CONTRACT No. B-13556

FEDERAL AID PROJECT NO.	STATE	PROJECT NO.	BRIDGES OVER 20' SPAN FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.	IR-70-4(42)115	1981	1	39

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
IR-70-4(42)115 I-70-115-5140 A & JA I-70-116-23608	109-33-5139A	DECK RECONSTRUCTION AND OVERLAY	38'-0, 2@78'-6, 36'-0 65'-6, 79'-0, 65'-6 45'-0, 56'-0, 46'-0	I-70 MONTGOMERY CREEK INDIANA EASTERN RR & TRANSPORTATION CO.	

SHEET NO	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL
1		TITLE SHEET & INDEX	
2		TRAFFIC MAINTENANCE (5139A)	
3-4		TRAFFIC MAINTENANCE (5140A & JA & 23608)	
5	D1	GENERAL PLAN (5139A)	
6-7	D2, D3	DETAILS	
8	D4	SUPERSTRUCTURE DETAILS	
9	D5	GENERAL PLAN (5140A & JA)	
10	D6	DETAILS (5140A & JA & 23608)	
11	D7	CORNER DETAILS (5140A & JA)	
12-13	D8, D9	SUPERSTRUCTURE DETAILS	
14	D10	GENERAL PLAN (23608)	
15	D11	SUPERSTRUCTURE DETAILS	
16	D12	APPROACH DETAILS (5140A & JA & 23608)	
17	D13	ESTIMATE OF QUANTITIES & MISCELLANEOUS DETAILS	

NOTE:-
WHEREVER "INDIANA STATE HIGHWAY COMMISSION" APPEARS IN THESE PLANS, IT SHALL BE INTERPRETED AS "INDIANA DEPARTMENT OF HIGHWAYS" EXCEPT THE 1978 INDIANA STATE HIGHWAY COMMISSION SPECIFICATIONS SHALL BE USED.

TRAFFIC DATA	S.R. 109	I-70
A.D.T. (1978)	2,700	19,100 V.P.D.
A.D.T. (19 PROJECTED)		V.P.D.
D.H.V. (19 PROJECTED)		V.P.D.
TRUCKS		D.H.V. % A.D.T. %
DESIGN SPEED		M.P.H.
ACCESS CONTROL		

STATE OF INDIANA
DEPARTMENT OF HIGHWAYS

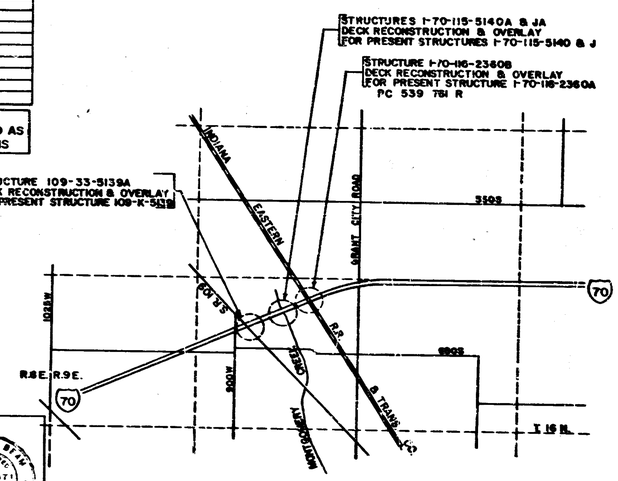
BRIDGE PLANS
FOR SPANS OVER 20 FEET

PROJECT NO. IR-70-4(42)115

DECK RECONSTRUCTION AND OVERLAY FOR BRIDGE ON S.R. 109 OVER I-70
ALL IN SECTION 17, T.16N., R.9E. IN HENRY COUNTY

DECK RECONSTRUCTION AND OVERLAY FOR BRIDGE ON I-70 OVER MONTGOMERY CREEK
ALL IN SECTION 17, T.16N., R.9E. IN HENRY COUNTY

DECK RECONSTRUCTION AND OVERLAY FOR BRIDGE ON I-70 OVER INDIANA EASTERN R.R. & TRANSPORTATION CO.
ALL IN SECTION 17, T.16N., R.9E. IN HENRY COUNTY



HENRY COUNTY

PLANS PREPARED BY
FLOYD E. BURROUGHS & ASSOC., INC.
CONSULTING ENGINEERS
INDIANAPOLIS, INDIANA
CERTIFIED Walter M. Bryan DATE OCTOBER 27, 1981

WALTER M. BRYAN REGISTERED No. 3871 STATE OF INDIANA PROFESSIONAL ENGINEER

INDIANA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS DATED 1978 TO BE USED WITH THESE PLANS.

REVISIONS	
DATE	SHEET NO.

REVISIONS	
DATE	SHEET NO.
9-15-82	1 & 17

INDEX CONTINUED
STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL	ADOPTED & REVISION "A"
18	BRIDGE STD. BR1	ALUMINUM BRIDGE RAILING	12-16-80	R11-3-80
19	BRIDGE STD. BR2	ALUMINUM BRIDGE RAILING DETAILS	5-10-79	R12-1-78
	BRIDGE STD. BR3	STEEL BRIDGE RAILING		
	BRIDGE STD. BR4	STEEL BRIDGE RAILING DETAILS		
	BRIDGE STD. BR5	RAILING CONNECTION DETAILS		
	BRIDGE STD. BR6	RAILING CONNECTION DETAILS		
20	BRIDGE STD. C1	MISCELLANEOUS DETAILS	12-21-81	R-12-7-81
	BRIDGE STD. C2	MISCELLANEOUS DETAILS		
21	BRIDGE STD. C3	MISCELLANEOUS DETAILS	12-21-81	R-12-7-81
	BRIDGE STD. C4	MISCELLANEOUS DETAILS		
	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS		
22	BRIDGE STD. D1	ADJUSTING FRAMES		R7-1-77
	BRIDGE STD.			
	BRIDGE STD. P2	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. P3	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. P8A	PRESTRESSED BOX BEAMS		
	BRIDGE STD. P9	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
	BRIDGE STD. P9	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
	BRIDGE STD. P9.10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS		
	BRIDGE STD. P9.11	ELASTOMERIC BEARING PAD DETAILS		
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS		
	BRIDGE STD. R2B			
	BRIDGE STD. S1	MISCELLANEOUS DETAILS		
	BRIDGE STD. SH1	STEEL SHOE DETAILS		
	BRIDGE STD. T SHEET A	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD. T SHEET B	STANDARD TEMPORARY BRIDGE		
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD.			
	ROAD STD. SHEET A	STANDARD PAVEMENT JOINTS		
	ROAD STD. SHEET B	STANDARD PAVEMENT JOINTS		
23	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS	9-29-71	R1-4-71
	ROAD STD. SHEET MA	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MB2	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MC	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MCI	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MD	MISCELLANEOUS STANDARDS		
24	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS	12-22-80	R10-1-80
	ROAD STD. SHEET ME	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MH	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MI	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MB	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
25	ROAD STD. SHEET MP	MISCELLANEOUS STANDARDS	6-6-80	R4-1-80
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MQ	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET MR	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET			
	ROAD STD.	STANDARD REINF. CONCRETE BOX CULVERTS		
	ROAD STD.	STANDARD REINF. CONCRETE CULVERTS		
26	ROAD STD. SHEET GR8	GUARD RAIL CLASS DS	3-25-80	R1-2-80
27	ROAD STD. SHEET GR9	GUARD RAIL CLASS DA	5-17-79	R-2-1-79
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
28	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS	12-6-76	R9-1-76
29	ROAD STD. SHEET GR6	STEEL TUBE GUARD RAIL DETAILS	8-2-78	R8-1-78
30	ROAD STD. SHEET GR10A	BREAKAWAY CABLE TERMINAL	5-15-81	R2-2-81
31	ROAD STD. SHEET GR10	GUARD RAIL BURIED ENDS	6-6-80	R4-1-80
32	ROAD STD. SHEET CB 2	TEMPORARY CONCRETE BARRIER	6-3-81	R4-1-81
33	ROAD STD. SHEET 9	TRAFFIC SIGN DETAILS		R-4-1-79
34	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS	6-3-81	R4-1-81
	ROAD STD. SHEET 1A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS		
35	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS	8-25-81	R8-3-81
36	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS	10-20-80	R9-1-80
37	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS	5-18-77	R4-1-77
38	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS	5-18-77	R4-1-77
	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS		
39	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS	6-3-81	R4-1-81

APPROVED 3-9-82
Kenneth Hollowell
CHIEF HIGHWAY ENGINEER - INDIANA DEPARTMENT OF HIGHWAYS

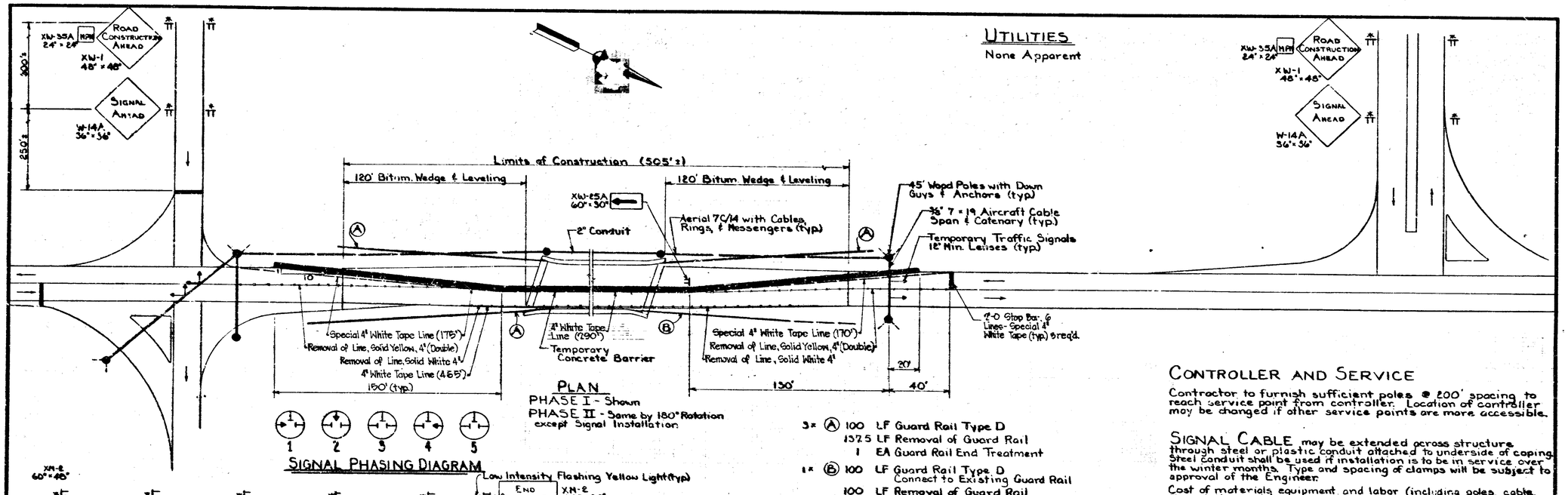
RECOMMENDED FOR APPROVAL 3-8-82
William B. Abbott
ENGINEER OF BRIDGE DESIGN, INDIANA DEPARTMENT OF HIGHWAYS

WILLIAM B. ABBOTT REGISTERED No. 8643 STATE OF INDIANA PROFESSIONAL ENGINEER

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
APPROVED:
DIVISION ADMINISTRATOR DATE

BRIDGE FILE:- 109-33-5139A, I-70-115-5140A & JA, & I-70-116-23608

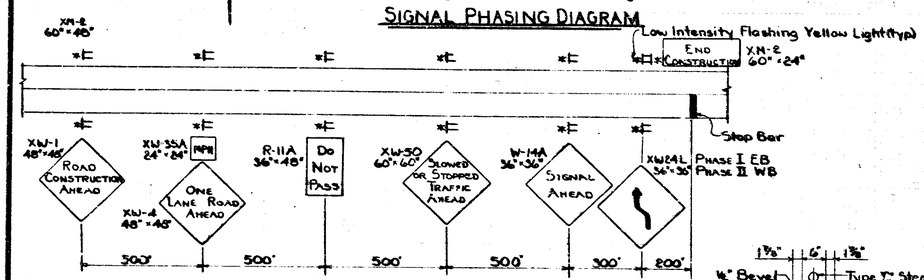
TP100



PLAN

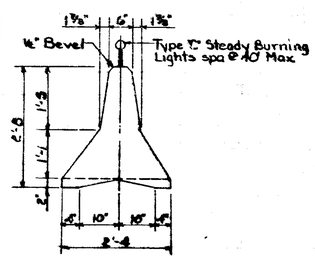
PHASE I - Shown
PHASE II - Same by 180° Rotation except Signal Installation

SIGNAL PHASING DIAGRAM



TYPICAL SIGNING

No Scale



TEMPORARY CONCRETE BARRIER

No Scale

The configuration of the concrete barrier may be as shown in the above sketch or as detailed on Rd. Std. CB 2.

See the Special Provisions.

UTILITIES

None Apparent

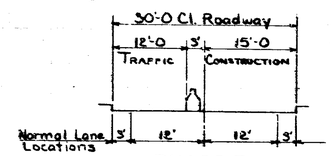
3 × Ⓐ 100 LF Guard Rail Type D
137.5 LF Removal of Guard Rail
1 EA Guard Rail End Treatment

1 × Ⓑ 100 LF Guard Rail Type D Connect to Existing Guard Rail
100 LF Removal of Guard Rail

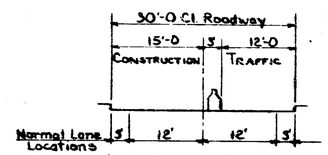
GUARD RAIL SUMMARY

400 LF Guard Rail Type D
512.5 LF Removal of Guard Rail
3 EA Guard Rail End Treatment

NOTE: Placement of bituminous wedging shall be done while traffic is controlled by the use of flagmen.



PHASE I



PHASE II

No Scale

NOTE: For Traffic Maintenance Legend, see Sheet 4.

CONTROLLER AND SERVICE

Contractor to furnish sufficient poles @ 200' spacing to reach service point from controller. Location of controller may be changed if other service points are more accessible.

SIGNAL CABLE may be extended across structure through steel or plastic conduit attached to underside of coping. Steel Conduit shall be used if installation is to be in service over the winter months. Type and spacing of clamps will be subject to approval of the Engineer.

Cost of materials, equipment, and labor (including poles, cable, 2" conduit, signal equipment and hardware) needed to install, operate, and remove the traffic signal system shall be included in the pay item "Temporary Traffic Signals".

NOTE: Signal equipment may be new or used. If signal equipment is used it must be in proper operating condition and meet the approval of the Engineer.

All signal equipment is to remain the property of the Contractor.

ESTIMATED QUANTITIES

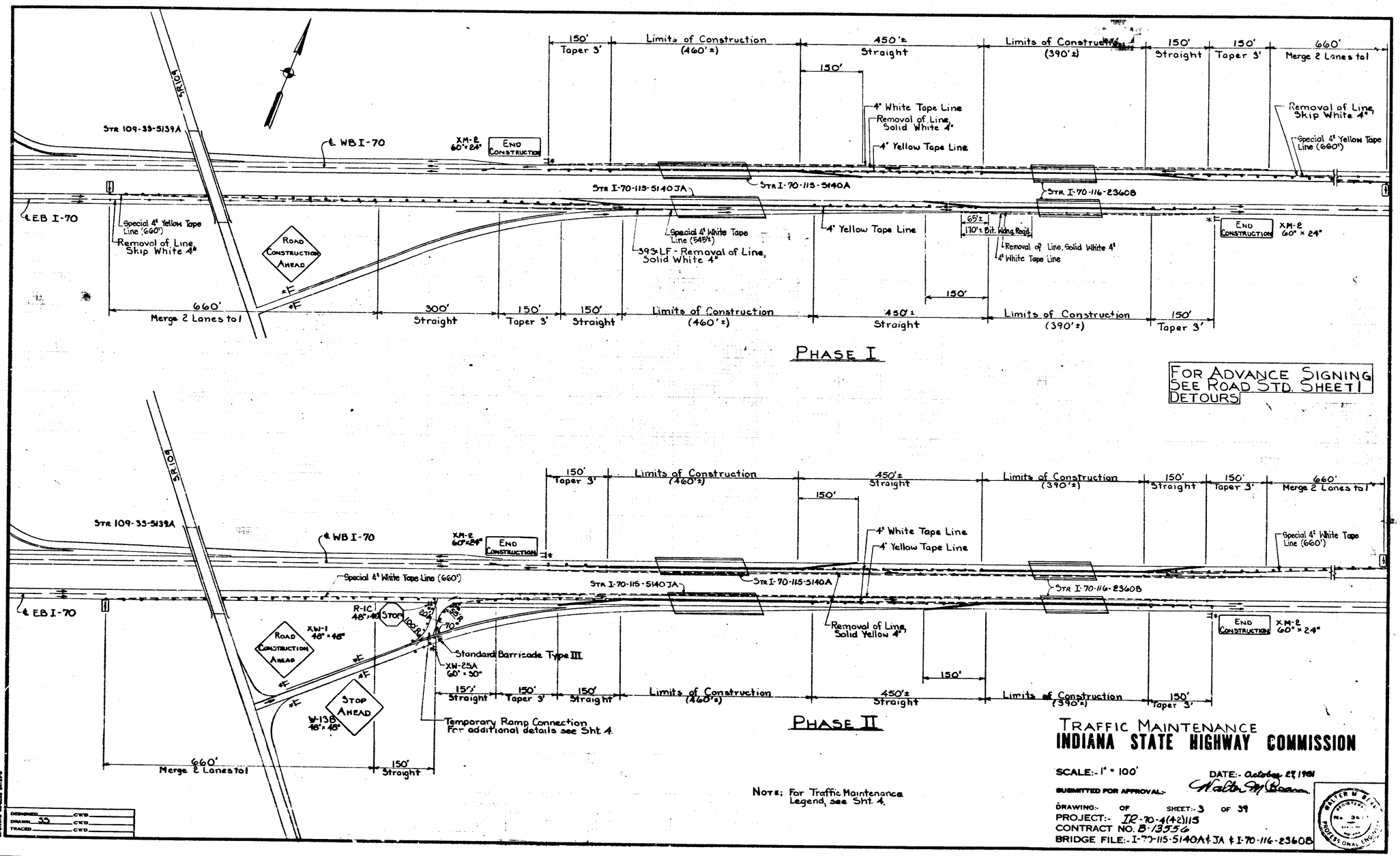
1	LS	Maintaining Traffic
1	LS	Temporary Traffic Signals
600	LF	Temporary Concrete Barrier
35	EA	Construction Signs (Type A)
8	EA	Construction Signs (Type B)
1510	LF	Temporary Pavement Marking Tape
1240	LF	Line, Solid Yellow 4"
1010	LF	Line, Solid White 4"
560	LF	Removal of Line, Solid Yellow 4"
465	LF	Removal of Line, Solid White 4"
966	LF	Special Temporary Pavement Marking Tape

TRAFFIC MAINTENANCE
INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1" = 30' Unless Noted DATE:- October 27, 1961
SUBMITTED FOR APPROVAL:- Walter M. Weaver
DRAWING:- OF SHEET:- 2 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- 109-33-5139A

DESIGNED ____ CKD ____
DRAWN SS CKD ____
TRACED ____ CKD ____

BRUNING 40-5233 24139-2



TRAFFIC MAINTENANCE

INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1" = 100'

DATE:- October 27, 1981

SUBMITTED FOR APPROVAL:- Walter M. Beam

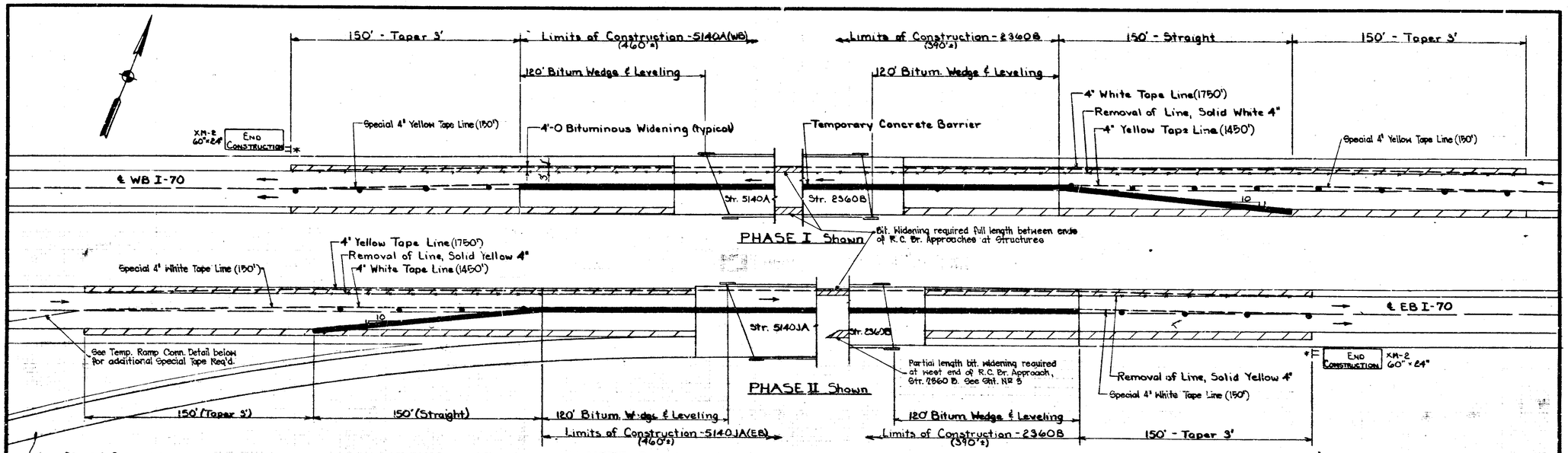
DRAWING:- OF SHEET:- 3 OF 39

PROJECT:- IR-70-4(42)115

CONTRACT NO. B-13556

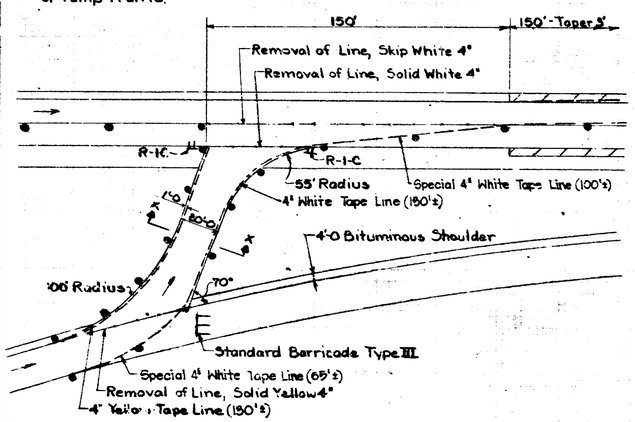
BRIDGE FILE:- I-70-115-5140A & JA & I-70-116-2360B

WALTER M. BEAM REGISTERED No. 36 PROFESSIONAL ENGINEER

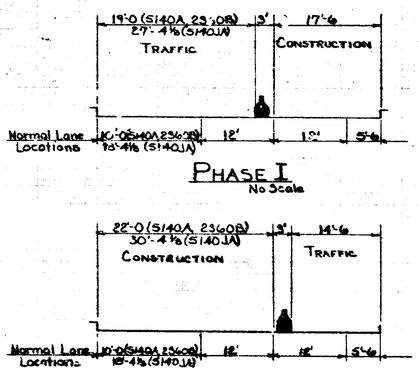


NOTE: Bituminous Widening to be continuous between structures on WB lanes and median side of EB lanes, and to extend 325'± east of Structure I-70-116-2360B on shoulder side of EB lanes.

See Sht. 3 for other details between structures.

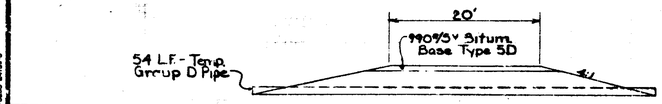


TEMPORARY RAMP CONNECTION

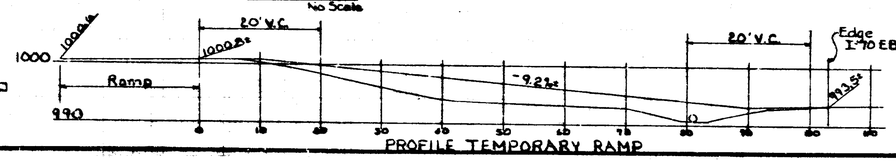


PHASE I
No Scale

PHASE II
No Scale



SECTION X-X
Scale 1/8" = 1'-0



PROFILE TEMPORARY RAMP

ESTIMATED QUANTITIES

5140A & JA	2360B	
		ILS - Maintaining Traffic
1220 LF	1080 LF	Temporary Concrete Barrier
16 EA	9 EA	Construction Signs (Type A)
2 EA	2 EA	Construction Signs (Type B)
1 EA		Standard Barricades (Type III)
6640 LF	6120 LF	Temporary Pavement Marking Tape
1890 LF	1680 LF	Line, Solid Yellow 4"
2363 LF	1680 LF	Line, Solid White 4"
695 LF	585 LF	Thermoplastic Line, Skip White 5"
970 LF	900 LF	Removal of Line, Solid Yellow 4"
1283 LF	1520 LF	Removal of Line, Solid White 4"
304 LF	248 LF	Removal of Thermoplastic Line, Skip White 5"
Φ500 T	Φ530 T	Bituminous Widening
* 1 LS		Temporary Ramp Connection
Φ147 T		Bituminous Material for Temp. Ramp Conn.
54 LF		Temporary Pipe Group D (0.064" CS) 15"
2680 LF	1920 LF	Special Temporary Pavement Marking Tape

* Includes construction, removal, and restoration, including approximately 270 CY of borrow and 810 SY of Mulched Seeding "RU".

LEGEND

- Metal Drum or Type I or II Barricades with Type C Steady Burning Light
- * Low Intensity Flashing Yellow Light Type "A"
- -- Temporary Pavement Marking Tape
- ←→ Line Removal
- ▨ Bituminous Widening to remain in place

For detail of Temporary Concrete Barrier see Sheet 2.

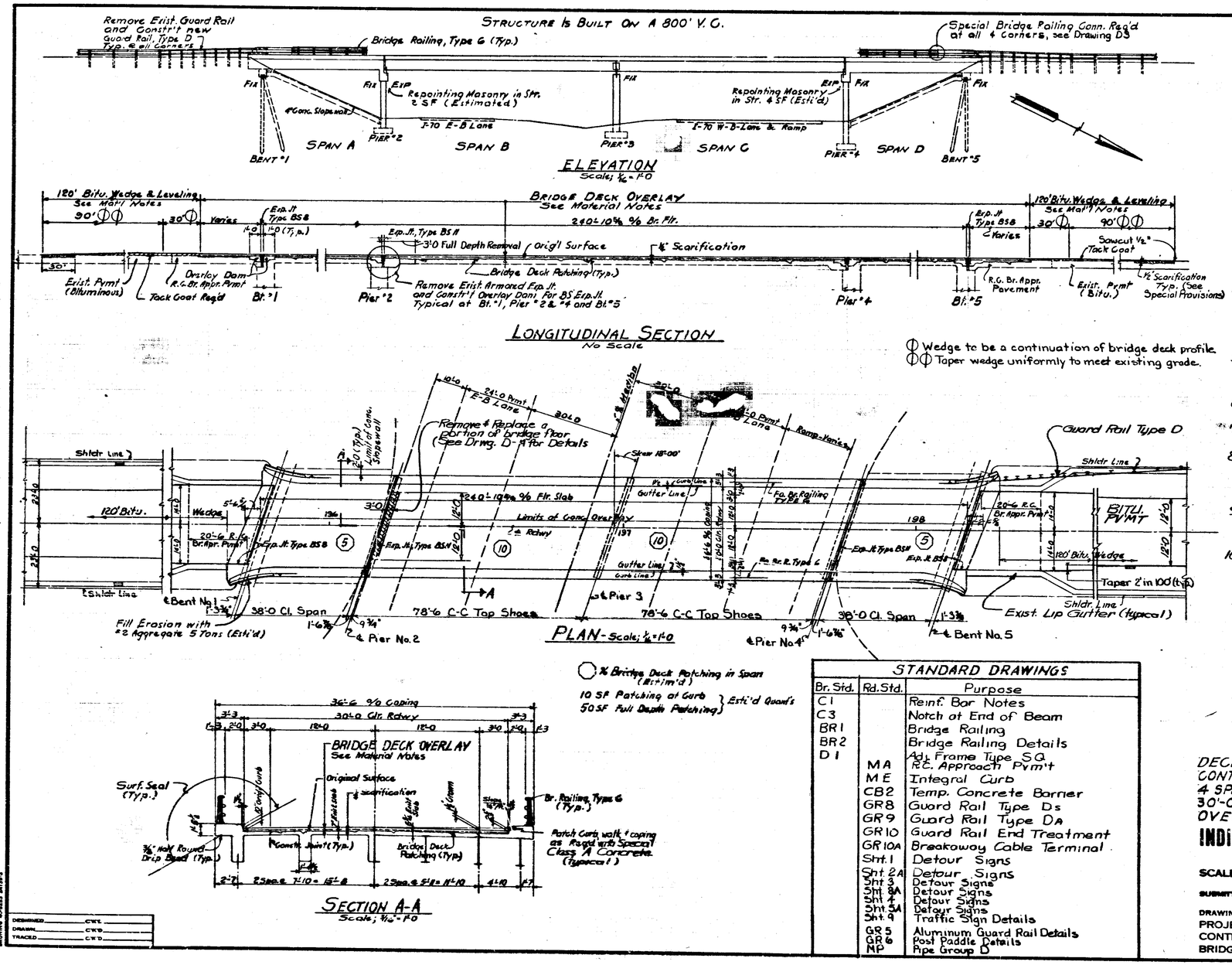
Φ Included in the [illegible] item "Bituminous [illegible] for Approaches"

TRAFFIC MAINTENANCE
INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1" = 30' Unless Noted
DATE:- October 27, 1971
SUBMITTED FOR APPROVAL:-
DRAWING:- OF SHEET:- 4 OF 39
PROJECT:- IR-70-4(142)115
CONTRACT NO. B-13556
BRIDGE FILE:- I-70-115-5140A & JA & I-70-116-2360B

DESIGNED SS CK'D
DRAWN CK'D
TRACED CK'D

DRAWING 40-5253 24139-3



GENERAL NOTES

1. Plans for the existing structures are on file in the Central Office as Bridge Files
109-K-5139
I-70-115-5140 & 5140 JA
I-70-116-2360 & 2360A
and are available on request.

2. 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 the new part to the old.

3. 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 doubt as to the quality of the concrete, removal shall continue until PERFECTLY SOUND CONCRETE is exposed.
All existing non-full depth patches are to be removed

4. The boundries of full depth removal areas shall be saw cut.
All saw cuts for full depth removals shall be made to a minimum depth of 1 inch below the original surface or to the top of reinforcing if cover is less than 1 inch.

5. Concrete in patches for deteriorated deck areas below scarified depth to be Mod. P.C. Concrete or Special Class A Concrete. See Special Provisions.

6. See Special Provisions for composition of concrete in Overlay Dams.

7. Concrete in superstructure to be Class A.

8. All bituminous material required in this contract to be included in the pay item "Bituminous Mixture for Approaches" except Tack Coat will be paid for seperately in Square Yards.

9. The length and Quantity of bituminous wedging shown on the plans is based on the thickness of the Mod. P.C.C. Overlay. See the Special Provisions.

10. Seal all joints and cracks in the approach pavement with hot poured joint sealer before placing the bituminous wedge. The cost of sealing is to be included in the cost of other items in the Contract.

STANDARD DRAWINGS

Br. Std.	Rd. Std.	Purpose
C1		Reinf. Bar Notes
C3		Notch at End of Beam
BR1		Bridge Railing
BR2		Bridge Railing Details
D1		Adj. Frame Type SQ
	MA	R.C. Approach Pvm't
	ME	Integral Curb
	CB2	Temp. Concrete Barrier
	GR8	Guard Rail Type Ds
	GR9	Guard Rail Type DA
	GR10	Guard Rail End Treatment
	GR10A	Breakaway Cable Terminal
	Sht. 1	Detour Signs
	Sht. 2A	Detour Signs
	Sht. 3	Detour Signs
	Sht. 3A	Detour Signs
	Sht. 4	Detour Signs
	Sht. 5A	Detour Signs
	Sht. 9	Traffic Sign Details
	GR5	Aluminum Guard Rail Details
	GR6	Post Paddle Details
	MP	Pipe Group D

GENERAL PLAN

DECK RECONSTRUCTION AND OVERLAY
CONTINUOUS STEEL BEAM & R.C. GIRDER BRIDGE
4 SPANS; 38'-0 Clr., 78'-6, 78'-6 & 38'-0 Clr. SKEW 18°00' Rt.
30'-0 CLEAR RDWY, 2-2'-0 CURBS
OVER I-70 ON S.R. 109

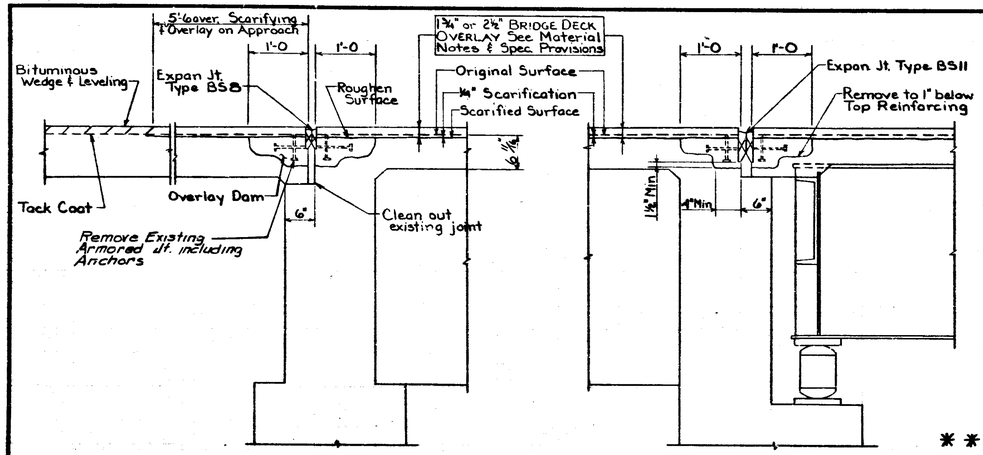
INDIANA STATE HIGHWAY COMMISSION

HENRY COUNTY

SCALE:- As Shown
DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- Walter M. Beam
DRAWING:- D1 OF 13 SHEET:- 5 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- 109-33-5139A

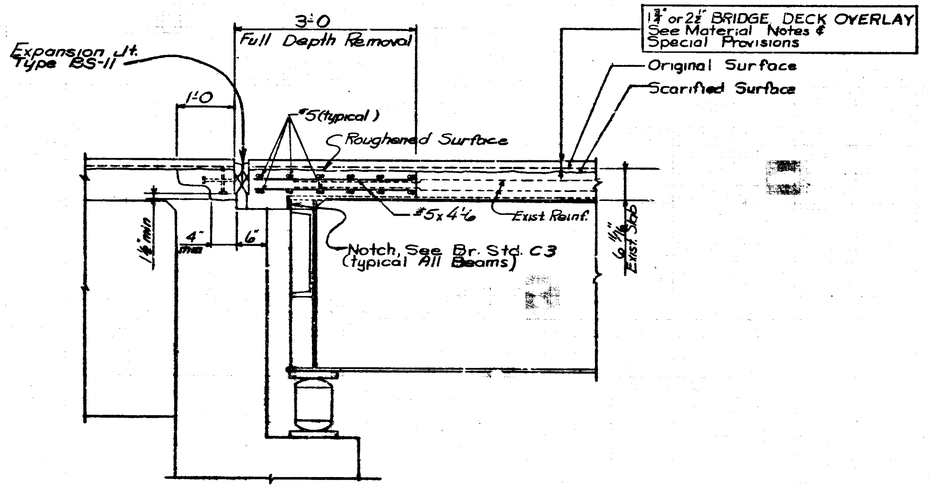
WALTER M. BEAM PE No. 3871 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED ____ CWB
DRAWN ____ CWD
TRACED ____ CWD



BENTS 1 & 5

PIER 4



PIER 2

TRAFFIC PROCEDURE

(109-33-5139 A)

1. Construct bituminous widening and erect constr. signs and automatic traffic signals.
2. Close one lane and maintain alternate one lane traffic with automatic traffic signals.

PHASE - I

A. MAINTAIN TRAFFIC on East Part of Bridge.
B. CONSTRUCTION: Complete Construction on West Part of Bridge and Approaches.

PHASE II

A. MAINTAIN TRAFFIC on West Part of Bridge.
B. CONSTRUCTION: Complete Construction on East Part of Bridge and Approaches.

MATERIAL NOTES

BRIDGE DECK OVERLAY
1¾" Modified Portland Cement Concrete Overlay
OR
2½" Dense Portland Cement Concrete Overlay
Includes ¼" Scarifying (See the Special Provisions

** BITUMINOUS WEDGE and LEVELING
110#/Sy Bituminous Surface Type 11 B
OVER
Variable depth Bituminous Binder or Bitum. Base.

TEMPORARY RAMP CONNECTION
990#/Sy Bituminous Base Type 5D

BITUMINOUS WIDENING
990#/Sy Bituminous Base Type 5D
(Str's 5140 A & JA, and 2360 B)

** The maximum depth of Bituminous Surface Type 11 B shall not exceed 1½".
At all locations where total wedge thickness will exceed 1½", bituminous binder or bituminous base shall be placed as a first course to within one inch of finished grade.

TRAFFIC PROCEDURE

(I-70-115-5140 A & JA)
(I-70-116-2360 B)

1. Construct bituminous widening and other work to provide for Traffic on Right Lane

PHASE - I

A. Close Left Lane (adjacent to median) and channel traffic on Right Lane in accordance with details.
B. Complete all construction on Left Lane, Median, and median side Bridge Rails, including bituminous widening, Bridge Deck Overlay, bituminous wedging, and Temporary Ramp Connection.

PHASE II

A. Close Right Lane and channel traffic on Left Lane in accordance with details.
B. Complete all construction on Right Lane, shoulders, and ramps, including bridge deck overlay and bituminous wedging.

CONSTRUCTION PROCEDURE

1. Remove the slab full depth and concrete for overlay dams as shown on details.
2. Scarify the remaining bridge floor and portions of the R.C. Bridge Approach to a depth of ¼".
Remove scarified dust.
3. Remove all existing deck patches and all deteriorated concrete around reinforcing and along curbs inaccessible to scarifying equipment by handchipping and cleaning in accordance with the Special Provisions.
4. Repour the full depth slab removal areas and Overlay Dams to level of scarification as shown on plans.
5. Blast and clean all repoured deck areas and all removal and scarified areas.
6. Place the Bridge Deck Patching and Bridge Deck Overlay as shown on the Plans and in accordance with the Special Provisions.
Install Expansion Joints.
7. Str. 109-33-5139 A Only
Clean and seal all concrete area from gutter to drip bead (includes curbs, walks, concrete railing, and coping) as shown on plans.
Str's. I-70-115-5140 A & JA,
Clean and seal top of exposed Overlay Dams.
8. Construct Bituminous Wedges.

The numbers do not necessarily indicate the sequence of operations.

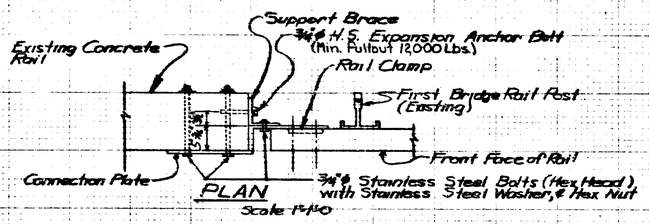
Existing reinforcing to remain in place and extend into repoured concrete shall be cleaned and straightened.

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" 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.

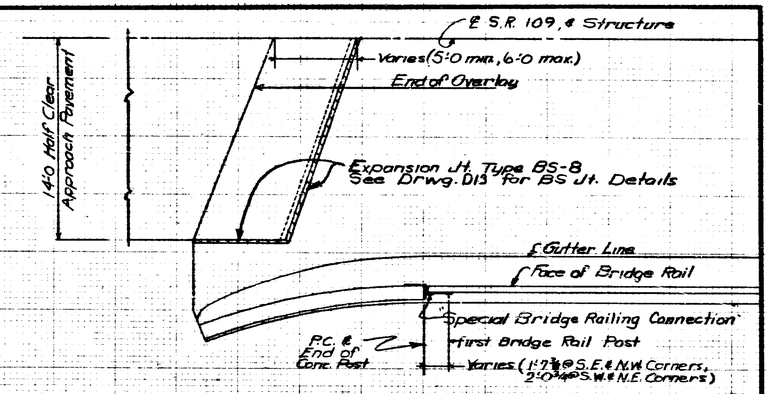
DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- 1" = 1'-0 DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- Walter M. Bean
DRAWING:- D-2 OF 13 SHEET:- 6 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- 109-33-5139A

DESIGNED ____ CK'D ____
DRAWN SS CK'D ____
TRACED ____ CK'D ____

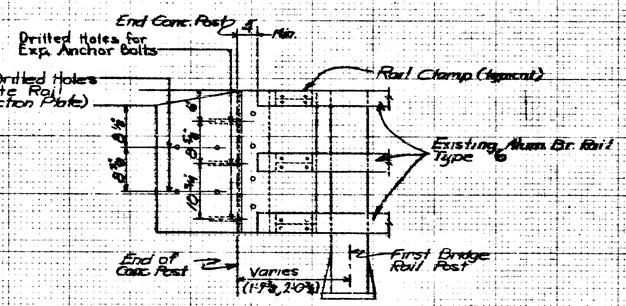


PLAN
Scale 1"=1'-0

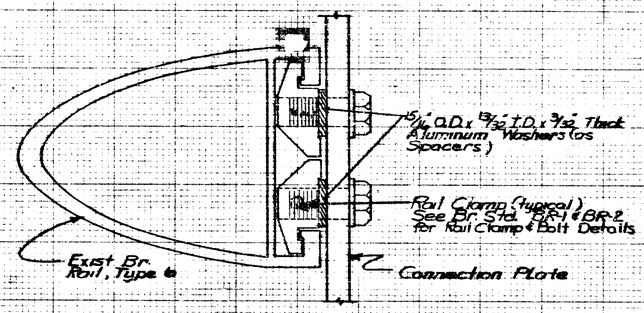


CORNER DETAIL
Scale: 1/4"=1'-0

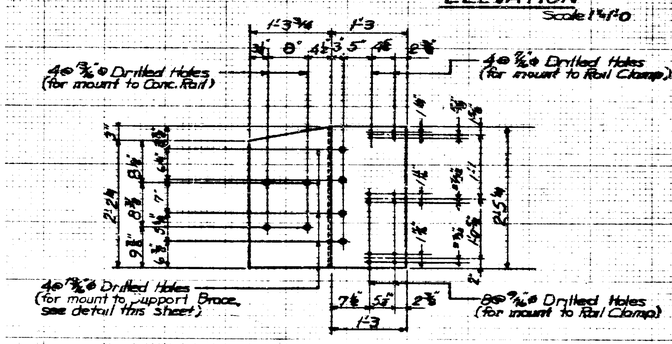
NOTE: For Expansion Jt. BS-11 at Piers #2 & #4 See Drwg. D-7



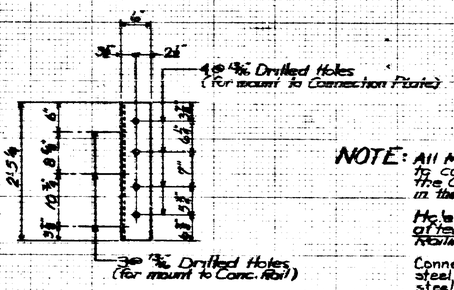
ELEVATION
Scale 1"=1'-0



TYPICAL SECTION
Scale: 1/4"



CONNECTION PLATE
Pl. 3/8" x 36" x 2'-5 1/4"
Scale: 1"=1'-0



SUPPORT BRACE
<6"x6"x1/2"
Scale 1"=1'-0

NOTE: All Materials and Labor necessary to connect the Bridge Railing to the Concrete Posts shall be included in the Pay Item "Special Bridge Railing Connection".

Holes in Concrete Post to be drilled after Connection Plate is bolted to Railing, Leveled, and Aligned.

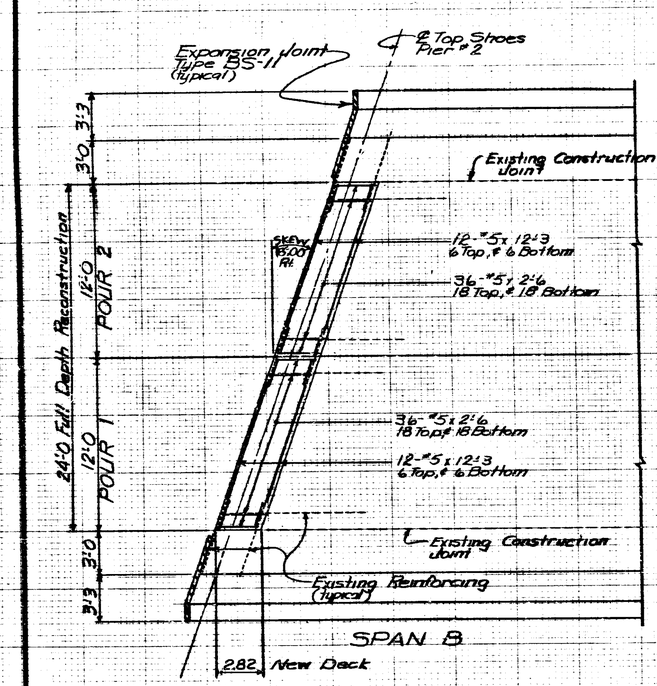
Connection Plate and Support Brace to be A-36 steel. All materials not aluminum or stainless steel to be galvanized in accordance with Articles 909.10 & 909.11 of the Specifications

DETAILS
INDIANA STATE HIGHWAY COMMISSION

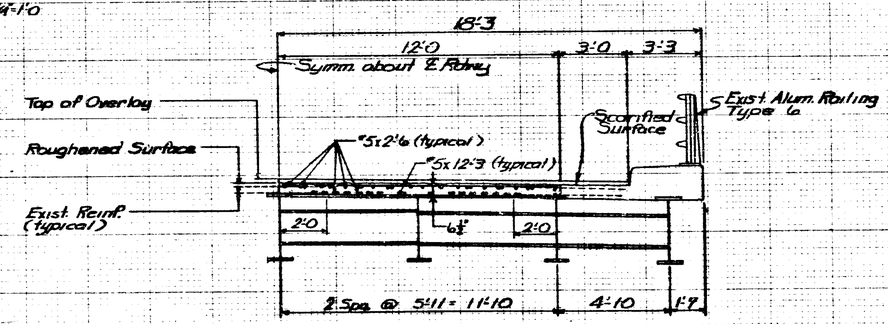
SCALE:- As Noted
DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- Walter H. Olson

DRAWING D3 OF 13 SHEET:- 7 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- 109-33-5139 A

DESIGNED RWH CKD.
DRAWN RWH CKD.
TRACED CKD.



PLAN Scale: 1/4"=1'-0



TYPICAL HALF SECTION Scale: 3/8"=1'-0

BILL OF MATERIALS SUPERSTRUCTURE			
Reinforcing Steel			
Size or Mark	Number of Bars	Length in ft.	Weight in lbs
#5	24	12'-3	
#5	72	2'-6	
Total Reinf. St'l			494
CONCRETE			
Pour No 1			.9 Cys
Pour No 2			.9 Cys
Total Conc. Class A in Superstructure			1.8 Cys

NOTES:

Existing Reinforcing to be cleaned, straightened, and extend 2'-0 into New Concrete and lap with New Reinforcing Steel.

See Br. Std. C1 for Reinforcing Bar Notes.

See DRW'G, D-13 for Expansion Jt. Details

SUPERSTRUCTURE DETAILS
PIER #2, SPAN B

INDIANA STATE HIGHWAY COMMISSION
HENRY COUNTY

SCALE:- As Noted DATE:- October 27, 1981

SUBMITTED FOR APPROVAL:- Walter M. Beam

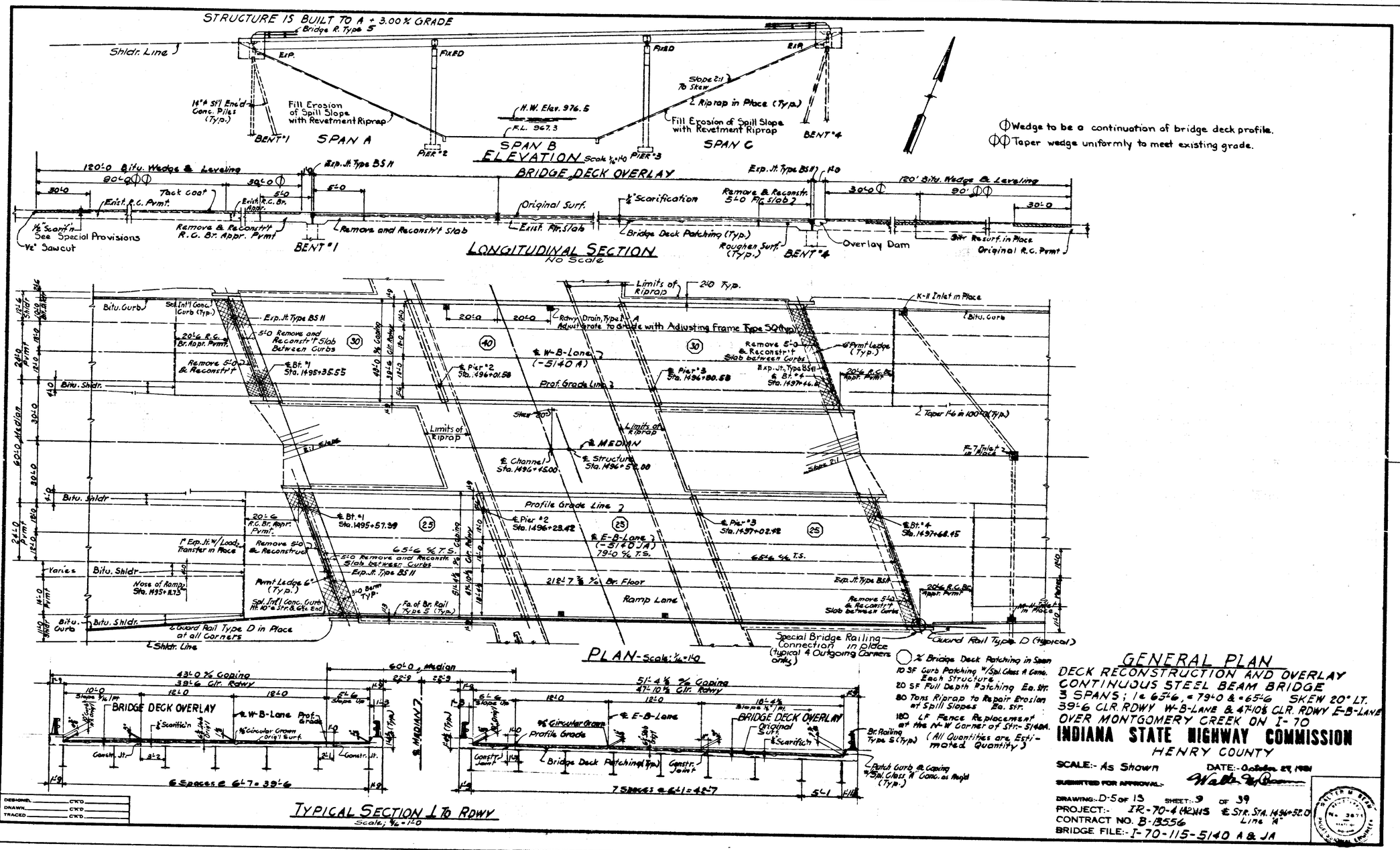
DRAWING:- D 4 OF 19 SHEET:- 8 OF 39

PROJECT:- IR-70-4(42)115

CONTRACT NO. B-13556

BRIDGE FILE:- 109-33-5139 A

DESIGNED RWH CK'D
DRAWN RWH CK'D
TRACED CK'D



GENERAL PLAN

DECK RECONSTRUCTION AND OVERLAY
CONTINUOUS STEEL BEAM BRIDGE
3 SPANS; 1@ 65'-6, @ 79'-0 & @ 65'-6 SKEW 20° LT.
39'-6 CLR. RDWY W-B-LANE & 47'-10 1/8" CLR. RDWY E-B-LANE
OVER MONTGOMERY CREEK ON I-70

INDIANA STATE HIGHWAY COMMISSION

HENRY COUNTY

SCALE:- As Shown DATE:- October 29, 1981

SUBMITTED FOR APPROVAL:- Walter M. Brown

DRAWING:- D-5 OF 13 SHEET:- 9 OF 39

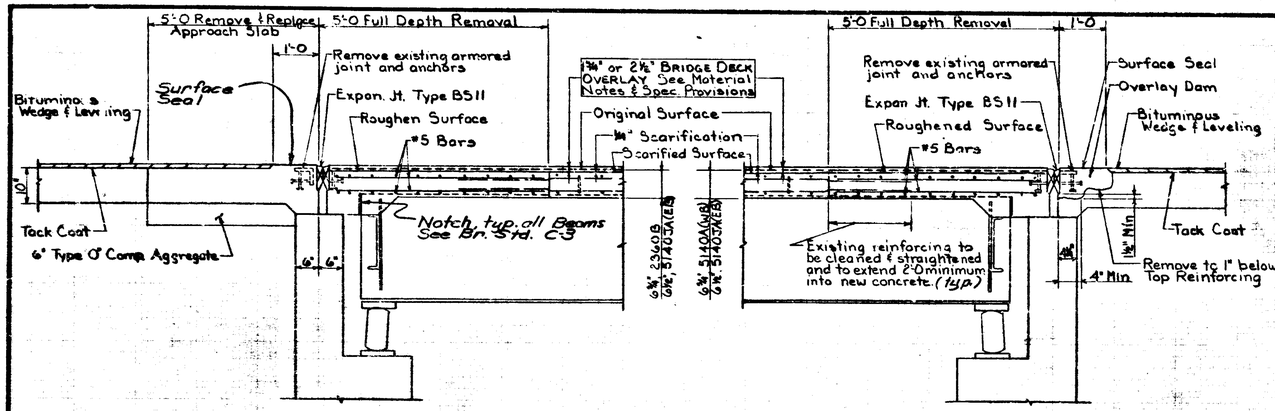
PROJECT:- IR-70-4 (42) 115 ℄ STR. STA. 1496+52.0 Line A

CONTRACT NO. B-13556

BRIDGE FILE:- I-70-115-5140 A & JA

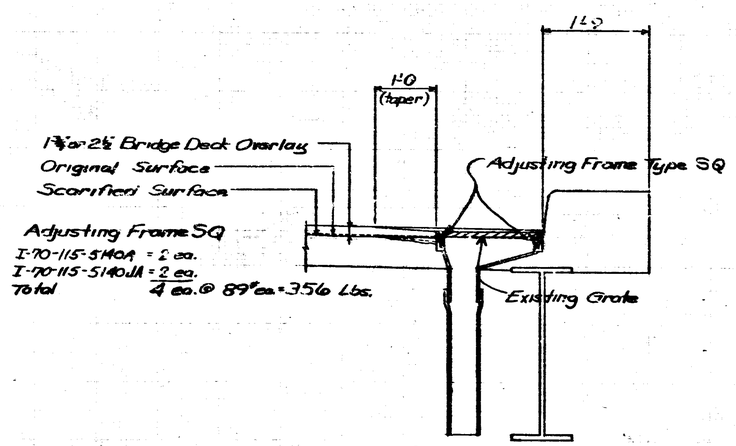
DESIGNED ____ CK'D ____
DRAWN ____ CK'D ____
TRACED ____ CK'D ____

BRUNING 40 5253 24139-3



BENTS 1 & 4 2360B & BENT 1 5140A & JA

BENT 4 5140 A & JA



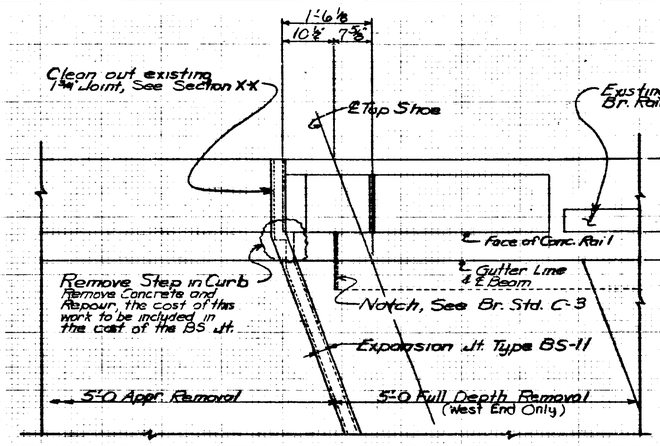
Adjusting Frame SQ
I-70-115-5140A = 2 ea.
I-70-115-5140JA = 2 ea.
Total 4 ea. @ 89# ea. = 356 Lbs.

RDW'Y DRAIN DETAIL
Scale 1"=1'-0

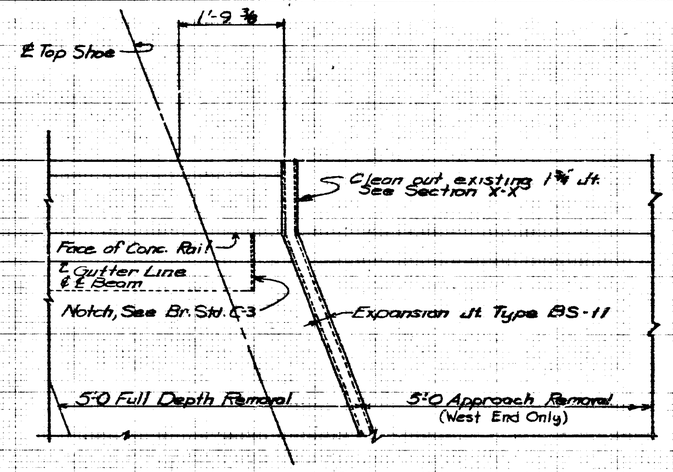
DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- ¾" = 1'-0 DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- Walter M. Dean
DRAWING:- D6 OF 13 SHEET:- 10 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- I-70-115-5140A & JA & I-70-116-2360B

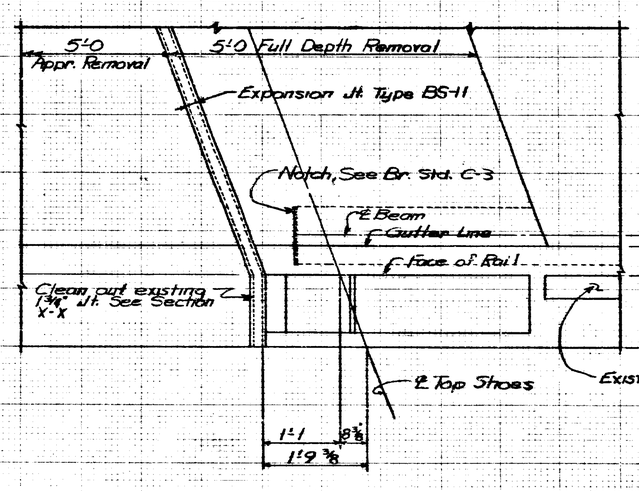
DESIGNED ____ CK'D ____
DRAWN SS CK'D ____
TRACED ____ CK'D ____



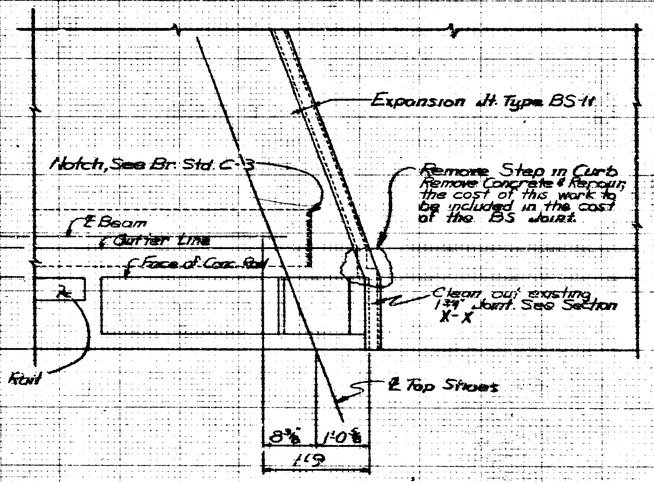
CORNER DETAIL
N.W. & S.E. Corner 5140 A (W.B.)
N.W. Corner 5140 JA (E.B.)



CORNER DETAIL
N.E. & S.W. Corner 5140 A (W.B.)
N.E. Corner 5140 JA (E.B.)



CORNER DETAIL
S.W. Corner 5140 JA (E.B.)



CORNER DETAIL
S.E. Corner 5140 JA (E.B.)
Step Removal on Str. 109-33-5139A Piers #2 & #4 Typical

NOTE: See Drwg. D-13 for BS Joint Details, and Section X-X

CORNER DETAIL

INDIANA STATE HIGHWAY COMMISSION

SCALE: 1"=1'-0 DATE: October 27, 1981

SUBMITTED FOR APPROVAL: Walter M. Bean

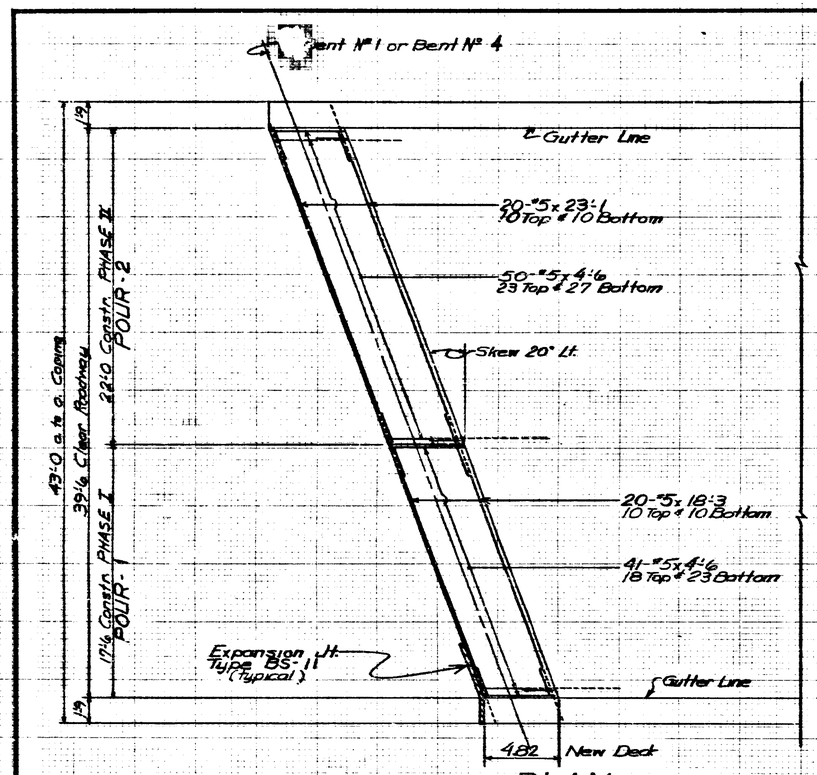
DRAWING: D7 OF 13 SHEET: 11 OF 39

PROJECT: IR-70-4(42)115

CONTRACT NO. B-13556

BRIDGE FILE: I-70-115-5140 A & JA

DESIGNED ____ CK'D ____
DRAWN ____ CK'D ____
TRACED ____ CK'D ____



PLAN. Bent #1 Shown,
Scale 1/4"=1'-0 Bent #4 Opposite Hand

BILL OF MATERIALS
SUPERSTRUCTURE
Bent Nº 1

REINFORCING STEEL			
Size or Mark	Number of Bars	Length ft.	Weight Lbs.
5	20	23'-1	
5	20	18'-3	
5	91	4'-6	
Total Reinf. St'l			1289

CONCRETE	CYS
Pour #1	2.1
Pour #2	2.7
Total Conc. Class A in Suprstr.	4.8

TOTALS FOR ONE
2 - REQUIRED

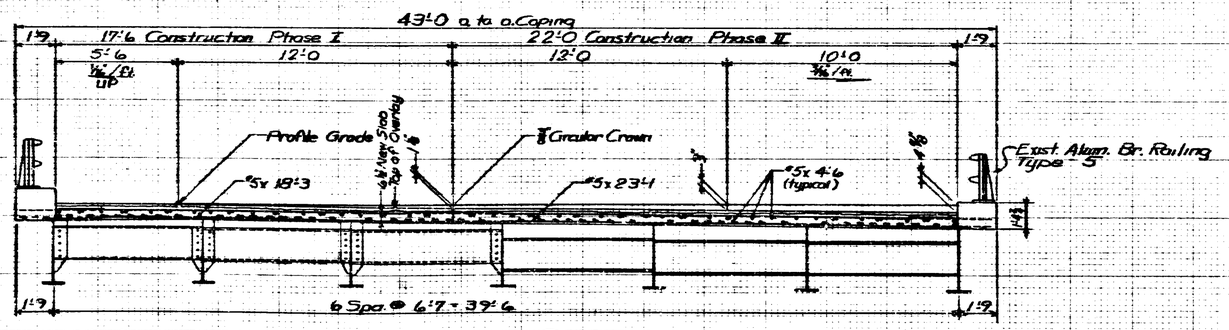
NOTES:

Existing Reinforcing to be cleaned, straightened, and extend 24" into New Concrete, and Lap with New Reinf. Stl.

See Br. Std. C1 for Reinf. Bar Note.

See DRW'G, D13 for Exp. Jt. Details

See DRW'G, D11 for Corner Details.



TYPICAL SECTION Scale 3/8"=1'-0

SUPERSTRUCTURE DETAILS
Bent Nº 1 Shown, Bent Nº 4 Opposite Hand

INDIANA STATE HIGHWAY COMMISSION

HENRY COUNTY

SCALE:- As Noted DATE:- October 27, 1961

SUBMITTED FOR APPROVAL:

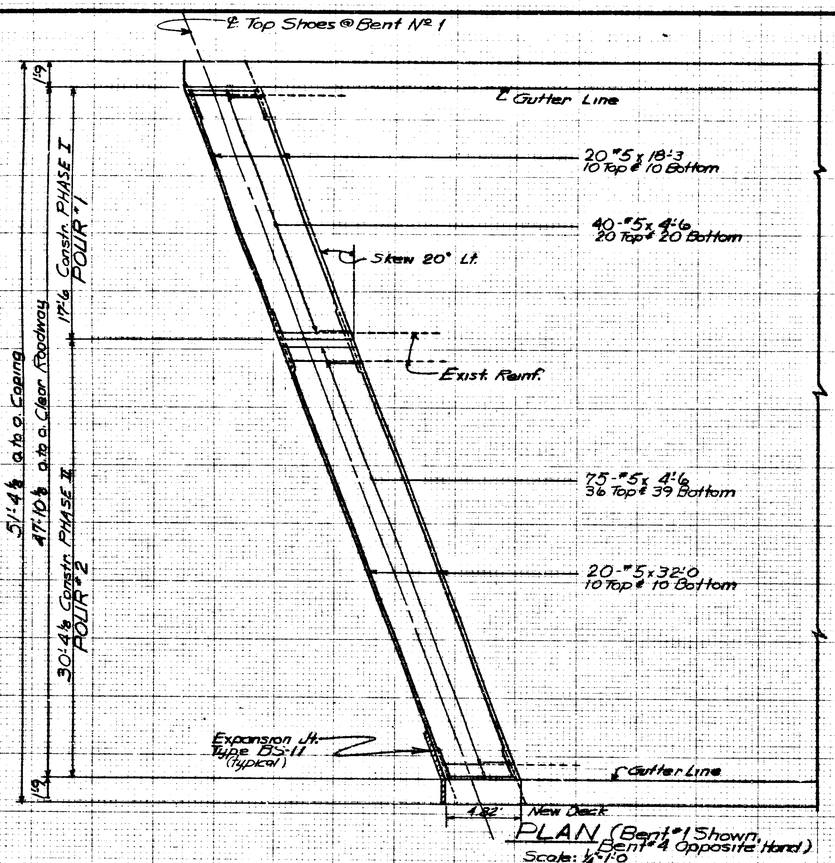
DRAWING: D8 OF 13 SHEET:- 12 OF 34

PROJECT:- IR-70-4(42)115

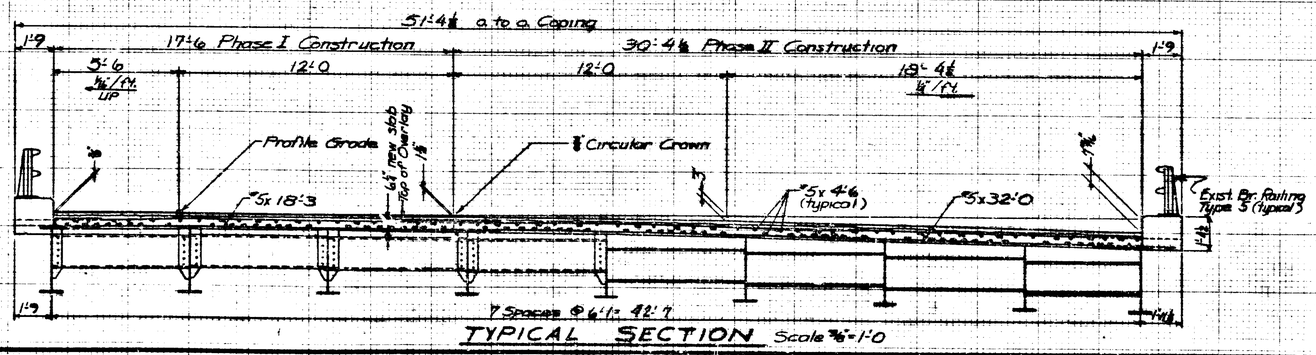
CONTRACT NO. B-13556

BRIDGE FILE:- I-70-115-5140 A

DESIGNED CKD
DRAWN CKD
TRACED CKD



PLAN (Bent #1 Shown, Bent #4 Opposite Hand)
Scale: ¼"=1'-0



TYPICAL SECTION Scale ⅜"=1'-0

BILL OF MATERIALS
SUPERSTRUCTURE
BENT # 1

REINFORCING STEEL			
Size or Mark	Number of Bars	Length in ft.	Weight in Lbs.
#5	20	32'-0	
#5	20	18'-3	
#5	115	4'-6	
Total Reinf. St'l			1588

CONCRETE	CYs
Pour #1	2.0
Pour #2	3.6
Total Conc. Class A in Superstructure	5.6

TOTAL FOR 1-2 REQ'D

NOTES;

Existing Reinforcing to be cleaned, straightened, and extend 2'-0 into New Concrete, and Lap with New Reinf. St'l.

See Br. Std. C1 for Reinf. Bar Notes

See DRWG. D13 for Exp. Jt. Details

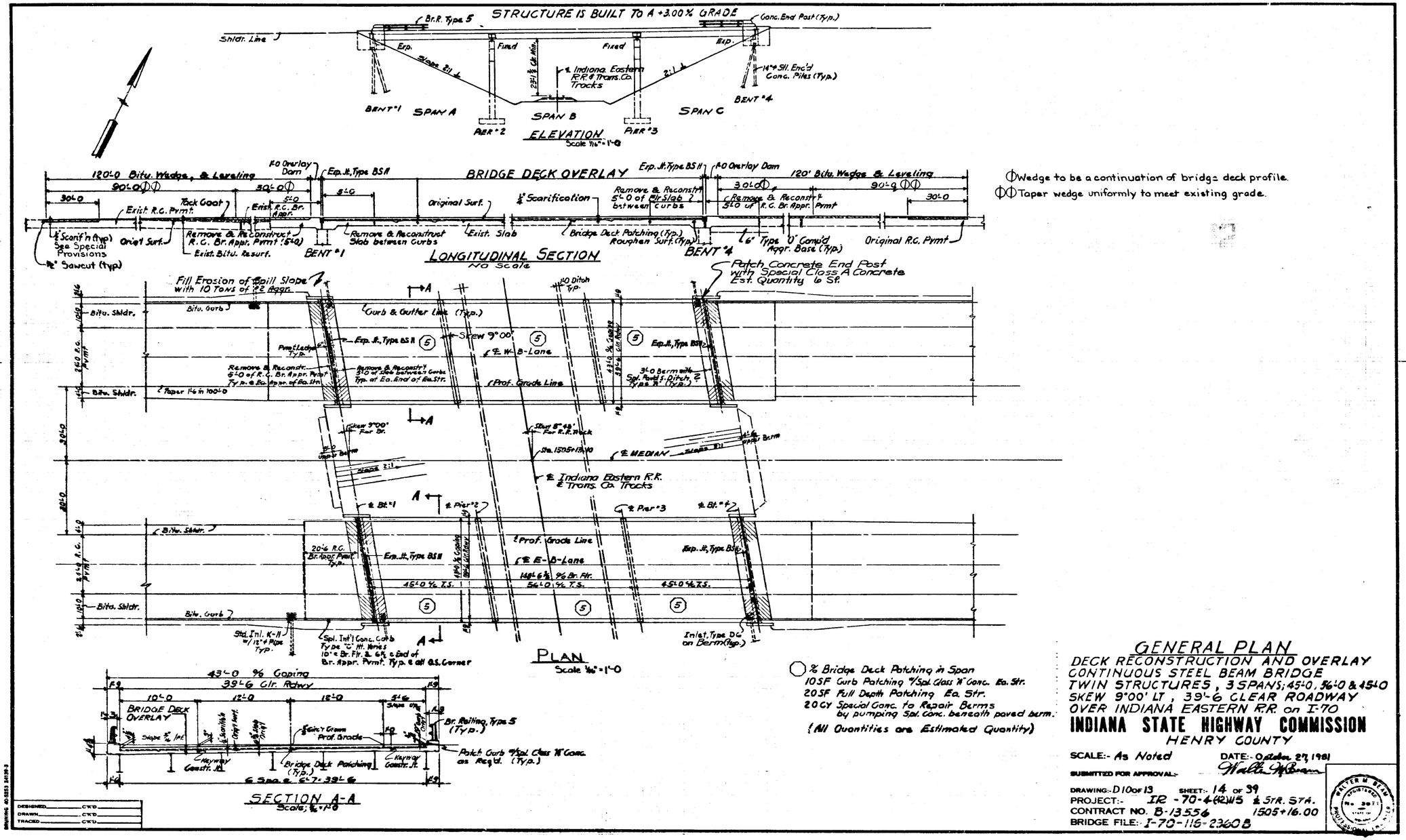
See DRWG. D7 for Corner Details

SUPERSTRUCTURE DETAILS
Bent Nº 1 Shown, Bent Nº 4 Opposite Hand

INDIANA STATE HIGHWAY COMMISSION
HENRY COUNTY

SCALE:- As Noted
DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- [signature]
DRAWING: D9 OF 13 SHEET: 13 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- I-70-115 5140 JA

DESIGNED ____ CK'D ____
DRAWN ____ CK'D ____
TRACED ____ CK'D ____



GENERAL PLAN

DECK RECONSTRUCTION AND OVERLAY
CONTINUOUS STEEL BEAM BRIDGE
TWIN STRUCTURES, 3 SPANS; 45'-0, 56'-0 & 45'-0
SKEW 9°00' LT, 39'-6 CLEAR ROADWAY
OVER INDIANA EASTERN R.R. on I-70

INDIANA STATE HIGHWAY COMMISSION

HENRY COUNTY

SCALE:- As Noted DATE:- October 27, 1981

SUBMITTED FOR APPROVAL:- Walter M. Beam

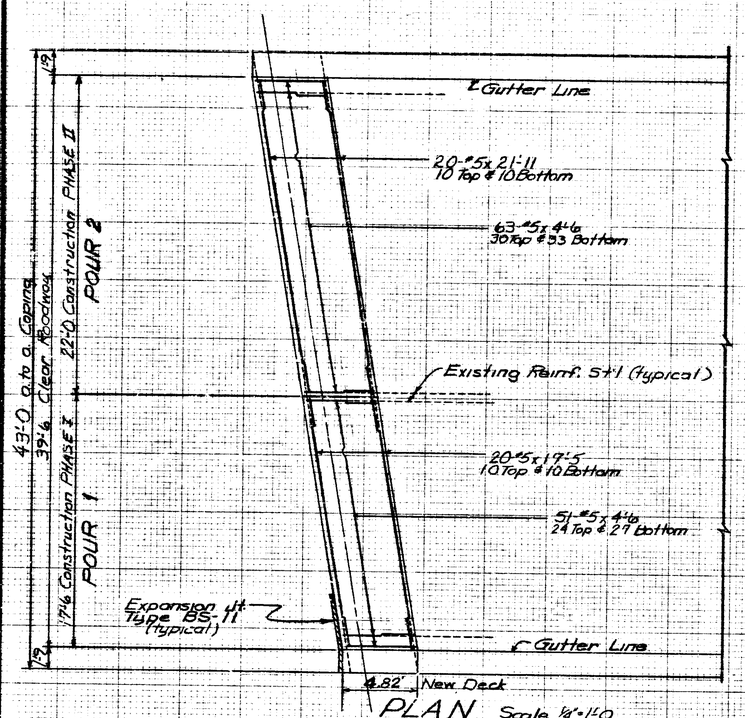
DRAWING:- D 10 of 13 SHEET:- 14 of 39

PROJECT:- IR-70-4(12)115 ℄ STR. STA. 1505+16.00

CONTRACT NO. B-13556

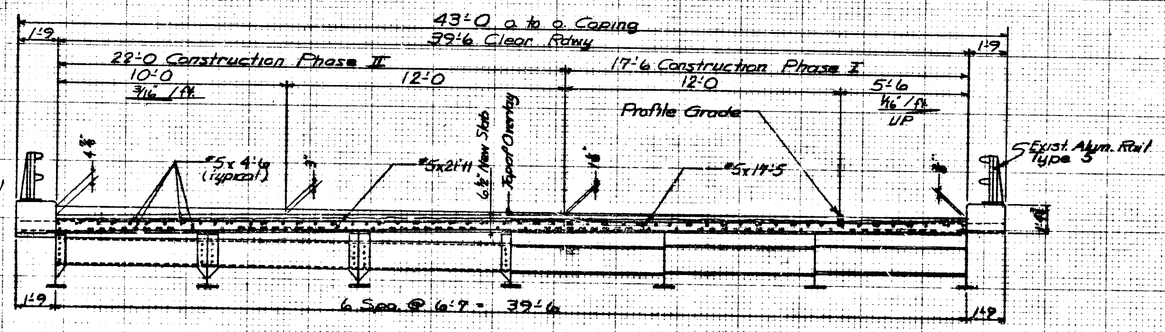
BRIDGE FILE:- I-70-116-2360B

WALTER M. BEAM REGISTERED PROFESSIONAL ENGINEER



PLAN Scale 1/4"=1'-0

Bent No 1 (W.B.L.) Shown
Bent No 4 (W.B.L.) Opposite Hand
Bent No 4 (E.B.L.) Rotate Bt. #1 (W.B.L.) 180°
Bent No 1 (E.B.L.) Rotate Bt. #4 (W.B.L.) 180°



TYPICAL SECTION Scale 3/8"=1'-0

BILL OF MATERIALS
SUPERSTRUCTURE
Bent No 1 (W.B.L.)

REINFORCING STEEL			
Size or Mark	Number of Bars	Length ft.	Weight Lbs.
5	20	21'-11	
5	20	17'-5	
5	114	4'-6	
Total Reinf. St'l			1356

CONCRETE	CYS
Pour #1	2.0
Pour #2	2.5
Total Conc. Class A in Sup'rstr.	4.5

TOTALS FOR ONE
4 REQ'D

NOTES:

Existing Reinforcing to be Cleaned, Straightened, and extend 2'-0 into new concrete to lap with New Reinforcing Steel.

See Br. Std. C1 for reinforcing bar notes

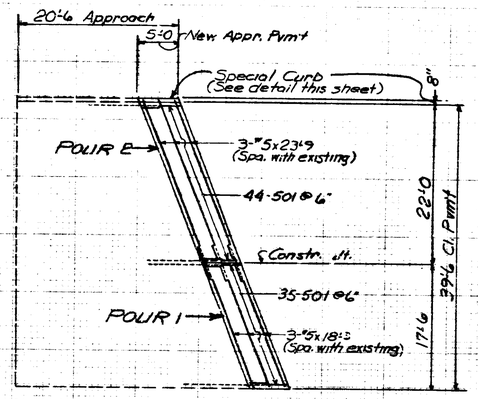
See DRW'G D13 for Expansion Joint Details.

SUPERSTRUCTURE DETAILS
BENTS #1 & 4 E.B. BENTS #1 & 4 W.B.

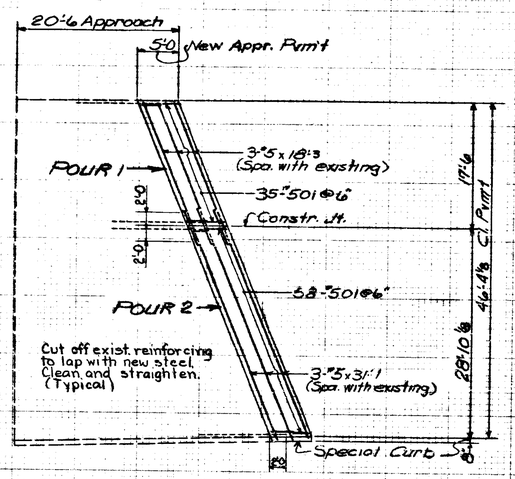
INDIANA STATE HIGHWAY COMMISSION
HENRY COUNTY

SCALE:- As Noted DATE:- October 27, 1981
SUBMITTED FOR APPROVAL: Walter M. Beam
DRAWING: D11 OF 13 SHEET: 15 OF 39
PROJECT:- IR 70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- I-70-116-2360 B

DESIGNED ____ CK'D ____
DRAWN ____ CK'D ____
TRACED ____ CK'D ____



PLAN Scale 1/8"=1'-0
I-70-115-5140 A, BENT #1



PLAN Scale 1/8"=1'-0
I-70-115-5140 JA, BENT #1

BILL OF MATERIALS
10" R.C. PVM'T
I-70-116-2360 B
Bent #1 Shown (W.B.)
Bent #4 W.B., #1 & #4 E.B. Same

REINFORCING STEEL			
Size or Mark	Number of Bars	Length (Ft.)	Weight (Lbs.)
501	79	5'-1	
5	3	22'-7	
5	3	17'-4	
Total Reinf. Steel			544
CONCRETE			
Conc. Pvm't Reinf. 10"			SY
Pour 1			9.7
Pour 2			12.2
Total			22 SY
MISCELLANEOUS			
Removal of Curb			5 LF
Removal of Pvm't			22 SY
Special Int. Curb			5 LF
6" Type "O" Comp. Aggregate Base			7.3 T.

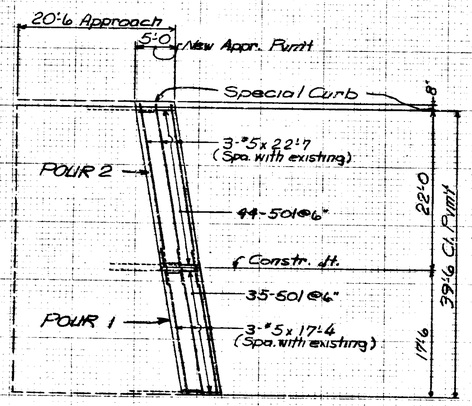
TOTALS FOR ONE
4 REQUIRED

BILL OF MATERIALS
10" R.C. PVM'T
I-70-115-5140A
Bent # 1

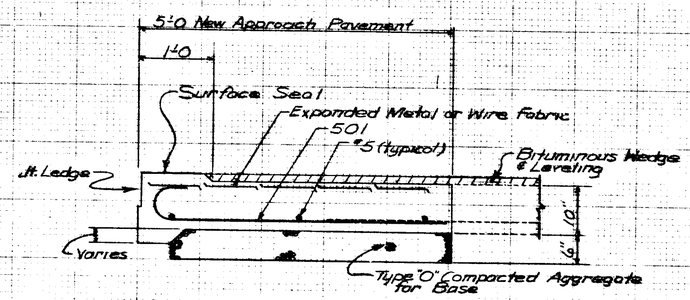
REINFORCING STEEL			
Size or Mark	Number of Bars	Length (Ft.)	Weight (Lbs.)
501	79	5'-1	
5	3	23'-9	
5	3	18'-3	
Total Reinf. Steel			550
CONCRETE			
Conc. Pvm't Reinf. 10"			SY
Pour 1			9.7
Pour 2			12.2
Total			22 SY
MISCELLANEOUS			
Removal of Curb			5 LF
Removal of Pvm't			22 SY
Special Int. Curb			5 LF.
6" Type "O" Comp. Aggregate Base			7.3 T.

BILL OF MATERIALS
10" R.C. PVM'T
I-70-115-5140 JA
Bent # 1

REINFORCING STEEL			
Size or Mark	Number of Bars	Length (Ft.)	Weight (Lbs.)
501	93	5'-1	
5	3	31'-1	
5	3	18'-3	
Total Reinf. Steel			647
CONCRETE			
Conc. Pvm't Reinf. 10"			SY
Pour 1			9.7
Pour 2			16.0
Total			26 SY
MISCELLANEOUS			
Removal of Curb			5 LF
Removal of Pvm't			26 SY
Special Int. Curb			5 LF.
6" Type "O" Comp. Aggregate Base			8.6 T.



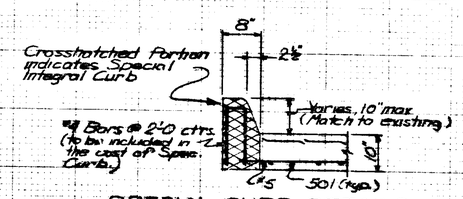
PLAN Scale 1/8"=1'-0
I-70-116-2360 B, BENT #1 W.B. (Shown)
(BENTS #4 W.B., #1, #4 E.B. Similar)



TYPICAL SECTION Scale 1"=1'-0

NOTES:

See Bridge Standard M-3 for R.C. Bridge Approach Details.
See Bridge Standard M-E for Integral Concrete Curb.
See Bridge Standard C-1 for Reinforcing Bar Notes.



SPECIAL CURB DETAILS
Scale 3/4"=1'-0

APPROACH DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- As Noted
DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:- [signature]
DRAWING:- D 12 OF 13
SHEET:- 16 OF 39
PROJECT:- IR 70-4 (42) 115
CONTRACT NO. B-13556
BRIDGE FILE:- I-70-115-5140 A & JA
I-70-116-2360 B

DESIGNED ____ CK'D ____
DRAWN Bunker CK'D ____
TRACED ____ CK'D ____

DRAWING 40-5203 24139

A. Includes the following quantities for approach scarification:
5139A 160 SY 5740A & JA 400 SY 2360B 320 SY

B. Includes full depth removal of slab, cleaning reinforcing steel, forming bottom of slab, and pouring cavity with Class "A" Concrete up to level of scarification.

C. Estimated quantity for patching concrete curbs and walks, includes concrete removal, sawcuts, cleaning reinforcing, and epoxy bonding compound.

D. Includes 500 lbs. of #5 reinforcing each str. as an undistributed quantity to replace badly corroded deck reinforcing.

E. Includes 4 Adjusting Frames Type SQ @ 89 lbs. Each

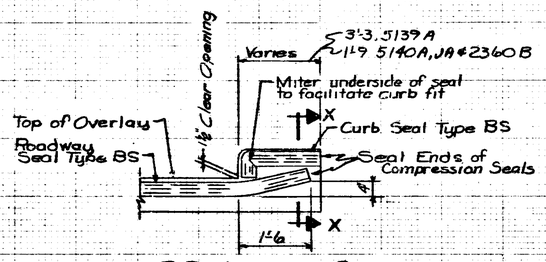
F. Includes preparation of curbs and walks.

G. Includes removal of portion of slab.

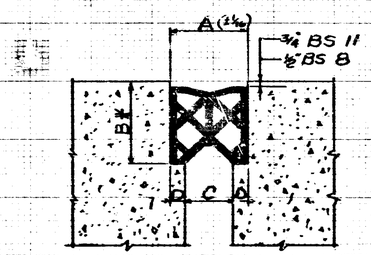
H. Includes:

	5139A	5740A & JA	2360B
Bituminous Wedge	42	138	115
Leveling for Wedge	63	207	173
Bituminous Widening		501	530
Temp. Ramp Conn.	Ø	159	Φ
Total	105	1005	818

I. See the Special Provisions
Est. Quantity of Surface Seal: 5139A = 3493 Syt.
5140A & JA = 93 Syt.

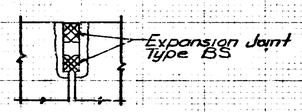


BS JOINT AT CURBS (No Scale)
Clean out and rebuild existing curb and walk joints to accomodate joint seal. Such work to be included in the cost of Exp. Jt. Type BS.



EXPANSION JT. TYPE BS
* To be determined in the field, See Special Provisions

Bridge Seal	A	B	C	D
BS 8	2"	*	1¼"±	⅜"
BS 11	3⅛"	*	2⅛"±	½"



SECTION X-X
No Scale

ESTIMATE OF QUANTITIES

	CODE	DESCRIPTION	UNIT	QUANTITY 5139A	5140A&JA	2360B	TOTAL	FUNDING * 90%	75%	All State
A	51833	Concrete Scarifying	SY	992	2367	1536	4895			
	51837	Blasting and Cleaning	SY	840	2064	1304	4208		✓	
	51843	Bridge Deck Patching	SF	589	5137	587	6313		✓	
	51842	Bridge Deck Overlay	SY	840	2064	1304	4208	✓		
	51838	Finishing and Curing	SY	840	2064	1304	4208	✓		
B		Full Depth Patching	SF	50	40	40	130		✓	
		Bridge Deck Tining	SY			1206	1206	✓		
		Overlay Dam	LF	263	93		356	✓		
C	51875	Special Class "A" Concrete	SF	10	20	26	56		✓	
	51870	Repointing Masonry in Structures	SF	6			6			✓
	51826	Surface Seal	SF							
	51001	Concrete Class "A" in Superstructure	CY	1.8	20.8	18.0	40.6		✓	
D	51030	Reinforcing Steel	LB	994	7957	8600	17545		✓	
		Bridge Deck Grooving	SY		1924		1924	✓		
E	51110	Cast Iron Grates, Basins, & Fittings	LB		356		356	✓		
F	51887	Expansion Joint Type BS8	LF	81			81	✓		
F	51890	Expansion Joint Type BS11	LF	86	212	190	488	✓		
G		Removal of Present Structure (Portions) 5140A & JA	LS		1		1		✓	
G		Removal of Present Structure (Portions) 2360B	LS			1	1		✓	
G		Removal of Present Structure (Portions) 5139A	LS	1			1		✓	
		Special Bridge Railing Connection	EA	4			4	✓		
	52515	Guard Rail Type D	LF	400			400	✓		
	52535	Removal of Guard Rail	LF	512.5			512.5	✓		
		Guard Rail End Treatment	EA	3			3	✓		
	52300	Concrete Pavement Reinforced 10"	SY		48	88	136		✓	
	52303	Removal of Pavement	SY		48	88	136		✓	
	52456	Bituminous Material for Tack Coat	SY	385	2502	1047	3934	✓		
H	52470	Bituminous Mixture for Approaches	Ton	105	1005	818	1928	✓		
		#2 Aggregate Class A, B, or C	T	5		10	15			✓
	52308	Type O Compacted Aggregate for Base (#53)	Ton		16	29	45		✓	
		Special Integral Concrete Curb	LF		10	20	30		✓	
		Removal of Curb	LF		10	20	30		✓	
		Temporary Pipe: Group D (0.064" CS) 15"	LF		54		54	✓		
		Farm Field Type Fence	LF		120		120			✓
	51375	Revetment Riprap	Ton		160		160			✓
		Special Concrete	CY			20	20			✓
I		Surface Seal (5139A)	LS	1			1		✓	
I		Surface Seal (5140A & JA)	LS		1		1		✓	
		Special Temporary Pavement Marking Tape	LF	966	2690	1920	5576			
	52640	Maintaining Traffic	LS			1	1	✓		
		Temporary Traffic Signals	LS	1			1	✓		
		Temporary Ramp Connection	LS		1		1	✓		
	52536	Temporary Concrete Barrier	LF	600	1220	1080	2900	✓		
	52340	Construction Signs (Type A)	EA	35	16	9	60	✓		
	52345	Construction Signs (Type B)	EA	8	2	2	12	✓		
	52350	Standard Barricades (Type III)	EA		1		1	✓		
	52366	Temporary Pavement Marking Tape	LF	1510	6660	6170	14340	✓		
	06714	Line, Solid Yellow 4"	LF	1190	1890	1520	4580	✓		
	06713	Line, Solid White 4"	LF	1013	2363	1680	5056	✓		
		Thermoplastic Line, Skip White 5"	LF		695	585	1280	✓		
	06717	Removal of Line, Solid Yellow 4"	LF	560	970	900	2430	✓		
	06716	Removal of Line, Solid White 4"	LF	465	1293	1520	3278	✓		
	06718	Removal of Thermoplastic Line, Skip White 5"	LF		304	248	552	✓		

ESTIMATE OF QUANTITIES & MISC. DETAILS
INDIANA STATE HIGHWAY COMMISSION

SCALE:- None DATE:- October 27, 1981
SUBMITTED FOR APPROVAL:-
DRAWING:- D13 OF 15 SHEET:- 19 OF 39
PROJECT:- IR-70-4(42)115
CONTRACT NO. B-13556
BRIDGE FILE:- ~~I-70-13-5139A~~ I-70-13-5140A & JA, I-70-14-2360B

DESIGNED CKB
DRAWN CKB
TRACED CKB

Rev. 3-18-82 Bridge Deck Tining & Bridge Deck Grooving Added to Est. of Quantities

END STR

I-70-115-5140A