

DECK RECONSTRUCTION AND OVERLAY FOR

BRIDGE FILE	CROSSING	Q. STATION	SECTION	TOWNSHIP	RANGE	COUNTY
I-465-124-5268A	Over	East 71st St.	1056+59.80	26 & 35	17N	4E Marion
I-465-124-5269A	Under	East 75th St.	1027+85.18	26 & 27	17N	4E Marion
I-465-125-5270A I-465-125-5270JA	Over	SR 37	1007+26.17	27	17N	4E Marion
I-465-125-5271A	Ramp Over	SR 37	116+56.33	27	17N	4E Marion
I-465-125-2377A 2377JA	Over	Ramp F and N & W Railway	996+83.5	27	17N	4E Marion
I-465-125-2377DRA	Ramp Over	N & W Railway	13+79.16	22	17N	4E Marion
I-69-0-5307A 5307JA	Over	East 82nd St.	69+19.08	23	17N	4E Marion

INDEX DETAILS

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I-FRI-465-4(219)124
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 - Section at Bent #1 - I-465-125-2377A & JA
- NOTE: The Bidder's attention is directed to the fact that Sheet 92 to 100 of the Construction Plans (Traffic Maintenance Details) and Sheets 101 to 132 of the Construction Plans (Standard Drawings) shall be included as a part of this contract under separate cover.

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 - Estimate of Quantities
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INDEX STANDARD DRAWINGS

Bridge	Road	Description	Purpose	FHWA Approval	R-Revised A-Adopted
101.	BR 1	Aluminum Bridge Railing	Bridge Railing		R-11-3-80
102.	RR 2	Aluminum Bridge Railing Detail	Bridge Railing	5-10-79	R-12-1-78
103.	C 1	Standard Miscellaneous Detail	Reinforcing Bar Notes, Bar Bending	6-13-77	R-6-1-77
104.	C 3	Standard Miscellaneous Detail	Type LA Joint, Constr. Joint type 'A', Beam Notch		R-11-15-78
105.	D	Casting Details Roadway Drain	Roadway Drain	3-8-76	R-1-9-76
106.	D -	Adjusting Frame Details for Roadway Drains	Adjusting Frame		R-7-1-77
107.	S 1	Miscellaneous Details	'B' Borrow	1-17-72	R-8-2-71
108.	B	Standard Pavement Joints	Terminal Joint	5-18-77	R-3-1-77
109.	MA	Miscellaneous Standard Details	R.C. Bridge Approach, Monument	9-29-71	R-1-4-71
110.	M ₁	Miscellaneous Standard Details	Paved Side Ditch	12-16-80	A-Oct. 1980
111.	M ₁ 1	Miscellaneous Standard Details	Concrete Gutter Turnout	2-3-66	A-July 1965
112.	M ₂ 2	Miscellaneous Standard Details	Riprap	6-14-74	R-1-2-74
113.	M ₂	Miscellaneous Standard Details	Curbs	10-22-80	R-10-1-80
114.	GR2	Guard Rail, Class B ₁ , F ₂	Guard Rail	10-24-80	R-8-1-80
115.	GR3	Guard Rail, Class B ₂ , B ₃ , C ₁ , C ₂ , F ₁ , F ₂ , F ₃	Guard Rail	10-24-80	R-8-1-80
116.	GR4	Guard Rail Class C ₁ , C ₂	Guard Rail	5-17-79	R-2-1-79
117.	GR5	Aluminum Guard Rail Details	Guard Rail	12-6-76	R-9-1-76

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INDEX STANDARD DRAWING (CON'T)

Bridge	Soed	Description	Purpose	FHWA Approval	A-Adopted R-RevISED
118.	GR6	Steel Tube Guard Rail Details	Guard Rail	11-2-78	R-8-1-78
119.	GR7	Guard Rail Pier Connection Details	Guard Rail	10-24-80	R-8-1-80
120.	GR8	Steel Beam Guard Rail Class D ₂	Guard Rail	3-25-80	R-1-2-80
121.	GR9	Aluminum Beam Guard Rail Class D ₂	Guard Rail	5-17-79	R-2-1-79
122.	GR10	Guard Rail, Buried End	Guard Rail	6-6-80	R-4-1-80
123.	GR10A	Guard Rail Breakaway Cable Terminal	Guard Rail	5-10-79	R-4-1-79
124.	CB 2	Temporary Concrete Barrier	Temporary Concrete Barrier	12-7-79	R-11-1-79
125.	Sh. 1 Det.	Standard Detour Signs	Traffic Maintenance	6-10-80	R-5-1-80
126.	Sh. 1B Det.	Standard Detour Signs	Traffic Maintenance	11-20-80	R-10-1-80
127.	Sh. 2A Det.	Standard Detour Signs	Traffic Maintenance	11-15-79	R-8-1-79
128.	Sh. 3 Det.	Standard Detour Signs	Traffic Maintenance	10-20-80	R-9-1-80
129.	Sh. 3A Det.	Standard Detour Signs	Traffic Maintenance	5-18-77	R-4-1-77
130.	Sh. 4 Det.	Standard Detour Signs	Traffic Maintenance	5-18-77	R-4-1-77
131.	Sh. 5A Det.	Standard Detour Signs	Traffic Maintenance	10-20-80	R-9-1-80
132.	Sheet 9	Traffic Sign Details	Traffic Maintenance		R-4-1-79

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MATERIAL NOTES

BRIDGE DECK OVERLAY
1-3/4" Modified Portland Cement Concrete Overlay OR
2-1/2" Dense Portland Cement Concrete Overlay

* BITUMINOUS WEDGE & LEVELING
110 lbs/sy Bituminous Surface Type 11B over
Variable depth Bituminous Binder or Base

PAVEMENT RELIEF JOINT
110 #/sy Bituminous Surface Type 11B over
1870 #/sy Bituminous base.

TERMINAL JOINT RECONSTRUCTION
220 lbs/sy Bituminous Binder

BITUMINOUS WIDENING
990 #/sy Bituminous Base Type 5D

* The maximum depth of bituminous surface Type 11B shall not exceed 1 1/2". All locations where total wedge thickness will exceed 1 1/2", a bituminous binder or base shall be placed as a first course to within one inch of the finished grade.

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GENERAL NOTES

- Standards under dates as listed in the index on Sheet No. 5 & 6 to be used on this project.
- All guard rail removed will become property of the contractor.
- Unless otherwise specified, the contractor shall have the option of using either Hot Asphaltic Concrete (HAC) or Hot Asphaltic Emulsion (HAE) on all bituminous items.
- All bituminous material required for this contract to be paid for as "Bituminous Mixture for Approaches", unless noted.
- Tack coat to be paid for as "Bituminous Material for Tack Coat" in square yards.
- Plans for these structures are on file in the central office and are available upon request.
- Where new work is to be fitted to old work, the contractor shall check all dimensions and conditions in the field and report any errors or discrepancies to the Engineer and assume responsibility for their correctness and the fit of new parts to the old.
- The handchipping and cleaning of deteriorated deck areas shall be as directed by the Engineer. It is the intent of these plans that all such deteriorated concrete be removed and should there be any doubts as to the quality of the concrete, removal shall continue until PERFECTLY SOUND CONCRETE is exposed. All existing non-full depth patches shall be removed.
- Concrete in patches for deteriorated concrete areas of slab to be Modified portland Cement Concrete or Special Class "A" Concrete. See the Special Provisions.
- All quantities shown on the plans are based on the 1-3/4" Modified Portland Cement Concrete Overlay. See the special provisions for necessary adjustment if 2-1/2" Dense Portland Cement Concrete Overlay is used.
- See the Special Provisions for composition of concrete in overlay dams.
- Seal all joints and cracks in the approach pavement with a hot poured joint sealer before placing the bituminous wedge. The cost of sealing to be included in the cost of other items.
- Care must be taken so as not to damage existing 2" diameter steel conduits in the copings during the construction.

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CONSTRUCTION PROCEDURE FOR PLACING
BRIDGE DECK OVERLAY

- Scarify the bridge floor to a depth of 1/4 inch. Scarify additional areas of bridge floor an additional 1/4 inch as directed by the Engineer.
- Remove scarifying dust.
- Remove all existing non-full depth deck patches and all deteriorated concrete below the level of scarification and remove concrete around reinforcing and along curbs inaccessible to scarifying equipment by handchipping and cleaning in accordance with the Special Provisions.
- Reconstruct all full depth portions of the slab and other members as required for the installation of Class 5-8 Expansion Joints.
- Construct overlay dams.
- Blast and clean all removal and scarified areas.
- Place the bridge deck patching and bridge deck overlay as shown on the plans and in accordance with the special provisions.
- Install BS expansion joints.

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GENERAL NOTES (cont.)

- All removal equipment used for partial concrete removals of bridge structures shall be hand held. Pneumatic hammers, 30 lbs. maximum weight shall be used for all removal areas to be patched and all areas within 24 inches of full depth removal lines. Pneumatic hammers up to 90 lbs. maximum weight may be used for all other removals outside these limits. Deck areas that are to be removed full depth shall be completely separated from adjacent concrete before hammers heavier than 30 lbs. may be used.
- See Guard Rail Revision sheets for orientation of structures.
- See sheets 86 thru 91 for Estimate of Quantities.
- See sheets 92 thru 100 for Traffic Maintenance Details.

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I-465-124-5268A
I-465 over East 71st Street

STRUCTURE DATA:

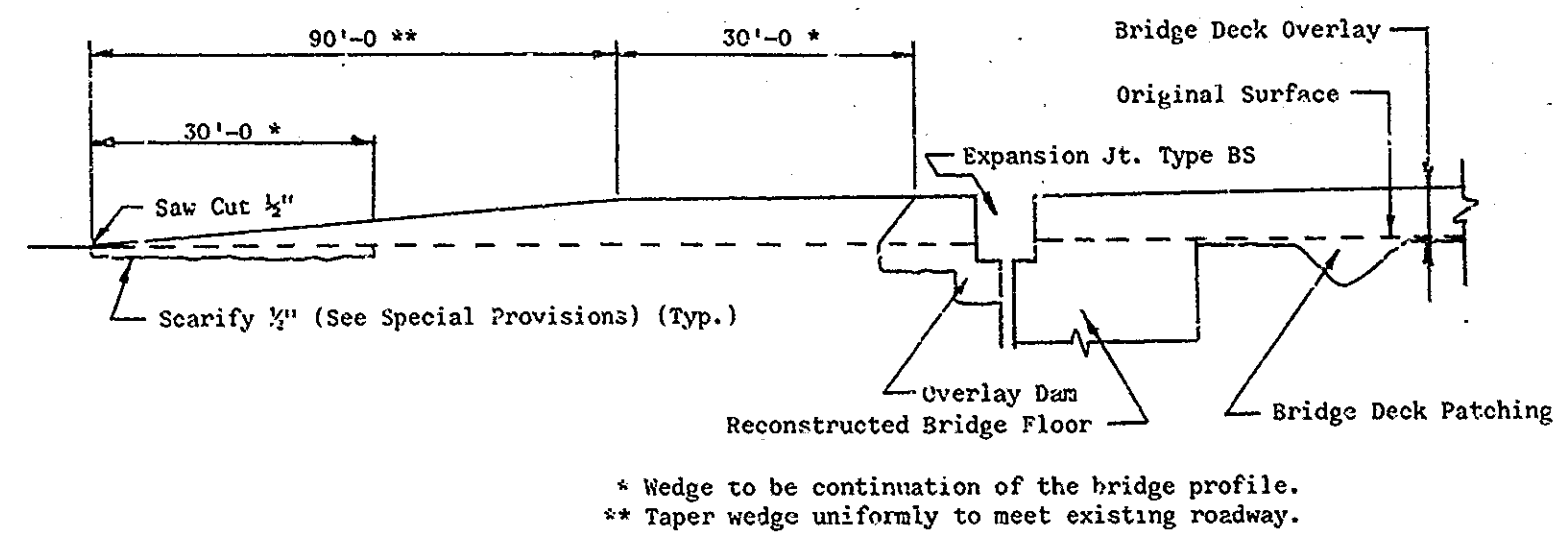
Type: Composite Continuous Steel Beam (Twin)
Spans: 58'6", 58'6"
Skew: 0°
O-O Bridge Floor: 118.33'
Clear Roadway: 50'6"
Curb Width: 9" O-O Coping: 54'6"
Deck Area: 664 sq. yd.
Expansion Jcint: Existing: Open @ Bent #1 Proposed: Type BS 9
Open @ Bent #3 Type BS 9
ADT (1980): 79,500 V.P.D.
Approach: 36'-0" R.C. Pavement

CONSTRUCTION PROCEDURE:

Place concrete overlay according to sheet # 10.
Clean and seal the roadway face and top of the curbs, face of the deck copings, underside of the deck from copings to the drip bead, all exposed faces of wings and top of the overlay dam on approaches.
Remove top 2" of existing bituminous material from the terminal joints. Clean out the joint and place new bituminous material.
Construct bituminous wedges.
Update the guard rail according to sheet # 17.
Make Special Bridge Railing Connections at outgoing ends of the structure as detailed on sheets 84 & 85.
Remove and reconstruct 5'-0" long sections of bridge deck, full width, at both ends of both structures according to sheets 12 thru 16.

NOTES:

See sheet 12 for longitudinal section
See sheet 73 for expansion joint details
See sheet 14 for section at end bents
See sheet 82 for section at roadway drains
See sheet 75 for joint installation at curbs
See sheet 76 for Approach Section.

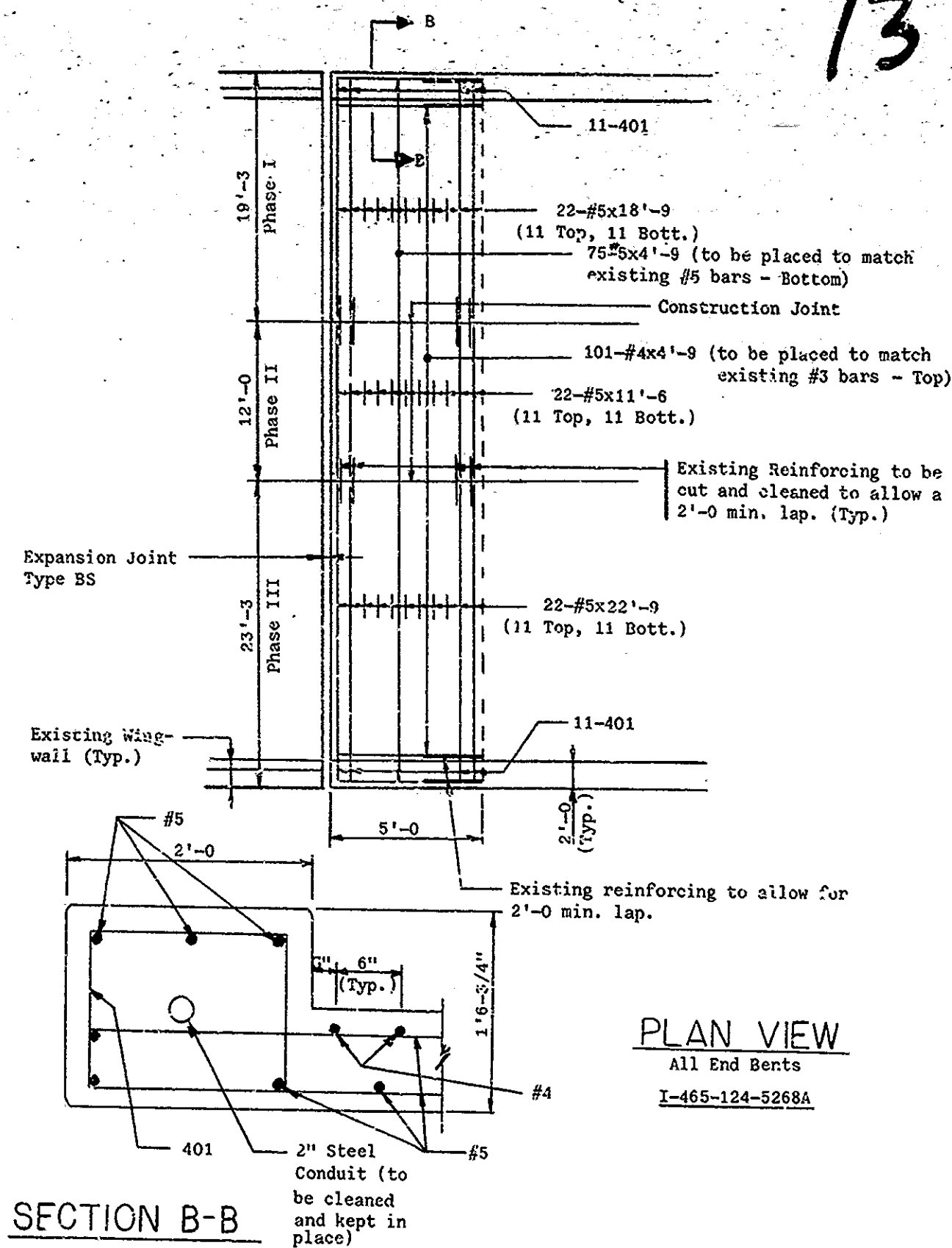


LONGITUDINAL SECTION

I-465-124-5268A

* Wedge to be continuation of the bridge profile.
** Taper wedge uniformly to meet existing roadway.

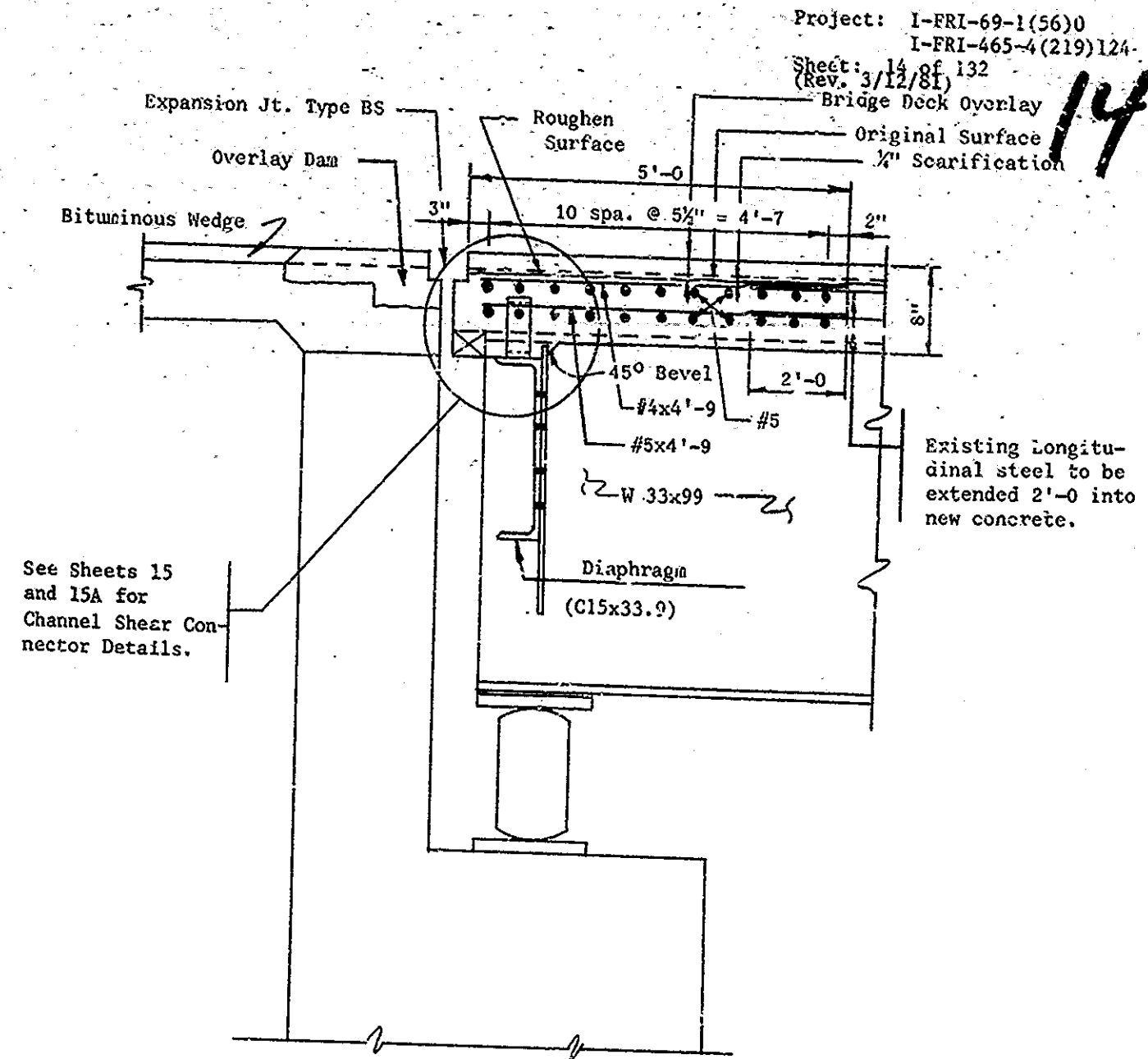
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PLAN VIEW
All End Bents
I-465-124-5268A

SECTION B-B

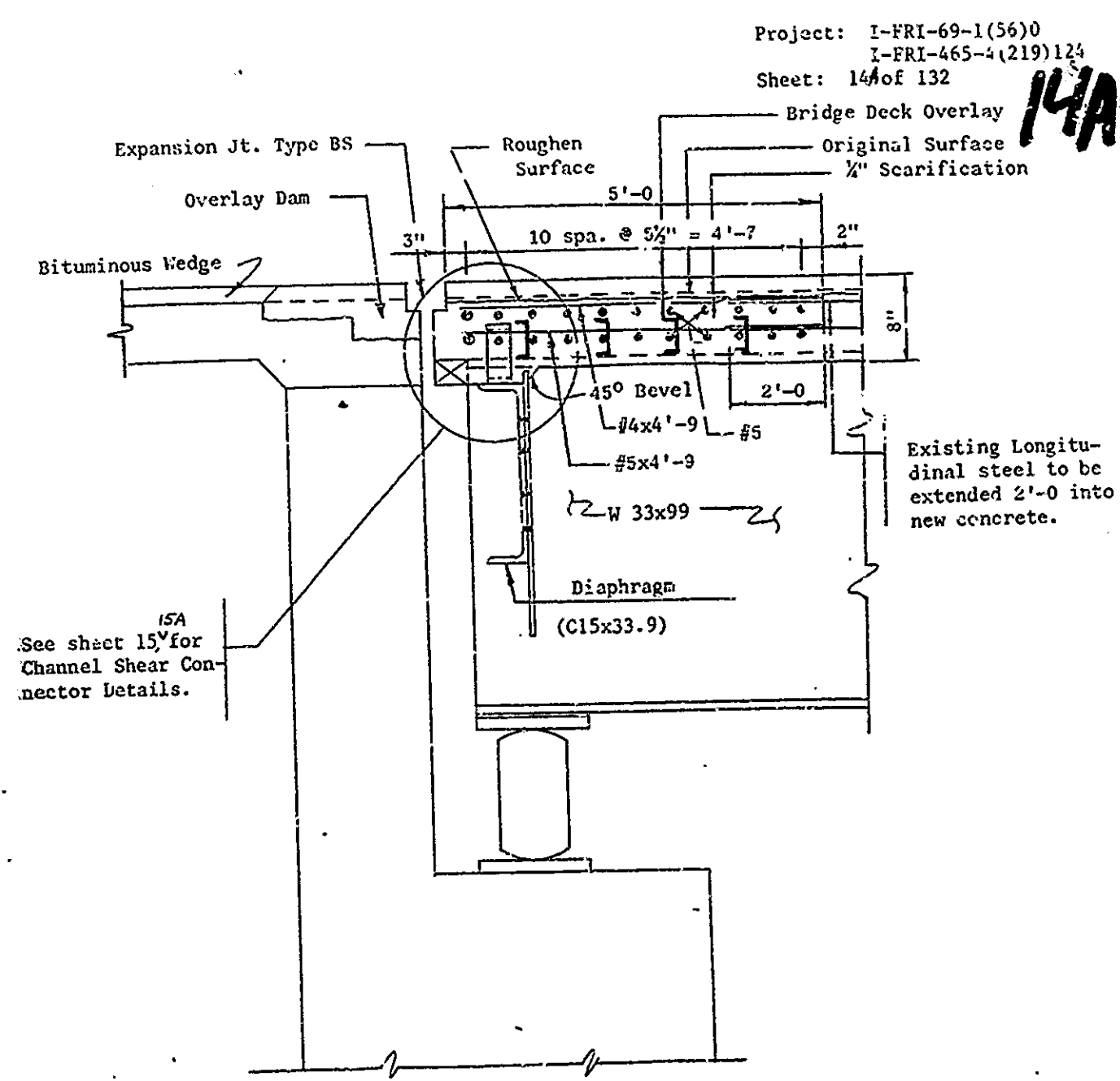
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SECTION AT END BENT

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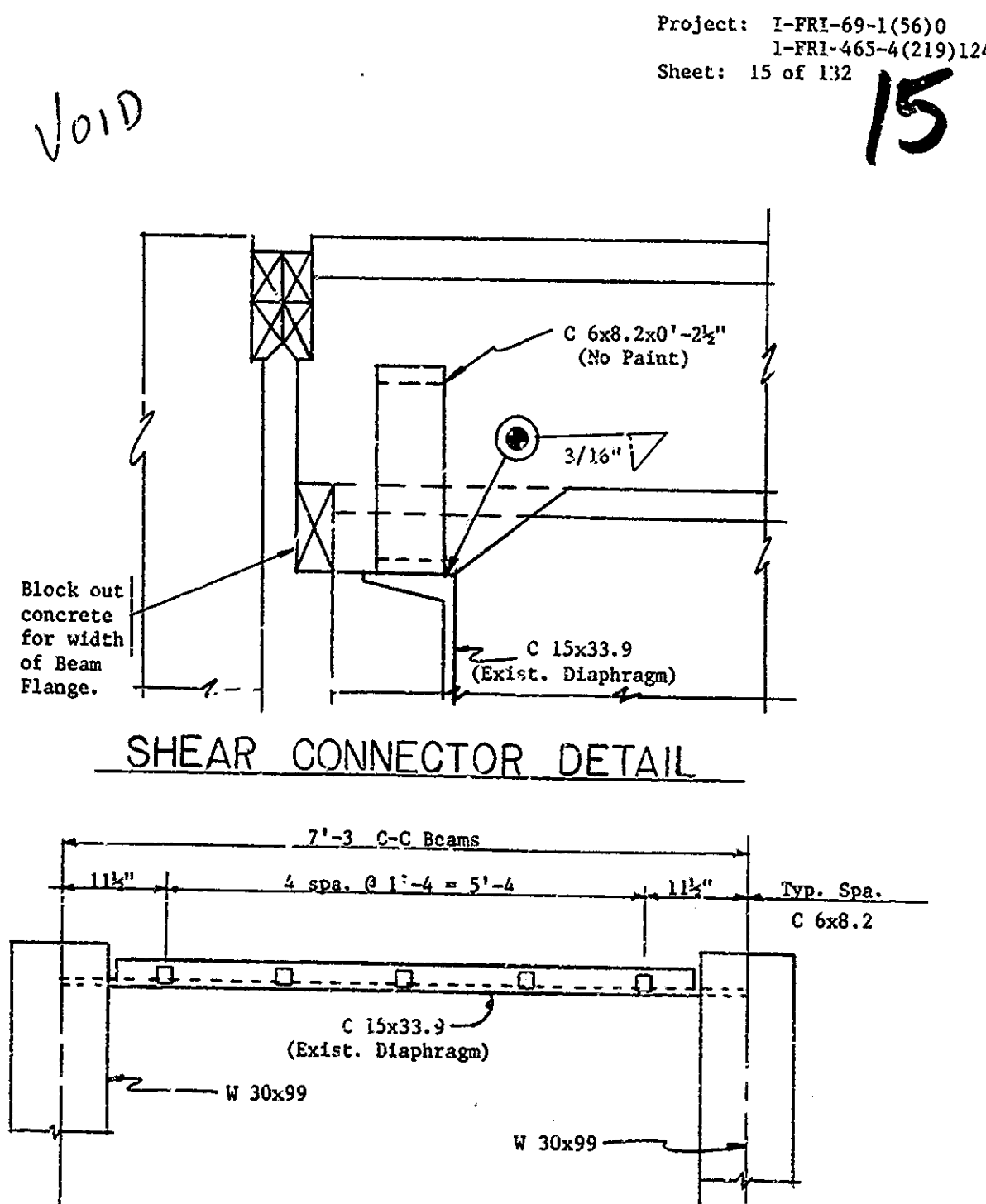
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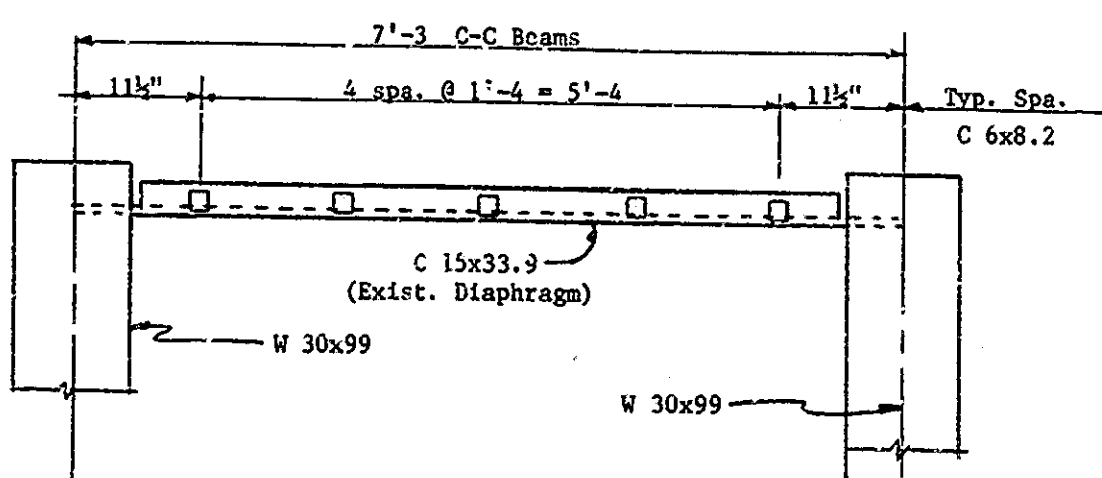
SECTION AT END BENT

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See sheet 15A for Channel Shear Connector Details.



SHEAR CONNECTOR DETAIL

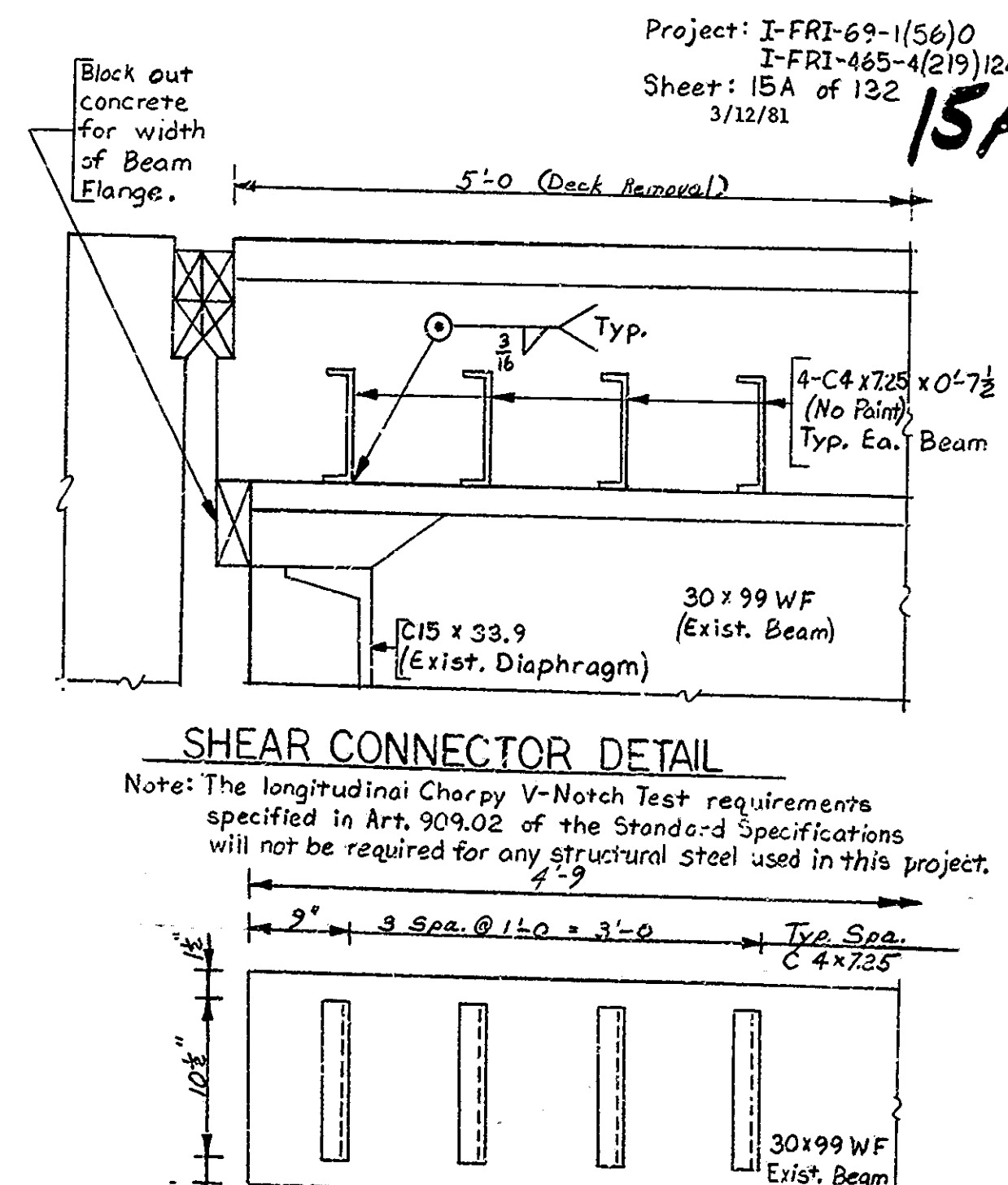


SHEAR CONNECTOR SPACING

To be paid for as "Channel Shear Connectors", Each. (Includes all materials, field welding and necessary equipment).

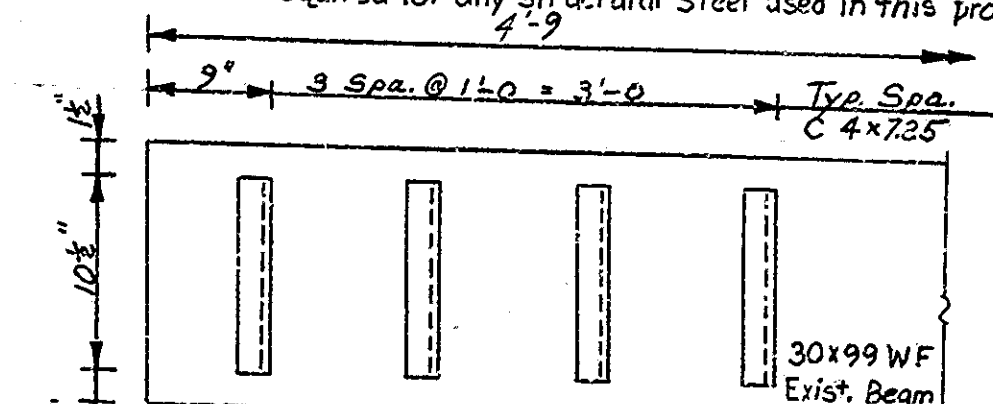
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SHEAR CONNECTOR DETAIL

Note: The longitudinal Charpy V-Notch Test requirements specified in Art. 909.02 of the Standard Specifications will not be required for any structural steel used in this project.



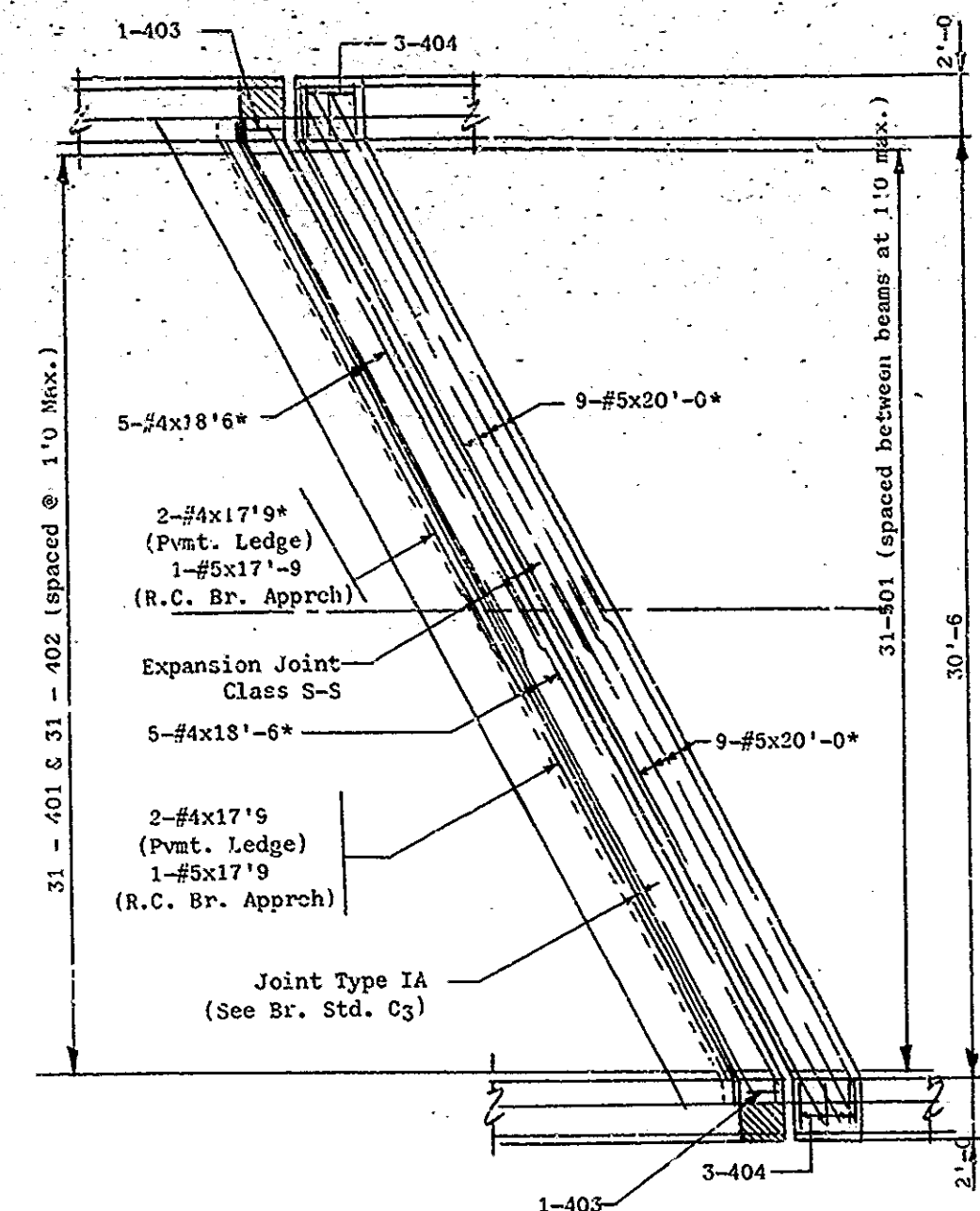
SHEAR CONNECTOR SPACING

To be paid for as "Channel Shear Connectors", Each. (Includes all materials, field welding and necessary equipment).

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See sheet 21 for Corner Details

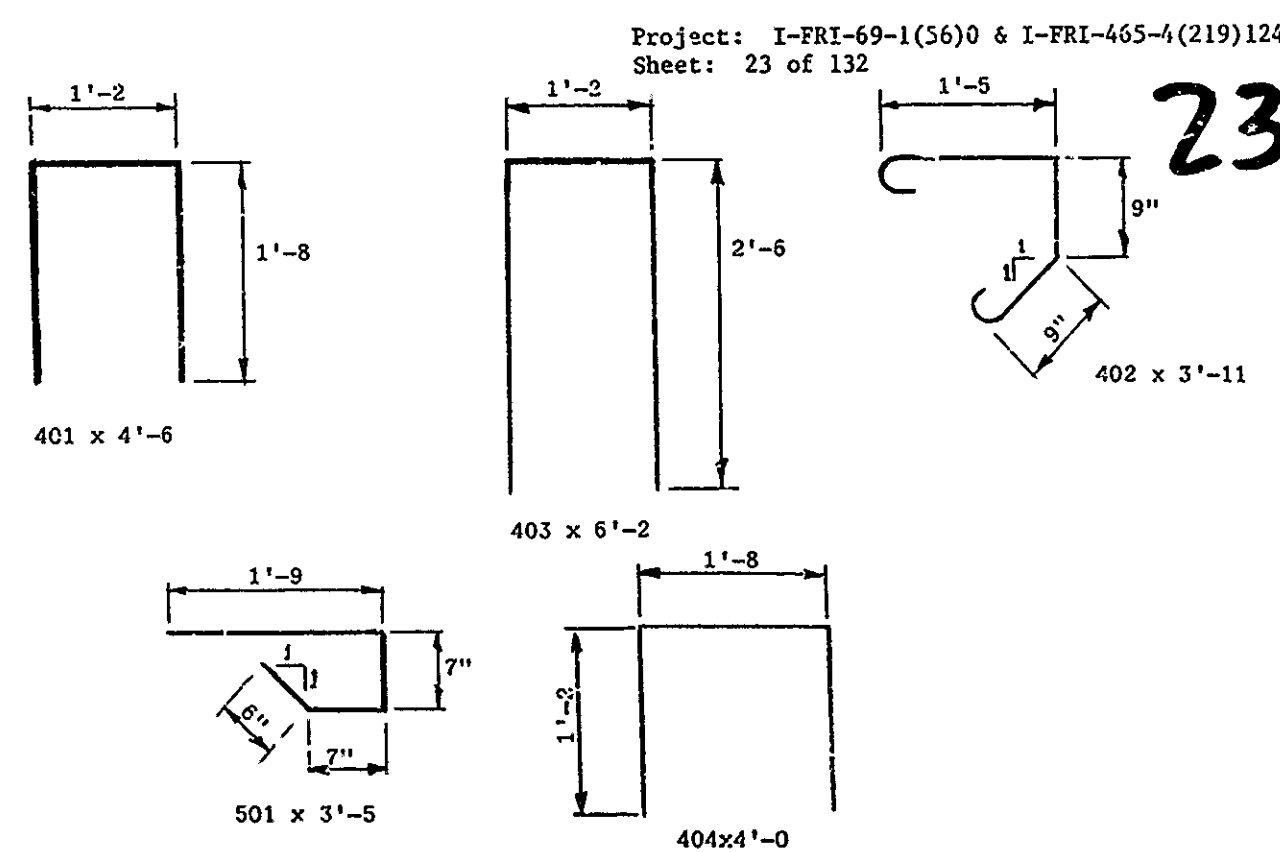


See sheet 72 for Section at Bent #1

PLAN AT END BENT #1 (I-465-124-5269A)

* Field bend as required

Hatched portion of the wingwall to be removed and reconstructed. (See sheet 21)

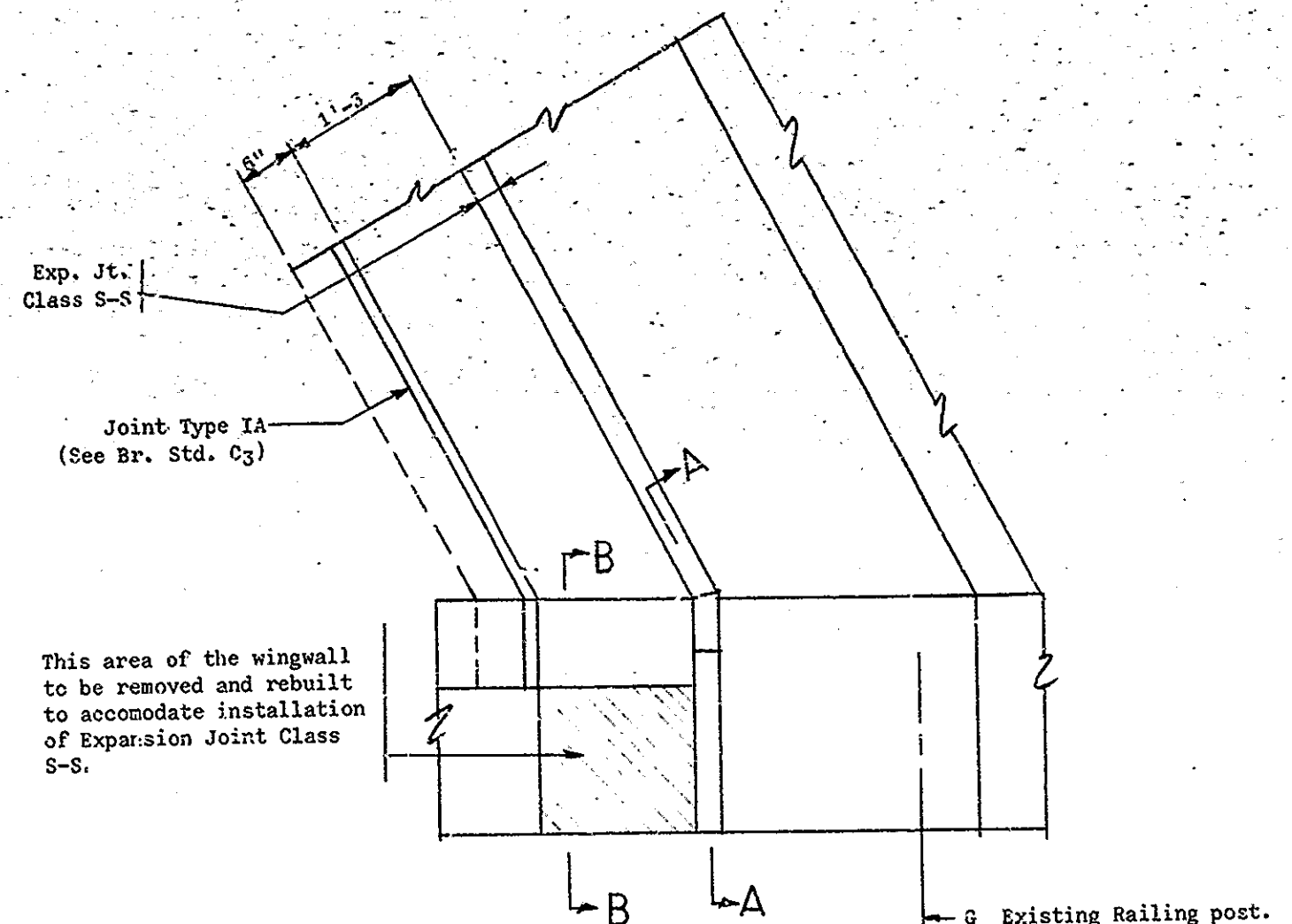


BAR BENDING DIAGRAMS

BILL OF MATERIALS (at Bent #1)

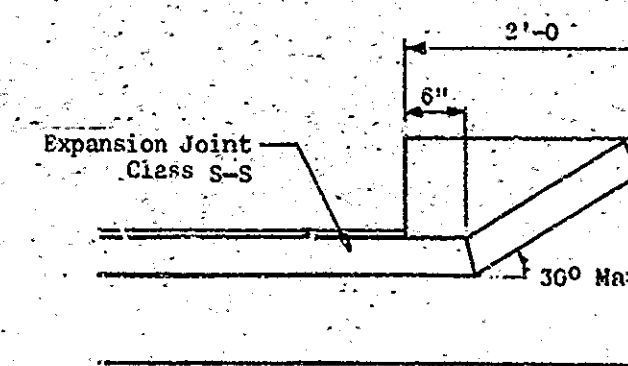
I-465-124-5269A

REINFORCING STEEL				CONCRETE	
Mark or Size	Number	Length	Weight		
501	31	3'-5"		Conc. Cl. 'A' in Superstruc.	
5	18	20'-0"		Mudwall	5.5cys.
5	2	17'-9"		Bridge Floor	2.2cys.
				Total	7.7cys.
401	31	4'-6"		Conc. Cl. 'A' in Substruc.	
402	31	3'-11"		Wingwall	0.2cys.
403	2	6'-2"		MISCELLANEOUS	
4	10	12'-6"		Removal of Pavement	8 cys.
4	5	17'-9"		R.C. Pmnt. (10")	8 cys.
404	6	4'-0"		Integral Conc. Curb	0.1cys.
				Expansion Joint Class S-S	39 Lft.
				Total #4	370
Total Reinforcing Steel			893		

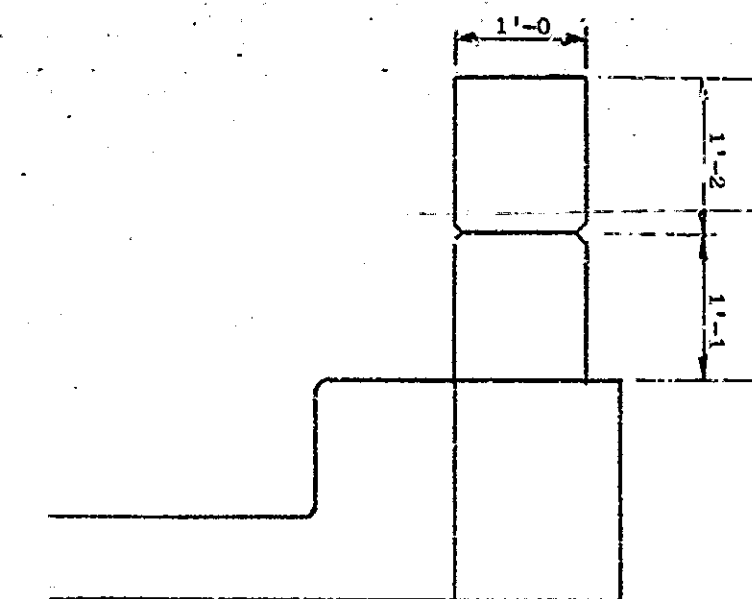


CORNER DETAIL (I-465-124-5269A)

See sheet 22 for Sections.



SECTION A-A



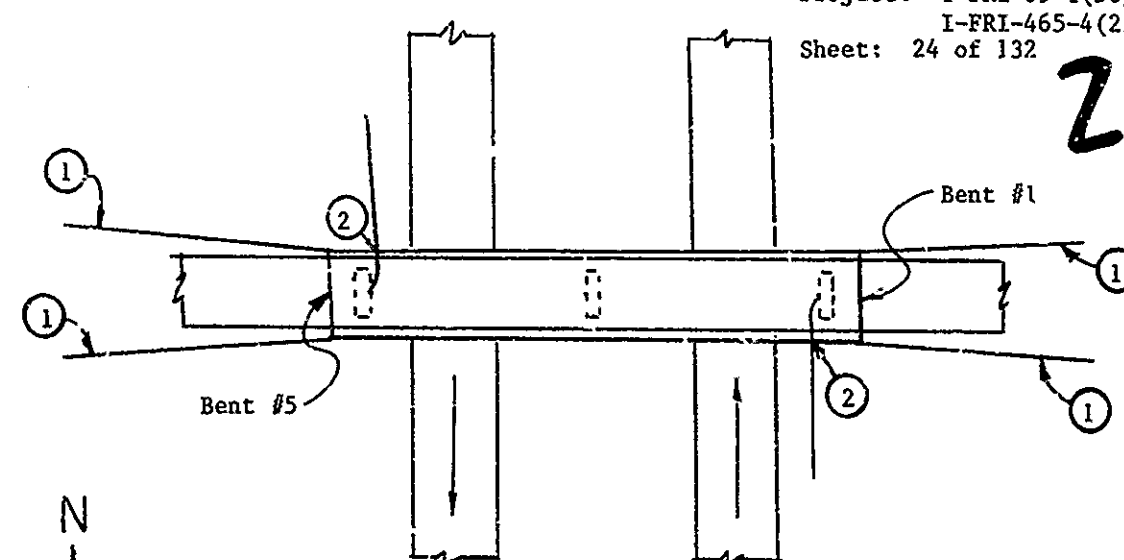
SECTION B-B

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GUARD RAIL REVISIONS

I-465-124-5269A
I-465 Under East 75th Street

- Remove 40 lft. of existing Guard Rail Buried End and install Guard Rail End Treatment.
- Reset 25 lft. of Guard Rail Class 'E₂'. Includes installation of 4 additional Posts and Brackets and 12'-6" Rail lengths for Double Rail Section. Install 12.5 lft. of Guard Rail Class 'E₂' (Terminal End Pier Connection) according to Road Std. CR 7.

SUMMARY

Removal of Guard Rail 160 lft.
Guard Rail End Treatment 4 each
Reset Guard Rail 50 lft.
Guard Rail Typ. 25 lft.

NOTE: Reconnect existing guard rail at the structure to the concrete wingwalls at all corners with bolted thru connection as shown on Road Standard CR 8 (to be included in cost of other guard rail items in the contract).

I-465-125-5270A & 5270JA
I-465 Over State Road 37 (I-69)

STRUCTURE DATA:

Type: Continuous Composite Steel Beam
Spans: 102'-6, 102'-6
Skew: 5° 38' 58" Left
O-O Bridge Floor: 206.22'
Clear Roadway: Varies N.B. - 59.05' to 63.17' Varies S.B. - 65.19' to 73.46'
O-O Coping: Varies N.B. - 63.05' to 67.17' Varies S.B. - 69.19' to 77.46'
Curb Width: 9"
Deck Area: N.B. - 1400.2 sys. S.B. - 1588.2 sys.
Expansion Joint: Existing: Bent #1 Open Jt. Proposed: BS 11
Bent #3 Open Jt. BS 11
ADT (1980): 58,100 V.P.D.
Approach: Variable Width R.C. Pmnt.

CONSTRUCTION PROCEDURE:

Place concrete overlay according to sheet #10.

Clean and seal the roadway face and top of the curbs, face of the deck copings, underside of the deck from copings to the drip bead, all exposed faces of wingwalls and the top of the overlay dam on approaches.

Remove top 2" of existing bituminous material from the terminal joints. Clean out the joint and place new bituminous material.

Construct pavement relief joints in the ramp lanes.

Construct bituminous wedges.

Update guard rail according to sheet #29 (north approach only).

Remove and replace a damaged railing post on the south coping of the north-bound structure (to be included in cost of other guard rail items in the contract).

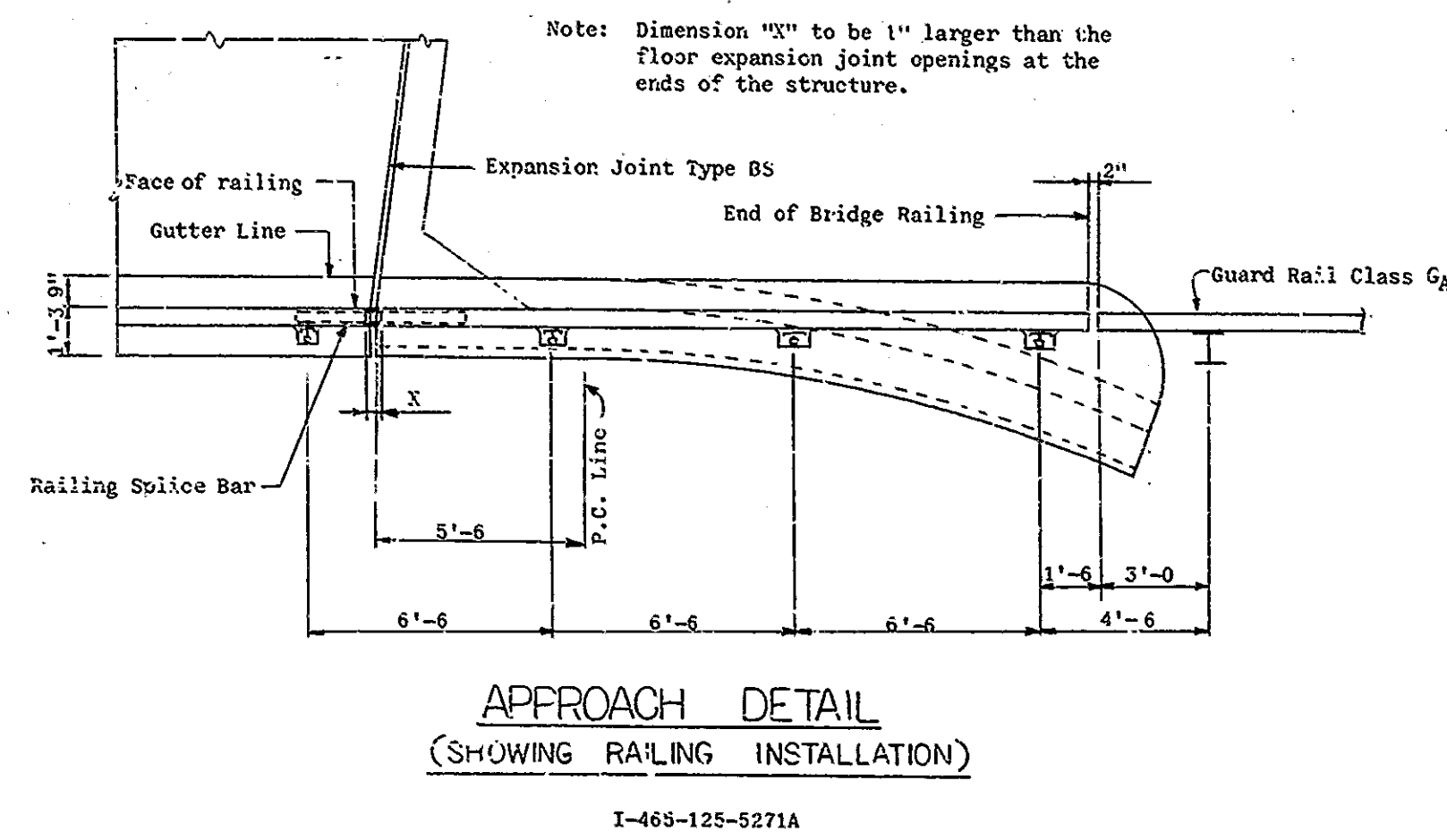
Make Special Bridge Railing Connections at outgoing ends of the structure as detailed on sheets #84 & #85.

Remove and reconstruct damaged portion of the mudwall at southside of bent #3 of the S.B. structure according to details on sheets 26 thru 28.

Remove damaged portions of the slopewall (4 sys. east slopewall and 2 sys. west slopewall). Fill the voids using Special Concrete. Rebuild removed portions of the slopewall.

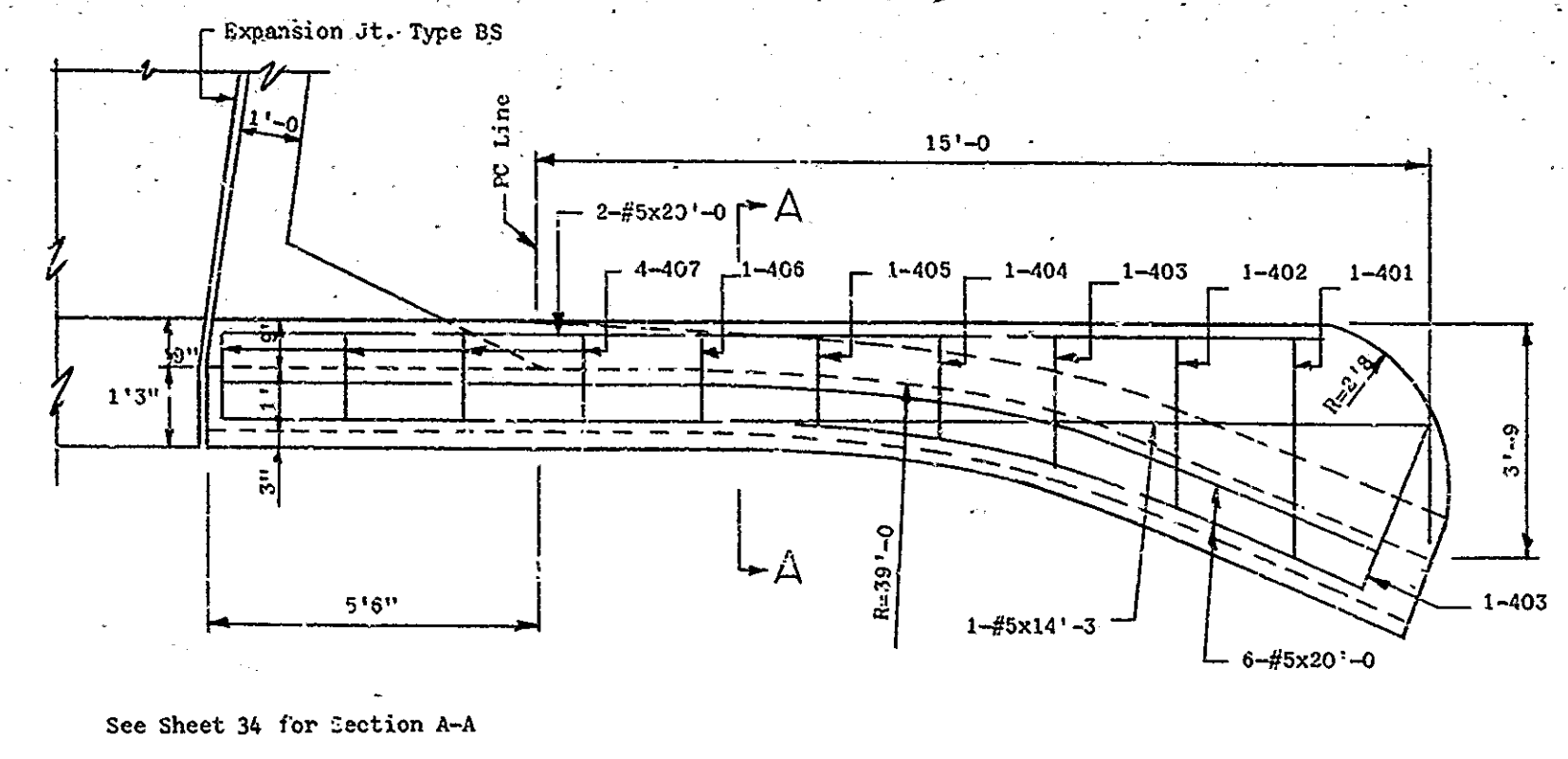
NOTES:

See sheet 66 for longitudinal section
See sheet 75 for expansion joint details
See sheet 68 for section at end bents
See sheet 82 for section at roadway drains
See sheet 75 for joint installation at curbs
See sheet 70 for Approach Section



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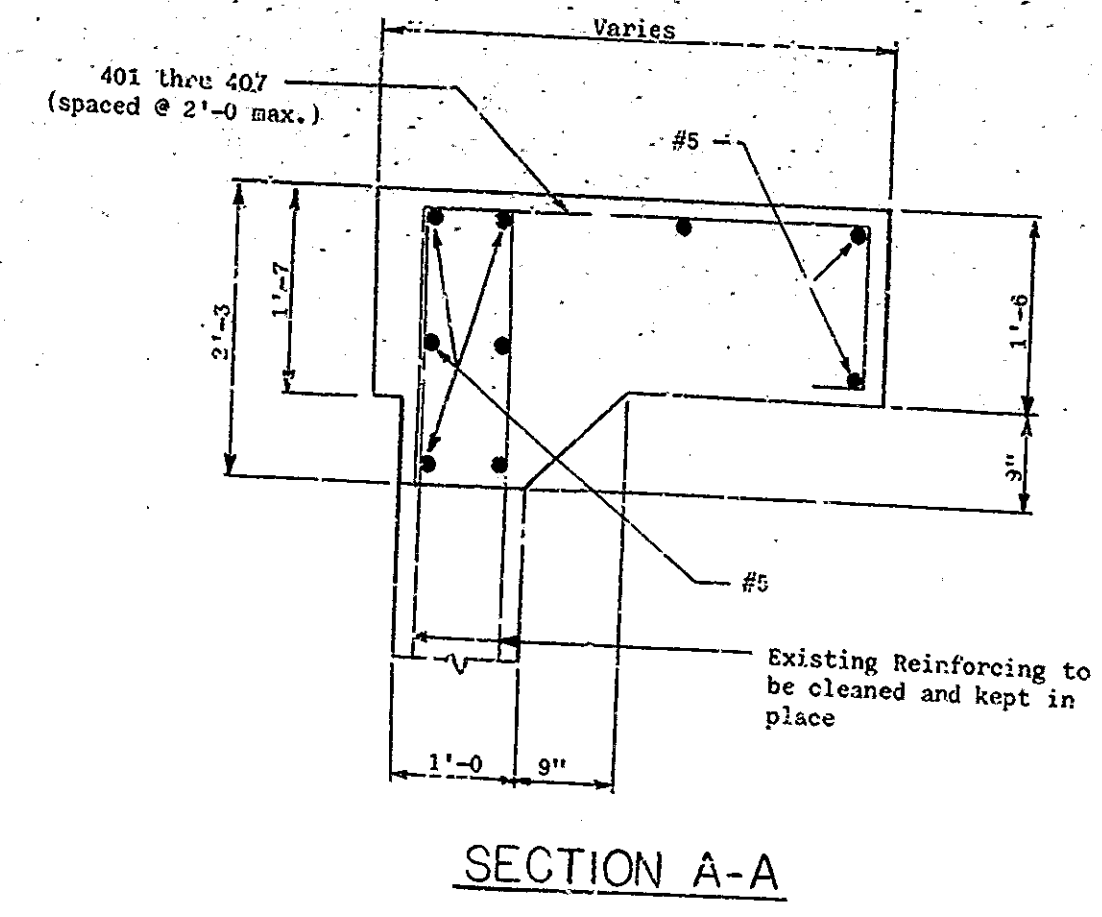


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APPROACH DETAILS
(SHOWING REINFORCING)

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Mark	Dimension B	Length
401	3'-8"	7'-5"
402	3'-0"	6'-9"
403	2'-6"	6'-3"
404	2'-1"	5'-10"
405	1'-9"	5'-6"
406	1'-7"	5'-4"
407	1'-5"	5'-2"

401 thru 407

BAR BENDING DIAGRAM

I-465-125-5271A

BILL OF MATERIALS

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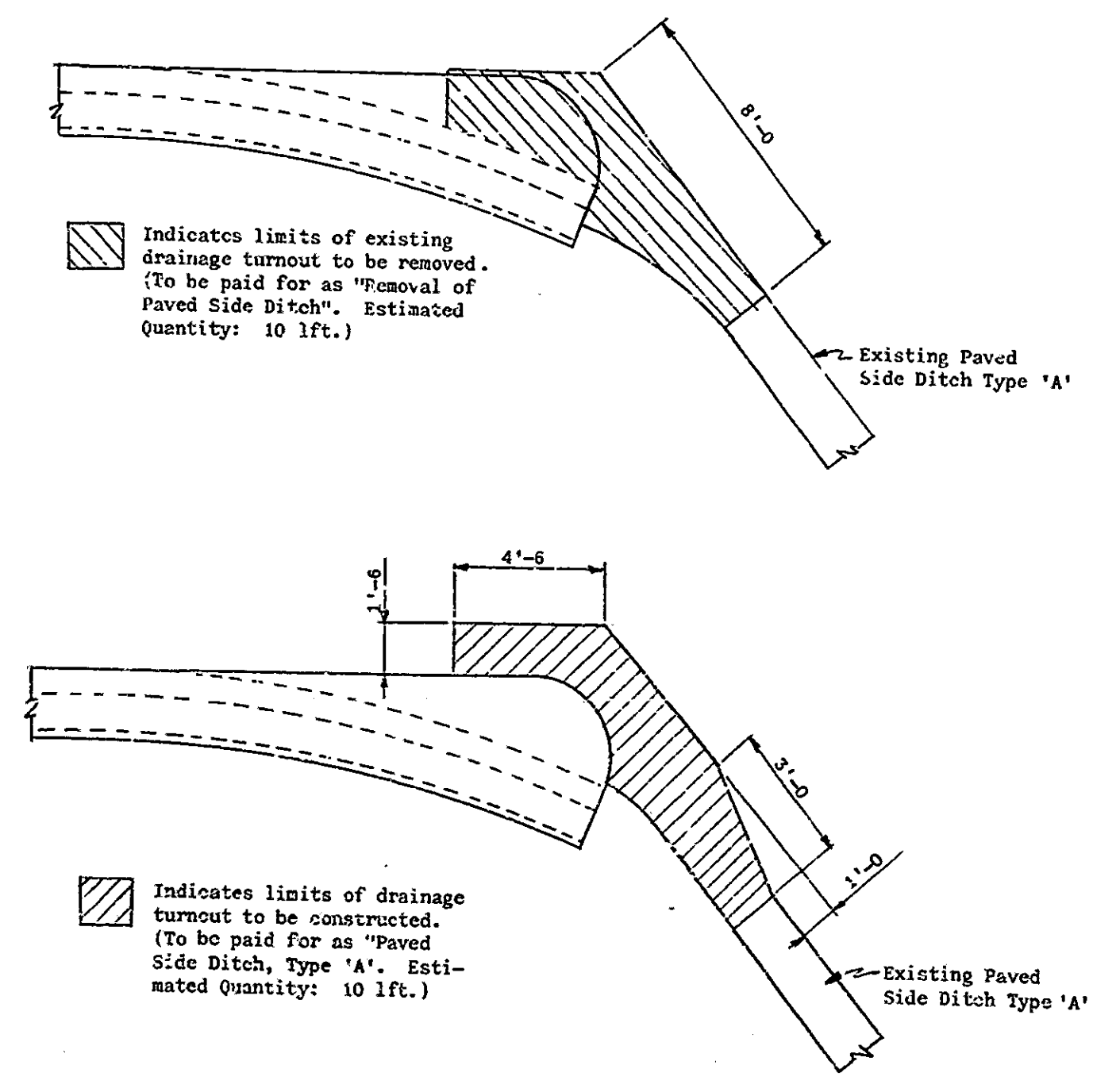
(ONE WING)
I-465-125-5271A

REINFORCING STEEL			
Mark or Size	Number	Length	Weight
5	8	20'-0"	
5	1	14'-3"	
TOTAL #5			182#
401	1	7'-5"	
402	1	6'-9"	
403	2	6'-3"	
404	1	5'-10"	
405	1	5'-6"	
406	1	5'-4"	
407	4	5'-3"	
TOTAL #4			45#
TOTAL REINFORCING STEEL			225 lbs.

CONCRETE	
Concrete Class "A" in Substructure	3.8 cys.
MISCELLANEOUS	
Railing Type 5	19.5 lft.

For 4 wings
Reinforcing Steel 900 lbs.
Concrete Class "A" in Substructure 15.2 cys.
Railing Type 5 78 lft.

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 35 of 132

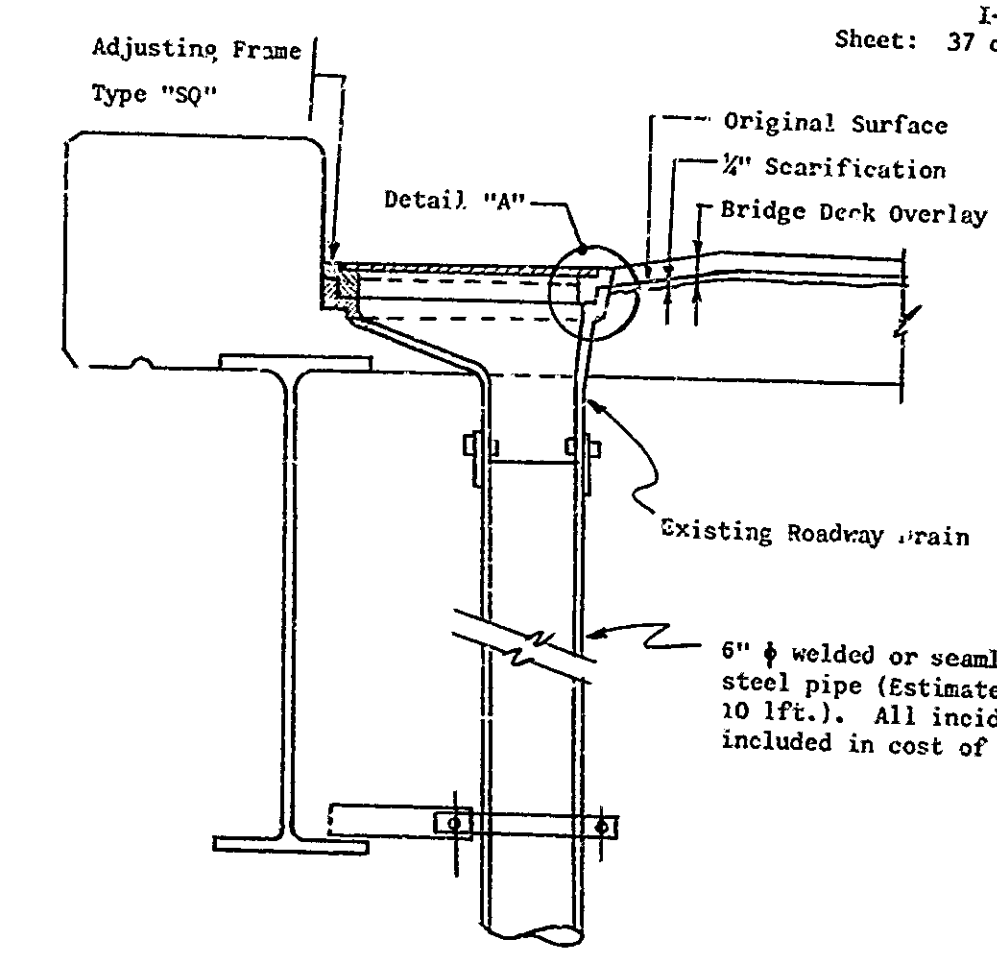


DRAINAGE TURNOUT DETAILS
(Northeast and Northwest Corners)

I-465-125-5271A

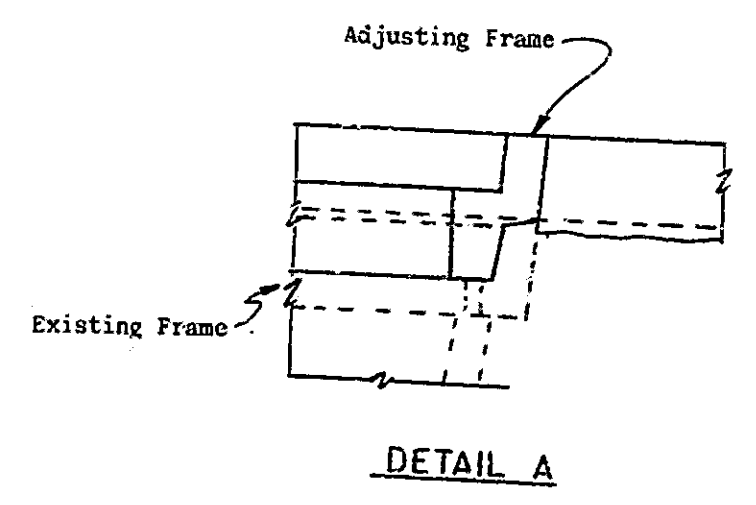
36

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 36 of 132



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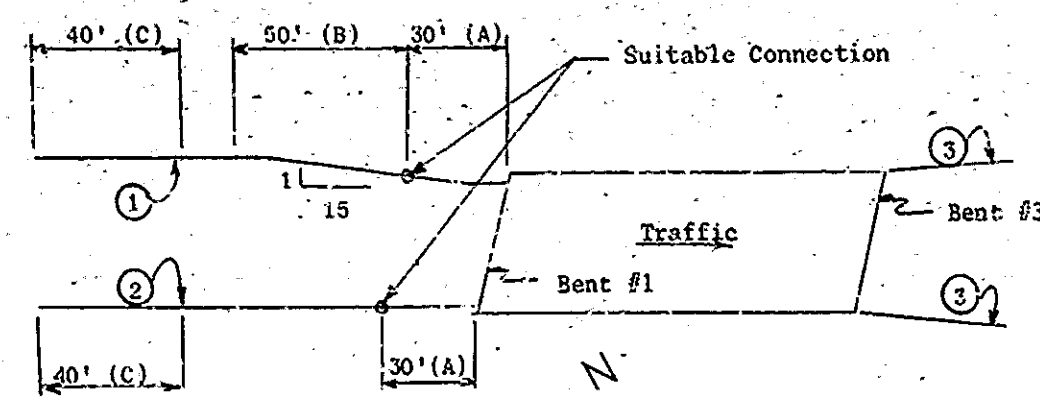
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 37 of 132



SECTION AT ROADWAY DRAIN

I-465-125-5271A

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 38 of 132



- (A) Remove Steel Beam G.R.
Install Aluminum G.R.
- (B) Reset Steel Beam G.R.
- (C) Remove Buried End
Install G.R. End Treatment

GUARD RAIL REVISION

I-465-125-5271A
Ramp 'F' (I-89 S.B. to I-465 S.B.) over SR 37 (I-69)

1. Remove 40 ft. of Guard Rail Buried End
Remove 30 ft. of " " at structure
Install 30 ft. of " " Class "G_A"
Reset 50 ft. of " " Class "D_s"
Install Guard Rail End Treatment
2. Remove 40 ft. of Guard Rail Buried End
Remove 30 ft. of " " at structure
Install 30 ft. of " " Class "G_A"
Install Guard Rail End Treatment
3. Install 50 ft. of Guard Rail Class "G_A"

SUMMARY

Removal of Guard Rail	140 ft.
Reset Guard Rail	50 ft.
Guard Rail Type "G"	160 ft.
Guard Rail End Treatment	2 each

I-465-125-2377A & JA
I-465 Over N & W Railway & Ramp 'F'

STRUCTURE DATA:

Type: Continuous Composite Steel Beam
Spans: Northbound: 44'-0", 61'-0", 61'-0", 44'-0" (2377A)
Southbound: 44'-0", 55'-6", 55'-6", 44'-0" (2377JA)
Skew: 49° Left.
O-O Bridge Floor: Northbound: 212.70' O-O Coping: Northbound: 34'-6"
Southbound: 201.70' Southbound: Varies 70.09' to 75.15'
Curb Width: 3"
Deck Area: Northbound: 1217.1 sys.
Southbound: 1593.9 sys.
Expansion Joint: Existing: Bent #1 Open Joint Proposed: BS 8
Bent #5 Tooth Expansion Class S-S
Clear Roadway: Northbound: 51'-6" Southbound: Varies from 67.09' to 75.15'
ADT (1980): 47,600 V.P.D.
Approach: Variable Width R.C. Pmt.

CONSTRUCTION PROCEDURE:

Place concrete overlay according to sheet #10.

Clean and seal the roadway face and top of the curbs, face of the deck copings, underside of the deck from copings to the drip bead and the top of the overlay dam on approaches.

Remove top 2" of existing bituminous material from the terminal joints. Clean out the joint and place new bituminous material.

Construct bituminous wedges.

Extend existing roadway drains according to sheet #82.

Update Guard Rail according to sheet #51.

Remove 10 ft. of existing bituminous curb and place 10 ft. of concrete curb of variable height (10" at the structure and match existing at the other end) at shoulder side of the incoming end of the northbound structure.

Place "Curb Turnout, Type 'A'" at incoming median side of the northbound structure and incoming median and shoulder side of the southbound structure according to Road Standard GR 4.

Remove and reconstruct 2'-6" long sections of bridge slab, full width at bent #1 of both structures according to sheets #42 thru 50.

Remove and replace damaged sections of bridge railing on the north side of the southbound structure. (Estimated Quantity: 40 ft.)

Adjust Casting to Grade on east approaches.

Remove damaged portions of the slopewall at the west end of the southbound structure (Estimated Quantity: 2 sys.) Fill the voids using Special Concrete. Rebuild removed portions of the slopewall.

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
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I-465-125-2377A-6 2377JA
I-465 Over N & W Railway & Ramp 'F'. (cont.)

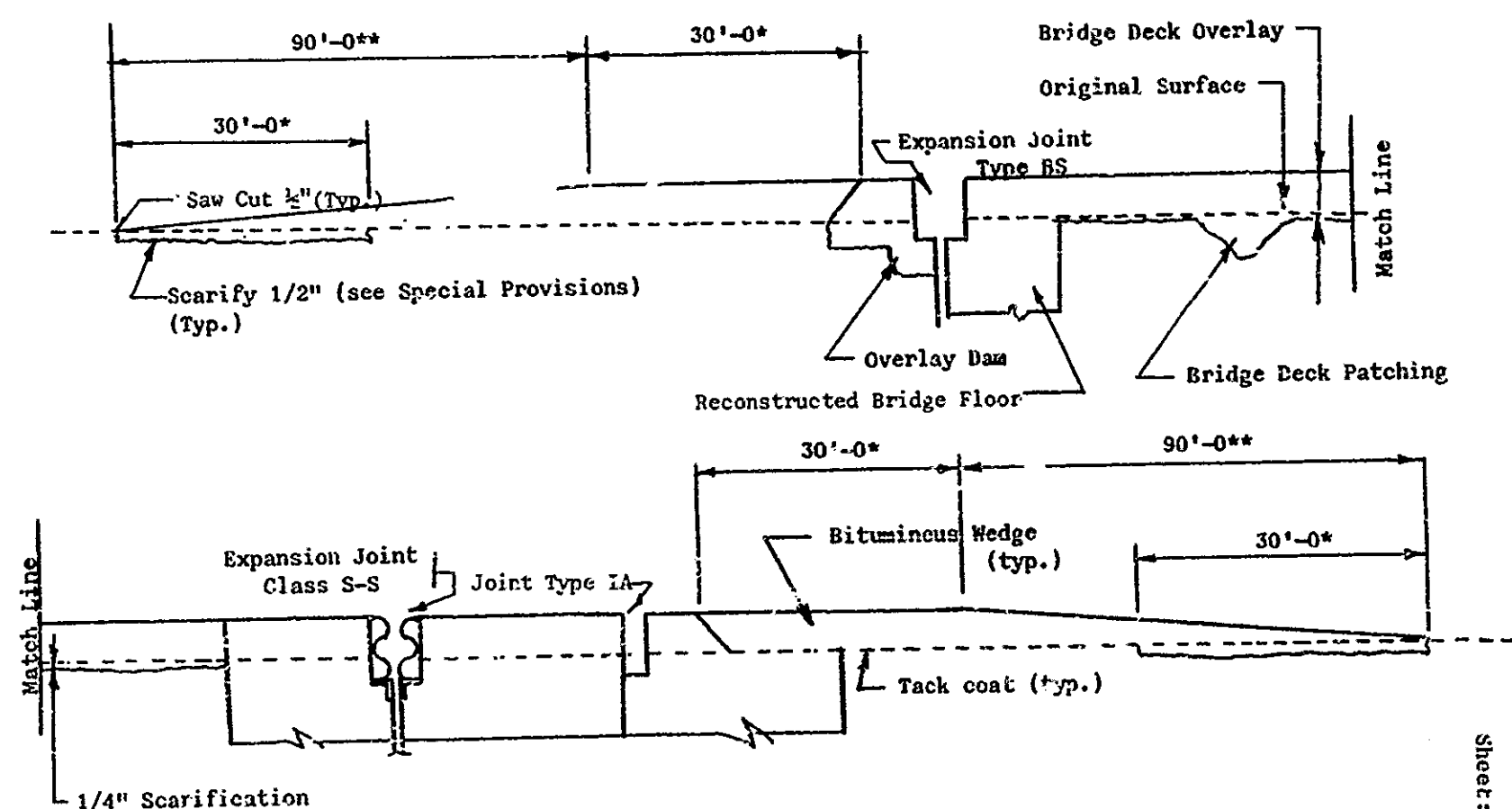
NOTES:

- See sheet 41 for longitudinal section
- See sheet 75 for Expansion Joint Type BS detail
- See sheet 42 & 70 for section at end bent #1
- See sheet 82 for section at roadway drains
- See sheet 74 & 75 for joint installation at curbs
- See sheet 45 for pavement offsets
- See sheet 77 thru 81 for Expansion Joint Class S-S details
- See sheet 71 for removal at bent #5
- See sheet 72 for reconstruction at bent #5
- See sheet 43 & 44 for plan detail
- See sheet 49 & 50 for Bill of Materials
- See sheet 76 for Approach Section

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 40 of 132

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- * Wedge to be continuation of the bridge profile
- ** Taper wedge uniformly to meet existing roadway

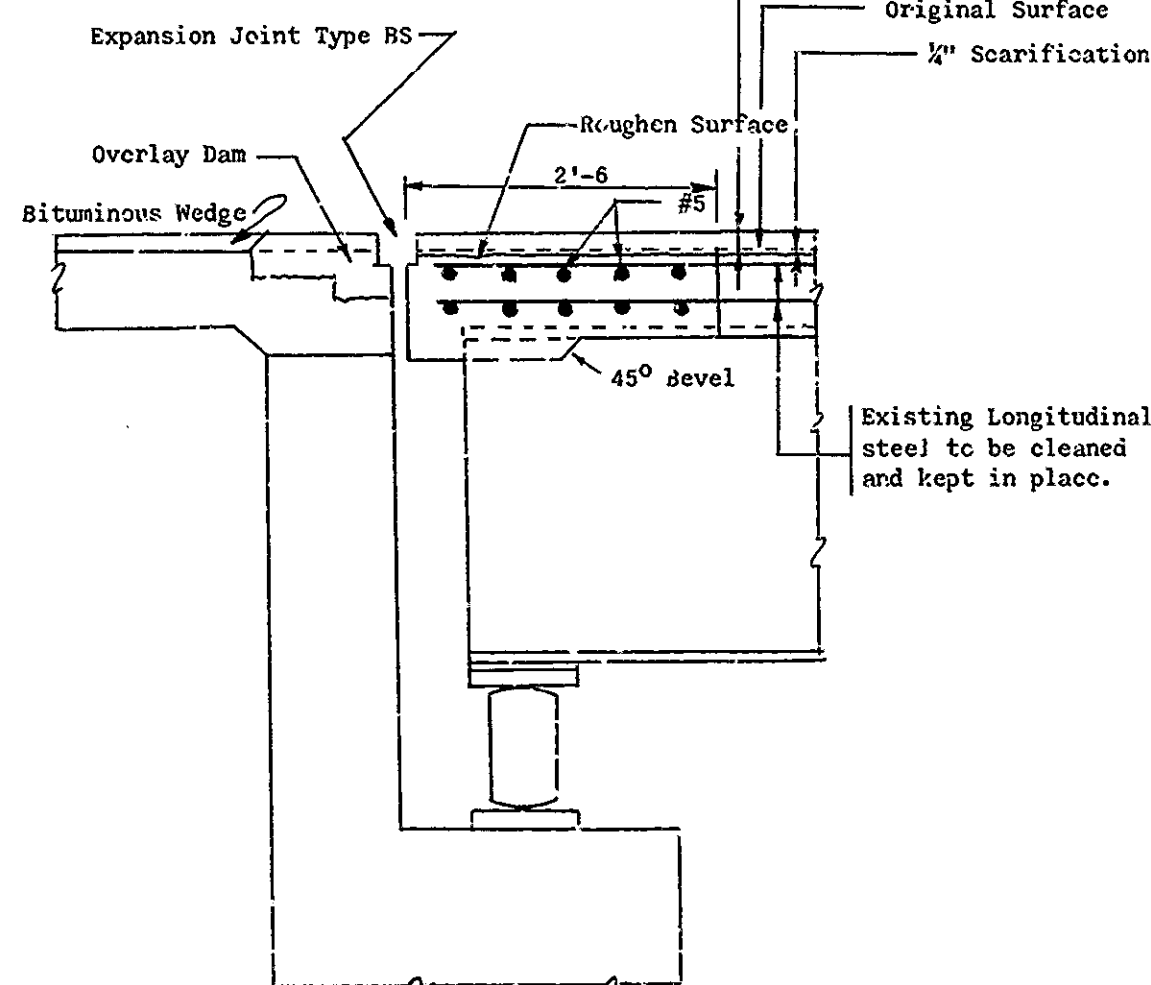
LONGITUDINAL SECTION

I-465-125-2377A & JA

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 41 of 132

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 42 of 132

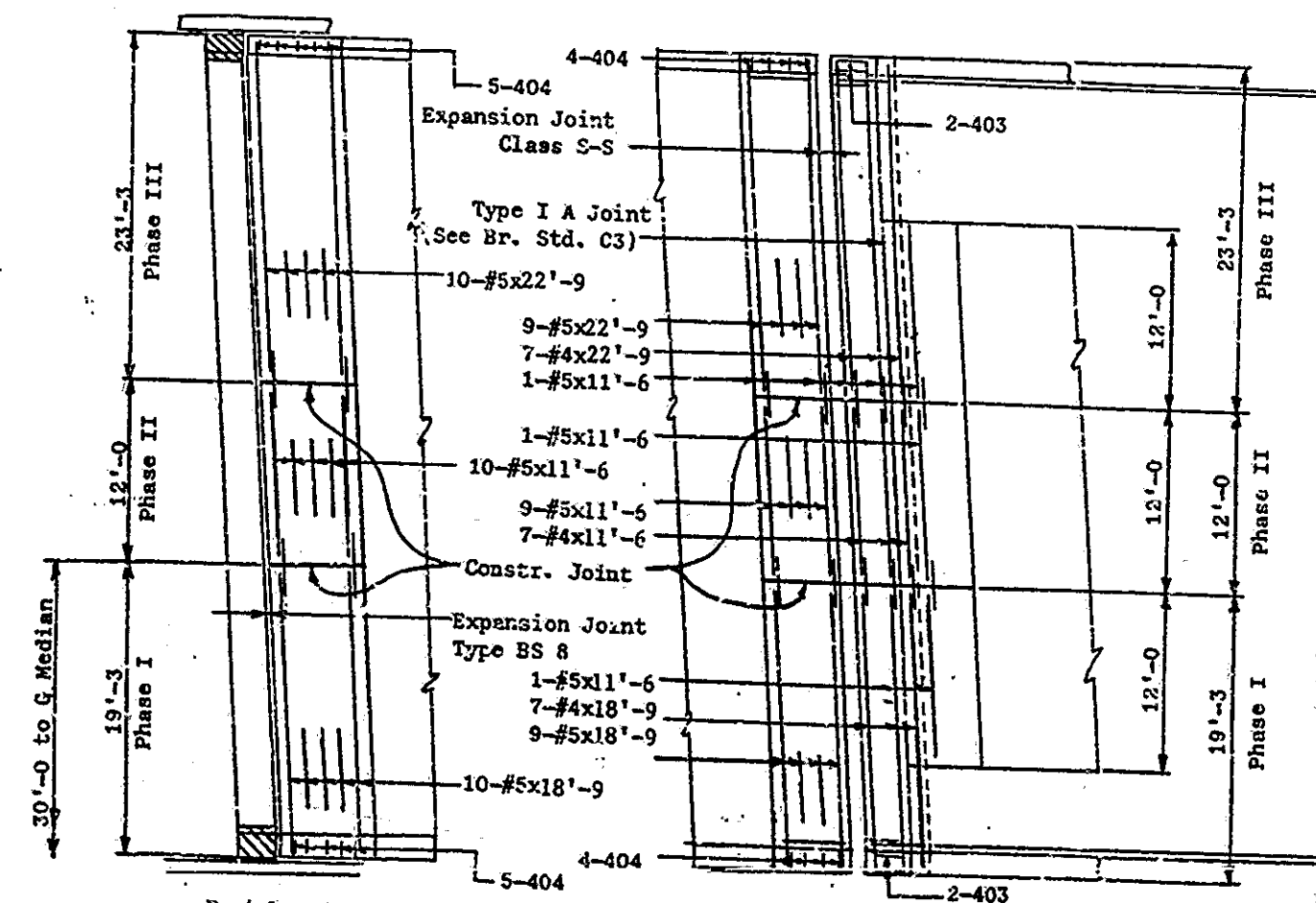
42



SECTION AT BENT No. 1

I-465-125-2377A & 2377JA

43



PLAN VIEW

I-465-125-2377A

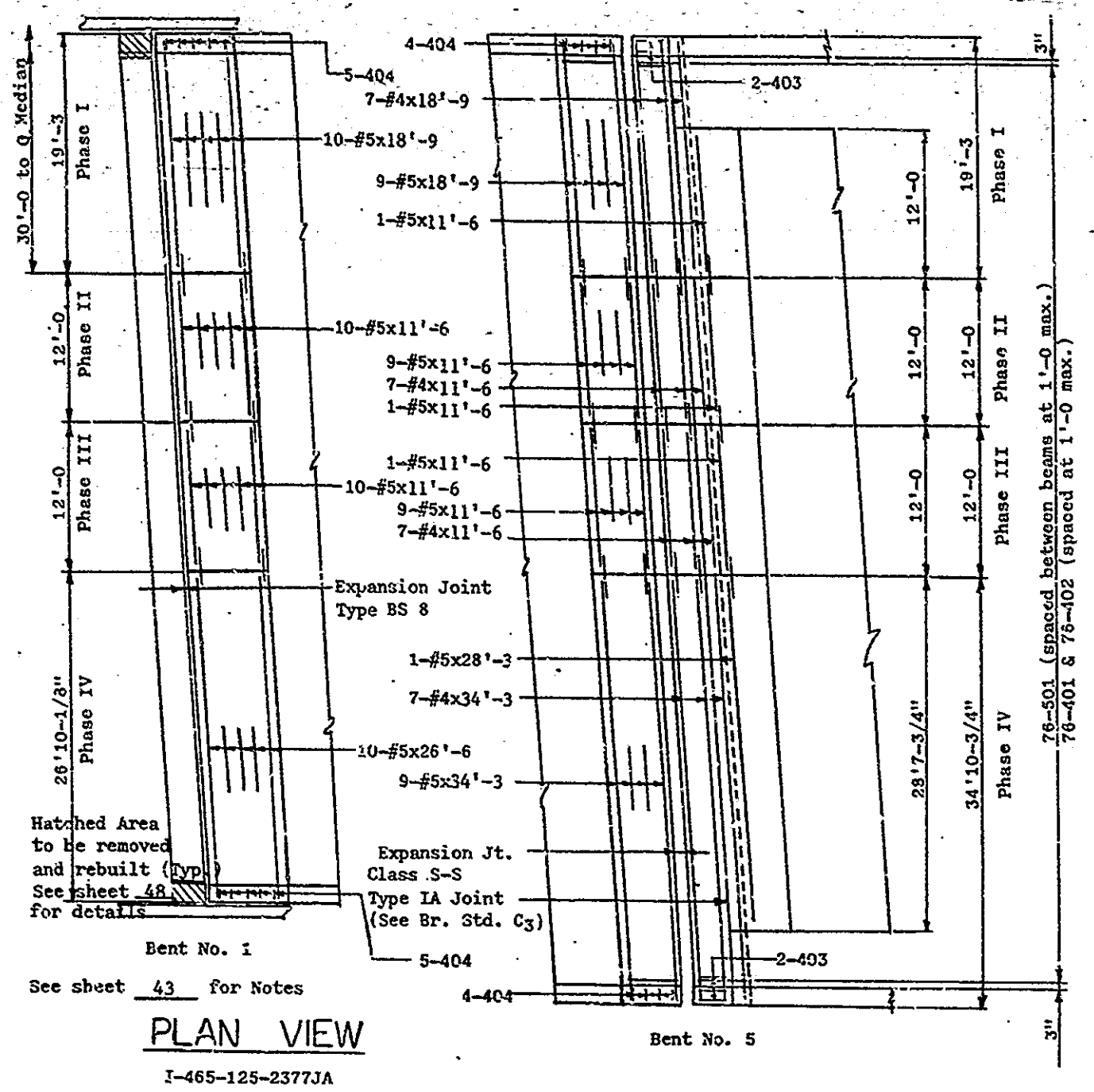
Hatched Area to be Removed and Rebuilt (Typ.). See Sheet 48 for Details

Note: Existing longitudinal reinforcing to be cleaned and kept in place. Cost of removal and replacement of bridge railing post to be included in cost of other items.

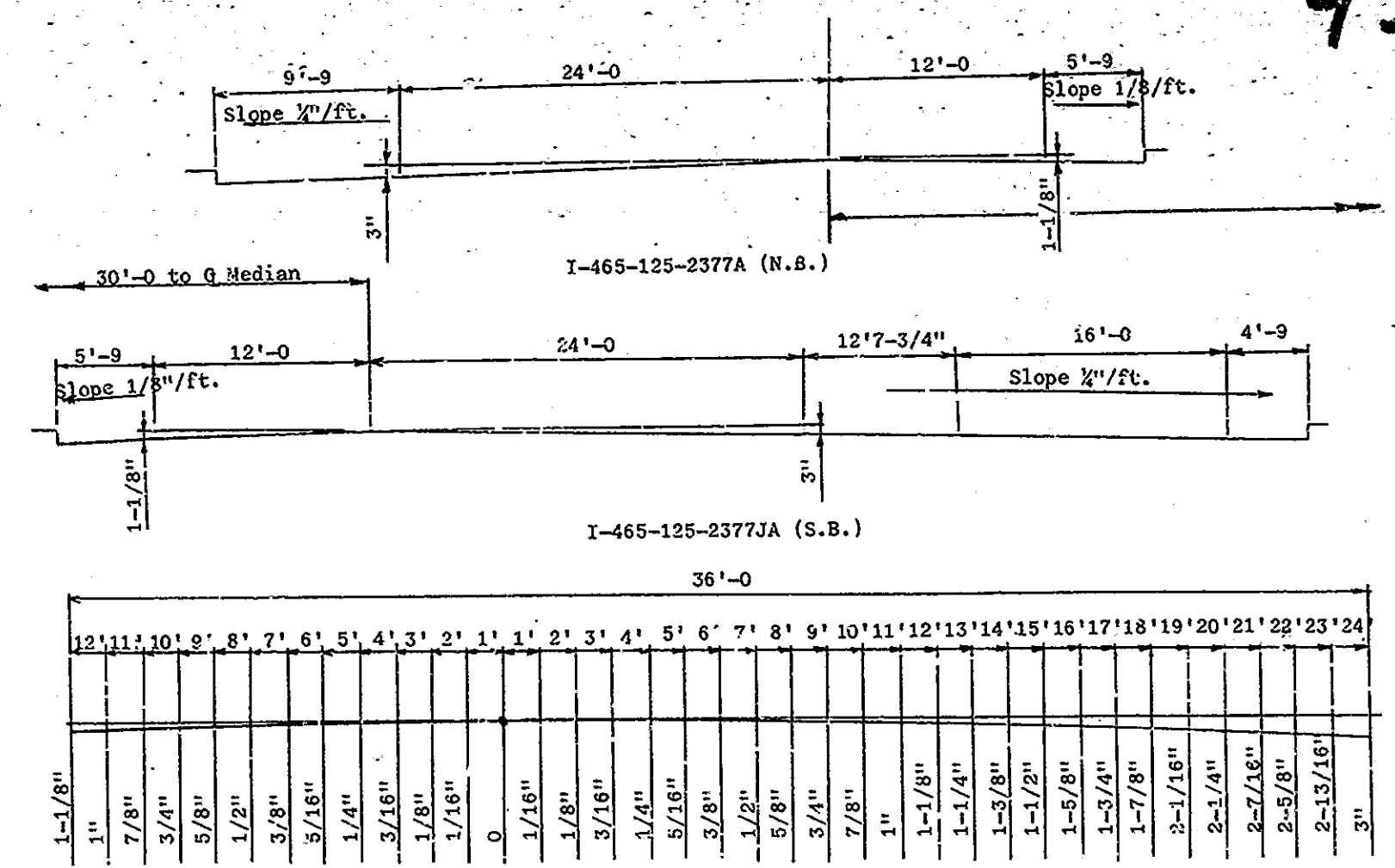
See sheet 46 for Corner Detail at Bent #1
See sheet 47 for Corner Detail at Bent #5

NOTE: Existing transverse reinforcing to be cut 2'-0" from construction joint.

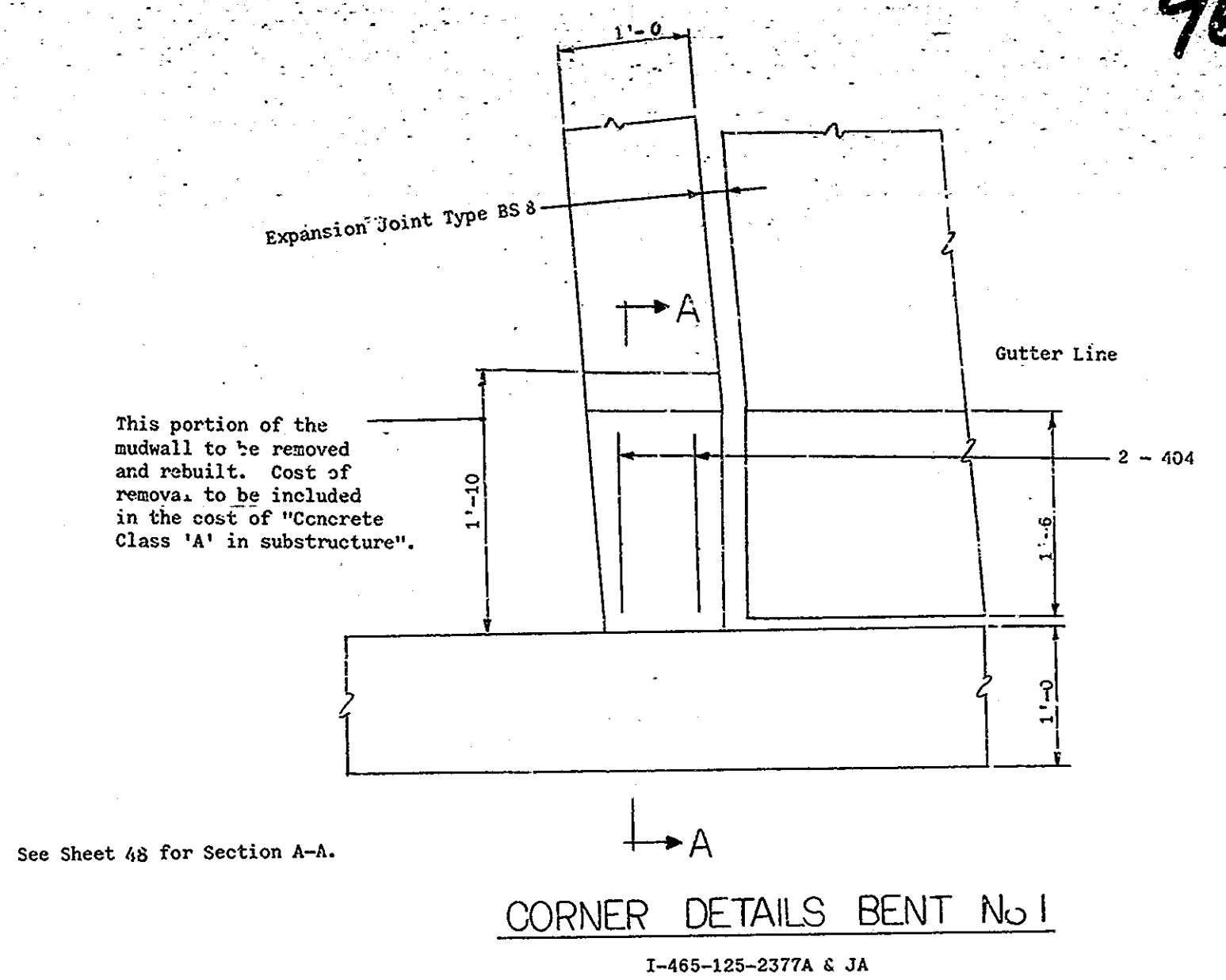
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 43 of 132



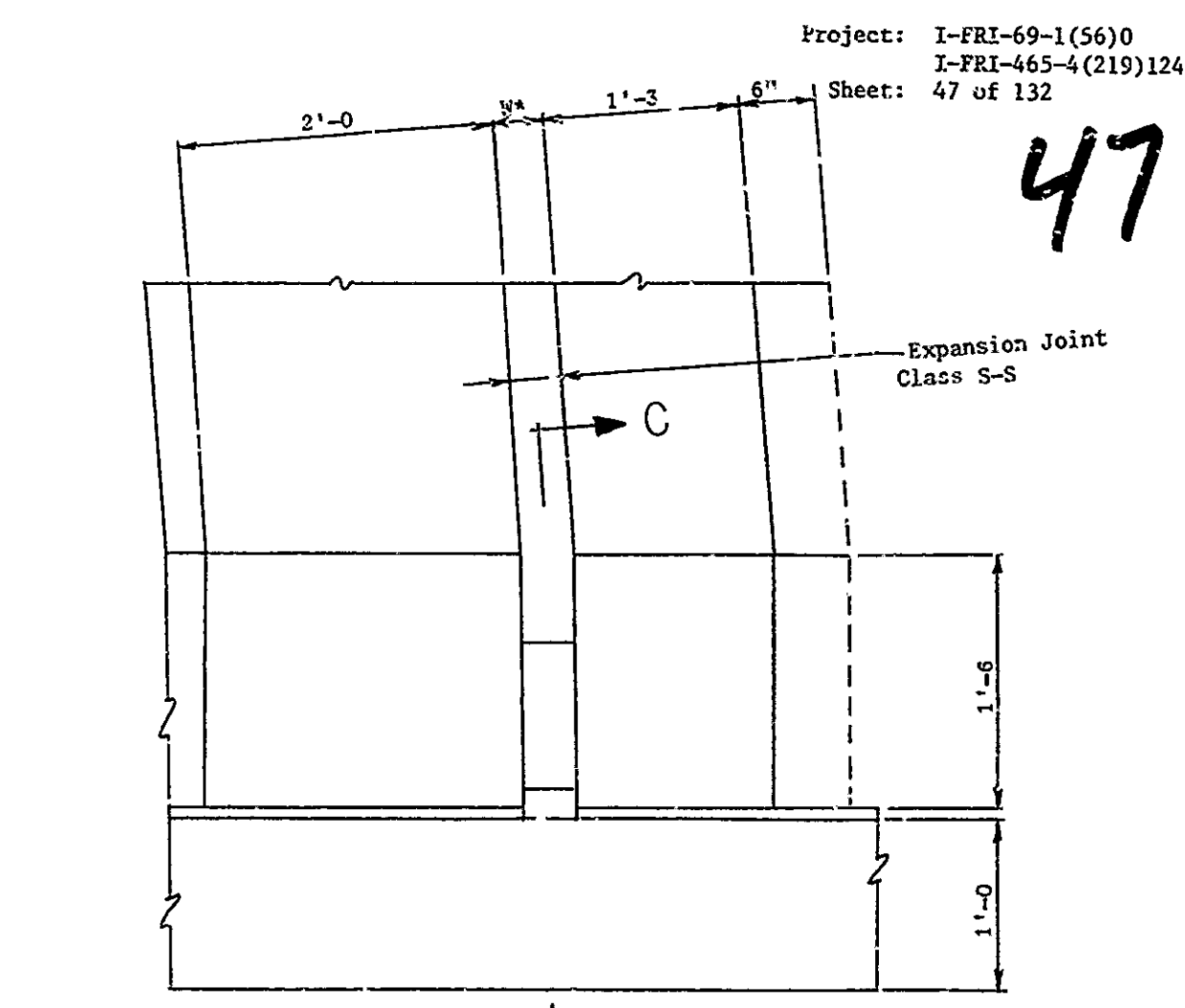
44



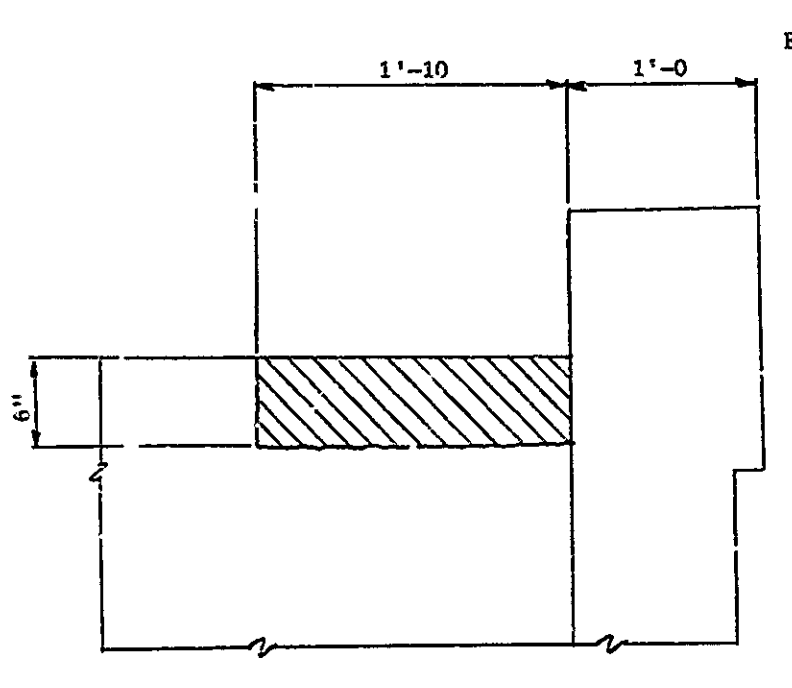
45



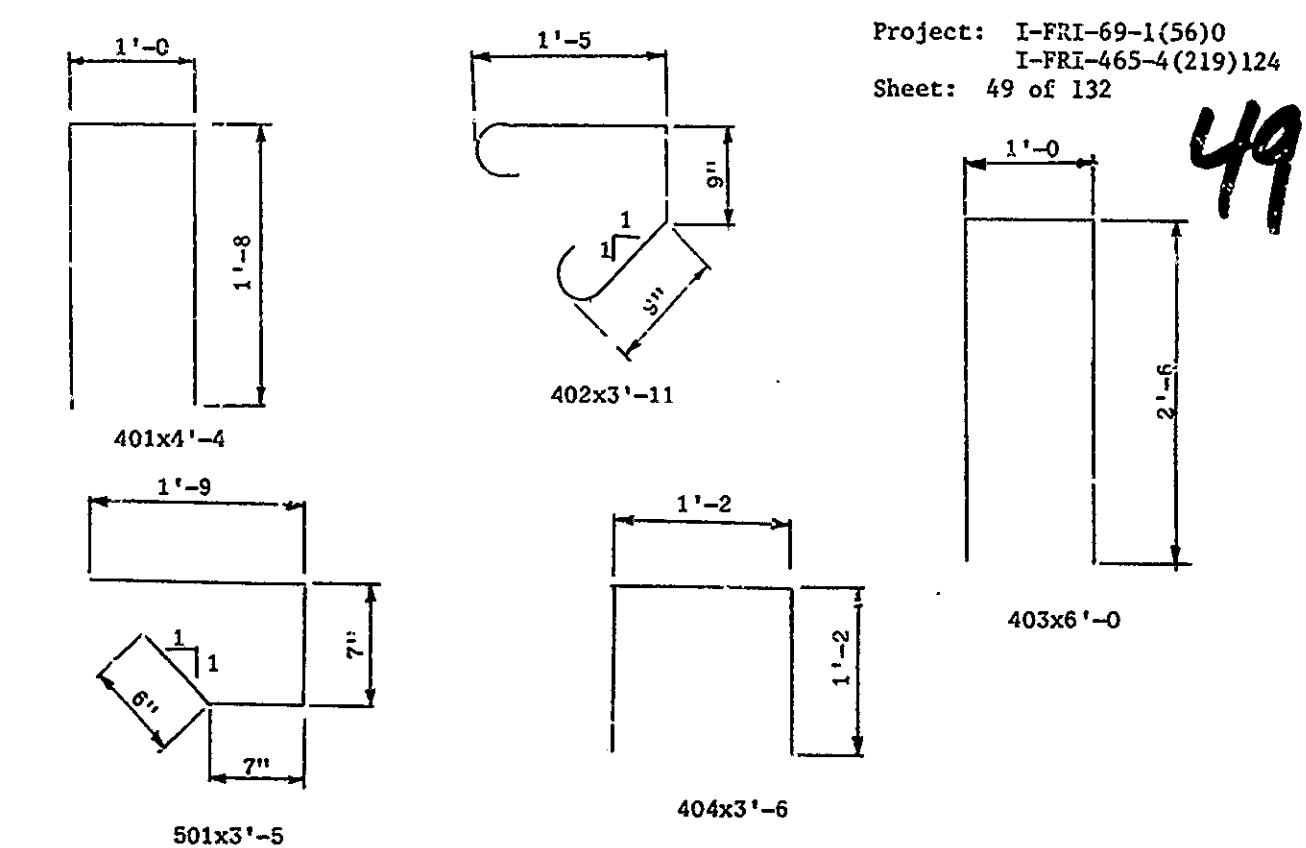
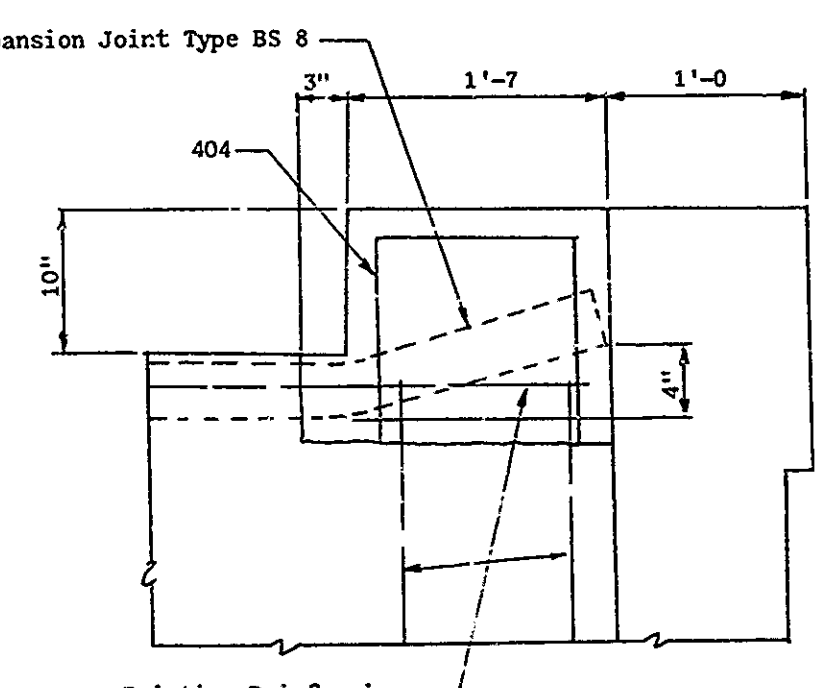
46



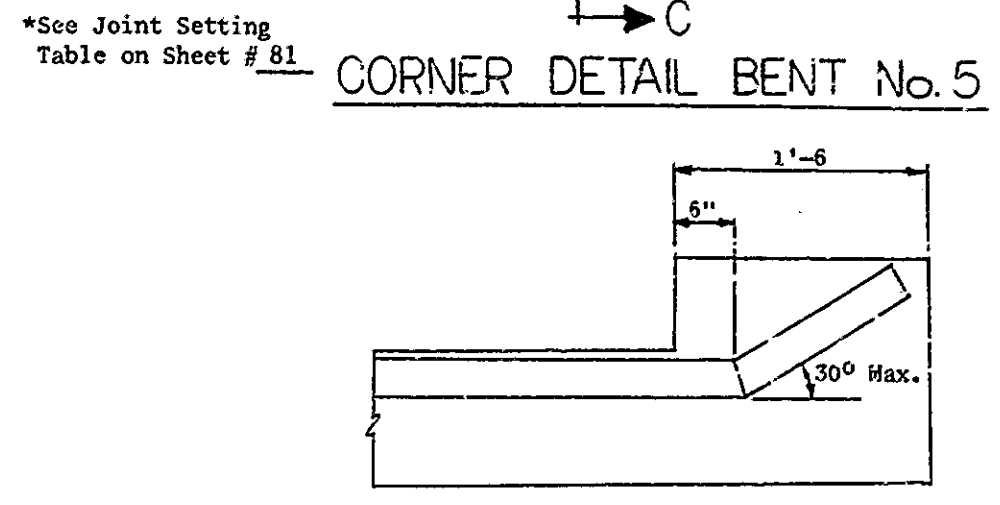
47



48



49



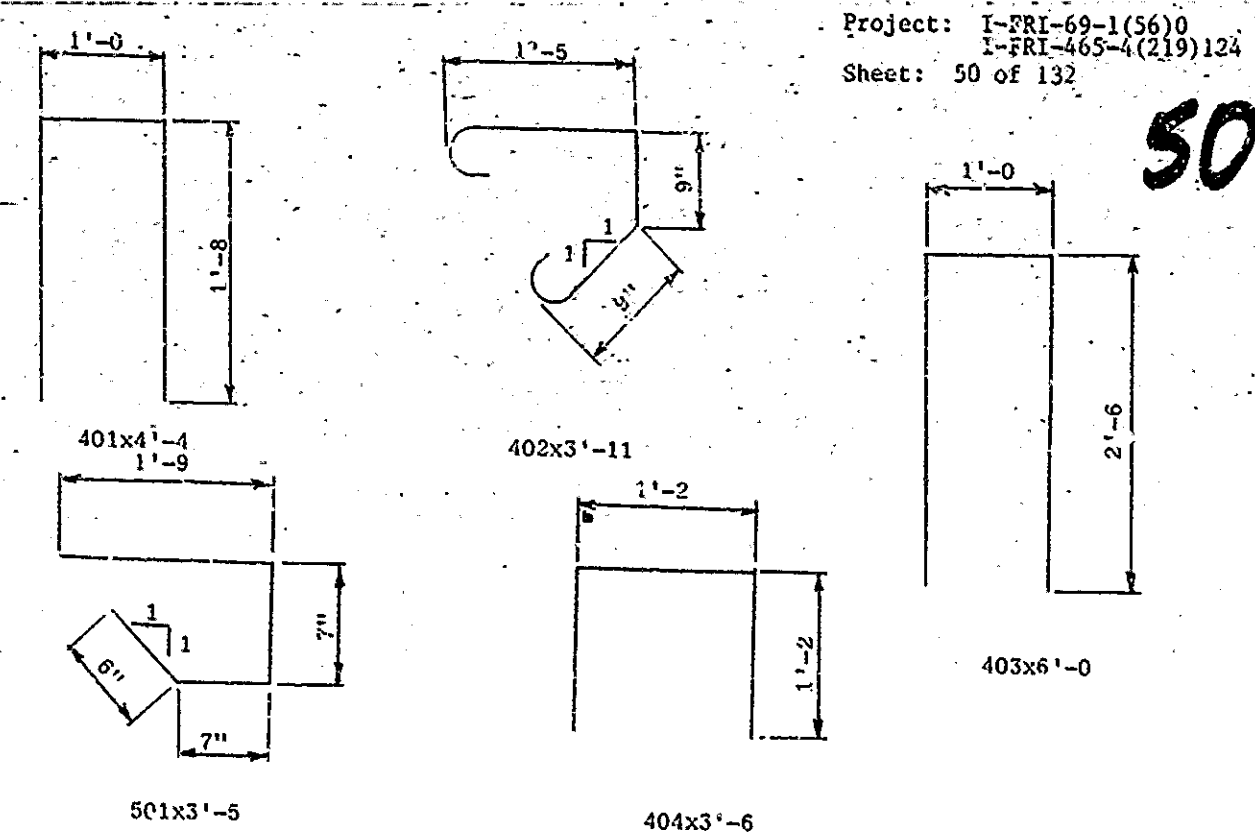
SECTION C-C
Note: Existing railing post to be removed and reset (to be included in cost of Expansion Joint Class S-S).
I-465-125-2377A & 2377JA

SECTION A-A (SHOWING REMOVAL)

SECTION A-A (SHOWING RECONSTRUCTION)

BILL OF MATERIALS

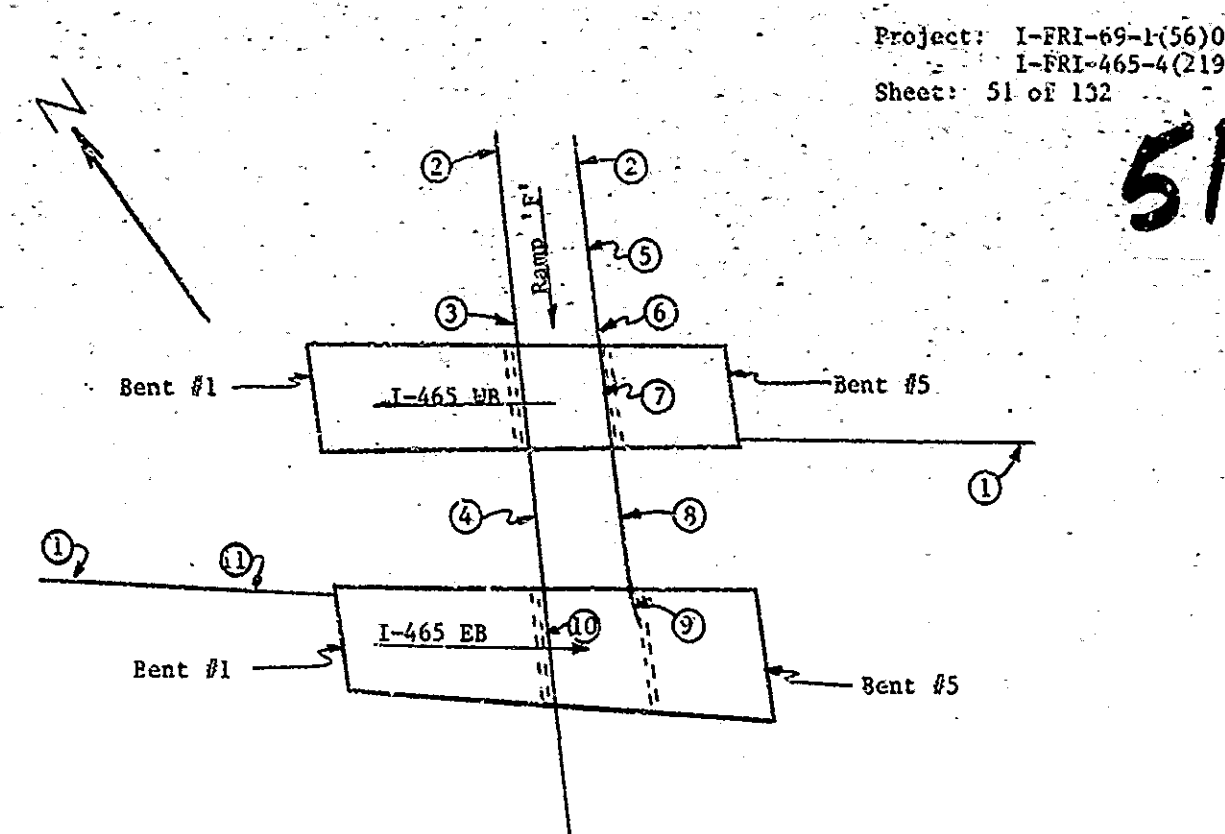
REINFORCING STEEL				CONCRETE	
Mark or Size	Number	Length	Weight	Concrete Class 'A' in Superstructure	
#5	52	3'5"		Bent #1	3.9 cys
#5	19	22'9"		Bent #5	11.6 cys
#5	19	18'9"		Total	15.5 cys
#5	22	11'6"		Concrete Class 'A' in Substructure	0.2 cys
	Total #5		1272#		
401	52	4'4"		MISCELLANEOUS	
402	52	3'11"		Removal of Pavement	8 svcs
403	4	8'0"		R.C. Pavement (10")	8 svcs
404	22	3'6"		Expansion Jt. Type BS 8	54 lft
#4	7	22'9"		Expansion Jt. Class S-S	54 lft
#4	7	18'9"			
#4	7	11'6"			
	Total #4		602#		
	Total Reinforcing		1874#		



BAR BENDING DIAGRAMS

BILL OF MATERIALS

REINFORCING STEEL				CONCRETE	
Mark or Size	Number	Length	Weight	Concrete Class 'A' in	Substructure
501	76	3'-5"		Superstructure	
#5	9	34'-3"		Bent #1	4.9 cys
#5	1	28'-3"		Bent #5	16.5 cys
#5	10	26'-5"		Total	21.4 cys
#5	19	18'-9"		Concrete Class 'A' in	
#5	41	11'-6"		Substructure	3.2 cys
Total #5			1762#		
401	76	4'-4"		MISCELLANEOUS	
402	76	3'-11"		Removal of Pavement	15
403	4	6'-0"		R.C. Pavement (10")	15
404	22	3'-6"		Expansion Jt. Type BS 8	70
#4	7	34'-3"		Expansion Jt. Class S-S	78
#4	7	18'-9"			
#4	14	11'-6"			
Total #4			842#		
Total Reinforcing			2604#		



GUARD RAIL REVISION

I-465-125-2377A & 2377JA
I-465 Over Ramp 'E' and M&W R.R.

- Remove 40 lft. of Guard Rail Buried End. Install 172 lft. of Guard Rail Class 'G_A' with Guard Rail End Treatment.
- Remove 40 lft. of Guard Rail Buried End. Install Guard Rail End Treatment.
- Add 4 Posts and Brackets Class 'D₂'.
- Add 5 Posts and Brackets Class 'D₂'.
- Remove 62.5 lft. of damaged Guard Rail. Install 62.5 lft. of Guard Rail Class 'E₂'.
- Reset 25 lft. of Guard Rail.
- Install 50 lft. of Guard Rail Class 'E₂'.
- Reset 37.5 lft. of Guard Rail (includes 12'-6" Rail length for Double Rail Section).
- Install 12.5 lft. of Guard Rail Class 'E₂' (Terminal End Pier Connection).
- Remove 50 lft. of damaged Guard Rail. Install 50 lft. of Guard Rail Class 'E₂'.
- Remove 20 lft. of damaged Guard Rail. Install 20 lft. of Guard Rail Class 'G_A'.

* See Road Standard GR 7.

SUMMARY

Removal of Guard Rail	293 lft.
Guard Rail Type 'G'	364 lft.
Guard Rail Type 'E'	175 lft.
Reset Guard Rail	63 lft.
Guard Rail Post and Bracket Type 'D'	9 each
Guard Rail End Treatment	4 each

I-465-125-2377DRA
Ramp 'E' (I-69 S.B. to I-465 N.B.) over M&W Railroad.

STRUCTURE DATA:

Type:	Continuous Composite Steel Beam
Spans:	43'-54", 43'
Skew:	17° 59' 29" Right
O-O Bridge Floor:	141.27'
Clear Roadway:	25'-6"
O-O Copings:	28'-6"
Curb Width:	3'
Deck Area:	400.3 sqs.
Expansion Joint:	Existing: Bent #1 - Open Jt. Proposed: Type BS 8 Bent #4 - Open Jt. Type BS 11
ADT (1978):	4,265 V.P.D.
Approach:	16'-0" R.C. Pavement

CONSTRUCTION PROCEDURE:

Place concrete overlay according to sheet #10.

Clean and seal the roadway face and top of the curbs, face of the deck copings, underside of the deck from copings to the drip bead and top of the overlay dam on approaches.

Construct pavement relief joints.

Construct bituminous wedges.

Extend existing roadway drains according to sheet #83.

Remove and reconstruct 6'-0" long section of bridge slab, full width, at bent #4 (west end) and 2'-6" long section of bridge slab, full width, at bent #1 (east end) according to sheet #54, 55 & 56.

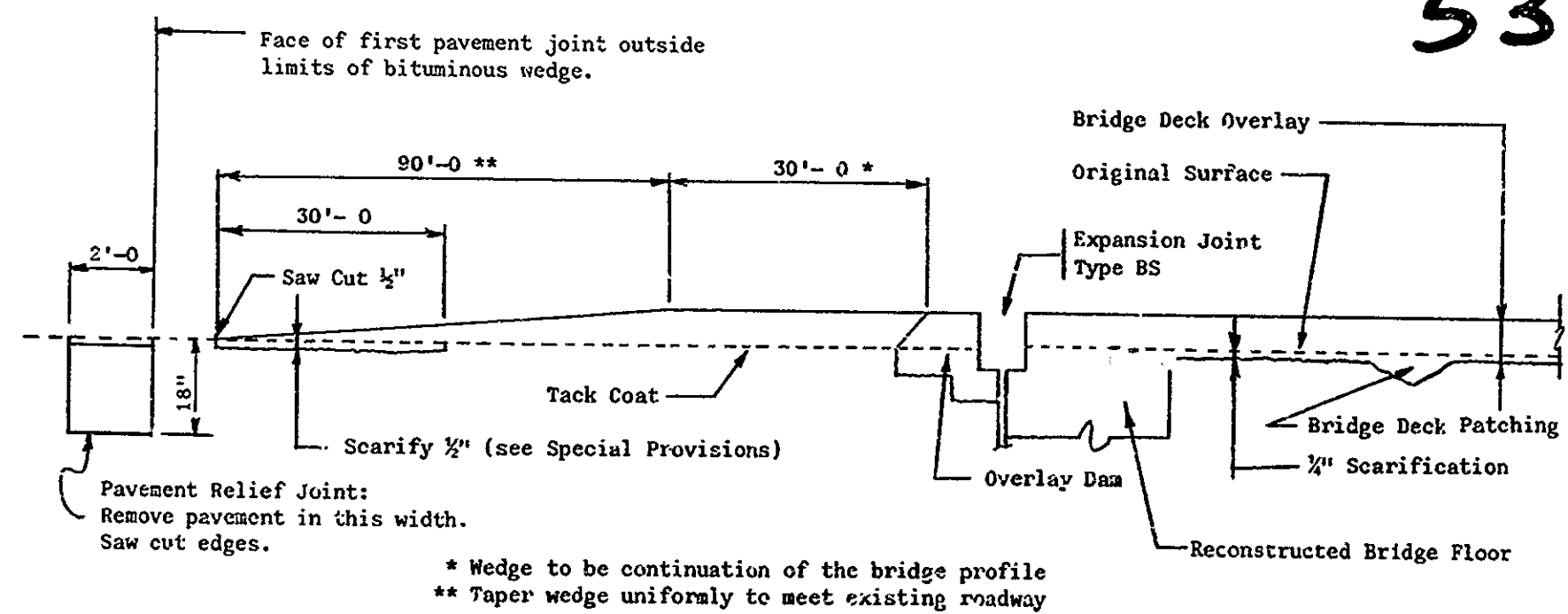
Remove existing wingwalls and extend bridge railing to connect with approach guard rail according to details on sheet # 57 thru 62.

Update the Guard Rail according to sheet #63.

Remove two 2' square sections of slopewall on both ends of the structure. Fill the voids using special concrete (Estimated Quantity: 10 cys.). Re-build removed portions of the slopewall.

NOTES:

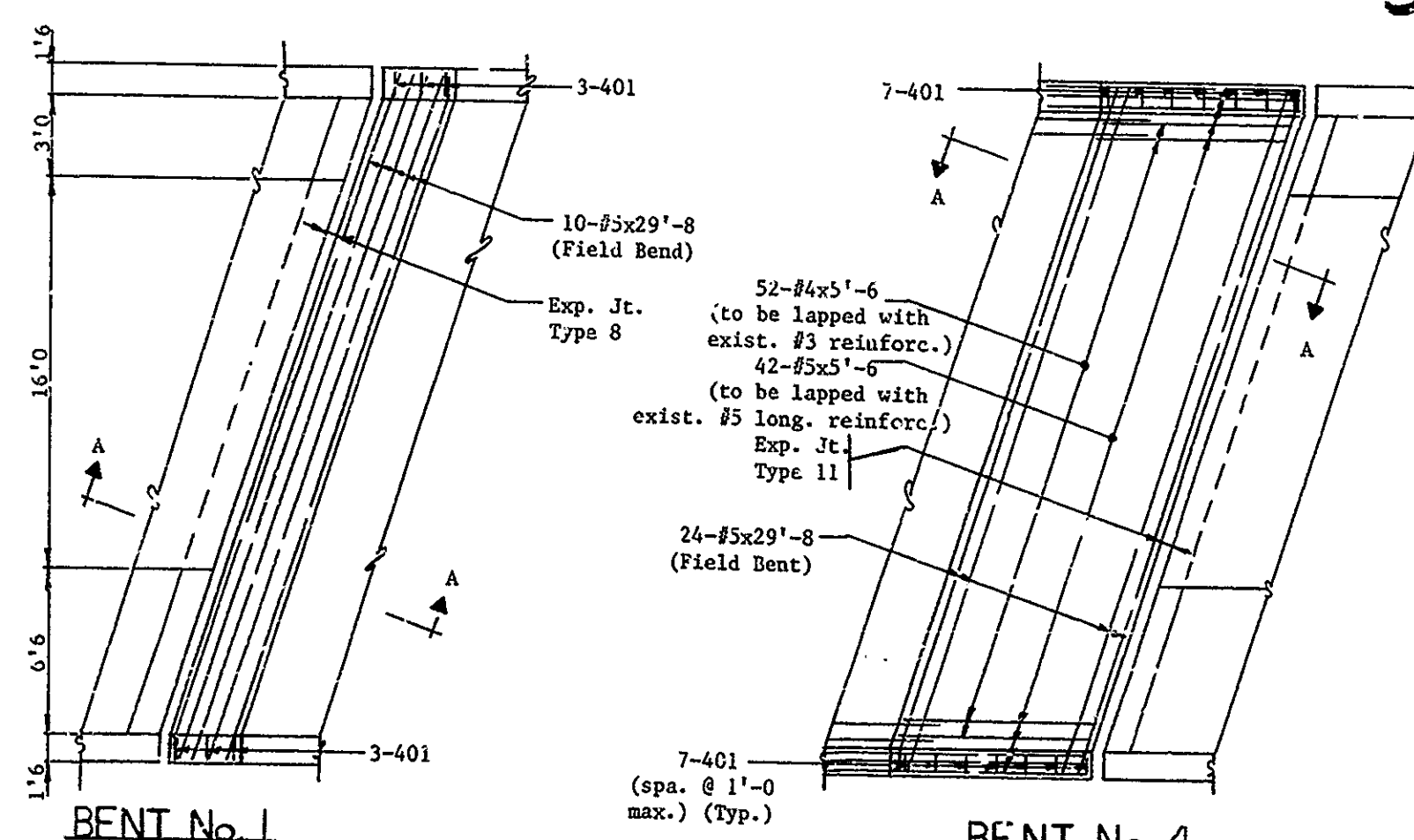
- See sheet 53 for longitudinal section
- See sheet 73 for expansion joint detail
- See sheet 55 for section at roadway drains
- See sheet 82 for section at roadway drains
- See sheet 74 for joint installation at curbs



LONGITUDINAL SECTION

I-465-125-2377DRA

- * Wedge to be continuation of the bridge profile
- ** Taper wedge uniformly to meet existing roadway

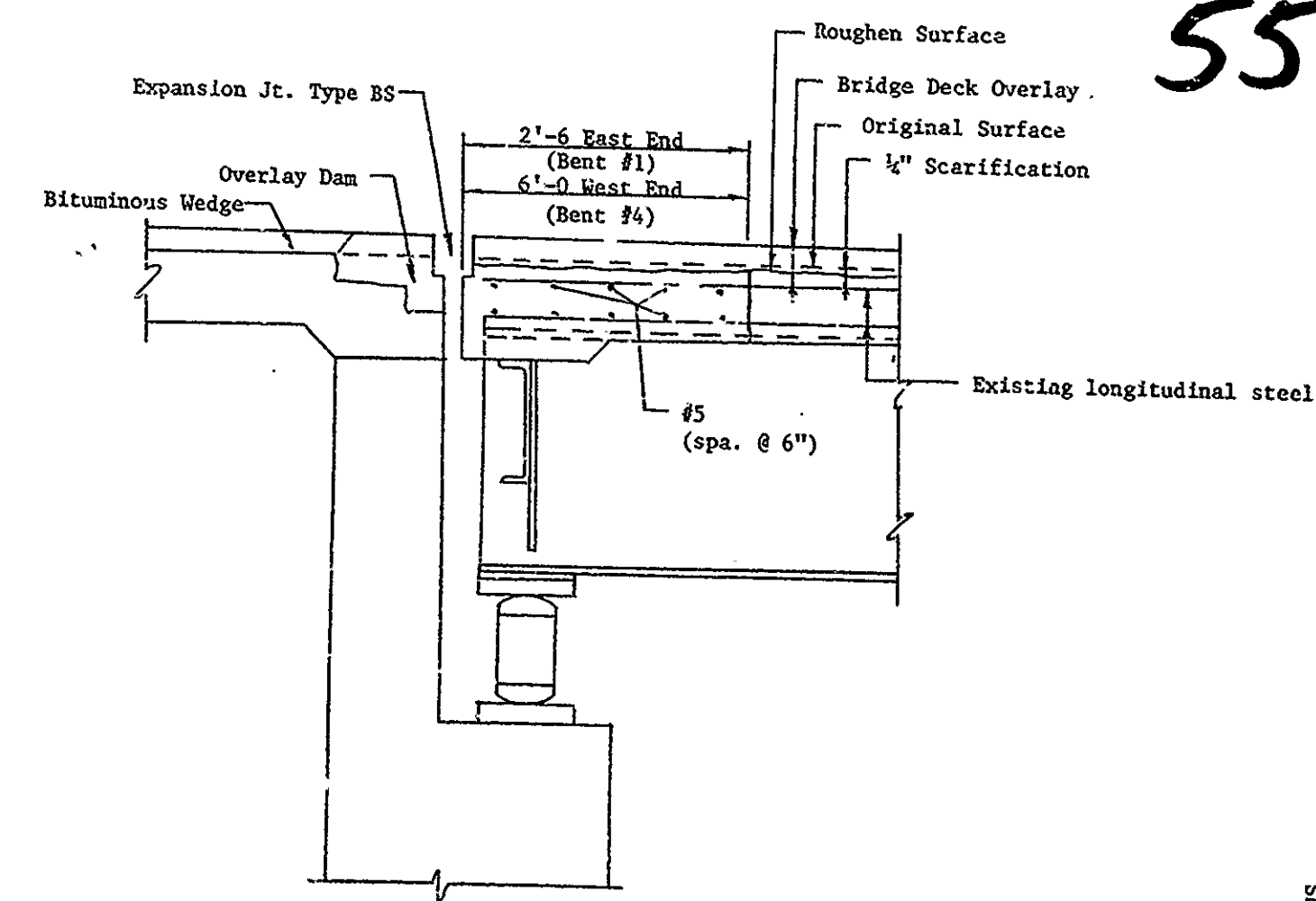


PLAN VIEW

I-465-125-2377DRA

NOTE: Existing longitudinal reinforcing to be cleaned and kept in place at bent #1. Existing longitudinal reinforcing to be cut 2'-0" into new concrete at bent #4.

Cost of removal and replacement of bridge railing posts to be included in cost of other items.



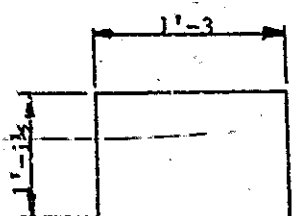
SECTION AT END BENT
SECTION A-A

I-465-125-2377DRA

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 55 of 132

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 56 of 132

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401x3'-6
BAR BENDING DIAGRAMS

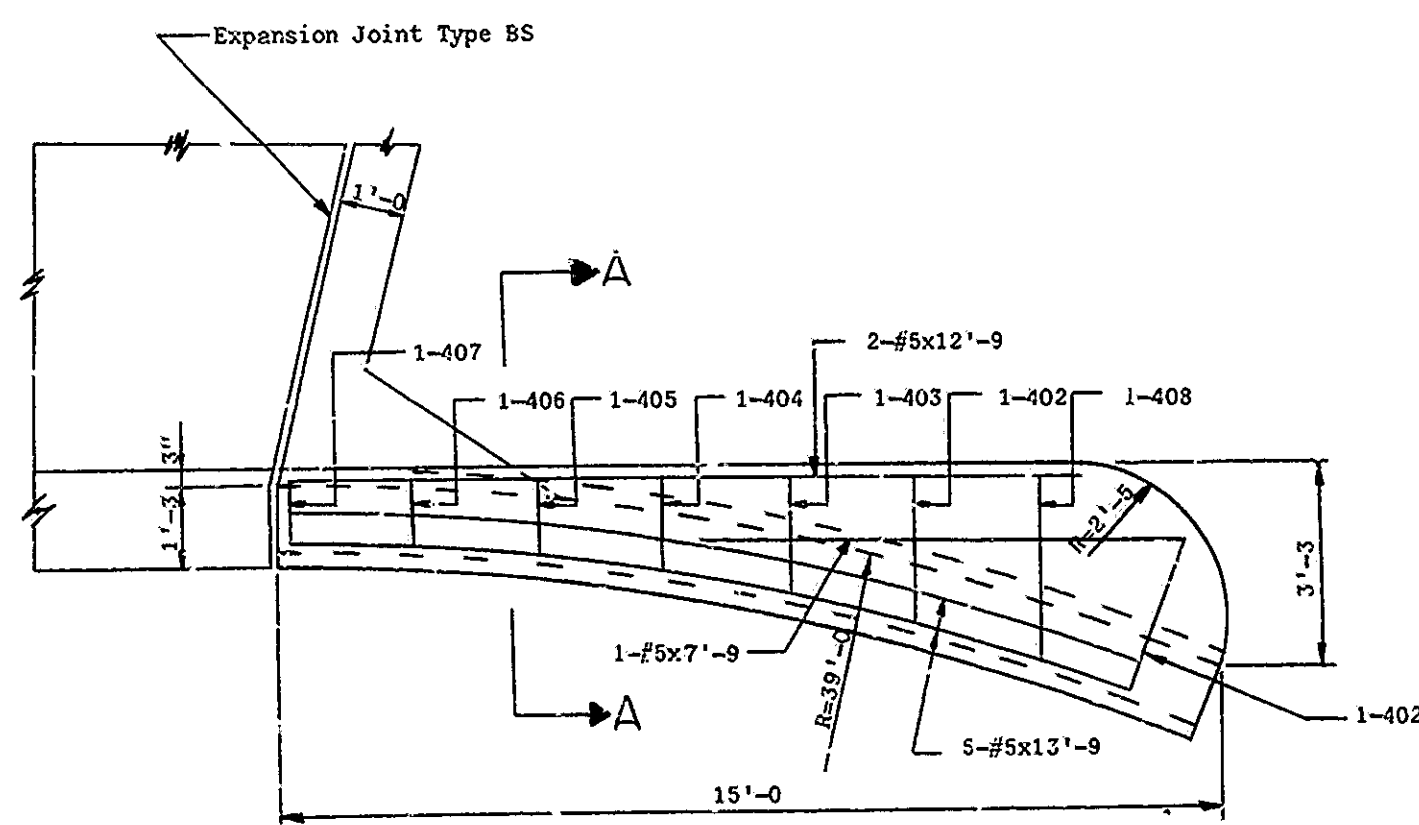
BILL OF MATERIALS

I-465-125-2377DRA (Bridge Deck Reconstruction)

REINFORCING STEEL				CONCRETE	
Mark or Size	Number	Length	Weight	Concrete Class A in Superstructure	
#5	36	29'-8"		@ Bent #1	1.9 cys.
#5	42	5'-6"		@ Bent #4	4.3 cys.
		Total #5	1293#		
401	20	3'-6"		Total Concrete	6.2 cys.
#4	52	5'-6"			
		Total #4	238#		
		Total Reinforcing	1531#		

MISCELLANEOUS

59



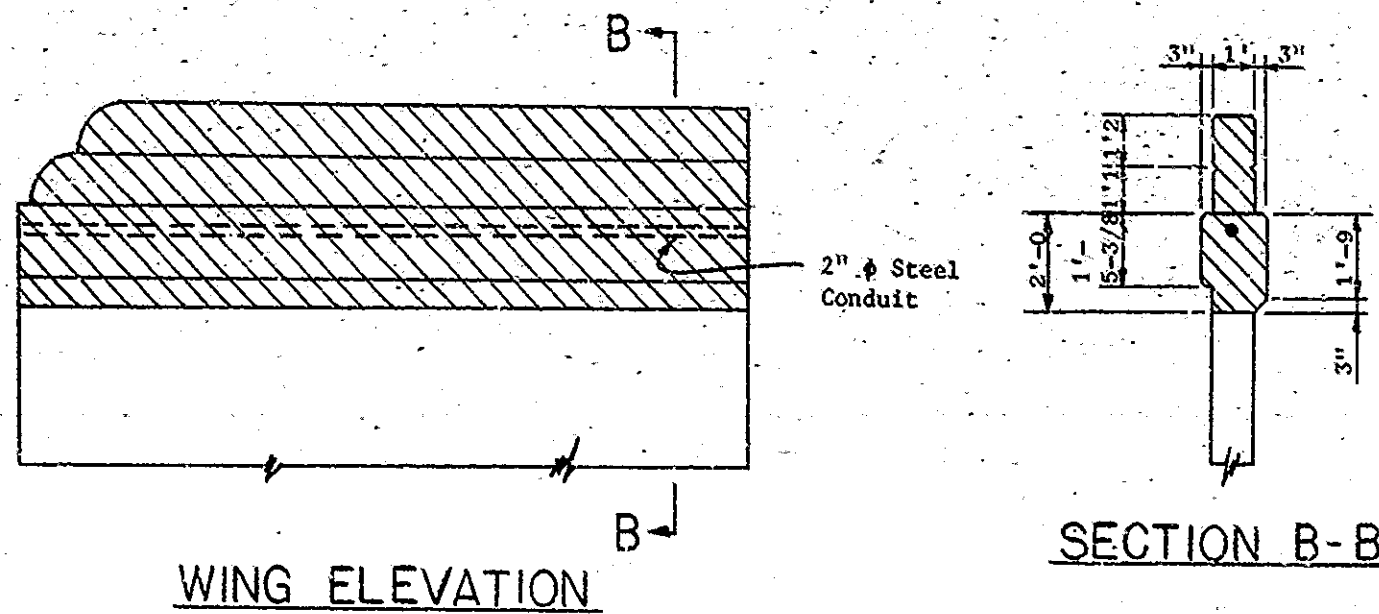
APPROACH DETAILS (SHOWING REINFORCING)

I-465-125-2377DRA

See Sheet 60 for Section A-A.

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 59 of 132

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WING ELEVATION SECTION B-B

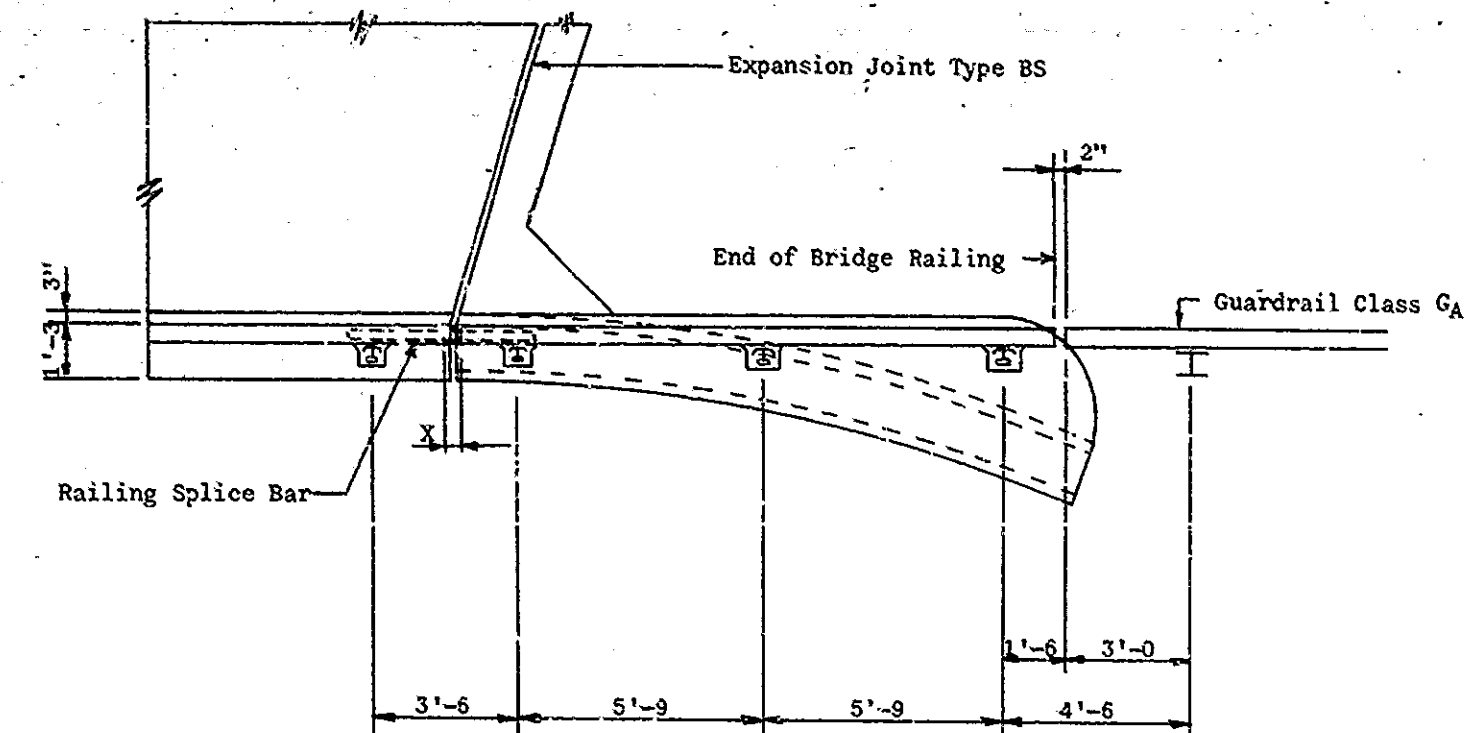
(SHOWING LIMITS OF REMOVAL)

I-465-125-2377DRA

NOTE: Existing 2" steel conduit in the removal area to be cleaned and kept in place.

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 57 of 132

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APPROACH DETAIL (SHOWING RAILING INSTALLATION)

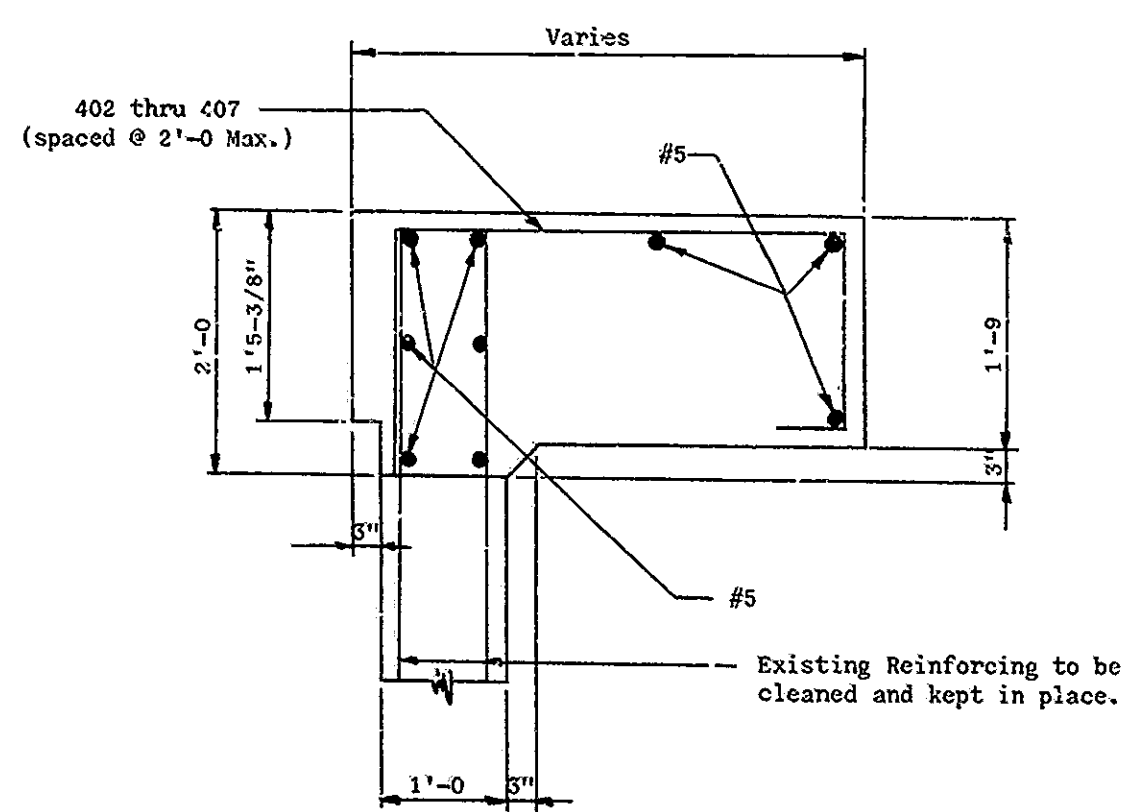
I-465-125-2377DRA

Note: Dimension "X" to be 1" larger than the floor expansion joint openings at the ends of the structure.

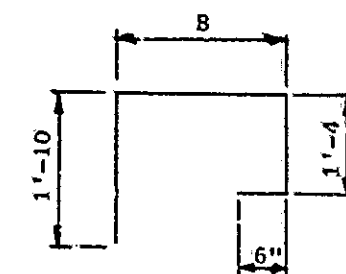
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 58 of 132

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 60 of 132

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SECTION A-A



402 thru 408

MARK	DIMENSION B	LENGTH
402	2'-4"	6'-0"
403	1'-10"	5'-5"
404	1'-6"	5'-2"
405	1'-3"	4'-11"
406	1'-1"	4'-9"
407	1'-0"	4'-6"
408	2'-10"	6'-6"

BAR BENDING DIAGRAM

I-465-125-2377DRA

BILL OF MATERIALS

61

(one wing)
I-465-125-2377DRA

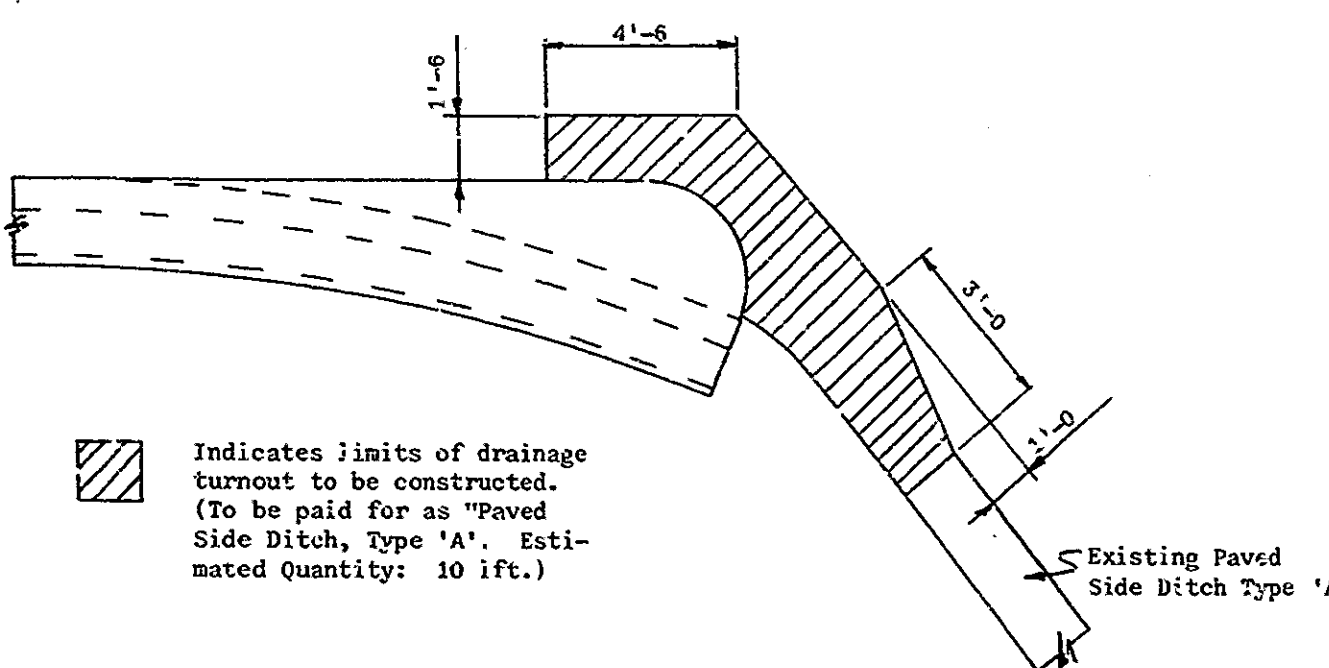
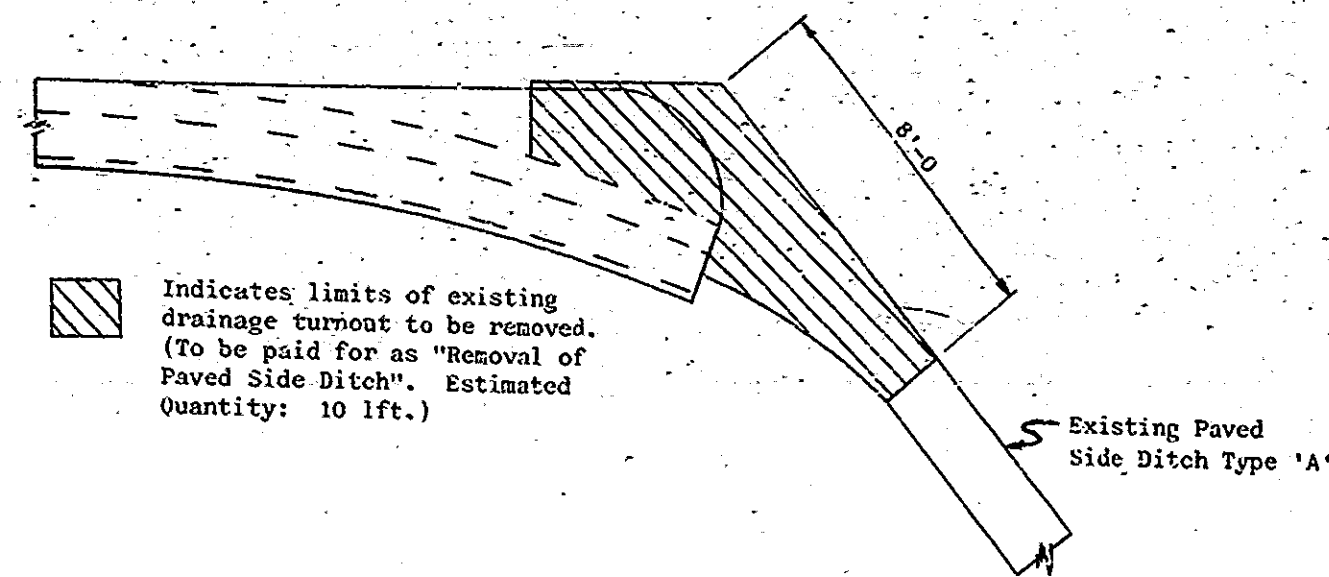
REINFORCING STEEL				CONCRETE	
Mark or Size	Number	Length	Weight	Concrete Class "A" in Substructure	
5	6	13'-9"		Substructure 2.2 cys.	
5	2	12'-9"			
5	1	7'-9"			
		Total #5	121#		
402	2	6'-0"			
403	1	5'-5"			
404	1	5'-2"			
405	1	4'-11"			
406	1	4'-9"			
407	1	4'-8"			
408	1	6'-6"			
		Total #4	29#		
		Total Reinforcing Steel	150#		

MISCELLANEOUS	
Railing Type 5A	15 lft.

For 4 Wings
Reinforcing Steel 600 lbs.
Concrete Class "A" in Substructure 8.8 cys.
Railing Type 5A 60 lft.

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 61 of 132

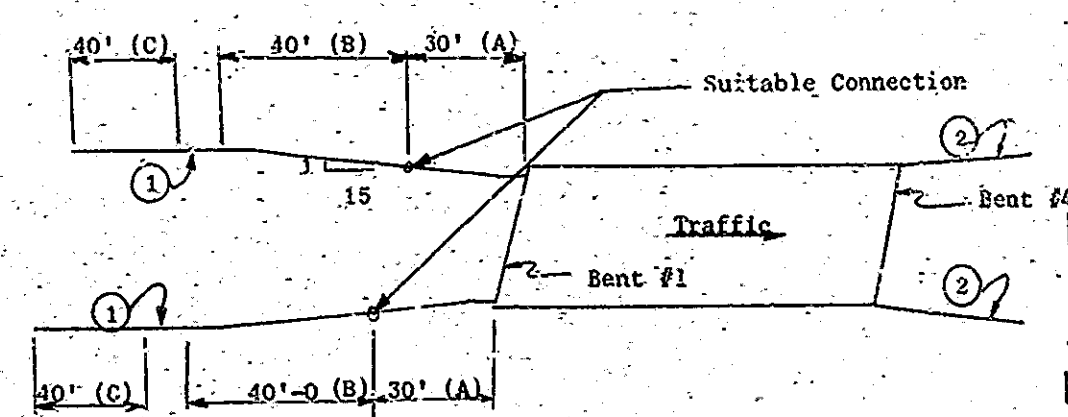
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 62 of 132



DRAINAGE TURNOUT DETAILS

(Northeast Corner)
I-465-125-2377DR

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 63 of 132



- (A) Remove Steel Beam G.R.
Install Aluminum G.R.
- (B) Reset Steel Beam G.R.
- (C) Remove Buried End
Install G.R. End Treatment

GUARD RAIL REVISION

I-465-125-2377DR

Ramp 'E' (I-69 S.B. to I-465 N.B.) over N & W RR

1. Remove 40 ft. of Guard Rail Buried End
Remove 30 ft. of " " at structure
Install 30 ft. of " " Class "G_A"
Reset 40 ft. of " " Class "D_S"
Install Guard Rail End Treatment
2. Install 50 ft. of Guard Rail Class "G"

SUMMARY

Removal of Guard Rail	140 ft.
Reset Guard Rail	80 ft.
Guard Rail Type "G"	160 ft.
Guard Rail End Treatment	2 each

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 64 of 132

I-69-0-5307A & 53071A
I-69 over East 82nd Street

STRUCTURE DATA:

Type:	Continuous Composite Steel Beam	
Spans:	Northbound: 92' 42"	Southbound: 96' 96"
Skew:	30° 48' 46.98" Left	
O-O Bridge Floor:	Northbound: 188.66'	Southbound: 192.66'
Clear Roadway:	61'6"	O-O Coping: 64'6"
Deck Area:	3'	
Expansion Joint:	Existing: Bent #1 Open Jt. Proposed: BS 11	Bent #3 Open Jt. BS 11

CONSTRUCTION PROCEDURE:

Place concrete overlay according to sheet #10.

Clean and seal the roadway face and top of the curbs, face of the deck copings, underside of the deck from copings to the drip bead and top of the overlay dam on approaches.

Remove top 2" of existing bituminous material from the terminal joints. Clean out the joint and place new bituminous material.

Construct bituminous wedges.

Update Guard Rail according to sheet #65.

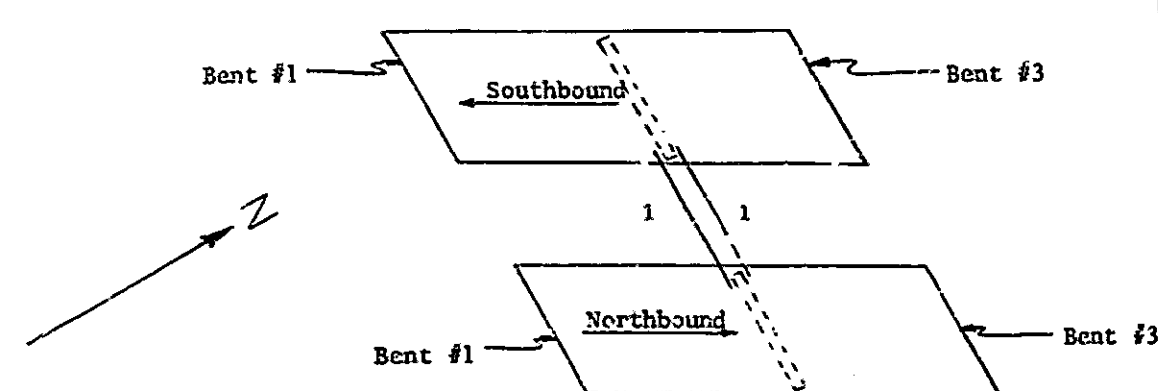
Reset splice bar connection at bridge railing in southeast corner of the southbound structure. (Paid for as "Railing Reset". Estimated Quantity: 80 ft.)

Remove 10 ft. of existing bituminous curb and place 10 ft. of concrete curb of variable height (10") at structure and match existing at the other end) at northeast corner of the southbound structure and southeast and southwest corner of the northbound structure.

NOTES:

- See sheet 66 for longitudinal section
- See sheet 73 for expansion joint details
- See sheet 69 for section at end bents
- See sheet 82 for section at roadway drains
- See sheet 74 for joint installation at curbs
- See sheet 76 for Approach Section

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
Sheet: 65 of 132



GUARD RAIL REVISION

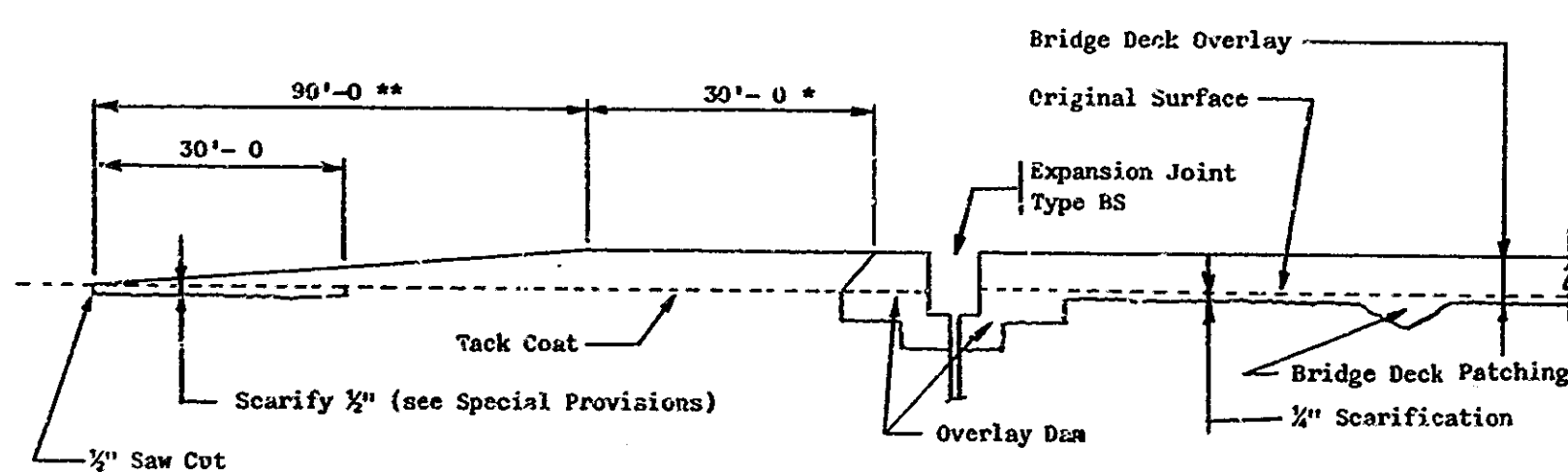
I-69-0-5307A & JA
I-69 over East 82nd Street

1. Add 3 Posts and Brackets Class 'D_A'
2. Remove 20 ft. of Damaged Aluminum Guard Rail
Install 20 ft. of Guard Rail Class 'D_B'

SUMMARY

Removal of Guard Rail	20 ft.
Guard Rail Type 'G'	20 ft.
Guard Rail Post & Bracket Type 'D'	5 each

66



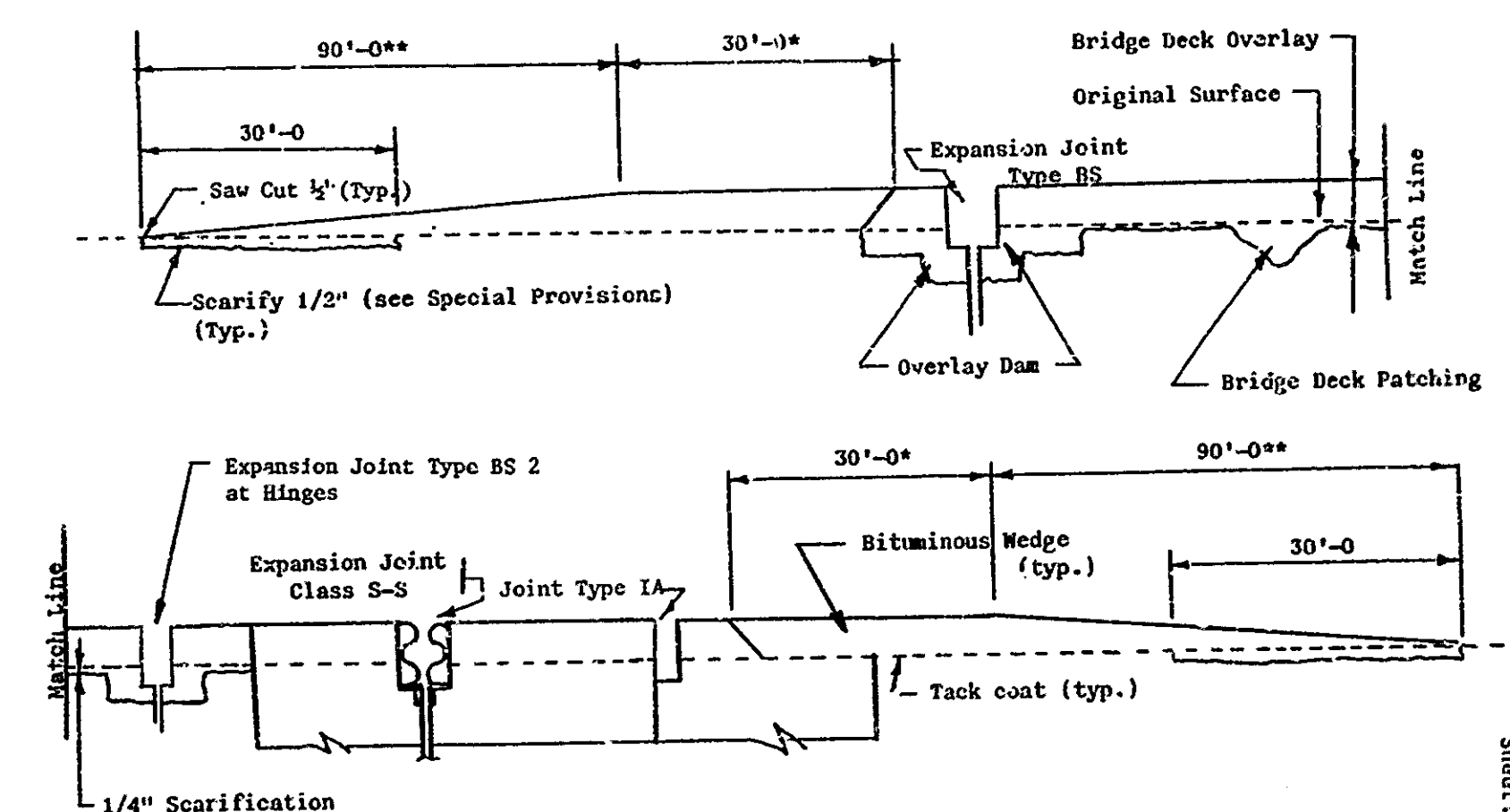
* Wedge to be continuation of the bridge profile
** Taper wedge uniformly to meet existing roadway

LONGITUDINAL SECTION

I-465-124-5270A & JA
I-465-125-5271A
I-69-0-5307A & JA

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I-FRI-465-4(219)124
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* Wedge to be continuation of the bridge profile
** Taper wedge uniformly to meet existing roadway

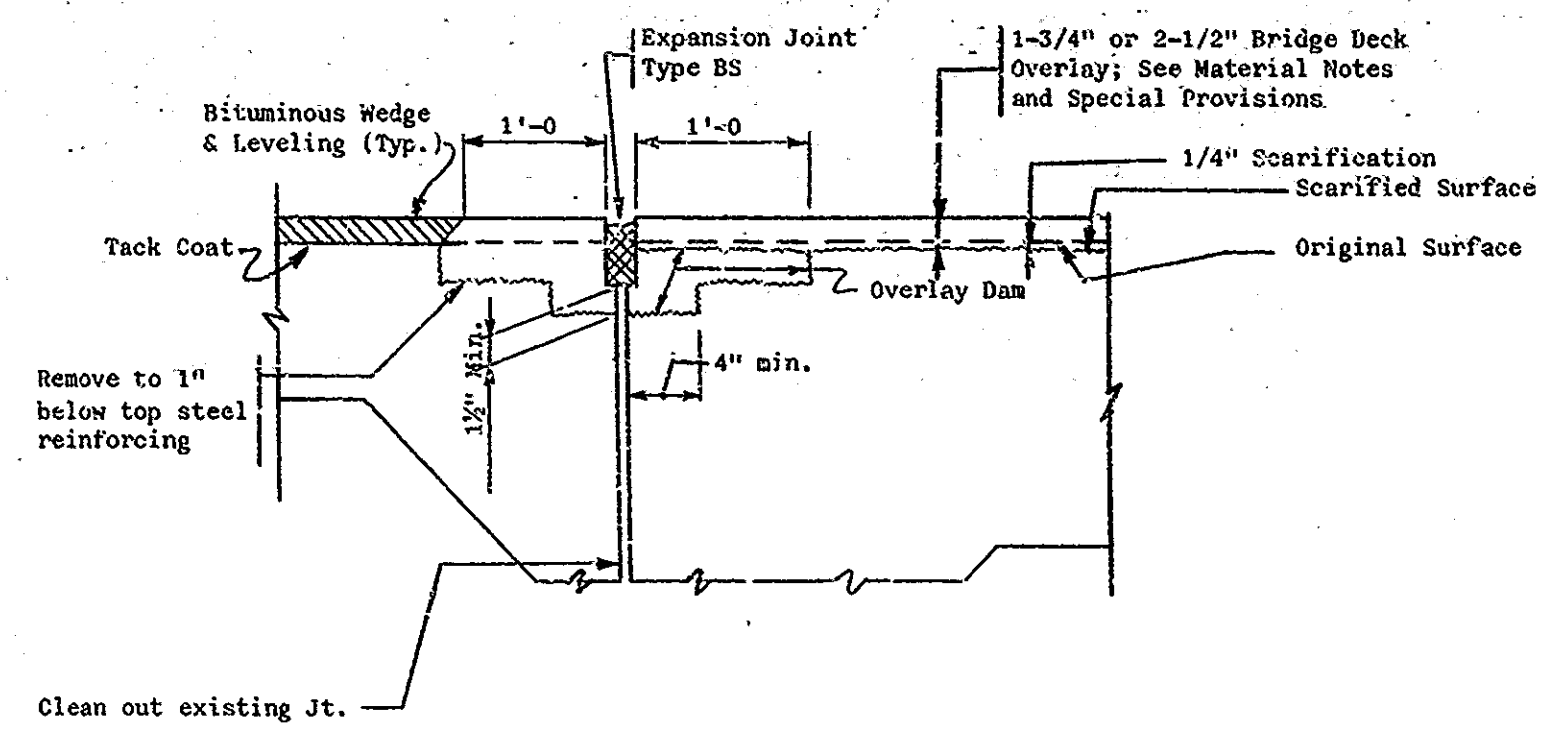
LONGITUDINAL SECTION

I-465-124-5269A

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
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Project: I-FRI-69-1(56)0
 I-FRI-465-4(219)124
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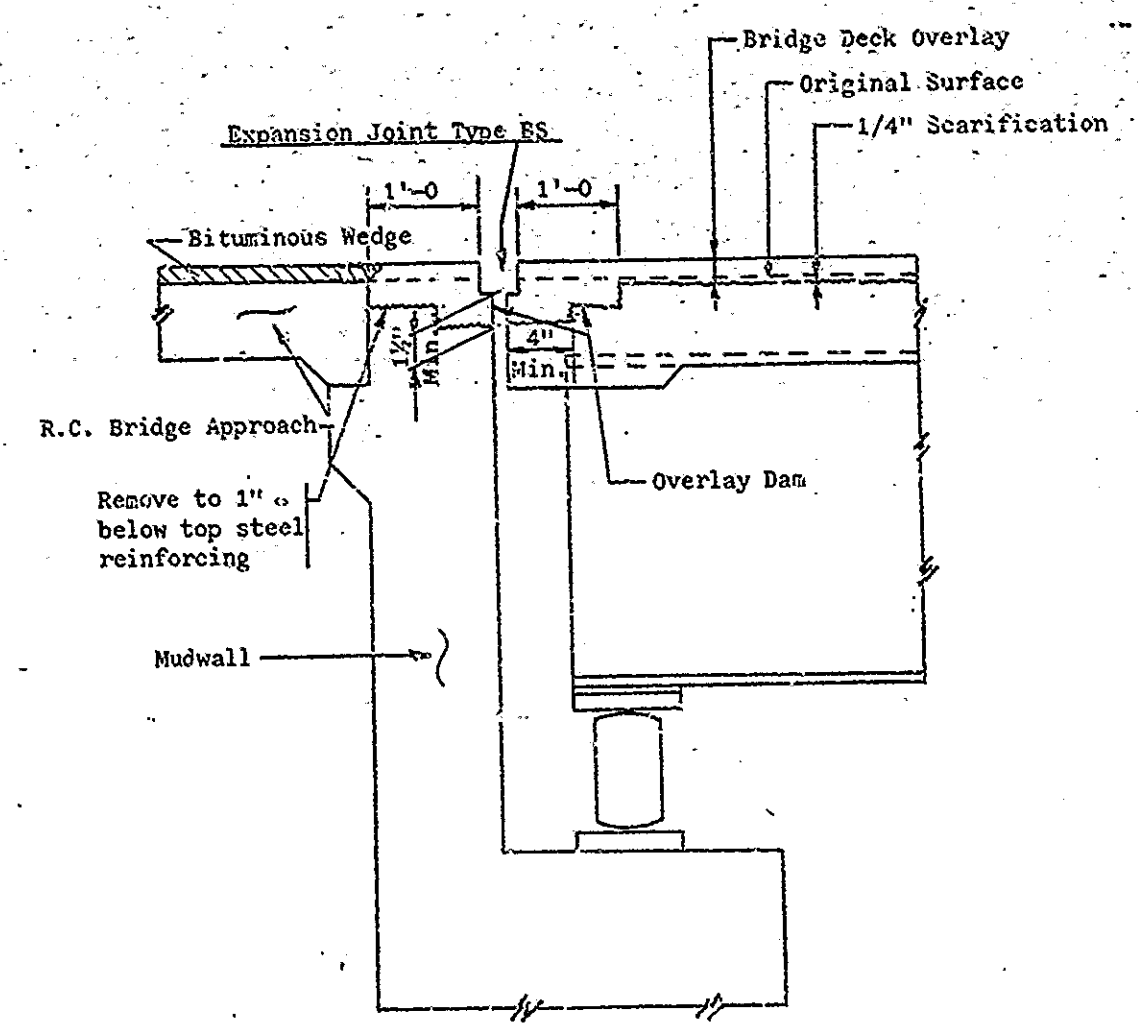


SECTION AT END BENT

I-465-124-5269A (Bent #5)
 I-465-125-5270A & JA
 I-465-125-5271A

Project: I-FRI-69-1(56)0
 I-FRI-465-4(219)124
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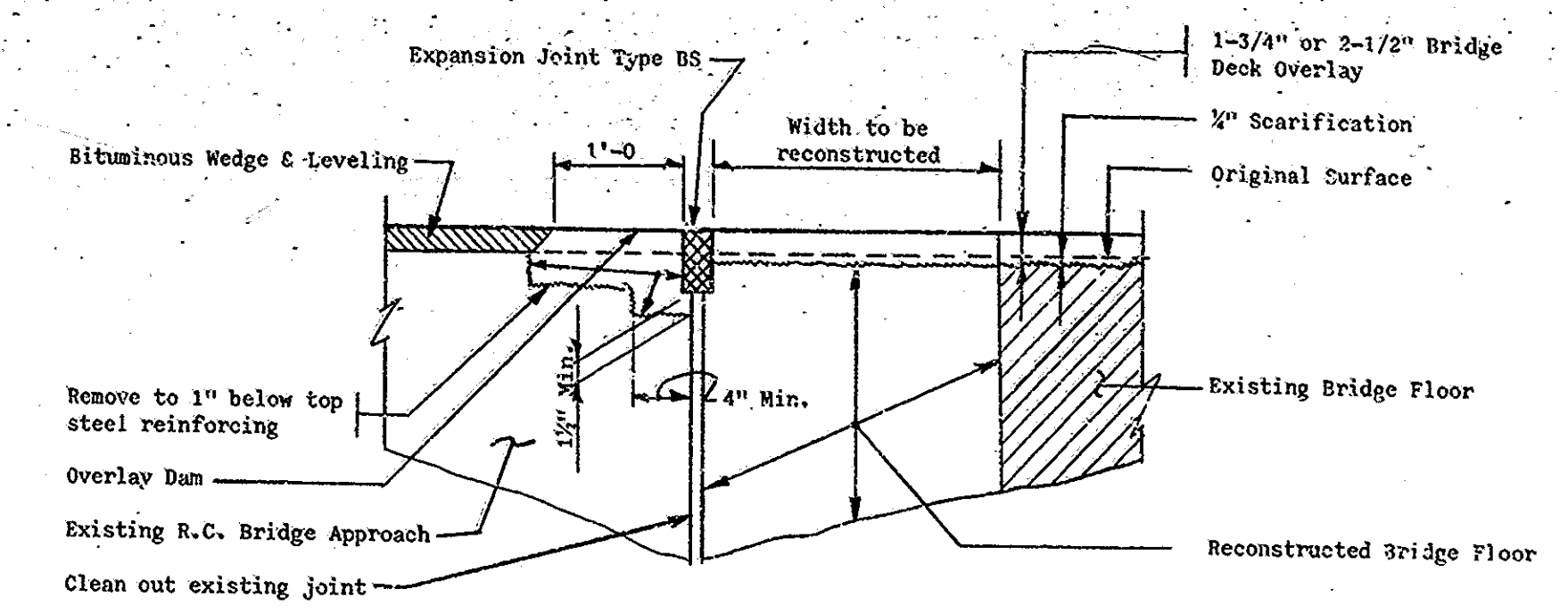
69



SECTION AT END BENT

I-69-0-5307A & JA

70

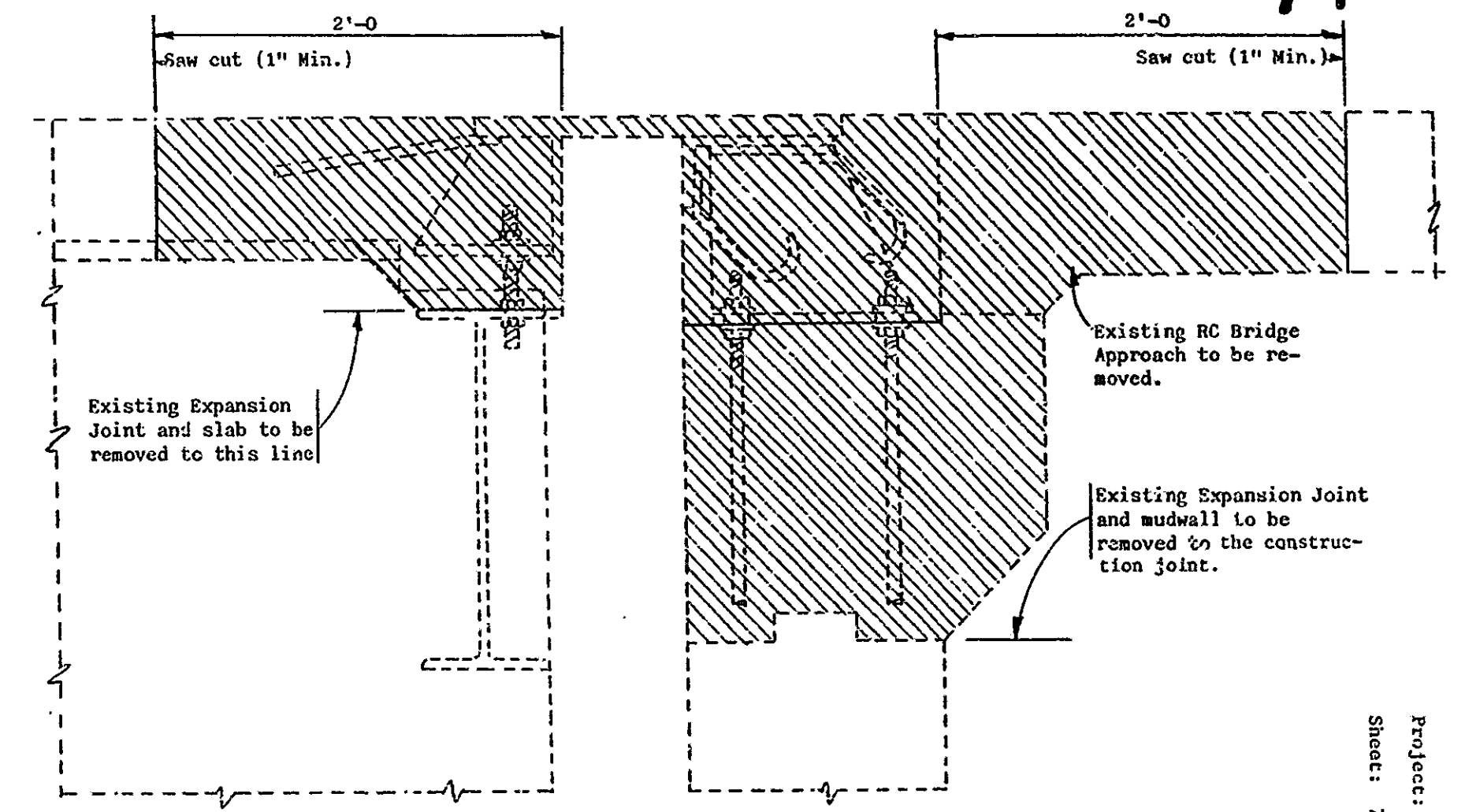


SECTION AT END BENT

I-465-125-2377A & JA

Project: I-FRI-69-1(56)0
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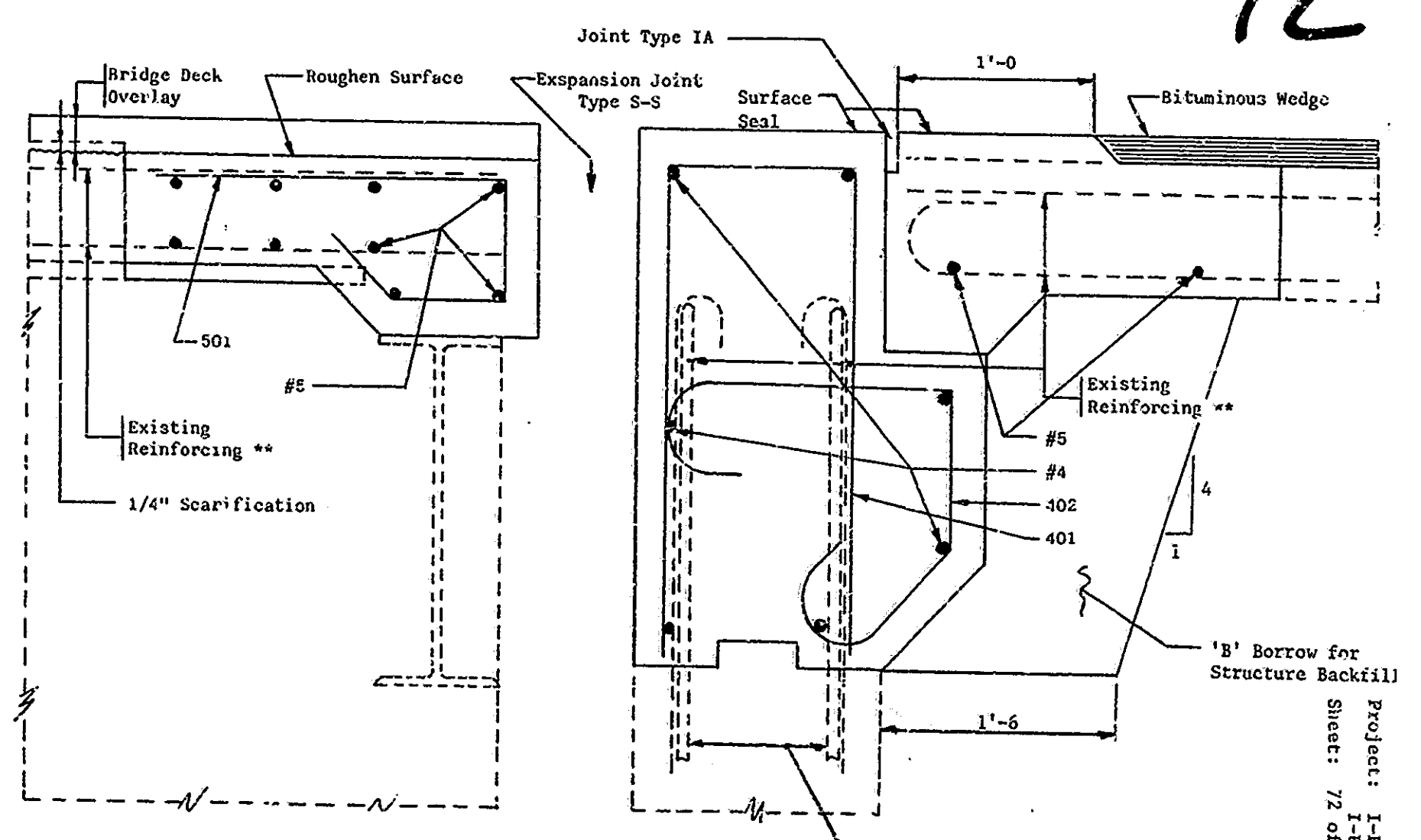


SECTION AT EXISTING TOOTH EXPANSION JOINT (SHOWING LIMITS OF REMOVAL)

I-465-124-5269A
 I-465-125-2377A & JA

Project: I-FRI-69-1(56)0
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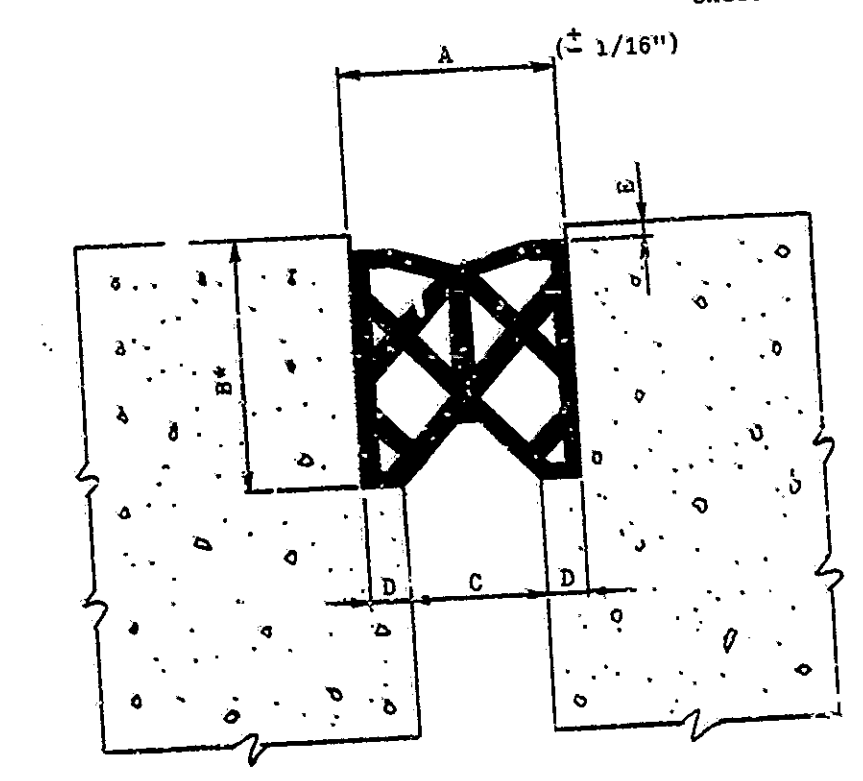
SECTION AT END BENT (SHOWING RECONSTRUCTION)

I-465-124-5269A
 I-465-125-2377A & JA

Project: I-FRI-69-1(56)0
 I-FRI-465-4(219)124
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** To be stripped, cleaned and left in place.

73

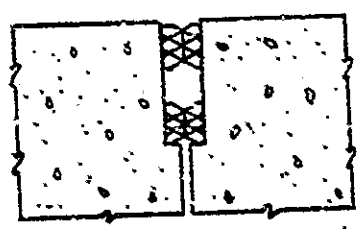
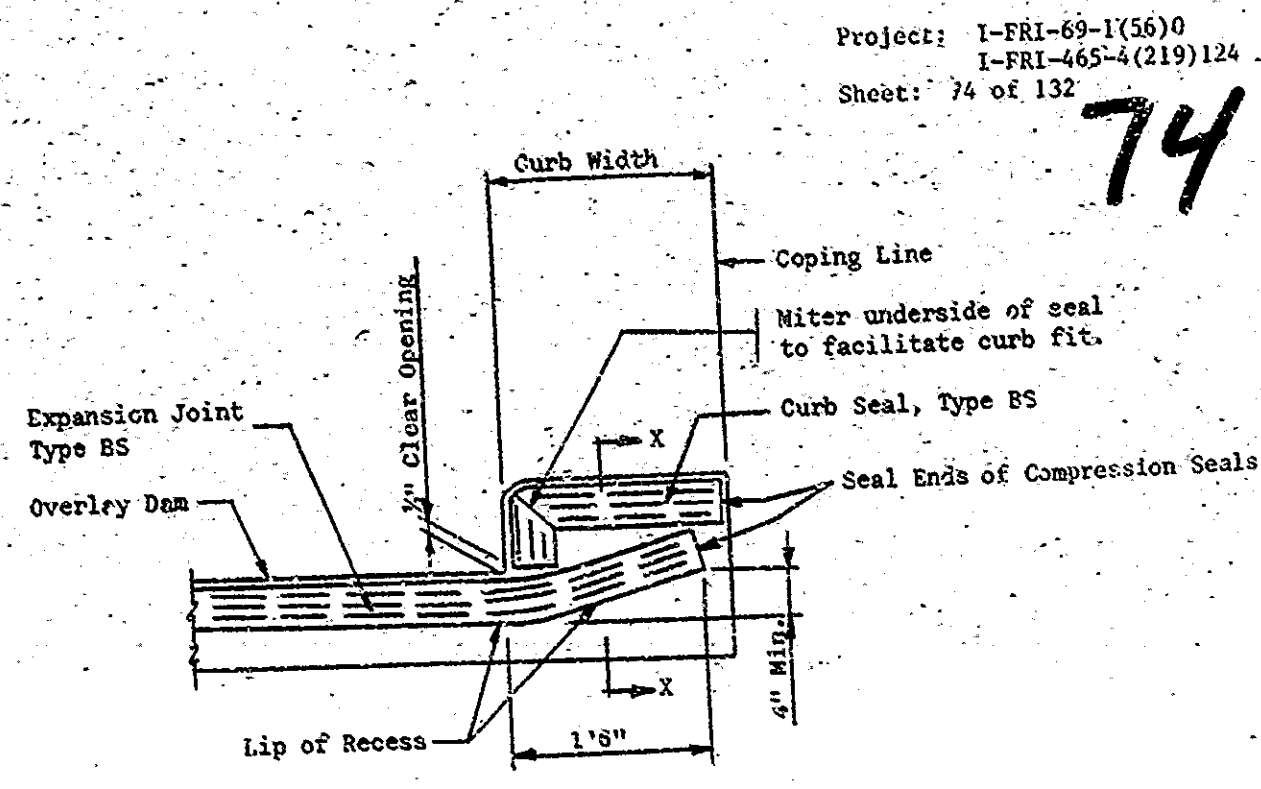


* To be determined in the field, see the Special Provisions.

Bridge Seal	A	B	C	D	E
BS 2	1"	*	0"	1/2"	1/2"
BS 6	1-5/8"	*	7/8"	3/8"	1/2"
BS 8	2"	*	1-1/4"	3/8"	1/2"
BS 9	2-5/8"	*	1-5/8"	1/2"	3/4"
BS 11	3-1/8"	*	2-1/8"	1/2"	3/4"

EXPANSION JOINT TYPE BS

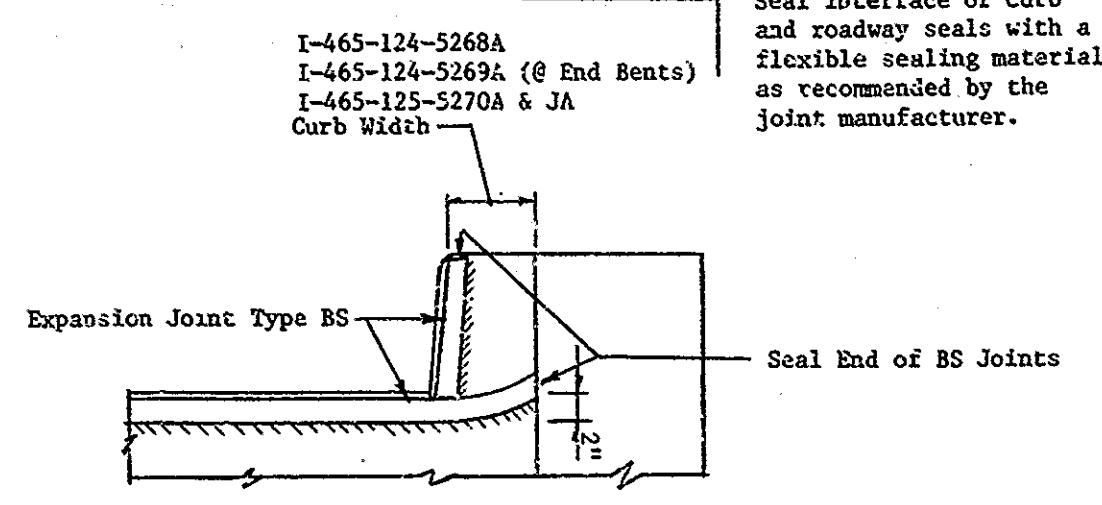
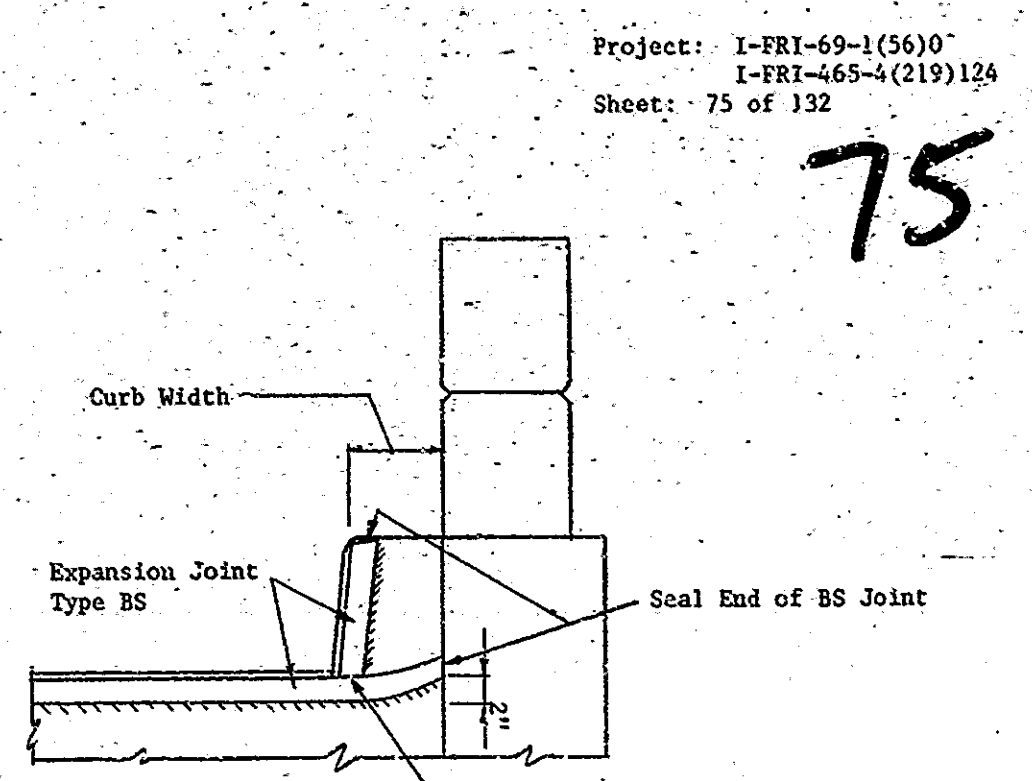
Project: I-FRI-69-1(56)0
 I-FRI-465-4(219)124
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SECTION "X-X"

BS JOINT INSTALLATION AT CURBS

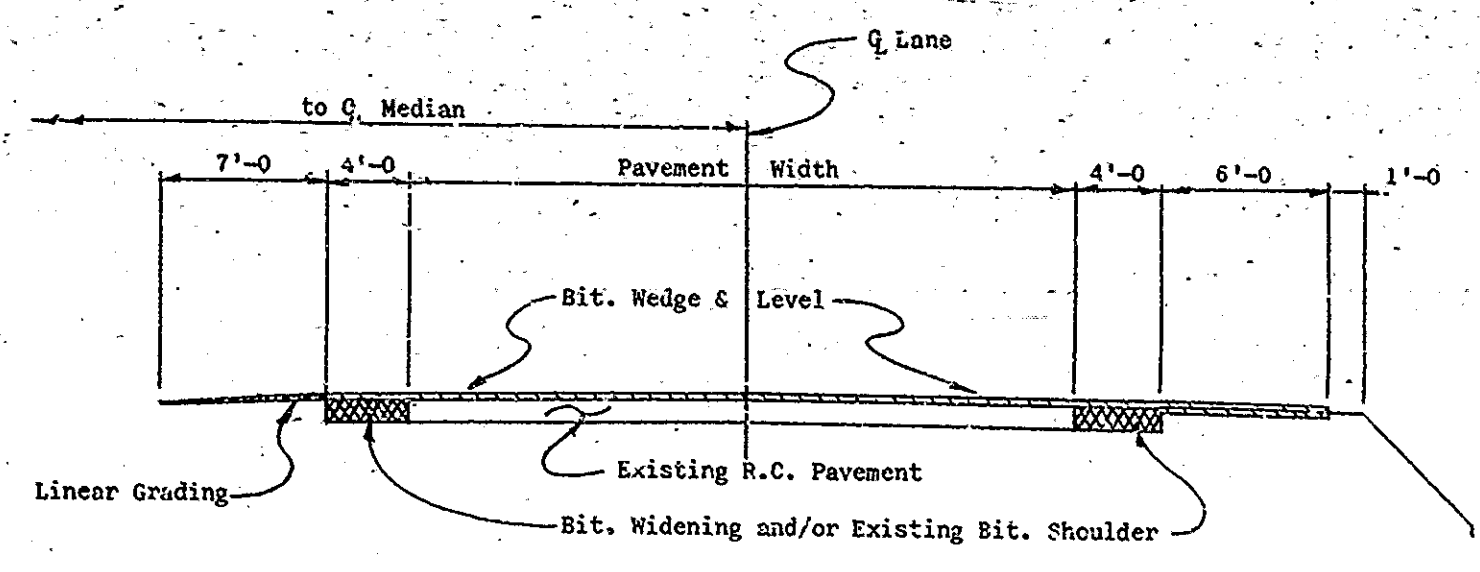
- I-465-124-5269A (at hinges only)
- I-465-125-5271A
- I-465-125-2377A (Incoming Median Only)
- I-465-125-2377JA (Incoming Median & Shoulder)
- I-465-125-2377DRA
- I-69-0-5307A & JA



I-465-125-2377A (Incoming Shoulders Only)

NOTE: The cost of reconstructing curbs to install the seals shall be included in the cost of Expansion Joint Type BS.

TYPICAL BS JOINT INSTALLATION AT CURBS

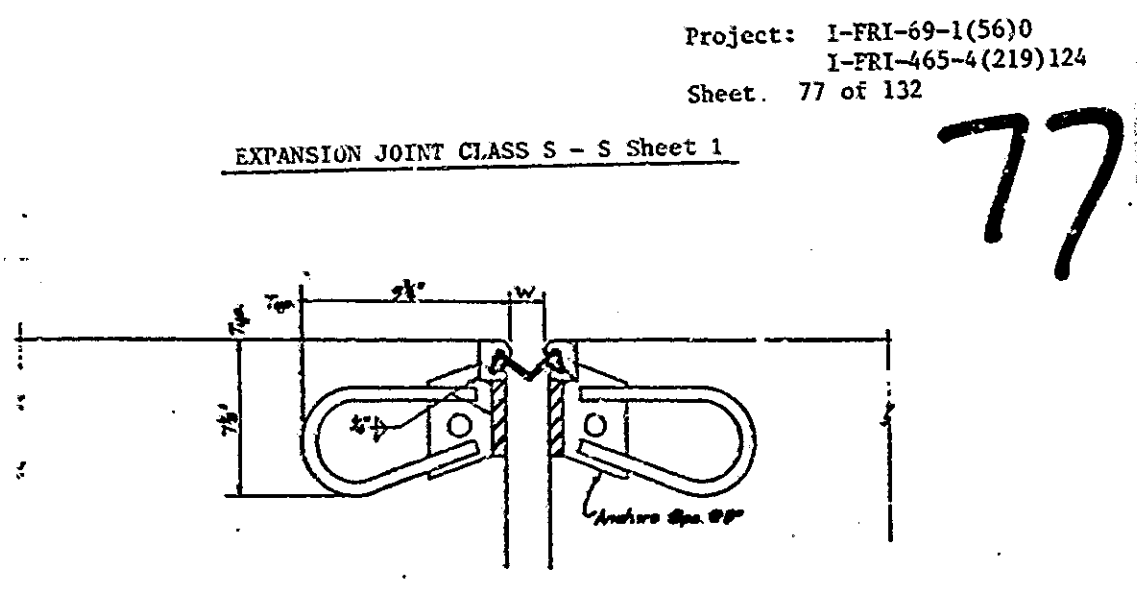


TYP HALF APPROACH SECTION

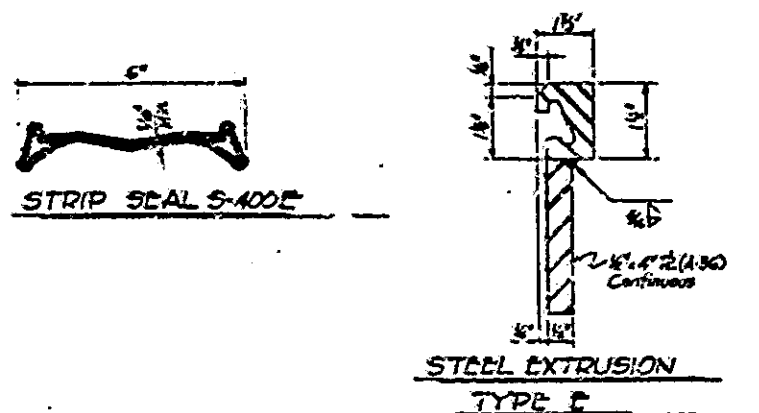
- I-465-124-5268A
- I-465-125-5270A
- I-465-125-2377A & JA
- I-69-0-5307A & JA

NOTE: The cost of stripping and borrow for Linear Grading shall be included in the cost of other items in the Contract.

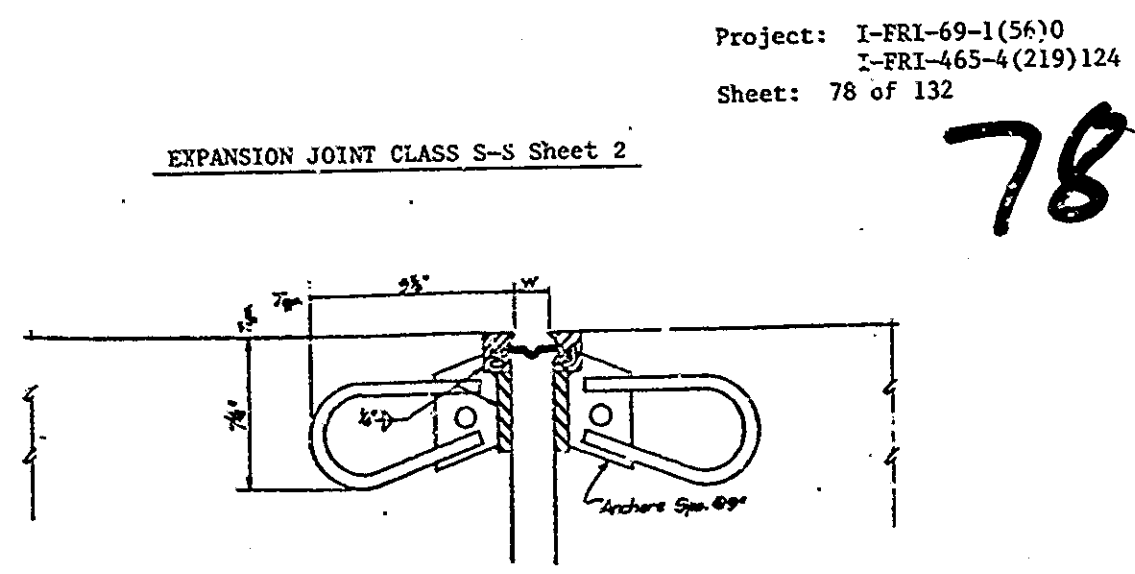
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
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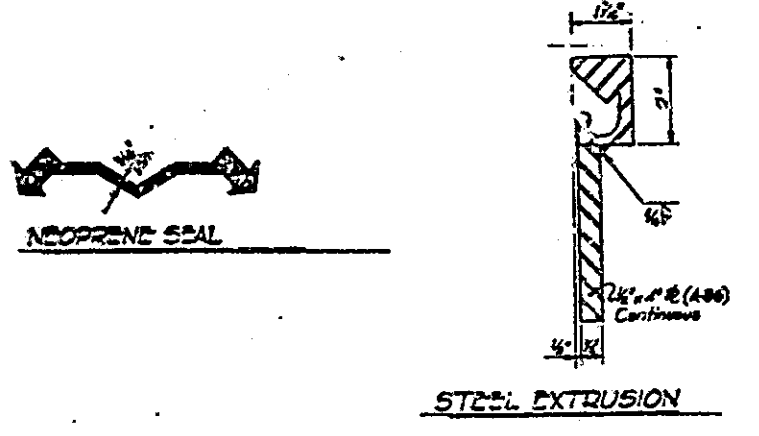
TYPICAL SECTION



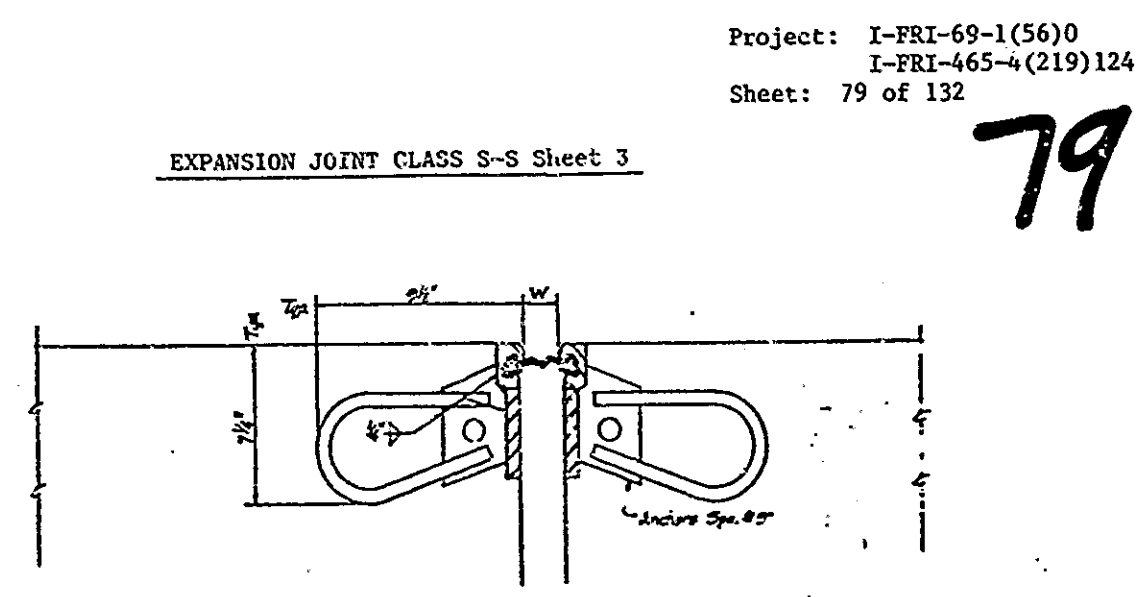
JOINT WABO S-400E



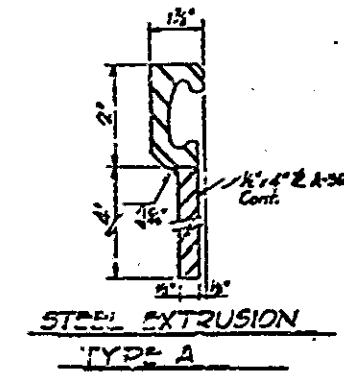
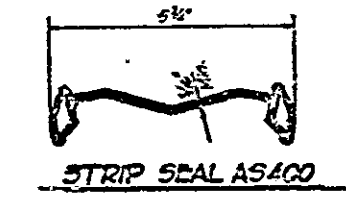
TYPICAL SECTION



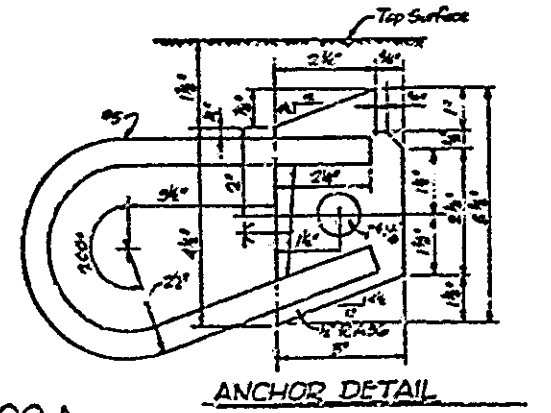
JOINT DELASTIFLEX®



TYPICAL SECTION

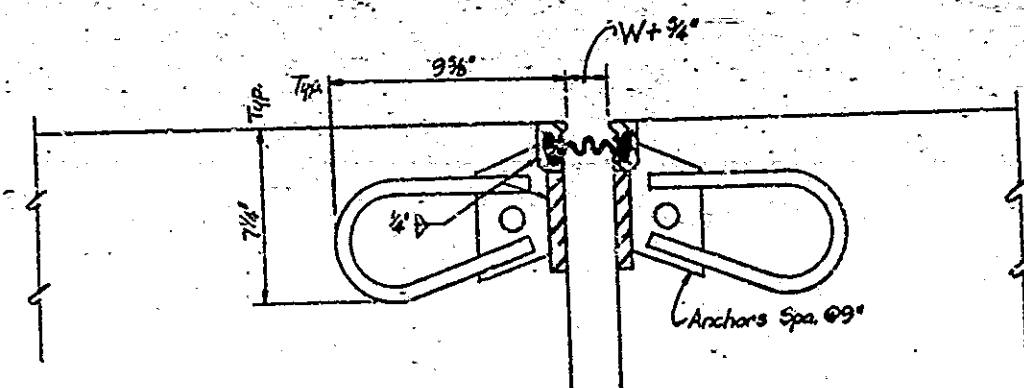


JOINT ACMA AS 400 A



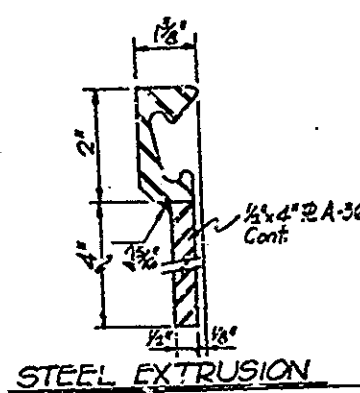
Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
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EXPANSION JOINT CLASS S-S Sheet 4

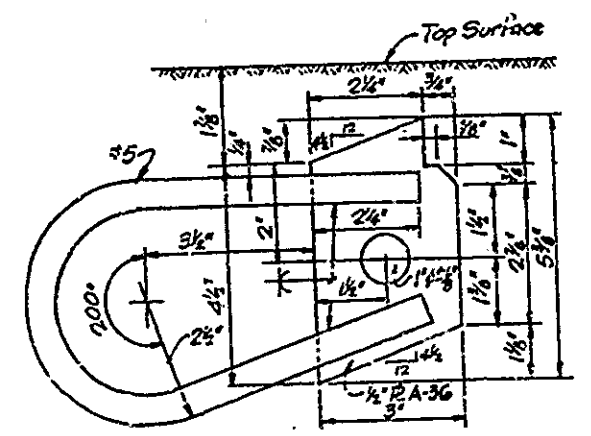


TYPICAL SECTION

NEOPRENE SEAL



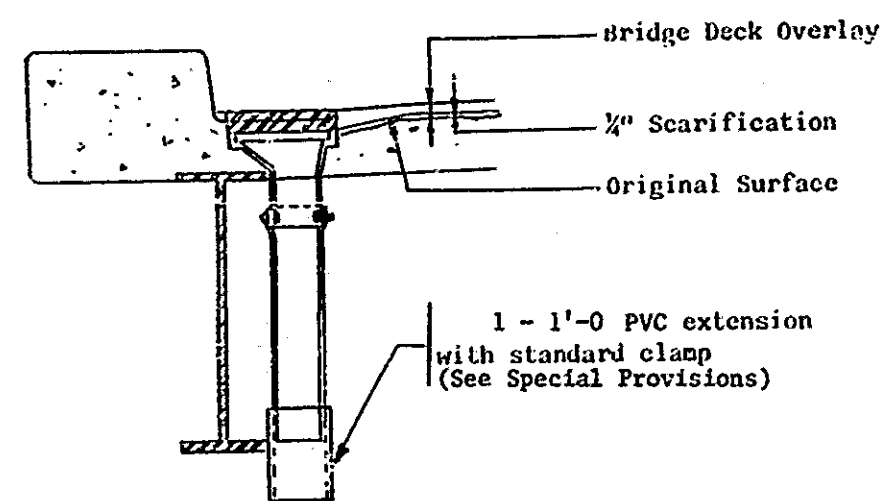
STEEL EXTRUSION



ANCHOR DETAIL

GENERAL TIRE GS-400

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ROADWAY DRAIN EXTENSION DETAIL

I-465-124-5269A, I-465-125-2377A & JA, I-465-125-2377DRA

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I-FRI-465-4(219)124
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EXPANSION JOINT CLASS S-S Sheet 5

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I-FRI-465-4(219)124
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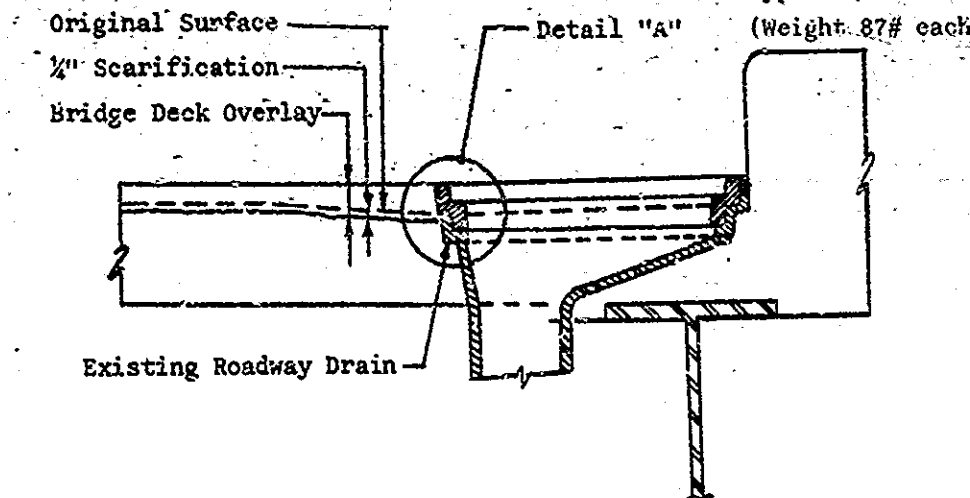
NOTES:

- See the Special Provisions for properties of materials.
- The cost of extrusions, elastomeric seal elements, sealants, adhesive, cement grout, anchor system and installation of joint shall be included in the cost of expansion joint.
- The profile of the joint is to conform to the roadway cross section.
- The seal element shall be moulded and furnished in a continuous length equal to that required for the joint.
- At changes in direction (at curbs, median barriers, etc.) the sections of joint are to be cut to the bevel required to produce the same cross section on each piece being joined. The anchor assembly is to be shop fabricated and delivered to the job site as a complete continuous unit for joint lengths up to 44 feet. Joints above lengths of 44 feet or joints used with stage construction shall be field welded with ends to be shop prepared.
- All work, both shop and field, shall be in accordance with 711.05.
- All exposed structural steel surfaces will be painted in accordance with ISHC Standard Specifications.
- The Contractor shall submit 3 copies of shop drawings for all joints involving curbs or other special features.

STRUCTURE	EXPANSION LENGTH
I-465-124-5269A	200' - 300'
I-465-125-2377A & JA	100' - 200'

Ambient Temperature	JOINT SETTING TABLE		
	DIMENSION "W" * A		
	Expansion Length		
	100' - 200'	200' - 300'	300' - 400'
120°	2-1/8"	1-3/16"	1/2"
100°	2-7/16"	1-3/4"	1-1/8"
80°	2-11/16"	2-3/16"	1-11/16"
60°	3"	2-5/8"	2-1/4"
40°	3-5/16"	3-1/16"	2-13/16"
20°	3-9/16"	3-1/2"	3-5/8"
0°	3-7/8"	3-15/16"	4"

* For "General Tire - GS 400" Joint the opening will be W+3/4"

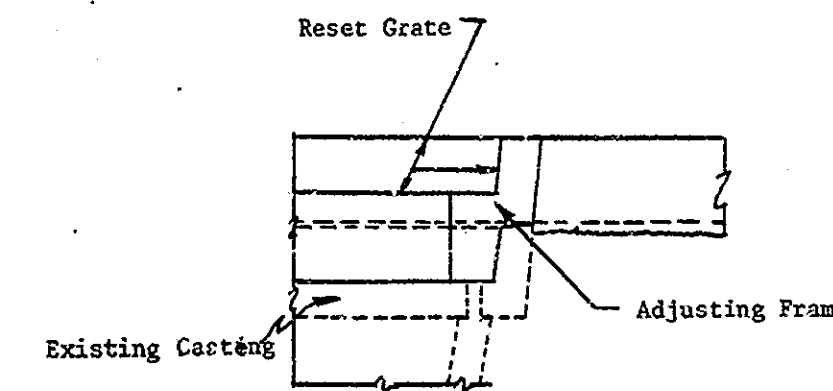


DETAIL A

SECTION AT ROADWAY DRAIN

Project: I-FRI-69-1(56)0
I-FRI-465-4(219)124
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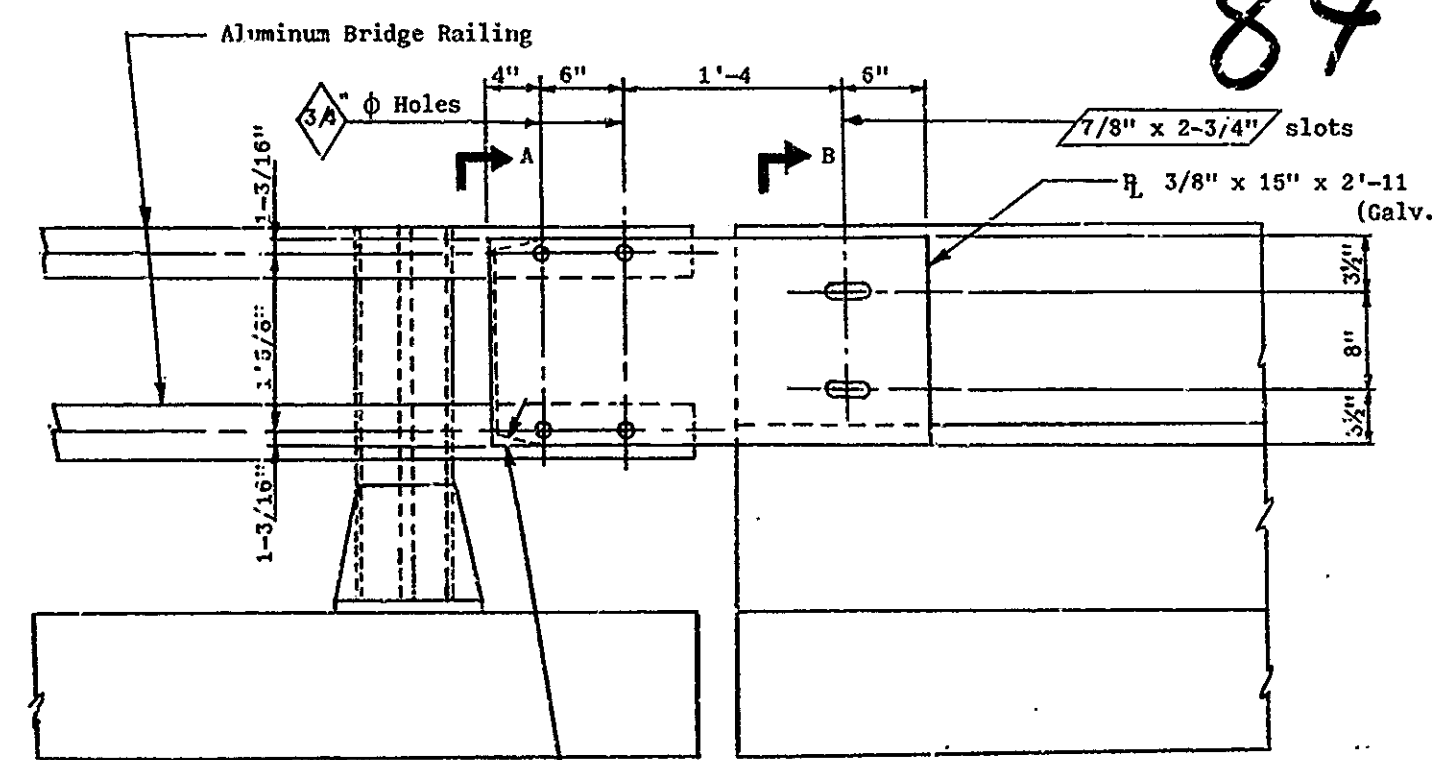
82



DETAIL A

SECTION AT ROADWAY DRAIN

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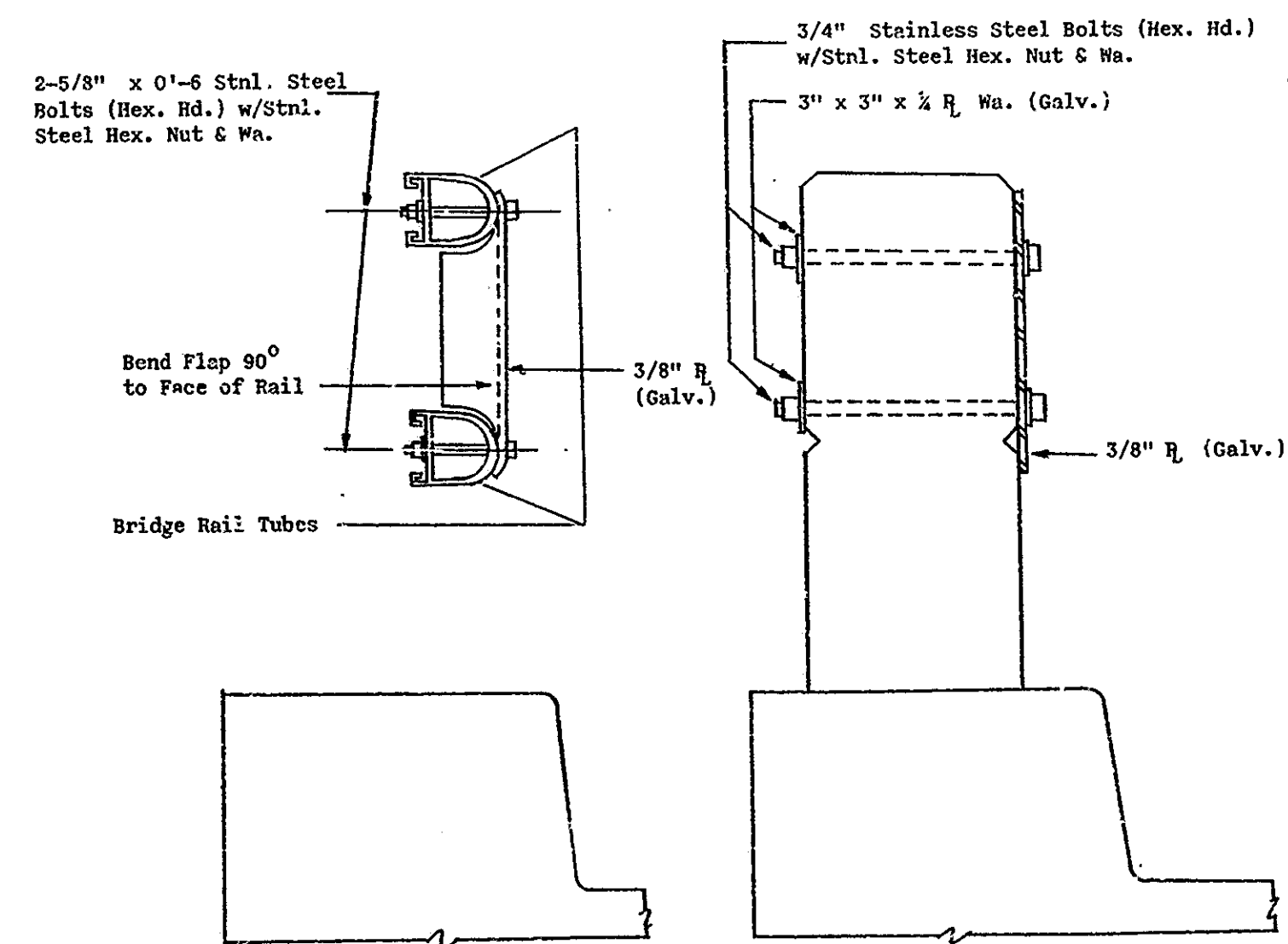
SPECIAL BRIDGE RAILING CONNECTION DETAIL

Scale: 1" = 1'

Notes: See Sheet 85 for Section A-A and Section B-B. Special Bridge Railing Connection to be made at outgoing corners of divided dual lane structures.

I-465-124-5268A
I-465-125-2270A & JA

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I-FRI-465-4(219)124
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SECTION A-A

SECTION B-B

Scale: 1 1/2" = 1'

I-465-124-5268A
I-465-125-2270A & JA

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I-FRI-465-4(219)124
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ESTIMATE OF QUANTITIES - 1

86

CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
51845	BRIDGE DECK SURFACE	SYS.	A	1328	987	2989	827	2811	401	2606	11,949
51842	BRIDGE DECK OVERLAY	SYS.	A	840	2000	1900	1120	2530	540	2350	11,280
51843	BRIDGE DECK PATCHING	SFT.	B	2175	1134	4376	1147	3985	589	3286	17,292
51833	CONCRETE SCARIFYING*	SYS.	B	266	198	598	166	562	80	521	2,591
51840	ADDITIONAL CONCRETE SCARIFYING	SYS.	B	1328	987	2989	827	2811	401	2606	11,949
51837	BLASTING AND CLEANING	SYS.	A	1328	987	2989	827	2811	401	2606	11,949
51828	FINISHING AND CURING	SYS.	A	404	238	524	156	119	81	573	2,095
51874	OVERLAY DAMS	SFT.	A	3500	3325	5280	3420	3650	1590	3650	23,215
51826	SURFACE SEAL	SFT.	B								
	FULL DEPTH PATCHING	SFT.	B								
51881	EXPANSION JOINT TYPE BS 2	LFT.	A		84						84
51885	EXPANSION JOINT TYPE BS 6	LFT.	A		37						37
51887	EXPANSION JOINT TYPE BS 8	LFT.	A					124	30		154
51888	EXPANSION JOINT TYPE BS 9	LFT.	A	208		265	84			300	679
51890	EXPANSION JOINT TYPE BS 11	LFT.	A		37			132			166
51925	EXPANSION JOINT CLASS S-S	LFT.	A								
	*Includes Approach Scarification	SYS.		960	147	1387	320	1174	213	1280	5,481
	**Undistributed Quantity										

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ESTIMATE OF QUANTITIES - 2

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CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
	RESHAPING SPILL SLOPES	LS.									
51375	REVEIMENT RIPRAP, 18"	TONS									
51365	SLOPEMALL	SYS.	C			6		2	4		12
92210	PLASTIC FILTER CLOTH	SYS.									
	REMOVAL OF PAVED SIDE DITCH	LFT.	A				10		10		20
	PAVED SIDE DITCH TYPE 'A'	LFT.	A				10		10		20
	PAVED SIDE DITCH TYPE 'B'	LFT.	A								
51368	REMOVAL OF SLOPEMALL	SYS.	C			6		2	4		12
	SPECIAL CONCRETE	CYS.	C			10		5	10		25
52255	'B' BORROW FOR STRUCTURE BACKFILL	CYS.	A		5			15			20
51300	CONCRETE PAVEMENT REINFORCED (10")	SYS.	A		8		3 (C)	23			34
52303	REMOVAL OF PAVEMENT	SYS.	A		8		3 (C)	23			34
52470	BITUMINOUS MIXTURE FOR APPROACHES*	TON	A	770	59	616	365	685	45	679	3219
92273	BITUMINOUS BASE #5D	TON									
52456	BITUMINOUS MATERIAL FOR TACK COAT	SYS.	A	2720	1067	3478	1027	3270	680	3280	15,522
51001	CONCRETE CLASS 'A' IN SUPERSTRUCTURE	CYS.	A	29.7	7.7			36.9	6.2		80.5
	*See Sheet 88										

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ESTIMATE OF QUANTITIES - 3

88

CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
51005	CONCRETE CLASS 'A' IN SUBSTRUCTURE	CYS.	A		0.2	0.7(C)	15.2	0.4	8.8		25.3
51030	REINFORCING STEEL	LBS.	A	7868	893	20(C)	900	4478	2131		16,290
51875	SPECIAL CLASS 'A' CONCRETE	SFT.	C								7000
51870	REPOINTING MASONRY IN STRUCTURES	SFT.	C		5						5
	INTEGRAL CURB WALK	CYS.	A		0.1						0.1
	REMOVAL OF BITUMINOUS CURB	LFT.	A					10		30	40
	CONCRETE CURB	LFT.	A					10		30	40
	CURB TURNOUT TYPE 'A'	EACH	A					3		3	3
	CHANNEL SHEAR CONNECTOR	EACH	A	268							268
	*Bituminous Mixture for APPROACHES - Quantity Breakdown										
	Bituminous Wedge	TON	A	154	59	199	58	185	38	147	880
	Pavement Relief Joint	TON	A	7	7	14	3	9	7	10	36
	Terminal Jt. Reconstruct.	TON	A	609	396	304	491	482	482	2282	2282
	Bituminous Widening	TON	A	770	616	365	685	679	679	679	3219
	TOTAL	TON	A	770	616	365	685	679	679	679	3219
	**Undistributed Quantity										

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ESTIMATE OF QUANTITIES - 4

88A

CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
51005	CONCRETE CLASS 'A' IN SUBSTRUCTURE	CYS.	A		0.2	0.7(C)	15.2	0.4	8.8		25.3
51030	REINFORCING STEEL	LBS.	A	7868	893	20(C)	900	4478	2131		16,290
51875	SPECIAL CLASS 'A' CONCRETE	SFT.	C								7000
51870	REPOINTING MASONRY IN STRUCTURES	SFT.	C		5						5
	INTEGRAL CURB WALK	CYS.	A		0.1						0.1
	REMOVAL OF BITUMINOUS CURB	LFT.	A					10		30	40
	CONCRETE CURB	LFT.	A					10		30	40
	CURB TURNOUT TYPE 'A'	EACH	A					3		3	3
	CHANNEL SHEAR CONNECTOR	EACH	A	268							268
	*Bituminous Mixture for APPROACHES - Quantity Breakdown										
	Bituminous Wedge	TON	A	154	59	199	58	185	38	147	880
	Pavement Relief Joint	TON	A	7	7	14	3	9	7	10	36
	Terminal Jt. Reconstruct.	TON	A	609	396	304	491	482	482	2282	2282
	Bituminous Widening	TON	A	770	616	365	685	679	679	679	3219
	TOTAL	TON	A	770	616	365	685	679	679	679	3219
	**Undistributed Quantity										

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ESTIMATE OF QUANTITIES - 5

89

CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
52535	REMOVAL OF GUARD RAIL	LFT.	A	155	160	40	140	293	140	20	948
52505	GUARD RAIL TYPE 'B'	LFT.	A								
52510	GUARD RAIL TYPE 'C'	LFT.	A								
52515	GUARD RAIL TYPE 'D'	LFT.	A			50					50
52520	GUARD RAIL TYPE 'E'	LFT.	A		25			175			200
52525	GUARD RAIL TYPE 'F'	LFT.	A	75							75
52530	GUARD RAIL TYPE 'G'	LFT.	A				160	364	160	20	704
08035	RESET GUARD RAIL	LFT.	A		50		50	63	80		243
	GUARD RAIL END TREATMENT	EACH	A	2	4	1	2	4	2		15
	GUARD RAIL POST AND BRACKET TYPE 'D'	EACH	A	32		8		9		6	55
	GUARD RAIL POST AND BRACKET TYPE 'E'	EACH	A								
51134	REMOVAL OF PRESENT RAILING	LFT.	C					40		80	120
	RAILING TYPE 5	LFT.	**				78	40	60		178
	RAILING RESET	LFT.	C							80	80
	ALUMINUM TYPE 'I' POST	EACH	A								
	SPECIAL BRIDGE RAILING CONNECTION	EACH	A	4		4					8
	**52.1A & 2377DRA 90% Federal Participation 2377A & JA All State Funds										

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ESTIMATE OF QUANTITIES - 6

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CODE#	ITEM	UNIT	FUND-ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
52640	MAINTAINING TRAFFIC	LS.	A								1
52340	CONSTRUCTION SIGN TYPE 'A'	EACH	A								80
52345	CONSTRUCTION SIGN TYPE 'B'	EACH	A								12
52350	STANDARD BARRICADES TYPE III	EACH	A		2				2		4
	TEMPORARY STOP SIGN TYPE R-1 A	EACH	A								
	TEMPORARY YIELD SIGN TYPE R-301	EACH	A								
52366	TEMPORARY PAVEMENT MARKING TAPE	LFT.	A								
	TEMPORARY CONCRETE BARRIER	LFT.	A	1740		2100	590	2100		2140	8670
06717	REMOVAL OF LINE - SOLID, YELLOW, 4"	LFT.	A	1620		1930	890	1910		1820	8170
06715	REMOVAL OF LINE - SOLID, WHITE, 4"	LFT.	A	1620		2330	890	2030		860	7730
06718	REMOVAL OF LINE - SKIP, WHITE, 4"	LFT.	A	1410		1030	390	1030		2490	6350
06714	LINE, SOLID, YELLOW 4"	LFT.	A	1620	2340	1930	890	1910	420	1820	10,930
06713	LINE, SOLID, WHITE 4"	LFT.	A	1620		2330	890	2030	420	860	8150
	LINE, SKIP WHITE, 4"	LFT.	A	1410		1030	390	1030		2490	6350
	TEMPORARY IMPACT ATTENUATION DEVICE	EACH	A	2		2		2		2	8

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ESTIMATE OF QUANTITIES - 5A

90A

CODE	ITEM	UNIT	FUND- ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
	FURNISHING, APPLICATION & REMOVAL OF SPECIAL TEMPORARY PAVEMENT MARKING	LFT.	A	11,280		12,290	3700	14,630		18,410	60,310
	FURNISHING, APPLICATION & REMOVAL OF SPECIAL TEMPORARY PAVEMENT MARKING	EACH	A	2		4		4		6	16
	RE-APPLICATION & REMOVAL OF SPECIAL TEMPORARY PAVEMENT MARKING	LFT.									
	RE-APPLICATION AND REMOVAL OF SPECIAL TEMPORARY PAVEMENT MARKING	EACH									
	Rev. 2-2-81 Temp. Pvmt. Marking										

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ESTIMATE OF QUANTITIES - 6

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CODE#	ITEM	UNIT	FUND- ING	5268A	5269A	5270A & JA	5271A	2377A & JA	2377DRA	5307A & JA	TOTAL
44000	CASTING ADJUSTED TO GRADE	EACH	A					2			2
51110	CAST IRON GRATES, BASINS AND FITTINGS	LBS.	A	696	348	348	174	348	87	435	2,436
	EXTENSION OF C.I. DRAINS	EACH	B		4			4	1		9
51092	STEEL PIPE CONDUIT 2"	LFT.									
	WELDED OR SEAMLESS BLACK STEEL PIPE 6"	LFT.	C				1C				10
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (5268A)	LSUM	B	1							1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (5270JA)	LSUM	C			1					1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (5269A)	LSUM	A		1						1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (5271A)	LSUM	A				1				1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (2377A)	LSUM	B					1			1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (2377JA)	LSUM	B					1			1
51328	REMOVAL OF PRESENT STRUCTURE (PORTIONS) (2377DRA)	LSUM	A						1		1
	FUNDING CODE										
	A - 80% Federal										
	B - 75% Federal										
	C - All State Funds										

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