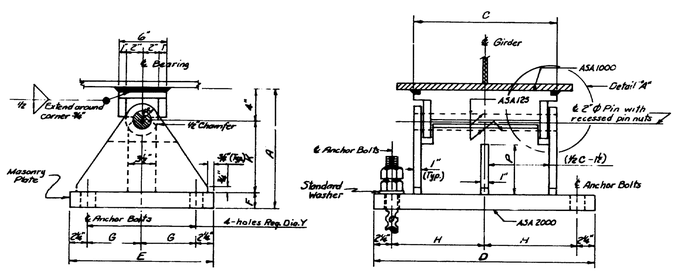
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-L-525-2(23)	59	77



EXPANSION PEDESTAL — EPD

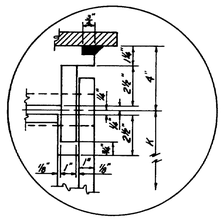


EXPANSION PEDESTAL — EPE

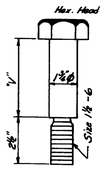


FIXED PEDESTAL — FPD

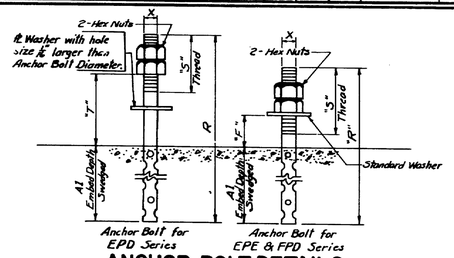
MARK	LOAD	A	B	C	D	E	F	G	H	J	K	M	P	Q	R	S	T		V	X-Anchor Bolt Diameter	Y-Masonry Plate Hole Size	Number Anchor Bolts Required	Z-Slotted Hole for Anchor Bolts or Cap Screws	℄ Washer Size for Anchor Bolts or Cap Screws	A1 Embedment Depth	MARK
EPD-1	100K	1'-2 3/4"	9"	8"	1'-6"	8"	1 1/2"	3 1/2"	4"	2 3/4"	7"	1/2"	–	3"	1'-4 1/2"	3"	4 1/2"		–	1"	1 1/8"	2	3" × 1 1/8"	3" × 5" × 1/2"	10"	EPD-1
EPD-2	100K	1'-2 3/4"	9"	8"	1'-6"	9"	1 3/4"	4"	4"	2 3/4"	7"	1/2"	–	3"	1'-4 3/4"	3"	4 1/2"		–	1"	1 1/8"	2	3" × 1 1/8"	3" × 5" × 1/2"	10"	EPD-2
EPD-3	100K	1'-2 3/4"	9"	8"	1'-6"	10"	1 3/4"	4 1/2"	4"	2 3/4"	7"	1/2"	–	3"	1'-4 3/4"	3"	4 1/2"		–	1"	1 1/8"	2	3" × 1 1/8"	3" × 5" × 1/2"	10"	EPD-3
EPD-4	100K	1'-3 3/4"	1'-0"	8"	1'-6"	11"	1 3/4"	5"	4"	2 3/4"	10"	1/2"	–	3"	1'-5"	3"	4 1/2"		–	1"	1 1/8"	2	3" × 1 1/8"	3" × 5" × 1/2"	10"	EPD-4
EPD-5	200K	1'-9 1/2"	1'-3"	10"	1'-8"	1'-0"	2 1/2"	5 1/2"	4"	3 3/4"	1'-0 1/4"	1/2"	–	4"	2'-0 3/4"	4"	6 1/2"		–	1 1/2"	1 1/2"	2	4" × 1 1/8"	4" × 7" × 1/2"	1'-3"	EPD-5
EPD-6	200K	1'-9 1/2"	1'-3"	10"	1'-8"	1'-1"	2 1/2"	6"	4"	3 3/4"	1'-0 1/4"	1/2"	–	4"	2'-1"	4"	6 1/2"		–	1 1/2"	1 1/2"	2	4" × 1 1/8"	4" × 7" × 1/2"	1'-3"	EPD-6
EPD-7	200K	1'-9 1/2"	1'-3"	10"	1'-8"	1'-2"	2 1/2"	6 1/2"	4"	3 3/4"	1'-0 1/4"	1/2"	–	4"	2'-1"	4"	6 1/2"		–	1 1/2"	1 1/2"	2	4" × 1 1/8"	4" × 7" × 1/2"	1'-3"	EPD-7
EPD-8	200K	1'-9 1/2"	1'-3"	10"	1'-8"	1'-3"	2 1/2"	7"	4"	3 3/4"	1'-0 1/4"	1/2"	–	4"	2'-1"	4"	6 3/4"		–	1 1/2"	1 1/2"	2	4" × 1 1/8"	4" × 7" × 1/2"	1'-3"	EPD-8
EPD-9	300K	1'-10"	1'-3"	1'-2"	2'-0"	1'-4"	3"	7 1/2"	5"	4 3/4	1 1/8"	1/2"	–	6"	2'-2 1/2"	4"	8"		–	1 1/2"	1 1/2"	2	5" × 1 1/8"	4" × 10" × 1/2"	1'-3"	EPD-9
EPD-10	400K	1'-10 1/2"	1'-3"	1'-6"	2'-4"	1'-6"	3 1/2"	8 1/2"	6"	5 3/4"	1 1/8"	1/2"	8 3/4"	3 3/4"	2'-3"	4"	8 3/4"		–	1 1/2"	1 1/2"	2	5" × 1 3/4"	4" × 10" × 1/2"	1'-3"	EPD-10
EPE-1	200K	1'-10"	1'-3"	10"	1'-7"	1'-6"	3"	4"	4"	3 1/4"	1'-0"	2 3/4"	–	4"	1'-10"	4 1/2"	–		4"	1 1/2"	1 1/2"	4	3 1/2" × 1 1/8"	3 1/2" × 4 1/2" × 1/2"	1'-3"	EPE-1
EPE-2	200K	1'-10"	1'-3"	11"	1'-8"	1'-9"	3"	5 1/2"	4 1/2"	3 1/2"	1'-0"	2 3/4"	–	4 1/2"	1'-10"	4 1/2"	–		4"	1 1/2"	1 1/2"	4	4" × 1 1/8"	3 1/2" × 3 1/2" × 1/2"	1'-3"	EPE-2
EPE-3	200K	1'-10"	1'-3"	11"	1'-8"	1'-10"	3"	6"	4 1/2"	3 1/4"	1'-0"	2 3/4"	–	4 1/2"	1'-10"	4 1/2"	–		4 1/2"	1 1/2"	1 1/2"	4	4" × 1 1/8"	3 1/2" × 3 1/2" × 1/2"	1'-3"	EPE-3
EPE-4	200K	1'-10"	1'-3"	11"	1'-8"	1'-10"	3"	6 1/2"	4 1/2"	3 1/4"	1'-0"	2 3/4"	–	4 1/2"	1'-10"	4 1/2"	–		4 1/2"	1 1/2"	1 1/2"	4	4 1/2" × 1 1/8"	3 1/2" × 6" × 1/2"	1'-3"	EPE-4
EPE-5	200K	1'-10"	1'-3"	11"	1'-8"	2'-0"	3"	7"	4 1/2"	3 1/4"	1'-0"	2 3/4"	–	4 1/2"	1'-10"	4 1/2"	–		4 3/4"	1 1/2"	1 1/2"	4	4 1/2" × 1 1/8"	3 1/2" × 6" × 1/2"	1'-3"	EPE-5
EPE-6	300K	1'-10"	1'-3"	1'-2"	1'-11"	1'-6"	3"	4"	5"	4 1/4"	1'-0"	2 3/4"	–	6"	1'-10"	4 1/2"	–		4"	1 1/2"	1 1/2"	4	2 3/4" × 1 1/8"	3 1/2" × 4 1/2" × 1/2"	1'-3"	EPE-6
EPE-7	300K	1'-10 1/2"	1'-3"	1'-2"	1'-11"	1'-8"	3 1/2"	5"	5"	4 1/2"	1 1/8"	2 3/4"	–	6"	1'-10"	4 1/2"	–		4"	1 1/2"	1 1/2"	4	3" × 1 1/8"	3 1/2" × 5" × 1/2"	1'-3"	EPE-7
EPE-8	300K	1'-10 1/2"	1'-3"	1'-2"	1'-11"	1'-10"	3 1/2"	6"	5"	4 1/2"	1 1/8"	2 3/4"	–	6"	1'-10 1/2"	4 1/2"	–		4 1/2"	1 1/2"	1 1/2"	4	4 1/2" × 1 1/8"	3 1/2" × 6 1/2" × 1/2"	1'-3"	EPE-8
EPE-9	300K	1'-10 1/2"	1'-3"	1'-2"	1'-11"	2'-0"	3 1/2"	7"	5"	4 1/2"	1 1/8"	2 3/4"	–	6"	1'-10 1/2"	4 1/2"	–		4 3/4"	1 1/2"	1 1/2"	4	5" × 1 1/8"	3 1/2" × 6 1/2" × 1/2"	1'-3"	EPE-9
EPE-10	300K	1'-10 1/2"	1'-3"	1'-2"	1'-11"	2'-3"	3 1/2"	8"	5"	4 1/4"	1 1/2"	3 1/4"	–	6"	1'-10 1/2"	4 1/2"	–		5 1/4"	1 1/2"	1 1/2"	4	5" × 1 1/8"	3 1/2" × 7" × 1/2"	1'-3"	EPE-10
EPE-11	400K	1'-10 1/2"	1'-3"	1'-7"	2'-4"	1'-7"	3 1/2"	4 1/2"	5"	6 3/4"	1 1/2"	2 3/4"	9"	4"	1'-10"	4 1/2"	–		4"	1 1/2"	1 1/2"	4	4" × 1 1/8"	3 1/2" × 5" × 1/2"	1'-3"	EPE-11
EPE-12	400K	1'-10 1/2"	1'-3"	1'-7"	2'-4"	1'-11"	3 1/2"	6 1/2"	5"	6 3/4"	1 1/2"	2 3/4"	8 1/2"	4"	1'-10 1/2"	4 1/2"	–		5"	1 1/2"	1 1/2"	4	5" × 1 1/8"	3 1/2" × 6" × 1/2"	1'-3"	EPE-12
EPE-13	400K	1'-11"	1'-3"	1'-7"	2'-4"	2'-4"	4"	8 1/2"	5"	6 3/4"	1"	3 1/2"	8 1/2"	4"	1'-11"	4 1/2"	–		6 1/4"	1 1/2"	1 1/2"	4	6 1/2" × 1 1/8"	3 1/2" × 8" × 1/2"	1'-3"	EPE-13
EPE-14	600K	2'-1 1/2"	1'-6"	1'-11"	3'-0"	1'-10"	3 3/4"	6"	7"	8 3/4"	1'-2 1/4"	2 3/4"	11 1/2"	5"	1'-10 1/2"	4 1/2"	–		4 1/2"	1 1/2"	1 1/2"	4	4 1/2" × 1 1/8"	4" × 5 1/2" × 1/2"	1'-3"	EPE-14
EPE-15	600K	2'-2 1/4"	1'-6"	1'-11"	3'-0"	2'-3"	4 1/4"	9"	7"	8 3/4"	1'-1 1/8"	3 1/4"	11"	5"	1'-11"	4 1/4"	–		6 1/2"	1 1/2"	1 1/2"	4	6 1/2" × 1 1/8"	4" × 8" × 1/2"	1'-3"	EPE-15
EPE-16	800K	2'-2"	1'-6"	2'-6"	3'-10"	1'-11"	4"	6 1/2"	10"	10 3/4"	1'-2"	2 3/4"	11 1/2"	6 3/4"	1'-11"	4 1/2"	–		5"	1 1/2"	1 1/2"	4	4 1/2" × 1 1/8"	4" × 6" × 1/2"	1'-3"	EPE-16
EPE-17	800K	2'-2 1/2"	1'-6"	2'-6"	3'-10"	2'-3"	4 1/2"	9"	10"	10 3/4"	1'-1 1/2"	3 1/4"	10 3/4"	6 3/4"	1'-11 1/2"	4 1/2"	–		6 1/2"	1 1/2"	1 1/2"	4	6 1/2" × 1 1/8"	4" × 8 1/2" × 1/2"	1'-3"	EPE-17
FPD-1	100K	1'-0"	–	8"	1'-6"	9"	2"	2 1/2"	6 1/2"	–	6"	–	–	–	1'-3"	3 1/2"	–		–	1"	1 1/8"	4	–	Standard	10"	FPD-1
FPD-2	200K	1'-0"	–	10"	1'-8"	1'-2"	2"	4 1/2"	7 1/2"	–	6"	–	–	–	1'-8"	4"	–		–	1 1/2"	1 1/2"	4	–	Standard	1'-3"	FPD-2
FPD-3	300K	1'-0"	–	1'-2"	2'-0"	1'-4"	2"	5 3/4"	9 1/2"	–	6"	–	–	–	1'-8"	4"	–		–	1 1/2"	1 1/2"	4	–	Standard	1'-3"	FPD-3
FPD-4	400K	1'-3"	–	1'-6"	2'-4"	1'-6"	2"	6 3/4"	11 1/2"	–	9"	–	6 1/4"	–	1'-8"	4"	–		–	1 1/2"	1 1/2"	4	–	Standard	1'-3"	FPD-4
FPD-5	600K	1'-3"	–	1'-11"	3'-0"	1'-10"	3"	8 1/2"	1'-3 1/2"	–	8"	–	3 1/2"	–	1'-9	4"	–		–	1 1/2"	1 1/8"	4	–	Standard	1'-3"	FPD-5
FPD-6	800K	1'-3"	–	2'-6"	3'-10"	1'-11"	3"	9 1/2"	1'-8 1/2"	–	8"	–	3 1/2"	–	1'-9"	4"	–		–	1 1/2"	1 1/8"	4	–	Standard	1'-3"	FPD-6



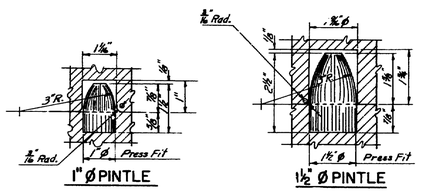
DETAIL "A"



CAP SCREW DETAIL



ANCHOR BOLT DETAILS



1" ϕ PINTLE — 1 1/2" ϕ PINTLE

PINTLE DETAILS

NOTE:
Use 1" ϕ Pintles with 1" ϕ Anchor Bolts & 1 1/2" ϕ Pintles with 1 1/8" ϕ Anchor Bolts.

GENERAL NOTES:

At the location of bearing pedestals the concrete bridge seats shall be dressed one inch larger all around than size of masonry plates and to exact elevations shown on the plans. If dressed areas are below the surface of the surrounding bridge seat a small channel shall be cut to the edge of the bridge seat for drainage where required by the Engineer. Channels shall have a min. width of 2", and a min. slope of ¼ inch per foot. No separate payment for this work will be made as it shall be considered incidental to contract items.

Fabricate pedestals with ½" fillet welds.

The diameter of the pin hole shall not exceed that of the pin by more than 1/64 inch.

Pedestals EPD-1 thru EPD-9 and EPE-1 thru EPE-10 have no center stiffeners and have only one drainage hole.

Pedestals EPD-10 and EPE-11 thru EPE-17 have a center stiffener and have two drainage holes.

Pedestals FPD-1 thru FPD-3 have no center stiffeners and have no drainage holes.

Pedestals FPD-4 thru FPD-6 have a center stiffener and no drainage holes.

DESIGN SPECIFICATIONS

A.A.S.H.O., Standard Specifications for Highway Bridges, 1969

A.S.T.M. STEEL CLASSIFICATION

All structural steel shall be -A36 except the following:

2" ϕ Pin - A36; A235, Class E or A108, Grade 1016 - 1030 inclusive.

A	Charpy V-Notch tests are not required	2-5-75
REVISIONS		DATE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

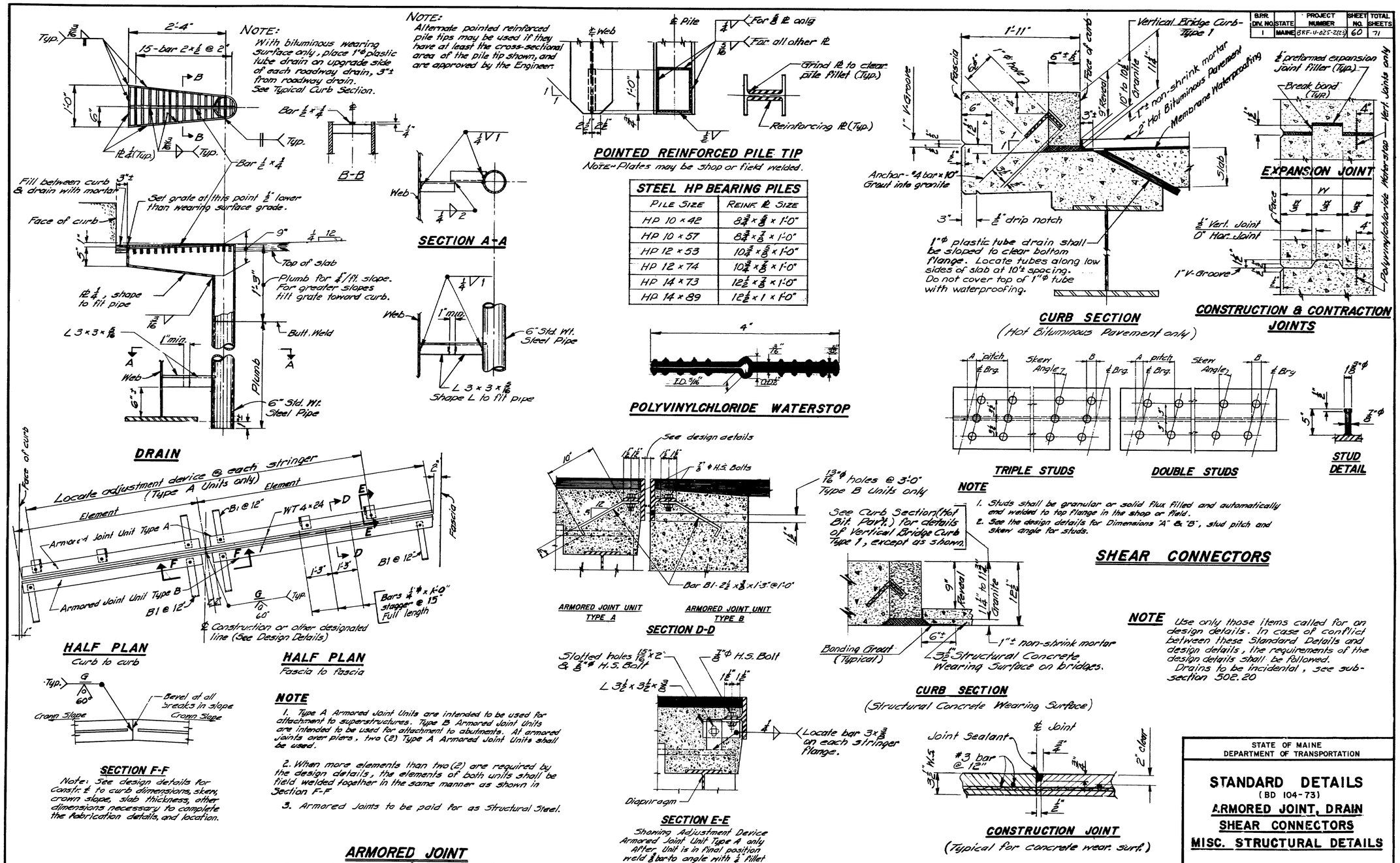
STANDARD DETAILS
(BD 100-71)

BEARING PEDESTALS

AUGUSTA, MAINE JULY 1971

167-178

B.P.R. DIV. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	60	71



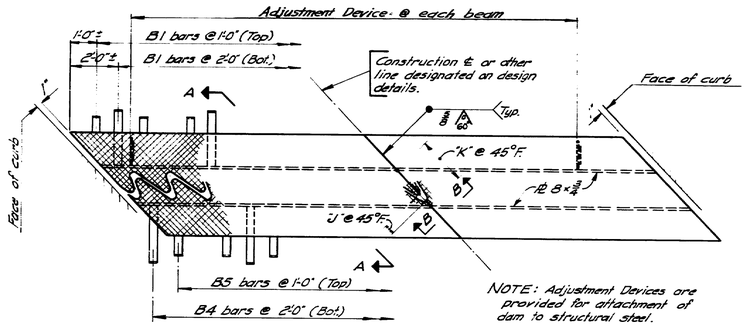
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 104-73)
ARMORED JOINT, DRAIN
SHEAR CONNECTORS
MISC. STRUCTURAL DETAILS

SHEET OF AUGUSTA, ME. JULY 1973

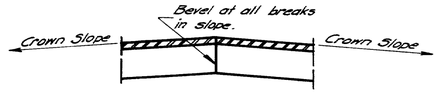
167-179 -

S. P. R. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	[illegible]	61	



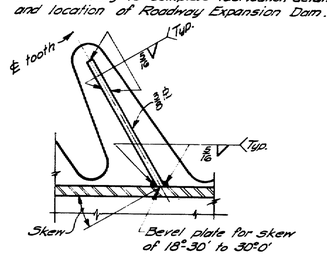
PLAN

Right skew indicated



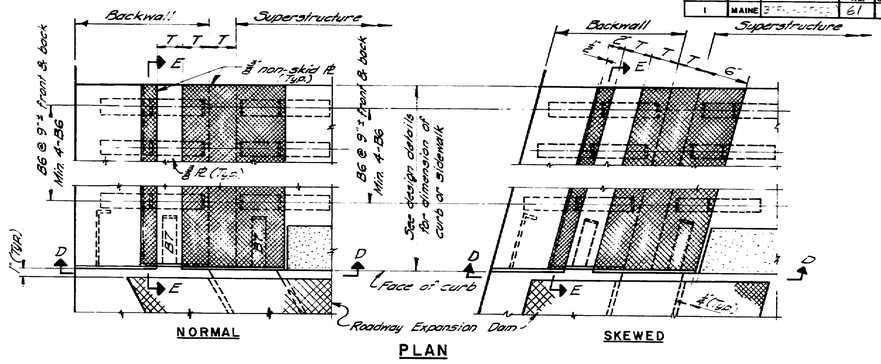
SECTION B-B

See design details for construction ℄ to curb dimensions, skew, crown slope, slab thickness, other dimensions & angles that are necessary to complete fabrication details and location of Roadway Expansion Dam.

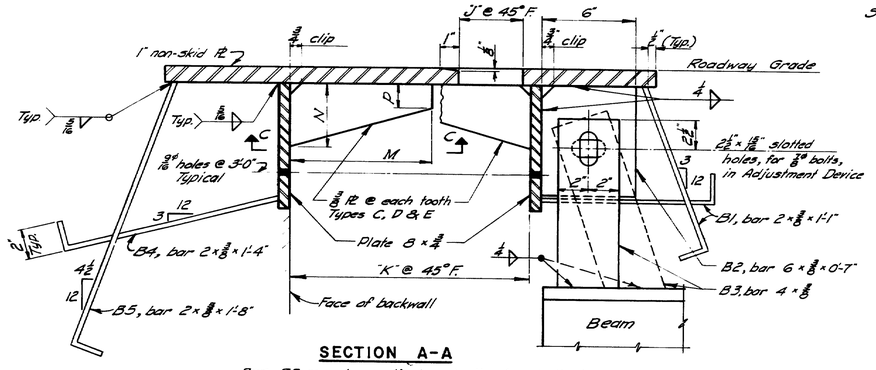


SECTION C-C

Skew ~0° to 30°-0'

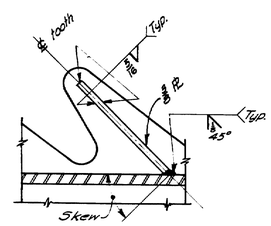


PLAN



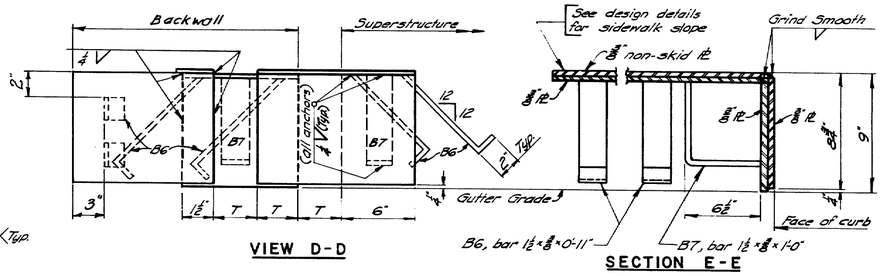
SECTION A-A

Bar B3 may be vertical or inclined as indicated, depending on design conditions.
After Adjustment Device is in final position weld bars B2 to B3 with 1/4" fillet weld.



SECTION C-C

Skew over 30°

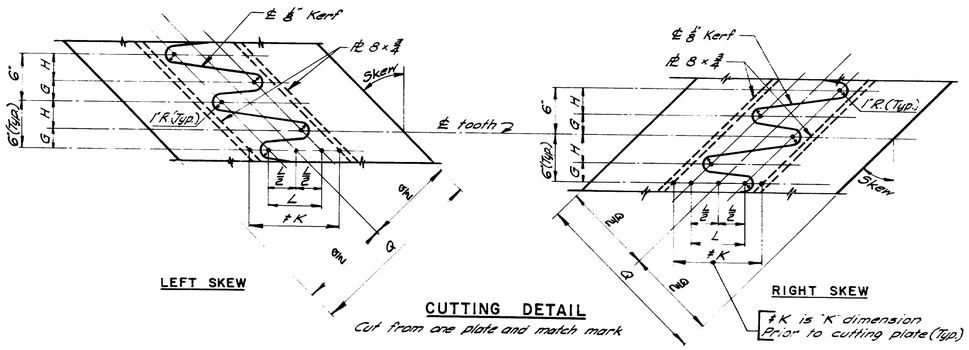


VIEW D-D

SECTION E-E

TYPE	V	W	X	Y	Z
Exp. Length	100'-280'	280'-440'	440'-600'	600'-760'	760'-920'
T	3"	4"	5"	6"	7"

CURB AND SIDEWALK EXPANSION DAM - DETAILS



ROADWAY EXPANSION DAM - DETAILS

TABLE OF DIMENSIONS

Type	Exp. Length	Skew	#K	L	G	H	K@45°	J@45°	M	N	P	Q
A	100'-280'	0°-5° incl.	7"	4"	3"	3"	9"	2 1/8"	—	—	—	21"
		5°-10°	7 1/4"	4 1/4"	2 3/8"	3 1/8"	9 1/2"	2 1/8"	—	—	—	22"
		10°-20°	8"	4 3/4"	2 3/8"	3 1/8"	10"	2 1/8"	—	—	—	22"
		20°-30°	8 3/4"	5 1/4"	2 3/8"	3 1/4"	10 3/4"	2 1/8"	—	—	—	23"
		30°-40°	9 1/4"	5 3/4"	2 3/8"	3 1/8"	11 1/8"	2 1/8"	—	—	—	23"
		40°-50° incl.	11 1/4"	6 1/2"	2 1/2"	3 1/2"	13 1/2"	2 1/8"	—	—	—	23"
B	280'-440'	0°-5° incl.	9"	6"	3"	3"	12"	3 1/8"	—	—	—	23"
		5°-10°	9 1/2"	6 1/4"	2 3/8"	3 1/8"	12 3/4"	3 1/8"	—	—	—	24"
		10°-20°	10"	6 3/4"	2 3/8"	3 1/8"	13"	3 1/8"	—	—	—	24"
		20°-30°	10 3/4"	7 1/4"	2 3/8"	3 1/4"	13 3/4"	3 1/8"	—	—	—	25"
		30°-40°	12"	8"	2 3/8"	3 1/4"	15"	3 1/8"	—	—	—	25"
		40°-50° incl.	13 1/2"	8 3/4"	2 3/8"	3 3/8"	16 1/2"	3 1/8"	—	—	—	25"
C	440-600'	0°-10° incl.	11 1/2"	8 1/4"	3"	3"	15 1/2"	4 1/8"	9"	4"	1 1/2"	26"
		10°-20°	12"	8 3/4"	2 3/8"	3 1/8"	16"	4 1/8"	10"	4"	1 1/2"	26"
		20°-30°	12 3/4"	9 1/4"	2 3/8"	3 1/8"	16 3/4"	4 1/8"	11"	4"	1 1/2"	26"
		30°-40°	14"	10"	2 3/8"	3 1/4"	18"	4 1/8"	11"	4"	1 1/2"	26"
		40°-50° incl.	15 1/2"	10 3/4"	2 3/8"	3 1/2"	19 1/2"	4 1/8"	12"	4"	1 1/2"	26"
D	600'-760'	0°-10° incl.	13 1/2"	10 1/4"	3"	3"	18 1/2"	5 1/8"	11"	5"	2"	30"
		10°-20°	14"	10 3/4"	2 3/8"	3 1/8"	19"	5 1/8"	12"	5"	2"	30"
		20°-30°	14 3/4"	11 1/4"	2 3/8"	3 1/8"	19 3/4"	5 1/8"	13"	5"	2"	30"
		30°-40°	16"	12"	2 3/8"	3 1/8"	21"	5 1/8"	13"	5"	2"	30"
		40°-50° incl.	17 1/2"	13"	2 3/8"	3 1/2"	22 3/8"	5 1/8"	15"	5"	2"	30"
E	760'-920'	0°-10° incl.	15 1/2"	12 1/4"	3"	3"	21 1/2"	6 1/8"	13"	6"	2 1/2"	36"
		10°-20°	16"	12 3/4"	2 3/8"	3 1/8"	22"	6 1/8"	14"	6"	2 1/2"	36"
		20°-30°	16 3/4"	13 1/4"	2 3/8"	3 1/8"	22 3/4"	6 1/8"	15"	6"	2 1/2"	36"
		30°-40°	18"	14"	2 3/8"	3 1/8"	24"	6 1/8"	15"	6"	2 1/2"	36"
		40°-50° incl.	19 1/2"	15"	2 3/8"	3 1/2"	25 3/8"	6 1/8"	17"	6"	2 1/2"	36"

GENERAL NOTES

Expansion Dams to be paid for as Structural Steel.

If there is conflict between this Standard Detail and the design details, the requirements of the design details shall be followed.

Steel Classification: A.S.T.M. A36

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS

(BD 105 - 74)

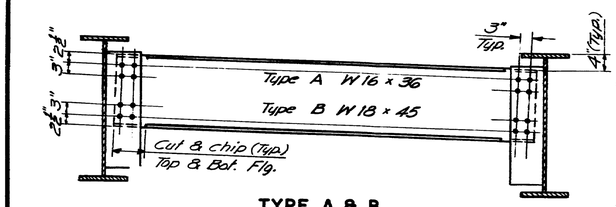
EXPANSION DAMS

SHEET OF AUGUSTA, MAINE MAY 1974

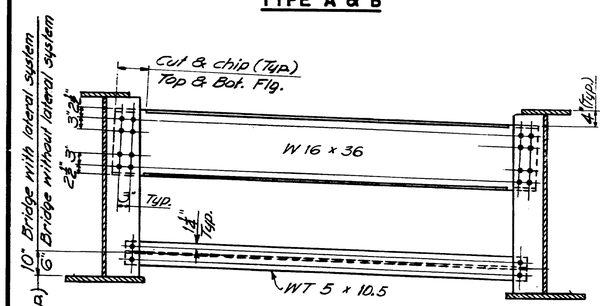
167-180

F.H.W.A. REGN. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(3)	62	71

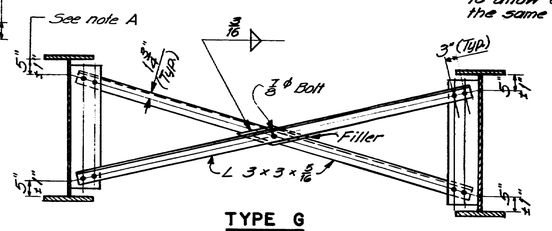
NOTE A — This dimension may be varied (±1") to allow a series of diagonals to have the same slope.



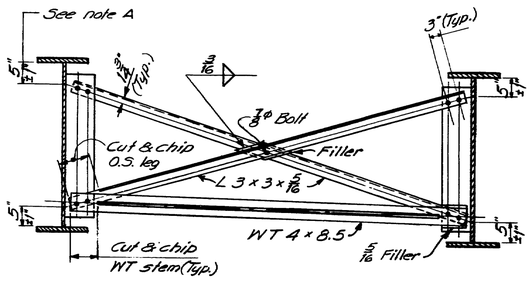
TYPE A & B



TYPE C



TYPE G



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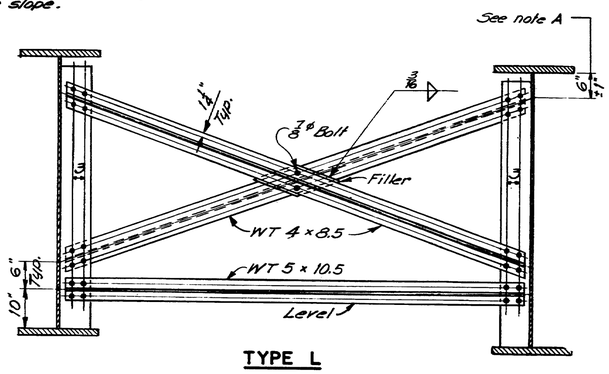

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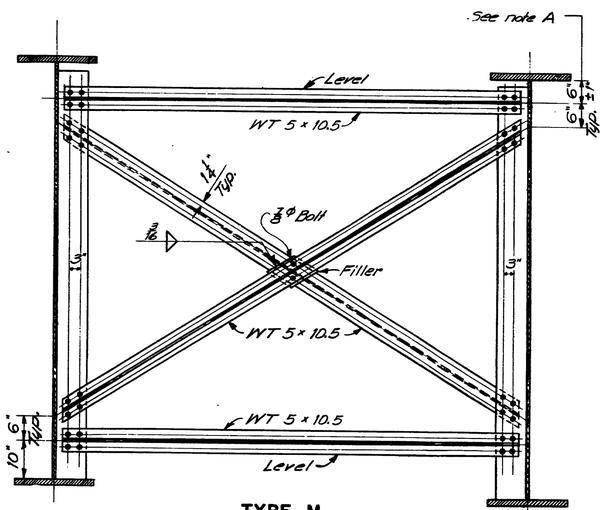
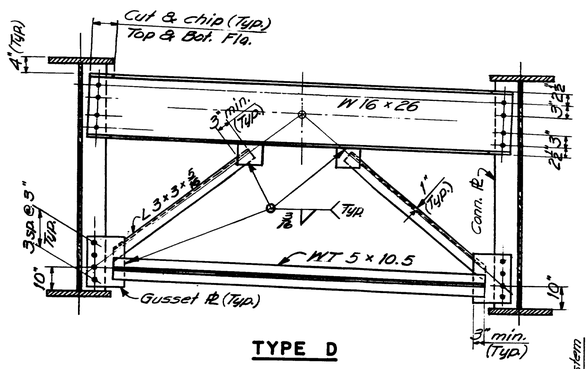
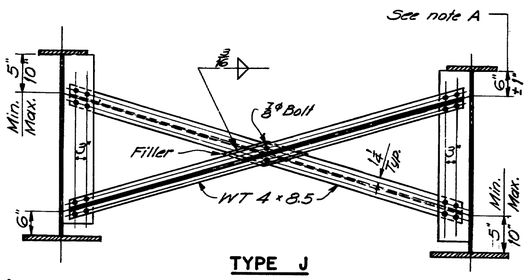


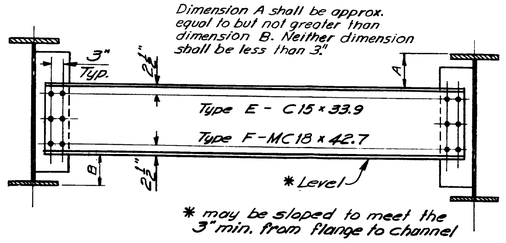
TYPE M



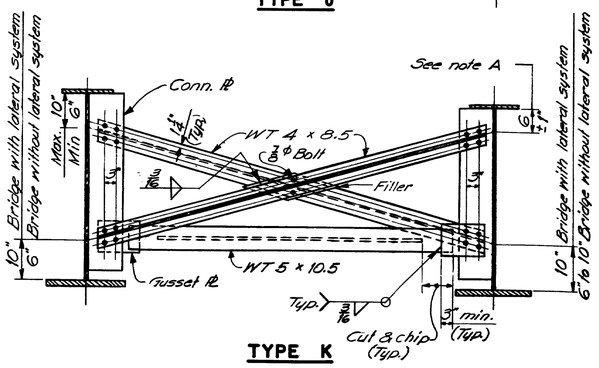
TYPE D



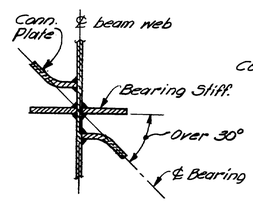
TYPE J



TYPE E & F

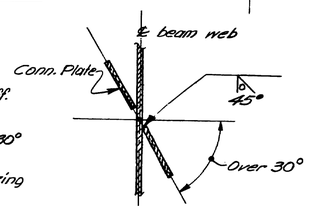


TYPE K



DETAIL A

Referenced from Note 5



DETAIL B

Referenced from Note 4

MATERIALS

Diaphragms, Crossframes and All Plates (Filler, gusset, and connection) ASTM A36

High Strength Bolts 7/8" diameter — — — ASTM A325

FABRICATION NOTES

1. For location and type of diaphragm or crossframe see design details.
2. Holes for 7/8" diameter bolts shall be 15/16" dia. and Edge distances shall be 1 1/4" minimum unless otherwise shown.
3. Connection plates and gusset plates shall have a minimum thickness of 3/8" and shall have sufficient width to provide erection clearances. When bearing stiffeners or intermediate stiffeners are used as connection plates, the plate size will be given on the design details.
4. Connection plates shall be fastened to beam and girder webs as follows:
   - 0° to 30° skew — fillet weld both sides.
   - Over 30° skew — full penetration groove weld (see Detail B) except as indicated in Note 5
   - Over 45° skew — weld prequalification will be required.

   The skew angle is the angle between the connection plate and a line normal to the beam.
5. Bearing stiffeners shall be used as connection plates when the skew is not over 30°. When the skew is over 30° a bent connection plate shall be attached to the web adjacent to the bearing stiff. as shown in Detail A.
6. All fillet weld sizes shall be the minimum for the thickness of metal being joined according to AWS Specifications for Welded Highway & Railway Bridges.
7. Connection plates on welded beams and girders shall extend to the top flange in areas where the top flange is always in compression or when used as a bearing stiffener or intermediate stiff.
8. Connection plates shall extend to the bottom flange when used as a bearing stiffener, at points where lateral bracing is attached & on welded beams and girders in areas where the bottom flange is always in compression.
9. When a conn. plate is extended to a flange it shall be a paint tight fit except as otherwise indicated on design details.
10. Conn. plates shall be 2 1/2" clear from flanges, except as indicated by Notes 7&8.
11. Use only those items called for on the design details. In case of conflict between these standard details and the design details, the design details shall be followed.

PLANS	BY	DATE
DESIGN - DETAILED		
CHECKED		
REVIEWED		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

STANDARD DETAILS
(BD 113 - 72)

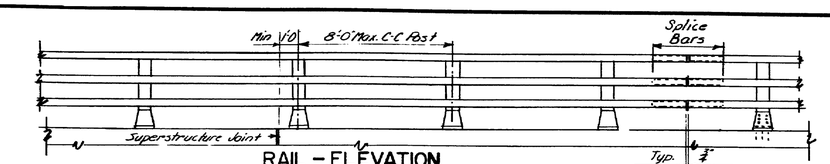
DIAPHRAGMS & CROSSFRAMES

SHEET OF AUGUSTA, MAINE SEPT. 1972

167-181

F.H.W.A. REGL. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	63	71

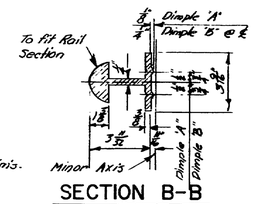
DESIGN SPECIFICATIONS
AASHO.- Standard Specification for Highway Bridges 1969 and Interim Specifications



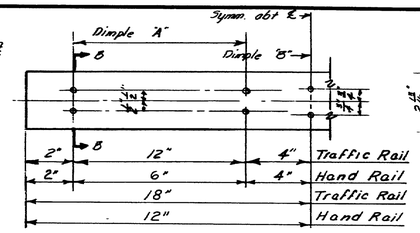
RAIL - ELEVATION

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 Bridge Plans.

Typ. At Superstr. Exp. Joints — 3/4" Min. See Design Diags. for actual Dims.

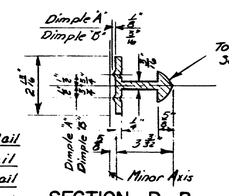


SECTION B-B
TRAFFIC RAIL

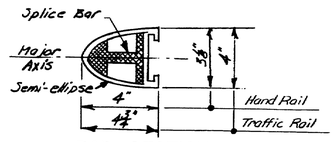


SPLICE BAR

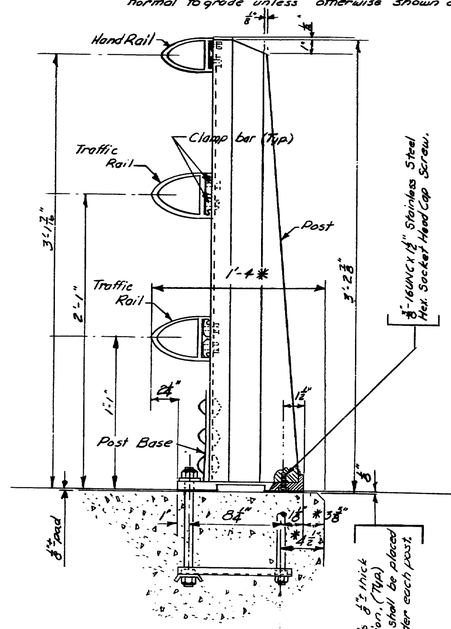
Note: An alternate to the dimple system for holding the splice bar in position may be used if approved by the Engineer.



SECTION B-B
HAND RAIL

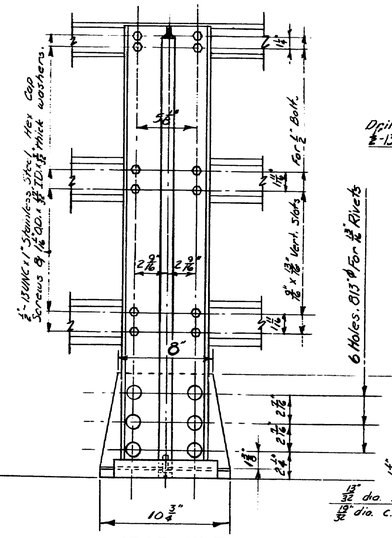


RAIL SECTION
See "Rail Detail"

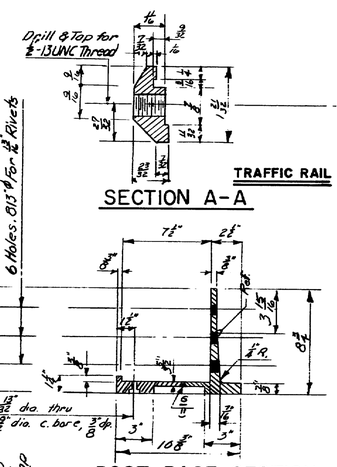


BRIDGE RAIL
(Assembly)

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

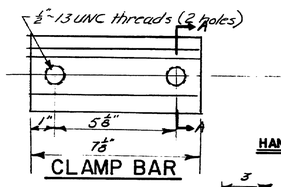


REAR ELEV.

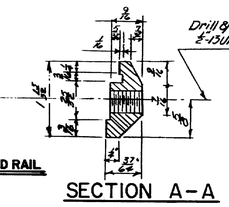


POST BASE SECTION

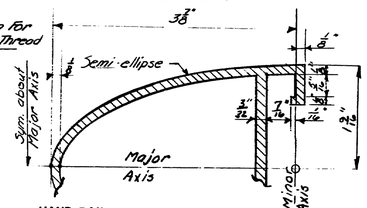
SECTION A-A

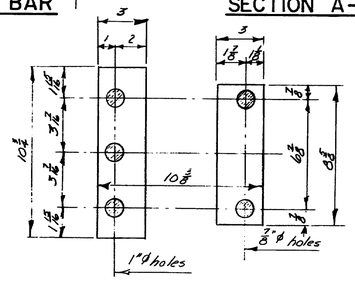


CLAMP BAR

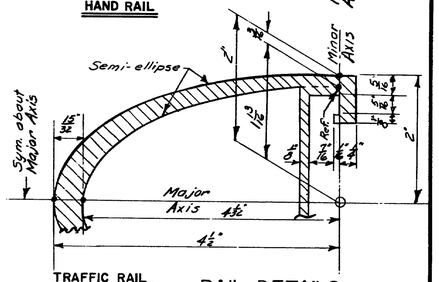


SECTION A-A

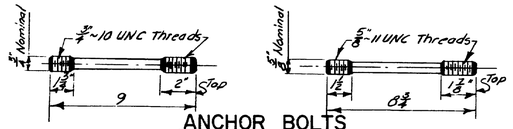




PREFORMED PADS

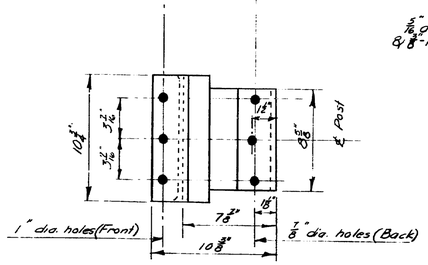


RAIL DETAILS

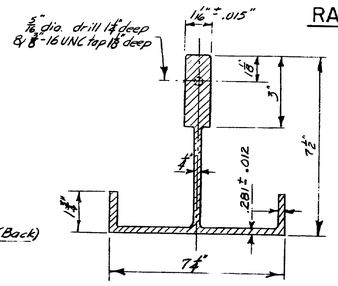


ANCHOR BOLTS

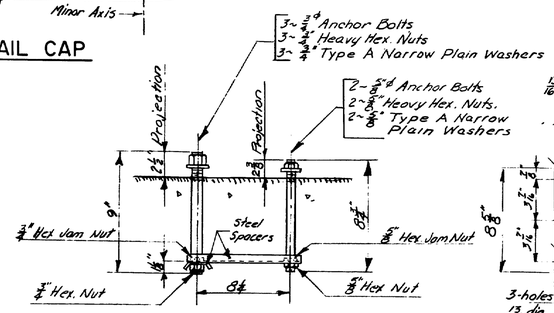
If cut threads are used, body diameter shall be not less than nominal diameter.
If rolled threads are used, body diameter shall be not less than the root diameter of the threads.



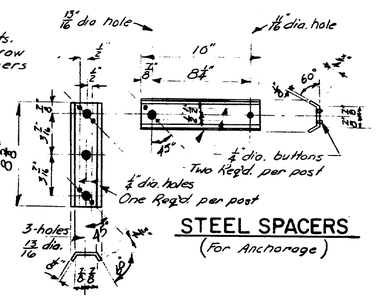
POST BASE
(Bottom View)



POST SECTION



RAIL POST ANCHORAGE
(Assembly)



STEEL SPACERS
(For Anchorage)

PLANS		BY	DATE
	DESIGN - DETAILED	K.A. Lynch	Jan. 1972
	CHECKED		
	REVISIONS		
	FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

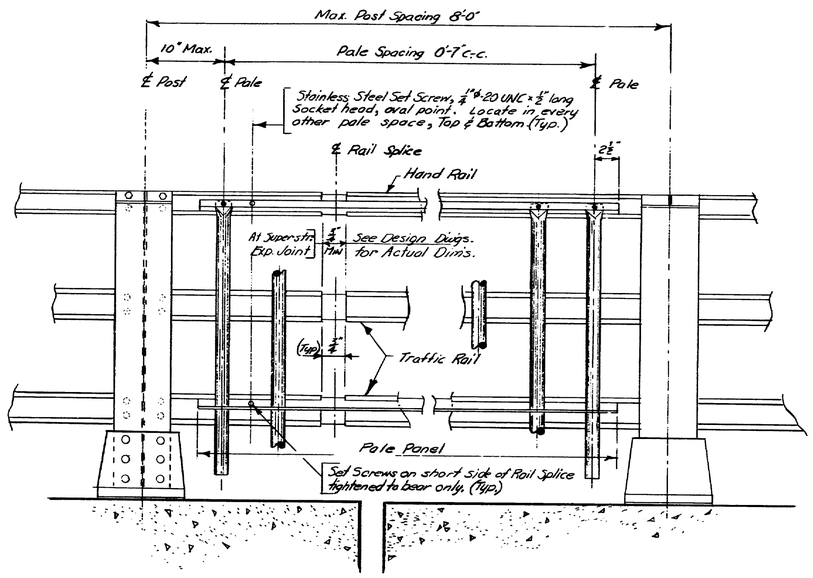
STANDARD DETAILS
(BD 115 - 73)

ALUMINUM RAILING
3 - BAR (SEMI-ELLIPSE) EXTRUDED POST

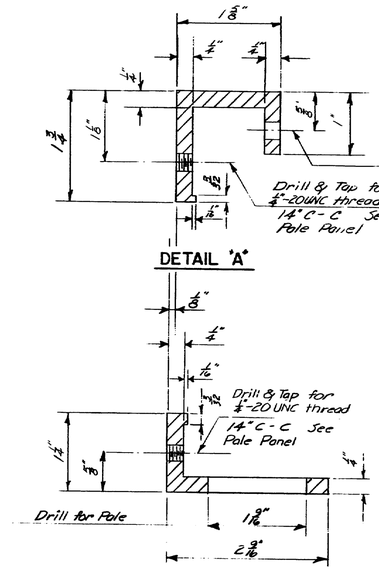
SHEET OF AUGUSTA, MAINE FEBRUARY 1973

167-182

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(3)	64	71

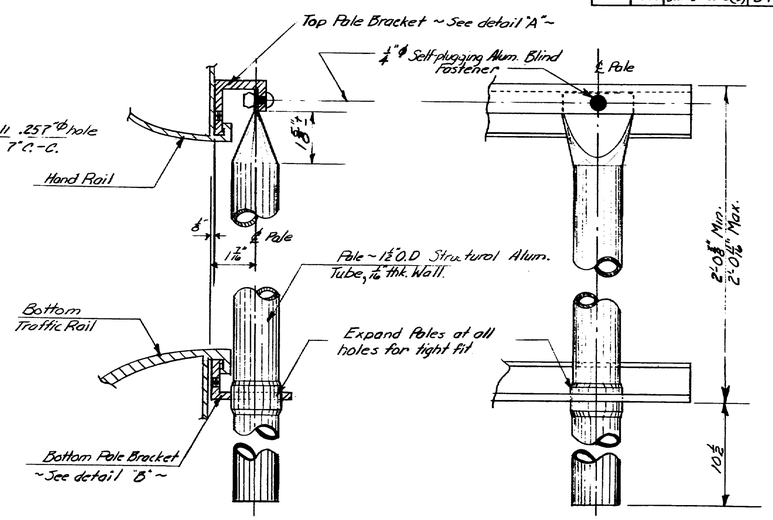


REAR ELEVATION



DETAIL "A"

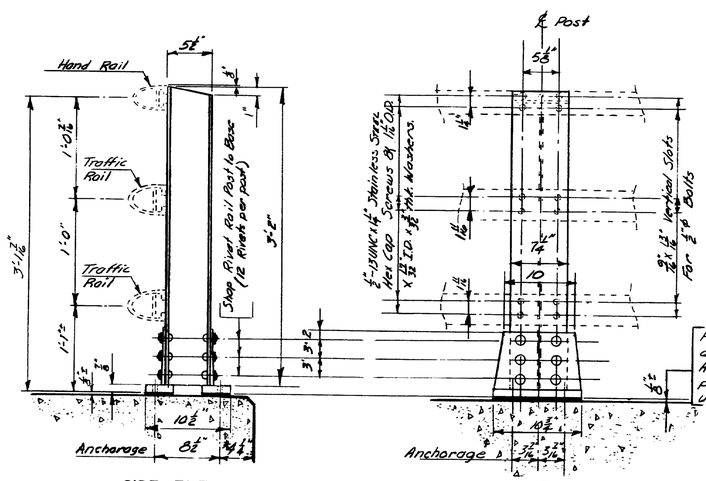
DETAIL "B"



PALE PANEL DETAILS

PALES

For use with 3-Bar Aluminum Rail



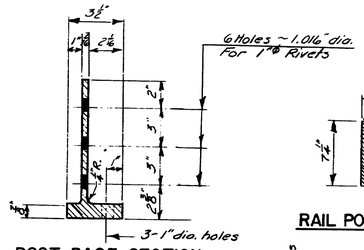
SIDE ELEV.

FRONT ELEV.

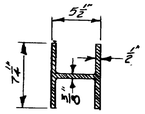
RAIL POST

Preformed Pads, 3/8" thick after compression. (Typ.) At least one pad shall be placed at front & back under each post.

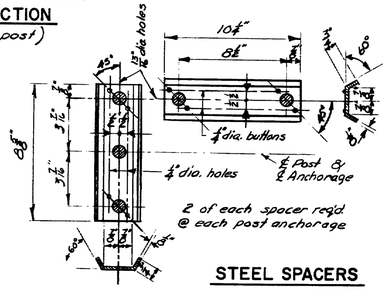
* Preferable minimum dimension. For actual dimension ~ See Bridge Plans.



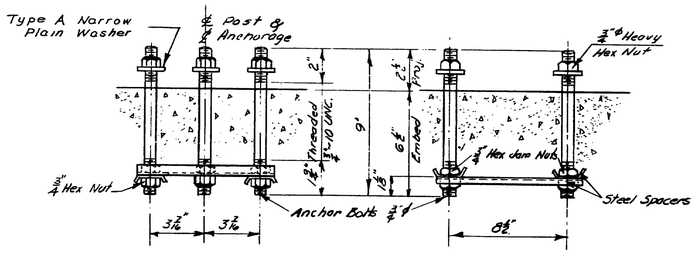
POST BASE SECTION
(2 Required per post)



RAIL POST SECTION

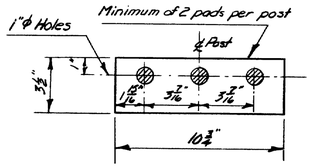


STEEL SPACERS



RAIL POST ANCHORAGE

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 root diameter of the threads.



PREFORMED PAD

HEAVY DUTY POST (3-BAR RAIL)

PLANS	BY	DATE
DESIGN - DETAILED	K.L. Lynch	Jan. 1973
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
(SHEET BD115-73 SHALL ACCOMPANY THIS SHEET)

STANDARD DETAILS
(BD 116-73)

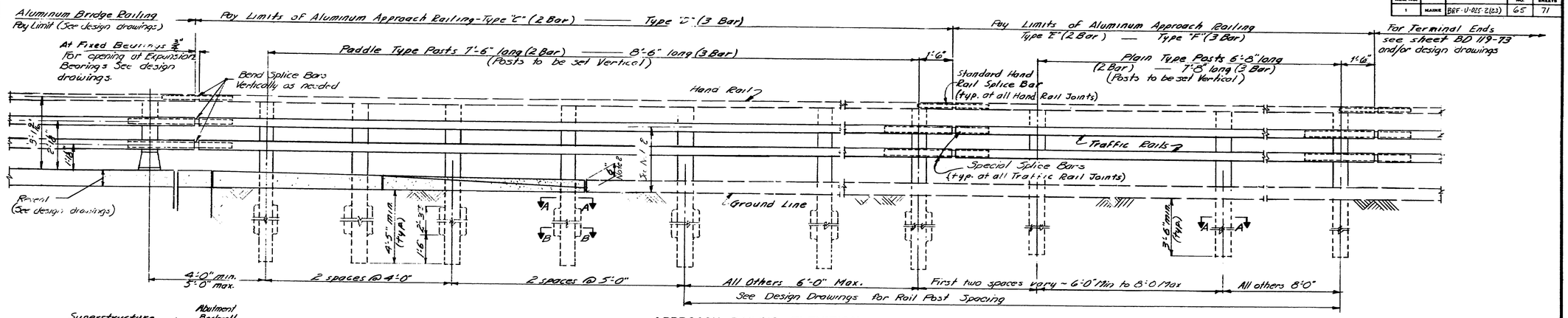
ALUMINUM BRIDGE RAILING

PALE PANEL & HEAVY DUTY POST

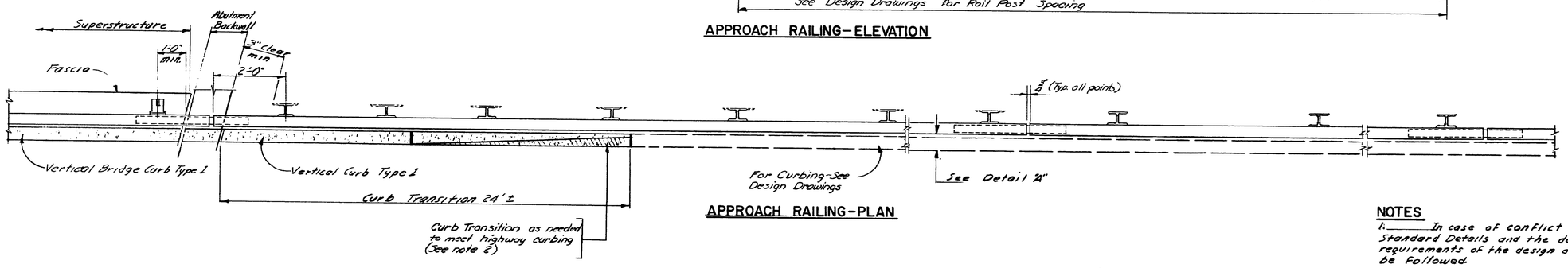
SHEET OF AUGUSTA, MAINE FEBRUARY 1973

167-183

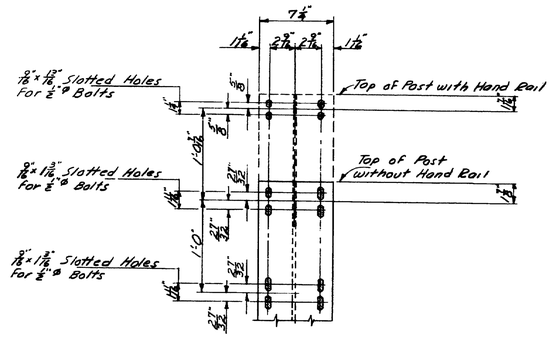
F.H.W.A. REGN. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	65	71



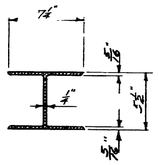
APPROACH RAILING-ELEVATION



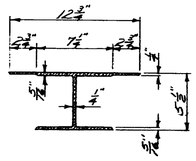
APPROACH RAILING-PLAN



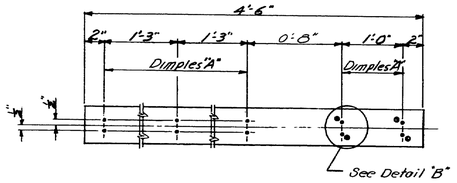
APPROACH RAIL POST DETAIL



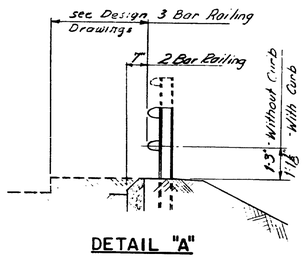
SECTION A-A



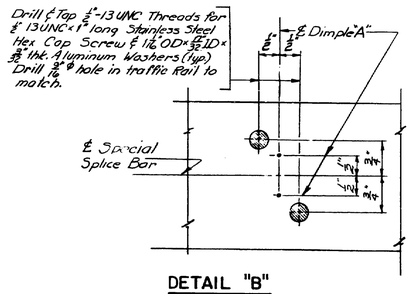
SECTION B-B



SPECIAL SPLICE BAR DETAIL



DETAIL "A"



DETAIL "B"

NOTES

1. In case of conflict between these Standard Details and the design details, the requirements of the design details shall be followed.

2. If no highway curbing is used on approaches, use 24'± Curb Transition as shown with Curb Transition Section "A" Type I, and adjust rail height over 50 feet so that ℄ of bottom rail is 1'-3" above ground line of face of rail.

3. If the first approach rail post is mounted on the Abutment backwall, the post and anchorage must match the bridge railing, and will be supplied and paid for under the Bridge Railing Item. See design drawings for post location.

4. Trim tops of posts as required to maintain ±1/8 inch below top of Top Rail.

5. For details of Vertical Curb Type I and Curb Transition Type I, Section A, see Highway Standards (3).

PLANS	BY	DATE
DESIGN-DETAILED		
CHECKED		
REVISIONS		
FIELD CHANGES		

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

(SHEETS BD 114-73 OR BD 115-73 AND BD 119-73 SHALL ACCOMPANY THIS SHEET AS NEEDED)

STANDARD DETAILS

(BD 118-73)

ALUMINUM APPROACH RAILING

2 BAR OR 3BAR (SEMI-ELLIPSE)
TYPE "C", "D", "E", & "F"

SHEET OF AUGUSTA, MAINE JUNE 1973

167-184

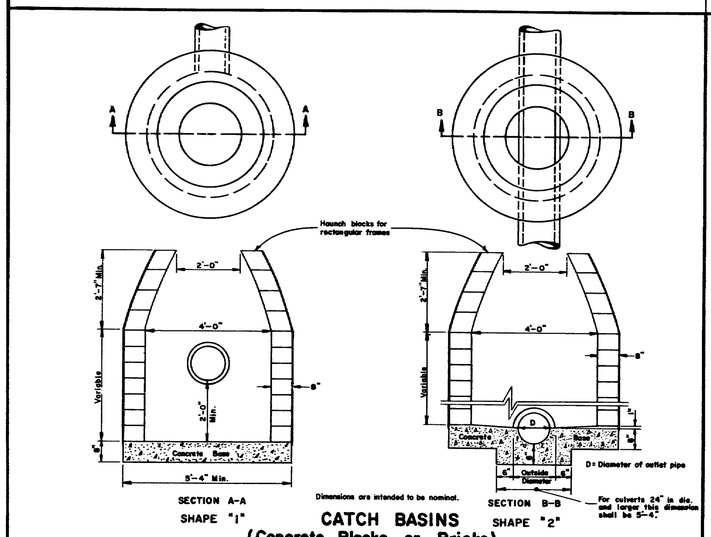
F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	GRF-U-025-2(23)	66	71

GENERAL NOTES — ALL CATCH BASINS AND MANHOLES

1. Any Catch Basin in excess of 8' in depth shall, if directed be provided with steps similar to those detailed for Manholes.
2. Frames, Grates & Covers shall be considered as part of the structure, and no separate payment shall be made.

GENERAL NOTES — PRECAST CATCH BASINS AND MANHOLES

1. Drain holes in precast sumps to be not over 3" in diameter, and shall be plugged with mortar when constructed.
2. All precast sections of less than 8" wall thickness shall have tongue and groove joints.
3. Cone and Ring sections wall thickness min. 4", max. 8"
4. Minimum wall thickness of sump may be 4" as specified in A.S.T.M. C-478, however, if concrete blocks are used around the inlet and outlet pipes, the wall thickness of sump shall be 8".
5. Wall around inlet and outlet pipes may be built of 8" concrete blocks or a precast ring with an opening 2" larger than the outside diameter of the pipe may be used.
6. Lift Holes shall be provided.

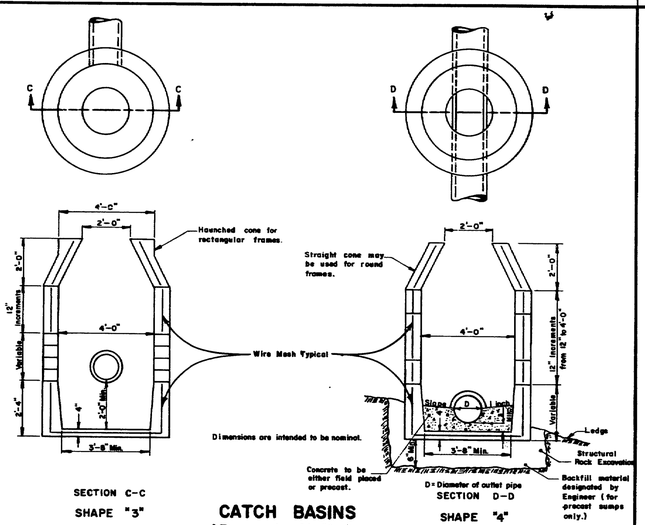


SECTION A-A
SHAPE "1"

SECTION B-B
SHAPE "2"

CATCH BASINS (Concrete Blocks or Bricks)

A

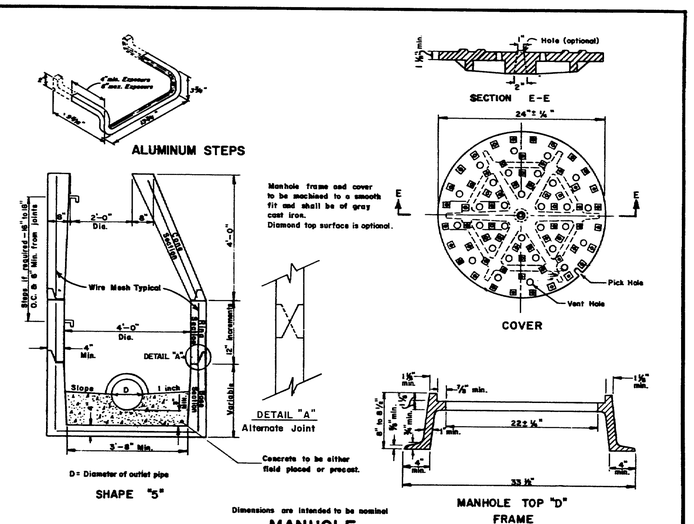


SECTION C-C
SHAPE "3"

SECTION D-D
SHAPE "4"

CATCH BASINS (Precast Units)

B

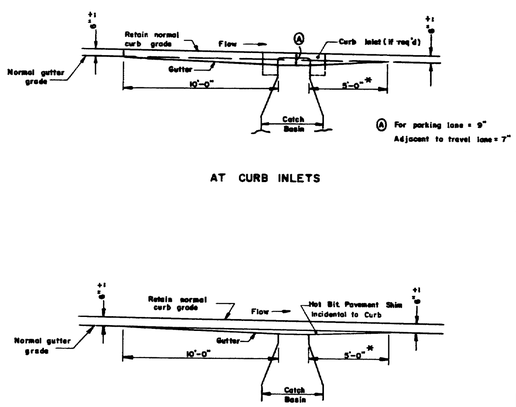


SHAPE "5"

MANHOLE

MANHOLE TOP "D" FRAME

C



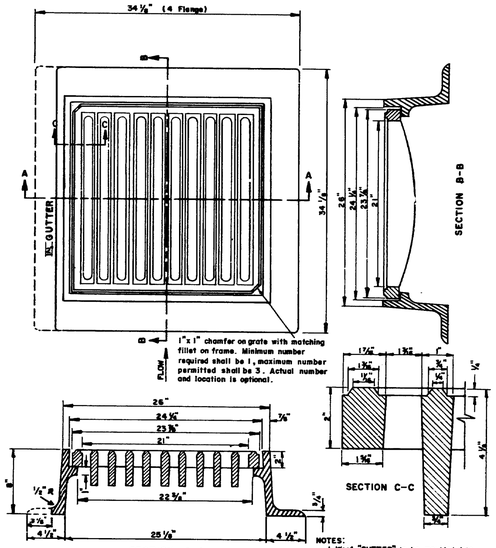
AT CURB INLETS

AT CURB WITHOUT INLET STONES

NOTE: PARALLEL BAR GRATES SHALL BE INSTALLED ON A LEVEL GRADIENT. CASCADE GRATES SHALL BE INSTALLED ON GRADIENT OF THE GUTTER. THE GRATES SHALL BE DEPRESSED 3" BELOW THE NORMAL GUTTER GRADE UNLESS THIS DEPRESSION INTERFERES WITH TRAFFIC. DIMENSIONS ARE INTENDED TO BE NOMINAL.

GUTTER GRADE TRANSITION AT CATCH BASIN

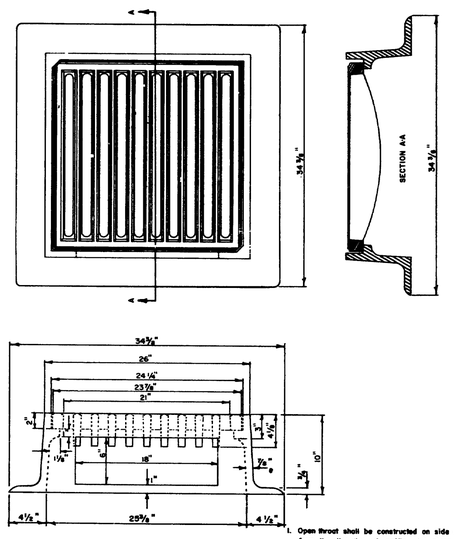
D



NOTES:
1. Word "GUTTER" to be moulded into back flange - Type "B" top only.
2. Type "A" grate to have 3 flanges
3. Type "B" grate to have 4 flanges.
4. Frame and grate to be of gray cast iron.
5. Dimensions are intended to be nominal.

TYPE "A" & "B" CATCH BASIN TOPS
(PARALLEL BAR GRATES)

E



1. Open throat shall be constructed on side away from the direction of traffic. All other sides shall be graded flush with the top of C.B. grate.
2. Frame shall be gray cast iron.
3. Grate shall be same as type "A" and "B".
4. Dimensions are intended to be nominal.
5. When volume of water warrants, 6" opening may be increased.

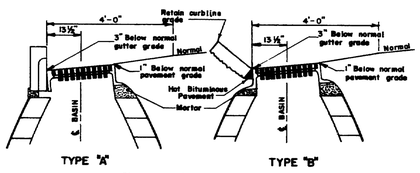
TYPE "C" CATCH BASIN TOPS

F

STRUCTURE	TOP				SHAPE				
CATCH BASIN	A	B	C	D	1	2	3	4	5
Type A-1	X				X		X		
Type A-2	X					X		X	
Type B-1		X			X		X		
Type B-2		X				X		X	
Type C-1			X		X		X		
Type C-2			X			X		X	
MANHOLE				X		X		X	X

TABLE OF CATCH BASIN TYPES
(COMBINATION OF TOPS AND SHAPES)

For Type "E" & Type "F" C.B. See Sheet No. 3



CATCH BASIN TOP INSTALLATION

G

REVISIONS	
CATCH BASINS TOPS A-B-C	10-21-69
PLATE E	4-21-71
PLATE D-E	8-26-75
PLATE C	10-14-75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

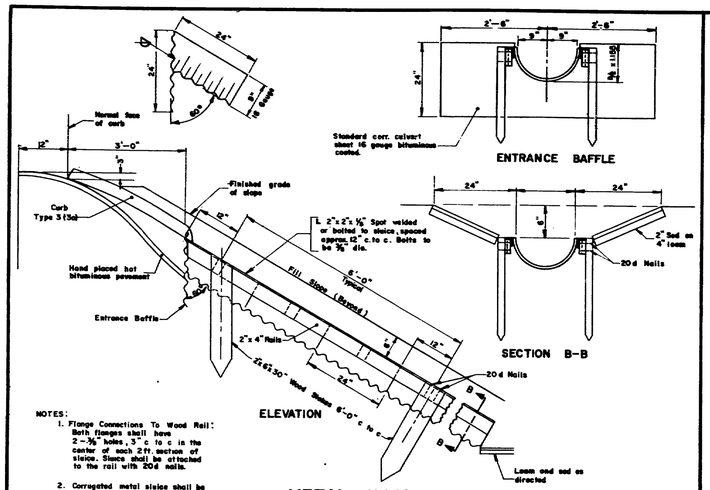
STANDARD DETAILS

CATCH BASINS
AND
MANHOLES

AUG. 1969 (1)

167-185

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	67	71

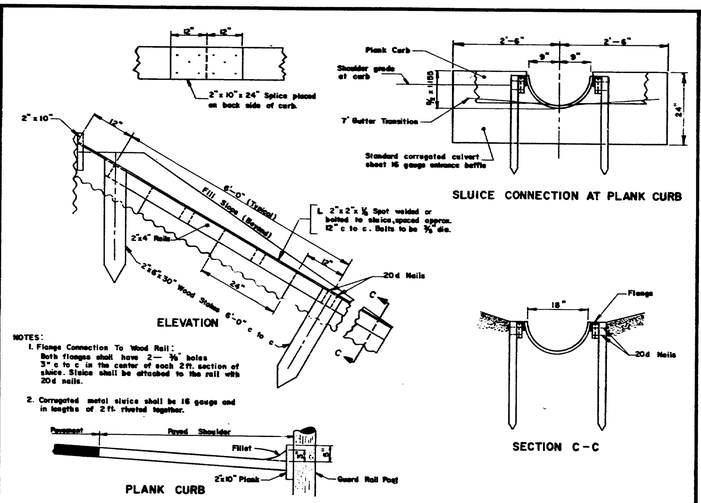


NOTES:

1. Flange Connections To Wood Rail: Both flanges shall have 2 – 3/8" holes, 3" c to c in the center of each 2 ft. section of sluice. Sluice shall be attached to the rail with 20d nails.
2. Corrugated metal sluice shall be 16 gauge and in lengths of 2 ft. riveted together.

METAL SLUICE WITH CURB TYPE 3 or 3a

A

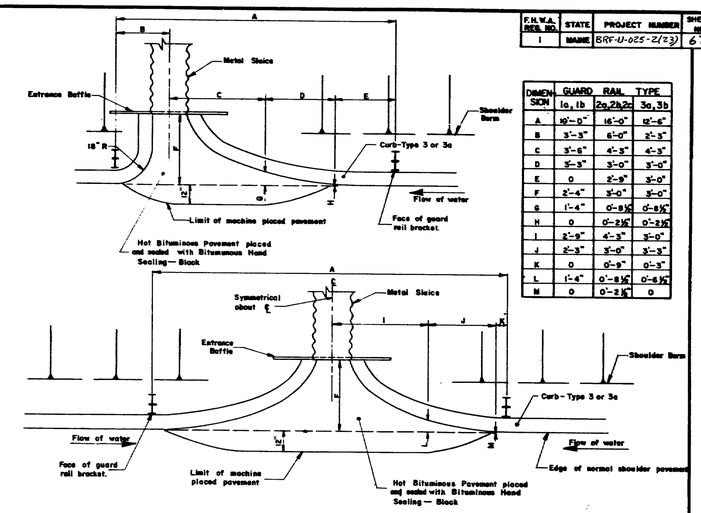


NOTES:

1. Flange Connection To Wood Rail: Both flanges shall have 2 – 3/8" holes 3" c to c in the center of each 2 ft. section of sluice. Sluice shall be attached to the rail with 20d nails.
2. Corrugated metal sluice shall be 16 gauge and in lengths of 2 ft. riveted together.

METAL SLUICE WITH PLANK CURB

B



DIMENSION	GUARD RAIL TYPE 1a, 1b	2a, 2b, 2c	3a, 3b
A	10'-0"	16'-0"	12'-6"
B	3'-3"	6'-0"	2'-3"
C	3'-6"	4'-3"	4'-3"
D	5'-3"	3'-0"	3'-0"
E	0	2'-9"	3'-0"
F	2'-4"	3'-0"	3'-0"
G	1'-4"	0'-8½"	0'-8½"
H	0	0'-2½"	0'-2½"
I	2'-9"	4'-3"	3'-0"
J	2'-3"	3'-0"	3'-3"
K	0	0'-9"	0'-3"
L	1'-4"	0'-8½"	0'-6½"
M	0	0'-2½"	0

SLUICE ENTRANCE DETAIL

C

CIRCULAR

NOMINAL INSIDE DIAMETER	THICKNESS in INCHES CMP or BCCMP	CAP	CLASS and WALL RCP	CLASS ASBESTOS CEMENT PIPE
8 inch	.064	.060		
10 "	.064	.060		
12 "	.064	.060		
15 "	.064	.060		
18 "	.064	.060	Wall A or B	
21 "	.064	.060		
24 "	.064	.060		
30 "	.079	.075		
36 "	.079	.075		CLASS III
42 "	.109	.105	Class III	
48 "	.109	.105		
54 "	.109	.105		
60	.138	.135		
66	.138	.135		
72	.168	.164		
84	.168	.164		

PIPE ARCH

NOMINAL SIZES	GAUGE BCCMPA-CMPA	THICKNESS (inches) CAPA
18" span x 11" rise	16	.060
22" " x 13" "	16	.060
25" " x 16" "	16	.060
29" " x 18" "	14	.075
36" " x 22" "	14	.075
43" " x 27" "	12	.105
50" " x 31" "	12	.105
58" " x 36" "	10	.135
65" " x 40" "	10	.135
72" " x 44" "	8	.164

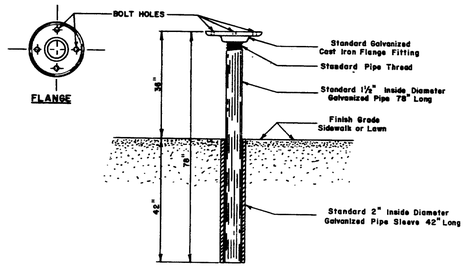
CMP = Corrugated Metal Pipe
BCCMP = Bituminous Coated Corrugated Metal Pipe
CAP = Corrugated Aluminum Pipe

RCP = Reinforced Concrete Pipe

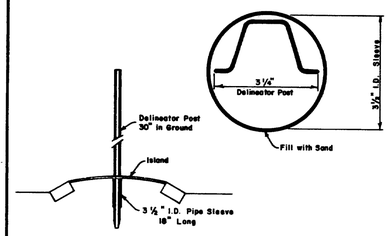
Above abbreviations followed by "A" indicate "Arch"
All RCPA shall be class III
Minimum thickness, class, and wall types for culvert pipe, unless otherwise designated.

CULVERT PIPE DATA

D

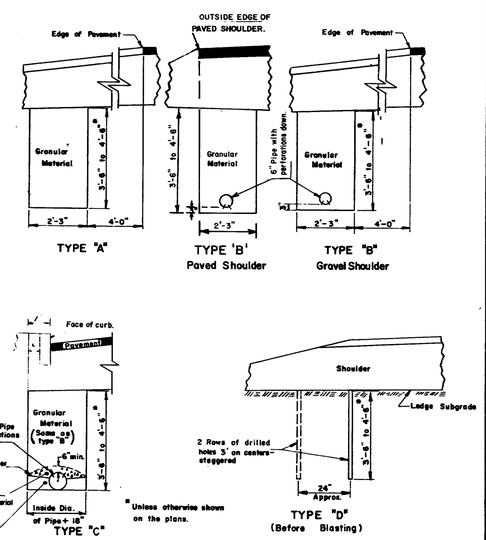


SINGLE POST TYPE 1C



PIPE SLEEVE FOR DELINEATOR POST

E



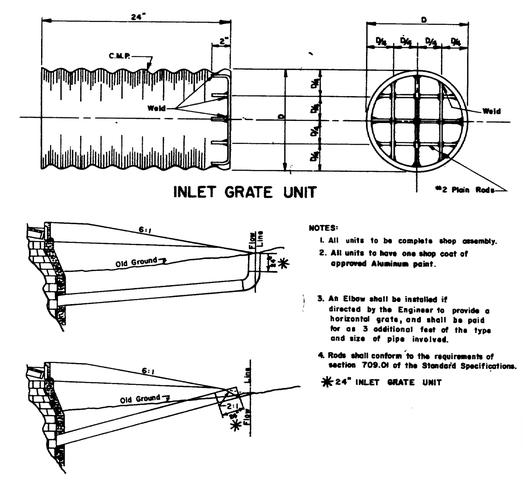
* Unless otherwise shown on the plans.

NOTES

1. The maximum vertical measurement of depth for payment of Structural Rock Excavation will be to a horizontal plane located 1 foot below the bottom of the trench for Underdrain Type "B" and Underdrain Type "C".
2. The material for Elts, Tees and Wyes for underdrain types "B" and "C" shall be at least as thick as the largest size pipe being connected.
3. Width of the trench for underdrain outlet will be the same as the underdrain trench.
4. No allowance for payment will be made for excavating or material excavated beyond the horizontal dimensions shown for Types A, B or C Underdrain.
5. In "Box Sections" the edge of trench shall be in line with edge of box section.

UNDERDRAIN

F



NOTES:

1. All units to be complete shop assembly.
2. All units to have one shop coat of approved Aluminum paint.
3. An Elbow shall be installed if directed by the Engineer to provide a horizontal grate, and shall be paid for as 3 additional feet of the type and size of pipe involved.
4. Rods shall conform to the requirements of section 709.01 of the Standard Specifications.

* 24" INLET GRATE UNIT

G

REVISIONS	
PLATE 'F'	9-17-70
PLATE 'G'	8-15-71
PLATE 'D'	12-20-71

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

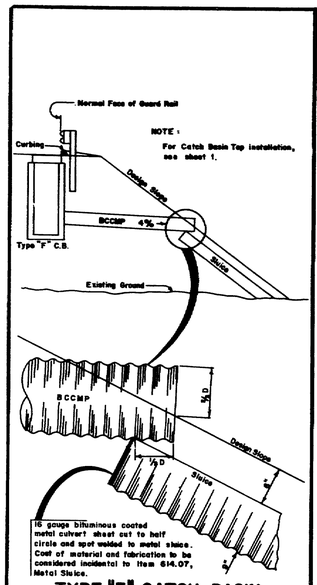
STANDARD DETAILS

METAL SLUICE — UNDERDRAIN — CULVERT PIPE DATA CULVERT INLET GRATE

AUG. 1969 (2)

167-186

FH. W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	68	71

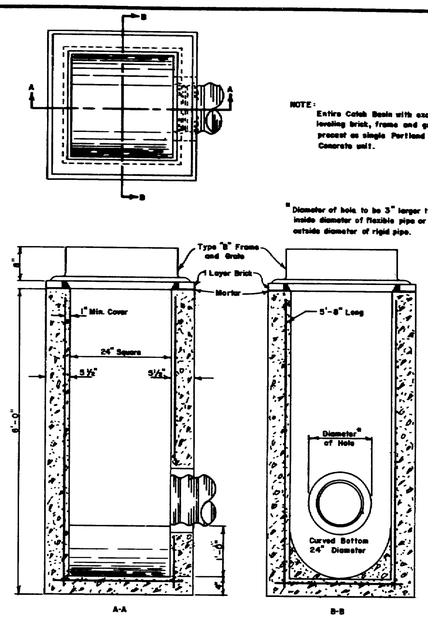


TYPE "F" CATCH BASIN WITH OUTLET PIPE

(SLUICE OPTIONAL)

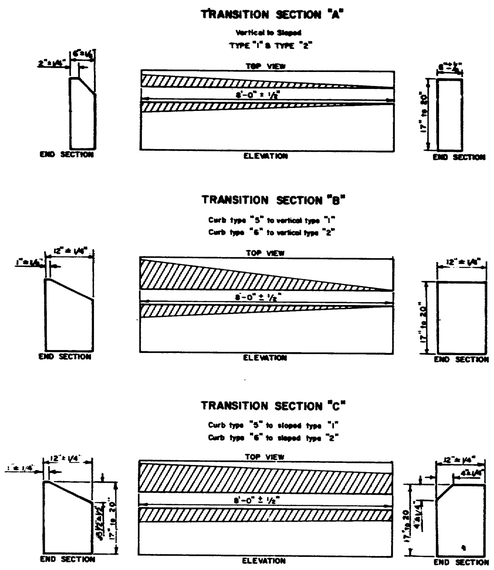
(SEE SHEET NO. 2 FOR STANDARD SLUICE DRAWING)

3-A



CATCH BASIN TYPE "F"

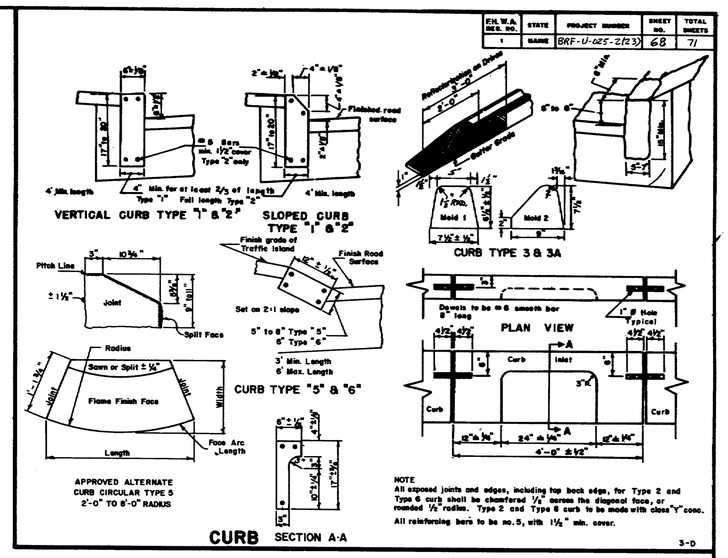
3-B



CURB TRANSITION

NOTE – TYPE 2 CURB
Precast concrete curb to be made with class "Y" concrete.
All reinf. bars to be #5, 1½" min. cover.

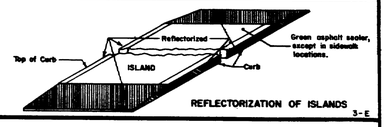
3-C



NOTE
All exposed joints and edges, including top back edge, for Type 2 and Type 6 curb shall be chamfered ⅛" across the diagonal face, or rounded ½" radius. Type 2 and Type 6 curb to be made with class "Y" conc.
All reinforcing bars to be no. 5, with 1½" min. cover.

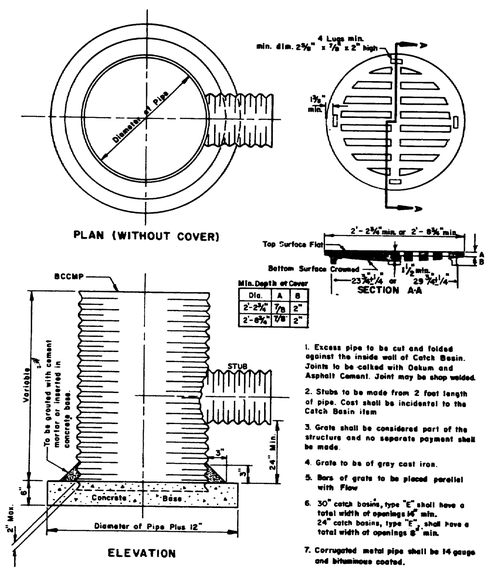
CURB SECTION A-A

3-D



REFLECTORIZATION OF ISLANDS

3-E

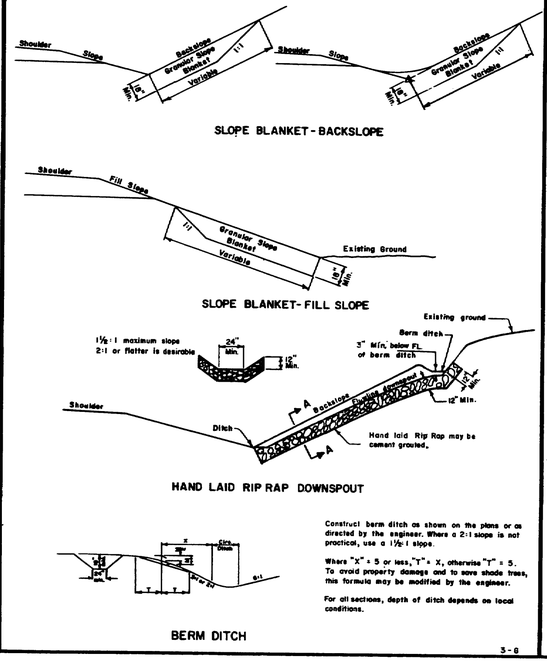


Min. Depth of Cover		
Dia.	A	B
2'-2⅝"	⅞	2"
2'-8⅝"	1⅛	2"

1. Excess pipe to be cut and folded against the inside wall of Catch Basin. Joints to be calked with Oakum and Asphalt Cement. Joint may be shop welded.
2. Stubs to be made from 2 foot length of pipe. Cost shall be incidental to the Catch Basin item
3. Grate shall be considered part of the structure and no separate payment shall be made.
4. Grate to be of gray cast iron.
5. Bars of grate to be placed parallel with Flow
6. 30" catch basins, type "E" shall have a total width of openings 14" min. 24" catch basins, type "E", shall have a total width of openings 8" min.
7. Corrugated metal pipe shall be 14 gauge and bituminous coated.

CATCH BASIN TYPE "E"

3-F

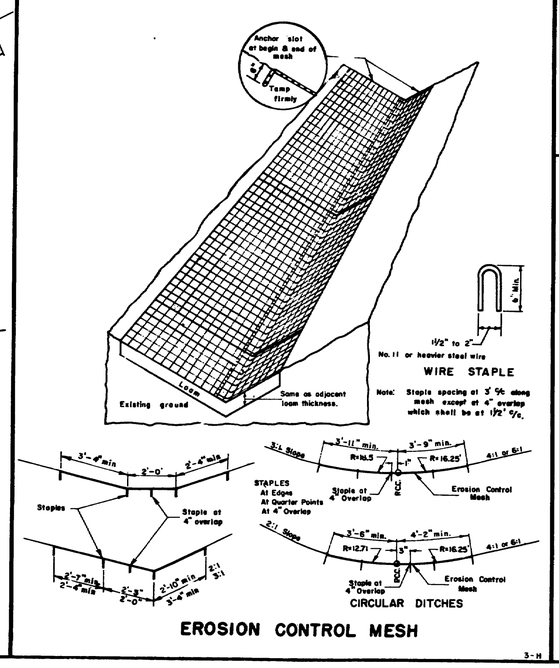


Construct berm ditch as shown on the plans or as directed by the engineer. Where a 2:1 slope is not practical, use a 1½:1 slope.

Where "X" = 5 or less, "Y" = X, otherwise "Y" = 5. To avoid property damage and to save shade trees, this formula may be modified by the engineer.

For all sections, depth of ditch depends on local conditions.

3-G



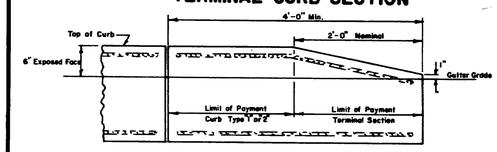
EROSION CONTROL MESH

3-H

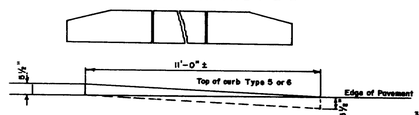
CURB TYPES (1 & 2), (5 & 6) ON CURVES				
Type	RADIUS OF CURVE	LENGTH	PAID FOR AS	STONE IS CUT OR CAST
1 & 2	0' To 60' Incl.	4' Min.	Circular	Arc To Fit Curve
	Over 60' To 160'	4' To 6'	Straight	Straight Pieces
5 & 6	0' To 8' Incl.	2' Min	Circular	To Fit Curve
	Over 8' To 30' Incl.	12" Min. Chord	Circular	Straight Pieces, Radial Ends
	Over 30' And Under 160'	2' To 3'	Straight	Straight Pieces
	160' And Under	3' To 6'	Straight	Straight Pieces

3-J

TERMINAL CURB SECTION



TERMINAL SECTION TYPE "1" & "2"



TERMINAL SECTION TYPE "5" & "6" (Use when shown on plans only)

3-I

REVISIONS	
Plate 3-G	12-23-69
Plate 3-F	5-27-70
Plate 3 J	7-15-70
PLATE 3G	3-4-71
PLATE 3H	8-28-73
PLATE 3H	6-26-75
PLATE D	8-8-75

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

STANDARD DETAILS

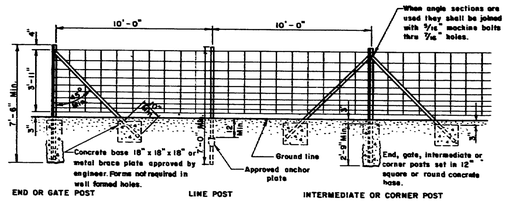
CURB, DITCHES AND SLOPES, AND CATCH BASINS TYPE "E"

AUG. 1969

3

167-187

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(3)	69	71



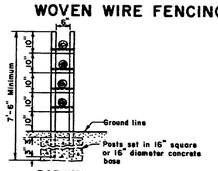
END, INTERMEDIATE AND CORNER POSTS – 2½" x 2½" x ¼" angle or nominal diameter 2" galvanized steel pipe minimum weight of 3.65 pounds per foot with approved top cap, length 7'-6"

GATE POSTS - 3½" x 3½" x 5/16" rolled angle section, or nominal diameter 2½" galvanized steel pipe with minimum weight of 5.79 pounds per foot. Pipe shall be filled with concrete and have an approved top cap, length 7'-6"

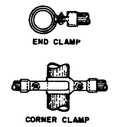
BRACES – 1¾" x 1¾" x ¼" rolled angle section, or nominal diameter 1¼" galvanized steel pipe with minimum weight of 2.27 pounds per foot.

LINE POSTS – Standard studded "T" post with minimum weight of 1.33 pounds per foot or standard leg "U" post with minimum weight of 1.12 pounds per foot, length 7'-0"

WOVEN WIRE FENCING - METAL POSTS



BARWAY

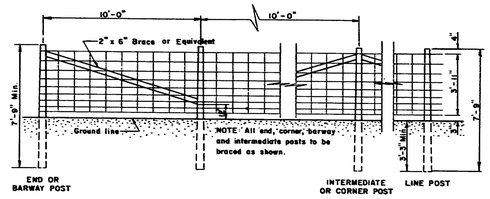


BRACE CLAMPS - PIPE POSTS

BARWAYS – Metal posts shall be installed for a 16'-0" opening. Barway posts and braces shall conform to requirements of "Gate Posts" and "Braces" under "Woven Wire Fencing – Metal Posts." Cross bar supports for barways shall be 1¾" x 1¾" x ¼" rolled angle section. When round gate posts are used, length of cross bar supports shall equal center to center of posts plus 2 inches and they shall be attached to the barway post with 7/16 x 4½" machine bolts. When angle section gate posts are used, the length of cross bar supports shall be equal to the out to out dimensions of the angle sections and shall be attached with 5/16" x 1" machine bolts. All bracing shall conform to the requirements of "Woven Wire Fencing – Metal Posts." Cross bars shall be as required for "Barways – Wood Posts."

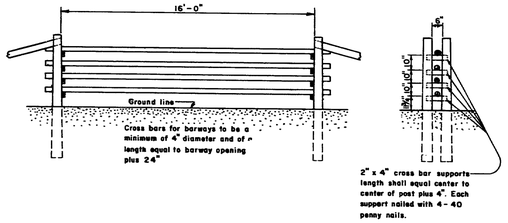
BARWAYS - METAL POSTS

B



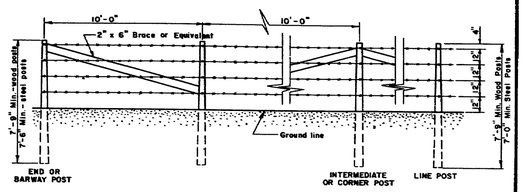
WOVEN WIRE FENCING – WOOD POSTS

Staples for wood posts to be 9 ga. 1½", placed according to the specifications.



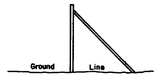
BARWAYS – WOOD POSTS

C



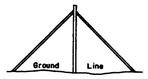
"Barbed Wire – Metal Posts" shall be constructed with the post and wire spacing shown above. Metal posts and braces shall conform to all the requirements noted and shown for "Woven Wire Fencing – Metal Posts," including concrete bases.

BARBED WIRE FENCING – WOOD POSTS AND BARBED WIRE FENCING – METAL POSTS



BRACING - TYPE I

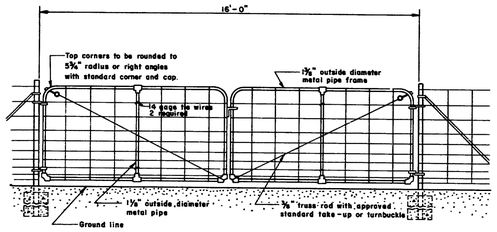
Used at Gates, Barways and Terminals.



BRACING - TYPE II

Used at Corners, Intermediate Points, and changes in Vertical Alignment

D



Gate posts, braces and anchorages to be as specified under "woven wire fencing – metal posts."

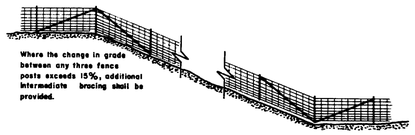
All gates shall be installed with the top hinge pin pointing down

Wire for gates shall conform to A.S.T.M. A116, class 1, design no. 1047-12-11.

The required fittings for fence and gates shall be steel or malleable iron of approved standard type.

Gates shall be furnished with standard fork latch and one piece of 5/16" straight link, alloy steel chain, 24" long. One end shall be attached to gate frame and attached to the other end shall be a snap lock or other approved fastening device.

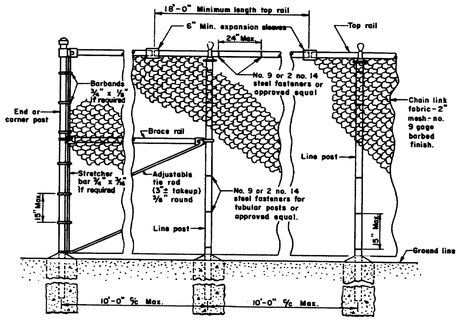
DRIVE GATEWAYS – 16 FEET



Where the change in grade between any three fence posts exceeds 15%, additional intermediate bracing shall be provided.

INTERMEDIATE BRACING

E

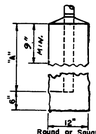


END OR CORNER POSTS: Nominal 2" diameter, galvanized steel pipe, minimum 3.65 pounds per linear foot or 2¼" x 2" "H" section, 4.10 lbs./l.f., or 3½" x 3½" "L" section with with integral fabric loops 5.14 lbs./l.f.

LINE POSTS: Nominal 1½" diameter, galvanized steel pipe, minimum weight 2.72 pounds per linear foot or 1⅞" x 1⅞" steel "H" section 2.70 lbs./l.f.

TOP & BRACE RAILS: Nominal 1¼" diameter, galvanized steel pipe, minimum weight 2.27 lbs./l.f. or 1⅞" x 1⅛" ⅜ shaped, rolled formed section.

STRETCHER BARS: Length to be 1" less than full height of fabric. One stretcher bar for each gate and post, and two stretcher bars for corner and bracing.



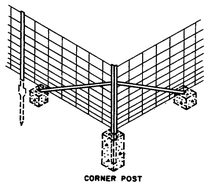
Round or Square

"A" = 2'-6" for 4' fence; 3'-0" for 6' fence and 5'-0" for all end and gate posts.

LINE, GATE AND END POST BASE

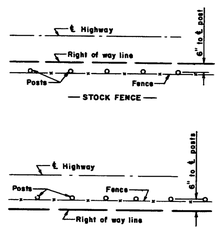
CHAIN LINK FENCE

F

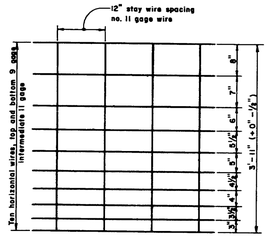


CORNER POST

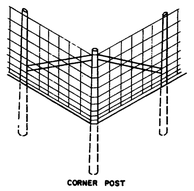
BRACING ASSEMBLY for METAL POST



FENCE LOCATION WITH RESPECT TO RIGHT OF WAY LINE



WOVEN WIRE FENCE



CORNER POST

BRACING ASSEMBLY for WOOD POST

G

GENERAL NOTES: FENCING

1. When ledge is encountered, steel posts shall be set and grouted 12" deep unless the posts penetrate the ground to the depth indicated on the drawings.
2. When wood posts are used, braces shall be attached to posts with a minimum of 4, 40 penny nails per attachment.
3. When the word *"standard"* is used, it shall be interpreted as if it were followed by the expression *"to the fence industry"*
4. Woven Wire and Barbed Wire Fencing shall be attached to wood posts with 9 gauge 1½" galvanized staples.
5. Concrete for post foundations shall be class B.
6. In well formed holes with vertical walls, forms will be required only at the top 9 inches. Holes which cannot be well formed shall have forms for the full depth of the base.

SPACING OF FENCE POSTS ON CURVES:

Radius of curve at fence location	Normal post spacing
Over 500 feet	10 feet
Over 200 feet to 500 feet	8 feet
Over 100 feet to 200 feet	6 feet
100 feet or less	5 feet

H

REVISIONS	
PLATE F	8-10-70
PLATES B C D F H	7-10-72

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

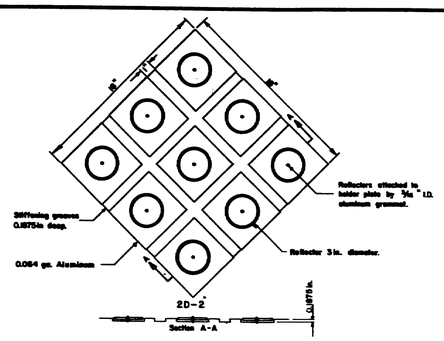
STANDARD DETAILS

FENCING

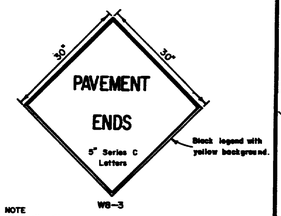
AUG. 1969 (10)

167-188

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(13)	70	71



HAZARD MARKER



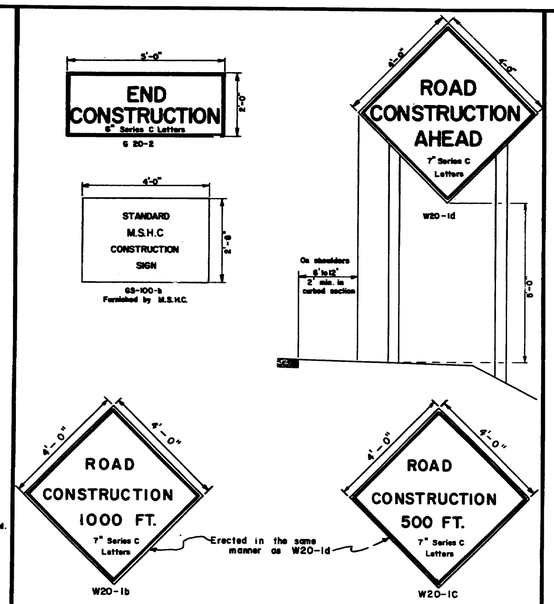
NOTE

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

GENERAL NOTE
Construction Signs

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

A



CONSTRUCTION SIGNS

B

GENERAL NOTES - BARRICADES

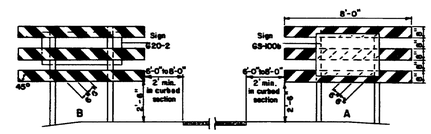
1. Unless otherwise designated, sign designation letters shall refer to the "Manual of Uniform Traffic Control Devices for Streets and Highways," published by the U.S. Department of Transportation, Federal Highway Administration, 1971.
2. White stripes shall be of silver reflective sheeting bonded to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

NOTES - PORTABLE BARRICADES

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

NOTES-WING BARRICADES

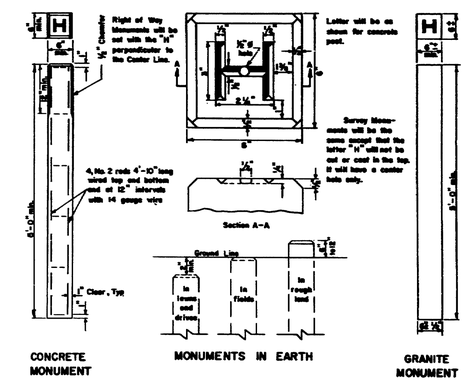
1. Lumber sizes for wing barricades shall be 1" x 8" except posts which shall be 4" x 4" (nominal sizes).
2. Wing barricades will not be required unless specifically called for in the special provisions.
3. Location of signs and barricades will be determined by the Engineer.

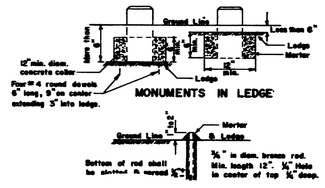


WING BARRICADES

C

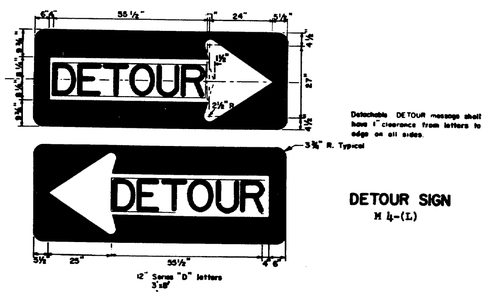
RIGHT OF WAY & SURVEY MONUMENTS





BRONZE PIN MARKERS

D

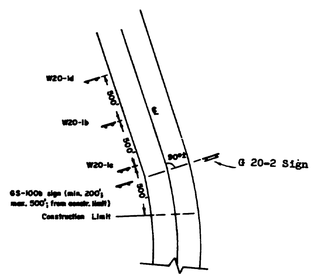


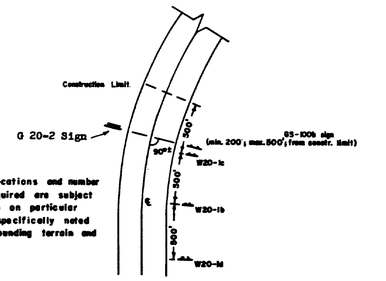
Detachable DETOUR message shall have 1" clearance from letters to edge on all sides.

DETOUR SIGN
M 4-(L)

E

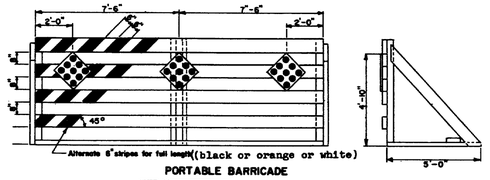
STANDARD SIGN LOCATIONS



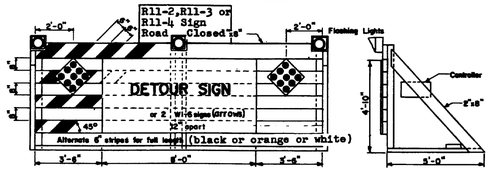


NOTE:
Standard locations and number of signs required are subject to variation on particular projects if specifically noted due to surrounding terrain and land use.

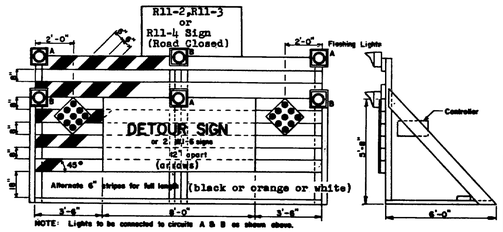
F



PORTABLE BARRICADE



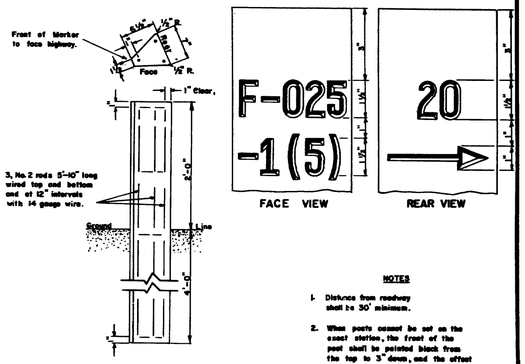
PORTABLE BARRICADE WITH FLASHING LIGHTS (NORMAL SIZE)



OVERSIZED PORTABLE BARRICADE WITH FLASHING LIGHTS

BARRICADES

G



NOTES

1. Distance from roadway shall be 30' minimum.
2. When posts cannot be set on the exact station, the front of the post shall be painted black from the top to 3" down, and the offset distance marked on rear with an arrow pointing in direction of beginning or end of project.
3. All markings to be 1/8" deep and 3/4" wide.

PROJECT MARKERS

H

REVISION	
PLATE B	12-21-70
PLATES B, C, & F&G	12-15-71
PLATE C	10-12-72

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

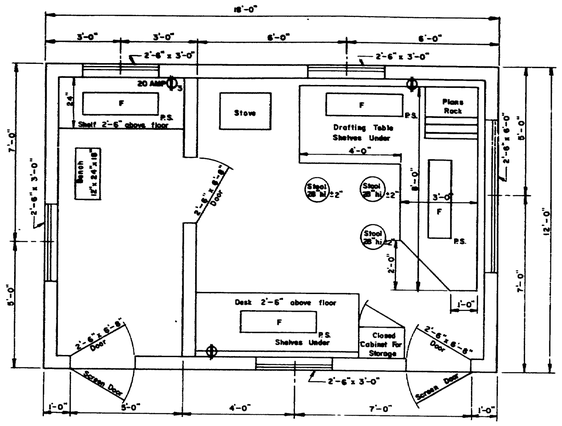
BARRICADES
WARNING SIGNS
MONUMENTS
PROJECT MARKERS

AUG. 1969

11

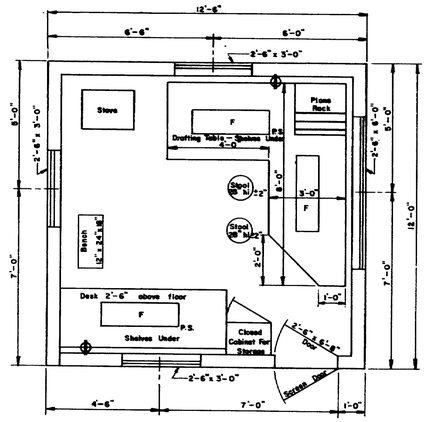
167-189

F.H.W.A. REG. NO.	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
1	MAINE	BRF-U-025-2(23)	71	71



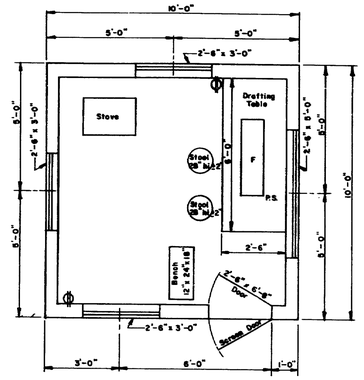
FLOOR PLAN
TYPE "A"

A



FLOOR PLAN
TYPE "B"

B

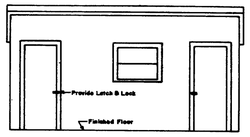


FLOOR PLAN
TYPE "C"

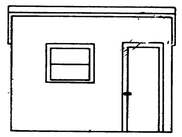
C

GENERAL NOTES

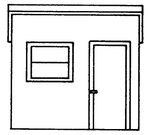
1. Drafting table shall be 3'-6" high at front edge and placed 2" from studs to allow prints to hang down behind table when in use.
2. Shelves under desk shall be constructed to received 11½" x 14" x 25" transfiles.
3. Windows shall be double hung.
4. Stovepipe shall not be in direct contact with combustible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



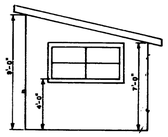
FRONT ELEVATION
TYPE "A"



FRONT ELEVATION
TYPE "B"



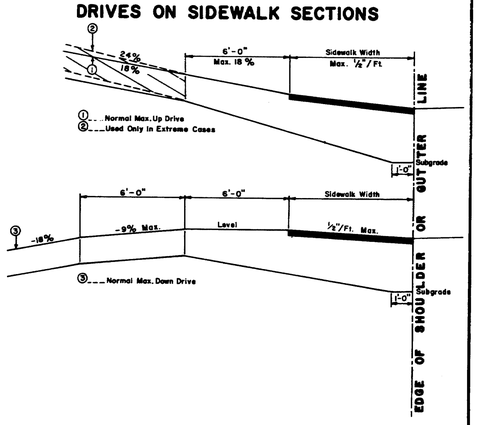
FRONT ELEVATION
TYPE "C"



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

F

DRIVES ON SIDEWALK SECTIONS



GENERAL NOTES

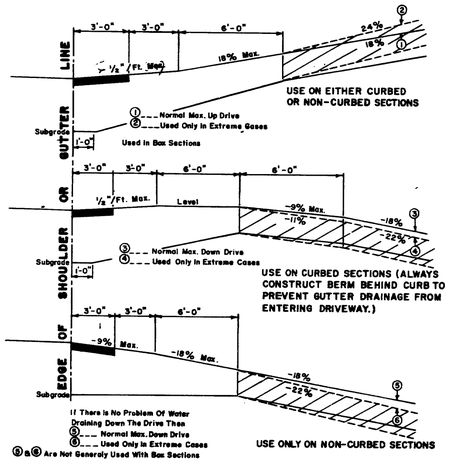
1. The sidewalk width shall be paved in all cases.
2. All residential or commercial drives 10% and over shall be paved.

NOTES ON MAXIMUM DRIVEWAY PROFILES

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

D

DRIVES ON NON-SIDEWALK SECTIONS



GENERAL NOTES

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

NOTES ON MAXIMUM DRIVEWAY PROFILES

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

E

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

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
AUGUSTA, MAINE

STANDARD DETAILS

DRIVEWAY DETAILS
FIELD OFFICES
TESTING LABORATORY

AUG. 1969

12

167-190