CONTRACT NO. B-15340

INDEX

PROJECT	STRUCTURE	TYPE	SPAN	OVER	STATION
MAFR- -024-4(14)	56-59-3710 B	R.C. ARCH	2 @ 82' SKEW 30°L	LOST RIVER	

SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL
1		TITLE AND INDEX SHEET	
2		TRAFFIC MAINTENANCE DETAILS	
3	D1	GENERAL PLAN	
4	D2	CONSTRUCTION PROCEDURE, GENERAL NOTES,	
		STANDARD DRAWING TABLE, MATERIAL NOTES	
5	D3	REMOVAL DETAILS	
6	D4	PIER №2 UMBRELLA TOP DETAILS	
7	D5	ARCH RING DETAILS AND BILL OF MATERIALS	
8	D6	SPANDREL WALL DETAILS AND BILL OF MATERIALS	
9	D7	MISCELLANEOUS DETAILS	
10	D8	WING "A" DETAILS AND BILL OF MATERIALS	
11	D9	WING "C" DETAILS AND BILL OF MATERIALS	
12		BRIDGE ESTIMATE OF QUANTITIES	

TRAFFIC DATA		
A.D.T. (1983)		6941 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		

NOTE: Wherever "Indiana State Highway Commission" appears in these plans, it shall be interpreted as "Indiana Department of Highways".

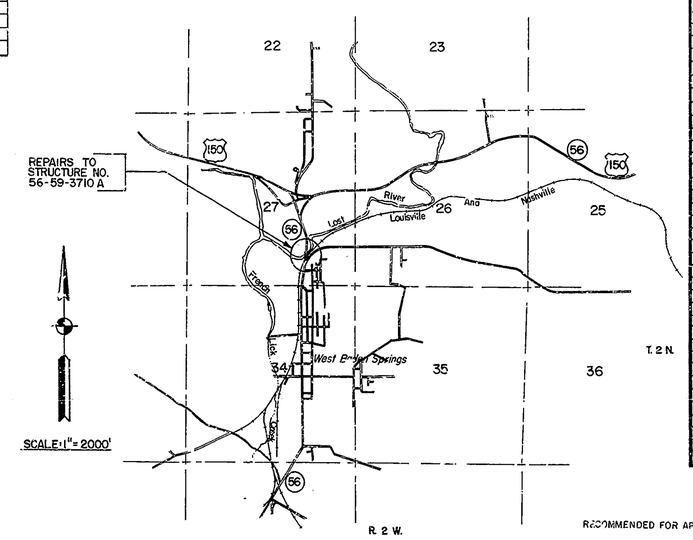
INDIANA DEPARTMENT OF HIGHWAYS

BRIDGE PLANS

FOR SPANS OVER 20 FEET ON STATE ROAD NO. 56

PROJECT MAFR-024-4(14)

Structure No. 56-59-3710 B Located on S.R. 56 over Lost River in West Baden Springs in Section 27, Township 2 North, Range 2 West, French Lick Township, Orange County, Indiana.



BRIDGES OVER 20' SPAN					
FEDERAL REGION NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IND.		198	1	28

INDEX CONTINUED

STANDARD DRAWINGS

SHEET NO.	SHEET DESIGNATION	SUBJECT	F.H.W.A. APPROVAL	ADOPTED "A" REVISION "R"
	BRIDGE STD. BR1	ALUMINUM BRIDGE RAILING		
	BRIDGE STD. BR2	ALUMINUM BRIDGE RAILING DETAILS		
	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		
13	BRIDGE STD. C1	MISCELLANEOUS DETAILS	12-21-81	R 12-07-81
14	BRIDGE STD. C2	MISCELLANEOUS DETAILS	7-24-72	R 6-01-72
15	BRIDGE STD. C3	MISCELLANEOUS DETAILS	12-21-81	R 12-07-81
	BRIDGE STD. C4	MISCELLANEOUS DETAILS		
	BRIDGE STD. D	CASTING DETAILS ROADWAY DRAINS		
	BRIDGE STD. D1	ADJUSTING FRAME DETAILS FOR ROADWAY DRAINS		
	BRIDGE STD.			
	BRIDGE STD. PB	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. PB	PRESTRESSED CONCRETE TYPE I-BEAMS		
	BRIDGE STD. PB6	PRESTRESSED BOX BEAMS		
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
	BRIDGE STD. PB	PRESTRESSED COMPOSITE BOX BEAMS WIDE		
	BRIDGE STD. PB10	TOLERANCES FOR FABRICATION OF PRESTRESSED BEAMS		
	BRIDGE STD. PB11	ELASTOMERIC BEARING PAD DETAILS		
	BRIDGE STD.			
	BRIDGE STD.			
	BRIDGE STD. R2A	BRIDGE LIGHTING DETAILS		
	BRIDGE STD. R2B	BRIDGE LIGHTING DETAILS		
	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		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
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	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
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	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
16	ROAD STD. SHEET MT 5	MISCELLANEOUS STANDARDS	8-30-82	A Jul, 1982
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET	MISCELLANEOUS STANDARDS		
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
17	ROAD STD. SHEET GR2	GUARD RAIL CLASS BS	6-4-84	R 4-2-84
18	ROAD STD. SHEET GR3	GUARD RAIL CLASS BA	6-4-84	R 4-2-84
	ROAD STD. SHEET GR	GUARD RAIL CLASS		
19	ROAD STD. SHEET GR5	ALUMINUM GUARD RAIL DETAILS	5-21-84	R 4-1-82
	ROAD STD. SHEET GR6	STEEL TUBE GUARD RAIL DETAILS		
	ROAD STD. SHEET GR7	GUARD RAIL PIER CONNECTION DETAILS		
20	ROAD STD. SHEET GR8	STEEL BEAM GUARD RAIL	PENDING	R 4-2-84
21	ROAD STD. SHEET GR9	ALUMINUM BEAM GUARD RAIL	PENDING	R 4-1-82
22	ROAD STD. SHEET GR10	GUARD RAIL BURIED ENDS	PENDING	R 2-1-85
	ROAD STD. SHEET GR10A	GUARD RAIL BREAKAWAY CABLE TERM.		
	ROAD STD.			
23	ROAD STD. SHEET CB2	TEMPORARY CONCRETE BARRIER	PENDING	R 6-01-84
	TRAFFIC STD. SHEET 9	TRAFFIC SIGN DETAILS		
24	ROAD STD. SHEET 1 DETOURS	STANDARD DETOUR SIGNS	PENDING	R 2-01-85
	ROAD STD. SHEET 1A DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 1B DETOURS	STANDARD DETOUR SIGNS		
	ROAD STD. SHEET 2 DETOURS	STANDARD DETOUR SIGNS		
25	ROAD STD. SHEET 2A DETOURS	STANDARD DETOUR SIGNS	PENDING	R 2-01-85
26	ROAD STD. SHEET 3 DETOURS	STANDARD DETOUR SIGNS	4-10-84	R 2-01-84
	ROAD STD. SHEET 3A DETOURS	STANDARD DETOUR SIGNS		
27	ROAD STD. SHEET 4 DETOURS	STANDARD DETOUR SIGNS	12-8-83	R 10-3-83
28	ROAD STD. SHEET 5 DETOURS	STANDARD DETOUR SIGNS	4-10-84	R 2-1-84
	ROAD STD. SHEET 5A DETOURS	STANDARD DETOUR SIGNS		

NOTE:—
WHENEVER FR-024-4(14) APPEARS IN THESE PLANS OR CONTRACT DOCUMENTS IT SHALL BE INTERPRETED AS MAFR-024-4(14)

INDIANA DEPARTMENT OF HIGHWAYS
STANDARD SPECIFICATIONS DATED 1985 TO BE USED WITH THESE PLANS.

GUY E. CANTWELL
REGISTERED 12220
STATE OF INDIANA
PROFESSIONAL ENGINEER

These Plans Prepared By
FINK ROBERTS & PETRIE, INC.
CONSULTING ENGINEERS
3307 WEST 96TH STREET
INDIANAPOLIS, INDIANA 46268
Certified By Guy E. Cantwell
Date April 15, 1985

REVISIONS	
DATE	SHEET NO.

REVISIONS	
DATE	SHEET NO.

RECOMMENDED FOR APPROVAL ____________
ASSISTANT ENGINEER OF BRIDGE DESIGN.

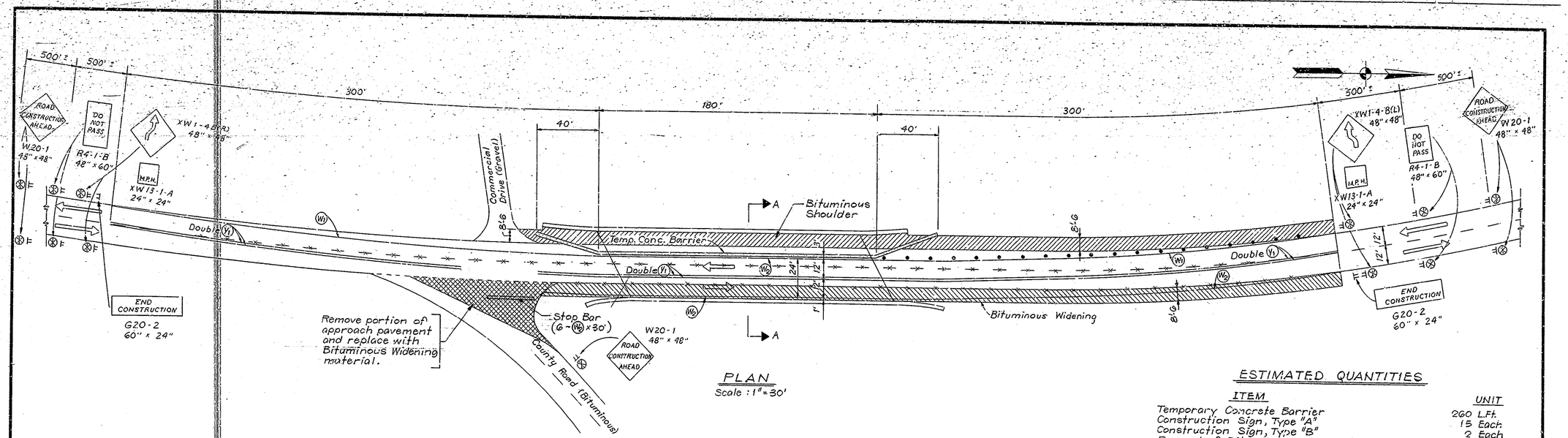
RECOMMENDED FOR APPROVAL 5-14-85
William B. Abbott
ENGINEER OF BRIDGE DESIGN

WILLIAM B. ABBOTT
REGISTERED No. 6643
STATE OF INDIANA
PROFESSIONAL ENGINEER

APPROVED 5-15-85
E. Wayne Walters
CHIEF HIGHWAY ENGINEER

FEDERAL HIGHWAY ADMINISTRATION
DEPARTMENT OF TRANSPORTATION
APPROVED:-
DIVISION ADMINISTRATOR DATE

BRIDGE FILE:- 56-59-3710 B



PLAN

Scale : 1" = 30'

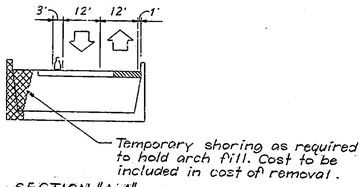
ESTIMATED QUANTITIES

ITEM	UNIT
Temporary Concrete Barrier	260 L.Ft.
Construction Sign, Type "A"	15 Each
Construction Sign, Type "B"	2 Each
Removal of Bituminous Pavement	150 Sys.
# Bituminous Widening	314 Tons
# Bituminous Shoulder	258 Tons
Temporary Pavement Marking Type I (White)	600 L.Ft.
Temporary Pavement Marking Type I (Yellow)	1460 L.Ft.
Temporary Pavement Marking Type II (White)	876 L.Ft.
Removal of Line, Solid, White, 4"	506 L.Ft.
Removal of Line, Solid, Yellow, 4"	1560 L.Ft.
Line, Solid, White, 4"	506 L.Ft.
Line, Solid, Yellow, 4"	1560 L.Ft.

Included in pay item "Bituminous Mixture for Approaches."

NOTES

- All signs shall be mounted in such a manner that vertical distance between the bottom of the sign and the edge of the pavement shall not be less than 5 feet and the horizontal distance from the edge of the pavement to the edge of the sign shall not be less than 12 feet (R/W permitting) or 6 feet from the edge of a paved shoulder.
- The spacing of the drums or the Type I or II Barricades shall be as shown on Road Standard Sheet 1 Detours.
- One lane of thru traffic shall be maintained each way throughout the length of the project.
- Approved lights shall mark barricades and signs continuously at night.



SECTION "A-A"

Not to Scale

LEGEND

- Bituminous Widening. To remain in place. See Material Notes, Dwg. D2.
- Bituminous Shoulder. To be placed between edge of pavement and new spandrel wall or wingwall. See Material Notes, Dwg. D2.
- Temporary Concrete Barrier. See Road Standard Sheet CB 2.
- Construction Sign, Type "A".
- Low Intensity Flashing Yellow Light (Type A).
- Drum or Barricade Type I or II with a steady burning light (not a pay item).
- Indicates removal of existing lane marking.
- (Y1) Temporary Pavement Marking, Type I (Yellow).
- (W1) Temporary Pavement Marking, Type I (White).
- (W2) Temporary Pavement Marking, Type II (White).
- Bituminous Pavement Removal and Replacement.

TRAFFIC MAINTENANCE DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- 1" = 30'-0

DATE:- April 18, 1985

DRAWING:- OF SHEET:- 2 OF 28

PROJECT:- FR-024-4( )

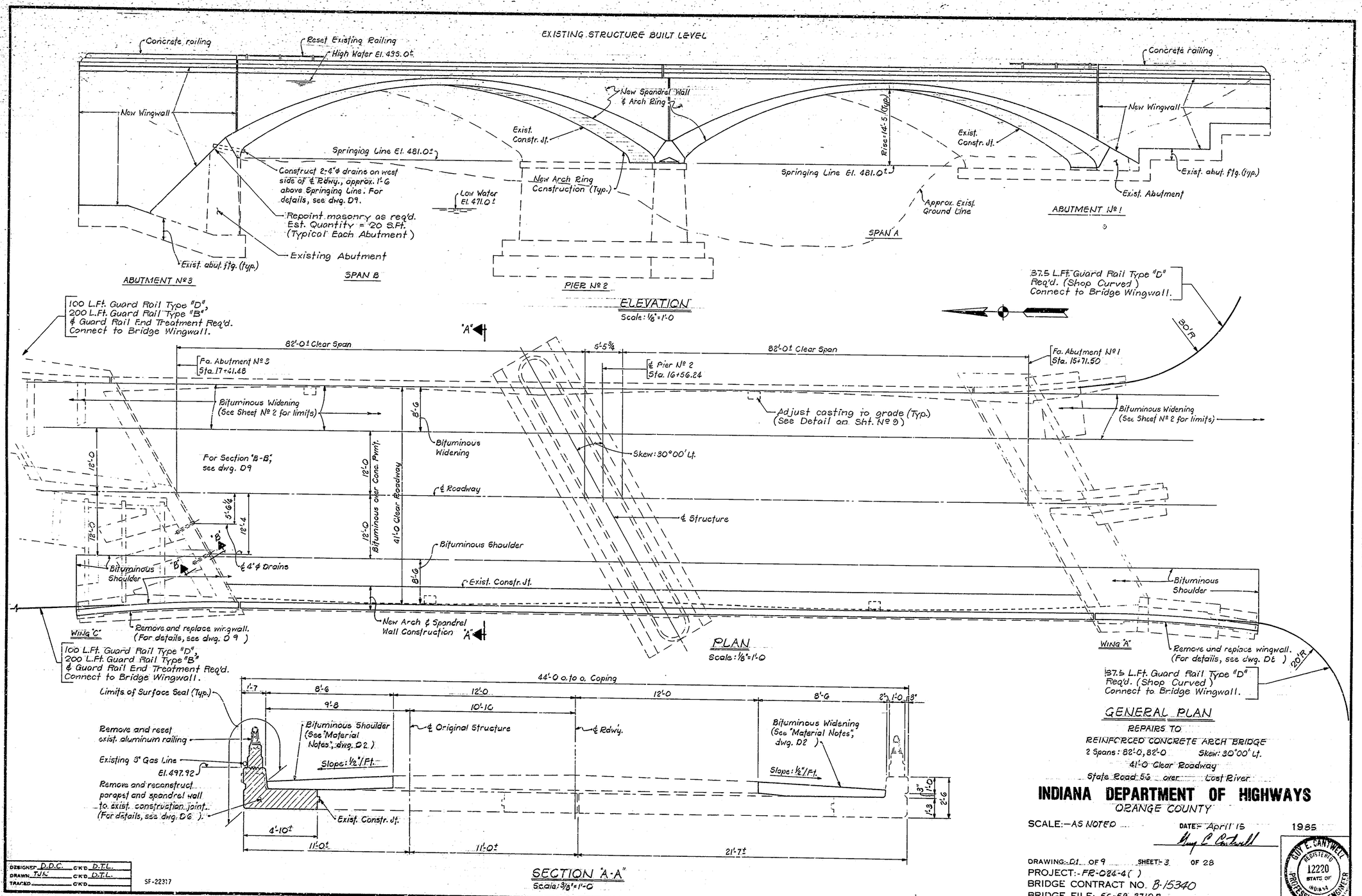
CONTRACT NO. B-15340

BRIDGE FILE:- 56-59-3710B

GUY E. CANTWELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED P.E.B. CK'D D.T.L.
DRAWN CSH CK'D D.T.L.
TRACED CK'D

TP118


EXISTING STRUCTURE BUILT LEVEL
Concrete railing
Reset Existing Railing
High Water El. 495.0±
New Wingwall
New Spandrel Wall & Arch Ring
Exist. Constr. Jt.
Rise = 14'-5 (Typ.)
Springing Line El. 481.0±
Construct 2-4"ϕ drains on west side of ℄ Rdwy., approx. 1'-6 above Springing Line. For details, see dwg. D9.
Low Water El. 471.0±
New Arch Ring Construction (Typ.)
Repoint masonry as req'd. Est. Quantity = 20 S.Ft. (Typical Each Abutment)
Existing Abutment
Exist. abut. ftg. (Typ.)
Approx. Exist. Ground Line
Exist. Abutment
ABUTMENT Nº 3
SPAN B
PIER Nº 2
SPAN A
ABUTMENT Nº 1
ELEVATION
Scale: 1/8" = 1'-0
37.5 L.Ft. Guard Rail Type "D" Req'd. (Shop Curved) Connect to Bridge Wingwall.
100 L.Ft. Guard Rail Type "D", 200 L.Ft. Guard Rail Type "B", & Guard Rail End Treatment Req'd. Connect to Bridge Wingwall.
30'R
20'R
82'-0± Clear Span
5'-5¾
Fa. Abutment Nº 3 Sta. 17+41.48
℄ Pier Nº 2 Sta. 16+56.24
Fa. Abutment Nº 1 Sta. 15+71.50
Bituminous Widening (See Sheet Nº 2 for limits)
Adjust casting to grade (Typ.) (See Detail on Sht. Nº 9)
For Section "B-B", see dwg. D9
Bituminous Widening
Skew: 30°00' Lt.
℄ Roadway
℄ Structure
Bituminous over Conc. Pvmt.
41'-0 Clear Roadway
Bituminous Shoulder
℄ 4"ϕ Drains
Exist. Constr. Jt.
Remove and replace wingwall. (For details, see dwg. D9)
New Arch & Spandrel Wall Construction
WING "C"
WING "A"
PLAN
Scale: 1/8" = 1'-0
44'-0 o. to o. Coping
Limits of Surface Seal (Typ.)
Remove and reset exist. aluminum railing
Existing 3" Gas Line El. 497.92
Remove and reconstruct parapet and spandrel wall to exist. construction joint. (For details, see dwg. D6)
Bituminous Shoulder (See "Material Notes", dwg. D2)
℄ Original Structure
℄ Rdwy.
Bituminous Widening (See "Material Notes", dwg. D2)
Slope: 1/2"/Ft.
Exist. Constr. Jt.
SECTION "A-A"
Scale: 3/8" = 1'-0
GENERAL PLAN
REPAIRS TO
REINFORCED CONCRETE ARCH BRIDGE
2 Spans: 82'-0, 82'-0 Skew: 30°00' Lt.
41'-0 Clear Roadway
State Road 56 over Lost River
INDIANA DEPARTMENT OF HIGHWAYS
ORANGE COUNTY
SCALE:—AS NOTED
DATE: April 15 1985
DRAWING: D1 OF 9 SHEET: 3 OF 28
PROJECT: FR-024-4( )
BRIDGE CONTRACT NO. B-15340
BRIDGE FILE: 56-59-8710B
GUY E. CANTWELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGNED D.D.C. CK'D D.T.L.
DRAWN T.J.K. CK'D D.T.L.
TRACED CK'D
SF-22317

CONSTRUCTION PROCEDURE

1. Construct bituminous widening, install temporary barrier railing and other traffic control devices to divert two way traffic to the east side of the bridge.

2. Remove and store aluminum railing from the west side of the bridge.

3. Remove the west parapet, wingwalls, spandrel wall and arch ring to the existing construction joint.

4. Place forms and reinforcing steel and pour new concrete arch ring, spandrel wall, wingwalls and parapet on the west side. Reset aluminum railing.

5. Construct bituminous shoulder on west side of bridge.

6. Seal on each side of the bridge, the roadway face, top and coping face of curbs and parapets, face of spandrel wall down to the arch ring and wingwalls with a penetrating epoxy sealer.

7. Install guard rail and perform all other work as shown on the plans.

8. When all work is completed, remove traffic control devices and open structure to normal two way traffic.

(The numbers do not necessarily indicate the sequence of operations.)

GENERAL NOTES

Plans for existing structure are on file and are available upon request in the Bridge Department, Indiana Department of Highways as: F.A.S. Project No. 5-203(4) ; File No. 56-G-3710A

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.

All bituminous material required in this contract to be included in the pay item "Bituminous Mixture For Approaches".

Reinforcing steel covering shall be 2 inches minimum at bottom of arch and 2" in all other parts, unless noted.

All removal equipment used for partial concrete removals of bridge structures shall be hand held. Pneumatic hammers, 30lbs. 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 90lbs. maximum weight may be used for all other removals outside these limits. Deck areas that are to be removed full depth shall be completely seperated from adjacent concrete before hammers heavier than 30 lbs. may be used.

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.

Continuous concrete pours shall be required between construction joints as shown on detail plans.

Bevel forms 1/4" under copings and chamfer exposed edges 1 inch, unless noted.

Waterproof wingwalls, spandrel wall and arch ring in accordance with Article 702.22 of the Specifications.

Concrete in wingwalls, spandrel wall, parapet wall and arch ring to be Class "A".

STANDARD DRAWING TABLE

Bridge Std.	Road Std.	Purpose
RI-A(RI-22-63)		Aluminum Railing Details
C 1		Reinforcing Bar Notes, Bar Bending Details
C 2		Arch Ring Stirrups, Copper Flashing
C 3		Construction Joint Details
	MT 3	Traffic Sign Details
	GR 2	Guard Rail Class Bs
	GR 3	Guard Rail Class BA
	GR 5	Aluminum Guard Rail Details
	GR 8	Guard Rail Class Ds
	GR 9	Guard Rail Class DA
	GR 10	Guard Rail End Treatment
	CB 2	Temporary Concrete Barrier
	Sht. 1 Detours	Spacing of Drums
	Sht. 2A Detours	Sign Standard and Barricade
	Sht. 3 Detours	Standard Detour Signs
	Sht. 4 Detours	Standard Detour Signs
	Sht. 5 Detours	Sign Design Details

MATERIAL NOTES

314 Tons - Bituminous Widening : 990 Lbs./Syd. Bituminous Base, Type 5D.

258 Tons - Bituminous Shoulder : 990 Lbs./Syd. Bituminous Base, Type 5D.

572 Tons - Bituminous Mixture For Approaches

CONSTRUCTION PROCEDURE, GENERAL NOTES
STANDARD DRAWING TABLE, MATERIAL NOTES

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- None

DATE:- April 15, 1985

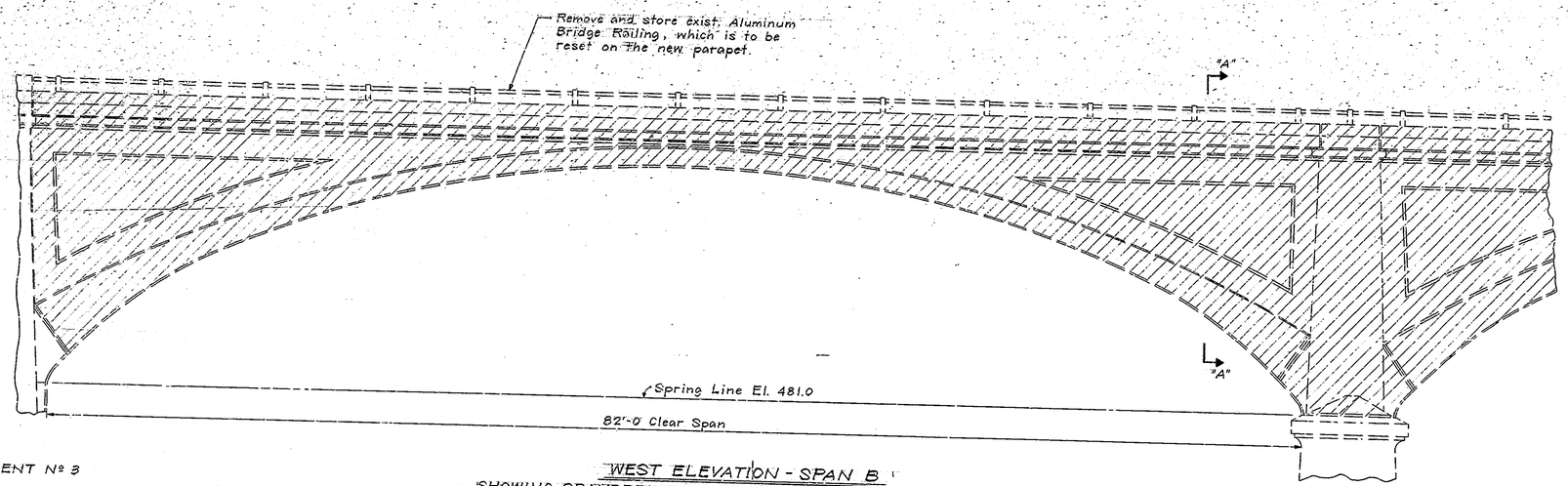
Guy E. Cantwell

GUY E. CANTWELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

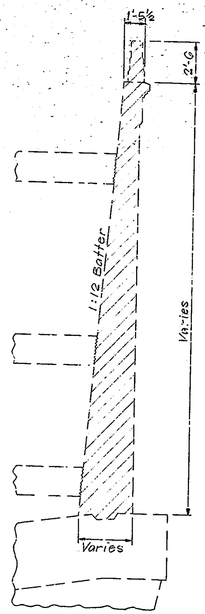
DRAWING:- D2 OF 9 SHEET:- 4 OF 28
PROJECT:- FR-024-4( )
CONTRACT NO. B-15340
BRIDGE FILE:- 56-59-3710 B

DESIGNED	R.E.B.	C'K'D	D.T.L.
DRAWN	CSH	C'K'D	D.T.L.
TRACED		C'K'D	

TP118

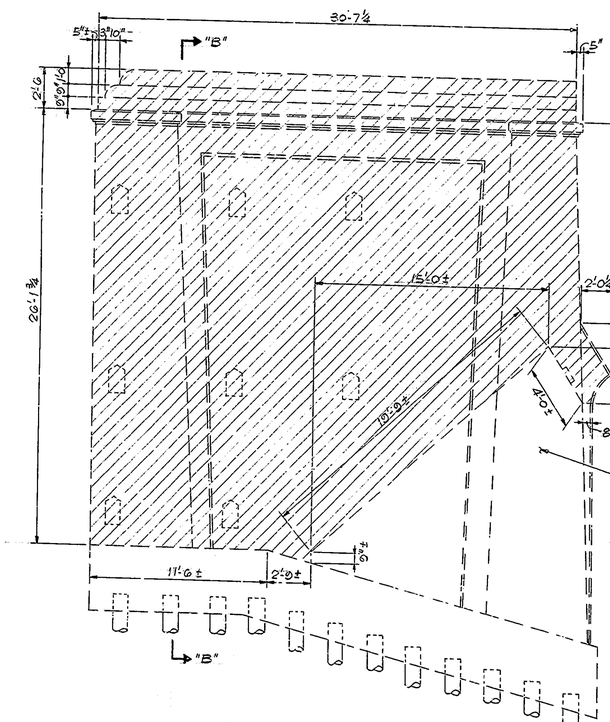


WEST ELEVATION - SPAN B
SHOWING SPANDREL WALL AND PARAPET REMOVAL LIMITS
(SPAN A SAME BY OPPOSITE HAND)
Scale: 1/4" = 1'-0

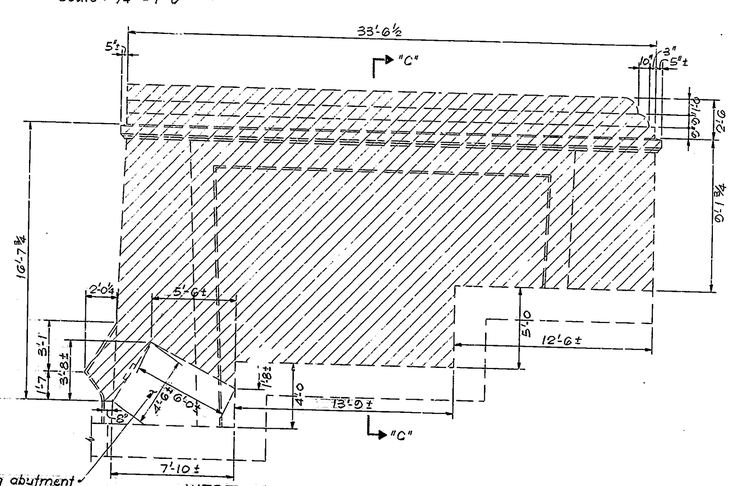


SECTION "B-B"
Scale: 1/4" = 1'-0

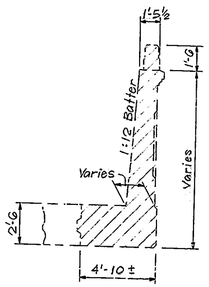
NOTE: For Additional Dimensions, see Dwg. D5.



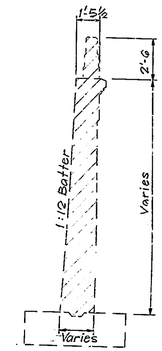
WEST ELEVATION - ABUTMENT Nº 3
SHOWING WINGWALL REMOVAL LIMITS
Scale: 1/4" = 1'-0



WEST ELEVATION - ABUTMENT Nº 1
SHOWING WINGWALL REMOVAL LIMITS
Scale: 1/4" = 1'-0



SECTION "A-A"
Scale: 1/4" = 1'-0



SECTION "C-C"
Scale: 1/4" = 1'-0

REMOVAL DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE: As noted. DATE: April 15 1985

Gary E. Cantrell

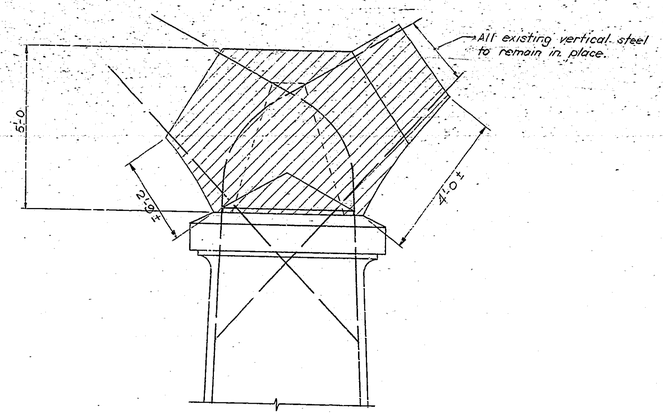
DRAWING: D3 OF 9 SHEET: 5 OF 28
PROJECT: FR-024-4( )
BRIDGE CONTRACT NO. B-15340
BRIDGE FILE: 56-53-3710B

GARY E. CANTRELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

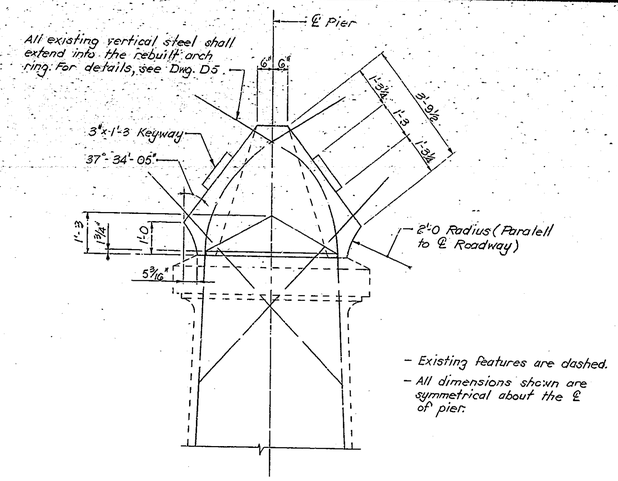
DESIGNED	T.L.H.	CK'D	D.T.L.
DRAWN	T.L.H.	CK'D	D.T.L.
TRACED		CK'D	

SF-22317

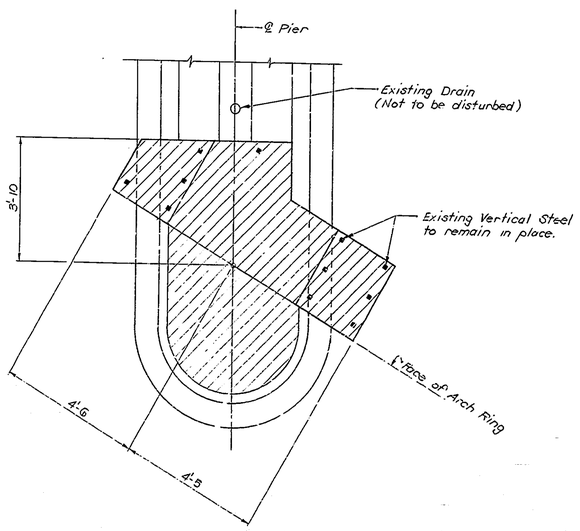
TP118



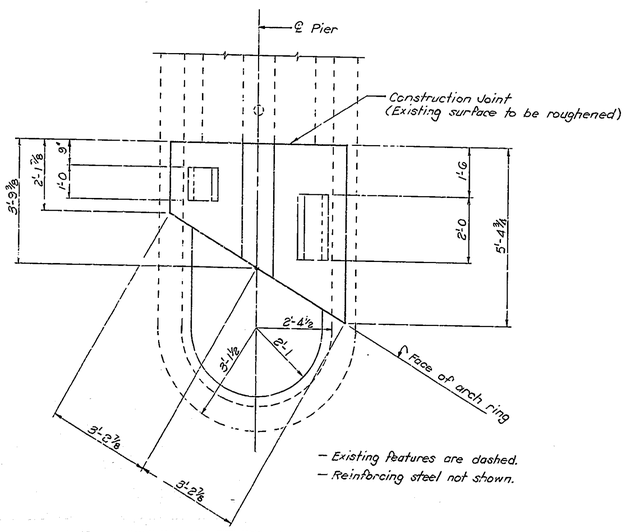
ELEVATION - PIER (WEST END)
(Showing Removal Limits of Existing Umbrella Top)
Scale: 1/2" = 1'-0



ELEVATION - PIER (WEST END)
(Showing New Construction)
Scale: 1/2" = 1'-0



PLAN VIEW
(Showing Removal Limits of Existing Umbrella Top)
Scale: 1/2" = 1'-0



PLAN VIEW
(Showing New Construction)
Scale: 1/2" = 1'-0

NOTES

-- The removal areas shown on this sheet apply only to the existing "Umbrella Top." For removal of surrounding areas, see Dwg. D3.

— All existing steel which is to be reused shall be cleaned and straightened.

— Where existing concrete surfaces abut with new concrete surfaces, the existing concrete shall be roughened and coated with an epoxy bonding compound prior to pouring the new concrete.

— 2.6 Cys. of Class "A" Concrete is required.

PIER NO. 2 UMBRELLA TOP DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:— AS SHOWN DATE:- April 15 1985

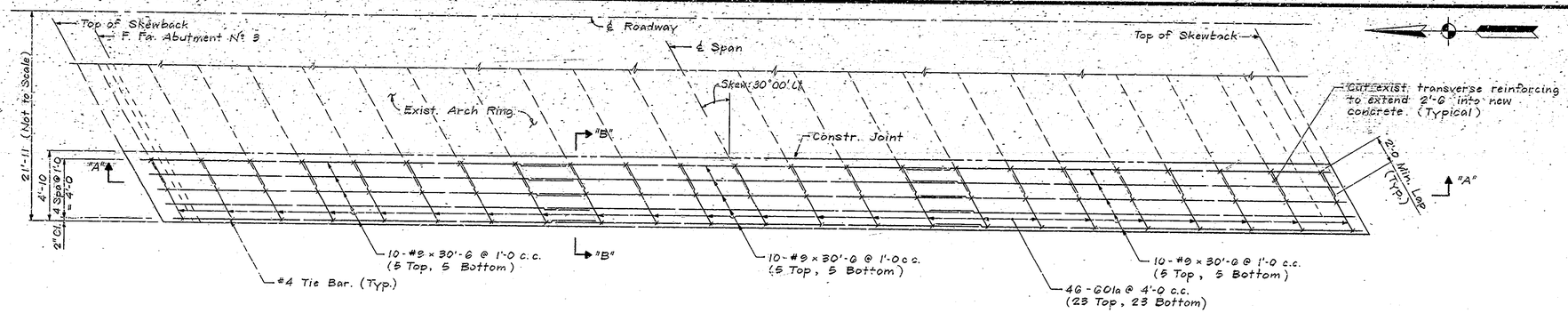
DRAWING:- D4 OF 9 SHEET:- 6 OF 28
PROJECT:- FR-024-4 ( )
BRIDGE CONTRACT NO. B-15340
BRIDGE FILE:- 5G-59-3710B

GUY E. CARTWRIGHT REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED DDC C'K'D D.T.L.
DRAWN DDC C'K'D D.T.L.
TRACED C'K'D

SF-22317

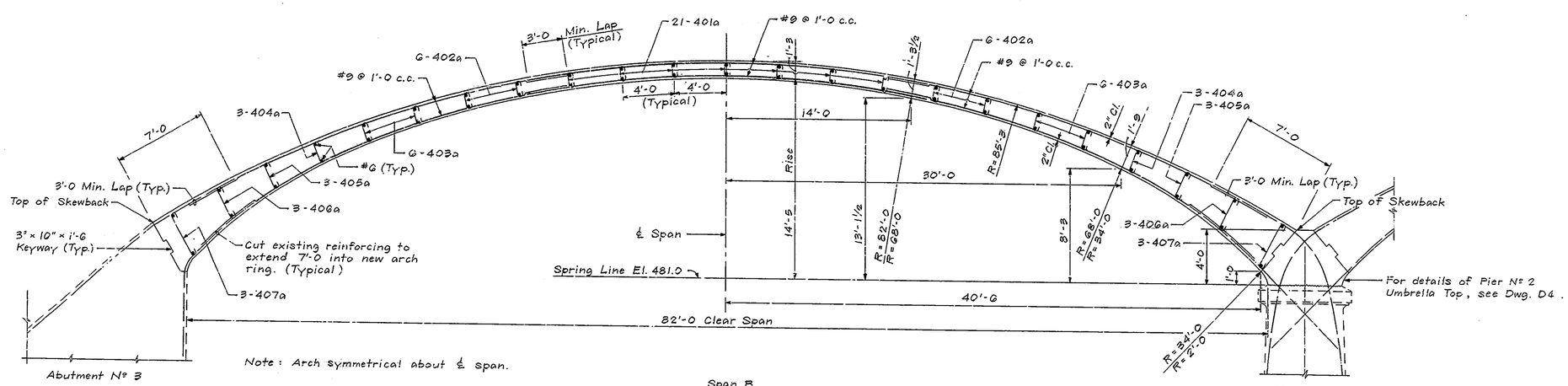
TP113



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

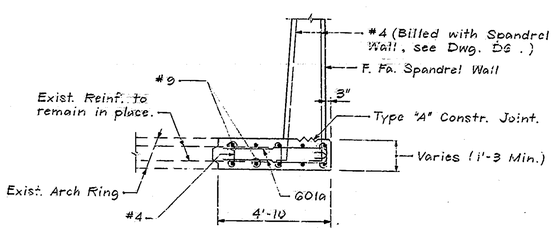
BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	Nº of Bars	Length	Weight (Lbs.)
#9	30	30'-6	
	Total #9		3111
#6	46	5'-9	
	Total #6		397
401a	21	1'-11	
402a	12	2'-0	
403a	12	2'-2	
404a	6	2'-5	
405a	6	2'-10	
406a	6	3'-6	
407a	6	4'-5	
	Total #4		112
	Total Reinf.		3620
CONCRETE			Cys.
Class "A" in superstructure			30.0



Note: Arch symmetrical about ℄ span.

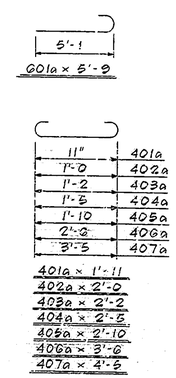
Span B
SECTION "A-A"
Scale: 1/4" = 1'-0



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

NOTES:

- For Reinforcing Bar Notes, see Bridge Standard C1.
- Existing Reinforcing Steel, which is to remain in place, shall be cleaned and realigned.
- All contact surfaces of existing steel and existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.
- See Bridge Standard C2 for "Typical Arch Ring Constr. Jt. Details".
- See Bridge Standard C3 for Type "A" Constr. Jt.



DESIGNED D.T.L. C'K'D. D.D.C.
DRAWN T.L.H. C'K'D. D.T.L.
TRACED C'K'D.
SF-22317

ARCH RING DETAILS AND BILL OF MATERIALS

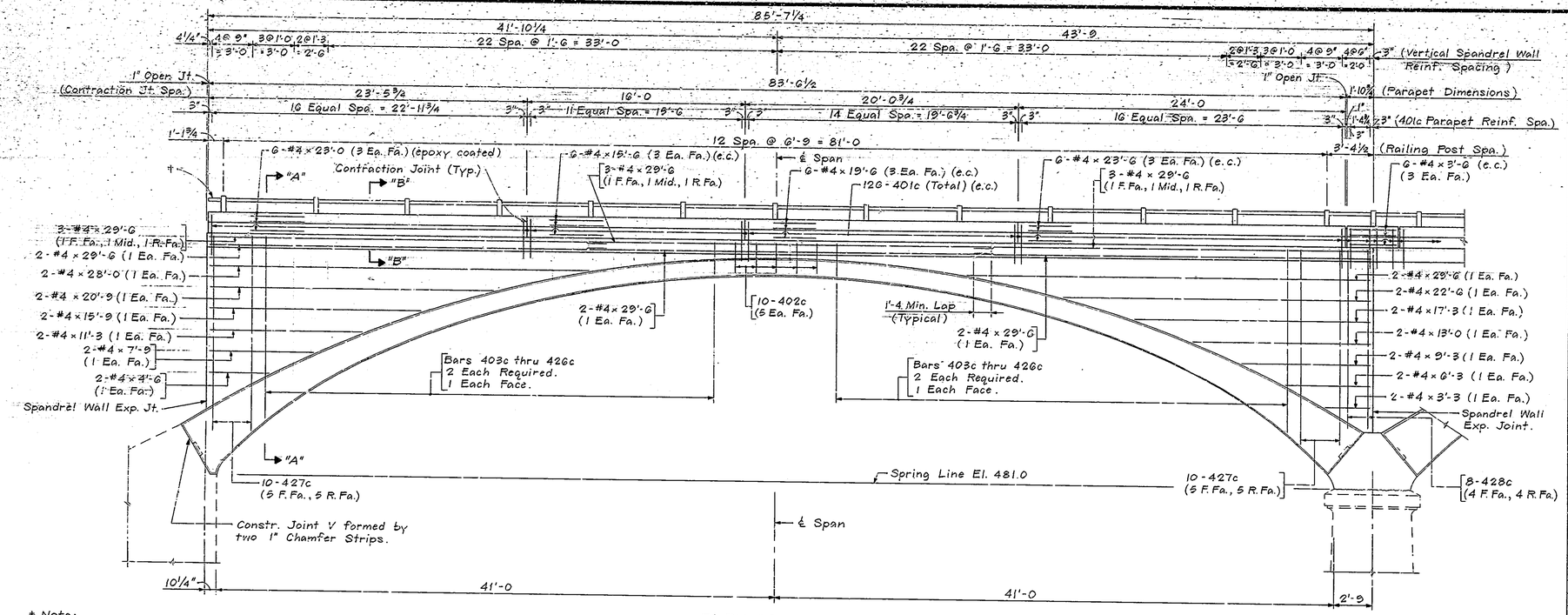
INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- As noted. DATE:- April 15 1985

DRAWING:- D5 OF 9 SHEET:- 7 OF 28
PROJECT:- FR-024-4( )
BRIDGE CONTRACT NO. B 15340
BRIDGE FILE:- 56-59-3710B

GARY E. CARTWRIGHT REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

TP118

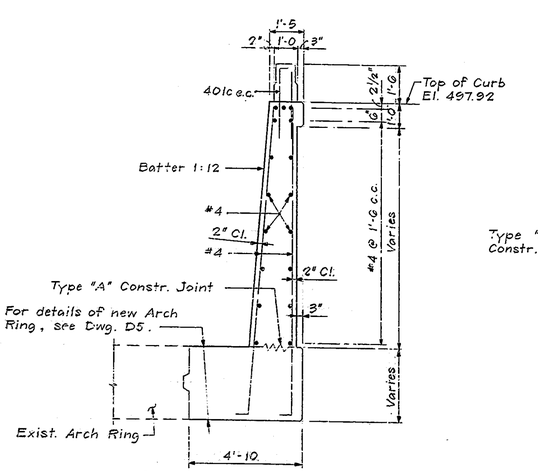


ELEVATION - SPAN B

(Span A same by opposite hand.)

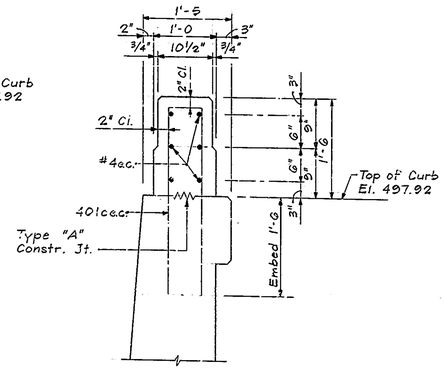
Scale: ¼" = 1'-0

† Note:
Remove 6¼" from each end of the existing Rail Tube and close exposed ends with drive-in type Rail End Caps prior to resetting existing Bridge Railing. For details of Rail End Caps, see Dwg. D7.



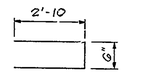
SECTION "A-A"

Scale: 3/8" = 1'-0



SECTION "B-B"

Scale: 1" = 1'-0



401c × 6'-2 (e.c.)

	6"
2'-2	402c × 2'-8
2'-4	403c × 2'-10
2'-5	404c × 2'-11
2'-7	405c × 3'-1
2'-8	406c × 3'-2
2'-10	407c × 3'-4
3'-2	408c × 3'-8
3'-4	409c × 3'-10
3'-8	410c × 4'-2
3'-10	411c × 4'-4
4'-2	412c × 4'-8
4'-8	413c × 5'-2
5'-0	414c × 5'-6
5'-6	415c × 6'-0
6'-0	416c × 6'-6
6'-6	417c × 7'-0
7'-0	418c × 7'-6
7'-8	419c × 8'-2
8'-4	420c × 8'-10
9'-0	421c × 9'-6
9-10	422c × 10'-4
10'-6	423c × 11'-0
11'-4	424c × 11'-10
12'-2	425c × 12'-8
12'-10	426c × 13'-4
13'-10	427c × 14'-4
12'-6	428c × 13'-0

NOTES:
- For Reinforcing Bar Notes, see Bridge Standard C1.
- See Bridge Standard C2 for Spandrel Wall Expansion Joint Details.
- See Bridge Standard C8 for Constr. Jt. Type "A".
- All contact surfaces of existing steel and existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.
- For details of Anchor Bolts for resetting existing Bridge Railing, see Dwg. D7. Cost of Anchor Bolts to be included in the pay item "Railing Reset".
- e.c. indicates epoxy coated reinforcing steel.

BILL OF MATERIALS

(Materials are for both spans.)

REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight (Lbs.)
402c	20	2'-8	
403c	8	2'-10	
404c	8	2'-11	
405c	8	3'-1	
406c	8	3'-2	
407c	8	3'-4	
408c	8	3'-8	
409c	8	3'-10	
410c	8	4'-2	
411c	8	4'-4	
412c	8	4'-8	
413c	8	5'-2	
414c	8	5'-6	
415c	8	6'-0	
416c	8	6'-6	
417c	8	7'-0	
418c	8	7'-6	
419c	8	8'-2	
420c	8	8'-10	
421c	8	9'-6	
422c	8	10'-4	
423c	8	11'-0	
424c	8	11'-10	
425c	8	12'-8	
426c	8	13'-4	
427c	40	14'-4	
428c	16	13'-0	
#4	34	29'-6	
#4	4	28'-0	
#4	4	22'-6	
#4	4	20'-9	
#4	4	17'-3	
#4	4	15'-9	
#4	4	13'-0	
#4	4	11'-3	
#4	4	9'-3	
#4	4	7'-9	
#4	4	6'-3	
#4	4	4'-6	
#4	4	3'-3	
Total #4			2505
Total Plain Reinf.			2505
EPOXY COATED REINF. STEEL			
401c	126	6'-2	
#4	12	23'-6	
#4	12	23'-0	
#4	12	19'-6	
#4	12	15'-6	
#4	6	3'-6	
Total #4			1187
Total Epoxy Coated Reinf.			1187
CONCRETE			
Class "C" Concrete Railing			9.5 Cys.
Concrete, Class "A" in Superstructure			62.1 Cys.
MISCELLANEOUS			
Railing Reset			171 LFt.

SPANDREL WALL DETAILS AND BILL OF MATERIALS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- As noted. DATE:- April 15 1935

Roy C. Cottrell

DRAWING:- D6 OF 9 SHEET:- 8 OF 28

PROJECT:- FR-024-4( )

BRIDGE CONTRACT NO. B-15340

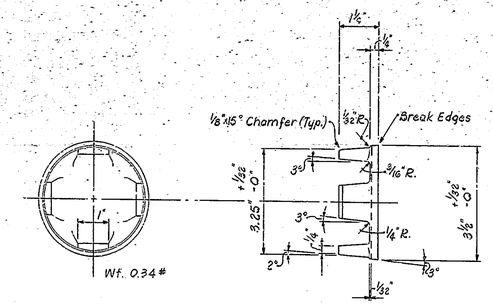
BRIDGE FILE:- 56-59-3710B

GUY E. CARPENTER REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED D.T.L.	C'K'D D.D.C.		
DRAWN T.L.H.	C'K'D D.T.L.		
TRACED	C'K'D		

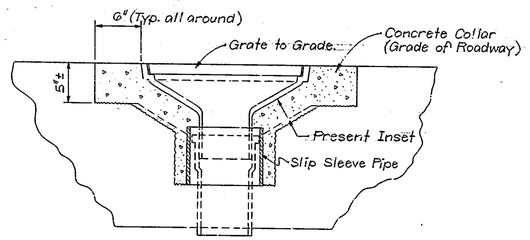
SF-22317

TP118



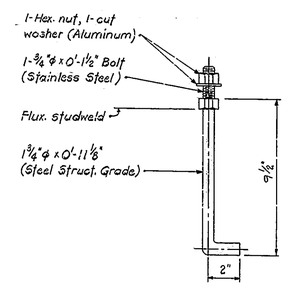
RAIL END CAP

Half Scale



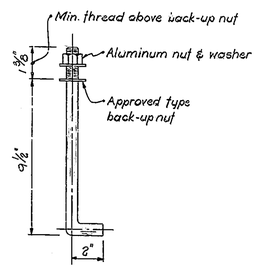
DETAIL SHOWING ADJUSTMENT OF EXISTING ROADWAY DRAIN TO GRADE

Scale: 1½" = 1'-0



ANCHOR BOLT "D"

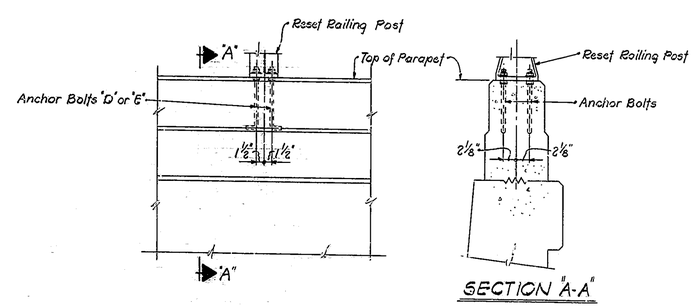
Scale: 3" = 1'-0



ANCHOR BOLT "E"

Stainless Steel

Scale: 3" = 1'-0



SECTION "A-A"

ANCHOR BOLT SPACING

Scale: 1" = 1'-0

NOTES

All material shown on this sheet shall be aluminum, unless noted.

Exposed ends of railing tubing shall be closed with drive-in type Rail End Caps. Caps may be either aluminum alloy permanent mold castings (complying to A.S.T.M. Spec. B108-59T Alloy SG 70 A) or Sand mold castings (complying to A.S.T.M. Spec. B26-60T Alloy 43-F).

All flash from castings shall be removed.

Stainless steel for Anchor Bolt "D" shall comply to A.S.T.M. Spec. A276 Type 304.

Stainless steel for Anchor Bolt "E" shall comply to A.S.T.M. Spec. A276-55 Type 430. Rolled or cut threads may be used. If cut threads are used, bar diameter to be ¾". If rolled threads are used, bar diameter not to be less than root diameter for ¾" diameter bolt.

Nuts shall be made either from rod complying to A.S.T.M. B211-60T Alloy 6061 (T6), or from extrusions complying to A.S.T.M. Spec. B235-60T Alloy 6061 (T6).

Bolt heads & nuts shall comply to American hex A.S.A. Spec. B18.2.

Aluminum contact surfaces with concrete shall be given a coat of zinc chromate. Material shall be sawed or milled. Cut edges shall be true, smooth, and free from burrs or ragged edges.

Flame cutting is not permitted.

Anchor Bolts shall be pre-set in the concrete. For spacing of railing posts see Spandrel Wall Details, dwg. D6.

Aluminum alloy washers shall be made from sheet complying to A.S.T.M. Spec. B209-60T Alloy 2024 (T4).

Cost of Anchor Bolts and Rail End Caps to be included in the pay item "Railing Reset."

MISCELLANEOUS DETAILS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- AS NOTED

DATE:- April 15 1985

Gary E. Cantwell

DRAWING:- D7 OF 9 SHEET:- 9 OF 23

PROJECT:- FR-024-4 ( )

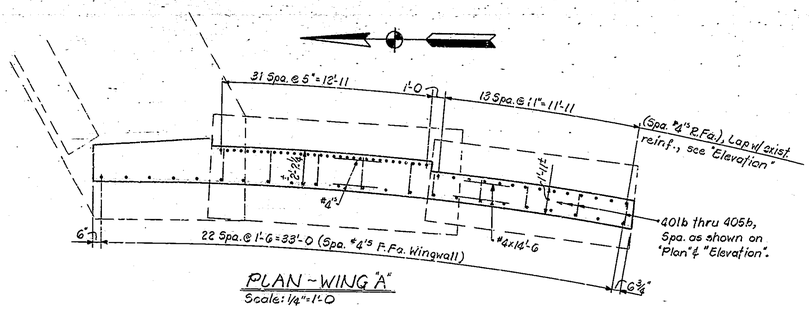
BRIDGE CONTRACT NO. B-15340

BRIDGE FILE:- 56-59-3710 5

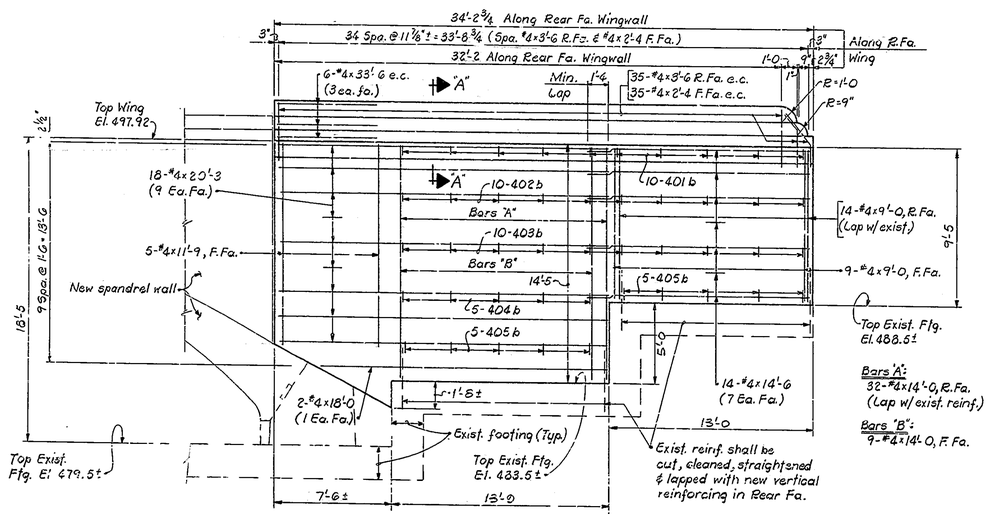
GARY E. CANTWELL REGISTERED 12229 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGNED D.D.C.	C'K'D D.T.L.		
DRAWN T.J.N.	C'K'D D.T.L.		
TRACED	C'K'D	SF-22317	

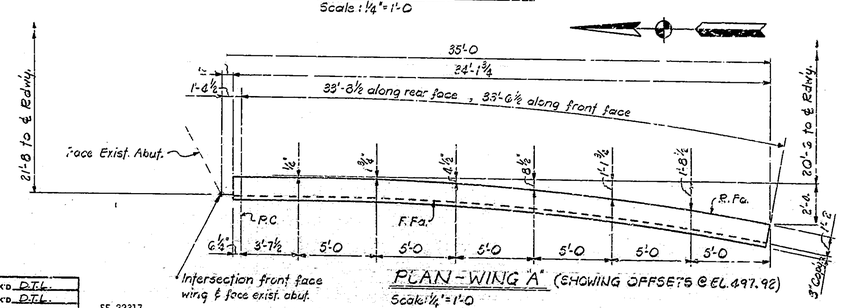
TP11S



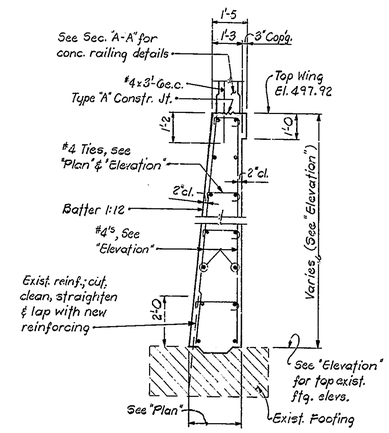
PLAN ~ WING "A"
Scale: 1/4" = 1'-0



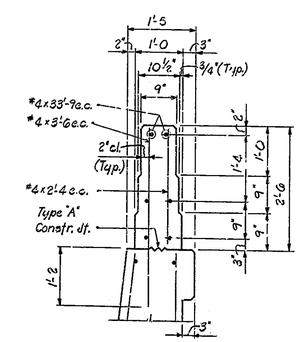
ELEVATION ~ WING "A"
Scale: 1/4" = 1'-0



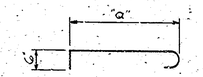
PLAN ~ WING "A" (SHOWING OFFSETS @ EL. 497.92)
Scale: 1/4" = 1'-0



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



SECTION "A-A"
Scale: 3/4" = 1'-0



Mark	"a"	Length
401b	11"	1'-11
402b	1'-1	2'-1
403b	1'-3	2'-3
404b	1'-5	2'-5
405b	1'-6	2'-6

BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight (Lbs.)
401b	10	1'-11	
402b	10	2'-1	
403b	10	2'-3	
404b	5	2'-5	
405b	10	2'-6	
#4	18	20'-3	
#4	2	18'-0	
#4	14	14'-6	
#4	41	14'-0	
#4	5	11'-9	
#4	23	9'-0	
	Total Plain Reinf.		1030
	E.C. REINF. STEEL		
#4 e.c.	6	33'-6	
#4 e.c.	35	3'-6	
#4 e.c.	35	2'-4	
	Total E.C. Reinf.		271
CONCRETE			Cys.
Class "A" Concrete in Wing			31.1
Class "C" Concrete in Railing			3.2

Notes:
- For reinforcing bar notes, see Bridge Std. C1.
- For Type "A" Construction Joint, see Bridge Std. C3.
- For Spandrel Wall Details, see dwg. D6.
- For Arch Ring Details, see dwg. D5.
- All contact surfaces of existing steel and existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.
- e.c. indicates epoxy coated reinforcing steel.

WING "A" DETAILS & BILL OF MATERIALS
INDIANA DEPARTMENT OF HIGHWAYS

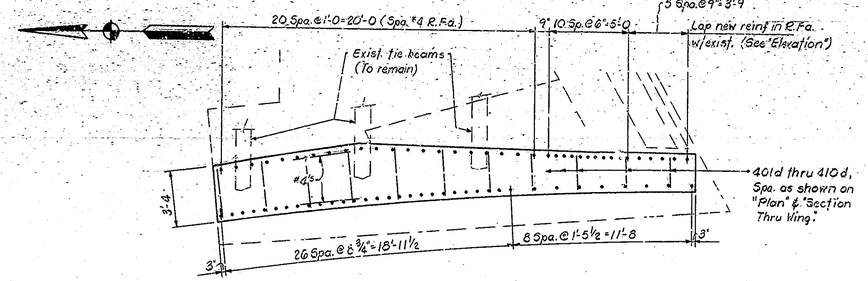
SCALE.-AS NOTED DATE:- April 15 1985

DRAWING:-D8 OF 9 SHEET:-10 OF 28
PROJECT:-FR-024-4( )
BRIDGE CONTRACT NO. B-15340
BRIDGE FILE:-56-59-3710B

DESIGNED D.D.G. CK'D D.T.L.
DRAWN T.J.N. CK'D D.T.L.
TRACED CK'D

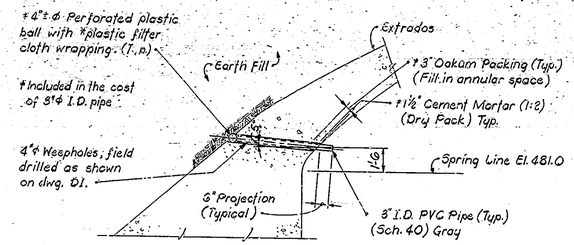
SF-22317

TP118



PLAN ~ WING "C"

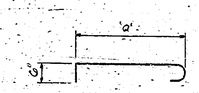
Scale: 1/4" = 1'-0



Note: Weepholes to be drilled perpendicular to face of abutment.

SECTION "B-B"

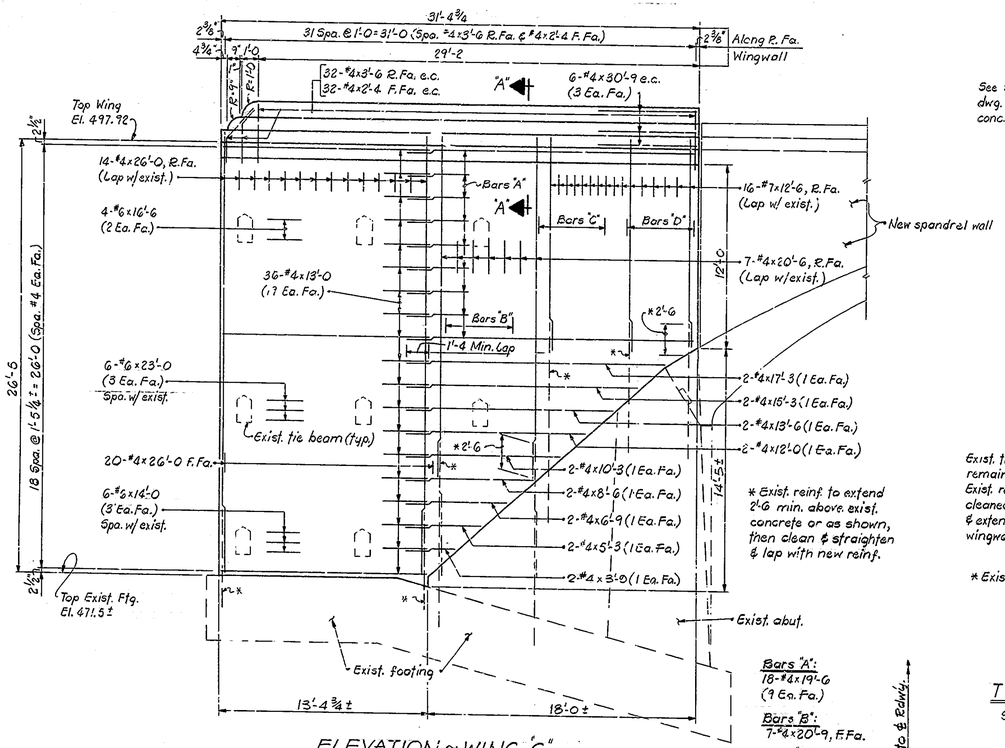
Scale: 1/4" = 1'-0



Mark	"a"	Length
401d	10"	1'-10
402d	1'-0	2'-0
403d	1'-1	2'-1
404d	1'-3	2'-3
405d	1'-4	2'-4
406d	1'-6	2'-6
407d	1'-7	2'-7
408d	1'-8	2'-8
409d	1'-9	2'-9
410d	1'-11	2'-11

BILL OF MATERIALS

REINFORCING STEEL			
Size & Mark	No. of Bars	Length	Weight (Lbs.)
#7	7	20'-6	
#7	16	12'-6	
	Total #7		702
#6	6	23'-0	
#6	4	16'-6	
#6	6	14'-0	
	Total #6		432
401d	11	1'-10	
402d	11	2'-0	
403d	11	2'-1	
404d	11	2'-3	
405d	11	2'-4	
406d	10	2'-6	
407d	9	2'-7	
408d	7	2'-8	
409d	6	2'-9	
410d	5	2'-11	
#4	34	26'-0	
	7	20'-9	
	18	19'-6	
	2	17'-3	
	4	15'-9	
	2	15'-3	
	2	13'-6	
	36	13'-0	
	2	12'-0	
	4	11'-9	
	2	10'-3	
	2	8'-6	
	2	6'-9	
	2	5'-3	
#4	2	3'-9	
	Total Plain #4		1574
	Total Plain Reinf.		2708
	E.C. REINF. STEEL		
#4 e.c.	6	30'-9	
#4 e.c.	32	3'-6	
#4 e.c.	32	2'-4	
	Total E.C. Reinf.		3
CONCRETE			CYS.
Class "A" Concrete in Wing			61.5
Class "C" Concrete in Railing			2.9



ELEVATION ~ WING "C"

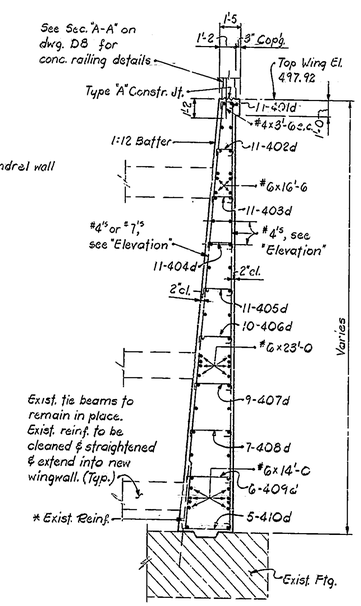
Scale: 1/4" = 1'-0

Bars "A": 18-#4x19'-6 (9 Ea. Fa.)

Bars "B": 7-#4x20'-9, F.Fa.

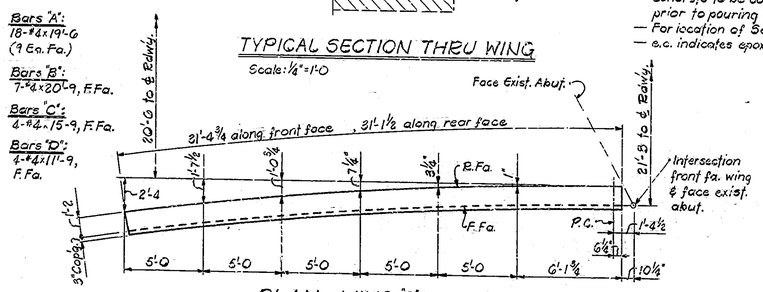
Bars "C": 4-#4x15'-9, F.Fa.

Bars "D": 4-#4x11'-9, F.Fa.



TYPICAL SECTION THRU WING

Scale: 1/4" = 1'-0



PLAN ~ WING "C" (SHOWING OFFSETS @ EL. 497.92)

Scale: 1/4" = 1'-0

Notes:

- For reinforcing bar notes, see Bridge Std. C1.
- For Type "A" Construction Joint, see Bridge Std. C3.
- For Spandrel Wall Details, see dwg. D6.
- For Arch Ring Details, see dwg. D5.
- For Section "A-A", see dwg. D8.
- All contact surfaces of existing steel and existing concrete to be coated with epoxy bonding compound prior to pouring new concrete.
- For location of Section "B-B", see dwg. D1.
- e.c. indicates epoxy coated reinforcing steel.

WING "C" DETAILS & BILL OF MATERIALS

INDIANA DEPARTMENT OF HIGHWAYS

SCALE:- AS NOTED

DATE:- April 15 1985

Guy C. Cantwell

GUY C. CANTWELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER

DRAWING:- D9 OF 9 SHEET:- 11 OF 28

PROJECT:- FB-024-4(

BRIDGE CONTRACT NO. B-15340

BRIDGE FILE:- 56-59-3710 B

DESIGNED D.D.C. C'K'D D.T.L.
DRAWN T.J.N. C'K'D D.T.L.
TRACED C'K'D

SF-22517

STRUCTURE PAY ITEMS

CODE NO.	DESCRIPTION	UNIT	STRUCTURE		TOTAL QUANTITY
51002	CONCRETE CLASS C IN SUPERSTRUCTURE	CYS.			
51061	CONCRETE, CLASS A IN SUPERSTRUCTURE	CYS.			187.3
51005	CONCRETE, CLASS A IN SUBSTRUCTURE	CYS.			
51010	CONCRETE, CLASS B ABOVE FOOTINGS	CYS.			
51015	CONCRETE, CLASS B IN FTGS	CYS.			
51875	SPECIAL CLASS A CONCRETE	SFT.			
51045	CONCRETE STRUCTURAL MEMBERS	LSUM			
51010	REINFORCING STEEL	LBS.			9863
51032	EPOXY COATED REINF. STEEL	LBS.			1706
51035	STRUCTURAL STEEL	LBS.			
51038	STRUCTURAL STEEL	LSUM			
51090	BRONZE PLATES	LBS.			
51370	ANCHOR PLATES(MK-AP 1)	EACH			
51075	ANCHOR PLATES(MK-AP 2)	EACH			
51080	ANCHOR PLATES(MK-AP 3)	EACH			
51085	ANCHOR PLATES(MK-AP 4)	EACH			
51112	ANCHOR BOLTS	EACH			
51068	TIE DOWN ASSEMBLY MK-UA	EACH			
	ADJUST CASTING TO GRADE	EACH			4
51095	CAST IRON,DRAIN PIPE,4 IN.	LBS.			
51100	CAST IRON,DRAIN PIPE,6 IN.	LBS.			
51105	CAST IRON,DRAIN PIPE,8 IN.	LBS.			
51110	CAST IRON,GRATES,BASIN AND FITTINGS	LBS.			
51134	REMOVAL OF PRESENT RAILING	LFT.			
51132	RAILING RESET	LFT.			171
51115	RAILING(TYPE 5 OR C)	LFT.			
51120	RAILING(TYPE 5A OR C1)	LFT.			
51125	RAILING(TYPE 6 or D)	LFT.			
51130	RAILING(TYPE 7 or E)	LFT.			
51020	CLASS C,CONCRETE RAILING	CYS.			15.6
51025	CLASS C,CONCRETE RAILING	LFT.			
51131	BARRIER RAILING TYPE X	LFT.			
51215	CLASS X EXCAVATION	CYS.			
51220	WET EXCAVATION	CYS.			
51223	WATERWAY EXCAVATION	CYS.			
51224	WATERWAY EXCAVATION	LSUM			
51225	DRY EXCAVATION	CYS.			
51230	FOUNDATION EXCAVATION (UNCLASSIFIED)	CYS.			
51813	PNEUMATICALLY PLACED MORTAR	SFT.			
51870	REPOINTING MASONRY IN STRS	SFT.			40
51814	WELDED STEEL WIRE FABRIC	SFT.			
51859	PAINTING OLD STEEL BRIDGE	LSUM			
51881	EXPANSION JOINT,TYPE BS2	LFT.			
51885	EXPANSION JOINT,TYPE BS6	LFT.			
51887	EXPANSION JOINT,TYPE BS8	LFT.			
51888	EXPANSION JOINT,TYPE BS9	LFT.			
51890	EXPANSION JOINT,TYPE BS11	LFT.			
51925	EXPANSION JOINT,CLASS S-S	LFT.			
51926	EXPANSION JOINT,CLASS T-S	LFT.			
51874	OVERLAY DAM	SFT.			

STRUCTURE PAY ITEMS

CODE NO.	DESCRIPTION	UNIT	STRUCTURE		TOTAL QUANTITY
51135	TIMBER PILES FURNISHED UNTREATED	LFT.			
51140	TIMBER PILES DRIVEN, UNTREATED	LFT.			
51145	TIMBER PILES FURN.TREATED	LFT.			
51150	TIMBER PILES DRIV.TREATED	LFT.			
51155	PILE SHELLS FURNISHED AND DRIVEN(12 INCH)	LFT.			
51160	PILE SHELLS FURNISHED AND DRIVEN(14 INCH)	LFT.			
51185	STEEL H PILES FURNISHED AND DRIVEN(8 BP 36)	LFT.			
51190	STEEL H PILES FURNISHED AND DRIVEN (10 BP 42)	LFT.			
51195	STEEL H PILES FURNISHED AND DRIVEN (12 BP 53)	LFT.			
51210	PILE ENCASEMENT;(CONCRETE)	LFT.			
51328	REMOVAL OF PRESENT STR. (PORTIONS)	LSUM			1
51330	REMOVAL OF PRESENT STR.	LSUM			
51335	TEMPORARY BRIDGE AND APPR.	LSUM			
51366	CONCRETE SLOPEWALL 5 INCH	SYS.			
51365	SLOPEWALL	SYS.			
51370	RIPRAP	SYS.			
51375	REVETMENT RIPRAP	TON			
51371	HANDLAID RIPRAP (2 INCH	SYS.			
51372	DUMPED RIPRAP	TON			
51374	PLASTIC FILTER CLOTH	SYS.			
51395	STEEL DRAIN PIPE(6 INCH)	LSUM			
51400	STEEL DRAIN PIPE(8 INCH)	LSUM			
51092	STEEL PIPE CONDUIT(2 INCH)	LFT.			
51866	RIVETS REMOVED	EACH			
51864	FIELD DRILLED HOLES	EACH			
51867	STRUCTURAL STEEL CUTTING	SIN			
51863	FIELD DRILLED HOLES IN CONCRETE,	EACH			2
	3"I.D. PVC. PIPE	LFT.			15
* 51821	SURFACE SEAL	LSUM			1
51842	BRIDGE DECK OVERLAY	SYS.			
51845	BRIDGE DECK SURFACE	SYS.			
51843	BRIDGE DECK PATCHING	SFT.			
51833	CONCRETE SCARIFYING	SYS.			
51840	ADDITIONAL CONC SCARIFYING	SYS.			
51837	BLASTING AND CLEANING	SYS.			
51838	FINISHING AND CURING	SYS.			

* Estimated 4700 S.Ft.

APPROACH PAY ITEMS

CODE NO.	DESCRIPTION	UNIT	STRUCTURE		TOTAL QUANTITY
02045	EXCAVATION FOR SUBGRADE TREATMENT	CYS.			
02020	UNCLASSIFIED EXCAVATION	CYS.			
52240	COMMON EXCAVATION	CYS.			
52245	BORROW	CYS.			
52250	B BORROW	CYS.			
52255	B BORROW FOR STRUCTURE BACKFILL	CYS.			450
52303	REMOVAL OF PAVEMENT	SYS.			
02235	BREAKING PAVEMENT	SYS.			
	REMOVAL OF BITUM. PAVEMENT	SYS.			150
52490	TERMINAL JOINT	LFT.			
52495	CONTRACTION JOINT,TYPE D-1	LFT.			
52280	CONC PAVEMENT REINFORCED (7 INCH)	SYS.			
52295	CONC PAVEMENT REINFORCED (8 INCH)	SYS.			
52290	CONC PAVEMENT REINFORCED (9 INCH)	SYS.			
52300	CONC PAVEMENT REINFORCED (10 INCH)	SYS.			
06070	CONCRETE SIDEWALK	SYS.			
52305	TYPE P COMPACTED AGGREGATE FOR BASE (SIZE NO. 53)	TON			
52605	AGGREGATE FOR SHOULDER DRAINS	TON			
52610	AGGREGATE FOR UNDER DRAINS	CYS.			
52308	TYPE O COMPACTED AGGREGATE FOR BASE (SIZE NO. 53)	TON			
52310	SUBBASE	CYS.			
52315	BITUM.STABILIZED SUBBASE TYPE I, II, OR III	TON			
52320	BITUM. STABILIZED SUBBASE	TON			
52445	BITUMINOUS BASE	TON			
04260	BITUMINOUS BASE (TYPE 5D)	TON			
52451	BITUMINOUS BINDER	TON			
52450	BITUMINOUS SURFACE	TON			
52456	BITUMINOUS MATERIAL FOR TACK COAT	SYS.			
52461	BITUMINOUS MATERIAL FOR PRIME COAT	SYS.			
04351	SEAL COAT TYPE 5	SYS.			
04348	SEAL COAT TYPE 2	SYS.			
52470	BITUMINOUS MIXTURE FOR APPROACHES	TON			572
52475	BITUMINOUS MIXTURE FOR SHOULDER	TON			
52500	GUARD RAIL. TYPE A	LFT.			
52505	GUARD RAIL, TYPE B	LFT.			400
52510	GUARD RAIL. TYPE C	LFT.			
52515	GUARD RAIL, TYPE D	LFT.			275
52520	GUARD RAIL, TYPE E	LFT.			
52525	GUARD RAIL, TYPE F	LFT.			
52530	GUARD RAIL, TYPE G	LFT.			
52531	GUARD RAIL, TYPE H	LFT.			
	G.R. END TREATMENT,TYPE I	EACH			2
06035	RESET GUARD RAIL	LFT.			
52535	REMOVAL OF GUARD RAIL	LFT.			
52380	SODDING	SYS.			
52381	SODDING (NURSERY)	SYS.			
52389	MULCHED SEEDING "R"	SYS.			
06560	MULCHED SEEDING "U"	SYS.			
52392	MULCHED SEEDING(LEGUMES)	SYS.			
52388	SEED MIXTURE "R"	LBS.			
52389	SEED MIXTURE "U"	LBS.			
52398	SEED MIXTURE "CU"	LBS.			
52391	SEED MIXTURE (GRASS)	LBS.			
52400	MULCHING MATERIAL	TON			
52401	MULCHING MATERIAL (WOOD CELLULOSE FIBER)	TON			
52405	FERTILIZER	TON			
52410	WATER	M.G.			
52415	AGRICULTURAL LIMESTONE	TON			

APPROACH PAY ITEMS

CODE NO.	DESCRIPTION	UNIT	STRUCTURE		TOTAL QUANTITY
07025	PIPE:GR.A(0.064"FBCCS) 12"	LFT.			
07075	PIPE:GR.A(0.064"FBCCS) 15"	LFT.			
07125	PIPE:GR.A(0.064"FBCCS) 18"	LFT.			
07175	PIPE:GR.A(0.064"FBCCS) 24"	LFT.			
07225	PIPE:GR.A(0.064"FBCCS) 30"	LFT.			
07275	PIPE:GR.A(0.064"FBCCS) 36"	LFT.			
07325	PIPE:GR.A(0.064"FBCCS) 42"	LFT.			
10000	PIPE:GR.D(0.064"CS) 12"	LFT.			
10025	PIPE:GR.D(0.064"CS) 15"	LFT.			
10050	PIPE:GR.D(0.064"CS) 18"	LFT.			
10075	PIPE:GR.D(0.064"CS) 24"	LFT.			
10100	PIPE:GR.D(0.064"CS) 30"	LFT.			
10125	PIPE:GR.D(0.064"CS) 36"	LFT.			
10150	PIPE:GR.D(0.064"CS) 42"	LFT.			
34000	PIPE:0.052"FBC PERF.CS 6"	LFT			
29000	PIPE:0.064"FBCCS 12"	LFT.			
52375	CONC.CLASS A IN STRUCTURE	CYS.			
52376	CONC.CLASS C IN STRUCTURE	CYS.			
46000	PIPE END SECTION 12"	EACH			
46005	PIPE END SECTION 15"	EACH			
46010	PIPE END SECTION 18"	EACH			
46015	PIPE END SECTION 21"	EACH			
46020	PIPE END SECTION 24"	EACH			
46025	PIPE END SECTION 27"	EACH			
46030	PIPE END SECTION 30"	EACH			
46035	PIPE END SECTION 33"	EACH			
46040	PIPE END SECTION 36"	EACH			
45000	INLET,TYPE A-1	EACH			
45025	INLET,TYPE D-6	EACH			
45030	INLET,TYPE E-7	EACH			
45070	INLET,TYPE P-12A	EACH			
06335	PAVED SIDE DITCH,TYPE A	LFT.			
06340	PAVED SIDE DITCH,TYPE B	LFT.			
06345	PAVED SIDE DITCH,TYPE C	LFT.			
06350	PAVED SIDE DITCH,TYPE D	LFT.			
06355	PAVED SIDE DITCH,TYPE E	LFT.			
06360	PAVED SIDE DITCH,TYPE F	LFT.			
06365	PAVED SIDE DITCH,TYPE G	LFT.			
52831	DRILLED HOLES FOR MUDJACKING	EACH			
52830	MATERIAL FOR MUDJACKING	CYS.			
99660	DO NOT SPRAY SIGNS	EACH			

APPROACH PAY ITEMS

CODE NO.	DESCRIPTION	UNIT	STRUCTURE		TOTAL QUANTITY
06040	47"FENCE,F,FIELD	LFT.			
06045	48"FENCE,CHAIN LINK	LFT.			
52340	CONSTRUCTION SIGNS(TYPE A)	EACH			15
52345	CONSTRUCTION SIGNS(TYPE B)	EACH			2
52250	STD.BARRICADES(TYPE III)	EACH			
52640	MAINTAINING TRAFFIC	LSUM			1
06650	STOP SIGN,TYPE R-1A	EACH			
06652	DO NOT PASS SIGN, TYPE R-11-A	EACH			
06655	YIELD SIGN,TYPE R-301	EACH			
06657	PASS WITH CARE SIGN, TYPE R-12A	EACH			
06660	CURVE SIGN,TYPE W-2AR	EACH			
06665	CURVE SIGN,TYPE W-2AL	EACH			
06670	REVERSE CURVE SIGN, TYPE W-4AR	EACH			
06675	REVERSE CURVE SIGN, TYPE W-4AL	EACH			
06680	LARGE ARROW SIGN, TYPE W-11A	EACH			
06685	STOP AHEAD SIGN,TYPE W-13A	EACH			
06725	DELINEATOR WITH POST, TYPE D-1, 3 INCH	EACH			
06740	DELINEATOR WITH POST, TYPE D-2, 3 INCH	EACH			
52825	FLEXIBLE DELINEATORS	EACH			
06770	DELINEATOR POST	EACH			
06771	FLEXIBLE DELINEATOR POST	EACH			
	TEMPORARY PAVEMENT MARKING TYPE I	LFT.			2060
	TEMPORARY PAVEMENT MARKING TYPE II	LFT.			876
52360	RIGHT-OF-WAY MARKERS	EACH			[illegible]
06500	MONUMENT,TYPE A	EACH			
06505	MONUMENT,TYPE B	EACH			
06510	MONUMENT,TYPE C	EACH			
06515	MONUMENT,TYPE D	EACH			
52821	FLASHING ARROW SIGN	WKS.			
06713	LINE,SOLID,WHITE, 4"	LFT.			506
06714	LINE,SOLID,YELLOW, 4"	LFT.			1560
06702	THERMOPLASTIC LINE,SKIP WHITE, 5"	LFT.			
06711	LINE,SKIP,WHITE, 4"	LFT.			
06712	LINE,SKIP,YELLOW 4"	LFT.			
06716	REMOVAL OF LINE,SOLID, WHITE, 4"	LFT.			506
06717	REMOVAL OF LINE,SOLID, YELLOW 4"	LFT.			1560
06718	REMOVAL OF LINE,SKIP, WHITE 4"	LFT.			
96900	REMOVAL OF LINE,SKIP, YELLOW 4"	LFT.			
53055	REMOVAL OF THERMOPLASTIC LINE,SKIP,WHITE 5"	LFT.			
52536	TEMPORARY CONC. BARRIER	LFT.			260
52810	TEMPORARY CROSSOVER TYPE "B"	EACH			

REVISIONS

DATE	ITEM

BRIDGE ESTIMATE OF QUANTITIES

INDIANA DEPARTMENT OF HIGHWAYS

DATE April 15, 1985

SUMMARIZED T.L.H. C'K'D T.E.M.

TRACED T.J.N. C'K'D D.T.L.

MARCH 1982

PROJECT FR-024-4( )
CONTRACT NO: B-15390
BRIDGE FILE: 56-59-3710 B

SHEET 12 OF 28

GUY E. CANTWELL REGISTERED 12220 STATE OF INDIANA PROFESSIONAL ENGINEER