

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

**PROPOSED
 HIGHWAY PLANS**

FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT = 18,700 (2014)

FAI ROUTE 70 (I-70)
 SECTION (18-45HB-1)BR
 PROJECT ACNHP-0070 (406)
 BRIDGE REHABILITATION
 CUMBERLAND COUNTY

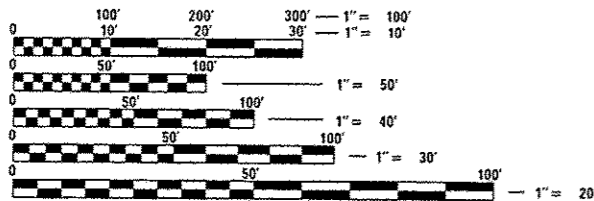
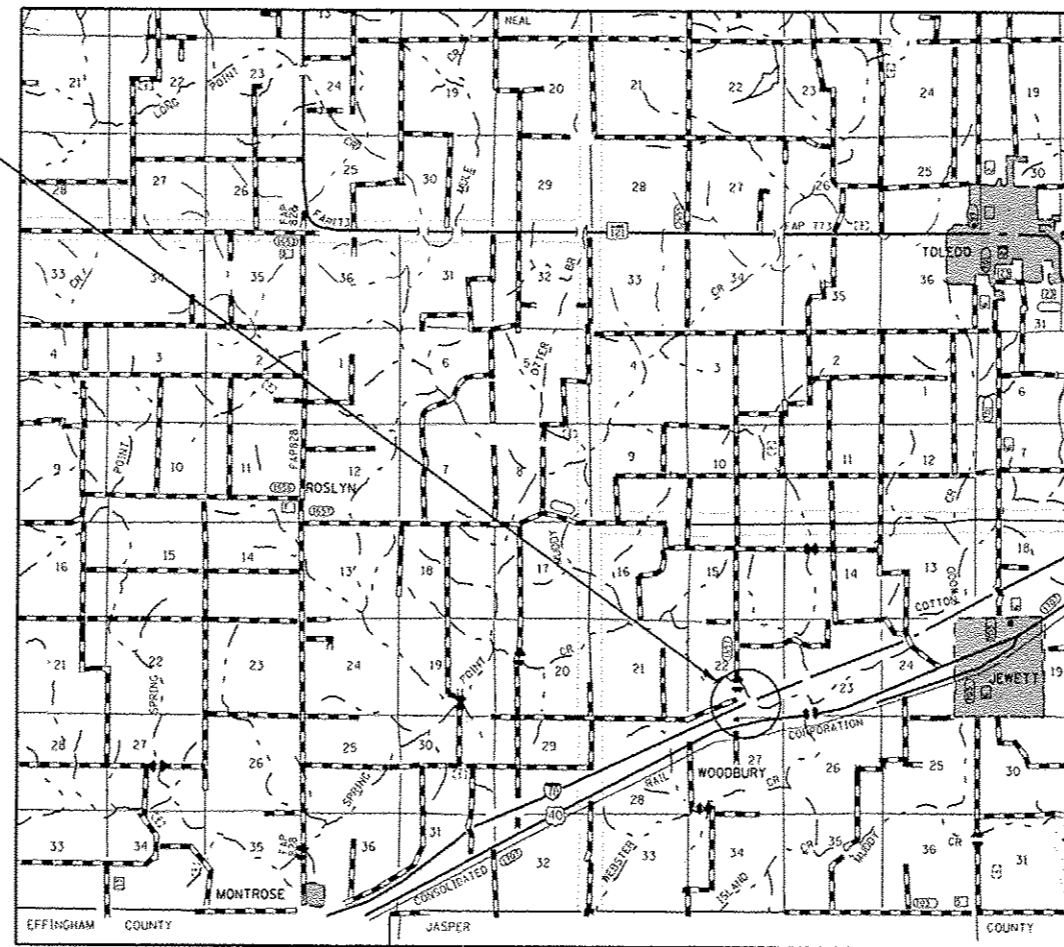
C-97-099-06

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	Cumberland	43	1
		ILLINOIS	CONTRACT NO. 74187	

D-97-060-06



LOCATION OF PROJECT



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
 JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
 1-800-892-0123
 OR 811

PROJECT ENGINEER: MARK DAUGHERTY
 PROJECT MANAGER: JOYCE HEMMEN

CONTRACT NO. 74187

GROSS LENGTH = 174 FT. = 0.033 MILE
 NET LENGTH = 174 FT. = 0.033 MILE

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

SUBMITTED August 15, 2014
Roger L. Oriskany
 DEPUTY DIRECTOR OF HIGHWAYS, REGION ENGINEER

Oct 17, 2014
John D. Baranzelli, P.E.
 acting ENGINEER OF DESIGN AND ENVIRONMENT

Oct 17, 2014
Emer Osman, P.E.
 DIRECTOR OF HIGHWAYS, CHIEF ENGINEER

PRINTED BY THE AUTHORITY
 OF THE STATE OF ILLINOIS

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2012; THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" INDICATED ON THE CHECK SHEET, AND "THE SPECIAL PROVISIONS" INCLUDED IN THE PROPOSAL.

THE WORK INCLUDED IN THIS SECTION CONSISTS OF A COMPLETE DECK REPLACEMENT OF EXISTING STRUCTURES 018-0040 AND 018-0041, APPROACH PAVEMENTS AND PAVEMENT CONNECTORS, GUARDRAIL, AND ANY OTHER WORK NECESSARY TO COMPLETE THE PROJECT.

FIELD MARKINGS OF UNDERGROUND UTILITIES IN CRITICAL AREAS MAY BE OBTAINED BY PROVIDING A MINIMUM OF 96 HOURS ADVANCE NOTICE THROUGH THE J.U.L.I.E. SYSTEM BY CALLING 800-892-0123.

THE CONTRACTOR WILL PROVIDE INTERNET ACCESSIBILITY TO THE BITUMINOUS PLANT QUALITY CONTROL LAB SO THAT BITUMINOUS PLANT REPORTS CAN BE E-MAILED TO THE DISTRICT HEADQUARTERS. THE WORK SHALL BE INCLUDED IN THE COST OF ALL BITUMINOUS ITEMS.

TEMPORARY BARRIER WALL SHALL NOT BE PLACED ON THE PROJECT FROM THE MONTHS OF DECEMBER TO MARCH.

PIPE UNDERDRAINS FOR STRUCTURES SHALL EXTEND TO THE BOTTOM OF THE EMBANKMENT SLOPE AND TERMINATE WITH A PCC END SECTION.

THE QUANTITY OF WHITE 4" MODIFIED URETHANE PAVEMENT MARKING IS 348 FOOT, THE QUANTITY OF YELLOW 4" MODIFIED URETHANE PAVEMENT MARKING IS 348 FOOT, THE QUANTITY OF WHITE 6" MODIFIED URETHANE PAVEMENT MARKING IS 88 FOOT AND THE QUANTITY OF ONE WAY CRYSTAL REPLACEMENT REFLECTOR IS 100 EACH.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE TO THIS PROJECT:

MIXTURE USE: HMA SHOULDERS, 2-1/2"
 APPLICATION: HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N90
 PG GRADE: PG 64-22
 DESIGN AIR VOIDS: 4.0% @ NDESIGN = 90
 MIXTURE COMPOSITION: IL-9.5
 FRICTION AGGREGATE: MIXTURE C

MIXTURE USE: BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)
 APPLICATION: HOT-MIX ASPHALT BINDER COURSE, IL 19.0, N70
 PG GRADE: PG 64-22
 DESIGN AIR VOIDS: 4.0% @ NDESIGN = 70
 MIXTURE COMPOSITION: IL-19.0
 FRICTION AGGREGATE: N/A

INDEX OF SHEETS

SHEET NO.	TITLE
1	COVER SHEET
2	INDEX OF SHEETS & GENERAL NOTES
3-4	SUMMARY OF QUANTITIES
5	SCHEDULES
6-7	STAGE CONSTRUCTION PLAN SHEETS
8-43	STRUCTURE PLAN SHEETS

THE FOLLOWING STANDARDS ARE A PART OF THESE PLANS AND ARE INCLUDED AFTER SHEET NO. 43:

000001-06	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND A FOOT
420401-10	BRIDGE APPROACH PAVEMENT CONNECTOR
515001-03	NAME PLATES
609006-05	BRIDGE APPROACH PAVEMENT (DRAIN DETAIL)
630001-10	STEEL PLATE BEAM GUARDRAIL
630301-06	SHOULDER WIDENING FOR TYPE1 (SPECIAL) GUARDRAIL TERMINALS
631031-12	TRAFFIC BARRIER TERMINAL, TYPE 6
635006-03	REFLECTOR AND TERMINAL MARKER PLACEMENT
635011-02	REFLECTOR MARKER AND MOUNTING DETAILS
642001-02	SHOULDER RUMBLE STRIPS, 16 IN
643001-02	SAND MODULE IMPACT ATTENUATORS
701101-04	OFF-ROAD OPERATIONS, MULTILANE 15' TO 24' FROM PAVEMENT EDGE
701400-07	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-08	LANE CLOSURE, FREEWAY/EXPRESSWAY
701402-09	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH BARRIER
701426-06	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS > = 45 MPH
701901-03	TRAFFIC CONTROL DEVICES
704001-07	TEMPORARY CONCRETE BARRIER
780001-04	TYPICAL PAVEMENT MARKINGS
781001-03	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS

FILE NAME :	USER NAME : steffennk	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL NOTES & INDEX OF SHEETS					F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
c:\pwork\pwork\steffennk\0254366\074187-ah-gegnote.dgn	DRAWN -	REVISED -	7D		118-45HB-118R	Cumberland	43	2						
PLOT SCALE = 1/8" = 1'-0"	CHECKED -	REVISED -	SCALE: SHEET OF SHEETS STA. TO STA.					CONTRACT NO. 74187						
Default	DATE -	REVISED -	ILLINOIS FED. AID PROJECT											

90/10 FED/STATE

90/10 FED/STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0014		
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD	EACH	4	4		
	701402					
70301000	WORK ZONE PAVEMENT MARKING REMOVAL	SO FT	6035	6035		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	750	750		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	700	700		
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2		
70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	2	2		
* 78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	696	696		
* 78009006	MODIFIED URETHANE PAVEMENT MARKING - LINE 6"	FOOT	88	88		
78100300	REPLACEMENT REFLECTOR	EACH	100	100		
* 78200410	GUARDRAIL MARKERS, TYPE A	EACH	19	19		
* 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4		
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	100	100		
X4202005	DIAMOND GRINDING AND GROOVING (ROADWAY SECTION)	SO YD	1278	1278		
12.						

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0014		
X5860110	GRANULAR BACKFILL FOR STRUCTURES	CU YD	331.1	331.1		
Z0004552	APPROACH SLAB REMOVAL	SQ YD	178	178		
Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SO FT	2.3	2.3		
Z0026407	TEMPORARY SHEET PILING	SO FT	756	756		
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	334	334		
4						
X7010410	SPEED DISPLAY TRAILER	CAL MO	4	4		
X7015005	CHANGEABLE MESSAGE SIGN	CAL DA	28	28		

* SPECIALTY ITEM

FILE NAME =	USER NAME = stoffennk	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUMMARY OF QUANTITIES	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
cr:\p\work\p\wdot\stoeffennk\20254366\074187-ahtrsoq.dgn	74187-ahtrsoq.dgn	DRAWN -	REVISED -			70	118-45HB-118R	Cumberland	43	4	
PLOT SCALE = 100.0000' / 1" = 100'		CHECKED -	REVISED -			CONTRACT NO. 74187					
PLOT DATE = 8/15/2014		DATE -	REVISED -			ILLINOIS FED. AID PROJECT					

BRIDGE APPROACH PAVEMENT CONNECTOR SCHEDULE

LOCATION		QUANTITY
LANE	STATION TO STATION	(SQ YD)
EB	250+03.57 250+09.57	28
WB	250+41.07 250+47.07	28
EB	251+33.33 251+39.33	28
WB	251+70.83 251+76.83	28
TOTAL		112

HMA AND RUMBLE STRIP SCHEDULE

				BITUMINOUS MATERIALS (PRIME COAT)	HOT-MIX ASPHALT SURFACE REMOVAL, 2 1/2"	HOT-MIX ASPHALT SHOULDERS, 2-1/2"	SHOULDER RUMBLE STRIPS, 16 INCH	
LANE	STATION TO STATION		LENGTH (FOOT)	WIDTH (FOOT)	(POUND)	(SQ FT)	(SQ FT)	(SQ FT)
WBPL	248+24.0	257+19.0	895	10	366	814	814	733
EBPL	245+00.0	253+88.0	888	10	363	807	807	726
WBDL	249+35.5	257+12.0	776.5	6	195	432	432	649
EBDL	245+08.0	252+82.5	774.5	6	194	432	432	647
TOTAL					1118	2485	2485	2755

PAVEMENT MARKING SCHEDULE
(FOR STAGE 1 CONSTRUCTION)

DESCRIPTION		STATION TO STATION		LENGTH	(SQ FT)	(FOOT)	(FOOT)	(EACH)	(EACH)	(FOOT)	(FOOT)
EB LANE	RIGHT	230+00.0	251+78.0	2178	871	174		25	25		
EB LANE	LEFT	245+00.00	254+94.50	994.5	666	174	43.5			888	250
WB LANE	LEFT	248+01.50	257+19.00	917.5	671			25	25	895	250
WB LANE	RIGHT	250+39.00	272+19.00	2180	873						
					3081	348	44	50	50	1783	500

PAVEMENT MARKING SCHEDULE
(FOR STAGE 2 CONSTRUCTION)

DESCRIPTION		STATION TO STATION		LENGTH	(SQ FT)	(FOOT)	(FOOT)	(EACH)	(EACH)	(FOOT)	(FOOT)
EB LANE	LEFT	230+00.0	251+77.5	2177.5	869			25	25		
EB LANE	RIGHT	245+08.0	253+85.5	877.5	607					809	250
WB LANE	RIGHT	248+32.0	257+12.0	880	608	174				811	250
WB LANE	LEFT	250+40.5	272+12.0	2171.5	870	174	43.5	25	25		
					2954	348	44	50	50	1620	500

FILE NAME =	USER NAME = steffenmk	DESIGNED -	REVISED -
c:\pw_work\pwidot\steffenmk\d0254366\074187-sh1-schedule.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / 1in.	CHECKED -	REVISED -
	PLOT DATE = 8/15/2014	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULES			
SCALE:	SHEET	OF	SHEETS
	STA.	TO	STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	Cumberland	43	5
CONTRACT NO.			74187	
ILLINOIS FED. AID PROJECT				

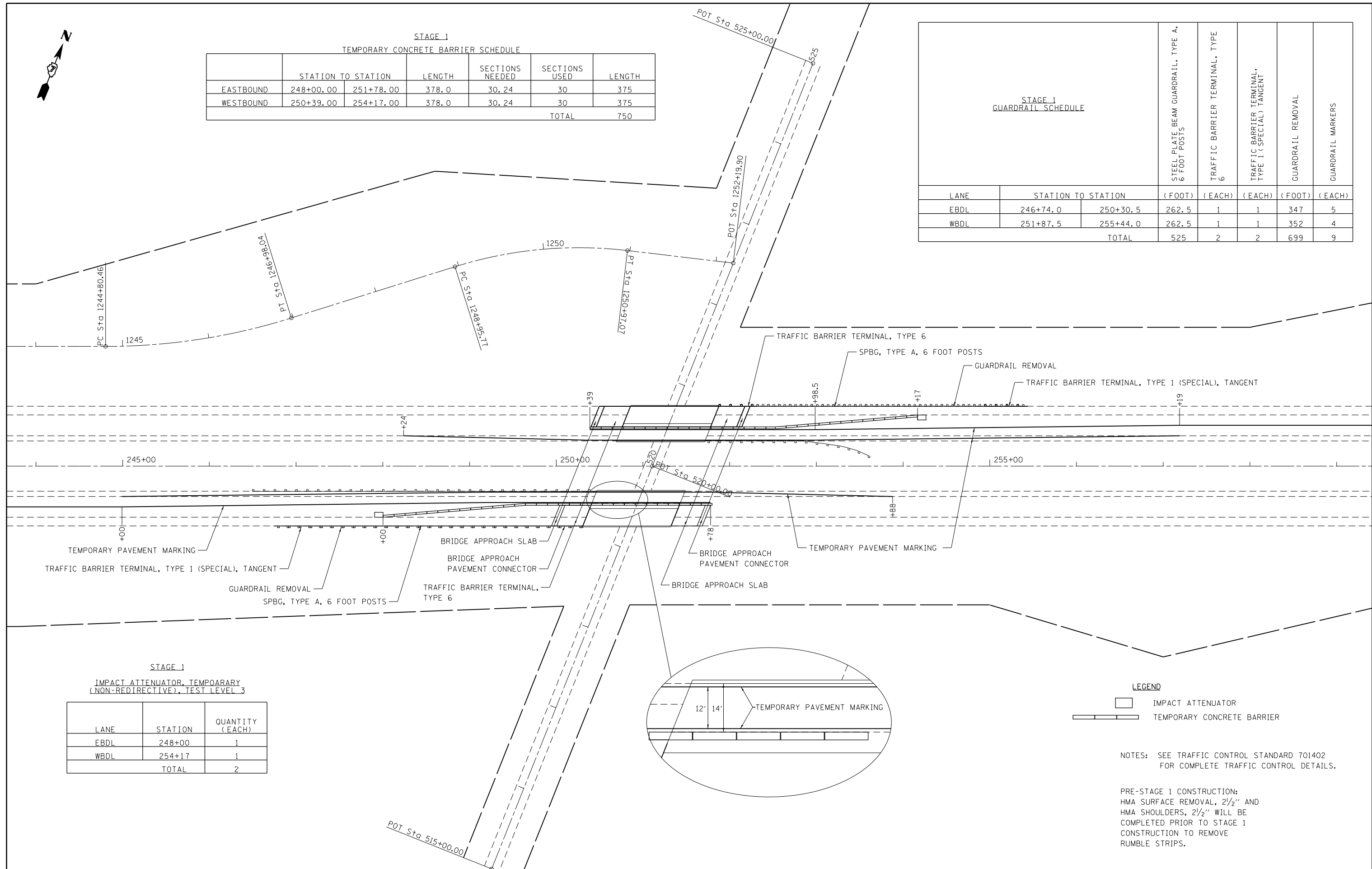


**STAGE 1
TEMPORARY CONCRETE BARRIER SCHEDULE**

	STATION TO STATION		LENGTH	SECTIONS NEEDED	SECTIONS USED	LENGTH
EASTBOUND	248+00.00	251+78.00	378.0	30.24	30	375
WESTBOUND	250+39.00	254+17.00	378.0	30.24	30	375
			TOTAL			750

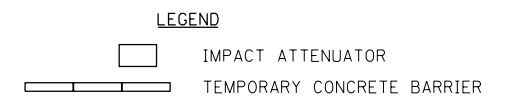
**STAGE 1
GUARDRAIL SCHEDULE**

LANE	STATION TO STATION		(FOOT)	(EACH)	(EACH)	(FOOT)	(EACH)
EBDL	246+74.0	250+30.5	262.5	1	1	347	5
WBDL	251+87.5	255+44.0	262.5	1	1	352	4
			TOTAL	2	2	699	9



**STAGE 1
IMPACT ATTENUATOR, TEMPORARY
(NON-REDIRECTIVE), TEST LEVEL 3**

LANE	STATION	QUANTITY (EACH)
EBDL	248+00	1
WBDL	254+17	1
TOTAL		2



NOTES: SEE TRAFFIC CONTROL STANDARD 701402 FOR COMPLETE TRAFFIC CONTROL DETAILS.

PRE-STAGE 1 CONSTRUCTION:
HMA SURFACE REMOVAL, 2 1/2" AND
HMA SHOULDERS, 2 1/2" WILL BE
COMPLETED PRIOR TO STAGE 1
CONSTRUCTION TO REMOVE
RUMBLE STRIPS.

FILE NAME =	USER NAME = steffenmk	DESIGNED -	REVISED -
ci:\pw\work\p\midot\steffenmk\d0254366\074187-sh1-staging.dgn		DRAWN -	REVISED -
Default	PLOT SCALE = 100.0000' / in.	CHECKED -	REVISED -
	PLOT DATE = 8/15/2014	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STAGE 1 CONSTRUCTION
PLAN SHEET**

SCALE:	SHEET	OF	SHEETS	STA.	TO	STA.
--------	-------	----	--------	------	----	------

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	Cumberland	43	6
CONTRACT NO.			74187	
ILLINOIS FED. AID PROJECT				

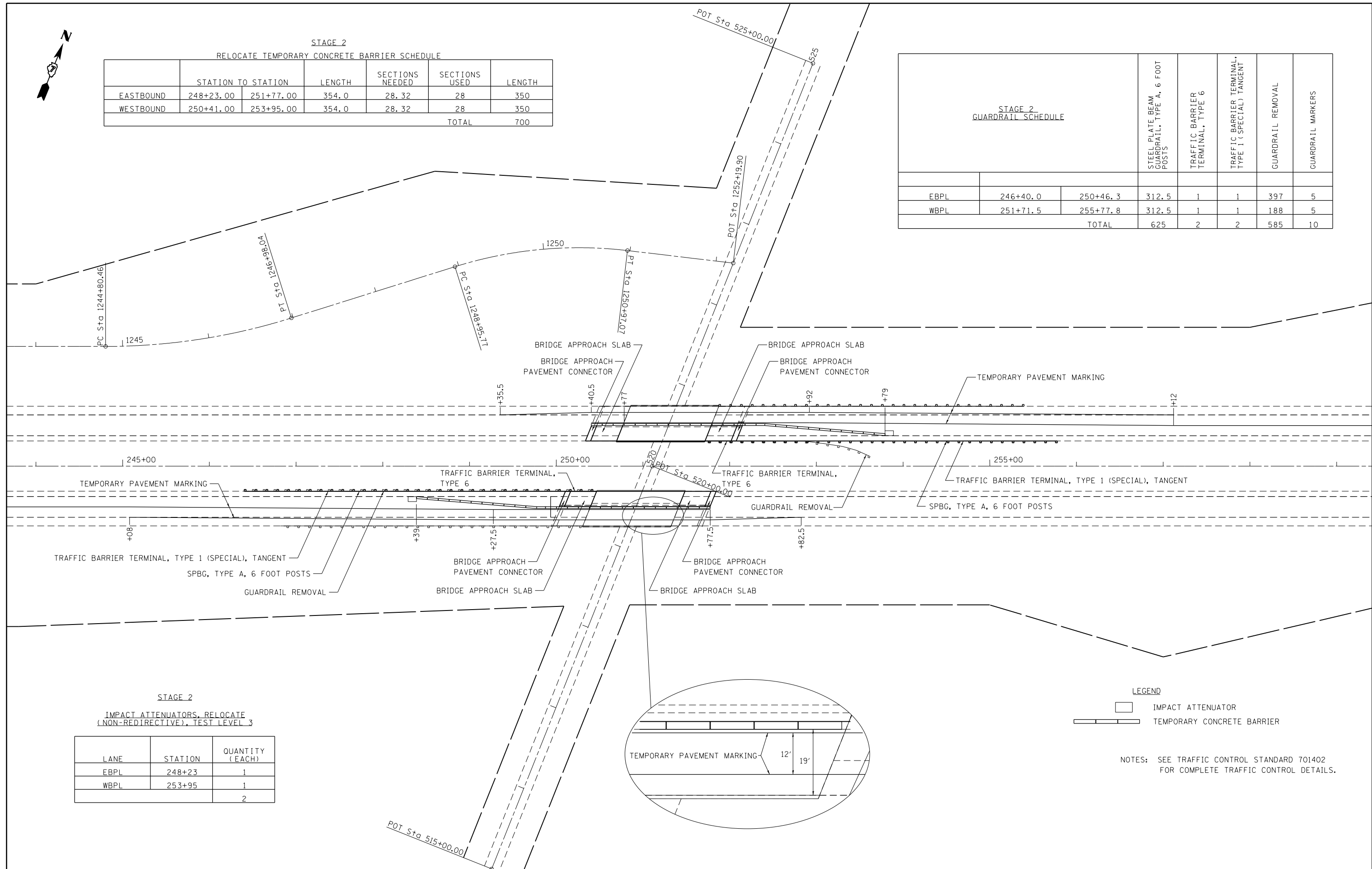


**STAGE 2
RELOCATE TEMPORARY CONCRETE BARRIER SCHEDULE**

	STATION TO STATION		LENGTH	SECTIONS NEEDED	SECTIONS USED	LENGTH
EASTBOUND	248+23.00	251+77.00	354.0	28.32	28	350
WESTBOUND	250+41.00	253+95.00	354.0	28.32	28	350
TOTAL						700

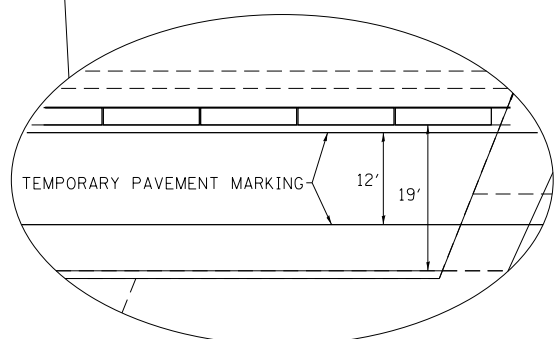
**STAGE 2
GUARDRAIL SCHEDULE**

	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 6	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	GUARDRAIL REMOVAL	GUARDRAIL MARKERS					
EBPL	246+40.0	250+46.3	312.5	1	1	397	5			
WBPL	251+71.5	255+77.8	312.5	1	1	188	5			
TOTAL						625	2	2	585	10



**STAGE 2
IMPACT ATTENUATORS, RELOCATE
(NON-REDIRECTIVE), TEST LEVEL 3**

LANE	STATION	QUANTITY (EACH)
EBPL	248+23	1
WBPL	253+95	1
		2

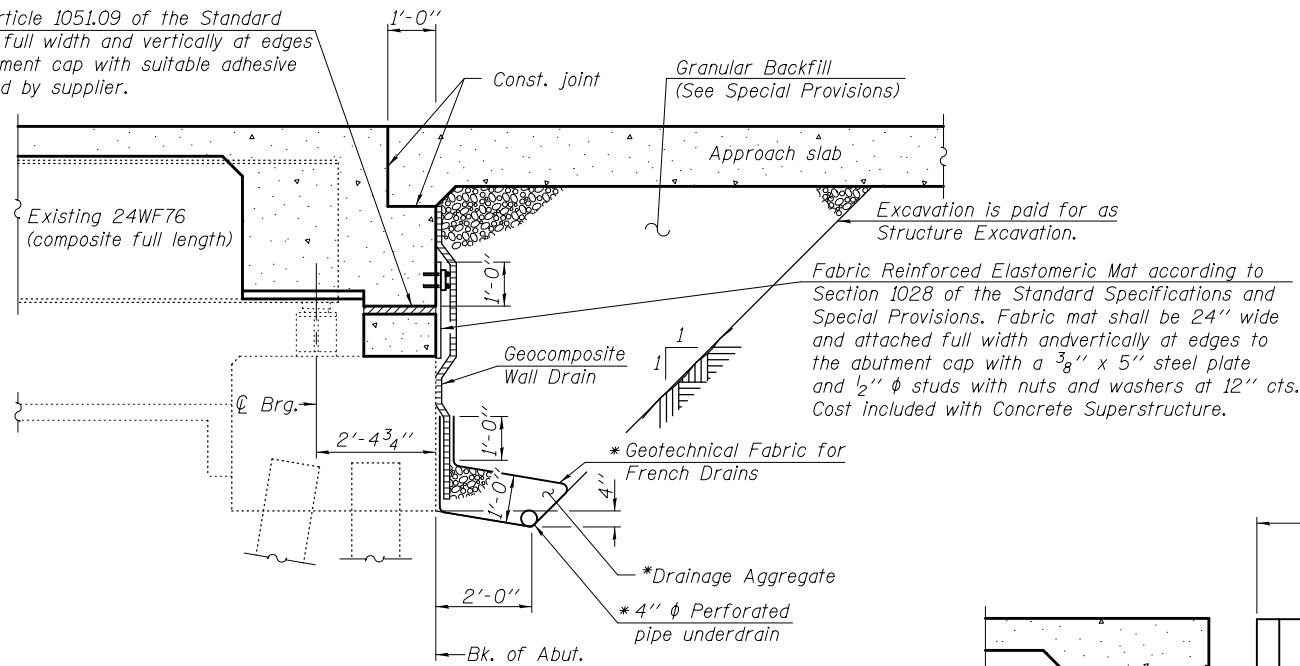


LEGEND

	IMPACT ATTENUATOR
	TEMPORARY CONCRETE BARRIER

NOTES: SEE TRAFFIC CONTROL STANDARD 701402 FOR COMPLETE TRAFFIC CONTROL DETAILS.

2" PJF (per Article 1051.09 of the Standard Specifications) full width and vertically at edges bonded to abutment cap with suitable adhesive as recommended by supplier.



SECTION THRU SEMI-INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

* Included in the cost of Pipe Underdrains for Structures.
(See Special Provisions)

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

STATION 251+09.95
RE-BUILT 20 BY
STATE OF ILLINOIS
F.A.I. RTE. 70 - SEC. (18-45HB-1)BR
LOADING HS20-44 & ALT.
STRUCTURE NO. 018-0040 (EB)

STATION 251+09.95
RE-BUILT 20 BY
STATE OF ILLINOIS
F.A.I. RTE. 70 - SEC. (18-45HB-1)BR
LOADING HS20-44 & ALT.
STRUCTURE NO. 018-0041 (WB)

NAME PLATE

See Std. 515001
Existing Name Plates shall be cleaned and relocated next to new Name Plates. Cost included with Name Plates.

TABLE OF ELEVATIONS

Location	North Bridge 018-0041 (WB)	South Bridge 018-0040 (EB)
Elev. A - West Abut.	551.65	552.24
Elev. A - East Abut.	549.85	550.42
Elev. B - West Abut.	543.42	544.19
Elev. B - East Abut.	541.69	542.45
Elev. C - West Abut.	543.09	543.86
Elev. C - East Abut.	541.36	542.12
Elev. D - West Abut.	538.85	539.44
Elev. D - East Abut.	537.05	537.62
Elev. E - West Abut.	530.29	531.06
Elev. E - East Abut.	528.56	529.32

INDEX OF SHEETS

- 1 - General Plan & Elevation
- 2 - General Data
- 3 - Stage Construction Details
- 4 - Temporary Concrete Barrier for Stage Construction
- 5-9 - Top of Slab Elevations
- 10-13 - Top of Approach Slab Elevations
- 14-15 - Superstructure
- 16 - Superstructure Details
- 17 - Diaphragm Details
- 18-21 - Bridge Approach Slab Details
- 22 - Structural Steel Details
- 23-26 - Abutment Removal
- 27-30 - Substructure Repairs
- 31-34 - Abutments
- 35 - Bar Splicer Assembly and Mechanical Splicer Details
- 36 - Cantilever Forming Brackets for Superstructures

GENERAL NOTES

No field welding is permitted except as specified in the contract documents. Reinforcement bars designated (E) shall be epoxy coated. Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that cannot be removed by grinding 1/4 inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction 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 scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Cleaning and field painting of structural steel shall be done under a separate painting contract.

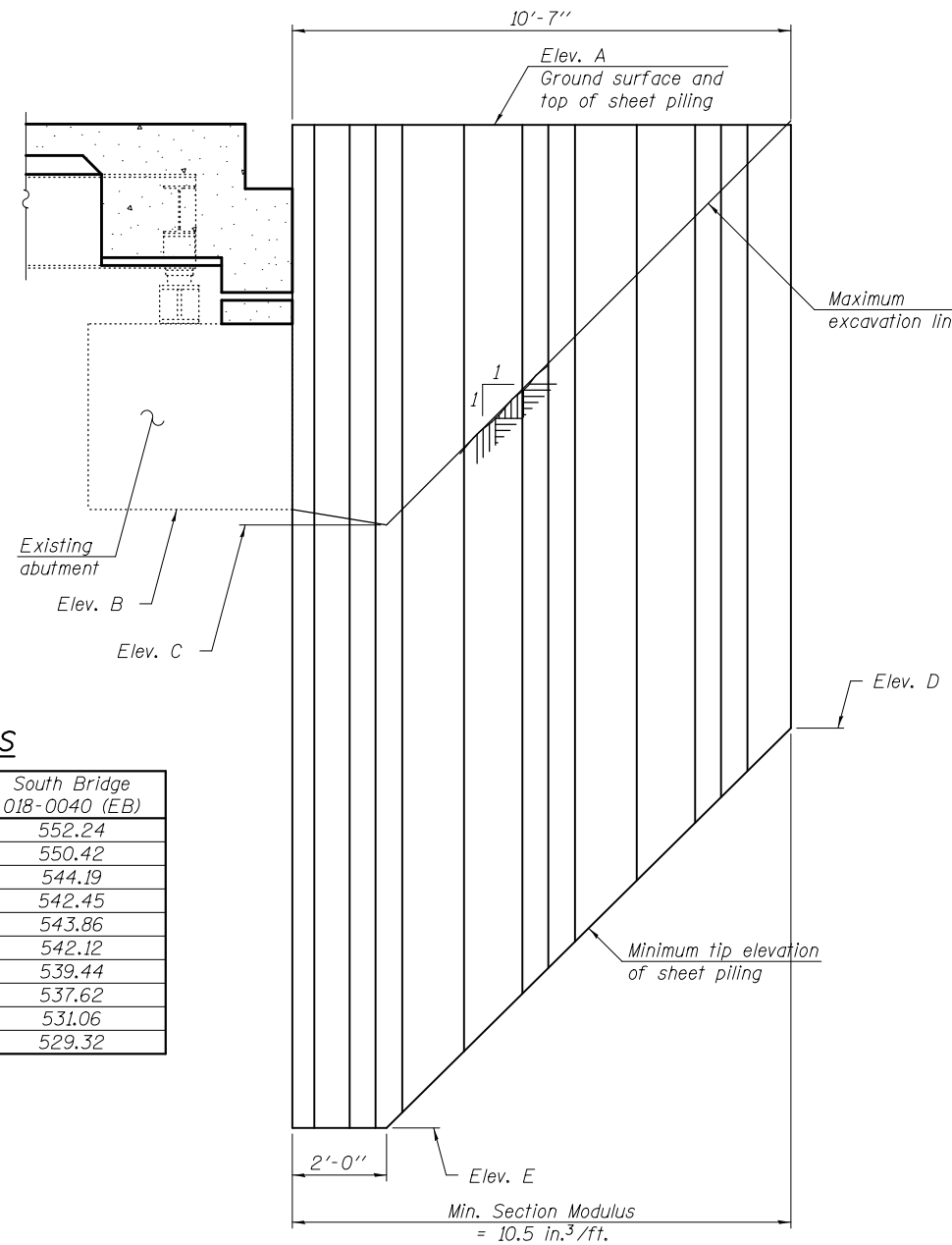
The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

Slipforming of parapet is not allowed.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Hot-Mix Asphalt Surface Removal (Asbestos)	Sq. Yd.	903.0		903.0
Concrete Removal	Cu. Yd.		68.8	68.8
Removal Of Existing Concrete Deck	Each	2		2
Protective Shield	Sq. Yd.	358		358
Structure Excavation	Cu. Yd.		381	381
Concrete Structures	Cu. Yd.		78.8	78.8
Concrete Superstructure	Cu. Yd.	610.0		610.0
Protective Coat	Sq. Yd.	1653.0		1653.0
Bridge Deck Grooving	Sq. Yd.	1362.0		1362.0
Stud Shear Connectors	Each	6,244		6,244
Reinforcement Bars, Epoxy Coated	Pound	135,540	5,340	140,880
Bar Splicers	Each	860	168	1,028
Name Plates	Each	2		2
Epoxy Crack Injection	Foot		89.0	89.0
Geocomposite Wall Drain	Sq. Yd.		174	174
Granular Backfill For Structures	Cu. Yd.		331.1	331.1
Structural Repair Of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.		2.3	2.3
Temporary Sheet Piling	Sq. Ft.		756.0	756.0
Diamond Grinding (Bridge Section)	Sq. Yd.	1.278		1.278
Pipe Underdrains For Structures 4"	Foot		334	334



TEMPORARY SHEET PILING

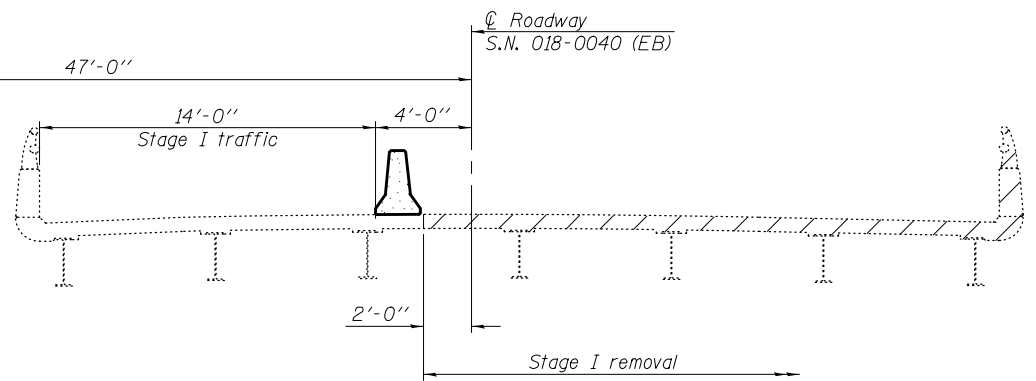
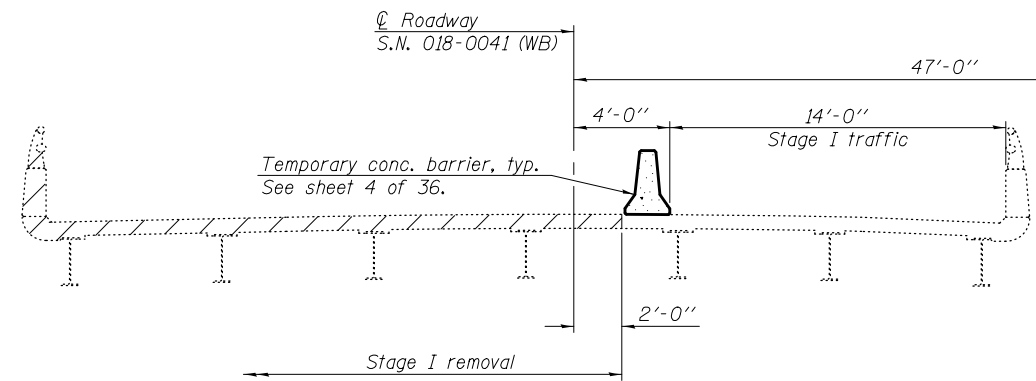
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Jaime F. [Signature]</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

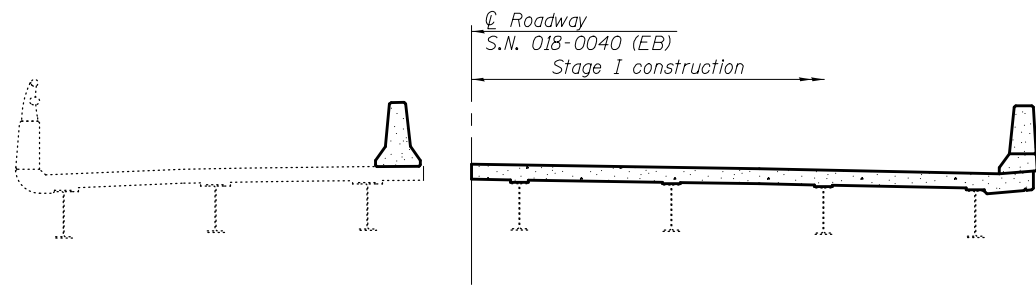
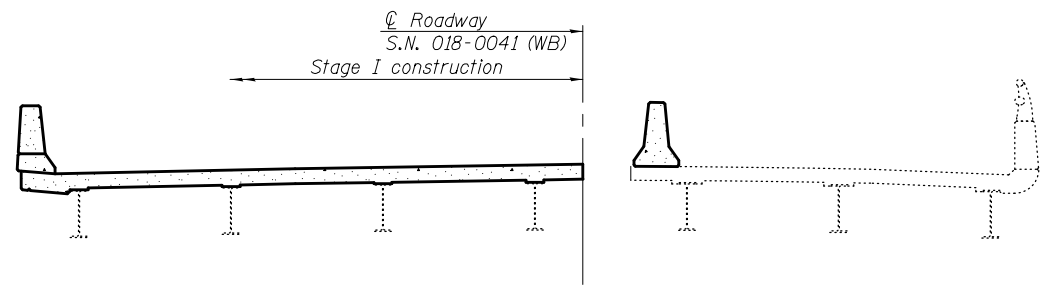
GENERAL DATA
STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)

SHEET NO. 2 OF 36 SHEETS

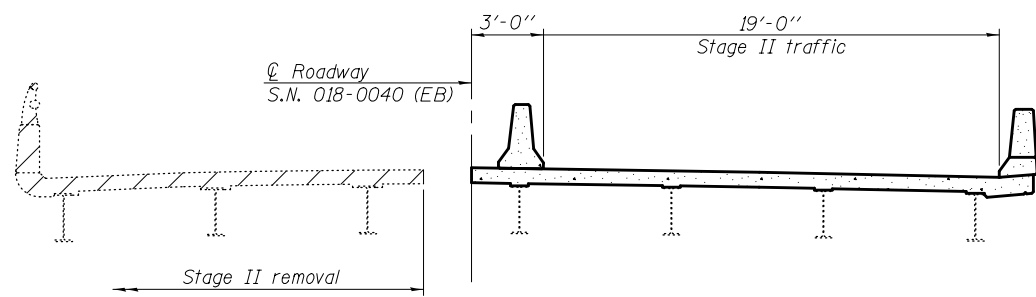
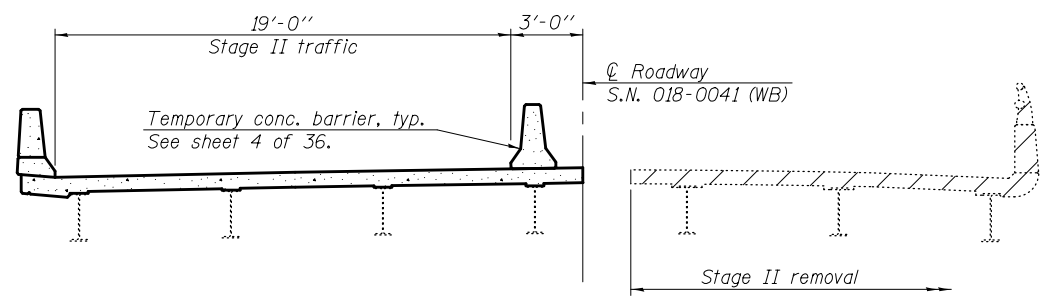
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	9
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74187	



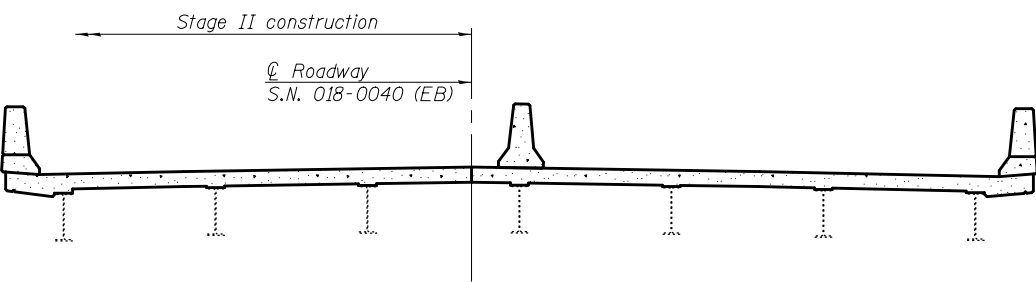
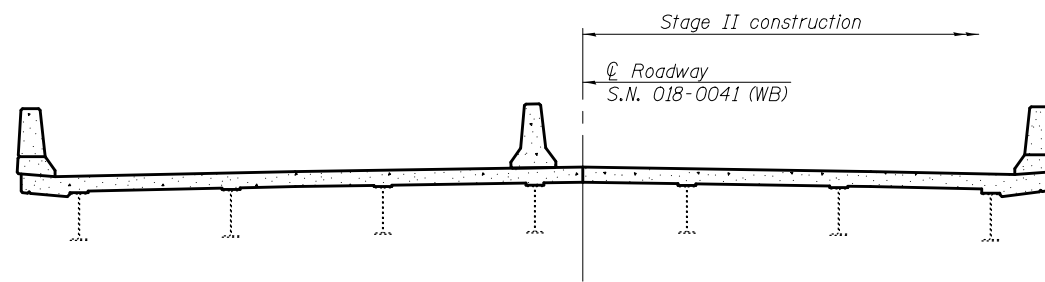
STAGE I REMOVAL



STAGE I CONSTRUCTION



STAGE II REMOVAL



STAGE II CONSTRUCTION

Notes:
 All staging cross sections are looking East.
 For quantity of Temporary Concrete Barrier, see roadway plans.
 Hatched area indicates Removal of Existing Concrete Deck.

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. DeLuca</i> ACTING ENGINEER OF BRIDGE DESIGN	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
DRAWN - MICHAEL B. MOSSMAN		REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

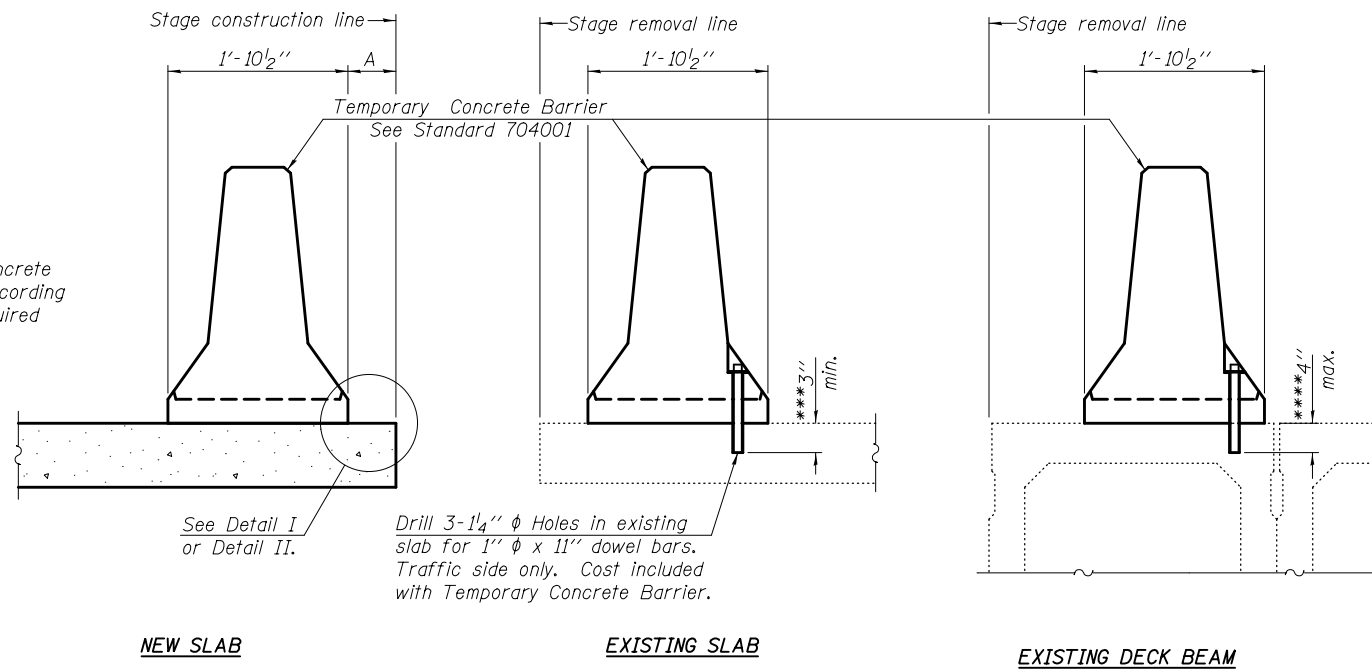
STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
 STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)

SHEET NO. 3 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	10
CONTRACT NO. 74187				
ILLINOIS FED. AID PROJECT				

When "A" is 3'-6" or less, the temporary concrete barrier shall be anchored to the new slab according to Detail I or Detail II. No anchorage is required when "A" is greater than 3'-6".



SECTIONS THRU SLAB OR DECK BEAM

NOTES

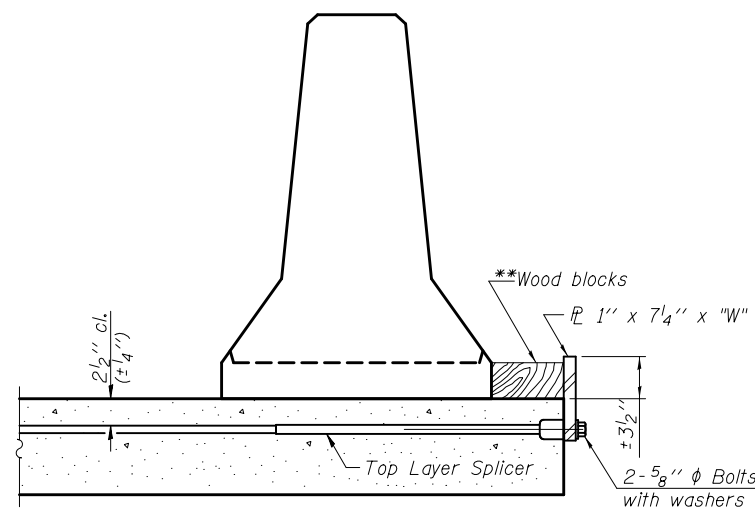
Detail I - With Bar Splicer or Couplers:
Connect one (1) 1" x 7/4" x "W" steel PL to the top layer of couplers with 2-5/8" φ bolts screwed to coupler at approximate C of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1" x 7/4" x "W" steel PL to the concrete slab or concrete wearing surface with 2-5/8" φ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate C of each barrier panel.

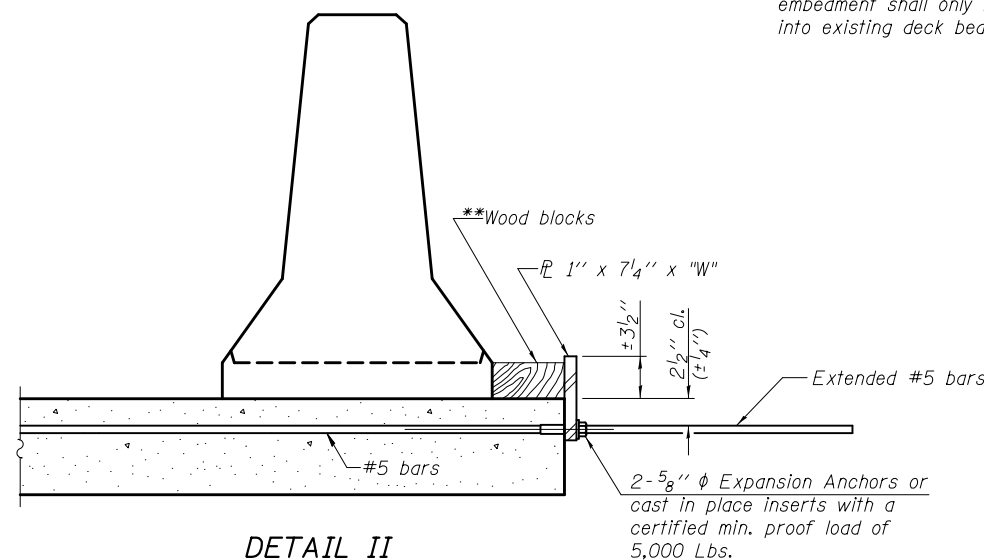
Cost of anchorage is included with Temporary Concrete Barrier. The 1" x 7/4" x "W" plate shall not be removed until stage II construction forms and all reinforcement bars are in place and the concrete is ready to be placed.

*** Dimension shown is minimum required embedment into concrete. If hot-mix asphalt wearing surface is present, minimum embedment shall be in addition to wearing surface depth.

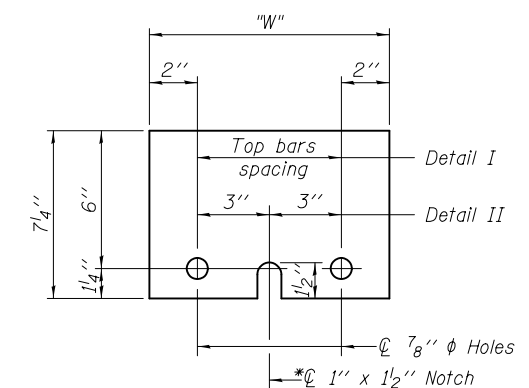
**** If existing deck beam is to remain in place after stage construction, embedment shall only be into wearing surface and not into existing deck beam concrete.



DETAIL I



DETAIL II



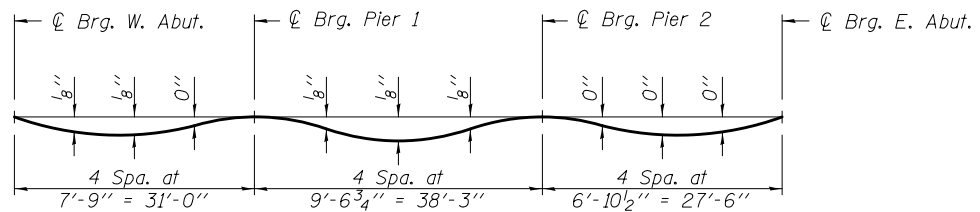
STEEL RETAINER 1" x 7/4" x "W"

* Required only with Detail II

** Wood blocks may be omitted when required to provide minimum stage traffic lane width. When the wood blocks are omitted, the concrete barrier shall be in direct contact with the steel retainer plate.

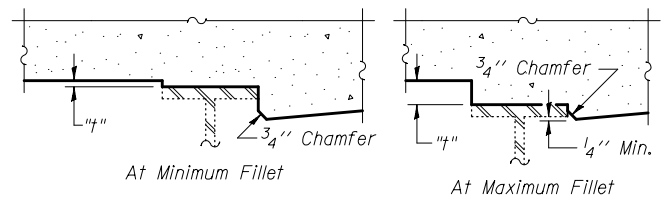
"W" = Top bars spacing + 4"

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J. [Signature]</i>	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED			70	(18-45HB-1)BR	CUMBERLAND	43	11	
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			CONTRACT NO. 74187					
CHECKED - F.T. / J.O.V. / G.R.A.					SHEET NO. 4 OF 36 SHEETS			ILLINOIS FED. AID PROJECT		



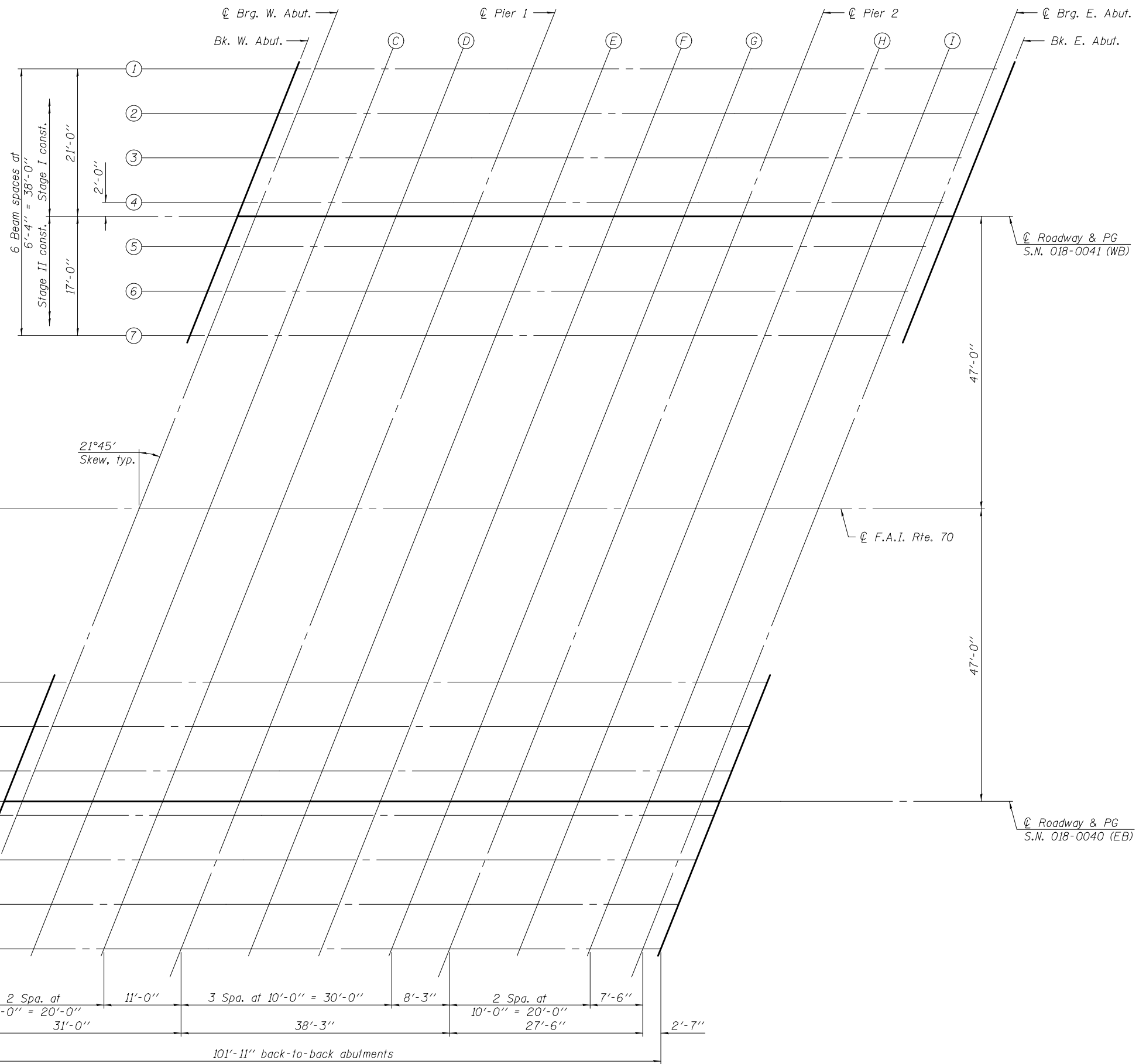
DEAD LOAD DEFLECTION DIAGRAM
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections and grinding as shown on sheets 6 thru 9 of 36.



To determine "h": Elevations of the top flanges of the beams shall be taken at intervals shown at right. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection and Grinding" shown on sheets 6 thru 9 of 36, minus slab thickness, equals the fillet heights "h" above top flange of beams.
The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 6 thru 9 of 36. For grinding the deck, see Special Provisions.

FILLET HEIGHTS



PLAN

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J. [Signature]</i> ACTING ENGINEER OF BRIDGE DESIGN	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)	F.A.I. RTE. 70	SECTION (18-45HB-1)BR	COUNTY CUMBERLAND	TOTAL SHEETS 43	SHEET NO. 12	
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			CONTRACT NO. 74187			ILLINOIS FED. AID PROJECT		
DRAWN - MICHAEL B. MOSSMAN		REVISED			SHEET NO. 5 OF 36 SHEETS					
CHECKED - F.T. / J.O.V. / G.R.A.										

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+84.37	-21.00	551.11	551.13
⊘ Brg. W. Abut.	250+86.95	-21.00	551.07	551.09
C	250+96.95	-21.00	550.89	550.92
D	251+06.95	-21.00	550.71	550.73
⊘ Pier 1	251+17.95	-21.00	550.52	550.54
E	251+27.95	-21.00	550.34	550.37
F	251+37.95	-21.00	550.16	550.19
G	251+47.95	-21.00	549.99	550.01
⊘ Pier 2	251+56.20	-21.00	549.84	549.86
H	251+66.20	-21.00	549.66	549.68
I	251+76.20	-21.00	549.49	549.51
⊘ Brg. E. Abut.	251+83.71	-21.00	549.35	549.37
Bk. E. Abut.	251+86.29	-21.00	549.31	549.33

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+81.84	-14.67	551.29	551.31
⊘ Brg. W. Abut.	250+84.43	-14.67	551.24	551.26
C	250+94.43	-14.67	551.07	551.10
D	251+04.43	-14.67	550.89	550.91
⊘ Pier 1	251+15.43	-14.67	550.69	550.71
E	251+25.43	-14.67	550.52	550.55
F	251+35.43	-14.67	550.34	550.37
G	251+45.43	-14.67	550.16	550.18
⊘ Pier 2	251+53.68	-14.67	550.02	550.04
H	251+63.68	-14.67	549.84	549.86
I	251+73.68	-14.67	549.66	549.68
⊘ Brg. E. Abut.	251+81.18	-14.67	549.53	549.55
Bk. E. Abut.	251+83.76	-14.67	549.48	549.50

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+79.32	-8.33	551.45	551.47
⊘ Brg. W. Abut.	250+81.90	-8.33	551.40	551.42
C	250+91.90	-8.33	551.22	551.25
D	251+01.90	-8.33	551.05	551.07
⊘ Pier 1	251+12.90	-8.33	550.85	550.87
E	251+22.90	-8.33	550.67	550.70
F	251+32.90	-8.33	550.50	550.53
G	251+42.90	-8.33	550.32	550.34
⊘ Pier 2	251+51.15	-8.33	550.17	550.19
H	251+61.15	-8.33	550.00	550.02
I	251+71.15	-8.33	549.82	549.84
⊘ Brg. E. Abut.	251+78.65	-8.33	549.69	549.71
Bk. E. Abut.	251+81.24	-8.33	549.64	549.66

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+76.79	-2.00	551.59	551.61
⊘ Brg. W. Abut.	250+79.37	-2.00	551.54	551.56
C	250+89.37	-2.00	551.37	551.40
D	250+99.37	-2.00	551.19	551.21
⊘ Pier 1	251+10.37	-2.00	551.00	551.02
E	251+20.37	-2.00	550.82	550.85
F	251+30.37	-2.00	550.64	550.67
G	251+40.37	-2.00	550.46	550.48
⊘ Pier 2	251+48.62	-2.00	550.32	550.34
H	251+58.62	-2.00	550.14	550.16
I	251+68.62	-2.00	549.96	549.98
⊘ Brg. E. Abut.	251+76.13	-2.00	549.83	549.85
Bk. E. Abut.	251+78.71	-2.00	549.79	549.81

⊘ ROADWAY, PG. & STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+75.99	0.00	551.63	551.65
⊘ Brg. W. Abut.	250+78.57	0.00	551.59	551.61
C	250+88.57	0.00	551.41	551.44
D	250+98.57	0.00	551.24	551.26
⊘ Pier 1	251+09.58	0.00	551.04	551.06
E	251+19.58	0.00	550.86	550.89
F	251+29.58	0.00	550.69	550.72
G	251+39.58	0.00	550.51	550.53
⊘ Pier 2	251+47.83	0.00	550.36	550.38
H	251+57.83	0.00	550.19	550.21
I	251+67.83	0.00	550.01	550.03
⊘ Brg. E. Abut.	251+75.33	0.00	549.88	549.90
Bk. E. Abut.	251+77.91	0.00	549.83	549.85

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+74.26	4.33	551.60	551.62
⊘ Brg. W. Abut.	250+76.85	4.33	551.55	551.57
C	250+86.85	4.33	551.38	551.41
D	250+96.85	4.33	551.20	551.22
⊘ Pier 1	251+07.85	4.33	551.00	551.02
E	251+17.85	4.33	550.83	550.86
F	251+27.85	4.33	550.65	550.68
G	251+37.85	4.33	550.47	550.49
⊘ Pier 2	251+46.10	4.33	550.33	550.35
H	251+56.10	4.33	550.15	550.17
I	251+66.10	4.33	549.97	549.99
⊘ Brg. E. Abut.	251+73.60	4.33	549.84	549.86
Bk. E. Abut.	251+76.18	4.33	549.79	549.81

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+71.74	10.67	551.54	551.56
⊘ Brg. W. Abut.	250+74.32	10.67	551.50	551.52
C	250+84.32	10.67	551.32	551.35
D	250+94.32	10.67	551.14	551.16
⊘ Pier 1	251+05.32	10.67	550.95	550.97
E	251+15.32	10.67	550.77	550.80
F	251+25.32	10.67	550.60	550.63
G	251+35.32	10.67	550.42	550.44
⊘ Pier 2	251+43.57	10.67	550.27	550.29
H	251+53.57	10.67	550.10	550.12
I	251+63.57	10.67	549.92	549.94
⊘ Brg. E. Abut.	251+71.07	10.67	549.79	549.81
Bk. E. Abut.	251+73.66	10.67	549.74	549.76

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+69.21	17.00	551.46	551.48
⊘ Brg. W. Abut.	250+71.79	17.00	551.42	551.44
C	250+81.79	17.00	551.24	551.27
D	250+91.79	17.00	551.06	551.08
⊘ Pier 1	251+02.79	17.00	550.87	550.89
E	251+12.79	17.00	550.69	550.72
F	251+22.79	17.00	550.51	550.54
G	251+32.79	17.00	550.34	550.36
⊘ Pier 2	251+41.04	17.00	550.19	550.21
H	251+51.04	17.00	550.01	550.03
I	251+61.04	17.00	549.84	549.86
⊘ Brg. E. Abut.	251+68.55	17.00	549.71	549.73
Bk. E. Abut.	251+71.13	17.00	549.66	549.68

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	<i>James F. [Signature]</i> ACTING ENGINEER OF BRIDGE DESIGN	
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED _____
CHECKED - F.T. / J.O.V. / G.R.A.	<i>Carl [Signature]</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED _____

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 018 - 0041 (WB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	14
			CONTRACT NO. 74187	
ILLINOIS FED. AID PROJECT				

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+45.27	-17.00	551.81	551.83
⊘ Brg. W. Abut.	250+47.85	-17.00	551.76	551.78
C	250+57.85	-17.00	551.58	551.61
D	250+67.85	-17.00	551.40	551.42
⊘ Pier 1	250+78.86	-17.00	551.21	551.23
E	250+88.86	-17.00	551.03	551.06
F	250+98.86	-17.00	550.85	550.88
G	251+08.86	-17.00	550.67	550.69
⊘ Pier 2	251+17.11	-17.00	550.52	550.54
H	251+27.11	-17.00	550.34	550.36
I	251+37.11	-17.00	550.16	550.18
⊘ Brg. E. Abut.	251+44.61	-17.00	550.03	550.05
Bk. E. Abut.	251+47.19	-17.00	549.98	550.00

BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+42.74	-10.67	551.98	552.00
⊘ Brg. W. Abut.	250+45.33	-10.67	551.93	551.95
C	250+55.33	-10.67	551.75	551.78
D	250+65.33	-10.67	551.57	551.59
⊘ Pier 1	250+76.33	-10.67	551.38	551.40
E	250+86.33	-10.67	551.20	551.23
F	250+96.33	-10.67	551.02	551.05
G	251+06.33	-10.67	550.84	550.86
⊘ Pier 2	251+14.58	-10.67	550.69	550.71
H	251+24.58	-10.67	550.51	550.53
I	251+34.58	-10.67	550.33	550.35
⊘ Brg. E. Abut.	251+42.08	-10.67	550.20	550.22
Bk. E. Abut.	251+44.66	-10.67	550.15	550.17

BEAM 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+40.22	-4.33	552.12	552.14
⊘ Brg. W. Abut.	250+42.80	-4.33	552.08	552.10
C	250+52.80	-4.33	551.90	551.93
D	250+62.80	-4.33	551.72	551.74
⊘ Pier 1	250+73.80	-4.33	551.52	551.54
E	250+83.80	-4.33	551.34	551.37
F	250+93.80	-4.33	551.16	551.19
G	251+03.80	-4.33	550.98	551.00
⊘ Pier 2	251+12.05	-4.33	550.84	550.86
H	251+22.05	-4.33	550.66	550.68
I	251+32.05	-4.33	550.48	550.50
⊘ Brg. E. Abut.	251+39.55	-4.33	550.34	550.36
Bk. E. Abut.	251+42.14	-4.33	550.30	550.32

⊘ ROADWAY, PG. & STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+38.49	0.00	552.22	552.24
⊘ Brg. W. Abut.	250+41.07	0.00	552.17	552.19
C	250+51.07	0.00	552.00	552.03
D	250+61.07	0.00	551.82	551.84
⊘ Pier 1	250+72.07	0.00	551.62	551.64
E	250+82.07	0.00	551.44	551.47
F	250+92.07	0.00	551.26	551.29
G	251+02.07	0.00	551.08	551.10
⊘ Pier 2	251+10.32	0.00	550.94	550.96
H	251+20.32	0.00	550.76	550.78
I	251+30.32	0.00	550.58	550.60
⊘ Brg. E. Abut.	251+37.83	0.00	550.44	550.46
Bk. E. Abut.	251+40.41	0.00	550.40	550.42

BEAM 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+37.69	2.00	552.20	552.22
⊘ Brg. W. Abut.	250+40.27	2.00	552.16	552.18
C	250+50.27	2.00	551.98	552.01
D	250+60.27	2.00	551.80	551.82
⊘ Pier 1	250+71.28	2.00	551.60	551.62
E	250+81.28	2.00	551.42	551.45
F	250+91.28	2.00	551.24	551.27
G	251+01.28	2.00	551.07	551.09
⊘ Pier 2	251+09.53	2.00	550.92	550.94
H	251+19.53	2.00	550.74	550.76
I	251+29.53	2.00	550.56	550.58
⊘ Brg. E. Abut.	251+37.03	2.00	550.43	550.45
Bk. E. Abut.	251+39.61	2.00	550.38	550.40

BEAM 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+35.16	8.33	552.15	552.17
⊘ Brg. W. Abut.	250+37.75	8.33	552.10	552.12
C	250+47.75	8.33	551.93	551.96
D	250+57.75	8.33	551.75	551.77
⊘ Pier 1	250+68.75	8.33	551.55	551.57
E	250+78.75	8.33	551.37	551.40
F	250+88.75	8.33	551.19	551.22
G	250+98.75	8.33	551.01	551.03
⊘ Pier 2	251+07.00	8.33	550.86	550.88
H	251+17.00	8.33	550.69	550.71
I	251+27.00	8.33	550.51	550.53
⊘ Brg. E. Abut.	251+34.50	8.33	550.37	550.39
Bk. E. Abut.	251+37.08	8.33	550.33	550.35

BEAM 13

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+32.64	14.67	552.08	552.10
⊘ Brg. W. Abut.	250+35.22	14.67	552.04	552.06
C	250+45.22	14.67	551.86	551.89
D	250+55.22	14.67	551.68	551.70
⊘ Pier 1	250+66.22	14.67	551.48	551.50
E	250+76.22	14.67	551.30	551.33
F	250+86.22	14.67	551.12	551.15
G	250+96.22	14.67	550.94	550.96
⊘ Pier 2	251+04.47	14.67	550.80	550.82
H	251+14.47	14.67	550.62	550.64
I	251+24.47	14.67	550.44	550.46
⊘ Brg. E. Abut.	251+31.97	14.67	550.30	550.32
Bk. E. Abut.	251+34.56	14.67	550.26	550.28

BEAM 14

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	250+30.11	21.00	552.00	552.02
⊘ Brg. W. Abut.	250+32.69	21.00	551.95	551.97
C	250+42.69	21.00	551.77	551.80
D	250+52.69	21.00	551.59	551.61
⊘ Pier 1	250+63.70	21.00	551.39	551.41
E	250+73.70	21.00	551.22	551.25
F	250+83.70	21.00	551.04	551.07
G	250+93.70	21.00	550.86	550.88
⊘ Pier 2	251+01.95	21.00	550.71	550.73
H	251+11.95	21.00	550.53	550.55
I	251+21.95	21.00	550.35	550.37
⊘ Brg. E. Abut.	251+29.45	21.00	550.22	550.24
Bk. E. Abut.	251+32.03	21.00	550.17	550.19

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	<i>Jaime F. J. [Signature]</i> ACTING ENGINEER OF BRIDGE DESIGN	
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.	<i>Carl [Signature]</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF SLAB ELEVATIONS
STRUCTURE NO. 018 - 0040 (EB)**

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	16
			CONTRACT NO. 74187	
			ILLINOIS FED. AID PROJECT	

☉ ROADWAY, PG., &
STAGE CONSTRUCTION JOINT
S.N. 018-0041 (WB)

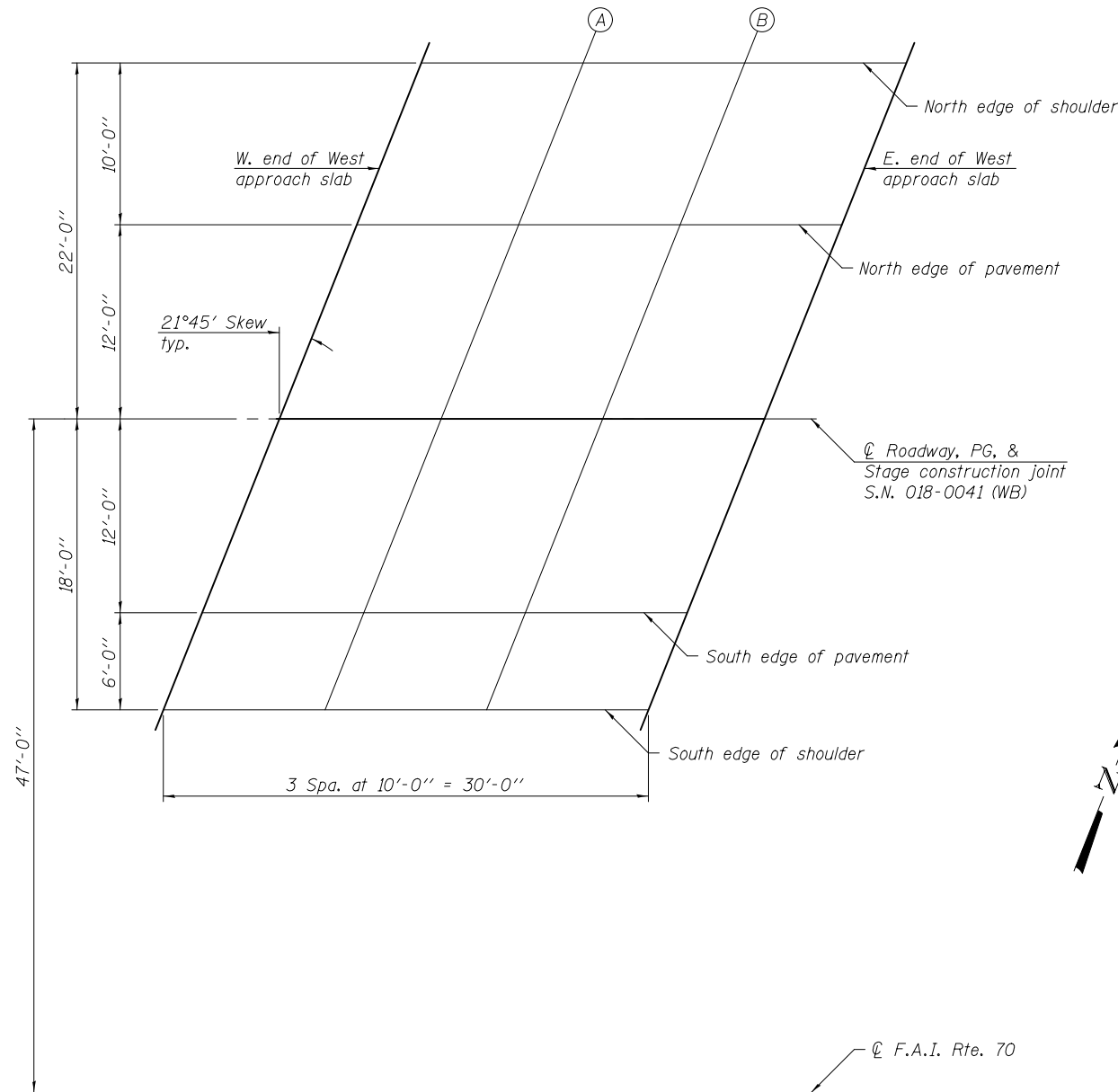
NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+55.85	-22.00	551.60	551.62
A	250+65.85	-22.00	551.42	551.44
B	250+75.85	-22.00	551.24	551.26
E. End of W. Appr. Slab	250+85.85	-22.00	551.06	551.08

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+51.86	-12.00	551.87	551.89
A	250+61.86	-12.00	551.70	551.72
B	250+71.86	-12.00	551.52	551.54
E. End of W. Appr. Slab	250+81.86	-12.00	551.34	551.36

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+47.07	0.00	552.15	552.17
A	250+57.07	0.00	551.97	551.99
B	250+67.07	0.00	551.79	551.81
E. End of W. Appr. Slab	250+77.07	0.00	551.62	551.64



PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+42.28	12.00	552.04	552.06
A	250+52.28	12.00	551.87	551.89
B	250+62.28	12.00	551.69	551.71
E. End of W. Appr. Slab	250+72.28	12.00	551.51	551.53

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+39.89	18.00	551.96	551.98
A	250+49.89	18.00	551.78	551.80
B	250+59.89	18.00	551.61	551.63
E. End of W. Appr. Slab	250+69.89	18.00	551.43	551.45

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. [Signature]</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED -
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED -
CHECKED - F.T. / J.O.V. / G.R.A.		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0041 (WB)**

SHEET NO. 10 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	17
			CONTRACT NO. 74187	
ILLINOIS FED. AID PROJECT				

**☉ ROADWAY, PG., &
STAGE CONSTRUCTION JOINT
S.N. 018-0041 (WB)**

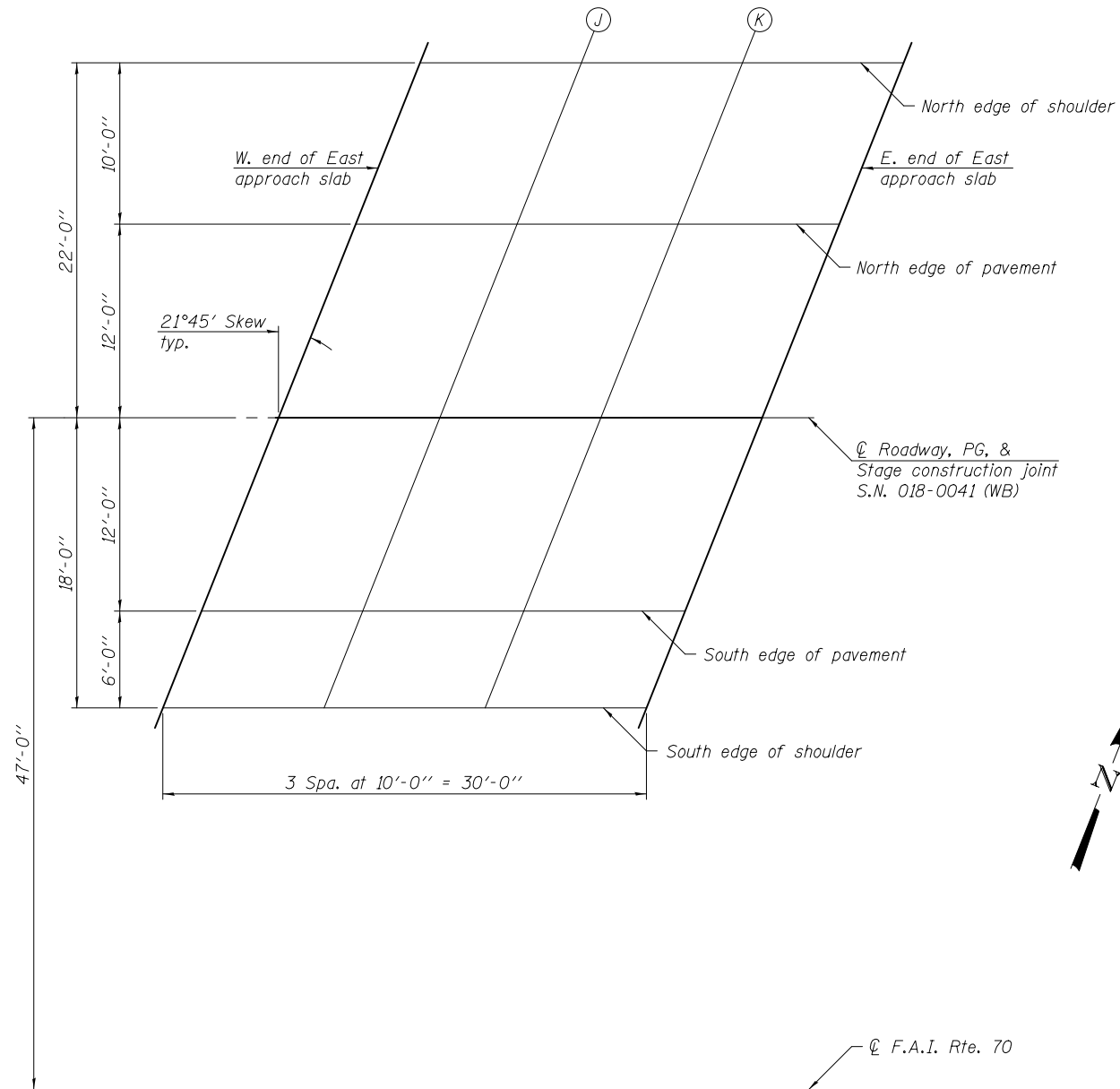
NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+85.61	-22.00	549.30	549.32
J	251+95.61	-22.00	549.12	549.14
K	252+05.61	-22.00	548.94	548.96
E. End of E. Appr. Slab	252+15.61	-22.00	548.77	548.79

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+81.62	-12.00	549.58	549.60
J	251+91.62	-12.00	549.40	549.42
K	252+01.62	-12.00	549.22	549.24
E. End of E. Appr. Slab	252+11.62	-12.00	549.05	549.07

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+76.83	0.00	549.85	549.87
J	251+86.83	0.00	549.67	549.69
K	251+96.83	0.00	549.50	549.52
E. End of E. Appr. Slab	252+06.83	0.00	549.32	549.34



PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+72.04	12.00	549.75	549.77
J	251+82.04	12.00	549.57	549.59
K	251+92.04	12.00	549.39	549.41
E. End of E. Appr. Slab	252+02.04	12.00	549.22	549.24

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+69.65	18.00	549.66	549.68
J	251+79.65	18.00	549.49	549.51
K	251+89.65	18.00	549.31	549.33
E. End of E. Appr. Slab	251+99.65	18.00	549.13	549.15



**CL ROADWAY, PG., &
STAGE CONSTRUCTION JOINT
S.N. 018-0040 (EB)**

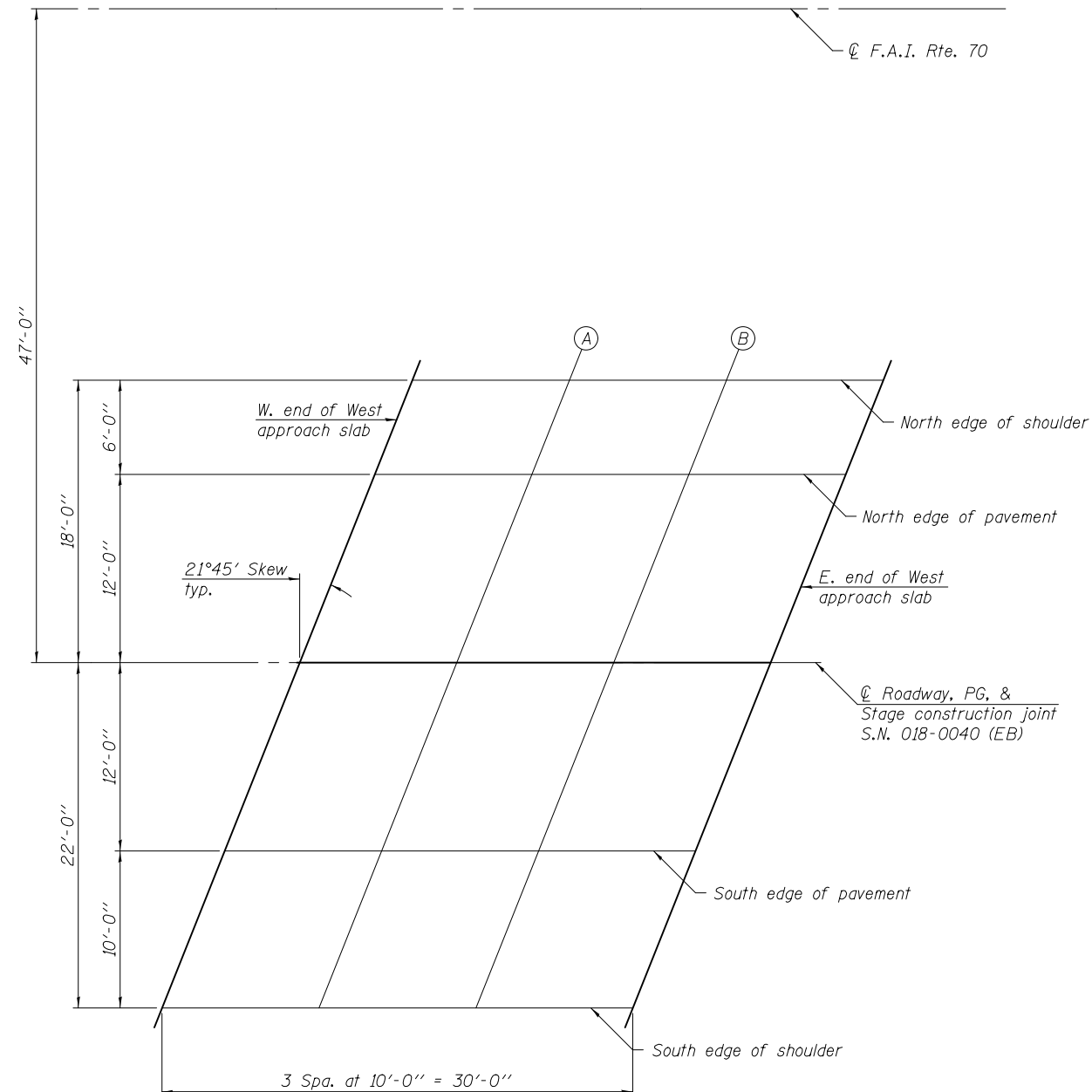
NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+16.75	-18.00	552.30	552.32
A	250+26.75	-18.00	552.12	552.14
B	250+36.75	-18.00	551.94	551.96
E. End of W. Appr. Slab	250+46.75	-18.00	551.76	551.78

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+14.36	-12.00	552.47	552.49
A	250+24.36	-12.00	552.29	552.31
B	250+34.36	-12.00	552.11	552.13
E. End of W. Appr. Slab	250+44.36	-12.00	551.93	551.95

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+09.57	0.00	552.74	552.76
A	250+19.57	0.00	552.56	552.58
B	250+29.57	0.00	552.38	552.40
E. End of W. Appr. Slab	250+39.57	0.00	552.20	552.22



PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+04.78	12.00	552.64	552.66
A	250+14.78	12.00	552.46	552.48
B	250+24.78	12.00	552.28	552.30
E. End of W. Appr. Slab	250+34.78	12.00	552.10	552.12

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of W. Appr. Slab	250+00.79	22.00	552.50	552.52
A	250+10.79	22.00	552.32	552.34
B	250+20.79	22.00	552.14	552.16
E. End of W. Appr. Slab	250+30.79	22.00	551.96	551.98

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J. [Signature]</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0040 (EB)**

SHEET NO. 12 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	19
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74187	

**CL ROADWAY, PG., &
STAGE CONSTRUCTION JOINT
S.N. 018-0040 (EB)**

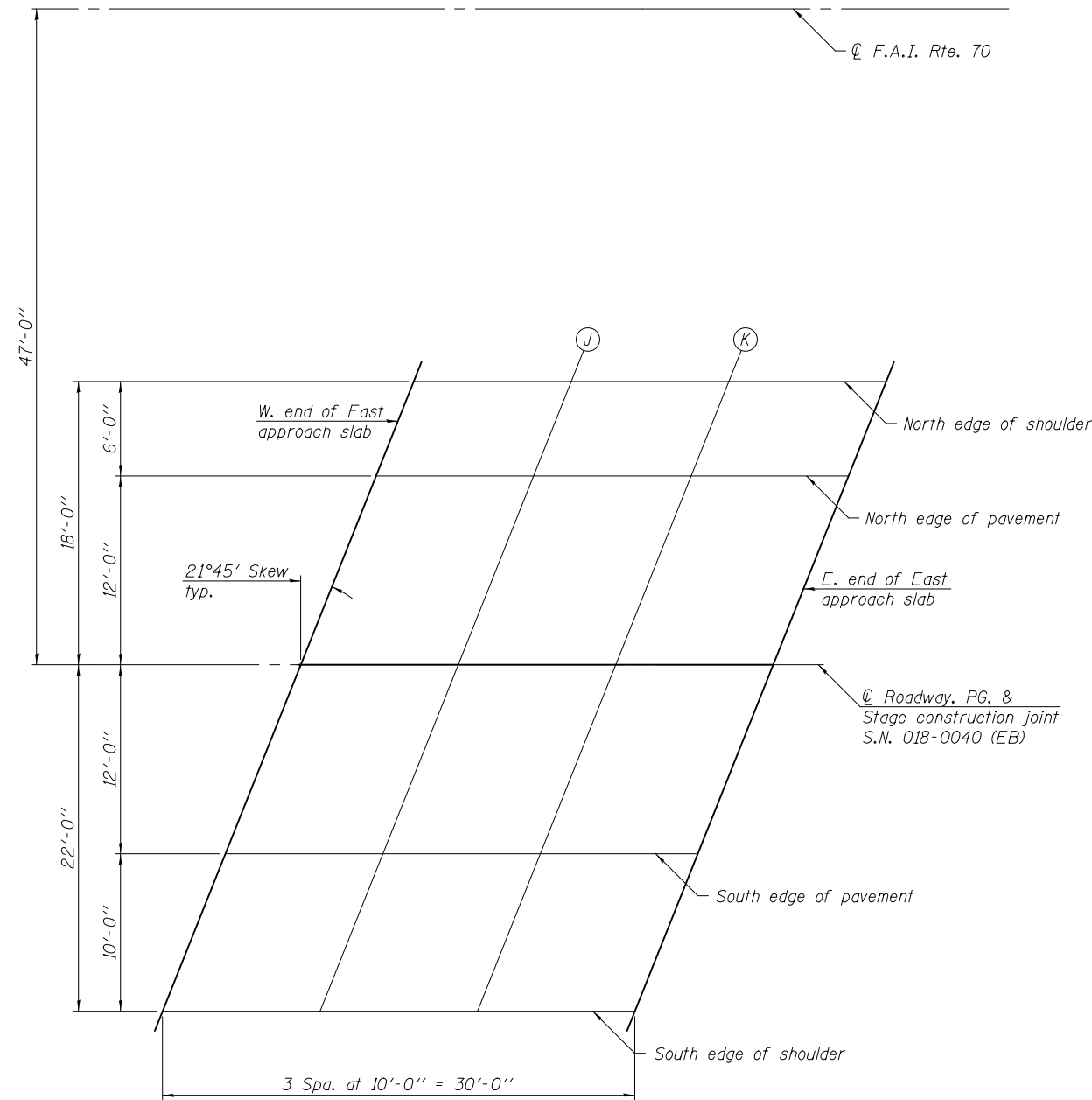
NORTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+46.51	-18.00	549.97	549.99
J	251+56.51	-18.00	549.80	549.82
K	251+66.51	-18.00	549.62	549.64
E. End of E. Appr. Slab	251+76.51	-18.00	549.44	549.46

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+44.12	-12.00	550.14	550.16
J	251+54.12	-12.00	549.96	549.98
K	251+64.12	-12.00	549.78	549.80
E. End of E. Appr. Slab	251+74.12	-12.00	549.61	549.63

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+39.33	0.00	550.42	550.44
J	251+49.33	0.00	550.24	550.26
K	251+59.33	0.00	550.06	550.08
E. End of E. Appr. Slab	251+69.33	0.00	549.88	549.90



PLAN

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+34.54	12.00	550.31	550.33
J	251+44.54	12.00	550.14	550.16
K	251+54.54	12.00	549.96	549.98
E. End of E. Appr. Slab	251+64.54	12.00	549.78	549.80

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. End of E. Appr. Slab	251+30.55	22.00	550.18	550.20
J	251+40.55	22.00	550.00	550.02
K	251+50.55	22.00	549.82	549.84
E. End of E. Appr. Slab	251+60.55	22.00	549.64	549.66

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J. [Signature]</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

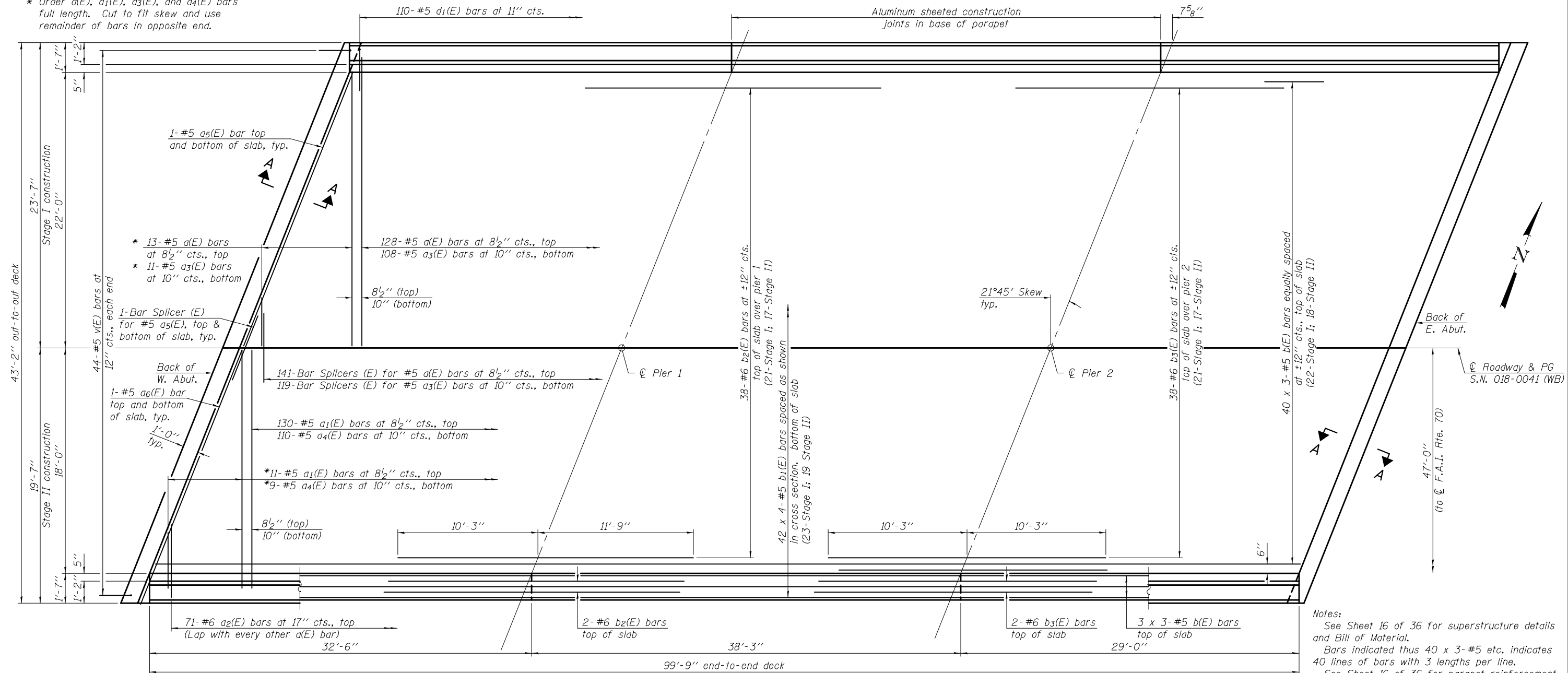
**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0040 (EB)**

SHEET NO. 13 OF 36 SHEETS

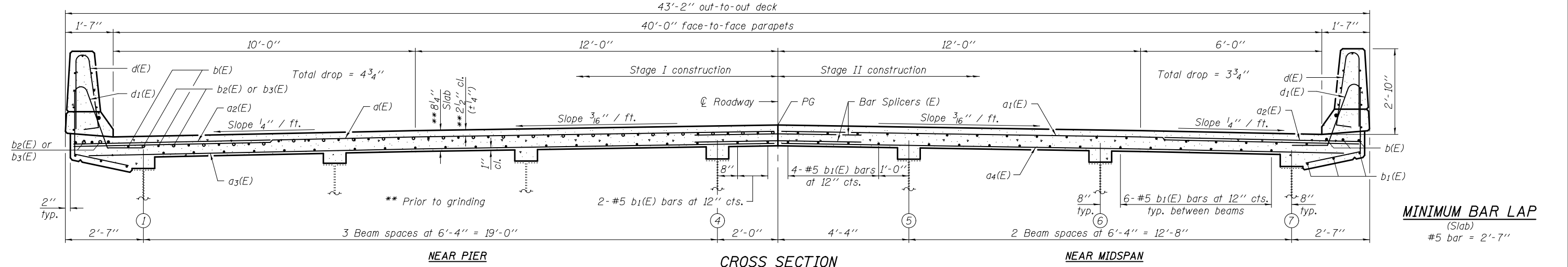
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	20
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74187	

* Order a(E), a₁(E), a₃(E), and a₄(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



Notes:
 See Sheet 16 of 36 for superstructure details and Bill of Material.
 Bars indicated thus 40 x 3-#5 etc. indicates 40 lines of bars with 3 lengths per line.
 See Sheet 16 of 36 for parapet reinforcement.
 See sheet 17 of 36 for diaphragm details and Section A-A.

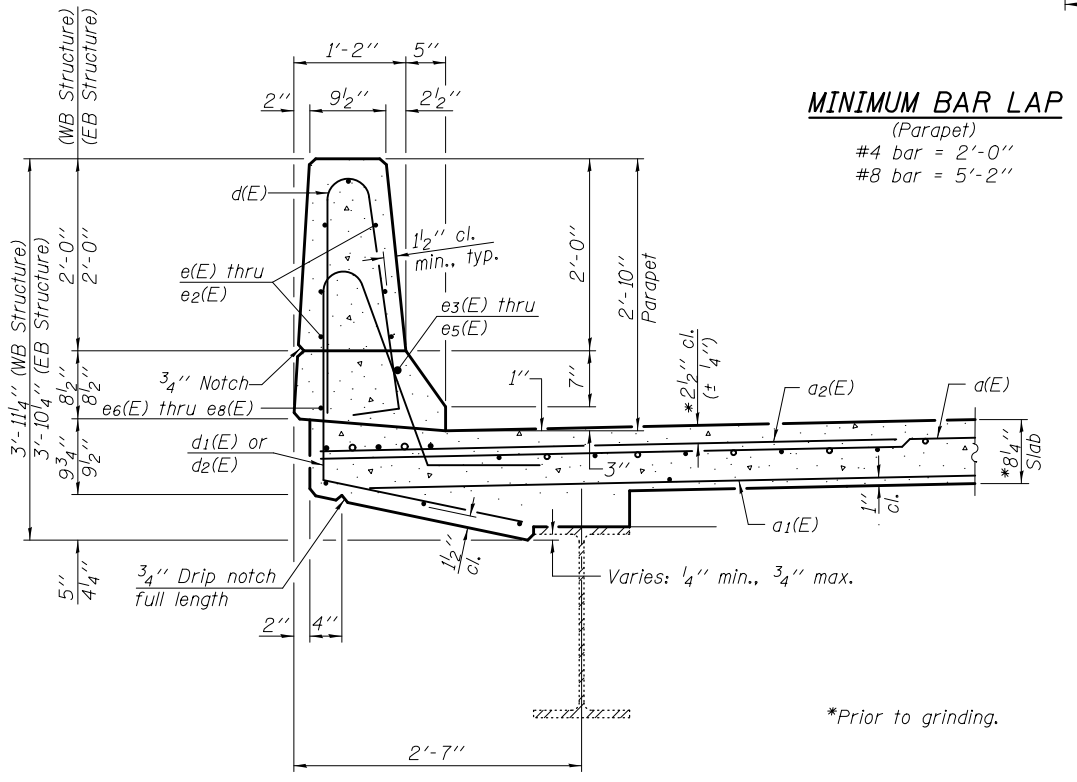
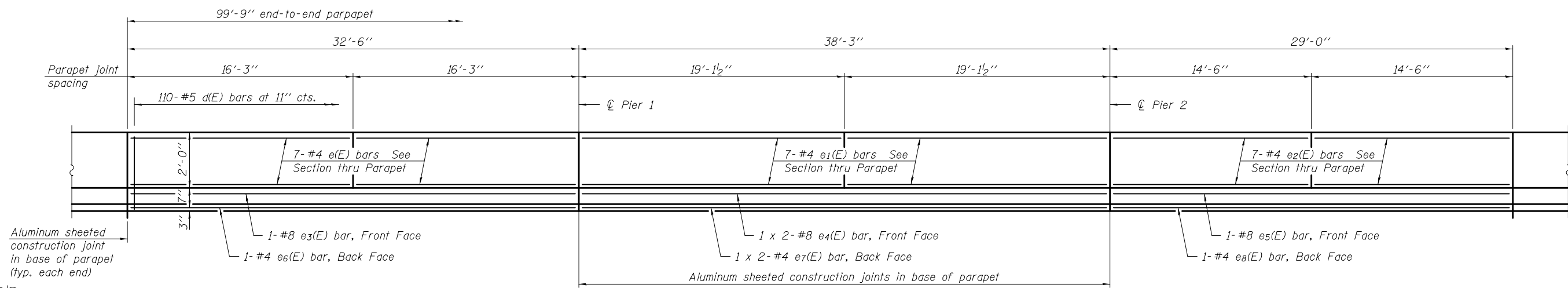
PLAN



CROSS SECTION
 (Looking East)

MINIMUM BAR LAP
 (Slab)
 #5 bar = 2'-7"

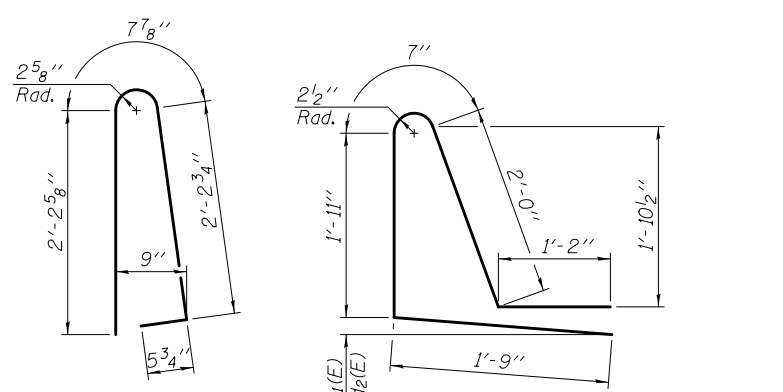
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>James F. Joffe</i> ACTING ENGINEER OF BRIDGE DESIGN	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 018 - 0041 (WB)	F.A.I. R.T.E. - 70	SECTION - (18-45HB-1)BR	COUNTY - CUMBERLAND	TOTAL SHEETS - 43	SHEET NO. - 21
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			CONTRACT NO. 74187				
DRAWN - MICHAEL B. MOSSMAN		REVISED			ILLINOIS FED. AID PROJECT				
CHECKED - F.T. / J.O.V. / G.R.A.					SHEET NO. 14 OF 36 SHEETS				



SECTION THRU PARAPET

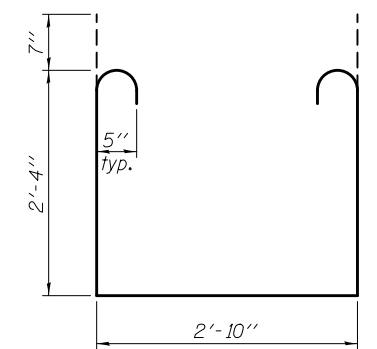
MINIMUM BAR LAP
(Parapet)
#4 bar = 2'-0"
#8 bar = 5'-2"

INSIDE ELEVATION OF PARAPET
(North parapets shown. South parapets similar)

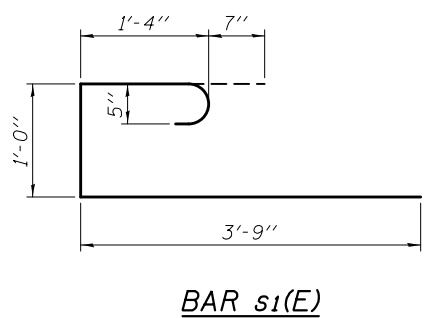


BAR d(E)

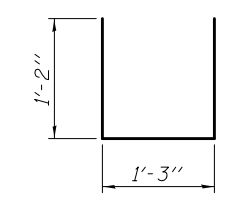
BARS d1(E) & d2(E)



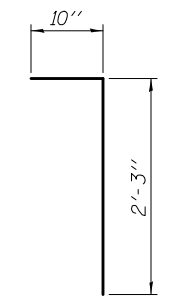
BAR s(E)



BAR s1(E)



BAR u(E)



BAR v(E)

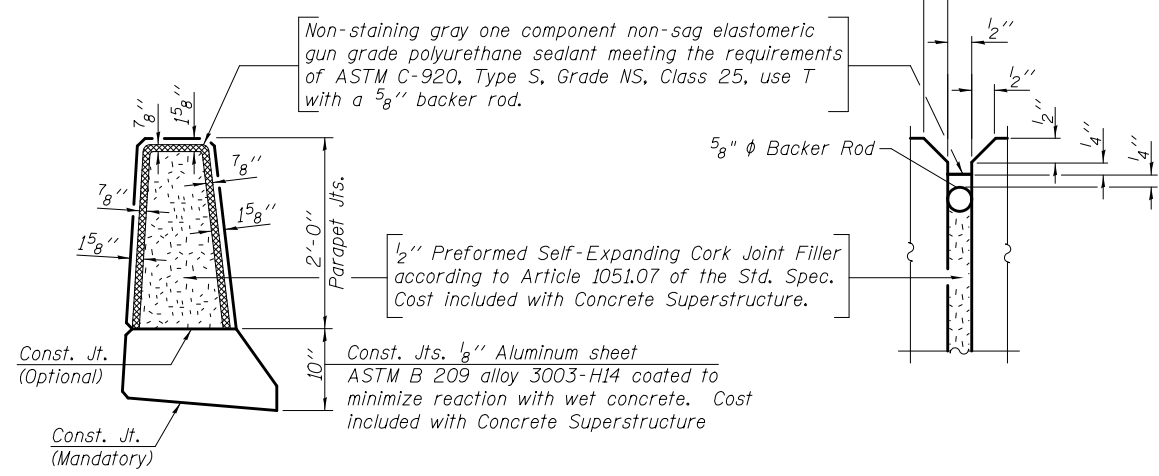
SUPERSTRUCTURE BILL OF MATERIAL
S.N. 018-0040 (EB)

Bar	No.	Size	Length	Shape
a(E)	141	#5	23'-2"	—
a1(E)	141	#5	19'-2"	—
a2(E)	142	#6	6'-6"	—
a3(E)	119	#5	22'-3"	—
a4(E)	119	#5	18'-3"	—
a5(E)	4	#5	24'-11"	—
a6(E)	4	#5	20'-7"	—
b(E)	138	#5	34'-11"	—
b1(E)	168	#5	26'-10"	—
b2(E)	42	#6	22'-0"	—
b3(E)	42	#6	20'-6"	—
d(E)	220	#5	5'-7"	⏏
d1(E)	220	#5	7'-5"	⏏
e(E)	28	#4	16'-0"	—
e1(E)	28	#4	18'-10"	—
e2(E)	28	#4	14'-3"	—
e3(E)	2	#8	32'-3"	—
e4(E)	4	#8	21'-7"	—
e5(E)	2	#8	28'-9"	—
e6(E)	2	#4	32'-3"	—
e7(E)	4	#4	20'-0"	—
e8(E)	2	#4	28'-9"	—
m(E)	20	#6	2'-5"	—
m1(E)	50	#6	6'-6"	—
m2(E)	10	#6	4'-4"	—
m3(E)	14	#6	20'-9"	—
m4(E)	14	#6	25'-1"	—
s(E)	84	#5	8'-8"	⏏
s1(E)	98	#5	6'-8"	⏏
u(E)	88	#5	3'-7"	⏏
v(E)	88	#5	3'-1"	⏏
Reinforcement Bars, Epoxy Coated		Pound	33,470	
Concrete Superstructure		Cu. Yds.	171.9	

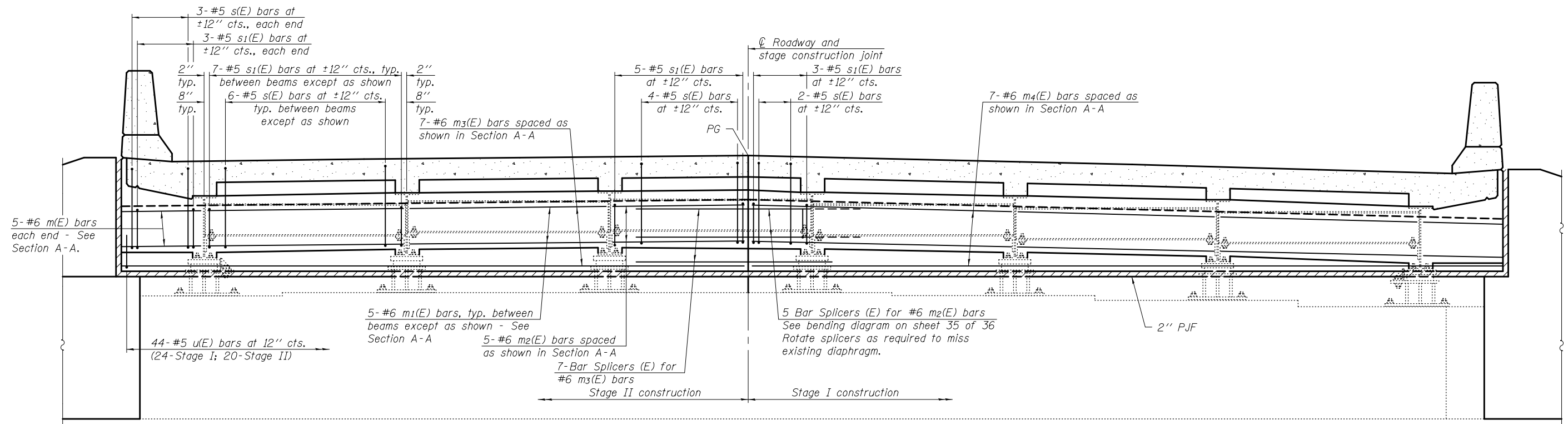
SUPERSTRUCTURE BILL OF MATERIAL
S.N. 018-0041 (WB)

Bar	No.	Size	Length	Shape
a(E)	141	#5	23'-2"	—
a1(E)	141	#5	19'-2"	—
a2(E)	142	#6	6'-6"	—
a3(E)	119	#5	22'-3"	—
a4(E)	119	#5	18'-3"	—
a5(E)	4	#5	24'-11"	—
a6(E)	4	#5	20'-7"	—
b(E)	138	#5	34'-11"	—
b1(E)	168	#5	26'-10"	—
b2(E)	42	#6	22'-0"	—
b3(E)	42	#6	20'-6"	—
d(E)	220	#5	5'-7"	⏏
d2(E)	220	#5	7'-5"	⏏
e(E)	28	#4	16'-0"	—
e1(E)	28	#4	18'-10"	—
e2(E)	28	#4	14'-3"	—
e3(E)	2	#8	32'-3"	—
e4(E)	4	#8	21'-7"	—
e5(E)	2	#8	28'-9"	—
e6(E)	2	#4	32'-3"	—
e7(E)	4	#4	20'-0"	—
e8(E)	2	#4	28'-9"	—
m(E)	20	#6	2'-5"	—
m1(E)	50	#6	6'-6"	—
m2(E)	10	#6	4'-4"	—
m3(E)	14	#6	20'-9"	—
m4(E)	14	#6	25'-1"	—
s(E)	84	#5	8'-8"	⏏
s1(E)	98	#5	6'-8"	⏏
u(E)	88	#5	3'-7"	⏏
v(E)	88	#5	3'-1"	⏏
Reinforcement Bars, Epoxy Coated		Pound	33,470	
Concrete Superstructure		Cu. Yds.	174.3	

Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.

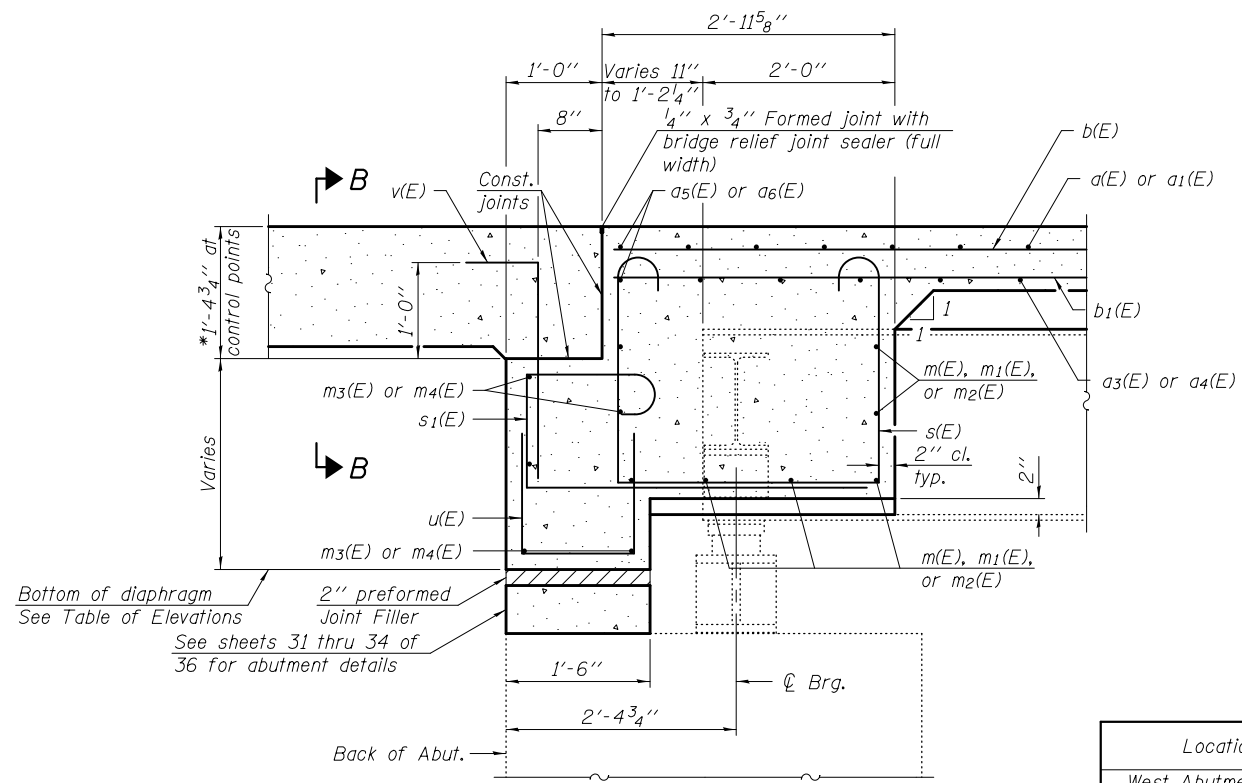


PARAPET JOINT DETAILS



DIAPHRAGM ELEVATION

(West Abutment diaphragm (WB) or East Abutment diaphragm (EB) shown, East Abutment diaphragm (WB) and West Abutment diaphragm (EB) similar)



SECTION A-A

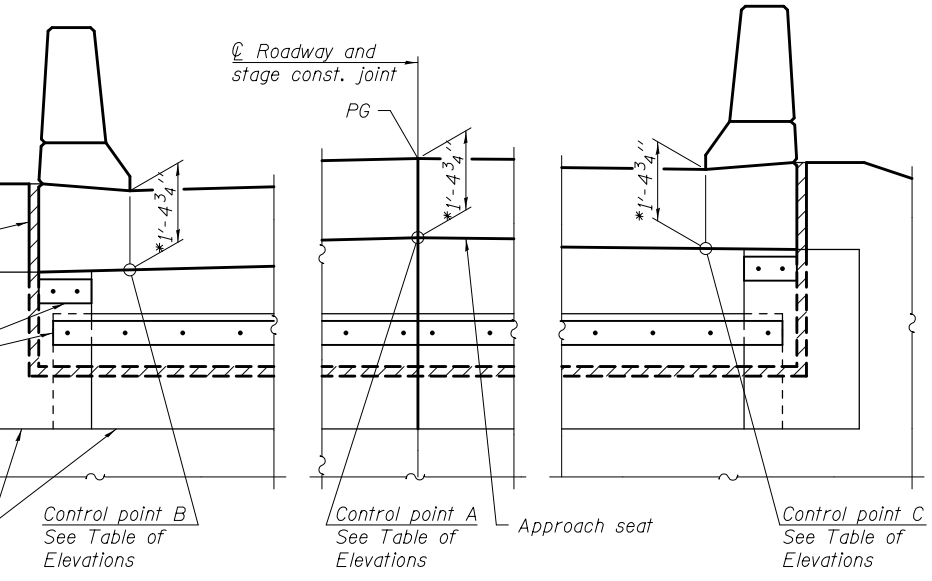
(Horizontal dimensions are at right L's to abutment).

* Prior to grinding

2" PJF - See Section thru Semi-Integral Abutment on sheet 2 of 36.

3/8" x 5" Steel plates with 1/2" ø studs, nuts, and washers See Section thru Semi-Integral Abutment on sheet 2 of 36.

Fabric Reinforced Elastomeric Mat - See Section thru Semi-Integral Abutment on sheet 2 of 36.



VIEW B-B

(Showing approach seat control point locations, 2" PJF, and limits of Fabric Reinforced Elastomeric Mat).

TABLE OF ELEVATIONS

Location	Bottom of Diaphragm	Control Point A	Control Point B	Control Point C
West Abutment (WB)	548.04	550.24	550.06	549.69
East Abutment (WB)	546.28	548.48	548.29	547.92
West Abutment (EB)	548.71	550.83	550.39	550.59
East Abutment (EB)	546.98	549.04	548.60	548.80

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 16 of 36.

Concrete in diaphragm is included with Concrete Superstructure on sheet 16 of 36.

For details of bars s(E), s1(E), u(E), and v(E), see sheet 16 of 36.

The s(E), s1(E), u(E), and v(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the control points shown.

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. Schaff</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

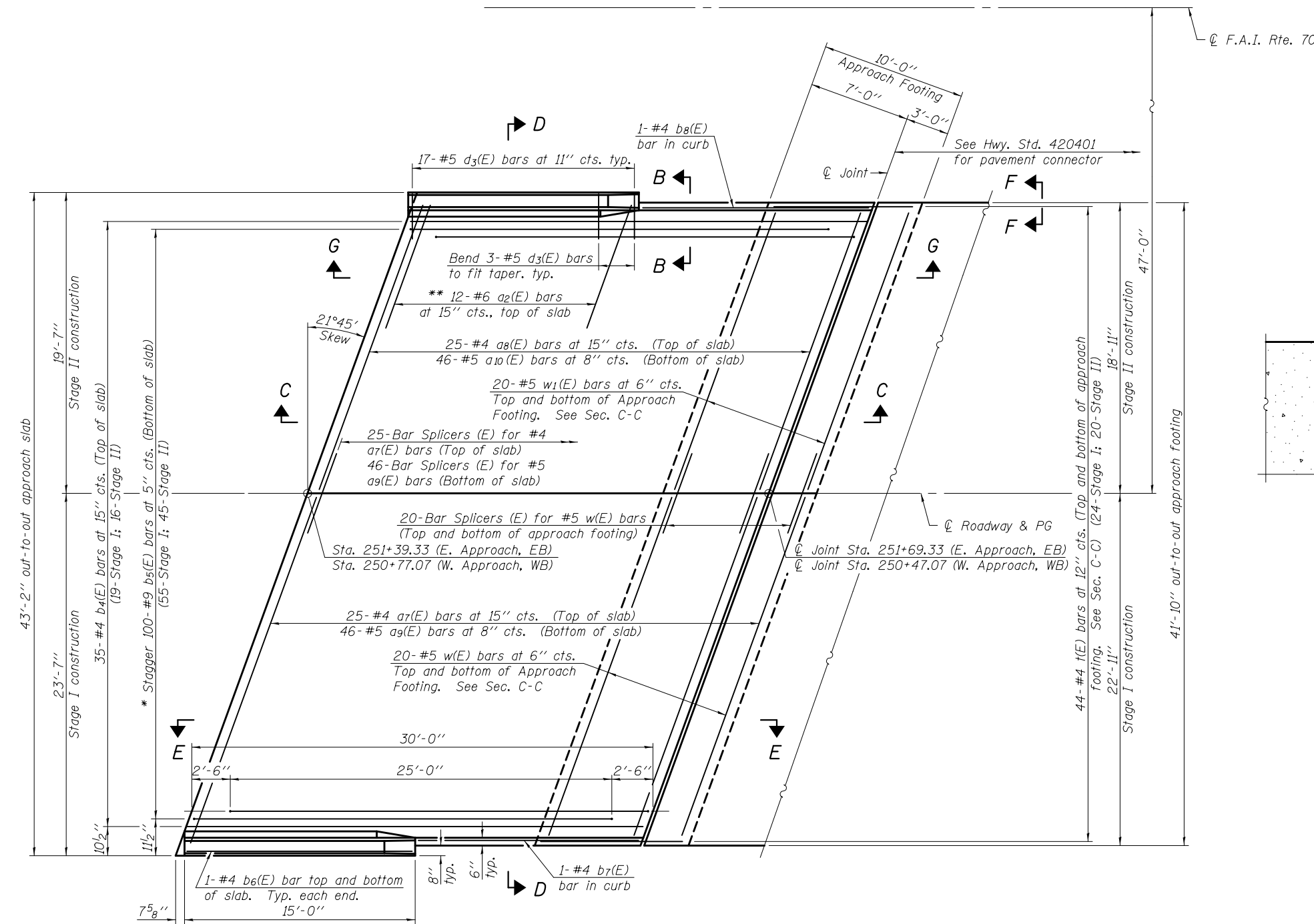
**DIAPHRAGM DETAILS
STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)**

SHEET NO. 17 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	24
CONTRACT NO. 74187				
ILLINOIS FED. AID PROJECT				

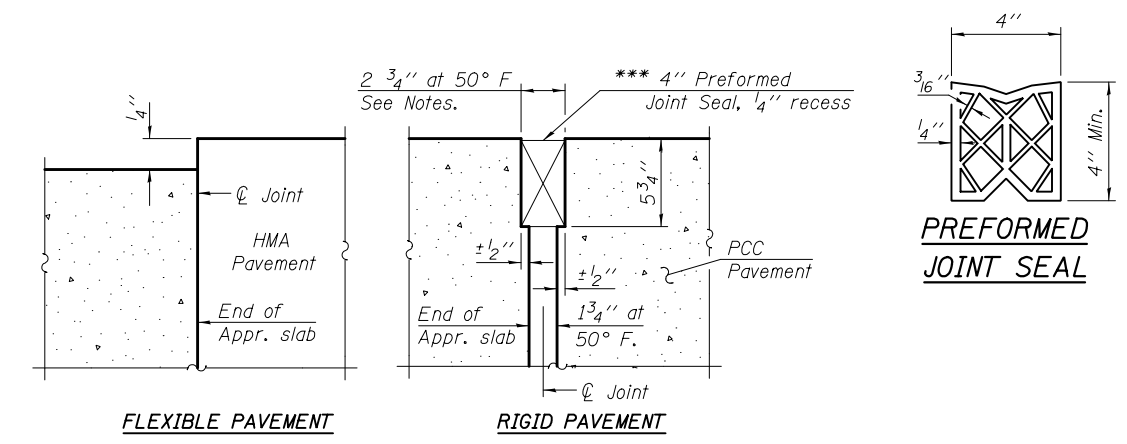
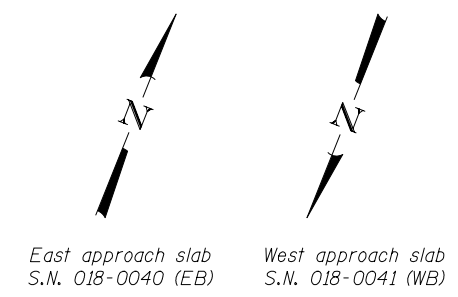
Notes:
 See sheet 19 of 36 for Sections C-C & D-D and Views E-E & G-G.
 $a_7(E)$ thru $a_{10}(E)$ bar spacings measured along C.Rdwy.
 The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be $1\frac{1}{2}$ " for installation purposes.

*** Cost included with Concrete Superstructure.

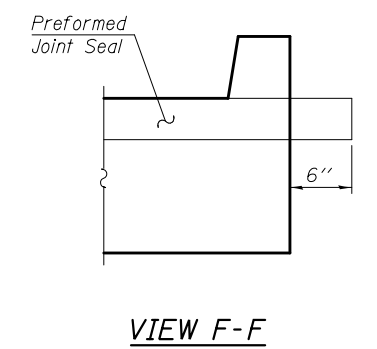


PLAN

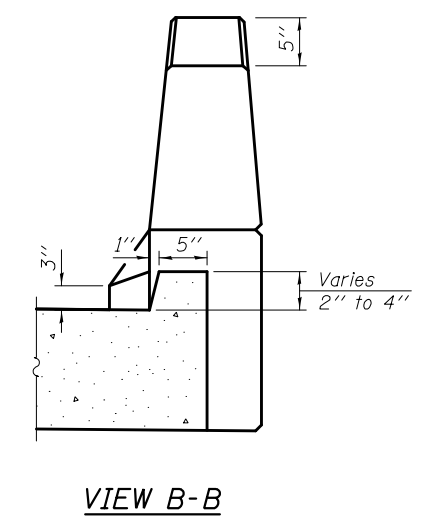
* Tilt #9 $b_5(E)$ bars as required to maintain clearance.
 ** Space between $a_7(E)$ and $a_8(E)$ bars, typ. each parapet.



DETAIL A



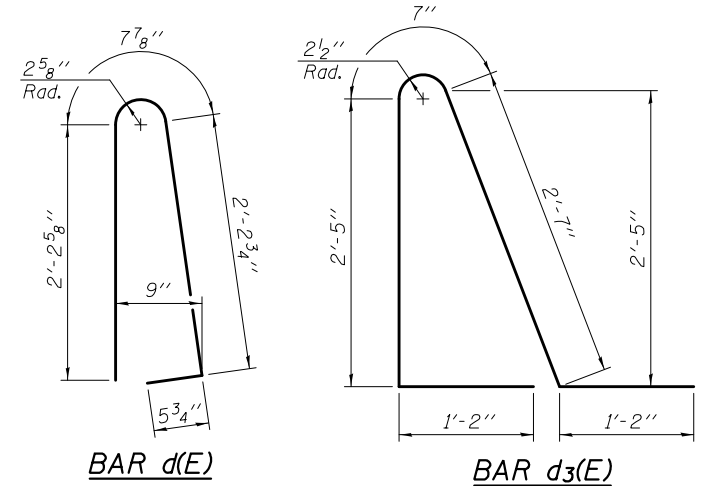
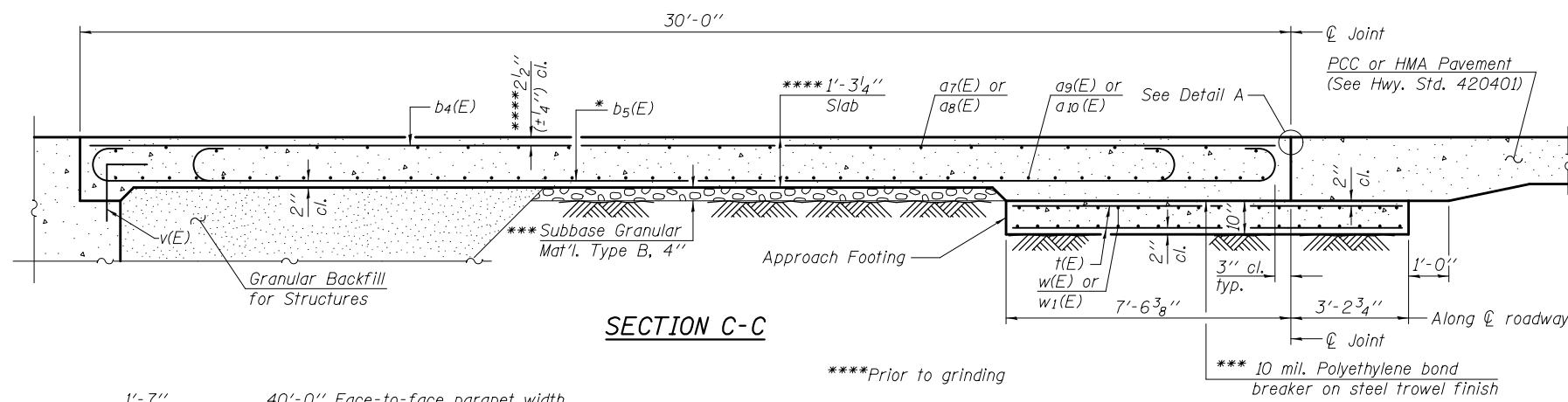
VIEW F-F



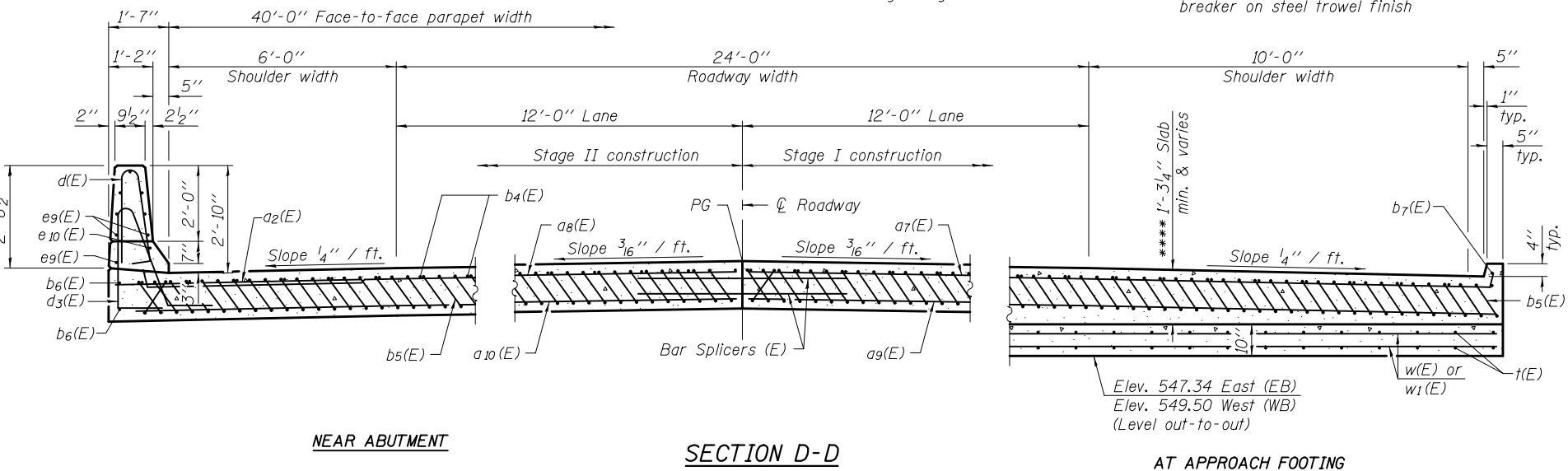
VIEW B-B

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>James F. Schaff</i> ACTING ENGINEER OF BRIDGE DESIGN	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST (EB) & WEST (WB) BRIDGE APPROACH SLABS STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)	F.A.I. RTE. 70	SECTION (18-45HB-1)BR	COUNTY CUMBERLAND	TOTAL SHEETS 43	SHEET NO. 25
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			CONTRACT NO. 74187				
DRAWN - MICHAEL B. MOSSMAN	REVISED	SHEET NO. 18 OF 36 SHEETS							
CHECKED - F.T. / J.O.V. / G.R.A.	ILLINOIS FED. AID PROJECT								

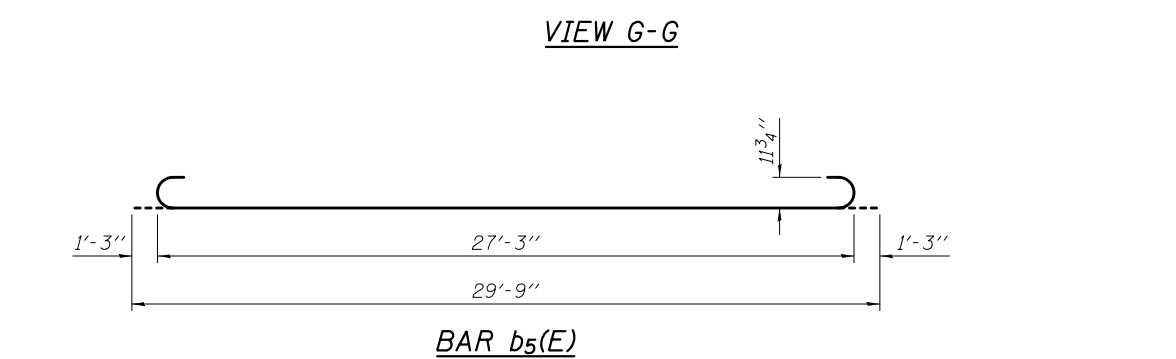
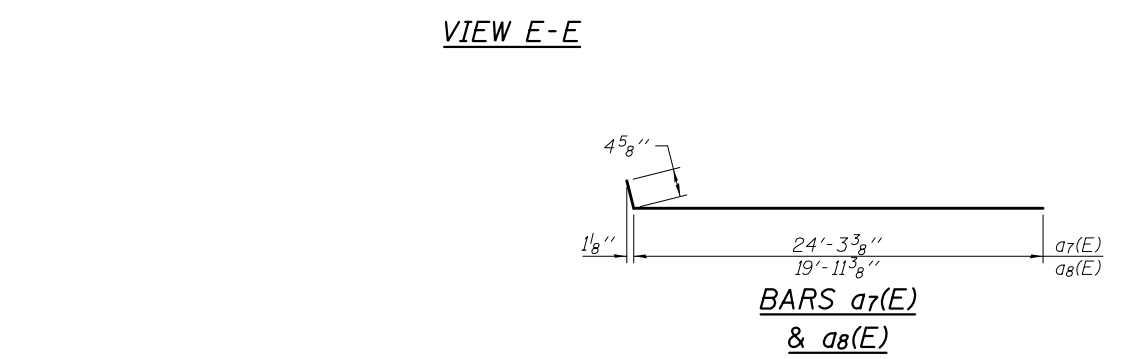
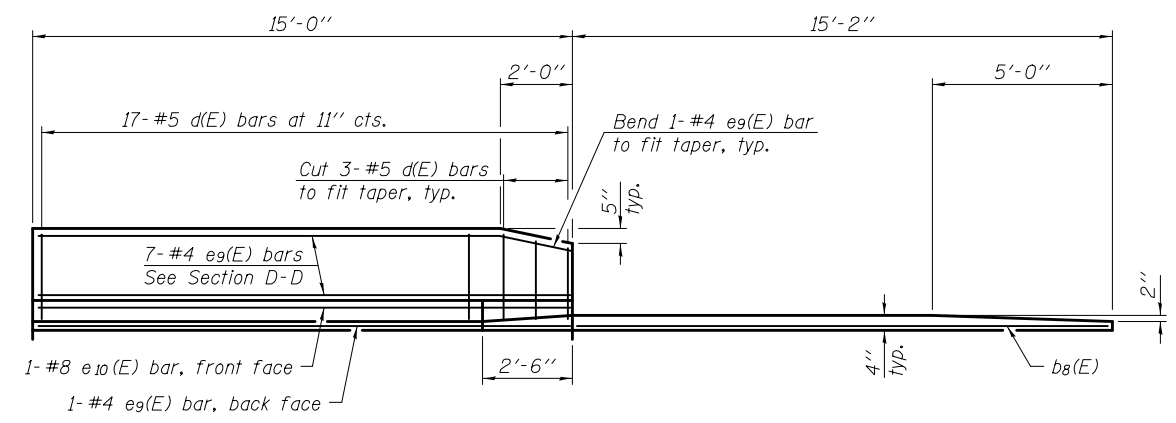
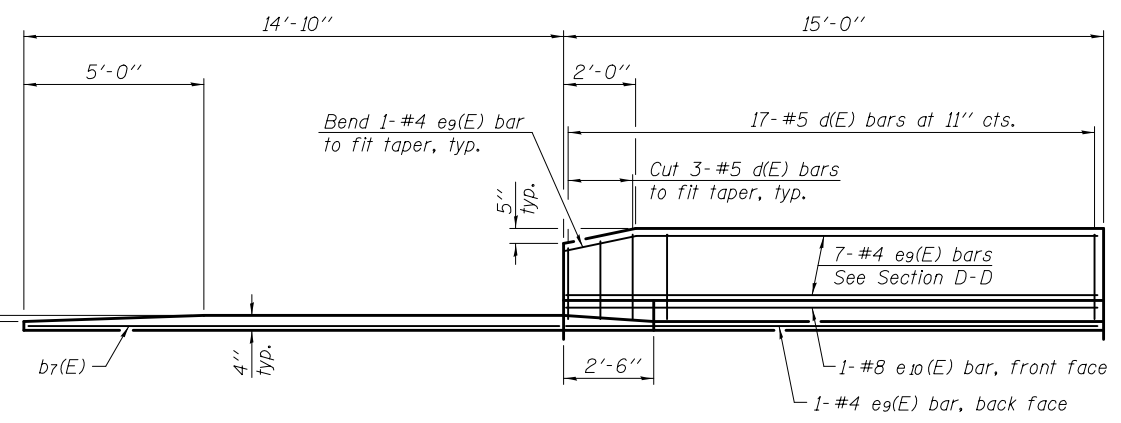
Notes:
 See sheet 18 of 36 for Detail A and View B-B.
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheet 16 of 36.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 35 of 36.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 36.
 For additional parapet details, see sheet 16 of 36.



* Tilt #9 b5(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.



AT APPROACH FOOTING

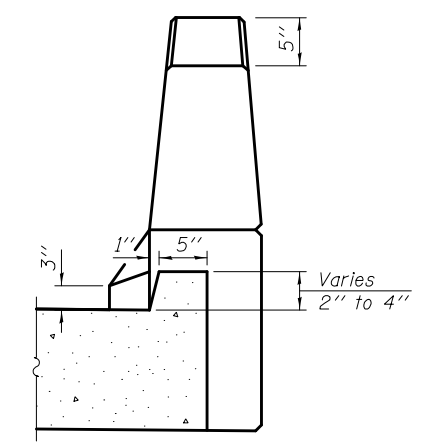
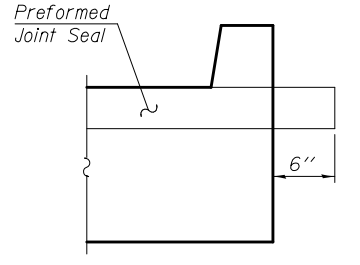
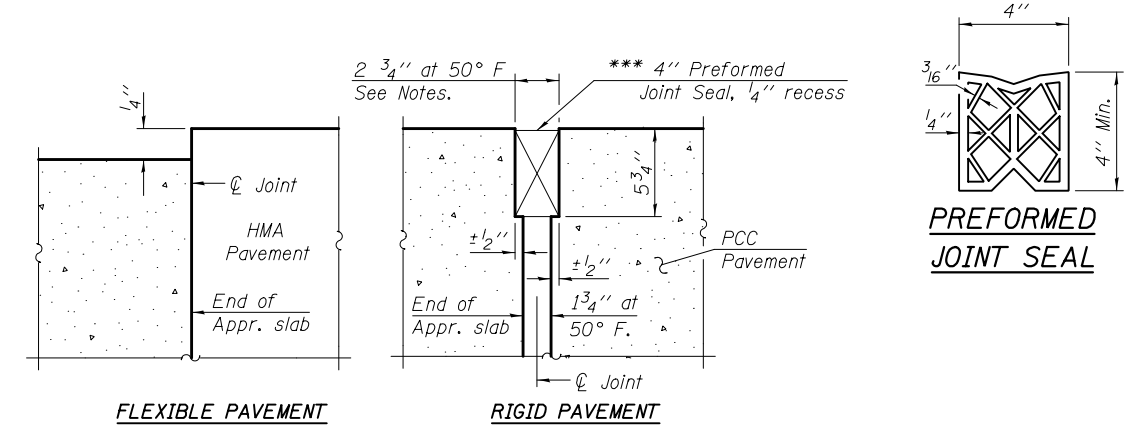
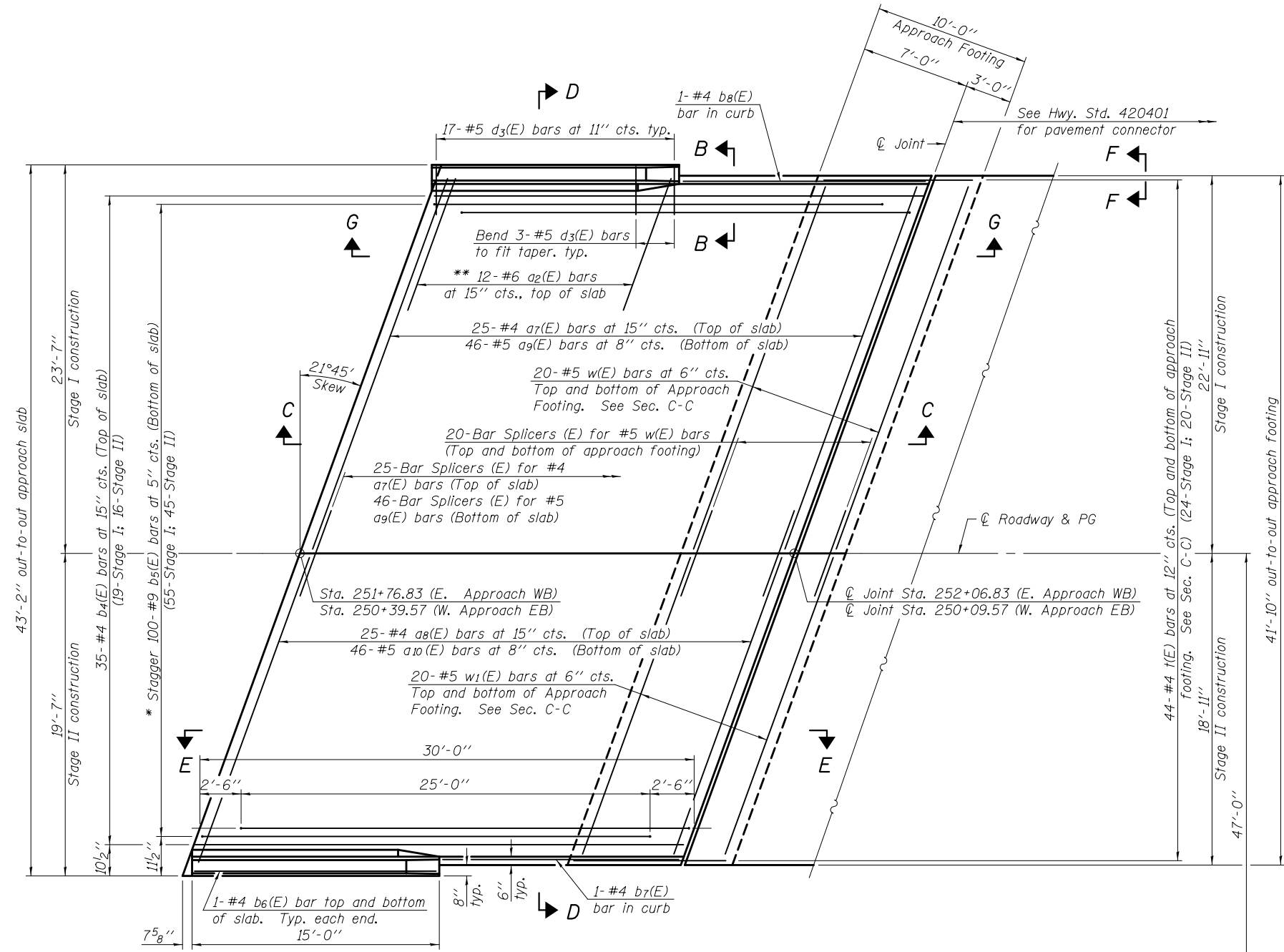


TWO APPROACHES
 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	48	#6	6'-6"	—
a7(E)	50	#4	24'-8"	—
a8(E)	50	#4	20'-4"	—
a9(E)	92	#5	24'-4"	—
a10(E)	92	#5	20'-0"	—
b4(E)	70	#4	29'-8"	—
b5(E)	200	#9	29'-9"	—
b6(E)	8	#4	14'-8"	—
b7(E)	2	#4	14'-6"	—
b8(E)	2	#4	14'-11"	—
d(E)	68	#5	5'-7"	▲
d3(E)	68	#5	7'-11"	▲
e9(E)	32	#4	14'-8"	—
e10(E)	4	#8	14'-8"	—
t(E)	176	#4	10'-4"	—
w(E)	80	#5	24'-3"	—
w1(E)	80	#5	20'-0"	—
Concrete Superstructure		Cu. Yd.	131.9	
Concrete Structures		Cu. Yd.	27.8	
Reinforcement Bars, Epoxy Coated		Pound	34,300	

Notes:
 See sheet 21 of 36 for Sections C-C & D-D and Views E-E & G-G.
 $a_7(E)$ thru $a_{10}(E)$ bar spacings measured along C.Rdwy.
 The joint opening shall be determined per Article 520.04 except that on jointless structures, the distance described as the bridge length between the nearest fixed bearings each way from the joint shall be taken as half the bridge length plus the approach slab length. The minimum dimension shall be $1\frac{1}{2}$ " for installation purposes.

*** Cost included with Concrete Superstructure.



PLAN

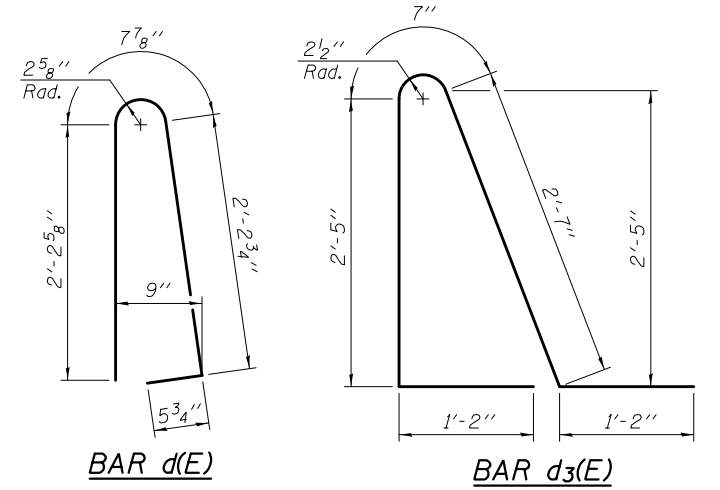
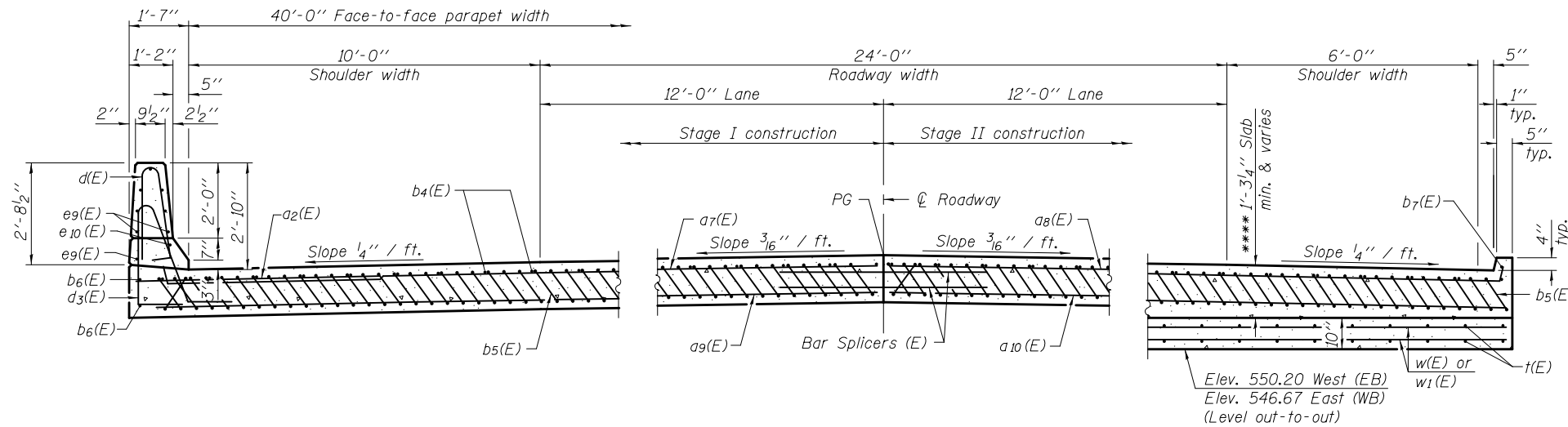
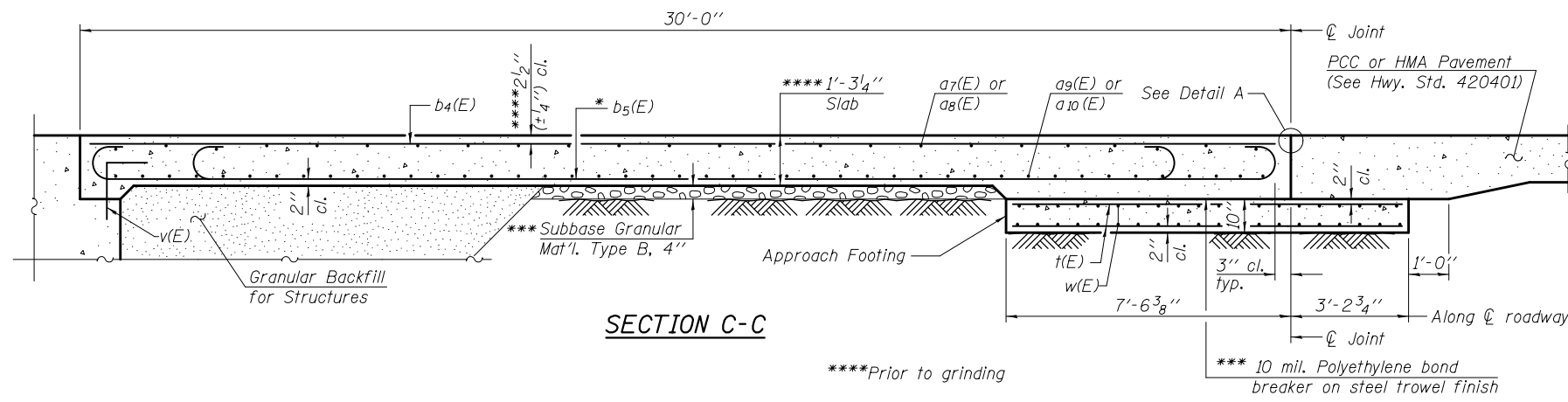
* Tilt #9 $b_5(E)$ bars as required to maintain clearance.
 ** Space between $a_7(E)$ and $a_8(E)$ bars, typ. each parapet.

East approach slab S.N. 018-0041 (WB)
 West approach slab S.N. 018-0040 (EB)

(Sheet 1 of 2)

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>James F. Schuff</i> ACTING ENGINEER OF BRIDGE DESIGN	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST (WB) & WEST (EB) BRIDGE APPROACH SLABS STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)	F.A.I. RTE. 70	SECTION (18-45HB-1)BR	COUNTY CUMBERLAND	TOTAL SHEETS 43	SHEET NO. 27	
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			CONTRACT NO. 74187			ILLINOIS FED. AID PROJECT		
DRAWN - MICHAEL B. MOSSMAN		REVISED			SHEET NO. 20 OF 36 SHEETS					
CHECKED - F.T. / J.O.V. / G.R.A.										

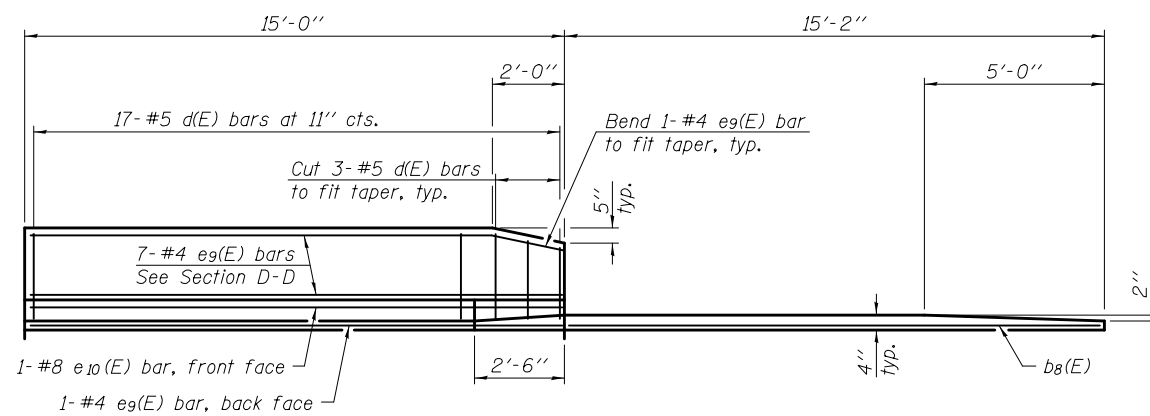
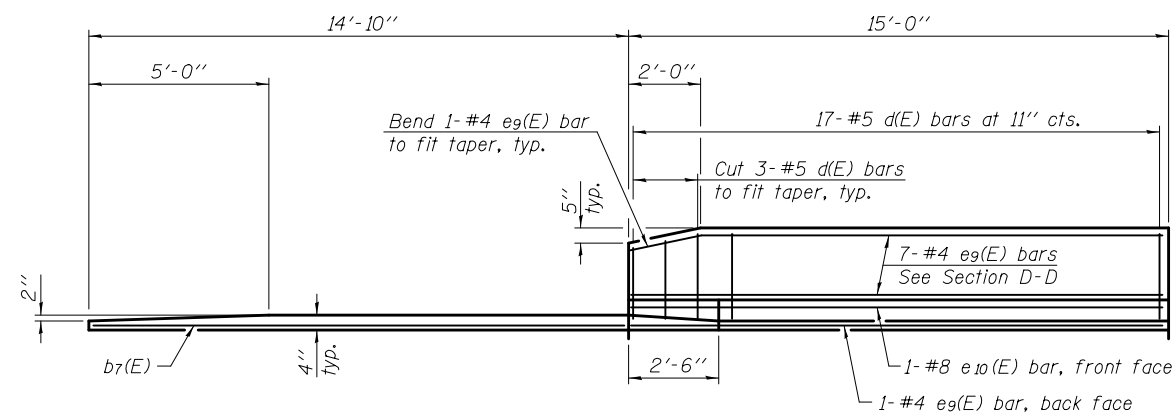
Notes:
 See sheet 18 of 36 for Detail A and View B-B.
 Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
 Approach footing concrete shall be paid for as Concrete Structures.
 Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
 For v(E) bar details, see sheet 16 of 36.
 The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
 For bar splicer details, see sheet 35 of 36.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 36.
 For additional parapet details, see sheet 16 of 36.



* Tilt #9 b5(E) bars as required to maintain clearance.
 *** Cost included with Concrete Superstructure.

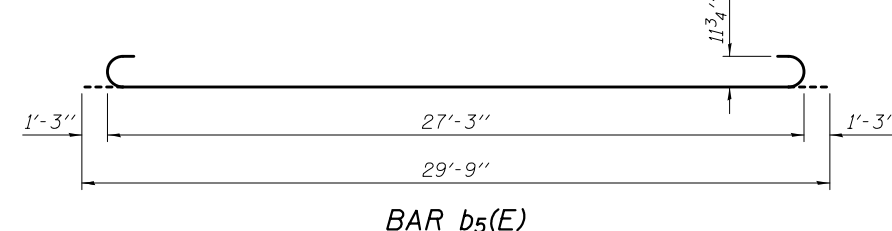
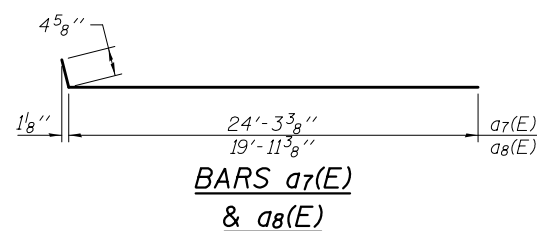
**TWO APPROACHES
 BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a2(E)	48	#6	6'-6"	—
a7(E)	50	#4	24'-8"	—
a8(E)	50	#4	20'-4"	—
a9(E)	92	#5	24'-4"	—
a10(E)	92	#5	20'-0"	—
b4(E)	70	#4	29'-8"	—
b5(E)	200	#9	29'-9"	—
b6(E)	8	#4	14'-8"	—
b7(E)	2	#4	14'-6"	—
b8(E)	2	#4	14'-11"	—
d(E)	68	#5	5'-7"	▲
d3(E)	68	#5	7'-11"	▲
e9(E)	32	#4	14'-8"	—
e10(E)	4	#8	14'-8"	—
t(E)	176	#4	10'-4"	—
w(E)	80	#5	24'-3"	—
w1(E)	80	#5	20'-0"	—
Concrete Superstructure		Cu. Yd.	131.9	
Concrete Structures		Cu. Yd.	27.8	
Reinforcement Bars, Epoxy Coated		Pound	34,300	



VIEW E-E

VIEW G-G



(Sheet 2 of 2)

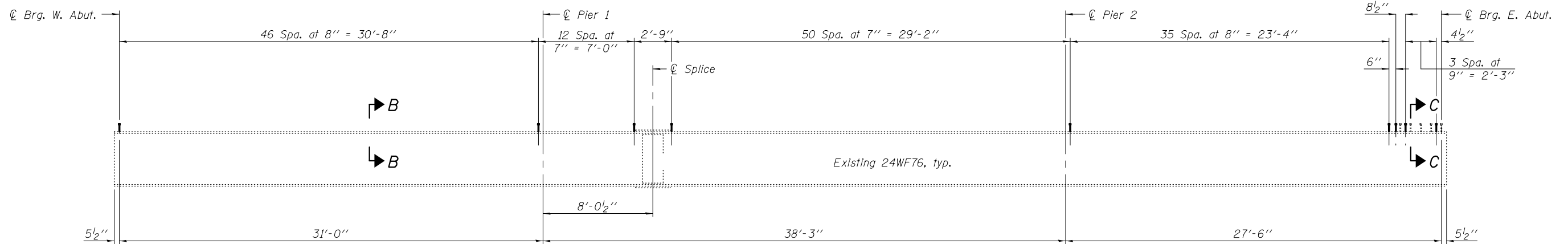
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. Schaff</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl Perry</i>	REVISOR
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISOR
CHECKED - F.T. / J.O.V. / G.R.A.		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EAST (WB) & WEST (EB) BRIDGE APPROACH SLAB DETAILS
 STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)

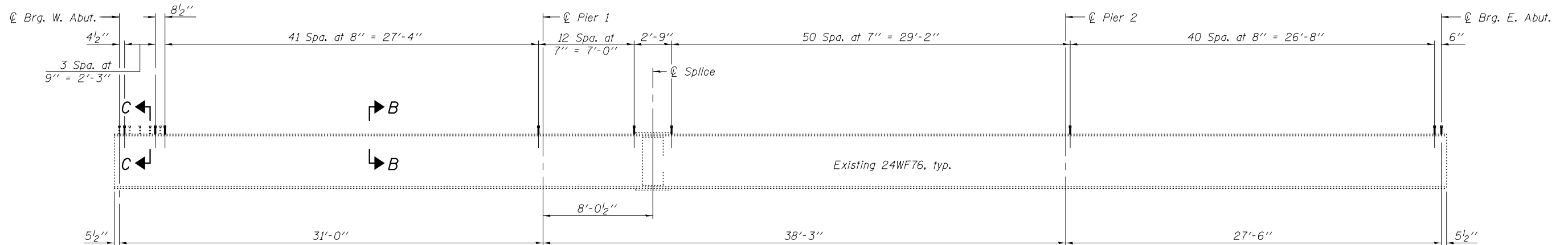
SHEET NO. 21 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	28
CONTRACT NO. 74187				
ILLINOIS FED. AID PROJECT				



BEAM ELEVATION

(Showing shear stud spacing, typ. beams 1 thru 7)



BEAM ELEVATION

(Showing shear stud spacing, typ. beams 8 thru 14)

Note:
Existing shear studs on approach end of each structure are to be cleaned and reused if possible. (2 rows of 5 studs at 9" cts., each beam)

	W. Abutments	Pier 1	Pier 2	E. Abutments
R ₀ (k)	*46.6	47.3	44.1	*44.5
R ₁ (k)	27.2	36.8	36.6	25.9
R ₂ (k)	8.2	11.0	11.0	7.8
R _{Total} (k)	82.0	95.1	91.7	78.2

* Dead load reaction at abutments include 32.7 kips for concrete diaphragm and approach pavement.

	0.4 Sp. 1	Pier 1	0.5 Sp. 2	Pier 2	0.6 Sp. 3
I _s (in ⁴)	2100	2100	2100	2100	2100
I _c (n) (in ⁴)	7012	7012	7012	7012	7012
I _c (3n) (in ⁴)	5261	5261	5261	5261	5261
S _s (in ³)	176	176	176	176	176
S _c (n) (in ³)	289	866	289	866	289
S _c (3n) (in ³)	260	432	260	432	260
Z (in ³)	-	-	-	-	-
Q (k/')	0.76	0.76	0.76	0.76	0.76
M ₀ (k)	50	95	50	83	36
s ₀ (k/')	0.45	0.45	0.45	0.45	0.45
M _{s0} (k)	30	56	30	49	21
M ₁ (k)	139	122	143	118	117
M ₂ (k)	42	37	43	36	35
S ₃ [M ₂ + I] (k)	302	265	310	256	254
M ₀ (k)	497	541	507	504	404
M _u (k)	1270	933	1270	933	1270
f _s non-comp (ksi)	3.4	6.5	3.4	5.7	2.4
f _s comp (ksi)	1.4	1.6	1.4	1.4	1.0
f _s S ₃ [M ₂ + I] (ksi)	12.5	3.7	12.9	3.6	10.6
f _s (Overload) (ksi)	17.3	11.8	17.7	10.7	14.0
f _s (Total) (ksi)	-	-	-	-	-
VR (k)	39.6	43.8	45.0	45.0	38.9

I_s, S_s: Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total and Overload) due to non-composite dead loads (in.⁴ and in.³).

I_c(n), S_c(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total and Overload) due to short-term composite live loads (in.⁴ and in.³).

I_c(3n), S_c(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total and Overload) due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

Z: Plastic Section Modulus of the steel section in non-composite areas (in.³).

Q: Un-factored non-composite dead load (kips/ft.).

M₀: Un-factored moment due to non-composite dead load (kip-ft.).

s₀: Un-factored long-term composite (superimposed) dead load (kips/ft.).

M_{s0}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M₁: Un-factored live load moment (kip-ft.).

M₂: Un-factored moment due to impact (kip-ft.).

M_u: Factored design moment (kip-ft.).

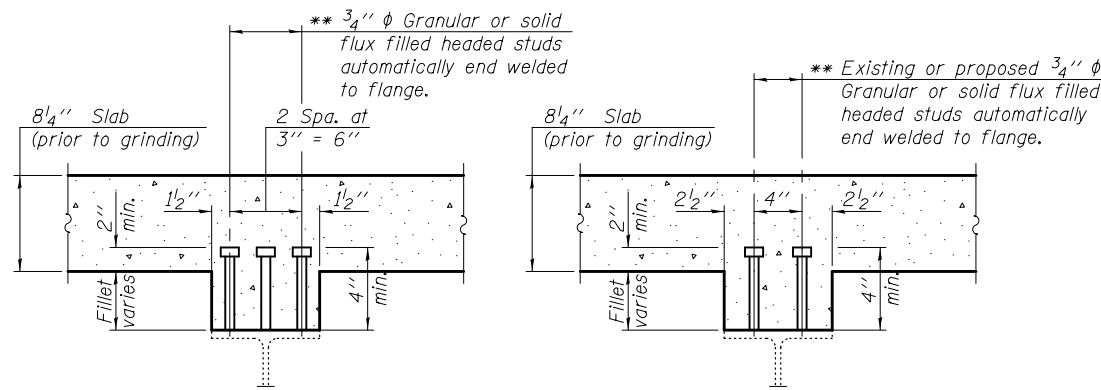
1.3 [M₀ + M_{s0} + $\frac{5}{3}$ (M₁ + M₂)]

M_u: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

f_s (Overload): Sum of stresses as computed from the moments below (ksi).
M₀ + M_{s0} + $\frac{5}{3}$ (M₁ + M₂)

f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
1.3 [M₀ + M_{s0} + $\frac{5}{3}$ (M₁ + M₂)]

VR: Maximum live load + impact shear range within the composite portion of the span for stud shear connector design (kips).



SECTION B-B

SECTION C-C

** Total required Shear Studs
S.N. 018-0040 (EB) = 3,122
S.N. 018-0041 (WB) = 3,122

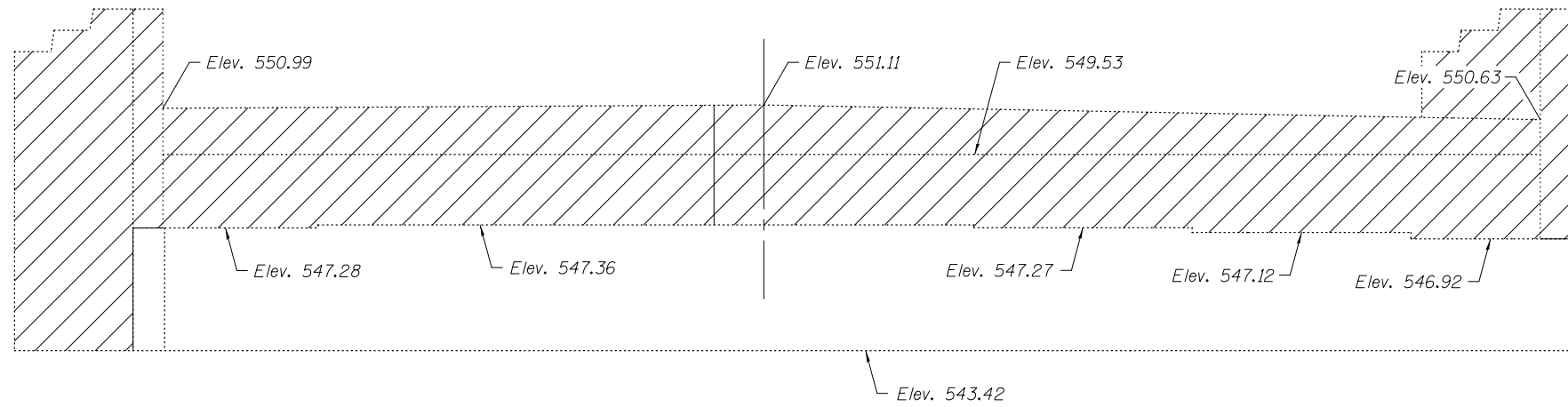
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J...</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl...</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

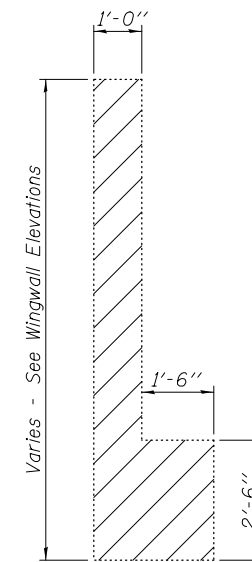
STRUCTURAL STEEL DETAILS
STRUCTURE NO. 018 - 0040 & 018 - 0041

SHEET NO. 22 OF 36 SHEETS

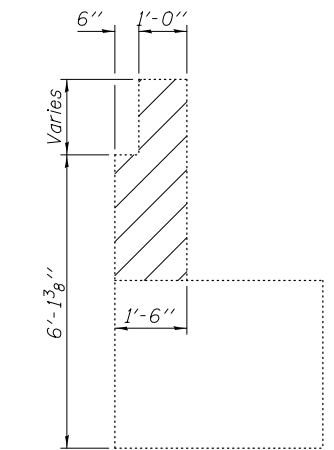
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	29
CONTRACT NO. 74187				
ILLINOIS FED. AID PROJECT				



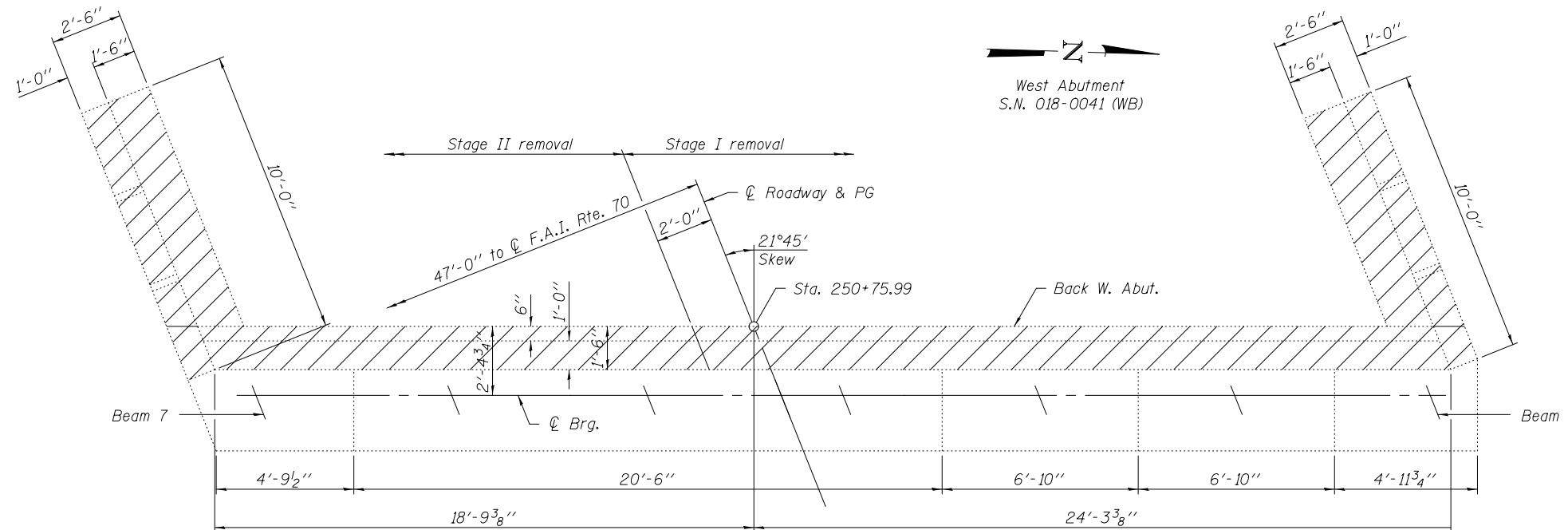
ELEVATION
(Looking west)



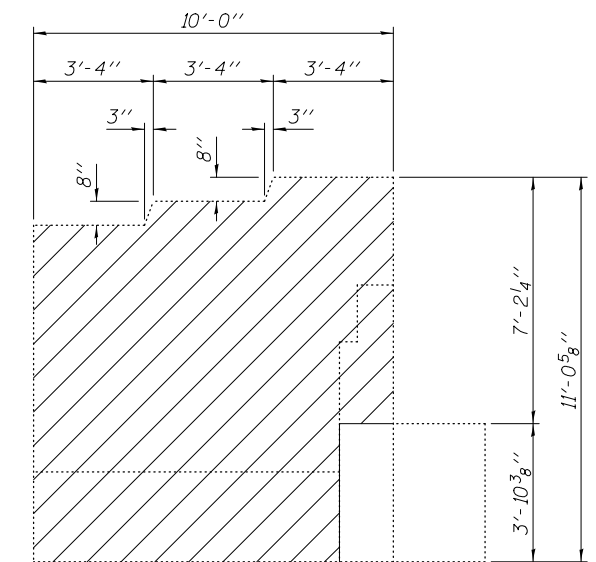
SECTION THRU WINGWALL



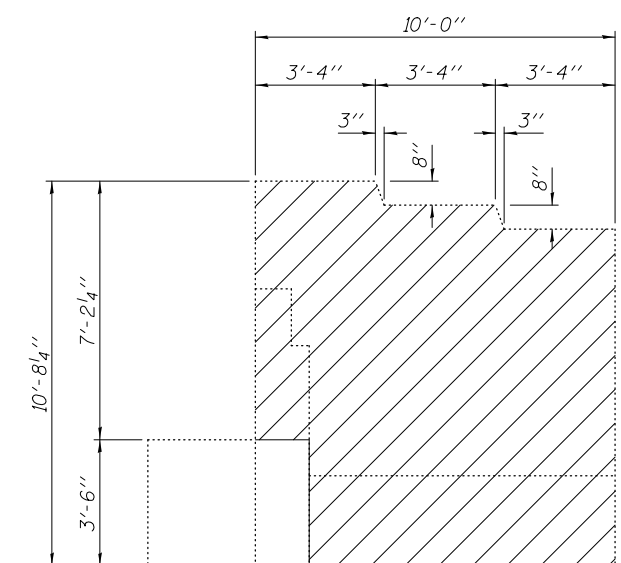
SECTION THRU ABUTMENT



PLAN



SOUTH WINGWALL ELEVATION



NORTH WINGWALL ELEVATION

Notes:
 Hatched areas indicate the limits of Concrete Removal.
 Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
 Existing reinforcement not extending into new construction shall be cut off flush and covered with a 2" layer of cement grout. Cost included with Concrete Removal.
 The elevations shown above were calculated from the survey information provided by the district.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	16.9

DESIGNED - FESSEHA TEKLEHAIMANOT
 CHECKED - JOSUE ORTIZ-VARELA
 DRAWN - MICHAEL B. MOSSMAN
 CHECKED - F.T. / J.O.V. / G.R.A.

EXAMINED
 PASSED
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

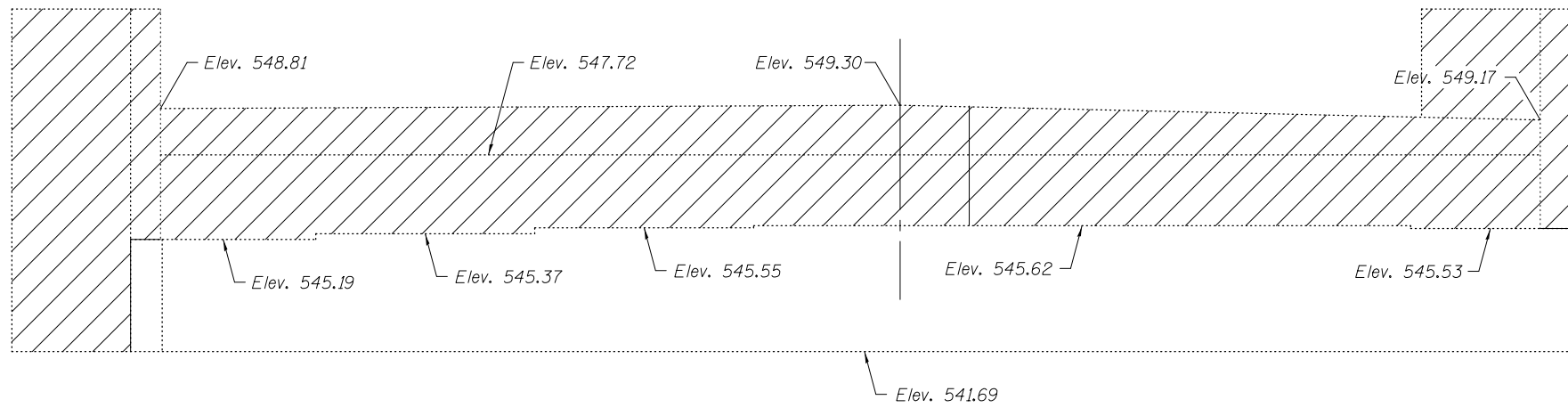
DATE - SEPTEMBER 16, 2014
 REVISED
 REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

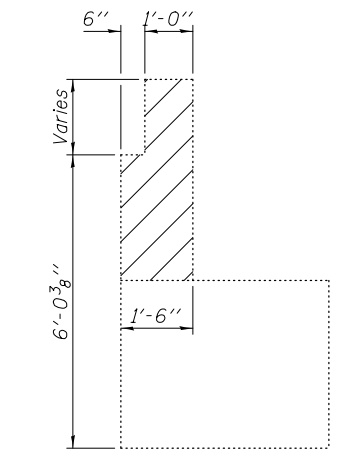
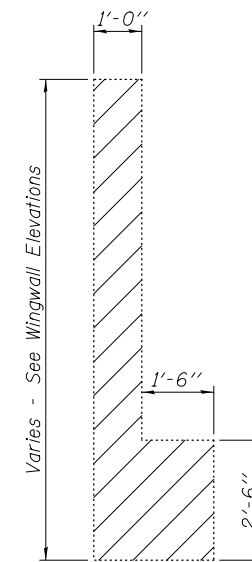
WEST ABUTMENT REMOVAL
STRUCTURE NO. 018 - 0041 (WB)

SHEET NO. 23 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	30
CONTRACT NO. 74187				
ILLINOIS FED. AID PROJECT				

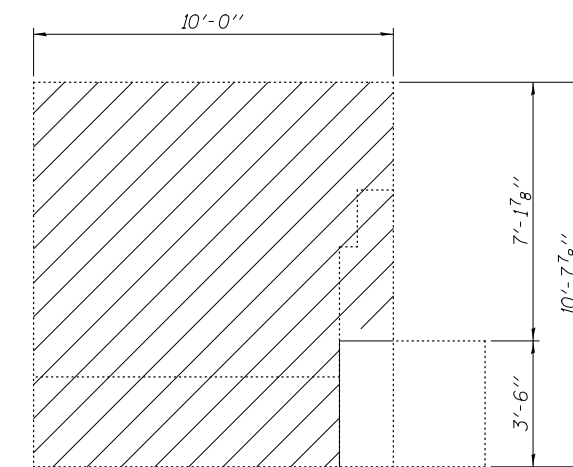


ELEVATION
(Looking east)

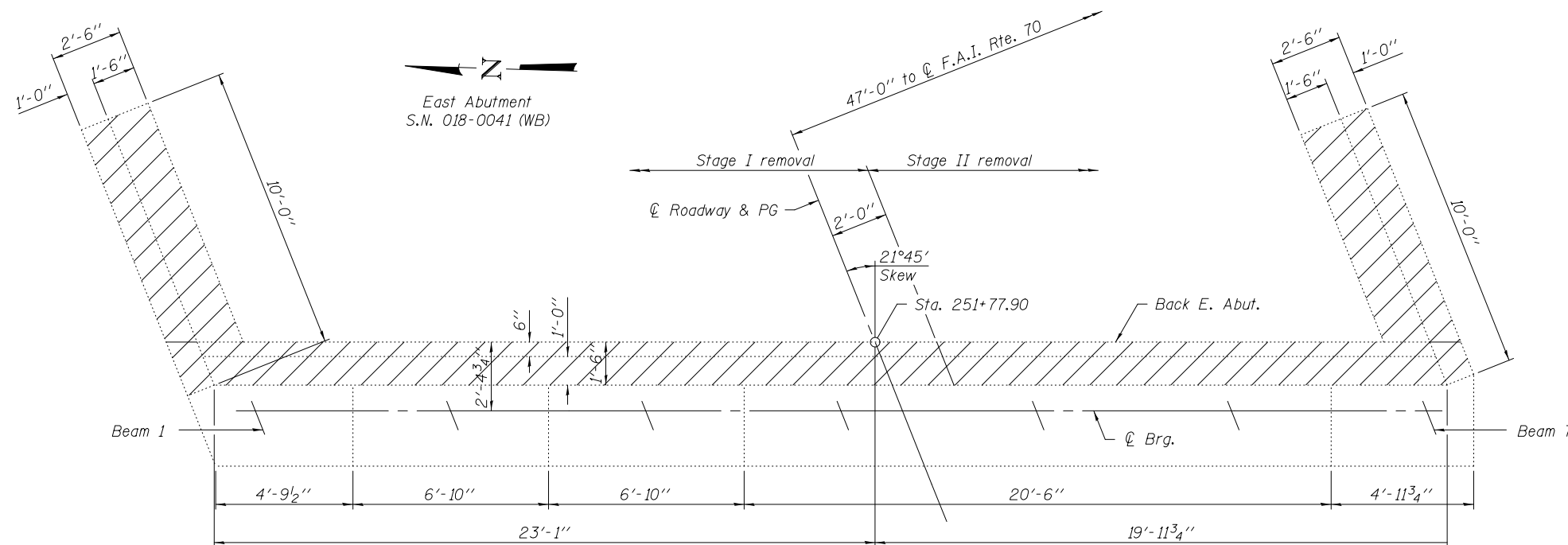


SECTION THRU ABUTMENT

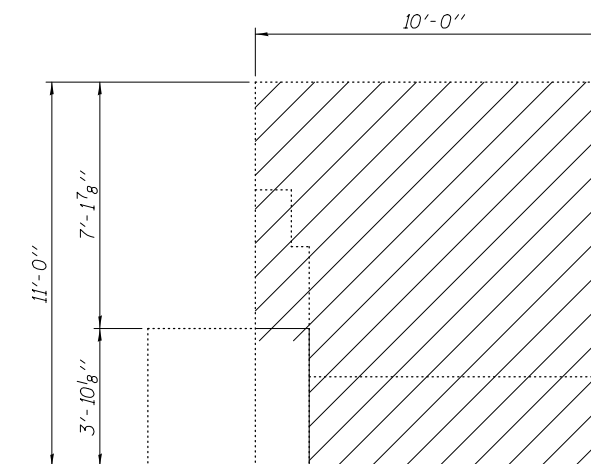
SECTION THRU WINGWALL



NORTH WINGWALL ELEVATION



PLAN



SOUTH WINGWALL ELEVATION

Notes:
 Hatched areas indicate the limits of Concrete Removal.
 Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
 Existing reinforcement not extending into new construction shall be cut off flush and covered with a 2" layer of cement grout. Cost included with Concrete Removal.
 The elevations shown above were calculated from the survey information provided by the district.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	17.0

DESIGNED - FESSEHA TEKLEHAIMANOT
 CHECKED - JOSUE ORTIZ-VARELA
 DRAWN - MICHAEL B. MOSSMAN
 CHECKED - F.T. / J.O.V. / G.R.A.

EXAMINED
 PASSED
 ACTING ENGINEER OF BRIDGE DESIGN
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

DATE - SEPTEMBER 16, 2014
 REVISED
 REVISED

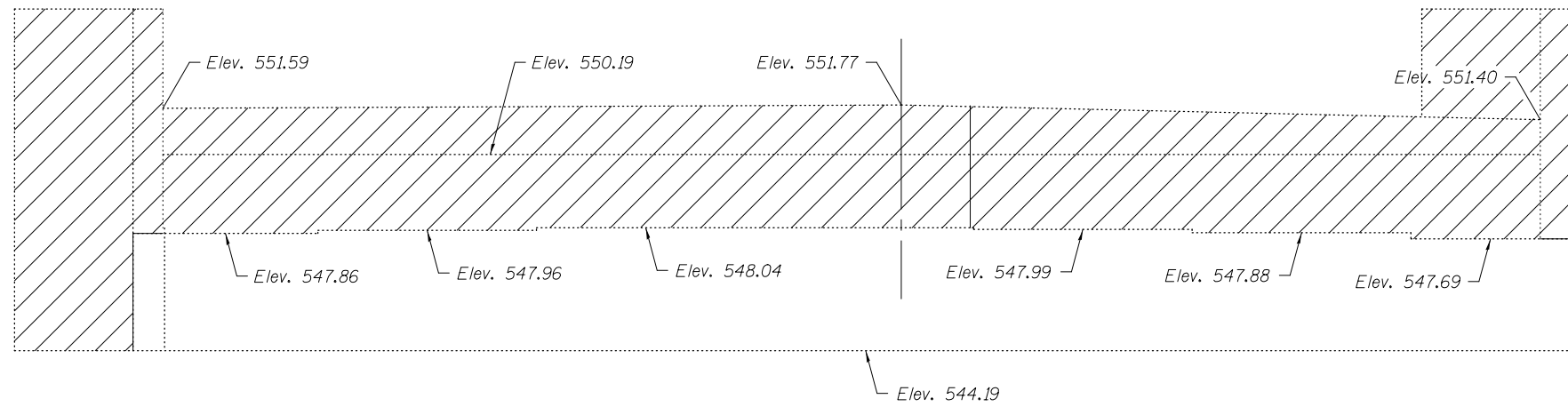
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REMOVAL
STRUCTURE NO. 018 - 0041 (WB)

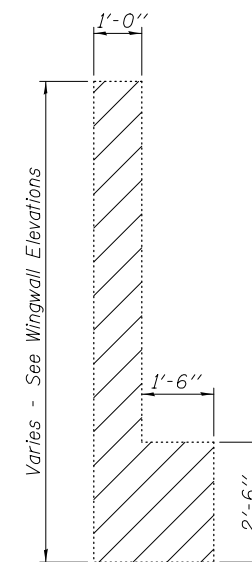
SHEET NO. 24 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	31
				CONTRACT NO. 74187

ILLINOIS FED. AID PROJECT

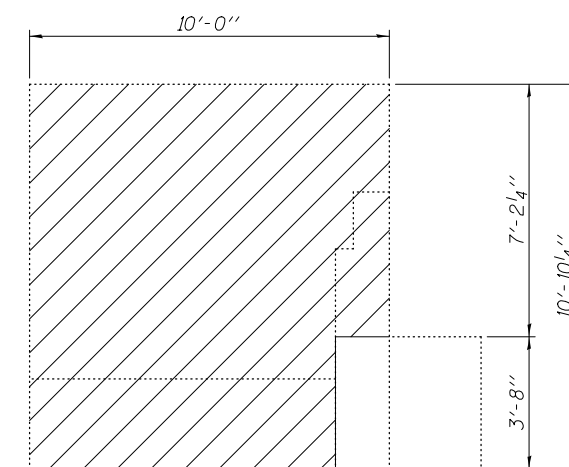


ELEVATION
(Looking west)

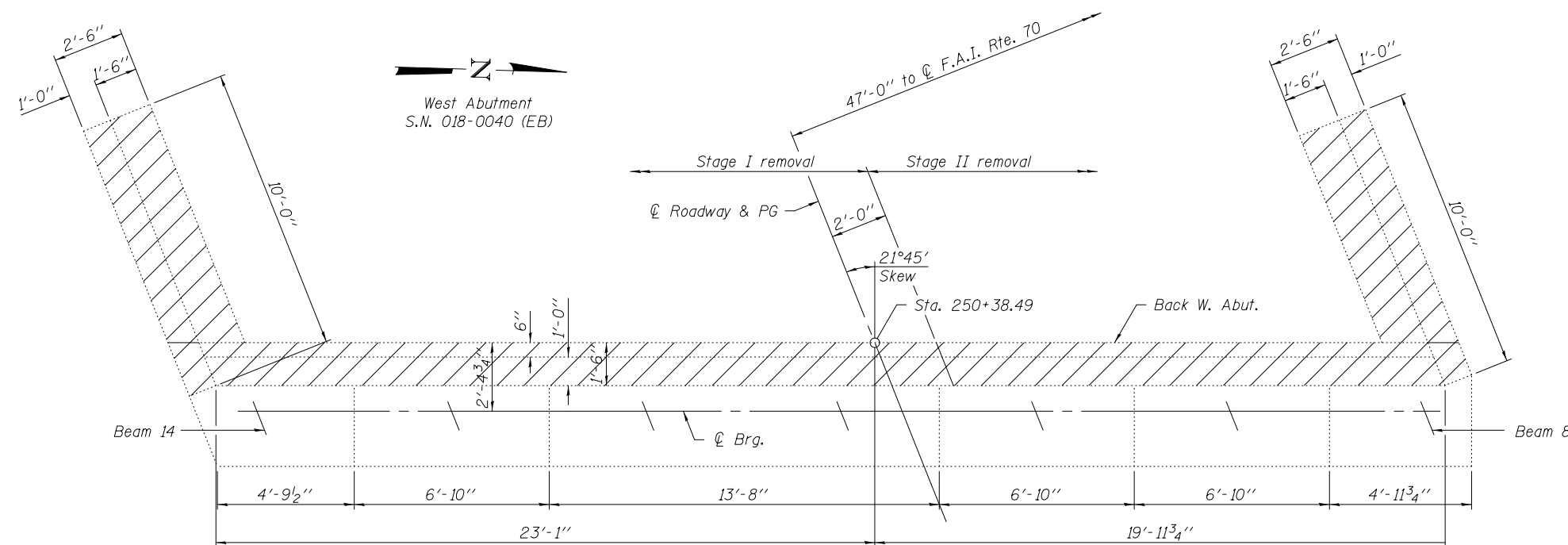


SECTION THRU ABUTMENT

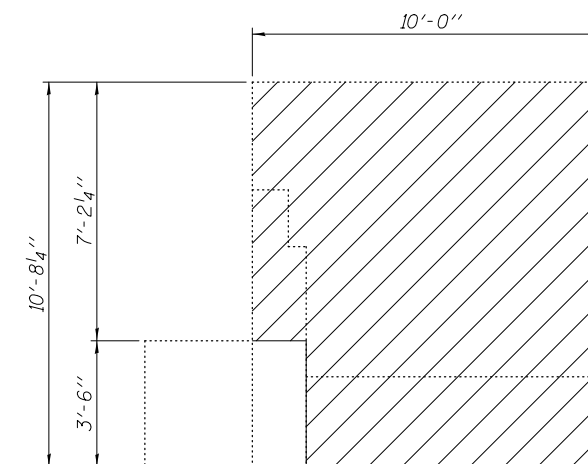
SECTION THRU WINGWALL



SOUTH WINGWALL ELEVATION



PLAN



NORTH WINGWALL ELEVATION

Notes:
 Hatched areas indicate the limits of Concrete Removal.
 Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
 Existing reinforcement not extending into new construction shall be cut off flush and covered with a 2" layer of cement grout. Cost included with Concrete Removal.
 The elevations shown above were calculated from the survey information provided by the district.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	17.8

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED - <i>Joanne F. J. [Signature]</i>	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	PASSED - <i>Carl [Signature]</i>	REVISED
DRAWN - MICHAEL B. MOSSMAN	ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.		

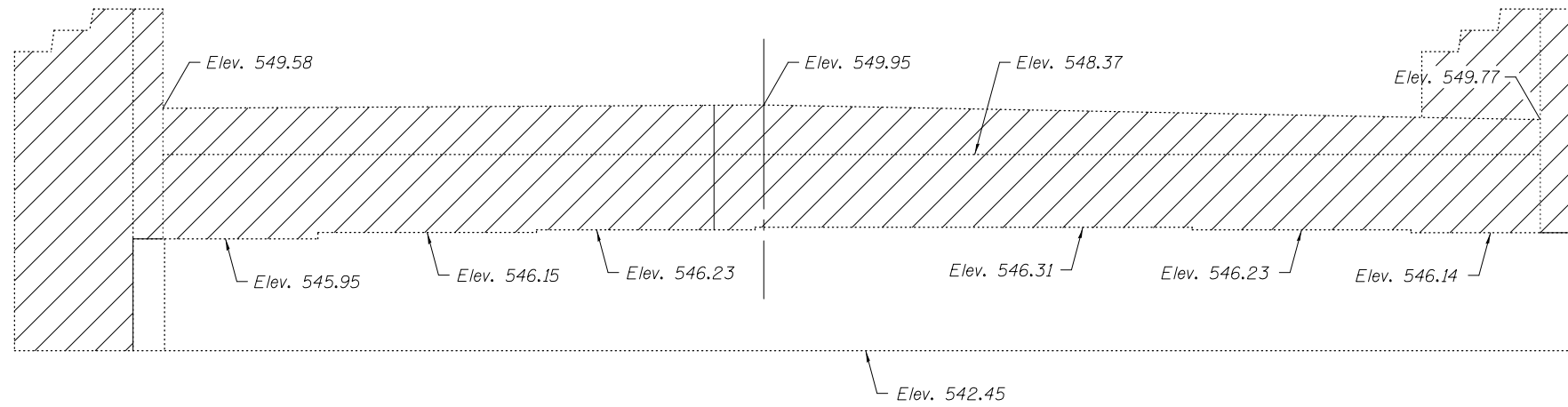
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REMOVAL
STRUCTURE NO. 018 - 0040 (EB)

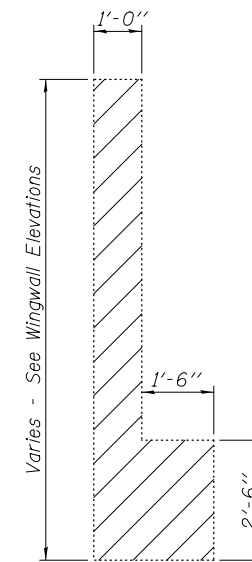
SHEET NO. 25 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	32
CONTRACT NO. 74187				

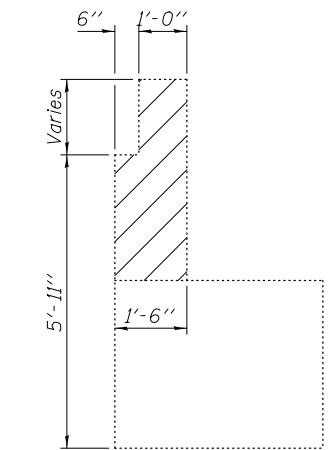
ILLINOIS FED. AID PROJECT



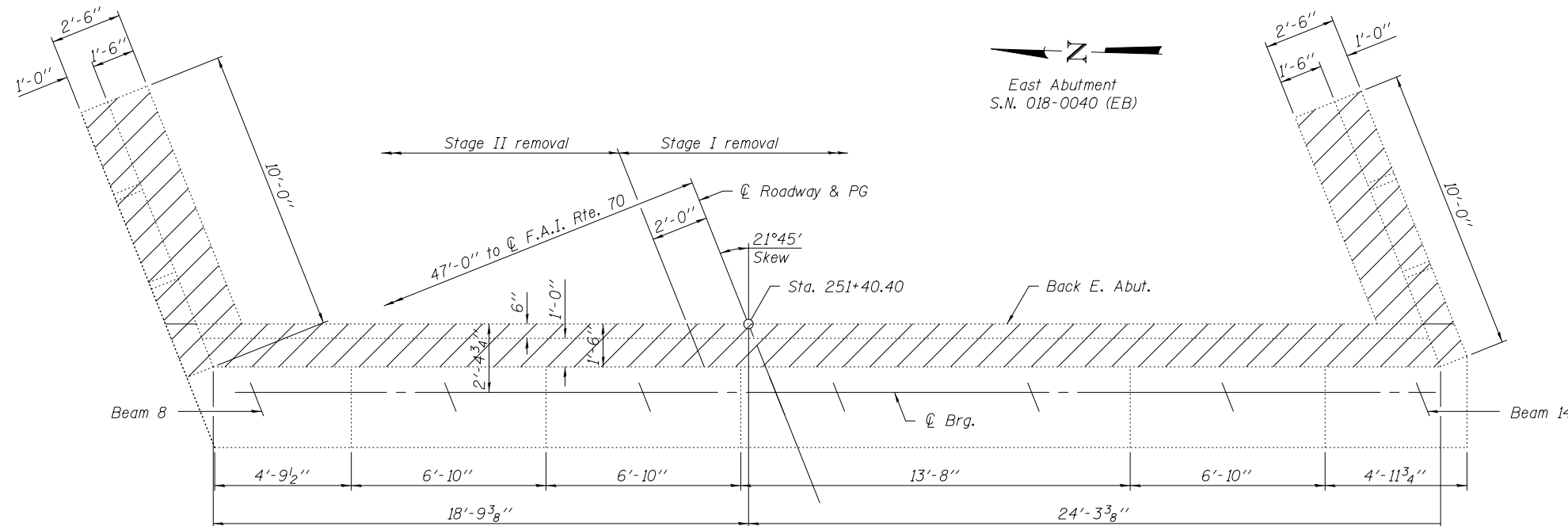
ELEVATION
(Looking east)



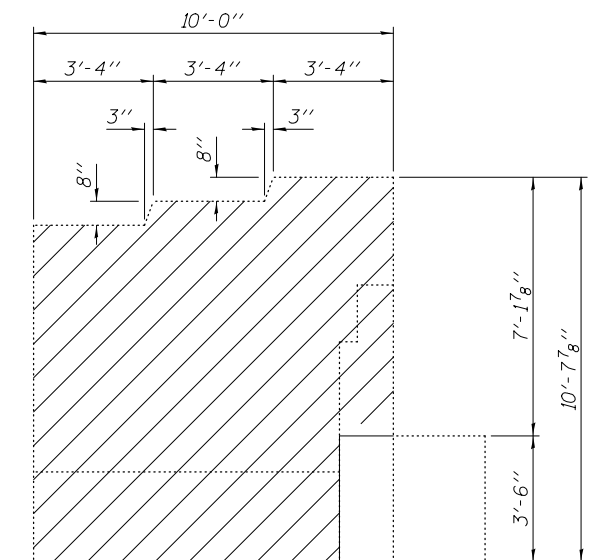
SECTION THRU WINGWALL



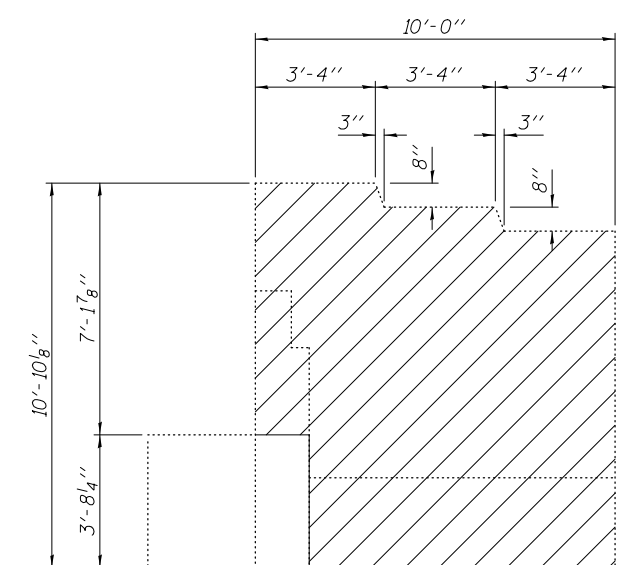
SECTION THRU ABUTMENT



PLAN



NORTH WINGWALL ELEVATION



SOUTH WINGWALL ELEVATION

Notes:
 Hatched areas indicate the limits of Concrete Removal.
 Existing reinforcement extending into new construction shall be cleaned, straightened, and incorporated into the new construction. Cost included with Concrete Removal.
 Existing reinforcement not extending into new construction shall be cut off flush and covered with a 2" layer of cement grout. Cost included with Concrete Removal.
 The elevations shown above were calculated from the survey information provided by the district.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	17.1

DESIGNED - FESSEHA TEKLEHAIMANOT
 CHECKED - JOSUE ORTIZ-VARELA
 DRAWN - MICHAEL B. MOSSMAN
 CHECKED - F.T. / J.O.V. / G.R.A.

EXAMINED - *Joanne F. Joffe*
 ACTING ENGINEER OF BRIDGE DESIGN
 PASSED - *Carl Berger*
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

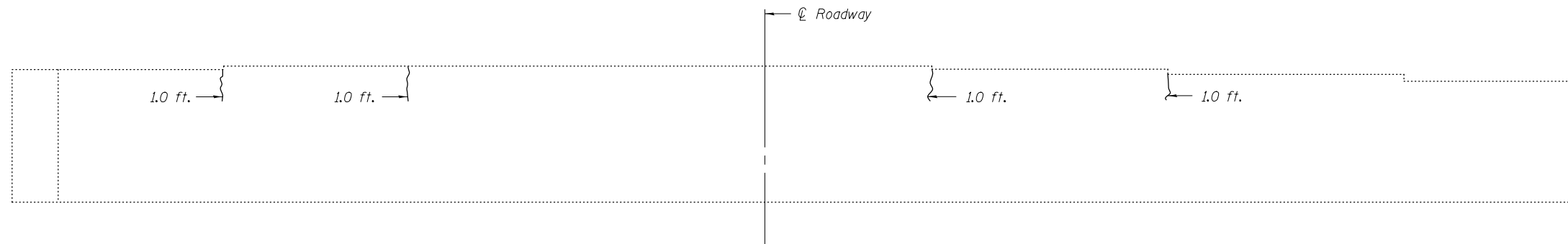
DATE - SEPTEMBER 16, 2014
 REVISED
 REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

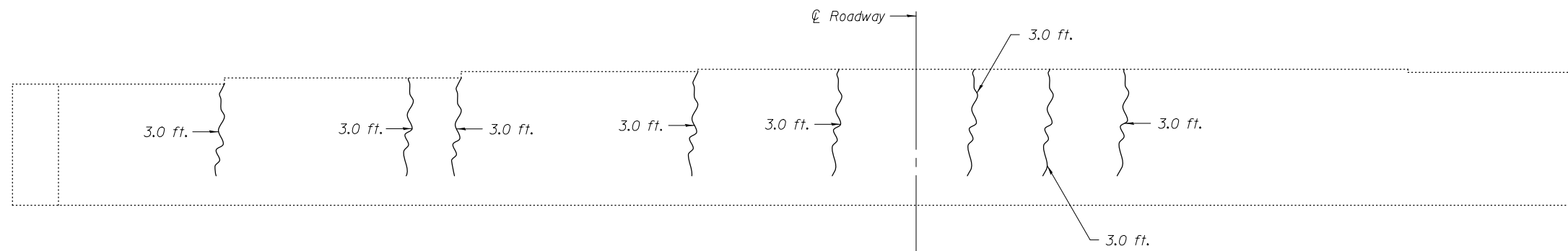
EAST ABUTMENT REMOVAL
STRUCTURE NO. 018 - 0040 (EB)

SHEET NO. 26 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	33
CONTRACT NO. 74187			ILLINOIS FED. AID PROJECT	



WEST ABUTMENT ELEVATION
(Looking west)



EAST ABUTMENT ELEVATION
(Looking east)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	28.0

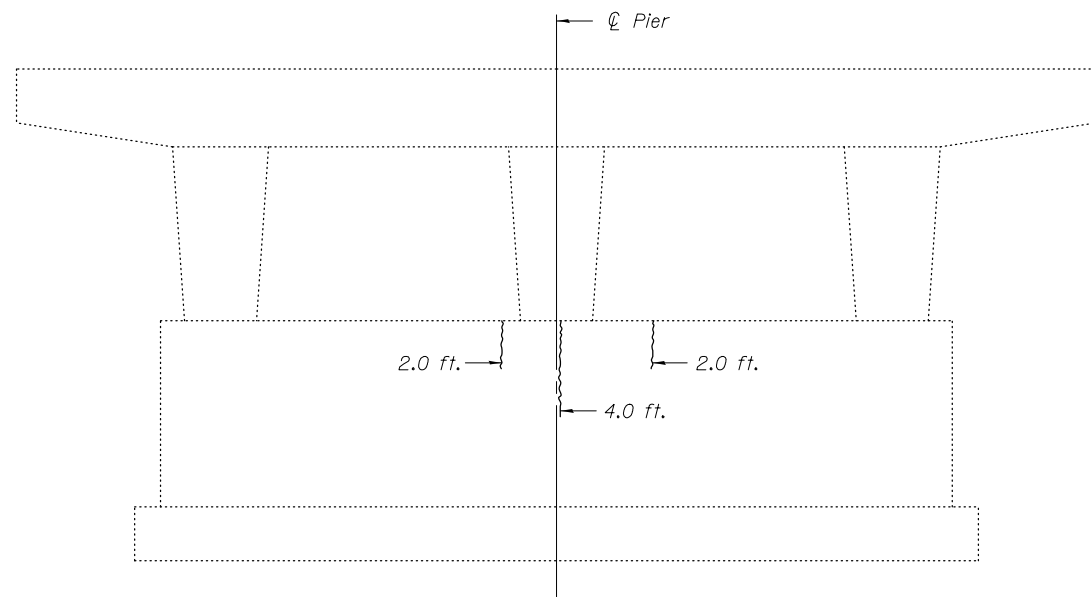
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	<i>Jaime F. Joffe</i> ACTING ENGINEER OF BRIDGE DESIGN	
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.	<i>Carl Kopper</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

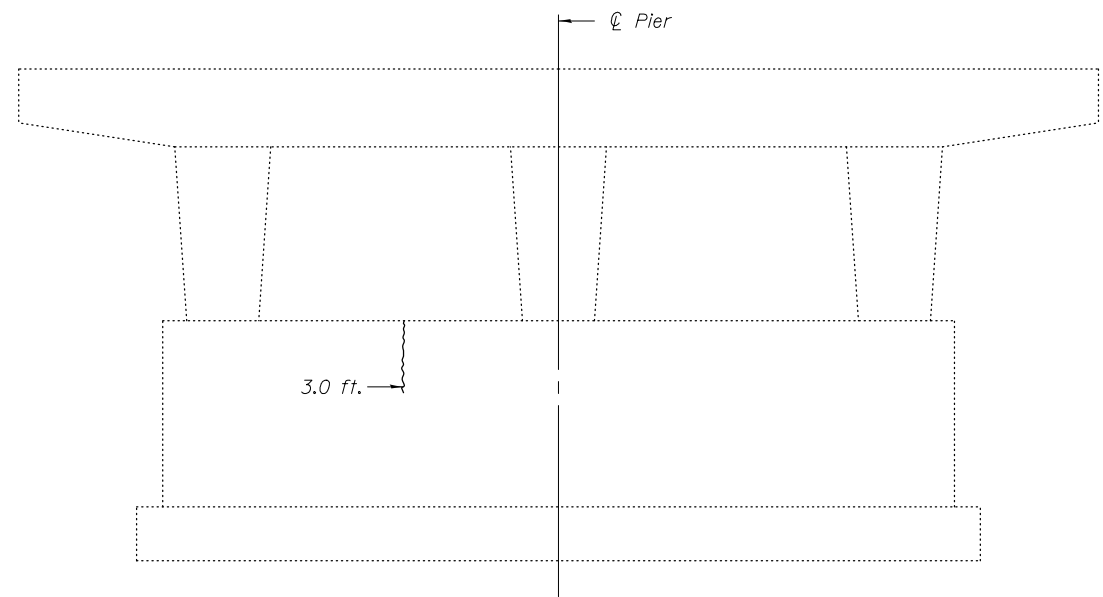
**SUBSTRUCTURE REPAIRS
STRUCTURE NO. 018 - 0041 (WB)**

SHEET NO. 27 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	34
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74187	

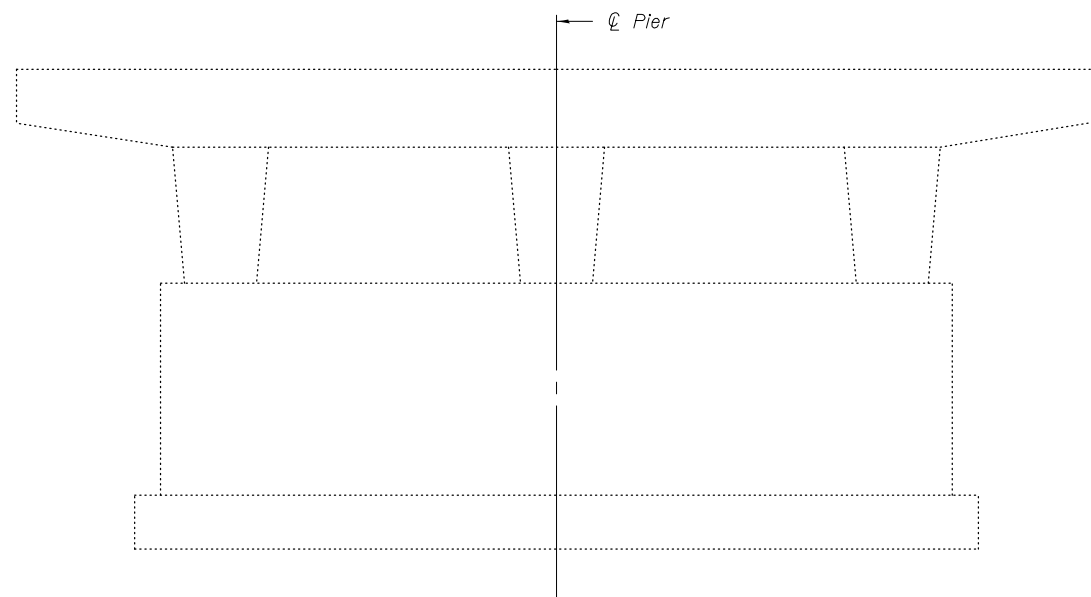


EAST FACE

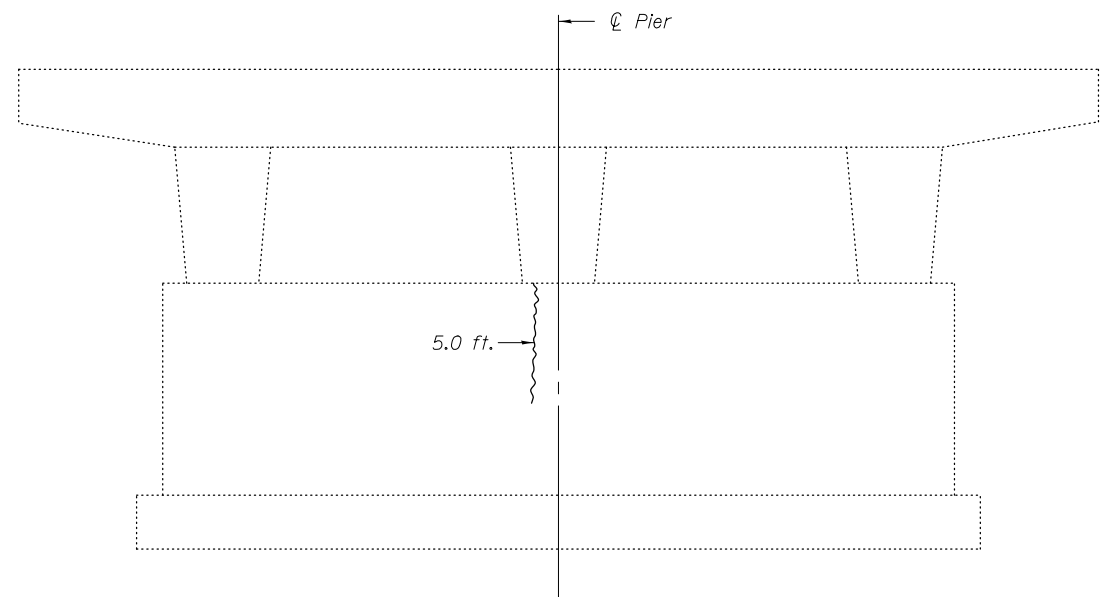


WEST FACE

PIER 1



EAST FACE



WEST FACE

PIER 2

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	16.0

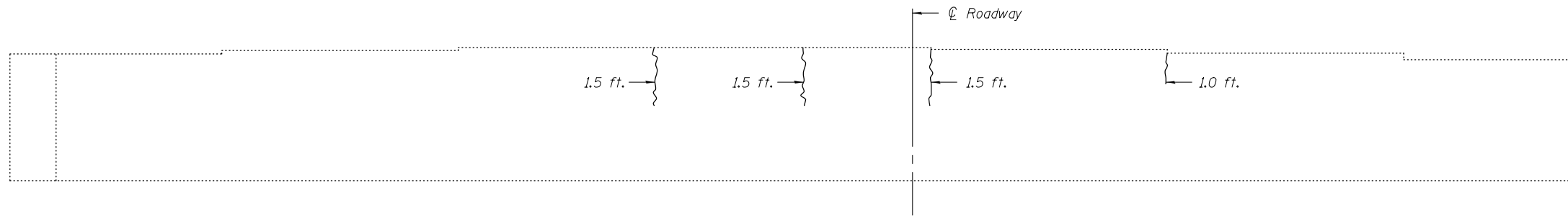
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	<i>Jaime F. Schaff</i> ACTING ENGINEER OF BRIDGE DESIGN	
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.	<i>Carl Kasper</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUBSTRUCTURE REPAIRS
STRUCTURE NO. 018 - 0041 (WB)**

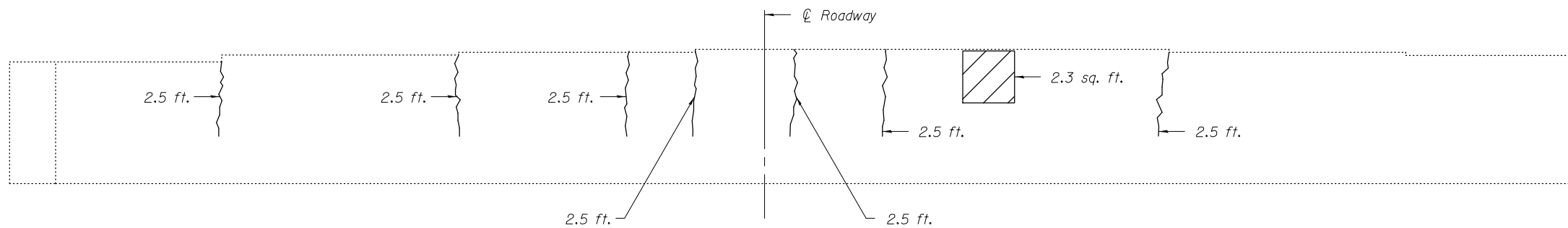
SHEET NO. 28 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	35
			CONTRACT NO. 74187	
ILLINOIS FED. AID PROJECT				



WEST ABUTMENT ELEVATION

(Looking west)



EAST ABUTMENT ELEVATION

(Looking east)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	23.0
Structural Repair of Concrete (Depth Greater Than 5 Inches)	Sq. Ft.	2.3

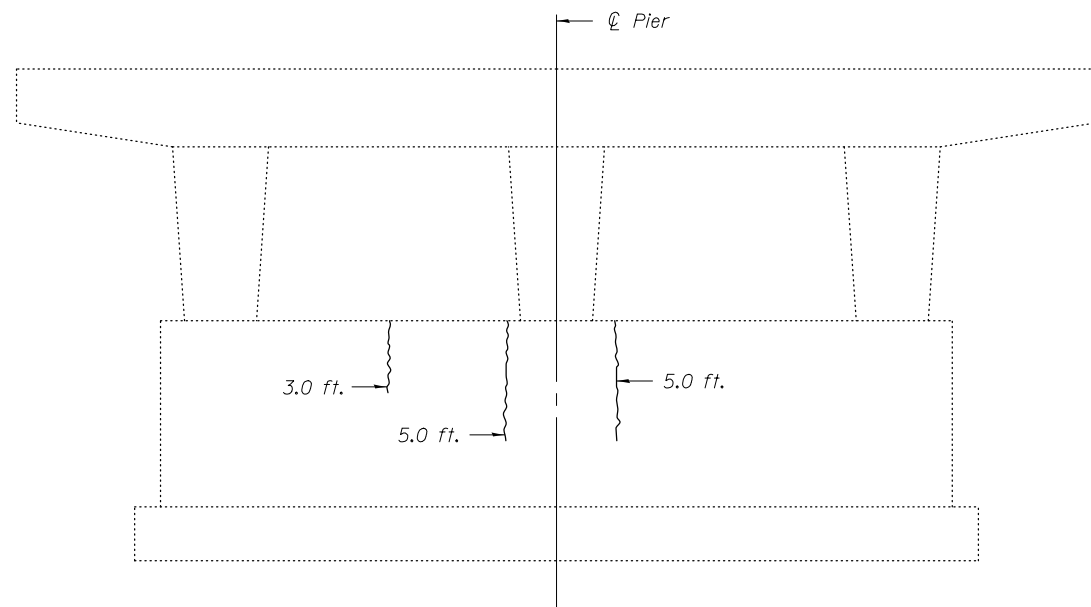
DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014
CHECKED - JOSUE ORTIZ-VARELA	<i>Jaime F. J. [Signature]</i> ACTING ENGINEER OF BRIDGE DESIGN	
DRAWN - MICHAEL B. MOSSMAN	PASSED	REVISED
CHECKED - F.T. / J.O.V. / G.R.A.	<i>Carl [Signature]</i> ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

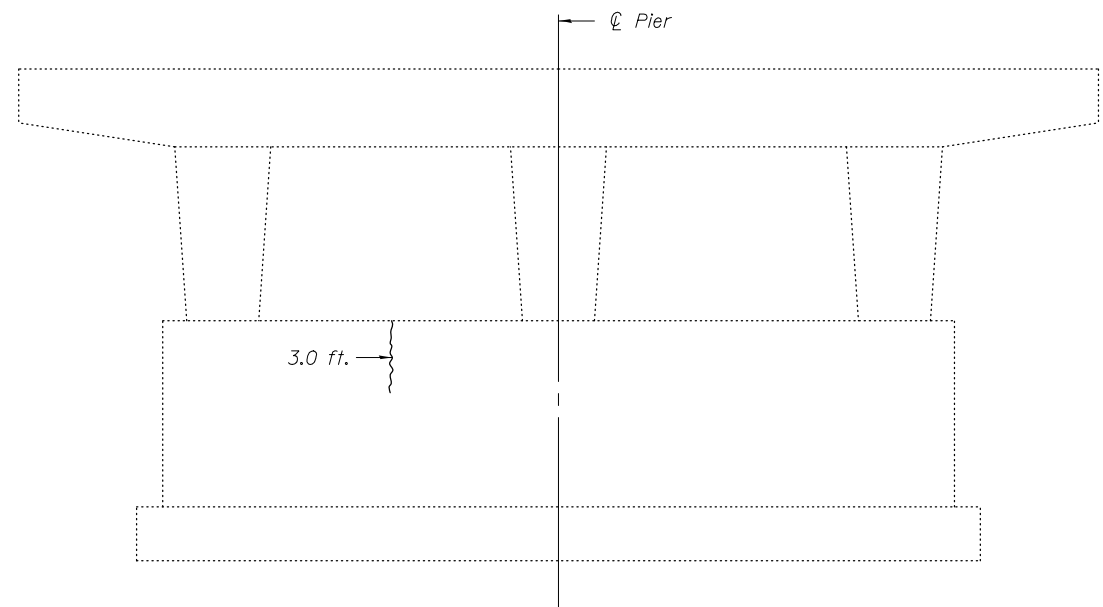
**SUBSTRUCTURE REPAIRS
STRUCTURE NO. 018 - 0040 (EB)**

SHEET NO. 29 OF 36 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	36
			CONTRACT NO. 74187	
ILLINOIS FED. AID PROJECT				

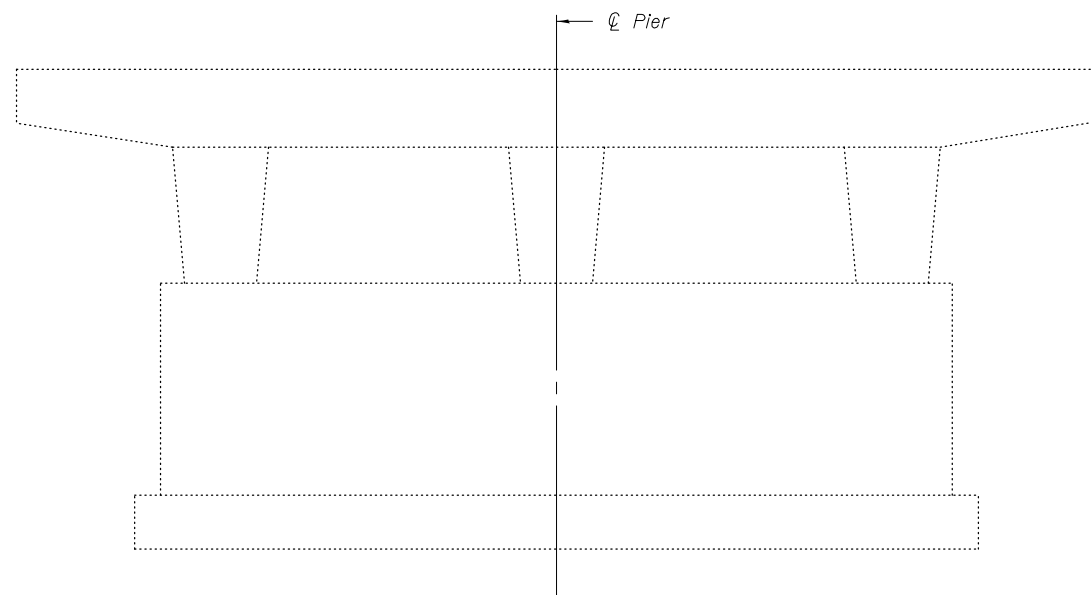


EAST FACE

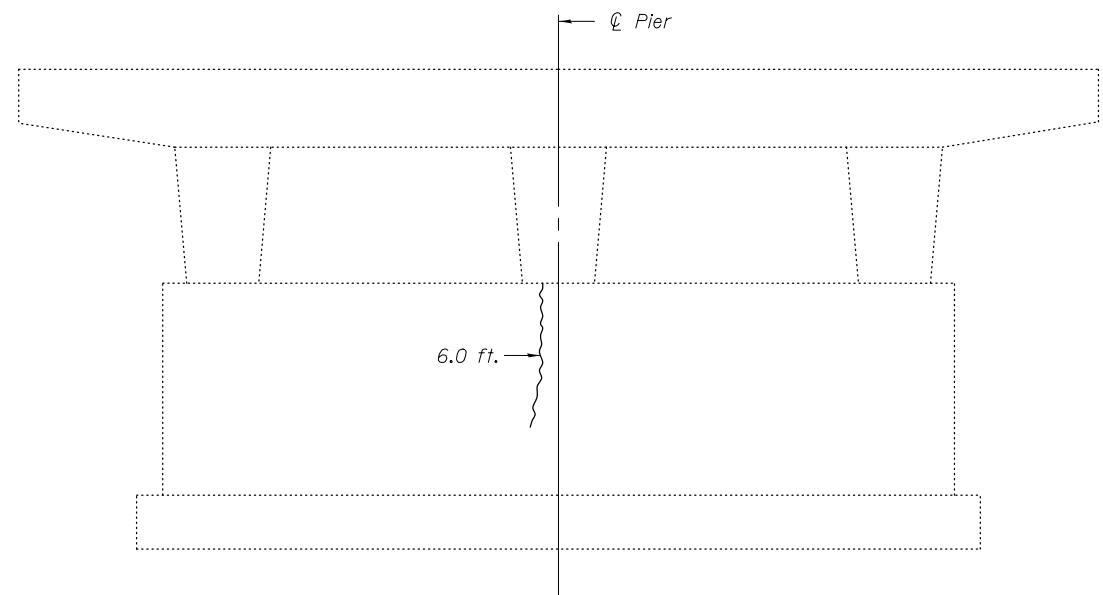


WEST FACE

PIER 1



EAST FACE



WEST FACE

PIER 2

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Epoxy Crack Injection	Foot	22.0

DESIGNED - FESSEHA TEKLEHAIMANOT
 CHECKED - JOSUE ORTIZ-VARELA
 DRAWN - MICHAEL B. MOSSMAN
 CHECKED - F.T. / J.O.V. / G.R.A.

EXAMINED *Jaime F. Joffe*
 ACTING ENGINEER OF BRIDGE DESIGN
 PASSED *Carl Kopper*
 ACTING ENGINEER OF BRIDGES AND STRUCTURES

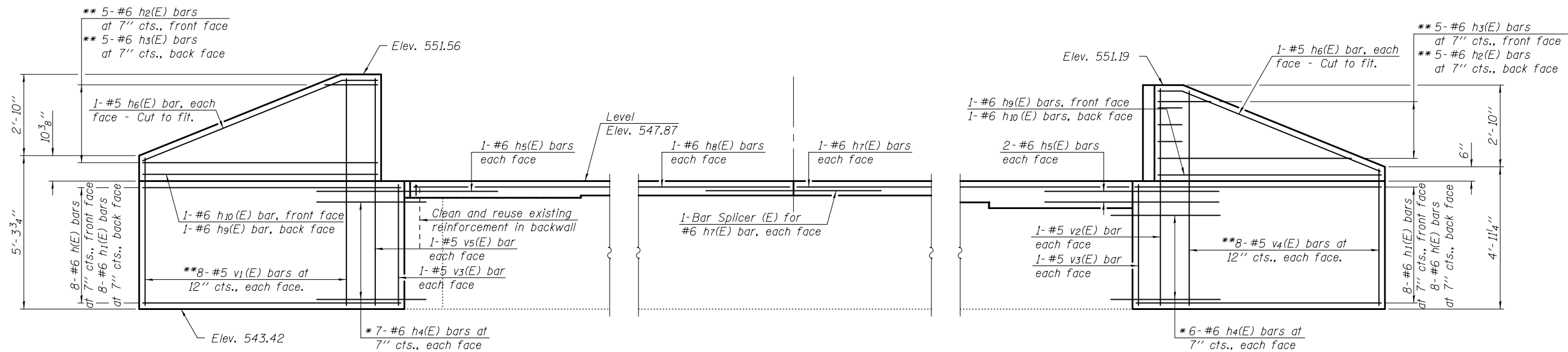
DATE - SEPTEMBER 16, 2014
 REVISED
 REVISED

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**SUBSTRUCTURE REPAIRS
 STRUCTURE NO. 018 - 0040 (EB)**

SHEET NO. 30 OF 36 SHEETS

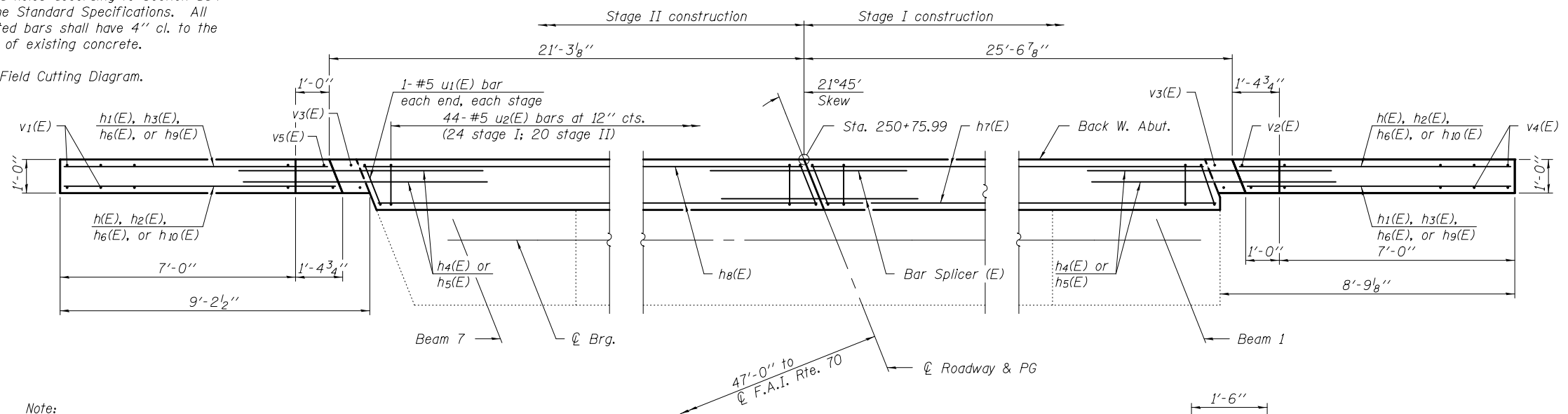
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(18-45HB-1)BR	CUMBERLAND	43	37
CONTRACT NO. 74187			ILLINOIS FED. AID PROJECT	



ELEVATION
(Looking west)

* Epoxy grout h4(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications. All grouted bars shall have 4" cl. to the edge of existing concrete.

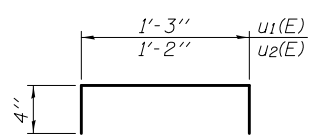
** See Field Cutting Diagram.



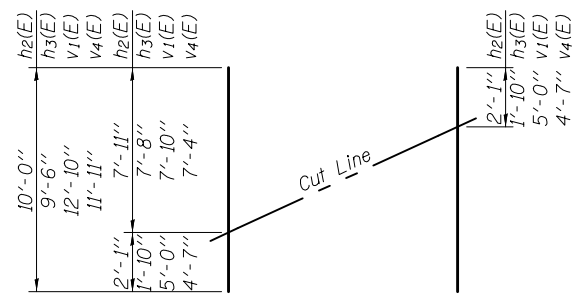
PLAN



Note:
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

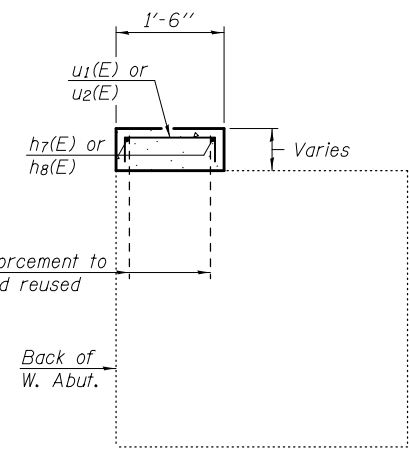


BARS u₁(E) & u₂(E)



FIELD CUTTING DIAGRAM

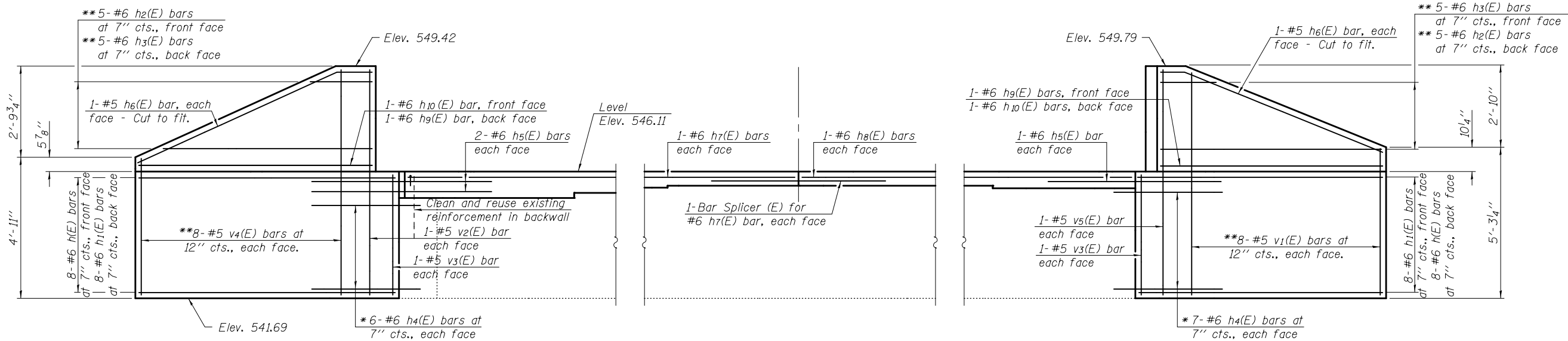
Order v₁(E), and v₄(E) full length. Cut as shown and use remainder of bars in opposite face.
Order h₂(E) and h₃(E) full length. Cut as shown and use remainder of bars in opposite face of opposite wingwall.



SECTION THRU ABUTMENT

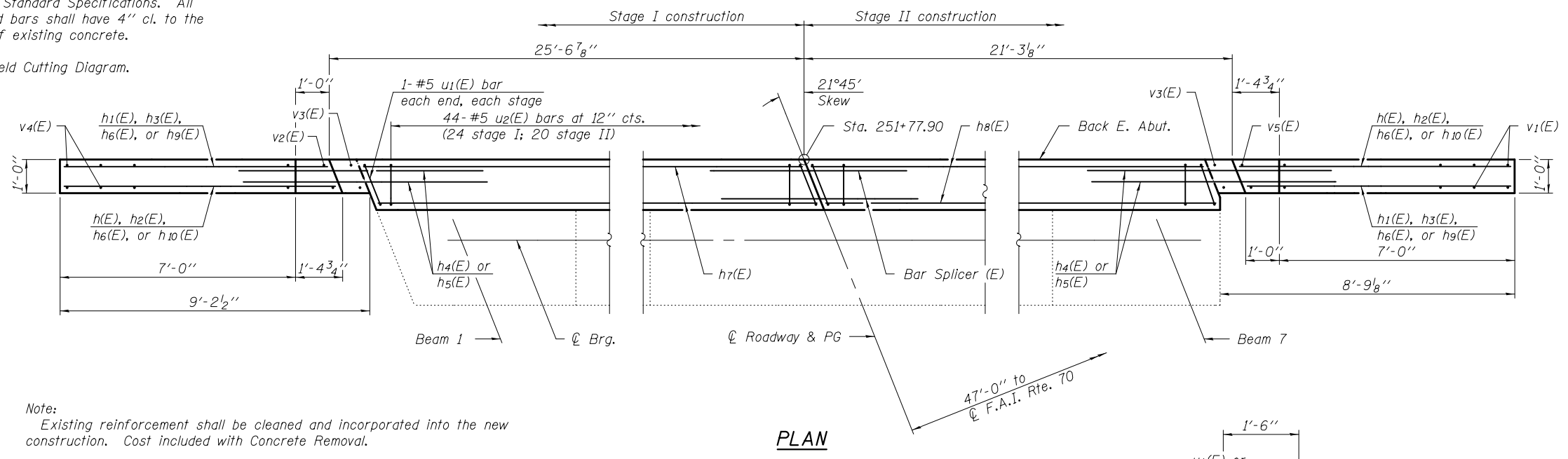
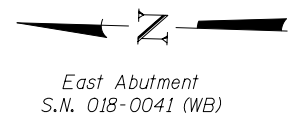
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	16	#6	8'-10"	—
h ₁ (E)	16	#6	8'-6"	—
h ₂ (E)	5	#6	10'-0"	—
h ₃ (E)	5	#6	9'-6"	—
h ₄ (E)	26	#6	4'-0"	—
h ₅ (E)	6	#6	6'-4"	—
h ₆ (E)	4	#5	8'-9"	—
h ₇ (E)	2	#6	24'-5"	—
h ₈ (E)	2	#6	20'-2"	—
h ₉ (E)	2	#6	7'-8"	—
h ₁₀ (E)	2	#6	8'-1"	—
u ₁ (E)	4	#5	1'-11"	□
u ₂ (E)	44	#5	1'-10"	□
v ₁ (E)	8	#5	12'-10"	—
v ₂ (E)	2	#5	7'-5"	—
v ₃ (E)	4	#5	4'-1"	—
v ₄ (E)	8	#5	11'-11"	—
v ₅ (E)	2	#5	7'-10"	—
Structure Excavation			Cu. Yd.	97
Concrete Structures			Cu. Yd.	5.8
Reinforcement Bars, Epoxy Coated			Pound	1,340



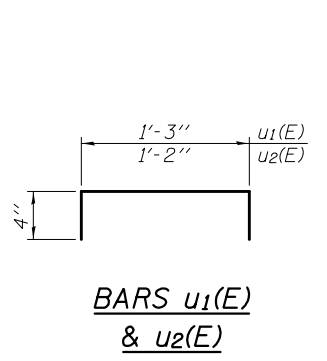
ELEVATION
(Looking east)

* Epoxy grout h4(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications. All grouted bars shall have 4" cl. to the edge of existing concrete.
** See Field Cutting Diagram.

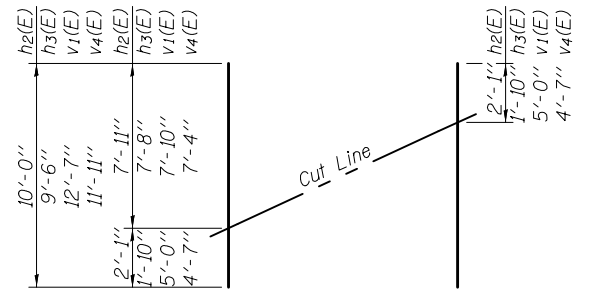


PLAN

Note:
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

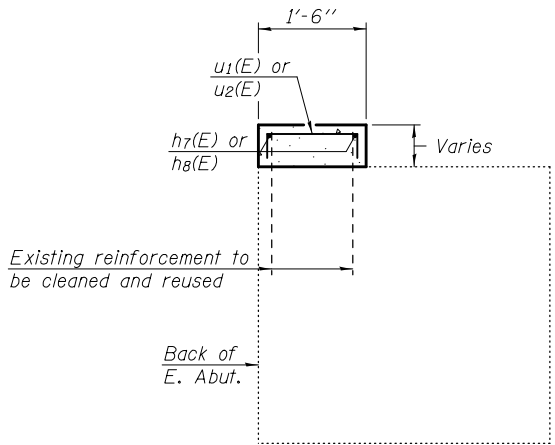


BARS u1(E) & u2(E)



FIELD CUTTING DIAGRAM

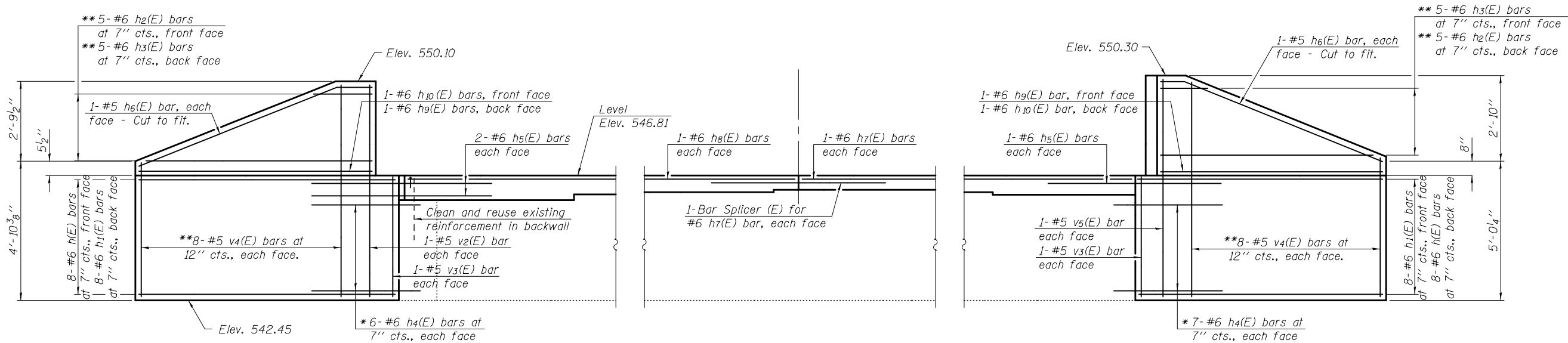
Order v1(E), and v4(E) full length. Cut as shown and use remainder of bars in opposite face.
Order h2(E) and h3(E) full length. Cut as shown and use remainder of bars in opposite face of opposite wingwall.



SECTION THRU ABUTMENT

BILL OF MATERIAL

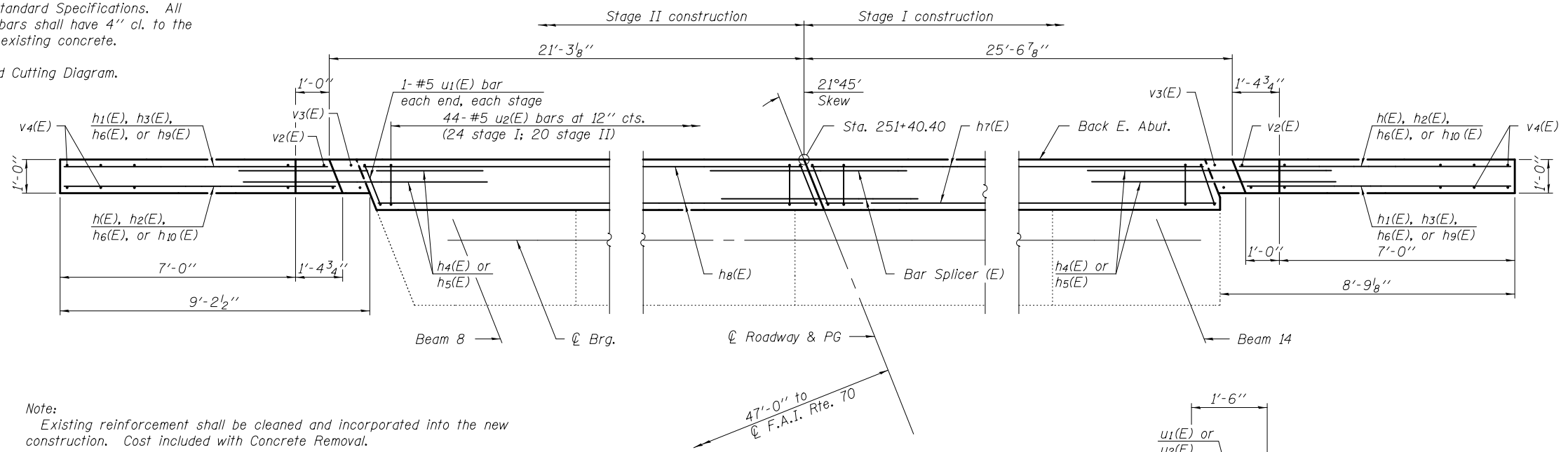
Bar	No.	Size	Length	Shape
h(E)	16	#6	8'-10"	—
h1(E)	16	#6	8'-6"	—
h2(E)	5	#6	10'-0"	—
h3(E)	5	#6	9'-6"	—
h4(E)	26	#6	4'-0"	—
h5(E)	4	#6	6'-4"	—
h6(E)	4	#5	8'-9"	—
h7(E)	2	#6	24'-5"	—
h8(E)	2	#6	20'-2"	—
h9(E)	2	#6	7'-8"	—
h10(E)	2	#6	8'-1"	—
u1(E)	4	#5	1'-11"	□
u2(E)	44	#5	1'-10"	□
v1(E)	8	#5	12'-10"	—
v2(E)	2	#5	7'-5"	—
v3(E)	4	#5	4'-1"	—
v4(E)	8	#5	11'-11"	—
v5(E)	2	#5	7'-10"	—
Structure Excavation		Cu. Yd.		96
Concrete Structures		Cu. Yd.		5.8
Reinforcement Bars, Epoxy Coated		Pound		1,340



ELEVATION
(Looking east)

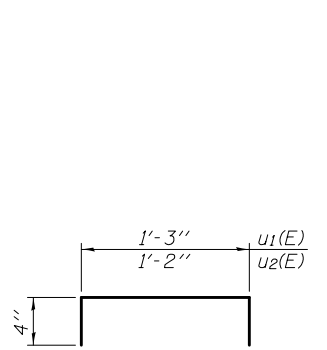
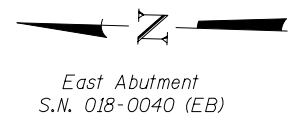
* Epoxy grout $h_4(E)$ bars in 9" min. drilled holes according to Section 584 of the Standard Specifications. All grouted bars shall have 4" cl. to the edge of existing concrete.

** See Field Cutting Diagram.

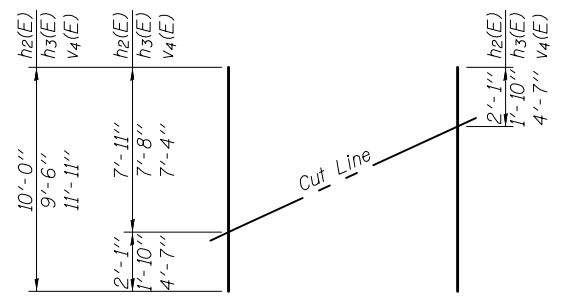


PLAN

Note:
Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.

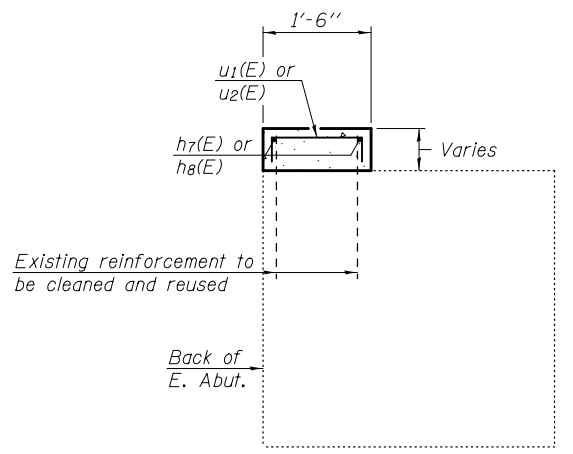


BARS $u_1(E)$ & $u_2(E)$



FIELD CUTTING DIAGRAM

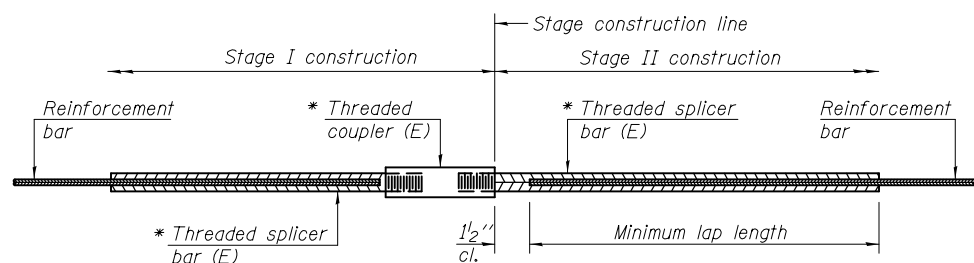
Order $v_4(E)$ full length. Cut as shown and use remainder of bars in opposite face.
Order $h_2(E)$ and $h_3(E)$ full length. Cut as shown and use remainder of bars in opposite face of opposite wingwall.



SECTION THRU ABUTMENT

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$h(E)$	16	#6	8'-10"	—
$h_1(E)$	16	#6	8'-6"	—
$h_2(E)$	5	#6	10'-0"	—
$h_3(E)$	5	#6	9'-6"	—
$h_4(E)$	26	#6	4'-0"	—
$h_5(E)$	6	#6	6'-4"	—
$h_6(E)$	4	#5	8'-9"	—
$h_7(E)$	2	#6	24'-5"	—
$h_8(E)$	2	#6	20'-2"	—
$h_9(E)$	2	#6	7'-8"	—
$h_{10}(E)$	2	#6	8'-1"	—
$u_1(E)$	4	#5	1'-11"	□
$u_2(E)$	44	#5	1'-10"	□
$v_2(E)$	4	#5	7'-5"	—
$v_3(E)$	4	#5	4'-1"	—
$v_4(E)$	16	#5	11'-11"	—
Structure Excavation		Cu. Yd.	92	
Concrete Structures		Cu. Yd.	5.8	
Reinforcement Bars, Epoxy Coated		Pound	1,330	



STANDARD BAR SPLICER ASSEMBLY

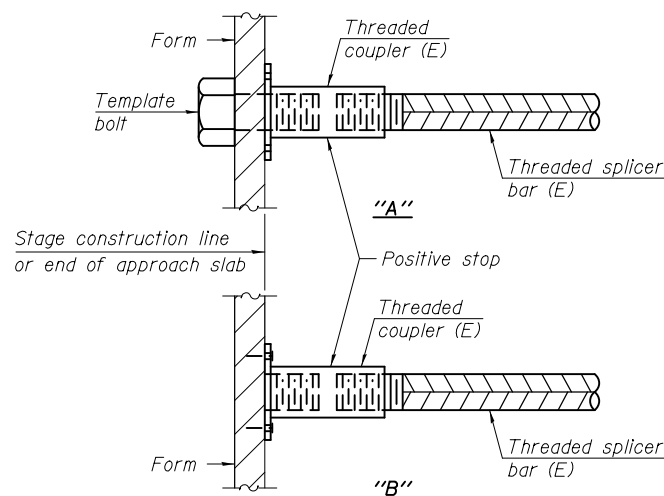
Minimum Lap Lengths						
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5	Table 6
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-7"	2'-11"
5	1'-9"	2'-5"	2'-7"	2'-11"	3'-3"	3'-8"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-10"	4'-5"
7	2'-9"	3'-10"	4'-2"	4'-8"	5'-2"	5'-10"
8	3'-8"	5'-1"	5'-5"	6'-2"	6'-9"	7'-8"
9	4'-7"	6'-5"	6'-10"	7'-9"	8'-7"	9'-8"

- Table 1: Black bar, 0.8 Class C
- Table 2: Black bar, Top bar lap, 0.8 Class C
- Table 3: Epoxy bar, 0.8 Class C
- Table 4: Epoxy bar, Top bar lap, 0.8 Class C
- Table 5: Epoxy bar, Class C
- Table 6: Epoxy bar, Top bar top, Class C

Threaded splicer bar length = min. lap length + 1/2" + thread length

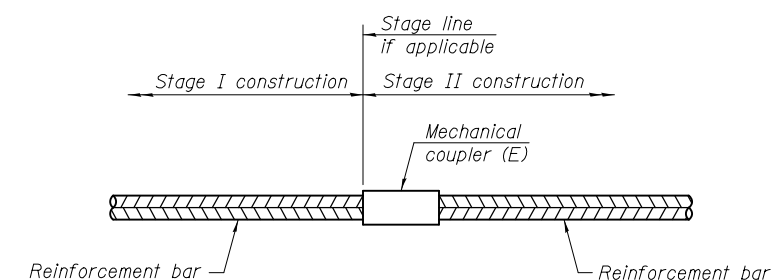
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
Approach slab, top	#4	100	4
Approach slab, bottom	#5	184	3
Approach slab footing	#5	160	3
Deck	#5	528	3
Diaphragms	#6	48	4
Abutments	#5	8	4



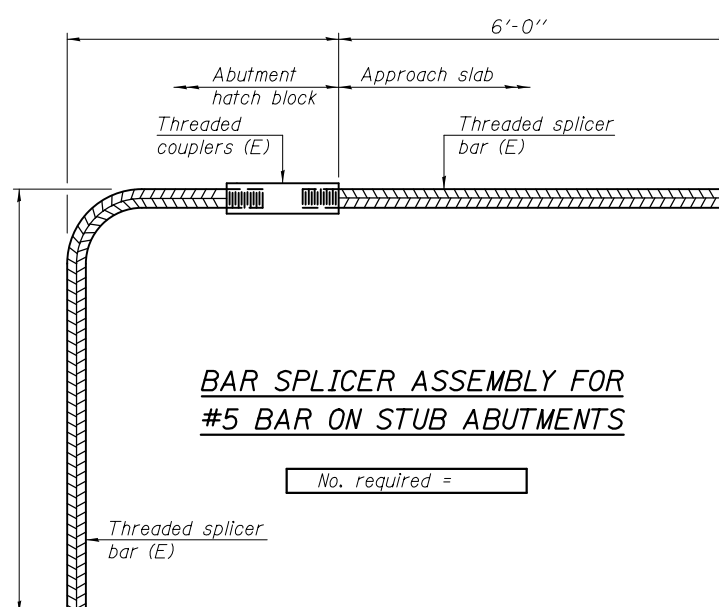
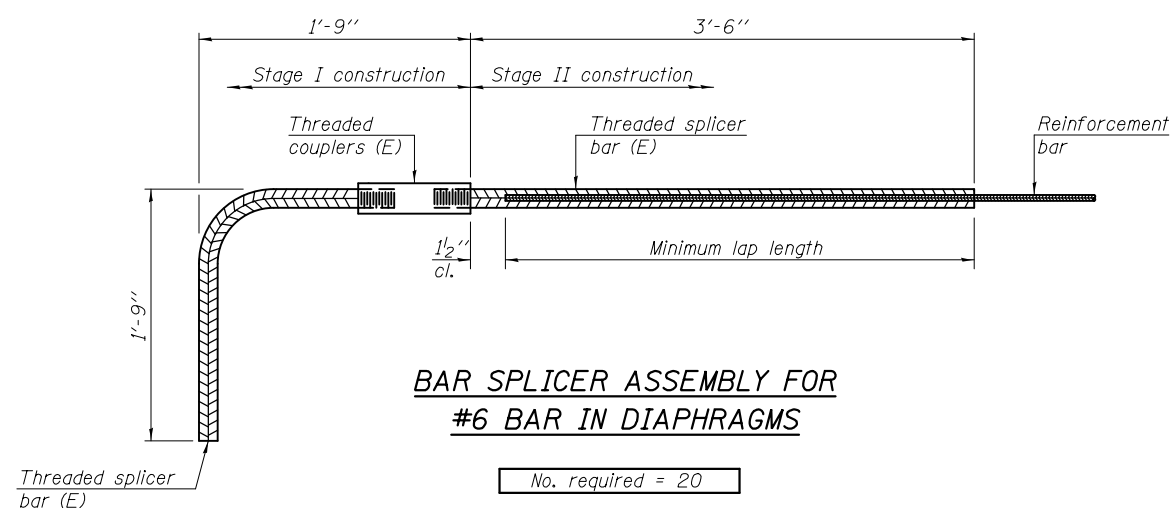
INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
 "B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
 (E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
 See approved list of bar splicer assemblies and mechanical splicers for alternatives.

Note:

The finishing machine rails shall be placed on the top of the top flange of the exterior beams within the deck pour. Beam blocks shall be placed between beams at all tie locations in each bay for the full width of the deck pour.

DESIGNED - FESSEHA TEKLEHAIMANOT	EXAMINED	DATE - SEPTEMBER 16, 2014	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CANTILEVER FORMING BRACKETS FOR SUPERSTRUCTURES STRUCTURE NO. 018 - 0040 (EB) & 018 - 0041 (WB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - JOSUE ORTIZ-VARELA	 ACTING ENGINEER OF BRIDGES AND STRUCTURES	REVISED			70	(18-45HB-1)BR	CUMBERLAND	43	43
DRAWN - MICHAEL B. MOSSMAN		REVISED			CONTRACT NO. 74187				
CHECKED - F.T. / J.O.V. / G.R.A.		ACTING ENGINEER OF BRIDGES AND STRUCTURES			SHEET NO. 36 OF 36 SHEETS				
				ILLINOIS FED. AID PROJECT					