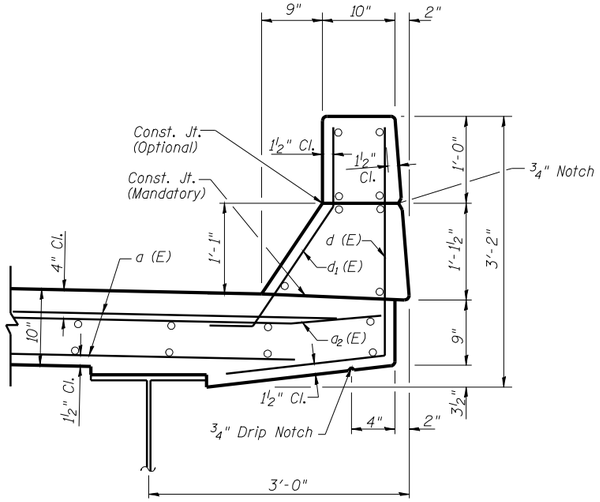
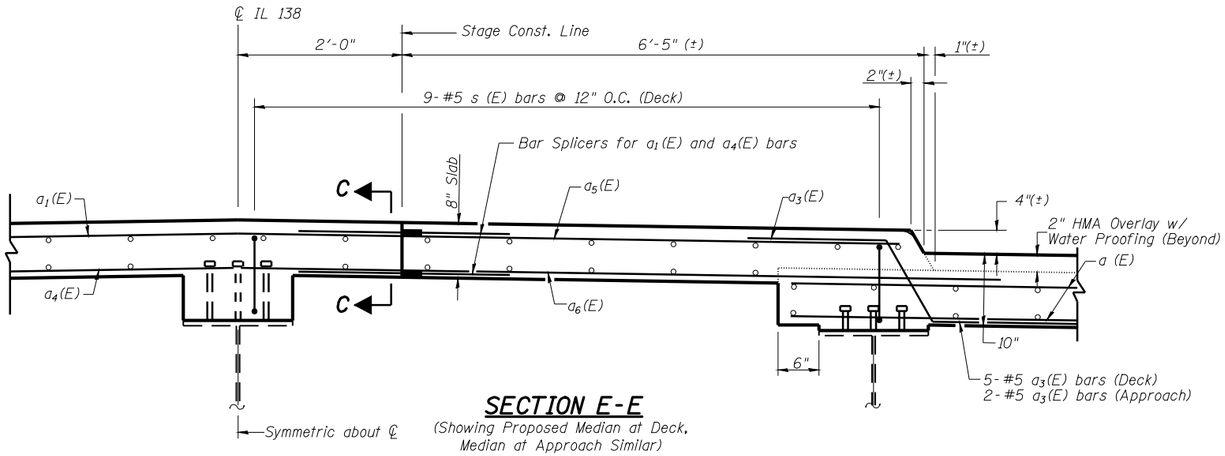
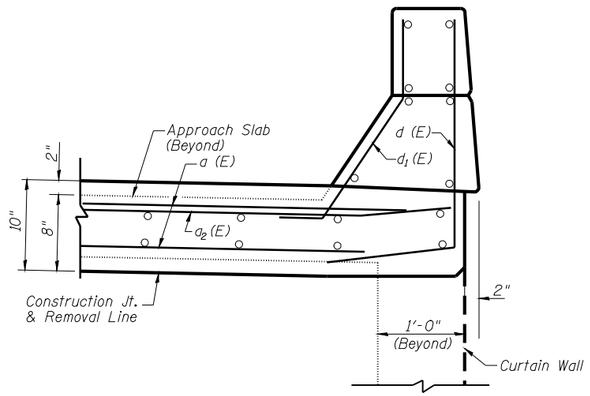
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



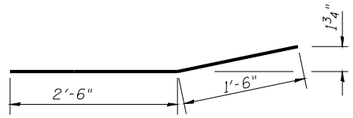
SECTION D-D
(Showing Parapet at Deck)



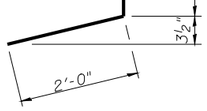
SECTION E-E
(Showing Proposed Median at Deck, Median at Approach Similar)



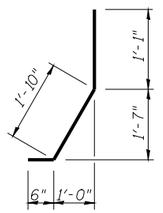
SECTION F-F
(Showing Parapet at Approach)



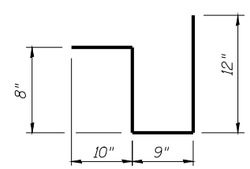
a2(E)



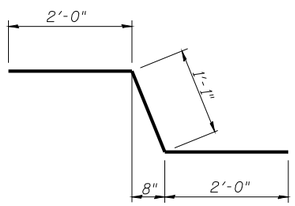
d (E)



d1(E)



s (E) Bar



a3(E) Bar

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a (E)	96	#6	26'-4"	
a1 (E)	24	#5	10'-1"	
a2(E)	32	#6	4'-0"	
a3(E)	48	#5	5'-1"	
a4(E)	32	#5	12'-0"	
a5(E)	24	#5	6'-1"	
a6(E)	32	#5	8'-0"	
d (E)	32	#4	4'-7"	
d1(E)	32	#5	3'-5"	
s (E)	72	#5	3'-3"	
Concrete Removal			Cu. Yd.	27.0
Concrete Superstructure			Cu. Yd.	26.7
Reinforcement Bars, Epoxy Coated			Pound	5780
Bar Splicers			Each	56
Protective Coat			Sq. Yd.	66

NOTES:

1. Any reinforcement bars that are damaged during concrete removal operations shall be repaired or replaced using an approved bar splicer or anchorage system. Cost included in the cost of Concrete Removal.
2. Removal of all existing expansion joints shall be included in the cost of Concrete Removal.

DECK REPAIR DETAILS
STRUCTURE NO. 059-0039
(Sheet 3 of 3)

SHEET NO. 5	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	Macoupin	137	101
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
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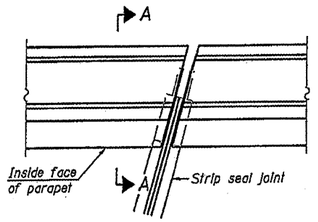
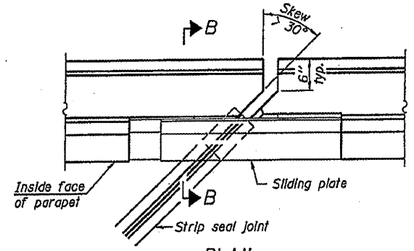
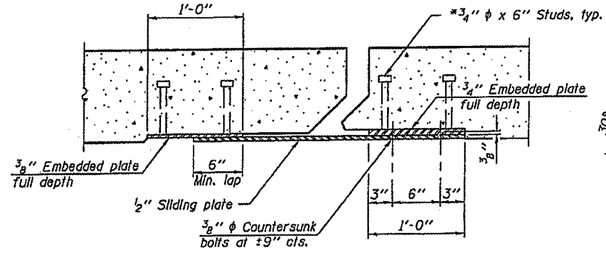


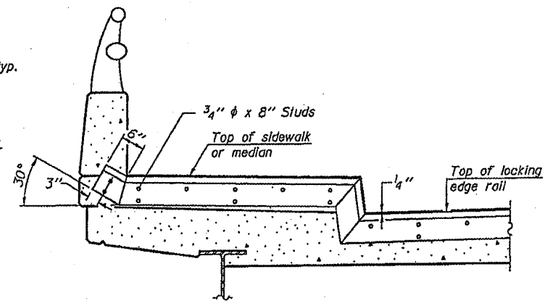
PLAN
(For skews ≤ 30°)



PLAN
(For skews > 30°)
Showing point block

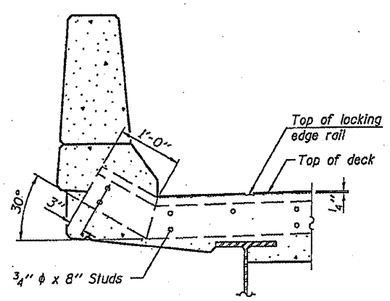


SECTION C-C

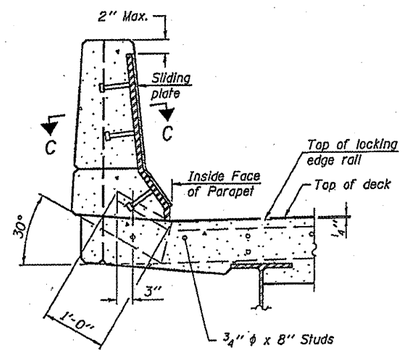


TYPICAL END TREATMENT
AT SIDEWALK OR MEDIAN

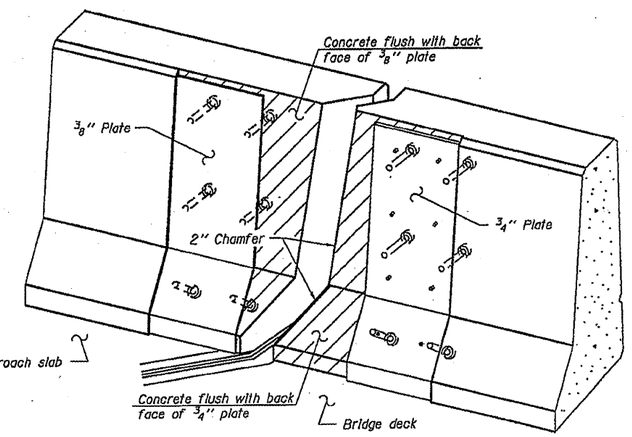
Shorter plates with a single row of studs at 12" cts. may be necessary on medians which are shallower than 9". See manufacturer's recommendation.



SECTION A-A

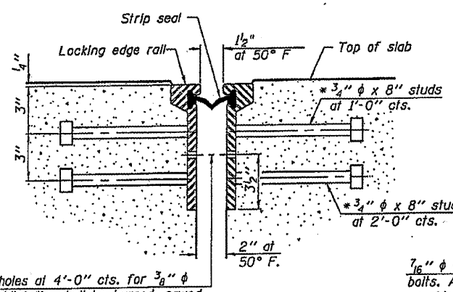


SECTION B-B



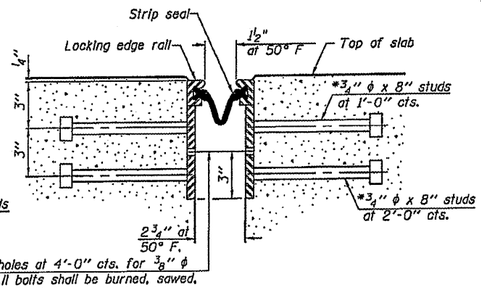
TRIMETRIC VIEW
(Showing back plates only)

Notes:
The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the Locking Edge Rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.
The Locking Edge Rails depicted are conceptual only, except for the minimum dimensions shown. The actual configuration of the Locking Edge Rails and matching strip seal may vary from manufacturer to manufacturer. Flanged edge rails will not be allowed. Locking Edge Rails may be spliced at slope discontinuities.
The manufacturer's recommended installation methods shall be followed.
The joint opening and deck dimensions detailed on the superstructure are based on a rolled rail expansion joint. If the Contractor elects to use the welded rail expansion joint, the opening and deck dimensions shall be modified according to the dimensions detailed on this sheet. Required modifications shall be made at no additional cost to the State.
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.
Maximum space between rail segments at stage lines shall be 3/16", sealed with a suitable sealant.
Parapet plates and anchorage studs for skews > 30° included in the cost of Preformed Joint Strip Seal.



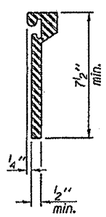
7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

SECTION THRU
ROLLED RAIL JOINT

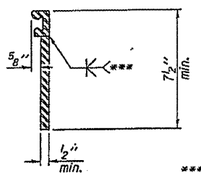


7/16" ϕ holes at 4'-0" cts. for 3/8" ϕ bolts. All bolts shall be burned, sawed, or chipped off flush with the plates after forms are removed, typ.

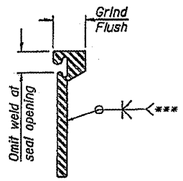
SECTION THRU
WELDED RAIL JOINT



ROLLED
EXTRUDED RAIL



WELDED RAIL



*** Back gouge not required if complete joint penetration is verified by mock-up.

LOCKING EDGE
RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

LOCKING EDGE RAILS

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	201

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 059-0039

SHEET NO. 6	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	Macoupin	137	101
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

EJ-SSJ 7-1-10

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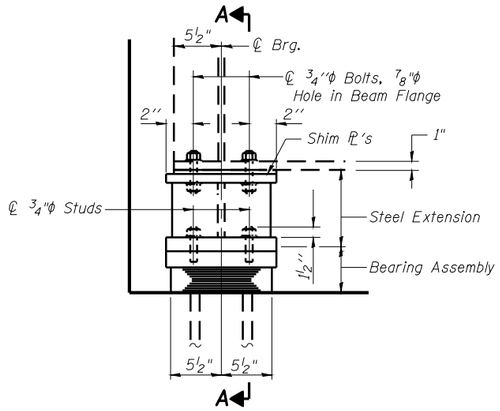
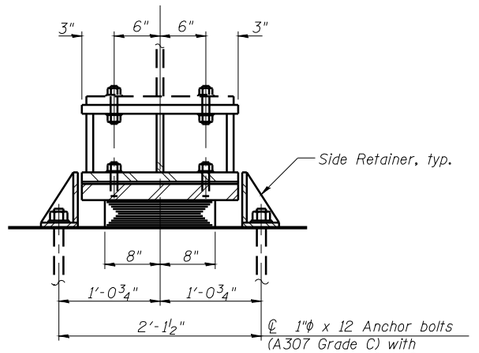
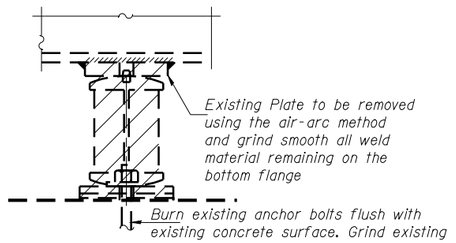


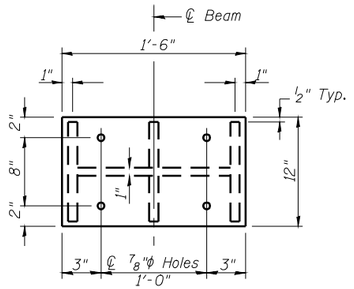
ELEVATION AT ABUT.



SECTION A-A

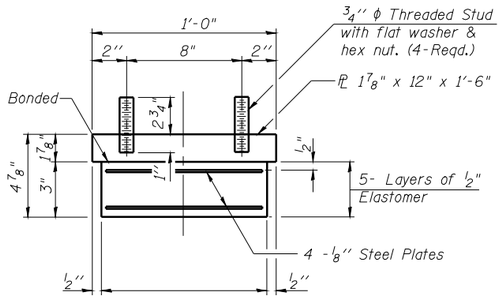


EXISTING BEARING REMOVAL DETAIL



PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

Steel Extensions, Shims and Bolts shall be included in the cost of Furnishing and Erecting Structural Steel.

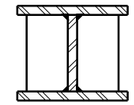
Prior to ordering any material for shims or extensions, the contractor shall verify in the field all bearing height and shim thickness dimensions.

Painting of steel shall be according to Article 506.05 of the Standard Specifications.

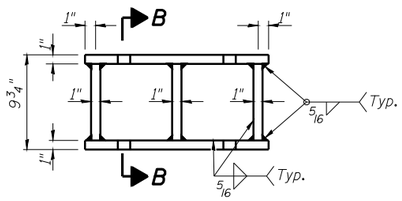
Provide two ⅛" shims for each bearing location. Adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts ¾"ϕ in 13/16"ϕ holes, unless otherwise noted.

Shim plates shall not be placed under Bearing Assembly.



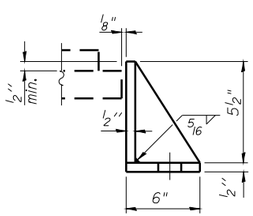
SECTION B-B

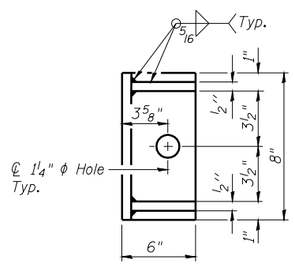


ELEVATION STEEL EXTENSION

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18
Anchor Bolts, 1"	Each	36
Jack & Remove Exist. Bearings	Each	18
Furnishing & Erecting Structural Steel	Pound	4480





BEAM REACTIONS

RD	(k)	65.5
RL	(k)	45.9
Imp.	(k)	10.3
R (Total)	(k)	121.7

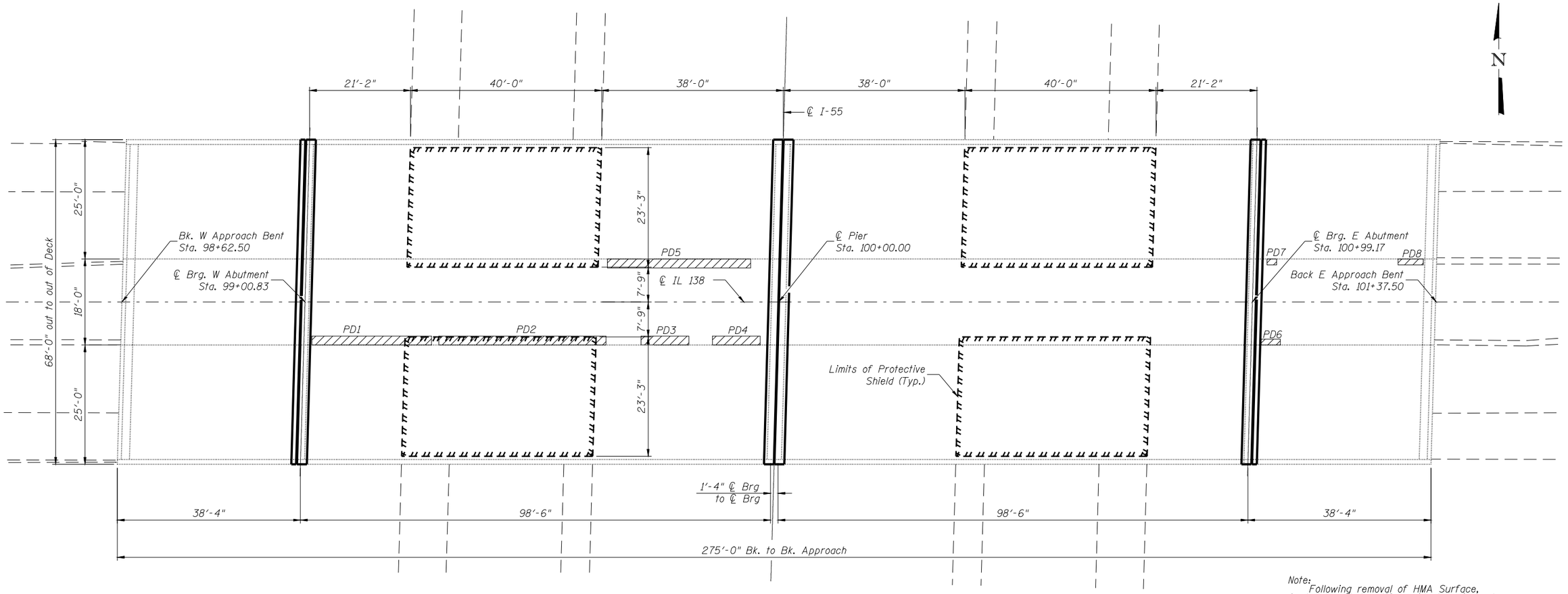
Min. jack capacity = 70 Tons

SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BEARING DETAILS
STRUCTURE NO. 059-0039

SHEET NO. 7	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	MACOUPIN	137	103
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		



Patch No.	Size	Deck Slab Repair (Part Depth)	Deck Slab Repair (FD TY I)	Deck Slab Repair (FD TY II)	
PD1	2.0'x25'	5.6			
PD2	2.0'x35'	7.8			
PD3	2.0'x10'	2.2			
PD4	1.5'x18'	3.0			
PD5	1.5'x30'	5.0			
PD6	1.0'x4'	0.4			
PD7	1.5'x2'	0.3			
PD8	1.0'x5'	0.6			
FD9	EST.		20.0		
PD10	EST.	68.1			
FD10	EST.			20.0	
12					
13					
14					

Patch No.	Size	Deck Slab Repair (Part Depth)	Deck Slab Repair (FD TY I)	Deck Slab Repair (FD TY II)	
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

Patch No.	Size	Deck Slab Repair (Part Depth)	Deck Slab Repair (FD TY I)	Deck Slab Repair (FD TY II)	
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					

Note:
Following removal of HMA Surface, Contractor shall notify resident engineer to inspect & sound existing deck

Quantities are estimated, actual quantities to be determined by the Resident Engineer.

Protective Shield shall be installed as directed by resident engineer to protect traffic below.

PATCHING LEGEND

Partial Depth

Full Depth

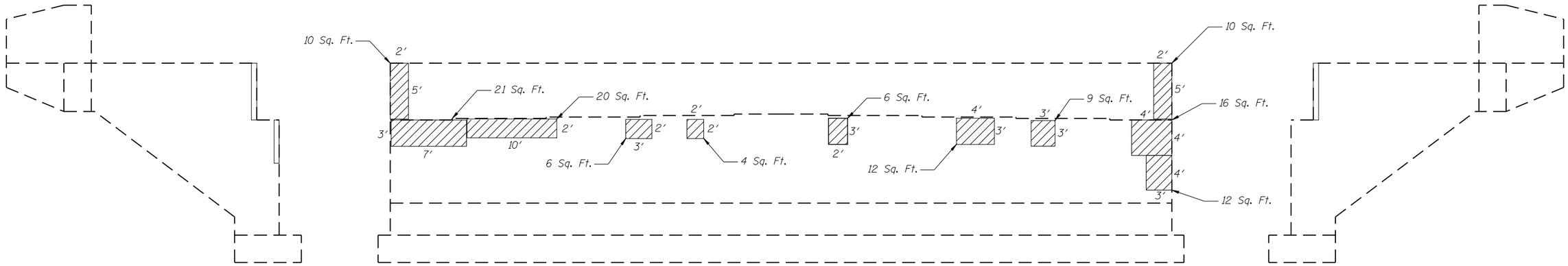
BILL OF MATERIAL

Item	Unit	Total
Deck Slab Repair (Partial)	Sq. Yd.	93
Deck Slab Repair (Full Depth Type I)	Sq. Yd.	20
Deck Slab Repair (Full Depth Type ii)	Sq. Yd.	20
Protective Shield	Sq. Yd.	420

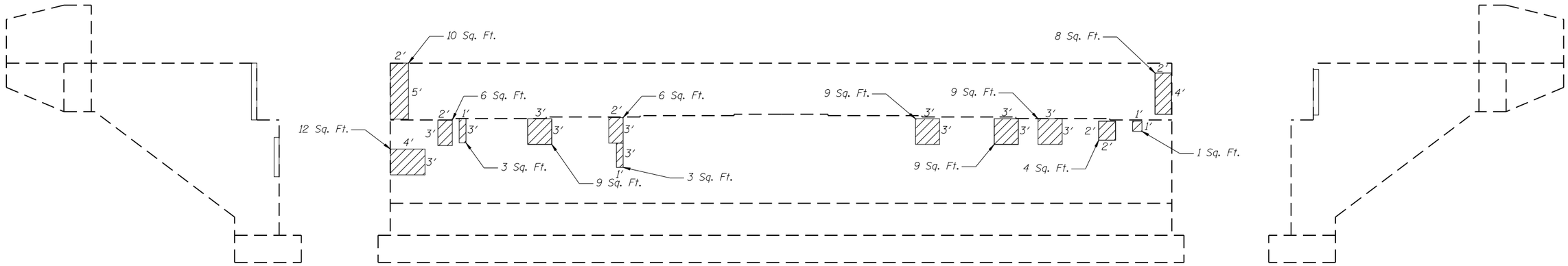
DECK PATCHING PLAN
STRUCTURE NO. 059-0039

SHEET NO. 8	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	Macoupin	137	104
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



EAST ABUTMENT



WEST ABUTMENT

BILL OF MATERIAL

Item	Unit	Total
Structural Repair of Concrete Depth equal to or less than 5 inches	Sq. Ft.	215
Concrete Sealer	Sq. Ft.	5137

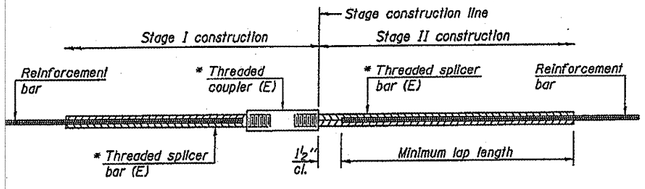
Notes:
Quantities and repair areas shown are estimated, actual quantities to be determined by the Resident Engineer.
Concrete Sealer to be applied to exposed vertical faces and beam seats of the abutments.

Structural Repair of Concrete ≤ 5"

ABUTMENT PATCHING PLAN
STRUCTURE NO. 059-0039

SHEET NO. 9	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	Macoupin	137	105
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

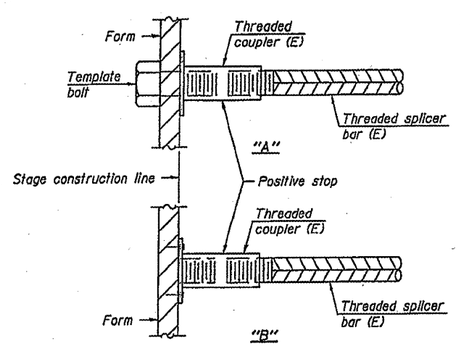
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

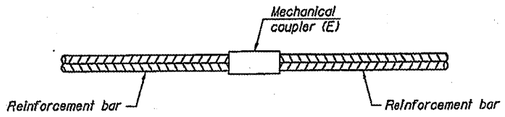
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Table for minimum lap length
W. Approach	#5	4	3
W. Deck	#5	12	3
W. Side of Pier	#5	12	3
E. Side of Pier	#5	12	3
E. Deck	#5	12	3
E. Approach	#5	4	3



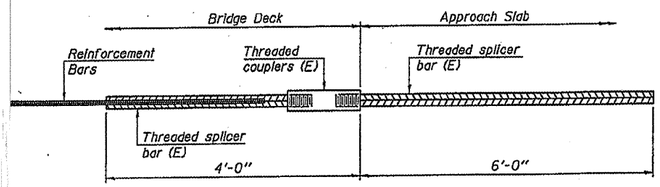
INSTALLATION AND SETTING METHODS

"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.



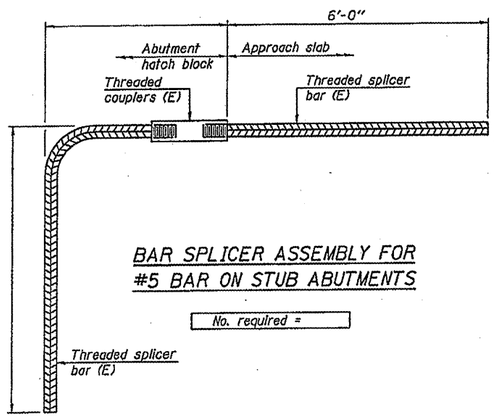
STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

No. required =



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. 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 special provision for Mechanical Splicers.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 059-0039

SHEET NO. 10	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
10 SHEETS	728	(59,68) RS-3, BR	MACOUPIN	137	106
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BSD-1 7-1-10

ark: Chiseled "□" on Southeast parapet wall of SN. 059-0041. Elevation = 643.15

Structure: S.N. 059-0040 (S.B.) and S.N. 059-0041 (N.B.) built in 1973 as F.A.I. Route 55 Section 59-1HB-3 at n 676+80. The superstructure consists of three span continuous steel girders with reinforced concrete deck. The ructure consists of open stub abutments supported on concrete piles and hammerhead piers supported on timber piles. structures measure 132'-3" bk-to-bk of abutments (S.B.), 116'-6" bk-to-bk of abutments (N.B.), and 42' out-to-out of with a 10 degree skew. Existing concrete decks shall be removed and replaced, existing abutments to be converted to integral abutments, abutments and Pier 2 bearings to be replaced. Pier 1 bearings to be retrofitted with stiffeners.

to be maintained under stage construction.

ge

STATION 676+80.00
REBUILT 20__ BY
STATE OF ILLINOIS
I. RT. 55 SEC. (59, 68)RS-3, BR
LOADING HS20-44 & ALT
STR. NO. 059-0040

STATION 676+80.00
REBUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. (59, 68)RS-3, BR
LOADING HS20-44 & ALT
STR. NO. 059-0041

NAME PLATES

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

DING HS 20-44 & ALT.

#/sq. ft. for future wearing surface.

N SPECIFICATIONS (NEW CONST.)

2002 AASHTO

DESIGN STRESSES

FIELD UNITS (NEW CONST.)

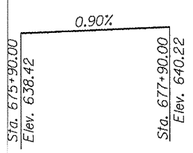
= 3,500 psi
= 60,000 psi (Reinforcement)
= 36,000 psi (Steel)

ELD UNITS (EXIST. CONST.)

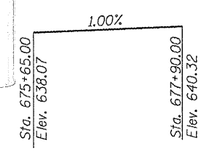
= 1,400 psi (Substructure)
= 20,000 psi (Reinforcement)
= 20,000 psi (Steel)

SEISMIC DATA

ic Performance Category (SPC) = B
Acceleration Coefficient (A) = 0.072g
Site Coefficient (S) = 1.0

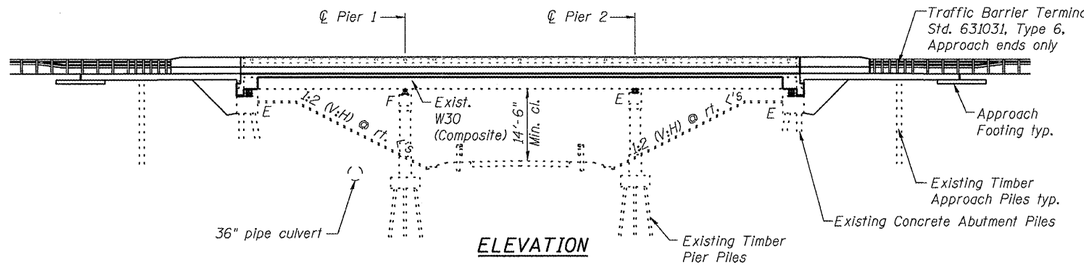


PROFILE GRADE
SN 059-0041 (N.B.)

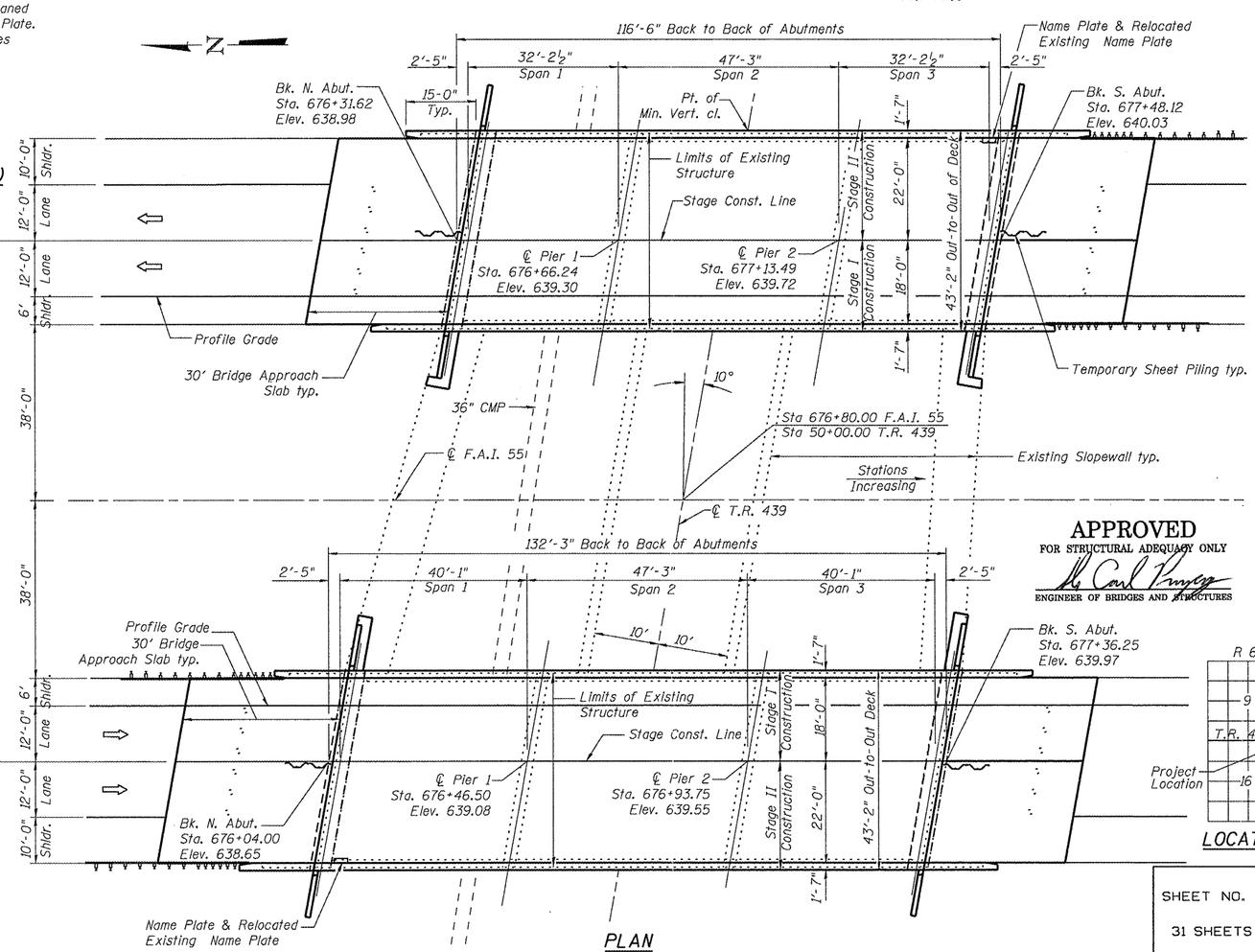


PROFILE GRADE
SN 059-0040 (S.B.)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN

INDEX OF SHEETS

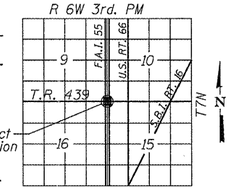
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Porous Granular Embankment (Special)	Cu. Yd.	-	425	425
Removal of Existing Concrete Deck	Each	2	-	2
Concrete Removal	Cu. Yd.	-	79.7	79.7
Structure Excavation	Cu. Yd.	-	470	470
Concrete Structures	Cu. Yd.	-	77.3	77.3
Concrete Superstructure	Cu. Yd.	658.9	-	658.9
Bridge Deck Grooving	Sq. Yd.	1,543	-	1,543
Protective Coat	Sq. Yd.	1,895	-	1,895
Furnishing and Erecting Structural Steel	Pound	-	9,795	9,795
Stud Shear Connectors	Each	5,232	-	5,232
Jack and Remove Existing Bearings	Each	-	36	36
Reinforcement Bars, Epoxy Coated	Pound	154,990	4,520	159,510
Bar Splicers	Each	1,444	-	1,444
Name Plates	Each	2	-	2
Temporary Sheet Piling	Sq. Ft.	-	447.4	447.4
Elastomeric Bearing Assembly Type I	Each	-	36	36
Anchor Bolts, 1"	Each	-	120	120
Geocomposite Wall Drain	Sq. Yd.	-	212	212
Pipe Underdrains for Structures 4"	Foot	-	318	318
Slopewall Removal	Sq. Yd.	-	20	20
Slopewall, 4 inch	Sq. Yd.	-	12	12

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
ENGINEER OF BRIDGES AND STRUCTURES

PETER B. BAYLES
REGISTERED
STRUCTURAL
ENGINEER
ILLINOIS

Peter B. Bayles, P.E., S.E.
Structural Engineer License No. 081-006042
Expiration Date: 11/30/2012



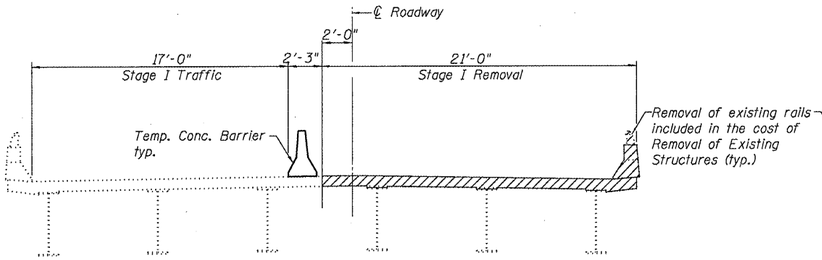
LOCATION SKETCH

GENERAL PLAN AND ELEVATION
F.A.I. RTE. 55 OVER T.R. 439
SECTION (59, 68)RS-3, BR
MACOUPIN COUNTY
STATION 676+80.00
STRUCTURE NO. 059-0040 (S.B.)
STRUCTURE NO. 059-0041 (N.B.)

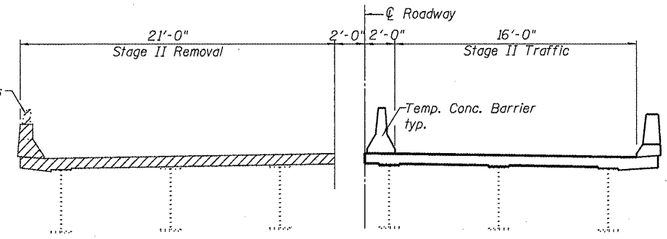
SHEET NO. 1	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	107
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

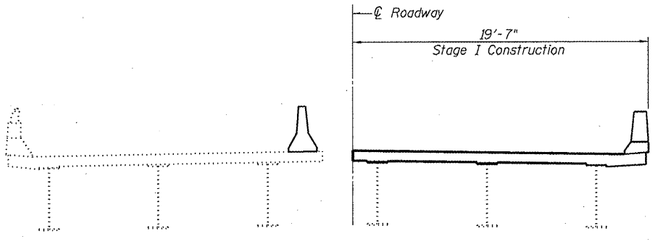
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STAGE I REMOVAL
(Looking South - North Bound)
(Looking North - South Bound)

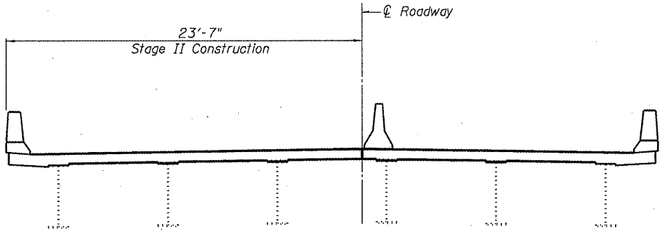


STAGE II REMOVAL
(Looking South - North Bound)
(Looking North - South Bound)

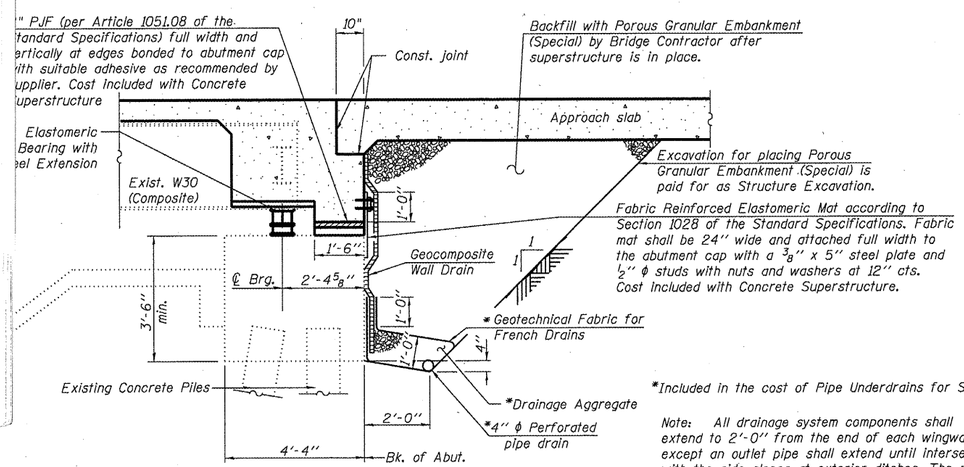


STAGE I CONSTRUCTION
(Looking South - North Bound)
(Looking North - South Bound)

Note:
For quantity of Temporary Concrete Barrier, see roadway plans.
Hatched area indicates Removal of Existing Structures.



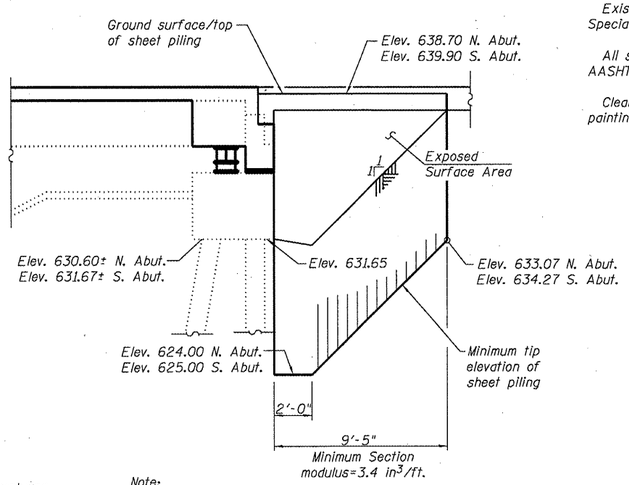
STAGE II CONSTRUCTION
(Looking South - North Bound)
(Looking North - South Bound)



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

*Included in the cost of Pipe Underdrains for Structures.

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 at exterior ditches. The pipes shall drain into concrete headwalls. Median outlet pipes shall be capped & sealed. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).



Note:
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.

TEMPORARY SHEET PILING

GENERAL NOTES

Fasteners shall be AASHTO M164 Type 1, galvanized bolts. Bolts 3/4" diameter, open holes 13/16" diameter, unless otherwise noted.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.

Reinforcement bars designated (E) shall be epoxy coated.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

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 can not be removed by grinding 1/4 in. 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 Contactor 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.

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

Existing structural steel shall only be cleaned and painted as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures".

All structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included in Furnishing and Erecting Structural Steel.

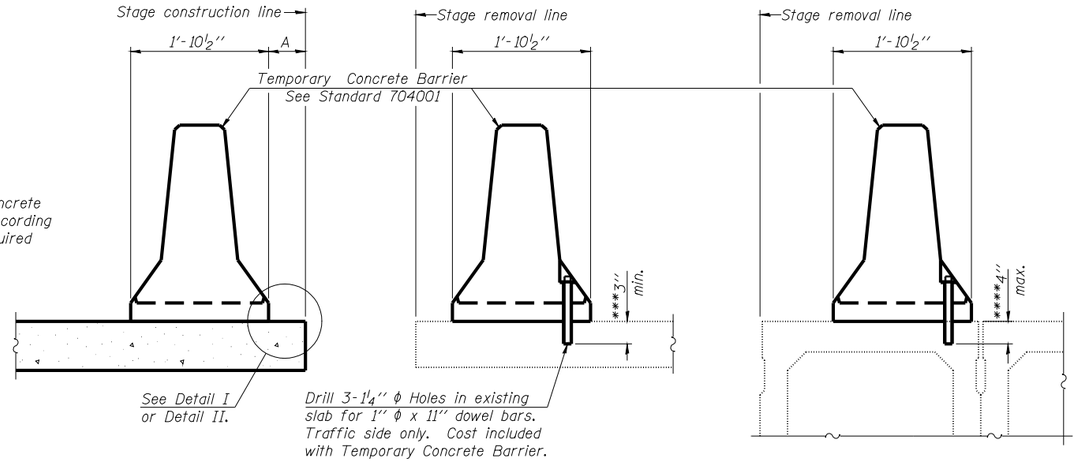
Cleaning and field painting of structural steel shall be done under a separate painting contract

GENERAL DATA
STRUCTURE NO. 059-0040 (S.B.)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 2	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	108
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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".



NEW SLAB **EXISTING SLAB** **EXISTING DECK BEAM**

NOTES

Detail I - With Bar Splicer or Couplers:
Connect one (1) 1'' x 7'' x ''W'' steel PL to the top layer of couplers with 2-⅝'' ϕ bolts screwed to coupler at approximate ℄ of each barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 1'' x 7'' x ''W'' steel PL to the concrete slab or concrete wearing surface with 2-⅝'' ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each barrier panel.

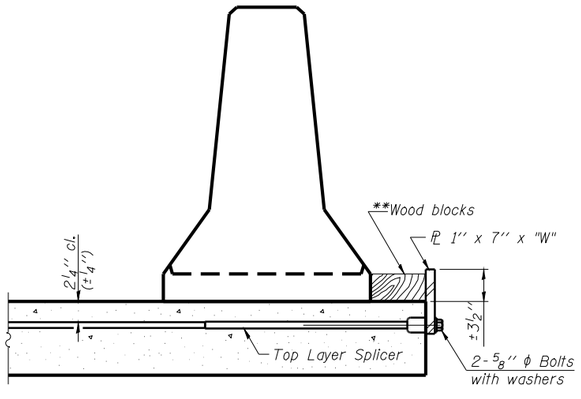
Cost of anchorage is included with Temporary Concrete Barrier.

The 1'' x 7'' 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.

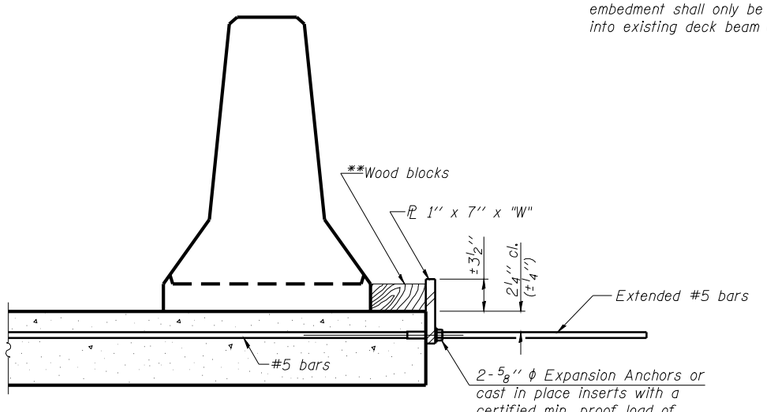
SECTIONS THRU SLAB OR DECK BEAM

*** 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.



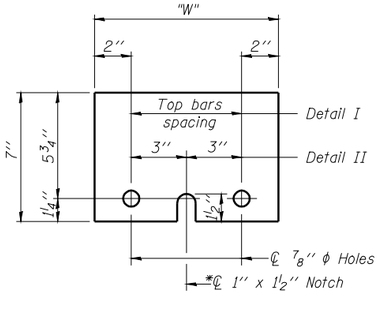
DETAIL I



DETAIL II

** 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''



STEEL RETAINER PL 1'' x 7'' x ''W''

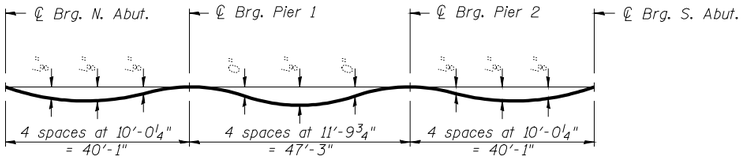
* Required only with Detail II

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 059-0040 (S.B.)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 3	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	109
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

R-27 7-1-10

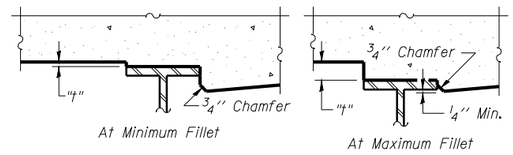
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DEAD LOAD DEFLECTION DIAGRAM

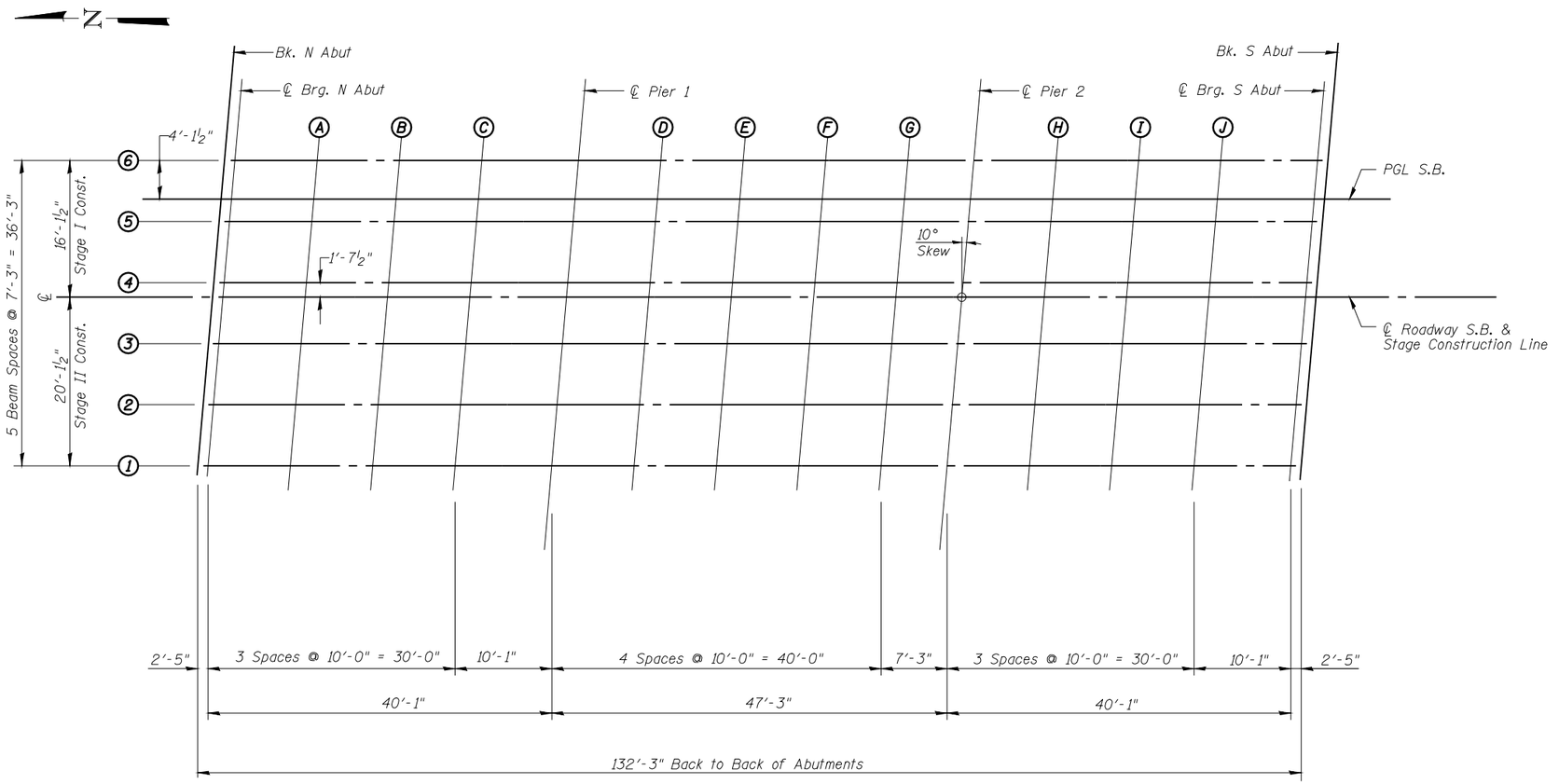
(Includes weight of concrete only.)

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 as shown on Sheets 5 of 31.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets 5 of 31, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

TOP OF SLAB ELEVATIONS (1 OF 2)
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 4	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	110
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+00.45	-20.13	638.25	638.25
CL.Brg.N.Abut.	676+02.87	-20.13	638.27	638.27
A	676+12.87	-20.13	638.37	638.38
B	676+22.87	-20.13	638.47	638.48
C	676+32.87	-20.13	638.57	638.58
CL.Pier1	676+42.95	-20.13	638.67	638.67
D	676+52.95	-20.13	638.77	638.77
E	676+62.95	-20.13	638.87	638.88
F	676+72.95	-20.13	638.97	638.98
G	676+82.95	-20.13	639.07	639.07
CL.Pier2	676+90.20	-20.13	639.15	639.15
H	677+00.20	-20.13	639.25	639.26
I	677+10.20	-20.13	639.35	639.36
J	677+20.20	-20.13	639.45	639.46
CL.Brg.N.Abut.	677+30.28	-20.13	639.55	639.55
Bk.S.Abut.	677+32.70	-20.13	639.57	639.57

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+01.73	-12.88	638.42	638.42
CL.Brg.N.Abut.	676+04.15	-12.88	638.44	638.44
A	676+14.15	-12.88	638.54	638.55
B	676+24.15	-12.88	638.64	638.65
C	676+34.15	-12.88	638.74	638.75
CL.Pier1	676+44.23	-12.88	638.84	638.84
D	676+54.23	-12.88	638.94	638.94
E	676+64.23	-12.88	639.04	639.05
F	676+74.23	-12.88	639.14	639.15
G	676+84.23	-12.88	639.24	639.24
CL.Pier2	676+91.48	-12.88	639.32	639.32
H	677+01.48	-12.88	639.42	639.43
I	677+11.48	-12.88	639.52	639.53
J	677+21.48	-12.88	639.62	639.63
CL.Brg.N.Abut.	677+31.56	-12.88	639.72	639.72
Bk.S.Abut.	677+33.98	-12.88	639.74	639.74

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+03.01	-5.63	638.55	638.55
CL.Brg.N.Abut.	676+05.43	-5.63	638.57	638.57
A	676+15.43	-5.63	638.67	638.68
B	676+25.43	-5.63	638.77	638.78
C	676+35.43	-5.63	638.87	638.88
CL.Pier1	676+45.51	-5.63	638.97	638.97
D	676+55.51	-5.63	639.07	639.07
E	676+65.51	-5.63	639.17	639.18
F	676+75.51	-5.63	639.27	639.28
G	676+85.51	-5.63	639.37	639.37
CL.Pier2	676+92.76	-5.63	639.45	639.45
H	677+02.76	-5.63	639.55	639.56
I	677+12.76	-5.63	639.65	639.66
J	677+22.76	-5.63	639.75	639.76
CL.Brg.N.Abut.	677+32.84	-5.63	639.85	639.85
Bk.S.Abut.	677+35.26	-5.63	639.87	639.87

S.B. ℄ ROADWAY, CROWN, & STAGE CONST. LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+04.00	-	638.65	638.65
CL.Brg.N.Abut.	676+06.42	-	638.67	638.67
A	676+16.42	-	638.77	638.78
B	676+26.42	-	638.87	638.88
C	676+36.42	-	638.97	638.98
CL.Pier1	676+46.50	-	639.07	639.07
D	676+56.50	-	639.17	639.17
E	676+66.50	-	639.27	639.28
F	676+76.50	-	639.37	639.38
G	676+86.50	-	639.47	639.47
CL.Pier2	676+93.75	-	639.55	639.55
H	677+03.75	-	639.65	639.66
I	677+13.75	-	639.75	639.76
J	677+23.75	-	639.85	639.86
CL.Brg.N.Abut.	677+33.83	-	639.95	639.95
Bk.S.Abut.	677+36.25	-	639.97	639.97

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+04.29	1.63	638.62	638.62
CL.Brg.N.Abut.	676+06.71	1.63	638.64	638.64
A	676+16.71	1.63	638.74	638.75
B	676+26.71	1.63	638.84	638.85
C	676+36.71	1.63	638.94	638.95
CL.Pier1	676+46.79	1.63	639.04	639.04
D	676+56.79	1.63	639.14	639.14
E	676+66.79	1.63	639.24	639.25
F	676+76.79	1.63	639.34	639.35
G	676+86.79	1.63	639.44	639.44
CL.Pier2	676+94.04	1.63	639.52	639.52
H	677+04.04	1.63	639.62	639.63
I	677+14.04	1.63	639.72	639.73
J	677+24.04	1.63	639.82	639.83
CL.Brg.N.Abut.	677+34.12	1.63	639.92	639.92
Bk.S.Abut.	677+36.54	1.63	639.94	639.94

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+05.56	8.88	638.53	638.53
CL.Brg.N.Abut.	676+07.98	8.88	638.55	638.55
A	676+17.98	8.88	638.65	638.66
B	676+27.98	8.88	638.75	638.76
C	676+37.98	8.88	638.85	638.86
CL.Pier1	676+48.06	8.88	638.95	638.95
D	676+58.06	8.88	639.05	639.05
E	676+68.06	8.88	639.15	639.16
F	676+78.06	8.88	639.25	639.26
G	676+88.06	8.88	639.35	639.35
CL.Pier2	676+95.31	8.88	639.43	639.43
H	677+05.31	8.88	639.53	639.54
I	677+15.31	8.88	639.63	639.64
J	677+25.31	8.88	639.73	639.74
CL.Brg.N.Abut.	677+35.39	8.88	639.83	639.83
Bk.S.Abut.	677+37.81	8.88	639.85	639.85

S.B. PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+06.12	12.00	638.48	638.48
CL.Brg.N.Abut.	676+08.54	12.00	638.50	638.50
A	676+18.54	12.00	638.60	638.61
B	676+28.54	12.00	638.70	638.71
C	676+38.54	12.00	638.80	638.81
CL.Pier1	676+48.62	12.00	638.90	638.90
D	676+58.62	12.00	639.00	639.00
E	676+68.62	12.00	639.10	639.11
F	676+78.62	12.00	639.20	639.21
G	676+88.62	12.00	639.30	639.30
CL.Pier2	676+95.87	12.00	639.38	639.38
H	677+05.87	12.00	639.48	639.49
I	677+15.87	12.00	639.58	639.59
J	677+25.87	12.00	639.68	639.69
CL.Brg.N.Abut.	677+35.95	12.00	639.78	639.78
Bk.S.Abut.	677+38.37	12.00	639.80	639.80

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+06.84	16.13	638.41	638.41
CL.Brg.N.Abut.	676+09.26	16.13	638.43	638.43
A	676+19.26	16.13	638.53	638.54
B	676+29.26	16.13	638.63	638.64
C	676+39.26	16.13	638.73	638.74
CL.Pier1	676+49.34	16.13	638.83	638.83
D	676+59.34	16.13	638.93	638.93
E	676+69.34	16.13	639.03	639.04
F	676+79.34	16.13	639.13	639.14
G	676+89.34	16.13	639.23	639.23
CL.Pier2	676+96.59	16.13	639.31	639.31
H	677+06.59	16.13	639.41	639.42
I	677+16.59	16.13	639.51	639.52
J	677+26.59	16.13	639.61	639.62
CL.Brg.N.Abut.	677+36.67	16.13	639.71	639.71
Bk.S.Abut.	677+39.09	16.13	639.73	639.73

TOP OF SLAB ELEVATIONS (2 OF 2)
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 5
31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59, 68)RS-3, BR	Macoupin	137	111
		CONTRACT NO. 72921		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+70.94	-22.00	637.92
A	675+80.94	-22.00	638.02
B	675+90.94	-22.00	638.12
S. End N. Appr. Pav't	676+00.94	-22.00	638.22
N. End S. Appr. Pav't	677+31.55	-22.00	639.52
C	677+41.55	-22.00	639.62
D	677+51.55	-22.00	639.72
S. End S. Appr. Pav't	677+61.55	-22.00	639.82

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+72.70	-12.00	638.15
A	675+82.70	-12.00	638.25
B	675+92.70	-12.00	638.35
S. End N. Appr. Pav't	676+02.70	-12.00	638.45
N. End S. Appr. Pav't	677+33.31	-12.00	639.75
C	677+43.31	-12.00	639.85
D	677+53.31	-12.00	639.95
S. End S. Appr. Pav't	677+63.31	-12.00	640.05

℄ ROADWAY (S.B.)

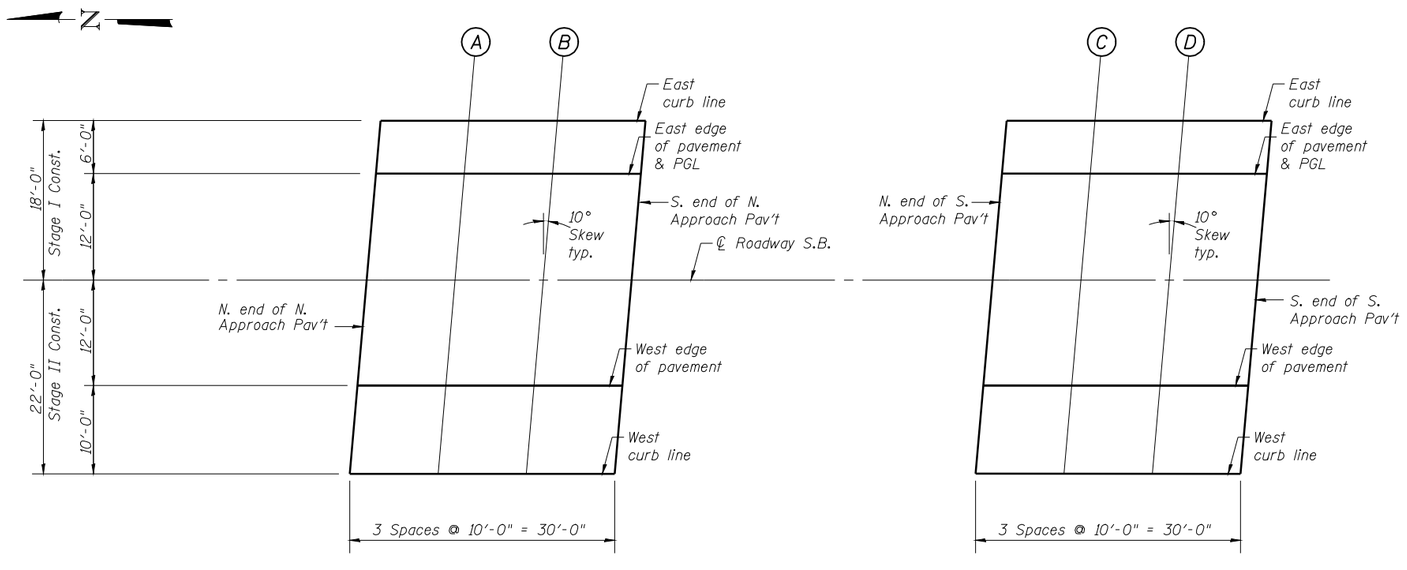
Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+74.82	-	638.36
A	675+84.82	-	638.46
B	675+94.82	-	638.56
S. End N. Appr. Pav't	676+04.82	-	638.66
N. End S. Appr. Pav't	677+35.43	-	639.96
C	677+45.43	-	640.06
D	677+55.43	-	640.16
S. End S. Appr. Pav't	677+65.43	-	640.26

EAST EDGE OF PAVEMENT & PGL

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+76.94	12.00	638.19
A	675+86.94	12.00	638.29
B	675+96.94	12.0	638.39
S. End N. Appr. Pav't	676+06.94	12.00	638.49
N. End S. Appr. Pav't	677+3755	12.00	639.79
C	677+47.55	12.00	639.89
D	677+57.55	12.00	640.99
S. End S. Appr. Pav't	677+67.55	12.00	640.09

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+77.99	18.00	638.08
A	675+87.99	18.00	638.18
B	675+97.99	18.00	638.28
S. End N. Appr. Pav't	676+07.99	18.00	638.38
N. End S. Appr. Pav't	677+38.60	18.00	639.68
C	677+48.60	18.00	639.78
D	677+58.60	18.00	639.88
S. End S. Appr. Pav't	677+68.60	18.00	639.98



PLAN

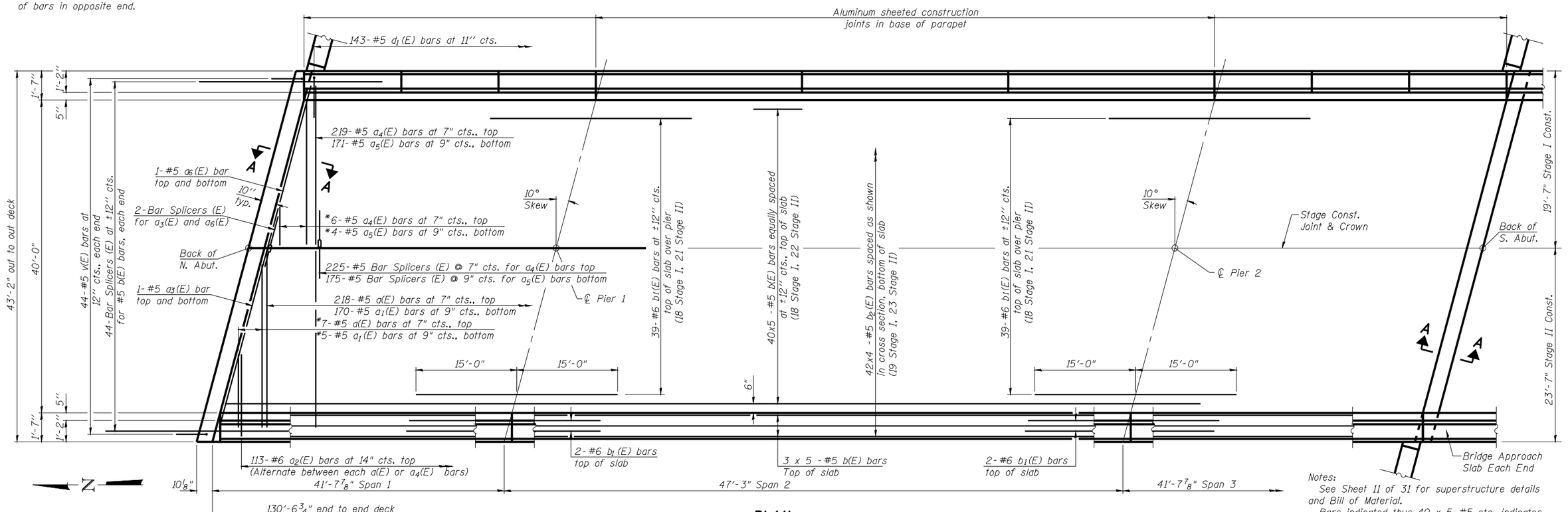
TOP OF APPROACH SLAB ELEVATIONS STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 6	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	112
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

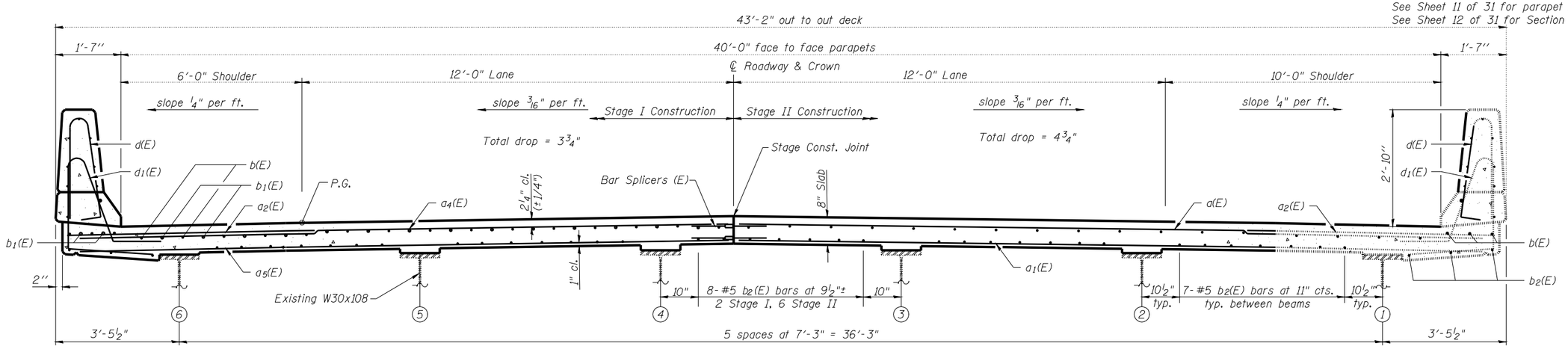
BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Order $a(E)$, $a_1(E)$, $a_4(E)$ and $a_5(E)$ bars full length. Cut to fit skew and use remainder of bars in opposite end.



PLAN



NEAR PIER **NEAR MIDSPAN**

CROSS SECTION
(Looking South)

Notes:
See Sheet 11 of 31 for superstructure details and Bill of Material.
Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.
See Sheet 11 of 31 for parapet reinforcement.
See Sheet 12 of 31 for Section A-A.

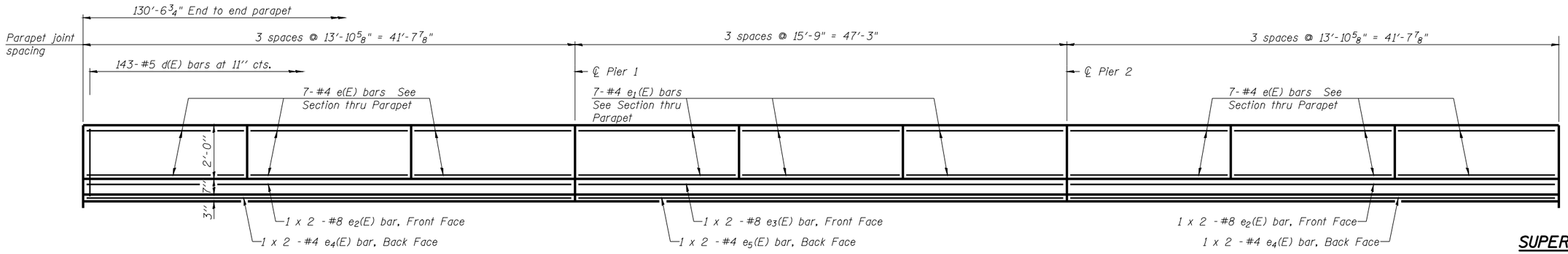
MIN. BAR LAP
#5 bar = 2'-7" (Deck)

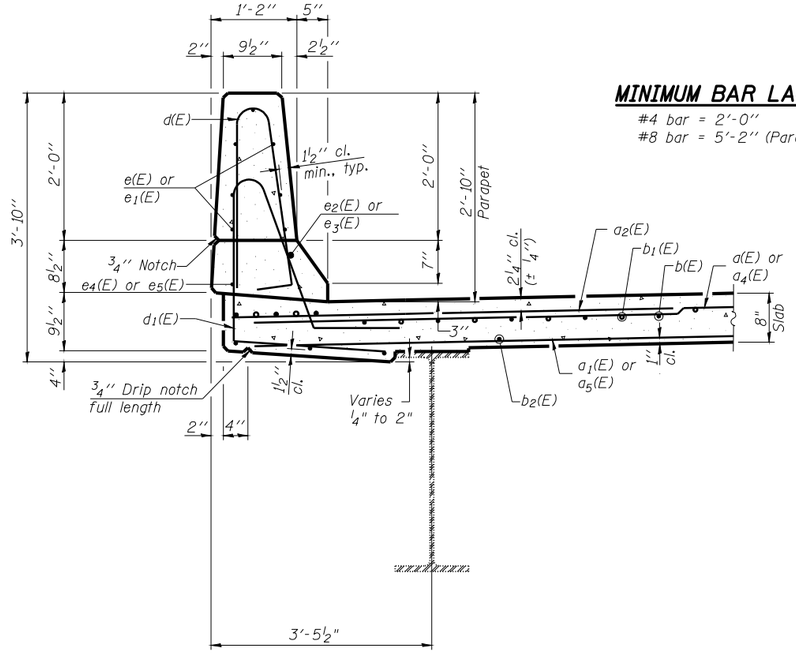
SUPERSTRUCTURE
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	113
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



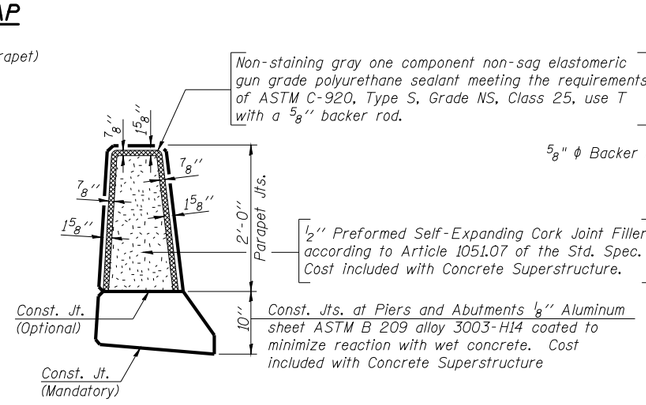


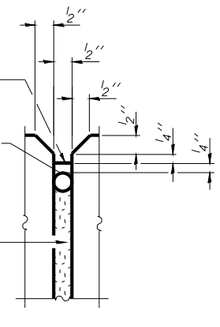
SECTION THRU PARAPET

MINIMUM BAR LAP

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

INSIDE ELEVATION OF PARAPET



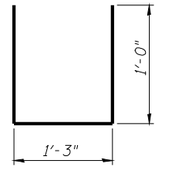


PARAPET JOINT DETAILS

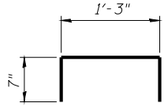
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	225	#5	22'-11"	
a1(E)	175	#5	22'-9"	
a2(E)	226	#6	6'-6"	
a3(E)	4	#5	23'-7"	
a4(E)	225	#5	18'-11"	
a5(E)	175	#5	18'-9"	
a6(E)	4	#5	19'-6"	
b(E)	230	#5	28'-2"	
b1(E)	86	#6	30'-0"	
b2(E)	168	#5	34'-7"	
d(E)	286	#5	5'-7"	
d1(E)	286	#5	8'-3"	
e(E)	84	#4	13'-7"	
e1(E)	42	#4	15'-5"	
e2(E)	8	#8	23'-3"	
e3(E)	4	#8	26'-1"	
e4(E)	8	#4	21'-8"	
e5(E)	4	#4	24'-6"	
m(E)	20	#6	23'-6"	
m1(E)	12	#6	10'-1"	
m2(E)	20	#6	7'-0"	
m3(E)	8	#6	3'-0"	
m4(E)	20	#6	19'-5"	
m5(E)	12	#6	8'-9"	
s(E)	92	#5	6'-9"	
s1(E)	82	#4	8'-7"	
u(E)	88	#5	3'-3"	
v(E)	88	#5	3'-4"	
Reinforcement Bars, Epoxy Coated		Pound	46,350	
Concrete Superstructure		Cu. Yds.	207.4	
Bar Splicers		Each	520	

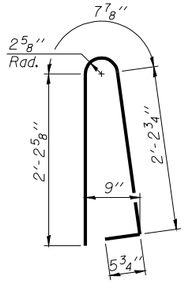
Bars indicated thus 1 x 2 -#8 etc. indicates 1 line of bars with 2 lengths per line.



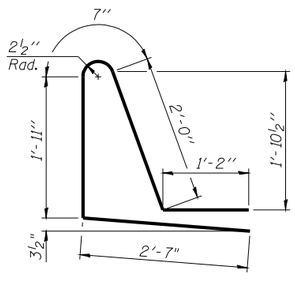
BAR u(E)



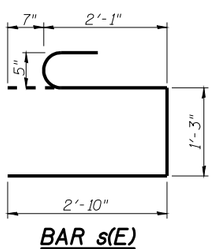
BAR u1(E)



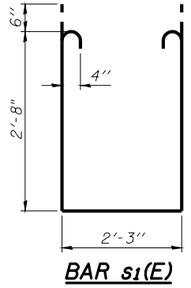
BAR d(E)



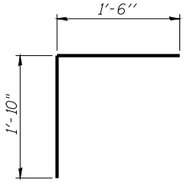
BAR d1(E)



BAR s(E)



BAR s1(E)

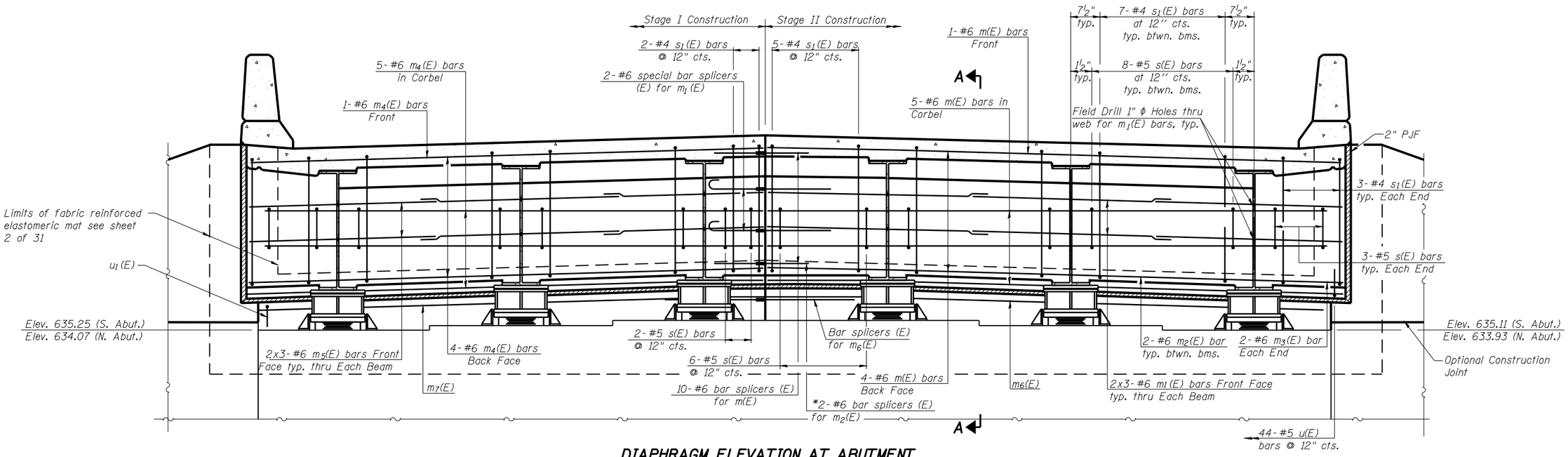


BAR v(E)

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 11	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	114
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DIAPHRAGM ELEVATION AT ABUTMENT

(Looking South at South Abutment)
(North Abutment Similar)

* Cut to fit at Stage line.

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 11 of 31.

Concrete in diaphragm is included with Concrete Superstructure on sheet 11 of 31.

Concrete in backwall is included with Concrete Stuctures on sheet 11 of 31.

For details of bars s(E), s_1(E), v(E), u(E) & u_1(E) see sheet 11 of 31.

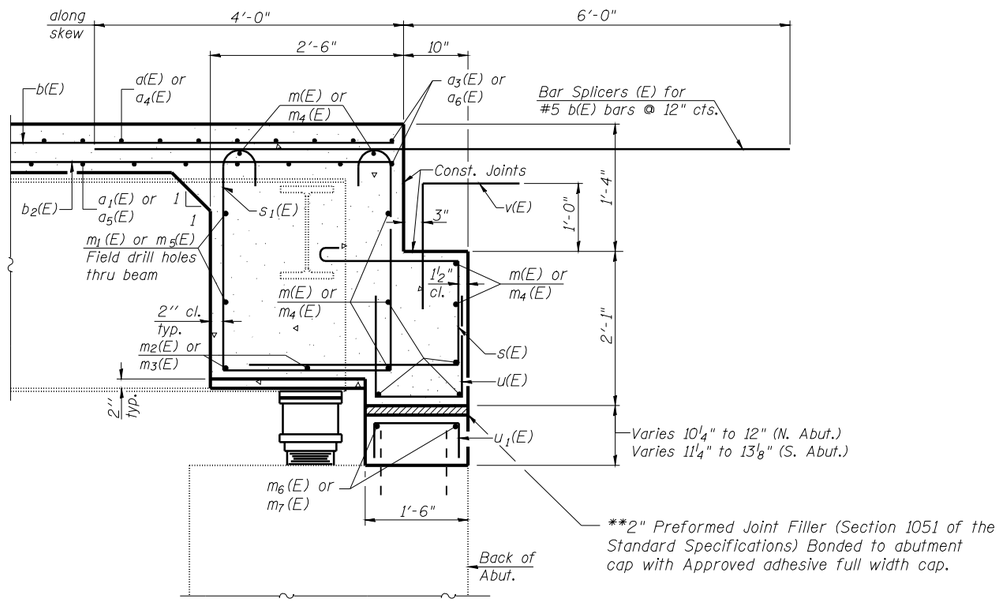
For layout of u_1(E), m_6(E) & m_7(E) bars see sheet 28 of 31.

The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The cost of field drilling holes in webs for m_1(E) & m_5(E) is included in the cost of Reinforcement Bars (Epoxy Coated).

MIN. BAR LAP

#6 bar = 3′-4″ (Diaphragm)



**Cost included with Concrete Superstructure.

SECTION A-A

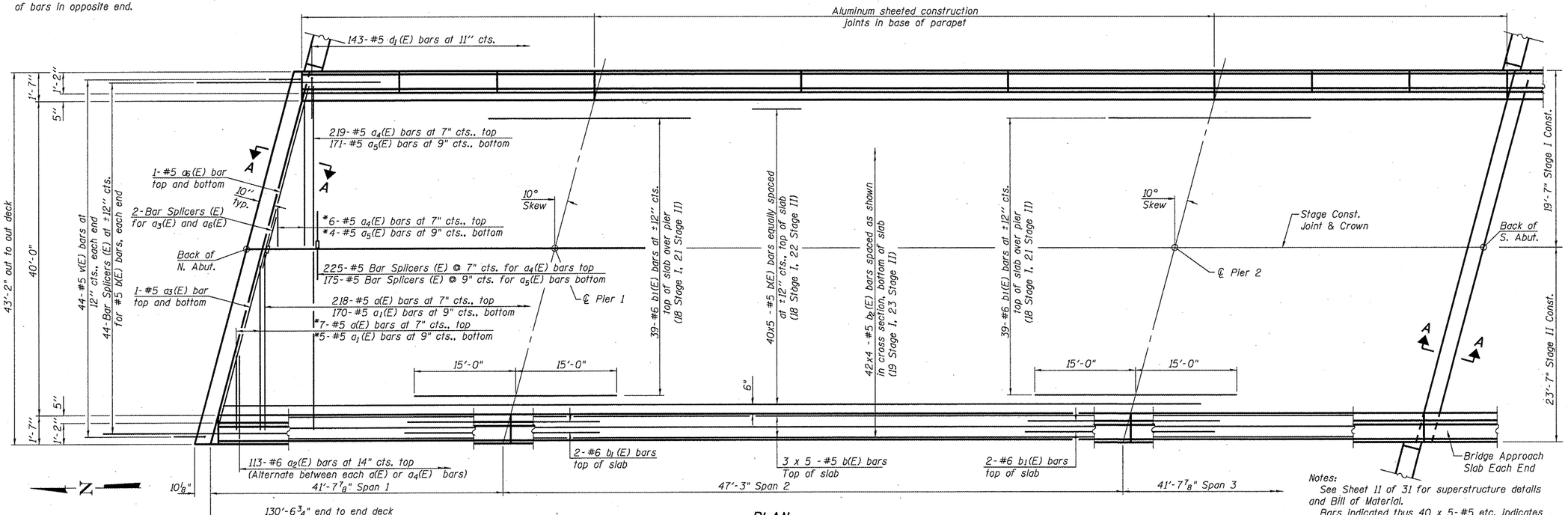
Dimensions at right angles to abutment, except as shown.

SEMI-INTEGRAL DIAPHRAGM DETAILS STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 12	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	115
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

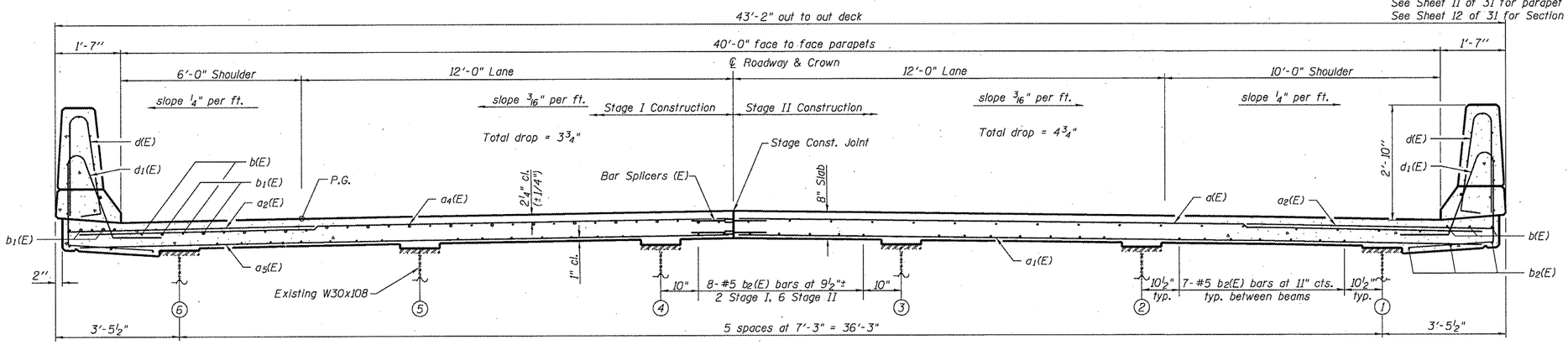
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Order d(E), a_1(E), a_4(E) and a_5(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.



PLAN

Notes:
See Sheet 11 of 31 for superstructure details and Bill of Material.
Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.
See Sheet 11 of 31 for parapet reinforcement.
See Sheet 12 of 31 for Section A-A.



NEAR PIER

NEAR MIDSPAN

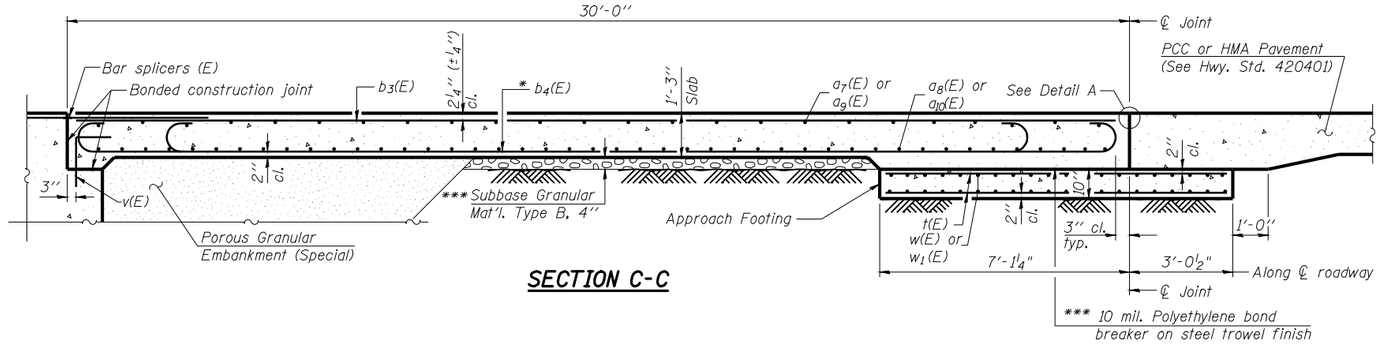
CROSS SECTION
(Looking South)

MIN. BAR LAP
#5 bar = 2'-7" (Deck)

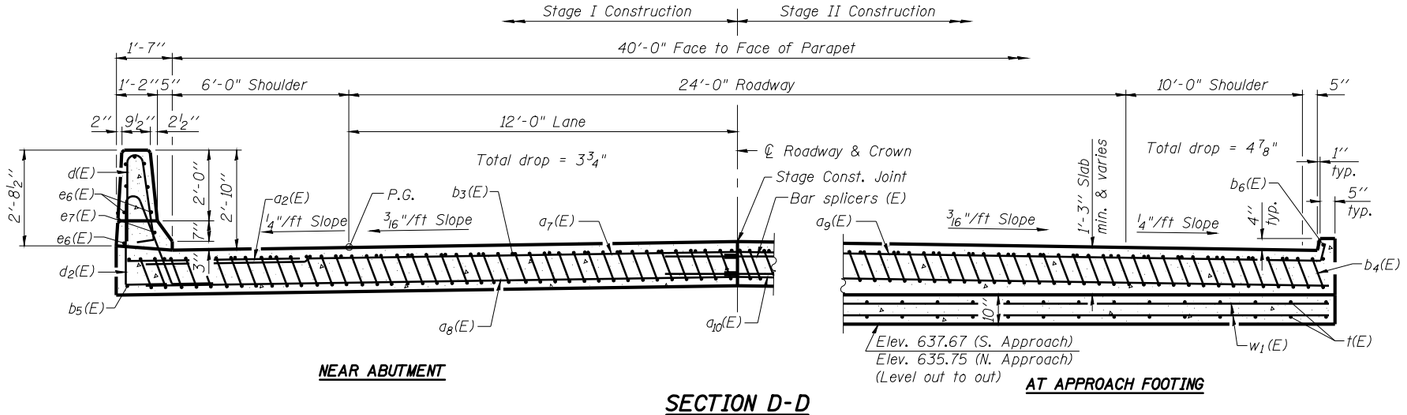
SUPERSTRUCTURE
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 10	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	116
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



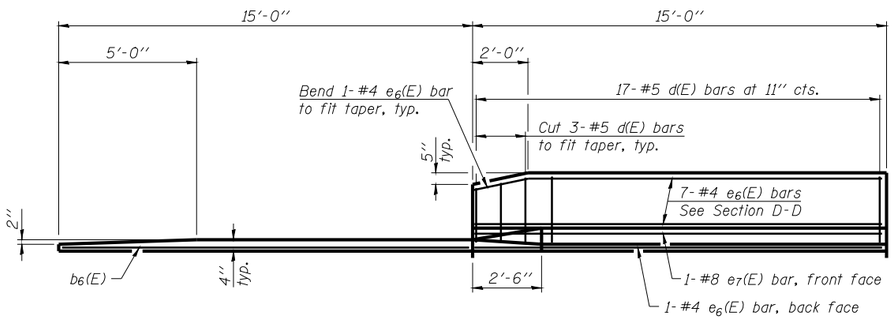
SECTION C-C



NEAR ABUTMENT **AT APPROACH FOOTING**

SECTION D-D

(Looking South)
(See Plan for dimensions not shown)

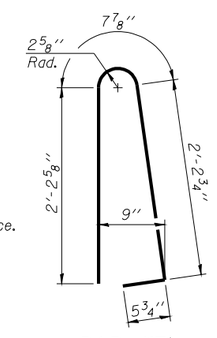


VIEW E-E

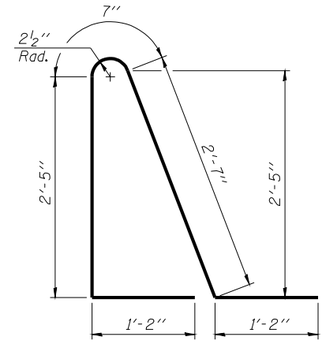
Notes:
See sheet 13 of 31 for Detail A and View B-B.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 11 of 31.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 30 of 31.
Cost of excavation for approach footing included with Concrete Structures.
For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 31.
For additional parapet details, see sheet 11 of 31.

* Tilt #9 $b_4(E)$ bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.



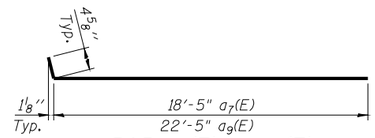
BAR d(E)



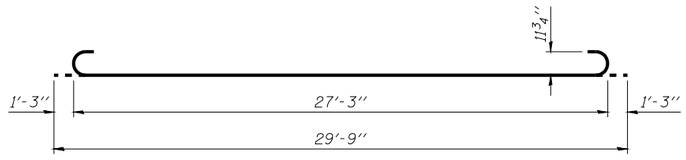
BAR $d_2(E)$

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
$a_2(E)$	48	#6	6'-6"	
$a_7(E)$	50	#4	18'-10"	
$a_8(E)$	92	#5	18'-6"	
$a_9(E)$	50	#4	22'-10"	
$a_{10}(E)$	92	#5	22'-6"	
$b_3(E)$	70	#4	29'-8"	
$b_4(E)$	200	#9	29'-9"	
$b_5(E)$	4	#4	14'-8"	
$b_6(E)$	4	#4	14'-5"	
d(E)	68	#5	5'-7"	
$d_2(E)$	68	#5	7'-11"	
$e_6(E)$	32	#4	14'-8"	
$e_7(E)$	4	#8	14'-8"	
t(E)	172	#4	9'-10"	
w(E)	80	#5	18'-9"	
$w_1(E)$	80	#5	22'-10"	
Concrete Superstructure			Cu. Yd.	132.6
Concrete Structures			Cu. Yd.	26.2
Reinforcement Bars, Epoxy Coated			Pound	33,520
Bar Splicers			Each	222



BAR $a_7(E)$ or $a_9(E)$

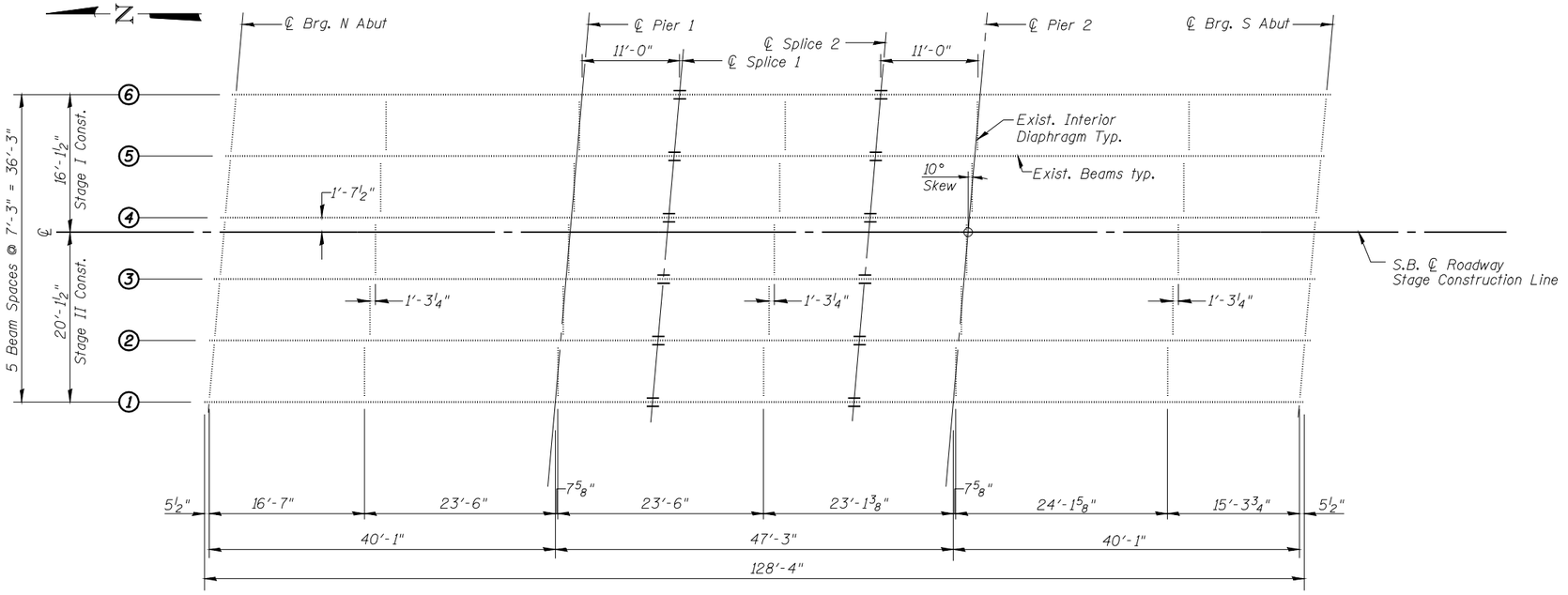


BAR $b_4(E)$

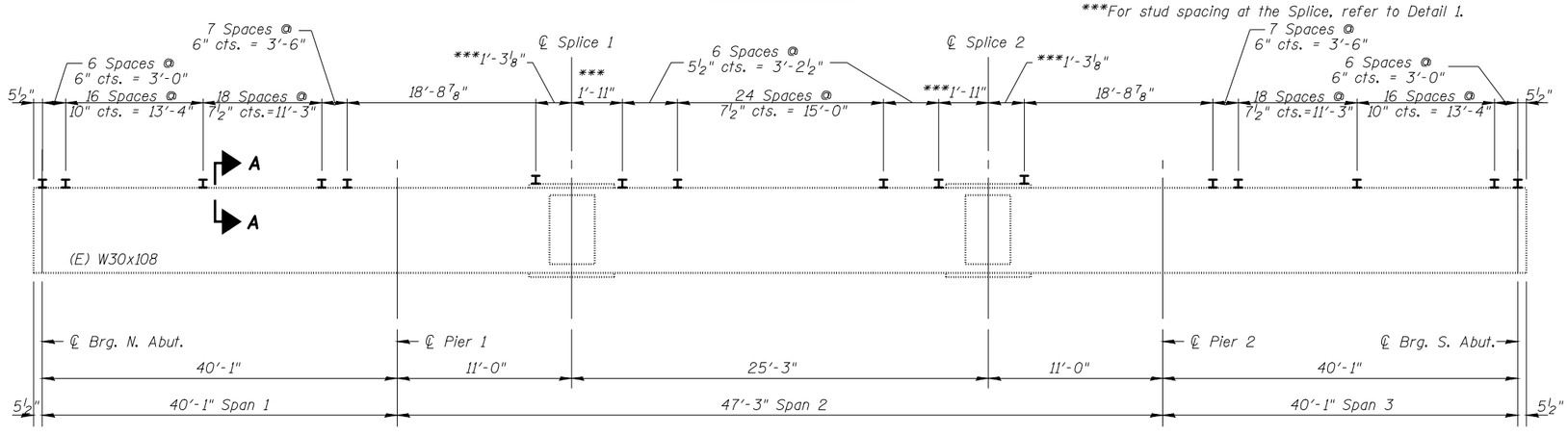
BRIDGE APPROACH SLAB DETAILS (2 of 2)
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 14	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	117
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

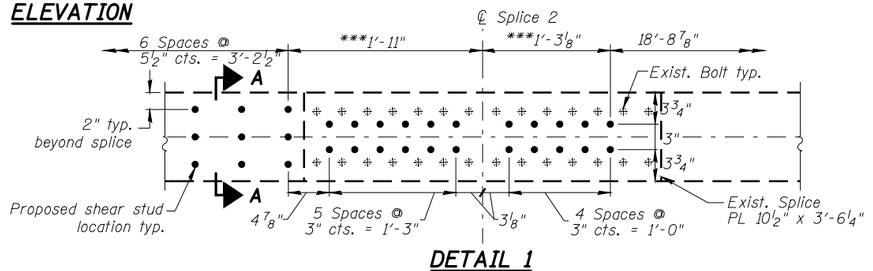
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



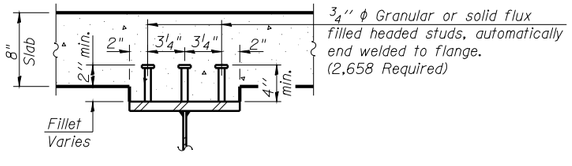
FRAMING PLAN



ELEVATION



DETAIL 1



¾" ϕ Granular or solid flux filled headed studs, automatically end welded to flange. (2.658 Required)

SECTION A-A

INTERIOR GIRDER MOMENT TABLE					
			0.4 Sp. 1 0.6 Sp. 3	Pier 1 Pier 2	0.5 Sp. 2
I_s	(in^4)		4,470	4,470	4,470
$I_c(n)$	(in^4)		12,914	-	12,914
$I_c(3n)$	(in^4)		9,686	-	9,686
S_s	(in^3)		299	299	299
$S_c(n)$	(in^3)		456	-	456
$S_c(3n)$	(in^3)		414	-	414
$\wp$	(k/′)		0.875	1.158	0.875
$M\wp$	(′k)		105	212	80
$s\wp$	(k/′)		0.283	-	0.283
$M_s\wp$	(′k)		38	-	37
M_L	(′k)		256	138	260
M_I	(′k)		77	41	75
$\frac{5}{3}[M_L + I]$	(′k)		555	299	559
M_a	(′k)		907	664	899
* M_u	(′k)		1,292	-	1,309
f_s $\wp$ non-comp	(ksi)		4.3	8.6	3.3
f_s $\wp$ (comp)	(ksi)		1.1	-	1.1
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)		14.6	12.0	14.8
f_s (Overload)	(ksi)		20.1	20.6	19.2
** f_s (Total)	(ksi)		-	26.5	-
VR	(k)		48.3	-	39.6

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
$R\wp$	(k)	18.2	56.5
R_L	(k)	34.9	42.4
R_I	(k)	10.5	10.0
R_{Total}	(k)	63.6	108.9

* Compact section
** Braced non-compact and partially braced section

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 $in.^3$).

$\wp$: Un-factored non-composite dead load (kips/ft.).

$M\wp$: Un-factored moment due to non-composite dead load (kip-ft.).

$s\wp$: Un-factored long-term composite (superimposed) dead load (kips/ft.)

$M_s\wp$: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

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

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

M_a: Factored design moment (kip-ft.).
$1.3\ [\ M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)]$

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).
$M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)$

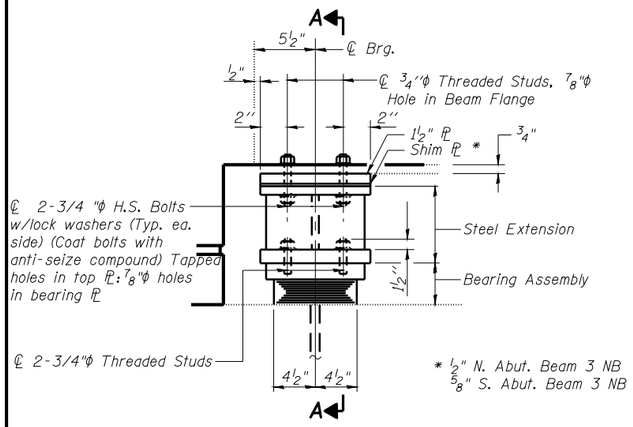
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M\wp + M_s\wp + \frac{5}{3}\ (M_L + M_I)]$

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

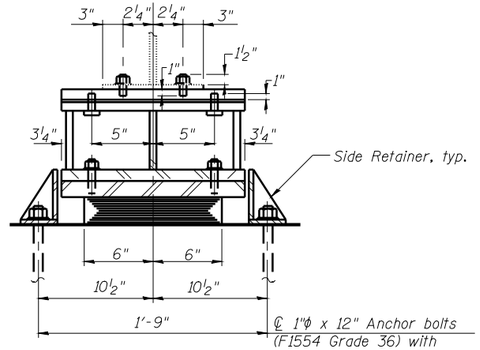
FRAMING PLAN AND BEAM DETAILS
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 20 31 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	(59, 68)RS-3, BR	Macoupin	137	118
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

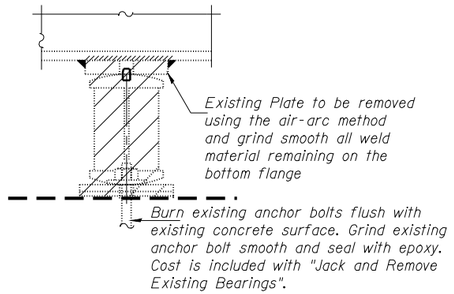
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



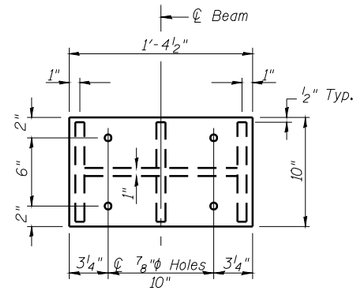
ELEVATION AT ABUT.



SECTION A-A

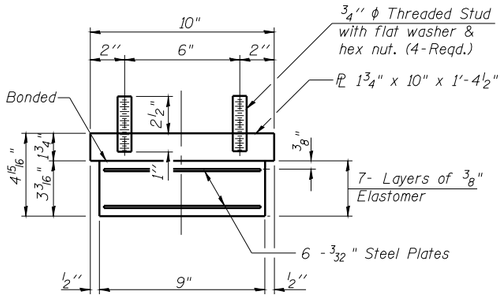


EXISTING BEARING REMOVAL DETAIL



PLAN STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

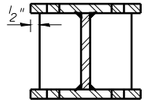
Steel Extensions, Shims and Bolts shall be included in the cost of Furnishing and Erecting Structural Steel.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

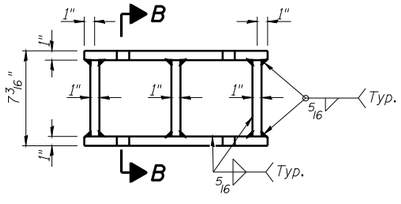
Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4"φ in 13/16"φ holes, unless otherwise noted.

Painting of steel shall be according to Article 506.05 of the Standard Specifications.

Prior to ordering any material for shims or extensions, the contractor shall verify in the field all bearing height and shim thickness dimensions.



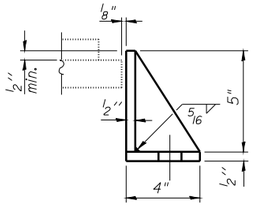
SECTION B-B

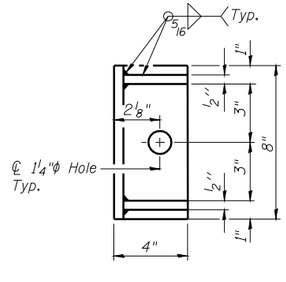


ELEVATION STEEL EXTENSION

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	24
Anchor Bolts, 1"	Each	48
Jack & Remove Exist. Bearings	Each	24
Furnishing & Erecting Structural Steel	Pound	5,784





SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BEAM REACTIONS

(for SN 059-0040)

RD	(k)	45.3
RL	(k)	35.4
Imp.	(k)	11.6
R (Total)	(k)	92.3

Min. jack capacity = 4 Tons **

BEAM REACTIONS

(for SN 059-0041)

RD	(k)	40.2
RL	(k)	33.5
Imp.	(k)	11.1
R (Total)	(k)	84.8

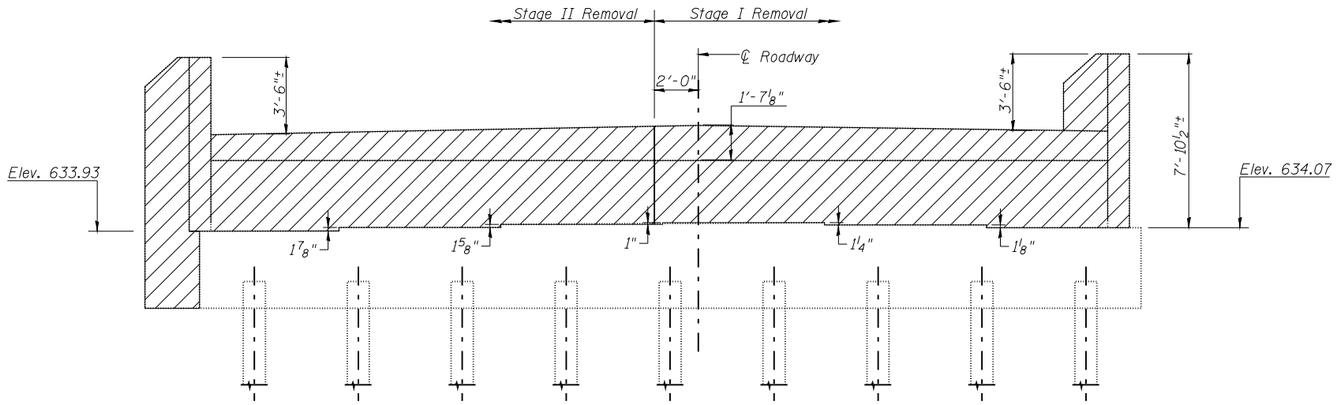
Min. jack capacity = 4 Tons **

**Capacity with concrete deck removed.
50 tons with existing deck not removed.

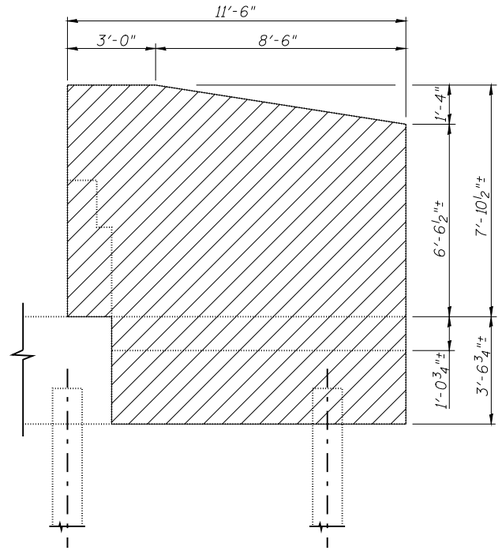
ABUTMENT BEARING DETAILS
STRUCTURE NO. 059-0040 (S.B.)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 22	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	119
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

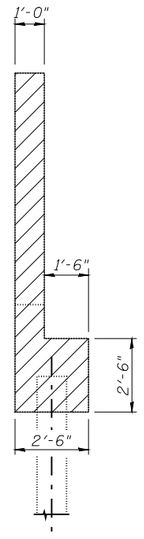
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



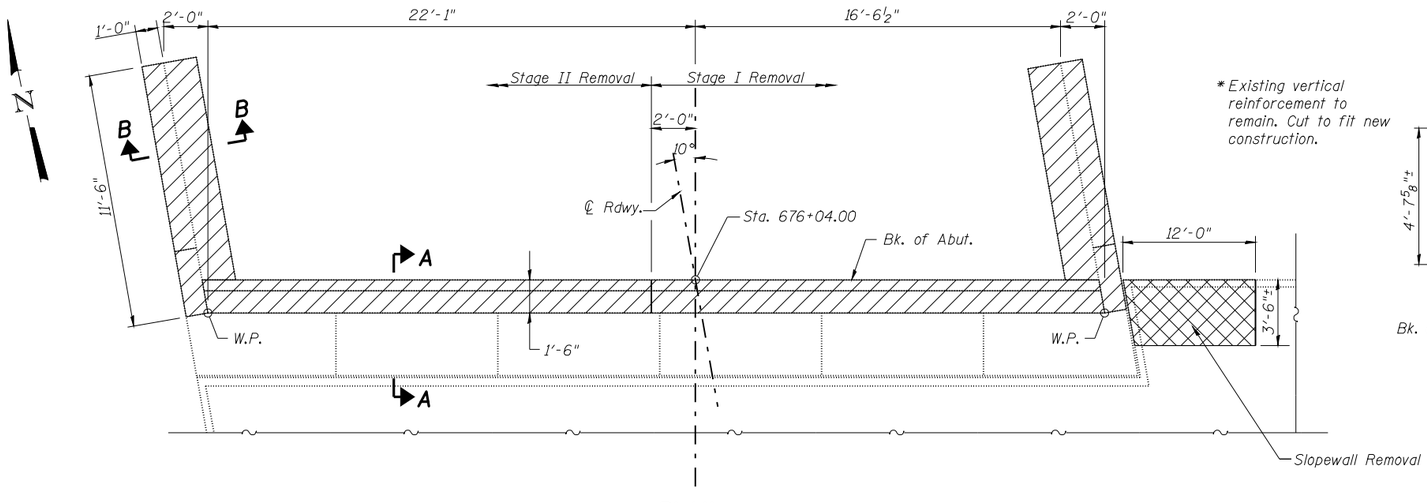
ELEVATION
North Abut. (Looking North)



OUTSIDE ELEVATION OF WINGWALL

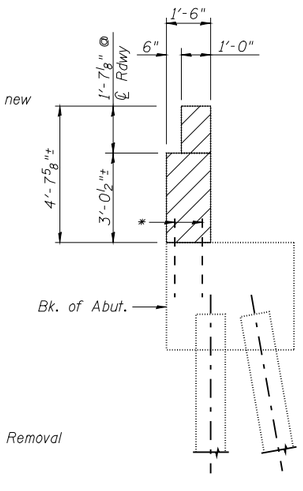


SECTION B-B



PLAN
North Abut.

* Existing vertical reinforcement to remain. Cut to fit new construction.



SECTION A-A

Note:
Existing vertical reinforcement extending into the new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
Hatched area indicates Concrete Removal.
Cross hatched area indicates Slopewall Removal.
Existing reinforcement not extending into the areas of new construction shall be cut at the removal line and removed. Exposed portion shall be cleaned and coated with a layer of epoxy. Cost included with Concrete Removal.

BILL OF MATERIAL

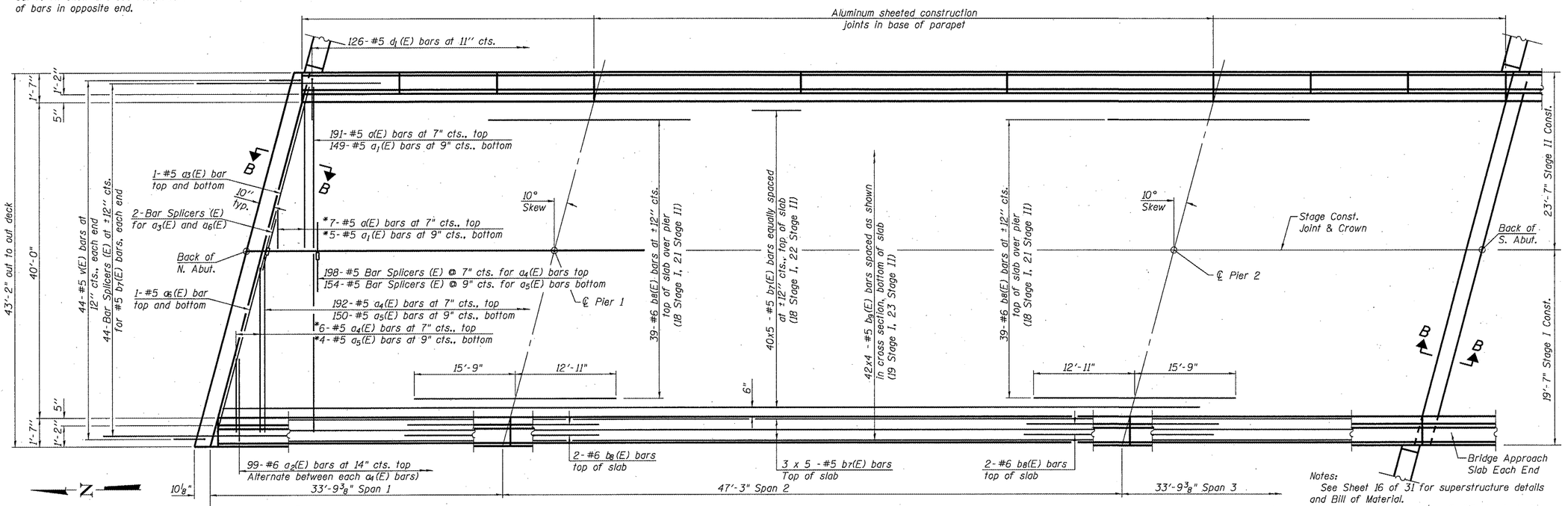
Item	Unit	Total
Concrete Removal	Cu. Yd.	19.9
Slopewall Removal	Sq. Yd.	4.5

CONCRETE REMOVAL (1 OF 2)
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 24	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	120
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

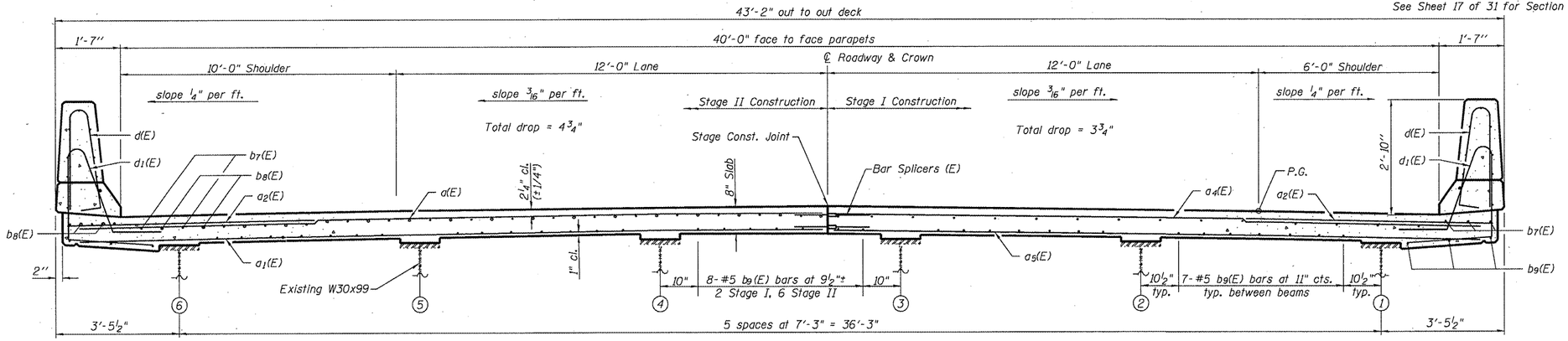
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Order $a(E)$, $a_1(E)$, $a_4(E)$ and $a_5(E)$ bars full length. Cut to fit skew and use remainder of bars in opposite end.



PLAN

Notes:
See Sheet 16 of 31 for superstructure details and Bill of Material.
Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.
See Sheet 16 of 31 for parapet reinforcement.
See Sheet 17 of 31 for Section B-B.



NEAR PIER

NEAR MIDSPAN

CROSS SECTION
(Looking South)

MIN. BAR LAP
#5 bar = 2'-7" (Deck)

SUPERSTRUCTURE
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 15 31 SHEETS	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	(59, 68)RS-3, BR	Macoupin	137	121
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

STATE OF ILLINOIS
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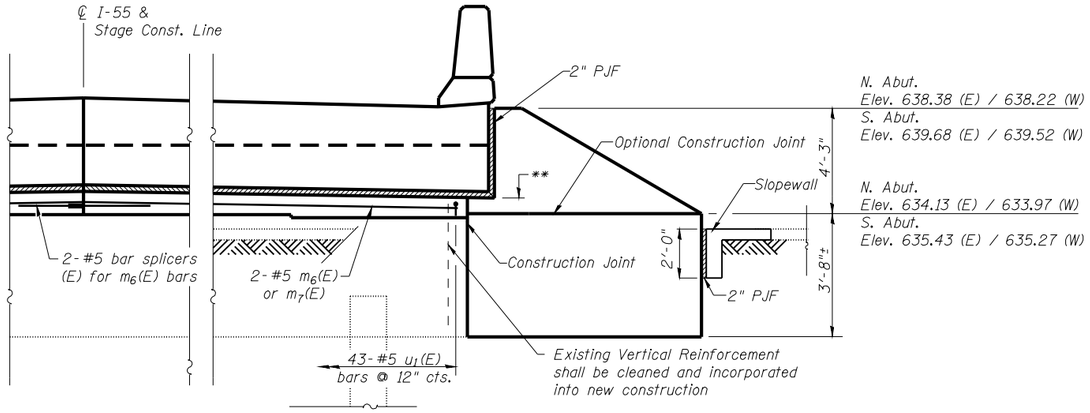
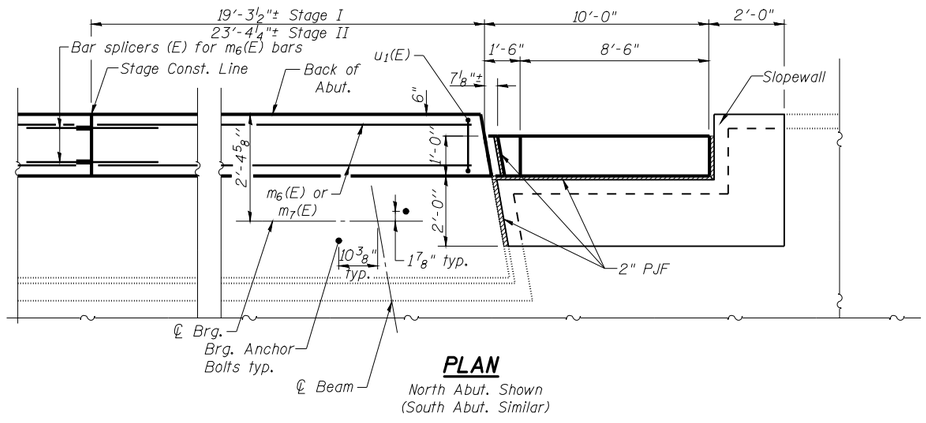


ELEVATION

North Abut. (Looking North)
(South Abut. Similar)

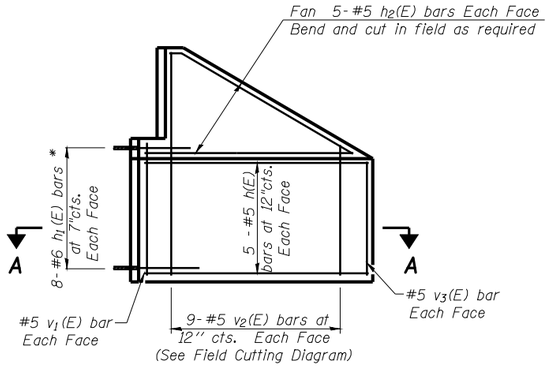


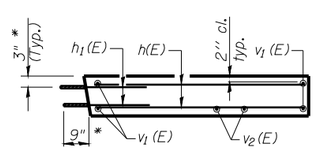
PLAN

North Abut. Shown
(South Abut. Similar)

** N. Abut. Elev. 634.80 (E)
N. Abut. Elev. 634.64 (W)

S. Abut. Elev. 636.10 (E)
S. Abut. Elev. 635.94 (W)

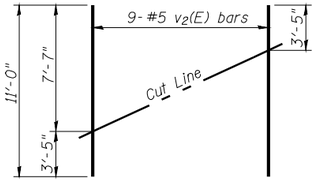




SECTION A-A

* Epoxy grout #6 bars in 1"ϕ holes 9" min. into existing abutment. All work shall be in accordance with Section 584 of the Standard Specifications. All work shall be inspected and approved by engineer. The cost of this work including all materials & labor shall be included in the cost per cu. yd. of Concrete Structures.

Note:
Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.



FIELD CUTTING DIAGRAM

Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL

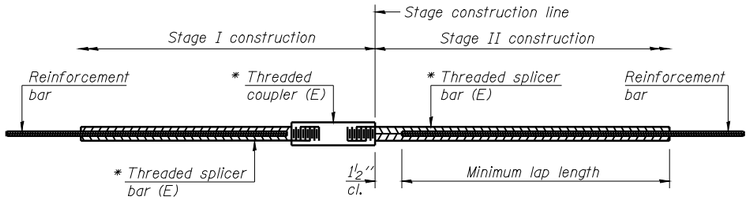
(2 Locations)

Bar	No.	Size	Length	Shape
h(E)	40	#5	9'-6"	——
$h_1(E)$	64	#6	6'-0"	——
$h_2(E)$	40	#5	10'-0"	——
$m_6(E)$	4	#5	23'-0"	——
$m_7(E)$	4	#5	18'-11"	——
$u_1(E)$	86	#5	2'-5"	⊓
$v_1(E)$	8	#5	4'-4"	——
$v_2(E)$	36	#5	11'-0"	——
$v_3(E)$	8	#5	3'-4"	——
Structure Excavation		Cu. Yd.	22	
Concrete Structures		Cu. Yd.	12.4	
Reinforcement Bars, Epoxy Coated		Pound	2,260	
Slopewall, 4 inch		Sq. Yd.	6	
Bar Splicers		Each	4	

WINGWALL AND SLOPEWALL DETAILS
STRUCTURE NO. 059-0040 (S.B.)

SHEET NO. 28	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	122
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



STANDARD BAR SPLICER ASSEMBLY

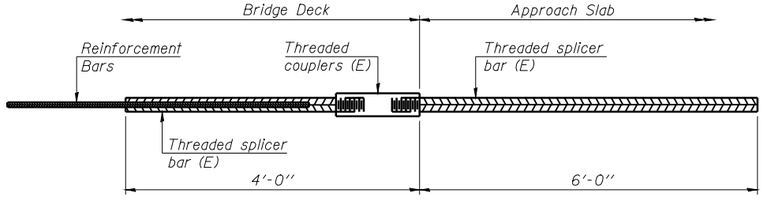
Minimum Lap Lengths					
Bar size to be spliced	Table 1	Table 2	Table 3	Table 4	Table 5
3, 4	1'-5"	1'-11"	2'-1"	2'-4"	2'-3"
5	1'-9"	2'-5"	2'-7"	2'-11"	2'-10"
6	2'-1"	2'-11"	3'-1"	3'-6"	3'-4"
7	2'-9"	3'-10"	4'-2"	4'-8"	4'-6"
8	3'-8"	5'-1"	5'-5"	6'-2"	5'-10"
9	4'-7"	6'-5"	6'-10"	7'-9"	7'-5"

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, Top bar lap, Class B

Threaded splicer bar length = min. lap length + 1½" + thread length

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

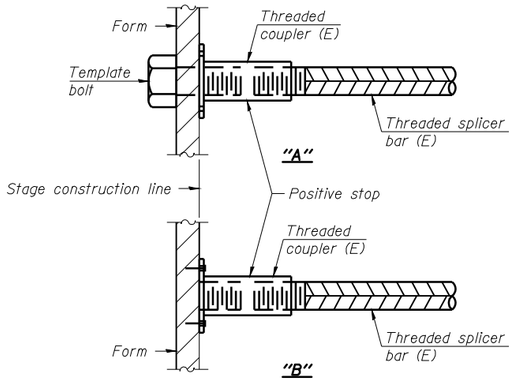
Location	Structure Number	Bar size	No. assemblies required	Table for minimum lap length
Deck, Top	059-0040	#5	227	4
Deck, Bottom	059-0040	#5	177	3
Approach, Top	059-0040	#4	50	4
Approach, Bottom	059-0040	#5	92	3
Appr. Footing	059-0040	#5	80	3
Abutment	059-0040	#6	24	3
Abut. Backwall	059-0040	#5	4	3
Deck, Top	059-0041	#5	200	4
Deck, Bottom	059-0041	#5	156	3
Approach, Top	059-0041	#4	50	4
Approach, Bottom	059-0041	#5	92	3
Appr. Footing	059-0041	#5	80	3
Abutment	059-0041	#6	24	3
Abut. Backwall	059-0041	#5	4	3



BAR SPLICER ASSEMBLY FOR #5 BAR ON INTEGRAL OR SEMI-INTEGRAL ABUTMENTS

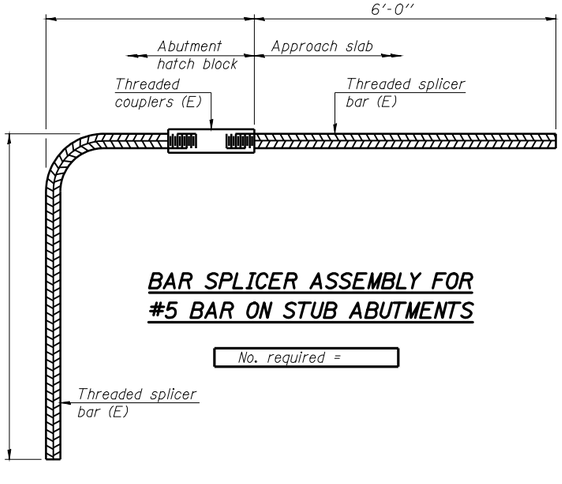
059-0040
No. required = 88

059-0041
No. required = 88



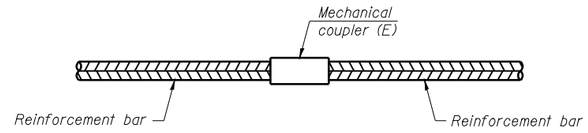
INSTALLATION AND SETTING METHODS

"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.



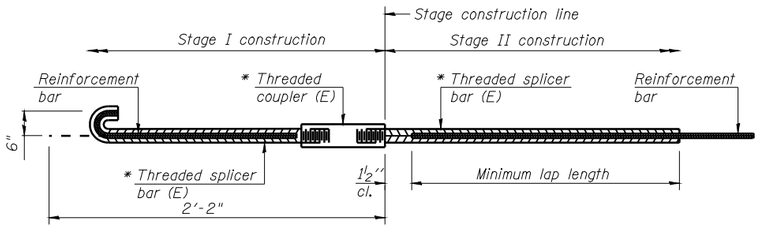
BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



SPECIAL BAR SPLICER ASSEMBLY

Location	Structure Number	Bar size	No. assemblies required	Min. Lap Length
Diaphragm	059-0040	#6	4	3
Diaphragm	059-0041	#6	4	3

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 special provision for Mechanical Splicers.

See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 059-0040 (S.B.) STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 30	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	123
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BSD-1 7-1-10

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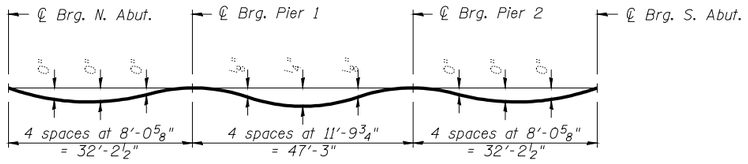
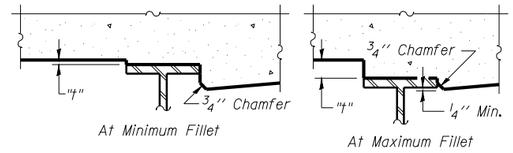


DEAD LOAD DEFLECTION DIAGRAM

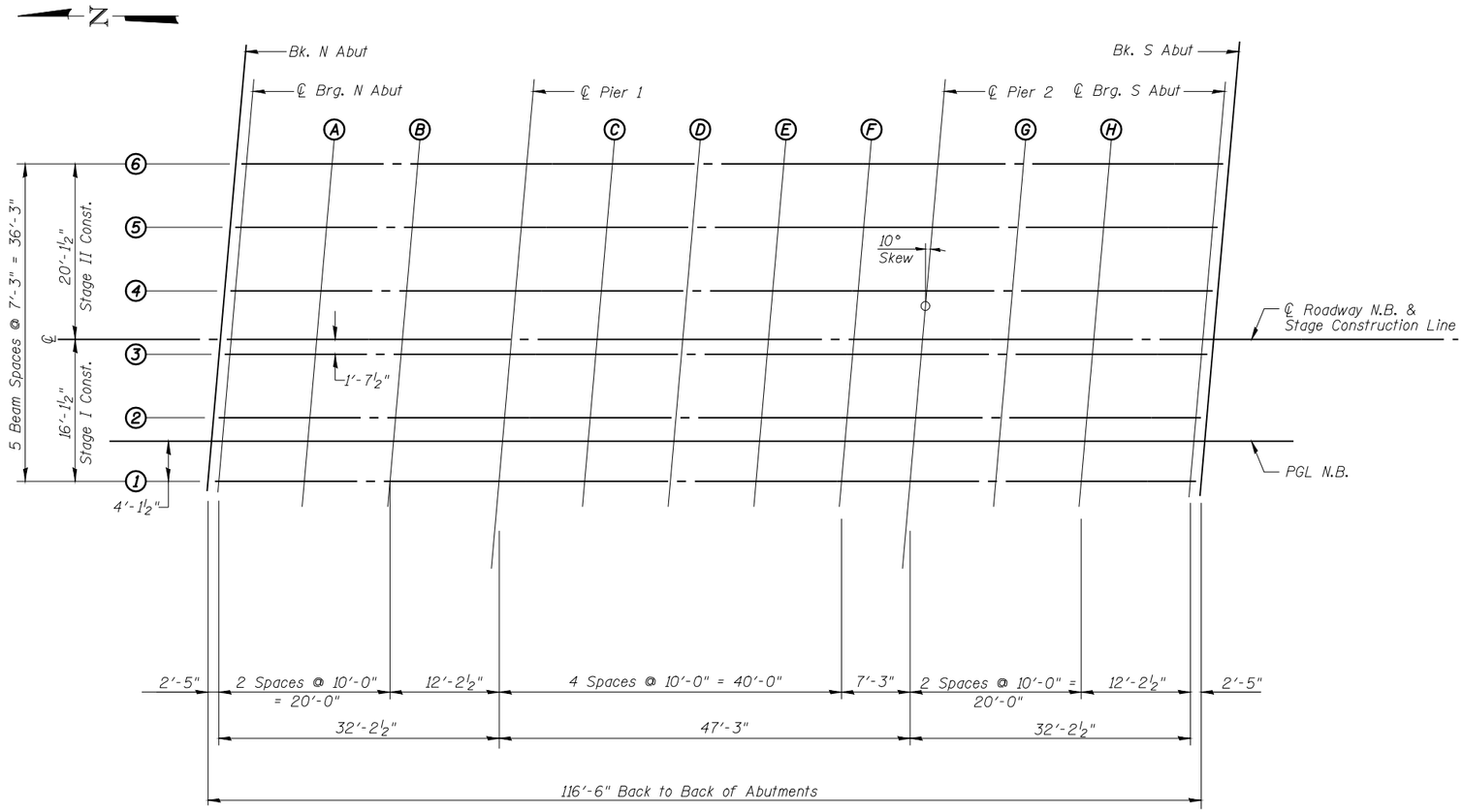
(Includes weight of concrete only.)

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 as shown on Sheets 8 of 31.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheets 8 of 31, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

TOP OF SLAB ELEVATIONS (1 OF 2)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 7
31 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(59, 68)RS-3, BR	Macoupin	137	124
		CONTRACT NO. 72921		
FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

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BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+28.78	-16.13	638.68	638.68
CL.Brg.N.Abut.	676+31.20	-16.13	638.71	638.71
A	676+41.20	-16.13	638.80	638.80
B	676+51.20	-16.13	638.89	638.89
CL.Pier1	676+63.41	-16.13	639.00	639.00
C	676+73.41	-16.13	639.09	639.16
D	676+83.41	-16.13	639.18	639.20
E	676+93.41	-16.13	639.27	639.29
F	677+03.41	-16.13	639.36	639.37
CL.Pier2	677+10.66	-16.13	639.42	639.42
G	677+20.66	-16.13	639.51	639.51
H	677+30.66	-16.13	639.60	639.60
CL.Brg.N.Abut.	677+42.86	-16.13	639.71	639.71
Bk.S.Abut.	677+45.28	-16.13	639.73	639.73

N.B. PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+29.50	-12.00	638.77	638.77
CL.Brg.N.Abut.	676+31.92	-12.00	638.80	638.80
A	676+41.92	-12.00	638.89	638.89
B	676+51.92	-12.00	638.98	638.98
CL.Pier1	676+64.13	-12.00	639.09	639.09
C	676+74.13	-12.00	639.18	639.19
D	676+84.13	-12.00	639.27	639.29
E	676+94.13	-12.00	639.36	639.38
F	677+04.13	-12.00	639.45	639.46
CL.Pier2	677+11.38	-12.00	639.51	639.51
G	677+21.38	-12.00	639.60	639.60
H	677+31.38	-12.00	639.69	639.69
CL.Brg.N.Abut.	677+43.58	-12.00	639.80	639.80
Bk.S.Abut.	677+46.00	-12.00	639.82	639.82

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+30.06	-8.88	638.83	638.83
CL.Brg.N.Abut.	676+32.48	-8.88	638.86	638.86
A	676+42.48	-8.88	638.95	638.95
B	676+52.48	-8.88	639.04	639.04
CL.Pier1	676+64.69	-8.88	639.15	639.15
C	676+74.69	-8.88	639.24	639.25
D	676+84.69	-8.88	639.33	639.35
E	676+94.69	-8.88	639.42	639.44
F	677+04.69	-8.88	639.51	639.52
CL.Pier2	677+11.94	-8.88	639.57	639.57
G	677+21.94	-8.88	639.66	639.66
H	677+31.94	-8.88	639.75	639.75
CL.Brg.N.Abut.	677+44.14	-8.88	639.86	639.86
Bk.S.Abut.	677+46.56	-8.88	639.88	639.88

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+31.33	-1.63	638.95	638.95
CL.Brg.N.Abut.	676+33.75	-1.63	638.98	638.98
A	676+43.75	-1.63	639.07	639.07
B	676+53.75	-1.63	639.16	639.16
CL.Pier1	676+65.96	-1.63	639.27	639.27
C	676+75.96	-1.63	639.36	639.37
D	676+85.96	-1.63	639.45	639.47
E	676+95.96	-1.63	639.54	639.56
F	677+05.96	-1.63	639.63	639.64
CL.Pier2	677+13.21	-1.63	639.69	639.69
G	677+23.21	-1.63	639.78	639.78
H	677+33.21	-1.63	639.87	639.87
CL.Brg.N.Abut.	677+45.41	-1.63	639.98	639.98
Bk.S.Abut.	677+47.83	-1.63	640.00	640.00

N.B. ℄ ROADWAY, CROWN, & STAGE CONST. LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+31.62	-	638.98	638.98
CL.Brg.N.Abut.	676+34.04	-	639.01	639.01
A	676+44.04	-	639.10	639.10
B	676+54.04	-	639.19	639.19
CL.Pier1	676+66.25	-	639.30	639.30
C	676+76.25	-	639.39	639.40
D	676+86.25	-	639.48	639.50
E	676+96.25	-	639.57	639.59
F	677+06.25	-	639.66	639.67
CL.Pier2	677+13.50	-	639.72	639.72
G	677+23.50	-	639.81	639.81
H	677+33.50	-	639.90	639.90
CL.Brg.N.Abut.	677+45.70	-	640.01	640.01
Bk.S.Abut.	677+48.12	-	640.03	640.03

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+32.61	5.63	638.90	638.90
CL.Brg.N.Abut.	676+35.03	5.63	638.93	638.93
A	676+45.03	5.63	639.02	639.02
B	676+55.03	5.63	639.11	639.11
CL.Pier1	676+67.24	5.63	639.22	639.22
C	676+77.24	5.63	639.31	639.32
D	676+87.24	5.63	639.40	639.42
E	676+97.24	5.63	639.49	639.51
F	677+07.24	5.63	639.58	639.59
CL.Pier2	677+14.49	5.63	639.64	639.64
G	677+24.49	5.63	639.73	639.73
H	677+34.49	5.63	639.82	639.82
CL.Brg.N.Abut.	677+46.69	5.63	639.93	639.93
Bk.S.Abut.	677+49.11	5.63	639.95	639.95

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+33.89	12.88	638.79	638.79
CL.Brg.N.Abut.	676+36.31	12.88	638.82	638.82
A	676+46.31	12.88	638.91	638.91
B	676+56.31	12.88	639.00	639.00
CL.Pier1	676+68.52	12.88	639.11	639.11
C	676+78.52	12.88	639.20	639.21
D	676+88.52	12.88	639.29	639.31
E	676+98.52	12.88	639.38	639.40
F	677+08.52	12.88	639.47	639.48
CL.Pier2	677+15.77	12.88	639.53	639.53
G	677+25.77	12.88	639.62	639.62
H	677+35.77	12.88	639.71	639.71
CL.Brg.N.Abut.	677+47.97	12.88	639.82	639.82
Bk.S.Abut.	677+50.39	12.88	639.84	639.84

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk.N.Abut.	676+35.17	20.13	638.65	638.65
CL.Brg.N.Abut.	676+37.59	20.13	638.68	638.68
A	676+47.59	20.13	638.77	638.77
B	676+57.59	20.13	638.86	638.86
CL.Pier1	676+69.80	20.13	638.97	638.97
C	676+79.80	20.13	639.06	639.07
D	676+89.80	20.13	639.15	639.17
E	676+99.80	20.13	639.24	639.26
F	677+09.80	20.13	639.33	639.34
CL.Pier2	677+17.05	20.13	639.39	639.39
G	677+27.05	20.13	639.48	639.48
H	677+37.05	20.13	639.57	639.57
CL.Brg.N.Abut.	677+49.25	20.13	639.68	639.68
Bk.S.Abut.	677+51.67	20.13	639.70	639.70

TOP OF SLAB ELEVATIONS (2 OF 2)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 8	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	125
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	675+99.27	-18.00	638.38
A	676+09.27	-18.00	638.47
B	676+19.27	-18.00	638.56
S. End N. Appr. Pav't	676+29.27	-18.00	638.65
N. End S. Appr. Pav't	677+44.13	-18.00	639.69
C	677+54.13	-18.00	639.78
D	677+64.13	-18.00	639.87
S. End S. Appr. Pav't	677+74.13	-18.00	639.96

WEST EDGE OF PAVEMENT & PGL

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	676+00.32	-12.00	638.51
A	676+10.32	-12.00	638.60
B	676+20.32	-12.00	638.69
S. End N. Appr. Pav't	676+30.32	-12.00	638.78
N. End S. Appr. Pav't	677+45.18	-12.00	639.82
C	677+55.18	-12.00	639.91
D	677+65.18	-12.00	640.00
S. End S. Appr. Pav't	677+75.18	-12.00	640.09

℄ ROADWAY (N.B.)

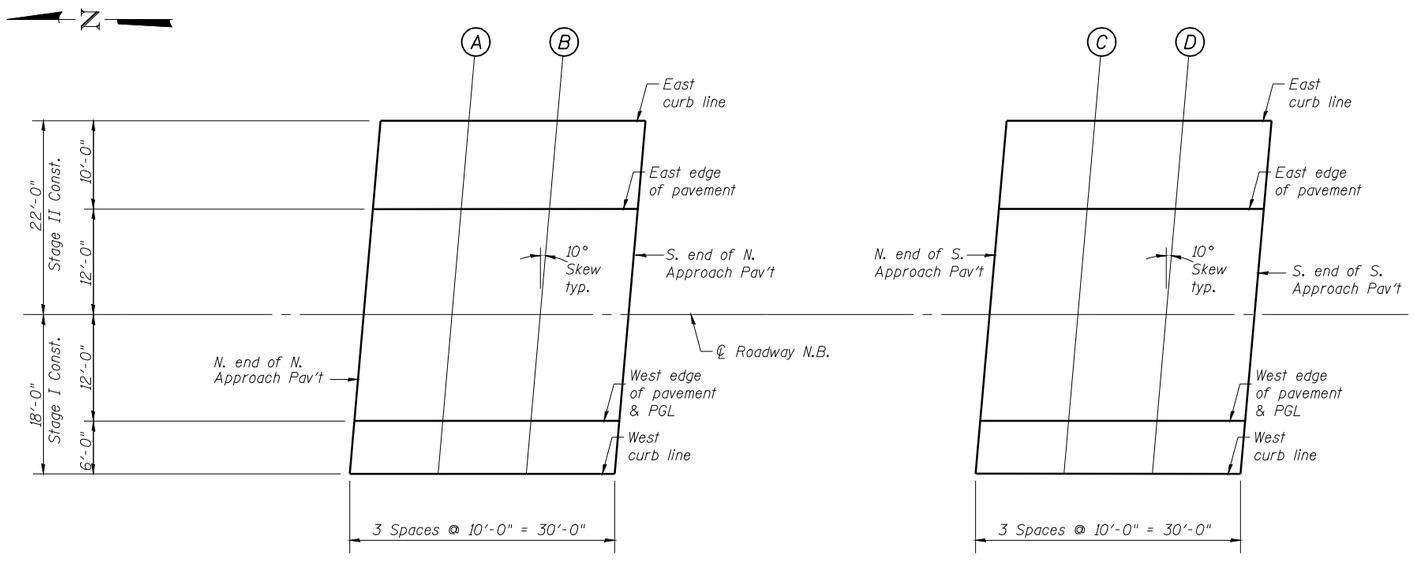
Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	676+02.44	-	638.72
A	676+12.44	-	638.81
B	676+22.44	-	638.80
S. End N. Appr. Pav't	676+32.44	-	638.99
N. End S. Appr. Pav't	677+47.30	-	640.03
C	677+57.30	-	640.12
D	677+67.30	-	640.21
S. End S. Appr. Pav't	677+77.30	-	640.30

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	676+04.56	12.00	638.55
A	676+14.56	12.00	638.64
B	676+24.56	12.00	638.73
S. End N. Appr. Pav't	676+34.56	12.00	638.82
N. End S. Appr. Pav't	677+49.42	12.00	639.86
C	677+59.42	12.00	639.95
D	677+69.42	12.00	640.04
S. End S. Appr. Pav't	677+79.42	12.00	640.13

EAST CURB LINE

Location	Station	Offset	Theoretical Grade Elevations
N. End N. Appr. Pav't	676+06.32	22.00	638.35
A	676+16.32	22.00	638.44
B	676+26.32	22.00	638.53
S. End N. Appr. Pav't	676+36.32	22.00	638.62
N. End S. Appr. Pav't	677+51.18	22.00	639.66
C	677+61.18	22.00	639.75
D	677+71.18	22.00	639.84
S. End S. Appr. Pav't	677+81.18	22.00	639.93



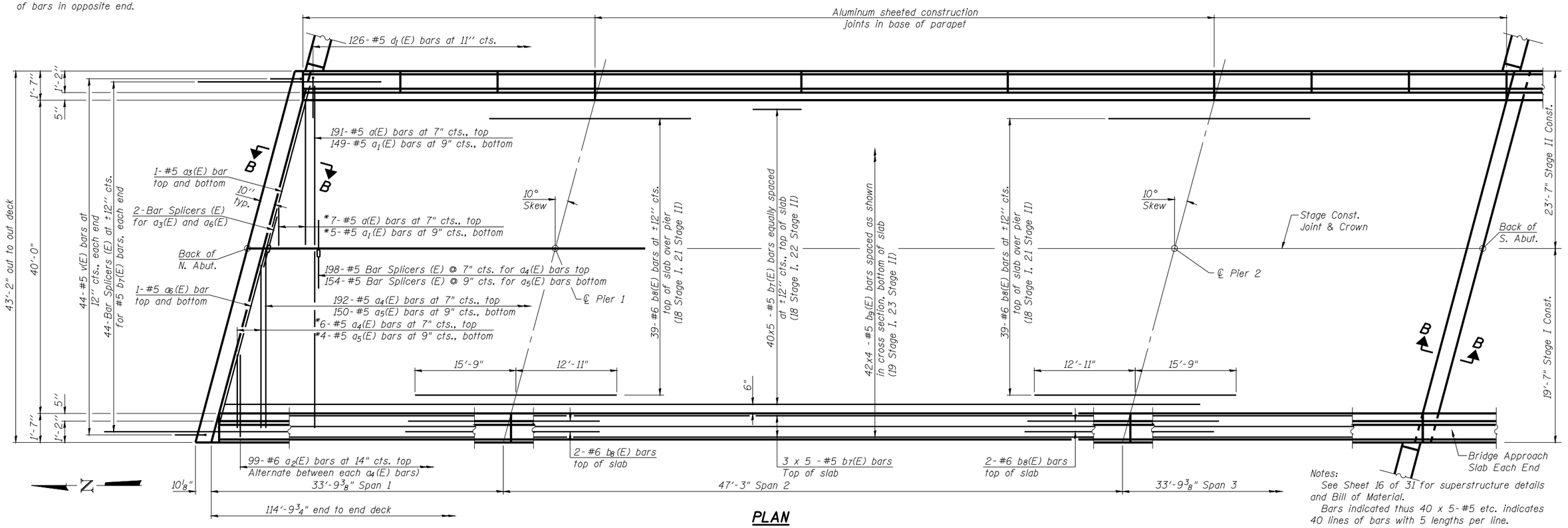
PLAN

TOP OF APPROACH SLAB ELEVATIONS STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 9	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	126
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

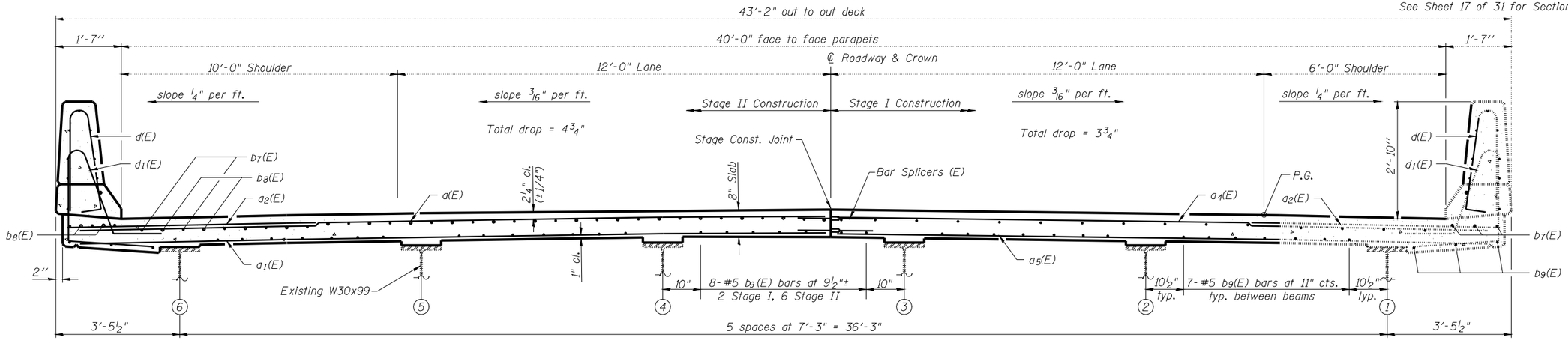
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

* Order $a(E)$, $a_1(E)$, $a_4(E)$ and $a_5(E)$ bars full length. Cut to fit skew and use remainder of bars in opposite end.



PLAN

Notes:
See Sheet 16 of 31 for superstructure details and Bill of Material.
Bars indicated thus 40 x 5-#5 etc. indicates 40 lines of bars with 5 lengths per line.
See Sheet 16 of 31 for parapet reinforcement.
See Sheet 17 of 31 for Section B-B.



NEAR PIER **NEAR MIDSPAN**

CROSS SECTION
(Looking South)

MIN. BAR LAP
#5 bar = 2'-7'' (Deck)

SUPERSTRUCTURE
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 15	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	127
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

STATE OF ILLINOIS
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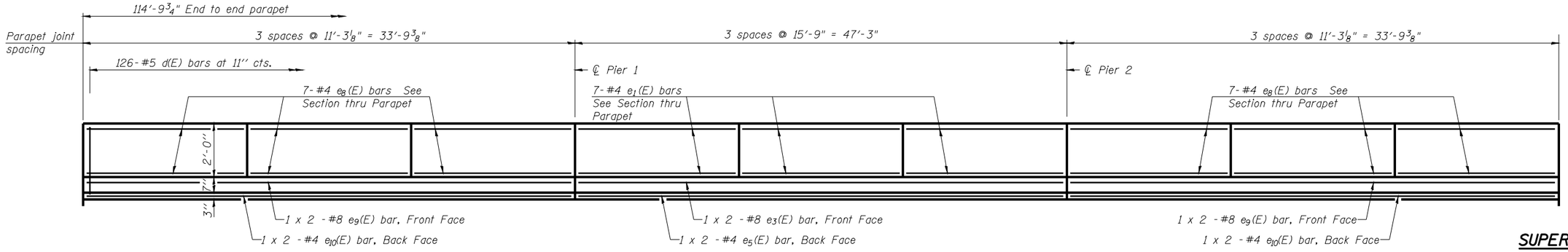
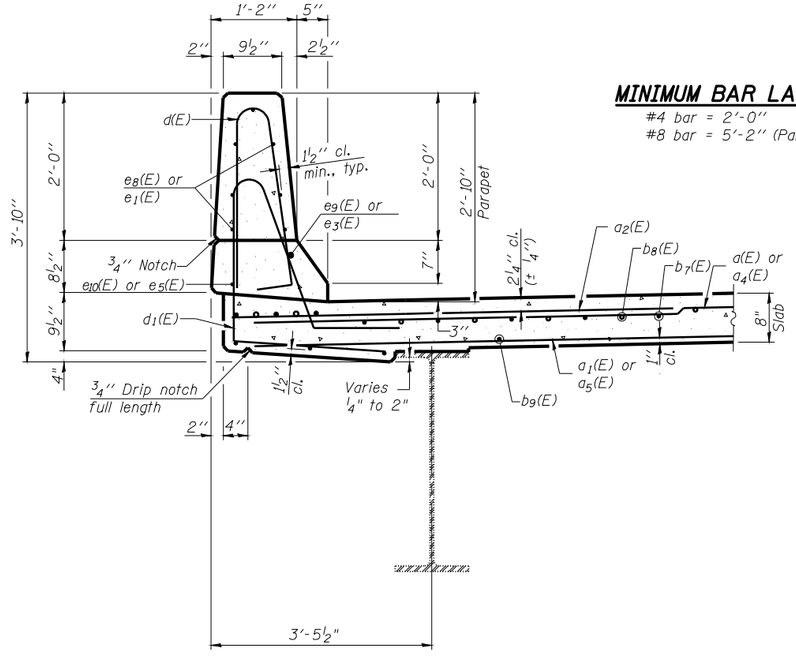


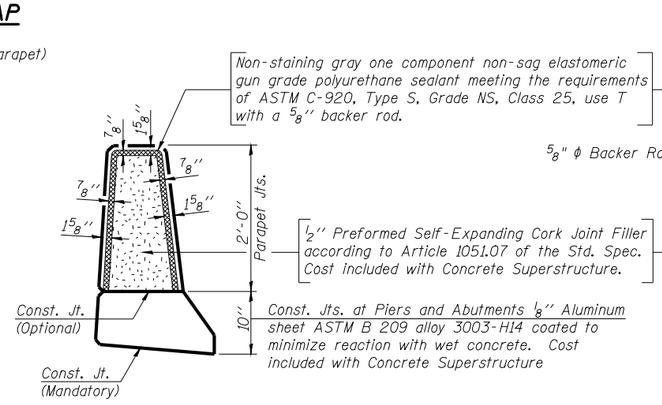


SECTION THRU PARAPET

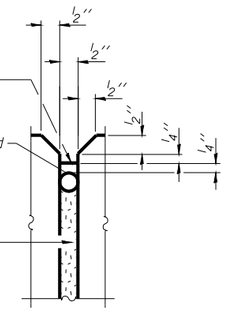
MINIMUM BAR LAP

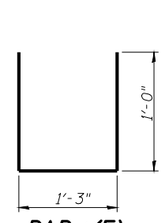
#4 bar = 2'-0"
#8 bar = 5'-2" (Parapet)

INSIDE ELEVATION OF PARAPET

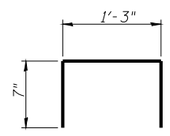


PARAPET JOINT DETAILS





BAR u(E)

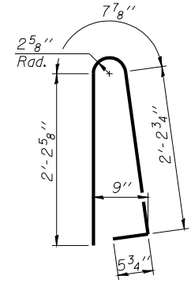


BAR u1(E)

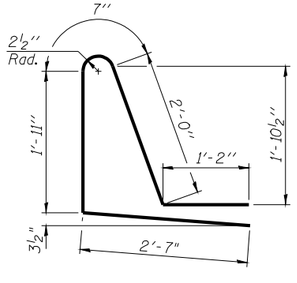
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	198	#5	22'-11"	
a1(E)	154	#5	22'-9"	
a2(E)	198	#6	6'-6"	
a3(E)	4	#5	23'-7"	
a4(E)	198	#5	18'-11"	
a5(E)	154	#5	18'-9"	
a6(E)	4	#5	19'-6"	
b7(E)	230	#5	24'-11"	
b8(E)	86	#6	28'-8"	
b9(E)	168	#5	30'-7"	
d(E)	252	#5	5'-7"	
d1(E)	252	#5	8'-3"	
e1(E)	42	#4	15'-5"	
e3(E)	4	#8	26'-1"	
e5(E)	4	#4	24'-6"	
e8(E)	84	#4	11'-0"	
e9(E)	8	#8	19'-4"	
e10(E)	8	#4	17'-9"	
m(E)	20	#6	23'-6"	
m1(E)	12	#6	10'-1"	
m2(E)	20	#6	7'-0"	
m3(E)	8	#6	3'-0"	
m4(E)	20	#6	19'-5"	
m5(E)	12	#6	8'-9"	
s(E)	92	#5	6'-9"	
s1(E)	82	#4	8'-7"	
u(E)	88	#5	3'-3"	U
v(E)	88	#5	3'-4"	
Reinforcement Bars, Epoxy Coated			Pound	41,600
Concrete Superstructure			Cu. Yds.	186.3
Bar Splicers			Each	472

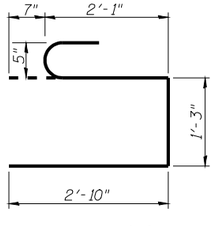
Bars indicated thus 1 x 2 -#8 etc. indicates 1 line of bars with 2 lengths per line.



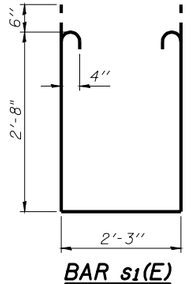
BAR d(E)



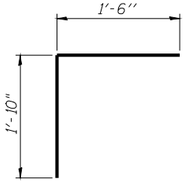
BAR d1(E)



BAR s(E)



BAR s1(E)



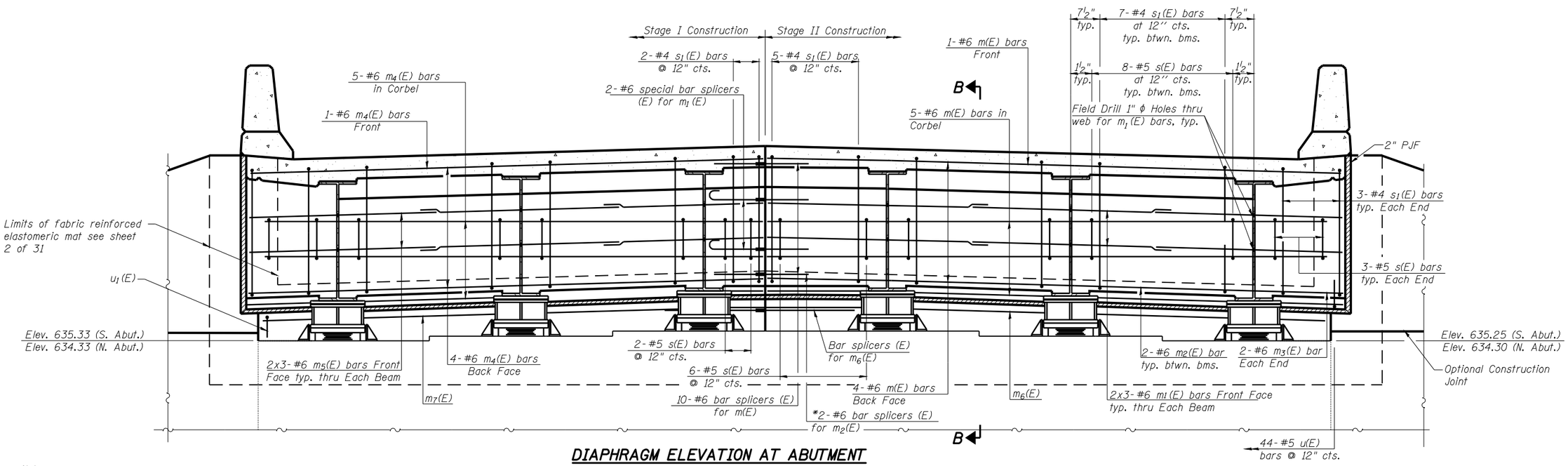
BAR v(E)

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 16	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	128
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

BLANK, WESSELINK, COOK & ASSOCIATES ENGINEERS - CONSULTANTS DECATUR, ILLINOIS DESIGN FIRM NO. 184000894

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



DIAPHRAGM ELEVATION AT ABUTMENT

(Looking North at North Abutment)
(South Abutment Similar)

* Cut to fit @ Stageline

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 16 of 31.

Concrete in diaphragm is included with Concrete Superstructure on sheet 16 of 31.

For details of bars s(E), s_1(E), v(E), u(E) & u_1(E) see sheet 16 of 31.

For layout of m_6(E), m_7(E) & u_1(E) bars see sheet 29 of 31

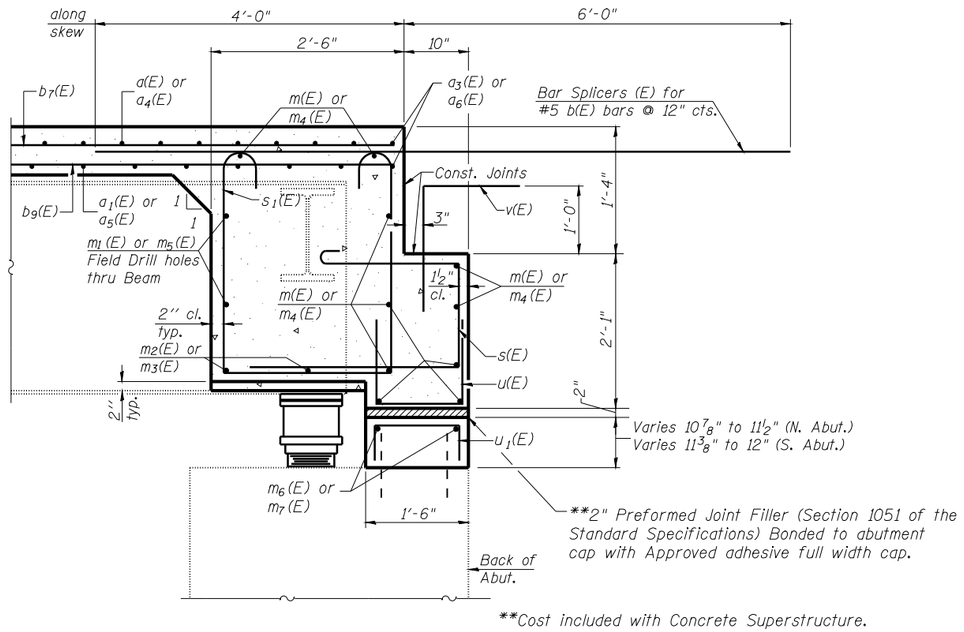
Concrete in back wall is included with Concrete Structures on sheet 16 of 31.

The s(E) and s_1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

Cost of field drilling holes in webs for m_1(E) and m_5(E) bars is included in the cost of Reinforcement Bars (Epoxy coated).

MIN. BAR LAP

#6 bar = 3'-4" (Diaphragm)



**Cost included with Concrete Superstructure.

SECTION B-B

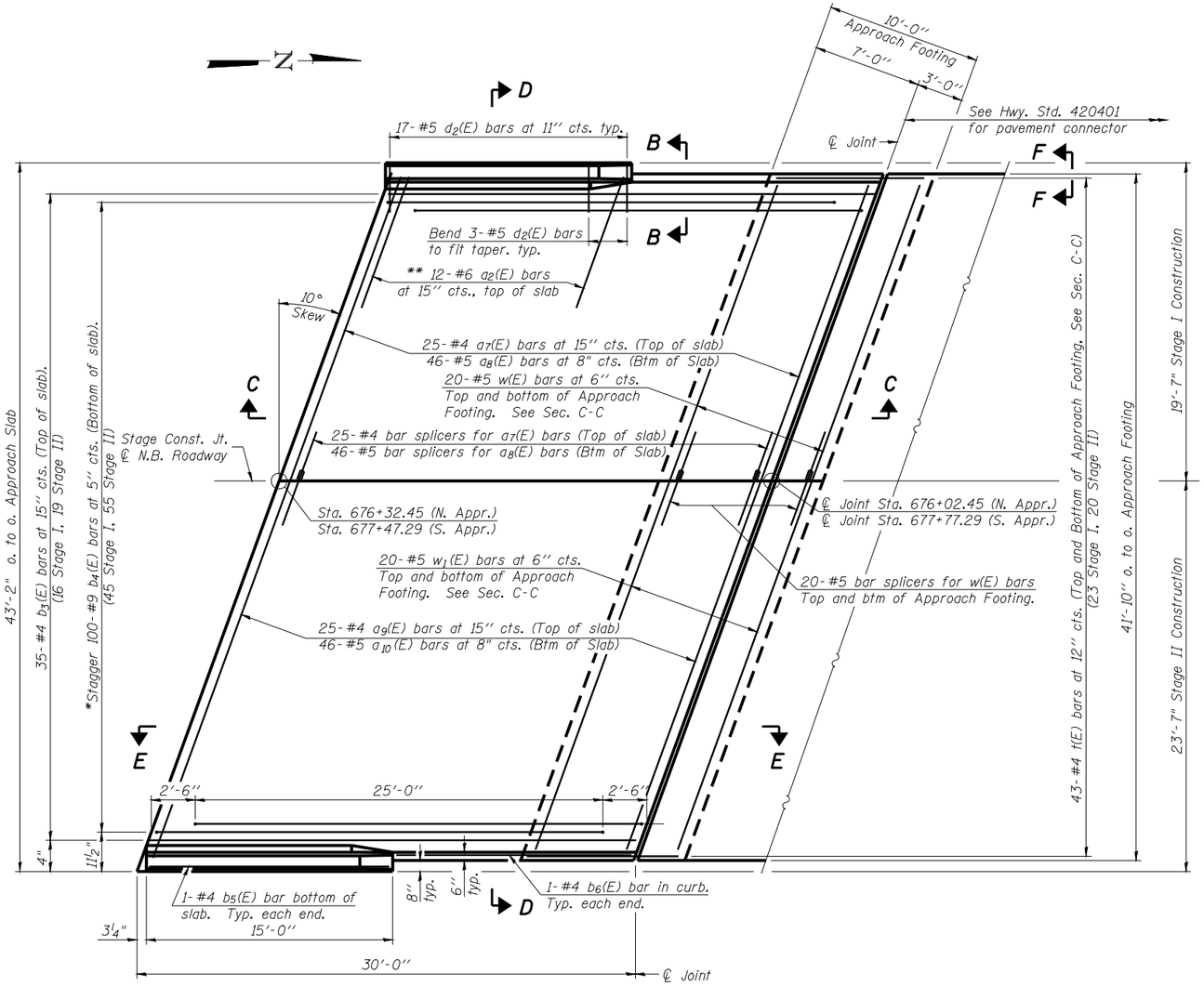
Dimensions at right angles to abutment, except as shown.

SEMI-INTEGRAL DIAPHRAGM DETAILS STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 17	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	129
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

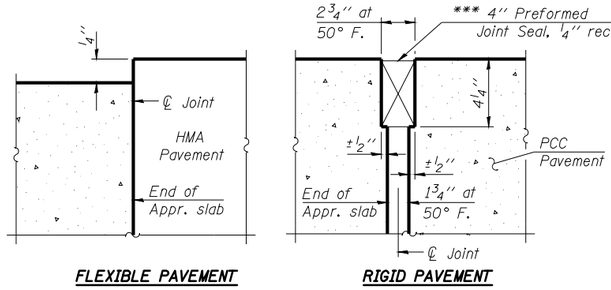
Notes:
See sheet 19 of 31 for Sections C-C & D-D and View E-E.
a_7(E) thru a_{10}(E) bar spacings measured along ℄ Rdwy.



NORTH APPROACH PLAN
(S. Approach similar)

* Tilt #9 b_4(E) bars as required to maintain clearance.
** Space between a_7(E) bars and a_9(E) bars, typ. each parapet.

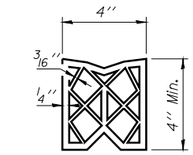
*** Cost included with Concrete Superstructure.



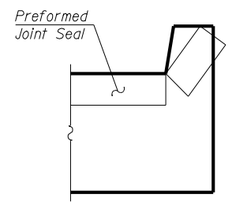
FLEXIBLE PAVEMENT

RIGID PAVEMENT

DETAIL A

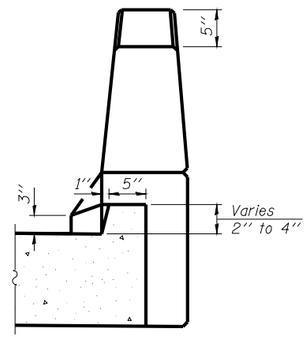


PREFORMED JOINT SEAL



VIEW F-F

Angle Preformed Joint Seal at 45° at curbs when req'd for drainage.



VIEW B-B

BRIDGE APPROACH SLAB DETAILS (1 OF 2)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 18	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	130
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

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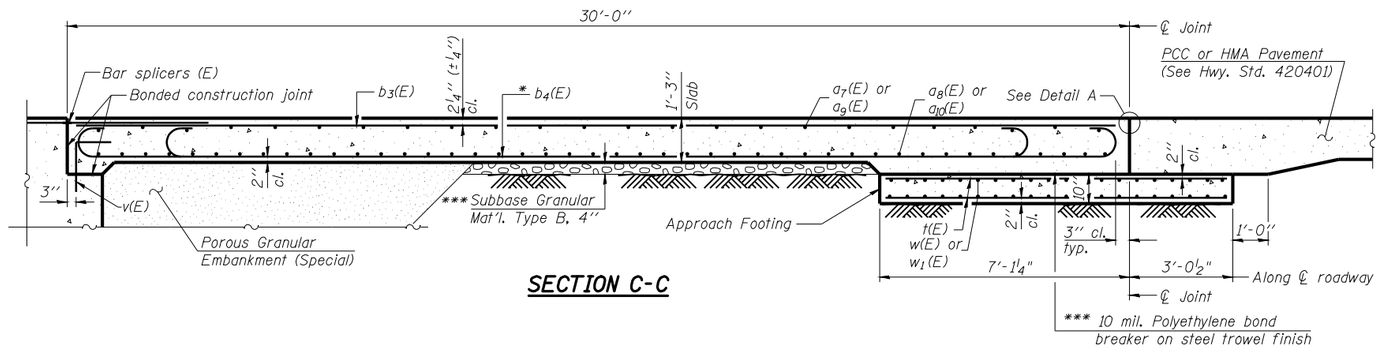
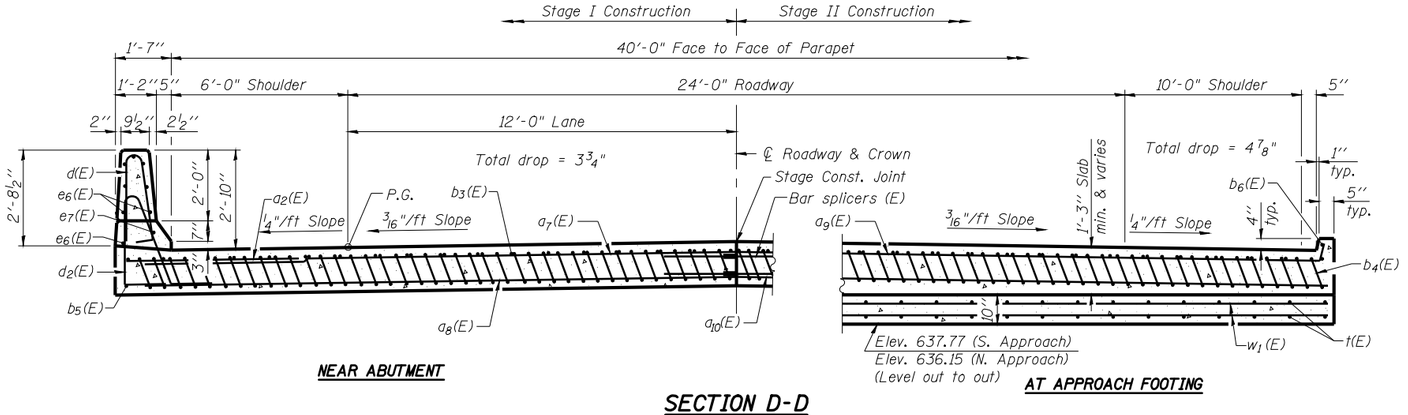
Notes:
See sheet 18 of 31 for Detail A and View B-B.
Approach slab and parapet concrete shall be paid for as Concrete Superstructure.
Approach footing concrete shall be paid for as Concrete Structures.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.
For v(E) bar details, see sheet 16 of 31.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
For bar splicer details, see sheet 30 of 31.
Cost of excavation for approach footing included with Concrete Structures.
For Porous Granular Embankment (Special) and drainage treatment details, see sheet 2 of 31.
For additional parapet details, see sheet 16 of 31.



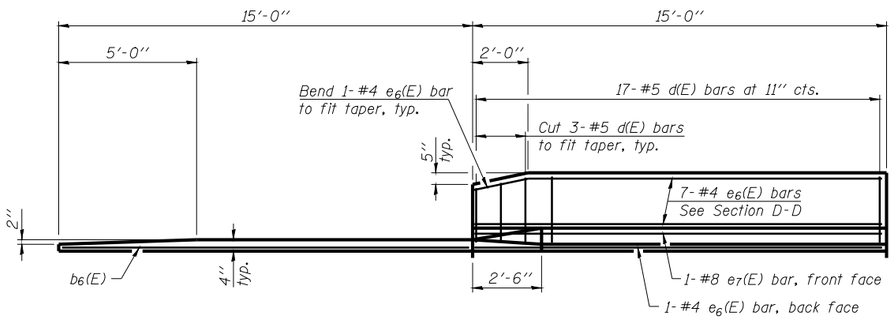
SECTION C-C



NEAR ABUTMENT **AT APPROACH FOOTING**

SECTION D-D

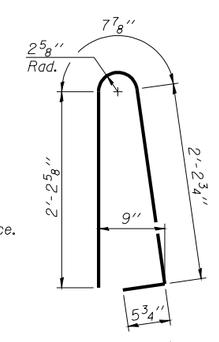
(Looking North)
(See Plan for dimensions not shown)



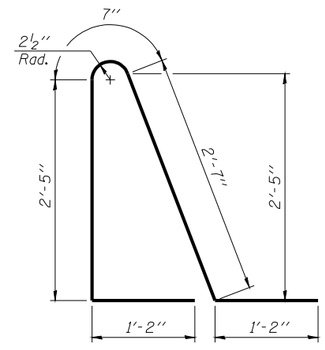
VIEW E-E

* Tilt #9 b4(E) bars as required to maintain clearance.

*** Cost included with Concrete Superstructure.



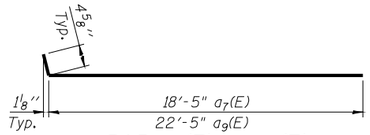
BAR d(E)



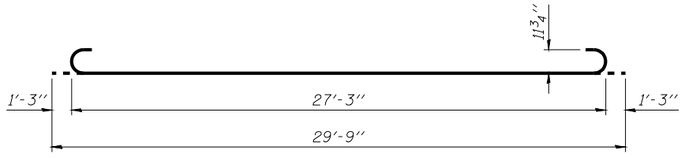
BAR d2(E)

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	48	#6	6'-6"	
a7(E)	50	#4	18'-10"	
a8(E)	92	#5	18'-6"	
a9(E)	50	#4	22'-10"	
a10(E)	92	#5	22'-6"	
b3(E)	70	#4	29'-8"	
b4(E)	200	#9	29'-9"	
b5(E)	4	#4	14'-8"	
b6(E)	4	#4	14'-5"	
d(E)	68	#5	5'-7"	
d2(E)	68	#5	7'-11"	
e6(E)	32	#4	14'-8"	
e7(E)	4	#8	14'-8"	
t(E)	172	#4	9'-10"	
w(E)	80	#5	18'-9"	
w1(E)	80	#5	22'-10"	
Concrete Superstructure			Cu. Yd.	132.6
Concrete Structures			Cu. Yd.	26.2
Reinforcement Bars, Epoxy Coated			Pound	33,520
Bar Splicers			Each	222



BAR a7(E) or a9(E)

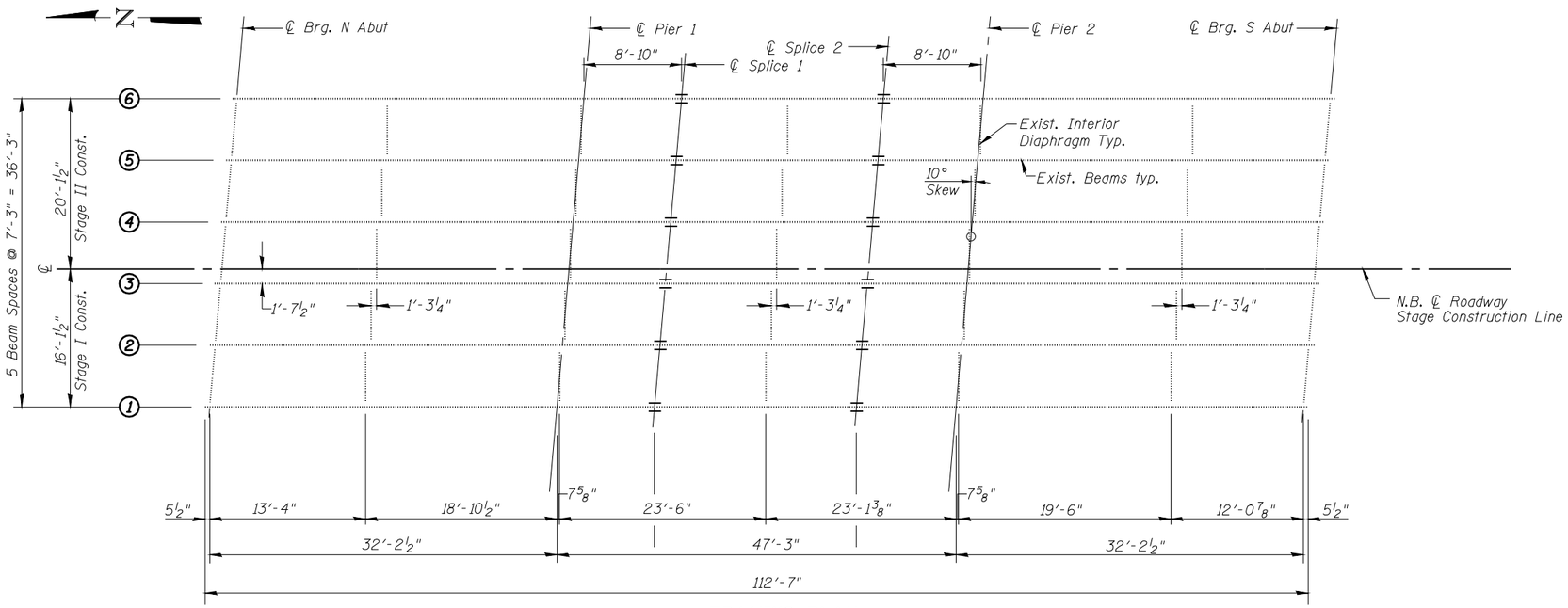


BAR b4(E)

BRIDGE APPROACH SLAB DETAILS (2 OF 2)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 19	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	131
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

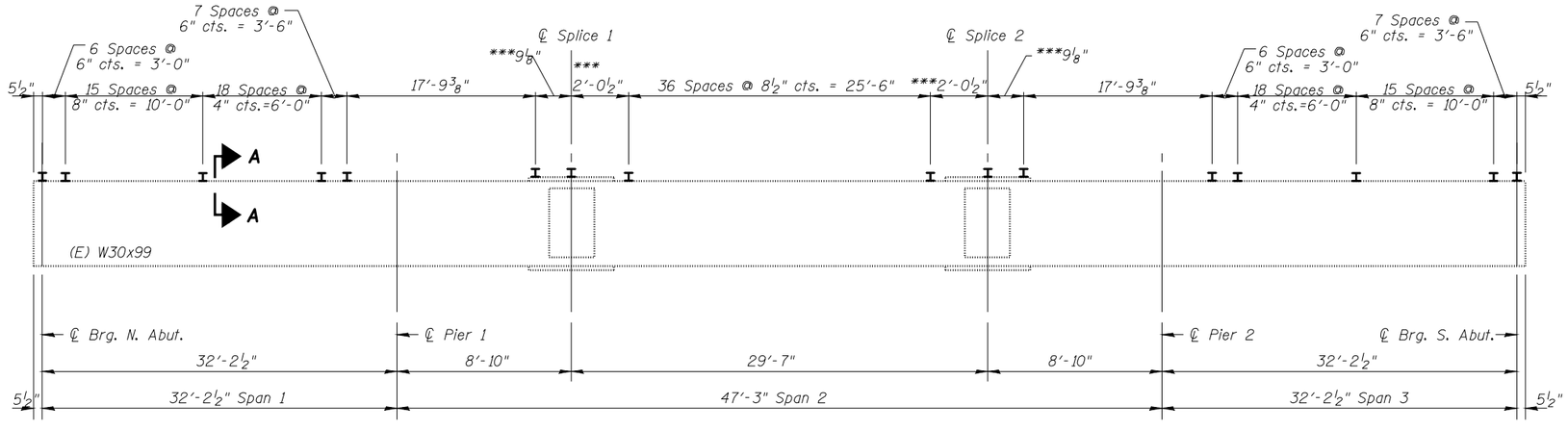


FRAMING PLAN

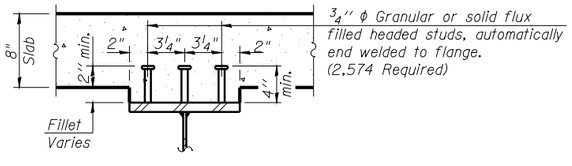
INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1	Pier 1	0.5 Sp. 2
I_s	(in^4)	3,990	3,990	3,990
$I_c(n)$	(in^4)	11,915	-	11,915
$I_c(3n)$	(in^4)	8,984	-	8,984
S_s	(in^3)	269	269	269
$S_c(n)$	(in^3)	417	-	417
$S_c(3n)$	(in^3)	379	-	379
w_{ℓ}	(k/')	0.866	1.148	0.866
M_{ℓ}	('k)	53	183	100
s_{ℓ}	(k/')	0.283	-	0.283
$M_{s\ell}$	('k)	21	-	44
M_L	('k)	175	122	277
M_{IM}	('k)	53	36	80
$\frac{5}{3}[M_L + I]$	('k)	380	264	595
M_a	('k)	390	581	961
* M_u	('k)	1,213	-	1,175
f_s ℓ non-comp	(ksi)	2.4	8.2	4.5
f_s ℓ (comp)	(ksi)	0.7	-	1.4
f_s $\frac{5}{3}[M_L + M_I]$	(ksi)	11.0	11.8	17.2
f_s (Overload)	(ksi)	14.1	20.0	23.1
** f_s (Total)	(ksi)	-	26.0	-
VR	(k)	45.6	-	41.3

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
R_{ℓ}	(k)	13.0	51.9
R_L	(k)	32.2	41.8
R_I	(k)	9.7	10.2
R_{Total}	(k)	54.9	103.9

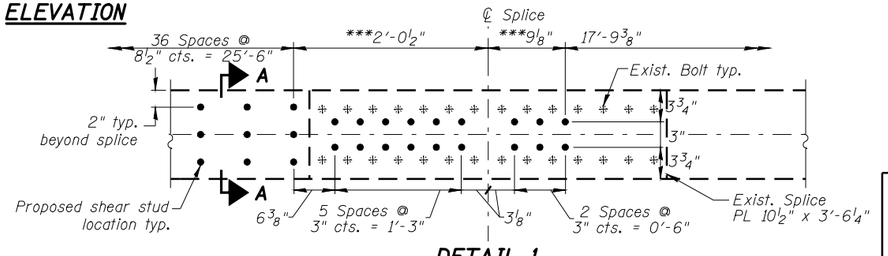
* Compact section
** Braced non-compact and partially braced section



ELEVATION



SECTION A-A



DETAIL 1

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 $in.^3$).

w_{ℓ}: Un-factored non-composite dead load (kips/ft.).

M_{ℓ}: Un-factored moment due to non-composite dead load (kip-ft.).

s_{ℓ}: Un-factored long-term composite (superimposed) dead load (kips/ft.)

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

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

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

M_a: Factored design moment (kip-ft.).
$1.3\ [\ M_{\ell} + M_{s\ell} + \frac{5}{3}\ (M_L + M_I)]$

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).
$M_{\ell} + M_{s\ell} + \frac{5}{3}\ (M_L + M_I)$

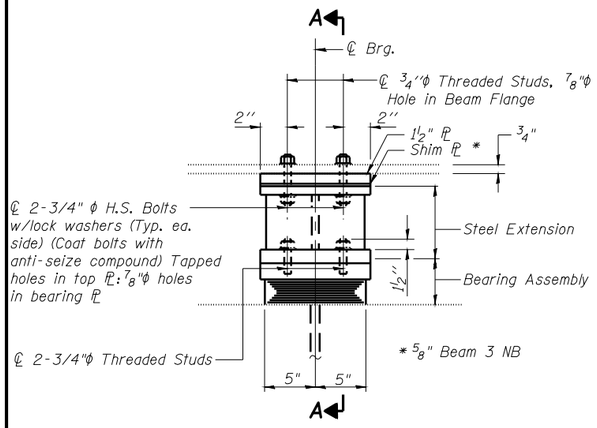
f_s (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M_{\ell} + M_{s\ell} + \frac{5}{3}\ (M_L + M_I)]$

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

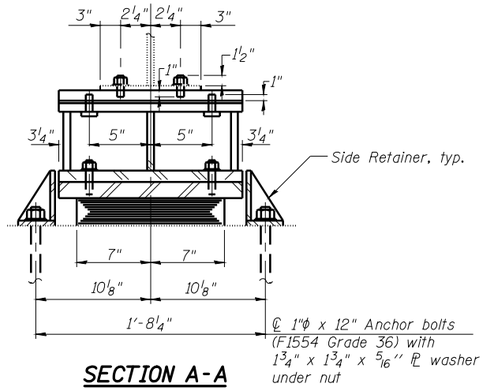
FRAMING PLAN AND BEAM DETAILS
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 21	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	132
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

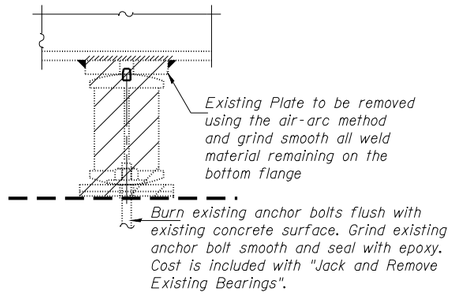
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION AT PIER

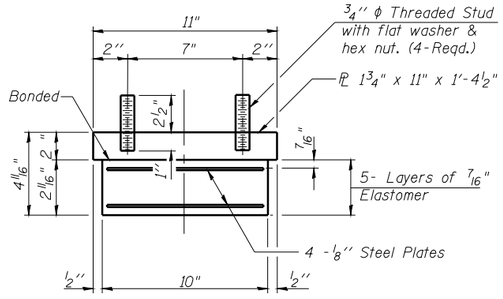


SECTION A-A



EXISTING BEARING REMOVAL DETAIL

TYPE I ELASTOMERIC EXP. BRG. FOR PIERS



BEARING ASSEMBLY

Note:
Shim plates shall not be placed under Bearing Assembly.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.

Side retainers and other steel members required for the bearing assembly shall be included in the cost of Elastomeric Bearing Assembly, Type I.

Steel Extensions, Shims and Bolts shall be included in the cost of Furnishing and Erecting Structural Steel.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Fasteners shall be AASHTO M164 Type 1, mechanically galvanized bolts. Bolts 3/4"ϕ in 13/16"ϕ holes, unless otherwise noted.

Painting of steel shall be according to Article 506.05 of the Standard Specifications.

Prior to ordering any material for shims or extensions, the contractor shall verify in the field all bearing height and shim thickness dimensions.

BEAM REACTIONS

(for SN 059-0040)

RD	(k)	56.5
RL	(k)	42.4
Imp.	(k)	10.0
R (Total)	(k)	108.9

Min. jack capacity = 6 Tons **

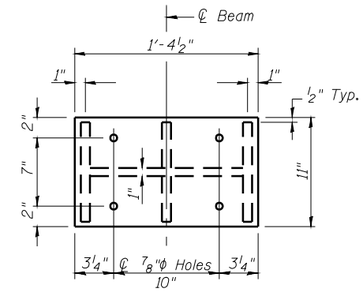
BEAM REACTIONS

(for SN 059-0041)

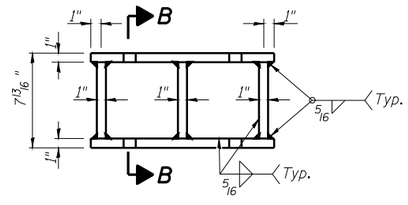
RD	(k)	51.9
RL	(k)	41.8
Imp.	(k)	10.2
R (Total)	(k)	103.9

Min. jack capacity = 6 Tons **

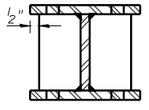
** Capacity with concrete deck removed.
60 tons with existing deck not removed.



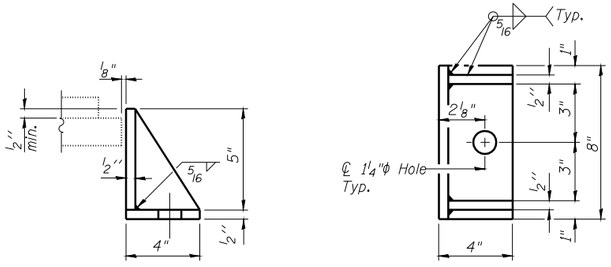
PLAN STEEL EXTENSION



ELEVATION STEEL EXTENSION

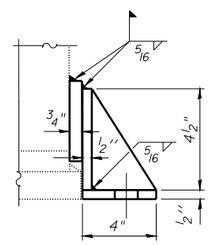


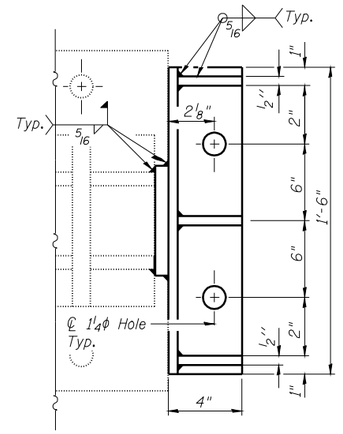
SECTION B-B



SIDE RETAINER

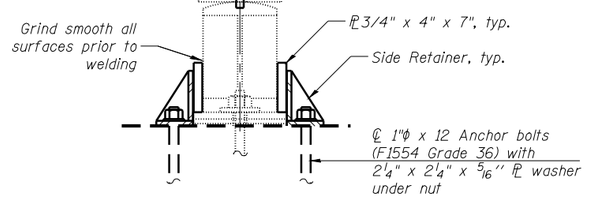
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.





SIDE RETAINER FOR FIXED BEARINGS

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



FIXED BEARINGS RETAINERS

Note:
Side retainers and other steel members required for the fixed bearing retainers shall be included in the cost of Furnishing and Erecting Structural Steel.

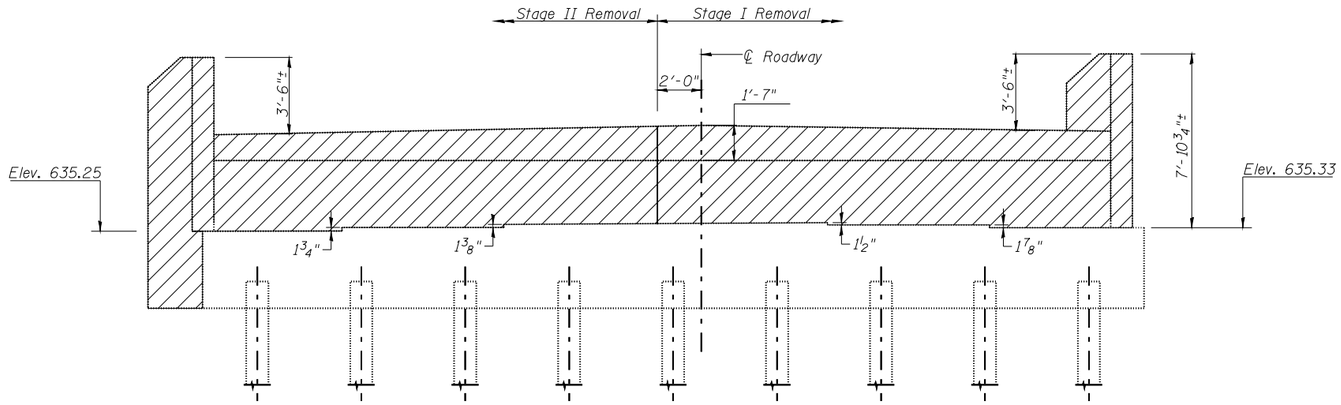
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12
Anchor Bolts, 1"	Each	72
Jack & Remove Exist. Bearings	Each	12
Furnishing & Erecting Structural Steel	Pound	4,011

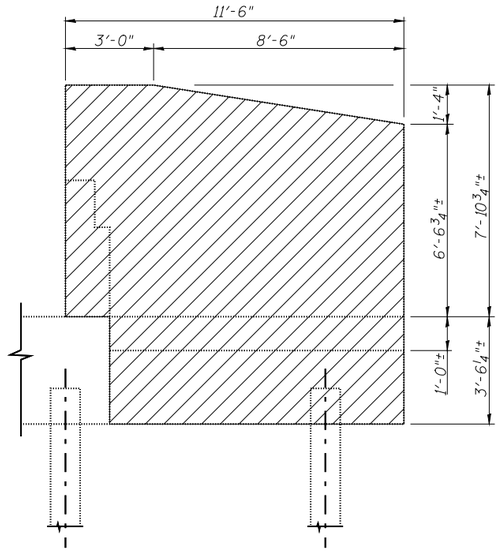
PIER BEARING DETAILS
STRUCTURE NO. 059-0040 (S.B.)
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 23	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	133
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

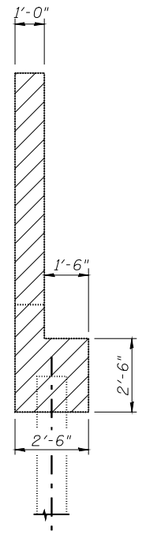
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



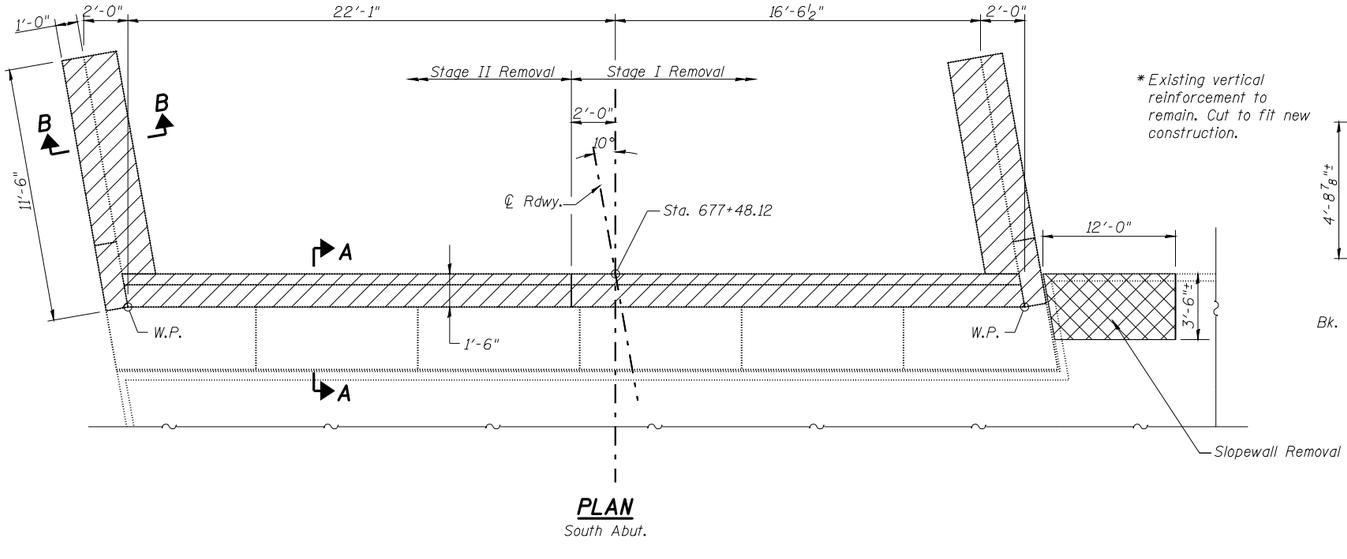
ELEVATION
South Abut. (Looking South)



OUTSIDE ELEVATION OF WINGWALL

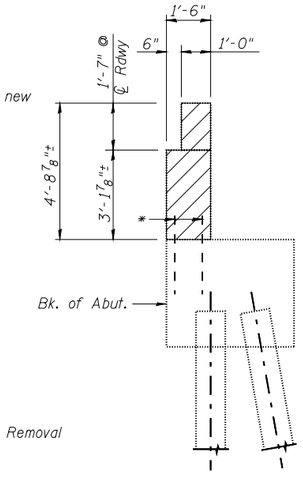


SECTION B-B



* Existing vertical reinforcement to remain. Cut to fit new construction.

PLAN
South Abut.



SECTION A-A

Note:
Existing vertical reinforcement extending into the new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
Hatched area indicates Concrete Removal.
Cross hatched area indicates Slopewall Removal.
Existing reinforcement not extending into the areas of new construction shall be cut at the removal line and removed. Exposed portion shall be cleaned and coated with a layer of epoxy. Cost included with Concrete Removal.

BILL OF MATERIAL

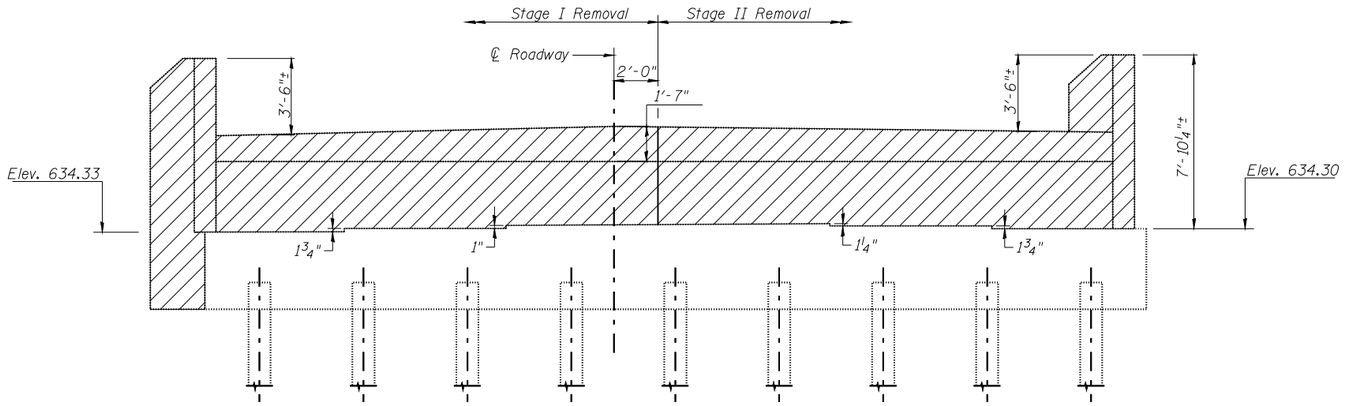
Item	Unit	Total
Concrete Removal	Cu. Yd.	20.0
Slopewall Removal	Sq. Yd.	4.5

(Sheet 1 of 2)

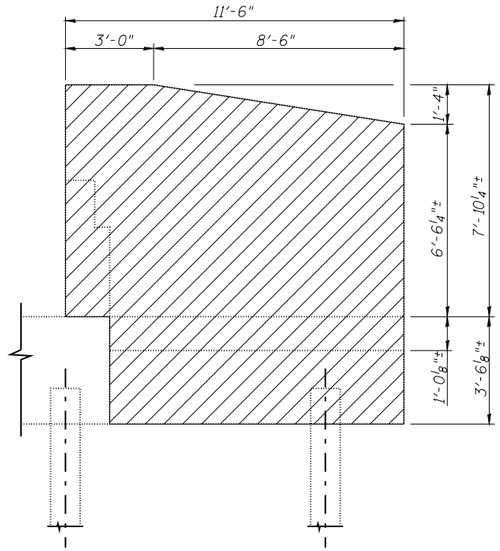
CONCRETE REMOVAL
STRUCTURE NO. 059-0041 (N.B.)

SHEET NO. 26	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	134
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

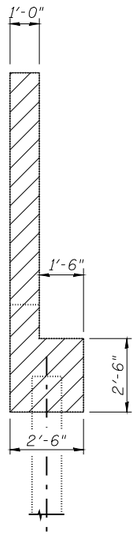
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



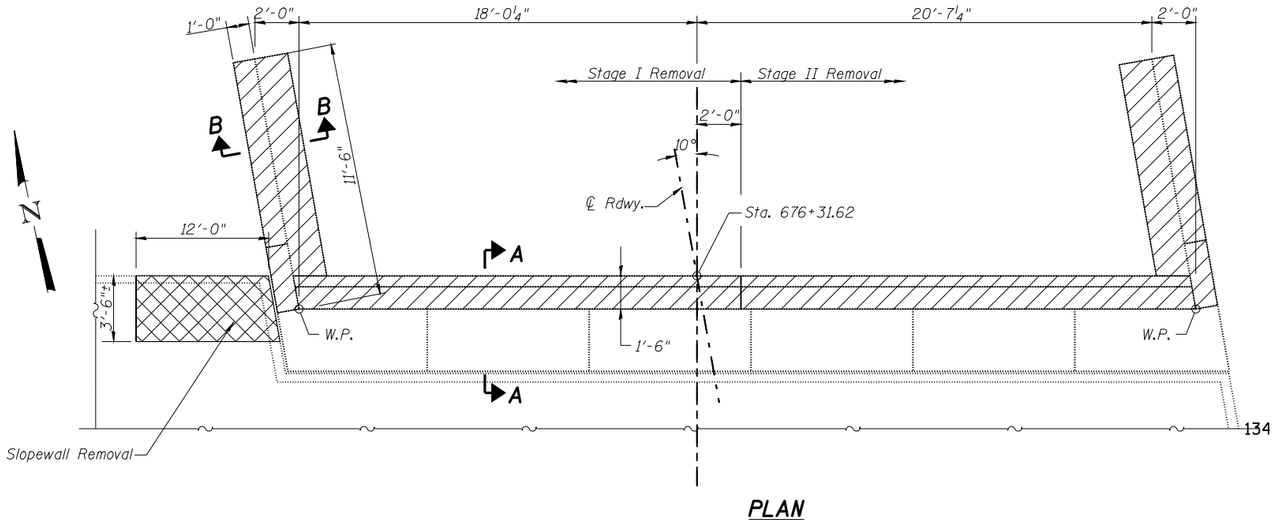
ELEVATION
North Abut. (Looking North)



OUTSIDE ELEVATION OF WINGWALL

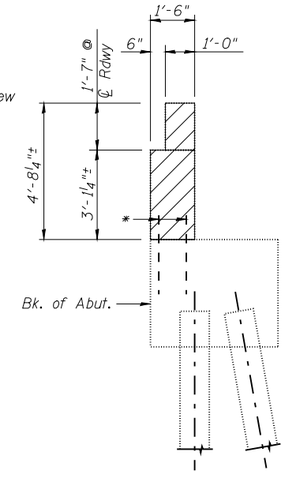


SECTION B-B



PLAN
North Abut.

* Existing vertical reinforcement to remain. Cut to fit new construction.



SECTION A-A

Note:
Existing vertical reinforcement extending into the new construction shall be cleaned and incorporated into the new construction. Cost included with Concrete Removal.
Hatched area indicates Concrete Removal.
Cross hatched area indicates Slopewall Removal.
Existing reinforcement not extending into the areas of new construction shall be cut at the removal line and removed. Exposed portion shall be cleaned and coated with a layer of epoxy. Cost included with Concrete Removal.

BILL OF MATERIAL

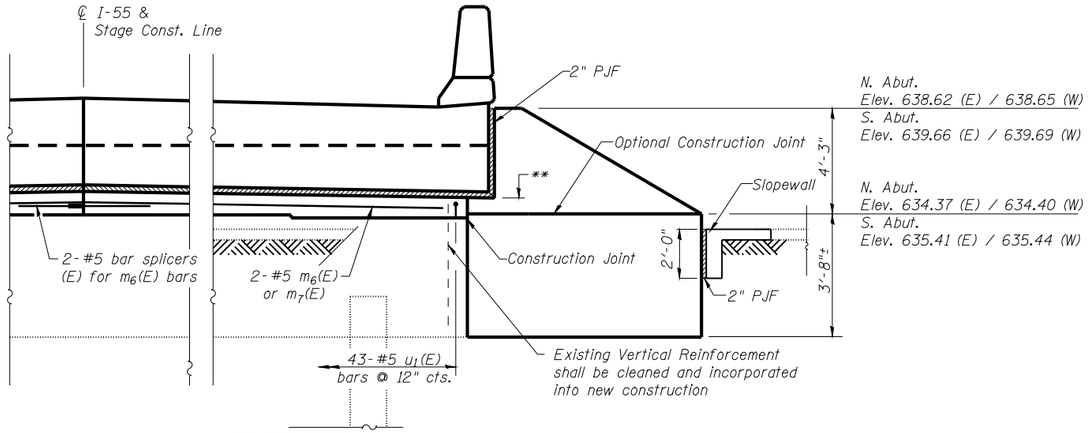
Item	Unit	Total
Concrete Removal	Cu. Yd.	20.3
Slopewall Removal	Sq. Yd.	4.5

(Sheet 2 of 2)

CONCRETE REMOVAL
STRUCTURE NO. 059-0041 (N.B.)

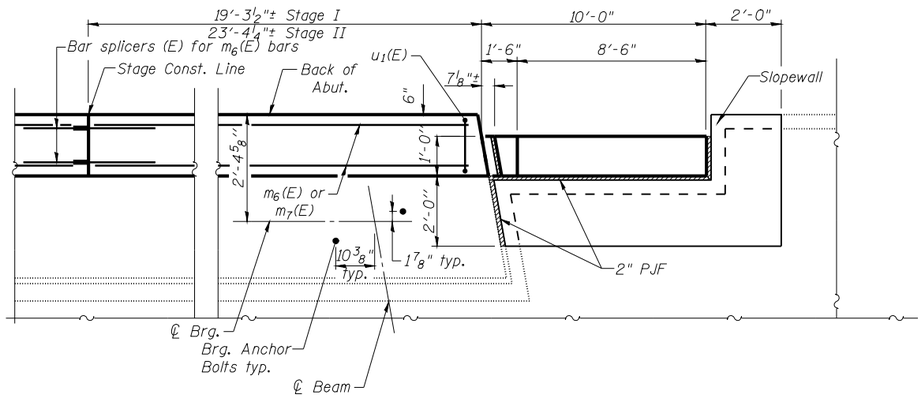
SHEET NO. 27	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	135
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION

South Abut. (Looking South)
(North Abut. Similar)

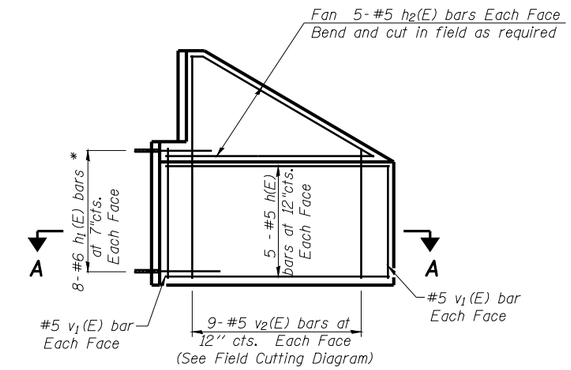


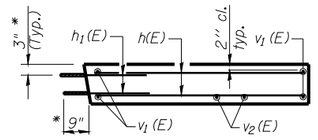
PLAN

South Abut. Shown
(North Abut. Similar)

** N. Abut. Elev. 635.04 (E)
N. Abut. Elev. 635.07 (W)

S. Abut. Elev. 636.08 (E)
S. Abut. Elev. 636.11 (W)

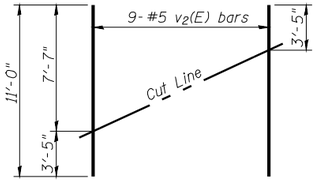




SECTION A-A

* Epoxy grout #6 bars in 1"ϕ holes 9" min. into existing abutment. All work shall be in accordance with Section 584 of the Standard Specifications. All work shall be inspected and approved by engineer. The cost of this work including all materials & labor shall be included in the cost per cu. yd. of Concrete Structures.

Note:
Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.



FIELD CUTTING DIAGRAM

Order $v_2(E)$ full length. Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL

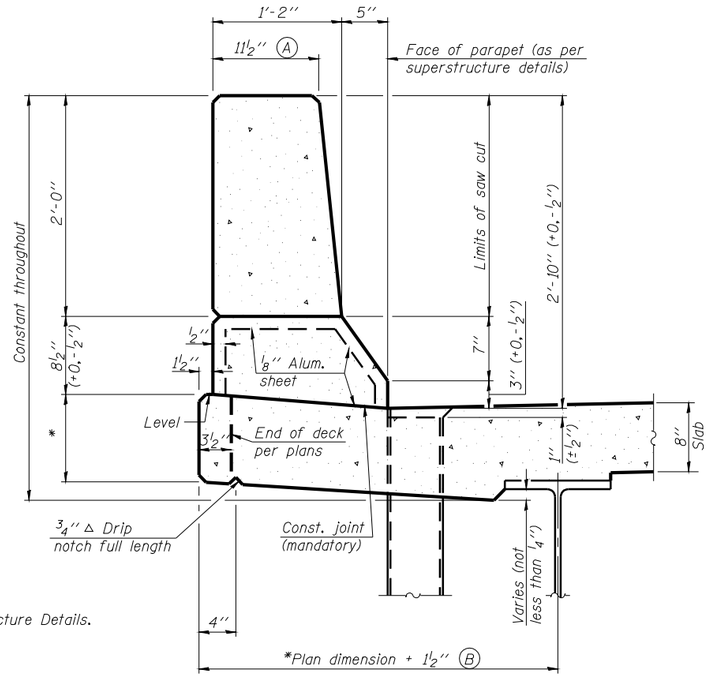
(2 Locations)

Bar	No.	Size	Length	Shape
h(E)	40	#5	9'-6"	——
$h_1(E)$	64	#6	6'-0"	——
$h_2(E)$	40	#5	10'-0"	——
$m_6(E)$	4	#5	23'-0"	——
$m_7(E)$	4	#5	18'-11"	——
$u_1(E)$	86	#5	2'-5"	⊓
$v_1(E)$	8	#5	4'-4"	——
$v_2(E)$	36	#5	11'-0"	——
$v_3(E)$	8	#5	3'-4"	——
Structure Excavation		Cu. Yd.	22	
Concrete Structures		Cu. Yd.	12.3	
Reinforcement Bars, Epoxy Coated		Pound	2,260	
Slopewall, 4 inch		Sq. Yd.	6	
Bar Splicers		Each	4	

WINGWALL AND SLOPEWALL DETAILS
STRUCTURE NO. 059-0041 (N.B.)

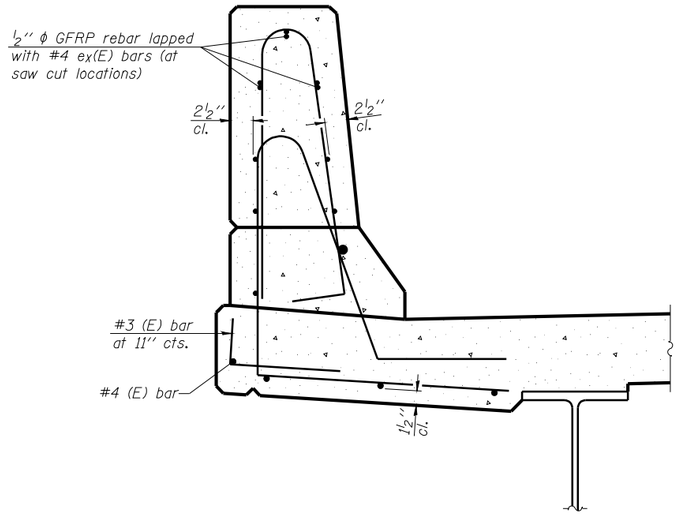
SHEET NO. 29	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	136
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

DEPARTMENT OF TRANSPORTATION



* See Superstructure Details.

SECTION
(Showing dimensions)



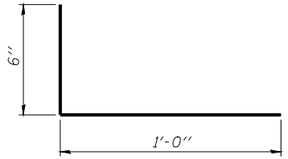
SECTION
(Showing reinforcement clearances for slip forming and additional reinforcement bars)

GENERAL NOTES

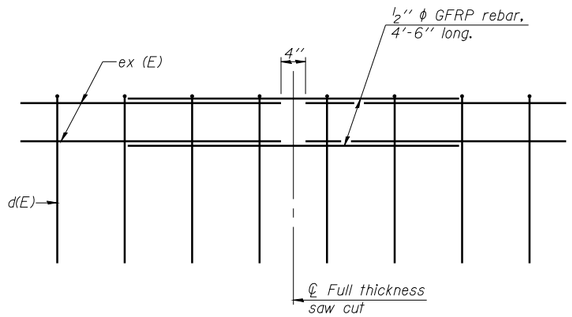
All dimensions shall remain the same as shown on superstructure details, except dimensions A and B which are to be revised as shown to provide additional clearance. Additional concrete needed to revise dimension A and B = 0.0165 cu. yds./ft. of parapet.

Place aluminum sheet in curb portion at and near piers. Full thickness saw cut at all joint locations in lieu of cork joint filler.

Steel superstructure shown. Other superstructure types similar.



#3 (E) BAR



GFRP REBAR STIFFENING DETAIL
(Place as shown in parapet section at each parapet joint location.)

CONCRETE PARAPET SLIPFORMING OPTION

SHEET NO. 31	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
31 SHEETS	55	(59, 68)RS-3, BR	Macoupin	137	137
			CONTRACT NO. 72921		
	FED. ROAD DIST. NO. 6	ILLINOIS	FED. AID PROJECT		

SFP-34 7-1-10