

SN 041-0042

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SET NO. 2 OF 3 SETS

SET 2 OF 3

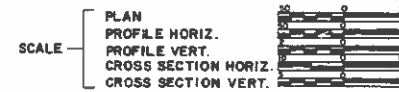
ROUTE NO.	JEC.	COUNTY	SECTION	SHEET
849	I13BR-1	JEFFERSON	27	1

P97 - 020 - 84

PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

SHEET NO.	TITLE
1	TITLE SHEET
2	TYPICAL SECTIONS & GENERAL NOTES
3	SUMMARY OF QUANTITIES
4	PLAN AND PROFILE (ILL. 142)
5	PLAN AND PROFILE (RELOCATED TR 333)
6	DELETED
7-23	BRIDGE PLANS
24, 425	CROSS SECTIONS (ILL. 142)
26, 427	CROSS SECTIONS & CROSS ROAD CULVERT SECTIONS (RELOCATED TR 333)

SCALE IN FEET



F.A. RTE. 849 (ILL. RTE. 142)
SECTION I13 BR-1
~~PROJECT BR-849~~
JEFFERSON COUNTY

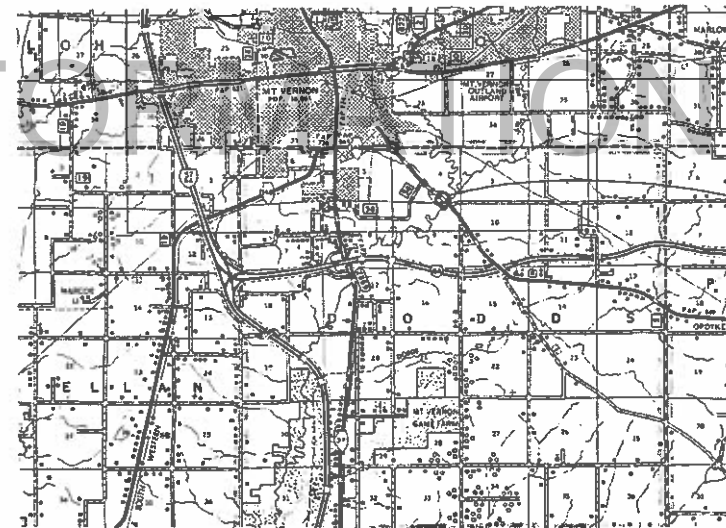
6-87-055-88

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS
AND ARE INCLUDED AFTER SET NO. 3.

1686-	SYMBOLS AND ABBREVIATIONS
1744-	RIGHT-OF-WAY MARKERS
2113-	NAME PLATE FOR BRIDGES
2230-	STEEL PLATE BEAM GUARD RAIL TYPES A, B, C, & D
2262-	PRECAST REINFORCED CONCRETE FLARED END SECTION
2298-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2299-	DESIGN OF TRAFFIC CONTROL DEVICES
2300-	FLAGMAN TRAFFIC CONTROL SIGN
2301-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2302-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2305-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2306-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2307-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2308-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2311-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2323-	PAVEMENT JOINTS
2324-	BRIDGE APPROACH SHOULDER PAVEMENT
2336-	TRAFFIC BARRIER TERMINAL TYPE 1 & 1A
2341-	TRAFFIC BARRIER TERMINAL TYPE 6
2381-	TEMPORARY EROSION CONTROL SYSTEMS
2382-	BRIDGE APPROACH PAVEMENT
2383-	TEMPORARY CONCRETE BARRIERS
2409-	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
2427	CLASS C AND D PATCHES



LOCATION OF SECTION INDICATED THUS:—



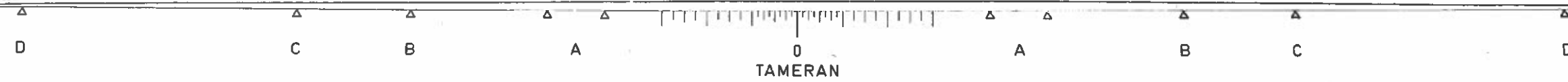
LOCATION OF PROJECT
F.A. ROUTE 849 SECTION
I13 BR-1 CASEY FORK
BEGINS STA. 12+00
ENDS STA. 129+00

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	
DATE:	_____
DESIGNED BY:	_____
CHECKED BY:	_____
APPROVED BY:	_____
SECTION OF HIGHWAYS	



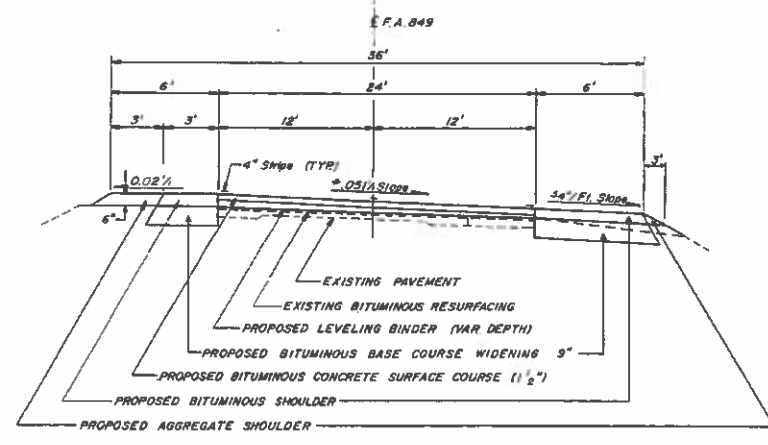
CONTRACT NO.

JEFFERSON COUNTY SECTION I13 BR-1 F.A. ROUTE 849

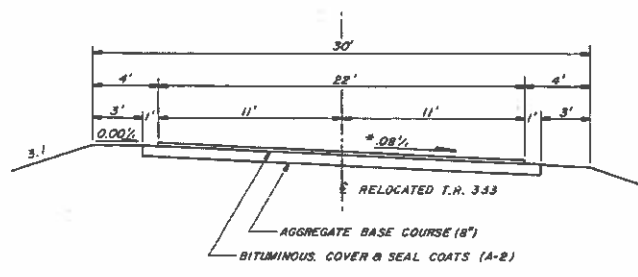


ROUTE	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FA 849 (13 BR-1)		JEFFERSON	27	2
KENTON, KY. DEPT. OF HIGHWAYS - PROJECT -				

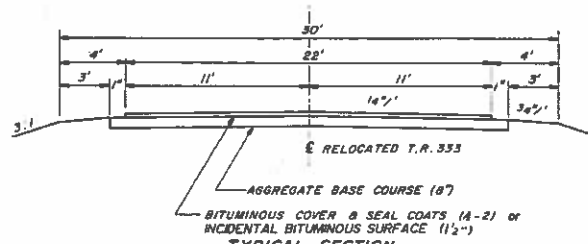
* NOTE: Varies at Stations of S.E. Attainment and Removal.



TYPICAL SECTION
 STA. 121+00 to STA. 122+60.57
 STA. 124+73.43 to STA. 128+33.52



TYPICAL SECTION
 STA. 53+94.04 to STA. 60+96.67



TYPICAL SECTION
 STA. 50+12 to STA. 53+94.04
 STA. 60+96.67 to STA. 60+00

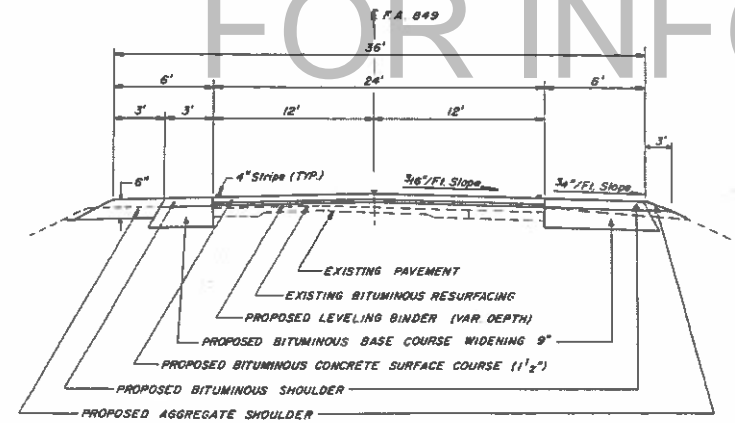
RELOCATED TR 333

GENERAL NOTES

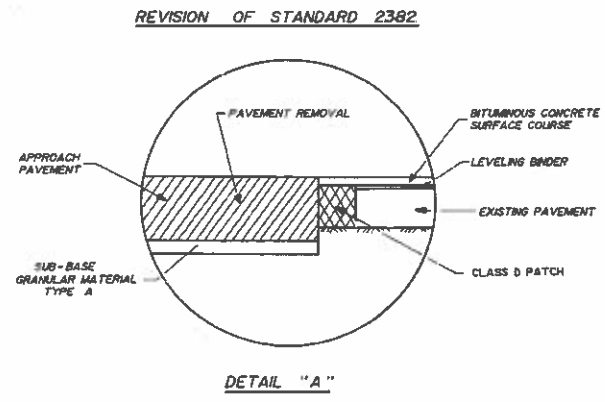
This Section shall be constructed in accordance with the plans, the "Standard Specifications for Road and Bridge Construction", adopted July, 1966, the "Standard Specifications for Traffic Control Items", adopted February 1, 1964, the Supplemental Specifications and Recurring Special Provisions and the Special Provisions included in the Proposal.

The work included in Section 113 BR-1 consists of the construction of a three span structure carrying Ill. Route 142 over Casey Fork; the removal of the existing superstructure, the partial removal of the existing abutments and piers, the construction of bridge approach pavements, guardrail, resurfacing of the existing pavement, relocating TR 333, and all other work necessary to complete the Section.

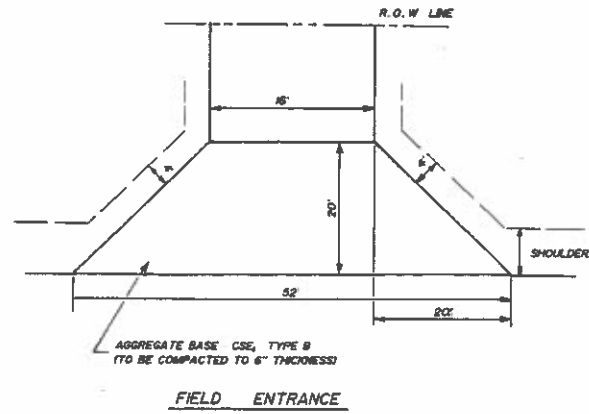
CLASS II SEEDING SHALL BE ACCOMPLISHED BETWEEN THE DATES OF APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 15.



TYPICAL SECTION
 STA. 128+53.62 to STA. 129+00
F.A. ROUTE 849



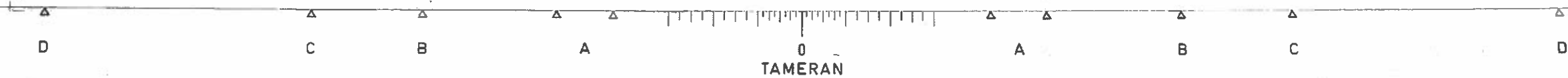
DETAIL "A"



FIELD ENTRANCE

GREENE & BRADFORD, L.M.
 CONSULTING ENGINEERS
 1001 FIVE HILLS DRIVE • PLYMOUTH • BRADFORD, KY.

TYPICAL SECTION AND GENERAL NOTES



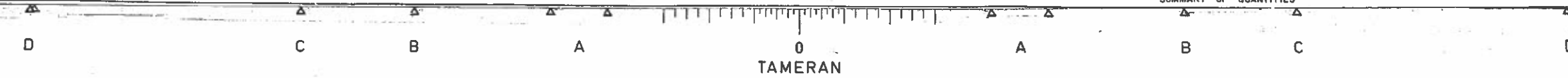
ROUTE	SECTION	COUNTY	TOTAL SHEET	SHEET NO.
FA. 949	13 BR-1	JEFFERSON	27	3

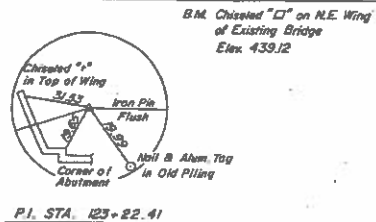
SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	CONSTRUCTION TYPE CODE	
			TOTAL	X071-2A
1502020	PAINT PAVEMENT MARKING-LINE 4"	LIN FT	1890	1890
20100100	TREE REMOVAL (6 TO 15 INCH DIAMETER)	IN DIA	76	76
20100200	TREE REMOVAL (OVER 15 INCH DIAMETER)	IN DIA	44	44
20200100	EARTH EXCAVATION	CU YD	996	996
20700100	EMBANKMENT	CU YD	5157	5157
20800200	AGGREGATE SHOULDERS, TYPE B	TON	84	84
21000100	BITUMINOUS SHOULDERS	TON	122	122
30100100	AGGREGATE BASE COURSE, TYPE A	TON	1220	1220
30101400	AGGREGATE BASE COURSE, TYPE B	TON	52	52
30800400	BITUMINOUS CONCRETE BASE COURSE WIDENING 9"	SQ YD	657	657
40300300	BITUMINOUS MATERIALS (COVER AND SEAL COATS)	GALLON	1760	1760
40300500	COVER COAT AGGREGATE	TON	31	31
40300600	SEAL COAT AGGREGATE	TON	31	31
40600100	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	987	987
40600300	AGGREGATE (PRIME COAT)	TON	4	4
40600500	LEVELING BINDER (MACHINE METHOD)	TON	226	226
40600850	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 2	TON	141	141
40700400	INCIDENTAL BITUMINOUS SURFACING	TON	22	22
40800150	BRIDGE APPROACH PAVEMENT (STANDARD 2382)	SQ YD	107	107
40800150	P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ YD	35	35
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	1
50102000	CONCRETE REMOVAL	CU YD	110	110
50300100	FLOOR DRAINS	EACH	11	11
50500120	PREFORMED JOINT SEALER 2 1/2"	LIN FT	39	39
50800130	PREFORMED JOINT SEALER 4"	LIN FT	39	39
50800300	CLASS X CONCRETE SUPERSTRUCTURES PROTECTIVE COAT	CU YD	96.9	96.9
50800300	PROTECTIVE COAT	SQ YD	921	921
50800310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	18	18
51400300	CLASS X CONCRETE	CU YD	81.4	81.4
51700100	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	0.4	0.4
51700500	STUD SHEAR CONNECTORS	EACH	208	208
40601960	STRIP REFLECTIVE CRACK CONTROL TREATMENT	LM.FT.	1340	1340
40601960	GEOTEXTILE FABRIC FOR EROSION CONTROL OF SLOPEWALLS	SQ.YD.	830	830
10040500	PIPE CULVERT REMOVAL	LM.FT.	36	36
	FILTER FABRIC FOR USE WITH RIPRAP	SQ.YD.	320	320
	PIPE CULVERTS, TYPE 1, R.C.C.P. 15"	LIN FT.	58	58
	PIPE CULVERTS, TYPE 1, R.C.C.P. 18"	LIN FT.	78	78
	AGGREGATE SURFACE COURSE, TYPE B	TON	85	85

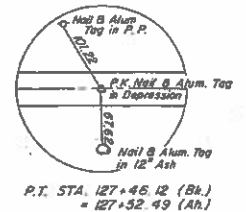
CODE NO.	ITEM	UNIT	CONSTRUCTION TYPE CODE	
			TOTAL	X071-2A
51100445	PIPE CULVERTS, TYPE 1 R.C.C.P. 30"	LIN FT	39	39
51101250	PIPE CULVERTS, TYPE 2 R.C.C.P. 42"	LIN FT	48	48
51113675	PRECAST REINFORCED CONCRETE FLARED END SECTION 30"	EACH	2	2
51113687	PRECAST REINFORCED CONCRETE FLARED END SECTION 42"	EACH	2	2
51200100	REINFORCEMENT BARS	POUND	12440	6040 6400
51200200	REINFORCEMENT BARS (EPOXY COATED)	POUND	42570	42570
51300400	FURNISHING STEEL PILES HP10X42	LIN FT	860	860
51300200	DRIVING STEEL PILES	LIN FT	860	860
51300400	TEST PILE STEEL HP10X42	EACH	1	1
51300500	TEMPORARY SHEET PILING	SQ FT	1000	1000
51400100	NAME PLATES	EACH	1	1
60100107	STONE RIPRAP, CLASS A 4	SQ YD	320	320
63600500	INSTALL TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	LIN FT	440	440
63600700	INSTALL TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2	2
61605530	RELOCATE TEMPORARY CONCRETE BARRIER	LIN FT	490	490
61700100	PAVEMENT REMOVAL	SQ YD	211	211
62000200	CLASS O PATCHES, TYPE I, 10 INCH	SQ YD.	16	16
62800000	STEEL PLATE BEAM GUARD RAIL, TYPE A	LIN FT	400	400
62800035	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	4	4
62800085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4
63300500	STEEL PLATE BEAM GUARD RAIL REMOVAL	LIN FT	75	75
64200200	SEEDING, CLASS II	ACRE	1.8	1.8
64600400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	7	7
64700080	TEMPORARY PAVEMENT MARKING	LIN FT	128	128
64800405	TRAFFIC CONTROL AND PROTECTION, STANDARD 2409	EACH	0.4	0.4
65000100	MOBILIZATION	L SUM	0.4	0.4
64200400	NITROGEN FERTILIZER NUTRIENT	POUND	144	144
64200500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	144	144
64200600	POTASSIUM FERTILIZER NUTRIENT	POUND	144	144
64200700	AGRICULTURAL GROUND LIMESTONE	TON	7.2	7.2
64300110	MULCH METHOD I	TON	3.6	3.6
60200600	STRUCTURE EXCAVATION	CU.YD.	70	70
61700900	BITUMINOUS CONCRETE REMOVAL	SQ.YD.	8	8
64800500	TRAFFIC CONTROL AND PROTECTION, STANDARD 2311	L SUM	0.4	0.4
63900100	FURNISHING AND ERECTING RIGHT-OF-WAY MARKERS	EACH	16	16

SUMMARY OF QUANTITIES

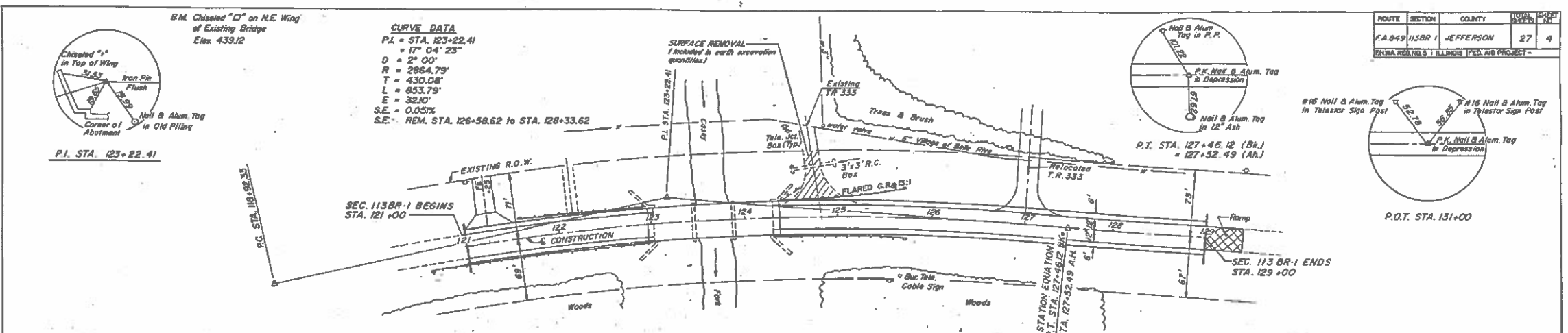




CURVE DATA
 P.I. = STA. 123+22.41
 = 17° 04' 23"
 D = 2' 00"
 R = 2854.73'
 T = 430.08'
 L = 853.79'
 E = 32.10'
 S.E. = 0.051%
 S.E. REM. STA. 126+58.62 TO STA. 128+33.62



ROUTE	SECTION	COUNTY	DATE	SHEET
F.A. 849	113BR-1	JEFFERSON	27	4



CONSTRUCT TRAFFIC BARRIER TERMINAL TYPE 6
 RT. STA. 122-59 TO RT. STA. 122-88 1 EACH
 LT. STA. 122-59 TO LT. STA. 122-88 1 EACH
 RT. STA. 124-35 TO RT. STA. 124-75 1 EACH
 LT. STA. 124-35 TO LT. STA. 124-75 1 EACH
 TOTAL 4 EACH

CONSTRUCT STEEL PLATE BEAM GUARD RAIL
 RT. STA. 120+84 TO RT. STA. 122-59 175 LIN. FT.
 LT. STA. 120+84 TO LT. STA. 122-59 75 LIN. FT.
 RT. STA. 124-75 TO RT. STA. 125-50 75 LIN. FT.
 LT. STA. 124-75 TO LT. STA. 125-50 75 LIN. FT.
 TOTAL 400 LIN. FT.

CONSTRUCT AGGREGATE SHOULDERS, TYPE B
 LT. STA. 121+00 TO LT. STA. 122+71.57 20 TON
 RT. STA. 121+00 TO RT. STA. 122+00 3 TON
 LT. STA. 124+58.43 TO LT. STA. 125+00 50 TON
 RT. STA. 125+30 TO RT. STA. 125+00 11 TON
 TOTAL 84 TON

CONSTRUCT AGGREGATE (PRIME COAT)
 STA. 121+00 TO STA. 122-63.57 1 TON
 STA. 124+70.43 TO STA. 125+40 3 TON
 TOTAL 4 TON

CONSTRUCT LEVELING BINDER (MACHINE METHOD)
 STA. 121+00 TO STA. 122-63.57 78 TON
 STA. 124+70.43 TO STA. 125-10 148 TON
 TOTAL 226 TON

TEMPORARY PAVEMENT MARKING
 STA. 121+00 TO STA. 122-63.57 34 LIN. FT.
 STA. 124+70.43 TO STA. 125-42 54 LIN. FT.
 TOTAL 128 LIN. FT.

PAINT PAVEMENT MARKING - LINE 4"
 STA. 121+00 TO STA. 125+40 1890 LIN. FT.

GREENE & BRADFORD, Ltd.
 CONSULTING ENGINEERS
 1719 WASHINGTON BL. • WASHINGTON • WYOMING, U.S.A.

CONSTRUCT TRAFFIC BARRIER TERMINAL TYPE 1
 RT. STA. 120-59 TO RT. STA. 120-84 1 EACH
 LT. STA. 120-59 TO LT. STA. 120-84 1 EACH
 RT. STA. 125-50 TO RT. STA. 125-75 1 EACH
 LT. STA. 125-50 TO LT. STA. 125-75 1 EACH
 TOTAL 4 EACH

STEEL PLATE BEAM GUARD RAIL REMOVAL
 RT. STA. 122+89 TO RT. STA. 122-99 50 LIN. FT.
 LT. STA. 124+35 TO LT. STA. 124-57 25 LIN. FT.
 TOTAL 75 LIN. FT.

CONSTRUCT BITUMINOUS MATERIAL (PRIME COAT)
 STA. 121+00 TO STA. 122-63.57 57 GALLON
 STA. 124+70.43 TO STA. 125+40 136 GALLON
 TOTAL 193 GALLON

STRIP REFLECTIVE CRACK CONTROL TREATMENT
 STA. 121+00 TO STA. 123+00 200 LBS.
 STA. 124+30 TO STA. 125+00 940 LBS.
 TOTAL 1140 LBS.

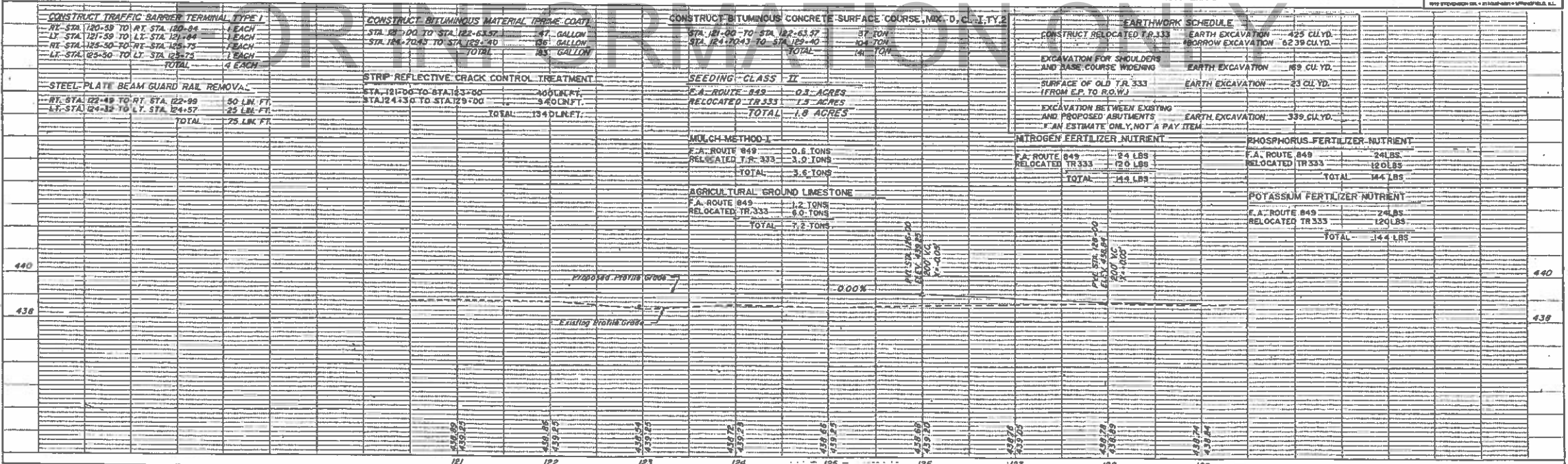
CONSTRUCT BITUMINOUS CONCRETE SURFACE COURSE, MK. D, C, I, FY. 2
 STA. 121+00 TO STA. 122-63.57 37 TON
 STA. 124+70.43 TO STA. 125+40 104 TON
 TOTAL 141 TON

SEEDING CLASS II
 F.A. ROUTE 849 0.3 ACRES
 RELOCATED TR 333 1.5 ACRES
 TOTAL 1.8 ACRES

MULCH METHOD 1
 F.A. ROUTE 849 0.6 TONS
 RELOCATED TR 333 3.0 TONS
 TOTAL 3.6 TONS

AGRICULTURAL GROUND LESTONE
 F.A. ROUTE 849 1.2 TONS
 RELOCATED TR 333 6.0 TONS
 TOTAL 7.2 TONS

EARTHWORK SCHEDULE		PHOSPHORUS FERTILIZER NUTRIENT	
CONSTRUCT RELOCATED TR 333	EARTH EXCAVATION	F.A. ROUTE 849	24 LBS.
BORROW EXCAVATION	62.39 CU. YD.	RELOCATED TR 333	120 LBS.
EXCAVATION FOR SHOULDERS AND BASE COURSE WIDENING	EARTH EXCAVATION	TOTAL	144 LBS.
SURFACE OF OLD TR 333 (FROM E.P. TO R.O.W.)	EARTH EXCAVATION	POTASSIUM FERTILIZER NUTRIENT	
EXCAVATION BETWEEN EXISTING AND PROPOSED ABUTMENTS	EARTH EXCAVATION	F.A. ROUTE 849	24 LBS.
FAN ESTIMATE ONLY, NOT A PAY ITEM	339 CU. YD.	RELOCATED TR 333	120 LBS.
		TOTAL	144 LBS.



PLAN	SCALE
AS SHOWN	1" = 40'

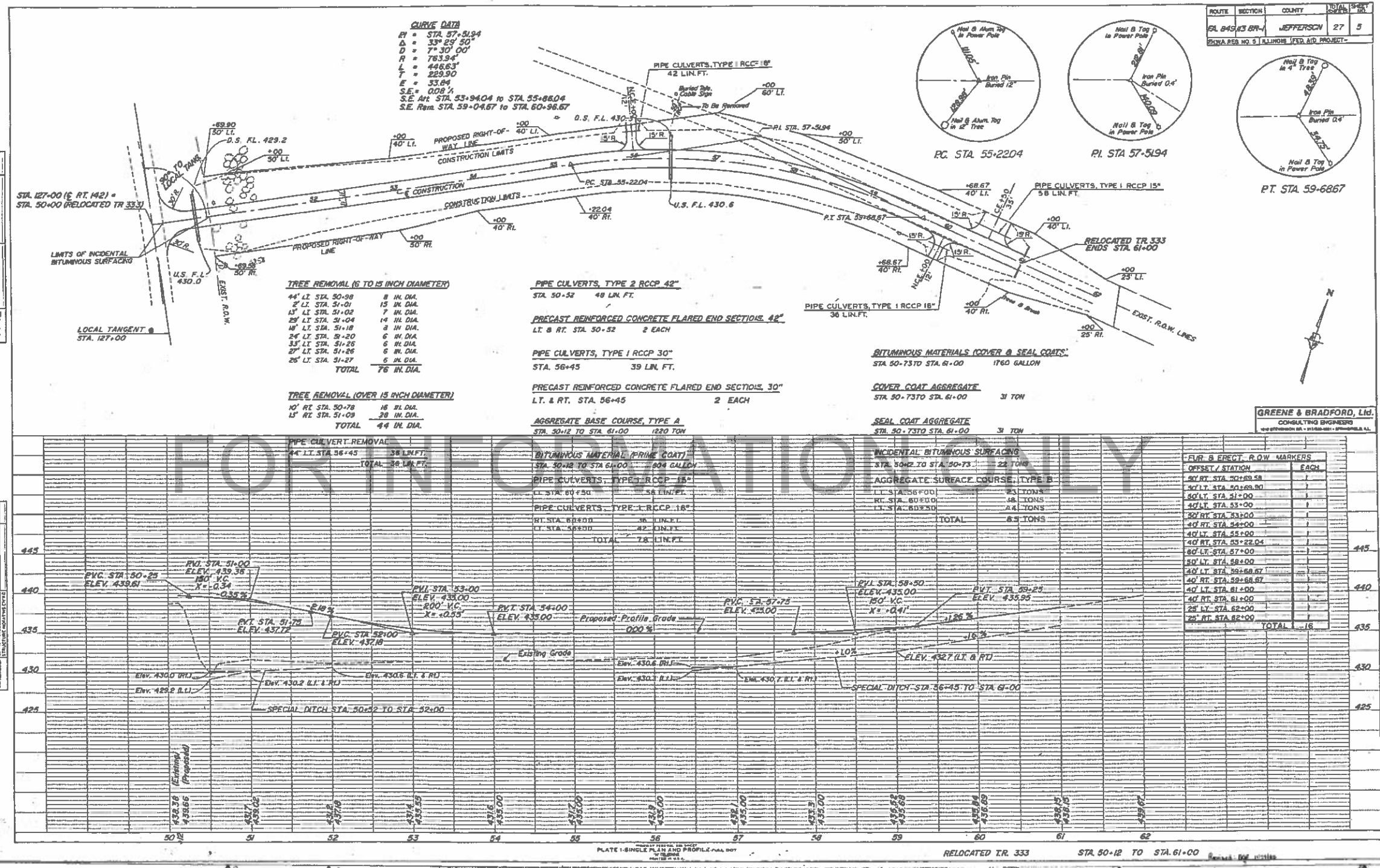
PROFILE	SCALE
AS SHOWN	1" = 10'



TAMERAN
DAD CUTI

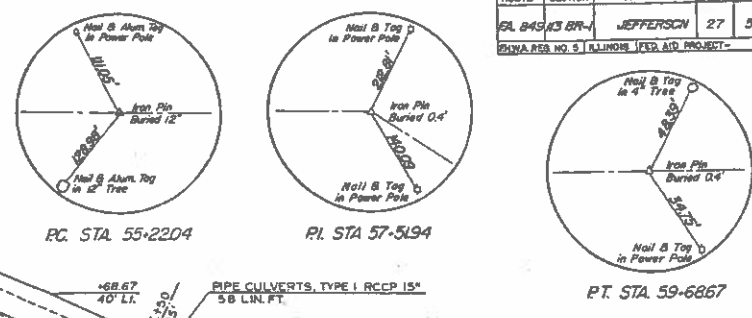
DATE		
BY		
REVISIONS		
NO.	DESCRIPTION	DATE
1	AS SHOWN	10/20/02

PROFILE		
NO.	DESCRIPTION	DATE
1	AS SHOWN	10/20/02

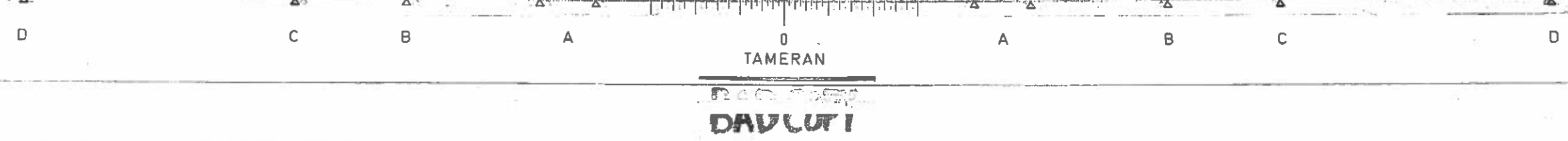


ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
EA. 045 (3 BR.)		JEFFERSON	27	5

IANA REG. NO. 5 | ILLINOIS | PER. AND PROJECT



GREENE & BRADFORD, Ltd.
 CONSULTING ENGINEERS
 1115 W. WASHINGTON ST. | CHICAGO, ILL.



TAMERAN
 DAVCUT I

B.M. Chisled "D" Top of NE Wingwall of Existing Bridge. Elev. 439.12

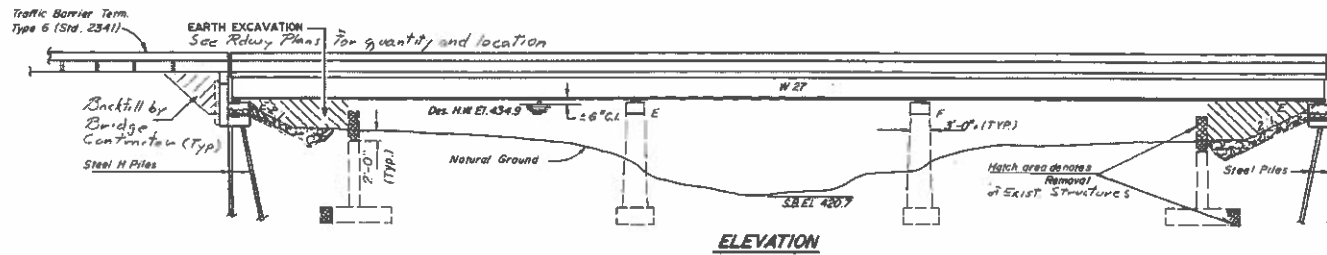
Exist. Struct. 041-0042. Three span R.C. deck girder on R.C. closed abutments and R.C. solid piers. Superstructure and abutments to be removed. No Salvage. Revise piers to accommodate new superstructure. Use Stage Construction to maintain one lane of traffic during construction. Exist. Struct. 129'-3" x 37'-0"

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to minimal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

BRIDGE SHEET 1 OF 17
GENERAL NOTES

ROUTE	SECTION	COUNTY	SHEET
FA 849	113BR	JEFFERSON	27 7

- Fasteners shall be high strength bolts (AASHTO) M164. Bolts 3/4" dia, open holes 1/2" dia, or 6" dia, open holes 1/2" dia, unless otherwise noted.
- Calculated weight of structural steel equals 122,120 pounds. (M163 ----- 15,350) (M164, or 50 ----- 106,970)
- The Zinc Silicate and Vinyl Paint System shall be used for shop and field painting of structural steel, except where otherwise noted.
- Field welding of construction accessories will not be permitted to the bottom flange of beams nor to the top flange for a distance equal to 1/4 the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the engineer.
- Anchor bolts shall be set before bolting diaphragms over the supports.
- The main load carrying member components subject to tensile stress shall conform to the supplemental requirements for Notch Toughness Zone 2. These components are the splice plate material and steel wide flange beams.
- Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, or M-53 Grade 60.
- Riprap slopes may be varied in the field to suit ground conditions as directed by the Engineer.
- Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8". Adjustments shall be made either by grinding the surface or by shimming the bearing. Two 1/2" adjusting shims of the dimensions of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. For type I Elastomeric Brgs., shims of the dimension of the top plate shall be provided and placed as detailed.
- See sh 16 for Boring Data.
- The Contractor shall drive one (1) Steel Test Pile at the West Abutment, at a permanent location as directed by the Engineer. Test piles shall be driven prior to ordering the remainder of each type of piling.



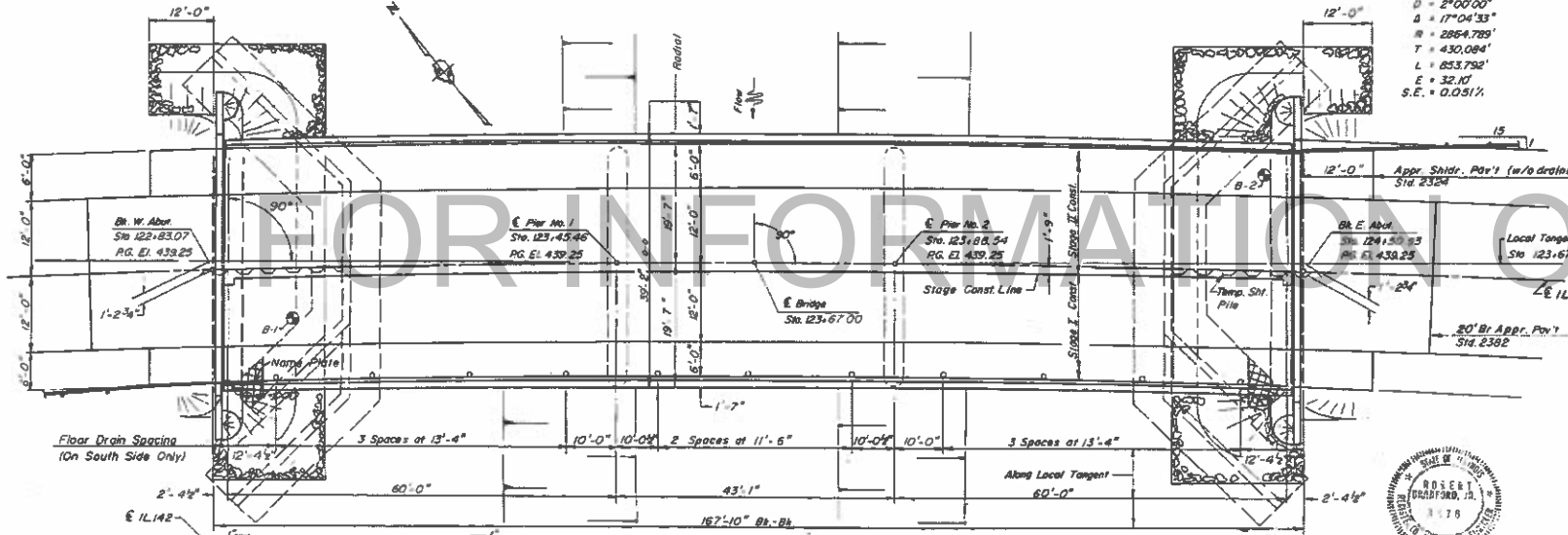
ELEVATION

CURVE DATA

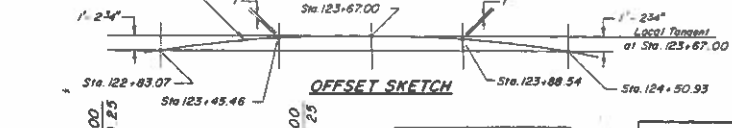
PI = 123,22.41
D = 2°00'00"
A = 17°04'33"
R = 2864.789'
T = 430.084'
L = 853.792'
E = 32.10'
S.E. = 0.051%



RIP-RAP ANCHOR DETAIL



PLAN



OFFSET SKETCH

WATERWAY INFORMATION TABLE

Section	Flood	Freq. Yr.	Q Total C.F.S.	Opening (Sq. Ft.)	Net Head (Ft.)	Headwater Elev. Exist.	Headwater Elev. Prop.			
13BR-1	Design	50	4100	950	999	434.9	0.52	0.39	435.42	435.29
	Base	100	4645	974	1027	435.1	0.60	0.48	435.78	435.59
	Max. Conc.	500	5885	1068	1068	435.5	0.76	0.76	436.26	436.26

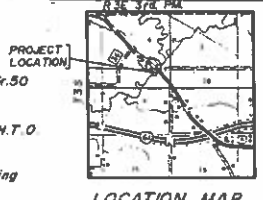
STATION 123+87
RESULT 198... BY
STATE OF MISSISSIPPI
F.A. RT. 849 SEC. 13BR-1
F.A. PROJ. ACB-ACF-849(6)
LOADING HS20
STR. NO. 041-0042

NAME PLATE

See Std. 283. Locate Existing Name E adjacent to New. Incident.

DESIGN STRESSES

$f_c = 3,500$ p.s.i.
 $f_y = 60,000$ p.s.i. (Reinf.)
 $f_y = 50,000$ p.s.i. (SI. ST. M223) Gr. 50
 $f_y = 36,000$ p.s.i. (SI. ST. M163)
LOADING HS20-44
Design Specifications: 1983 A.A.S.H.T.O.
& 1984 Interim.
Allow 25 #/sq. ft. for future wearing surface.



LOCATION MAP

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUB	SUPER	TOTAL
Protective Coat *	sq. yd.		921	921
Class X Concrete	cu. yd.	81.4		81.4
Structural Steel	L. sum		0.4	0.4
Stud Shear Connectors	ea.		2016	2016
Reinforcement Bars	lb.	6400		6400
Reinforcement Bars (Epoxy coated)	lb.		43,450	43,450
Name Plates	ea.		1	1
Temporary Sheet Piling	Sq. ft.	1000		1000
Steel Piles HP 10x42	lin. ft.	860		860
Test Piles, Steel HP 10x42	ea.	1		1
Class X Concrete Superstr's	cu. yd.		196.9	196.9
Riprap-Stone, Class A4	sq. yd.	320		320
Floor Drains	ea.		11	11
Concrete Removal	cu. yd.	11.0		11.0
Preformed Joint Seal 2 1/2"	lin. ft.		39	39
Preformed Joint Seal 4"	lin. ft.		39	39
Removal of Existing Structures	ea.		1	1
Elastomeric Bearing Assembly Ty I	ea.		18	18
Filter Fabric For use w/ Riprap	sq. yd.	320		320
Structure Excavation	cu. yd.	70		70

GENERAL PLAN
FA. RTE. 849 (ILL. 142 / CASEY FORK CR.
SECTION 113BR-1
JEFFERSON COUNTY
STATION 123+67.00
STRUCTURE NO. 041-0042

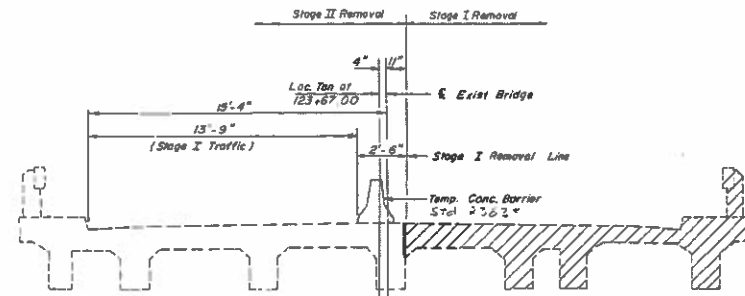
GREENE & BRADFORD, L.N.
CONSULTING ENGINEERS
2117 W. 10TH ST. SUITE 100
JEFFERSON CITY, MISSISSIPPI 39201
Tel. 578-89



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

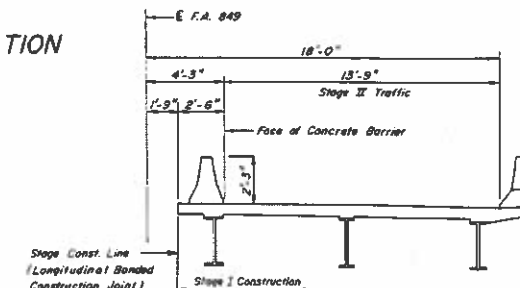
ROUTE	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FA 849	113BR-1	JEFFERSON	27	8

BRIDGE SHEET 2 OF 11



REMOVAL
(Showing Stage I Traffic)
* For quantity and location see Rwy Plans
Hatched portion indicates removal area.

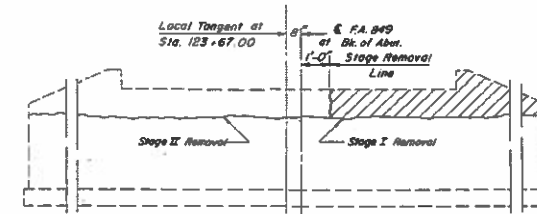
NOTES: Existing bridge is straight and symmetrical about E. Exist Br.
New bridge is curved and symmetrical about E. F.A. 849.



CONSTRUCTION
(Showing Stage II Traffic)

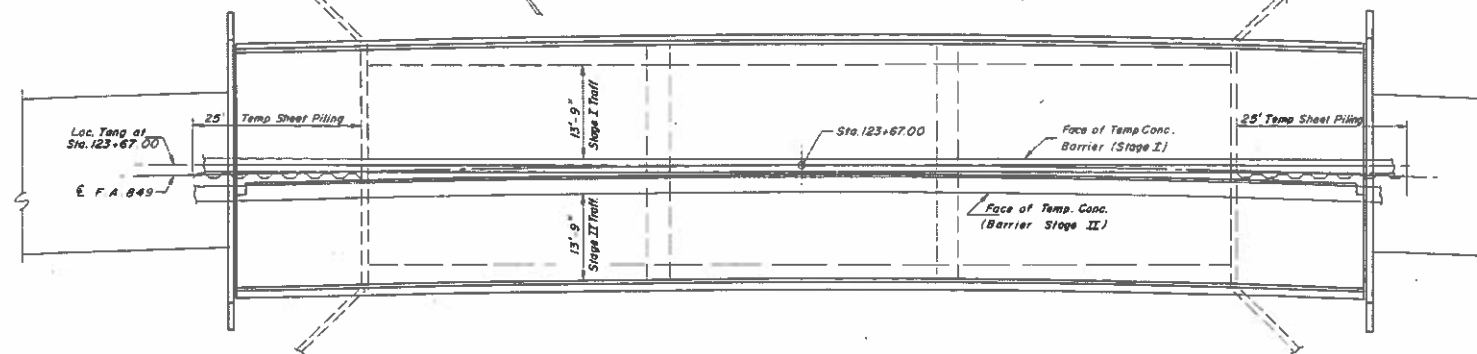
Contractor to anchor sheeting to back of existing abutment wall. Connection to be approved by Engineer. Sheeting within limits of existing footing shall have their tip Elev. at top of footing.

THE INFORMATION SHOWN FOR THE TEMPORARY SHEET PILING IS ESTIMATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A DESIGN OF THE TEMPORARY SHEET PILING AND ASSOCIATED MEMBERS, IF REQUIRED, SUBJECT TO THE APPROVAL OF THE ENGINEER.



ABUTMENTS - STAGE REMOVAL
(Both Abutments Shown Looking East)

FOR INFORMATION ONLY



PLAN VIEW
(Showing Stage Traffic Lanes)

NOTE: Following completion of Stage I construction the Temp. Conc. Barrier shall be relocated to Stage II as shown.

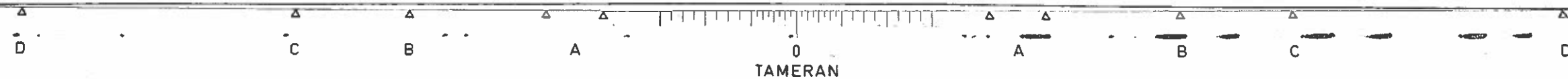
Temporary sheet piling to extend from Elev. 419.0 (Top Elev.) to Elev. 439.0 (Minimum Cut-off Elev.) at locations shown.

Temporary Conc. Barrier shall be placed parallel to Local Tangent during Stage I, concentric with E during Stage II

STAGING DETAILS

F.A. RTE. 849 (ILL. 142 1/2) CASEY FORK CR.
SECTION 113BR-1
JEFFERSON COUNTY
STATION 123+67.00
STRUCTURE NO. 041-0042

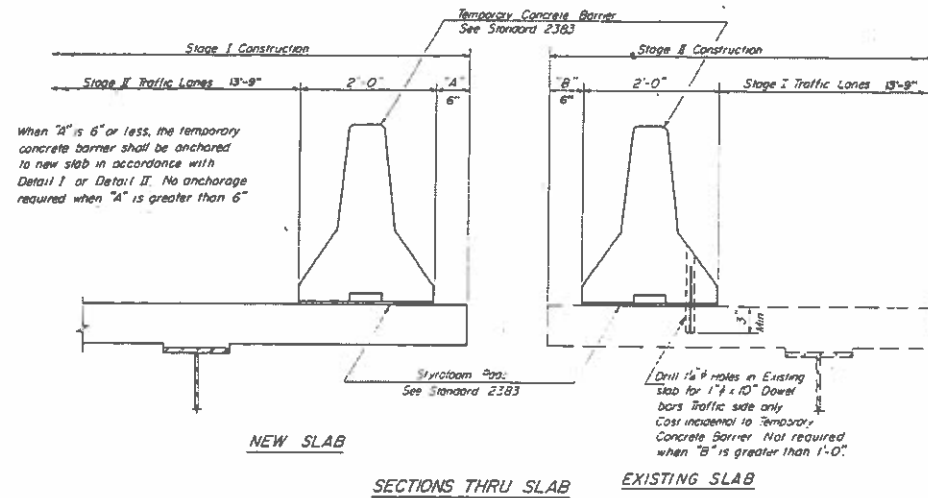
GREENE & BRADFORD, LINC.
CONSULTING ENGINEERS
1214 S. BROADWAY, CHICAGO, ILL. 60605



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	SHEET	TOTAL SHEETS	SHEET NO.
049	USBR-1	JEFFERSON	27	9
DESIGNED BY	DRAWN	CHECKED	DATE	

BRIDGE SHEET 3 OF 17



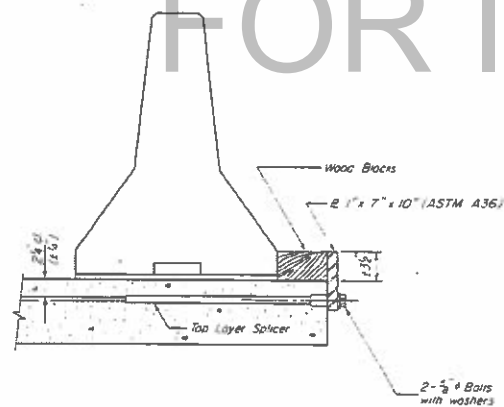
NOTES

Detail I - With Bar Splicer or Couplers
Connect one (1) 1" x 7" x 10" steel *R* to the top layer of couplers with 2-5/8" bolts screwed to coupler at approximate 1/2 of each 10'-0" barrier panel.

Detail II - With Extended Reinforcement Bars
Connect one (1) 1" x 7" x 10" steel *R* to the concrete slab with 2-5/8" Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate 1/2 of each 10'-0" barrier panel.

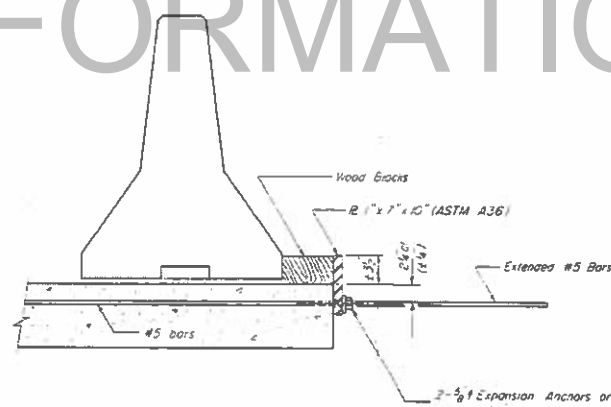
Cost of anchorage is incidental to Temporary Concrete Barrier.

For Pay Item See Roadway Plan



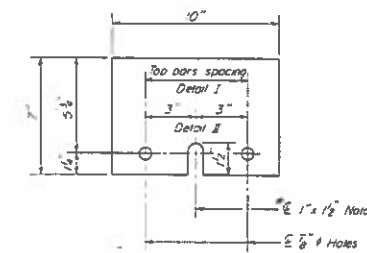
DETAIL I

The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 1" x 7" x 10" Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



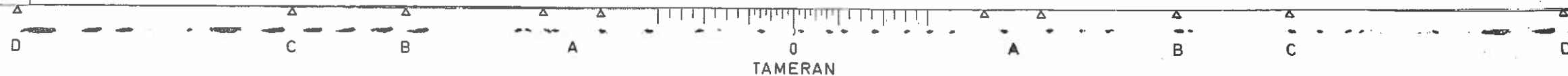
1" x 7" x 10"

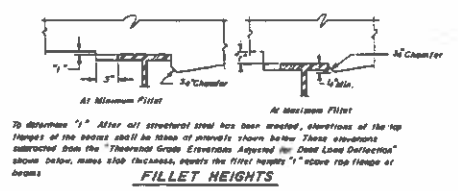
* Required only with Detail II

**TEMPORARY CONCRETE BARRIER
FOR STAGE CONSTRUCTION**

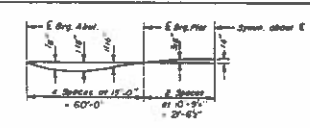
P.A. RTE. 049 B.L. 1421/CASEY FORK CR.
SECTION #3 BR-1
JEFFERSON COUNTY
STATION 123+67.00
STRUCTURE NO. 041-0042

GREENE & BRADFORD, L.M.
CONSULTING ENGINEERS
103 STEVENSON DR. • SPRINGFIELD, ILL.





STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

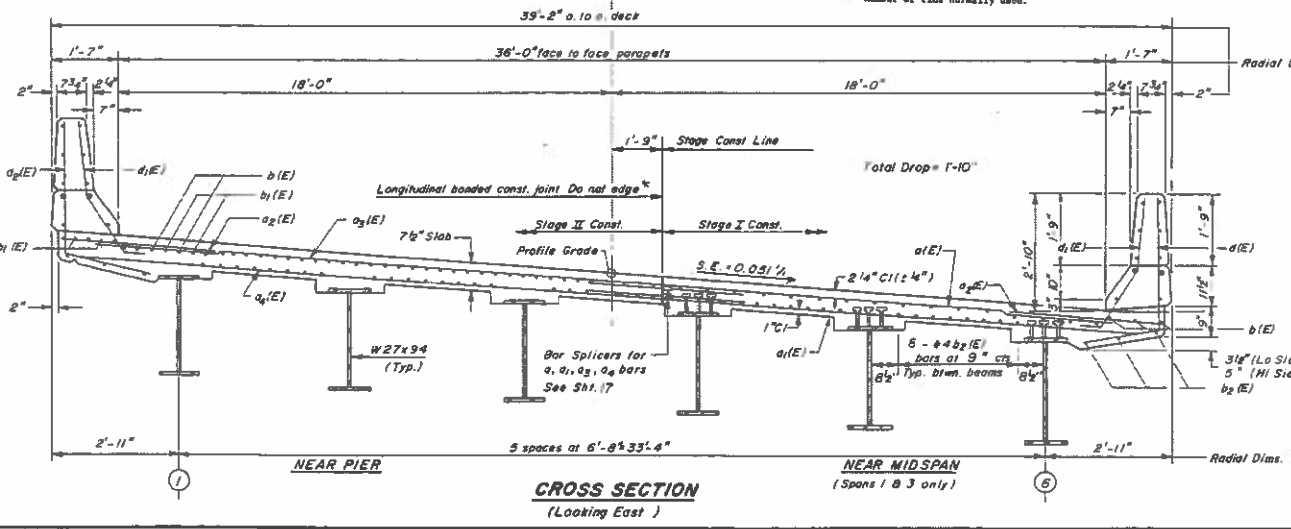
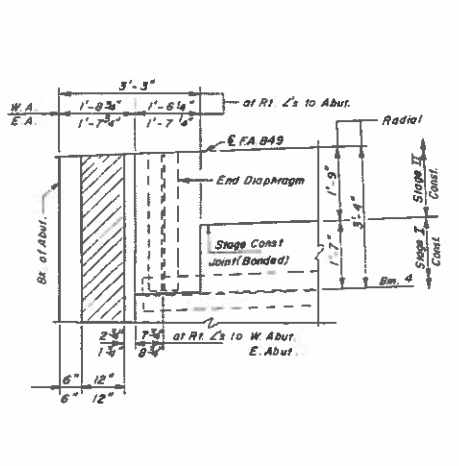
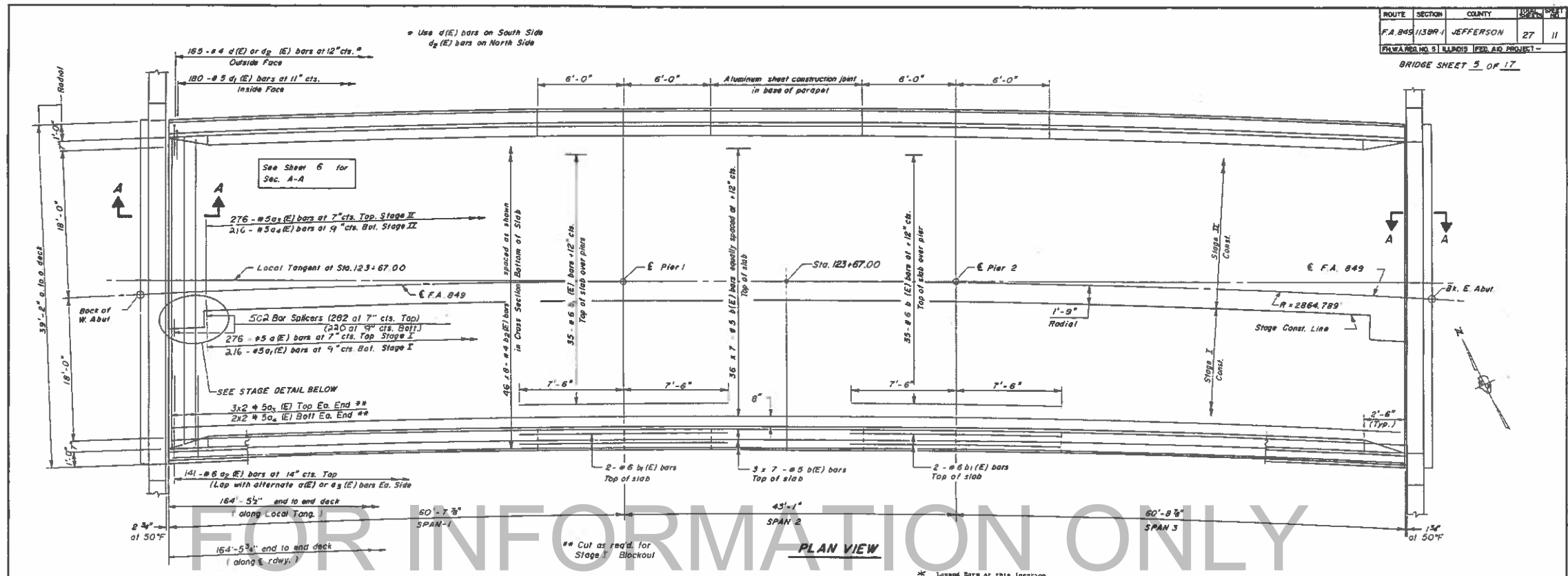


ROUTE	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FA 849	113BR-1	JEFFERSON	27	10
BRIDGE NO. 6 SALMONS FORD PROJECT				
BRIDGE SHEET 4 OF 17				

LINE	LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
A	BEAM 1	12283 357	16.464	446.100	446.100
	BEAM 2	12283 863	10.000	439.760	439.760
	BEAM 3	12283 167	3.333	439.420	439.420
	CENTER	12283 871	0.000	439.250	439.250
	JOINT	12283 820	-1.750	439.161	439.161
	BEAM 4	12282 773	-3.333	439.080	439.080
B	BEAM 1	12282 777	-10.000	438.760	438.760
	BEAM 2	12282 360	-16.464	438.400	438.400
	BEAM 1	12282 718	16.464	446.100	446.100
	BEAM 2	12282 735	10.000	439.760	439.760
	BEAM 3	12282 341	3.333	439.420	439.420
	CENTER	12282 444	0.000	439.250	439.250
C	JOINT	12282 394	-1.750	439.161	439.161
	BEAM 4	12282 351	-3.333	439.080	439.080
	BEAM 3	12282 160	-10.000	438.760	438.760
	BEAM 2	12282 749	-16.464	438.400	438.400
	BEAM 1	12282 690	16.464	446.100	446.100
	BEAM 2	12282 673	10.000	439.760	439.760
D	BEAM 3	12282 359	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 363	-3.333	439.080	439.080
	BEAM 3	12282 195	-10.000	438.760	438.760
	BEAM 2	12282 627	-16.464	438.400	438.400
E	BEAM 1	12282 602	16.464	446.100	446.100
	BEAM 2	12282 640	10.000	439.760	439.760
	BEAM 3	12282 518	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 374	-3.333	439.080	439.080
F	BEAM 3	12282 350	-10.000	438.760	438.760
	BEAM 2	12282 384	-16.464	438.400	438.400
	BEAM 1	12282 744	16.464	446.100	446.100
	BEAM 2	12282 625	10.000	439.760	439.760
	BEAM 3	12282 584	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
G	JOINT	12282 414	-1.750	439.161	439.161
	BEAM 4	12282 384	-3.333	439.080	439.080
	BEAM 3	12282 265	-10.000	438.760	438.760
	BEAM 2	12282 144	-16.464	438.400	438.400
	BEAM 1	12282 694	16.464	446.100	446.100
	BEAM 2	12282 675	10.000	439.760	439.760
H	BEAM 3	12282 364	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 363	-3.333	439.080	439.080
	BEAM 3	12282 195	-10.000	438.760	438.760
	BEAM 2	12282 627	-16.464	438.400	438.400
I	BEAM 1	12282 602	16.464	446.100	446.100
	BEAM 2	12282 640	10.000	439.760	439.760
	BEAM 3	12282 518	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 374	-3.333	439.080	439.080
J	BEAM 3	12282 350	-10.000	438.760	438.760
	BEAM 2	12282 384	-16.464	438.400	438.400
	BEAM 1	12282 744	16.464	446.100	446.100
	BEAM 2	12282 625	10.000	439.760	439.760
	BEAM 3	12282 584	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
K	JOINT	12282 414	-1.750	439.161	439.161
	BEAM 4	12282 384	-3.333	439.080	439.080
	BEAM 3	12282 265	-10.000	438.760	438.760
	BEAM 2	12282 144	-16.464	438.400	438.400
	BEAM 1	12282 694	16.464	446.100	446.100
	BEAM 2	12282 675	10.000	439.760	439.760
L	BEAM 3	12282 364	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 363	-3.333	439.080	439.080
	BEAM 3	12282 195	-10.000	438.760	438.760
	BEAM 2	12282 627	-16.464	438.400	438.400
M	BEAM 1	12282 602	16.464	446.100	446.100
	BEAM 2	12282 640	10.000	439.760	439.760
	BEAM 3	12282 518	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 374	-3.333	439.080	439.080
N	BEAM 3	12282 350	-10.000	438.760	438.760
	BEAM 2	12282 384	-16.464	438.400	438.400
	BEAM 1	12282 744	16.464	446.100	446.100
	BEAM 2	12282 625	10.000	439.760	439.760
	BEAM 3	12282 584	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
O	JOINT	12282 414	-1.750	439.161	439.161
	BEAM 4	12282 384	-3.333	439.080	439.080
	BEAM 3	12282 265	-10.000	438.760	438.760
	BEAM 2	12282 144	-16.464	438.400	438.400
	BEAM 1	12282 694	16.464	446.100	446.100
	BEAM 2	12282 675	10.000	439.760	439.760
P	BEAM 3	12282 364	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 363	-3.333	439.080	439.080
	BEAM 3	12282 195	-10.000	438.760	438.760
	BEAM 2	12282 627	-16.464	438.400	438.400
Q	BEAM 1	12282 602	16.464	446.100	446.100
	BEAM 2	12282 640	10.000	439.760	439.760
	BEAM 3	12282 518	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
	JOINT	12282 483	-1.750	439.161	439.161
	BEAM 4	12282 374	-3.333	439.080	439.080
R	BEAM 3	12282 350	-10.000	438.760	438.760
	BEAM 2	12282 384	-16.464	438.400	438.400
	BEAM 1	12282 744	16.464	446.100	446.100
	BEAM 2	12282 625	10.000	439.760	439.760
	BEAM 3	12282 584	3.333	439.420	439.420
	CENTER	12282 464	0.000	439.250	439.250
S	JOINT	12282 414	-1.750	439.161	439.161
	BEAM 4	12282 384	-3.333	439.080	439.080
	BEAM 3	12282 265	-10.000	438.760	438.760
	BEAM 2	12282 144	-16.464	438.400	438.400
	BEAM 1	12282 694	16.464	446.100	446.100
	BEAM 2	12282 675	10.000	439.760	439.760

LINE	LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
A	BEAM 1	12283 484	16.464	446.100	446.100
	BEAM 2	12283 191	10.000	439.760	439.760
	BEAM 3	12283 494	3.333	439.420	439.420
	CENTER	12283 444	0.000	439.250	439.250
	JOINT	12283 421	-1.750	439.161	439.161
	BEAM 4	12283 378	-3.333	439.080	439.080
B	BEAM 3	12283 300	-10.000	438.760	438.760
	BEAM 2	12283 283	-16.464	438.400	438.400
	BEAM 1	12283 629	16.464	446.100	446.100
	BEAM 2	12283 534	10.000	439.760	439.760
	BEAM 3	12283 482	3.333	439.420	439.420
	CENTER	12283 444	0.000	439.250	439.250
C	JOINT	12283 429	-1.750	439.161	439.161
	BEAM 4	12283 489	-3.333	439.080	439.080
	BEAM 3	12283 233	-10.000	438.760	438.760
	BEAM 2	12283 211	-16.464	438.400	438.400
	BEAM 1	12283 582	16.464	446.100	446.100
	BEAM 2	12283 522	10.000	439.760	439.760
D	BEAM 3	12283 482	3.333	439.420	439.420
	CENTER	12283 480	0.000	439.250	439.250
	JOINT	12283 485	-1.750	439.161	439.161
	BEAM 4	12283 420	-3.333	439.080	439.080
	BEAM 3	12283 382	-10.000	438.760	438.760
	BEAM 2	12283 357	-16.464	438.400	438.400
E	BEAM 1	12283 723	16.464	446.100	446.100
	BEAM 2	12283 670	10.000	439.760	439.760
	BEAM 3	12283 471	3.333	439.420	439.420
	CENTER	12283 458	0.000	439.250	439.250
	JOINT	12283 451	-1.750	439.161	439.161
	BEAM 4	12283 444	-3.333	439.080	439.080
F	BEAM 3	12283 350	-10.000	438.760	438.760
	BEAM 2	12283 330	-16.464	438.400	438.400
	BEAM 1	12283 627	16.464	446.100	446.100
	BEAM 2	12283 577	10.000	439.760	439.760
	BEAM 3	12283 473	3.333	439.420	439.420
	CENTER	12283 469	0.000	439.250	439.250
G	JOINT	12283 451	-1.750	439.161	439.161
	BEAM 4	12283 444	-3.333	439.080	439.080
	BEAM 3	12283 319	-10.000	438.760	438.760
	BEAM 2	12283 299	-16.464	438.400	438.400
	BEAM 1	12283 627	16.464	446.100	446.100
	BEAM 2	12283 567	10.000	439.760	439.760
H	BEAM 3	12283 473	3.333	439.420	439.420
	CENTER	12283 471	0.000	439.250	439.250
	JOINT	12283 477	-1.750	439.161	439.161
	BEAM 4	12283 417	-3.333	439.080	439.080
	BEAM 3	12283 382	-10.000	438.760	438.760
	BEAM 2	12283 357	-16.464	438.400	438.400
I	BEAM 1	12283 627	16.464	446.100	446.100
	BEAM 2	12283 567	10.000	439.760	439.760
	BEAM 3	12283 473	3.333	439.420	439.420
	CENTER	12283 471	0.000	439.250	439.250
	JOINT	12283 477	-1.750	439.161	439.161
	BEAM 4	12283 417	-3.333	439.080	439.080
J	BEAM 3	12283 382	-10.000	438.760	438.760
	BEAM 2	12283 357	-16.464	438.400	438.400
	BEAM 1	12283 627	16.464	446.100	446.100
	BEAM 2	12283 567	10.000	439.760	439.760
	BEAM 3	12283 473	3.333	439.420	439.420
	CENTER	12283 471	0.000	439.250	439.250
K	JOINT	12283 477	-1.750	439.161	439.161
	BEAM 4	12283 417	-3.333	439.080	439.080
	BEAM 3	12283 299	-10.000	438.760	438.760
	BEAM 2	12283 274	-16.464	438.400	438.400
	BEAM 1	12283 627	16.464	446.100	446.100
	BEAM 2	12283 567	10.000	439.760	439.760
L	BEAM 3	12283 473	3.333	439.420	439.420
	CENTER	12283 471	0.000	439.250	439.250
	JOINT	12283 477	-1.750	439.161	439.161
	BEAM 4	12283 417	-3.3		

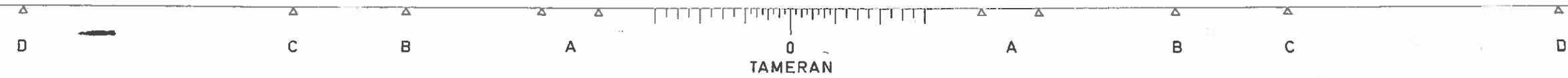
ROUTE	SECTION	COUNTY	SHEET	TOTAL SHEETS
F.A. 849	113BR-1	JEFFERSON	27	11
BRIDGE SHEET 5 OF 17				



NOTES: See sheet # 6 for superstructure details and Bill of Material. Reinforcement bars designated (E) shall be epoxy coated. Bars indicated thus 20 x 3 - #5 etc. indicates 20 lines of bars with 3 lengths per line.

Minimum bar laps:
 # 4 bar 1'-4"
 # 5 bar 1'-8"
 # 6 bar 2'-0"

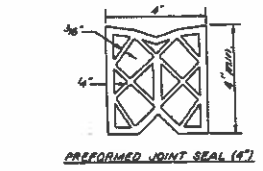
SUPERSTRUCTURE
 F.A. RTE. 849 (ILL. 142) / CASEY FORK CR.
 SECTION 113BR-1
 JEFFERSON COUNTY
 STATION 123+67.00
 STRUCTURE NO. 041-0042
GREENE & BRADFORD, Ltd.
 CONSULTING ENGINEERS
 1414 STEVENSON DR. • FAYETTEVILLE • SPRINGFIELD, ILL.



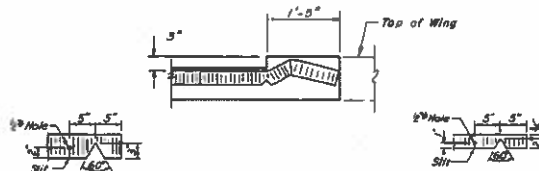
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	LINE	SHEET
F.A. 849	113BR-1	JEFFERSON	27	13

BRIDGE SHEET 7 OF 17

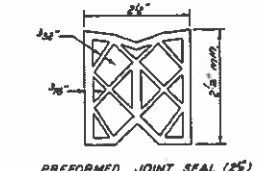


PREFORMED JOINT SEAL (4')

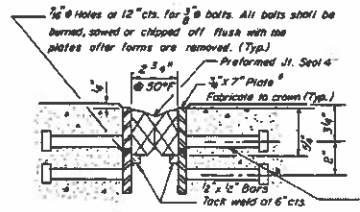


SEAL CUT-OUT
(WEST ABUT.)

SEAL CUT-OUT
(EAST ABUT.)



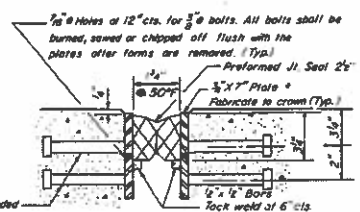
PREFORMED JOINT SEAL (24')



EXPANSION JT. of WEST ABUT.

* 4 Pieces
2 of 15'-2 1/4"
2 of 15'-8 1/4"

3/8" x 8" Granular or solid flux filled headed studs conforming to Art. 710.38 of the Std. Spec's, automatically and welded at 12" intervals.
(No. Req'd. = 74)



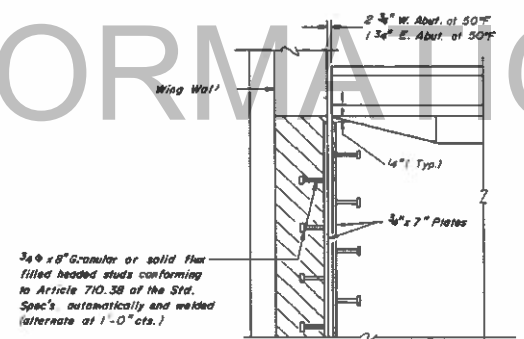
EXPANSION JT. of EAST ABUT.

* 4 Pieces
2 of 15'-9 1/4"
2 of 20'-3 1/4"

3/8" x 8" Granular or solid flux filled headed studs conforming to Art. 710.38 of the Std. Spec's, automatically and welded at 12" intervals.
(No. Req'd. = 74)

END OF SEAL TREATMENT
(TYP. EACH ABUT.)

FOR INFORMATION ONLY



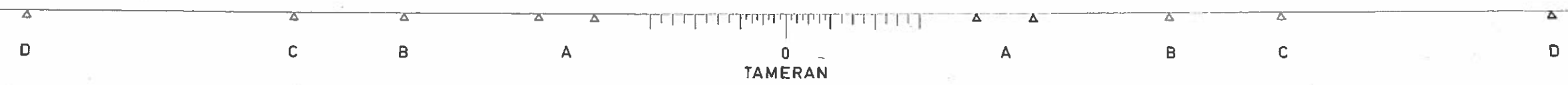
PLAN

3/8" x 8" Granular or solid flux filled headed studs conforming to Article 710.38 of the Std. Spec's, automatically and welded (alternate at 1'-0" cts.)

NOTES
After fabrication all surfaces of the steel plates shall be given one shop coat of zinc-silicate paint.

EXPANSION JOINT DETAILS
F.A. RTE. 849 (ILL. 142) / CASEY FORK CR.
SECTION 113BR-1
JEFFERSON COUNTY
STATION 23+67.00
STRUCTURE NO. 041-0042

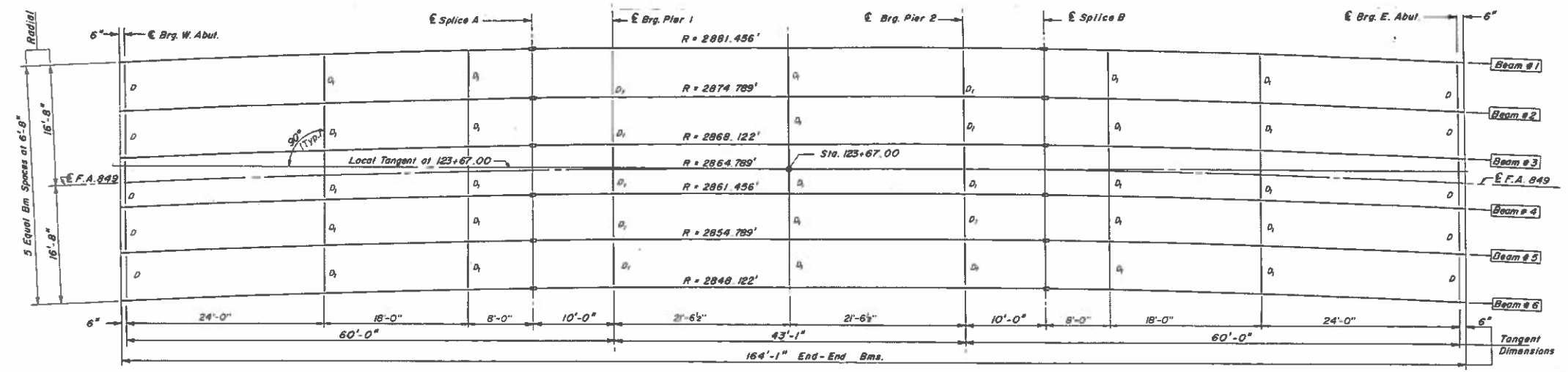
GREENE & BRADFORD, Ltd.
CONSULTING ENGINEERS
104 STEVENSON DR. • ST. LOUIS, MO. 63103



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SHEET
13BR-1	JEFFERSON	27	14

BRIDGE SHEET 8 OF 17



TOP OF W^F ELEVATION *

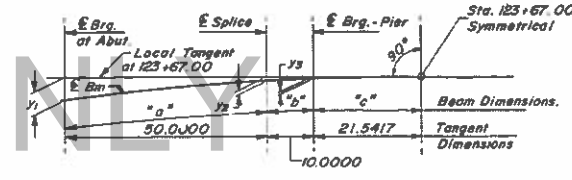
Beam	ELEV
1	439.33
2	438.99
3	438.65
4	438.31
5	437.97
6	437.63

* Use designated elevation throughout for each beam line for Fabrication Only

FRAMING PLAN

(All Bms. W27 x 94)
M223 Gr50 N.T.R.

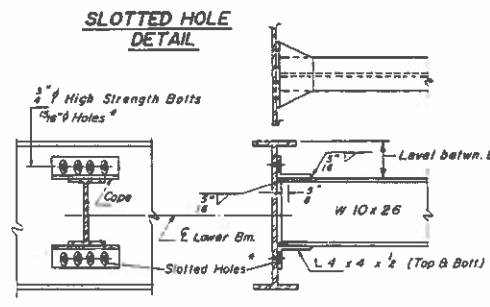
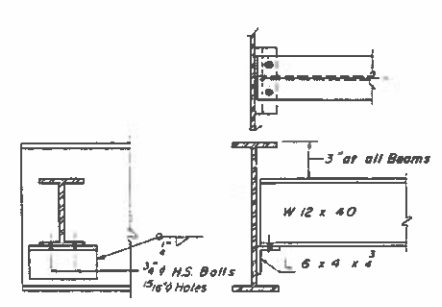
NOTE: Place diaphragms between Bms. #3 & #4 during Stage II construction.



Beam	Dim.	BEAM DIMENSIONS			LAYOUT DIMENSIONS		
		"a"	"b"	"c"	y ₁	y ₂	y ₃
1	50.0103	10.0004	21.5419	1.1540	0.1726	0.0805	
2	50.0103	10.0004	21.5419	1.1567	0.1730	0.0807	
3	50.0104	10.0004	21.5419	1.1594	0.1734	0.0809	
4	50.0105	10.0004	21.5419	1.1621	0.1738	0.0811	
5	50.0105	10.0004	21.5419	1.1648	0.1742	0.0813	
6	50.0106	10.0004	21.5419	1.1675	0.1747	0.0815	

BEAM GEOMETRY

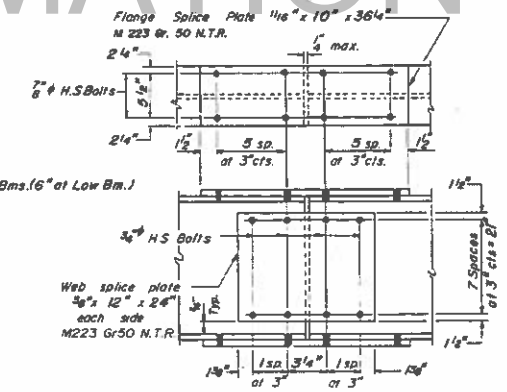
NOTES: 1. All dimensions shown in feet.
2. Beams symmetrical about Sta. 123+67.00



Note: Two hardened washers shall be required over all 5/16" holes

* Provide slotted holes in 4 x 4 x 1/2 angles for diaphragms between Bms. 3 & 4. Provide slots in angles at North end of diaphragms only. Provide 5/8" Str. Washer at each slotted connector.

3/4" H.S. Bolts for diaphragms D₁ between Bms. 3 & 4 shall be tightened only after completing Stage II deck construction. Slots to be 3/8" x 1 1/2".



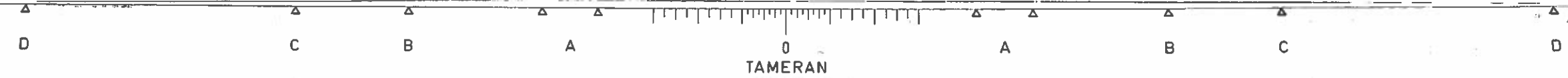
NOTE: All Splice Plates are to be M223 Gr50 Structural Steel

N.T.R. = Notch Toughness Requirement

STRUCTURAL STEEL

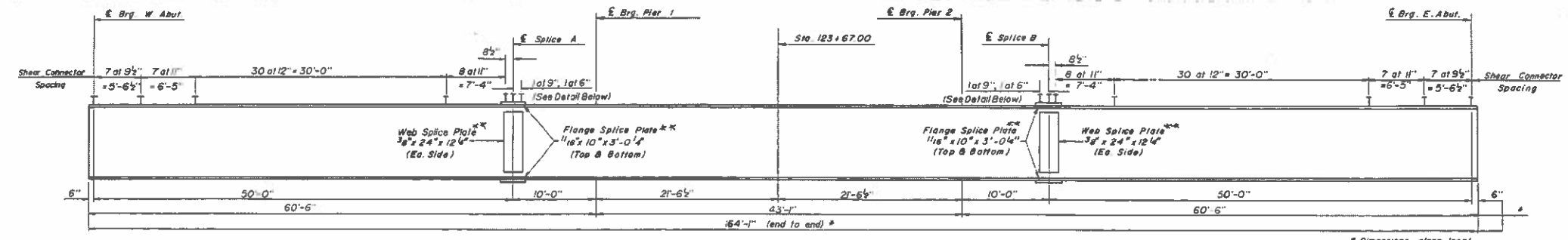
F.A. RTE. 949 ILL. 142 N/CASEY FORK CR.
SECTION 13BR-1
JEFFERSON COUNTY
STATION 123+67.00
STRUCTURE NO. 041-0042

GREENE & BRADFORD, Ltd.
CONSULTING ENGINEERS
400 BROADWAY, NEW YORK, N.Y.



DAVUT I

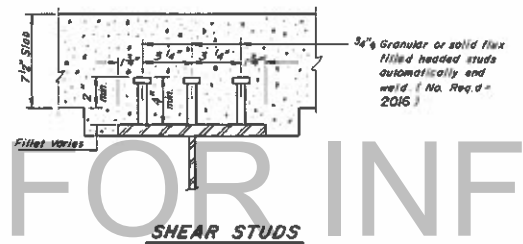
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 849	113BR-1	JEFFERSON	27	15
FED. AID PROJECT -				
BRIDGE SHEET 9 OF 17				



TYPICAL BEAM
(Use W 27 x 94 throughout) **
** NTR M223, Gr 50

Note: Fabricate beams to horizontal radius shown on Sheet 8

* Dimensions along local tangent @ Sta. 123+67.00
For dimensions along beam see Sheet 8



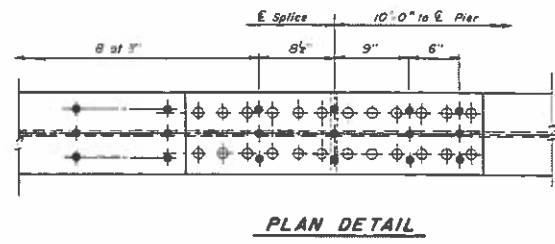
	O. & Sp. 1	Pier	O. & Sp. 2
I_x (in ⁴)	3270	3270	3270
I_y (in ⁴)	10434	—	—
S_x (in ³)	243	243	243
S_y (in ³)	374	—	—
M (K)	738	1,040	1,040
M_D (K)	251	-286.3	-46
M_L (K)	302	—	—
M_S (K)	185	—	—
M_L (K)	424	-177	189
M_{imp} (K)	114	-52	56
M_a (K)	897	-382	402
M_u (K)	1603	781	461
M_u (K)	2280	—	1158
f_s (non-comp) (ksi)	11.4	-14.1	-2.2
f_s (comp) (ksi)	3.5	—	—
f_s (k = 1/1.8) (ksi)	20.8	+18.8	19.5
f_s (Overload) (ksi)	43.7	-32.9	17.3
f_s (Toig) (ksi)	—	-42.8	—
V_R (K)	49.4	—	—

NOTES

I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s (Total Overload).
 I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s (Total Overload).
 V_R is the maximum f_s impact shear range in span.

The Fully Plastic Moment capacity (M_u) is computed according to AASHTO 10.48.1 & 10.50.11.
 f_s (Total) is the sum of the stresses due to $1.3[M_D + M_S + M_L + I]$
 f_s (Overload) is the sum of the stresses due to $M_D + M_S + M_L + I$
 M_D - Moment due to dead loads on non-composite section.
 M_S - Moment due to dead loads on composite section.
 M_L - Moment due to live load as non-composite or composite section.
 I - Live load impact.

See General Notes #6 Sheet No. 1 for Notch Toughness Requirements.



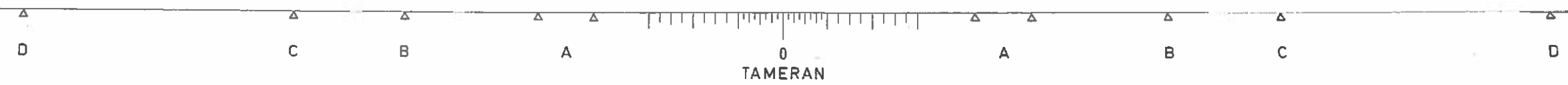
	Abut.	Pier
R_D (K)	26.5	58.4
R_L (K)	35.9	46.1
R_{imp} (K)	9.7	12.4
R_{total} (K)	72.1	116.9

* M_u = Full Plastic Moment Capacity for Compact, Braced section.
** Non-compact section
 M_a (Applied Moment) = $1.3[M_D + M_S + M_L + I]$

STRUCTURAL STEEL DETAILS

F.A. RTE. 849 (ILL. 142 V) CASEY FORK, R.
SECTION 113BR-1
JEFFERSON COUNTY
STATION E3+67.00
STRUCTURE NO. 041-0042

GREENE & BRADFORD, Ltd.
CONSULTING ENGINEERS
1015 Broadway St., Pittsburgh, Pa. 15229



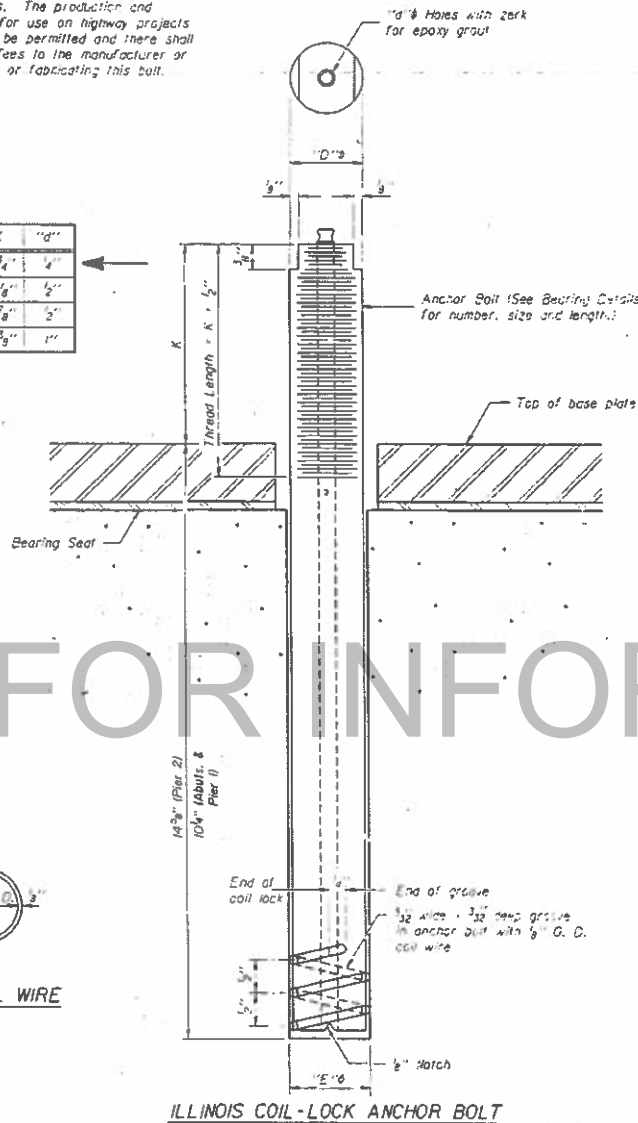
The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	NO.	DATE	BY	CHKD.
113BR-1	JEFFERSON	27	17	

BRIDGE SHEET 11 OF 17

D	E	H	K	"d"
1"	1 1/8"	1 1/2"	1 3/4"	1/2"
1 1/2"	1 5/8"	1 7/8"	2 1/8"	5/8"
2"	2 1/4"	2 5/8"	2 7/8"	3/4"
2 1/2"	2 5/8"	3 1/8"	3 3/8"	1"



MATERIALS FOR ILLINOIS COIL-LOCK

ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and flat washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C881, Type I, Grade I and of a Class suitable for the temperature of installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk filling with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. A threaded rod stud with nut and washer conforming to ASTM A307.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

Anchor bolts, nuts, and washers shall be completely coated by either the hot-dipped process conforming with AASHTO M232 or the mechanical plating method conforming to ASTM B695, Class 50. Zinc coated nuts shall be tapered oversize in accordance with the requirements of AASHTO M291 and shall meet the supplementary requirements S1.1 thru S12.1 of the same specifications for lubricant and testing.

FOR INFORMATION ONLY

ANCHOR BOLT DETAILS

FOR BEARINGS

F.A. RTE. 849 ILL. 142 1/2 CASEY FORK CR.

SECTION 113BR-1

JEFFERSON COUNTY

STATION 03+67.00

STRUCTURE NO. 041-0042

GREENE & BRADFORD, I.M.

CONSULTING ENGINEERS

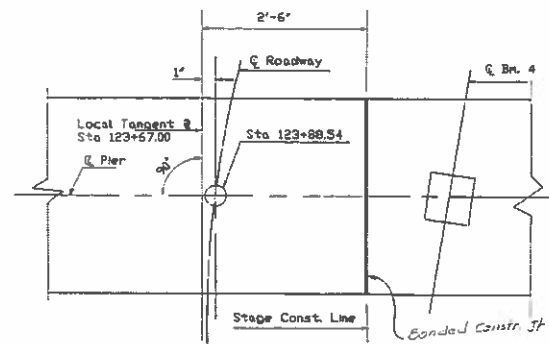
101 STEPHENSON DR. • CHICAGO, ILL. 60601



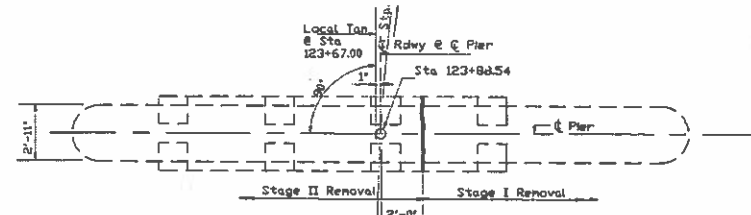
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SEC NO	ROUTE	COUNTY	SHEET NO	TOTAL SHEETS
113BR-1	FA 849	JEFFERSON	27	19
PLAN SHEET NO. 3	BLK. NO.	FILE NO.	PROJ. NO.	

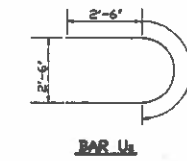
Bridge Sheet 13 of 17



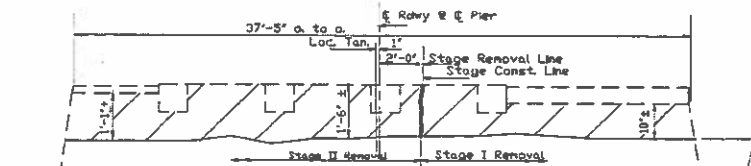
DETAIL A



PLAN VIEW-EXISTING

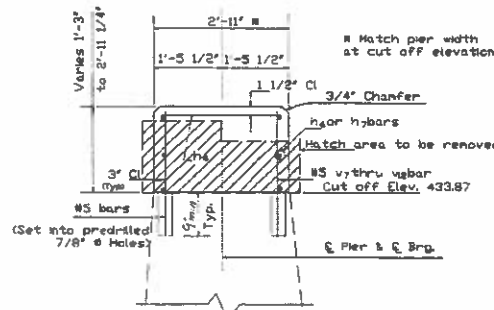


BAR U

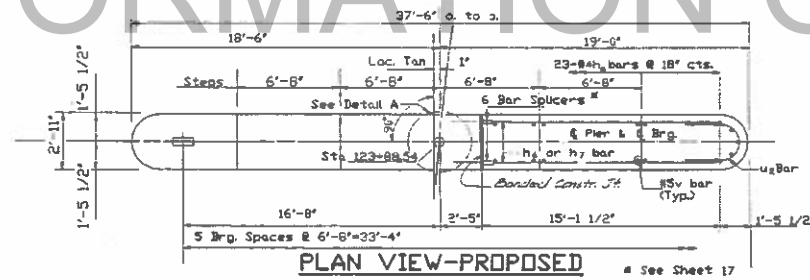


PARTIAL ELEVATION-EXISTING

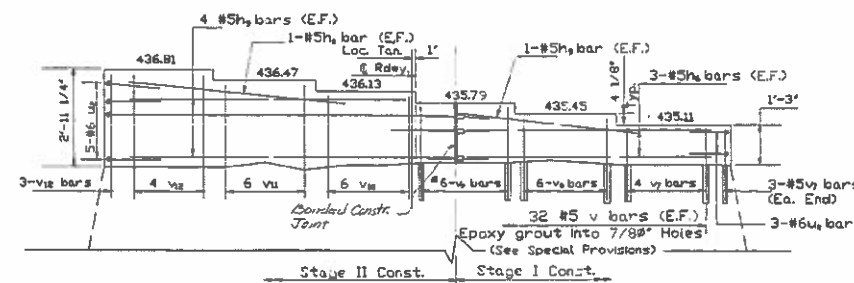
Remove cap above Elev. 433.87 in stages as indicated in Plan View-Existing. Reinf. that projects into new cap to be cleaned, straightened & incorporated into new construction.



SEC THRU PIER CAP
(Looking north)



PLAN VIEW-PROPOSED



PARTIAL ELEVATION-PROPOSED

3 bars Stage I Const.
3 bars Stage II Const.

PIER 2
BILL OF MATERIALS

BAR NO.	SIZE	LENGTH	SHAPE
h6	#5	13'-0"	U
h7	#5	19'-6"	U
h8	#5	2'-8"	U
h9	#5	14'-0"	U
u6	#6	8'-11"	U
v7	#5	2'-2"	U
v8	#5	2'-6"	U
v9	#5	2'-10"	U
v10	#5	3'-2"	U
v11	#5	3'-6"	U
v12	#5	3'-10"	U
CLASS X CONCRETE			CJ YD 7.9
REINFORCEMENT			POUND 690
CONC REMOVAL			CU YD 5.5

PIER 2
FA Rte. 849, 142/Cassy Park Cr.
Section 113BR-1 Jefferson Co.
Station 123+67.00

GREENE & BRADFORD LTD.
Consulting Engineers
489 Stevenson St. St. Louis, Mo. 63102

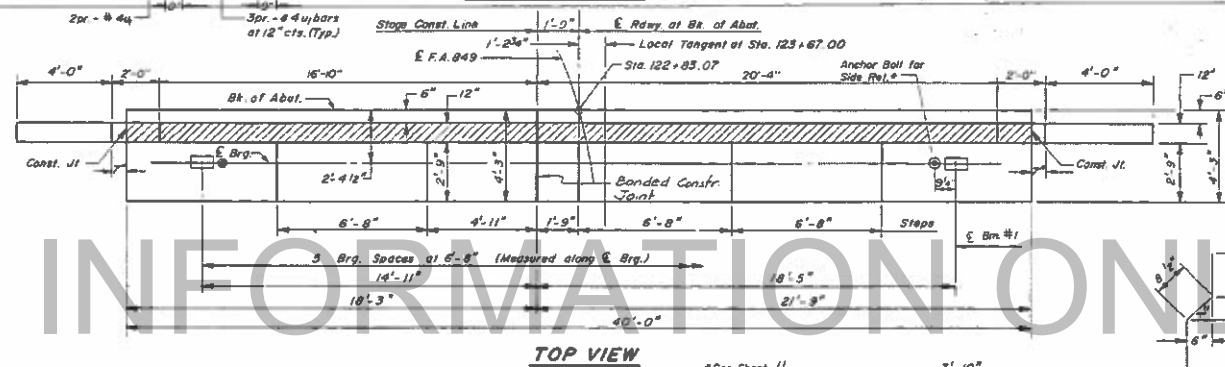
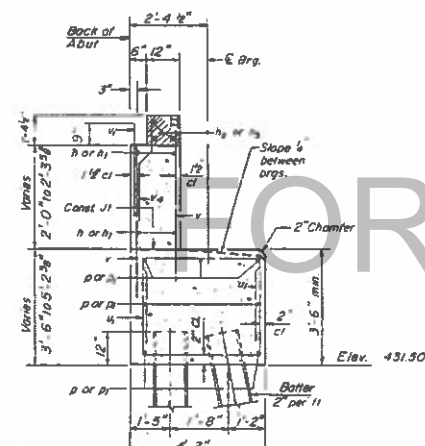
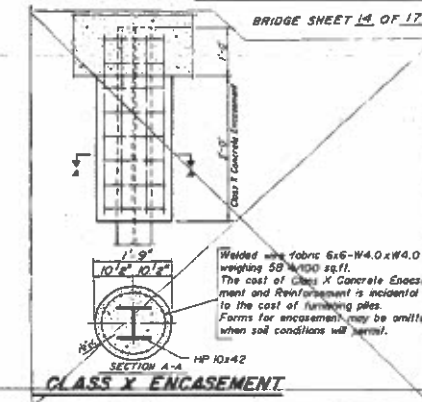
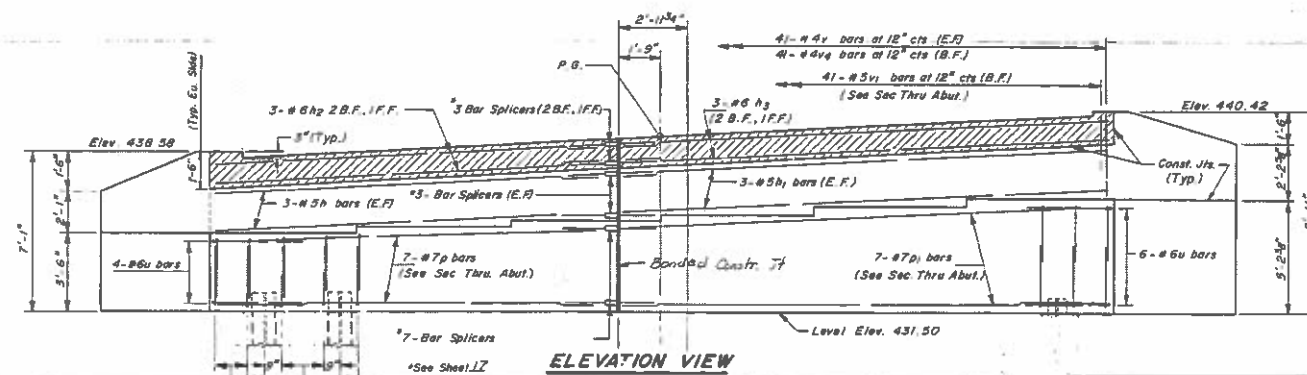
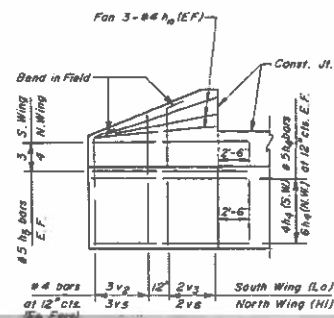


TAMERAN

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FA. RTE. 113BR-1		JEFFERSON	27	20

BRIDGE SHEET 14 OF 17

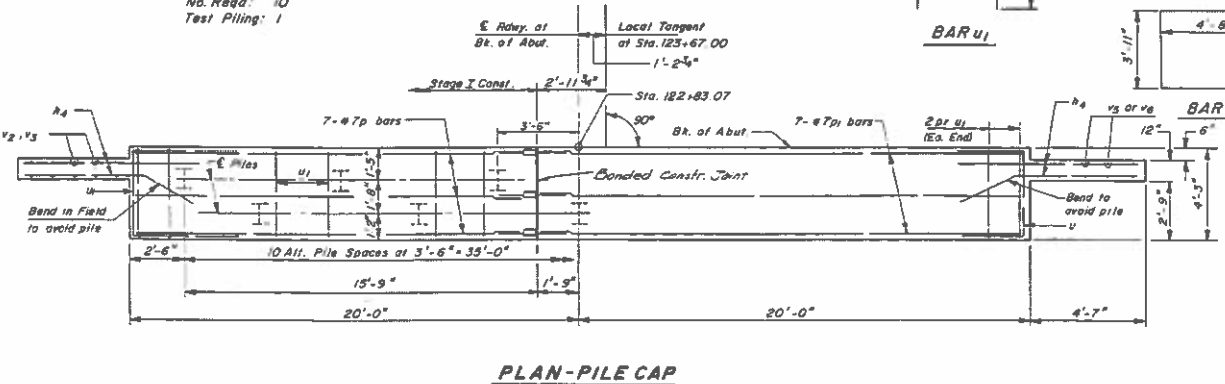
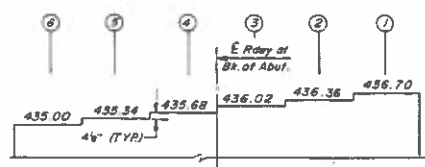


PILE DATA
Type: Steel HP 10x42
Capacity: To refusal
Est. Length: 42'-0"
No. Req'd: 10
Test Piling: 1

**WEST ABUTMENT
BILL OF MATERIAL**

BAR NO.	SIZE	LENGTH	SHAPE
h	#3	18'-0"	—
h ₁	#3	21'-6"	—
h ₂	#6	18'-0"	—
h ₃	#6	21'-6"	—
h ₄	#3	8'-0"	—
h ₅	#3	6'-6"	—
h ₆	#4	4'-0"	—
p	#7	18'-0"	—
p ₁	#7	21'-6"	—
u	#6	13'-3"	—
u ₁	#4	10'-0"	—
v	#4	5'-0"	—
v ₁	#3	3'-0"	—
v ₂	#4	6'-3"	—
v ₃	#6	6'-3"	—
v ₄	#4	3'-0"	—
v ₅	#4	8'-0"	—
v ₆	#4	8'-8"	—
Class X Concrete	Cu. Yds.	33.0	
Reinforcement Bars	Lbs.	2010	
Steel Piles HP 10x42	Lbs. Ft.	420	
Test Piles Steel HP 10x42	Eg.	1	

NOTE: Hatched area to be poured after Superstructure
Formwork has been removed. Quantity of Concrete
in hatched portion included in Superstructure.



WEST ABUTMENT
FA. RTE. 849 ILL. 142 1/2 CASEY FORK CR.
SECTION 113BR-1
JEFFERSON COUNTY
STATION 123+67.00
STRUCTURE NO. 041-0042

GREENE & BRADFORD, L.M.
CONSULTING ENGINEERS
100 STEVENSON DR. • ST. LOUIS • MISSOURI, U.S.A.



BRIDGE FOUNDATION BORING LOGS

JOB NO. P-97-020-84 BRIDGE CASEY FORK Date: SEPTEMBER 18, 1985
 ROUTE FA 849 (ILL. 142) Checked By: R. D. MURPHY
 SEC 1138A-1 STA 125+57
 COUNTY JEFFERSON

Station	Depth (ft)	Soils	Penetration (blows/ft)	Notes
420.0	0.0	CONCRETE AND 1-1/2" PAVEMENT (1.6'±)		
420.0	0.9	MEDIUM, VERY DAMP, CLAY LOAM	11	
420.0	1.8	MEDIUM, DAMP, SILTY CLAY	21	
420.0	2.7	MEDIUM TO SOFT, VERY DAMP, SANDY CLAY LOAM WITH 1/8" TO 1-1/2" THICK LENSES OF SAND	25	
420.0	3.6	MEDIUM, DAMP TO VERY DAMP, CLAY (ORGANIC WITH OODS)	24	
420.0	4.5	SOFT, VERY DAMP TO WET, CLAY (ORGANIC WITH OODS)	28	
420.0	5.4	MEDIUM, VERY DAMP, SANDY CLAY (ORGANIC WITH OODS)	21	
420.0	6.3	VERY SOFT, WET, CLAY (ORGANIC WITH OODS)	28	
420.0	7.2	MEDIUM, WET, MIXTURE OF SAND, GRAVEL, FRAGMENTS OF SOFT SANDSTONE & CLAY	11	
420.0	8.1	MEDIUM, VERY DAMP, CLAY LOAM	11	
420.0	9.0	VERY DENSE, VERY MOIST, CLAY SHALE	6	
420.0	9.9	VERY DENSE, MOIST, SANDSTONE	6	
420.0	10.8	EXTENT OF EXPLOSION	1	

BORING 1

JOB NO. P-97-020-84 BRIDGE CASEY FORK Date: SEPTEMBER 18, 1985
 ROUTE FA 849 (ILL. 142) Checked By: R. D. MURPHY
 SEC 1138A-1 STA 125+57
 COUNTY JEFFERSON

Station	Depth (ft)	Soils	Penetration (blows/ft)	Notes
419.0	0.0	ROCK AND SKINNED REELS		
419.0	0.9	MEDIUM TO SOFT, DAMP, CLAY LOAM	25	
419.0	1.8	SOFT, WET, CLAY	21	
419.0	2.7	MEDIUM, DAMP, SILTY CLAY	21	
419.0	3.6	MEDIUM, DAMP, CLAY	21	
419.0	4.5	MEDIUM TO SOFT, VERY DAMP, SILTY CLAY (ORGANIC WITH OODS & MOOD)	21	
419.0	5.4	MEDIUM, VERY DAMP, CLAY	21	
419.0	6.3	STIFF, DAMP, LOAM	23	
419.0	7.2	SOFT, WET, SILTY CLAY	12	
419.0	8.1	MEDIUM, VERY DAMP, CLAY	12	
419.0	9.0	VERY DENSE, VERY MOIST CLAY SHALE LAMINATED WITH 1/16" THICK LENSES OF SANDSTONE	11	
419.0	9.9	NO RECOVERY - VERY DENSE, SHALE ON SANDSTONE	11	

BORING 2

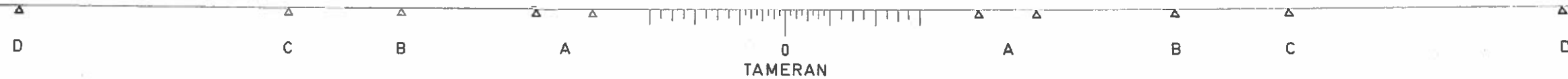
N - Standard Penetration Test
 Blows per foot to drive 2"
 O.D. Split Spion Sampler 12"
 with 140# Hammer falling 50"

Qu - Unconfined Compressive
 Strength - 1/2"
 w - Water Content - percentage
 of oven dry weight - %

Type failure:
 B - Bulge Failure
 S - Shear Failure
 E - Estimated Value
 P - Penetrometer

BORING LOGS
 FA. RTE. 849 (ILL. 142) / CASEY FORK CR.
 SECTION 1138A-1
 JEFFERSON COUNTY
 STATION 123+67.00
 STRUCTURE NO. 04-0042

GREENE & RADFORD, L.P.
 CONSULTING ENGINEERS
 1001 W. BROADWAY, SUITE 1000, DALLAS, TEXAS 75201



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

The diameter of this part of the splicer is the same diameter of the bar spliced.

Rolled Thread Dowel Bar

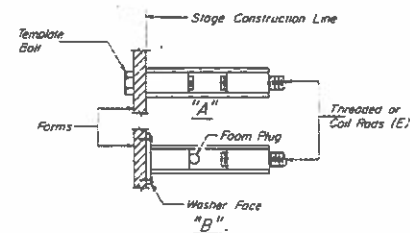
"ONE PIECE"

Wire Connector

WELDED SECTIONS

SPLICER ALTERNATIVES

* Heavy Hex Nuts conforming to ASTM A563, Grade C, D or DH may be used



INSTALLATION AND SETTING METHODS

- A Set splicer by means of a template ball
- B Set splicer by nailing to wood forms or cementing to steel forms
- E Indicates epoxy coating.

NOTES

Steel Splicer (Coupler) assembly shall be of an approved type and shall develop a tension of least 125 percent of the yield strength of the lapped reinforcement bars.
Steel Splicer rods shall be of minimum 60 ksi yield strength, threaded or coated full length and have effective tensile stress area equal or greater than that of the lapped reinforcement bars.
All reinforcement bars shall be lapped and tied to the splicer rods.
Splicer (coupler) assembly in the slab shall be epoxy coated in accordance with the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed splicer (coupler) assembly satisfies the following requirements:

- 1 Minimum Capacity = $1.25 \times fy \times A_s$
(Tension in kips)
- 2 Minimum Pull-out Strength = $1.25 \times f_{t,slab} \times A_s$
(Tension in kips)

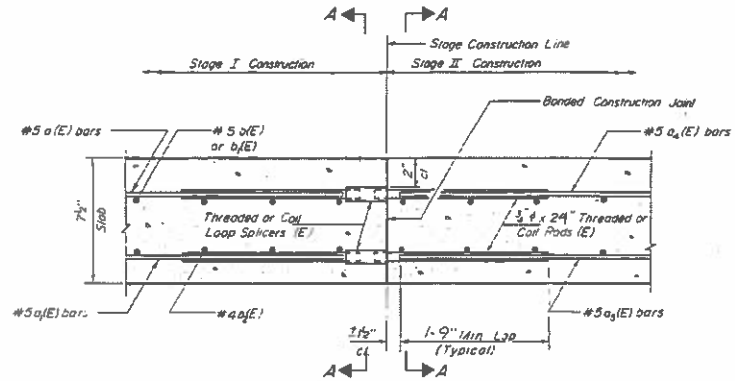
where fy = Yield strength of lapped reinforcement bars in ksi;
 $f_{t,slab}$ = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_s = Tensile stress area of lapped reinforcement bars
= 28 day concrete

Typical Splicer (Coupler) Assembly Sizes

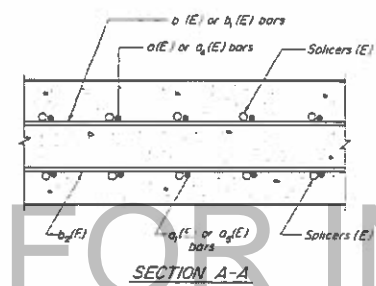
#5 bar lap with $\frac{1}{2}$ " Splicer (Coupler) x 2'-0" Splicer Rods	Minimum Capacity = 23.0 kips-tension Minimum Pull-out Strength = 9.2 kips-tension
#7 bar lap with 1" Splicer (Coupler) x 3'-5" Splicer Rods	Minimum Capacity = 45.1 kips-tension Minimum Pull-out Strength = 38.0 kips-tension
#6 bar lap with $\frac{3}{4}$ " Splicer (Coupler) x 2'-8" Splicer Rods	Minimum Capacity = 33.1 kips-tension Minimum Pull-out Strength = 13.3 kips-tension

DATE	DESCRIPTION	BY	CHECKED
8-49	A3BR-1	JEFFERSON	27 23

BRIDGE SHEET 12 OF 17



SECTION THRU SLAB

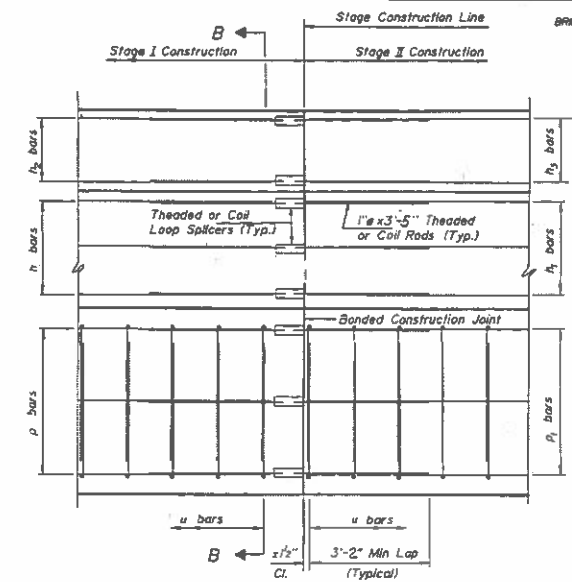


SECTION A-A

SPLICER DETAILS

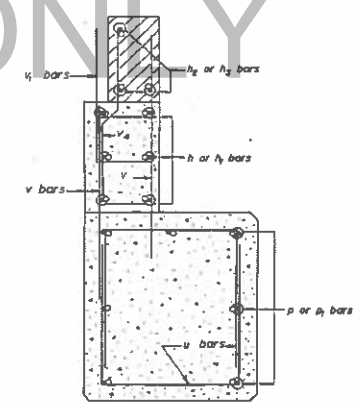
(No Req'd 502)

Cost incidental to reinforcement bars (Epoxy Coated)



SECTION THRU ABUTMENTS

No Epoxy Coating Required



SECTION B-B

SPLICER DETAILS

(No. Required 32)

BAR SPLICER (COUPLER) DETAILS AT STAGE CONSTRUCTION

FA RTE 849 SECTION 113 BP-1
JEFFERSON CO
STATION 123-67
STRUCTURE NO. 041-0042

GREENE & BRADFORD, Ltd.
CONSULTING ENGINEERS
1100 WASHINGTON ST. - TAMERAN - BRITISH COLUMBIA

