

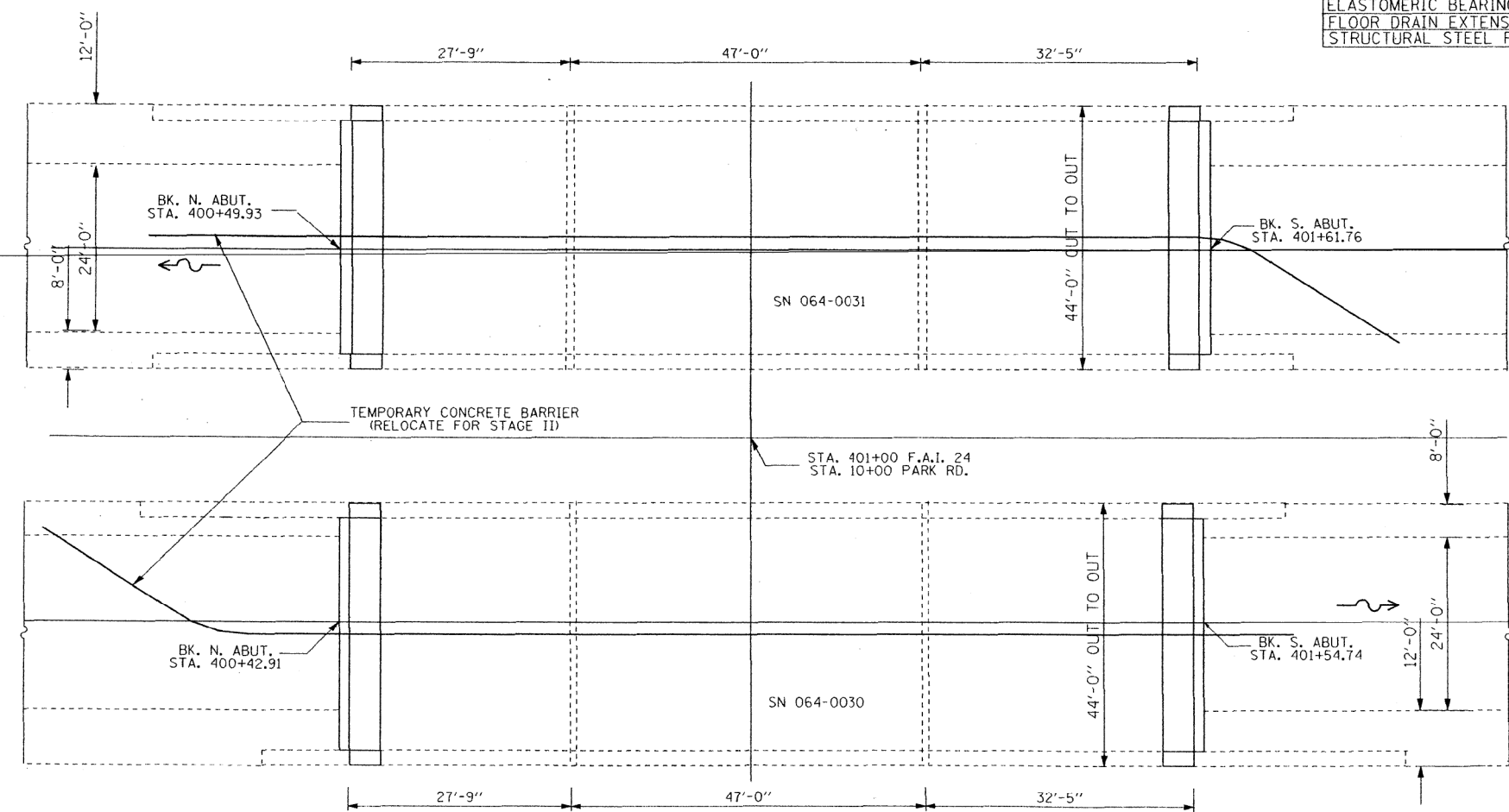
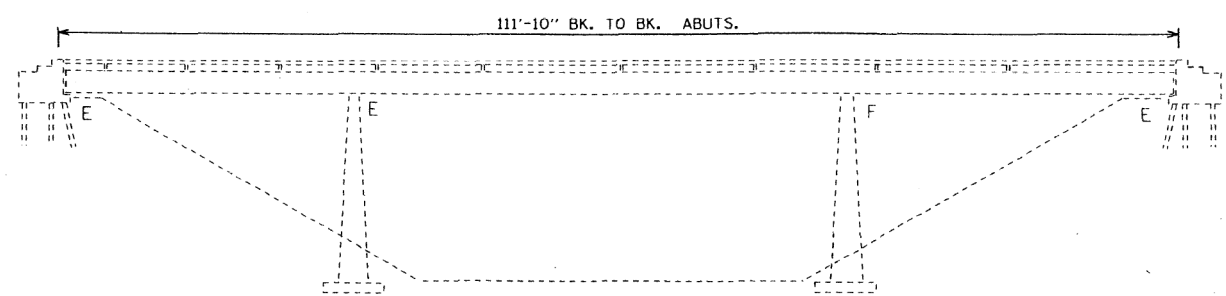
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	203

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
 * 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2
 SHEET 1 OF 11 SHEETS



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL	0030	0031
JACK AND REMOVE EXISTING BEARINGS	EACH	36	18	18
SILICONE JOINT SEALER 1"	FOOT	81	40.5	40.5
SILICONE JOINT SEALER 1 1/2"	FOOT	81	40.5	40.5
POLYMER CONCRETE	CU FT	11.8	5.9	5.9
BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2 1/4"	SQ YD	950	475	475
BAR SPLICERS	EACH	56	28	28
CONCRETE BRIDGE DECK SCARIFICATION (1/2")	SQ YD	950	475	475
DECK SLAB REPAIR (PARTIAL)	SQ YD	35.9	29.1	6.8
CONCRETE SUPERSTRUCTURE	CU YD	35.2	17.6	17.6
CONCRETE REMOVAL	CU YD	33.8	16.9	16.9
BRIDGE DECK GROOVING	SQ YD	938	469	469
REINFORCEMENT BARS, EPOXY COATED	POUND	4070	2035	2035
TEMPORARY CONCRETE BARRIER	FOOT	640	320	320
RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	534	267	267
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2	1	1
PLUG EXISTING DECK DRAINS	EACH	24	12	12
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	13,410	6705	6705
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	24	12	12
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12	6	6
FLOOR DRAIN EXTENSIONS	EACH	16	8	8
STRUCTURAL STEEL REMOVAL	POUND	6140	3070	3070



SCOPE OF WORK

- SCARIFY EXISTING DECK SURFACE.
- REMOVE CONCRETE AT ABUTMENT JOINTS.
- REMOVE AND REPLACE END DIAPHRAGMS.
- REMOVE AND REPLACE EXPANSION BEARINGS.
- RECONSTRUCT EXPANSION JOINTS WITH SILICONE SEALER AND POLYMER CONCRETE NOSINGS.
- PARTIAL DEPTH PATCHING.
- NEW MICROSILICA OVERLAY.
- ELIMINATE DRAINS LOCATED WITHIN 10' OF ANY SUBSTRUCTURE ELEMENT.
- EXTEND ANY DRAINS TO REMAIN IN PLACE.

DESIGN STRESSES

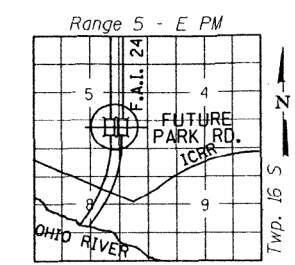
- FIELD UNITS**
- NEW CONSTRUCTION**
- $f'_c = 3500$ psi
 - $f_y = 60,000$ psi (REINFORCEMENT)
 - $f_y = 36,000$ psi (STRUCTURAL STEEL)
- EXISTING STRUCTURE**
- $f_c = 1400$ psi
 - $f_s = 20,000$ psi (REINFORCEMENT)

CONSTRUCTION SEQUENCE

1. SCARIFY STAGE I
2. CONSTRUCT STAGE I
3. SCARIFY STAGE II
4. CONSTRUCT STAGE II

NOTE: SEE ROADWAY PLANS FOR LIMITS AND QUANTITIES FOR THE BITUMINOUS CONCRETE BASE COURSE WIDENING

FOR INFORMATION ONLY



GENERAL PLAN AND ELEVATION
 F.A.I. ROUTE 24 OVER PARK RD
 SECTION (64-1) RS-1
 SN 064-0030 (S.B.) & 064-0031 (N.B.)
 MASSAC COUNTY

DESIGNED	J.C.P.
CHECKED	
DRAWN	A.K.K.
CHECKED	

MODEL: Default
 FILE NAME: L:\Draw\Structures\SN 0030 & 0031\012_0030-0031_Editing Plans-001.dgn



USER NAME = Misael Cordova	DESIGNED - DAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 11/18/2020 - 7:46:46 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
 STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
 SHEET 12 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	201
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	204
FED. ROAD DIST. NO.		ILLINOIS	FED. AID PROJECT	
* 64(1,2,2-1,3-1,3)RS-1.		BSMART FY2002-2		
SHEET 2 OF 11 SHEETS				

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.

EXISTING REINFORCEMENT BARS EXTENDING INTO THE REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM. COST INCLUDED WITH CONCRETE REMOVAL.

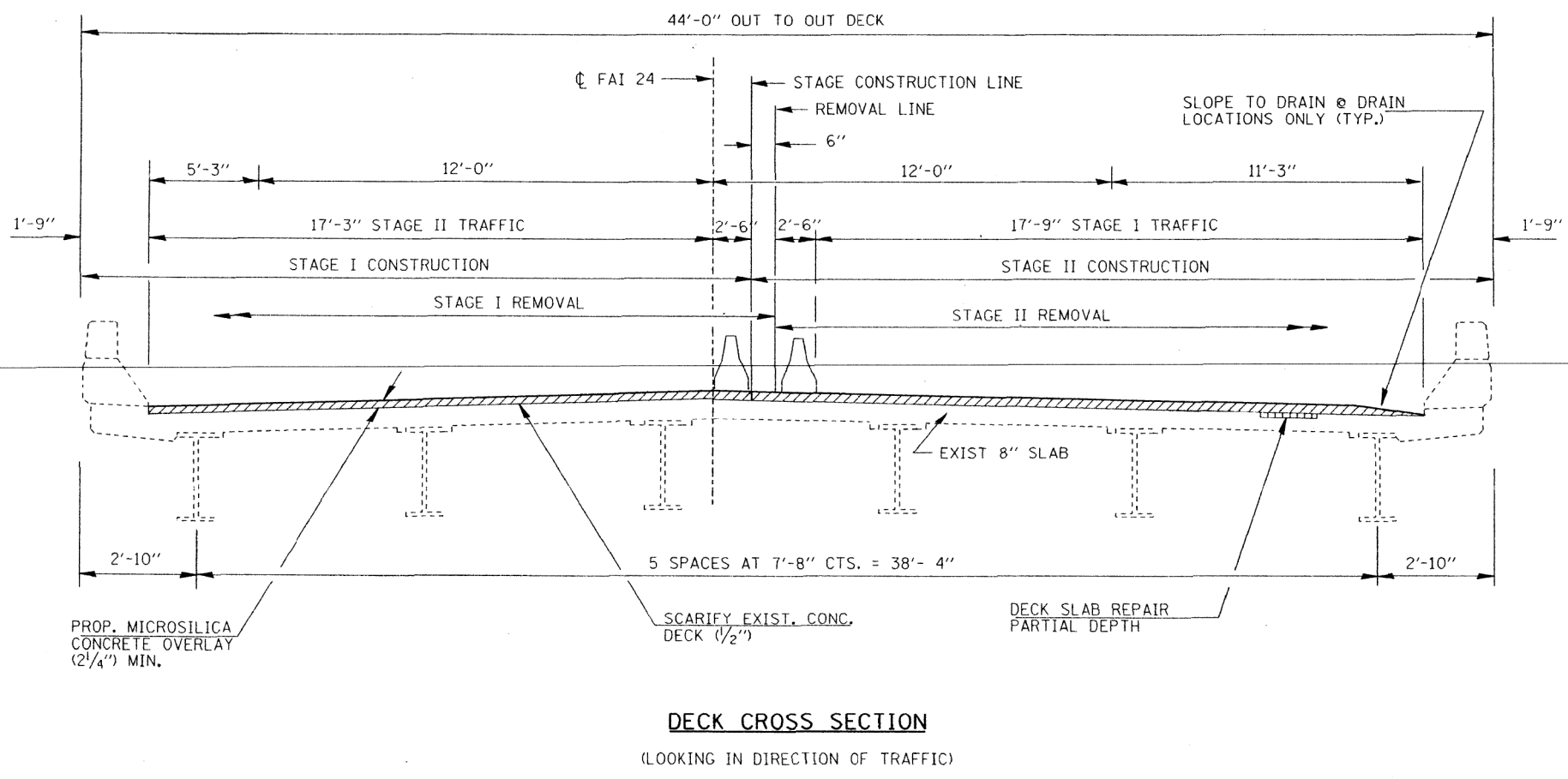
JOINT OPENINGS SHALL BE ADJUSTED ACCORDING TO ARTICLE 503.10(C) OF THE STANDARD SPECIFICATIONS WHEN THE DECK IS POURED AT AN AMBIENT TEMPERATURE OTHER THAN 50° F.

STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED.

THE INORGANIC ZINC RICH PRIMER/ACRYLIC/ACRYLIC PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE ACRYLIC FINISH COAT SHALL BE INTERSTATE GREEN, MUNSELL NO. 7.5G 4/8. SEE SPECIAL PROVISION "CLEANING AND PAINTING NEW METAL STRUCTURES".

THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHOULD 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".



DECK CROSS SECTION
(LOOKING IN DIRECTION OF TRAFFIC)

BILL OF MATERIAL

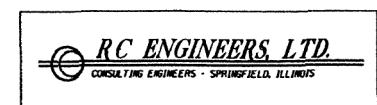
BAR	NO.	SIZE	LENGTH	SHAPE	
a(E)	40	#6	20'-6"	—	
a ₁ (E)	40	#6	21'-6"	—	
d(E)	24	#4	4'-7"	⌋	
d ₁ (E)	24	#5	3'-5"	⌋	
d ₂ (E)	16	#4	2'-1"	⌋	
h(E)	16	#6	19'-7"	—	
h ₁ (E)	16	#6	20'-7"	—	
x(E)	164	#5	2'-4"	—	
CONC. REMOVAL				CU YD	33.8
CONC. SUPER.				CU YD	35.2
REINFORC. BARS, EPOXY COATED				POUND	4070
BAR SPLICERS				EACH	56
POLYMER CONC.				CU FT	11.8
SILIC. JT. SEALER				FOOT	162

FOR INFORMATION ONLY

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

CROSS SECTION, GENERAL NOTES, BILL OF MATERIAL

DESIGNED	J.C.P.
CHECKED	
DRAWN	T. F.
CHECKED	



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USER NAME =	Misael Cordova	DESIGNED -	DAC	REVISED -	
		CHECKED -	AS	REVISED -	
PLOT SCALE =	N/A	DRAWN -	GLD/RAH	REVISED -	
PLOT DATE =	11/18/2020 - 7:46:53 AM	CHECKED -	JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

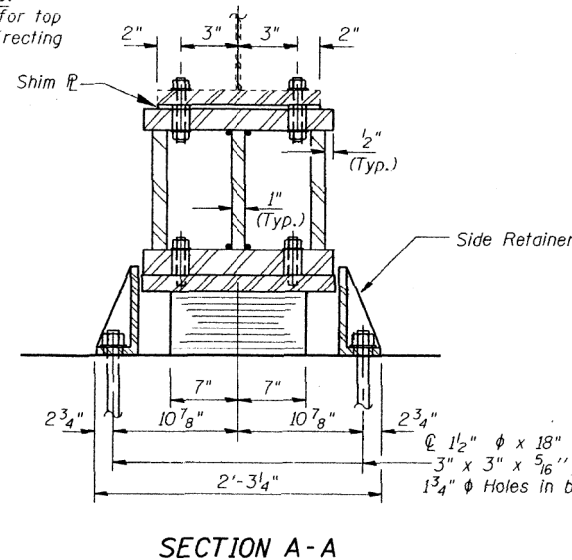
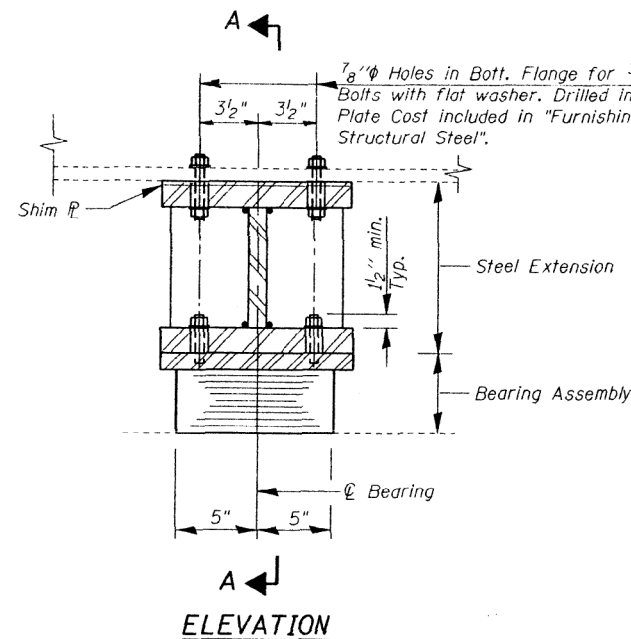
EXISTING PLANS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

SHEET 13 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	202
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

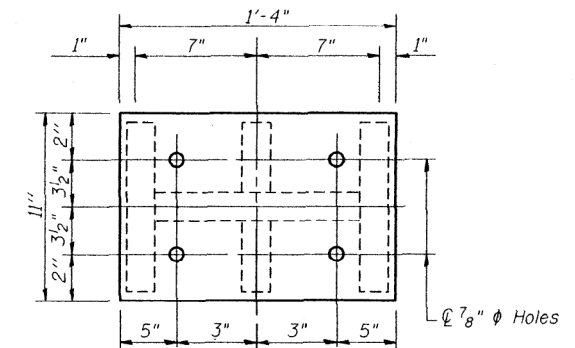
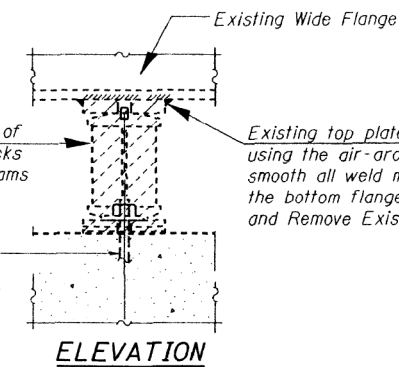
FOR INFORMATION ONLY

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	208
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 64(1,2-1,3-1,3)RS-1		BSMART FY2002-2		
Sheet 6 of 11 sheets				

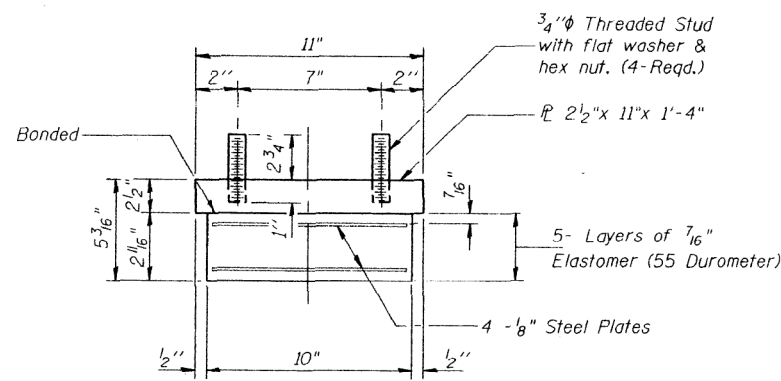


Hatched areas indicate removal of existing bearing and plates. Jacks shall be placed under exist. beams and cribbing shall be provided.

Burn existing anchor bolts flush with concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is included with "Jack and Remove Existing Bearings".



TYPE I ELASTOMERIC BEARING PIER 1

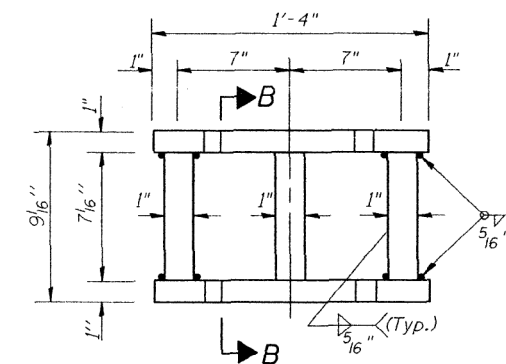
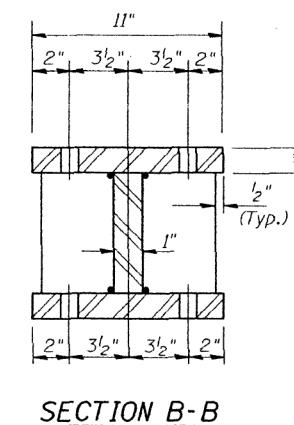


Note: Shim plates shall not be placed under Bearing Assembly

*** BEAM REACTION TABLE**

	SERVICE LOADS
R ϕ (K)	63.3
R $\frac{1}{4}$ (K)	44.9
Imp (K)	13.5
R Total (K)	121.7

* Min. Jack capacity at each Beam shall be 70 Tons.



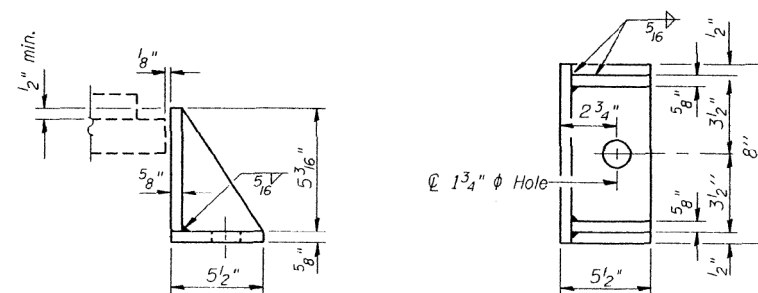
Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

For anchor bolt installation details see sheet # 8 of 11.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".



Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	12

ELASTOMERIC BEARING TYPE I, PIER 1



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

SHEET 15 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	204
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78606	

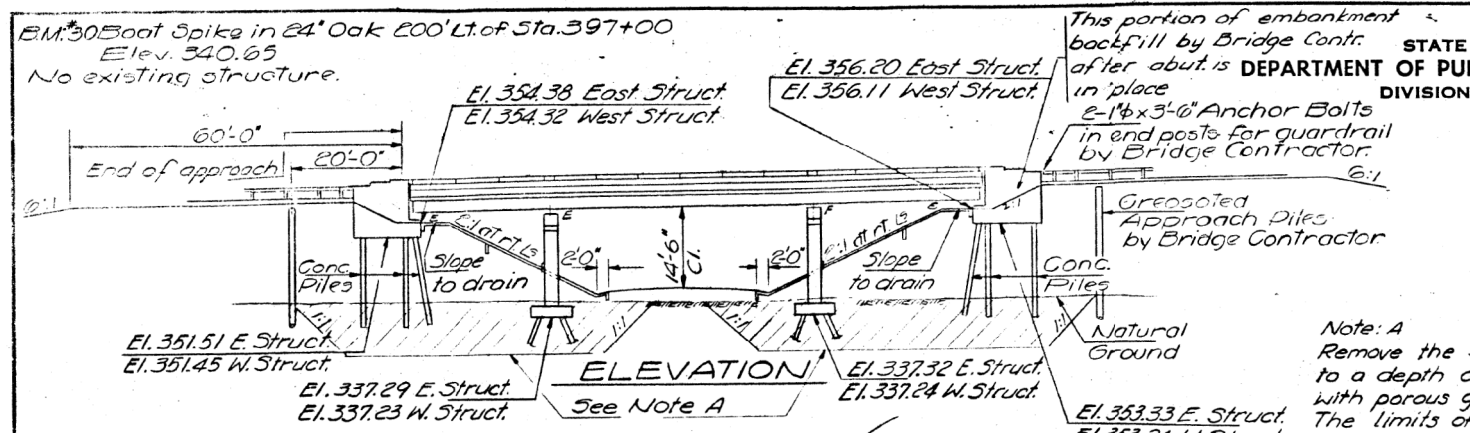


USER NAME	= Misaed Cordova
DESIGNED	- DAC
CHECKED	- AS
PLOT SCALE	= N/A
DRAWN	- GLD/RAH
CHECKED	- JTH
PLOT DATE	= 11/18/2020 - 7:47:05 AM

DESIGNED	- DAC	REVISED	-
CHECKED	- AS	REVISED	-
DRAWN	- GLD/RAH	REVISED	-
CHECKED	- JTH	REVISED	-

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STATE OF ILLINOIS DEPARTMENT OF PUBLIC WORKS & BUILDINGS DIVISION OF HIGHWAYS



CREOSOTED APPR. PILE DATA

No. Req'd.	Length
6	18' N. Abut. E. Struct.
6	21' S. Abut. E. Struct.
6	22' N. Abut. W. Struct.
6	25' S. Abut. W. Struct.

GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.

Rivets $\frac{3}{4}$ " ϕ , open holes $\frac{1}{2}$ " ϕ , unless otherwise noted.

The exposed surfaces of the expansion guard shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.

Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of paint. See Special Provisions for field paint.

Anchor bolts shall be set before riveting diaphragms over supports.

Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor on the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.

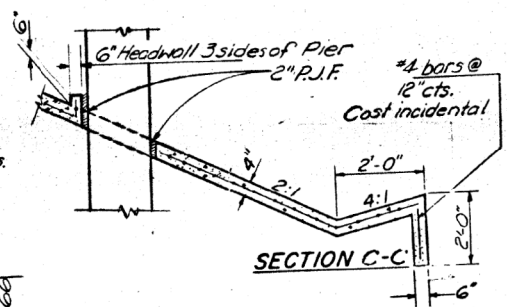
Slope wall shall be reinforced with welded wire fabric 6" x 6" mesh, weighing 58# per 100 sq. ft.

The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.

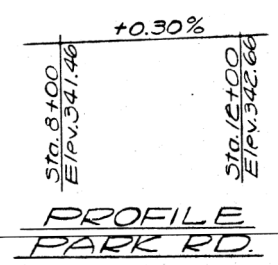
The Contractor shall drive one (1) concrete test pile in a permanent location @ the N. Abut. West Struct. & Pier 2 East Struct. as directed by the Engineer before ordering the remainder of piles.

Concrete piles at abutments shall be driven in holes precored through the embankment in accordance with Art. 513.09 (c) of Standard Specifications.

The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.



Note: A
Remove the soft surface material to a depth of 5 ft. & replace with porous granular backfill. The limits of removal are a point under the midslope of either sideslope, the toe of the endslopes, & 10 ft. behind the Abutts. (See Special Provisions)



CURVE DATA

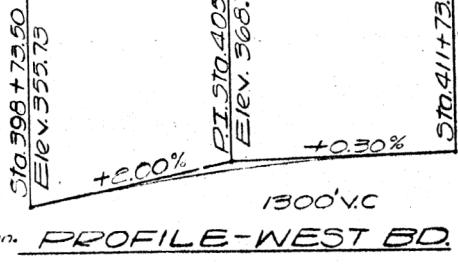
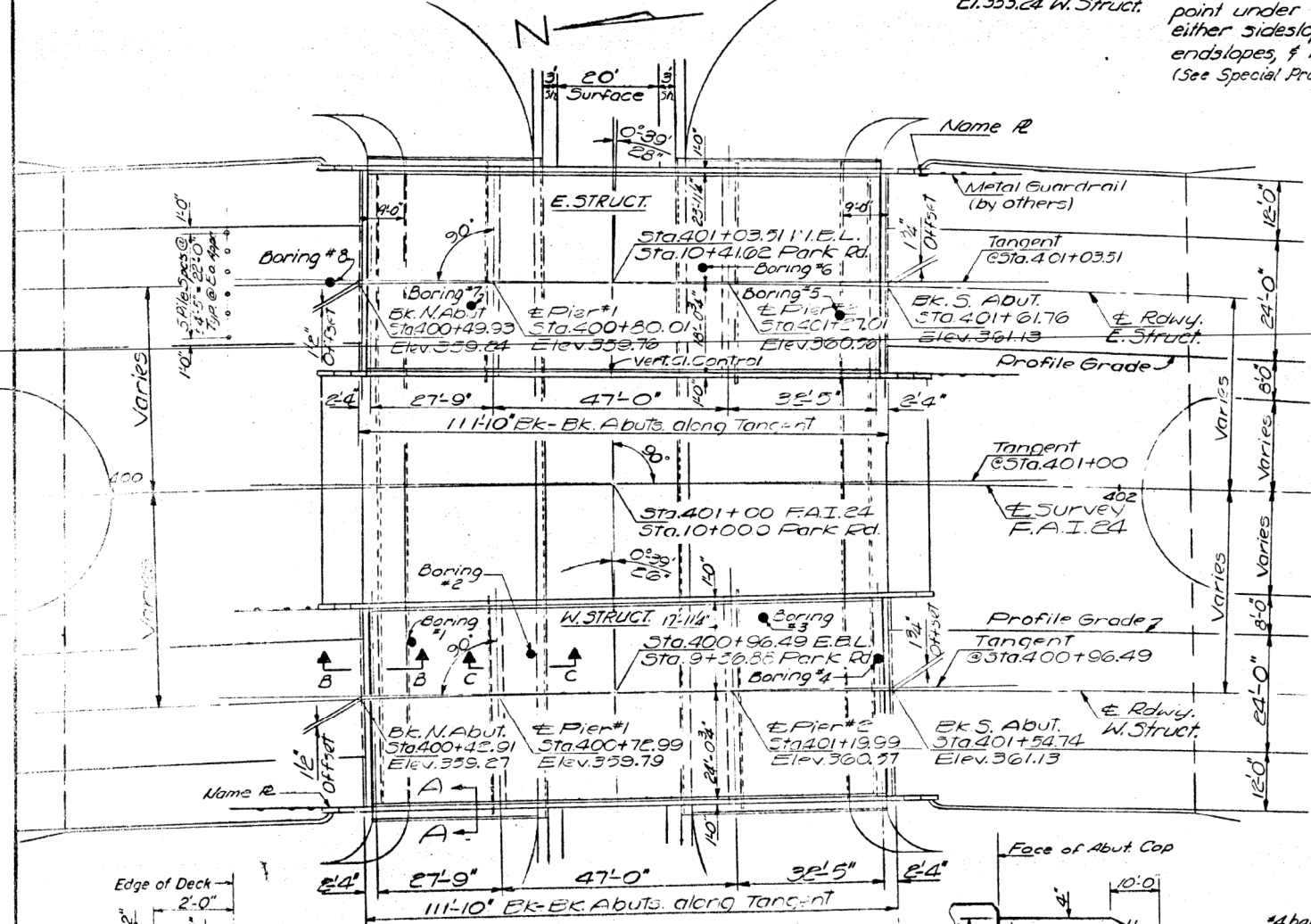
W. Bd. Lane P.I. Sta. 406+80.74
 E. Bd. Lane P.I. Sta. 409+36.72
 E. P.I. Sta. 408+08.73
 $\Delta = 15^\circ-29'-39''$
 $D = 0^\circ-30'$
 $R = 11,459.16'$
 $L = 3,098.84'$
 $T = 1,558.93'$
 $E = 105.55'$
 $S.E. = 0.015''/ft$

STATION 401+00
 BUILT 196 BY
 STATE OF ILLINOIS
 F.A.I. RT. 24 SEC. 64-3HR-2
 F.A. PROJ. 1-16-24-1(23)
 LOADING H520 & ALT.

NAME PLATE
 See Std. 2113-1

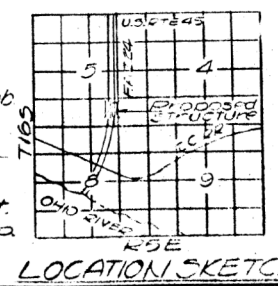
TOTAL BILL OF MATERIAL

Item	Super	Sub	Total
Earth Excavation		4200	4200
Porous Granular Backfill Cu Yds		4200	4200
Protective Coat	Sq. Yds. 1190		1190
Class X Concrete	Cu Yds. 2945	356.2	3301.2
Structural Steel	Lbs. 172400		172400
Stud Shear Connectors	Ea. 1692		1692
Aluminum Railing	Lin. Ft. 434		434
Reinforcement Bars	Lbs. 76190	39220	115410
Creosoted Piles (Up to 20' Lin. Ft)		108	108
Creosoted Piles (20.1 to 38' Lin. Ft)		408	408
Concrete Piles	Lin. Ft. 2031		2031
Test Pile Concrete	Ea. 2		2
Name Plates	Ea. 2		2
Slope Wall 4'	Sq. Yds. 1120		1120
Preformed Jt. Sealer	Lin. Ft. 163		163



DESIGN STRESSES

$f_c = 1200$ psi - Deck Slab
 $f_c = 1400$ psi - Curb, Parapet, Sub
 $f_s = 20,000$ psi - Reinf.
 $f_s = 20,000$ psi - Struct.
 $f_c = 75$ psi - Flgs.
 $n = 10$
 Allowable F_{UT} WS. 25#/15q. FT.
 Allowable $L.D.$ 1/3 Non-Comp.
 1/30 Comp.
 LOADING H520-24 & ALT.



FOR INFORMATION ONLY 9-70

PROJ. 1-16-24-1(23)37
 GENERAL PLAN & ELEVATION
 F.A.I. RT. 24 OVER
 FORT MASSAC
 PARK ROAD
 F.A.I. ROUTE 24
 SECTION 64-3HR-2
 MASSAC COUNTY
 STATION 401+00

DESIGNED: [Signature]
 CHECKED: [Signature]
 DRAWN: [Signature]
 EXAMINED: [Signature]
 PASSED: [Signature]
 APPROVED: [Signature]
 JANUARY 22 1969



USER NAME = Misaed Cordova	DESIGNED - DAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 11/18/2020 - 7:47:18 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

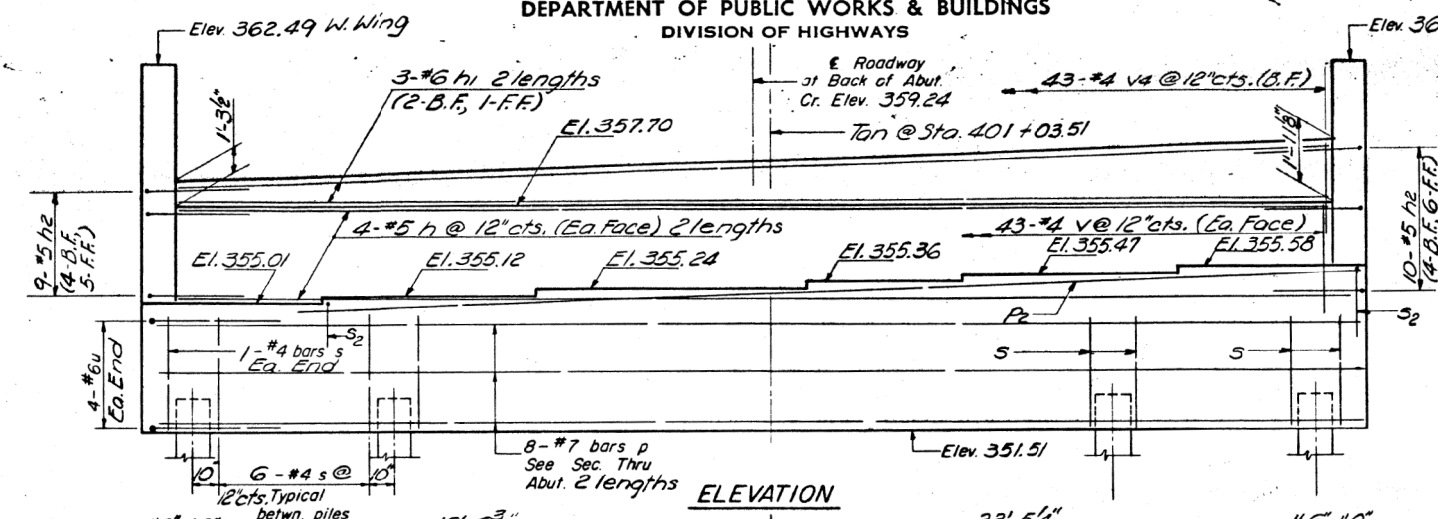
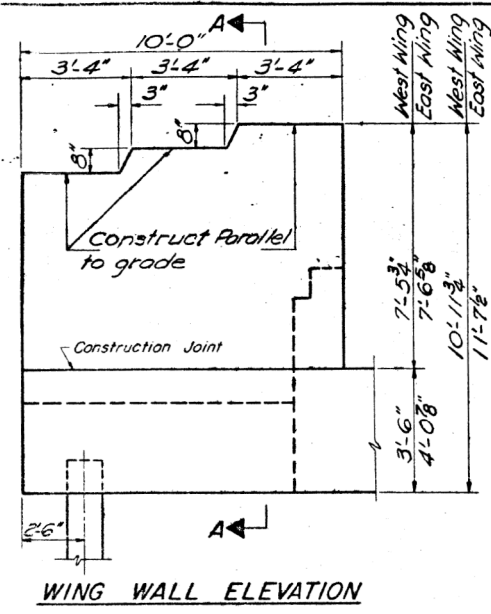
STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
 STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	206

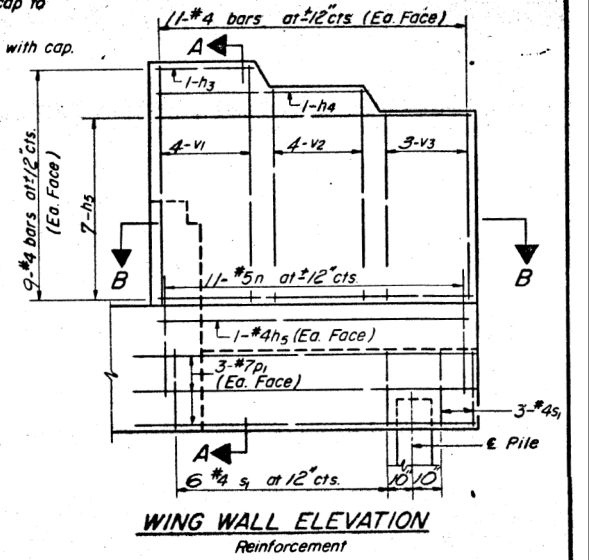
CONTRACT NO. 78606
 ILLINOIS FED. AID PROJECT

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

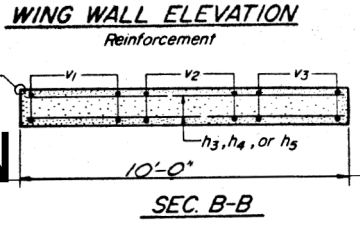


Space reinforcement in cap to miss anchor bolts.

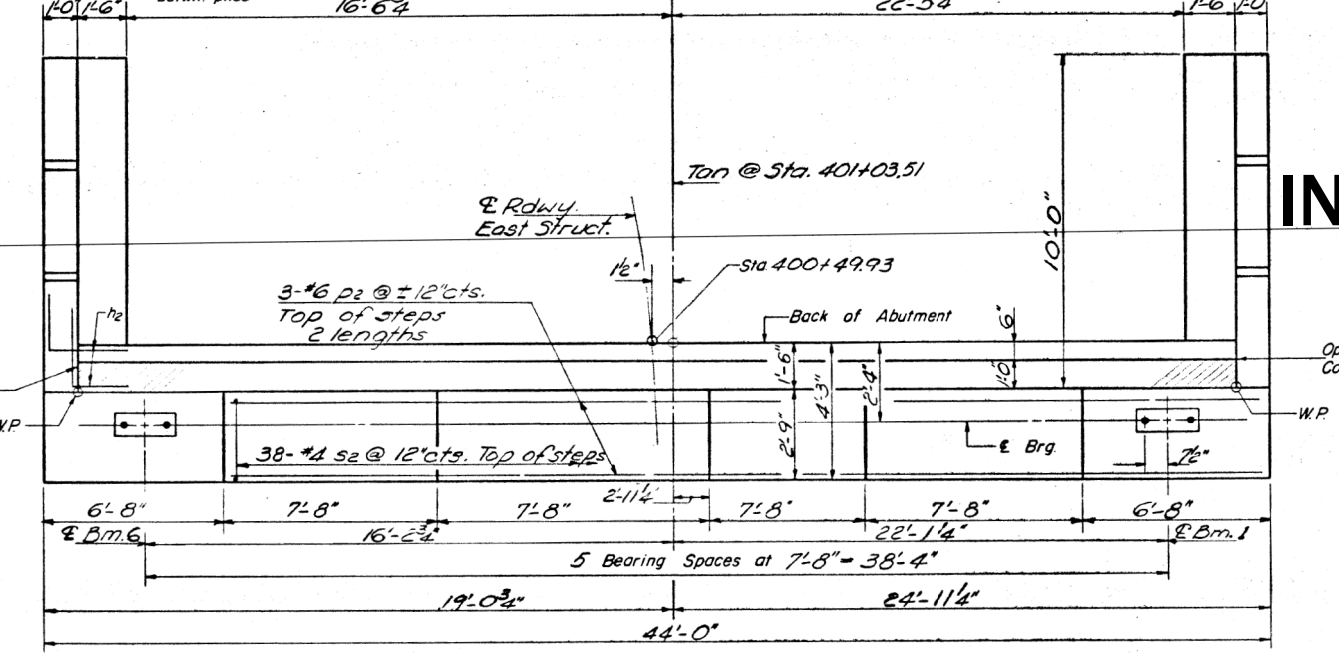
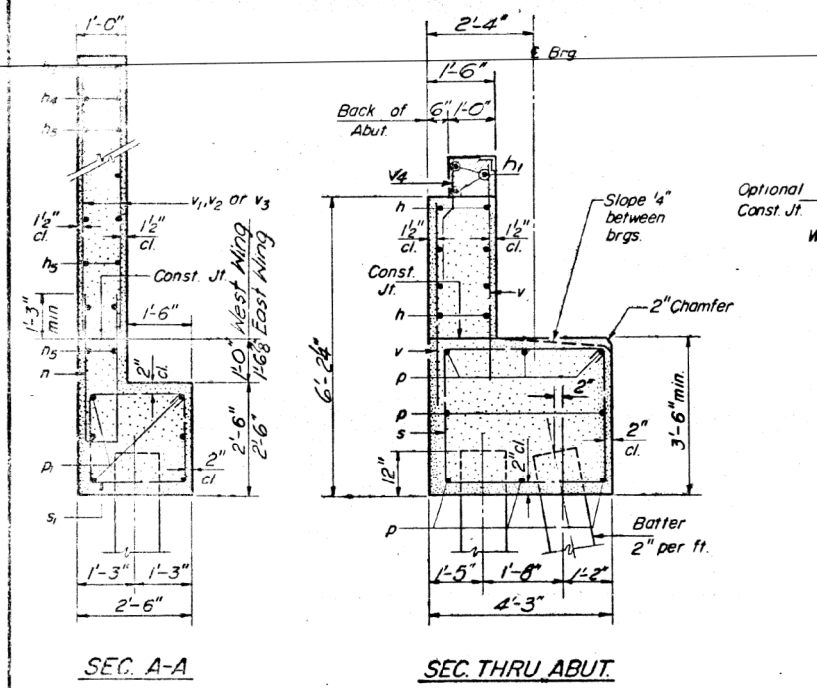
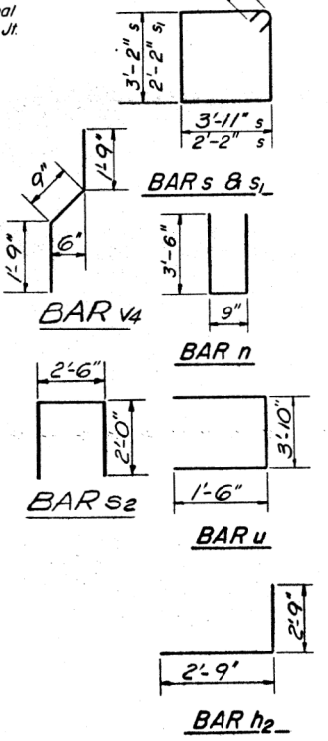
Pour steps monolithically with cap.



FOR INFORMATION ONLY

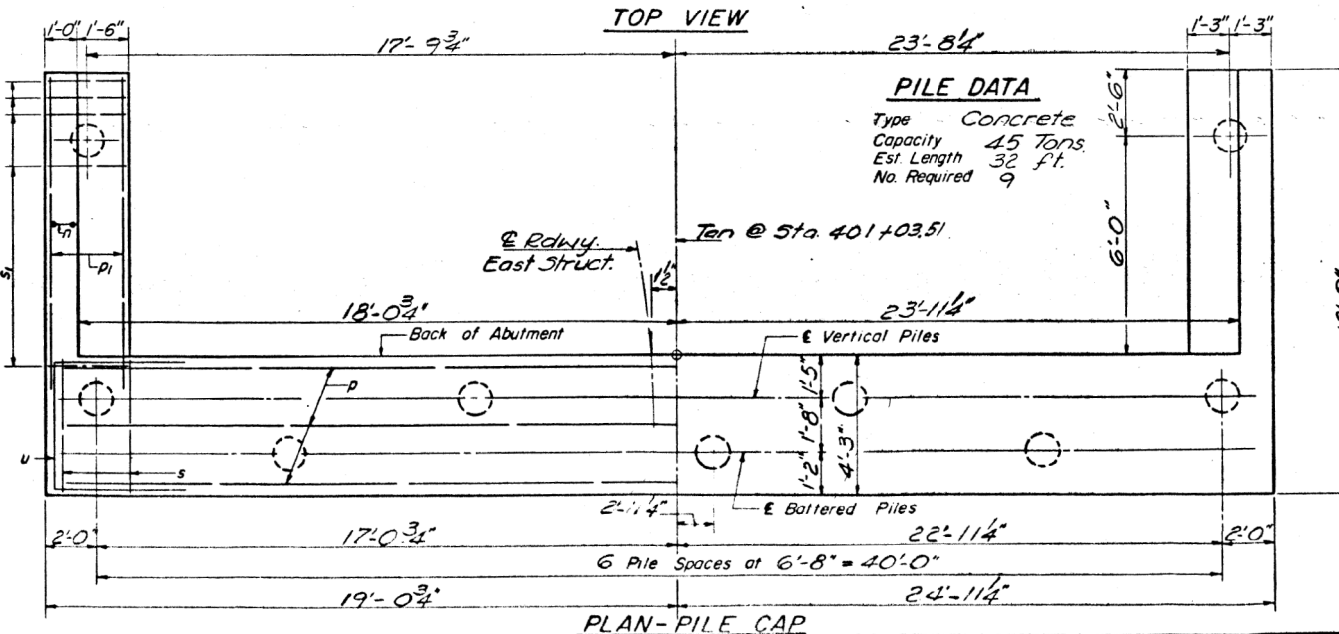


Bar	No	Size	Length	Shape
h	16	#5	21'-9"	—
h ₁	6	#5	21'-9"	—
h ₂	19	#5	5'-6"	—
h ₃	4	#4	3'-0"	—
h ₄	4	#4	6'-3"	—
h ₅	32	#4	9'-9"	—
n	22	#5	7'-9"	U
p	16	#7	22'-9"	—
p ₁	12	#7	11'-9"	—
p ₂	6	#6	19'-6"	—
s	38	#4	15'-0"	□
s ₁	18	#4	9'-6"	—
s ₂	38	#4	6'-6"	□
u	8	#6	6'-10"	□
v	86	#4	5'-6"	—
v ₁	16	#4	7'-3"	—
v ₂	16	#4	6'-6"	—
v ₃	12	#4	6'-0"	—
v ₄	86	#4	4'-3"	—
Class X Concrete		Cu Yds		
Reinforcement Bars		Lbs		
Concrete Piles		Lin. Ft.		



PILE DATA

Type	Concrete
Capacity	45 Tons
Est. Length	32 ft.
No. Required	9



NORTH ABUTMENT EAST STRUCTURE
F.A.I. RT. 24 SEC. 64-34B-2
MASSAC COUNTY
STA. 401+00

EXAMINED JANUARY 22 1969

PASSED *W.E. Bourne*

APPROVED *J.E. Stoff*



USER NAME = Misaed Cordova

DESIGNED - DAC

CHECKED - AS

PLOT SCALE - N/A

DRAWN - GLD/RAH

DATE - 11/18/2020 - 7:47:30 AM

CHECKED - JTH

REVISOR -

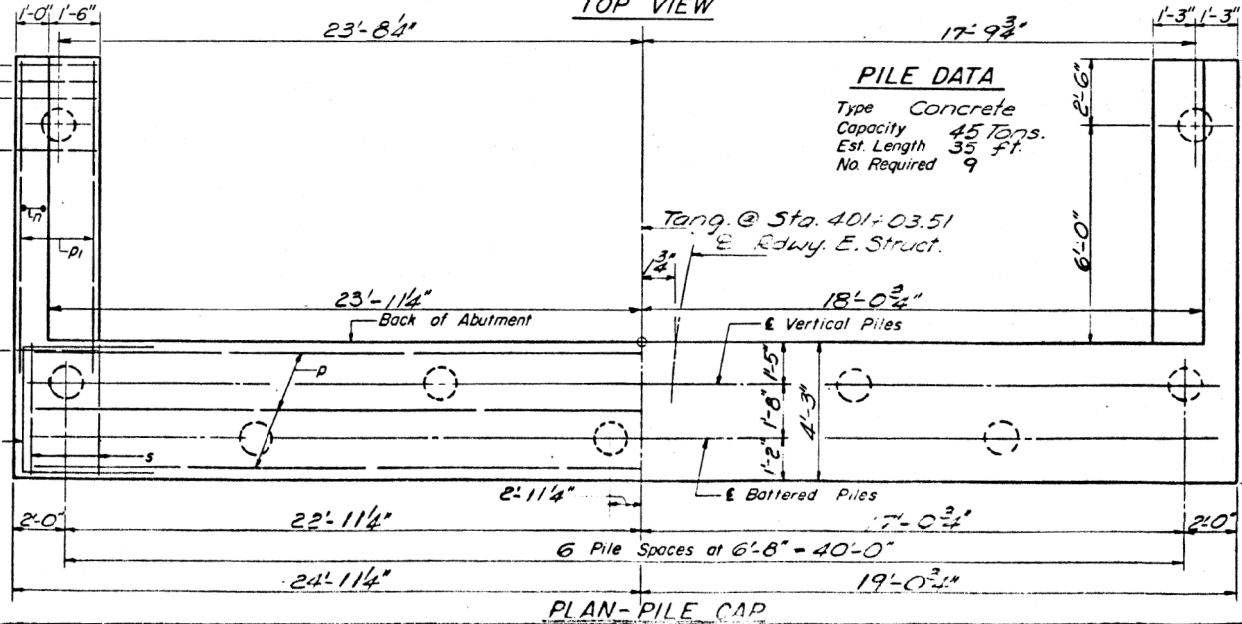
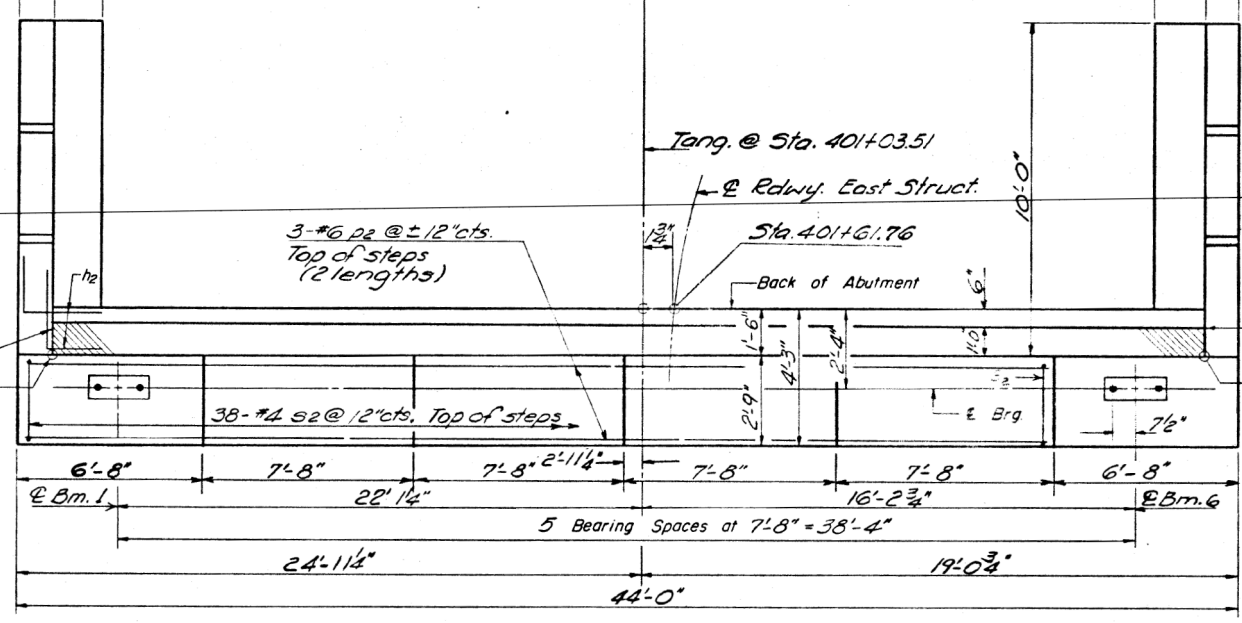
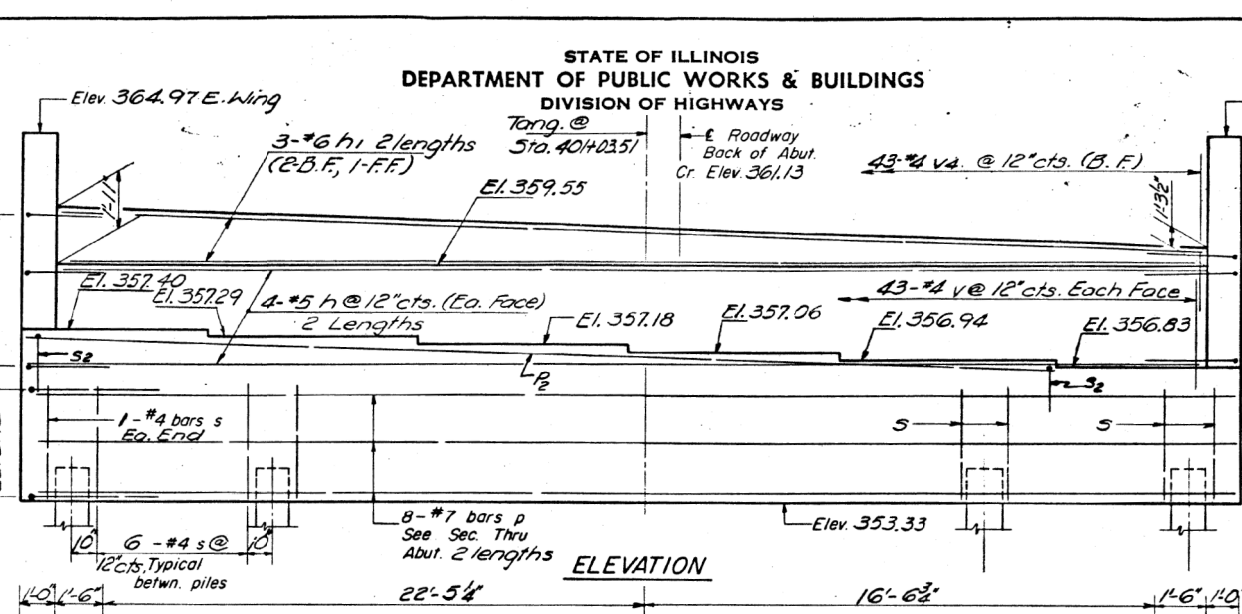
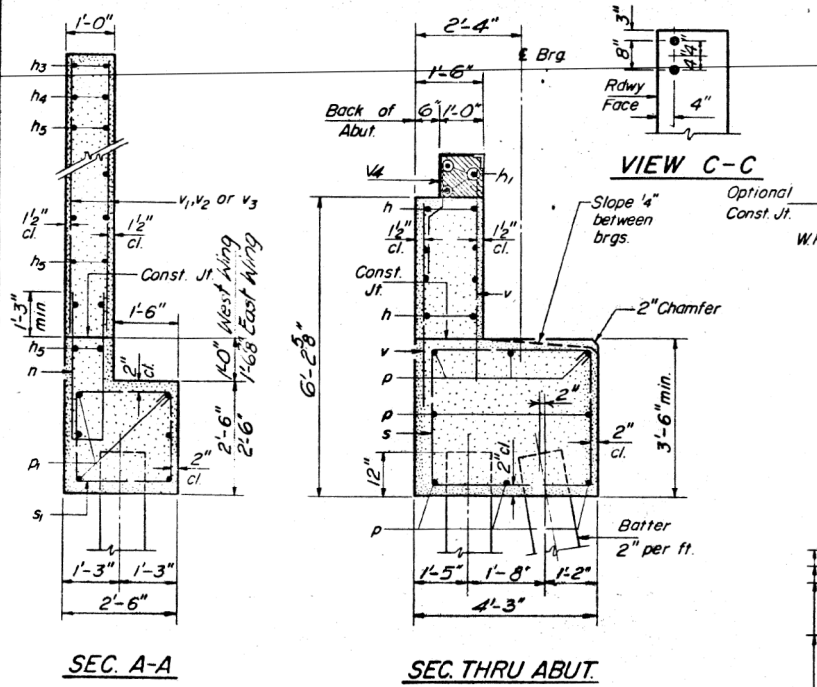
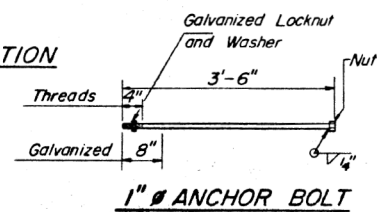
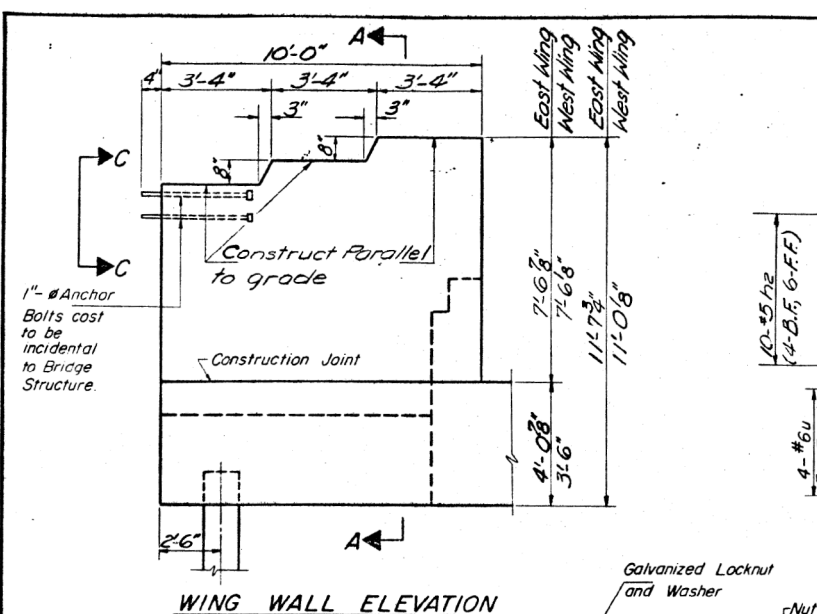
REVISION -

REVISION -

REVISION -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

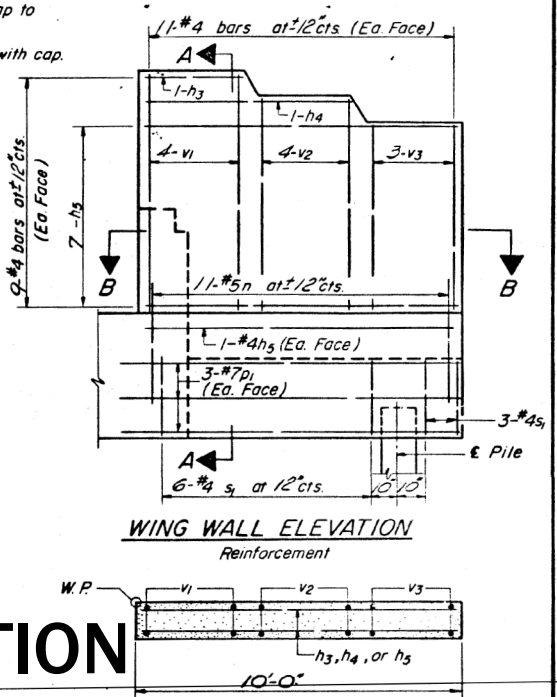


PILE DATA

Type	Concrete
Capacity	45 Tons.
Est. Length	35 ft.
No. Required	9

Space reinforcement in cap to miss anchor bolts.
Four steps monolithically with cap.

FOR INFORMATION ONLY



SEC. B-B
ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	16	#5	21'-9"	—
h1	6	#6	21'-9"	—
h2	19	#5	5'-6"	J
h3	4	#4	5'-0"	—
h4	4	#4	6'-3"	—
h5	32	#4	9'-9"	—
n	22	#5	7'-9"	U
p	16	#7	22'-9"	—
p1	12	#7	11'-9"	—
p2	6	#6	19'-6"	—
s	32	#4	15'-0"	□
s1	18	#4	9'-6"	□
s2	38	#4	6'-6"	□
u	8	#6	6'-10"	J
v	86	#4	5'-6"	—
v1	16	#4	7'-3"	—
v2	16	#4	6'-6"	—
v3	12	#4	6'-0"	—
v4	86	#4	5'-3"	J
Class X Concrete		Cu. Yds.		
Reinforcement Bars		Lbs.		
Concrete Piles		Lin. Ft.		

**SOUTH ABUTMENT
EAST STRUCTURE**
F.A.I. RT. 24 SEC. 64-3HB-2
MASSAC COUNTY
STA. 401+00

DESIGNED	Jan 22 1969
CHECKED	
DRAWN	SG Ferchow
CHECKED	
EXAMINED	
PASSED	
APPROVED	

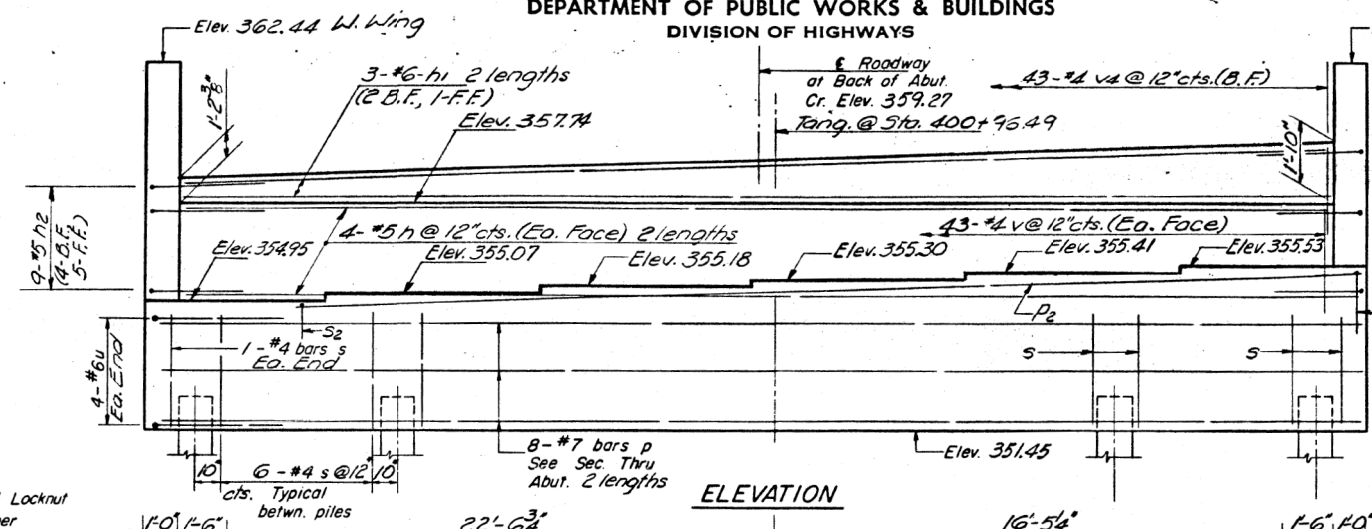
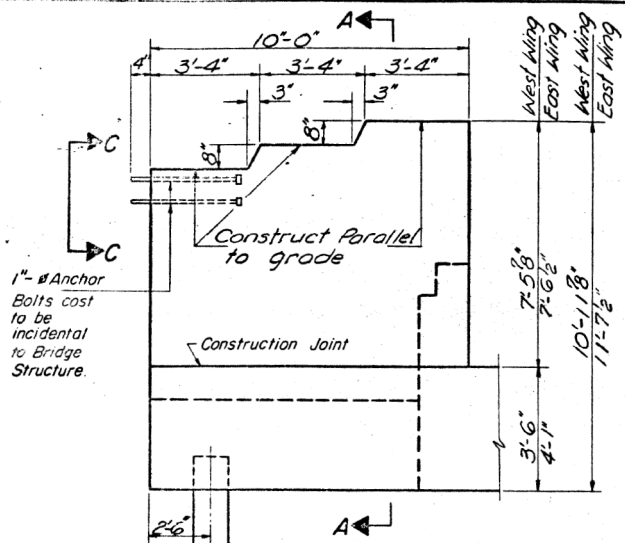


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		CHECKED -	JTH	REVISED -	

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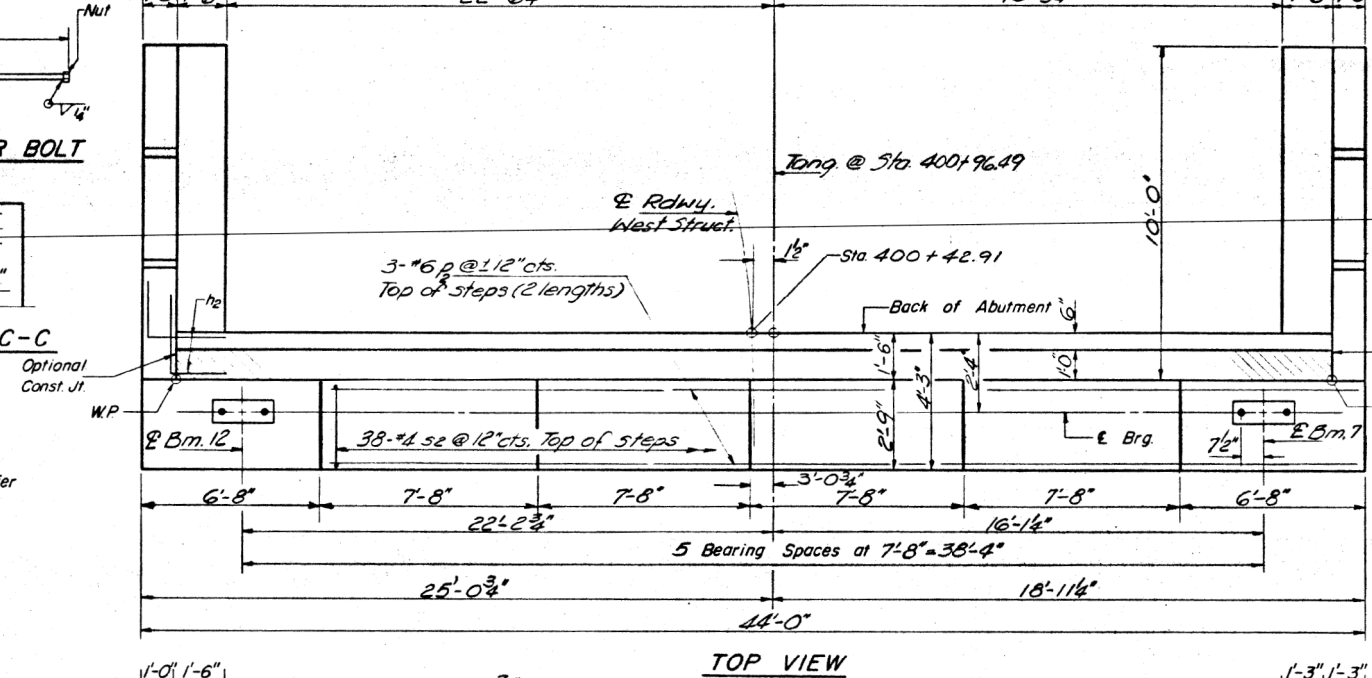
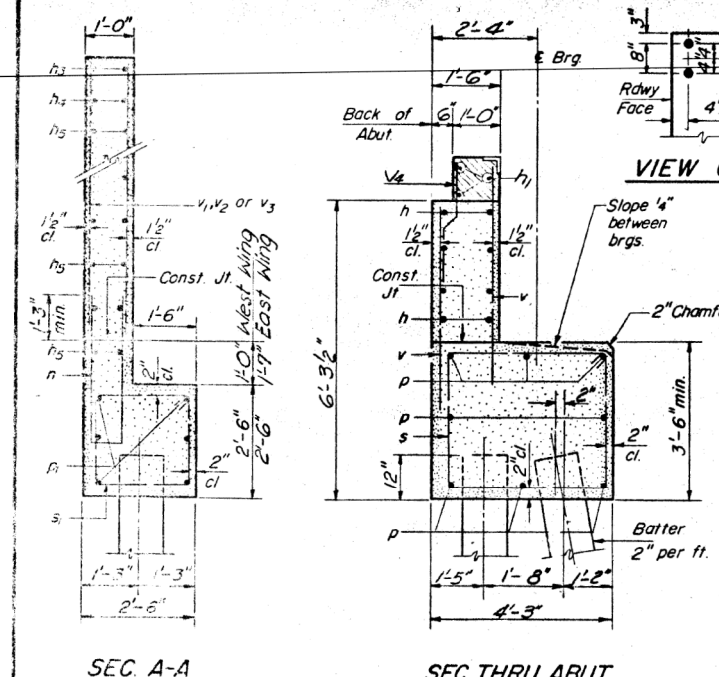
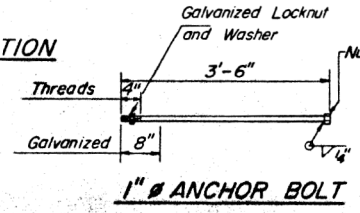
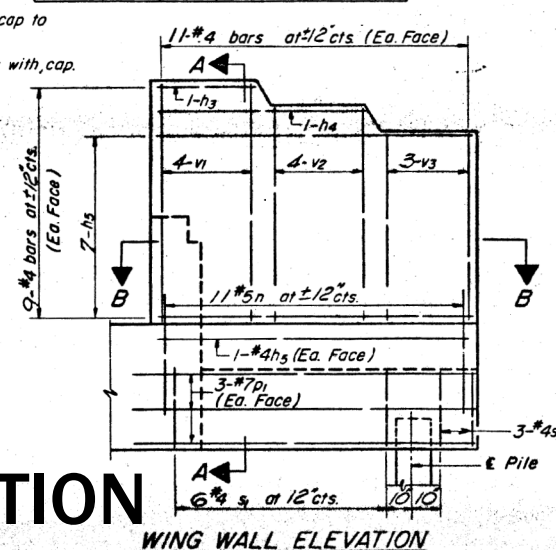
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	31B	MASSAC	44	17
FED. ROAD DIST. NO. 7		ILLINOIS FED. AID PROJECT		SHEET NO. 5
				19 SHEETS



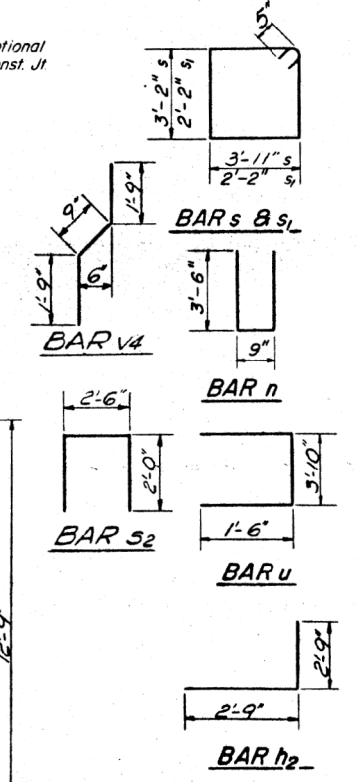
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

FOR INFORMATION ONLY



PILE DATA

Type	Concrete
Capacity	45 tons
Est. Length	30 ft.
No. Required	8 plus 1 permanent Test Pile



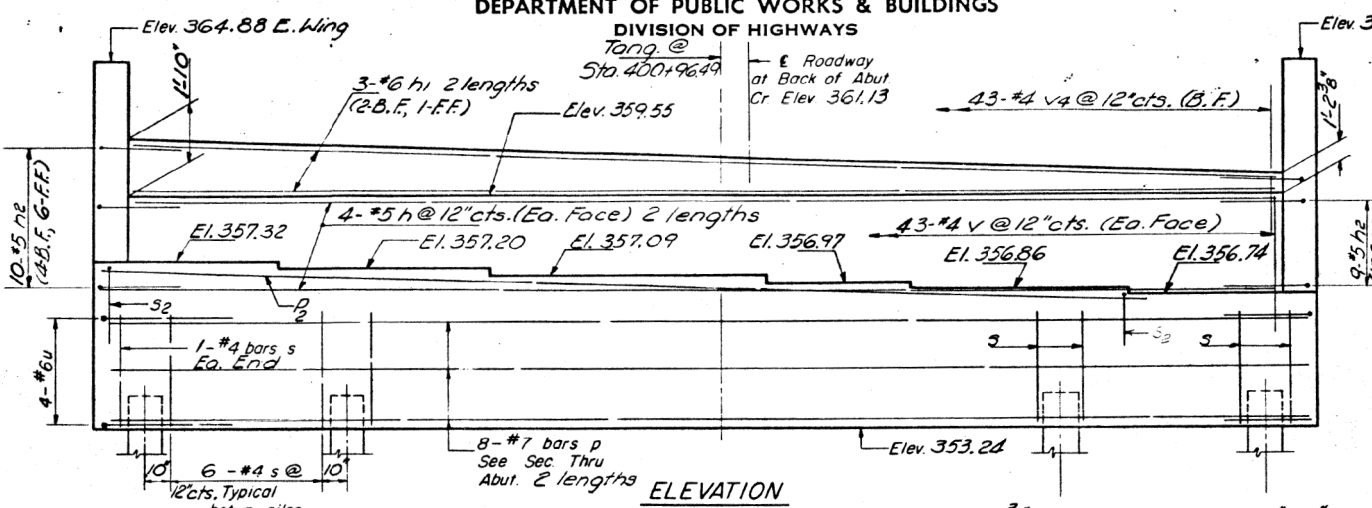
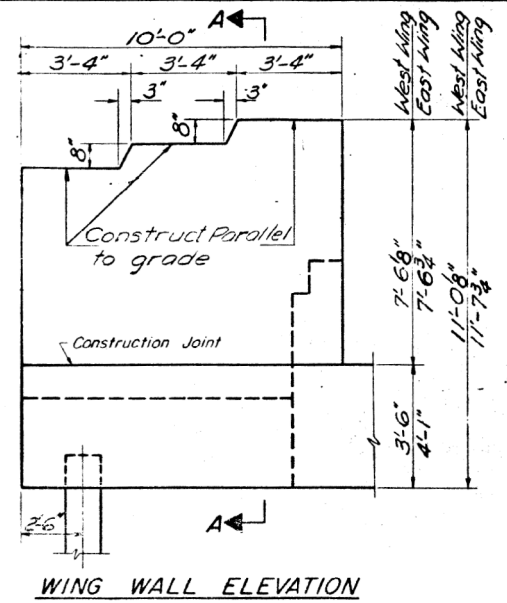
ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
n	16	#5	21'-9"	—
h1	6	#6	21'-9"	—
h2	19	#5	5'-6"	┘
h3	4	#4	3'-0"	—
h4	4	#4	6'-3"	—
h5	32	#4	9'-9"	—
n	22	#5	7'-9"	U
p	16	#7	22'-9"	—
p1	12	#7	11'-9"	—
p2	6	#6	19'-6"	—
s	38	#2	15'-0"	□
s1	18	#4	9'-6"	□
s2	38	#4	6'-6"	□
u	8	#6	6'-10"	□
v	86	#4	5'-6"	—
v1	16	#4	7'-3"	—
v2	16	#4	6'-6"	—
v3	12	#4	3'-0"	—
v4	86	#4	4'-3"	┘
Class X Concrete			Cu Yds.	4
Reinforcement Bars			Lbs	
Concrete Piles			Lin. Ft.	
Test Piles (Concrete)			Ea.	1

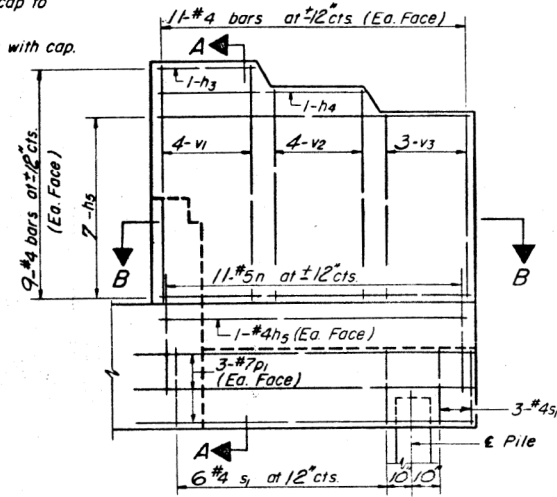
DESIGNED	James M. S. ...	EXAMINED	Jan 22 1969
CHECKED	...	PASSED	...
DRAWN	...	APPROVED	...
CHECKED	...		

NORTH ABUTMENT
WEST STRUCTURE
F.A.I. RT. 24 SEC. 64-31B-2
MASSAC COUNTY
STA. 401+00

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



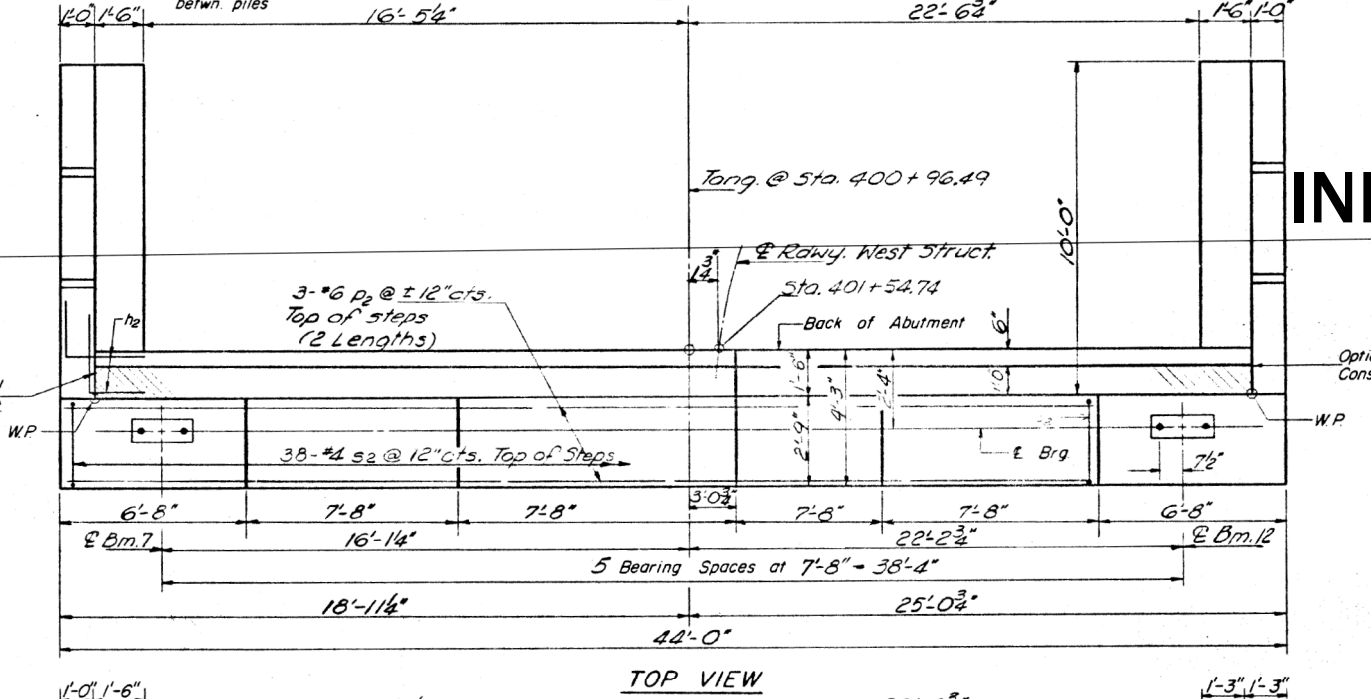
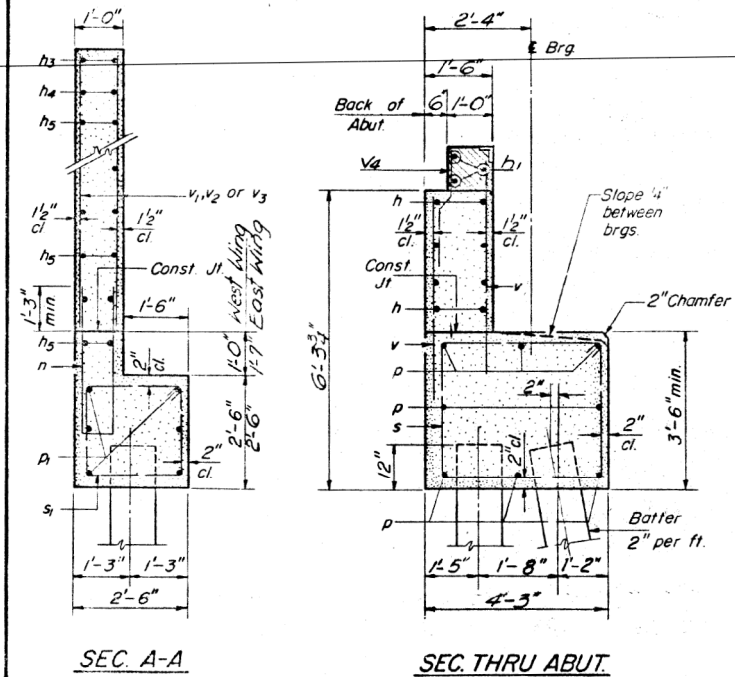
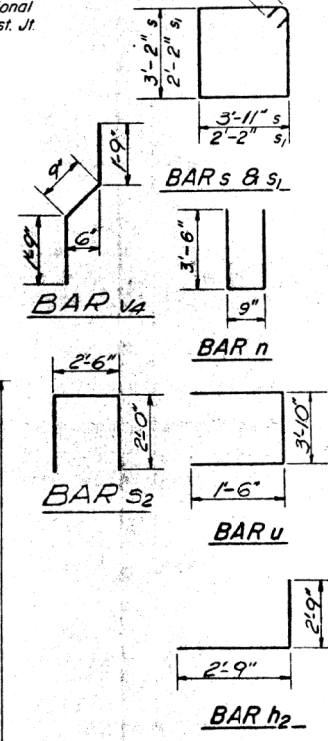
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.



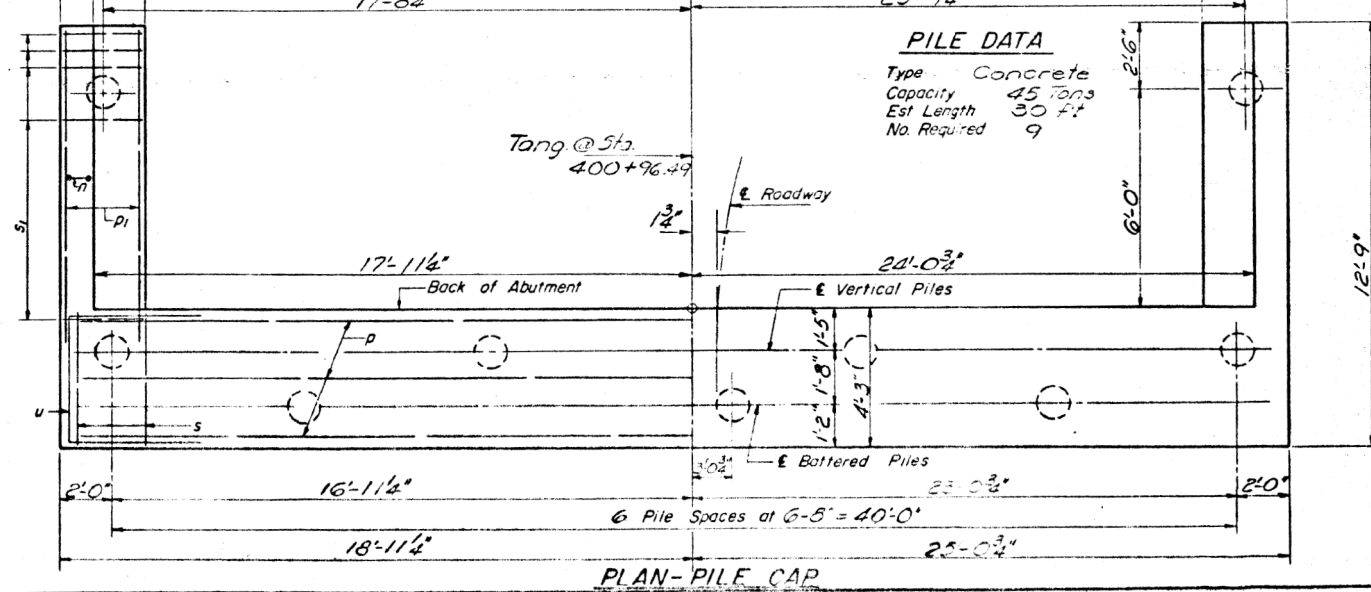
FOR INFORMATION ONLY

ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	21'-9"	—
h ₁	6	#6	21'-9"	—
h ₂	19	#5	5'-6"	U
h ₃	4	#4	3'-0"	—
h ₄	4	#4	6'-3"	—
h ₅	32	#4	9'-9"	—
n	22	#5	7'-9"	U
p	16	#7	22'-9"	—
p ₁	12	#7	11'-9"	—
p ₂	6	#6	19'-6"	—
s	38	#4	15'-0"	—
s ₁	18	#4	9'-6"	□
s ₂	38	#4	6'-6"	□
u	8	#6	6'-10"	□
v	86	#4	5'-6"	—
v ₁	16	#4	7'-3"	—
v ₂	16	#4	6'-6"	—
v ₃	12	#4	6'-0"	—
v ₄	86	#4	4'-3"	—
Class X Concrete		Cu Yds		
Reinforcement Bars		Lbs		
Concrete Piles		Lin Ft		



PILE DATA
Type Concrete
Capacity 45 Tons
Est Length 30 Ft.
No. Required 9



DESIGNED
CHECKED
DRAWN
CHECKED
EXAMINED
PASSED
APPROVED
JAN 27 1963
SG Ferchow
G. Carranza
J.E. Stahl

SOUTH ABUTMENT
WEST STRUCTURE
F.A.I. RT. 24 SEC. 64-3HB-2
MASSAC COUNTY
STA. 401+00

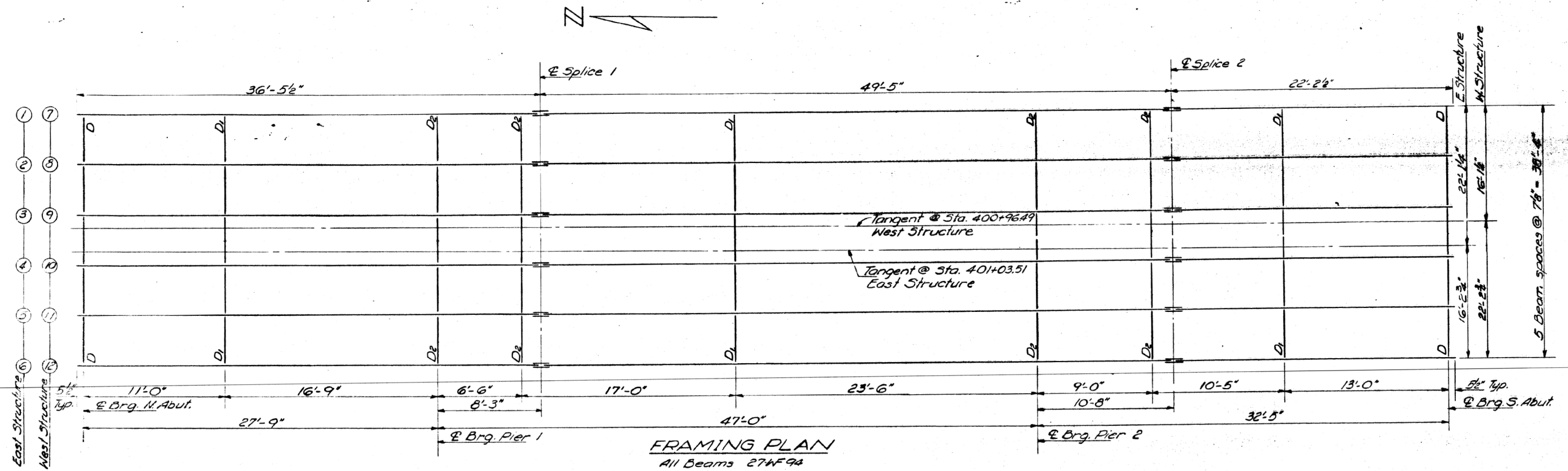


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CHECKED - AS
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DRAWN - GLD/RAH
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REVISOR -
REVISOR -
REVISOR -
REVISOR -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

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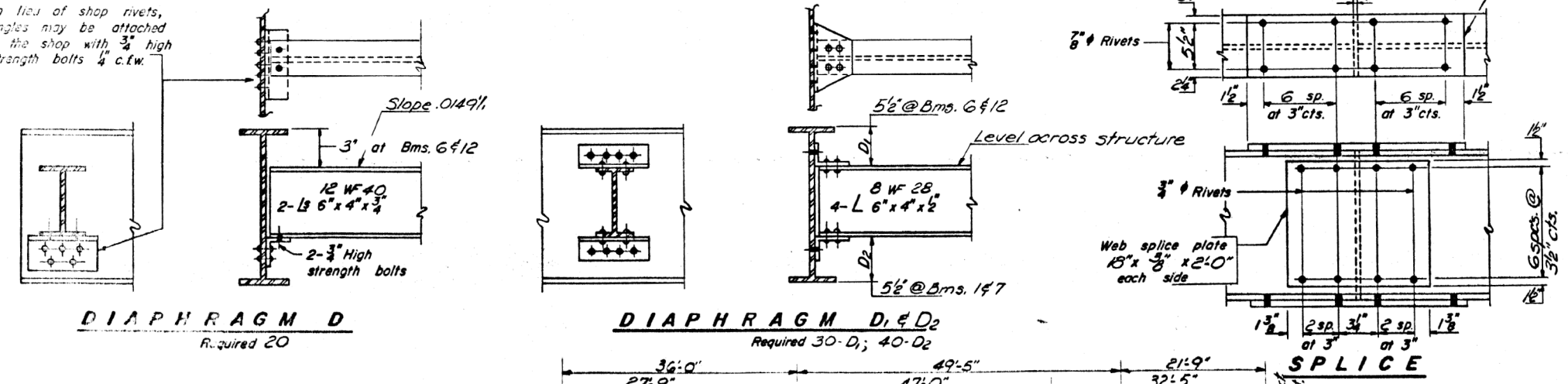
TOP OF BEAM ELEVATIONS
(For Fabrication only)
East Structure

Brm. No.	1	2	3	4	5	6
E Brq. N. Abut.	358.94	358.83	358.72	358.60	358.48	358.37
E Brq. Pier 1	359.37	359.26	359.15	359.03	358.91	358.80
E Splice 1	359.50	359.39	359.28	359.16	359.04	358.93
E Brq. Pier 2	360.16	360.05	359.94	359.82	359.70	359.59
E Splice 2	360.34	360.23	360.12	360.00	359.88	359.77
E Brq. S. Abut.	360.76	360.65	360.54	360.42	360.30	360.19

West Structure

Brm. No.	7	8	9	10	11	12
E Brq. N. Abut.	358.89	358.77	358.66	358.54	358.43	358.31
E Brq. Pier 1	359.32	359.20	359.09	358.97	358.86	358.74
E Splice 1	359.45	359.33	359.22	359.10	358.99	358.87
E Brq. Pier 2	360.09	359.97	359.86	359.74	359.63	359.51
E Splice 2	360.27	360.15	360.04	359.92	359.81	359.69
E Brq. S. Abut.	360.68	360.56	360.45	360.33	360.22	360.10

In lieu of shop rivets, angles may be attached in the shop with 3/4" high strength bolts 1/4" c.f.w.

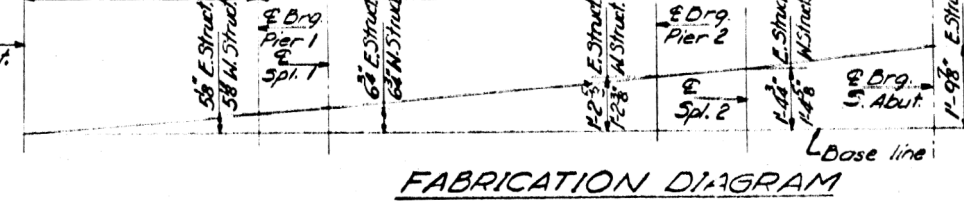


Note: See Sheet # 12 for Bearing Details & Shear Stud Spacing.
Diaphragm connections may be adapted to shop welding subject to approval by the Engineer.

FOR INFORMATION ONLY

STRUCTURAL STEEL
F.A.I. RT. 24 SEC. 64-3HB-2
MASSAC COUNTY
STA. 401+00

DESIGNED	JAN 22 1969
CHECKED	
DRAWN	
CHECKED	
EXAMINED	
PASSED	
APPROVED	



STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Hours	Elevation	N	Qu/1/2 ft.	w (%)
1 S	401+21.6	6' LT CENTERLINE EBL	None	330.0						
Ground Surface 333.0 0										
VERY SOFT WET DARK BROWN ORGANIC SILTY CLAY LOAM A-4(8)										
								1	0.25	21
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 3.0 FEET										
VERY SOFT VERY MOIST BROWN MOTTLED GREY SILTY CLAY LOAM A-4(9)										
								5	0.48	21
MEDIUM VERY MOIST BROWN MOTTLED GREY CLAY TO CLAY LOAM A-6(9-10)										
								20	0.85	16
MEDIUM TO STIFF MOIST TO VERY MOIST REDDISH BROWN SANDY CLAY LOAM A-4(3) WITH SOME GRAVEL										
								39	1.05	13
								13	1.25	21
								27	0.65	14
MEDIUM VERY MOIST BROWN SANDY CLAY A-4(6) WITH SOME GRAVEL										
								58	-	-
VERY DENSE VERY MOIST BROWN COARSE GRAINED SAND AND GRAVEL										
								59	-	-
BOTTOM OF HOLE = 19.0 FEET										

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Hours	Elevation	N	Qu/1/2 ft.	w (%)
2 S	401+19.9	6' LT CENTERLINE EBL	None	337.5						
Ground Surface 333.0 0										
ROTTEN VEGETATION										
								1	0.18	27
VERY SOFT VERY MOIST BROWN SILTY CLAY LOAM TO CLAY LOAM A-4(8)										
								16	1.65	23
MEDIUM MOIST BROWN MOTTLED GREY CLAY LOAM A-6(10) WITH SOME GRAVEL										
								12	1.35	20
MEDIUM MOIST BROWN MOTTLED GREY SANDY CLAY LOAM A-4(4)										
								15	-	16
MEDIUM MOIST REDDISH BROWN FINE GRAINED SAND										
								10	-	30
								40	-	12
DENSE TO VERY DENSE MOIST REDDISH BROWN COARSE SAND AND GRAVEL										
								83	-	-
BOTTOM OF HOLE = 19.0 FEET										

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Hours	Elevation	N	Qu/1/2 ft.	w (%)
4 S	401+33.6	7' LT CENTERLINE EBL	None	327.0						
Ground Surface 333.0 0										
VERY SOFT WET BROWN SILTY CLAY LOAM TO CLAY LOAM A-4(8)										
								2	-	-
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 1.0 FEET										
								16	0.48	20
MEDIUM VERY MOIST BROWN MOTTLED GREY CLAY LOAM A-6(9) WITH SOME GRAVEL										
								29	3.55	10
VERY STIFF TO MEDIUM DAMP BROWN MOTTLED GREY SAND AND GRAVEL WITH CLAY LOAM BINDER										
								28	-	10
								70	-	8
HARD DAMP REDDISH BROWN SAND AND GRAVEL										
								74	-	11
								100	BLOWS IN 6" 10	
VERY HARD VERY MOIST REDDISH BROWN SAND AND GRAVEL										
								51	-	11
VERY DENSE WET REDDISH BROWN SAND AND GRAVEL										
								59	-	-
BOTTOM OF HOLE = 19.0 FEET										

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Hours	Elevation	N	Qu/1/2 ft.	w (%)
3 S	401+25.6	6' LT CENTERLINE EBL	None	322.1						
Ground Surface 333.0 0										
VERY SOFT VERY MOIST BROWN MOTTLED GREY SILTY CLAY A-4(9-10)										
								17	1.15	30
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 3.0 FEET										
								22	3.35	18
STIFF TO VERY STIFF MOIST BROWN MOTTLED GREY SILTY CLAY TO CLAY A-6(11-12)										
								21	-	20
VERY STIFF MOIST BROWN CLAY LOAM WITH GRAVEL										
								34	-	-
MEDIUM TO COARSE MOIST GRAVEL WITH CLAY BINDER										
								72	-	-
								73	-	-
COARSE MOIST BROWN SANDY GRAVEL										
								59	-	-
BOTTOM OF HOLE = 19.0 FEET										

FOR INFORMATION ONLY

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
 Qu - Unconfined Compressive Strength - 1/2"
 w - Water Content - percentage of oven dry weight - %
 Type failure:
 B - Bulge Failure
 S - Shear Failure
 E - Estimated Value
 P - Penetrometer

BORINGS 1, 2, 3, & 4
 F.I.A. RT. 24 - SEC. 64-3HB-2
 MASSAC COUNTY
 STATION 401+00

DESIGNED: [Signature]
 CHECKED: [Signature]
 DRAWN: J.R. Sutherland
 EXAMINED: [Signature]
 PASSED: [Signature]
 APPROVED: [Signature]

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DESIGNED - DAC
 CHECKED - AS
 DRAWN - GLD/RAH
 CHECKED - JTH
 REVISED -
 REVISED -
 REVISED -
 REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
 STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

SHEET 24 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	213
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
44-1	2	MASSAC	44	30
SHEET NO. 13 19 SHEETS				

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Elevation	N	Qu / f.t.	w (%)
5 S	401+50.1	8' RT. CENTERLINE WBL	NONE	-	-	335.0	-	-	-
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 15.5 FEET									
						332.5	15	3.25	22
						330.0	23	4.25	14
						327.5	17	1.65	17
						325.0	19	0.55	15
						319.0	80	-	-

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Elevation	N	Qu / f.t.	w (%)
6 S	401+22	8' LT. CENTERLINE WBL	NONE	325.0	323.8	332.0	-	-	-
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 10.0 FEET									
						332.5	19	0.55	13
						330.0	20	1.85	20
						327.5	12	1.35	19
						325.0	23	-	15
						319.0	80	-	-

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Elevation	N	Qu / f.t.	w (%)
8 S	401+44.9	CENTERLINE WBL	NONE	NONE	-	333.0	-	-	-
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 10.0 FEET									
						333.5	47	-	9
						331.0	18	1.35	21
						328.5	16	1.15	22
						326.0	16	0.55	18
						323.5	24	-	-
						320.0	100	-	-

Boring No.	Station	Offset	Surface Water El.	Groundwater El. at Completion	After	Elevation	N	Qu / f.t.	w (%)
7 S	401+22.9	8' RT. CENTERLINE WBL	NONE	323.0	-	333.0	-	-	-
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 15.5 FEET									
						332.5	19	2.45	18
						330.0	21	0.75	15
						327.5	19	0.55	15
						325.0	15	0.35	34
						319.0	80	-	-

FOR INFORMATION ONLY

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30'.
Qu - Unconfined Compressive Strength - t/sf
w - Water Content - percentage of oven dry weight - %
Type failure:
B - Builge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

BORINGS 5, 6, 7, & 8
F.I.A. RT. 24 - SEC. 64-3HB-2
MASSAC COUNTY
STATION 401+00

DESIGNED	EXAMINED
CHECKED	PASSED
DRAWN	APPROVED
CHECKED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	214
CONTRACT NO. 78606				

SHEET 25 OF 25 SHEETS

ILLINOIS FED. AID PROJECT

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	CHECKED - JTH	REVISED -

SCOPE OF WORK

1. Remove existing 2 1/4" concrete wearing surface.
 2. Perform deck repairs as shown. Remove and replace floor drains within deck repair areas as shown.
 3. Replace bearings at abutments.
 4. Repair damaged bridge rail and replace damaged guardrail sections at SN 064-0033.
 5. Remove and replace bridge approach slabs and pavement connectors including removal of buried pile bent caps.
 6. Clean and paint all steel beam ends at each abutment as preparation for concrete encasement.
 7. Convert existing stub abutments to semi-integral abutments.
 8. Install new 3 1/4" latex concrete wearing surface and perform diamond grinding, longitudinal bridge deck grooving and apply protective coat.
- Up to 1/4" may be ground off the bridge deck and the bridge approach slabs.

INDEX OF SHEETS

- 1 - General Plan and Elevation
- 2 - General Data
- 3 - Stage Construction Details
- 4 - Deck Patching Plan
- 5 - Temporary Concrete Barrier for Stage Construction
- 6 - Superstructure
- 7-8 - Diaphragm Details
- 9-10 - Approach Slab Details
- 11 - Abutment Removal
- 12 - Abutment Details
- 13 - Bearing Details
- 14 - Bar Splicer Assembly and Mechanical Splicer Details
- 15-24 - Existing Plans

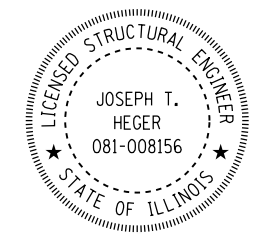
DESIGN STRESSES

FIELD UNITS

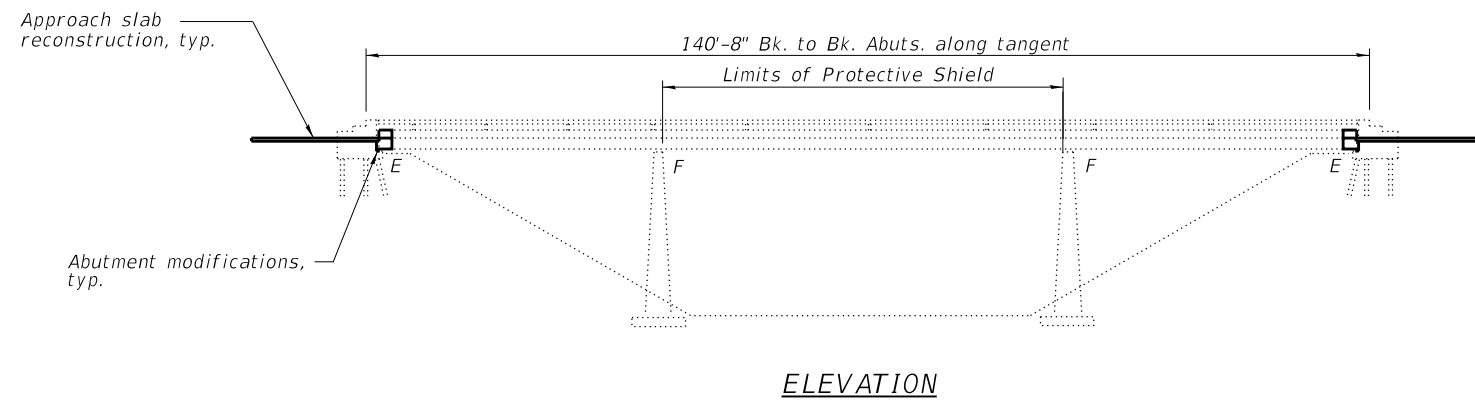
New Construction
 $f'_c = 4,000$ psi
 $f_y = 60,000$ psi (Reinforcement)

Existing Structure, 2001 Rehabilitation
 $f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)

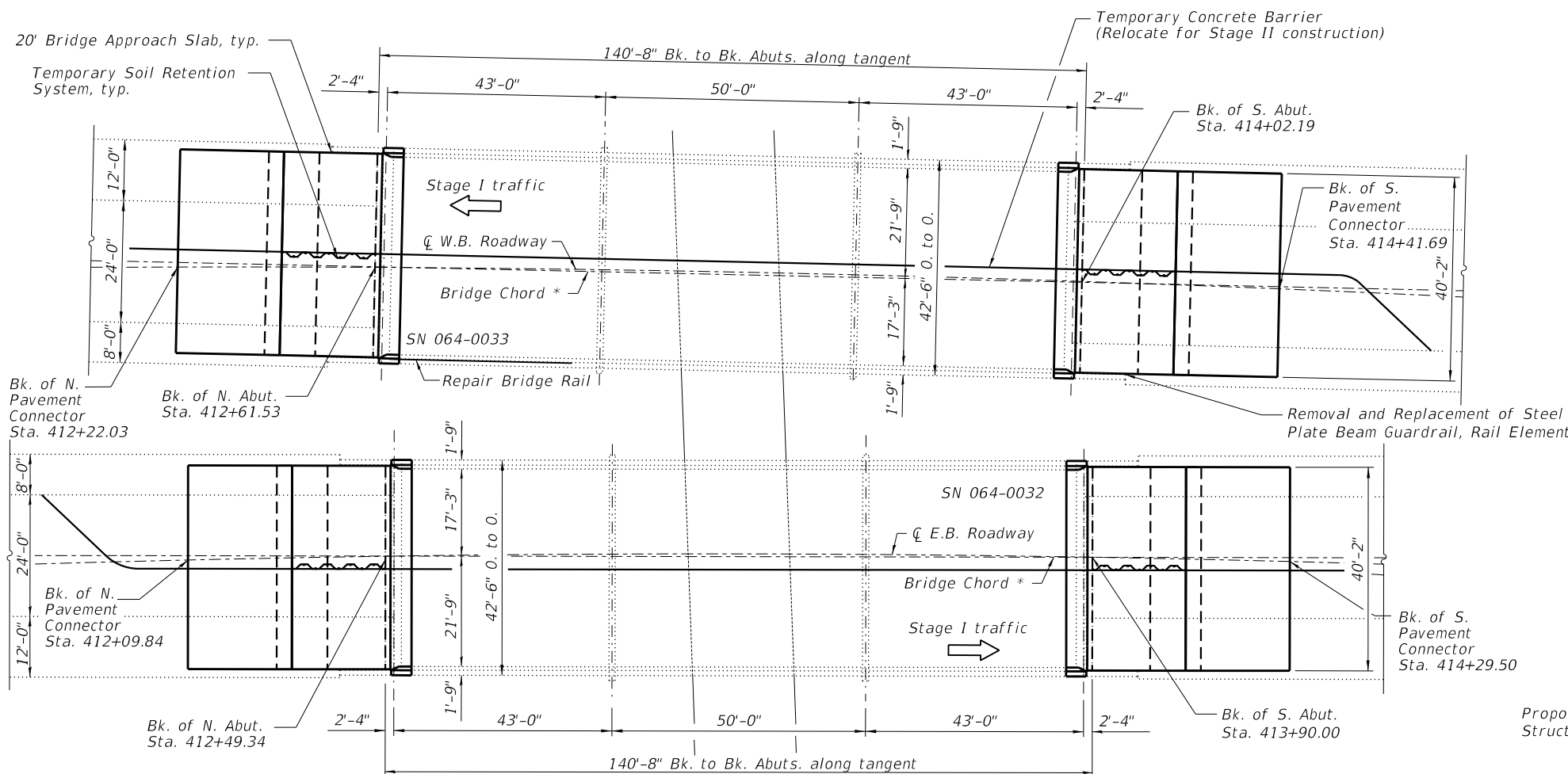
Existing Structure, 1970
 $f'_c = 1,200$ psi
 $f_s = 20,000$ psi (Reinforcement)



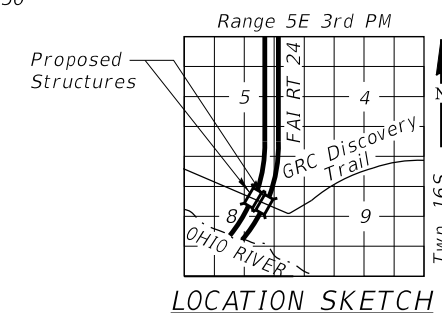
Joseph T. Heger
 Exp. Date 11/30/2020



ELEVATION



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
I-24 OVER PEDESTRIAN PATH
F.A.I. 24, SECTION BRIDGE REPAIR 2021-1
MASSAC COUNTY
STA. 413+31.86 & STA. 413+19.67
SN 064-0032 & 064-0033

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STATE OF ILLINOIS
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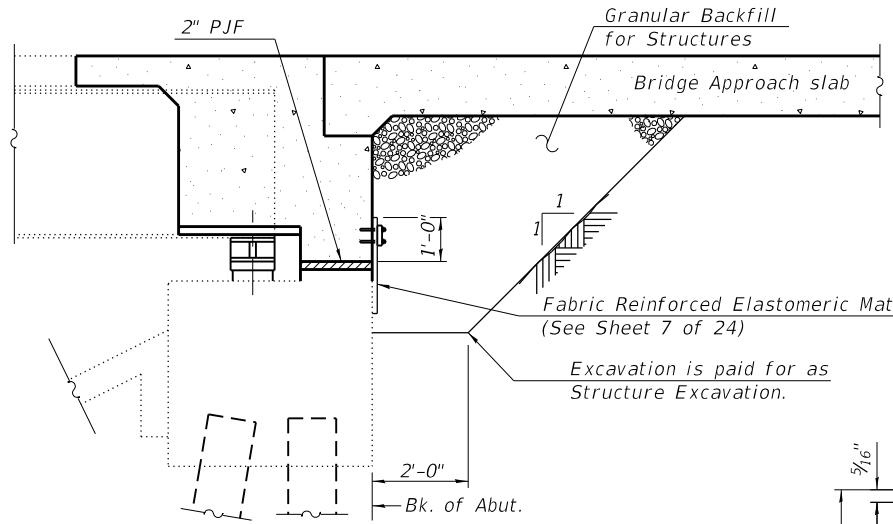
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 1 OF 24 SHEETS

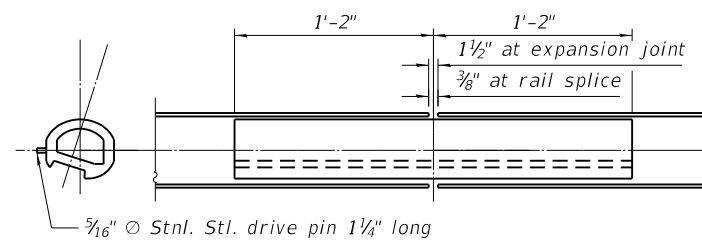
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	215
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

TOTAL BILL OF MATERIAL

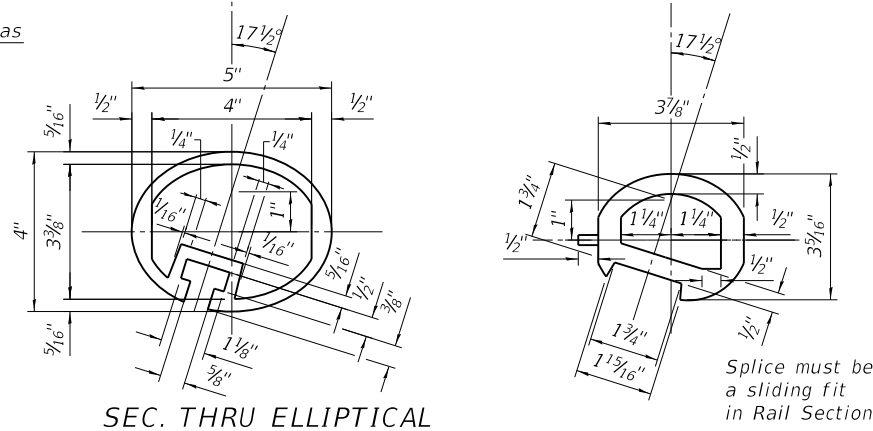
ITEM	UNIT	SN 064-0032	SN 064-0033	TOTAL
Paved Shoulder Removal	Sq. Yd.	180	180	360
Concrete Removal	Cu. Yd.	30.6	30.6	61.2
Protective Shield	Sq. Yd.	236	236	472
Structure Excavation	Cu. Yd.	48	47	95
Floor Drains	Each	1	1	2
Concrete Structures	Cu. Yd.	26.7	26.7	53.4
Concrete Superstructure	Cu. Yd.	37.4	37.4	74.8
Protective Coat	Sq. Yd.	898	898	1796
Concrete Superstructure (Approach Slab)	Cu. Yd.	75.7	75.7	151.4
Furnishing and Erecting Structural Steel	Pound	2340	2340	4680
Reinforcement Bars, Epoxy Coated	Pound	38120	38120	76240
Bar Splicers	Each	298	298	596
Elastomeric Bearing Assembly, Type I	Each	12	12	24
Anchor Bolts, 1"	Each	24	24	48
Temporary Soil Retention System	Sq. Ft.	43	41	84
Granular Backfill for Structures	Cu. Yd.	44	43	87
Geocomposite Wall Drain	Sq. Yd.	9	9	18
Concrete Headwalls for Pipe Drains	Each	4	4	8
Temporary Concrete Barrier	Foot	380	380	760
Relocate Temporary Concrete Barrier	Foot	380	380	760
Impact Attenuators, Temporary (Non-Redirective), Test Level 3	Each	1	1	2
Impact Attenuators, Relocate (Non-Redirective), Test Level 3	Each	1	1	2
Raised Reflective Pavement Marker	Each	3	3	6
Raised Reflective Pavement Marker (Bridge)	Each	1	1	2
Barrier Wall Reflectors, Type B	Each	10	10	20
Raised Reflective Pavement Marker Removal	Each	4	4	8
Bridge Approach Pavement Connector (Special)	Sq. Yd.	183	183	366
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	476	476	952
Removal and Replacement of Steel Beam Guardrail, Rail Element	Foot	0	25	25
Pinning Temporary Concrete Barrier	Each	8	8	16
Raised Reflective Pavement Marker, Reflector Removal	Each	4	4	8
Jack and Remove Existing Bearings	Each	12	12	24
Structural Steel Removal	Pound	2930	2930	5860
Approach Slab Removal	Sq. Yd.	213	213	426
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	0.091	0.091	0.182
Cleaning and Painting Steel Bridge No. 9	L. Sum	1	0	1
Cleaning and Painting Steel Bridge No. 10	L. Sum	0	1	1
Bridge Deck Scarification 3"	Sq. Yd.	559	559	1118
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1	1	2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	56	86	142
Diamond Grinding (Bridge Section)	Sq. Yd.	962	962	1925
Pipe Underdrains for Structures 4"	Sq. Yd.	72	72	144
Bridge Deck Latex Concrete Overlay, 3/4 Inches	Sq. Yd.	559	559	1118
Repair Bridge Rail	Foot	0	25	25



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



RAIL SPLICE

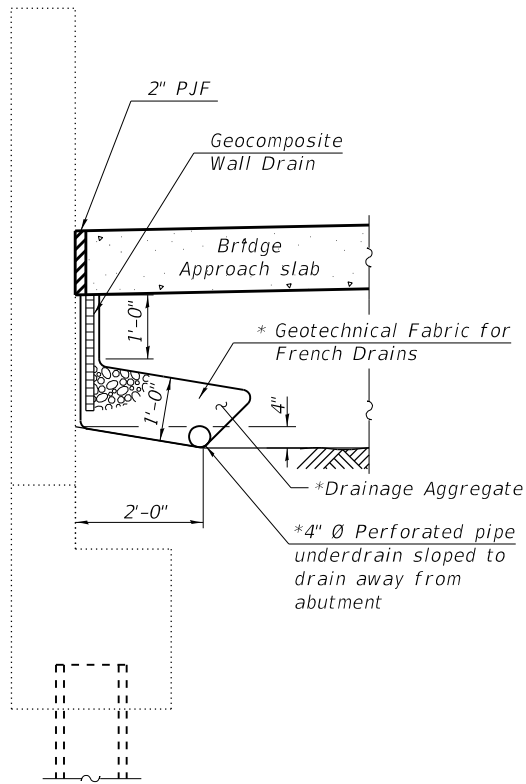


SEC. THRU ELLIPTICAL RAIL SECTION

SEC. THRU SPLICE

REPAIR BRIDGE RAIL

A segment of aluminum bridge rail is damaged along the west rail at the north end of SN 064-0033. The rail shall be repaired and properly spliced to the adjacent rail section. Rail elements may be repaired and reused or replaced. See the special provision for "Repair Bridge Rail". See Existing Plans for rail details not shown.



SECTION THRU ABUTMENT WINGWALL
(Horiz. dim. @ Rt. L's)

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

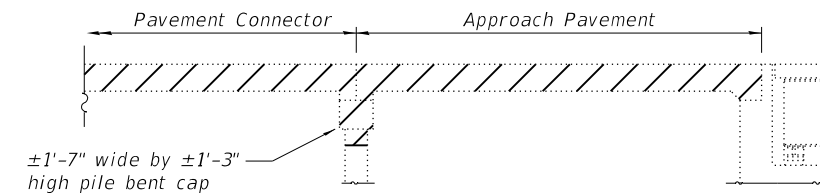
Note:
All drainage system components shall extend 2'-0" from the end of each wingwall except an outlet pipe shall wrap around and extend until intersecting with the side slope. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

GENERAL NOTES

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring 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.
- Plan dimensions and details are relative to existing plans and are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams and other structural steel from the end of the beam to 1'-6" (measured along the beam) beyond the face of the concrete diaphragm shall be cleaned per Near White Blast Cleaning (SSPC- SP10). The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning (SSPC- SP15).
- The designated areas cleaned per Near White Blast Cleaning (SSPC- SP10) and per Commercial Grade Power Tool Cleaning (SSPC- SP15) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Topcoat system. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No 7.5G 4/8.
- All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel".

GENERAL NOTES (continued)

- SSPC QP1 and SSPC QP2 Certification is required for this Contract.
- To retain the temporary concrete barrier for Stage II traffic, the Contractor shall have the option of using either 2 (#5) bar splicers or 2 cast in place inserts at 6" centers at the mid-depth of the approach slab and pavement connector. The bar splicers or inserts shall have a minimum proof load of 5,000 pounds. Along with the anchoring devices the Contractor shall provide one steel retainer plate and 2 1/2" diameter bolt and washers every 6' as shown on Detail II on Standard R-27 (Sheet 5 of 24) from Sta. 412+09.84 to Sta. 412+49.34 and Sta. 413+90.00 to Sta. 414+29.50 for SN 064-0032 and Sta. 412+22.03 to Sta. 412+61.53 and Sta. 414+02.19 to Sta. 414+41.69 for SN 064-0033 for Stage II traffic. This work shall be included in the cost of Temporary Concrete Barrier, no additional compensation shall be provided.
- Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".



APPROACH SLAB REMOVAL

Existing approach slab and pavement connector to be removed. Buried pile bent cap to be completely removed. Piles shall be removed to 2' below finished grade. Approach slab and pavement connector removal shall be paid for as Approach Slab Removal. Pile bent cap removal shall be paid for as Concrete Removal. Pile removal shall be included in the cost of Concrete Removal.

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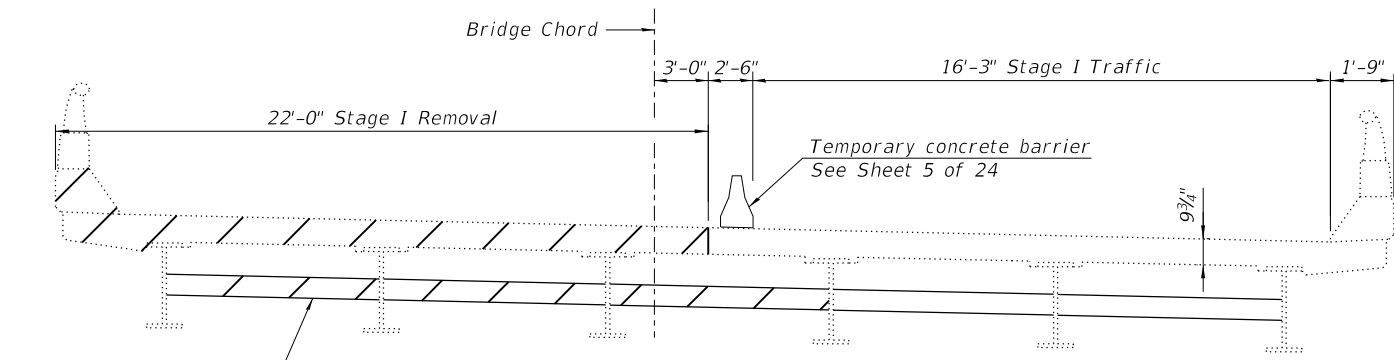
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

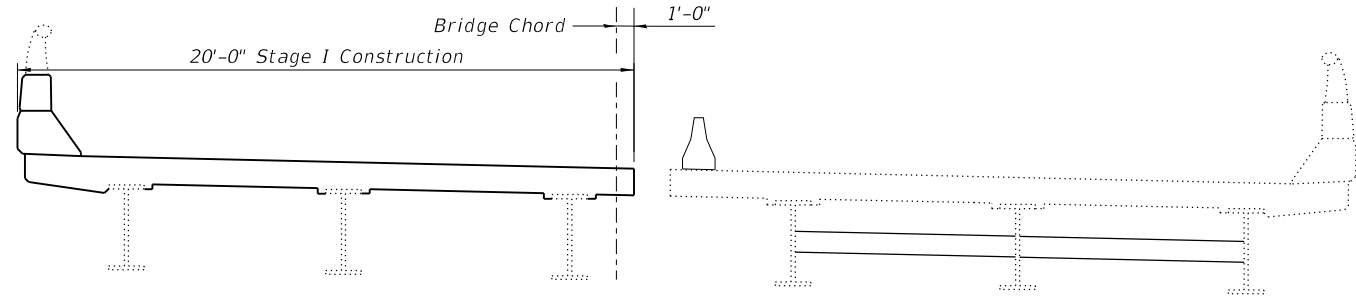
SHEET 2 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	216
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

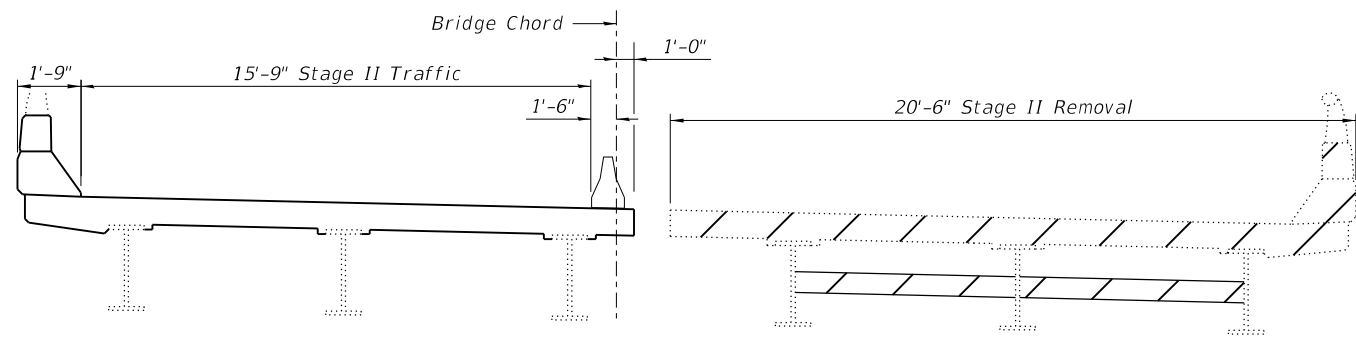


Steel diaphragms to be removed at abutments

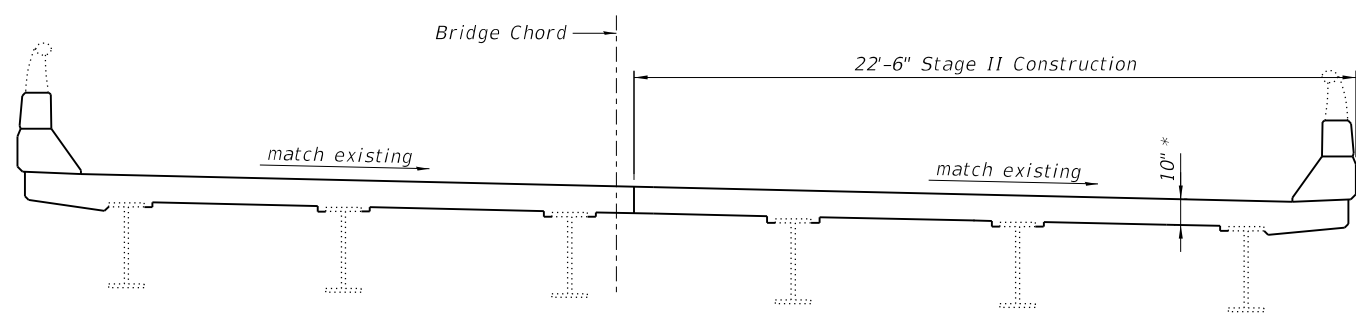
STAGE I REMOVAL
(Looking in the direction of traffic)



STAGE I CONSTRUCTION
(Looking in the direction of traffic)

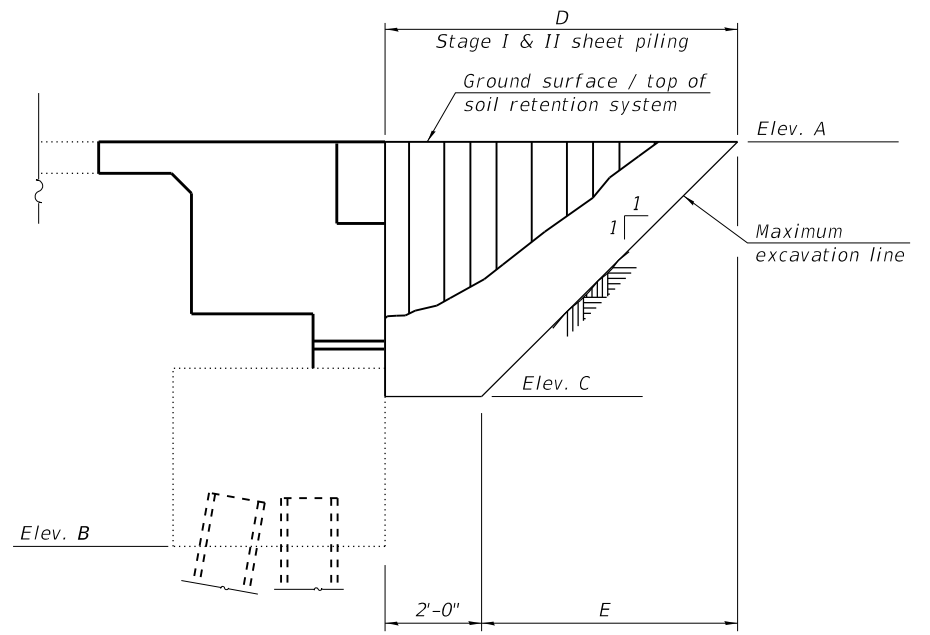


STAGE II REMOVAL
(Looking in the direction of traffic)



STAGE II CONSTRUCTION
(Looking in the direction of traffic)

* Prior to grinding.



TEMPORARY SOIL RETENTION SYSTEM

Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
SN 064-0032 N. Abut.	370.98	362.94	366.18	6'-8"	4'-8"
SN 064-0032 S. Abut.	371.40	363.35	366.59	6'-8"	4'-8"
SN 064-0033 N. Abut.	371.32	363.38	366.59	6'-7"	4'-7"
SN 064-0033 S. Abut.	371.74	363.76	367.00	6'-7"	4'-7"

Notes:
 A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.
 Elevations and dimensions shown are approximate based on existing plan data. Exact elevations and dimensions required shall be field verified by the Contractor.

Note:
 Hatched area indicates, Concrete Removal and Structural Steel Removal at abutments.

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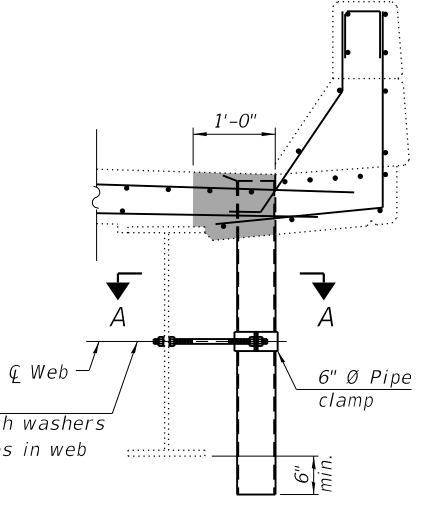
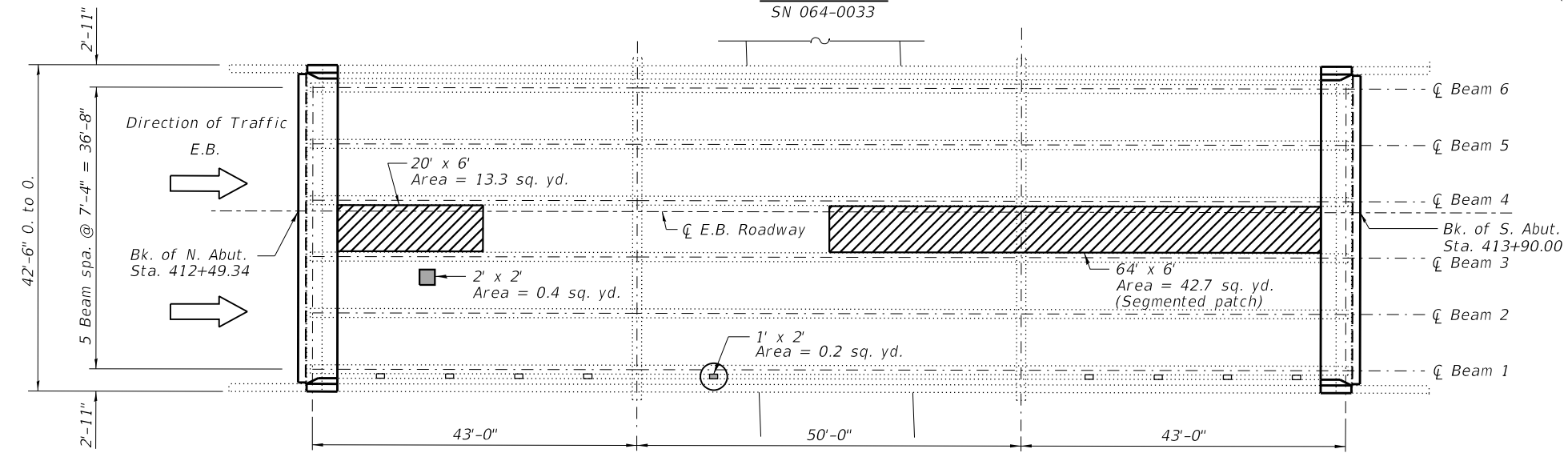
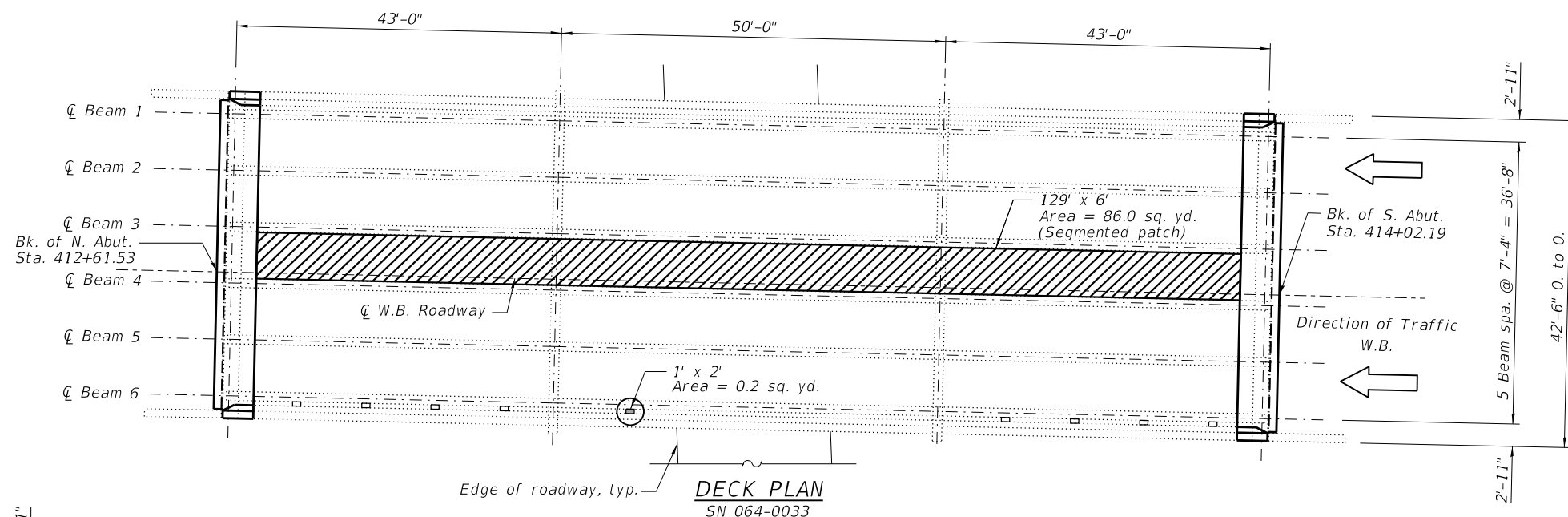
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
 STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 3 OF 24 SHEETS

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CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



- Legend**
- Full Depth, Type I
 - Full Depth, Type II
 - Location of new 6" circular Floor Drain

Notes:
The Resident Engineer will determine final patch locations and quantities in the field after removal of the concrete wearing surface, before bridge deck patching operations begin.

The Engineer shall show actual locations of deck repairs on As-built Plans.

Existing floor drains shall be removed at the locations indicated. New 6" circular floor drains shall be installed as shown. Cost for removal of existing floor drains included with Deck Slab Repair (Full Depth, Type I).

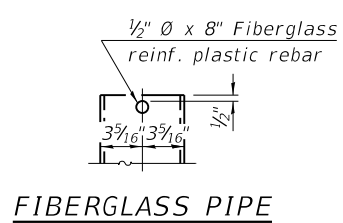
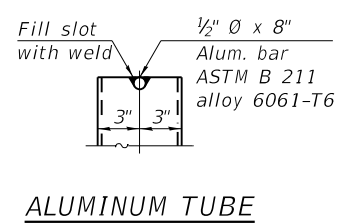
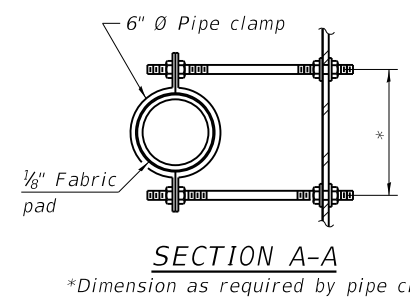
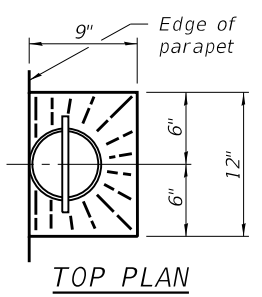
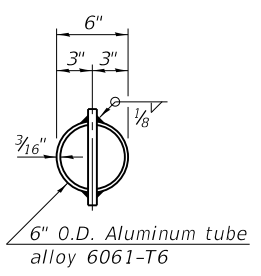
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting Existing Steel Structures. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings' Spec. SSPC-SPI prior to painting. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. Galvanize clamping device according to AASHTO M232. Cost of clamping device and galvanizing included with Floor Drains.

Protective Shield shall be placed the full out to out width of each brige for the full length of span 2 over George Rogers Clark Discovery Trail.

Deck patches indicated as "segmented" shall be removed and placed in alternating approximately equal lengths not to exceed 10' to prevent non-uniform or complete unloading of the adjacent steel beams. Before removal of the alternate segments can begin, at least 72 hours shall have elapsed from the end of the previous pour and the concrete shall have attained a minimum modulus of rupture of 650 psi or a minimum compressive strength of 3500 psi.

BILL OF MATERIAL

ITEM	UNIT	SN 064-0032	SN 064-0033	TOTAL
Protective Shield	Sq. Yd.	236	236	472
Floor Drains	Each	1	1	2
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1	1	2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	56	86	142



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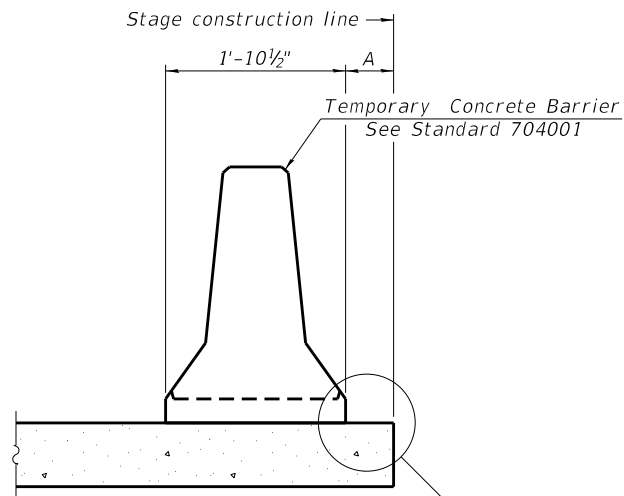
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING PLAN
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 4 OF 24 SHEETS

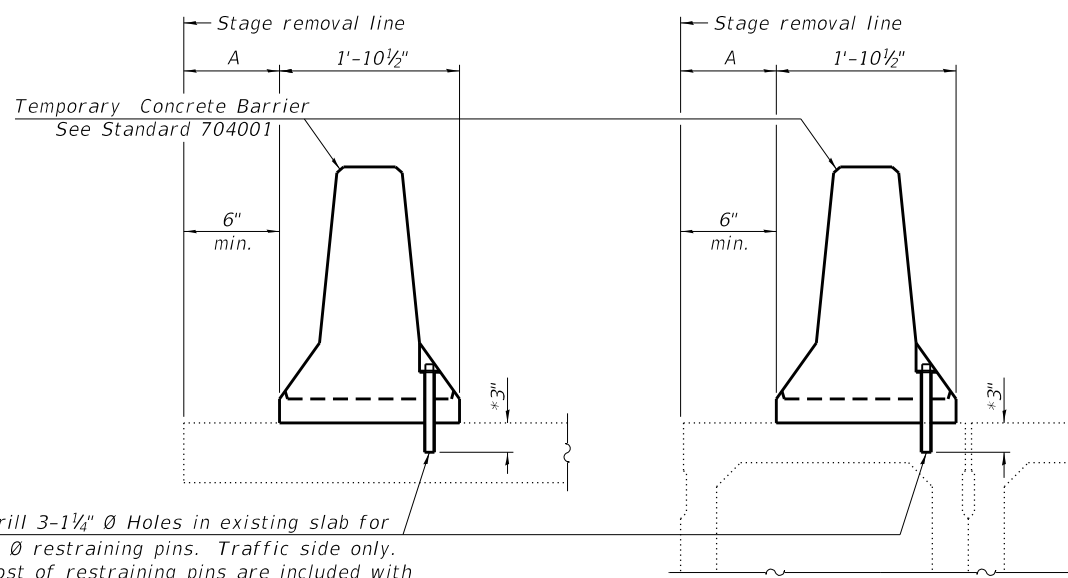
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	218
CONTRACT NO. 78606				

ILLINOIS FED. AID PROJECT



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

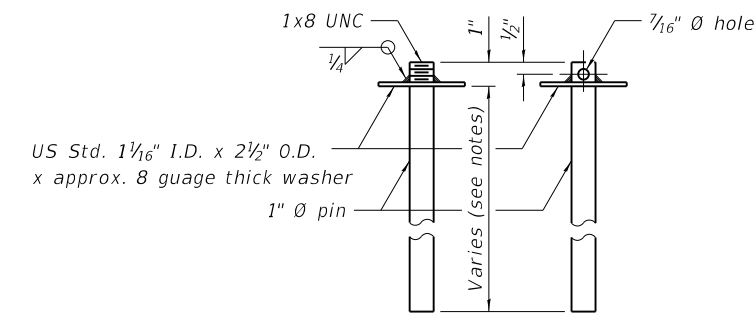
NEW SLAB OR NEW DECK BEAM



Drill 3-1 1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

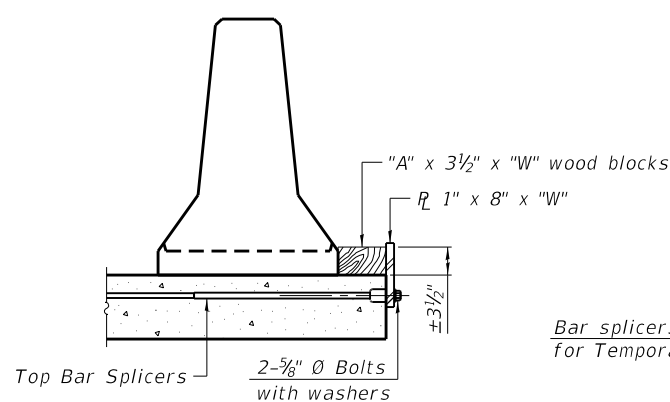
EXISTING SLAB

EXISTING DECK BEAM

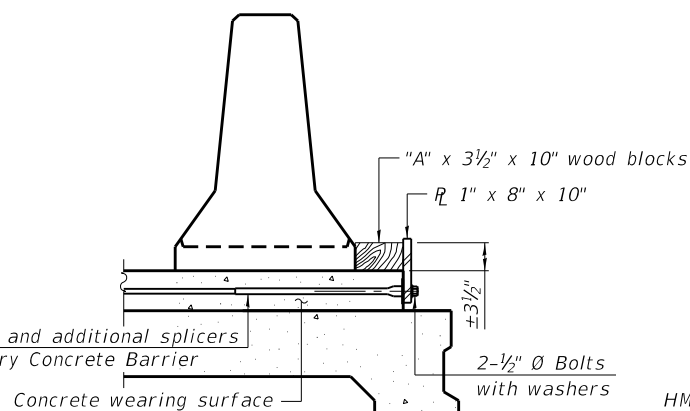


RESTRAINING PIN

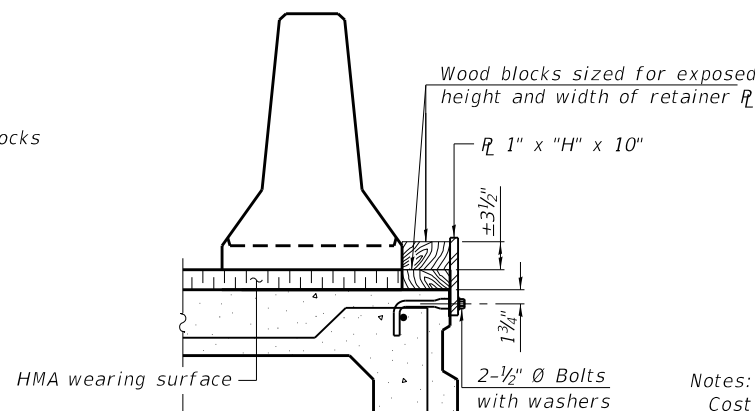
SECTIONS THRU SLAB OR DECK BEAM



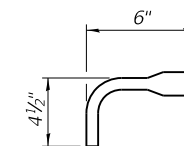
DETAIL I



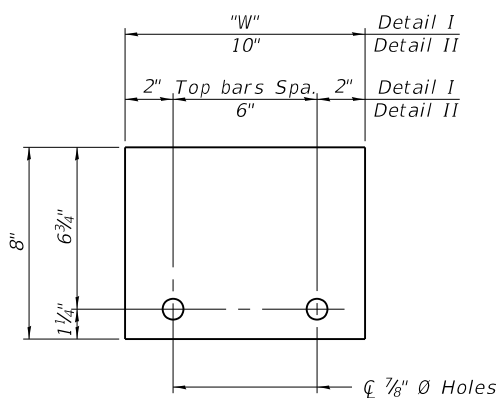
DETAIL II



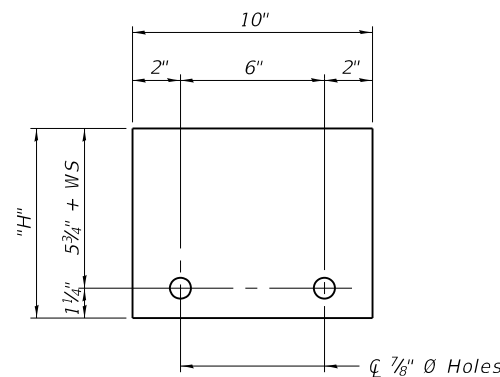
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"
(Detail III)

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate \bar{C} of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

- Detail I - Installation for a new bridge deck or bridge slab.
- Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
- Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

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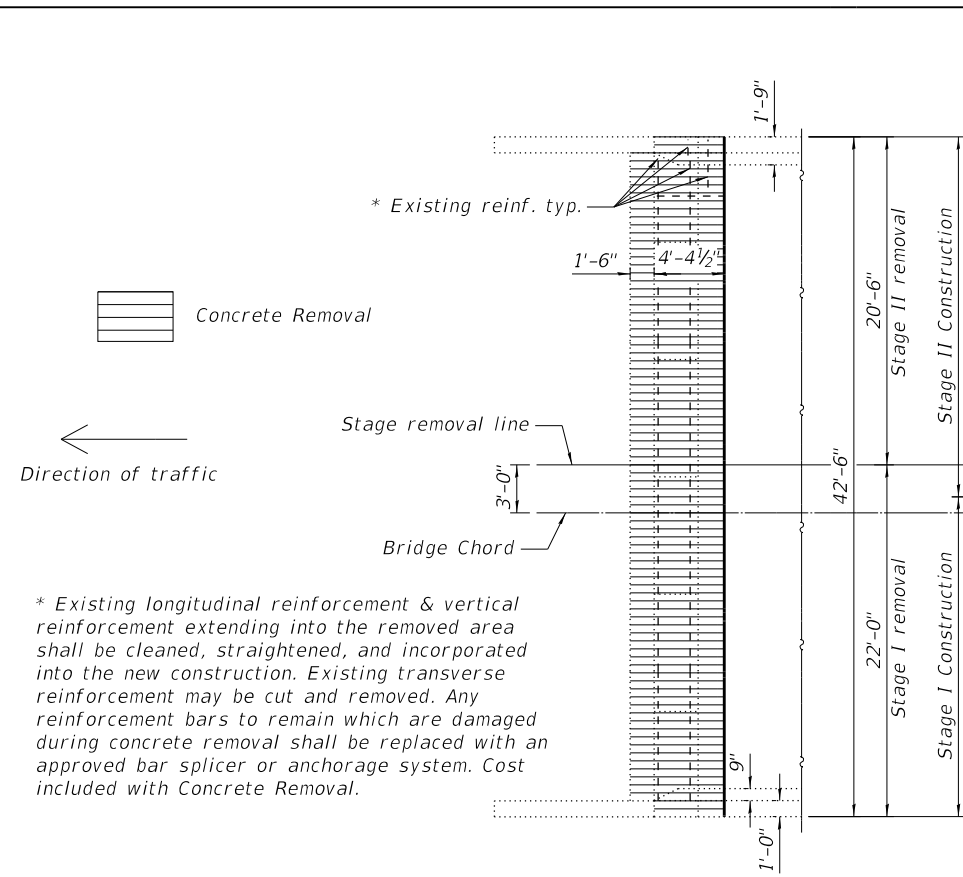
R-27
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STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

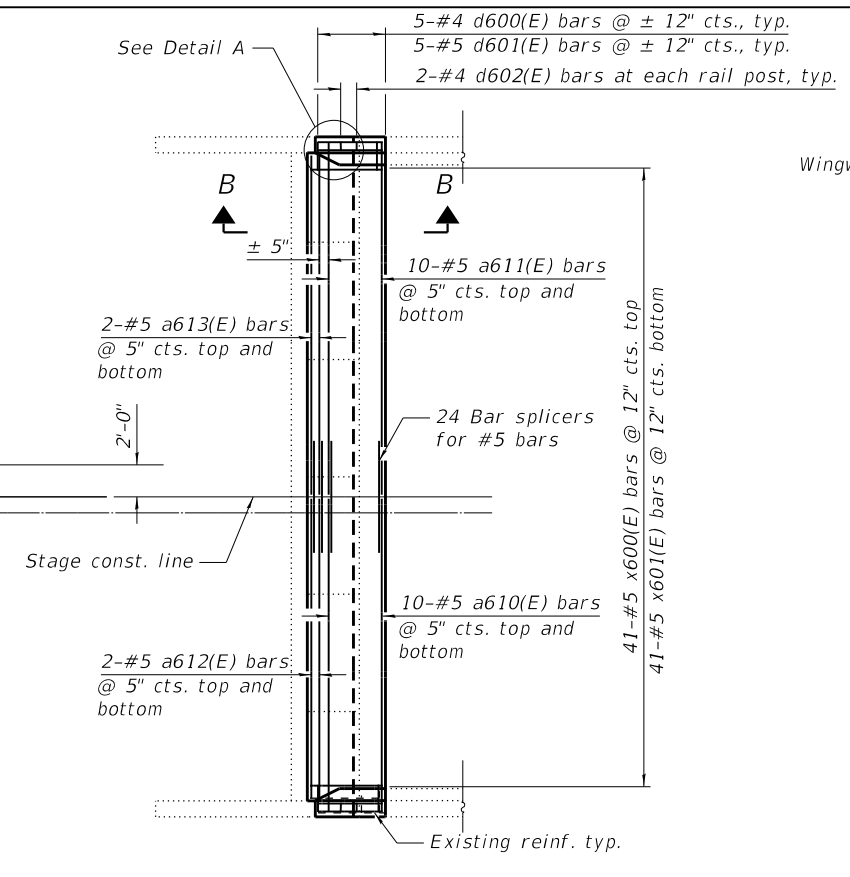
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
 STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	219
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

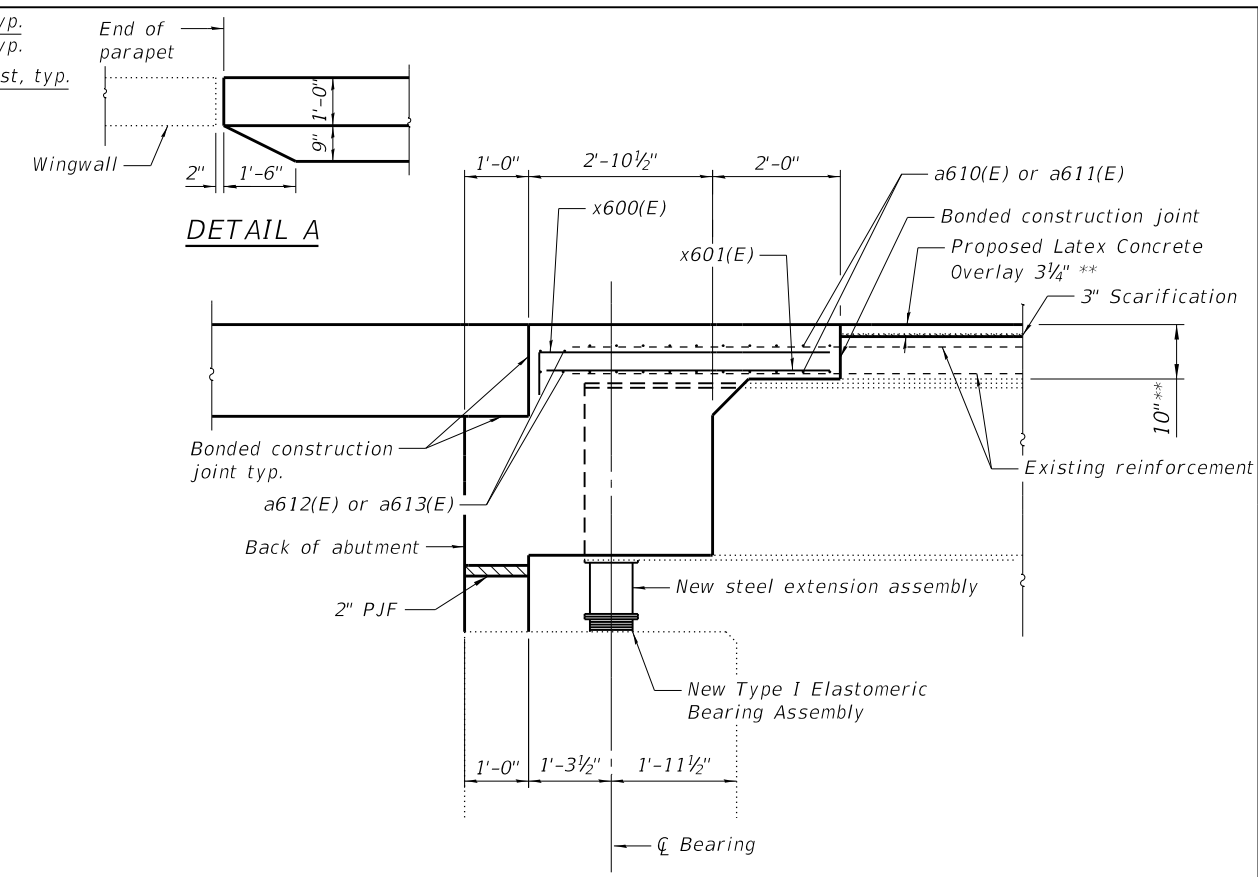


**ABUTMENT PLAN
SHOWING CONCRETE REMOVAL**

SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
SN 064-0033 north abutment shown, SN 064-0033 south abutment similar

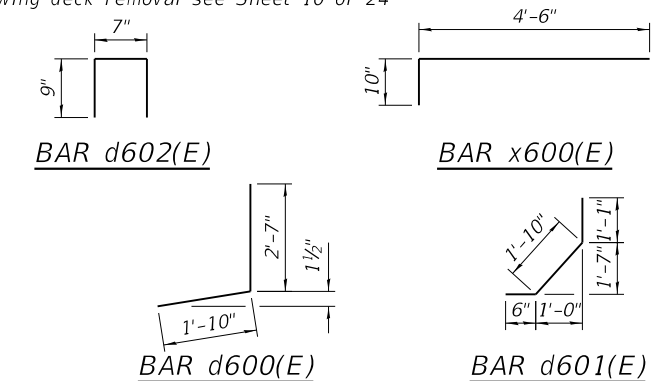


**ABUTMENT PLAN
SHOWING CONCRETE REPLACEMENT**



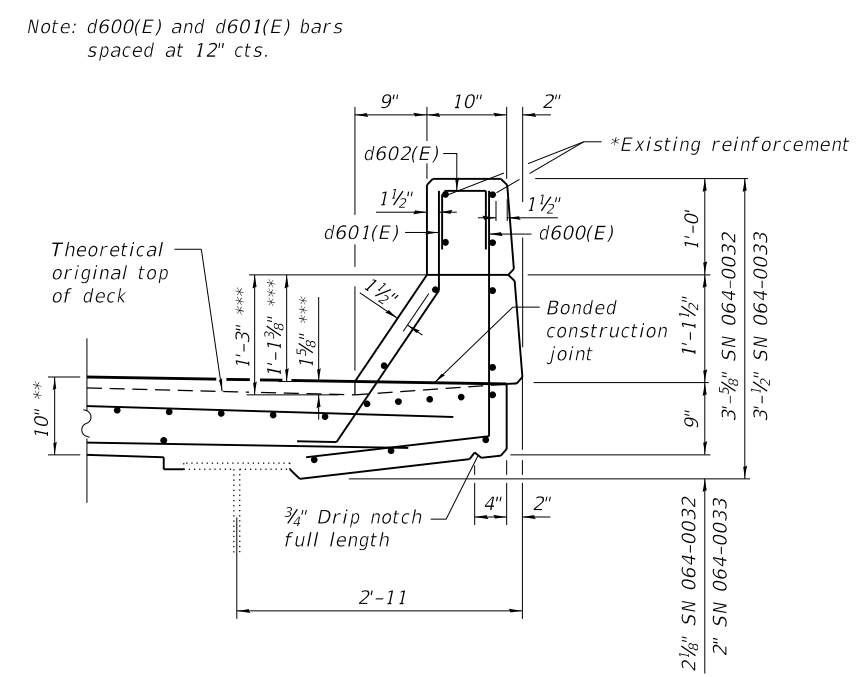
**SECTION B-B
TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT**

(Dimensions measured at right angles)
For section showing deck removal see Sheet 10 of 24



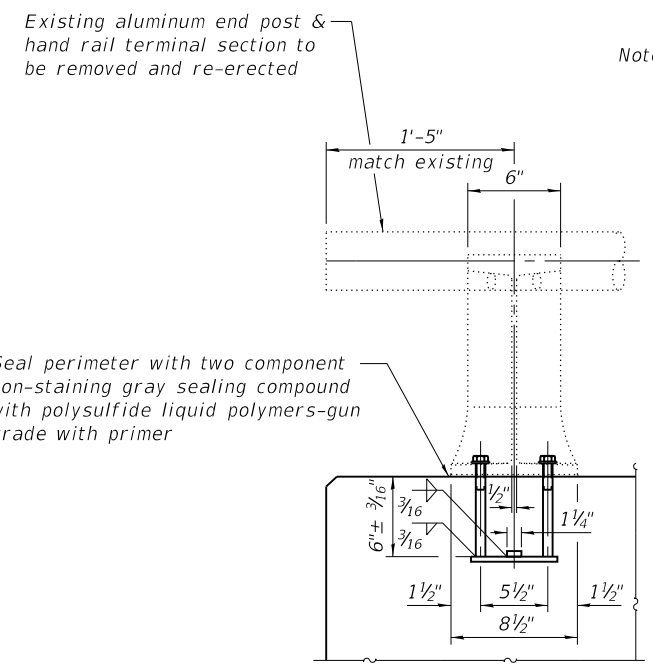
**FOUR SUPERSTRUCTURE ENDS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a610(E)	80	#5	19'-8"	—
a611(E)	80	#5	22'-2"	—
a612(E)	16	#5	18'-6"	—
a613(E)	16	#5	21'-0"	—
d600(E)	40	#4	4'-5"	J
d601(E)	40	#5	3'-5"	J
d602(E)	16	#4	2'-1"	□
x600(E)	164	#5	5'-4"	—
x601(E)	164	#5	4'-6"	—
Concrete Removal			Cu. Yd.	21.6
Concrete Superstructure			Cu. Yd.	74.8
Reinforcement Bars, Epoxy Coated			Pound	6120
Bar Splicers			Each	96

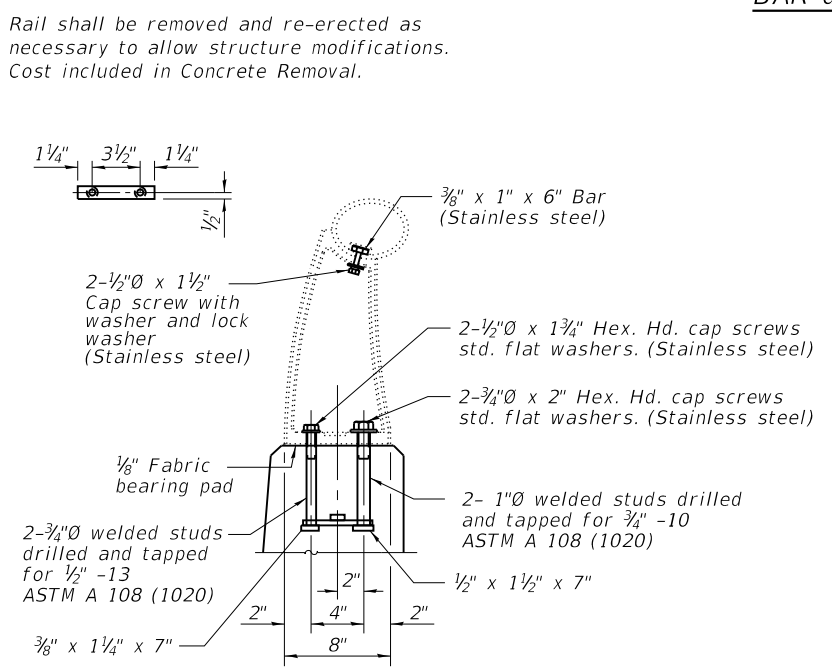


SECTION THRU PARAPET

*** Dimensions based on original 8" deck. Proposed parapet section to align with existing parapet section.



RAIL POST DETAILS



MODEL: D:\cmt\11500610\WO_11\Draw\Structures\SN 0032 & 0033\006_0032-0033_Superstructure_Details.dgn
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License No. 184-000813 © copyright CMT, Inc.



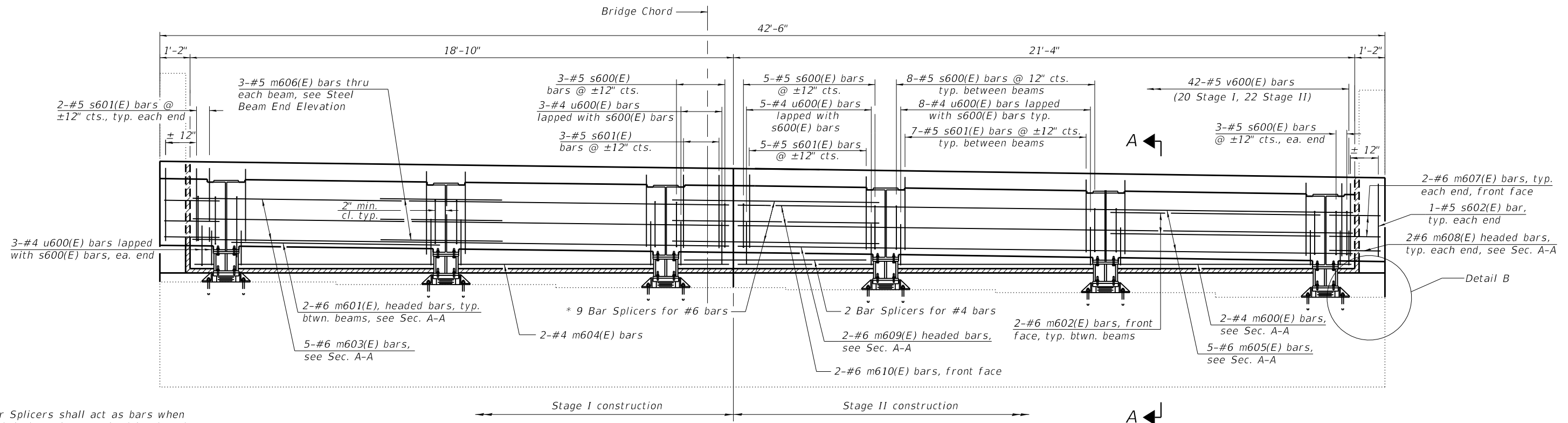
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PLOT DATE = 11/18/2020 - 8:13:03 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**SUPERSTRUCTURE
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

SHEET 6 OF 24 SHEETS

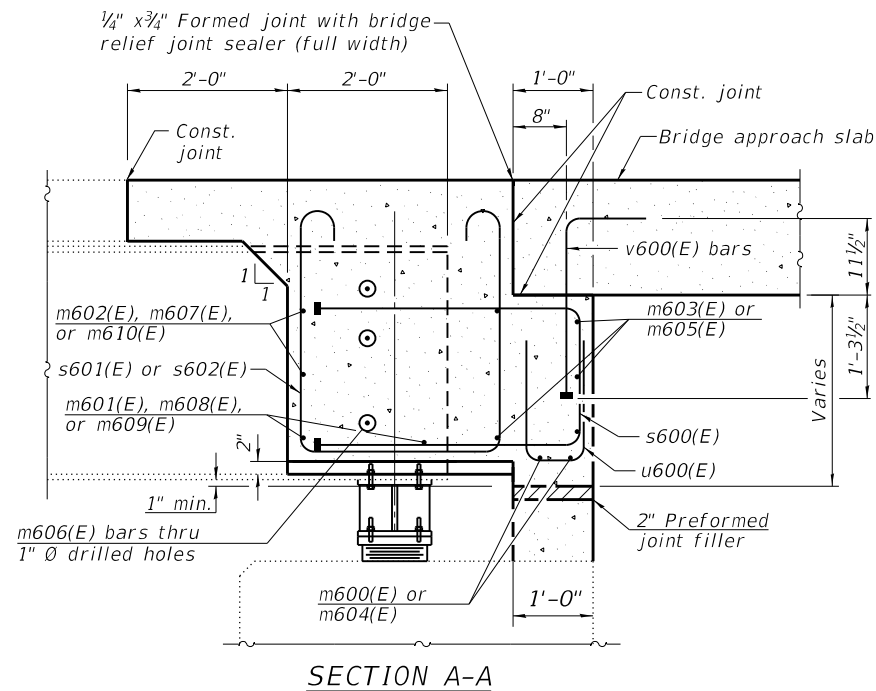
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	220
CONTRACT NO. 78606			ILLINOIS FED. AID PROJECT	



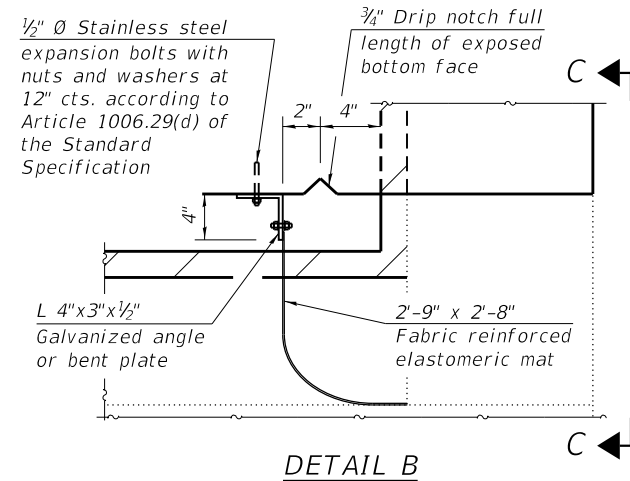
* Bar Splicers shall act as bars when length is less than required lap length. See Sheet 14 of 24.

DIAPHRAGM ELEVATION AT ABUTMENT

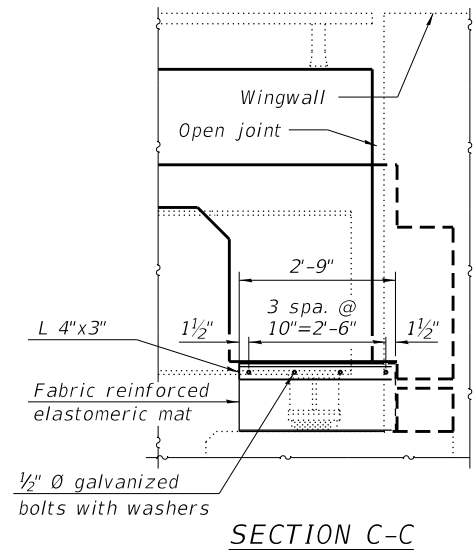
SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
 SN 064-0033 north abutment shown, SN 064-0033 south abutment similar



SECTION A-A



DETAIL B



SECTION C-C

Note:
 See Sheet 8 of 24 for additional diaphragm details and Bill of Material.

MODEL: Detail
 FILE NAME: L:\DOT\1500610\WO_11\Draw\Structures\SN 0032 & 0033\007_0032-0033_Diaphragm Detail.dgn
 License No. 184-00613 © Copyright CMT, Inc.



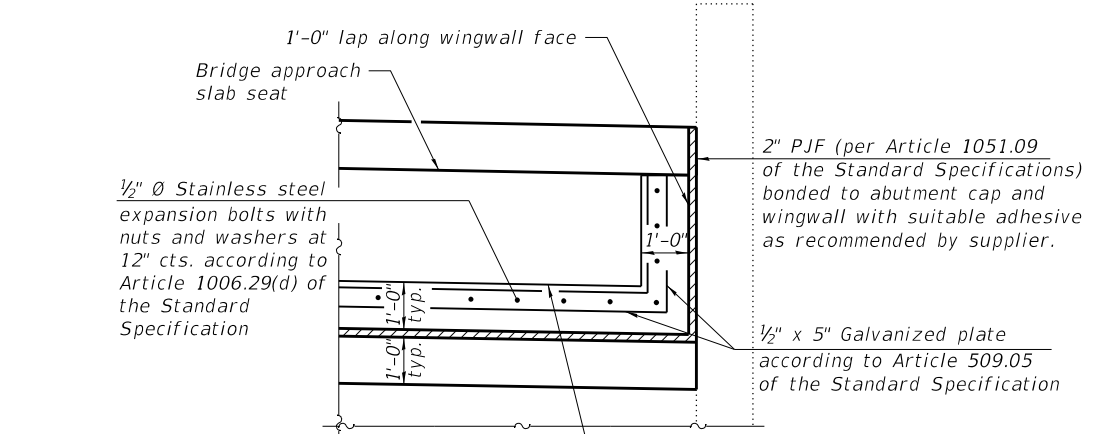
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	CHECKED - JTH	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS
 STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

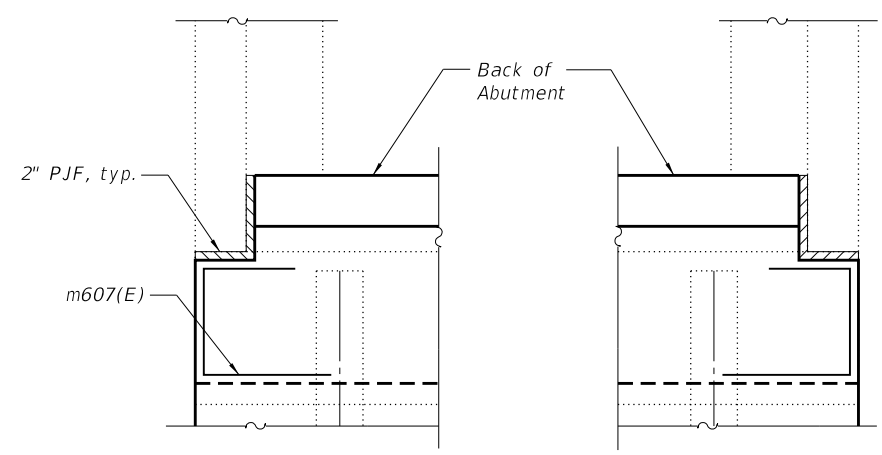
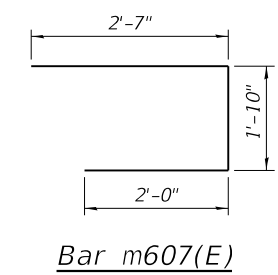
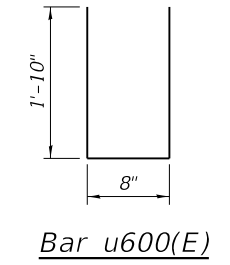
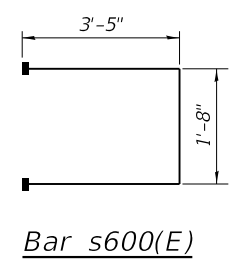
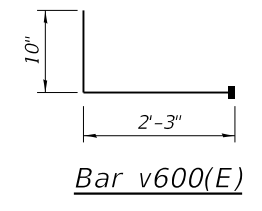
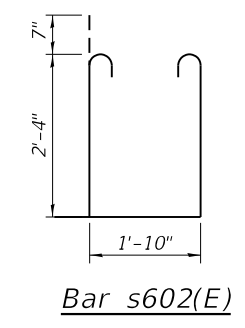
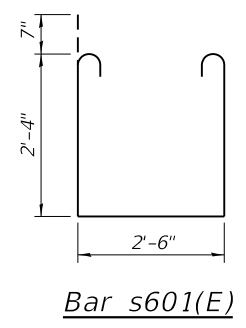
SHEET 7 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	221
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

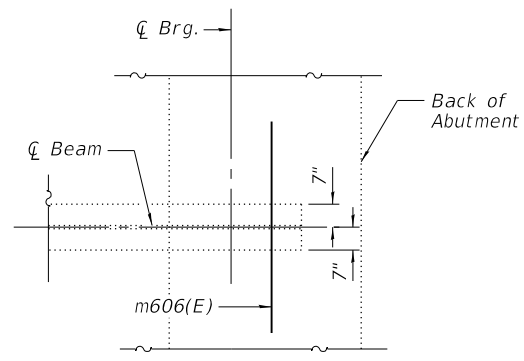


Limits of fabric reinforced elastomeric mat according to Section 1028 of the Standard Specifications and installed according to applicable requirements of Article 520.09 of the Standard Specifications.

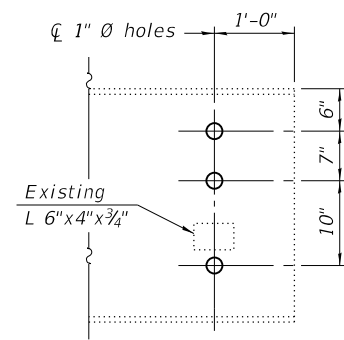
ELEVATION
(Looking at back of abutment)



PARTIAL PLAN



PARTIAL PLAN AT BEAMS
(Showing bottom flange of beam)



STEEL BEAM END ELEVATION

**FOUR DIAPHRAGMS
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
m600(E)	8	#4	21'-0"	—
m601(E)	32	#6	7'-0"	—
m602(E)	32	#6	7'-0"	—
m603(E)	20	#6	18'-6"	—
m604(E)	8	#4	18'-6"	—
m605(E)	20	#6	21'-0"	—
m606(E)	72	#5	4'-0"	—
m607(E)	16	#6	6'-5"	⌋
m608(E)	16	#6	2'-7"	—
m609(E)	8	#6	4'-7"	—
m610(E)	8	#6	4'-7"	—
s600(E)	184	#5	8'-6"	⌋
s601(E)	160	#5	8'-4"	⌋
s602(E)	8	#5	7'-8"	⌋
u600(E)	184	#4	2'-6"	⌋
v600(E)	168	#5	3'-1"	⌋
Reinforcement Bars, Epoxy Coated			Pound	6640
Bar Splicers			Each	44

Notes:
 Cost of fabric reinforced elastomeric mats, galvanized angles and plates, stainless steel expansion bolts with nuts and washers, galvanized bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 The s600(E), s601(E), s602(E), u600(E) and v600(E) bars are placed parallel to beams and spaced at right angles to beams.
 Concrete Superstructure quantity included in quantity shown on Sheet 6 of 24.

MODEL: Detail
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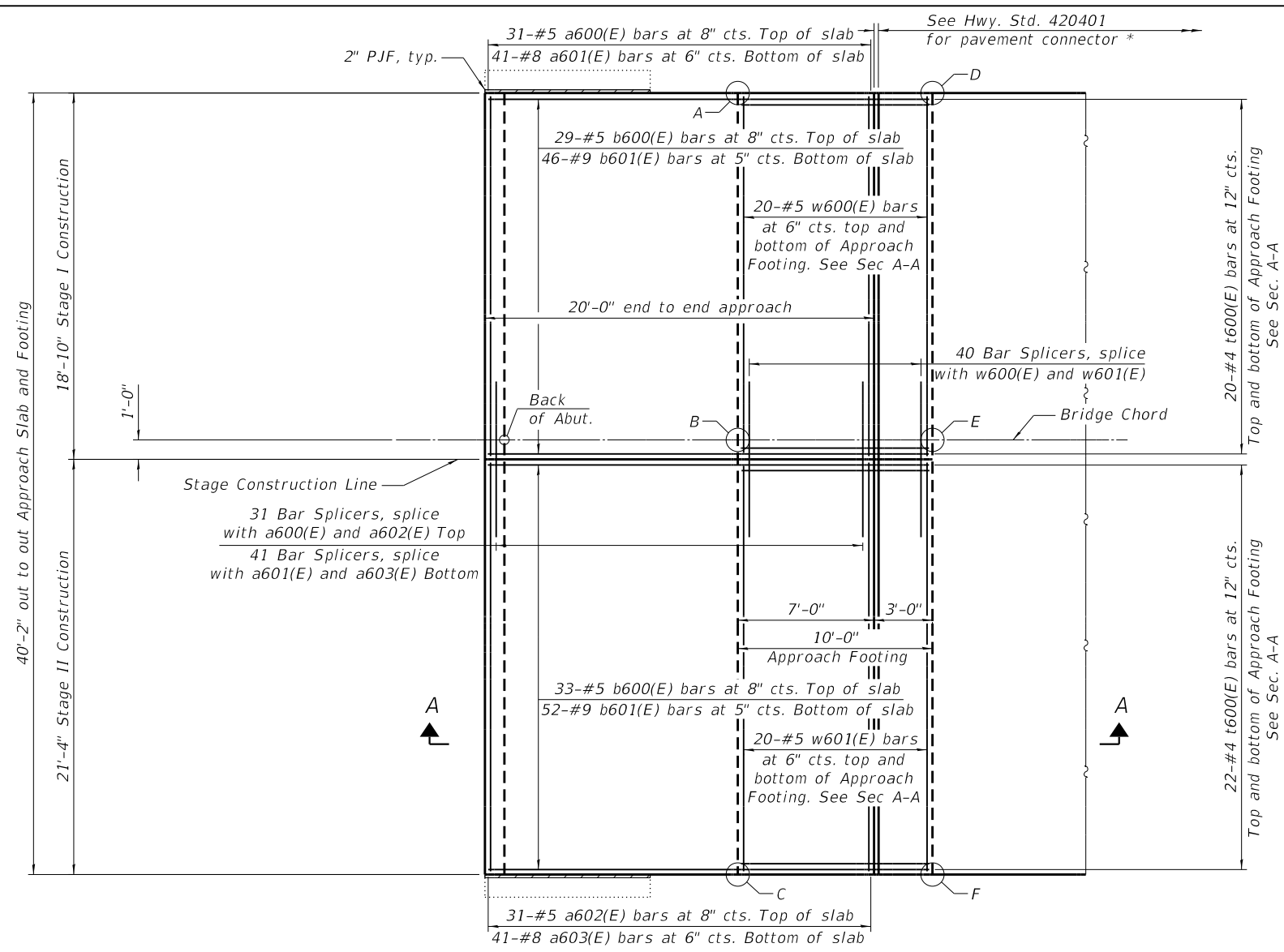
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PLOT SCALE = N/A	CHECKED - AS	REVISED -
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	CHECKED - JTH	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DIAPHRAGM DETAILS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

SHEET 8 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	222
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



PLAN

SN 064-0032 south approach slab shown, SN 064-0032 north approach slab similar
 SN 064-0033 north approach slab shown, SN 064-0033 south approach slab similar

* Pavement connector shall be paid for as Bridge Approach Pavement Connector (Special). The pavement connector shall be constructed per Hwy. Std. 420401 except that the 15'-0" length shall be 20'-6". See Special provision for additional details.

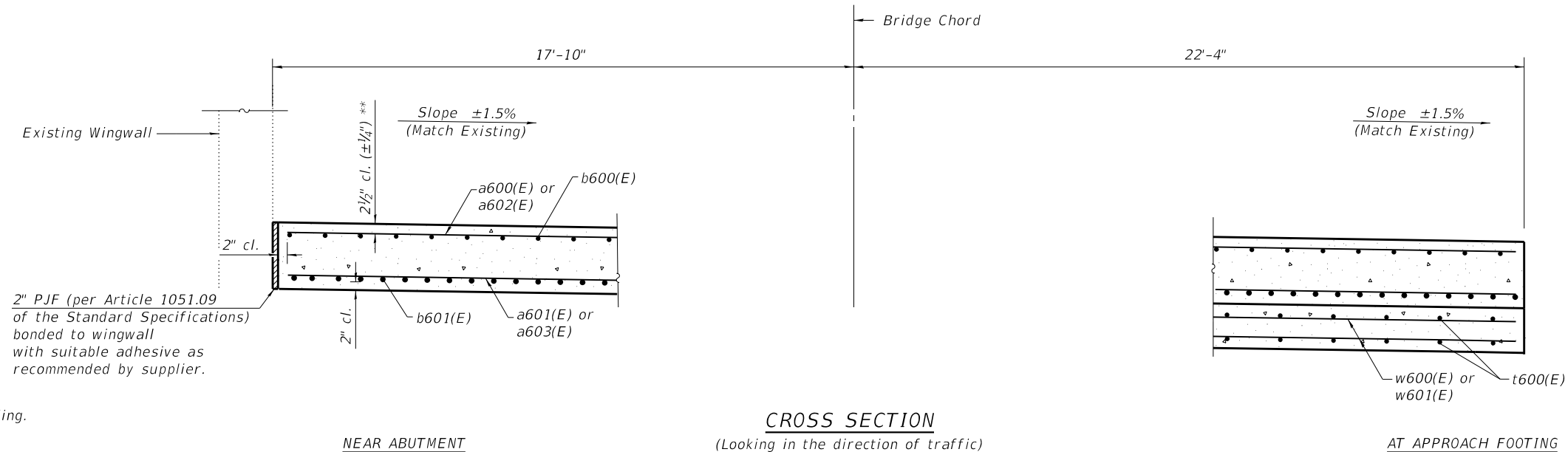
TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

S.N. 064-0032				
Point	North Approach		South Approach	
	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

S.N. 064-0033				
Point	North Approach		South Approach	
	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

The approach slab shall be placed to match existing elevations. The Contractor shall place the approach footing for the approach slabs to match existing elevations at grade. Blank tables included for field notation.

See Section A-A on Sheet 10 of 24.



NEAR ABUTMENT

CROSS SECTION
(Looking in the direction of traffic)

AT APPROACH FOOTING

(Sheet 1 of 2)

MODEL: D:\cmt\11\06610\WO_11\Draw\Structures\SN 0032 & 0033\009_0032-0033_Approach Slab Detail.dwg
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	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 9 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	223
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

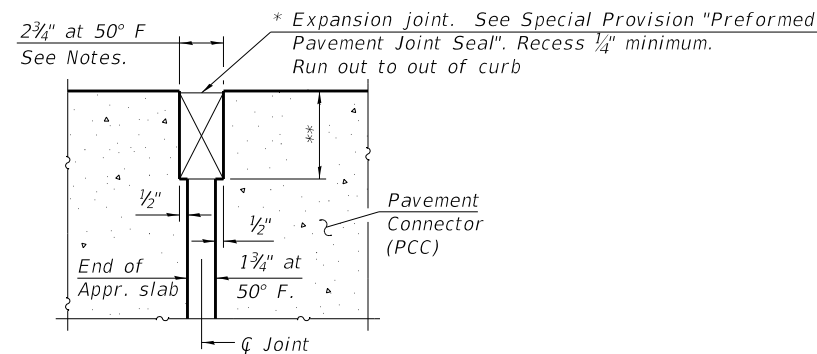
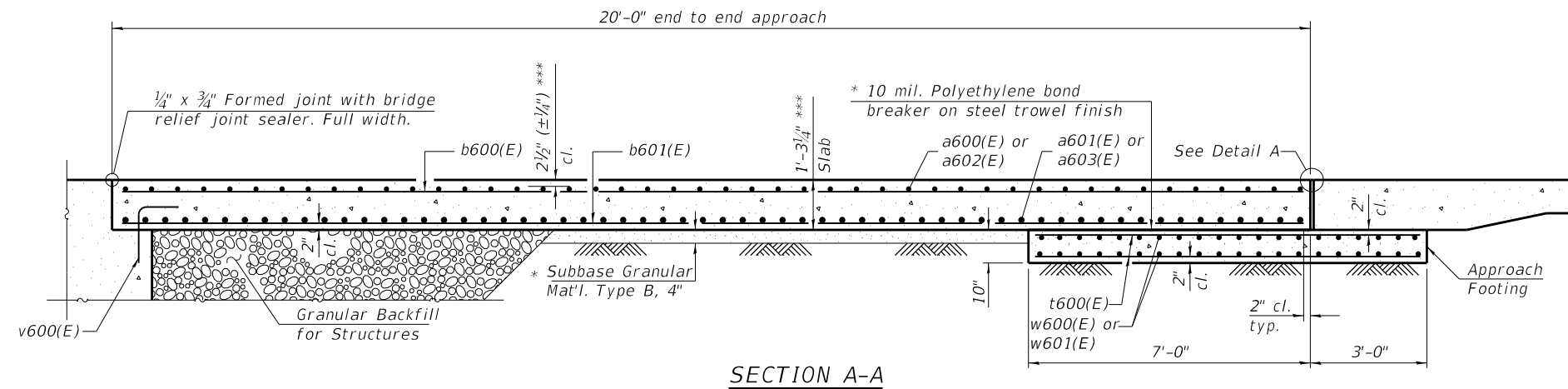
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 24.



DETAIL A
(@ Rt. L's)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations.

*** Prior to grinding.

FOUR APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a600(E)	124	#5	18'-6"	————
a601(E)	164	#8	18'-6"	————
a602(E)	124	#5	21'-0"	————
a603(E)	164	#8	21'-0"	————
b600(E)	248	#5	19'-8"	————
b601(E)	392	#9	19'-8"	————
t600(E)	336	#4	9'-8"	————
w600(E)	160	#5	18'-6"	————
w601(E)	160	#5	21'-0"	————
Concrete Structures			Cu. Yd.	49.6
Concrete Superstructure (Approach Slab)			Cu. Yd.	151.4
Reinforcement Bars, Epoxy Coated			Pound	62470
Bar Splicers			Each	448

(Sheet 2 of 2)

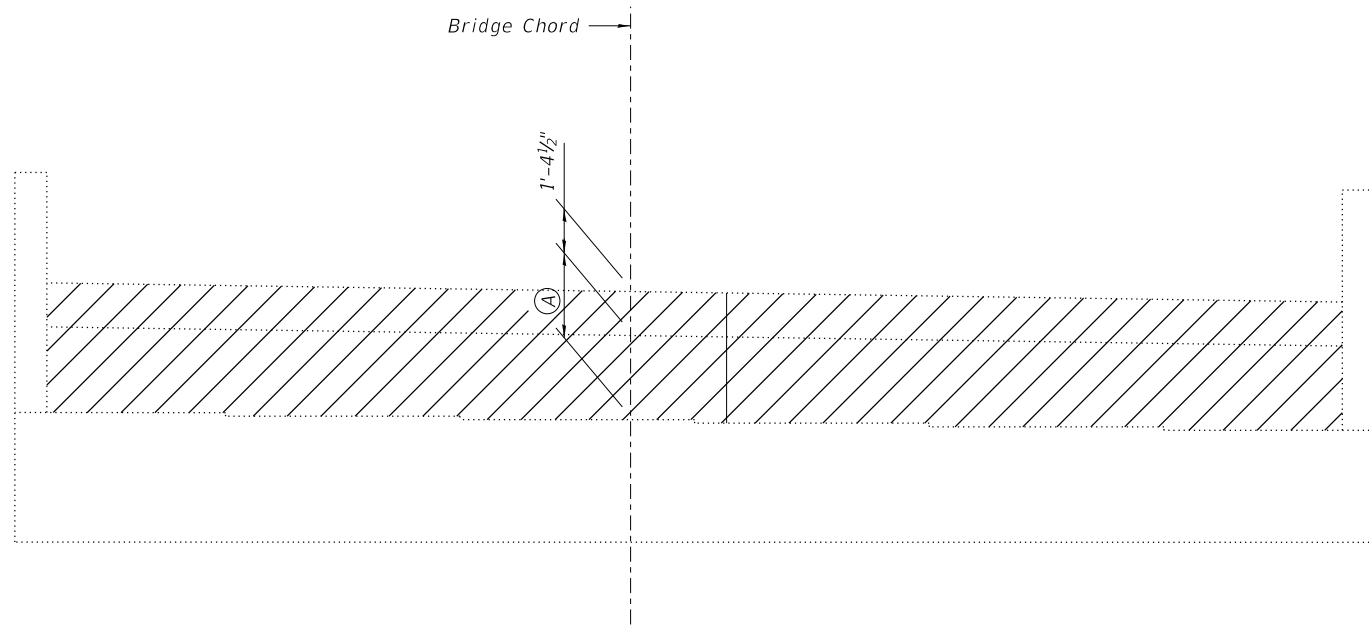
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	224
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

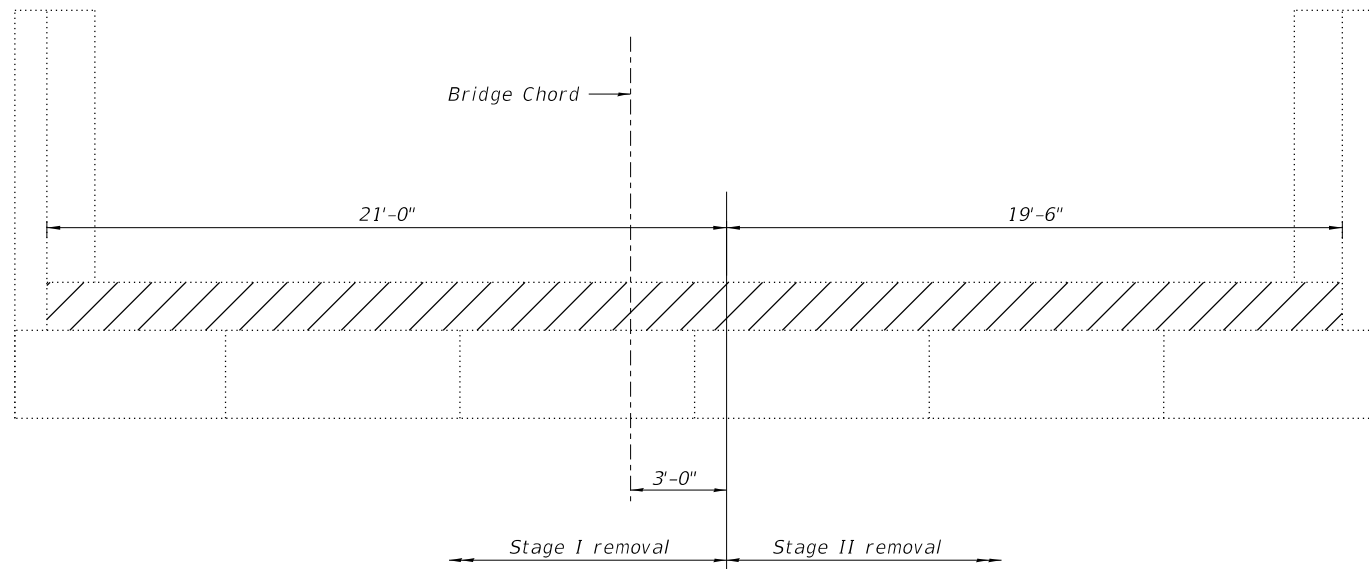
SHEET 10 OF 24 SHEETS

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PLOT DATE = 11/18/2020 - 8:13:14 AM	DRAWN - GLD/RAH	REVISIONS -
	CHECKED - JTH	REVISIONS -



ELEVATION

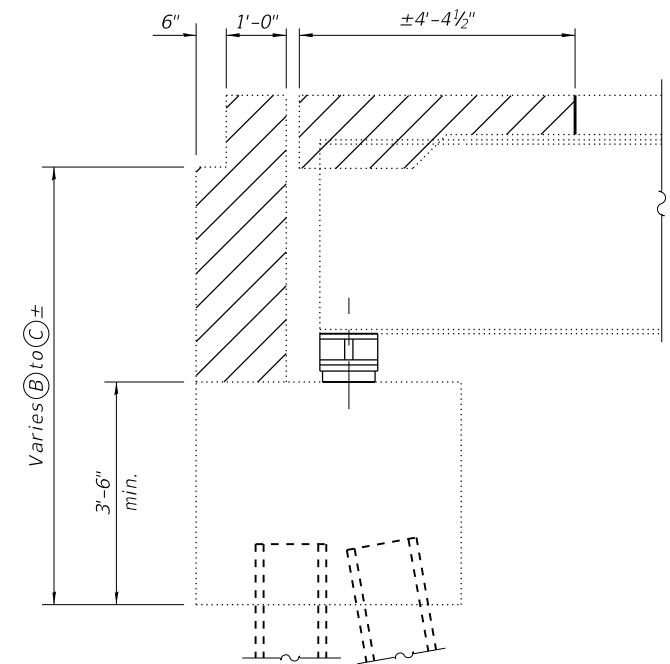
SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
 SN 064-0033 north abutment shown, SN 064-0033 south abutment similar



PLAN

SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
 SN 064-0033 north abutment shown, SN 064-0033 south abutment similar

Location	Dim. A	Dim. B	Dim. C
064-0032 - North Abutment	2'-7 ³ / ₄ "	6'-9"	6'-1 ⁵ / ₈ "
064-0032 - South Abutment	2'-9 ¹ / ₈ "	6'-9 ¹ / ₈ "	6'-1 ³ / ₄ "
064-0033 - North Abutment	2'-6 ⁷ / ₈ "	6'-9"	6'-1 ⁵ / ₈ "
064-0033 - South Abutment	2'-8 ³ / ₈ "	6'-9 ¹ / ₈ "	6'-1 ³ / ₄ "



SECTION THRU ABUTMENT

**FOUR ABUTMENTS
 BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	32.3

Concrete Removal quantity for deck concrete included in Bill of Material on sheet 6 of 24.

LEGEND



Concrete Removal

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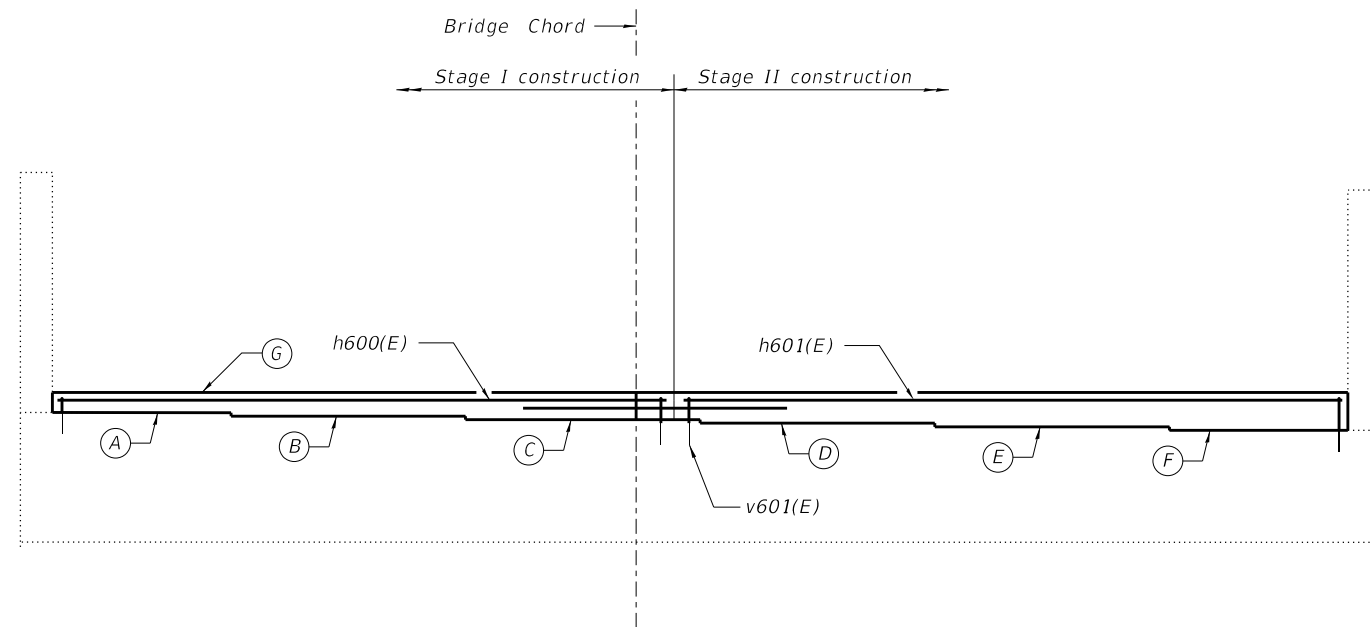
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	CHECKED - JTH	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

**ABUTMENT REMOVAL
 STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

SHEET 11 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	225
CONTRACT NO. 78606			ILLINOIS FED. AID PROJECT	

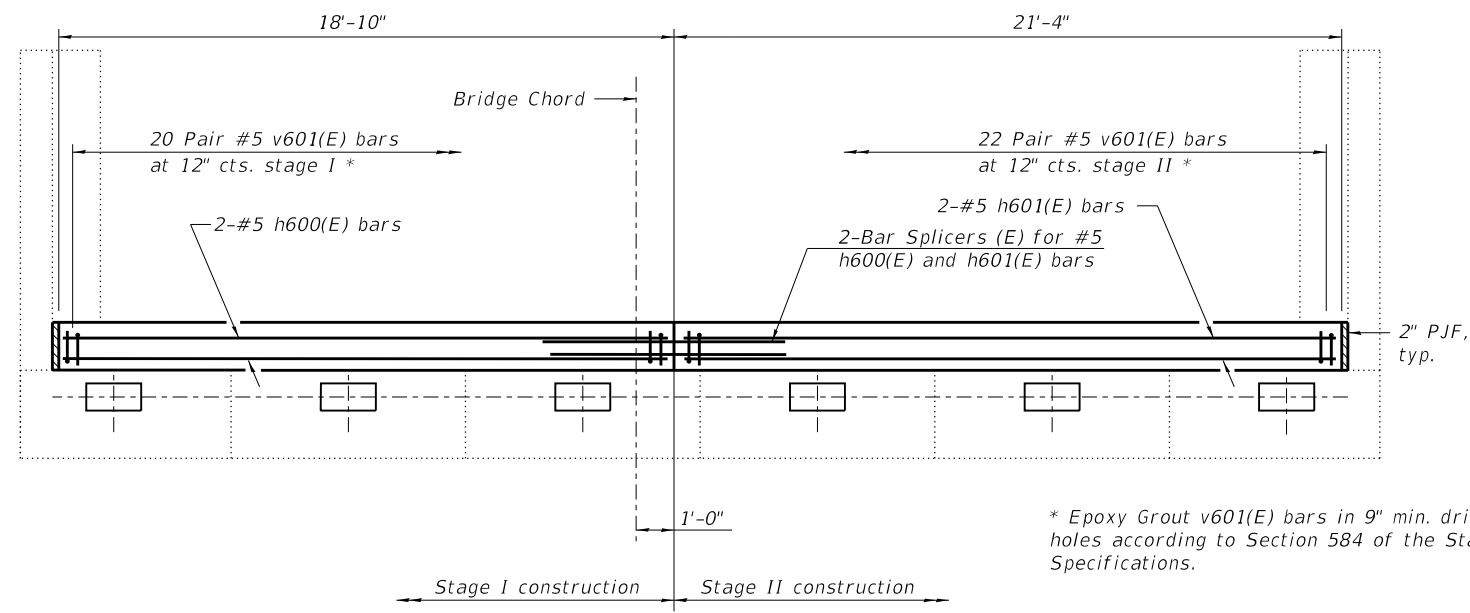


ELEVATION

SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
 SN 064-0033 north abutment shown, SN 064-0033 south abutment similar

Location	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G
064-0032 - North Abutment	366.99	366.88	366.77	366.66	366.55	366.44	367.35
064-0032 - South Abutment	367.40	367.29	367.18	367.07	366.96	366.85	367.76
064-0033 - North Abutment	367.40	367.29	367.18	367.07	366.96	366.85	367.76
064-0033 - South Abutment	367.81	367.70	367.59	367.48	367.37	367.26	368.17

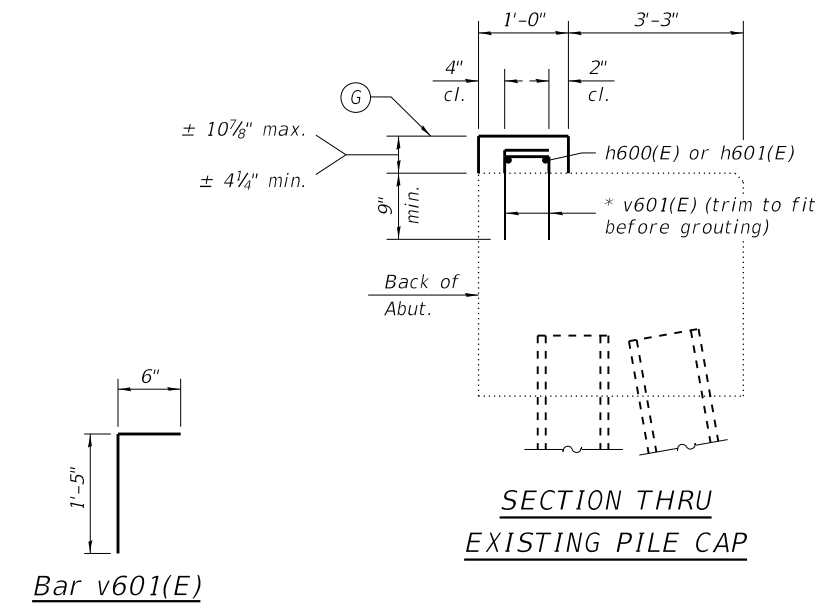
Elevations are based on existing plans and are provided as a reference point. Actual elevations and dimensions in the field may vary.



PLAN

SN 064-0032 south abutment shown, SN 064-0032 north abutment similar
 SN 064-0033 north abutment shown, SN 064-0033 south abutment similar

* Epoxy Grout v601(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.



SECTION THRU EXISTING PILE CAP

FOUR ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h600(E)	8	#5	18'-6"	—
h601(E)	8	#5	21'-0"	—
v601(E)	336	#5	1'-11"	└
Concrete Structures			Cu. Yd.	3.8
Concrete Reinforcement Bars, Epoxy-Coated			Pound	1010
Bar Splicers			Each	8

MODEL: Detail
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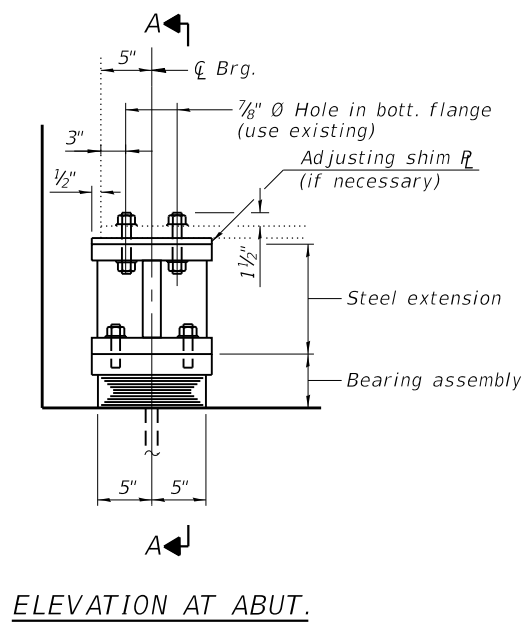
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	CHECKED - JTH	REVISED -

**STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION**

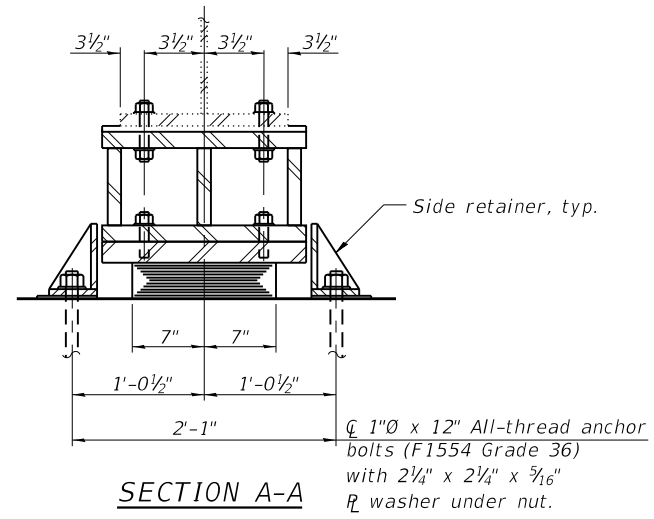
**ABUTMENT DETAILS
 STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)**

SHEET 12 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	226
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



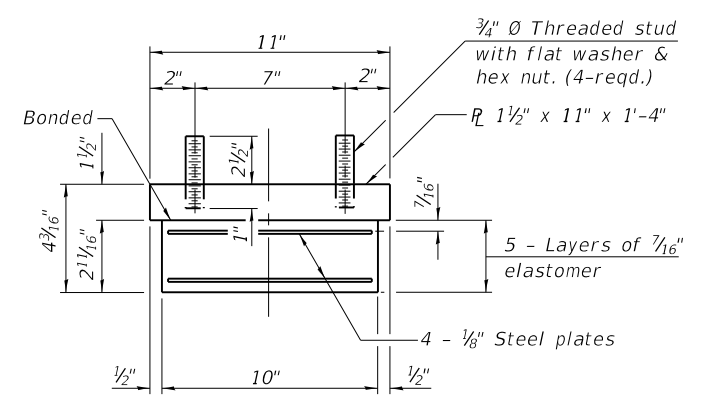
ELEVATION AT ABUT.



SECTION A-A

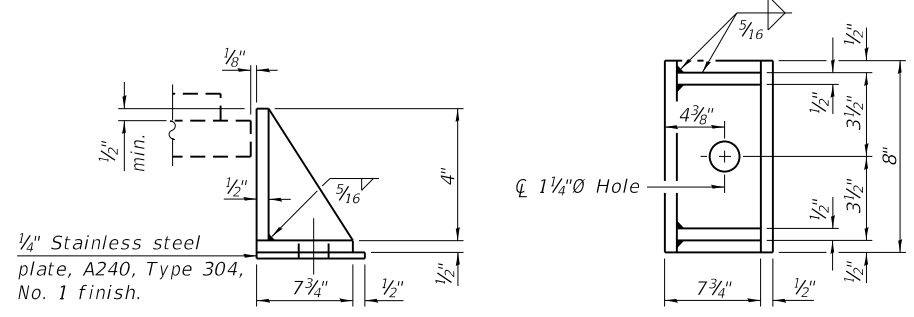
1"Ø x 12" All-thread anchor bolts (F1554 Grade 36) with 2 1/4" x 2 1/4" x 3/16" washer under nut.

TYPE I ELASTOMERIC EXP. BRG.



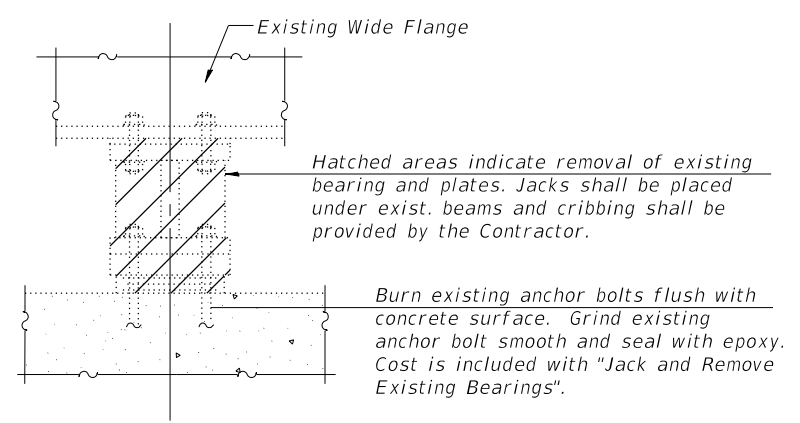
BEARING ASSEMBLY

Note: Shim plates shall not be placed under bearing assembly.



SIDE RETAINER

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



BEARING REMOVAL

INTERIOR BEAM REACTION TABLE

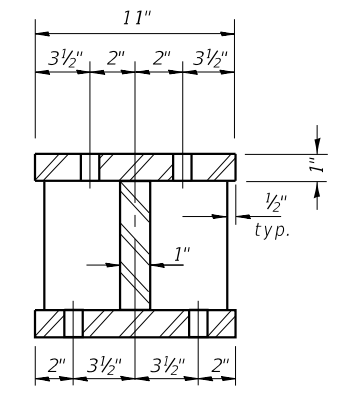
	Existing Service Loads	Proposed Service Loads
R DL (k)	16.3	37.3
R DW (k)	3.0	4.9
R L (k)	35.7 (HS20)	55.7 (HL-93)
Imp (k)	10.6	13.6
R Total (k)	65.5	111.4

Notes:

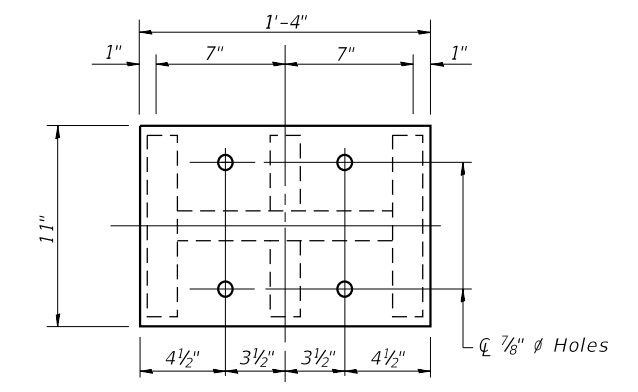
New steel extension, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.
 Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).
 Min. jack capacity = 38 tons.
 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.
 Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	4680
Elastomeric Bearing Assembly, Type I	Each	24
Anchor Bolts, 1"	Each	48
Jack and Remove Existing Bearings	Each	24



SECTION B-B



STEEL EXTENSION

MODEL: Detail; FILE NAME: L:\DOT\1500610\WO_1\Draw\Structures\SN 0032 & 0033\013_0032-0033_Bearing Detail.dgn



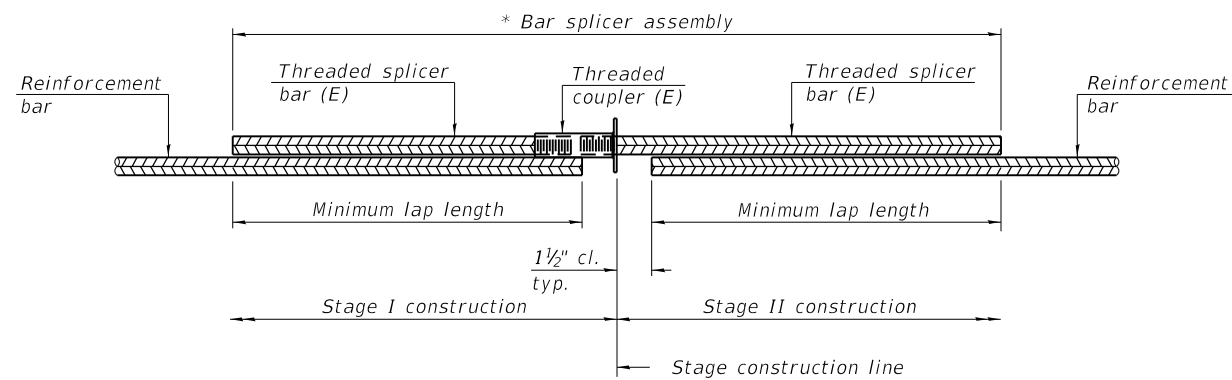
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PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 12/1/2020 - 7:15:38 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 13 OF 24 SHEETS

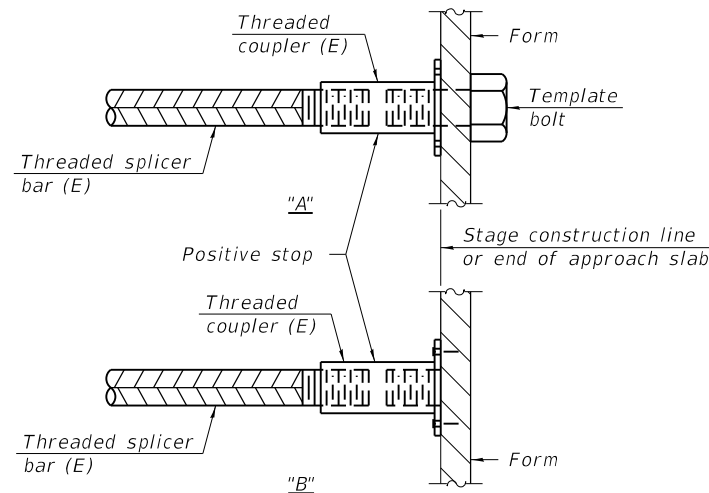
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	227
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



STANDARD BAR SPLICER ASSEMBLY PLAN
(All components shall be provided from one supplier)

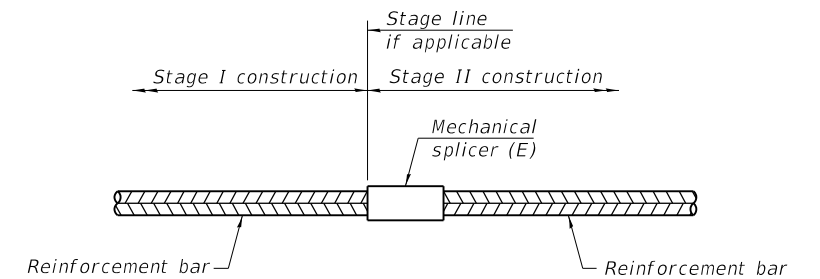
Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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



INSTALLATION AND SETTING METHODS

"A" : Set mechanical splicer assembly by means of a template bolt.
 "B" : Set mechanical 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

Location	Bar size	No. assemblies required	Minimum lap length
064-0032 N. Abut. Superstructure	#5	24	3'-6"
064-0032 N. Abut. Diaphragm	#6	5	4'-0"
064-0032 N. Abut. Diaphragm	#6	2	**
064-0032 N. Abut. Diaphragm	#6	2	***
064-0032 N. Abut. Diaphragm	#4	2	2'-5"
064-0032 N. Approach Slab	#5	31	3'-6"
064-0032 N. Approach Slab	#8	41	6'-9"
064-0032 N. Approach Slab Footing	#5	40	3'-6"
064-0032 N. Abut.	#5	2	3'-6"
064-0032 S. Abut. Superstructure	#5	24	3'-6"
064-0032 S. Abut. Diaphragm	#6	5	4'-0"
064-0032 S. Abut. Diaphragm	#6	2	**
064-0032 S. Abut. Diaphragm	#6	2	***
064-0032 S. Abut. Diaphragm	#4	2	2'-5"
064-0032 S. Approach Slab	#5	31	3'-6"
064-0032 S. Approach Slab	#8	41	6'-9"
064-0032 S. Approach Slab Footing	#5	40	3'-6"
064-0032 S. Abut.	#5	2	3'-6"
064-0033 N. Abut. Superstructure	#5	24	3'-6"
064-0033 N. Abut. Diaphragm	#6	5	4'-0"
064-0033 N. Abut. Diaphragm	#6	2	**
064-0033 N. Abut. Diaphragm	#6	2	***
064-0033 N. Abut. Diaphragm	#4	2	2'-5"
064-0033 N. Approach Slab	#5	31	3'-6"
064-0033 N. Approach Slab	#8	41	6'-9"
064-0033 N. Approach Slab Footing	#5	40	3'-6"
064-0033 N. Abut.	#5	2	3'-6"
064-0033 S. Abut. Superstructure	#5	24	3'-6"
064-0033 S. Abut. Diaphragm	#6	5	4'-0"
064-0033 S. Abut. Diaphragm	#6	2	**
064-0033 S. Abut. Diaphragm	#6	2	***
064-0033 S. Abut. Diaphragm	#4	2	2'-5"
064-0033 S. Approach Slab	#5	31	3'-6"
064-0033 S. Approach Slab	#8	41	6'-9"
064-0033 S. Approach Slab Footing	#5	40	3'-6"
064-0033 S. Abut.	#5	2	3'-6"

** 4'-0" minimum lap on Stage II side, 2'-1" bar on Stage I side.
 *** 4'-0" minimum lap on Stage II side, 2'-1" headed bar on Stage I side.

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

BSD-1 1-1-2020

MODEL: D:\cmt\11100610\WO_1\Draw\Structures\SN 0032 & 0033\014_0032-0033_Bar Splicer Assembly and Mechanical Splicer Details.dgn



USER NAME = Misael Cordova	DESIGNED - DAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 11/18/2020 - 8:13:20 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 14 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	228
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.

EXISTING REINFORCEMENT BARS EXTENDING INTO THE REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION, ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM. COST INCLUDED WITH CONCRETE REMOVAL.

JOINT OPENINGS SHALL BE ADJUSTED ACCORDING TO ARTICLE 503.10(C) OF THE STANDARD SPECIFICATIONS WHEN THE DECK IS POURED AT AN AMBIENT TEMPERATURE OTHER THAN 50°F.

STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GRADE 36, UNLESS OTHERWISE NOTED.

THE INORGANIC ZINC RICH PRIMER/ACRYLIC/ACRYLIC PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE ACRYLIC FINISH COAT SHALL BE INTERSTATE GREEN, MUNSSELL NO. 7.5G 4/8. SEE SPECIAL PROVISION "CLEANING AND PAINTING NEW METAL STRUCTURES".

THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHOULD 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".

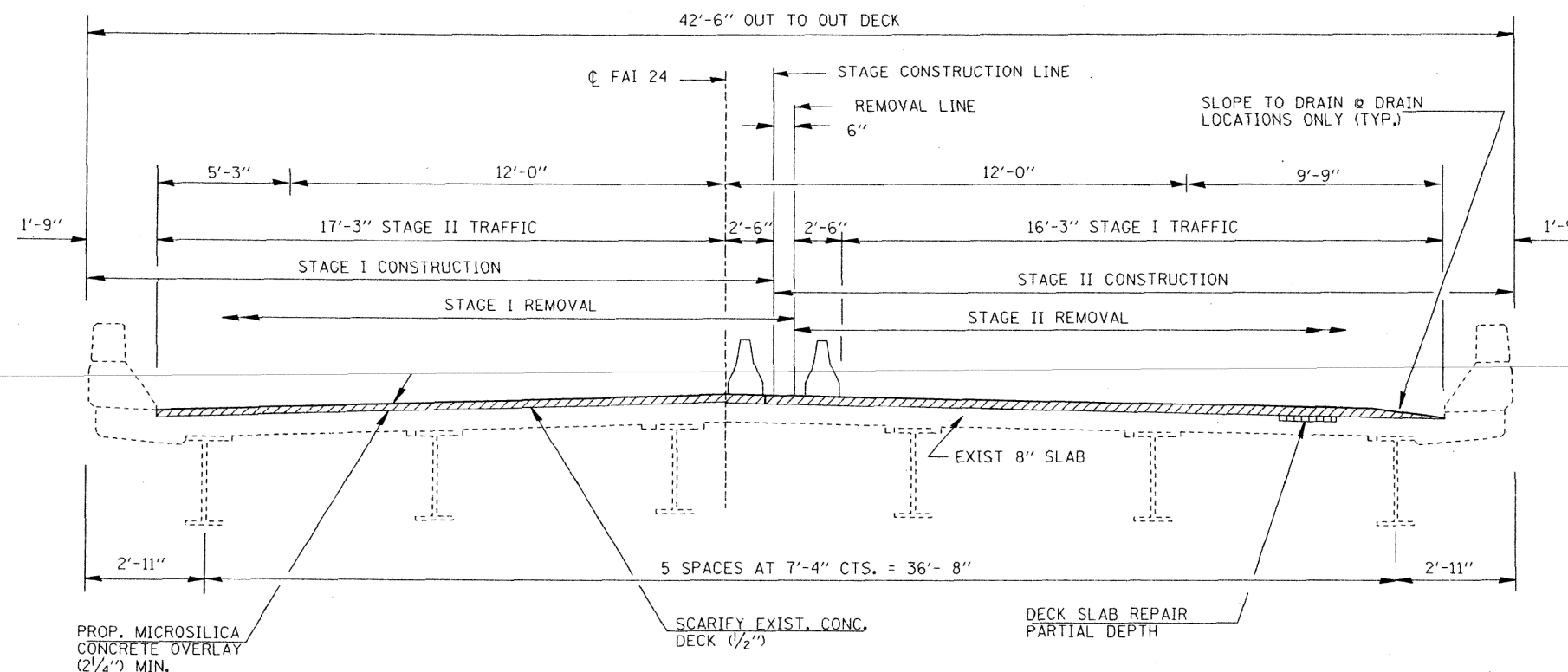
FOR INFORMATION ONLY

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
d(E)	48	#6	20'-6"	—
d ₁ (E)	48	#6	20'-0"	—
d(E)	24	#4	4'-7"	┘
d ₁ (E)	24	#5	3'-5"	┘
d ₂ (E)	16	#4	2'-1"	□
h(E)	16	#6	19'-7"	—
h ₁ (E)	16	#6	19'-1"	—
x(E)	156	#5	2'-10"	—
CONC. REMOVAL			CU YD	20.8
CONC. SUPER.			CU YD	23.2
REINFORC. BARS EPOXY COATED			POUND	4490
BAR SPLICERS			EACH	64
POLYMER CONC.			CU FT	11.2
SILIC. JT. SEALER			FOOT	156

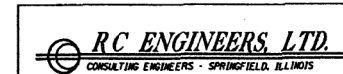
REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

CROSS SECTION, GENERAL NOTES, BILL OF MATERIAL



DECK CROSS SECTION
(LOOKING IN DIRECTION OF TRAFFIC)

DESIGNED	J.C.P.
CHECKED	
DRAWN	T. F.
CHECKED	



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

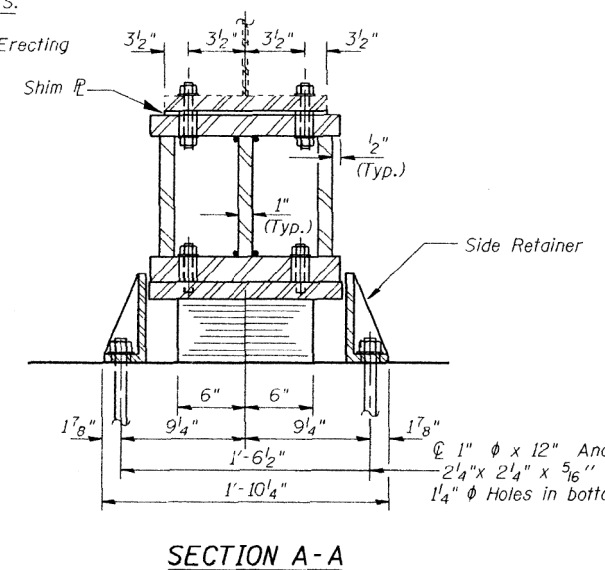
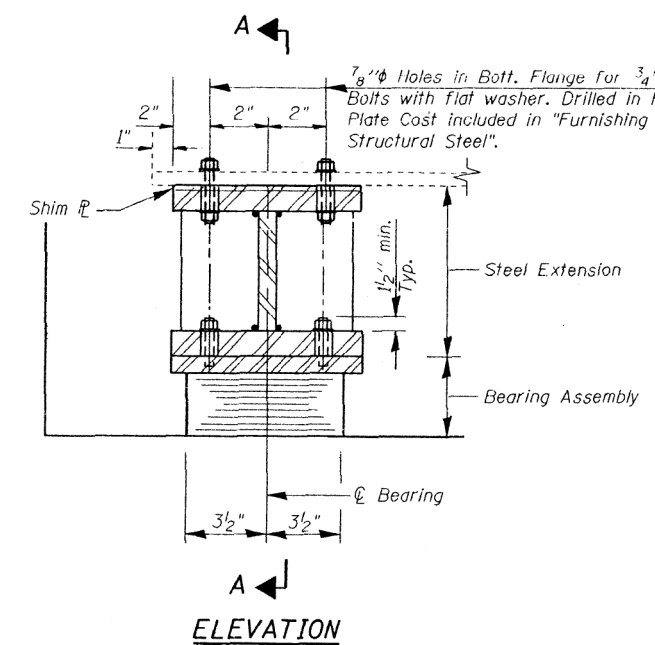
EXISTING PLANS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 16 OF 24 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	230
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



USER NAME =	Misael Cordova	DESIGNED -	DAC	REVISED -	
PLOT SCALE =	N/A	CHECKED -	AS	REVISED -	
PLOT DATE =	11/18/2020 - 8:13:27 AM	DRAWN -	GLD/RAH	REVISED -	
		CHECKED -	JTH	REVISED -	



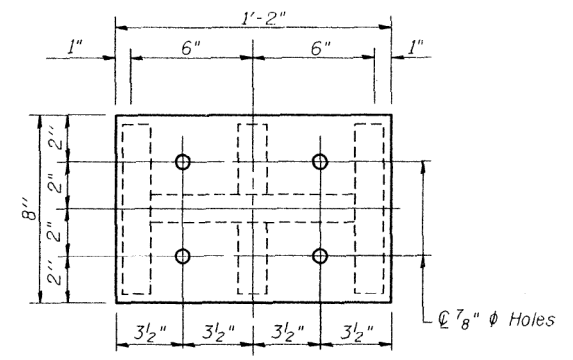
Hatched areas indicate removal of existing bearing and plates. Jacks shall be placed under exist. beams and cribbing shall be provided.

Burn existing anchor bolts flush with concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is included with "Jack and Remove Existing Bearings".

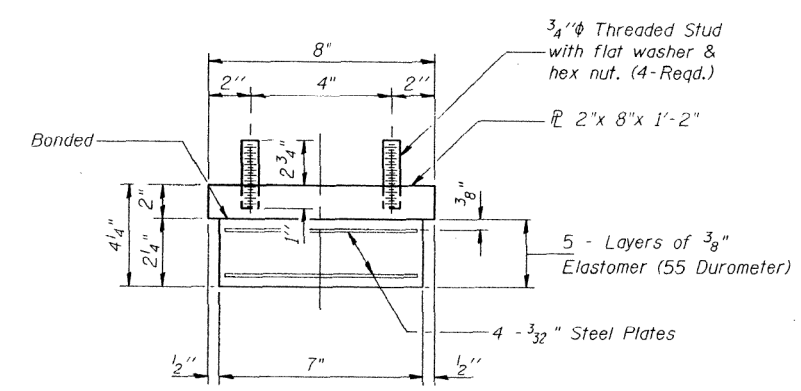
Existing Wide Flange

Existing top plate to be removed using the air-arc method and grind smooth all weld material remaining on the bottom flange, cost included in "Jack and Remove Existing Bearings".

ELEVATION



TYPE I ELASTOMERIC BEARING AT ABUTMENTS



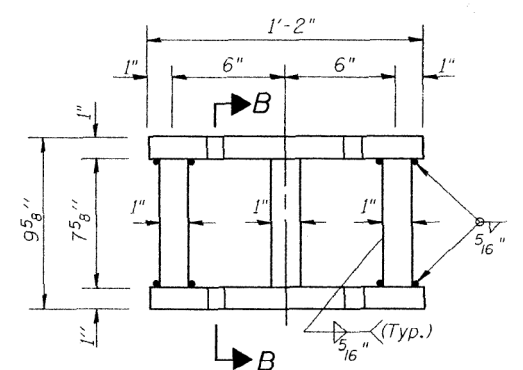
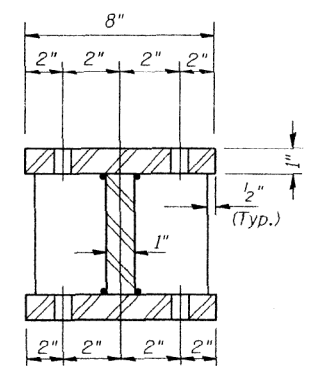
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly

***INTERIOR BEAM REACTION TABLE**

	SERVICE LOADS
R DL (K)	25.4
R LL (K)	35.7
Imp (K)	10.6
R Total (K)	71.7

* Min. Jack capacity at each Beam shall be 38 Tons.



FOR INFORMATION ONLY

Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

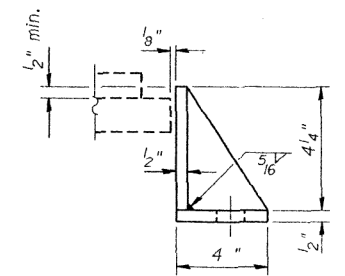
For anchor bolt installation details see sheet # 6 of 9.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

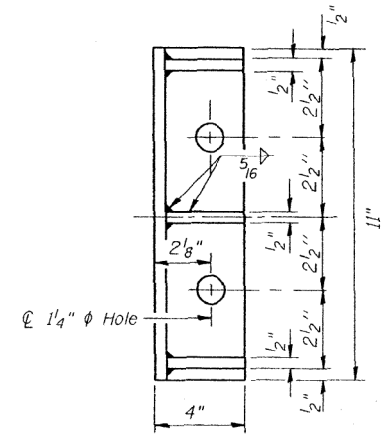
ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	24

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.



ELASTOMERIC BEARING TYPE I, WEST & EAST ABUTMENTS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

SHEET 17 OF 24 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	231
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

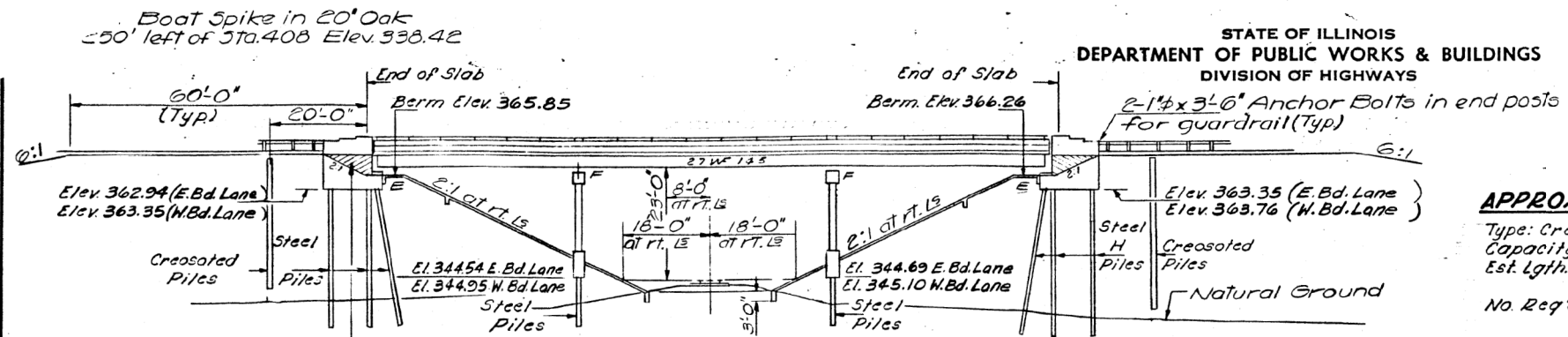
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DESIGNED	- DAC
CHECKED	- AS
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DRAWN	- GLD/RAH
PLOT DATE	= 11/18/2020 - 8:13:33 AM
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REVISED	-

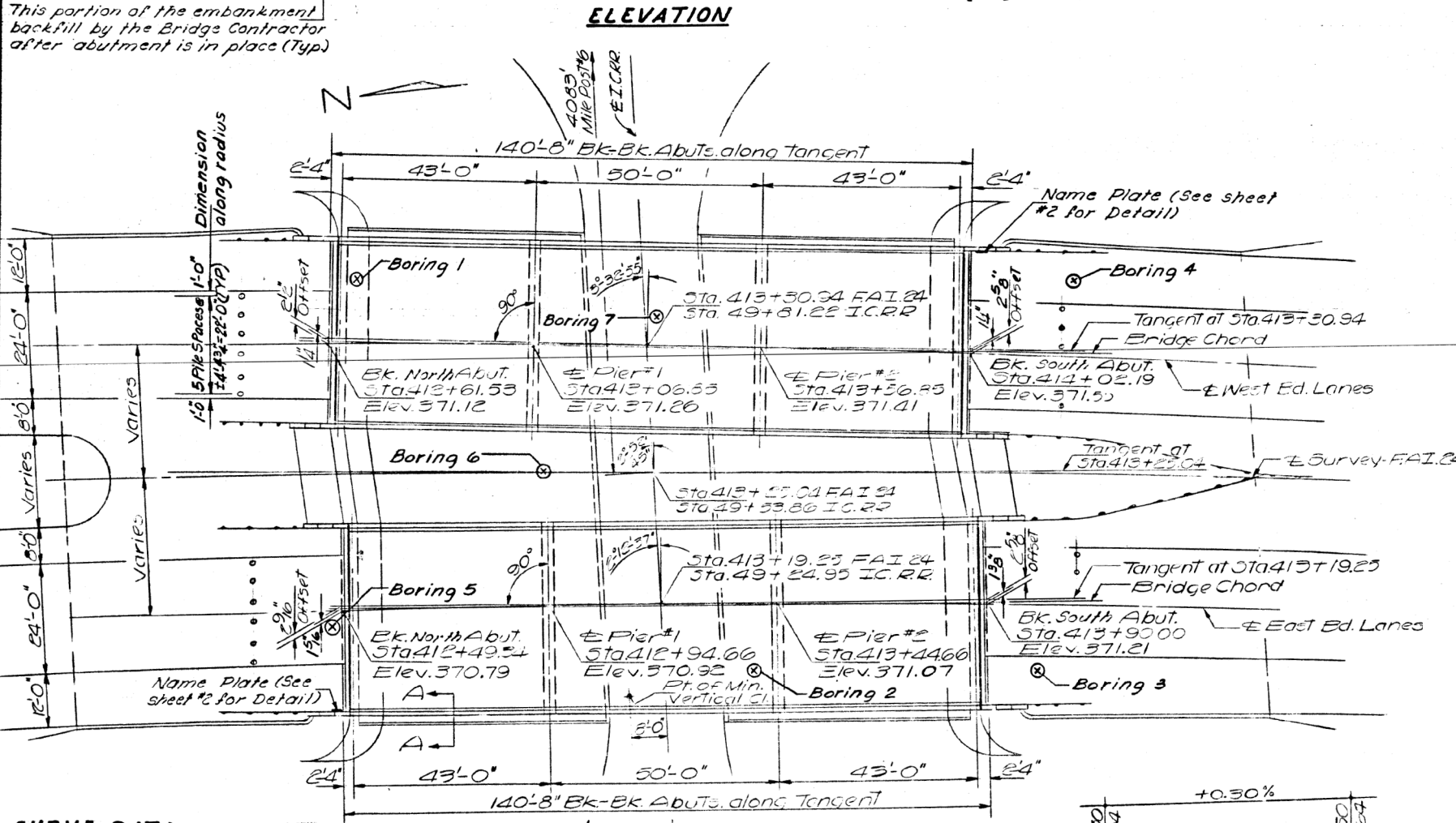
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64-3VB	MASSAC	76	17	13

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

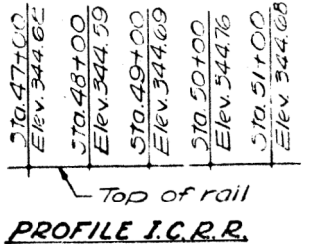
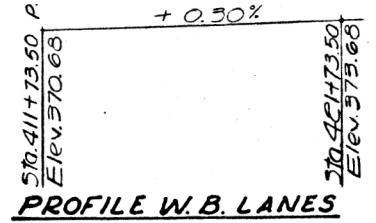
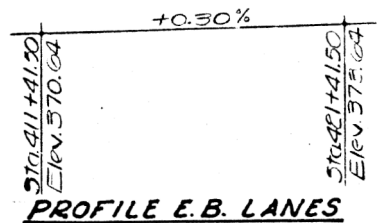
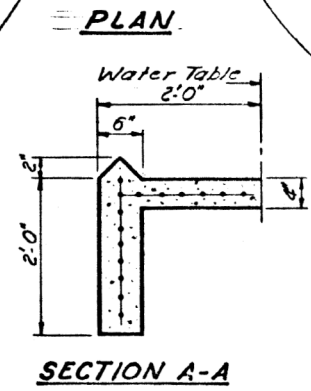


APPROACH PILE DATA
Type: Creosoted
Capacity: 20 Tons.
Est. Lgth.: 28'-0" (No. Apprx)
30'-0" (So. Apprx.)
No. Req'd.: 24

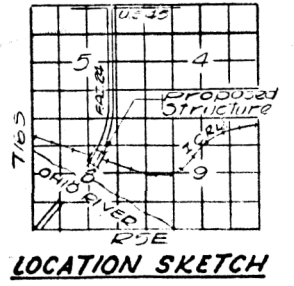
GENERAL NOTES
All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Rivets 3/8", open holes 1/8", unless otherwise noted.
Diaphragm connections may be adapted to shop welding subject to approval by the Engineer.
The exposed surfaces of the expansion guard shall be given two shop coats of red lead paint, the contact surfaces shall be given one coat of red lead paint. Anchor studs shall not be painted.
Except as otherwise provided, all structural steel shall receive one shop coat of red lead paint and two field coats of aluminum paint.
Field welding of construction accessories will not be permitted in the bottom of flange of beams or girders nor on the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.
Anchor bolts shall be set before riveting diaphragms (bolting cross frames) over supports.
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58 lb. per 100 sq. ft.
The Contractor shall drive 4 test piles, one each at N. Abut., E. Bd. Lane, S. Abut., W. Bd. Lane, Pier 1, W. Bd. Lane and Pier 2, E. Bd. Lane. All in Permanent locations as directed by the Engineer before ordering the remainder of piles.
Class A Excavation for structures includes excavation for slope wall.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments or Piers.
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.
Pier and abutment piles shall be driven to the minimum length noted and the bearing required obtained at or below this level.



CURVE DATA
West Bd. Lane P.I. Sta. 406+80.74
East Bd. Lane P.I. Sta. 409+36.72
P.I. Sta. 408+08.73
 $\Delta = 15^\circ - 29' - 39''$
 $D = 0^\circ - 30'$
 $R = 11,459.16'$
 $L = 3,098.84'$
 $T = 1,558.93'$
 $E = 105.55'$
 $S.E. = 0.015\%$



DESIGN STRESSES
 $f_c = 1200$ psi - Deck Slab
 $f_c = 1400$ psi - Curb, Parapet, Sub
 $f_s = 10000$ psi - Reinf.
 $f_s = 20,000$ psi - Struct.
 $V_c = 75$ psi - FTqs.
 $n = 10$
Allowabl. Future W.S. $\leq 7/10'$
Allowabl. $\epsilon \Delta \leq \frac{1}{1000}$ Non Composite
LOADING - H50-44 ALT.



TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub.	Total
Protective Coat	Sq. Yds.	1450		1450
Class A Excav. for Structures	Cu. Yds.		20	20
Class X Concrete	Cu. Yds.	354.9	351.3	706.2
Structural Steel	Lbs.	307270		307270
Aluminum Railing	Lin. Ft.	550		550
Reinforcement Bars	Lbs.	85370	40940	127410
Creosoted Piles (2017038')	Lin. Ft.		696	696
Steel Piles (8BP36)	Lin. Ft.		2690	2690
Test Piles Steel (8BP36)	Ea.		4	4
Name Plates	Ea.			2
Slope Wall (4')	Sq. Yds.		1700	1700
Preformed Joint Sealer	Lin. Ft.			170

GENERAL PLAN & ELEVATION
PROJ. I-16-24-1(23)37
F.A.I. RT. 24 OVER I.C.R.R.
F.A.I. RT. 24 SEC. 64-3VB
MASSAC COUNTY
STATION 413+25.04

DESIGNED: Lin
CHECKED: JH
DRAWN: J. Kessler
CHECKED: A. Ahmad
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]



USER NAME = Misaed Cordova	DESIGNED - DAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 11/18/2020 - 8:13:40 AM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	232
			CONTRACT NO. 78606	
ILLINOIS FED. AID PROJECT				

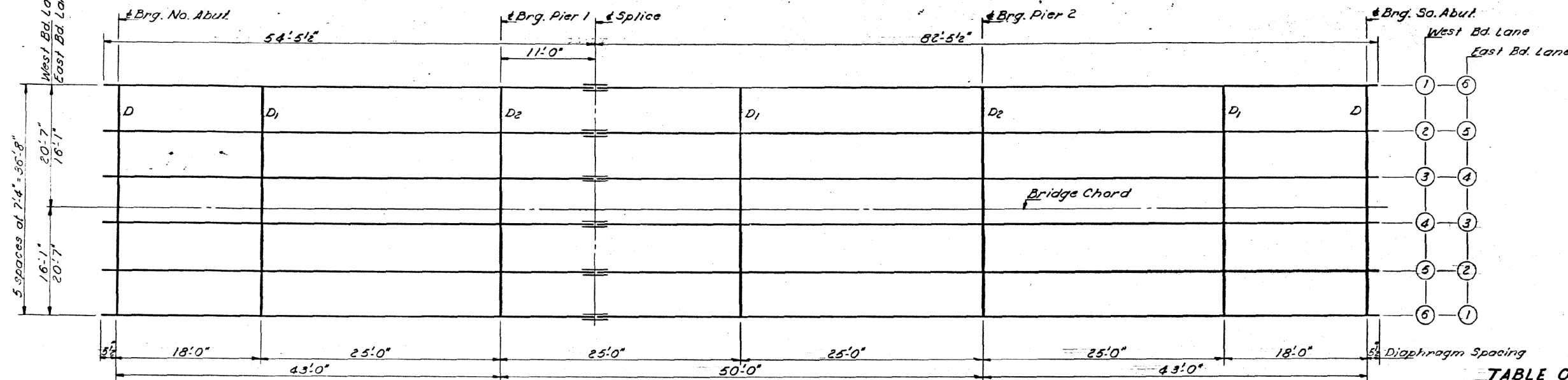
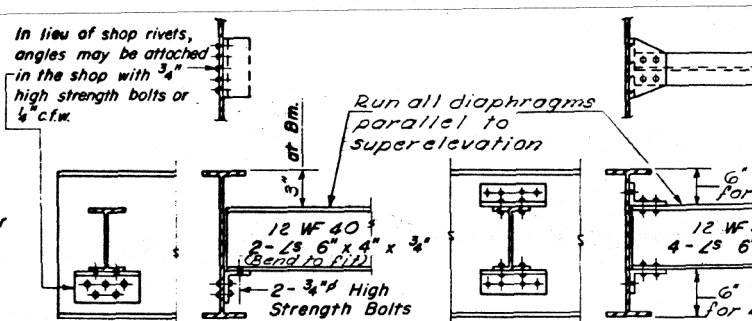
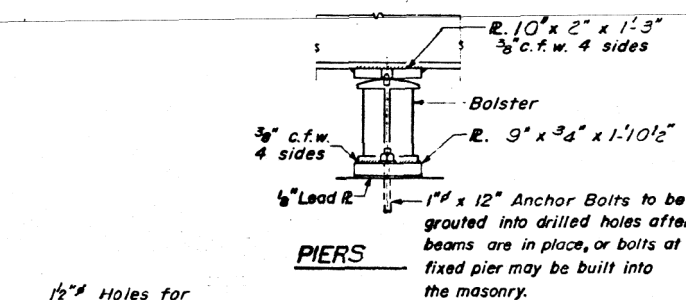
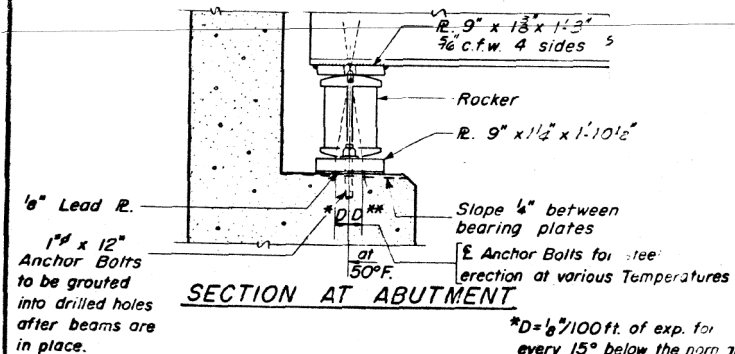


TABLE OF MOMENTS & REACTIONS - INT. BEAMS

	Moments			Reactions	
	Splice	Pier 1	Sp. 2	Abut.	Piers
D.L.	167.4	270.7	121.8	20.4	54.1
L.L.	267.8	207.7	257.3	35.5	44.8
Imp.	77.7	62.3	77.2	10.3	13.0
Total	512.9	540.7	456.3	66.2	121.9

Moments are in Ft.-Kips
Reactions are in Kips

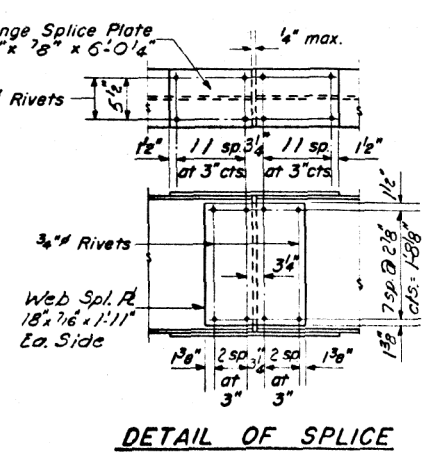
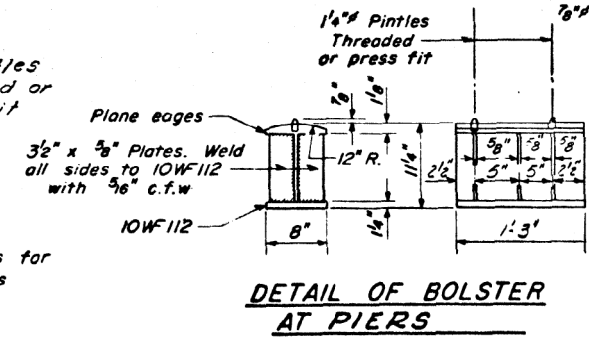
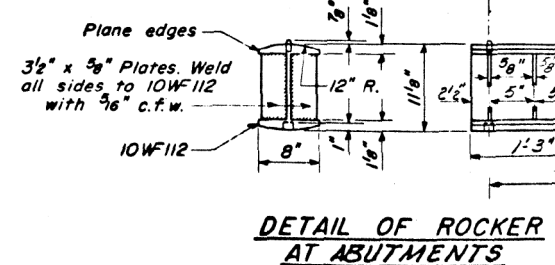
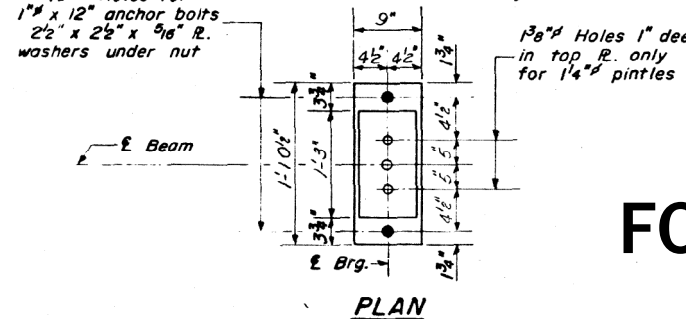
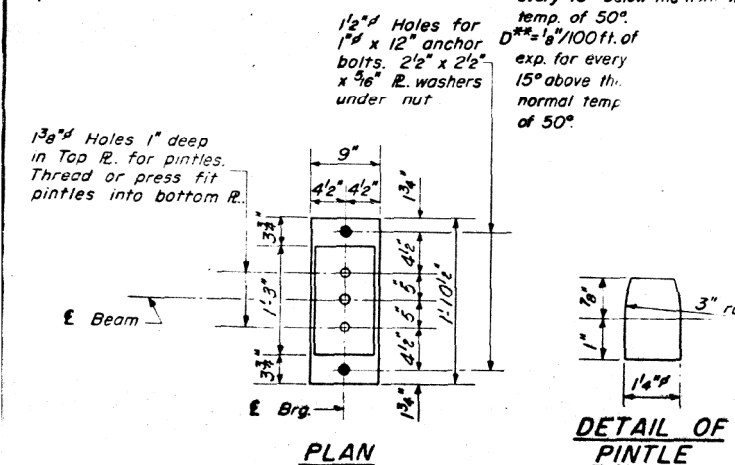


ELEVATION TOP OF W FOR FABRICATION ONLY

	East Bound Lane					
	1	2	3	4	5	6
Brg. N.A.	369.54	369.95	370.06	370.17	370.28	370.39
Brg. P-1	369.96	370.07	370.18	370.29	370.40	370.51
Splice	369.99	370.10	370.21	370.32	370.43	370.54
Brg. P-2	370.11	370.22	370.33	370.44	370.55	370.66
Brg. S.A.	370.25	370.36	370.47	370.58	370.69	370.80

	West Bound Lane					
	1	2	3	4	5	6
Brg. N.A.	370.80	370.69	370.58	370.47	370.36	370.25
Brg. P-1	370.92	370.81	370.70	370.59	370.48	370.37
Splice	370.95	370.84	370.73	370.62	370.51	370.40
Brg. P-2	371.07	370.96	370.85	370.74	370.63	370.52
Brg. S.A.	371.21	371.10	370.99	370.88	370.77	370.66

FOR INFORMATION ONLY



SUPERSTRUCTURE DETAILS
F.A.I. RT. 24 SEC. 64-3VB
MASSAC COUNTY
STATION 413+25.04

EXAMINED: *[Signature]* July 27 1962
PASSED: *[Signature]*
APPROVED: *[Signature]*

CHECKED: *[Signature]*
DRAWN: W. A. Sausaman Jr.
CHECKED: *[Signature]*

I-2-C 7-2-62 Rev. 11-9-62 Rev. 8-16-63 Rev. 12-10-63



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0032 (E.B.) & 064-0033 (W.B.)

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	234
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	3VB	MASSAC	76	29
SHEET NO. 13				

Boring No. 1
Station 412+66
Offset 40' RT. CENTERLINE MED.

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
340.0					334.0	329.0
337.0	28	3.75	19			
333.0	43	4.25	18			
330.0	40	4.35	20			
329.0	100	6"	9			
328.0	140		10			
327.0	150	2.38	10			
326.0	114		12			
325.0	130		10			
324.0						
323.0						
322.0						
321.0						
320.0						
318.5						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 21.5 FEET

Boring No. 2
Station 413+41
Offset 60' RT. CENTERLINE

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
340.7					332.7	
337.7	23	3.25	17			
332.7	29	4.25	19			
330.2	40	3.15	14			
329.2	46		15			
328.2	65		8			
327.2	90					
326.2	100	0.2				
325.2	100	0.2				
324.2	100	0.2				
323.2	100	0.2				
322.2	100	0.2				
321.2	100	0.2				
320.2	100	0.2				
320.0						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 20.7

Boring No. 3
Station 414+20
Offset 40' RT. CENTERLINE MED.

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
338.9					332.7	
336.9	10	1.35	20			
334.4	25	3.35	15			
331.9	27	1.65	12			
329.4	25		8			
327.9	27		8			
326.9	46		13			
325.9	74		11			
324.9	100	7"	12			
323.9	100	8"	14			
322.9						
321.9						
320.9						
320.0						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 20.3 FEET

Boring No. 4
Station 414+25
Offset 40' LT. CENTERLINE

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
337.0					332.7	
335.0	9	1.45	23			
332.5	13	1.75	25			
330.0	33		10			
327.5	35		9			
325.5	74		11			
322.5	100	0.0				

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 14.5 FEET

NOTE: COULD NOT AUGER THROUGH HARD SAND.

FOR INFORMATION ONLY

Boring No. 5
Station 412+50
Offset 30' RT. CENTERLINE MED.

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
339.6					332.7	
336.6	19	4.85	7			
334.1	22	6.45	15			
331.6	38	1.75	13			
329.1	50		8			
327.2	62					
325.2	100	BLDG IN 9"				
323.2						
322.2						
321.2						
320.2						
320.0						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 16.4 FEET

Boring No. 6
Station 413+00
Offset CENTERLINE MEDIAN

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
340.2					332.7	
337.2	25	0.75	13			
334.7	15	1.65	15			
332.2	29	3.85	16			
329.7	13	1.35	20			
327.2	5	0.28	27			
324.7	100	BLDG IN 2"				
322.4	100	BLDG IN 3"				
321.4						
320.4						
320.0						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 17.8 FEET

Boring No. 7
Station 413+30.94
Offset 30' LT. CENTERLINE MED.

Elevation	N	Qu / s.f.	w (%)	Surface Water El.	Groundwater El. at Completion	After - Hours
340.2					332.7	
337.2	13	1.75	16			
334.7	17	3.15	16			
332.2	14	3.05	21			
329.7	9	0.45	13			
327.2	26					
324.7	31					
321.2	100					
320.2						
320.0						

WASHING PROCEDURE USED FOR ENTIRE DEPTH OF BORING

BOTTOM OF HOLE = 19.0 FEET

N-Standard Penetration Test- Blows per foot to drive 2"
G.S. Split Spoon Sampler 12" with 140# hammer falling 30"
Qu-Unconfined Compressive Strength-1sf
w-Water Content-percentage of oven dry weight-%
Type failure
B-Bulge Failure
S-Shear Failure
E-Estimated Value
P-Penetrometer

DESIGNED S Lin
CHECKED A.A. Hammond
DRAWN J.H. ...
CHECKED A.A. Hammond

EXAMINED JAN 27 1969
PASSED
APPROVED

BORING DATA
F.A.I. RT. 24 SEC. 64-3VB
MASSAC COUNTY
STATION 413+25.04

SCOPE OF WORK

1. Remove existing 2 1/4" concrete wearing surface.
 2. Perform deck repairs as shown. Repair concrete spall at southeast wingwall guardrail attachment. Remove and replace floor drains within deck repair areas as shown.
 3. Remove and replace center barrier with Steel Plate Beam Guardrail, Attached to Structures (Special) as shown.
 4. Remove and replace bridge approach slabs and pavement connectors including removal of buried pile bent caps.
 5. Clean and paint all steel beam ends at each abutment as preparation for concrete encasement.
 6. Convert existing stub abutments to integral abutments.
 7. Perform Grading and Shaping Special at west end of north and south abutments.
 8. Install new 3 1/4" latex concrete wearing surface and perform diamond grinding, longitudinal bridge deck grooving and apply protective coat.
- Up to 1/4 inch may be ground off the bridge deck and the bridge approach slabs.

INDEX OF SHEETS

- 1 - General Plan and Elevation
- 2 - General Data
- 3 - Stage Construction Details
- 4 - Deck Patching Plan
- 5 - Temporary Concrete Barrier for Stage Construction
- 6-7 - Superstructure
- 8 - Guardrail Attached to Structure
- 9-10 - Diaphragm Details
- 11-12 - Approach Slab Details
- 13 - Abutment Removal
- 14 - Bar Splicer Assembly and Mechanical Splicer Details
- 15-25 - Existing Plans

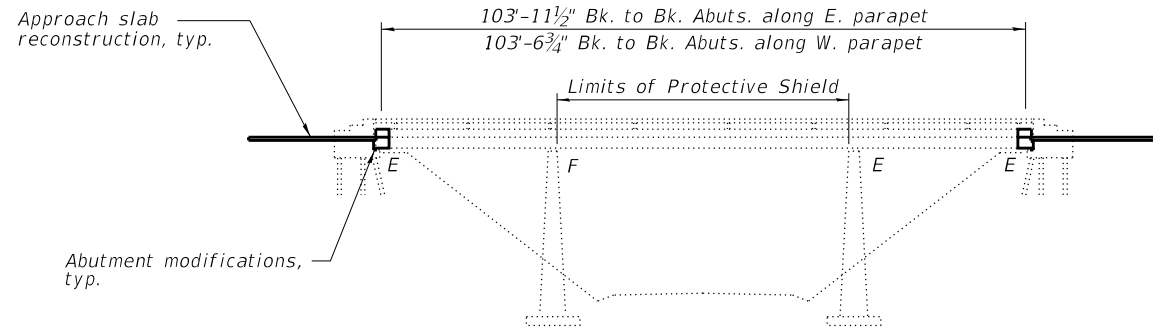
DESIGN STRESSES

FIELD UNITS

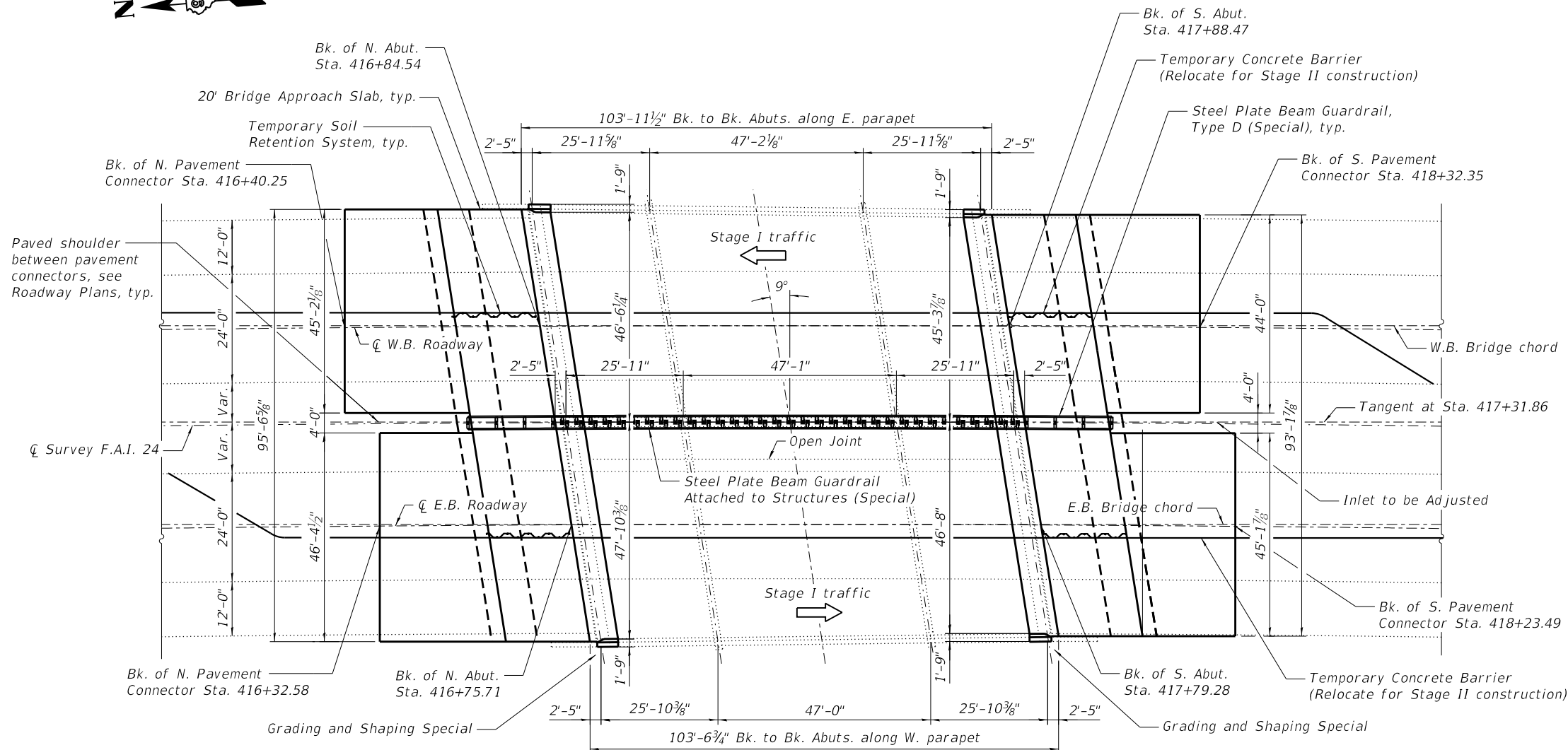
New Construction
 f'c = 4,000 psi
 fy = 60,000 psi (Reinforcement)

Existing Structure, 2001 Rehabilitation
 f'c = 3,500 psi
 fy = 60,000 psi (Reinforcement)

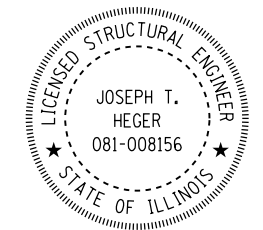
Existing Structure, 1969
 fc = 1,200 psi (Deck slab)
 fs = 20,000 psi (Reinforcement)



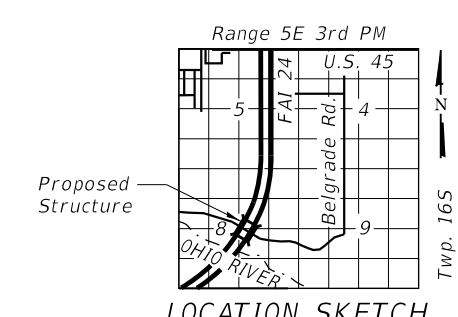
ELEVATION



PLAN



Joseph T. Heger 11/24/2020
 Exp. Date 11/30/2020



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
I-24 OVER TR 141
F.A.I. 24, SECTION BRIDGE REPAIR 2021-1
MASSAC COUNTY
STA. 417+31.86
SN 064-0034

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 064-0034

SHEET 1 OF 25 SHEETS

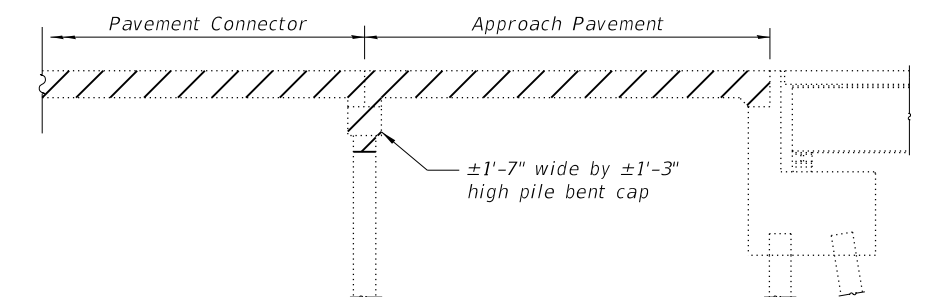
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	239
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Paved Shoulder Removal	Sq. Yd.	462
Concrete Removal	Cu. Yd.	69.6
Protective Shield	Sq. Yd.	506
Structure Excavation	Cu. Yd.	120
Floor Drains	Each	8
Concrete Structures	Cu. Yd.	59.0
Concrete Superstructure	Cu. Yd.	131.8
Protective Coat	Sq. Yd.	1563
Concrete Superstructure (Approach Slab)	Cu. Yd.	178.1
Reinforcement Bars, Epoxy Coated	Pound	91880
Bar Splicers	Each	600
Temporary Soil Retention System	Sq. Ft.	63
Granular Backfill for Structures	Cu. Yd.	120
Geocomposite Wall Drain	Sq. Yd.	9
Concrete Headwalls for Pipe Drains	Each	4
Inlets to be Adjusted	Each	2
Temporary Concrete Barrier	Foot	683
Relocate Temporary Concrete Barrier	Foot	683
Impact Attenuators, Temporary (Non-redirective), Test Level 3	Each	2
Impact Attenuators, Relocate (Non-redirective), Test Level 3	Each	2
Raised Reflective Pavement Marker	Each	6
Raised Reflective Pavement Marker (Bridge)	Each	2
Barrier Wall Reflectors, Type B	Each	18
Raised Reflective Pavement Marker Removal	Each	10
Grading and Shaping Special	Sq. Yd.	10
Bridge Approach Pavement Connector (Special)	Sq. Yd.	483
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	757
Steel Plate Beam Guardrail, Type D (Special)	Foot	44
Steel Plate Beam Guardrail, Attached to Structures (Special)	Foot	200
Pinning Temporary Concrete Barrier	Each	16
Raised Reflective Pavement Marker, Reflector Removal	Each	8
Approach Slab Removal	Sq. Yd.	426
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	0.091
Cleaning and Painting Steel Bridge No. 11	L. Sum	1
Bridge Deck Scarification 3"	Sq. Yd.	944
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	1
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	114
Diamond Grinding (Bridge Section)	Sq. Yd.	1901
Pipe Underdrains for Structures 4"	Foot	152
Bridge Deck Latex Concrete Overlay, 3 1/4 Inches	Sq. Yd.	979
Bridge Rail Removal (Special)	Foot	144

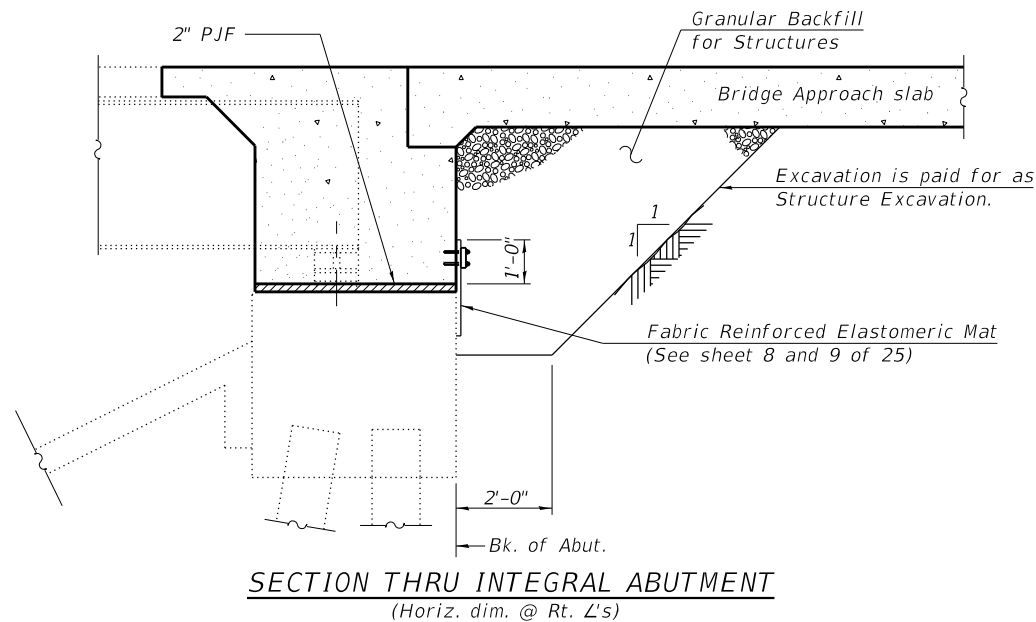
GENERAL NOTES

- Reinforcement bars designated (E) shall be epoxy coated.
- Prior to pouring 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.
- Plan dimensions and details are relative to existing plans and are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
- Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel from the end of the beam to 1'-6" (measured along the beam) beyond the face of the concrete diaphragm shall be cleaned per Near White Blast Cleaning (SSPC- SP10). The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning (SSPC- SP15).
- The designated areas cleaned per Near White Blast Cleaning (SSPC- SP10) and per Commercial Grade Power Tool Cleaning (SSPC- SP15) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Topcoat system. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No 7.5G 4/8.
- SSPC QP1 and SSPC QP2 Certification is required for this Contract.
- To retain the temporary concrete barrier for Stage II Traffic, the Contractor shall have the option of using either 2 (#5) bar splicers or 2 cast in place inserts at 6" centers at the mid-depth of the approach slab and pavement connector. The bar splicers or inserts shall have a minimum proof load of 5,000 pounds. Along with the anchoring devices the Contractor shall provide one steel retainer plate and 2 1/2" diameter bolt and washers every 6' as shown on Detail II on Standard R-27 (Sheet 5 of 25) from Sta. 416+40.25 to Sta. 416+84.54 and Sta. 417+88.47 to Sta. 418+33.63 for westbound lanes and Sta. 416+31.54 to Sta. 416+75.71 and Sta. 417+79.28 to Sta. 418+25.02 for eastbound lanes for Stage II traffic. This work shall be included in the cost of Temporary Concrete Barrier, no additional compensation shall be provided.



APPROACH SLAB REMOVAL

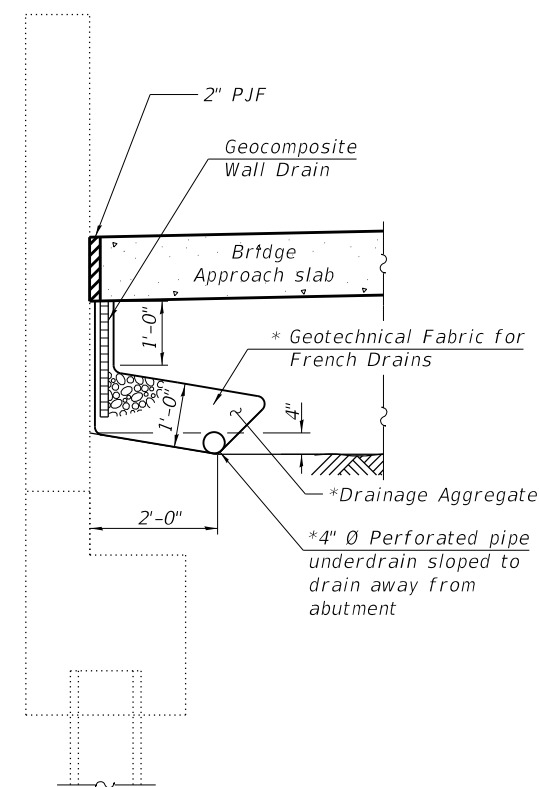
Existing approach slab and pavement connector to be removed. Buried pile bent cap to be completely removed. Piles shall be removed to 2' below finished grade. Approach slab and pavement connector removal shall be paid for as Approach Slab Removal. Pile bent cap removal shall be paid for as Concrete Removal. Pile removal shall be included in the cost of Concrete Removal.



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

EMBANKMENT REPAIRS

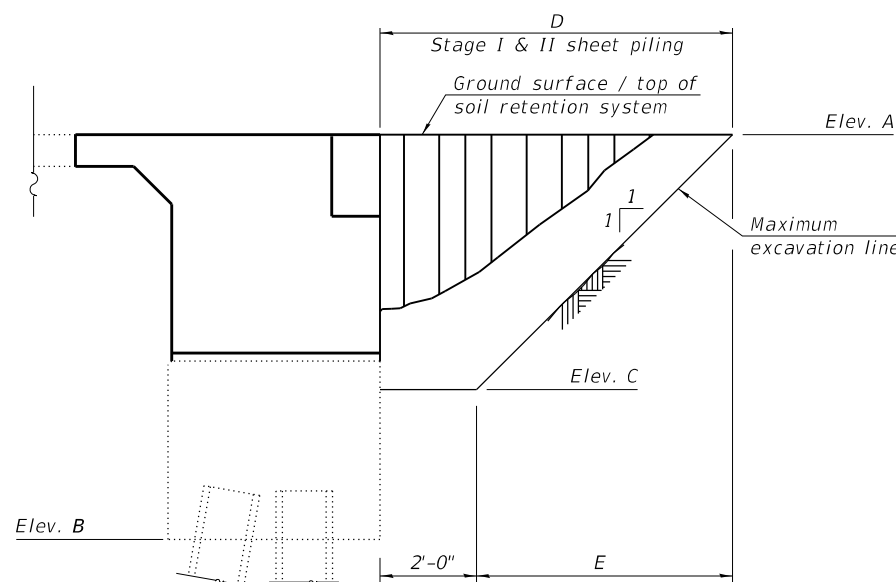
The embankment cones along the west edges of the abutments are spilling onto the abutment seats. These areas shall be regraded to ensure runoff and other materials stay off the abutment seats. This work shall be paid for as Shaping and Grading Special.



SECTION THRU ABUTMENT WINGWALL
(Horiz. dim. @ Rt. L's)

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

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



Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
W.B. - N. Abut.	372.58	364.20	367.19	7'-5"	5'-5"
E.B. - N. Abut.	372.25	364.20	366.85	7'-5"	5'-5"
W.B. - S. Abut.	372.91	364.50	367.49	7'-6"	5'-6"
E.B. - S. Abut.	372.55	364.50	367.15	7'-5"	5'-5"

Notes:

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

Elevations and dimensions shown are approximate based on existing plan data. Exact elevations and dimensions required shall be field verified by the Contractor.

TEMPORARY SOIL RETENTION SYSTEM

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**GENERAL DATA
STRUCTURE NO. 064-0034**

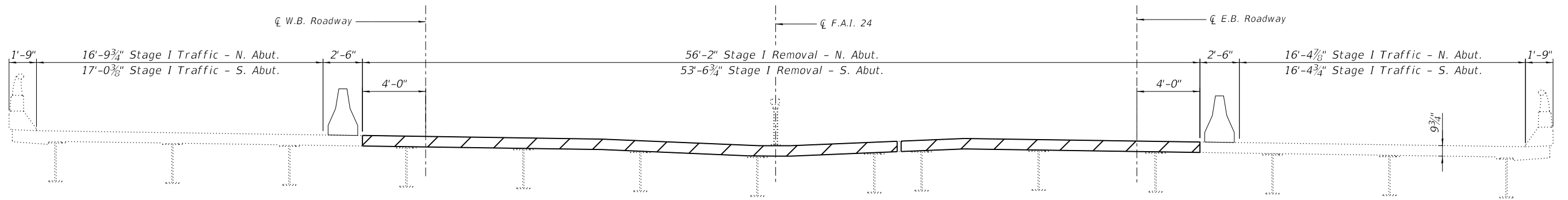
SHEET 2 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	240
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

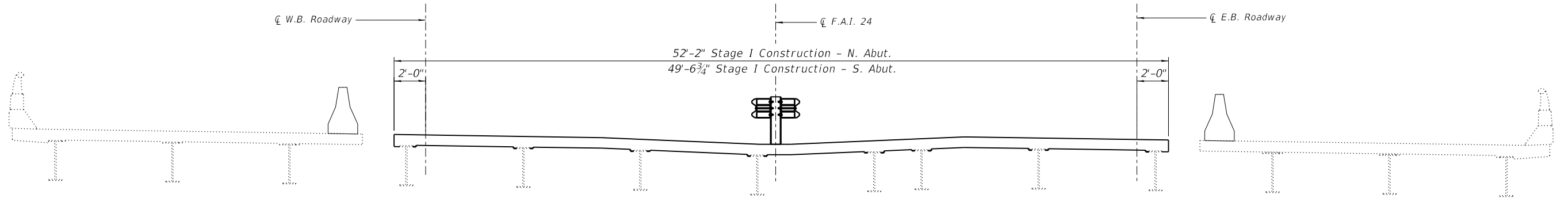
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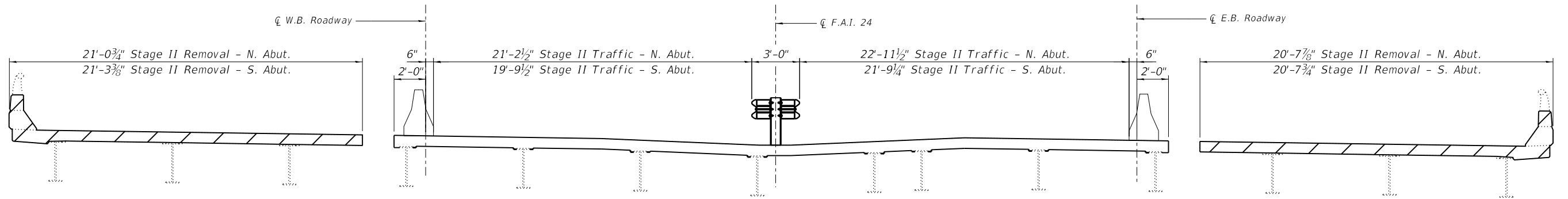
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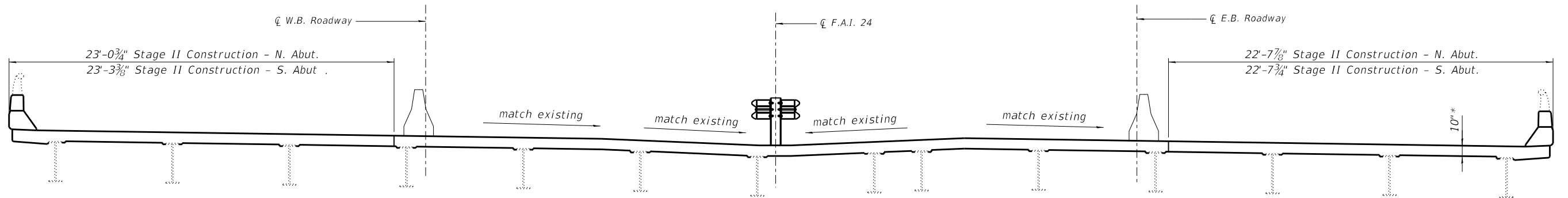
STAGE I REMOVAL
(Looking south)



STAGE I CONSTRUCTION
(Looking south)



STAGE II REMOVAL
(Looking south)



STAGE II CONSTRUCTION
(Looking south)

* Prior to grinding

Notes:
For quantity of Temporary Concrete Barrier, see roadway plans.
Hatched area indicates, Concrete Removal at abutments.

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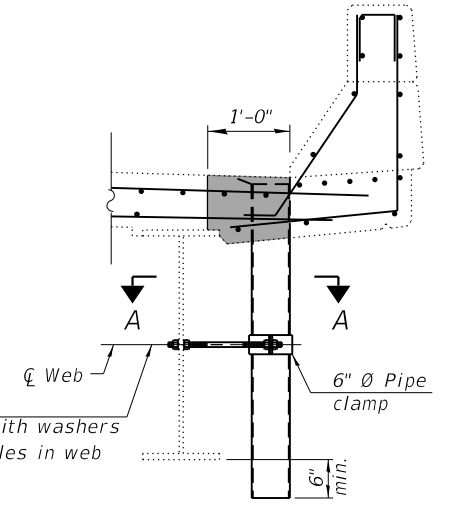
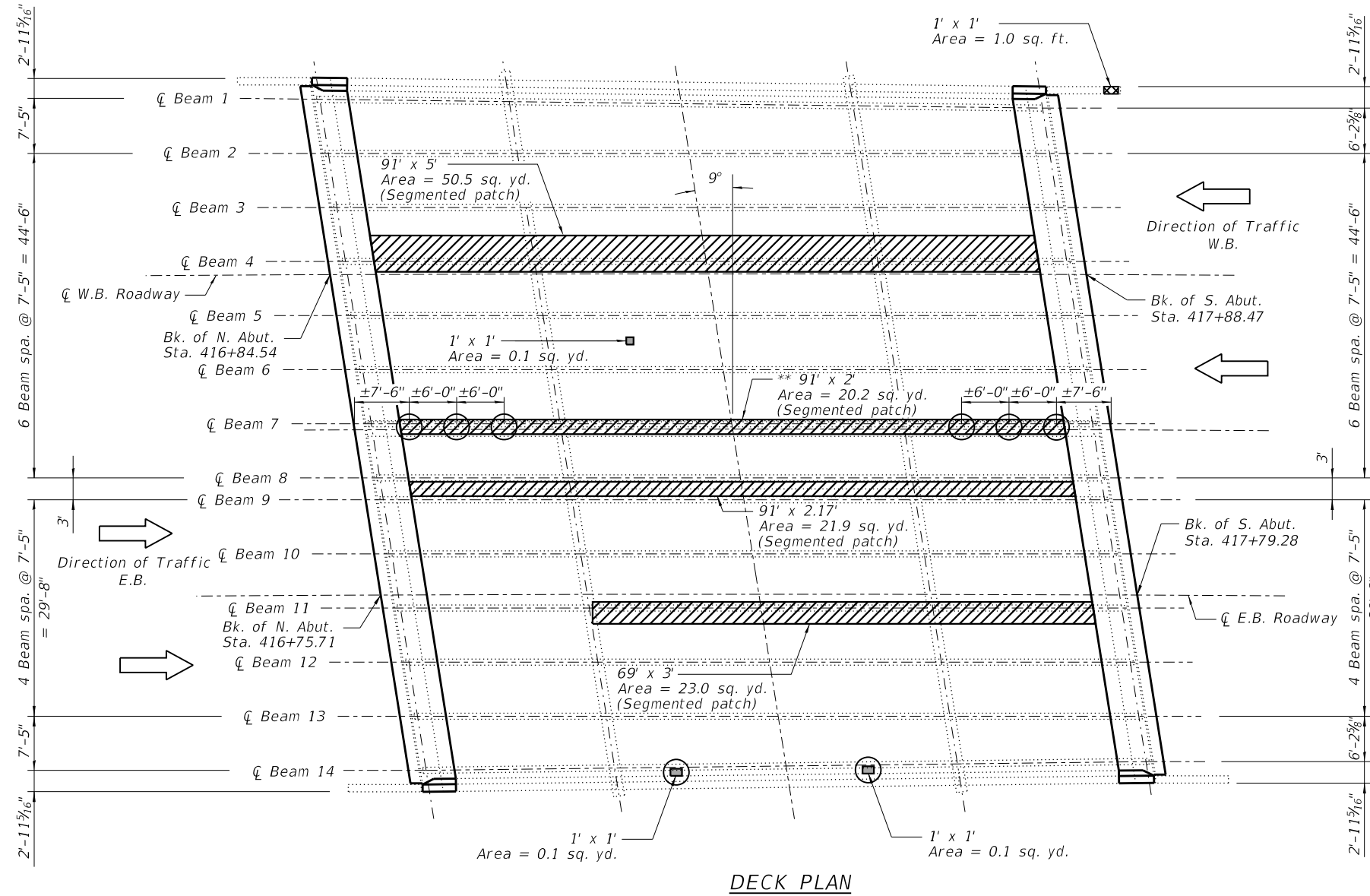
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 064-0034

SHEET 3 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	241
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

** Deck slab repairs at this location to accommodate removal and replacement of existing bridge railing and anchorages. Removal of existing railing shall be paid for as Bridge Rail Removal (Special). Three drainage scuppers in spans 1 and 3 (6 total) will be replaced and shall be positioned in approximately the same locations with minor adjustments for the proposed rail posts. See Sheet 8 of 25 for rail details.



- LEGEND**
- Full Depth, Type I
 - Full Depth, Type II
 - Structural Repair of Concrete (Depth Equal to or Less Than 5 inches)
 - Location of new 6" circular Floor Drain

Notes:

The Resident Engineer will determine final patch locations and quantities in the field after removal of the concrete bearing surface, before bridge deck patching operations begin.

The Engineer shall show actual locations of deck repairs on As-built Plans.

Protective Shield shall be placed the full out to out width for the full length of span 2 over TR 141 (Belgrade Road).

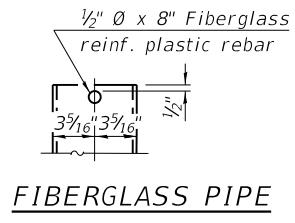
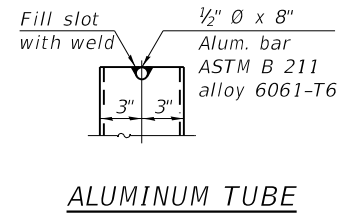
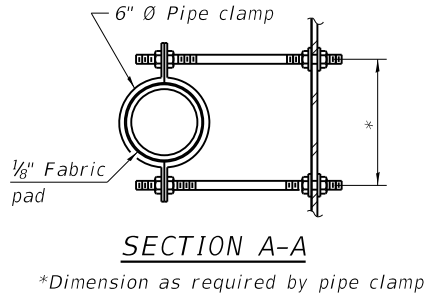
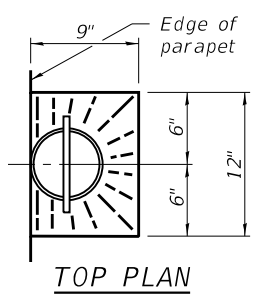
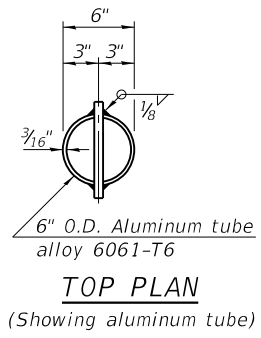
Existing floor drains shall be removed at the locations indicated. New 6" circular floor drains shall be installed as shown. Cost for removal of existing floor drains included with Deck Slab Repair (Full Depth, Type I).

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting Existing Steel Structures. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coatings Spec. SSPC-SP1 prior to painting. Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. Galvanize clamping device according to AASHTO M232. Cost of clamping device and galvanizing included with Floor Drains.

Deck patches indicated as "segmented" shall be removed and placed in alternating approximately equal lengths not to exceed 10' to prevent non-uniform or complete unloading of the adjacent steel beams. Before removal of the alternate segments can begin, at least 72 hours shall have elapsed from the end of the previous pour and the concrete shall have attained a minimum modulus of rupture of 650 psi or a minimum compressive strength of 3500 psi.

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Floor Drains	Sq. Yd.	8
Protective Shield	Sq. Yd.	506
Structural Repair of Concrete (Depth equal to or less than 5 inches)	Sq. Ft.	1
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	114



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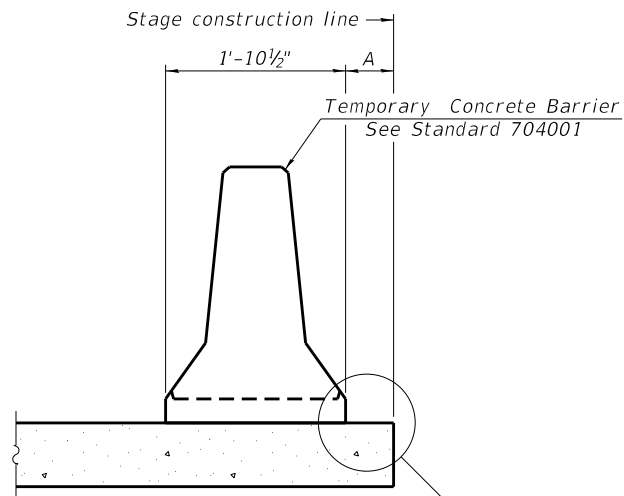
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**DECK PATCHING PLAN
STRUCTURE NO. 064-0034**

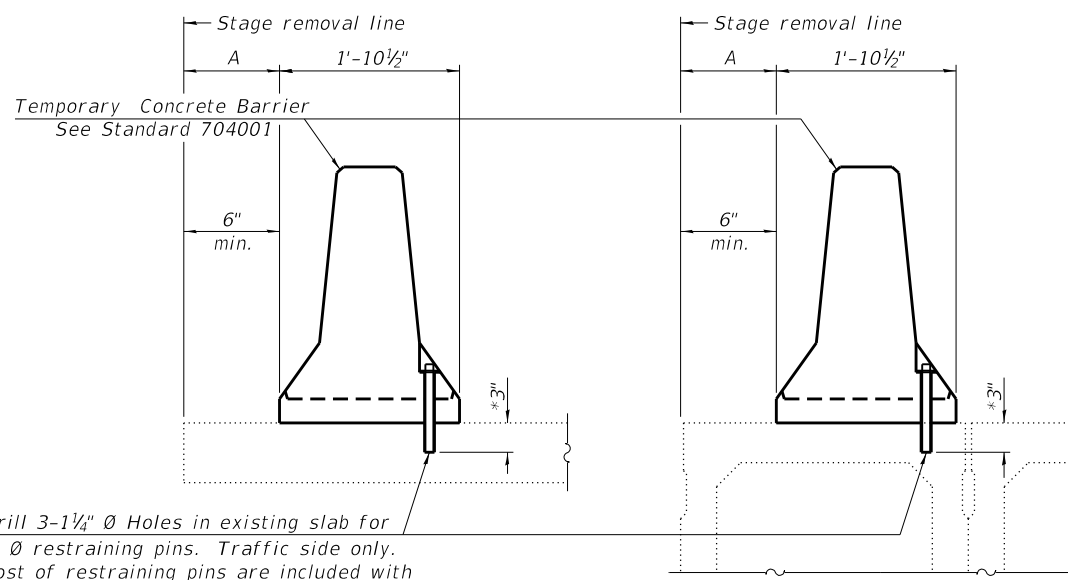
SHEET 4 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	242
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

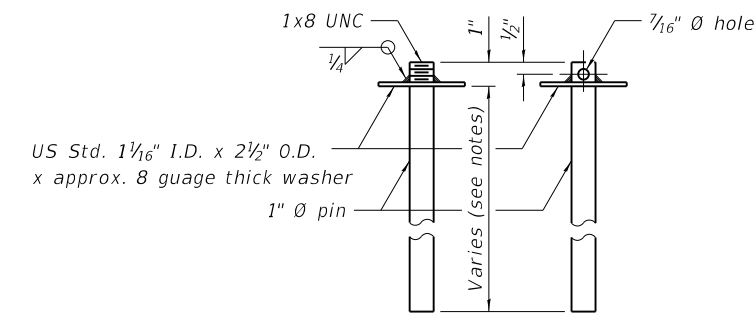
NEW SLAB OR NEW DECK BEAM



Drill 3-1/4" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

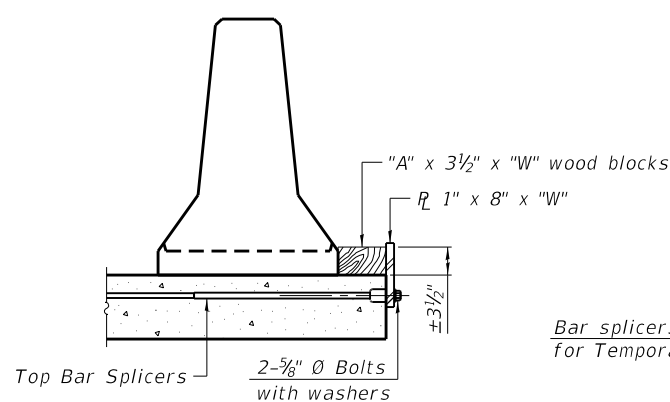
EXISTING SLAB

EXISTING DECK BEAM

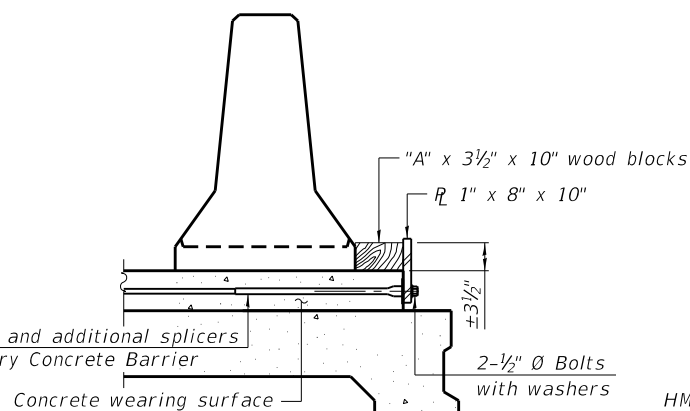


RESTRAINING PIN

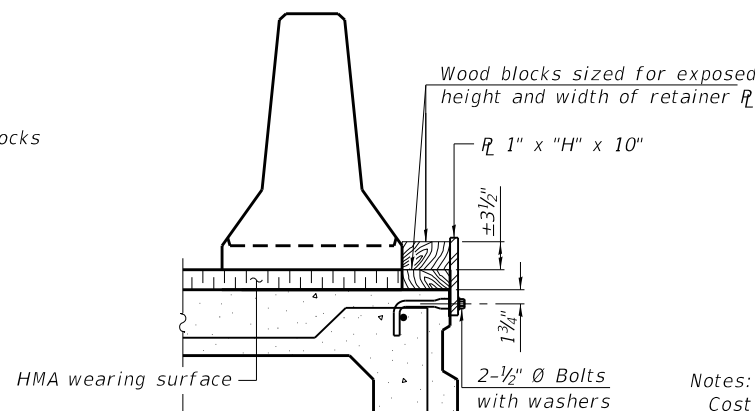
SECTIONS THRU SLAB OR DECK BEAM



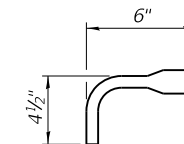
DETAIL I



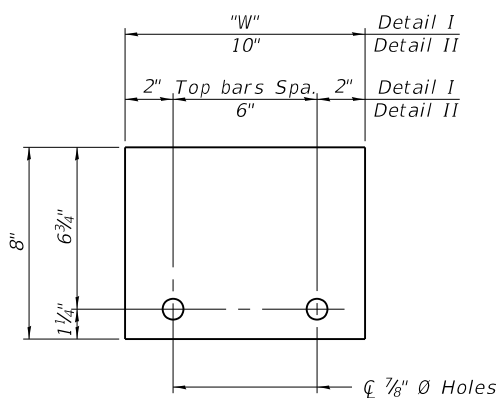
DETAIL II



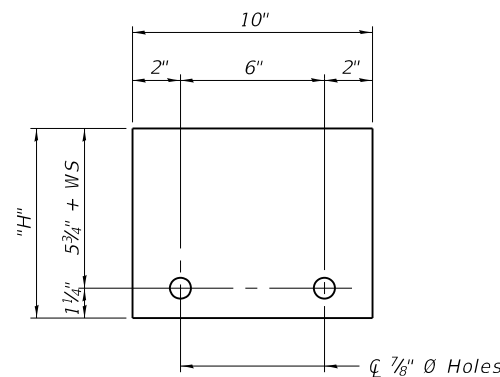
DETAIL III



BAR SPLICER FOR #4 BAR - DETAIL III



STEEL RETAINER R 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER R 1" x "H" x 10"
(Detail III)

Notes:
 Cost of retainer assembly is included with Temporary Concrete Barrier.
 A retainer assembly shall be located at the approximate $\frac{1}{2}$ of each temporary concrete barrier.
 The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.
 When the 'A' dimension is less than 1 1/2', the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

- Detail I - Installation for a new bridge deck or bridge slab.
- Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.
- Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27 2-17-2017

MODEL: Detail#1
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TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 064-0034

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	243
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

Direction of W.B. traffic

Stage removal line

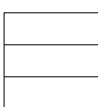
W.B. Bridge Chord

☐ F.A.I. 24

E.B. Bridge Chord

Stage removal line

Direction of E.B. traffic



Concrete Removal

* Existing longitudinal reinforcement & vertical reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement may be cut and removed. Any reinforcement bars to remain which are damaged during concrete removal shall be placed with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

**ABUTMENT PLAN
SHOWING CONCRETE REMOVAL**

North abutment shown, south abutment similar

See Detail A

2-#5 a714(E) bars @ 5" cts. top and bott. - N. Abut.
2-#5 a764(E) bars @ 5" cts. top and bott. - S. Abut.

6-#4 d700(E) bars @ ± 12" cts. typ.
6-#5 d701(E) bars @ ± 12" cts. typ.
2-#4 d702(E) bars at each rail post, typ.

11-#5 a712(E) bars @ 5" cts. top and bott. - N. Abut.
11-#5 a762(E) bars @ 5" cts. top and bott. - S. Abut.

13x2-#5 a711(E) bars @ 5" cts. top and bott. - N. Abut.
13x2-#5 a761(E) bars @ 5" cts. top and bott. - S. Abut.

11-#5 a710(E) bars @ 5" cts. top and bott. (trim to fit) - N. Abut.
11-#5 a710(E) bars @ 5" cts. top and bott. (trim to fit) - S. Abut.

2-#5 a713(E) bars @ 5" cts. top and bott. - N. Abut.
2-#5 a713(E) bars @ 5" cts. top and bott. - S. Abut.

Existing reinf. typ.

**ABUTMENT PLAN
SHOWING CONCRETE REPLACEMENT**

N. Abut. 4'-10³/₈"
S. Abut. 4'-9⁷/₈"

N. Abut. 97'-10⁵/₈"
S. Abut. 95'-5⁷/₈"

N. Abut. 21'-0³/₄" Stage II removal
S. Abut. 21'-3³/₈" Stage II removal

N. Abut. 56'-2" Stage I removal
S. Abut. 53'-6³/₄" Stage I removal

N. Abut. 20'-7⁷/₈" Stage II removal
S. Abut. 20'-7³/₄" Stage II removal

N. Abut. 4'-7¹/₄"
S. Abut. 4'-7¹/₄"

96-#5 x700(E) bars @ 12" cts. top
96-#5 x701(E) and x702(E) bars @ 12" cts. bottom
94-#5 x700(E) bars @ 12" cts. top
94-#5 x701(E) and x702(E) bars @ 12" cts. bottom

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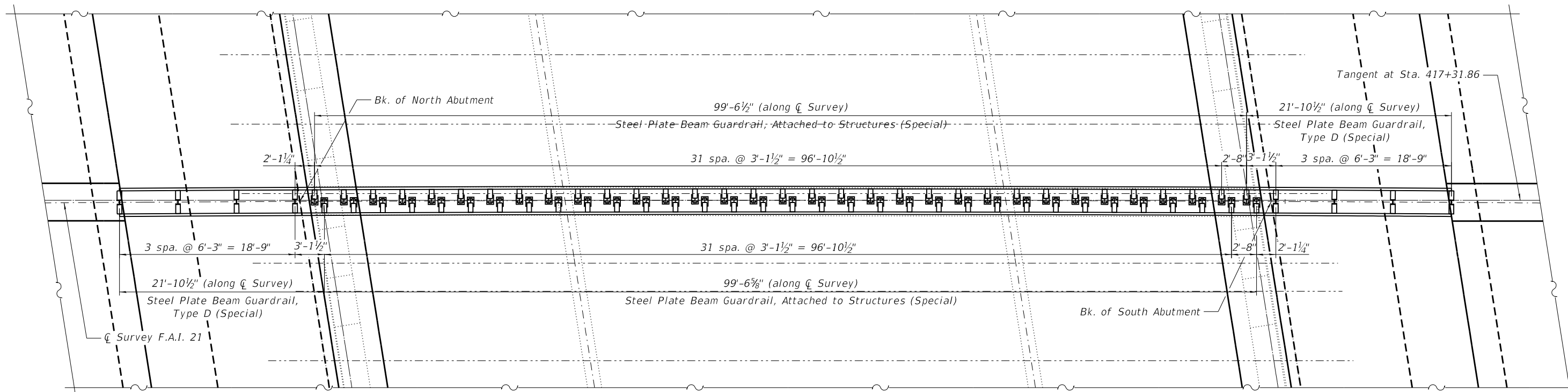
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

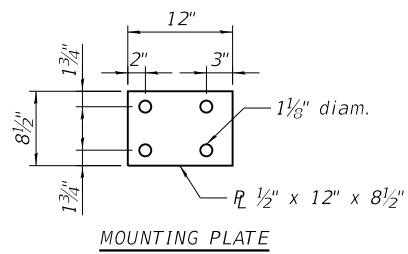
**SUPERSTRUCTURE
STRUCTURE NO. 064-0034**

SHEET 6 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	244
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

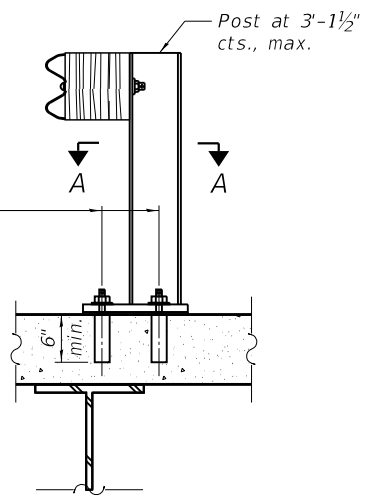


PLAN

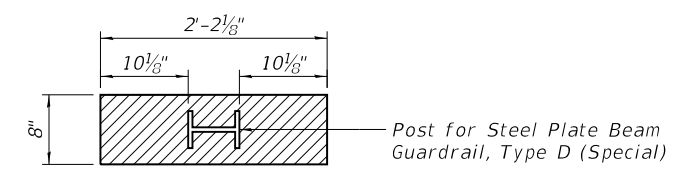


MOUNTING PLATE

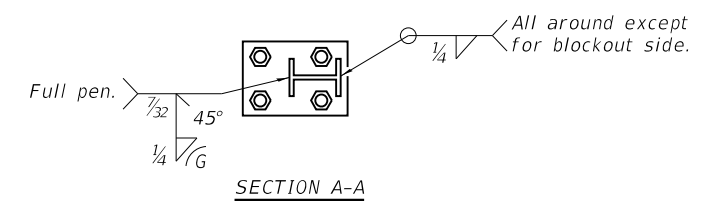
Drill 4-1 1/4" Ø holes for 1" Ø threaded rods with hex nut and flat washer. Drill and set rods according to Article 509.06 of the Standard Specifications.



CROSS SECTION



APPROACH SLAB LEAVE-OUT



SECTION A-A

STRONG POST GUARDRAIL ATTACHED TO BRIDGE SUPERSTRUCTURE

Note:
See special provisions for additional details.

BILL OF MATERIAL

Item	Unit	Total
Steel Plate Beam Guardrail, Type D (Special)	Foot	200
Steel Plate Beam Guardrail, Attached to Structures (Special)	Foot	44
Bridge Rail Removal (Special)	Foot	144

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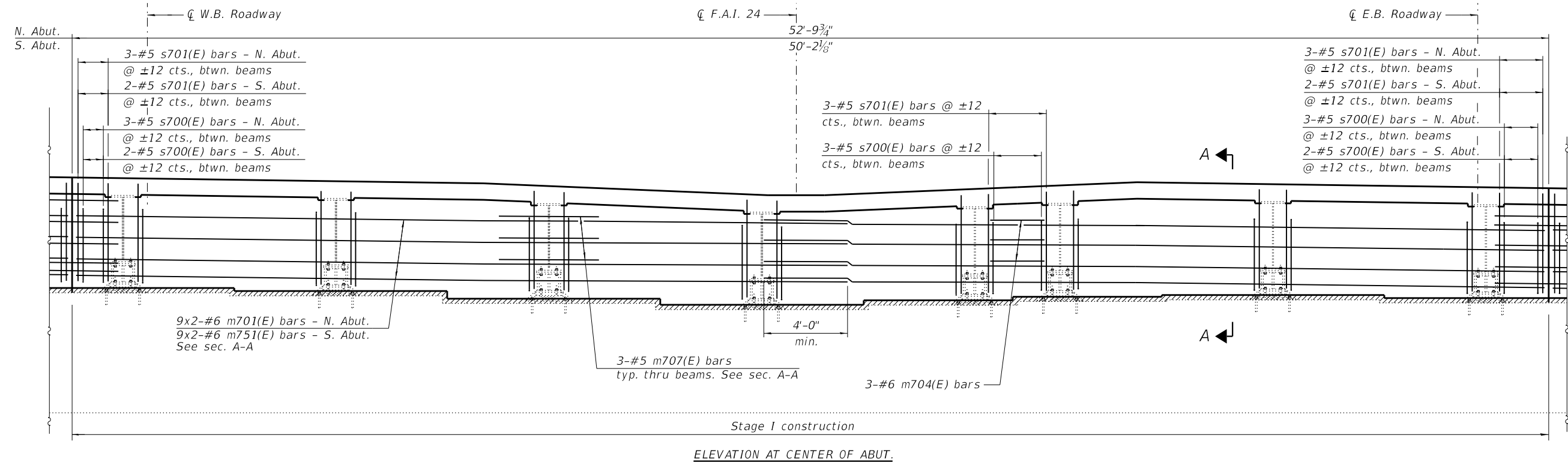
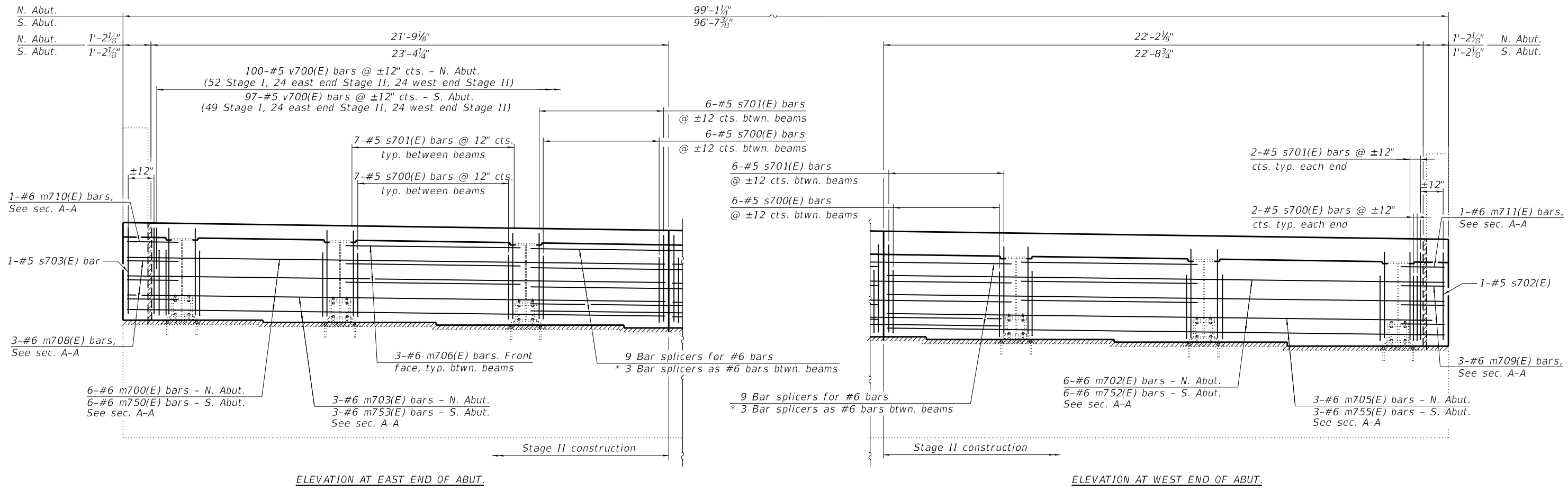
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GUARDRAIL ATTACHED TO STRUCTURE
STRUCTURE NO. 064-0034

SHEET 8 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	246
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



* Bar splicers shall act as bars when length is less than required lap length. See Sheet 14 of 25. Bar splicers for the bars between beams at the south abutment are not needed because the stage construction lines fall on Beams 4 and 11.

DIAPHRAGM ELEVATIONS AT ABUTMENT
 South abutment shown, north abutment similar

Notes:
 Dimensions measured at back face of abutment.
 See Sheet 10 of 25 for additional diaphragm details and Bill of Materials.

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 License No. 184-000813 © Copyright CMT, Inc.



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 064-0034

SHEET 9 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	247
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

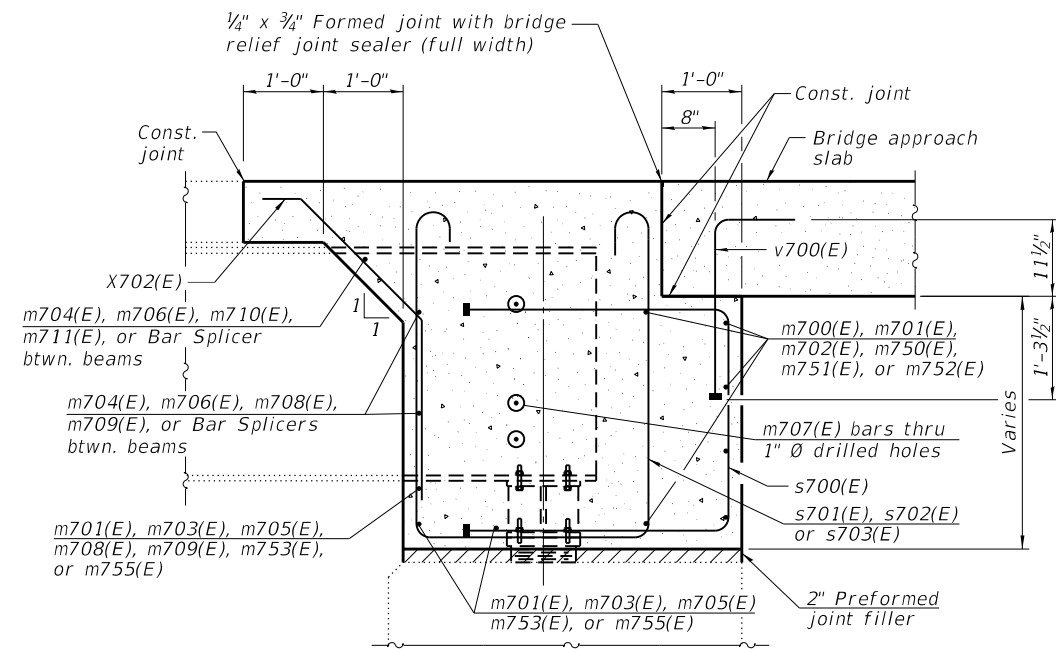
**NORTH DIAPHRAGM
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
m700(E)	6	#6	21'-5"	—
m701(E)	18	#6	28'-3"	—
m702(E)	6	#6	21'-10"	—
m703(E)	3	#6	22'-7"	—
m704(E)	3	#6	2'-8"	—
m705(E)	3	#6	23'-4"	—
m706(E)	30	#6	7'-2"	—
m707(E)	42	#5	4'-0"	~
m708(E)	3	#6	6'-11"	∟
m709(E)	3	#6	6'-7"	∟
m710(E)	1	#6	7'-11"	∟
m711(E)	1	#6	7'-7"	∟
s700(E)	95	#5	10'-1"	□
s701(E)	95	#5	11'-0"	□
s702(E)	1	#5	10'-2"	□
s703(E)	1	#5	10'-6"	□
v700(E)	100	#5	3'-1"	Γ
Reinforcement Bars, Epoxy Coated			Pound	4380
Bar Splicers			Each	24

**SOUTH DIAPHRAGM
BILL OF MATERIAL**

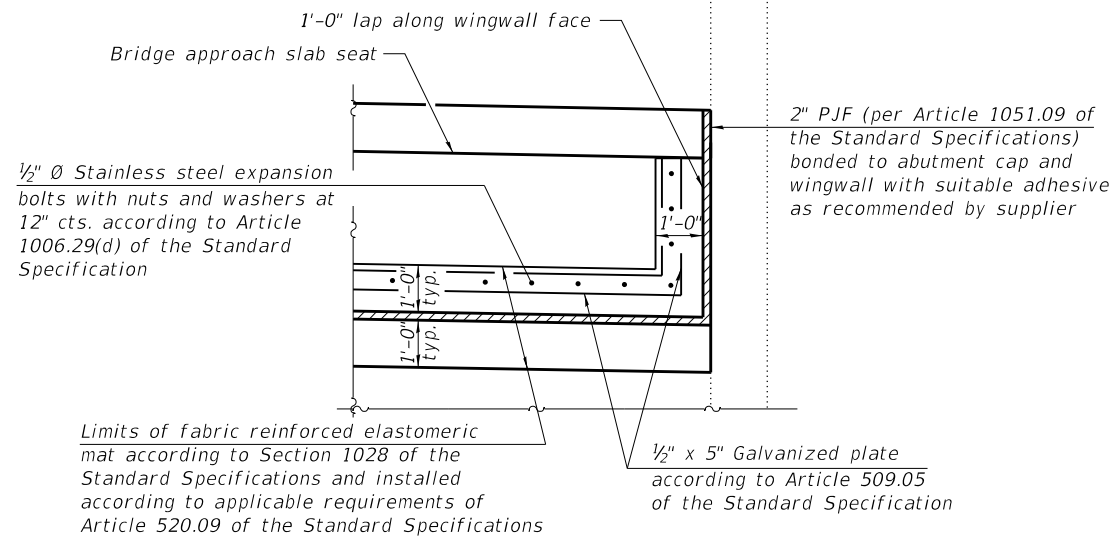
Bar	No.	Size	Length	Shape
m750(E)	6	#6	22'-0"	—
m751(E)	18	#6	26'-11"	—
m752(E)	6	#6	21'-5"	—
m753(E)	3	#6	23'-2"	—
m704(E)	3	#6	2'-8"	—
m755(E)	3	#6	22'-11"	—
m706(E)	36	#6	7'-2"	—
m707(E)	42	#5	4'-0"	~
m708(E)	3	#6	6'-11"	∟
m709(E)	3	#6	6'-7"	∟
m710(E)	1	#6	7'-11"	∟
m711(E)	1	#6	7'-7"	∟
s700(E)	93	#5	10'-1"	□
s701(E)	93	#5	11'-0"	□
s702(E)	1	#5	10'-2"	□
s703(E)	1	#5	10'-6"	□
v700(E)	97	#5	3'-1"	Γ
Reinforcement Bars, Epoxy Coated			Pound	4370
Bar Splicers			Each	24

Notes:
 Cost of fabric reinforced elastomeric mat, galvanized plates, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.
 Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
 The s700(E), s701(E), s702(E), s703(E), and v700(E) bars are placed parallel to beams and spaced at right angles to beams.
 Concrete Superstructure quantity included in quantity shown on Sheet 7 of 25.



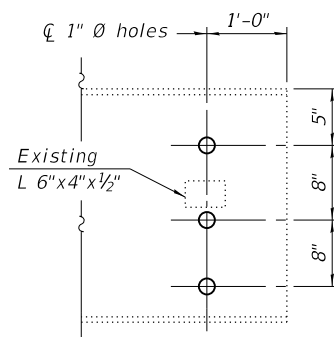
SECTION A-A

(Dimensions measured at right angles)

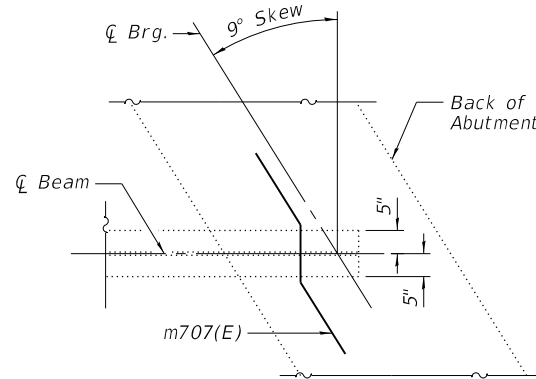


ELEVATION

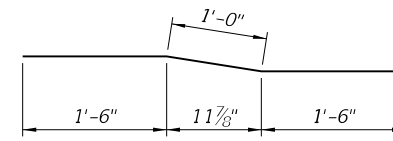
(Looking at back of abutment)



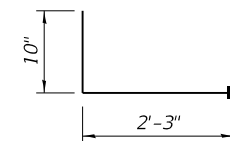
**STEEL BEAM
END ELEVATION**



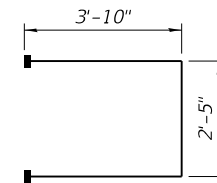
PARTIAL PLAN AT BEAMS
(Showing bottom flange of beam)



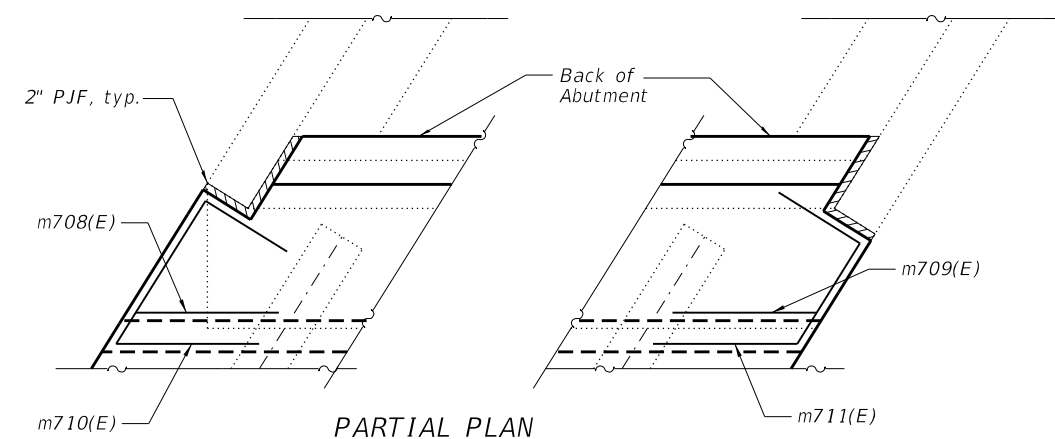
Bar m707(E)



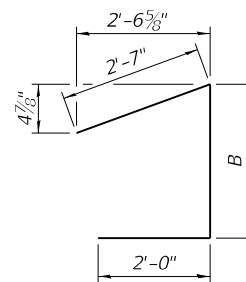
Bar v700(E)



Bar s700(E)

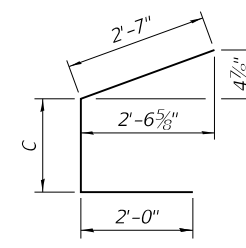


PARTIAL PLAN



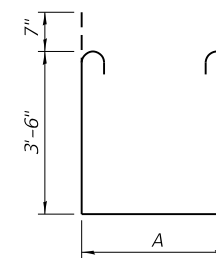
Bar	B
m708(E)	2'-4"
m710(E)	3'-4"

**Bar m708(E)
and m710(E)**



Bar	C
m709(E)	2'-0"
m711(E)	3'-0"

**Bar m709(E)
and m711(E)**



Bar	A
s701(E)	2'-10"
s702(E)	2'-0"
s703(E)	2'-4"

**Bar s701(E),
s702(E), and
s703(E)**

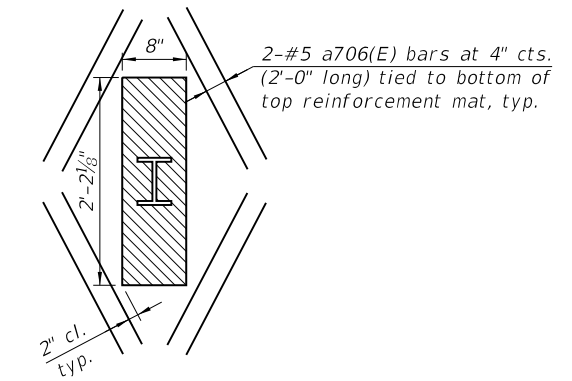
* Pavement connector shall be paid for as Bridge Approach Pavement Connector (Special). The pavement connector shall be constructed per Hwy. Std. 420401 except that two pavement connectors shall be constructed at each approach slab with a 4' gap between them and the 15'-0" length shall be 20'-6" for each. See Special provision for additional details.

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	North Approach		South Approach	
	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				
G				
H				

The approach slab shall be placed to match existing elevations. The Contractor shall place the approach footing for the approach slabs to match existing elevations at grade. Blank table included for field notation.

See Section A-A on Sheet 12 of 25.

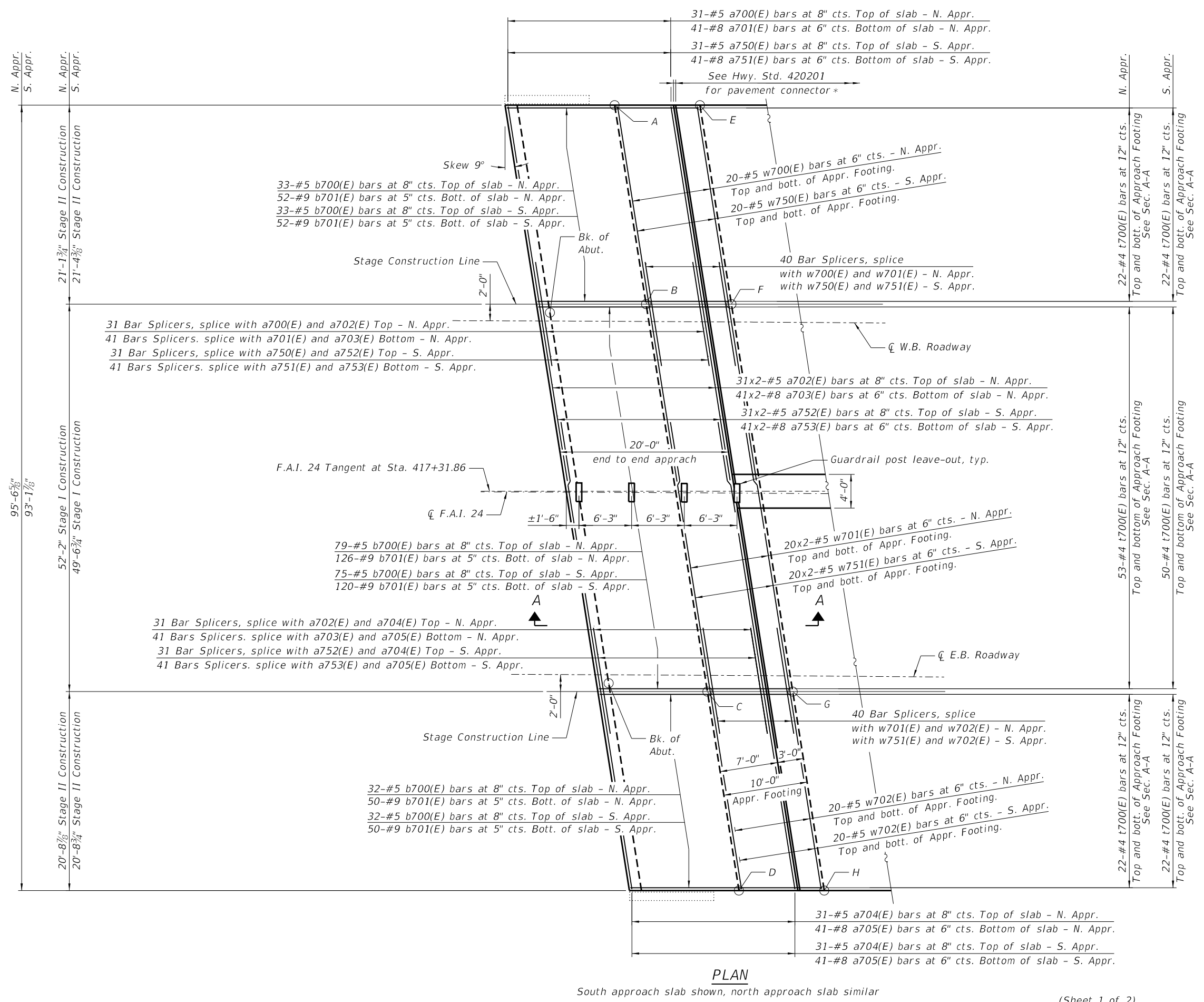


GUARDRAIL POST LEAVE-OUT

Notes:
Cut reinforcement to clear guardrail post leave-outs.
See Sheet 8 of 25 for guardrail details.

MIN BAR LAP

#5 = 3'-4"
#8 = 5-11



PLAN

South approach slab shown, north approach slab similar

(Sheet 1 of 2)

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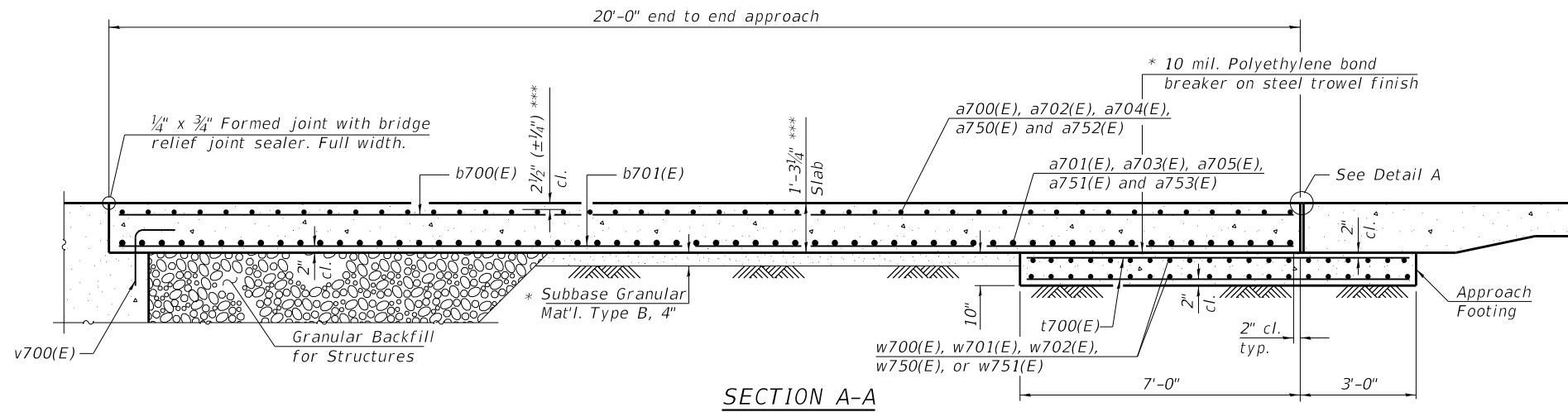
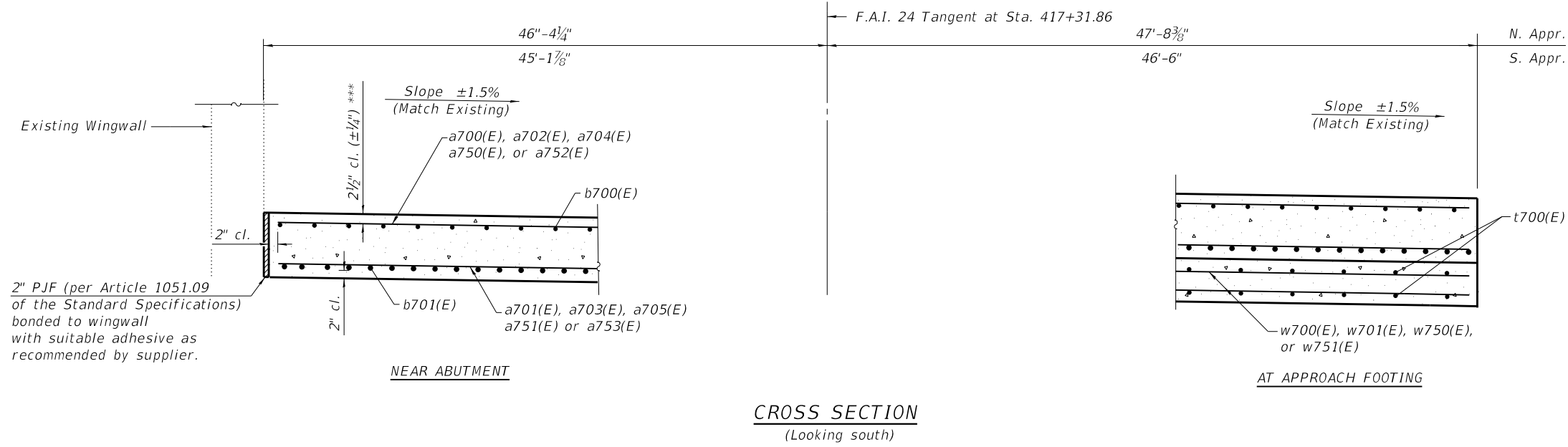
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**APPROACH SLAB DETAILS
STRUCTURE NO. 064-0034**

SHEET 11 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	249
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



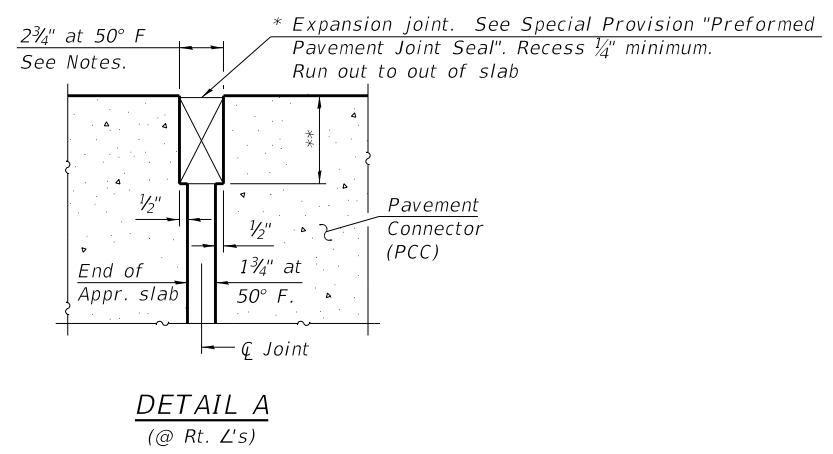
Notes:
 The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
 Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
 Approach footing concrete shall be paid for as Concrete Structures.
 The approach footing maximum applied service bearing pressure (Q_{max}) = 2.0 ksf.
 Cost of excavation for approach footing included with Concrete Structures.
 For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 25.

**NORTH APPROACH
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a700(E)	31	#5	21'-1"	—
a701(E)	41	#8	21'-1"	—
a702(E)	62	#5	27'-8"	—
a703(E)	82	#8	29'-2"	—
a704(E)	31	#5	20'-8"	—
a705(E)	41	#8	20'-8"	—
a706(E)	24	#5	2'-0"	—
b700(E)	144	#5	19'-8"	—
b701(E)	228	#9	19'-8"	—
t700(E)	194	#4	9'-9"	—
w700(E)	40	#5	21'-1"	—
w701(E)	80	#5	27'-8"	—
w702(E)	40	#5	20'-8"	—
Concrete Structures			Cu. Yd.	29.9
Concrete Superstructure (Approach Slab)			Cu. Yd.	90.0
Reinforcement Bars, Epoxy Coated			Pound	37660
Bar Splicers			Each	224

**SOUTH APPROACH
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
a750(E)	31	#5	21'-4"	—
a751(E)	41	#8	21'-4"	—
a752(E)	62	#5	26'-7"	—
a753(E)	82	#8	27'-10"	—
a704(E)	31	#5	20'-8"	—
a705(E)	41	#8	20'-8"	—
a706(E)	24	#5	2'-0"	—
b700(E)	140	#5	19'-8"	—
b701(E)	222	#9	19'-8"	—
t700(E)	188	#4	9'-9"	—
w750(E)	40	#5	21'-4"	—
w751(E)	80	#5	26'-7"	—
w702(E)	40	#5	20'-8"	—
Concrete Structures			Cu. Yd.	29.1
Concrete Superstructure (Approach Slab)			Cu. Yd.	88.1
Reinforcement Bars, Epoxy Coated			Pound	36730
Bar Splicers			Each	224

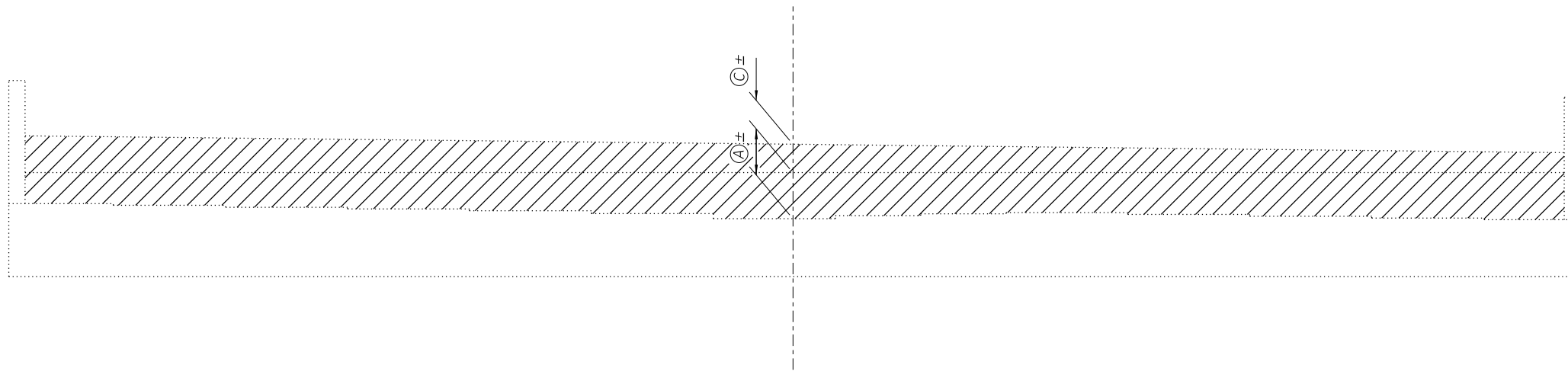


* Cost included with Concrete Superstructure (Approach Slab).
 ** Per manufacturer recommendations.
 *** Prior to grinding.

MODEL: Detail
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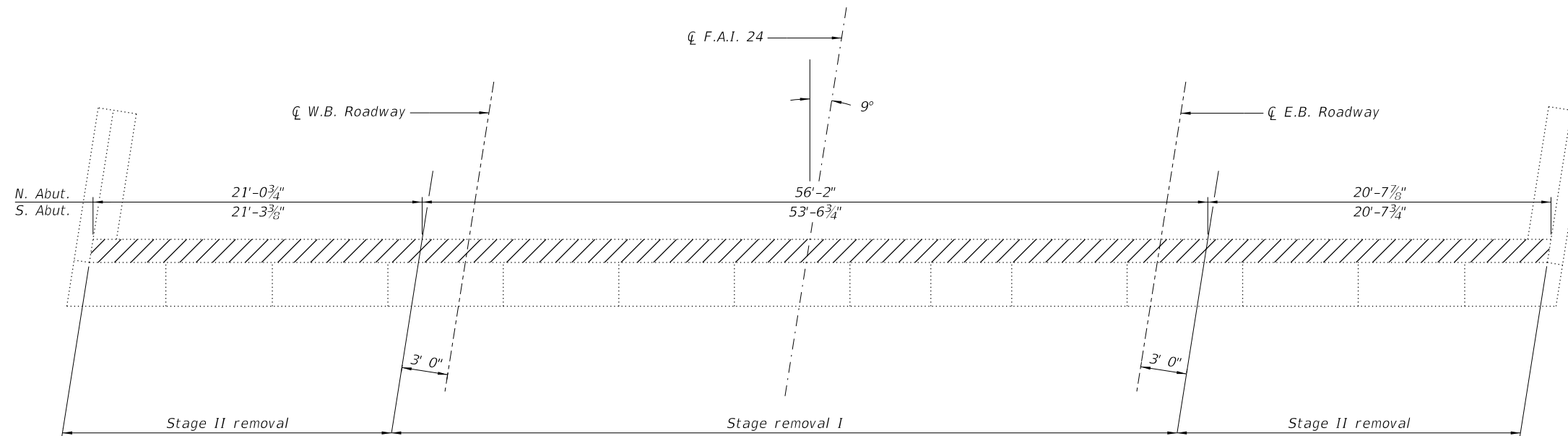


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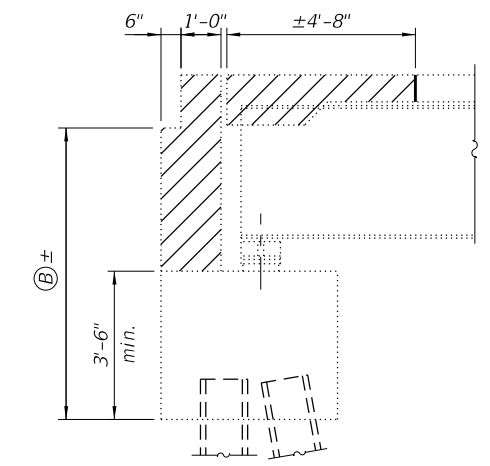


ELEVATION
(South abutment shown, north abutment similar)

Location	Dim. A	Dim. B	Dim. C
North Abutment	2'-9"	6'-3 $\frac{3}{4}$ "	1'-4 $\frac{3}{8}$ "
South Abutment	2'-10"	6'-4 $\frac{3}{4}$ "	1'-3 $\frac{1}{4}$ "



PLAN
(South abutment shown, north abutment similar)



SECTION THRU ABUTMENT

LEGEND



BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	38.2

Concrete Removal quantity for deck concrete included in Bill of Materials on Sheet 7 of 25.

MODEL: D:\file\... FILE NAME: L:\DOT\1500610\WO_1\Draw\Structures\SN_0034\013_0034_Abutment Removal.dgn



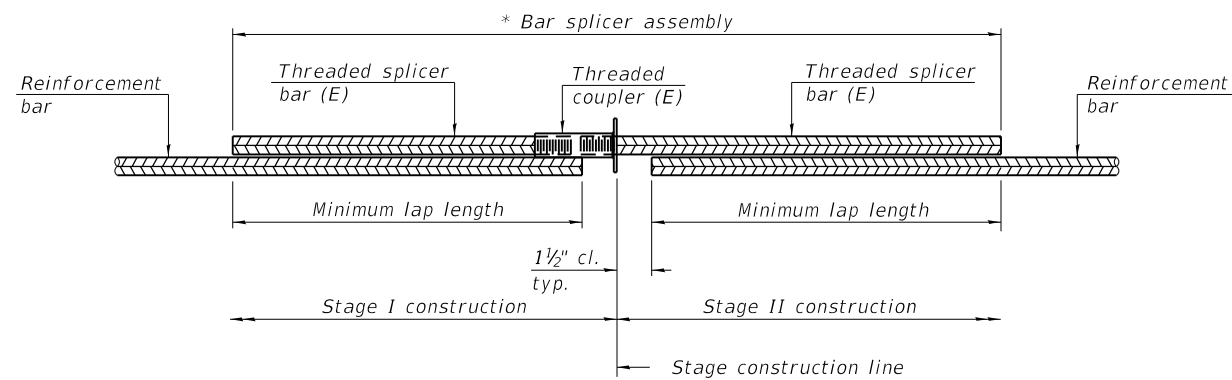
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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**ABUTMENT REMOVAL
STRUCTURE NO. 064-0034**

SHEET 13 OF 25 SHEETS

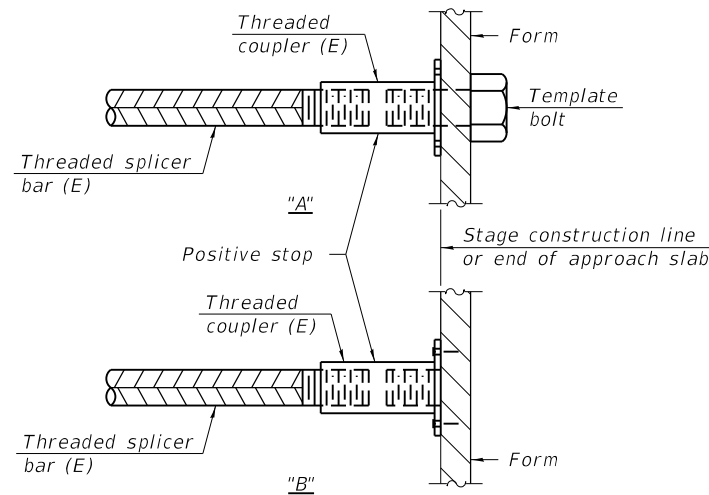
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	251
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



STANDARD BAR SPLICER ASSEMBLY PLAN
(All components shall be provided from one supplier)

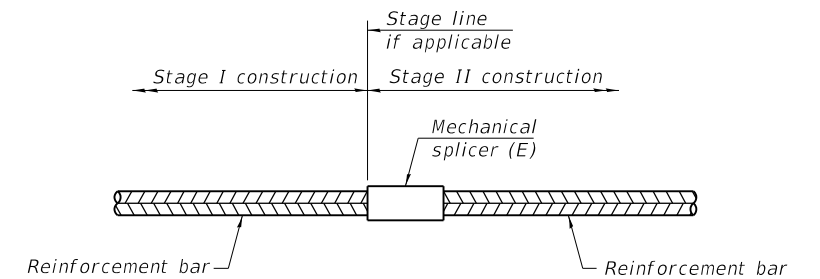
Threaded splicer bar length = min. lap length + 1 1/2" + thread length

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



INSTALLATION AND SETTING METHODS

"A" : Set mechanical splicer assembly by means of a template bolt.
 "B" : Set mechanical 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

Location	Bar size	No. assemblies required	Minimum lap length
W.B. N. Abut. Superstructure	#5	26	3'-6"
W.B. N. Abut. Diaphragm	#6	9	4'-0"
W.B. N. Abut. Diaphragm	#6	3	**
W.B. N. Approach Slab	#5	31	3'-6"
W.B. N. Approach Slab	#8	41	6'-9"
W.B. N. Approach Slab Footing	#5	40	3'-6"
E.B. N. Abut. Superstructure	#5	26	3'-6"
E.B. N. Abut. Diaphragm	#6	9	4'-0"
E.B. N. Abut. Diaphragm	#6	3	***
E.B. N. Approach Slab	#5	31	3'-6"
E.B. N. Approach Slab	#8	41	6'-9"
E.B. N. Approach Slab Footing	#5	40	3'-6"
W.B. S. Abut. Superstructure	#5	26	3'-6"
W.B. S. Abut. Diaphragm	#6	9	4'-0"
W.B. S. Abut. Diaphragm	#6	3	****
W.B. S. Approach Slab	#5	31	3'-6"
W.B. S. Approach Slab	#8	41	6'-9"
W.B. S. Approach Slab Footing	#5	40	3'-6"
E.B. S. Abut. Superstructure	#5	26	3'-6"
E.B. S. Abut. Diaphragm	#6	9	4'-0"
E.B. S. Abut. Diaphragm	#6	3	****
E.B. S. Approach Slab	#5	31	3'-6"
E.B. S. Approach Slab	#8	41	6'-9"
E.B. S. Approach Slab Footing	#5	40	3'-6"

** 1'-10" bar on Stage I side, 5'-0" bar on Stage II side.
 *** 2'-3" bar on Stage I side, 4'-7" bar on Stage II side.
 **** 1'-0" bar on Stage I side, 5'-10" bar on Stage II side.

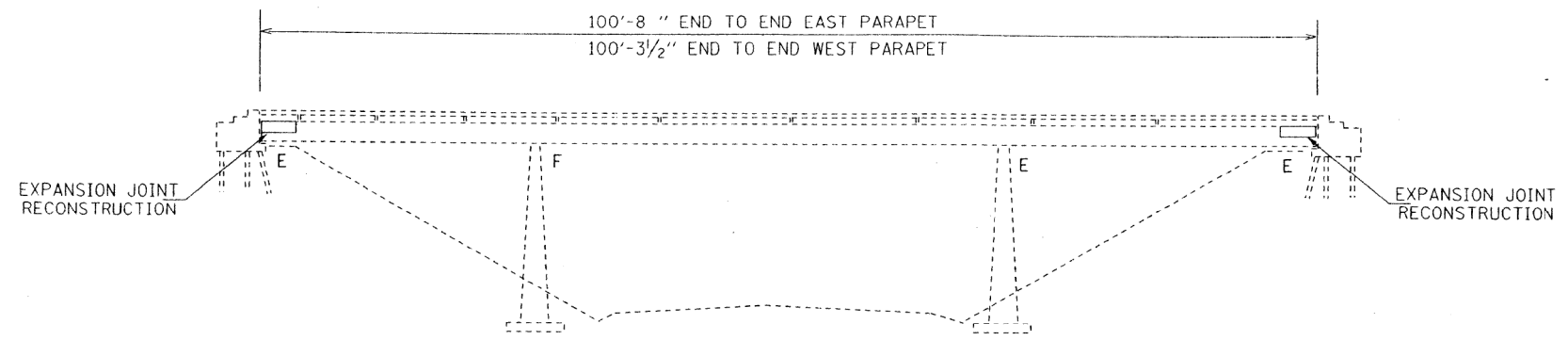
Notes:
 Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
 All reinforcement shall be lapped and tied to the splicer bars.
 Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.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

MODEL: D:\file\11\Draw\Structures\SN 0034\014_0034_Bar Splicer Assembly and Mechanical Splicer Details.dgn
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BSD-1 1-1-2020

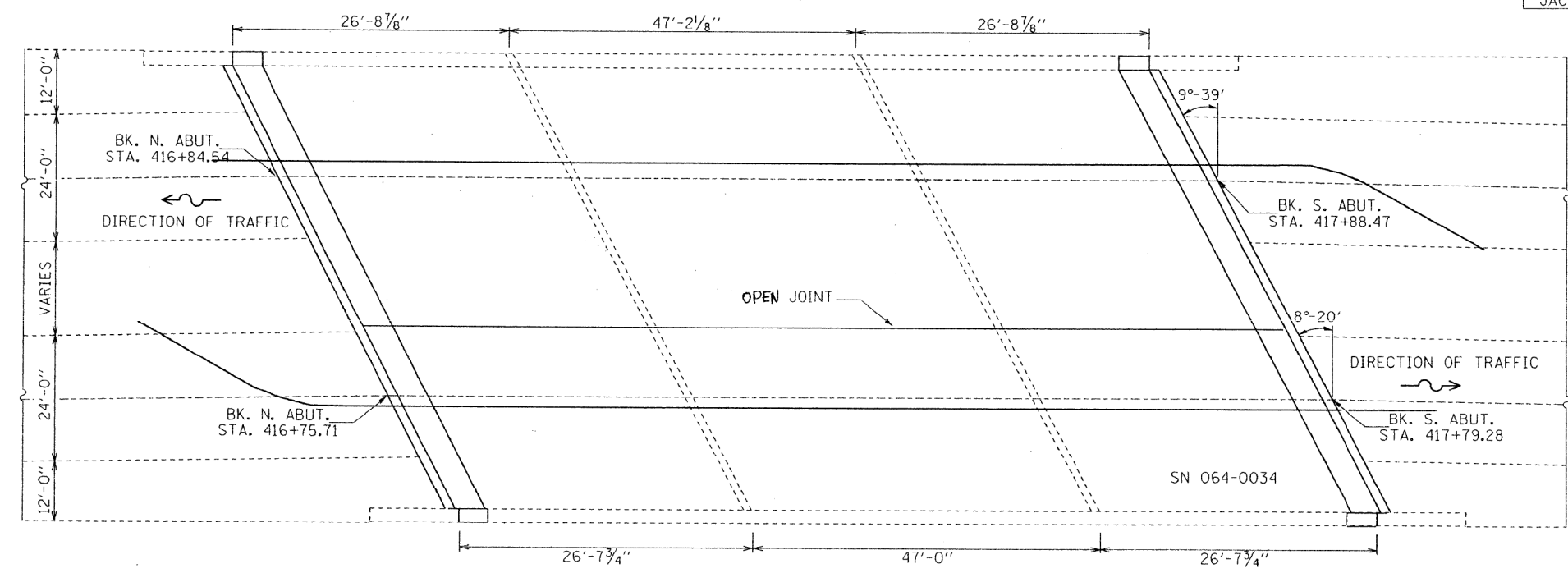
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	PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -			24	BRIDGE REPAIR 2021-1	MASSAC	263	252
PLOT DATE = 11/24/2020 10:01:39 AM	CHECKED - JTH	REVISED -		SHEET 14 OF 25 SHEETS		CONTRACT NO. 78606				
						ILLINOIS FED. AID PROJECT				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	223
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2				
SHEET 1 OF 12 SHEETS				



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
SILICONE JOINT SEALER 1"	FOOT	196
SILICONE JOINT SEALER 1/2"	FOOT	93
POLYMER CONCRETE	CU FT	13.8
BRIDGE DECK MICROSILOCA CONCRETE OVERLAY 2 1/4"	SO YD	989
BAR SPLICERS	EACH	76
CONCRETE BRIDGE DECK SCARIFICATION (1/2")	SO YD	989
DECK SLAB REPAIR (PARTIAL)	SO YD	7.7
CONCRETE SUPERSTRUCTURE	CU YD	43.9
CONCRETE REMOVAL	CU YD	40.8
BRIDGE DECK GROOVING	SO YD	96.8
REINFORCEMENT BARS, EPOXY COATED	POUND	6760
TEMPORARY CONCRETE BARRIER	FOOT	620
RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	514
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2
PLUG EXISTING DECK DRAINS	EACH	8
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	7490
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	42
FLOOR DRAIN EXTENSIONS	EACH	8
REMOVE AND RE-ERECT BOX BEAM MEDIAN BARRIER	FOOT	101
JACK AND REMOVE EXISTING BEARINGS	EACH	42



SCOPE OF WORK

- REMOVE AND RE-ERECT EXISTING GUARDRAIL AT MEDIAN
- SCARIFY EXISTING DECK SURFACE.
- REMOVE CONCRETE AT ABUTMENT JOINTS.
- REMOVE AND REPLACE END DIAPHRAGMS.
- REMOVE AND REPLACE EXPANSION BEARINGS.
- RECONSTRUCT EXPANSION JOINTS WITH SILICONE SEALER AND POLYMER CONCRETE NOSINGS.
- PARTIAL DEPTH PATCHING.
- NEW MICROSILOCA OVERLAY.
- ELIMINATE DRAINS LOCATED WITHIN 10' OF ANY SUBSTRUCTURE ELEMENT.
- EXTEND ANY DRAINS TO REMAIN IN PLACE.

FOR INFORMATION ONLY

DESIGN STRESSES

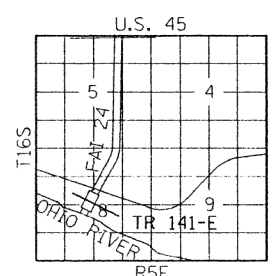
- FIELD UNITS
- NEW CONSTRUCTION
- $f'_c = 3500$ psi
 - $f_y = 60,000$ psi (REINFORCEMENT)
 - $f_y = 36,000$ psi (STRUCTURAL STEEL)

- EXISTING STRUCTURE
- $f'_c = 4000$ psi
 - $f_y = 60,000$ psi (REINFORCEMENT)

CONSTRUCTION SEQUENCE

1. REMOVE BOX BEAM GUARDRAIL
2. SCARIFY STAGE I
3. CONSTRUCT STAGE I
4. RE-ERECT BOX BEAM GUARDRAIL
5. SCARIFY STAGE II
6. CONSTRUCT STAGE II

NOTE: SEE ROADWAY PLANS FOR LIMITS AND QUANTITIES FOR THE BITUMINOUS CONCRETE BASE COURSE WIDENING.



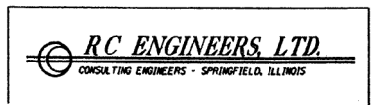
LOCATION SKETCH

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER TR 141-E
SECTION (64-1) RS-1
SN 064-0034
MASSAC COUNTY

DESIGNED	J.C.P.
CHECKED	
DRAWN	A.K.K.
CHECKED	



John R. ...
ILLINOIS STRUCTURAL NO. 081 003091 EXPIRES 11-30-2002



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 15 OF 25 SHEETS

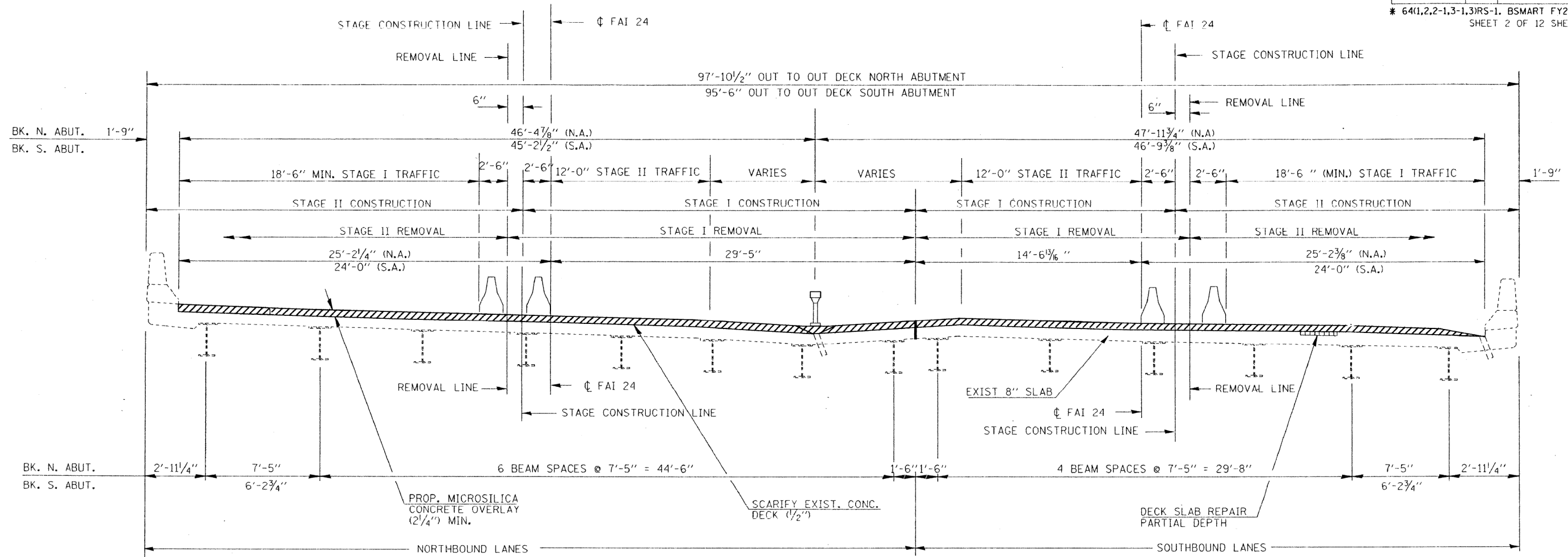
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	253
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	224
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		
* 64(1,2,2-1,3-1,3)RS-1	BSMART	FY2002-2	SHEET 2 OF 12 SHEETS	



DECK CROSS SECTION
(LOOKING SOUTH)

GENERAL NOTES

PLAN DIMENSIONS AND DETAILS RELATIVE TO THE EXISTING STRUCTURE HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53 GRADE 60.

EXISTING REINFORCEMENT BARS EXTENDING INTO THE REMOVAL AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION, ANY REINFORCEMENT BARS THAT ARE DAMAGED DURING CONCRETE REMOVAL SHALL BE REPLACED WITH AN APPROVED BAR SPLICER OR ANCHORAGE SYSTEM. COST INCLUDED WITH CONCRETE REMOVAL.

JOINT OPENINGS SHALL BE ADJUSTED ACCORDING TO ARTICLE 503.10(C) OF THE STANDARD SPECIFICATIONS WHEN THE DECK IS POURED AT AN AMBIENT TEMPERATURE OTHER THAN 50°F.

STRUCTURAL STEEL SHALL CONFORM TO AASHTO CLASSIFICATION M-270 GR. 36, UNLESS OTHERWISE NOTED.

THE INORGANIC ZINC RICH PRIMER/ACRYLIC/ACRYLIC PAINT SYSTEM SHALL BE USED FOR SHOP AND FIELD PAINTING OF NEW STRUCTURAL STEEL EXCEPT WHERE OTHERWISE NOTED. THE COLOR OF THE ACRYLIC FINISH COAT SHALL BE INTERSTATE GREEN, MUNSSELL NO. 7.5G 4/8. SEE SPECIAL PROVISION "CLEANING AND PAINTING NEW METAL STRUCTURES".

THE EXISTING STRUCTURAL STEEL COATING CONTAINS LEAD. THE CONTRACTOR SHOULD 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".

REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

BILL OF MATERIAL

BAR NO.	SIZE	LENGTH	SHAPE
a(E)	#6	17'-3"	—
a ₁ (E)	#6	32'-4"	—
a ₃ (E)	#6	22'-6"	—
a ₄ (E)	#6	23'-1"	—
a ₅ (E)	#6	2'-3"	—
a ₇ (E)	#6	20'-7"	—
d(E)	#4	4'-7"	—
d ₁ (E)	#5	3'-5"	—
d ₂ (E)	#4	2'-1"	—
h(E)	#6	21'-1"	—
h ₁ (E)	#6	22'-4"	—
x(E)	#5	6'-4"	—
CONC. REMOVAL			CU YD 43.9
CONC. SUPER.			CU YD 40.3
REINFORC. BARS EPOXY COATED			POUND 6760
BAR SPLICERS			EACH 76
POLYMER CONC.			CU FT 13.8
SILIC. JT. SEALER			FOOT 289

DESIGNED	J.C.P.
CHECKED	
DRAWN	T. F.
CHECKED	



FOR INFORMATION ONLY

CROSS SECTION, GENERAL NOTES, BILL OF MATERIAL

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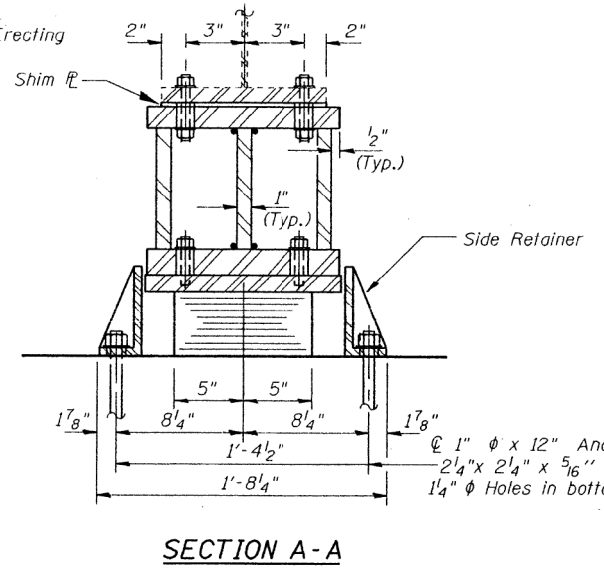
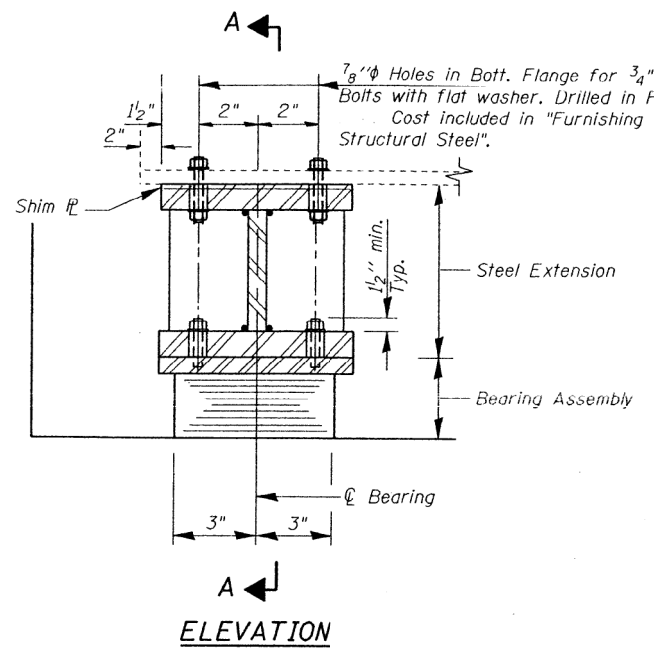
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 16 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	254
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	229
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		
* 64(1,2,2-1,3-1,3)RS-1.		BSMART FY2002-2		
Sheet 7 of 12 sheets				

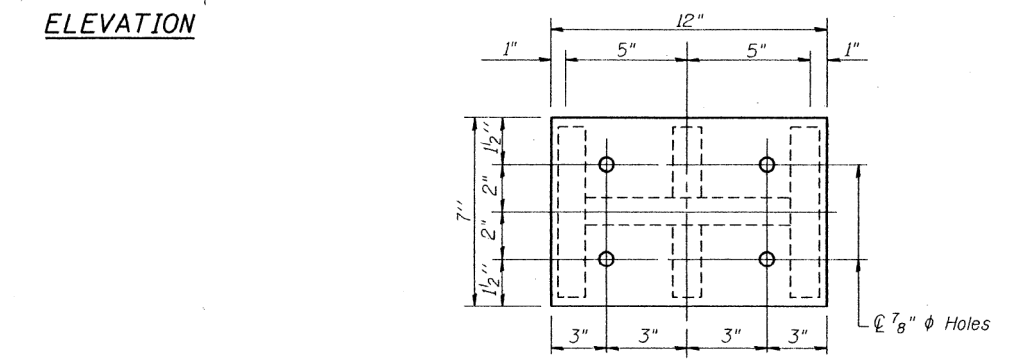


Hatched areas indicate removal of existing bearing and plates. Jacks shall be placed under exist. beams and cribbing shall be provided.

Burn existing anchor bolts flush with concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is included with "Jack and Remove Existing Bearings".

Existing Wide Flange

Existing top plate to be removed using the air-arc method and grind smooth all weld material remaining on the bottom flange, cost included in "Jack and Remove Existing Bearings".

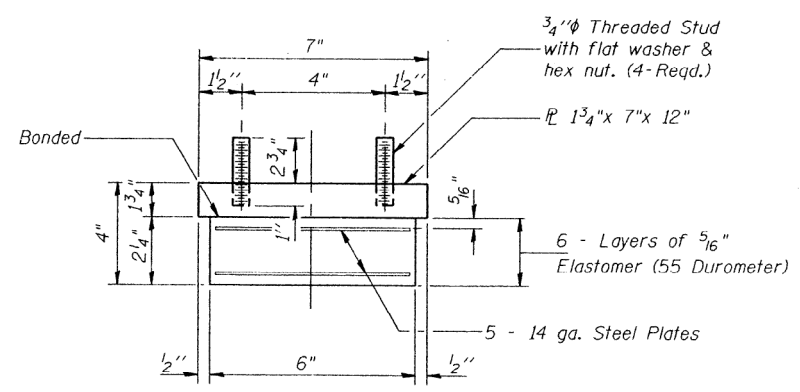


TYPE I ELASTOMERIC BEARING SOUTH ABUT.

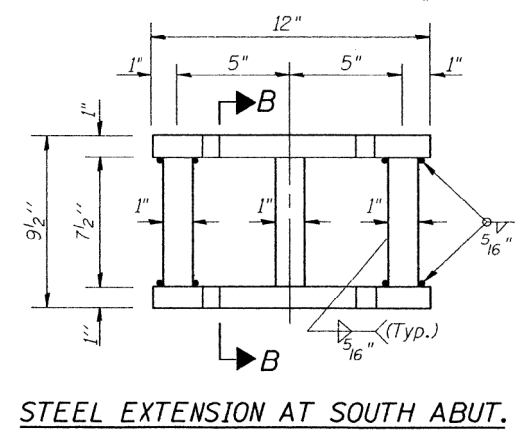
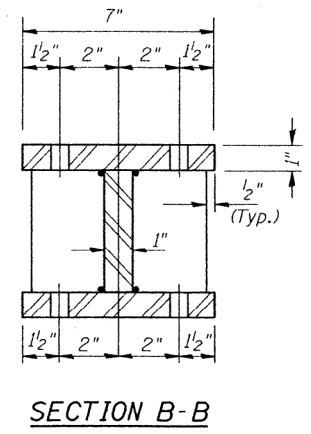
***INTERIOR BEAM REACTION TABLE**

	SERVICE LOADS
R _D (K)	10.9
R _L (K)	30.8
Imp (K)	9.2
R Total (K)	50.9

* Min. Jack capacity at each Beam shall be 25 Tons.

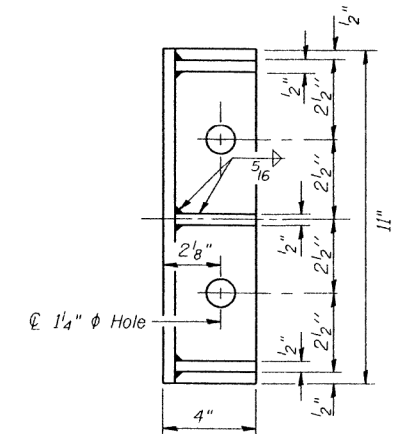
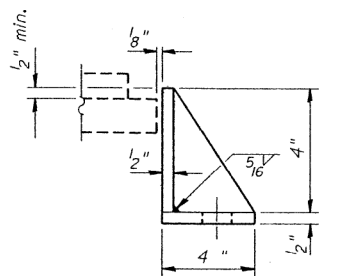


Note: Shim plates shall not be placed under Bearing Assembly



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly



Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

For anchor bolt installation details see sheet # 10 of 12.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14

FOR INFORMATION ONLY

ELASTOMERIC BEARING TYPE I, SOUTH ABUTMENT

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 17 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	255
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78606	

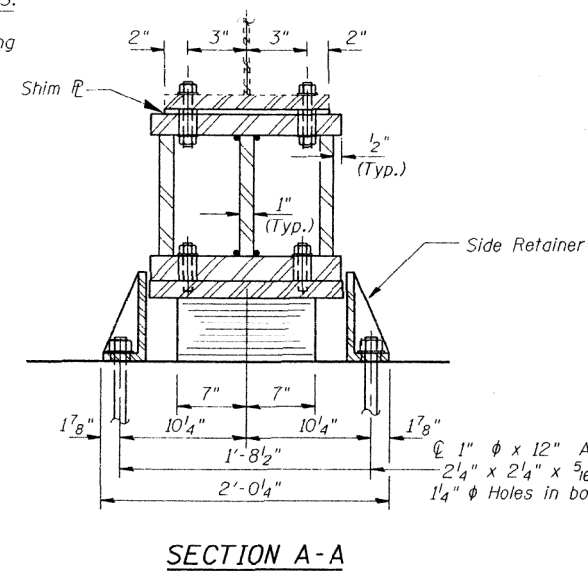
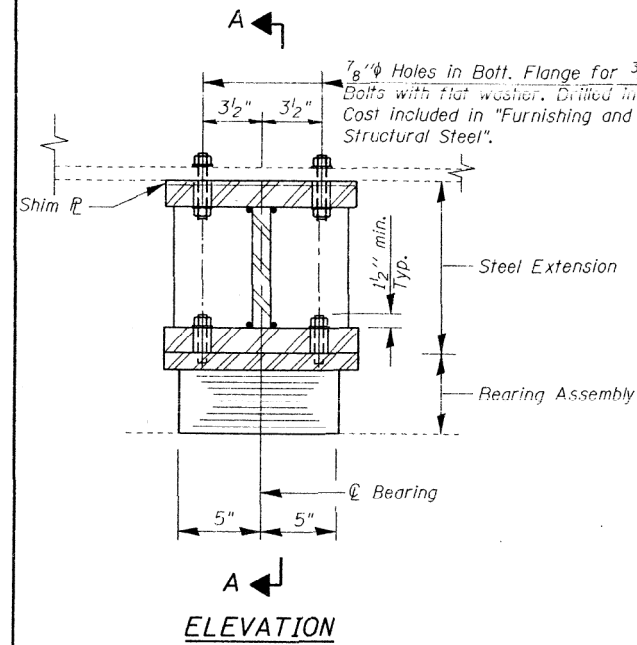


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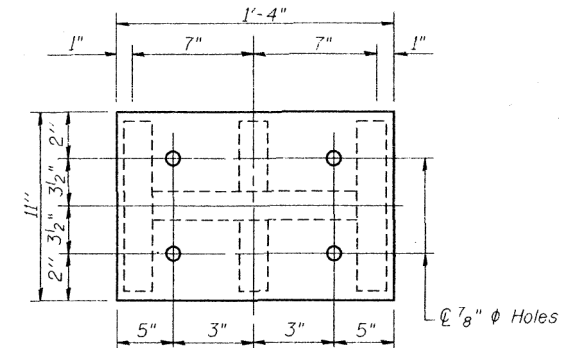
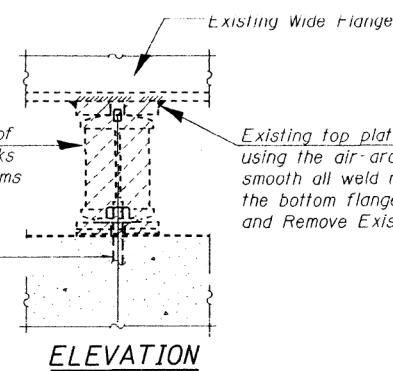
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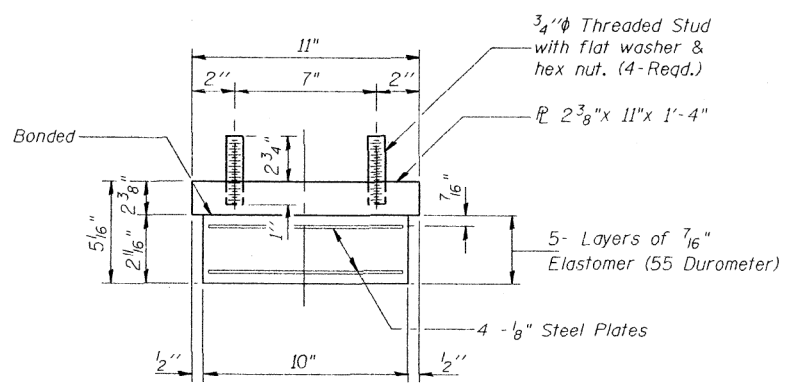


Hatched areas indicate removal of existing bearing and plates. Jacks shall be placed under exist. beams and cribbing shall be provided.

Burn existing anchor bolts flush with concrete surface. Grind existing anchor bolt smooth and seal with epoxy. Cost is included with "Jack and Remove Existing Bearings".



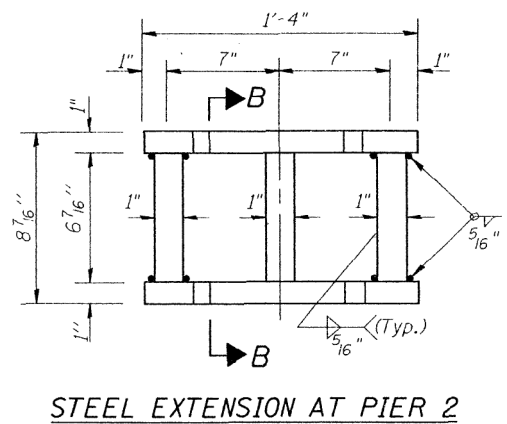
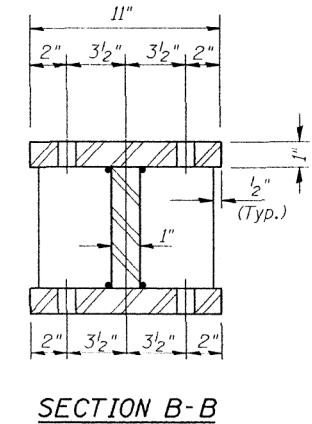
TYPE I ELASTOMERIC BEARING PIER 2



*** BEAM REACTION TABLE**

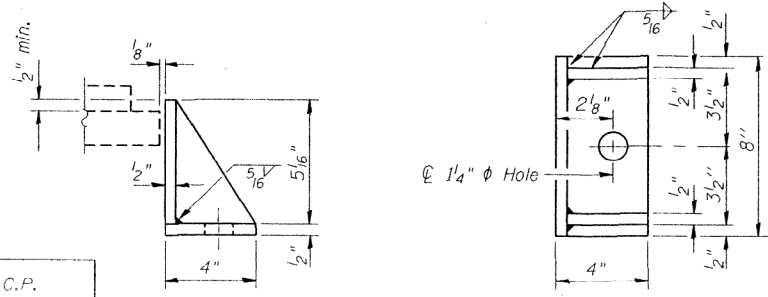
	SERVICE LOADS
R D (K)	58.5
R L (K)	43.3
Imp (K)	13.0
R Total (K)	114.8

* Min. Jack capacity at each Beam shall be 65 Tons.



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly



Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

For anchor bolt installation details see sheet # 10 of 12.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	

FOR INFORMATION ONLY

ELASTOMERIC BEARING TYPE I, PIER 2



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

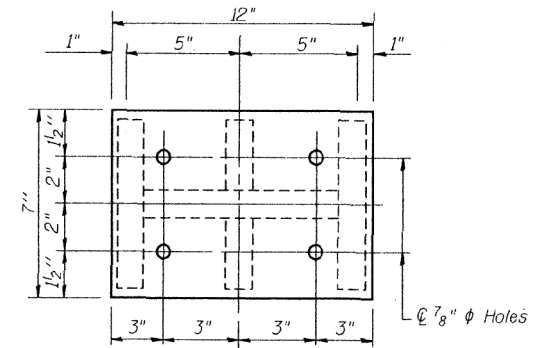
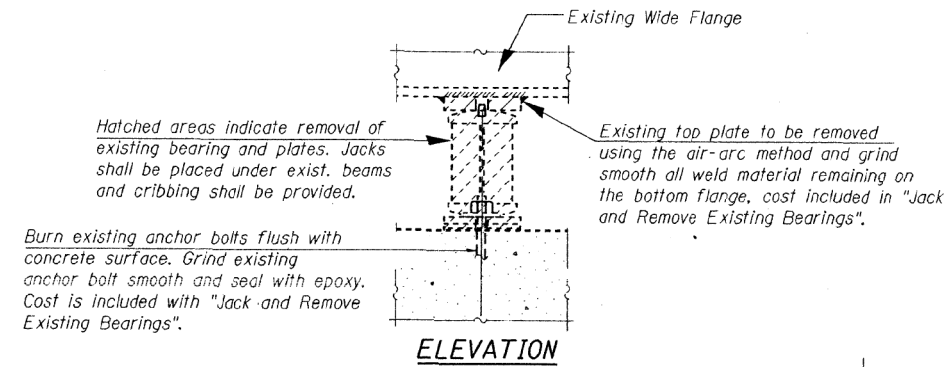
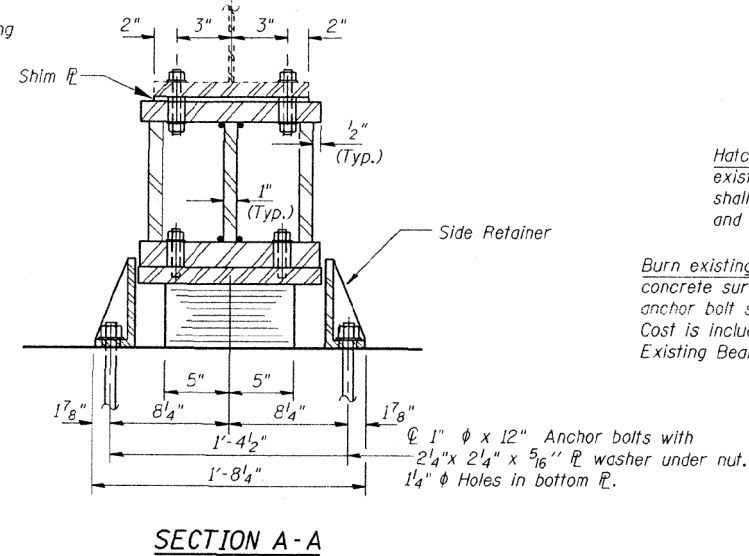
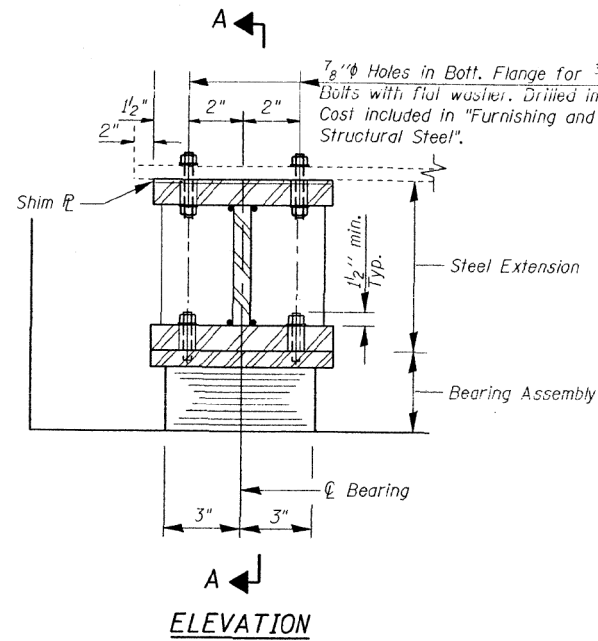
EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 18 OF 25 SHEETS

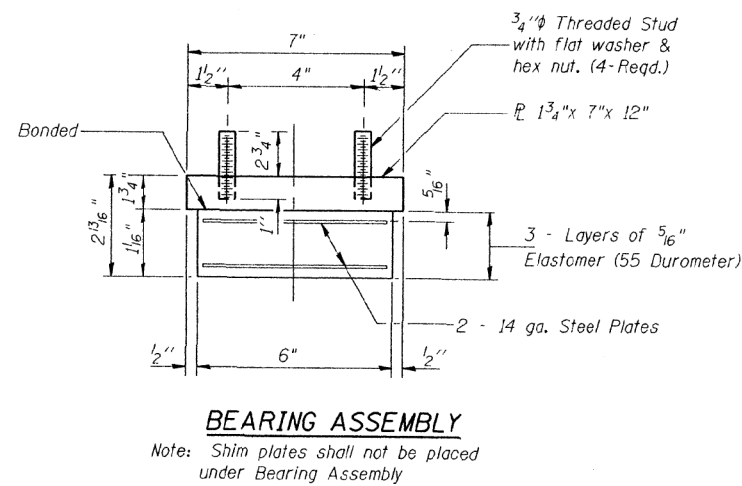


USER NAME = Misaed Cordova	DESIGNED - MAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 10/15/2020 - 4:13:00 PM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	231
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				
* 64(1,2,2-1,3,1,3)RS-1. BSMART FY2002-2				
Sheet 9 of 12 sheets				



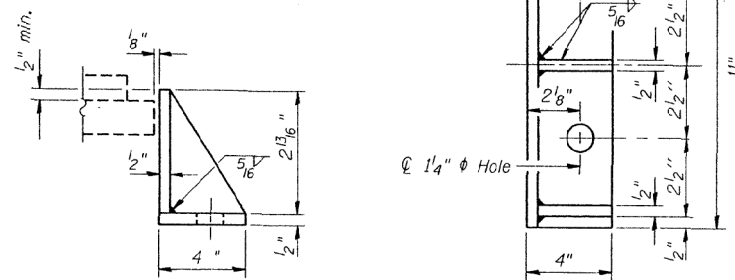
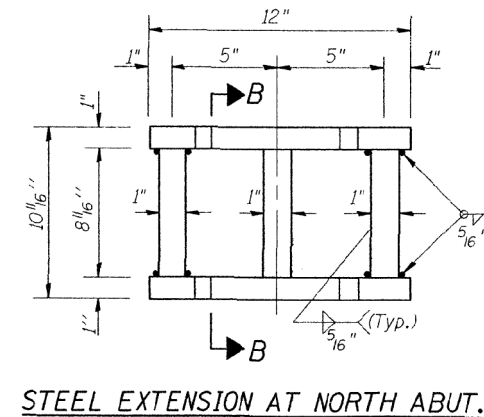
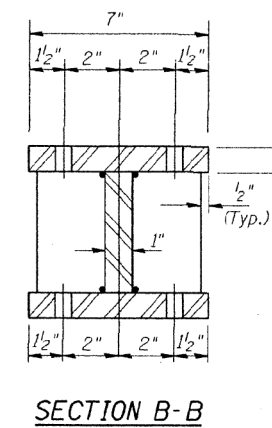
TYPE I ELASTOMERIC BEARING NORTH ABUT.



***INTERIOR BEAM REACTION TABLE**

	SERVICE LOADS
R \bar{Q} (K)	10.9
R \bar{L} (K)	30.8
Imp (K)	9.2
R Total (K)	50.9

* Min. Jack capacity at each Beam shall be 25 Tons.



Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. Weight included with Structural Steel.

Notes:

Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions.

For anchor bolt installation details see sheet # 10 of 12.

New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	14

DESIGNED	J.C.P.
CHECKED	
DRAWN	T.F.
CHECKED	

FOR INFORMATION ONLY

ELASTOMERIC BEARING TYPE I, NORTH ABUTMENT



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 19 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	257
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				



USER NAME	= Misaed Cordova
DESIGNED	- MAC
CHECKED	- AS
PLOT SCALE	= N/A
DRAWN	- GLD/RAH
PLOT DATE	= 10/15/2020 - 4:13:06 PM
CHECKED	- JTH
REVISED	-

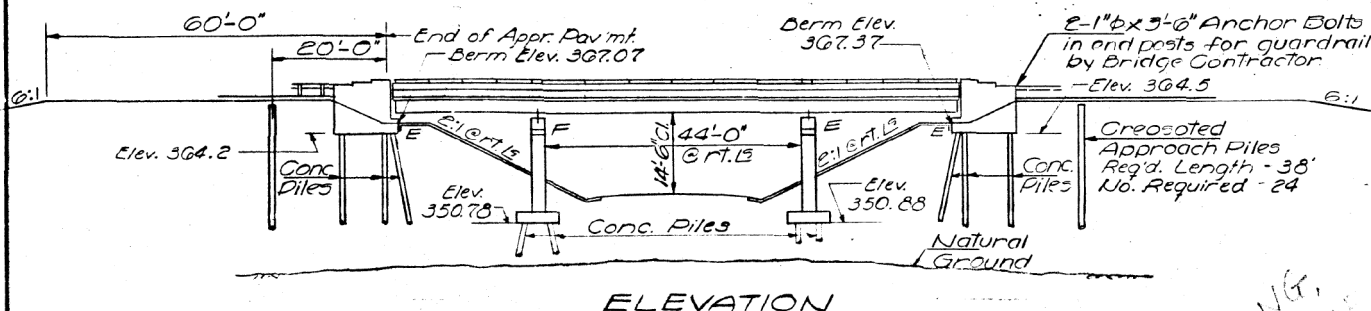
DESIGNED	- MAC	REVISED	-
CHECKED	- AS	REVISED	-
DRAWN	- GLD/RAH	REVISED	-
CHECKED	- JTH	REVISED	-

B.M. #32 Eot Spike in 12" Sasafras
400' Lt. of Station 419 Elev. 342.24

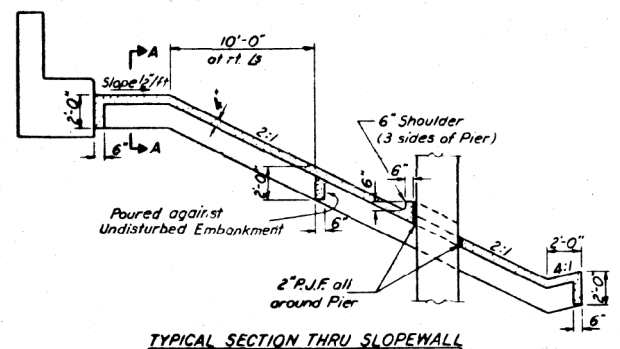
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
24	3	MASSAC	76	30	14 SHEETS

FOR INFORMATION ONLY



ELEVATION



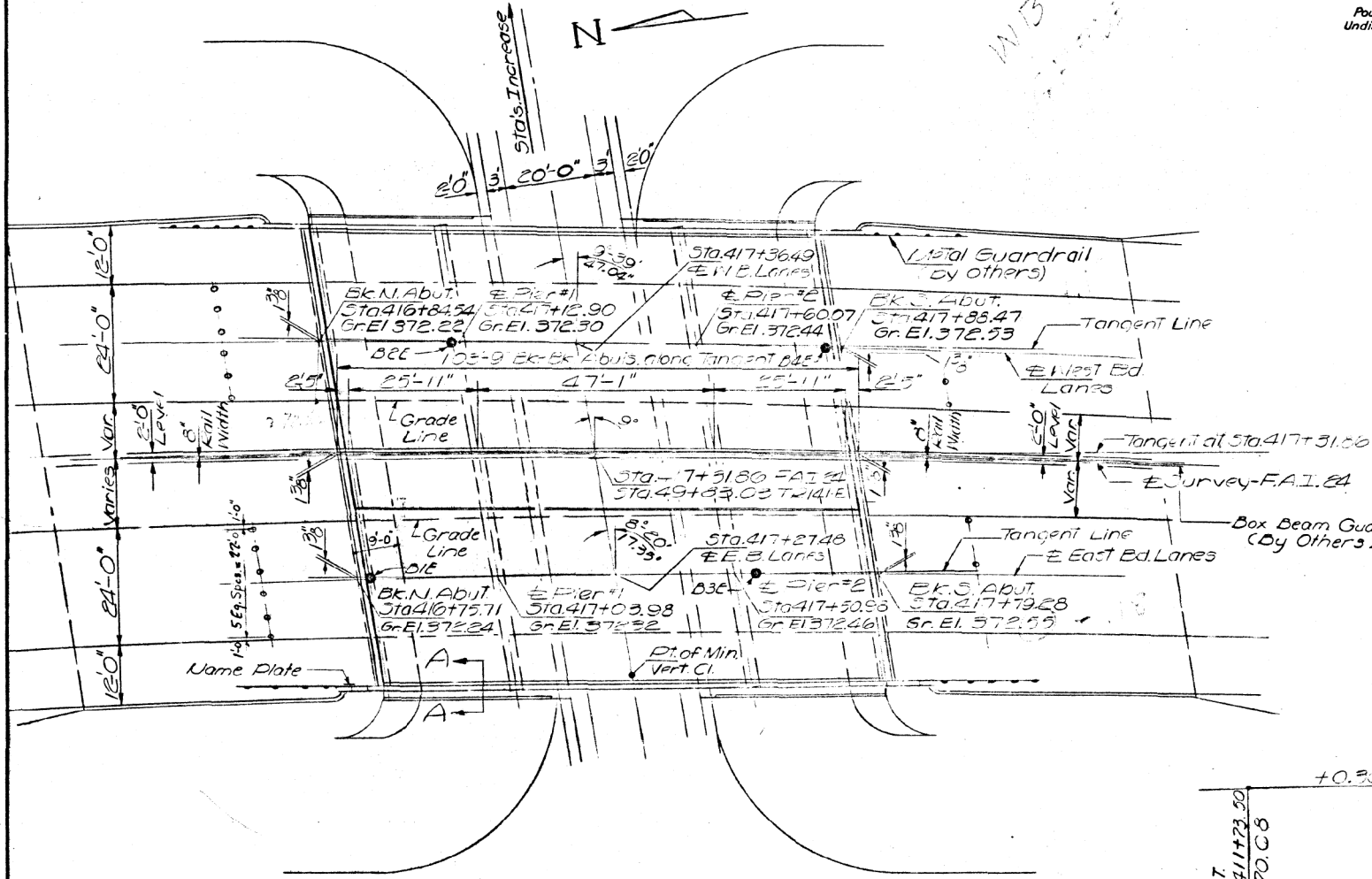
TYPICAL SECTION THRU SLOPEWALL

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class X Concrete	Cu. Yds.	287.5	412.9	700.4
Protective Coat	Sq. Yds.	1100		1100
Structural Steel	Lbs.	165 450		165 450
Aluminum Railing	Lin. Ft.	201		201
Reinforcement Bars	Lbs.	73 940	43 100	117 040
Creosoted Piles (20.1' to 38')	Lin. Ft.		912	912
Concrete Piles	Lin. Ft.		5600	5600
Test Piles (Concrete)	Each		4	4
Name Plates	Each	1		1
Slope Wall 4"	Sq. Yds.		1010	1010
Stud Shear Connectors	Each	1638		1638
Preformed Joint Sealer	Lin. Ft.	190		190

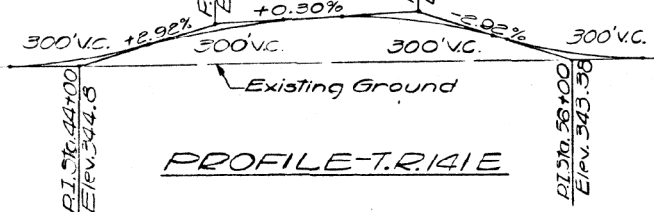
CURVE DATA

W.E.L. P.I. Sta 406+60.74
E.B.L. P.I. Sta 409+36.72
P.I. Sta. 408+08.73
 $\Delta = 15^\circ 29' 39''$
 $D = 0^\circ 30'$
 $R = 11,459.16'$
 $L = 3,098.84'$
 $T = 1,558.93'$
 $E = 105.55'$
 $SE = 0.015''/ft$

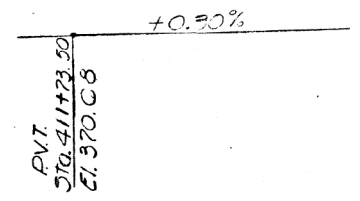


PLAN

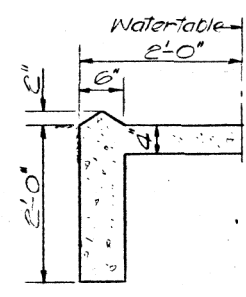
Note: See Sheet 8 for Footing Layout.



PROFILE-T.R.141E



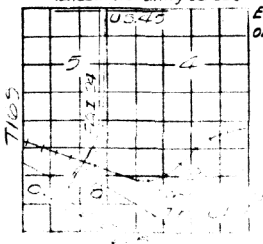
PROFILE-W.B.D. ALONG MEDIAN EDGE



SEC. A-A

DESIGN STRESSES

$f_c = 1200$ psi - Deck Slab
 $f_c = 1400$ psi - Curb, Panels, Sub.
 $f_s = 20,000$ psi. - Reinf.
 $f_s = 20,000$ psi. - Struct.
 $\tau_c = 75$ psi - Ftgs.
 $n = 10$
Allowable FUT IN S 25# 1/4"
Allowable FUT IN S 100# 1/2" 1000 PSI
LOADING H280-44 & LT



GENERAL PLAN & ELEVATION

PROJ. 1-IG-24-1(23)37
F.A.I. 24
OVER TR141E
F.A.T. ROUTE 24
SECTION 64-34B-3
MASSAC COUNTY
STATION 417+31.86

DESIGNED: [Signature]
CHECKED: George A. Bazzi
DRAWN: [Signature]
CHECKED: George A. Bazzi

EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]

FEB. 6 1969

STATION 417 + 31.86
BUILT 19 59
STATE OF ILLINOIS
F.A.I. RT. 24 SEC. 34-34B-3
F.A. PROJ. 1-IG-24-1(23)
LOADING H280
NAME PLATE
See Std. 2113-1

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

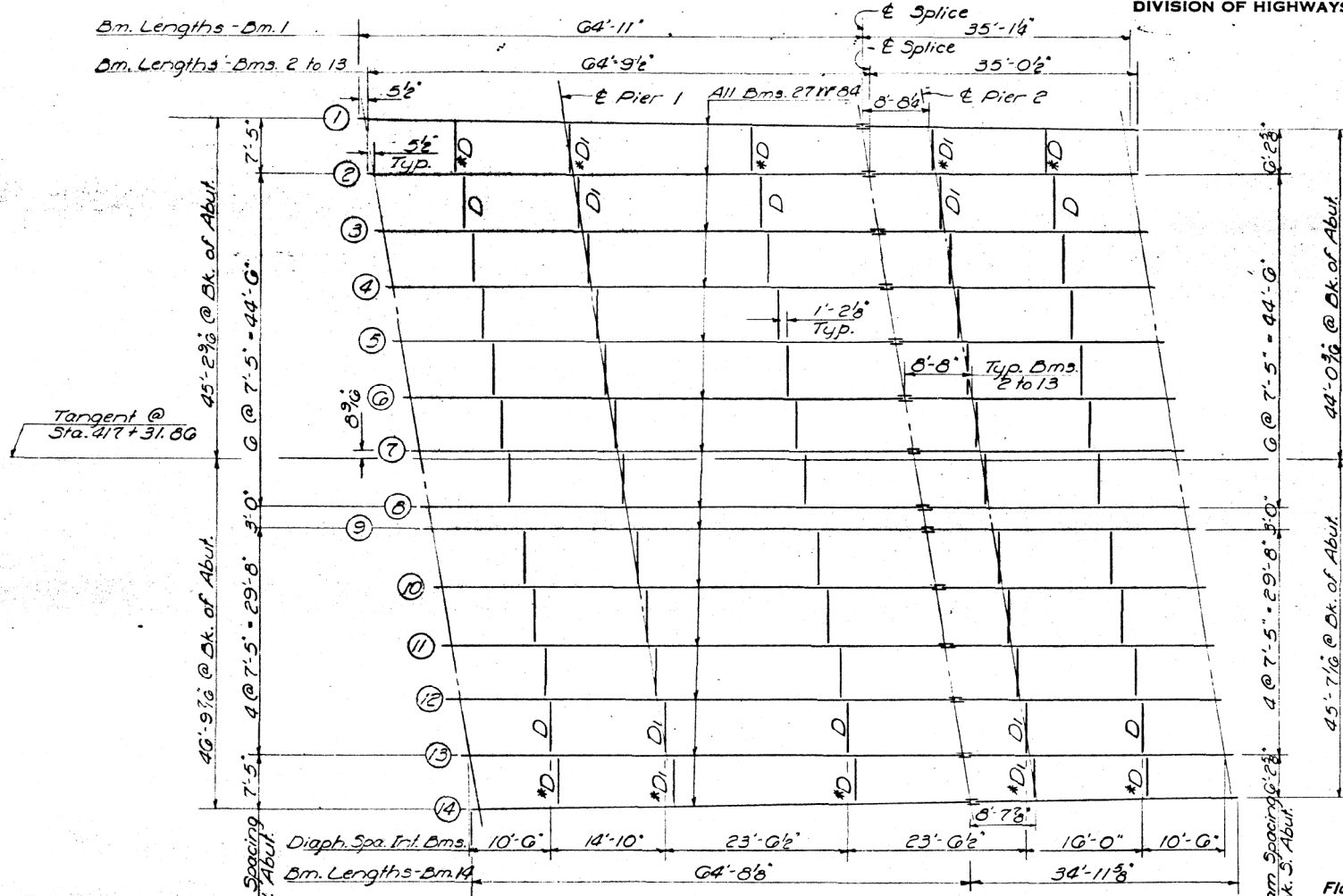
EXISTING PLANS
STRUCTURE NO. 064-0034



USER NAME = Misaed Cordova	DESIGNED - MAC	REVISED -
PLOT SCALE = N/A	CHECKED - AS	REVISED -
PLOT DATE = 10/15/2020 - 4:13:12 PM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	258
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

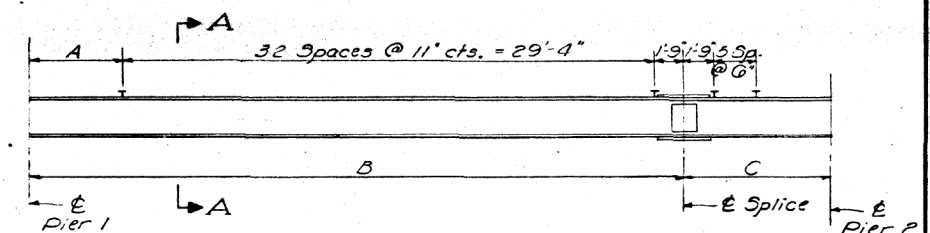
FOR INFORMATION ONLY



TOP OF W ELEVATIONS

Beam Location	1	2	3	4	5	6	7	8	9	10	11	12	13	14
E Brg. No. Abut.	372.03	371.92	371.81	371.71	371.60	371.42	371.11	371.29	371.41	371.40	371.37	371.20	371.15	371.05
E Pier 1	372.11	372.00	371.89	371.79	371.68	371.50	371.19	371.37	371.49	371.50	371.45	371.34	371.23	371.13
E Splice	372.22	372.11	372.00	371.90	371.79	371.61	371.30	371.48	371.60	371.67	371.50	371.45	371.34	371.24
E Pier 2	372.25	372.13	372.03	371.93	371.82	371.64	371.33	371.51	371.63	371.70	371.59	371.40	371.37	371.27
E Brg. So. Abut.	372.33	372.21	372.11	372.01	371.90	371.72	371.41	371.59	371.71	371.70	371.67	371.50	371.45	371.35

	A	B	C
Beam 1	7'-4 3/8"	38'-5 3/8"	8'-8 1/4"
Beams 2-13	7'-4"	38'-5"	8'-8"
Beam 14	7'-3 3/8"	38'-4 3/8"	8'-7 3/8"



BEAM ELEVATION - SPAN 2
(117 Studs per Beam)

MOMENTS & REACTIONS (INT. BMS.)

	*MOMENTS (Ft.-Kips)			REACTIONS (Kips)	
	4 Sp. 1	Pier 1	5 Sp. 2	Abuts.	Piers
D.L.	12.1	142.4	95.1	5.0	36.8
S.D.L.	7.5	33.7	38.4	2.1	10.8
L.L. & Imp.	158.5	171.4	343.7	29.3	43.9
Total	178.1	347.5		37.0	91.5

*Symm. about E. Span 2

SHEARS - SPAN 2

	.25L	.5L
S.D.L.	3.1	-
L.L. & Imp.	35.0	18.4
Total	38.1	18.4

PROPERTIES

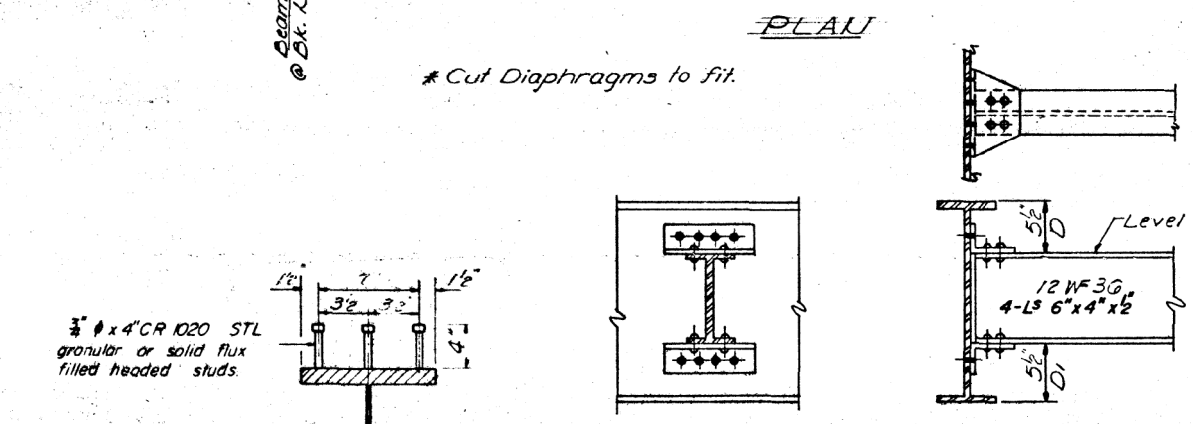
STEEL SECTION

I _o	2824.8 in. ⁴
S _o	211.7 in. ³
I (Pier)	4061.0 in. ⁴
S (Pier)	290.0 in. ³

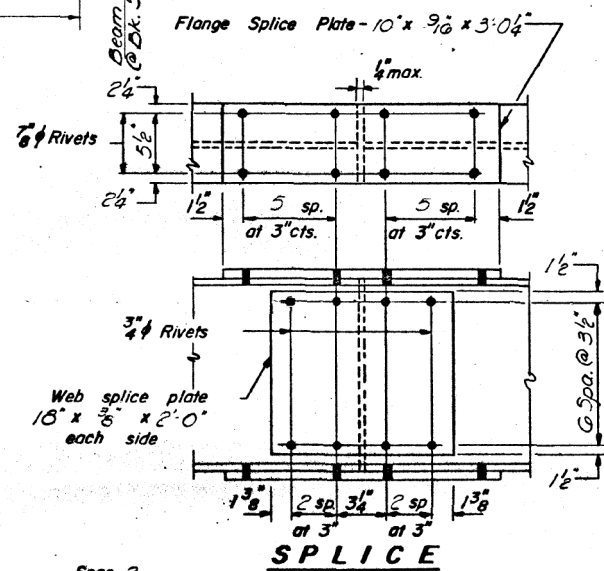
COMPOSITE SECTION

I _c	8877.3 in. ⁴
S _{oc}	330.0 in. ³

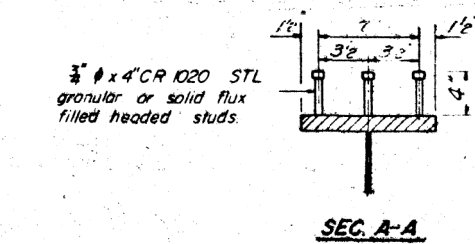
STRUCTURAL STEEL
F.A.I. RT. 24 SEC. G4-3HB-3
MASSAC COUNTY
STA. 417 + 31.80



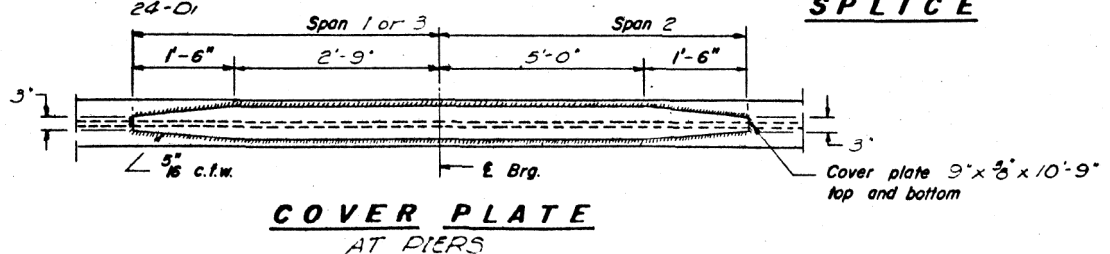
DIAPHRAGM D



SPLICE



SEC. A-A



COVER PLATE AT PIERS

DESIGNED: [Signature]
CHECKED: George A. Baird
DRAWN: J. Schneller
EXAMINED: [Signature] Feb. 6, 1965
PASSED: [Signature]
APPROVED: [Signature]

I-2-CD 9-1-65



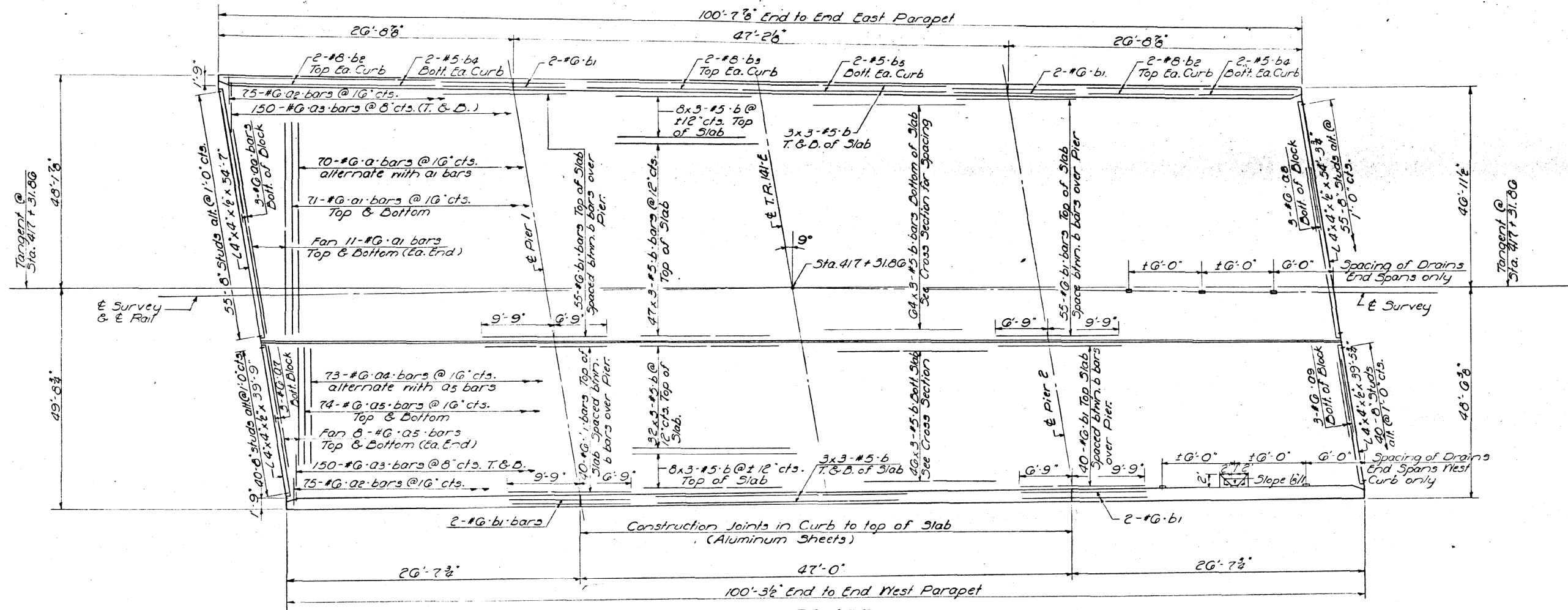
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PLOT DATE = 10/15/2020 - 4:13:18 PM	DRAWN - GLD/RAH	REVISED -
	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034
SHEET 21 OF 25 SHEETS

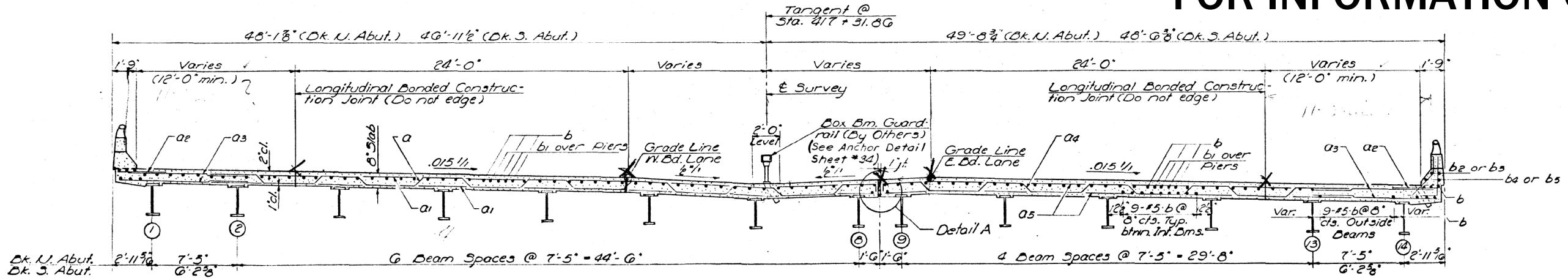
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	259
ILLINOIS			FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

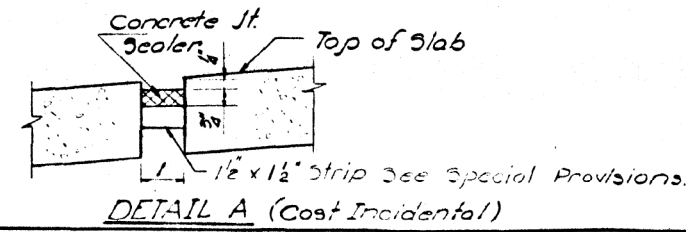


PLAN

FOR INFORMATION ONLY



CROSS SECTION
For guardrail layout
see sheet #G.



DETAIL A (Cost Incidental)

SUPERSTRUCTURE
F.A.I.R.T. 24 SEC. G4-3HE-3
MASSAC COUNTY
STA. 417 + 31.80

DESIGNED	EXAMINED
CHECKED	PASSED
DRAWN	APPROVED
CHECKED	

DATE: FEB 6 1969



USER NAME =	DESIGNED -	REVISED -
Misaed Cordova	MAC	
	CHECKED -	REVISED -
	AS	
PLOT SCALE =	DRAWN -	REVISED -
N/A	GLD/RAH	
PLOT DATE =	CHECKED -	REVISED -
10/15/2020 - 4:13:24 PM	JTH	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

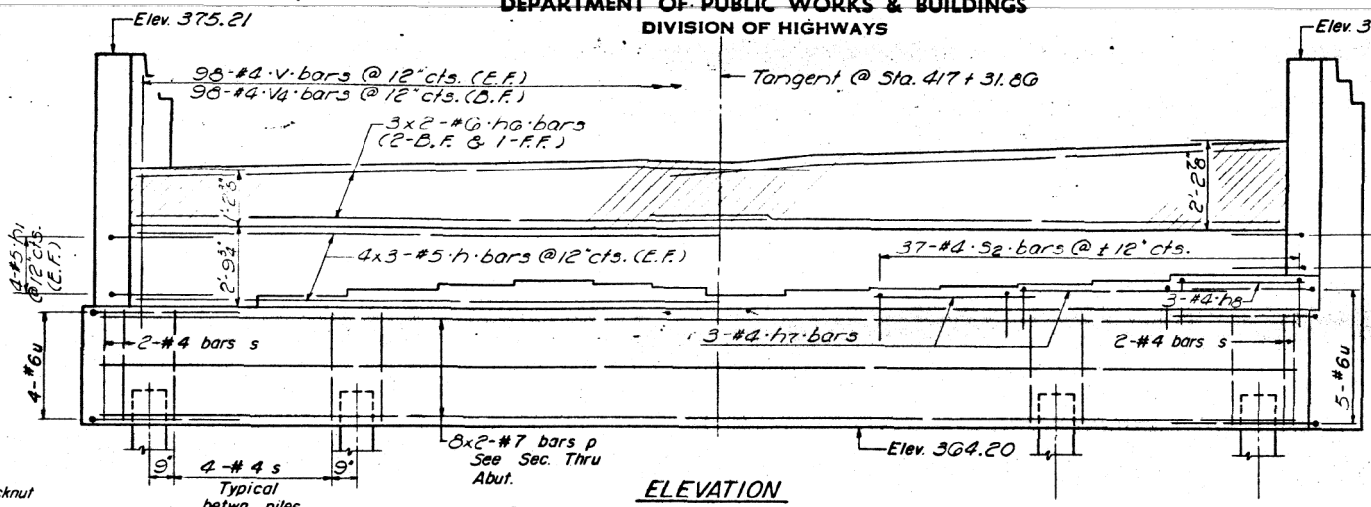
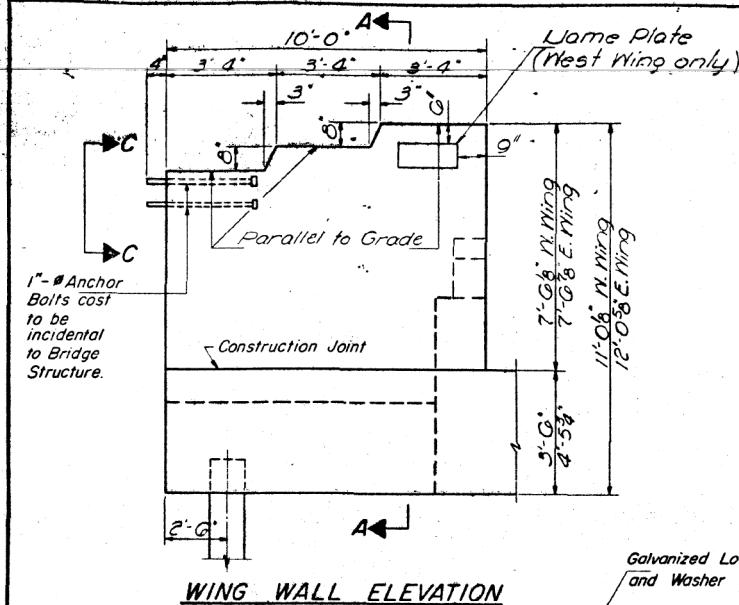
EXISTING PLANS
STRUCTURE NO. 064-0034

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	260
CONTRACT NO. 78606				
ILLINOIS FED. AID PROJECT				

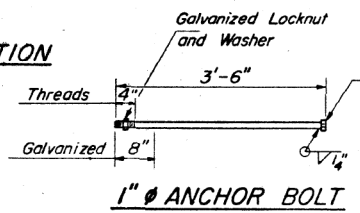
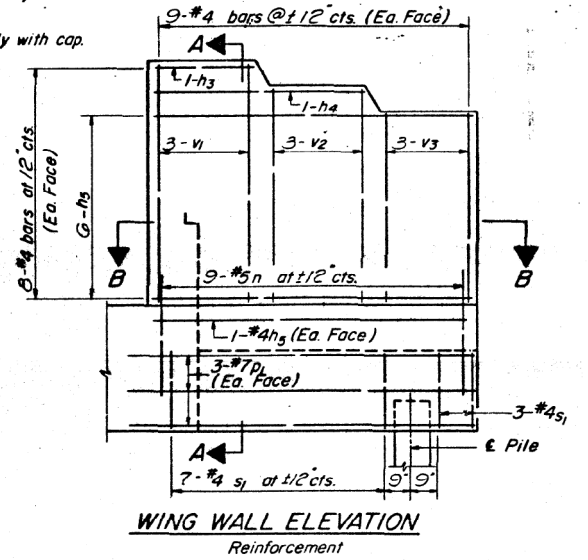
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STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

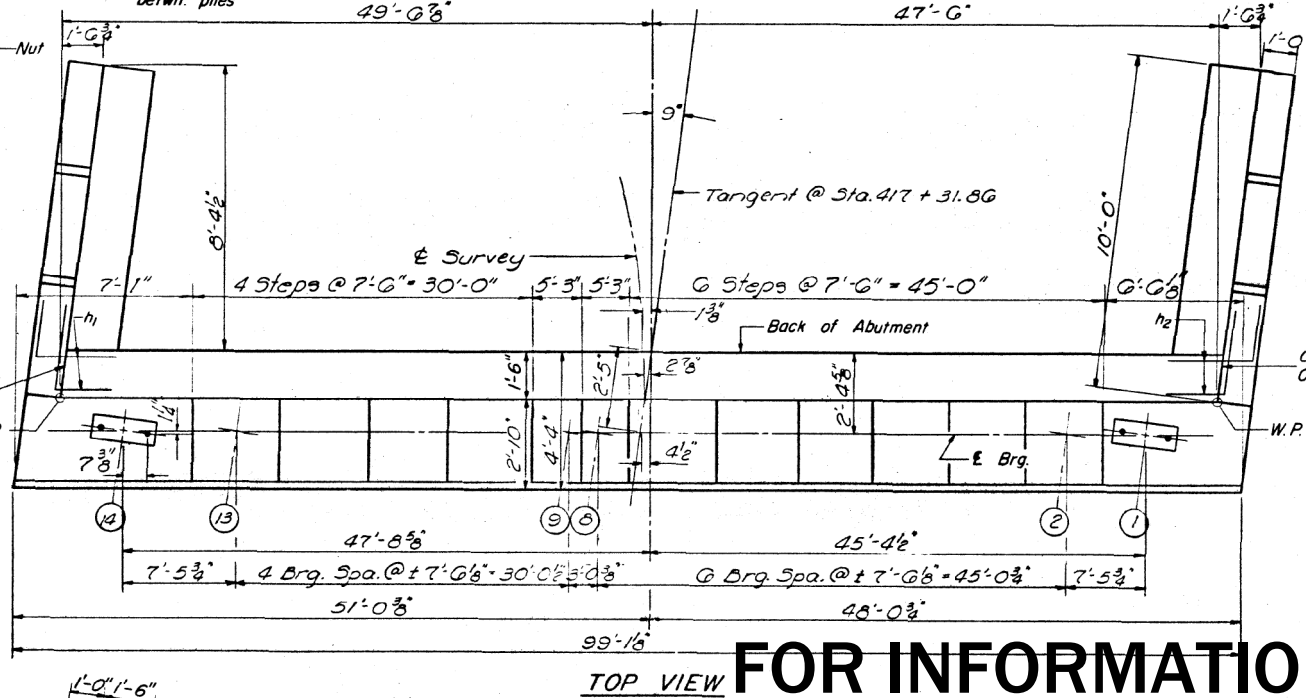
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
41-34B	3	MASSAC	76	38
SHEET NO. 9			14 SHEETS	



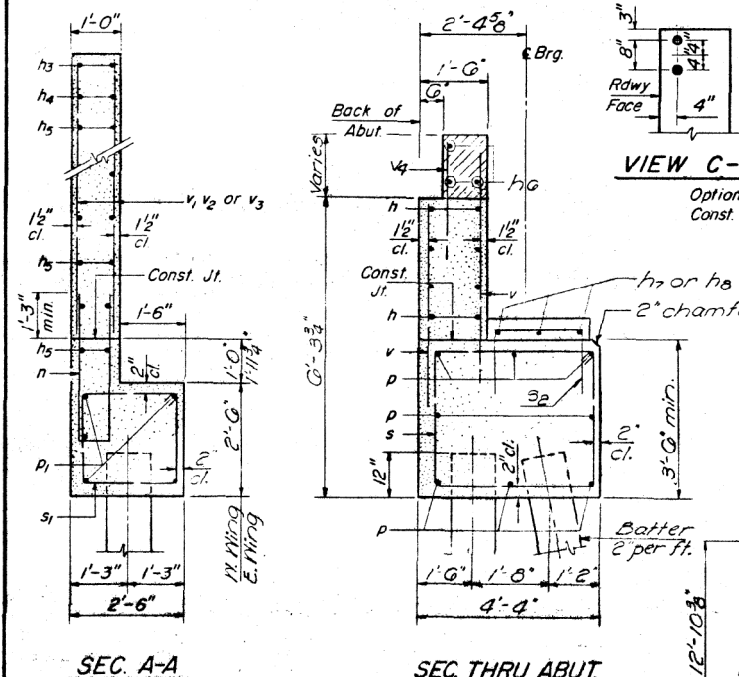
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.



VIEW C-C
Optional Const. Jt.



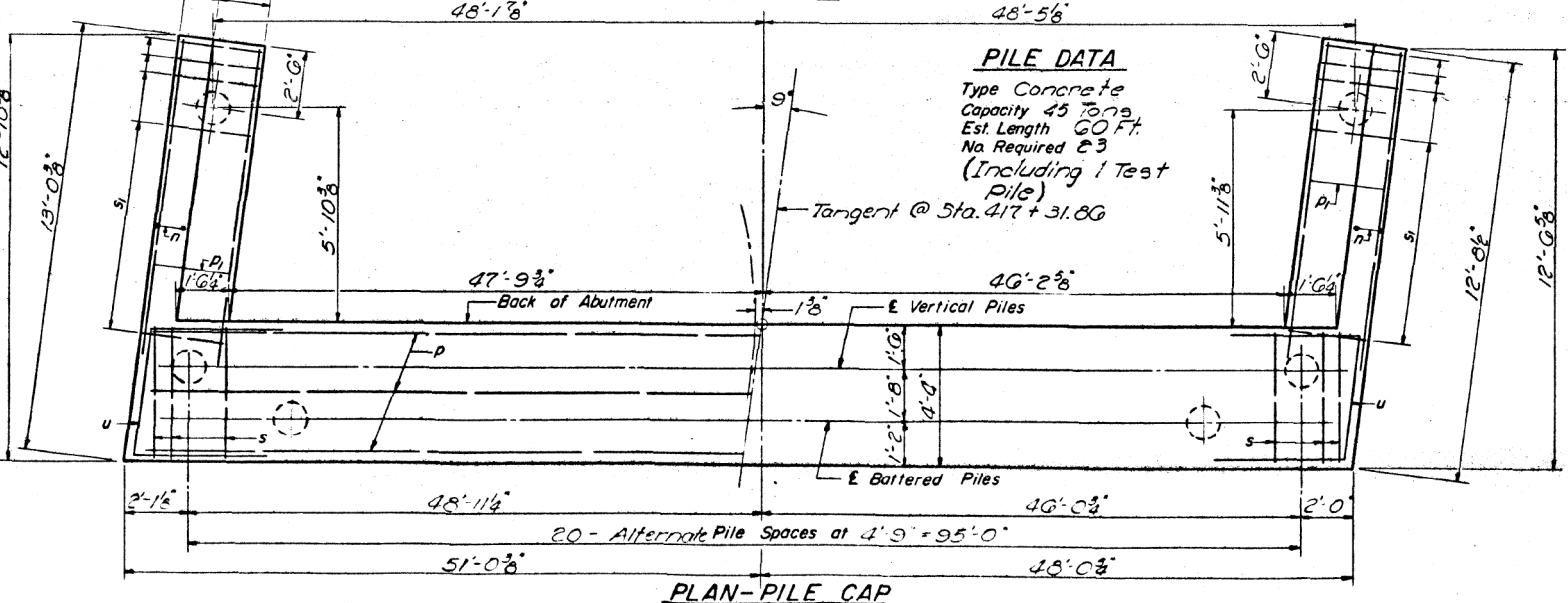
FOR INFORMATION ONLY



STEP ELEVATION

Sta.	1	2	3	4	5	6	7
Elev.	368.68	368.57	368.46	368.36	368.25	368.07	367.70
Sta.	8	9	10	11	12	13	14
Elev.	367.94	368.06	368.13	368.02	367.91	367.80	367.70

PILE DATA
Type Concrete
Capacity 45 Tons
Est. Length 60 Ft.
No. Required 23
(Including 1 Test pile)



**WORTH ABUTMENT
BILL OF MATERIAL**

Bar	No.	Size	Length	Shape
h	21	#5	33'-3"	—
h1	6	#5	5'-6"	L
h2	6	#5	5'-6"	J
h3	4	#4	3'-1"	—
h4	4	#4	6'-5"	—
h5	28	#4	9'-9"	—
h6	6	#6	49'-6"	—
h7	6	#4	15'-0"	—
h8	3	#4	6'-0"	—
n	18	#5	7'-8"	U
p	16	#7	51'-0"	—
pi	12	#7	9'-9"	—
s	84	#4	15'-1"	□
s1	20	#4	9'-5"	□
s2	37	#4	6'-8"	U
u	9	#6	11'-11"	J
v	106	#4	5'-0"	—
v1	12	#4	7'-3"	—
v2	12	#4	6'-7"	—
v3	12	#4	5'-11"	—
v4	35	#4	3'-3"	—
Class X Concrete			Cu. Yds.	84.3
Reinforcement Bars			Lbs.	6000
Concrete Piles			Lin. Ft.	1320
Test Piles (Concrete)			Ea.	1

WORTH ABUTMENT
F.A.I. RT. 24 SEC. 64-34B-3
MASSAC COUNTY
STA. 417 + 31.86

DESIGNED: [Signature]
CHECKED: [Signature]
DRAWN: [Signature]
CHECKED: [Signature]
EXAMINED: [Signature]
PASSED: [Signature]
APPROVED: [Signature]



USER NAME =	Misael Cordova	DESIGNED -	MAC	REVISED -	
PLOT SCALE =	N/A	CHECKED -	AS	REVISED -	
PLOT DATE =	10/15/2020 - 4:13:30 PM	DRAWN -	GLD/RAH	REVISED -	
		CHECKED -	JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

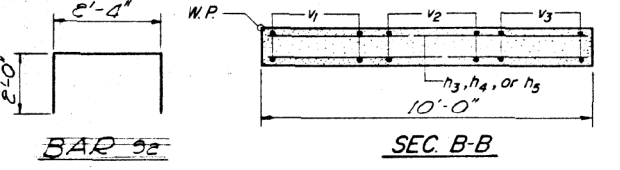
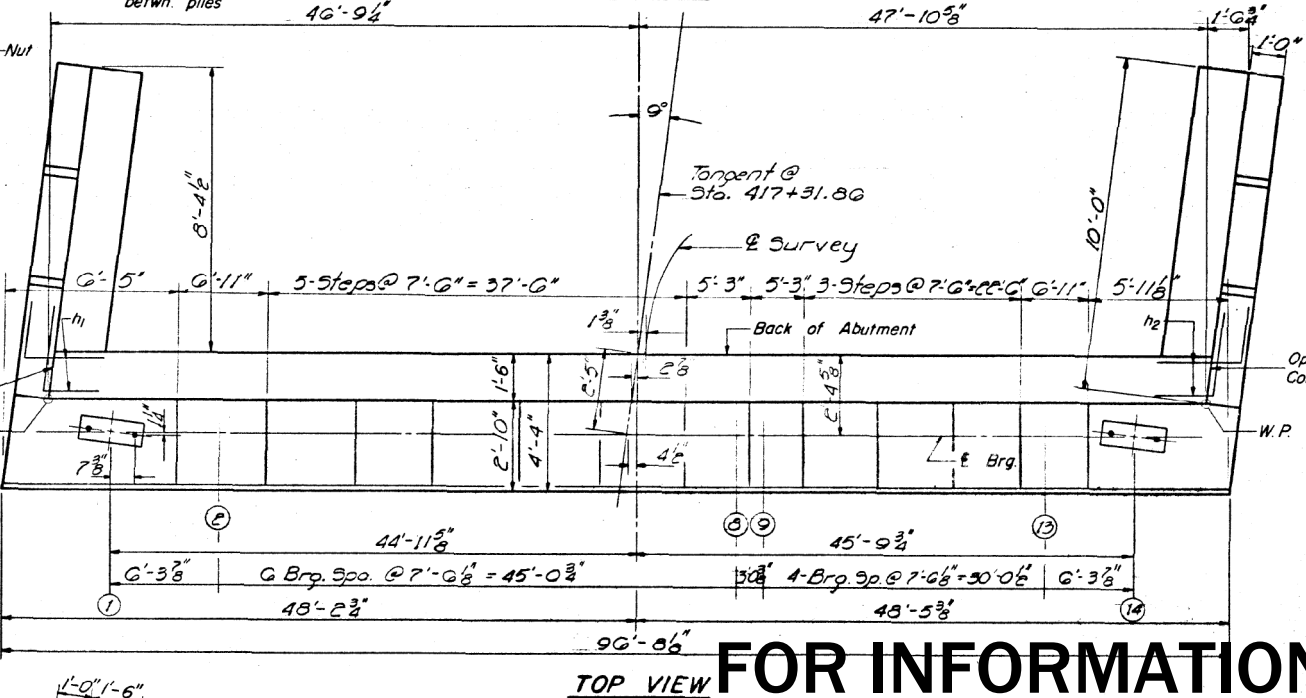
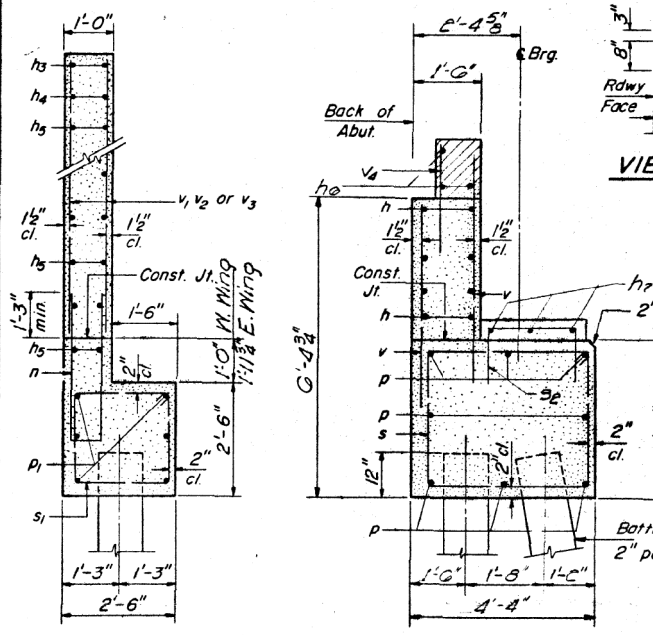
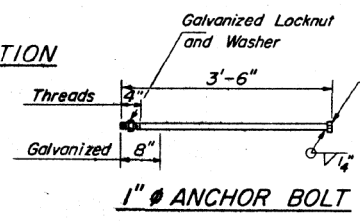
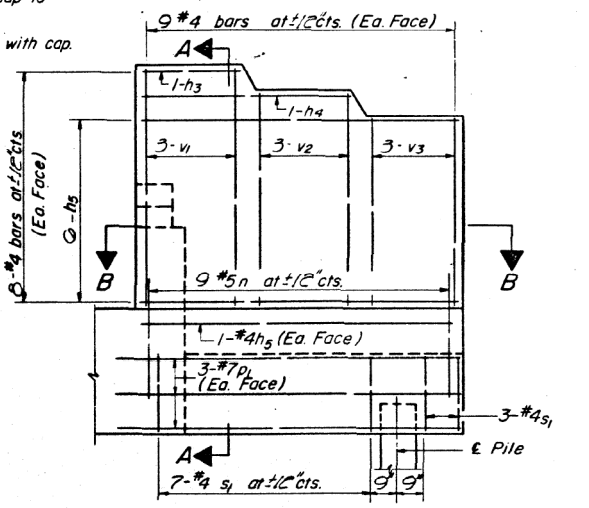
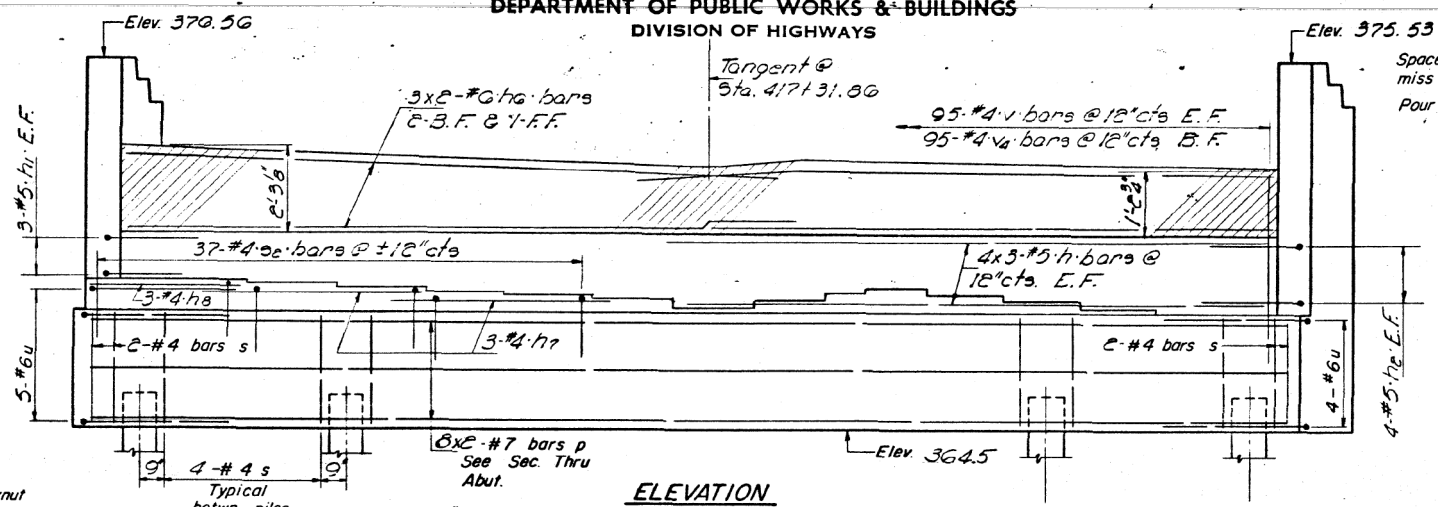
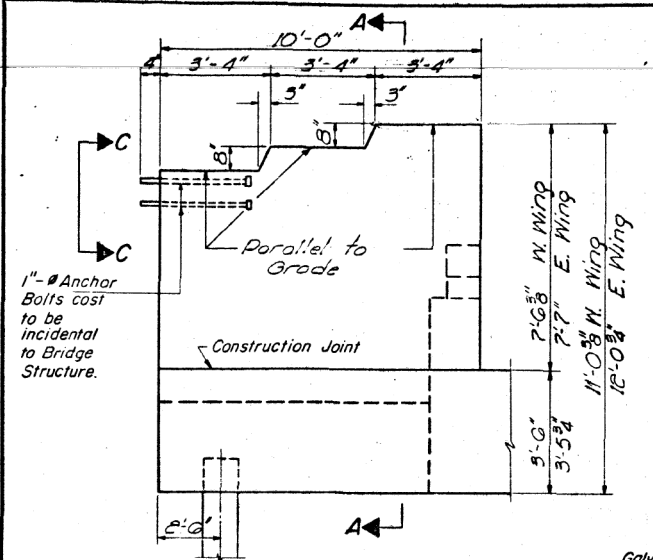
EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 23 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	261
CONTRACT NO. 78606			ILLINOIS FED. AID PROJECT	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	348-3	MASSAC	76	39
F.A.I. 24		ILLINOIS FED. AID PROJECT		14 SHEETS



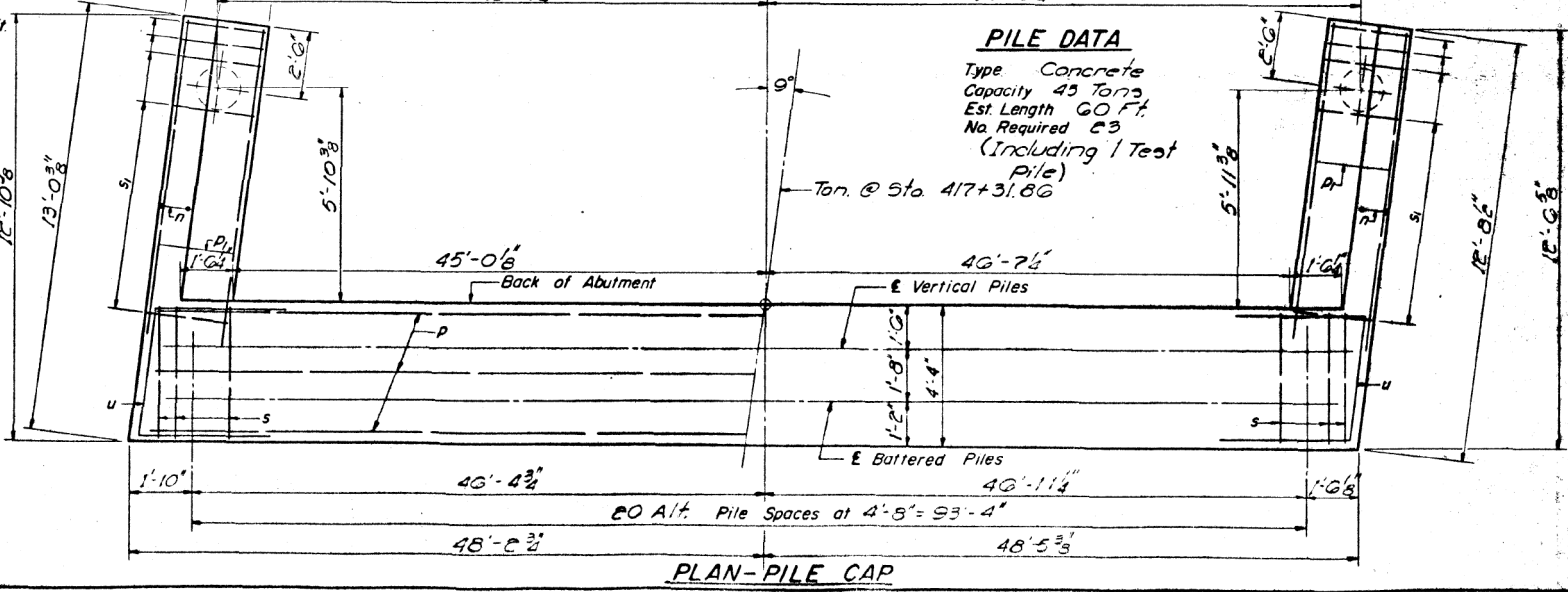
SOUTH ABUTMENT BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	24	#5	33'-5"	—
h1	8	#5	5'-6"	L
h2	6	#5	5'-6"	L
h3	4	#4	3'-1"	—
h4	4	#4	6'-5"	—
h5	28	#4	9'-9"	—
h6	6	#6	49'-6"	—
h7	6	#2	15'-6"	—
h8	3	#4	6'-0"	—
n	18	#5	1'-9"	L
p	12	#7	51'-0"	—
p1	12	#7	9'-9"	—
s	84	#4	15'-1"	□
s1	70	#4	9'-5"	□
5a	37	#4	6'-4"	L
u	9	#6	11'-11"	L
v	196	#4	5'-0"	—
v1	12	#4	7'-3"	—
v2	12	#4	6'-7"	—
v3	12	#4	5'-11"	—
v4	98	#4	3'-3"	—
Class X Concrete		Cu Yds	80.9	
Reinforcement Bars		Lbs	6010	
Concrete Piles		Lin. Ft	1320	
Test Piles Concrete		Ea.	1	

FOR INFORMATION ONLY

PILE DATA

Type Concrete
Capacity 45 Tons
Est Length 60 Ft
No. Required 23
(Including 1 Test Pile)



STEP ELEVATIONS

Bm.	1	2	3	4	5	6	7
Elev.	369.98	368.86	368.76	368.66	368.55	368.37	368.06
Bm.	8	9	10	11	12	13	14
Elev.	368.24	368.36	368.43	368.32	368.21	368.10	368.00

DESIGNED: [Signature]

CHECKED: [Signature]

DRAWN: [Signature]

CHECKED: [Signature]

EXAMINED: [Signature] FEB. 6, 1969

PASSED: [Signature]

APPROVED: [Signature]

A-9-R (10-14) 2-1-66

**SOUTH ABUTMENT
FAI RT 24 SEC. 64-348-3
MASSAC COUNTY
STA. 417+31.80**



USER NAME = Misael Cordova
DESIGNED - MAC
CHECKED - AS
DRAWN - GLD/RAH
CHECKED - JTH
PLOT SCALE = N/A
PLOT DATE = 10/15/2020 4:13:36 PM

DESIGNED - MAC
CHECKED - AS
DRAWN - GLD/RAH
CHECKED - JTH
REVISED -
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REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 24 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	262
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78606	

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	34B	MASSAC	76	43
SHEET NO. 14		TOTAL SHEETS 76		

Boring No.	Station	Elevation	N	Qu (t/sf)	w (%)	Surface Water El.		Elevation	N	Qu (t/sf)	w (%)
						Groundwater El. at Completion	After Hours				
3 E	417+55.6	322.2				NONE	330.2				
		0				SEE PREVIOUS COLUMN	309.2				
		329.2				HARD BROWN COARSE SAND AND GRAVEL	100 BLOWS 3"				
		326.7	5	0.33	25		306.2	100	BLOWS	5"	
		324.2									
		321.7	8	0.75	27						
		319.2									
		316.7									
		314.2									
		311.7									

Boring No.	Station	Elevation	N	Qu (t/sf)	w (%)	Surface Water El.		Elevation	N	Qu (t/sf)	w (%)
						Groundwater El. at Completion	After Hours				
3 E	417+55.6	325.9				NONE	317.4				
		0				SEE PREVIOUS COLUMN	312.9				
		322.9				MEDIUM REDDISH BROWN COARSE SAND AND GRAVEL WITH CLAY LOAM BINDER	14				
		320.4	8	0.65	17		309.9	100	BLOWS	6"	
		317.9									
		315.4									

Boring No.	Station	Elevation	N	Qu (t/sf)	w (%)	Surface Water El.		Elevation	N	Qu (t/sf)	w (%)
						Groundwater El. at Completion	After Hours				
3 E	417+55.6	330.2				NONE	330.7				
		0				SEE PREVIOUS COLUMN	311.2				
		328.7				HARD BROWN COARSE SAND & GRAVEL	100 BLOWS 6"				
		326.2	5	0.33	23		309.2	100	BLOWS	6"	
		323.7									
		321.2	7	0.75	24						
		318.7									
		316.2									
		313.7									

Boring No.	Station	Elevation	N	Qu (t/sf)	w (%)	Surface Water El.		Elevation	N	Qu (t/sf)	w (%)
						Groundwater El. at Completion	After Hours				
3 E	417+55.6	327.2				NONE	321.4				
		0				SEE PREVIOUS COLUMN	314.2				
		324.2				SOFT VERY MOIST BROWN MOTTLED GREY SANDY CLAY LOAM A-4(6)	3	0.38	15		
		321.7	3	0.33	22		311.2	100	BLOWS	5"	
		319.2									
		316.7									
		314.2									
		311.7									

DESIGNED	<i>[Signature]</i>
CHECKED	<i>George H. Dini</i>
DRAWN	<i>[Signature]</i>
CHECKED	<i>George H. Dini</i>

EXAMINED	<i>[Signature]</i> FEB 6 1969
PASSED	<i>[Signature]</i>
APPROVED	<i>Richard J. Hollerman</i> CHIEF HIGHWAY ENGINEER

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
 Qu - Unconfined Compressive Strength - t/sf
 w - Water Content - percentage of oven dry weight - %
 Type failure:
 U - Bulge Failure
 S - Shear Failure
 P - Estimated Value

FOR INFORMATION ONLY

BORINGS
F.A.I.R.T. 24 SEC. 64-3HE-3
MASSAC COUNTY
STA. 417+31.8G

MODEL: Default
FILE NAME: L:\DOT\15006\DWG_1\DrawStructures\SN 0034\025_0034_Existing Plans-01.dgn



USER NAME	= Misaed Cordova
PLOT SCALE	= N/A
PLOT DATE	= 10/15/2020 - 4:13:42 PM

DESIGNED	- MAC	REVISED	-
CHECKED	- AS	REVISED	-
DRAWN	- GLD/RAH	REVISED	-
CHECKED	- JTH	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0034

SHEET 25 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	263
ILLINOIS FED. AID PROJECT			CONTRACT NO. 78606	