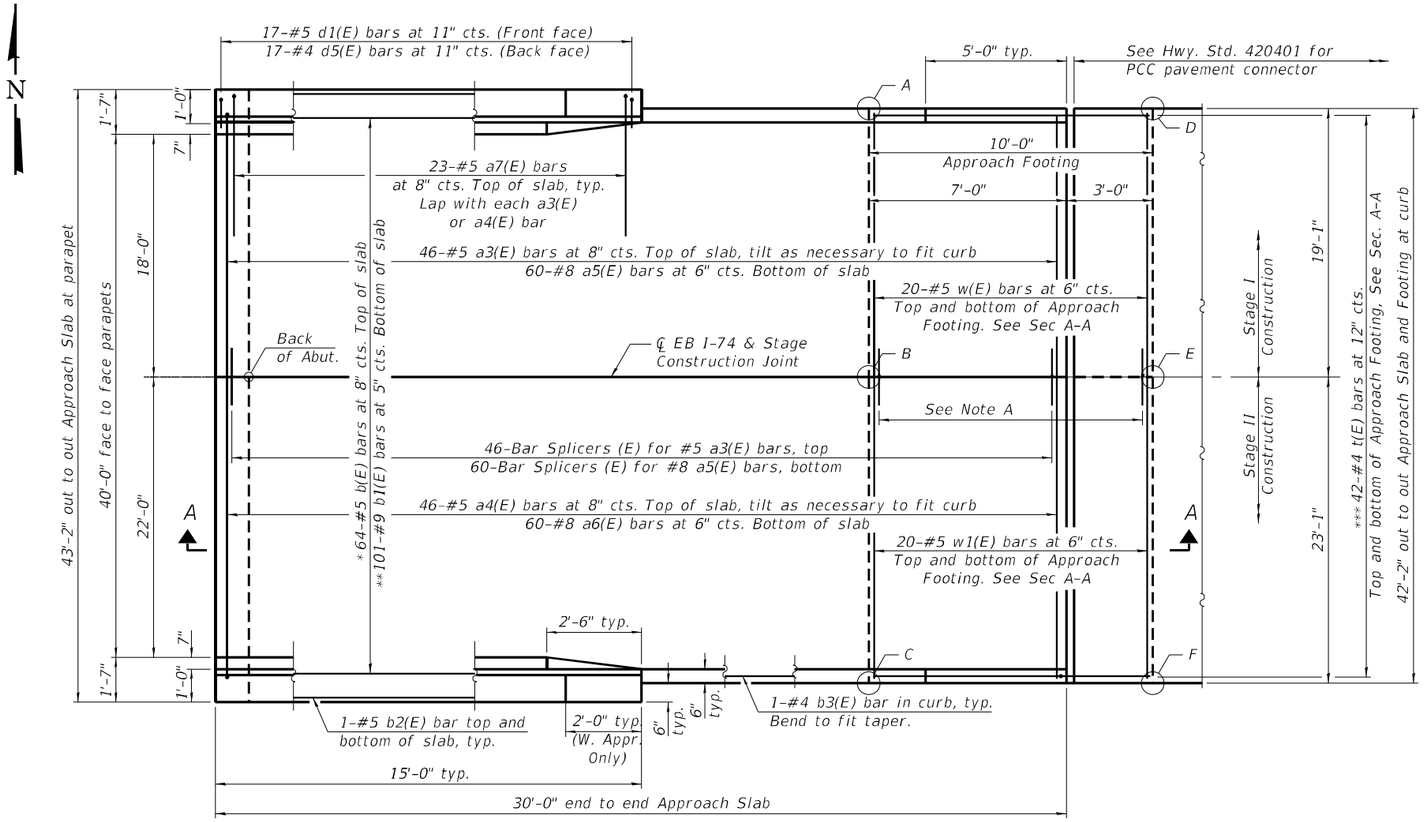


PLAN

(East approach shown, West approach similar)

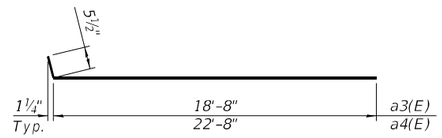
TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A	668.41	667.58	665.16	664.33
B	668.73	667.90	665.48	664.65
C	668.33	667.50	665.08	664.25
D	668.48	667.65	665.03	664.20
E	668.81	667.98	665.35	664.52
F	668.40	667.57	664.95	664.12

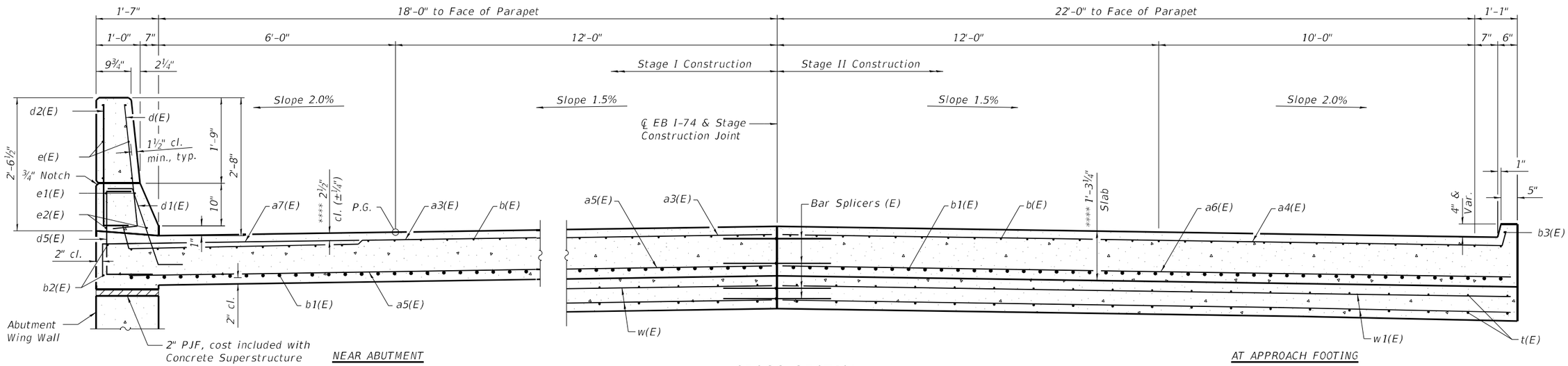
Note A - 20-Bar Splicers (E) for #5 w(E) bars, top & bottom

* (29-Stage I, 35-Stage II)
** (46-Stage I, 55-Stage II)
*** (19-Stage I, 23-Stage II)

Notes:
PJF (per Article 1051.09 of the Standard Specifications) below the approach slab shall be bonded to the top of new abutment wingwalls with suitable adhesive as recommended by supplier.
See Sheet 20 of 37 for Section A-A and Bill of Material.
See Sheet 18 of 37 for additional bar details.
See Sheet 37 of 37 for Bar Splicer details.



BARS a3(E) & a4(E)



NEAR ABUTMENT

**** Prior to ¼" Diamond Grinding

AT APPROACH FOOTING

CROSS SECTION

(Looking East)

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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - LVM	REVISED -		
PLOT SCALE =	DRAWN - JDK	REVISED -		SHEET NO. 17 OF 37 SHEETS
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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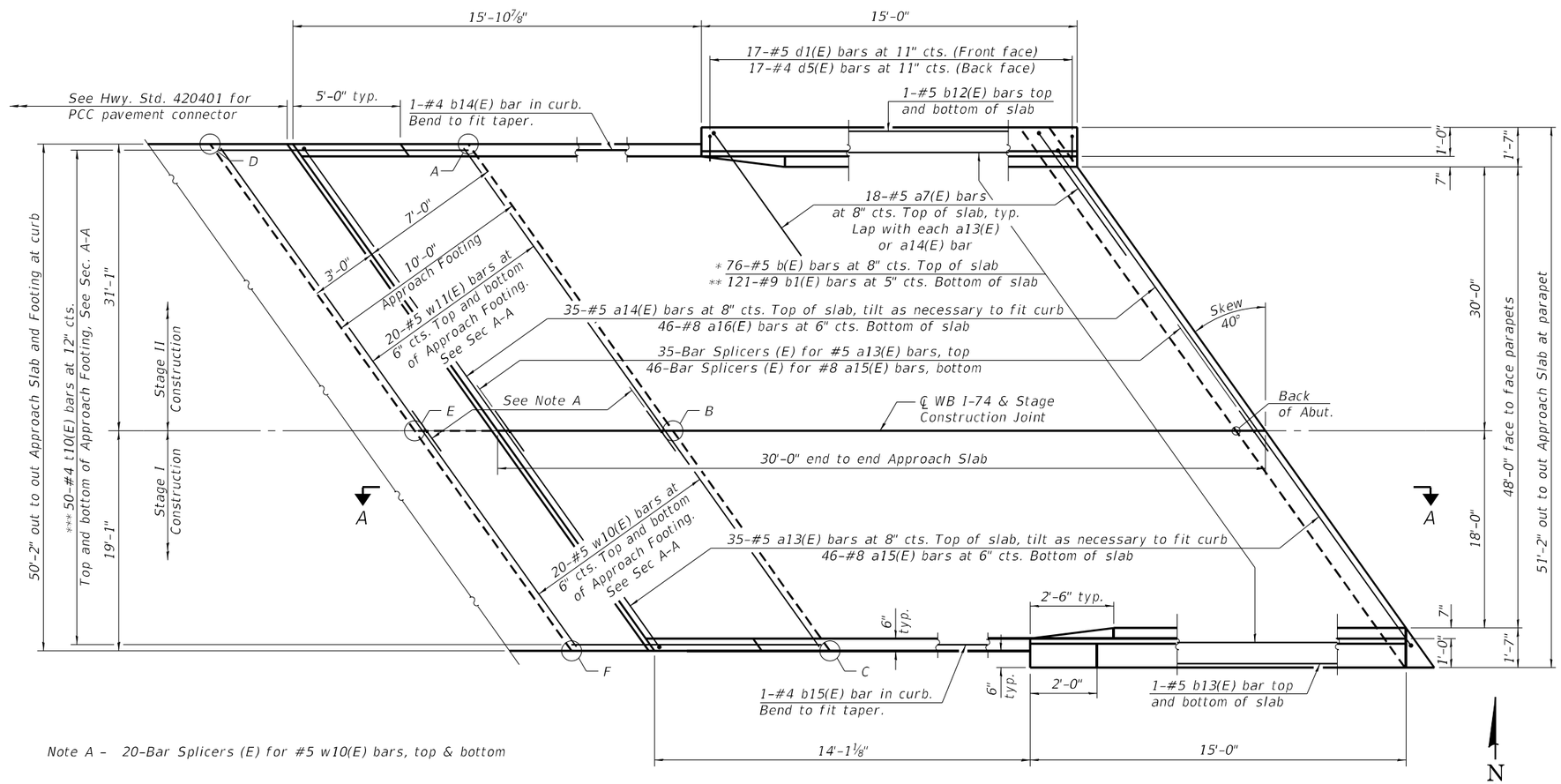
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



Note A – 20-Bar Splicers (E) for #5 w10(E) bars, top & bottom

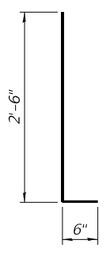
* (29-Stage I, 47-Stage II)
** (46-Stage I, 75-Stage II)
*** (19-Stage I, 31-Stage II)

PLAN – WEST APPROACH

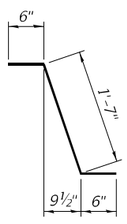
TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	668.57	667.74
B	668.96	668.13
C	668.53	667.70
D	668.65	667.82
E	669.05	668.22
F	668.62	667.79

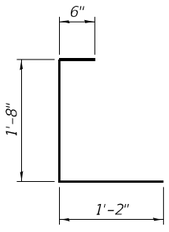
Notes:
See Sheet 20 of 37 for Section A-A and Bill of Material.
See Sheet 19 of 37 for Cross Section.
See Sheet 37 of 37 for Bar Splicer details.



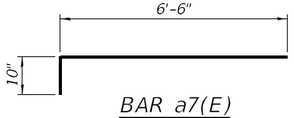
BARS d(E) & d2(E)



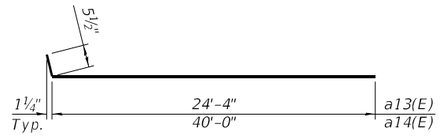
BAR d1(E)



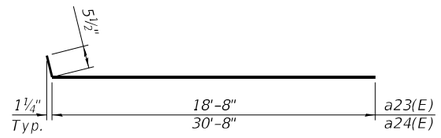
BAR d5(E)



BAR a7(E)



BARS a13(E) & a14(E)



BARS a23(E) & a24(E)

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	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0009
SHEET NO. 18 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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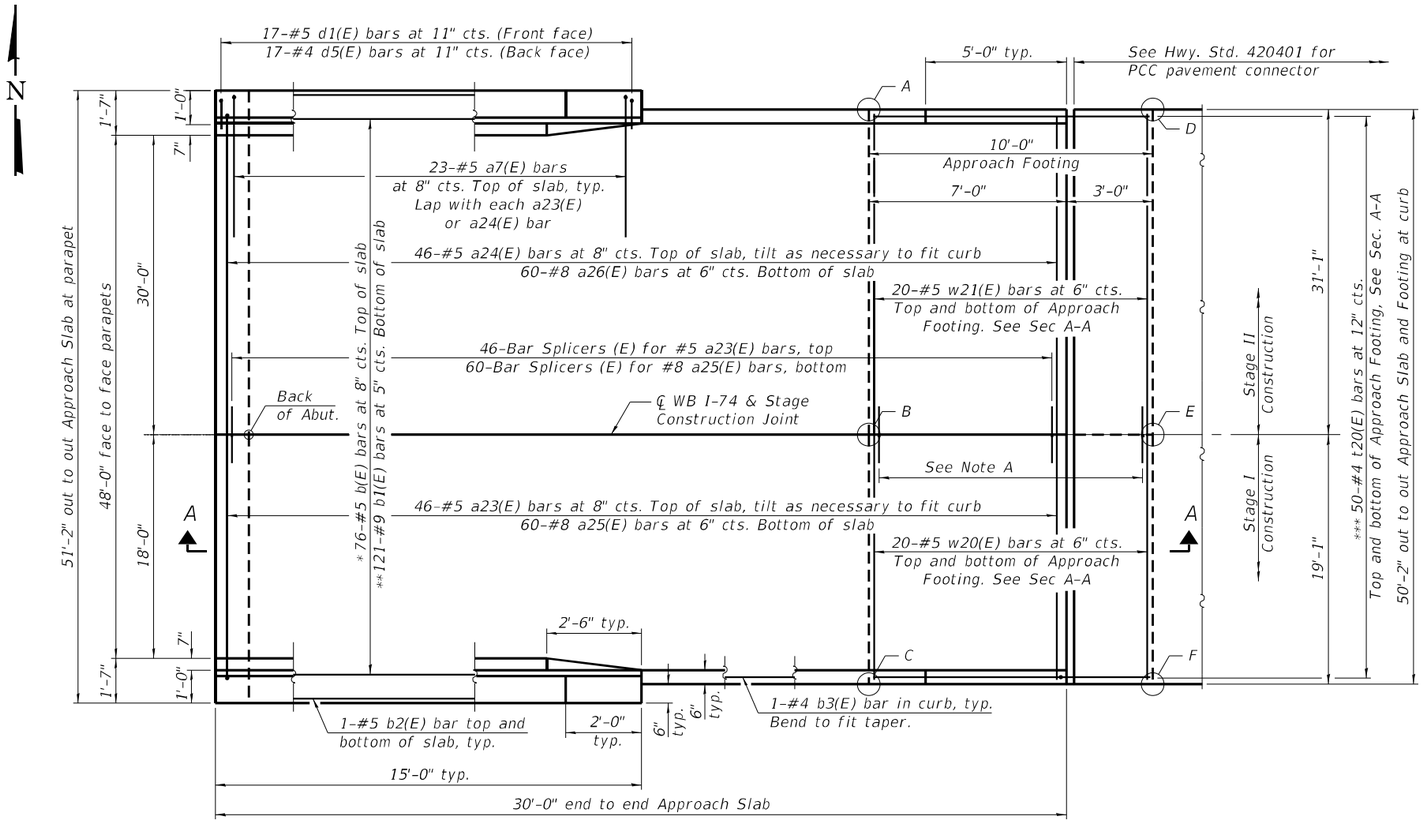
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN - EAST APPROACH

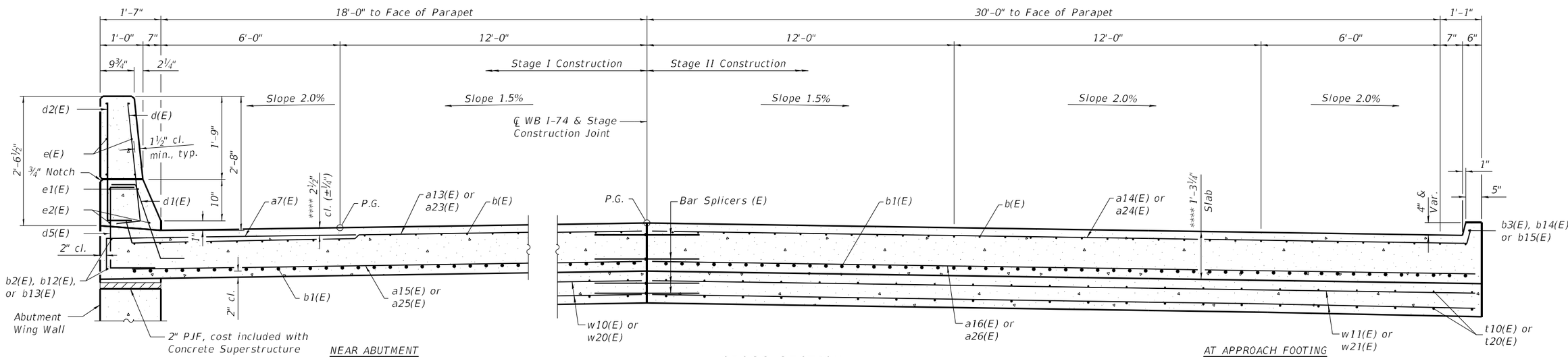
TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	664.87	664.04
B	665.43	664.60
C	665.11	664.28
D	664.74	663.91
E	665.30	664.47
F	664.98	664.15

Note A - 20-Bar Splicers (E) for #5 w20(E) bars, top & bottom

* (29-Stage I, 47-Stage II)
** (46-Stage I, 75-Stage II)
*** (19-Stage I, 31-Stage II)

Notes:
PJF (per Article 1051.09 of the Standard Specifications) below the approach slab shall be bonded to the top of new abutment wingwalls with suitable adhesive as recommended by supplier.
See Sheet 20 of 37 for Section A-A and Bill of Material.
See Sheet 18 of 37 for additonal bar details.
See Sheet 37 of 37 for Bar Splicer details.



NEAR ABUTMENT

AT APPROACH FOOTING

CROSS SECTION
(Looking West)

**** Prior to ¼" Diamond Grinding

(Sheet 3 of 4)

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	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0009
SHEET NO. 19 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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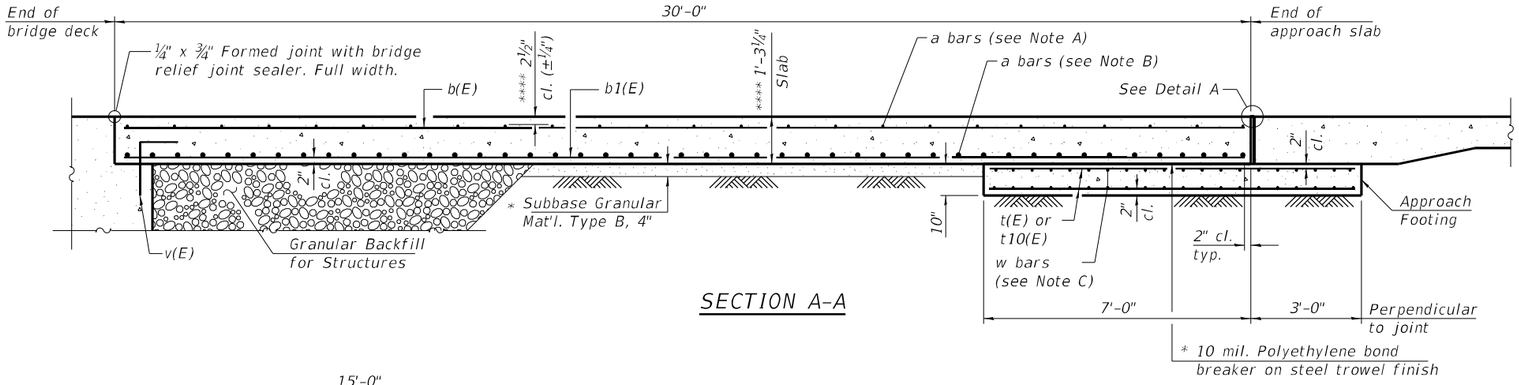
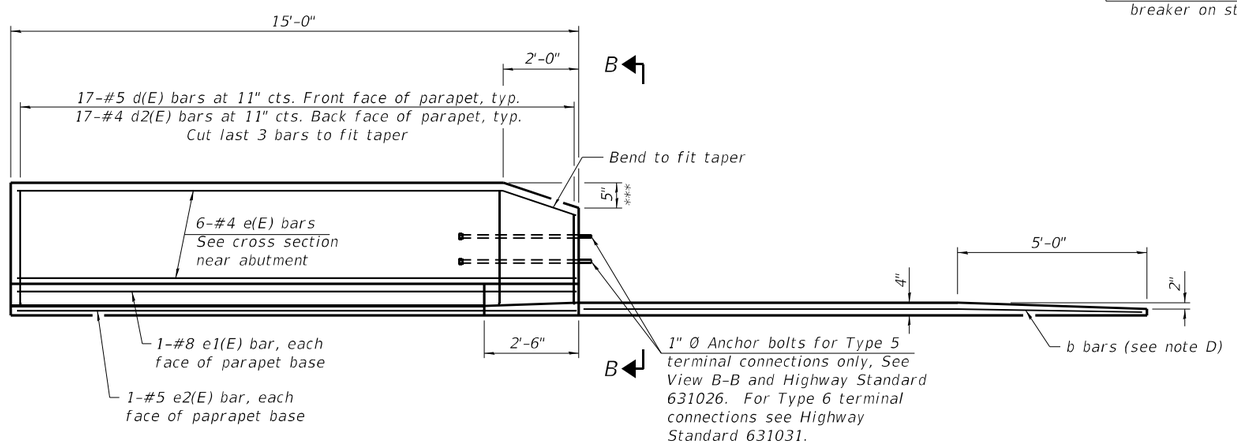
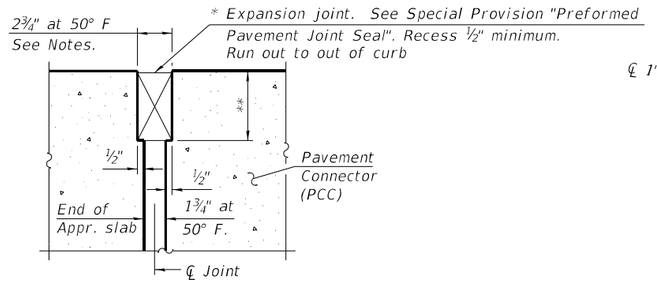
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



SECTION A-A



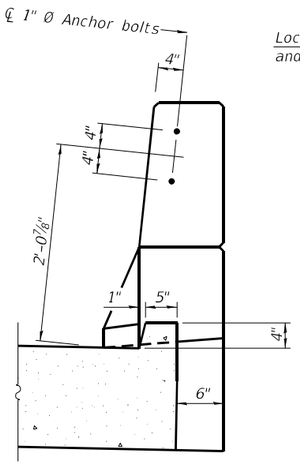
INSIDE ELEVATION OF PARAPET AND CURB



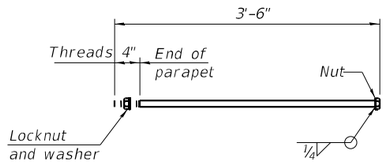
DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations



VIEW B-B



*1" Ø ANCHOR BOLT
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. The length of bridge used to calculate the adjustment shall be equal to the distance from the fixed bearing to the end of the bridge approach slab.

Parapet concrete shall be paid for as Concrete Superstructure.

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 (Qmax) = 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 37.

Adjust the profile grade as needed across the length of the bridge approach slab to match the top of bridge deck overlay at the abutment.

*** Omit taper at departure ends with Type 5 Terminals

**** Prior to ¼" Diamond Grinding

Note A - a3(E), a4(E), a13(E), a14(E), a23(E), or a24(E)
Note B - a5(E), a6(E), a15(E), a16(E), a25(E), or a26(E)
Note C - w(E), w1(E), w10(E), w11(E), w20(E), or w21(E)
Note D - b3(E), b14(E), or b15(E)

STR. NO. 092-0008 TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	92	#5	19'-2"	
a4(E)	92	#5	23'-2"	
a5(E)	120	#8	18'-9"	
a6(E)	120	#8	22'-9"	
a7(E)	92	#5	7'-4"	
b(E)	128	#5	29'-8"	
b1(E)	202	#9	29'-8"	
b2(E)	8	#5	14'-8"	
b3(E)	4	#4	14'-8"	
d(E)	68	#5	3'-0"	
d1(E)	68	#5	2'-7"	
d2(E)	68	#4	3'-0"	
d5(E)	68	#4	3'-4"	
e(E)	24	#4	14'-8"	
e1(E)	8	#8	14'-8"	
e2(E)	8	#5	14'-8"	
t(E)	168	#4	9'-8"	
w(E)	80	#5	18'-9"	
w1(E)	80	#5	22'-9"	
Concrete Superstructure			Cu. Yd.	5.9
Concrete Superstructure (Approach Slab)			Cu. Yd.	121.4
Concrete Structures			Cu. Yd.	26.0
Reinforcement Bars, Epoxy Coated			Pound	59930

STR. NO. 092-0009 TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a13(E)	35	#5	24'-10"	
a14(E)	35	#5	40'-6"	
a15(E)	46	#8	24'-6"	
a16(E)	46	#8	40'-2"	
a23(E)	46	#5	19'-2"	
a24(E)	46	#5	31'-2"	
a25(E)	60	#8	18'-9"	
a26(E)	60	#8	30'-9"	
a7(E)	82	#5	7'-4"	
b(E)	152	#5	29'-8"	
b1(E)	242	#9	29'-8"	
b2(E)	4	#5	14'-8"	
b3(E)	2	#4	14'-8"	
b12(E)	2	#5	13'-5"	
b13(E)	2	#5	15'-10"	
b14(E)	1	#4	15'-3"	
b15(E)	1	#4	13'-11"	
d(E)	68	#5	3'-0"	
d1(E)	68	#5	2'-7"	
d2(E)	68	#4	3'-0"	
d5(E)	68	#4	3'-4"	
e(E)	24	#4	14'-8"	
e1(E)	8	#8	14'-8"	
e2(E)	8	#5	14'-8"	
t10(E)	100	#4	12'-8"	
t20(E)	100	#4	9'-8"	
w10(E)	40	#5	24'-6"	
w11(E)	40	#5	40'-2"	
w20(E)	40	#5	18'-9"	
w21(E)	40	#5	30'-9"	
Concrete Superstructure			Cu. Yd.	5.9
Concrete Superstructure (Approach Slab)			Cu. Yd.	144.1
Concrete Structures			Cu. Yd.	35.7
Reinforcement Bars, Epoxy Coated			Pound	58180

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - LVM	REVISED -			
PLOT SCALE =	DRAWN - JDK	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		SHEET NO. 20 OF 37 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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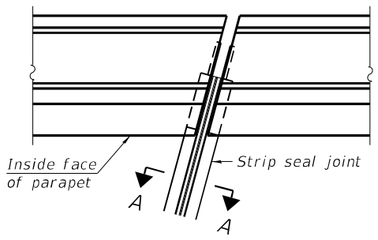
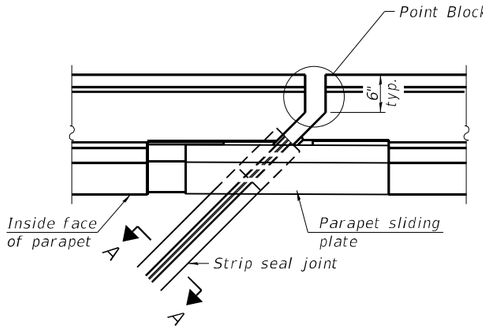
	ILLINOIS	FED. AID PROJECT		

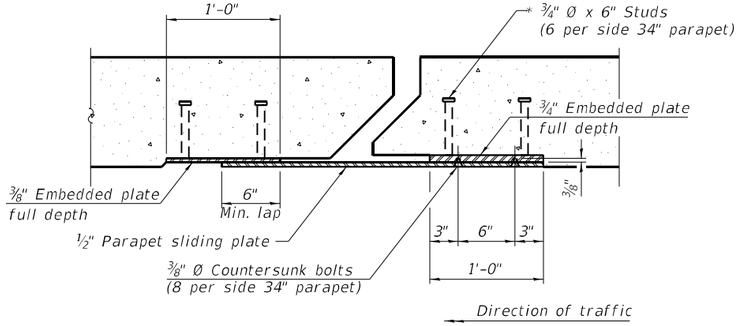


FOR SKEWS ≤ 30°

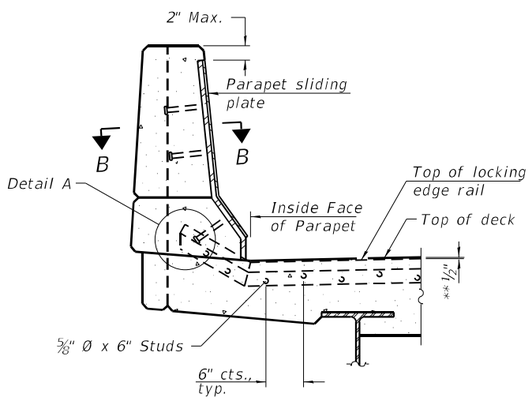


FOR SKEWS > 30°

PLAN AT PARAPET

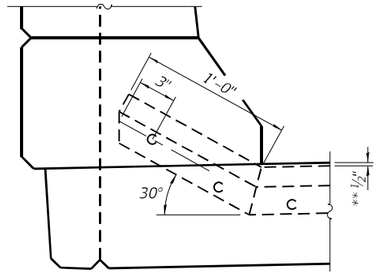


SECTION B-B



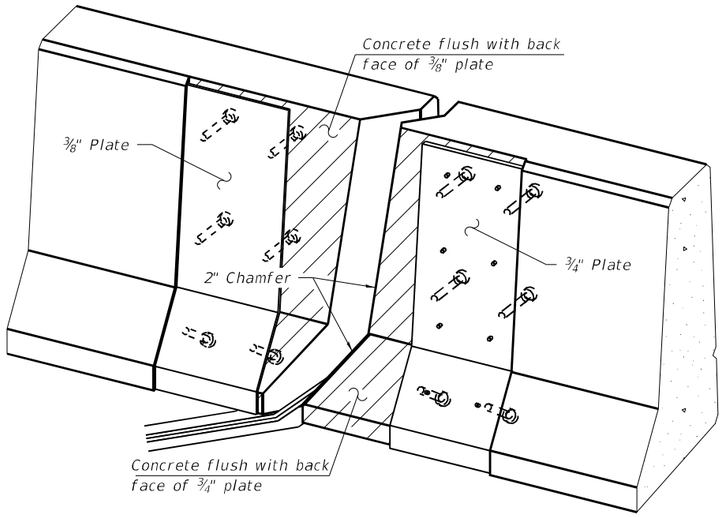
SECTION AT PARAPET

(Skews > 30° shown. Skews ≤ 30° similar except as shown in plan view.)



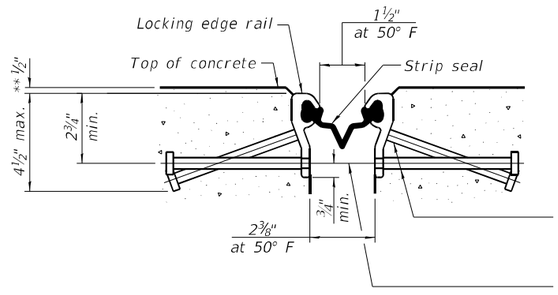
DETAIL A

** Prior to Diamond Grinding

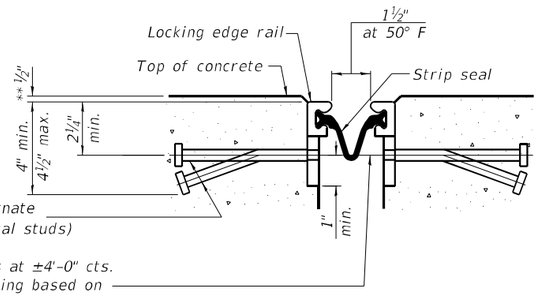


TRIMETRIC VIEW

(Showing back plates only)



SHOWING ROLLED RAIL JOINT



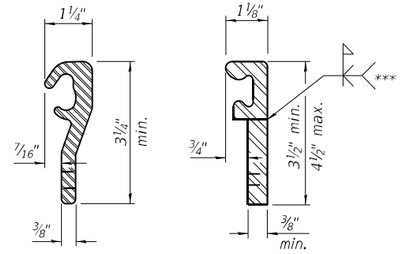
SHOWING WELDED RAIL JOINT

* ⅜" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

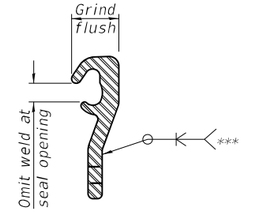


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

STR. NO. 092-0009

Item	Unit	Total
Preformed Joint Strip Seal	Foot	115

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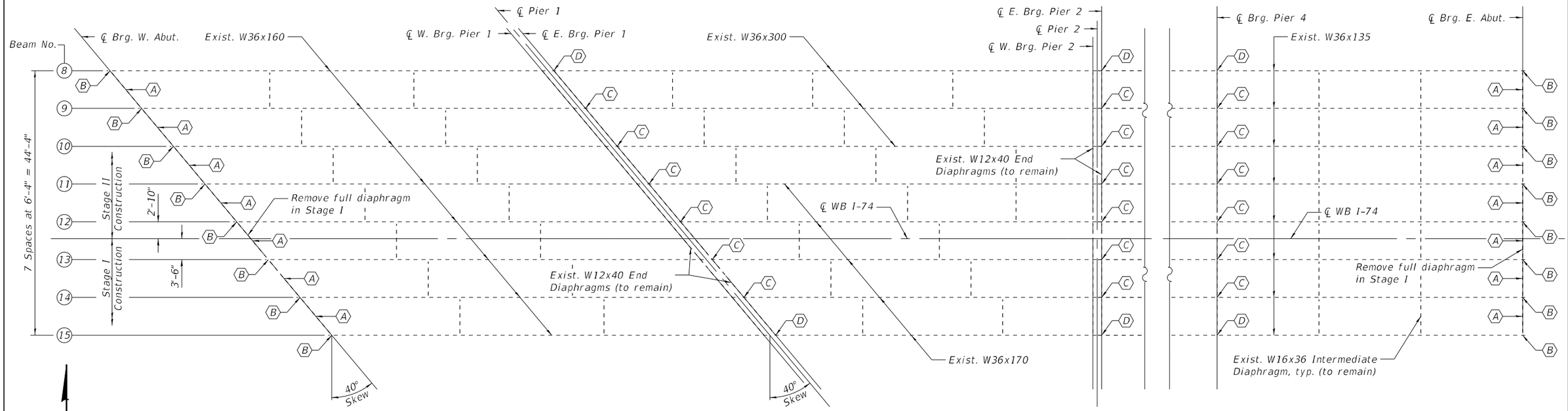
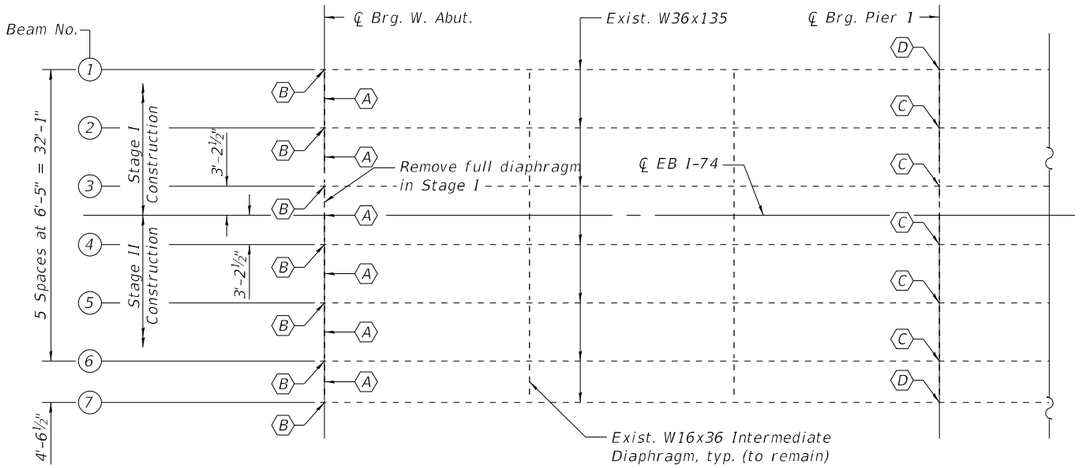
	CHECKED - LVM	REVISED -			
PLOT SCALE =	DRAWN - JDK	REVISED -		SHEET NO. 21 OF 37 SHEETS	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -			

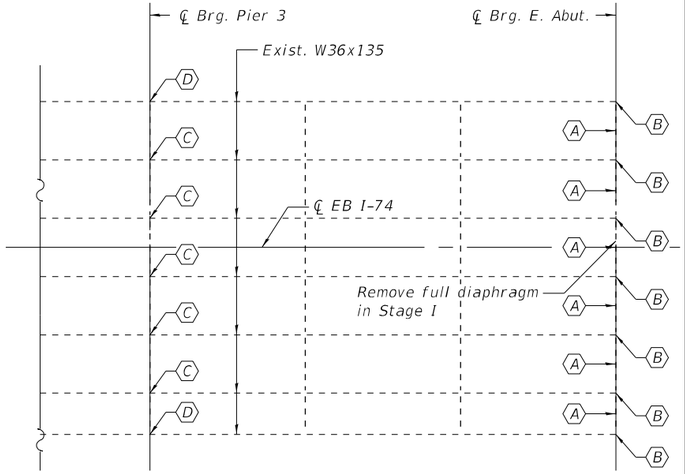
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	305
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PARTIAL FRAMING PLAN – S.N. 092-0009



PARTIAL FRAMING PLAN – S.N. 092-0008



GIRDER REACTION TABLE (EXIST.)					
		S.N. 092-0008 (EB)		S.N. 092-0009 (WB)	
		W. Abut.	E. Abut.	W. Abut.	E. Abut.
R℄	(k)	26.7	22.4	40.3	20.5
R℄	(k)	35.4	26.8	30.8	33.0
R IM	(k)	9.2	7.6	7.8	9.4
R Total	(k)	71.3	56.8	78.9	62.9

* GIRDER REACTION TABLE (PROP.)					
		S.N. 092-0008 (EB)		S.N. 092-0009 (WB)	
		W. Abut.	E. Abut.	W. Abut.	E. Abut.
R℄	(k)	53.5	49.7	70.5	47.3
R℄	(k)	43.3	41.5	44.6	40.9
R IM	(k)	11.2	11.8	11.2	11.6
R Total	(k)	108.0	103.0	126.3	99.8

* New bearing assembly loads (includes approach slab)

Notes:

Removal of existing diaphragms shall be paid for as Structural Steel Removal.

Removal of existing bearing assemblies shall be paid for as Jack and Remove Existing Bearings.

See Sheet 23 of 37 for Bill of Material.

Callouts:

(A) – *Remove existing W12x40 end diaphragm, see Sheet 23 of 37 for details.*

(B) – *Jack and remove existing bearing assembly, replace with new bearing assemblies as shown on Sheet 24 of 37.*

(C) – *Install new side retainer and 1" Ø anchor bolt on each side of existing bearing assembly, see Sheet 24 of 37 for details.*

(D) – *Install new side retainer and 1" Ø anchor bolt against existing bearing assembly, see Sheet 24 of 37 for details.*

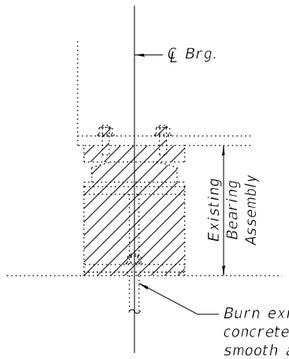
MODEL: Default
FILE NAME: S:\23\2019\23719020.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-09200008-022-Str Steel Plan.dgn

MAURER-STUTZ ENGINEERS SURVEYORS

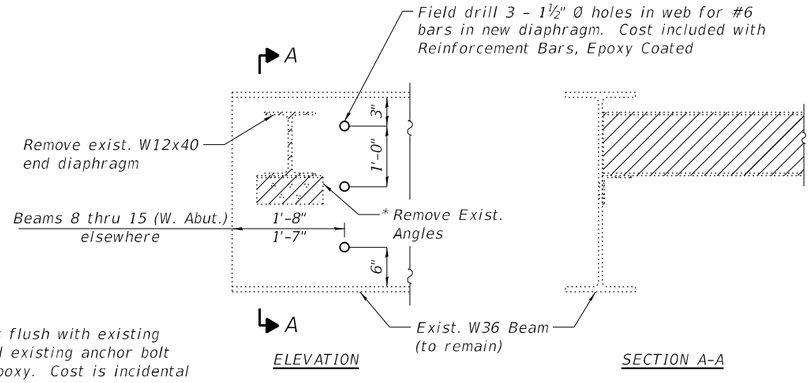
USER NAME = baswanson	DESIGNED - BAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL STEEL REMOVAL STRUCTURE NO. 092-0008 & 092-0009	
	CHECKED - LVM	REVISED -			
PLOT SCALE =	DRAWN - JDK	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		SHEET NO. 22 OF 37 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	306
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

4/22/2022 9:25:56 AM



EXISTING BEARING REMOVAL DETAIL



END DIAPHRAGM REMOVAL

* Angle welded to Beam 7 at each abutment may remain in place. See note.

To be removed

Notes:

Removal of the existing steel extensions and side retainers at the abutments shall be included in the cost of Jack and Remove Existing Bearings.

Minimum jack capacity shall be 45 tons.

Removal of steel end diaphragms shall be paid for as Structural Steel Removal.

Diaphragm connection angles welded to the beam webs may remain. If directed to be removed by the Engineer, these shall be removed utilizing air carbon arc cutting or other method approved by the Engineer. Remaining weld material shall be ground flush and inspected in accordance with general note.

Prior to pouring new concrete diaphragms, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the beam web in the vicinity of the removed diaphragms. 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 with Structural Steel Removal.

FILL PLATE THICKNESS

S.N. 092-0008, W. Abut.		S.N. 092-0008, E. Abut.	
Beam 1	--	Beam 1	3/8"
Beam 2	1/2"	Beam 2	1/4"
Beam 3	1/4"	Beam 3	--
Beam 4	--	Beam 4	--
Beam 5	--	Beam 5	--
Beam 6	--	Beam 6	--
Beam 7	--	Beam 7	3/8"
S.N. 092-0009, W. Abut.		S.N. 092-0009, E. Abut.	
Beam 8	--	Beam 8	--
Beam 9	--	Beam 9	--
Beam 10	--	Beam 10	--
Beam 11	--	Beam 11	1/2"
Beam 12	--	Beam 12	1/4"
Beam 13	--	Beam 13	1/4"
Beam 14	--	Beam 14	--
Beam 15	--	Beam 15	--

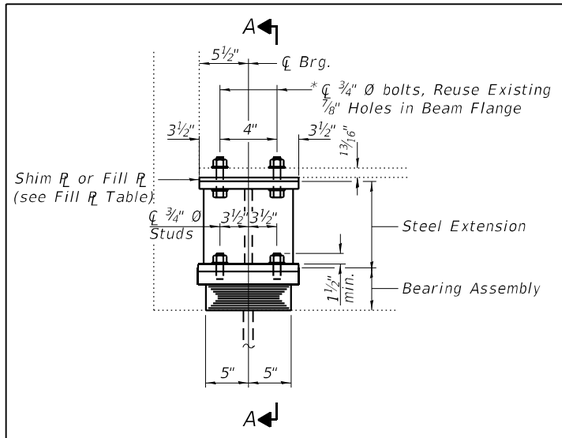
See Sheet 24 of 37 for dimensions of associated bearing assembly plates.

BILL OF MATERIAL
STR. NO. 092-0008

Item	Unit	Quantity
Elastomeric Bearing Assembly, Type I	Each	14
Anchor Bolts, 1"	Each	52
Furnishing and Erecting Structural Steel	Pound	3520
Jack and Remove Existing Bearings	Each	14
Structural Steel Removal	Pound	3360

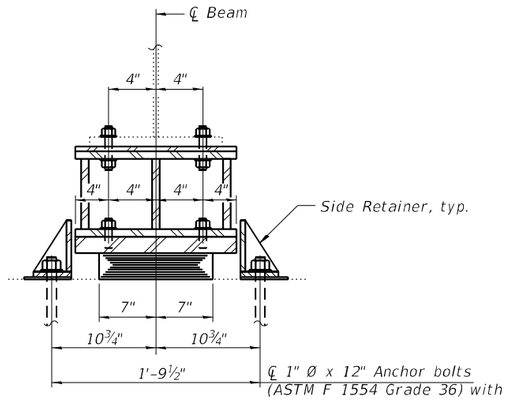
BILL OF MATERIAL
STR. NO. 092-0009

Item	Unit	Quantity
Elastomeric Bearing Assembly, Type I	Each	16
Anchor Bolts, 1"	Each	74
Furnishing and Erecting Structural Steel	Pound	4260
Jack and Remove Existing Bearings	Each	16
Structural Steel Removal	Pound	4640



ELEVATION AT ABUT.

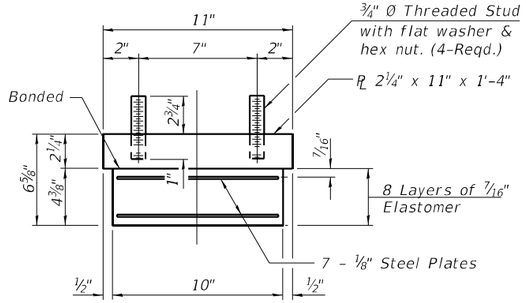
* Install bolts with nut and washer on top of beam flange, encase in concrete diaphragm



SECTION A-A

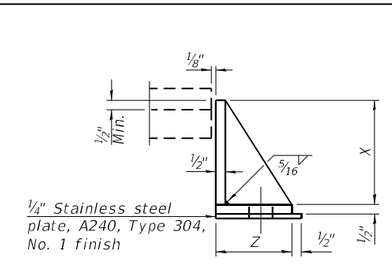
10"x14" TYPE I ELASTOMERIC EXP. BRG.

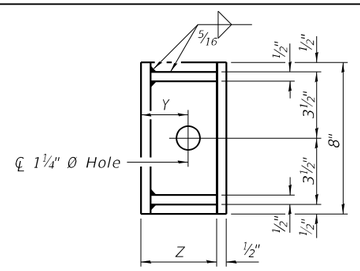
Beams 8 thru 15 at E. Abut., (WB)
Beams 1 thru 7 at E. Abut. & W. Abut., (EB)



** 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.

SIDE RETAINER DIMENSIONS

Location	No. Req'd	Bearing	X	Y	Z
W. Abut. (EB)	** 14	10"x14"	6½"	2⅝"	6"
E. Abut. (EB)	** 14	10"x14"	6½"	2⅝"	6"
E. Abut. (WB)	** 16	10"x14"	6½"	2⅝"	6"
W. Abut. (WB)	** 16	11"x16"	4¾"	2⅜"	6½"
Pier 1 (EB)	12	12"x18"	7"	2⅛"	4"
Pier 3 (EB)	12	10"x14"	7"	2⅛"	4"
Pier 1 (WB) E. Brg.	14	10"x14"	7"	2⅛"	4"
Pier 2 (WB) E. Brg.	14	7"x12"	5½"	2⅛"	4"
Pier 4 (WB)	14	10"x14"	7"	2⅛"	4"

** Cost included with associated Elastomeric Bearing Assembly.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or anEngineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTMF1554.

Steel extensions, shim plates, and connection bolts shall be paid for as Furnishing and Erecting Structural Steel.

Unless noted otherwise, side retainers shall be paid for as Furnishing and Erecting Structural Steel. Side retainers and stainless steel plates provided for new Elastomeric Bearing Assemblies shall be included in the cost of Elastomeric Bearing Assembly, Type I.

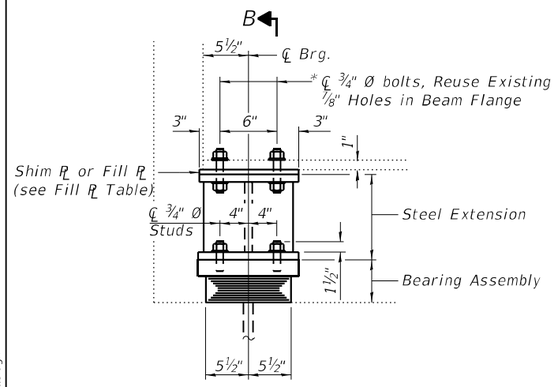
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

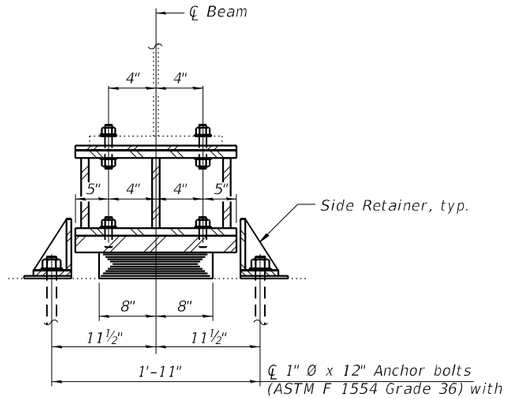
Provide two ⅛" adjusting shims for each bearing in addition to all other plates of the Bearing Assembly and placed as shown on the bearing details.

See sheet 23 of 37 for Fill Plate Thickness table and Bill of Material.

The Top Bearing Plates shall be shop painted with the inorganic zinc rich primer per AASHTO M300 Type I. Cost included with Elastomeric Bearing Assembly, Type I.



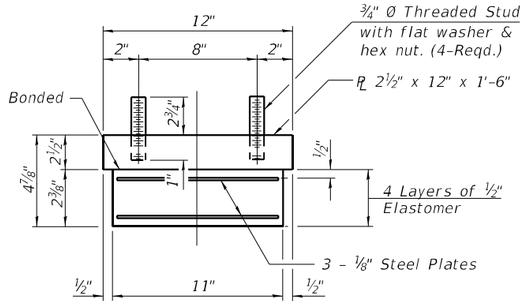
ELEVATION AT ABUT.



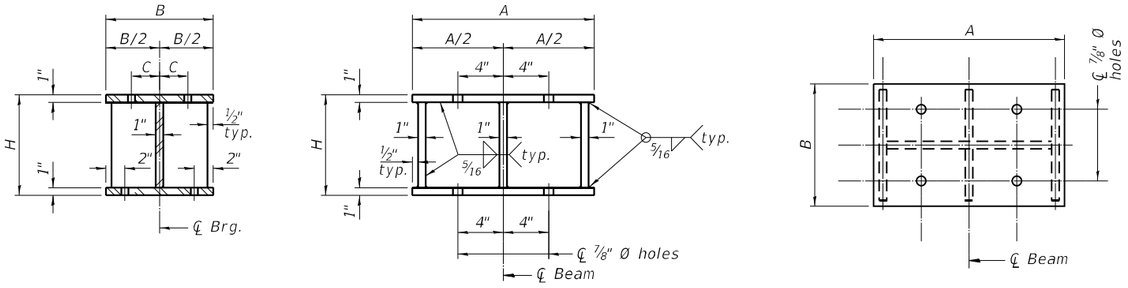
SECTION B-B

11"x16" TYPE I ELASTOMERIC EXP. BRG.

Beams 8 thru 15 at W. Abut., (WB)



** BEARING ASSEMBLY



STEEL EXTENSION

STEEL EXTENSION DIMENSIONS

Location	No. Req'd	A	B	H	C
W. Abut. (EB), Bms. 1-7	7	1'-4"	11"	9⅛"	2"
E. Abut. (EB), Bms. 1-7	7	1'-4"	11"	10⅞"	2"
E. Abut. (WB), Bms. 8-15	8	1'-4"	11"	8⅜"	2"
W. Abut. (WB), Bms. 8-15	8	1'-6"	12"	9⅝"	3"

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - BAS	REVISED -	
	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 5/5/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 092-0008 & 092-0009
SHEET NO. 24 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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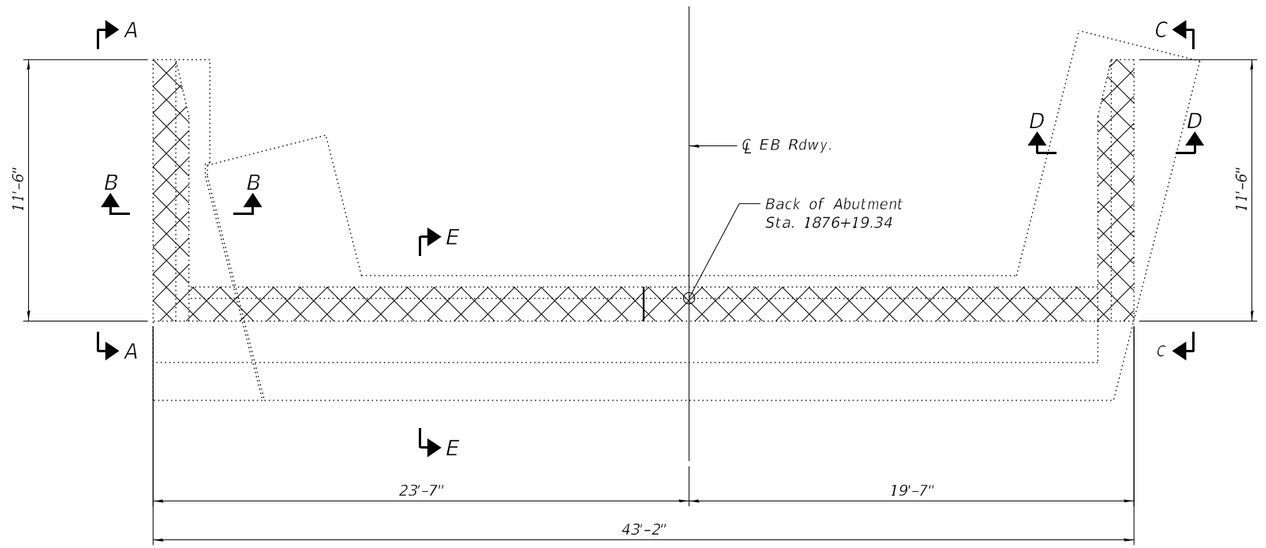
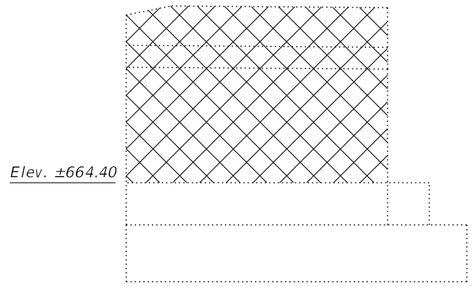
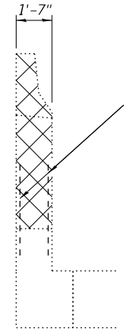
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN



VIEW A-A

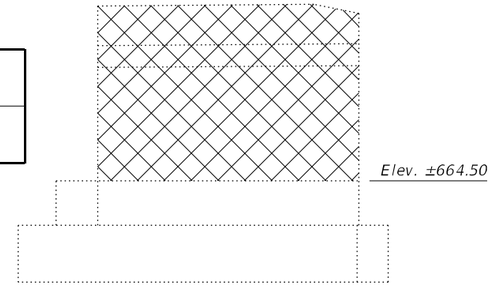


SECTION B-B

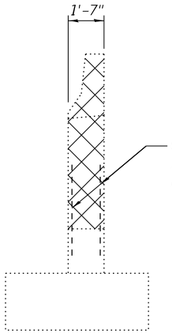
N

LEGEND

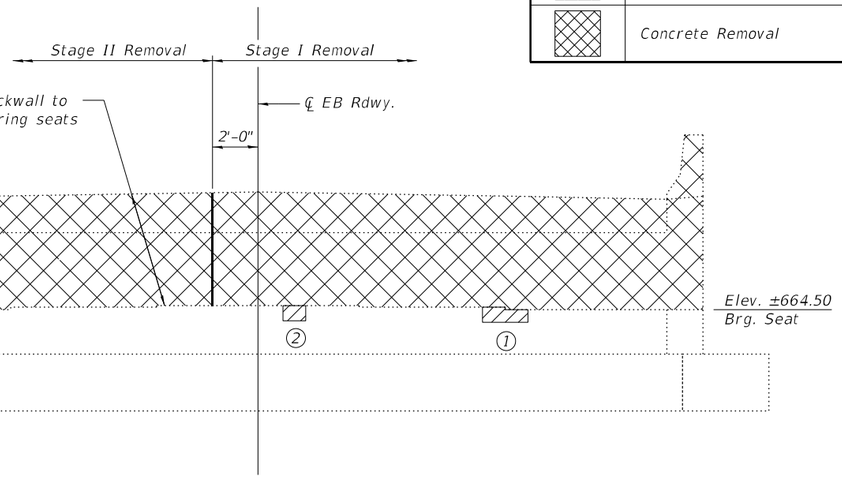
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal



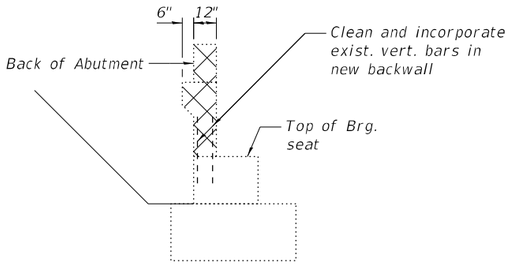
VIEW C-C



SECTION D-D



ELEVATION
(Looking West)



SECTION E-E

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
2	1' x 1'	1			
	Totals	3			

Notes:
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.
See Sheet 2 of 37 for limits of Structure Excavation.
See Sheet 26 of 37 for Bill of Material.

MODEL: Default
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4/22/2022 9:25:59 AM

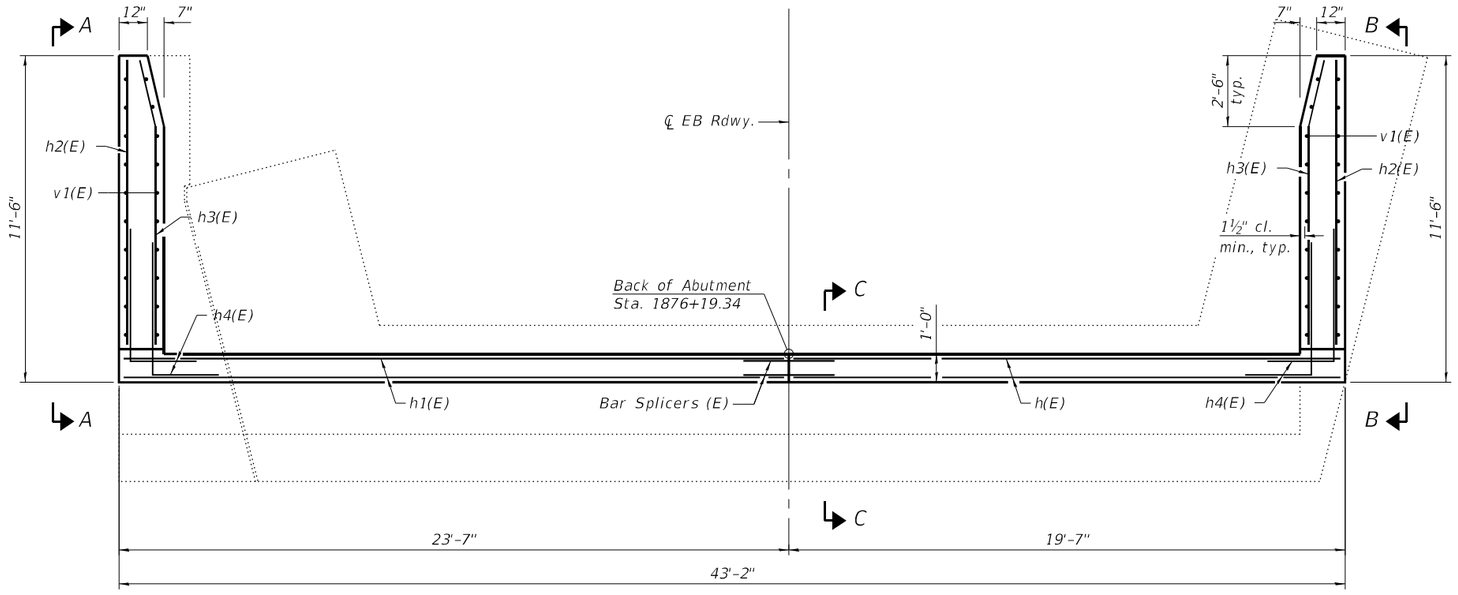
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson		DESIGNED - BAS		REVISED -	
		CHECKED - LVM		REVISED -	
PLOT SCALE =		DRAWN - JDK		REVISED -	
PLOT DATE = 4/22/2022		CHECKED - BAS		REVISED -	

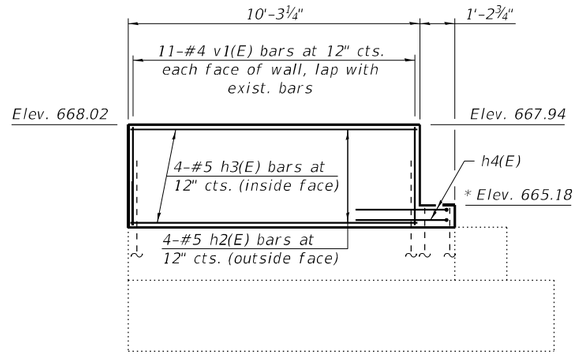
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REMOVAL
STRUCTURE NO. 092-0008
SHEET NO. 25 OF 37 SHEETS

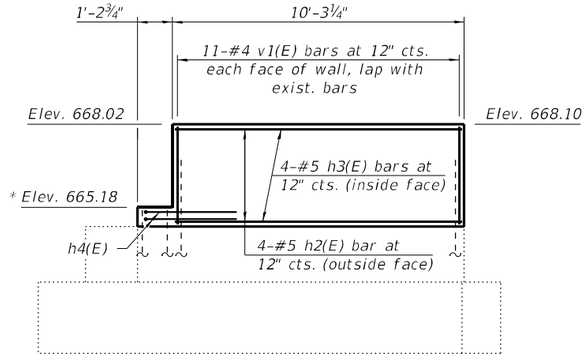
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	309
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN



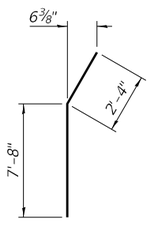
VIEW A-A



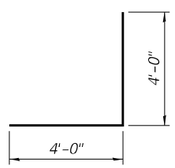
VIEW B-B

* Top of back wall shall be ±6" above the highest beam bearing seat.

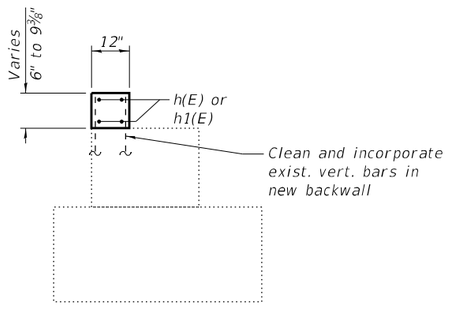
ELEVATION
(Looking West)



Bar h3(E)



Bar h4(E)



SECTION C-C

STR. NO. 092-0008
WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	19'-3"	
h1(E)	4	#5	23'-3"	
h2(E)	8	#5	9'-11"	
h3(E)	8	#5	10'-0"	
h4(E)	8	#5	8'-0"	
v1(E)	44	#4	3'-3"	
Structure Excavation		Cu. Yd.	42	
Concrete Removal		Cu. Yd.	17.3	
Concrete Structures		Cu. Yd.	5.3	
Reinforcement Bars, Epoxy Coated		Pound	510	
Structural Repair of Concrete (Depth ≤ 5 in.)		Sq. Ft.	3	

MODEL: Default
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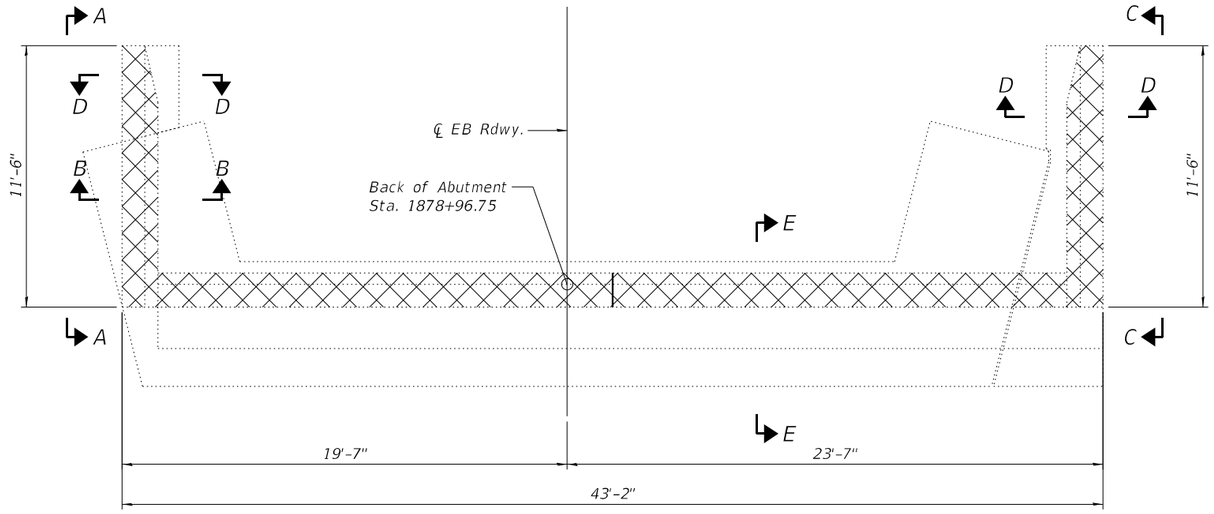
4/22/2022 9:26:00 AM

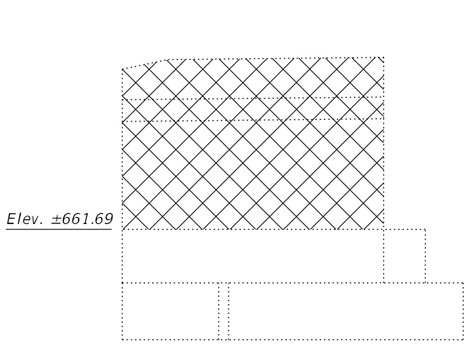
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - BAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT STRUCTURE NO. 092-0008	
	CHECKED - LVM	REVISED -			
PLOT SCALE =	DRAWN - JDK	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		SHEET NO. 26 OF 37 SHEETS	

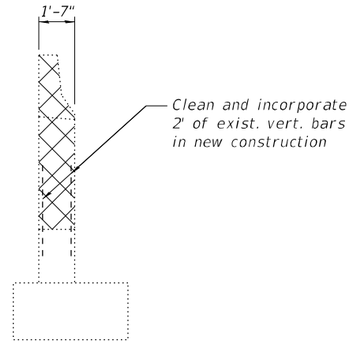
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	310
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



PLAN



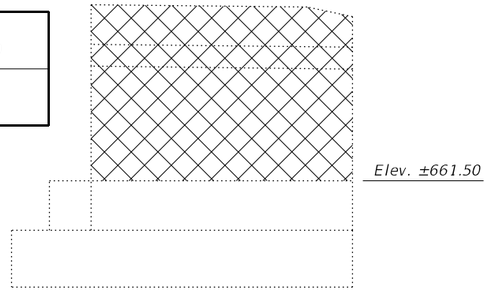
VIEW A-A



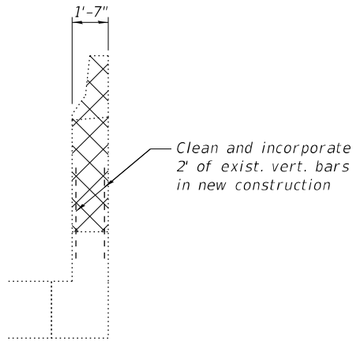
SECTION B-B

LEGEND

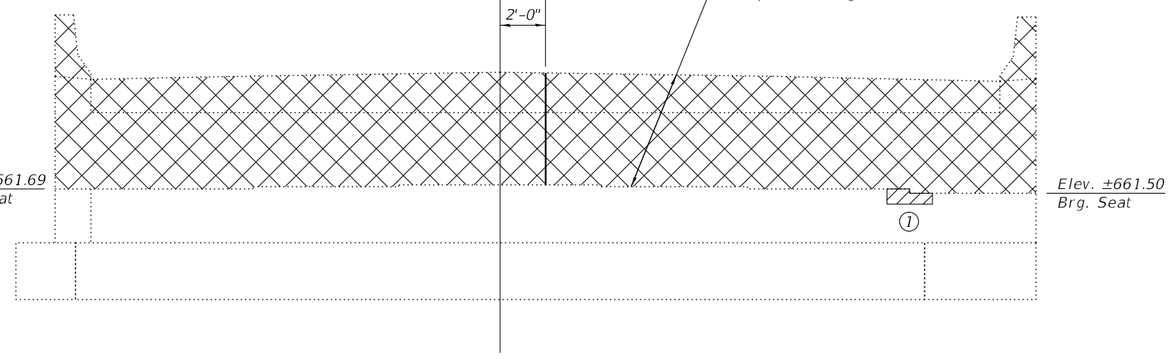
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal



VIEW C-C



SECTION D-D

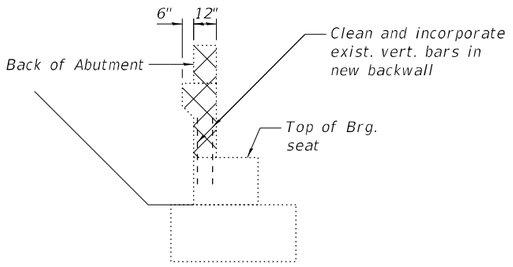


ELEVATION
(Looking East)

Notes:
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.
See Sheet 2 of 37 for limits of Structure Excavation.
See Sheet 28 of 37 for Bill of Material.

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
	Totals	2			



SECTION E-E

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4/22/2022 9:26:01 AM

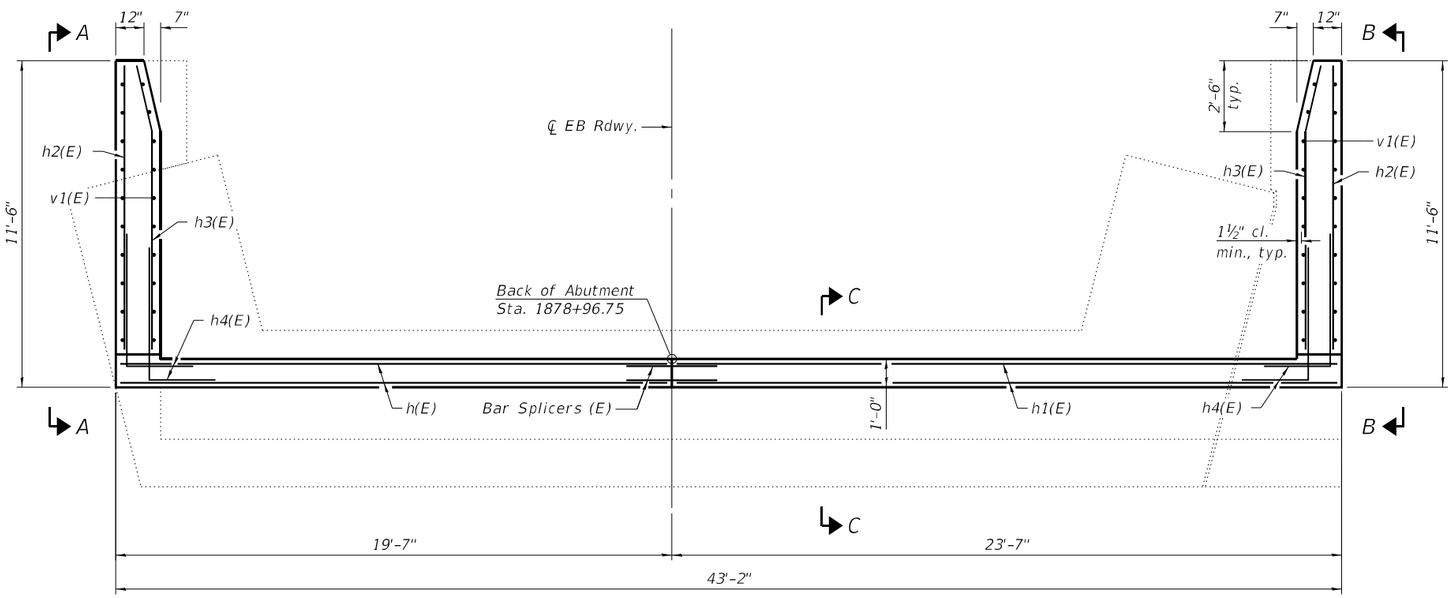
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

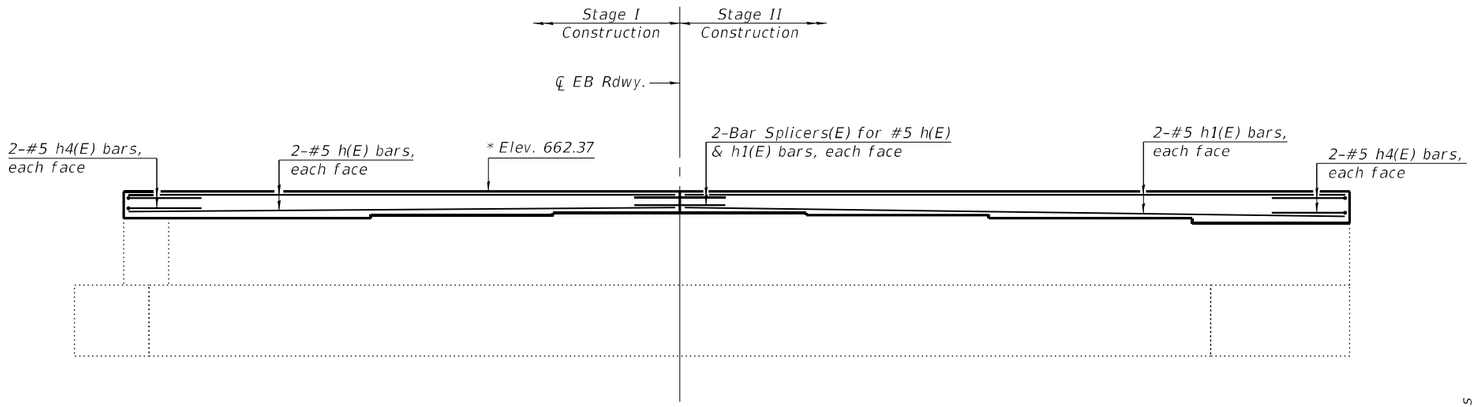
EAST ABUTMENT REMOVAL
STRUCTURE NO. 092-0008
SHEET NO. 27 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	311
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

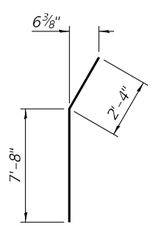


PLAN

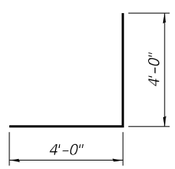
* Top of back wall shall be ±6" above the highest beam bearing seat.



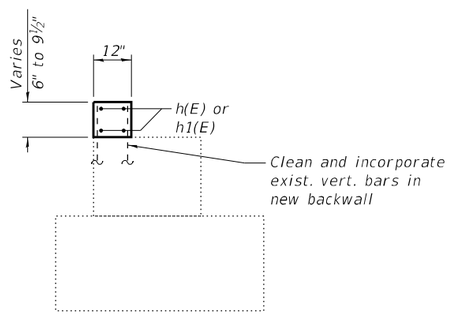
ELEVATION
(Looking East)



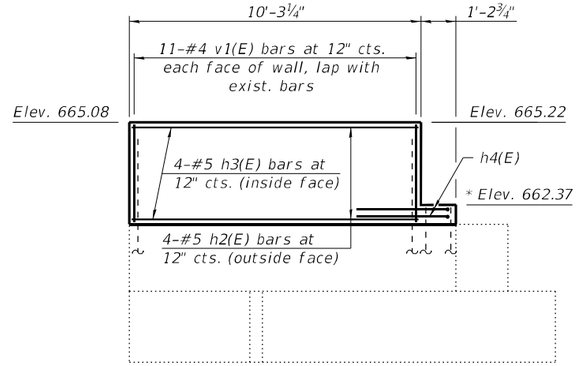
Bar h3(E)



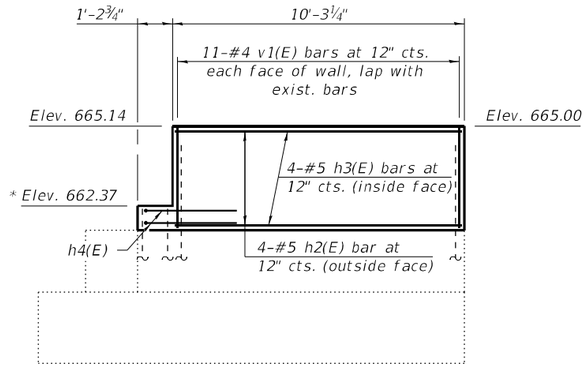
Bar h4(E)



SECTION C-C



VIEW A-A



VIEW B-B

STR. NO. 092-0008
EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	19'-3"	
h1(E)	4	#5	23'-3"	
h2(E)	8	#5	9'-11"	
h3(E)	8	#5	10'-0"	
h4(E)	8	#5	8'-0"	
v1(E)	44	#4	3'-3"	
Structure Excavation			Cu. Yd.	46
Concrete Removal			Cu. Yd.	17.3
Concrete Structures			Cu. Yd.	5.3
Reinforcement Bars, Epoxy Coated			Pound	510
Structural Repair of Concrete (Depth ≤ 5 in.)			Sq. Ft.	2

MODEL: Default
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4/22/2022 9:26:02 AM

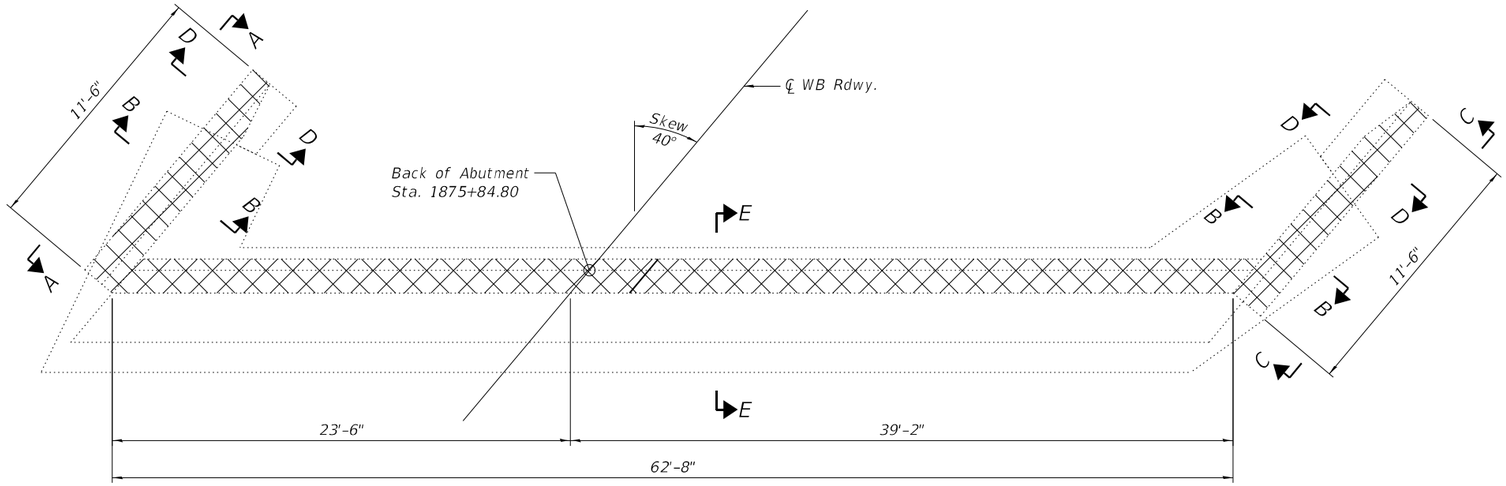
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - BAS	REVISED -	
	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

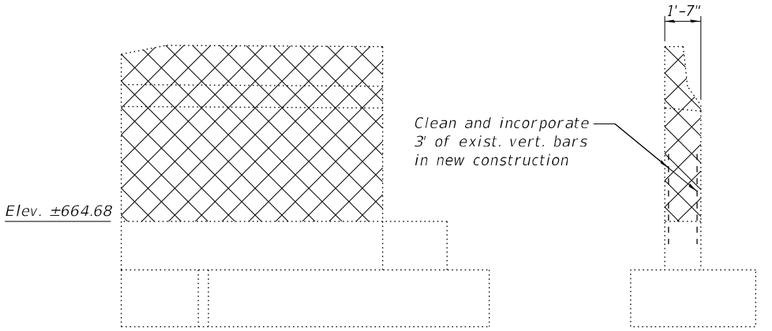
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 092-0008
SHEET NO. 28 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	312
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN

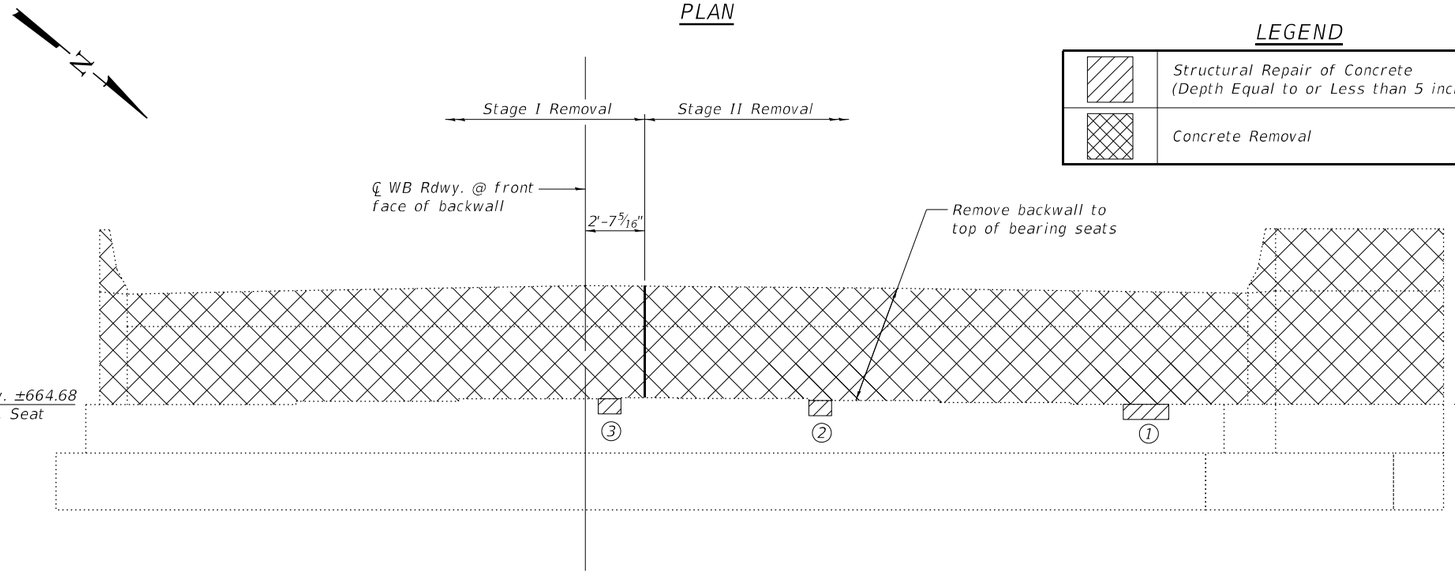


VIEW A-A

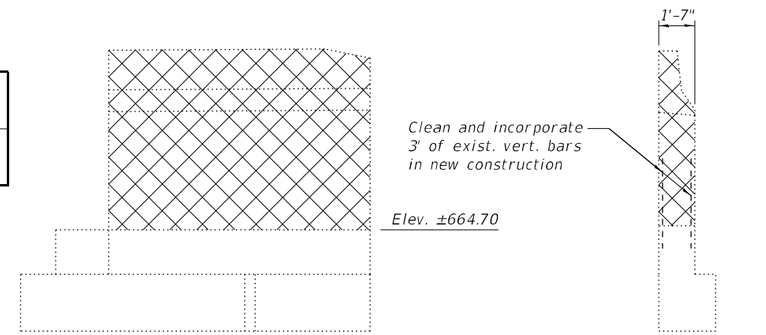
SECTION B-B

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal

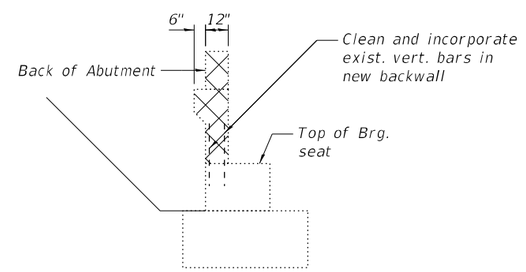


ELEVATION
(Looking West)



VIEW C-C

SECTION D-D



SECTION E-E

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
2	1' x 1'	1			
3	1' x 1'	1			
	Totals	4			

Notes:
Existing reinforcement bars that will be reused in the new construction shall not be cut or damaged. Damaged bars shall be replaced with new reinforcement bars drilled and epoxy grouted into existing concrete at no cost to the Department.
See Sheet 2 of 37 for limits of Structure Excavation.
See Sheet 30 of 37 for Bill of Material.

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REMOVAL
STRUCTURE NO. 092-0009
SHEET NO. 29 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	313
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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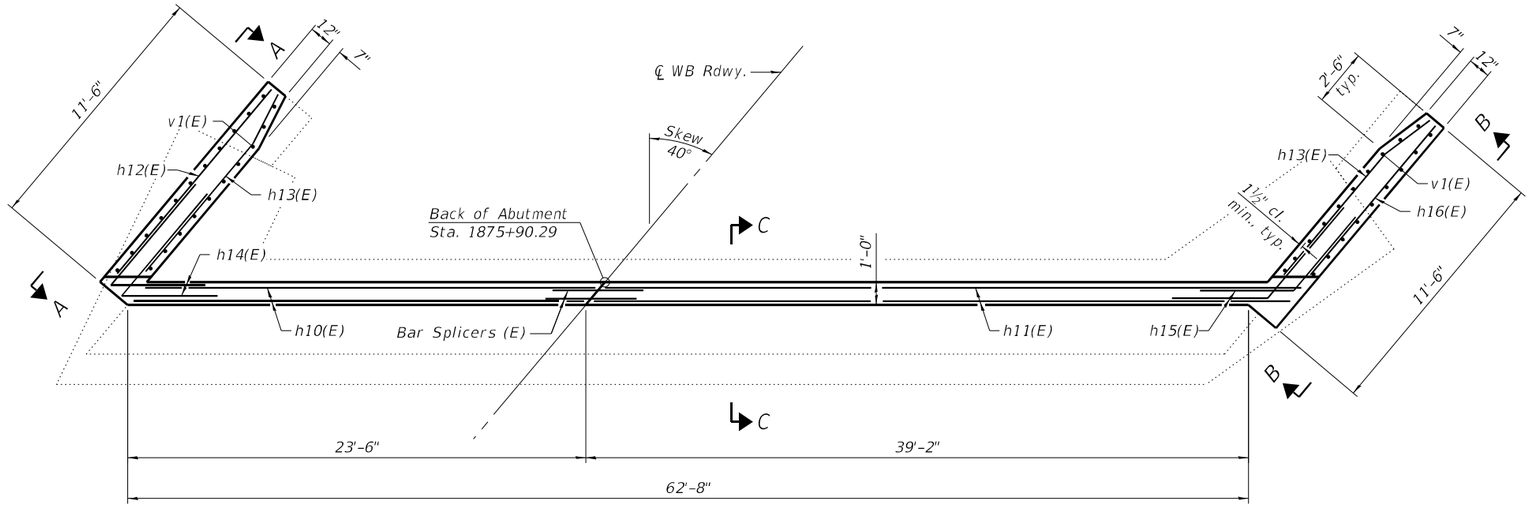
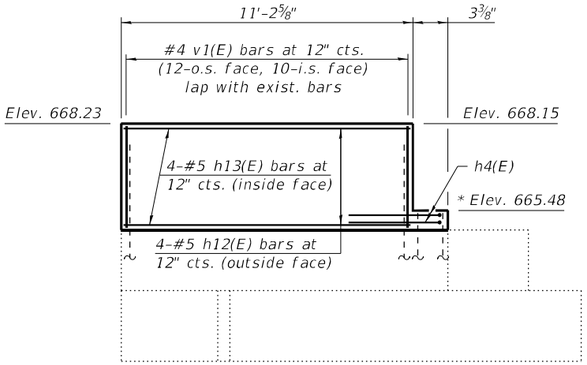
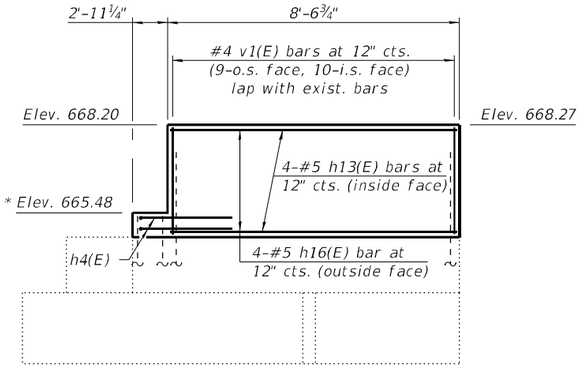


PLAN



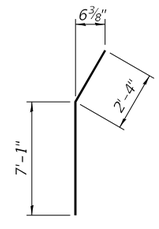
VIEW A-A



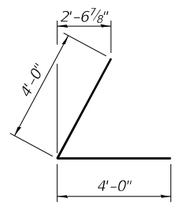
VIEW B-B

* Top of back wall shall be ±6" above the highest beam bearing seat.

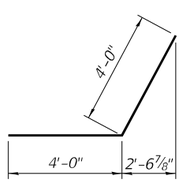
ELEVATION
(Looking West)



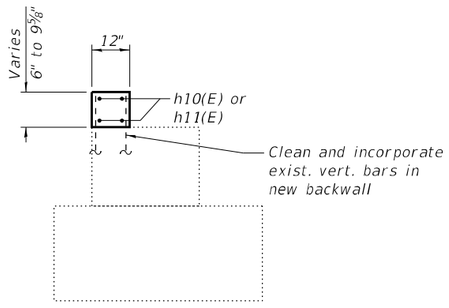
Bar h13(E)



Bar h14(E)



Bar h15(E)



SECTION C-C

STR. NO. 092-0009
WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10(E)	4	#5	23'-1"	
h11(E)	4	#5	40'-10"	
h12(E)	4	#5	10'-8"	
h13(E)	8	#5	9'-5"	
h14(E)	4	#5	8'-0"	
h15(E)	4	#5	8'-0"	
h16(E)	4	#5	8'-3"	
v1(E)	41	#4	3'-3"	
Structure Excavation			Cu. Yd.	71
Concrete Removal			Cu. Yd.	22.0
Concrete Structures			Cu. Yd.	5.8
Reinforcement Bars, Epoxy Coated			Pound	580
Structural Repair of Concrete (Depth ≤ 5 in.)			Sq. Ft.	4

MODEL: Default
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4/22/2022 9:26:04 AM

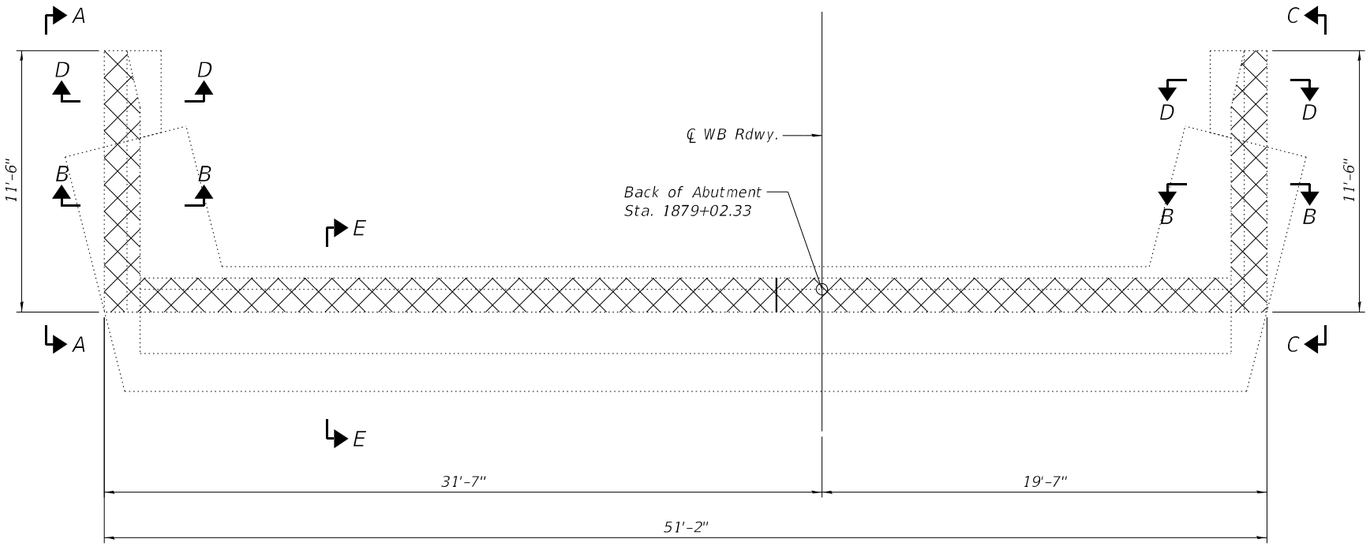
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

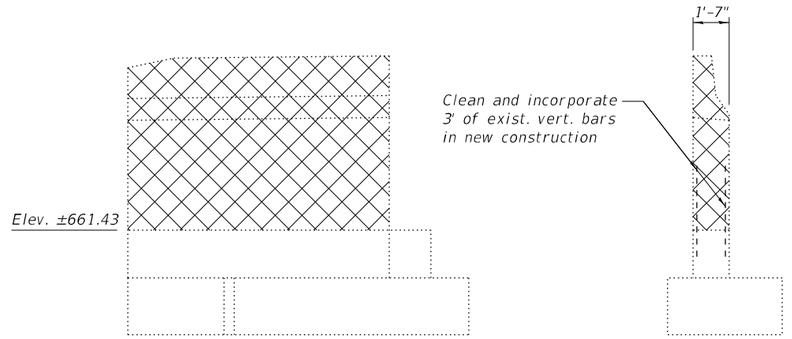
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
STRUCTURE NO. 092-0009
SHEET NO. 30 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	314
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN

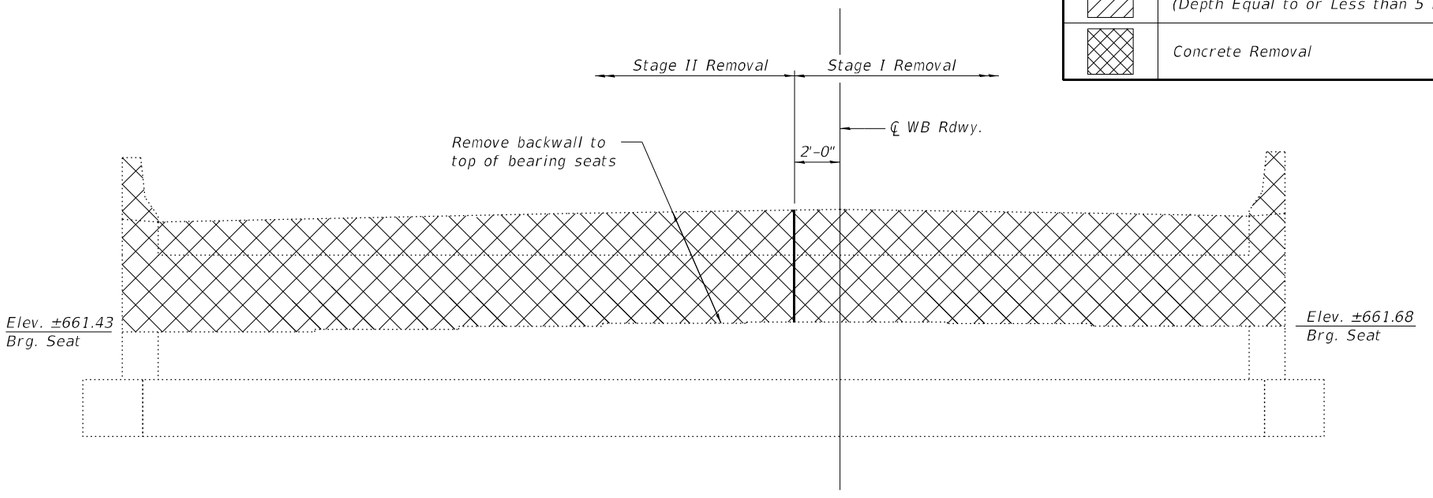


VIEW A-A

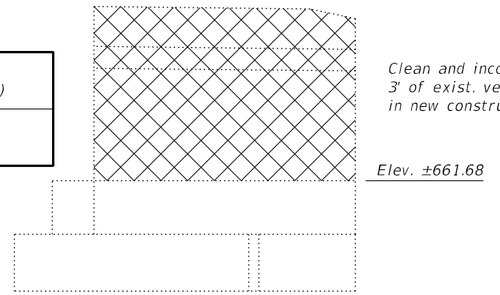
SECTION B-B

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal



ELEVATION
(Looking East)



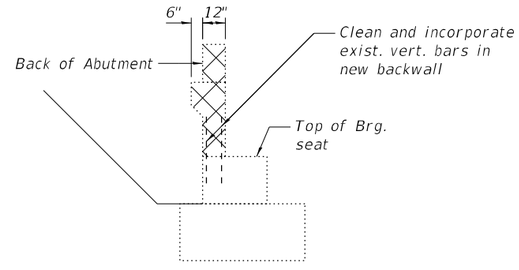
VIEW C-C

SECTION D-D

Notes:
Existing reinforcement bars that will be reused in the new construction shall not be cut or damaged. Damaged bars shall be replaced with new reinforcement bars drilled and epoxy grouted into existing concrete at no cost to the Department.
See Sheet 2 of 37 for limits of Structure Excavation.
See Sheet 32 of 37 for Bill of Material.

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
Totals					



SECTION E-E

MODEL: Default
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4/22/2022 9:26:05 AM

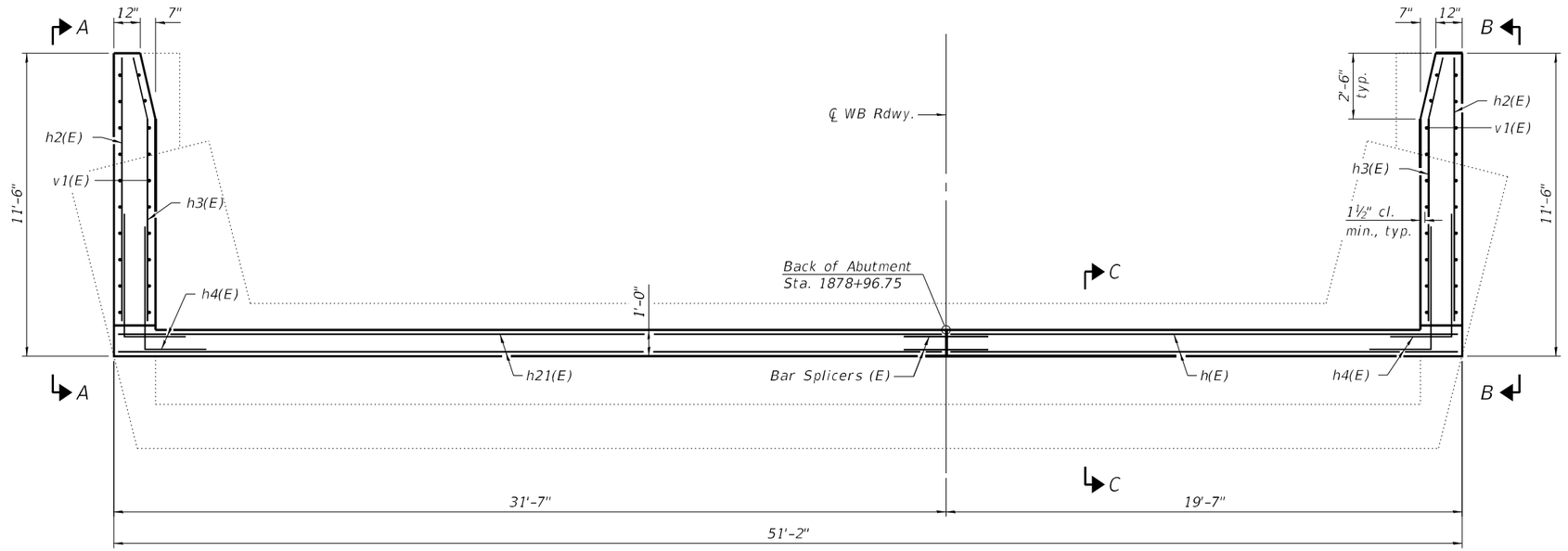
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

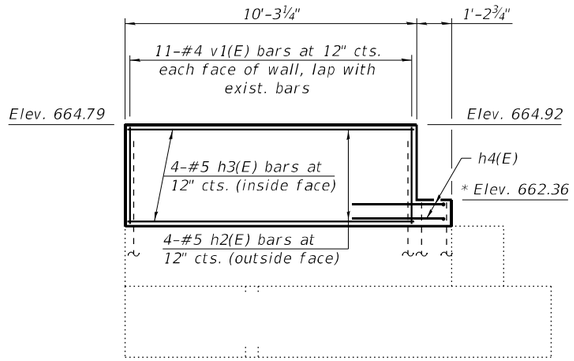
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REMOVAL
STRUCTURE NO. 092-0009
SHEET NO. 31 OF 37 SHEETS

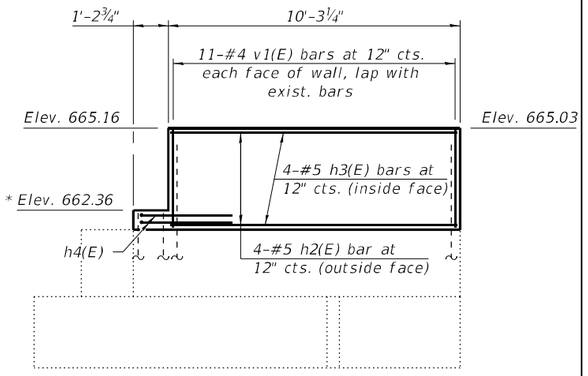
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	315
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	



PLAN

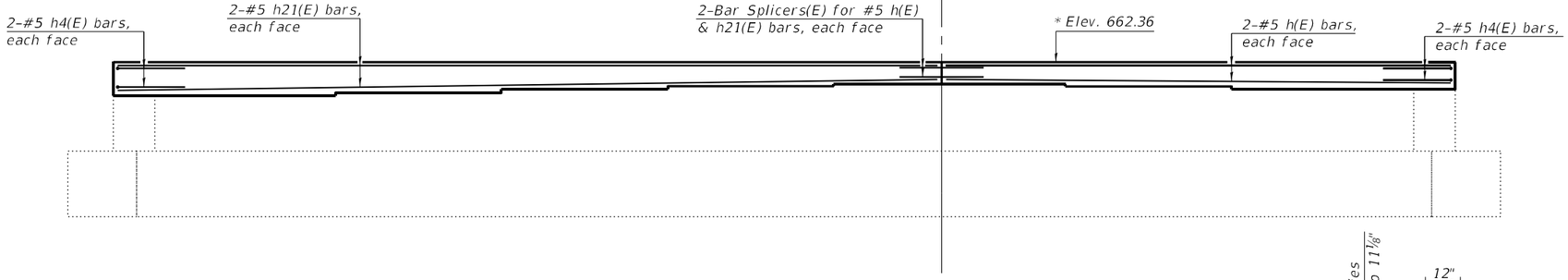


VIEW A-A

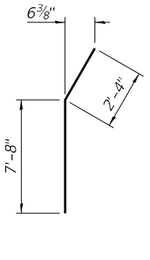


VIEW B-B

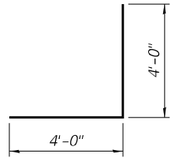
* Top of back wall shall be ±6" above the highest beam bearing seat.



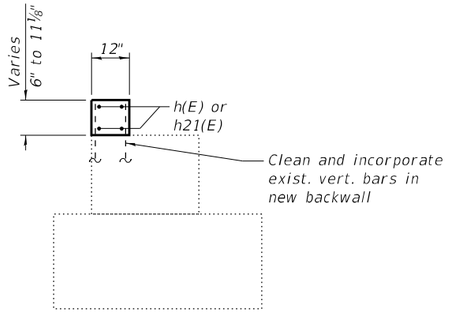
ELEVATION
(Looking East)



Bar h3(E)



Bar h4(E)



SECTION C-C

STR. NO. 092-0009
EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	19'-3"	
h21(E)	4	#5	31'-3"	
h2(E)	8	#5	9'-11"	
h3(E)	8	#5	10'-0"	
h4(E)	8	#5	8'-0"	
v1(E)	44	#4	3'-3"	
Structure Excavation			Cu. Yd.	55
Concrete Removal			Cu. Yd.	18.9
Concrete Structures			Cu. Yd.	5.4
Reinforcement Bars, Epoxy Coated			Pound	540

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 092-0009
SHEET NO. 32 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	316
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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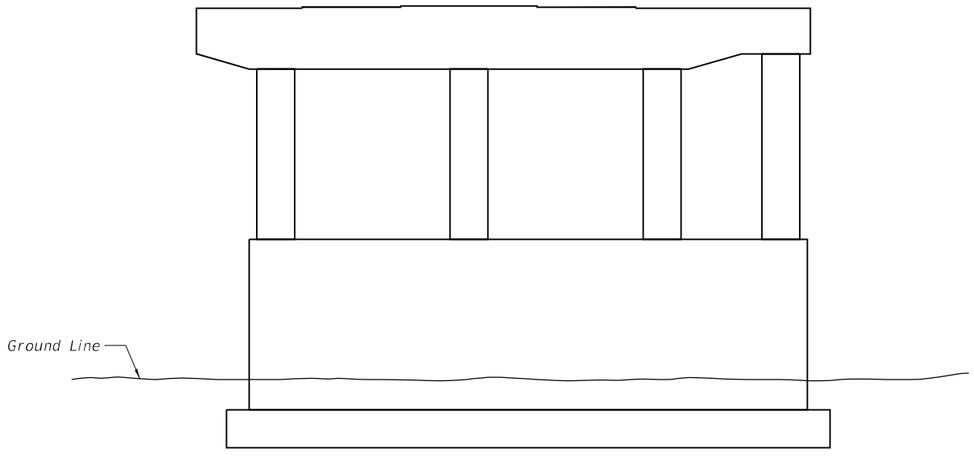
Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
1	2' x 1'	2			
2	2' x 1'	2			
3	2' x 2'	4			
Totals		8			



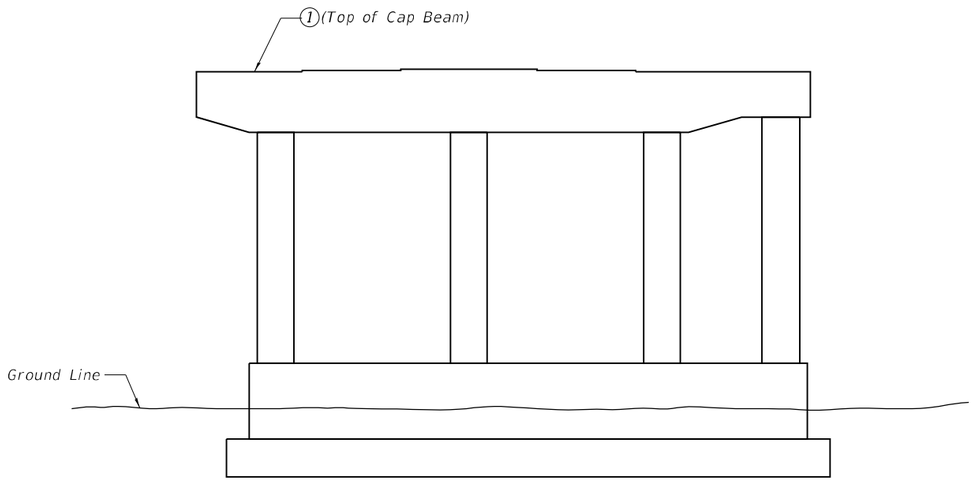
ELEVATION - PIER 1
(Looking East)

BILL OF MATERIAL

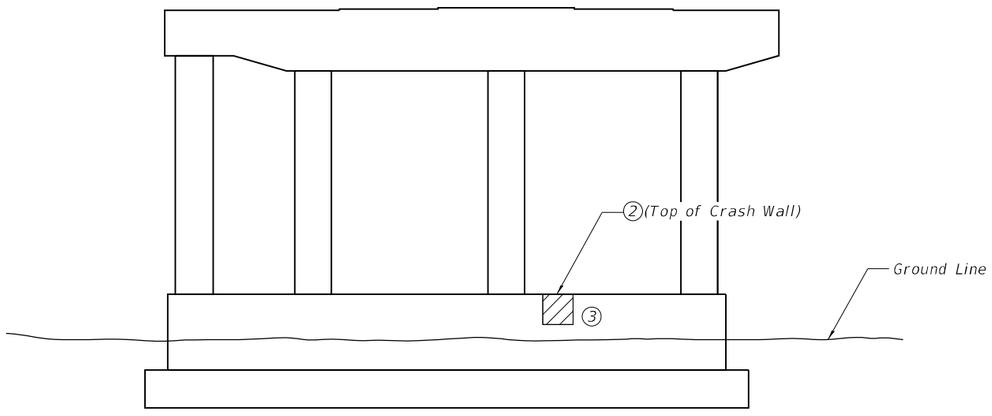
Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	8

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)



ELEVATION - PIER 2
(Looking East)



ELEVATION - PIER 3
(Looking West)

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4/22/2022 9:26:06 AM

MAURER-STUTZ ENGINEERS SURVEYORS

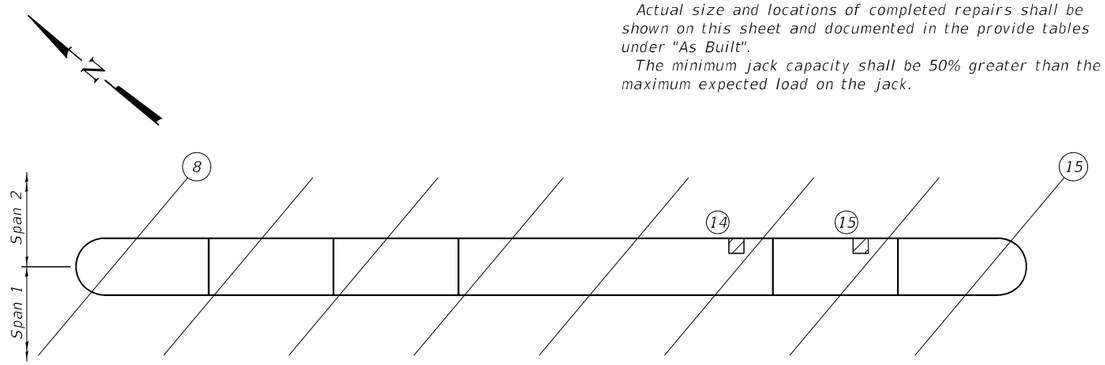
USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

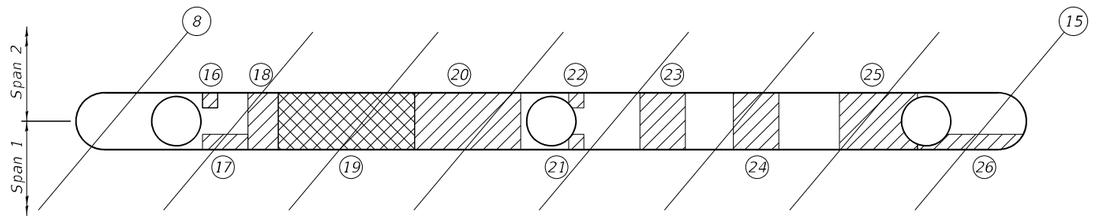
SUBSTRUCTURE REPAIR - PIERS
S.N. 092-0008
SHEET NO. 33 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	317
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	

Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".
The minimum jack capacity shall be 50% greater than the maximum expected load on the jack.



PLAN - TOP OF CAP BEAM



PLAN - BOTTOM OF CAP BEAM

GIRDER REACTION TABLE				
	R_P (k)	R_L (k)	R_{IM} (k)	R_{Total} (k)
Span 1, Beam 9-15	40.3	36.1	9.2	85.6
Span 2, Beam 9	50.4	32.4	7.7	90.5
Span 2, Beam 10	47.2	31.7	7.8	86.7
Span 2, Beam 11	39.4	31.1	7.8	78.3
Span 2, Beam 12	36.4	30.3	7.8	74.5
Span 2, Beam 13	33.5	29.3	7.8	70.6
Span 2, Beam 14	30.6	28.2	7.7	66.5

BILL OF MATERIAL

	Item	Unit	Quantity
*	Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	251
	Structural Repair of Concrete (Depth > 5 in.)	Sq. Ft.	32
	Concrete Sealer	Sq. Ft.	283
	Temporary Shoring and Cribbing	Each	13
	Jack, Remove, and Reinstall Existing Bearings	Each	2

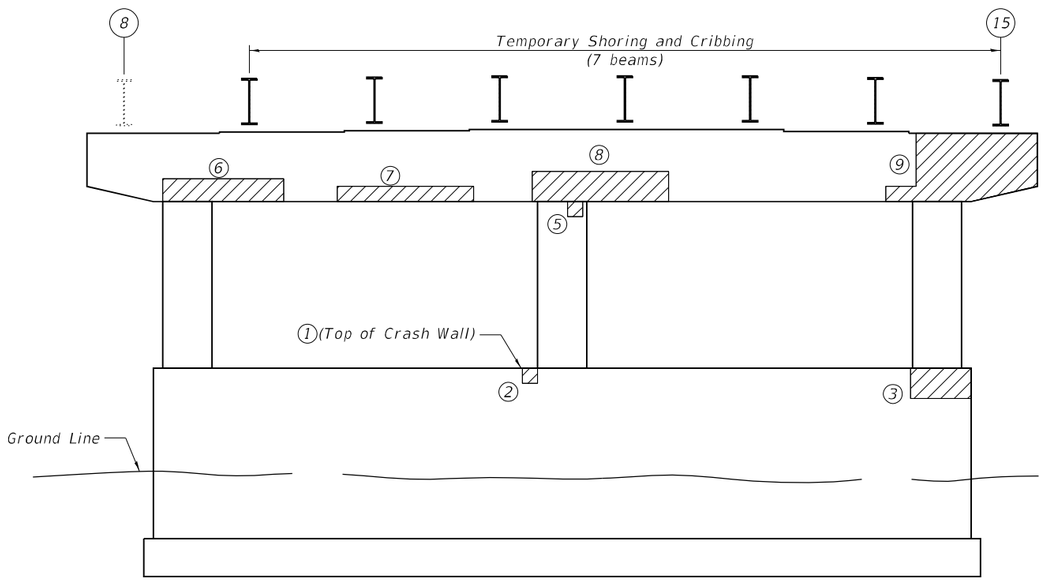
* Includes 10% allowance for increase in deterioration.

LEGEND

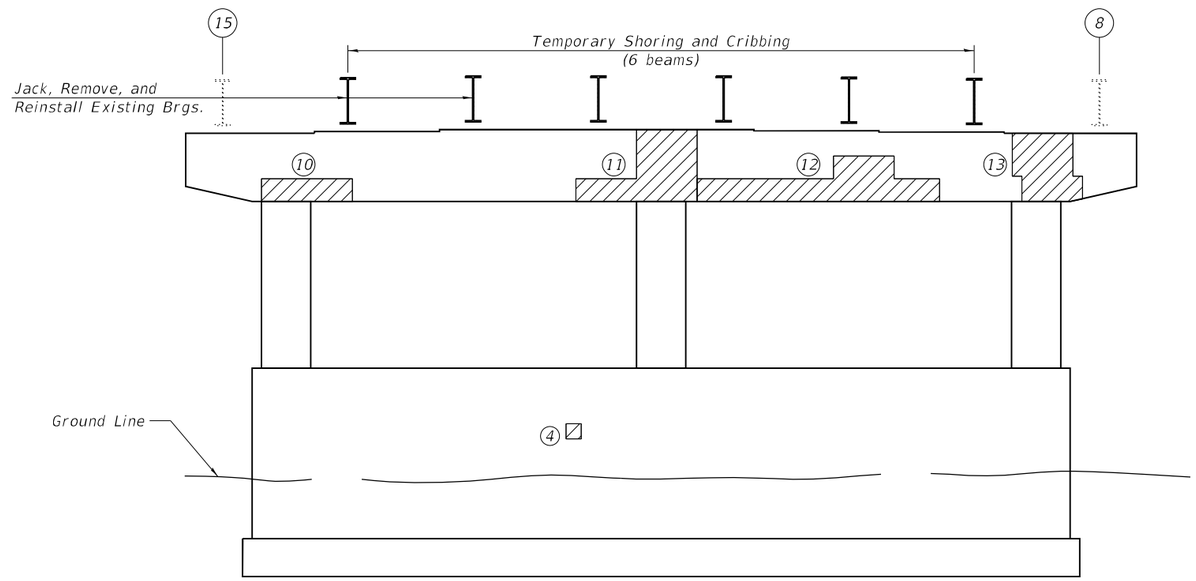
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
1	2' x 1'	2			
2	1' x 1'	1			
3	4' x 2'	8			
4	1' x 1'	1			
5	1' x 1'	1			
6	8' x 1.5'	12			
7	9' x 1'	9			
8	9' x 2'	18			
9	8' x 4.5'	24			
10	6' x 1.5'	9			
11	8' x 4.5'	24			
12	16' x 2'	20			
13	5' x 4.5'	17			
14	1' x 1'	1			
15	1' x 1'	1			
16	1' x 1'	1			
17	3' x 1'	3			
18	4' x 2'	8			
19	8' x 4'		32		
20	6' x 4'	24			
21	1' x 1'	1			
22	1' x 1'	1			
23	4' x 2.5'	10			
24	4' x 2.5'	10			
25	4.5' x 4'	18			
26	4' x 1'	4			
	Totals	228	32		



ELEVATION
(Looking East)



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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	BAS	REVISED -	
		CHECKED -	LVM	REVISED -	
PLOT SCALE =		DRAWN -	JDK	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

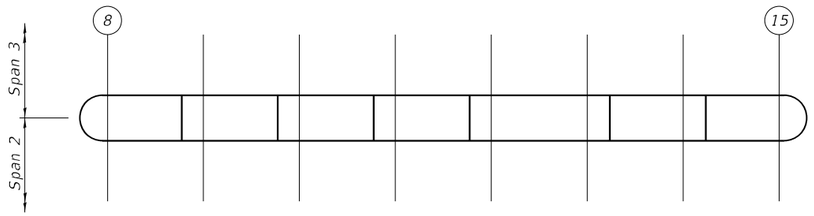
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIER 1
S.N. 092-0009
SHEET NO. 34 OF 37 SHEETS

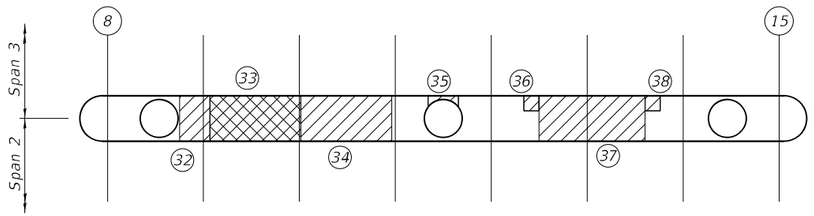
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	318
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".
The minimum jack capacity shall be 50% greater than the maximum expected load on the jack.

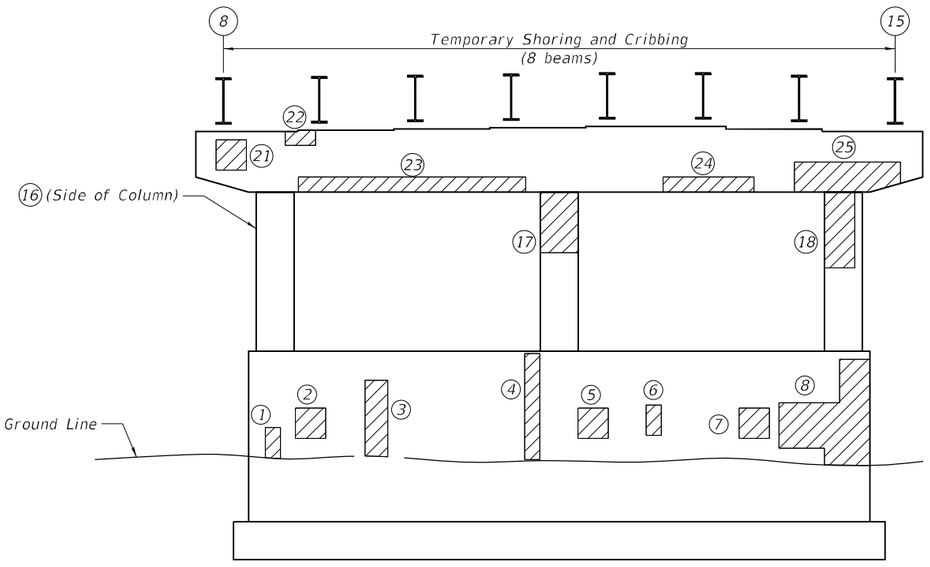
N



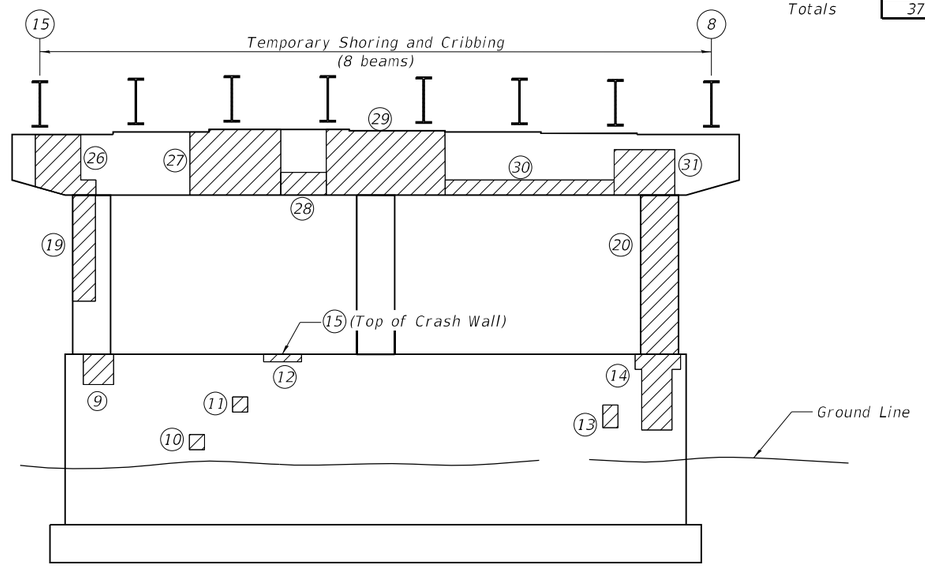
PLAN - TOP OF CAP BEAM



PLAN - BOTTOM OF CAP BEAM



ELEVATION
(Looking East)



ELEVATION
(Looking West)

GIRDER REACTION TABLE				
	R_{DL} (k)	R_{LL} (k)	R_{IM} (k)	R_{Total} (k)
Span 2, Beam 8	56.5	37.2	8.6	102.3
Span 2, Beam 9	50.4	36.9	8.8	96.1
Span 2, Beam 10	47.2	36.7	8.9	92.8
Span 2, Beam 11	39.4	36.3	9.1	84.8
Span 2, Beam 12	36.4	35.9	9.2	81.5
Span 2, Beam 13	33.5	35.4	9.4	78.3
Span 2, Beam 14	30.6	34.9	9.5	75.0
Span 2, Beam 15	29.5	34.2	9.6	73.3
Span 3, Beam 8-15	21.1	26.5	7.4	55.0

BILL OF MATERIAL

	Item	Unit	Quantity
*	Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	408
	Structural Repair of Concrete (Depth > 5 in.)	Sq. Ft.	18
	Concrete Sealer	Sq. Ft.	426
	Temporary Shoring and Cribbing	Each	16

* Includes 10% allowance for increase in deterioration.

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
2	2' x 2'	4			
3	4' x 2'	8			
4	7' x 1'	7			
5	2' x 2'	4			
6	2' x 1'	2			
7	2' x 2'	4			
8	7' x 6'	25			
9	2' x 2'	4			
10	1' x 1'	1			
11	1' x 1'	1			
12	2' x 1'	2			
13	2' x 1'	2			
14	5' x 3'	10			
15	2' x 1'	2			
16	4' x 2'	8			
17	4' x 3'	12			
18	6' x 2'	12			
19	9' x 2'	18			
20	10' x 5'	50			
21	2' x 2'	4			
22	2' x 1'	2			
23	15' x 1'	15			
24	6' x 1'	6			
25	7' x 2'	14			
26	4' x 4'	13			
27	6' x 4'	24			
28	2' x 2'	4			
29	8' x 4.5'	36			
30	15' x 1'	15			
31	4' x 3'	12			
32	3' x 2'	6			
33	6' x 3'		18		
34	6' x 3'	18			
35	1' x 1'	1			
36	1' x 1'	1			
37	7' x 3'	21			
38	1' x 1'	1			
	Totals	371	18		

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MAURER-STUTZ ENGINEERS SURVEYORS

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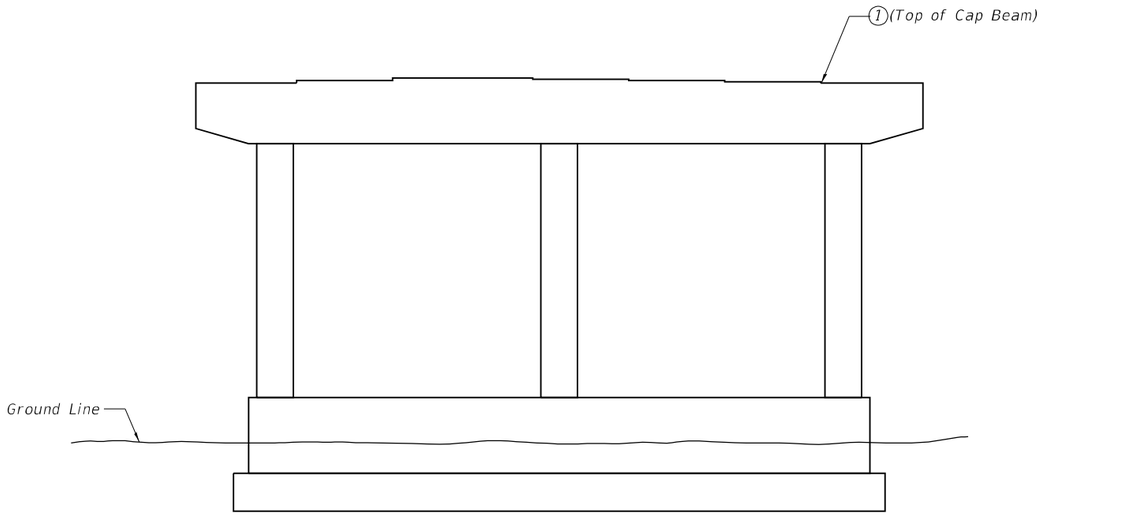
	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

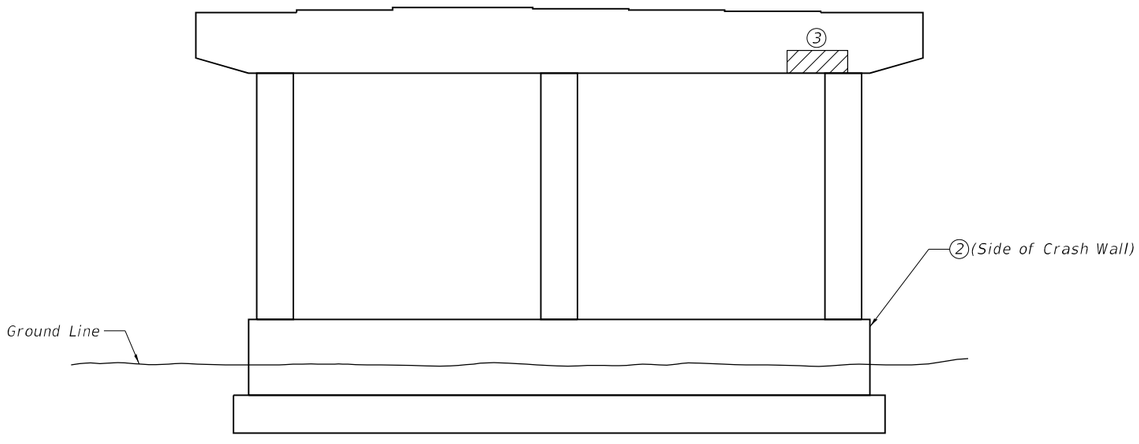
SUBSTRUCTURE REPAIR - PIER 2
S.N. 092-0009
SHEET NO. 35 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	319
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	

Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".



ELEVATION - PIER 3
(Looking West)



ELEVATION - PIER 4
(Looking West)

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
1	1' x 1'	1			
2	1' x 1'	1			
3	4' x 1.5'	6			
Totals		8			

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	8

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

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MAURER-STUTZ ENGINEERS SURVEYORS

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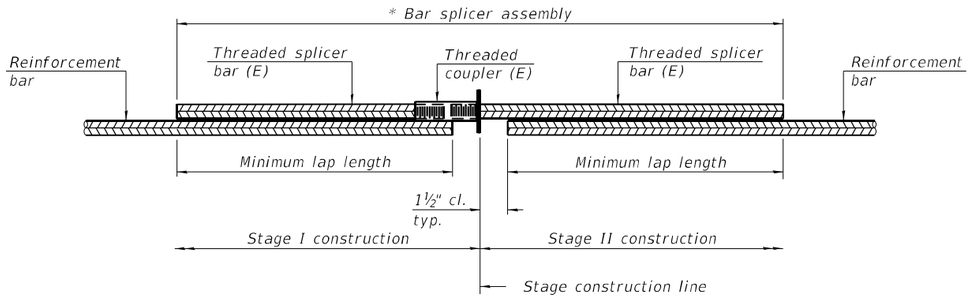
		CHECKED - LVM		REVISED -	
PLOT SCALE =		DRAWN - JDK		REVISED -	
PLOT DATE = 4/22/2022		CHECKED - BAS		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIERS 3 & 4
S.N. 092-0009
SHEET NO. 36 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	320
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

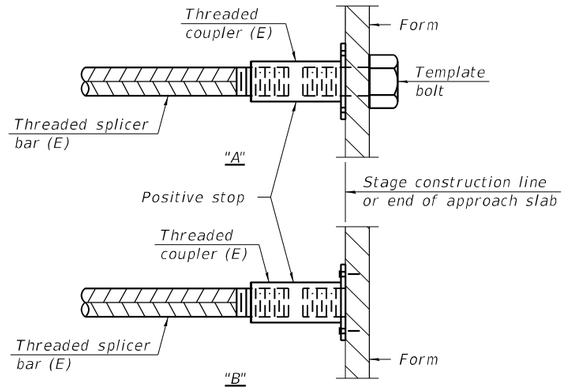
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

STR. NO. 092-0008

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	24	3'-6"
Diaphragm	#6	10	4'-0"
Diaphragm	#4	4	2'-5"
Approach Slab	#5	92	3'-4"
Approach Slab	#8	120	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-2"

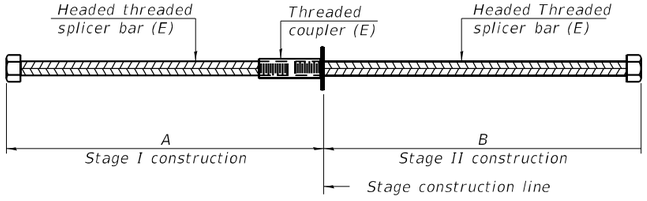
STR. NO. 092-0009

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	56	3'-6"
Diaphragm	#6	10	4'-0"
Diaphragm	#4	4	2'-5"
Approach Slab	#5	81	3'-4"
Approach Slab	#8	106	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-2"



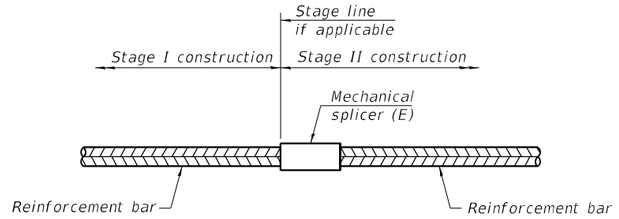
INSTALLATION AND SETTING METHODS

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



HEADED BAR SPLICER ASSEMBLY PLAN

Location	Bar size	No. assemblies required	A	B
Diaphragms -0008	#6	8	3'-0"	3'-0"
Diaphragms -0009, W. Abut.	#6	4	4'-2"	3'-4"
Diaphragms -0009, E. Abut.	#6	4	3'-3"	2'-7"



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - BAS	REVISED -	
	CHECKED - LVM	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 092-0008 & 092-0009
SHEET NO. 37 OF 37 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	321
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

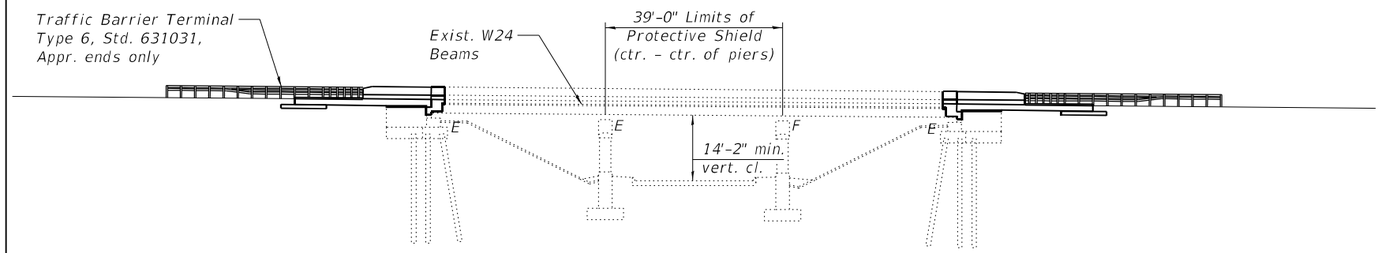
Benchmark – Survey disk on top of the NW wingwall of Structure No. 092-0011. Elev. 656.07.

Existing Structures – Structure No. 092-0010 & 092-0011 were built in 1962 as FAI 74, Section 92-11HB-3. In 2000, the bridge decks were replaced. The structures consist of steel beam and reinforced concrete deck superstructures supported on pile bent abutments and multiple column piers. Overall bridge lengths are 117'-8", with clear widths between parapets of 40'-8". One lane of traffic in each direction is to be maintained using staged construction.

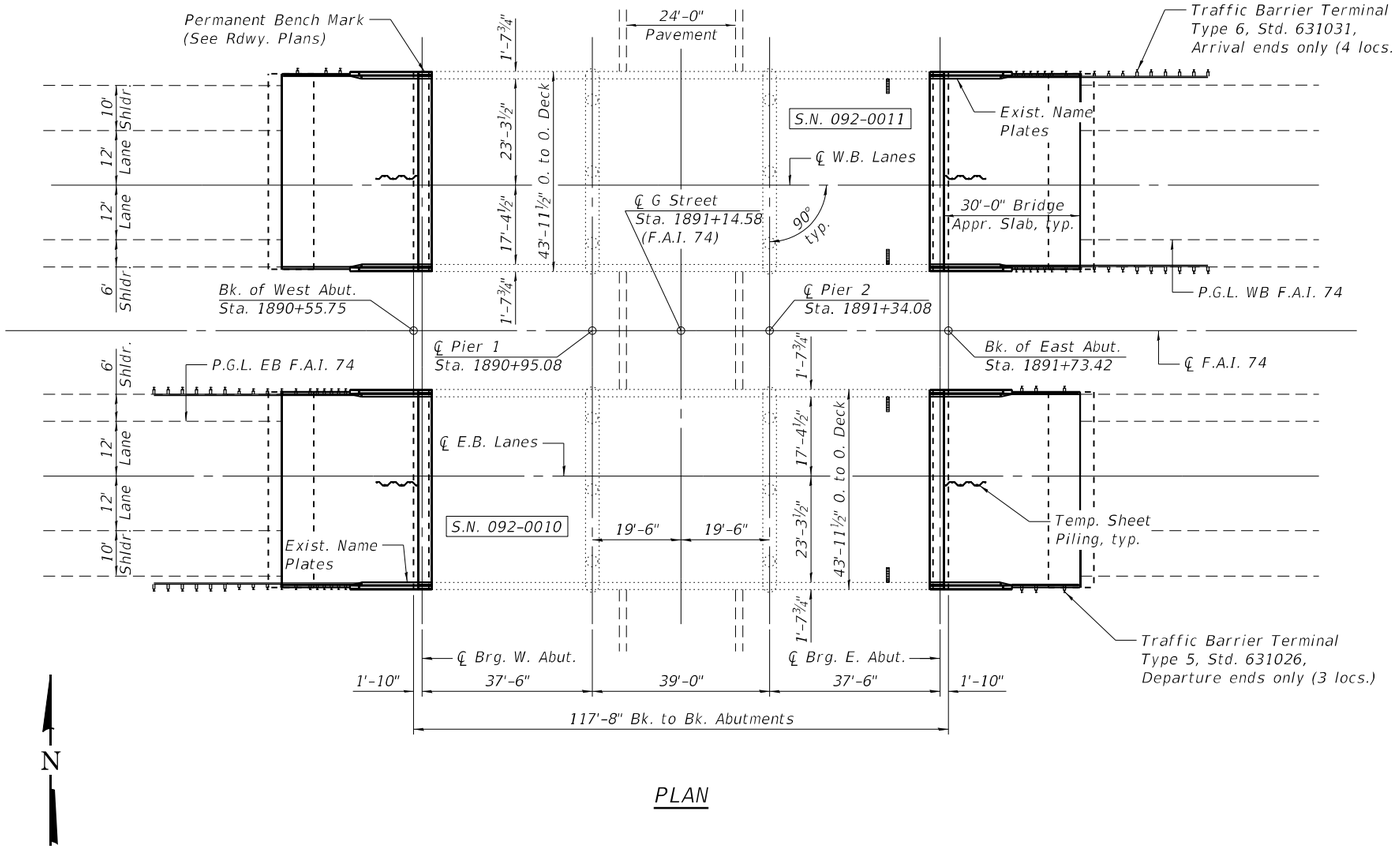
Salvage – None.

PROPOSED SCOPE OF WORK

1. Rehabilitate bridge deck with scarification and latex concrete overlay
2. Remove and replace bridge approach slabs
3. Replace steel beam bearing assemblies at abutments
4. Remove existing abutment deck joints and reconstruct with jointless semi-integral abutments
5. Repair concrete deterioration on piers and abutments
6. Seal cracks in concrete slope walls
7. Straighten and reinforce steel fascia beam
8. Paint beam ends



ELEVATION



PLAN

LOADING HS20-44

DESIGN SPECIFICATIONS

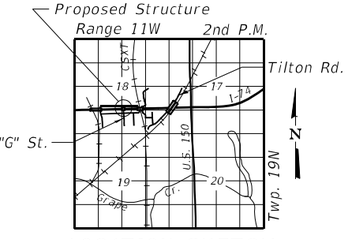
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition (LFD)

DESIGN STRESSES

FIELD UNITS

New Construction:
- f'c = 3,500 psi
- f'c = 4,000 psi (deck)
- fy = 60,000 psi (Reinforcement)
- fy = 36,000 psi (M270 Grade 36)

Exist. Structure:
- f'c = 3,500 psi
- fy = 60,000 psi (deck reinf.)
- fs = 20,000 psi (orig. substr. reinf.)
- fs = 18,000 (structural steel)



LOCATION SKETCH

STATE OF ILLINOIS
BRYAN A. SWANSON
081-006716
PEORIA, IL
LICENSED STRUCTURAL ENGINEER

Bryan Swanson
Date Signed: 4-22-22
Exp. Date: 11/30/2022

GENERAL PLAN AND ELEVATION
I-74 OVER "G" ST.
F.A.I. 74 - SEC. (92-10,11,12)R
VERMILION COUNTY
STATION 1891+14.58
STR. NO. 092-0010 & 092-0011

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - LVM	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	322
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

All new fasteners shall be high-strength steel bolts. Holes for ¾" Ø bolts shall be 13/16" Ø, unless noted otherwise. Holes for ⅞" Ø bolts shall be 15/16" Ø, unless noted otherwise.

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas, and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The 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.

Existing Name Plates shall be removed, cleaned and incorporated into the new construction. Cost included with Relocating Name Plates.

Synthetic Fibers shall be included in the bridge deck concrete overlay specified. See Special Provisions.

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". After removal of deck ends and diaphragms, but prior to new bearing installation and encasement of the steel beams, all beams within 5 ft of the beam ends shall be cleaned per Near White Blast Cleaning (SSPC-SP10).

The designated areas cleaned per Near White Blast Cleaning (SSPC-SP10) shall be painted according to the requirements of Paint System 1 (OZ/E/U). The color of the final finish coat for all steel surfaces shall be Gray, Munsell No. 5B 7/1.

Care shall be taken not to damage rubber bearing or joint components during blasting and cleaning operations. Any damage to these components shall be repaired at the Contractor's expense.

SSPC-QP1 and SPC-QP2 Painting Contractor Certifications will be required for this contract.

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 "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

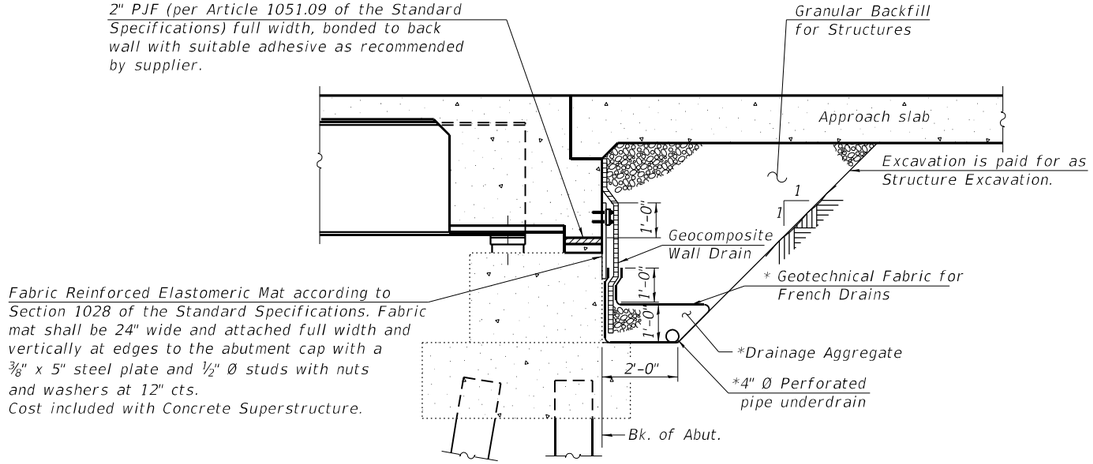
All new structural steel shall be hot dip galvanized except where noted otherwise. See Special Provisions for "Hot Dip Galvanizing for Structural Steel."

Existing structure plans are available from the District upon request.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	-0010	-0011	TOTAL
	Concrete Removal	Cu. Yd.	36.6	36.6	73.2
	Protective Shield	Sq. Yd.	190	190	380
	Structure Excavation	Cu Yd.	66	66	132
	Concrete Structures	Cu. Yd.	33.9	33.9	67.8
	Concrete Superstructure	Cu. Yd.	36.3	36.2	72.5
*	Protective Coat	Sq. Yd.	832	832	1664
	Concrete Superstructure (Approach Slab)	Cu. Yd.	123.4	123.4	246.8
	Furnishing and Erecting Structural Steel	Pound	2980	2980	5960
	Reinforcement Bars, Epoxy Coated	Pound	54930	54930	109860
	Bar Splicers	Each	344	344	688
	Elastomeric Bearing Assembly, Type I	Each	16	16	32
	Anchor Bolts, 1"	Each	32	32	64
	Temporary Sheet Piling	Sq. Ft.	148	148	296
	Granular Backfill for Structures	Cu. Yd.	62	60	122
	Geocomposite Wall Drain	Sq. Yd.	46	45	91
	Pipe Underdrains for Structures 4"	Foot	128	128	256
	Slope Wall Crack Sealing	Foot			214
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	468	468	936
	Jack and Remove Existing Bearings	Each	16	16	32
	Structural Steel Removal	Pound	3680	3680	7360
	Structural Steel Repair	Pound	250		250
	Beam Straightening	L. Sum	1		1
	Bridge Deck Latex Concrete Overlay 2¾"	Sq. Yd.	496	496	992
	Bridge Deck Scarification ¾"	Sq. Yd.	496	496	992
	Containment and Disposal of Lead Paint Cleaning Residues No. 1	L. Sum	1		1
	Containment and Disposal of Lead Paint Cleaning Residues No. 2	L. Sum		1	1
	Cleaning and Painting Steel Bridge No. 1	L. Sum	1		1
	Cleaning and Painting Steel Bridge No. 2	L. Sum		1	1
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	5	10	15
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	2	2	4
	Diamond Grinding (Bridge Section)	Sq. Yd.	716	716	1432
	Relocating Name Plates	Each	2	2	4
	Slope Wall Slurry Pumping	Cu. Yd.			7

* On new concrete superstructure, approach slabs, and latex concrete overlay.



SECTION THRU SEMI-INTEGRAL ABUTMENT

*Included in the cost of Pipe Underdrains for Structures 4".

Note:
All drainage system components shall extend between the wingwalls at each end of abutment, except an outlet pipe shall extend until intersecting with the side slopes or slope wall surface. Any slope wall removal and replacement required for the installation of the outlet pipe shall be included in the cost of Pipe Underdrains for Structures 4". The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

INDEX OF SHEETS

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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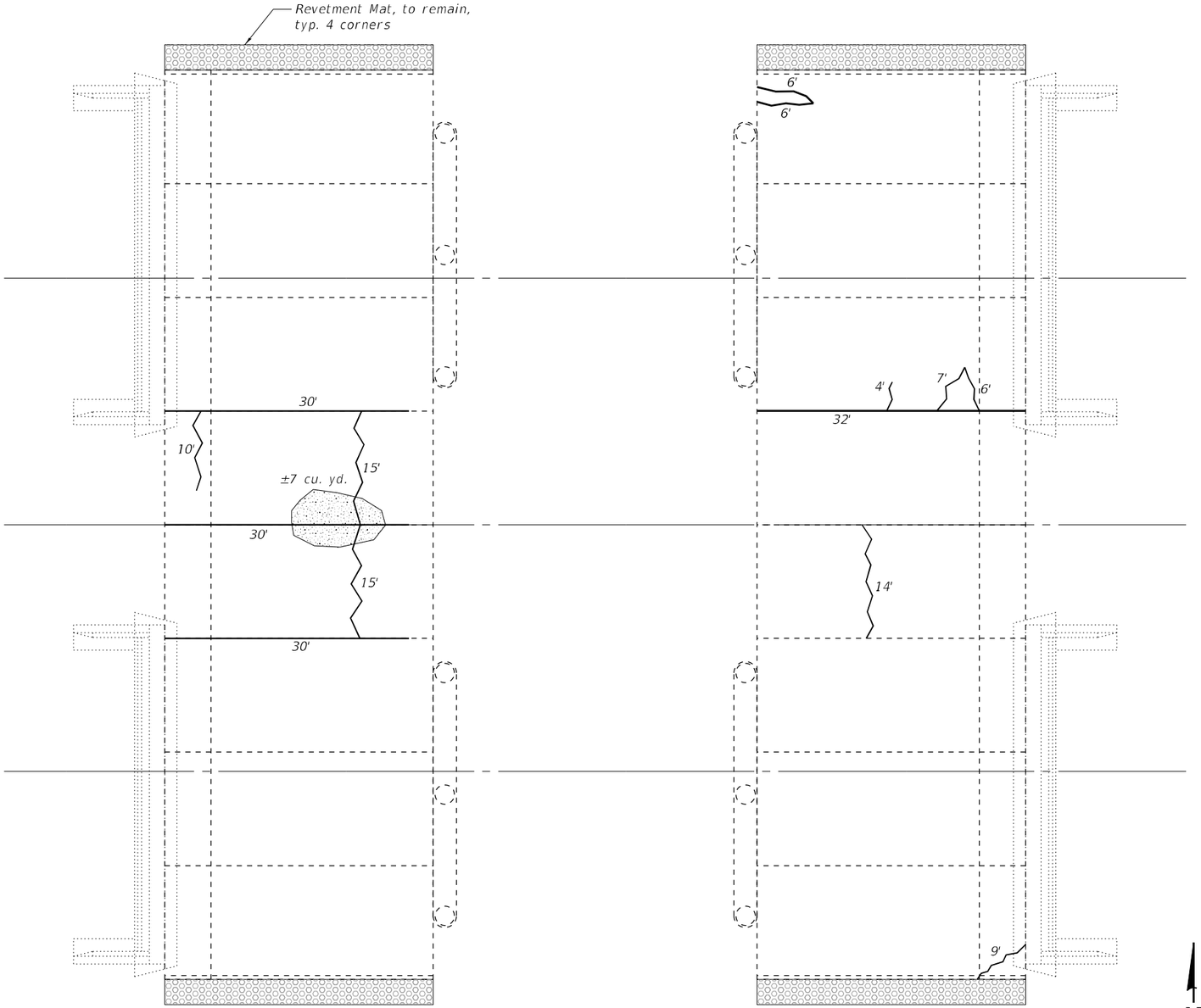
	ILLINOIS	FED. AID PROJECT		



SLOPE WALL REPAIR PLAN

LEGEND

#	Slope Wall Slurry Pumping (Volume)
#	Slope Wall Crack Sealing (Length)

Notes:

The repair areas shown are estimated based on a field inspection conducted in December 2020. The actual repair areas required shall be verified according to the Special Provisions.

SLOPE WALL BILL OF MATERIAL

Item	Unit	Quantity
Slope Wall Slurry Pumping	Cu. Yd.	7
Slope Wall Crack Sealing	Foot	214

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL PLAN
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 3 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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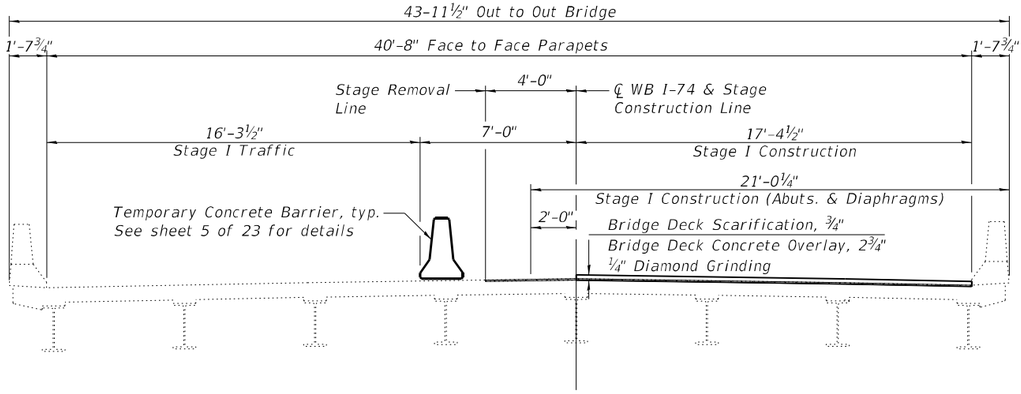
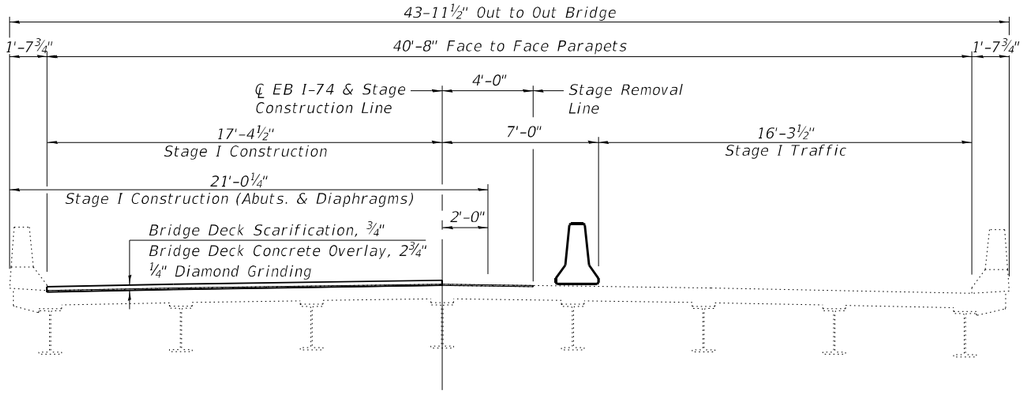
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



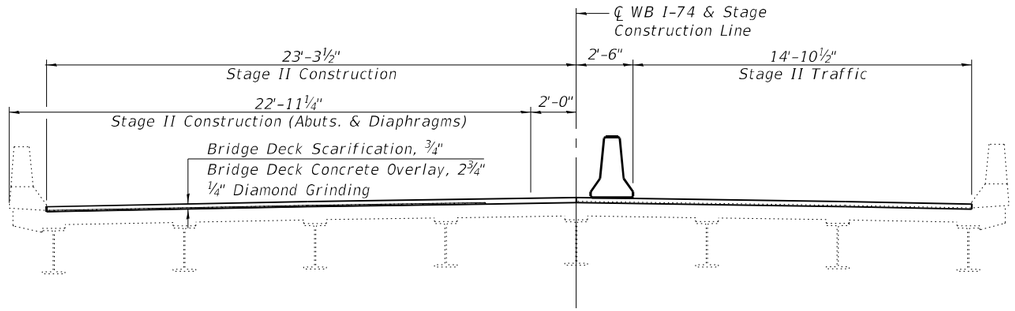
S.N. 092-0011



S.N. 092-0010

STAGE I CONSTRUCTION

(Looking East)



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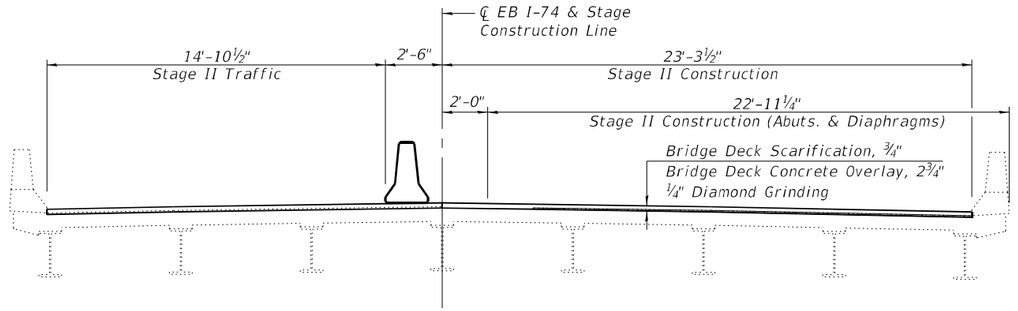


S.N. 092-0010

STAGE II CONSTRUCTION

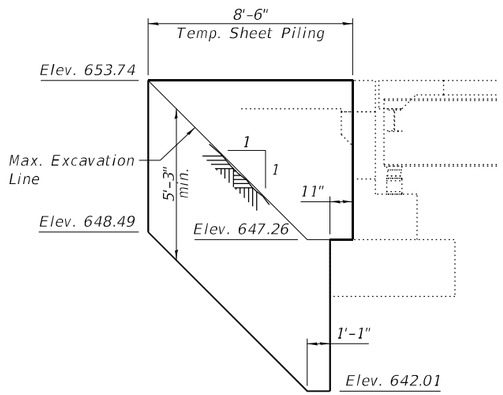
(Looking East)

Notes:

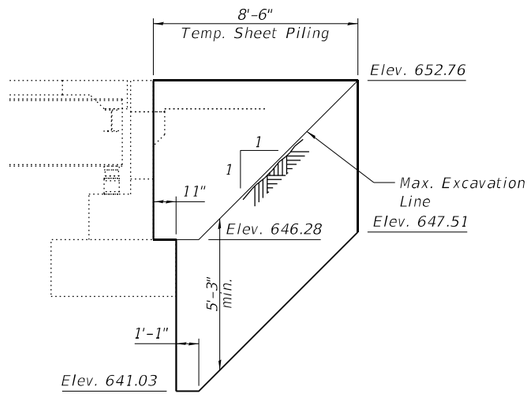
Sheet piling shall have a minimum section modulus of 2.5 in³/ft.

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

The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.



WEST ABUTMENT



EAST ABUTMENT

TEMPORARY SHEET PILING

(Looking North, typ. both bridges)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 4 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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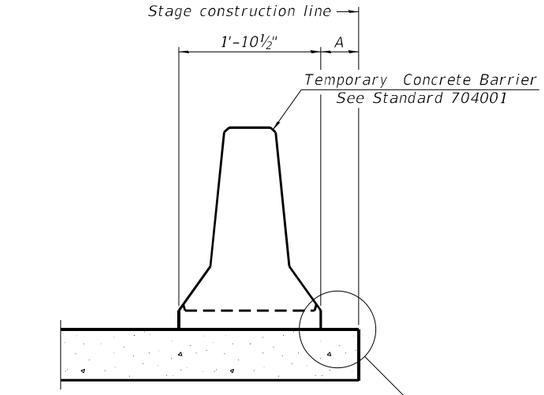
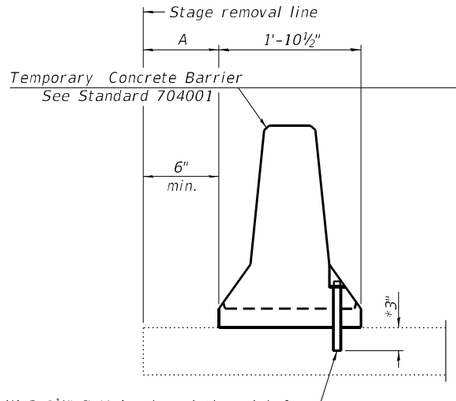
	ILLINOIS	FED. AID PROJECT		



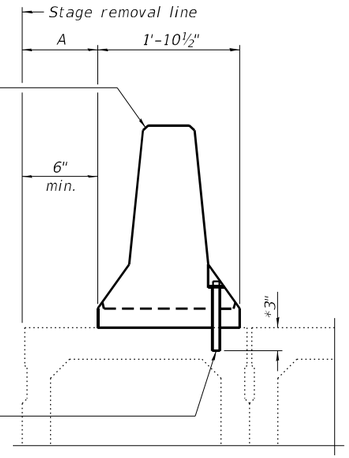
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

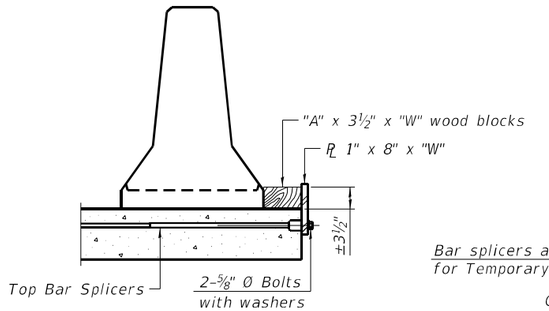
EXISTING SLAB



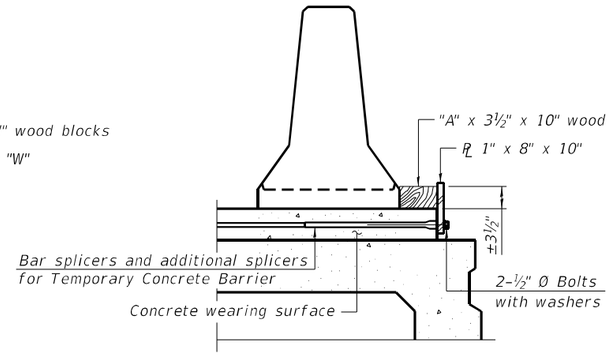
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

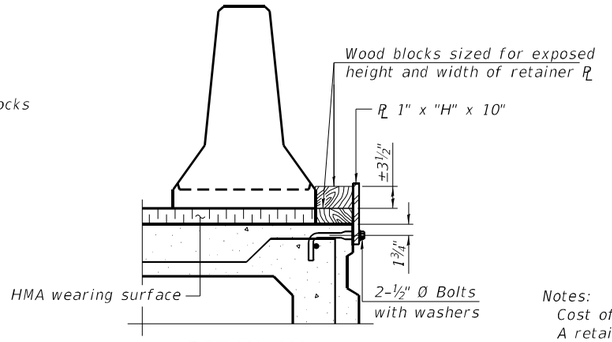
SECTIONS THRU SLAB OR DECK BEAM



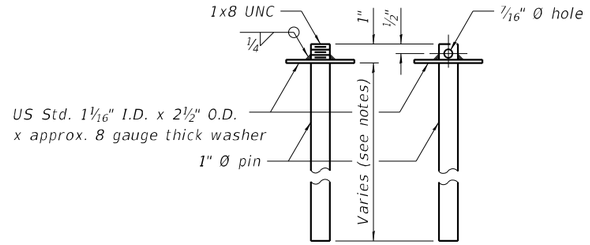
DETAIL I



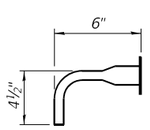
DETAIL II



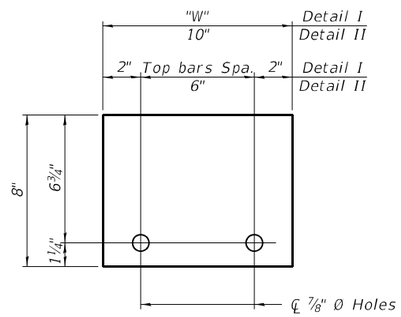
DETAIL III



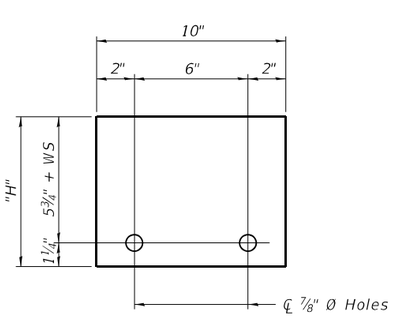
RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III



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



STEEL RETAINER ℄ 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 ℄ 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 1½", 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.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

10-12-2021

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 5 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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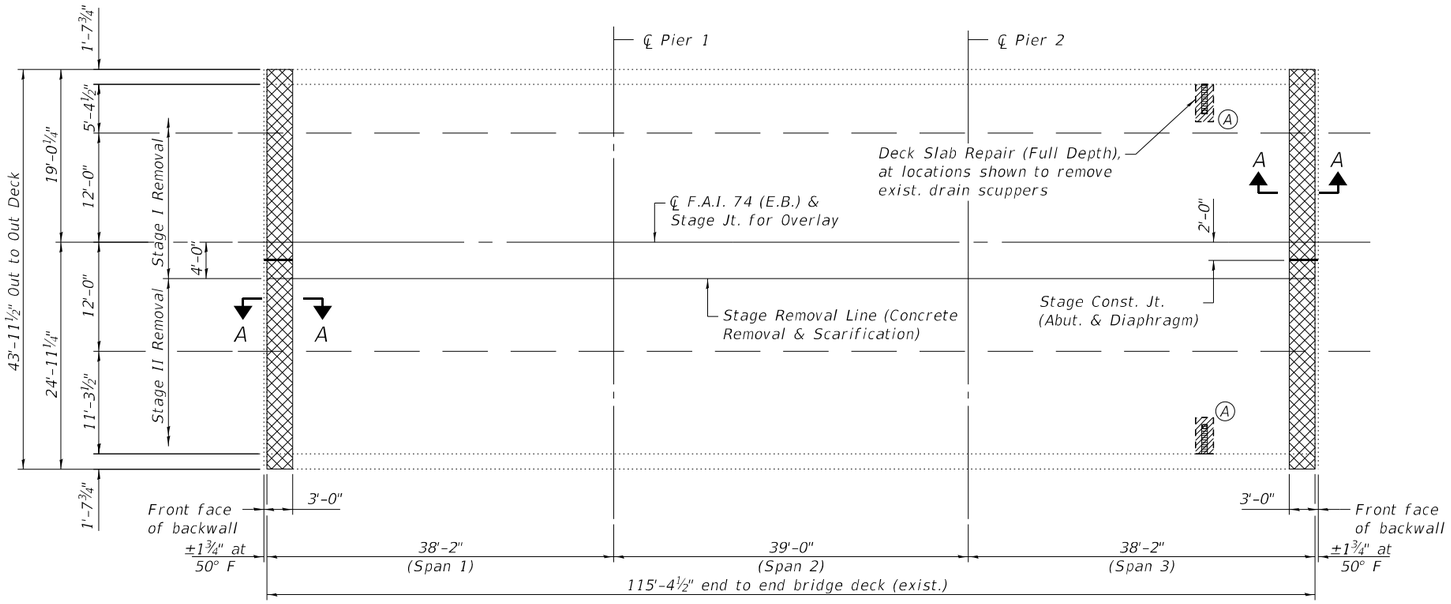
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



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PLAN – DECK SLAB REPAIRS

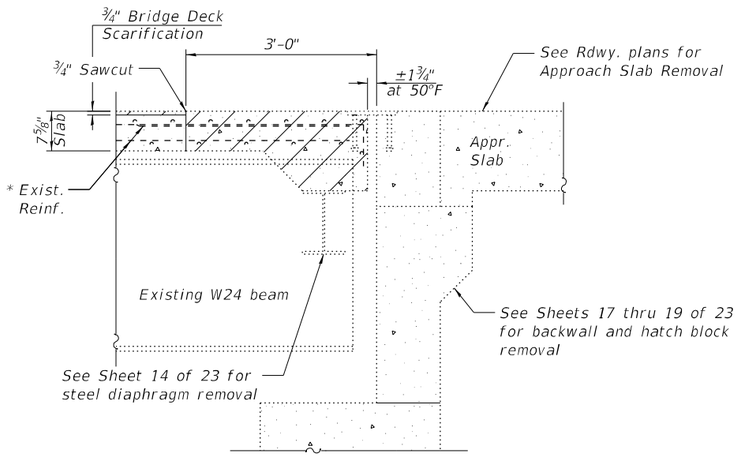
LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Concrete Removal

* Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorportated 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.

DECK SLAB REPAIR TABLE

Label	Size	Plan Qty. Deck Slab Repair (Part. Depth) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type I) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type II) Sq. Ft.	As Built Deck Slab Repair (FD Type I) Sq. Ft.	As Built Deck Slab Repair (FD Type II) Sq. Ft.
A	4' x 2' x 2 Loc.			16		
Totals				16		



SECTION A-A
(Showing Removal)

Notes:
See Sheet 9 of 23 for cross section thru bridge deck.
Deck survey performed on December 17, 2020. Locations and sizes shown in the plan view are approximate.
Deck Slab Repair (Partial Depth) is an estimated quantity per the deck survey. This area shall not be paid for separately, but shall be addressed as stated in the Special Provision for Bridge Deck Latex Concrete Overlay.
Actual size and locations of full-depth patches shall be shown on this sheet and documented in the Deck Slab Repair Table under "As Built".

DECK SLAB (S.N. 092-0010) BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	2
Bridge Deck Scarification ¾"	Sq. Yd.	496
Bridge Deck Latex Concrete Overlay, 2¾ Inches	Sq. Yd.	496

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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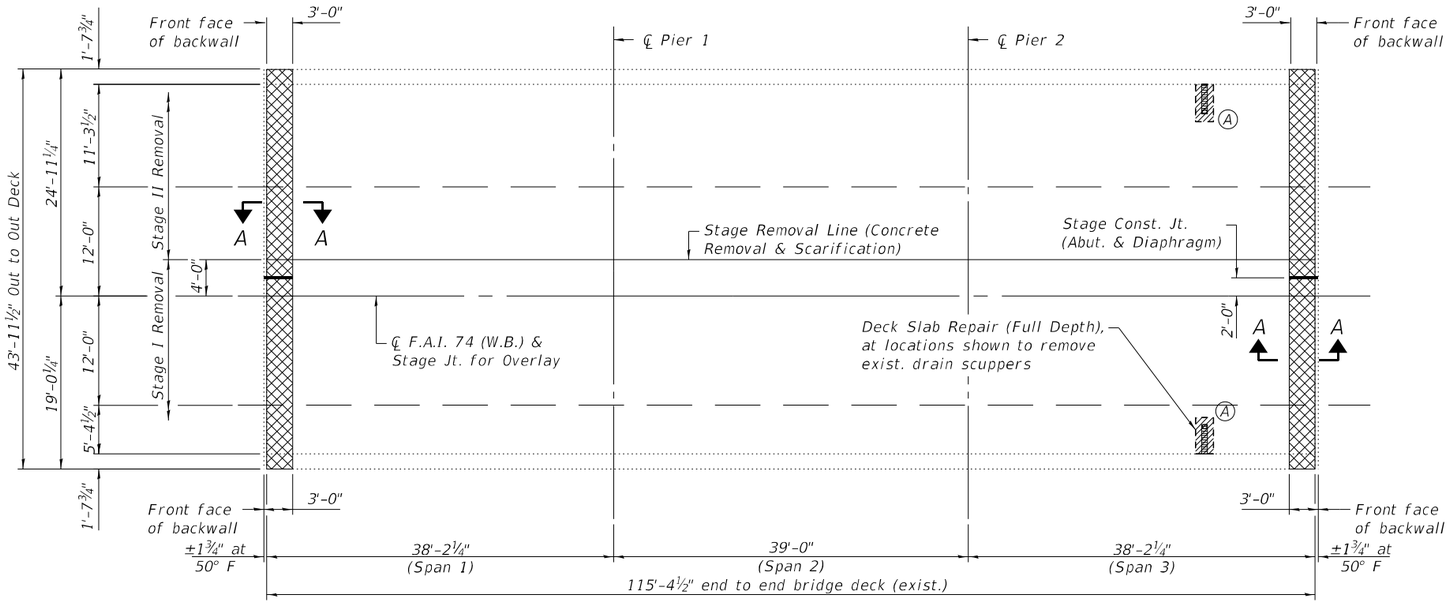

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PLAN – DECK SLAB REPAIRS

LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Concrete Removal

* 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.

DECK SLAB REPAIR TABLE

Label	Size	Plan Qty.			As Built	
		Deck Slab Repair (Part. Depth)	Deck Slab Repair (FD Type I)	Deck Slab Repair (FD Type II)	Deck Slab Repair (FD Type I)	Deck Slab Repair (FD Type II)
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
A	4' x 2' x 2 Loc.			16		
Totals				16		

Notes:

See Sheet 9 of 23 for cross section thru bridge deck.

See Sheet 6 of 23 for Section A-A.

Deck survey performed on December 15, 2020. Locations and sizes shown in the plan view are approximate.

Deck Slab Repair (Partial Depth) is an estimated quantity per the deck survey. This area shall not be paid for separately, but shall be addressed as stated in the Special Provision for Bridge Deck Latex Concrete Overlay.

Actual size and locations of full-depth patches shall be shown on this sheet and documented in the Deck Slab Repair Table under "As Built".

DECK SLAB (S.N. 092-0011) BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	2
Bridge Deck Scarification ¾"	Sq. Yd.	496
Bridge Deck Latex Concrete Overlay, 2¾ Inches	Sq. Yd.	496

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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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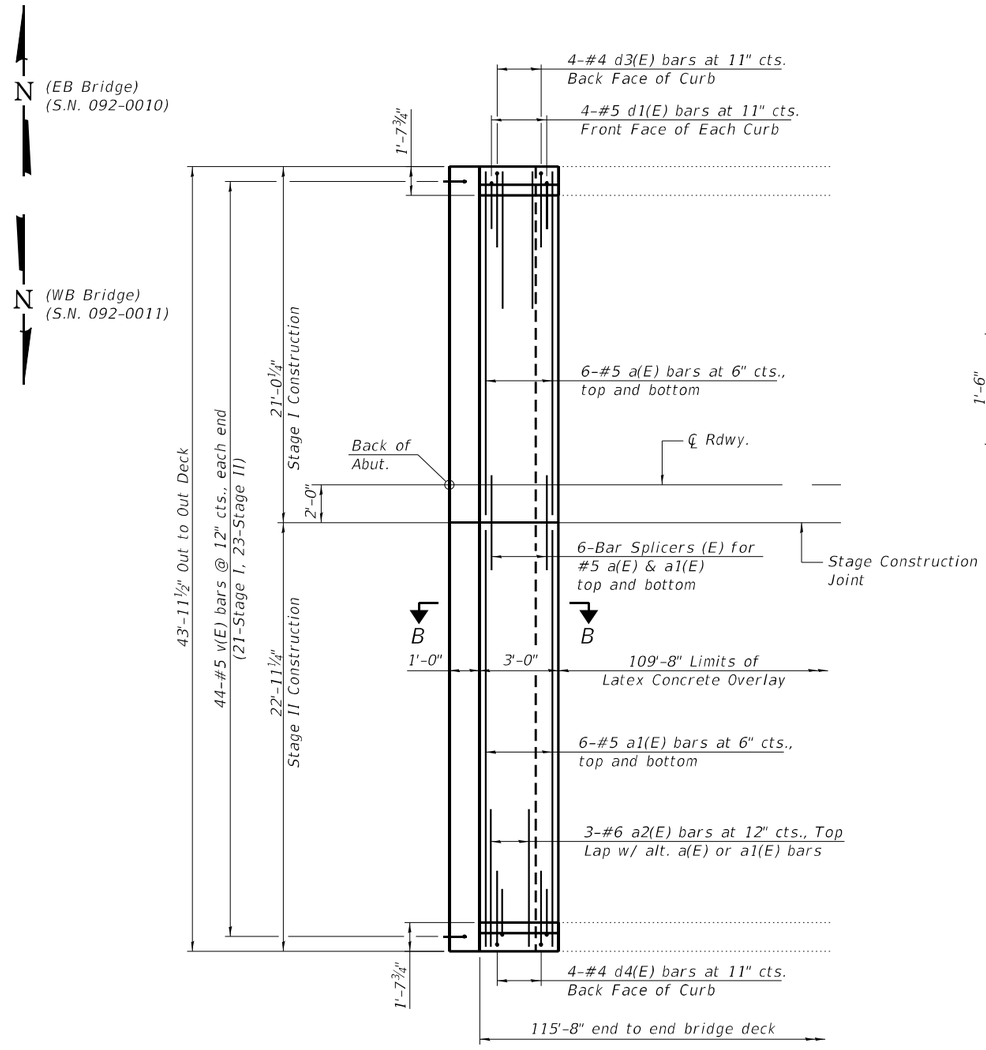
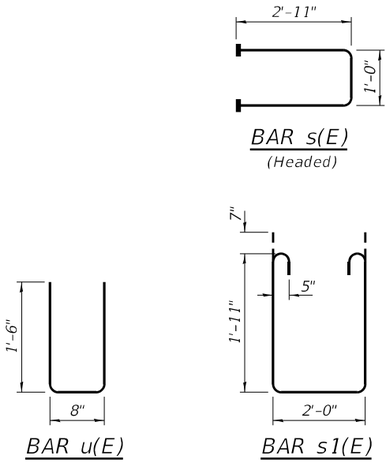
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN - DECK AT ABUTMENTS

(West abutment shown, East abutment opposite)



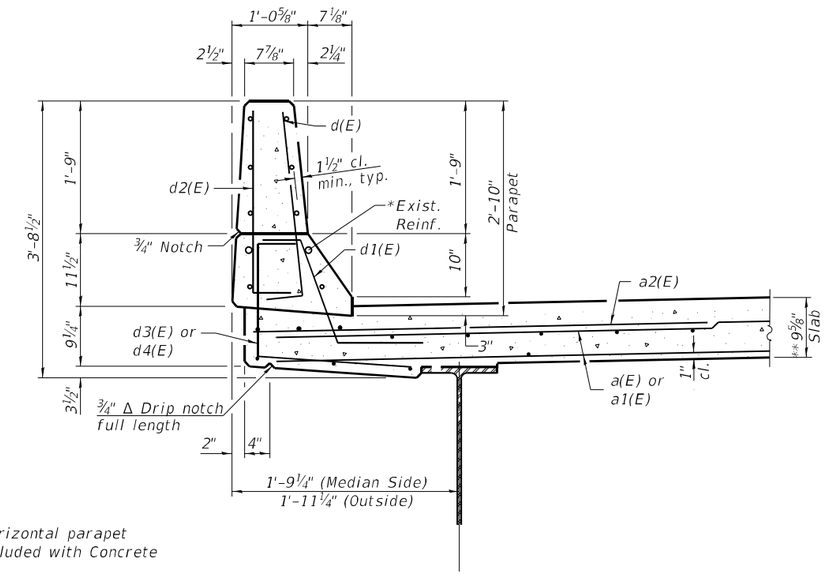
SUPERSTRUCTURE STR. NO. 092-0010 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	24	#5	20'-2"	
a1(E)	24	#5	22'-1"	
a2(E)	12	#6	6'-0"	
d(E)	16	#5	3'-0"	
d1(E)	16	#5	2'-7"	
d2(E)	16	#4	3'-0"	
d3(E)	8	#4	2'-10"	
d4(E)	8	#4	3'-0"	
m(E)	8	#6	20'-8"	
m1(E)	8	#6	22'-7"	
m2(E)	24	#6	5'-4"	
m3(E)	24	#6	5'-4"	
m4(E)	8	#6	1'-5"	
m5(E)	8	#6	1'-7"	
m6(E)	4	#4	20'-8"	
m7(E)	4	#4	22'-7"	
m100(E)	48	#6	4'-6"	
s(E)	124	#5	6'-10"	
s1(E)	80	#5	7'-0"	
u(E)	124	#4	3'-8"	
v(E)	88	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	4760
Concrete Superstructure			Cu. Yd.	30.4
Concrete Removal			Cu. Yd.	8.5

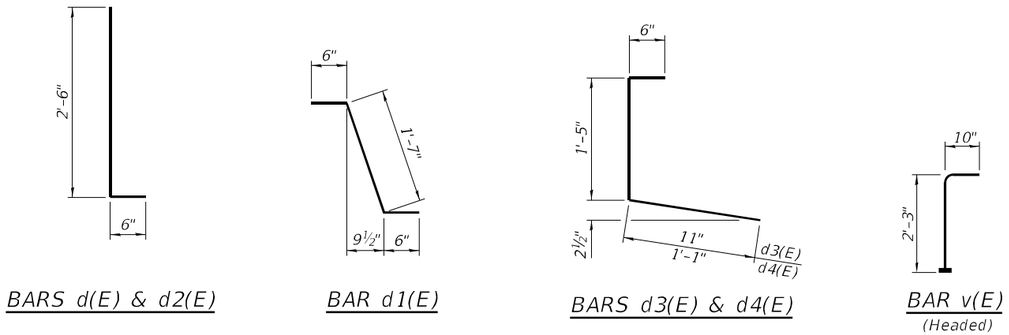
Notes:
See sheet 10 of 23 for Section B-B.

SUPERSTRUCTURE STR. NO. 092-0011 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	24	#5	20'-2"	
a1(E)	24	#5	22'-1"	
a2(E)	12	#6	6'-0"	
d(E)	16	#5	3'-0"	
d1(E)	16	#5	2'-7"	
d2(E)	16	#4	3'-0"	
d3(E)	8	#4	2'-10"	
d4(E)	8	#4	3'-0"	
m(E)	8	#6	20'-8"	
m1(E)	8	#6	22'-7"	
m2(E)	24	#6	5'-4"	
m3(E)	24	#6	5'-4"	
m4(E)	8	#6	1'-5"	
m5(E)	8	#6	1'-7"	
m6(E)	4	#4	20'-8"	
m7(E)	4	#4	22'-7"	
m100(E)	48	#6	4'-6"	
s(E)	124	#5	6'-10"	
s1(E)	80	#5	7'-0"	
u(E)	124	#4	3'-8"	
v(E)	88	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	4760
Concrete Superstructure			Cu. Yd.	30.3
Concrete Removal			Cu. Yd.	8.5



SECTION THRU PARAPET



* Straighten, clean, and incorporate existing horizontal parapet reinforcement into new construction. Cost included with Concrete Removal.

** Prior to ¼" Diamond Grinding

MODEL: Default
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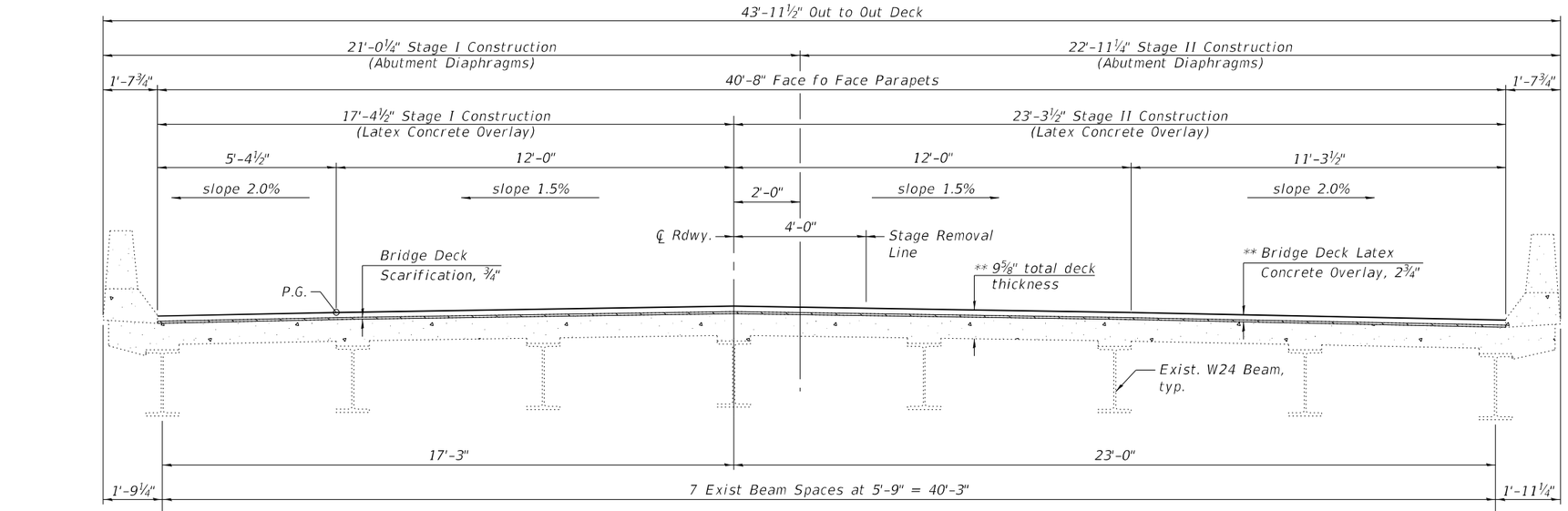
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 092-0010 & 092-0011	
	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - LVM	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		SHEET NO. 8 OF 23 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	329
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



S.N. 092-0010 (EB) (1)
S.N. 092-0011 (WB) (16)

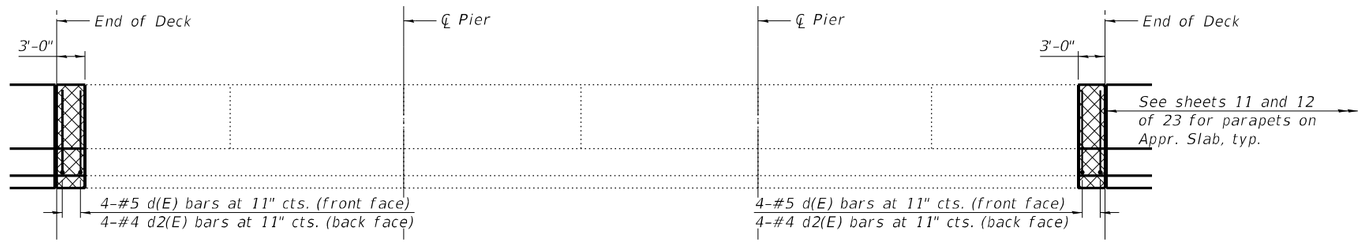
(8)
(9)

** Prior to ¼" Diamond Grinding

CROSS SECTION

(Looking East for East Bound,
Looking West for West Bound)

Notes:
See sheet 8 of 23 for Bill of Material, Section Thru Parapet, and bar details.
Cross-hatched areas on parapets indicate Concrete Removal and replacement with Concrete Superstructure.



PARAPET ELEVATION

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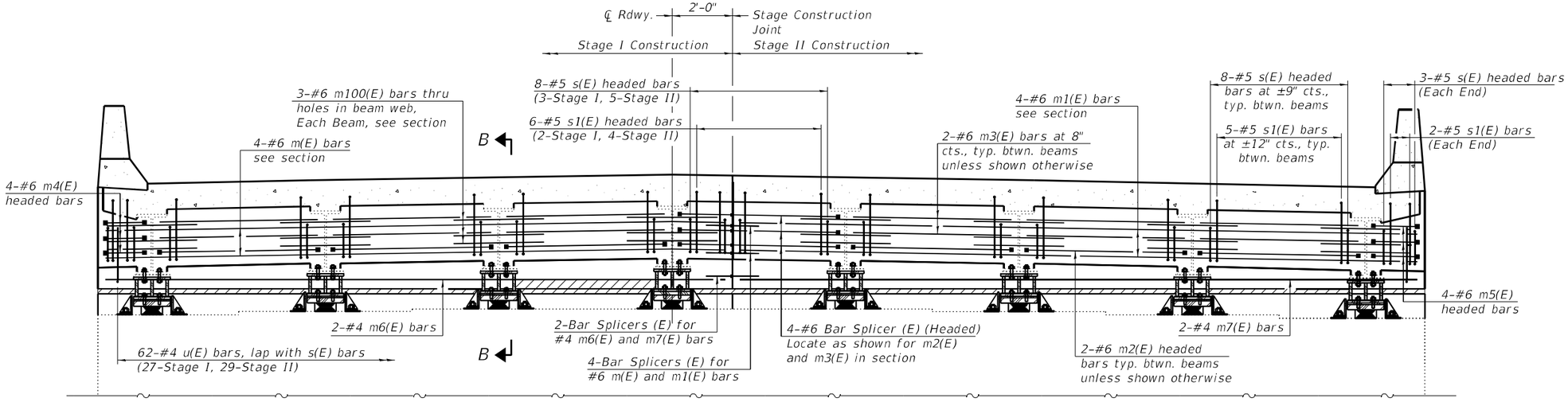
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 9 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	330
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



DIAPHRAGM AT ABUTMENT

(East abutment shown, West abutment opposite)

Notes:

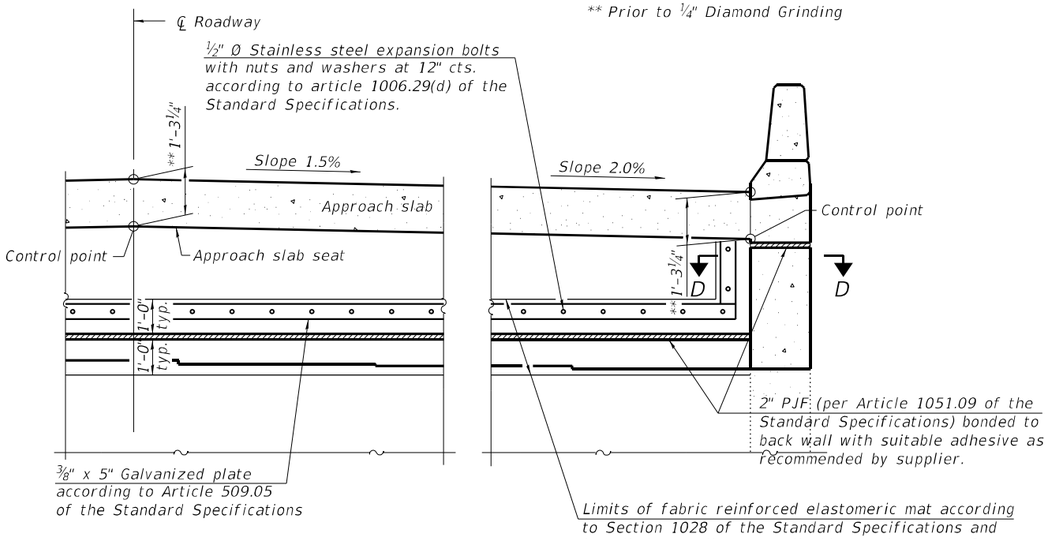
See sheet 8 of 23 for Bill of Material, bar details, and reinforcement in the bridge deck over the diaphragm.

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

See sheet 14 of 23 for hole locations thru beam web.

* 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.

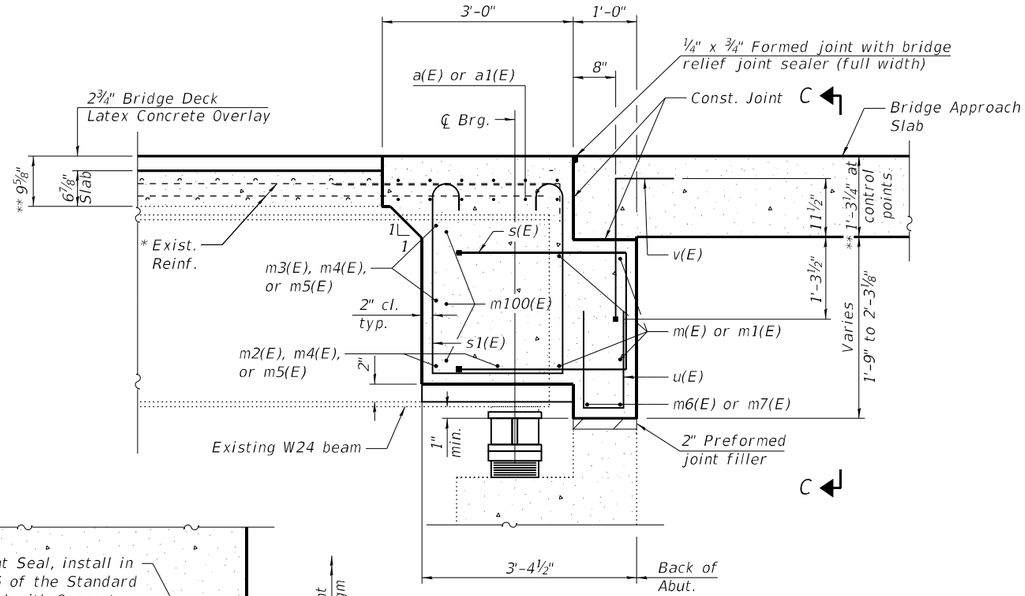
** Prior to ¼" Diamond Grinding



Note:

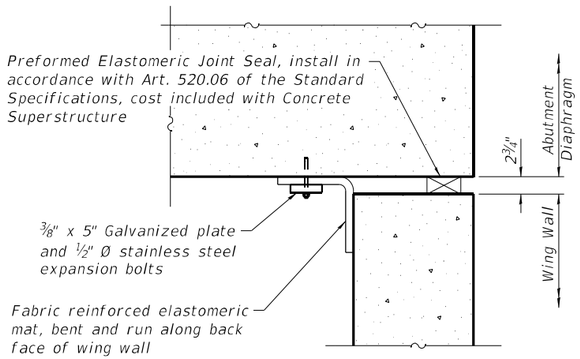
Cost of P.J.F., fabric reinforced elastomeric mat, galvanized plate, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.

VIEW C-C



SECTION B-B

(Showing Proposed)



SECTION D-D

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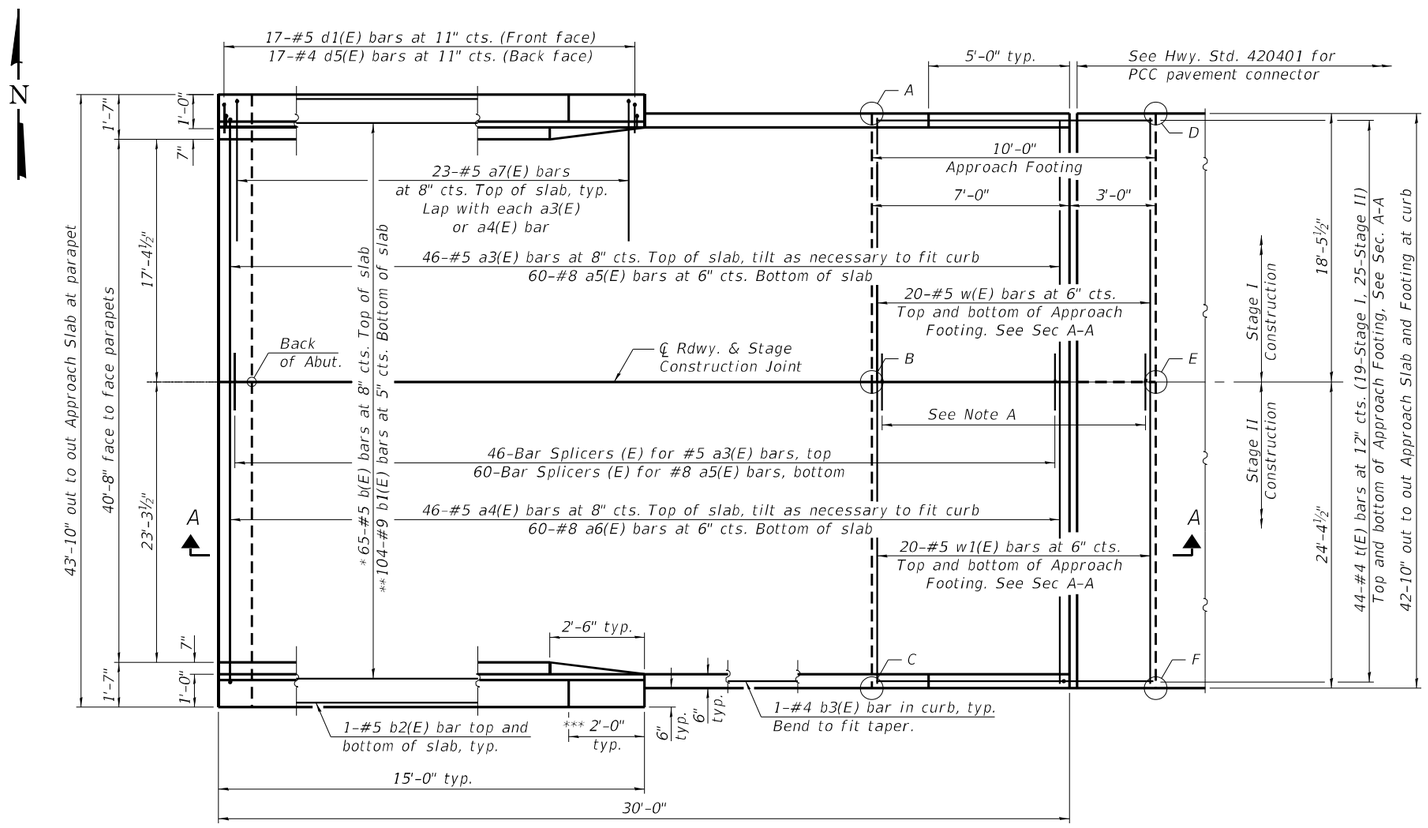
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 092-0010 & 092-0011

SHEET NO. 10 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	331
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

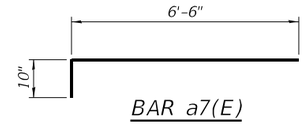


PLAN

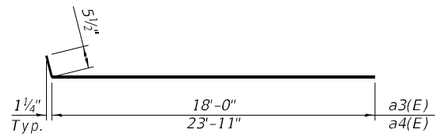
(East approach shown, West approach similar)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTINGS

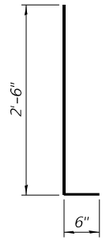
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A	652.36	651.53	650.97	650.14
B	652.67	651.84	651.28	650.45
C	652.24	651.41	650.85	650.02
D	652.44	651.61	650.88	650.05
E	652.75	651.92	651.19	650.36
F	652.33	651.50	650.76	649.93



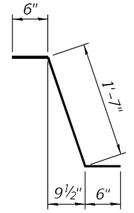
BAR a7(E)



BARS a3(E) & a4(E)



BARS d(E) & d2(E)

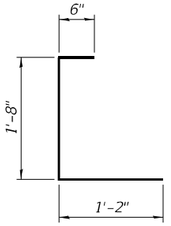


BAR d1(E)

Note A – 20-Bar Splicers (E) for #5 w(E) bars, top & bottom

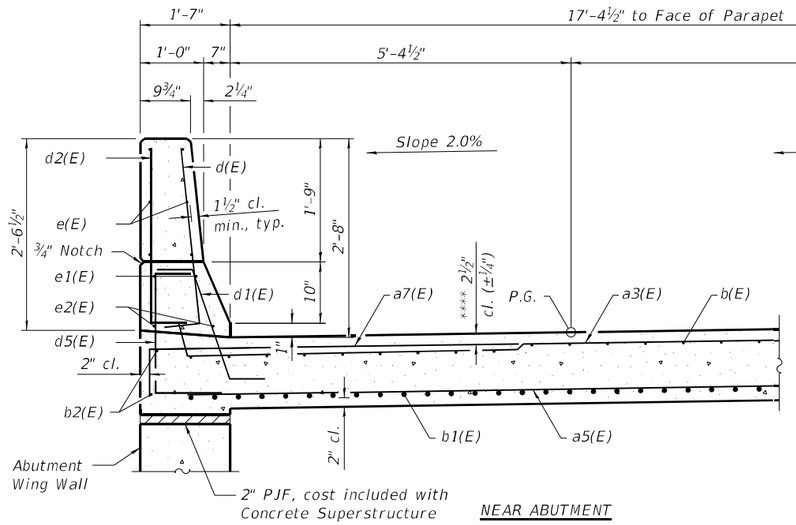
* (28-Stage I, 37-Stage II)
** (45-Stage I, 59-Stage II)

Notes:
PJF (per Article 1051.09 of the Standard Specifications) below the approach slab shall be bonded to the top of new abutment wingwalls with suitable adhesive as recommended by supplier.
See Sheet 12 of 23 for Section A-A and Bill of Material.
See Sheet 23 of 23 for Bar Splicer details.

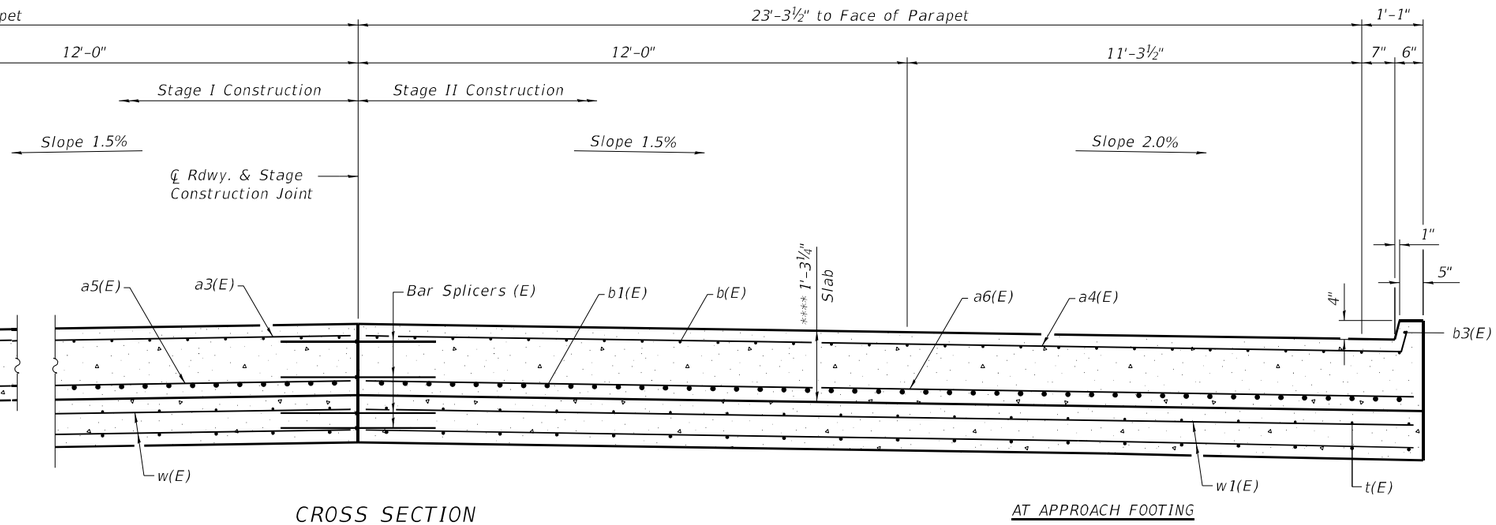


BAR d5(E)

*** Omit taper at departure ends with Type 5 terminals
**** Prior to ¼" Diamond Grinding



NEAR ABUTMENT



CROSS SECTION

(Looking East for EB I-74)
(Looking West for WB I-74)

AT APPROACH FOOTING

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MAURER-STUTZ ENGINEERS SURVEYORS

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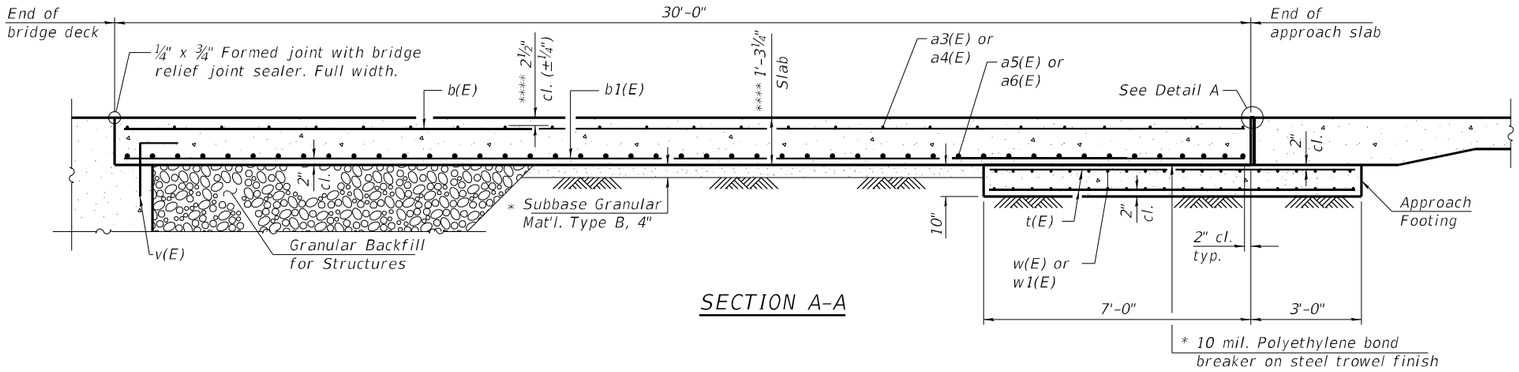
PLOT SCALE =	DRAWN - LVM	REVISED -		
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

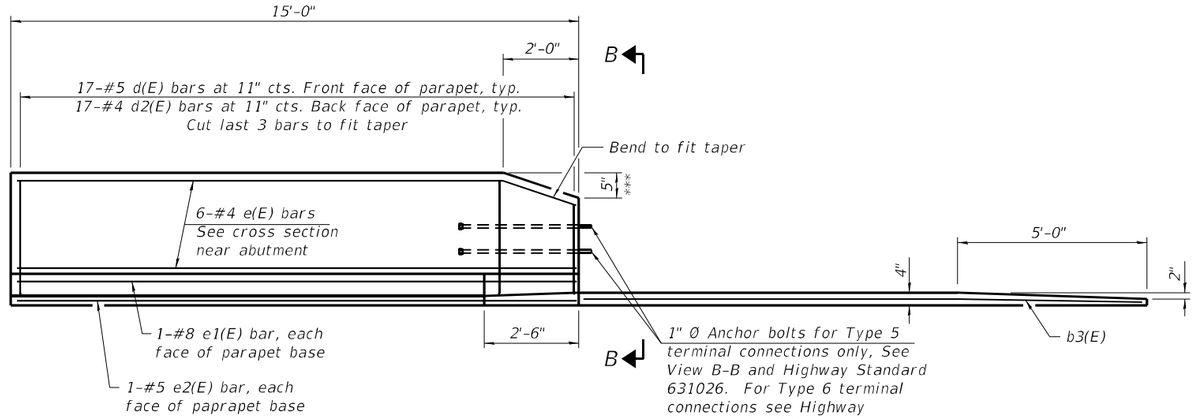
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0010 & 092-0011

SHEET NO. 11 OF 23 SHEETS

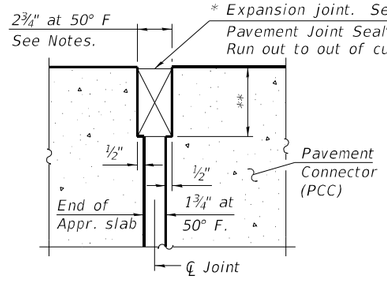
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	332
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	



SECTION A-A



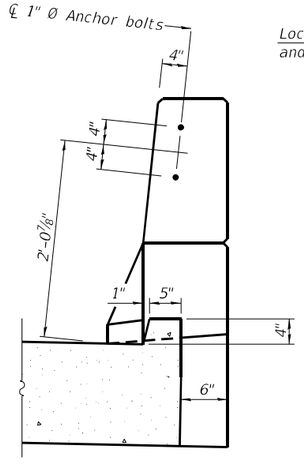
INSIDE ELEVATION OF PARAPET AND CURB



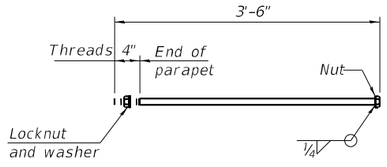
DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations



VIEW B-B



*1" Ø ANCHOR BOLT
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. The length of bridge used to calculate the adjustment shall be equal to the distance from the fixed bearing to the end of the bridge approach slab.

Parapet concrete shall be paid for as Concrete Superstructure.

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 (Qmax) = 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 23.

Adjust the profile grade as needed across the length of the bridge approach slab to match top of bridge deck overlay at the abutment.

*** Omit taper at departure ends with Type 5 Terminals

**** Prior to ¼" Diamond Grinding

STR. NO. 092-0010
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	92	#5	18'-6"	
a4(E)	92	#5	24'-5"	
a5(E)	120	#8	18'-1"	
a6(E)	120	#8	24'-0"	
a7(E)	92	#5	7'-4"	
b(E)	130	#5	29'-8"	
b1(E)	208	#9	29'-8"	
b2(E)	8	#5	14'-8"	
b3(E)	4	#4	14'-8"	
d(E)	68	#5	3'-0"	
d1(E)	68	#5	2'-7"	
d2(E)	68	#4	3'-0"	
d5(E)	68	#4	3'-4"	
e(E)	24	#4	14'-8"	
e1(E)	8	#8	14'-8"	
e2(E)	8	#5	14'-8"	
t(E)	176	#4	9'-8"	
w(E)	80	#5	18'-1"	
w1(E)	80	#5	24'-0"	
Concrete Superstructure		Cu. Yd.	5.9	
Concrete Superstructure (Approach Slab)		Cu. Yd.	123.4	
Concrete Structures		Cu. Yd.	26.4	
Reinforcement Bars, Epoxy Coated		Pound	49470	

STR. NO. 092-0011
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	92	#5	18'-6"	
a4(E)	92	#5	24'-5"	
a5(E)	120	#8	18'-1"	
a6(E)	120	#8	24'-0"	
a7(E)	92	#5	7'-4"	
b(E)	130	#5	29'-8"	
b1(E)	208	#9	29'-8"	
b2(E)	8	#5	14'-8"	
b3(E)	4	#4	14'-8"	
d(E)	68	#5	3'-0"	
d1(E)	68	#5	2'-7"	
d2(E)	68	#4	3'-0"	
d5(E)	68	#4	3'-4"	
e(E)	24	#4	14'-8"	
e1(E)	8	#8	14'-8"	
e2(E)	8	#5	14'-8"	
t(E)	176	#4	9'-8"	
w(E)	80	#5	18'-1"	
w1(E)	80	#5	24'-0"	
Concrete Superstructure		Cu. Yd.	5.9	
Concrete Superstructure (Approach Slab)		Cu. Yd.	123.4	
Concrete Structures		Cu. Yd.	26.4	
Reinforcement Bars, Epoxy Coated		Pound	49470	

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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - BAS	REVISED -			SECTION (92-10,11,12)R
PLOT SCALE =	DRAWN - LVM	REVISED -			COUNTY VERMILION
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -		SHEET NO. 12 OF 23 SHEETS	TOTAL SHEETS 698
					SHEET NO. 333
					CONTRACT NO. 70A29
					ILLINOIS FED. AID PROJECT

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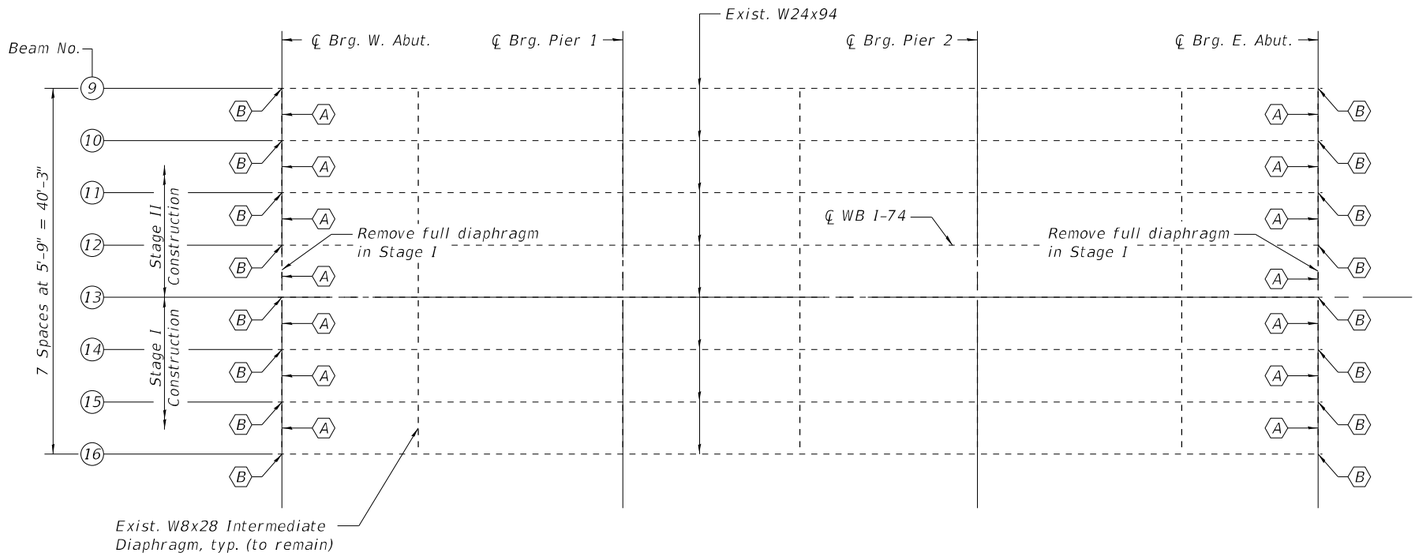


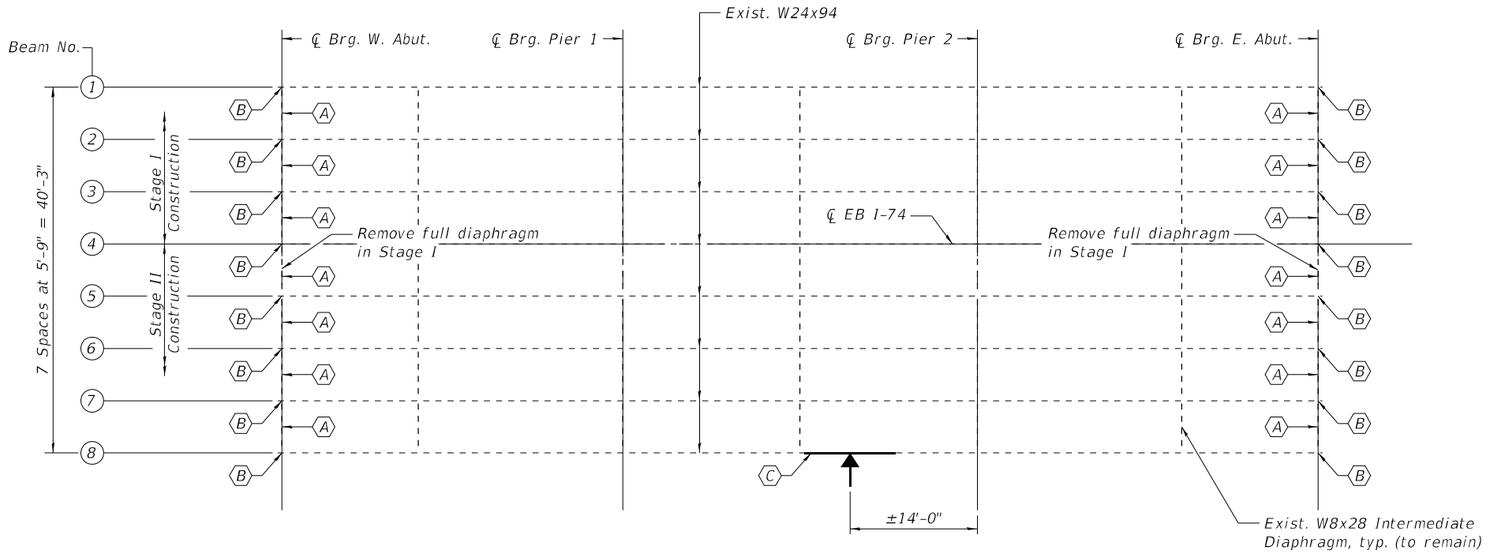
FRAMING PLAN – S.N. 092-0011

N

GIRDER REACTION TABLE (EXIST.) S.N. 092-0010 & 092-0011		
		Abutments
R_{DL}	(k)	14.2
R_{LL}	(k)	31.2
R_{IM}	(k)	9.4
R_{Total}	(k)	54.8

* GIRDER REACTION TABLE (PROP.) S.N. 092-0010 & 092-0011		
		Abutments
R_{DL}	(k)	39.0
R_{LL}	(k)	32.8
R_{IM}	(k)	9.9
R_{Total}	(k)	81.7

* New bearing assembly loads (includes approach slab)



FRAMING PLAN – S.N. 092-0010

Impact Line

Notes:
Removal of existing diaphragms shall be paid for as Structural Steel Removal.
Removal of existing bearing assemblies shall be paid for as Jack and Remove Existing Bearings.
See Sheet 14 of 23 for Bill of Material.

Callouts:

(A) – Remove existing W12x40 end diaphragm – see Sheet 14 of 23 for details.

(B) – Jack and remove existing bearing assembly, replace with new bearing assemblies as shown on Sheet 16 of 23.

(C) – Existing Beam to be Straightened & Strengthened – see Sheets 14 and 15 of 23 for details.

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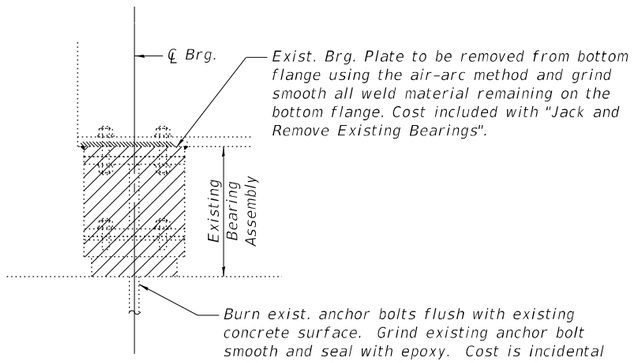
		CHECKED - BAS	REVISED -	
PLOT SCALE =		DRAWN - LVM	REVISED -	
PLOT DATE = 4/22/2022		CHECKED - BAS	REVISED -	

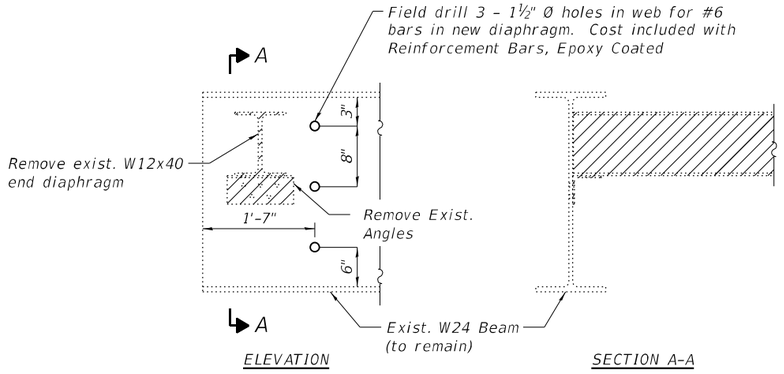
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL REMOVAL
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 13 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	334
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



EXISTING BEARING REMOVAL DETAIL



END DIAPHRAGM REMOVAL

To be removed

Notes:

Removal of the existing steel extensions and side retainers at the abutments shall be included in the cost of Jack and Remove Existing Bearings.

Minimum jack capacity shall be 30 tons.

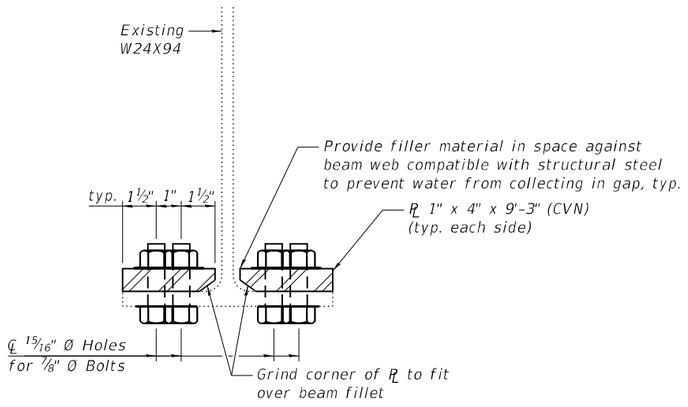
Removal of steel end diaphragms shall be paid for as Structural Steel Removal.

Strengthening plates shall be paid for as Structural Steel Repair.

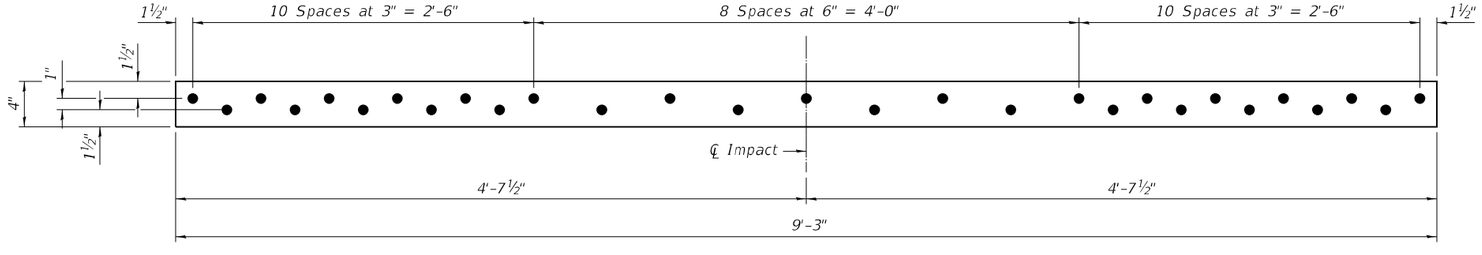
Beam ends shall be painted as noted in the General Notes. Cost included with Cleaning and Painting Steel Bridge No. 1 (S.N. 092-0010) and Cleaning and Painting Steel Bridge No. 2 (S.N. 092-0011).

Following the beam straightening but prior to installation of the strengthening PL, the beam flange area in contact with the strengthening PL shall be cleaned and painted per the requirements for Primary Connections as specified in the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.



STRENGTHENING DETAIL



BEAM 8 STRENGTHENING PL

PL 1" x 4" x 9'-3" (CVN) (2 Required)

BILL OF MATERIAL STR. NO. 092-0010

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	16
Anchor Bolts, 1"	Each	32
Furnishing and Erecting Structural Steel	Pound	2980
Jack and Remove Existing Bearings	Each	16
Structural Steel Removal	Pound	3680
Structural Steel Repair	Pound	250

BILL OF MATERIAL STR. NO. 092-0011

Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	16
Anchor Bolts, 1"	Each	32
Furnishing and Erecting Structural Steel	Pound	2980
Jack and Remove Existing Bearings	Each	16
Structural Steel Removal	Pound	3680

MODEL: Default
FILE NAME: S:\237\2019\237190200.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-092001O-014-Str Steel Details.dgn

4/22/2022 10:05:18 AM

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson		DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL STEEL DETAILS STRUCTURE NO. 092-0010 & 092-0011
		CHECKED - BAS	REVISED -		
PLOT SCALE =		DRAWN - LVM	REVISED -		
PLOT DATE = 4/22/2022		CHECKED - BAS	REVISED -		SHEET NO. 14 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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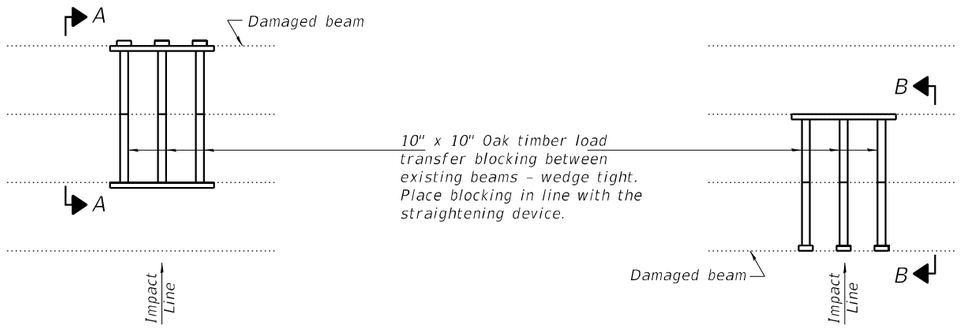
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

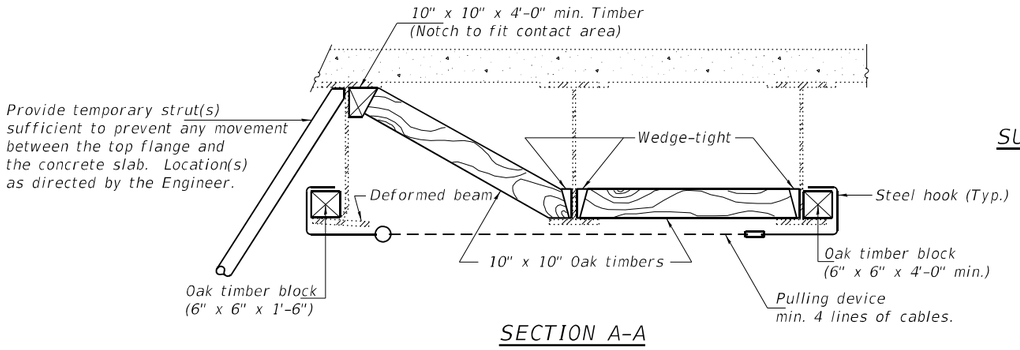


PULLING DEVICE

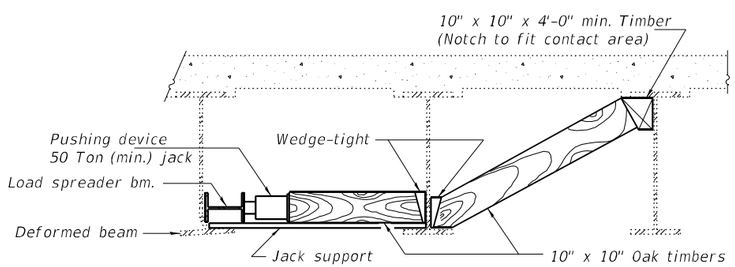
PUSHING DEVICE

PARTIAL PLANS
SUGGESTED BEAM STRAIGHTENING METHODS

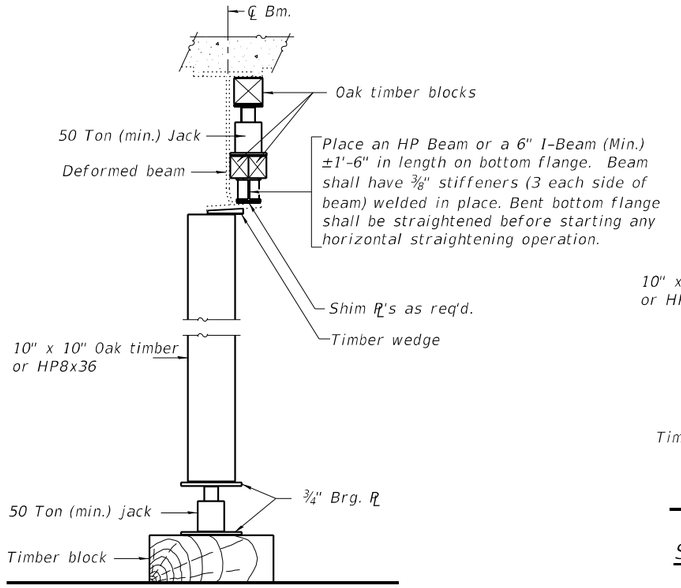
Straightening force shall be maintained on all load transfer blocking during beam straightening.



SECTION A-A

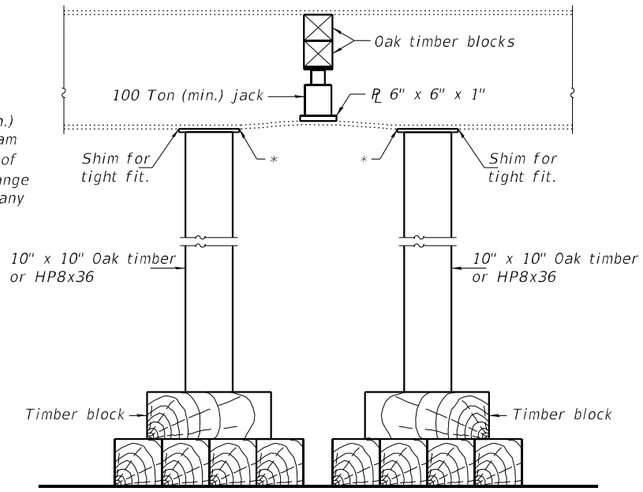


SECTION B-B



SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct flange rotation.)

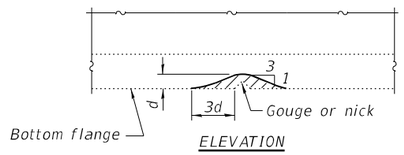


SUGGESTED VERTICAL STRAIGHTENING DETAIL

(To correct localized vertical flange deformations.)

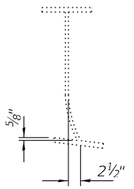
* Edge of plate shall line up with edge of deformation.

Note:
Braces and jack assembly shall be placed on same side of web.
Bent bottom flange shall be straightened before starting any horizontal straightening operations.



GRINDING DETAIL

Grind existing nicks, gouges and shallow cracks in the damaged beams as detailed. Ground surfaces shall be inspected for cracks using dye penetrant or magnetic particle testing prior to initiating any beam straightening operations. Any cracks that cannot be removed by grinding approximately ¼" deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. Ground surfaces shall be spot cleaned and painted with an aluminum epoxy mastic primer followed by a finish coat to match the color of the existing beam. Cost of grinding, testing and spot painting included with Beam Straightening.

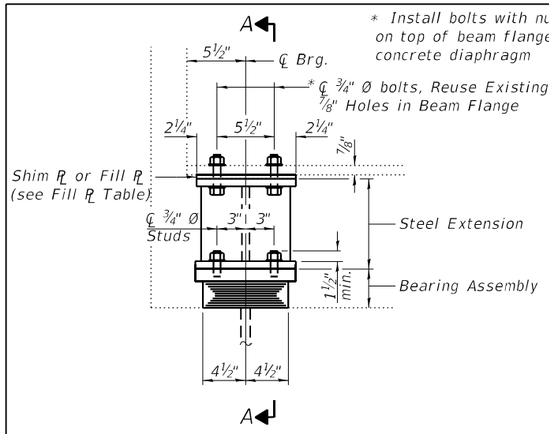


EXISTING DEFORMATION TO BE STRAIGHTENED

(Looking West)
(Approximate max. deflections)
Deflected length of beam to be straightened is approximately 10'-0"

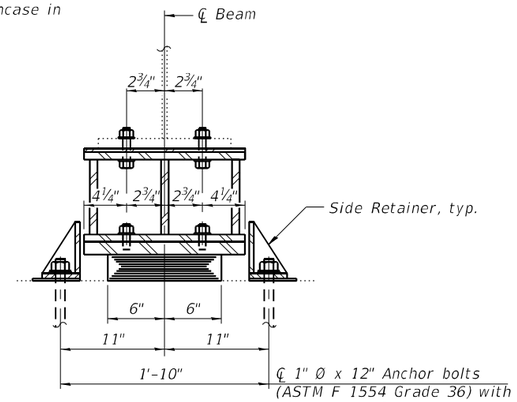
BILL OF MATERIAL
STR. NO. 092-0010

Item	Unit	Quantity
Beam Straightening	L. Sum	1

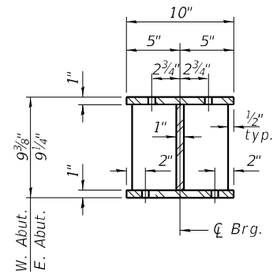


* Install bolts with nut and washer on top of beam flange, encase in concrete diaphragm

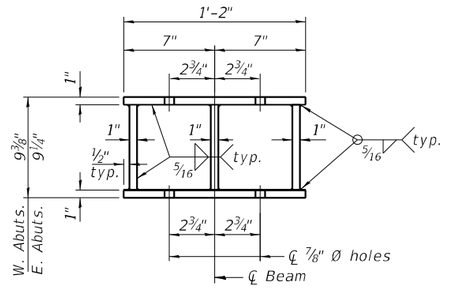
ELEVATION AT ABUT.



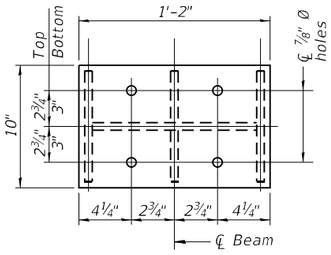
SECTION A-A



SECTION



ELEVATION



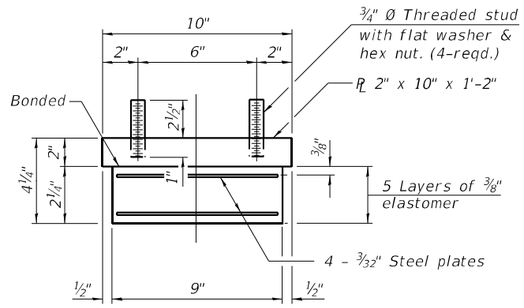
PLAN - TOP AND BOTTOM ℄

STEEL EXTENSION

TYPE I ELASTOMERIC EXP. BRG.

FILL PLATE THICKNESS

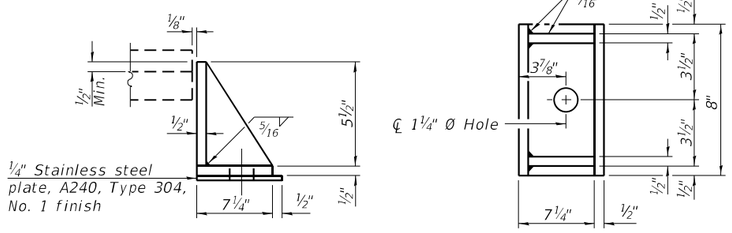
S.N. 092-0010, W. Abut.		S.N. 092-0010, E. Abut.	
Beam 1	5/8"	Beam 1	¾"
Beam 2	3/8"	Beam 2	5/8"
Beam 3	--	Beam 3	5/8"
Beam 4	¼"	Beam 4	1"
Beam 5	--	Beam 5	3/8"
Beam 6	--	Beam 6	½"
Beam 7	--	Beam 7	½"
Beam 8	--	Beam 8	3/8"
S.N. 092-0011, W. Abut.		S.N. 092-0011, E. Abut.	
Beam 9	--	Beam 9	3/8"
Beam 10	¾"	Beam 10	3/8"
Beam 11	¼"	Beam 11	--
Beam 12	¼"	Beam 12	--
Beam 13	5/8"	Beam 13	¼"
Beam 14	3/8"	Beam 14	¾"
Beam 15	3/8"	Beam 15	5/8"
Beam 16	3/8"	Beam 16	¾"



BEARING ASSEMBLY

(at Abutments)

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.

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTMF1554.

Steel extensions, shim plates, and connection bolts shall be paid for as Furnishing and Erecting Structural Steel.

Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

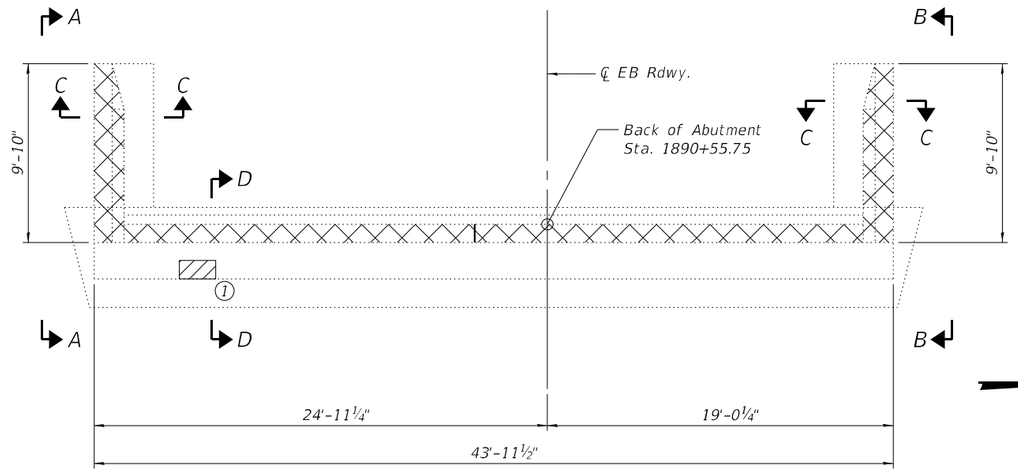
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

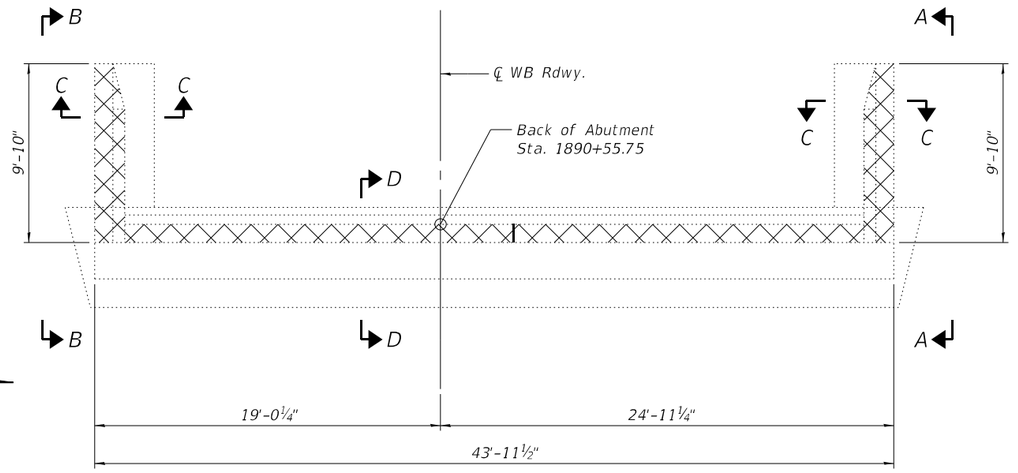
Provide two ⅛" adjusting shims for each bearing in addition to all other plates of the Bearing Assembly, and place as shown in the bearing details.

See sheet 14 of 23 for Bill of Material.

The Top Bearing Plates shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1. Cost included with Elastomeric Bearing Assembly, Type I.

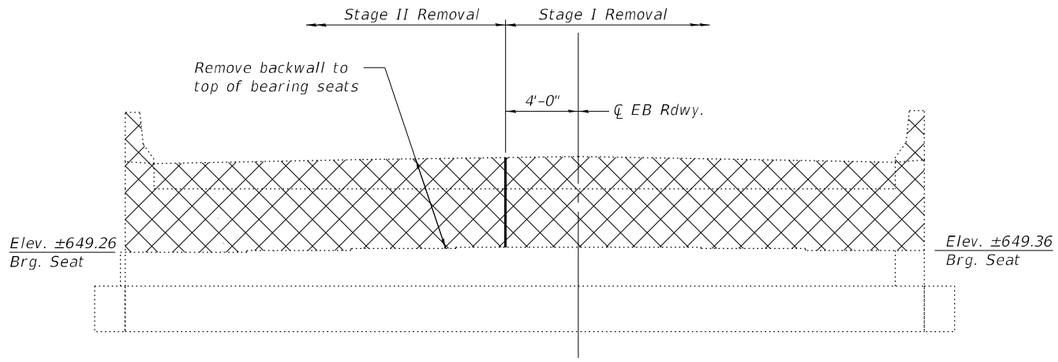


S.N. 092-0010

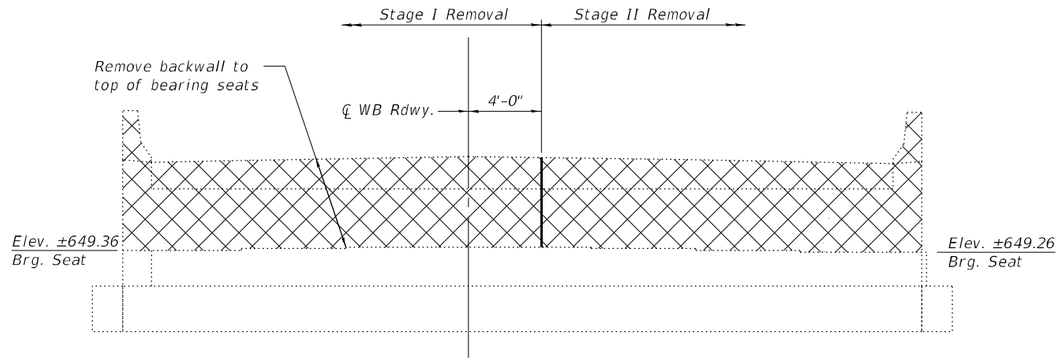


S.N. 092-0011

ABUTMENT PLAN



S.N. 092-0010



S.N. 092-0011

ABUTMENT ELEVATION

(Looking West)

Notes:

Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.

See Sheet 19 of 23 for Sections A-A, B-B, C-C, and D-D.

See Sheet 20 of 23 for Bill of Material.

See Sheet 2 of 23 for limits of Structure Excavation.

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	1' x 2'	2			
	Totals	2			

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal

MODEL: Default
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4/22/2022 10:05:20 AM

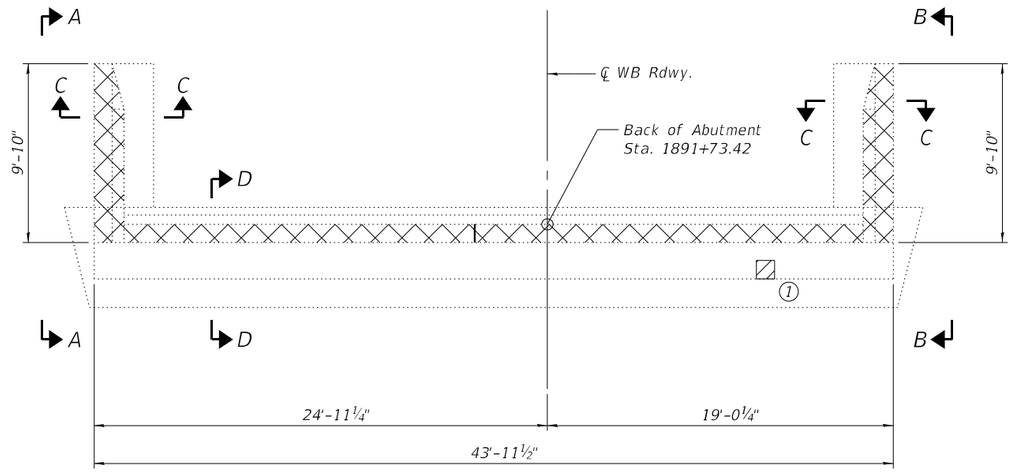
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED	-
		CHECKED -	BAS	REVISED	-
PLOT SCALE =		DRAWN -	LVM	REVISED	-
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED	-

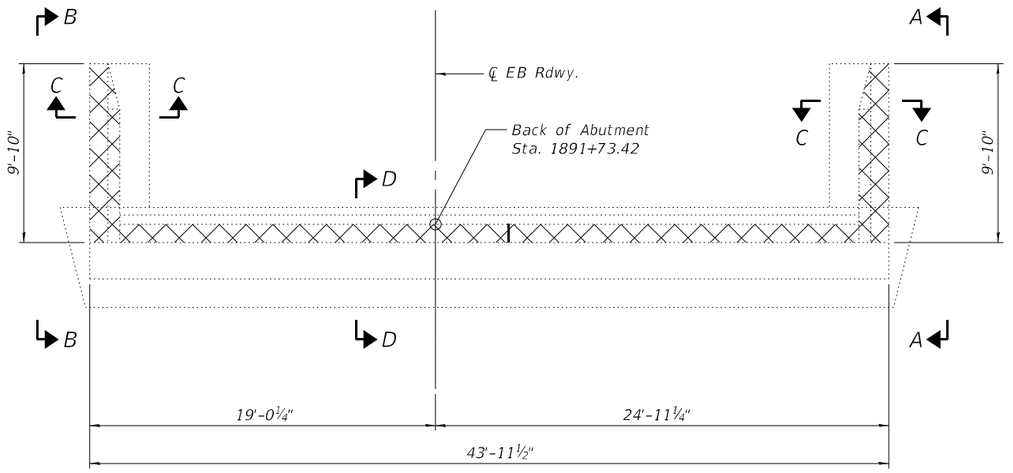
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT REMOVAL
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 17 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	338
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



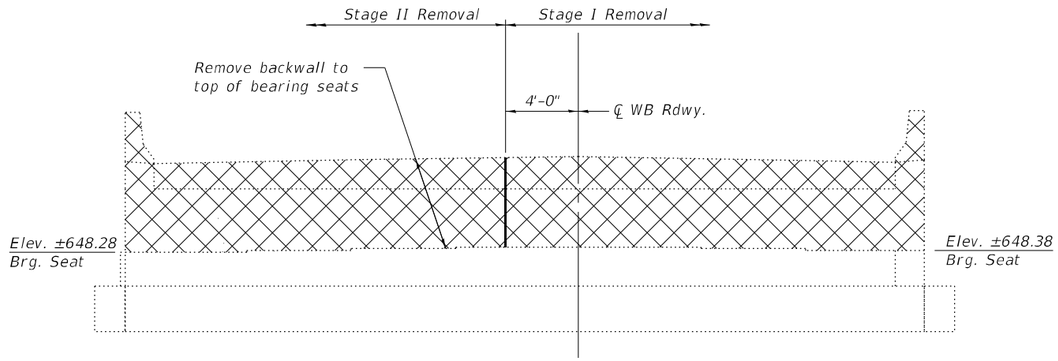
S.N. 092-0011



S.N. 092-0010

N

ABUTMENT PLAN



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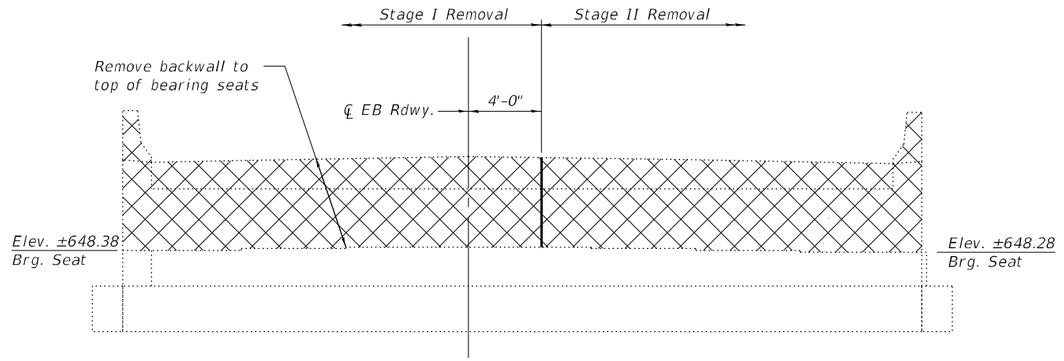

S.N. 092-0010

ABUTMENT ELEVATION

(Looking East)

Notes:

Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.

See Sheet 19 of 23 for Sections A-A, B-B, C-C, and D-D.

See Sheet 20 of 23 for Bill of Material.

See Sheet 2 of 23 for limits of Structure Excavation.

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	1' x 1'	1			
	Totals	1			

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal

MODEL: Default
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4/22/2022 10:05:21 AM

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	LVM	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REMOVAL
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 18 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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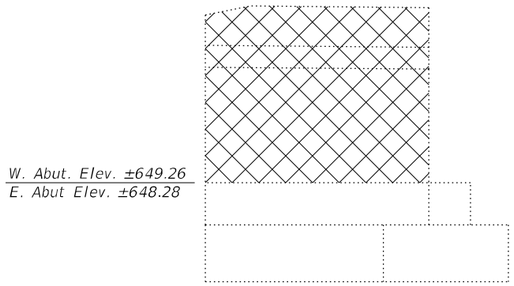
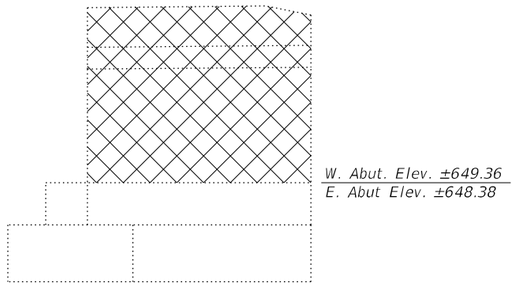
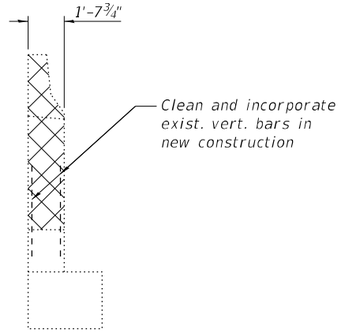
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



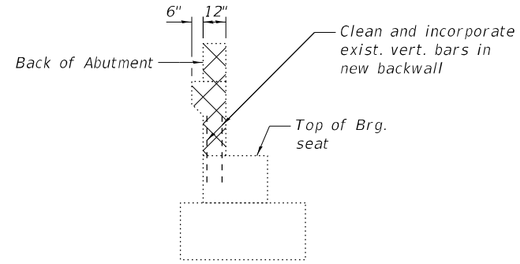
VIEW A-A
(Outside Wingwall)
(EB W. Abut. & WB E. Abut. Shown, others opposite)



VIEW B-B
(Median Side Wingwall)
(EB W. Abut. & WB E. Abut. Shown, others opposite)



SECTION C-C



SECTION D-D

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4/22/2022 10:05:22 AM

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - LVM	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT REMOVAL DETAILS
STRUCTURE NO. 092-0010 & 092-0011
SHEET NO. 19 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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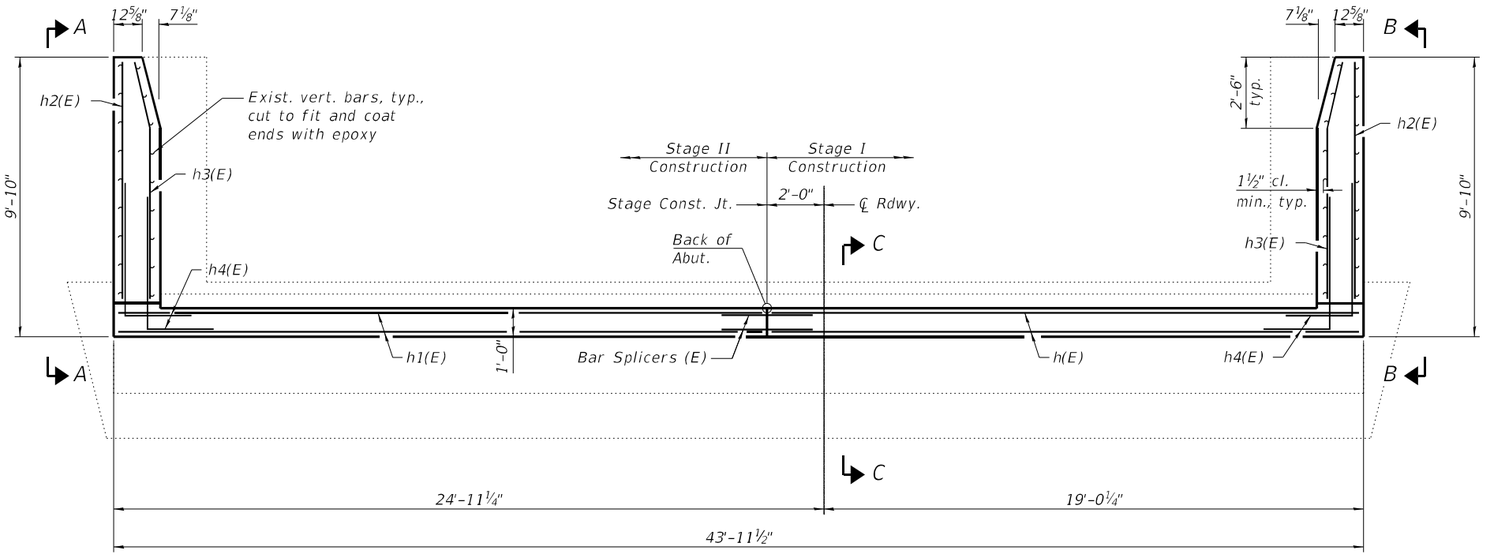
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

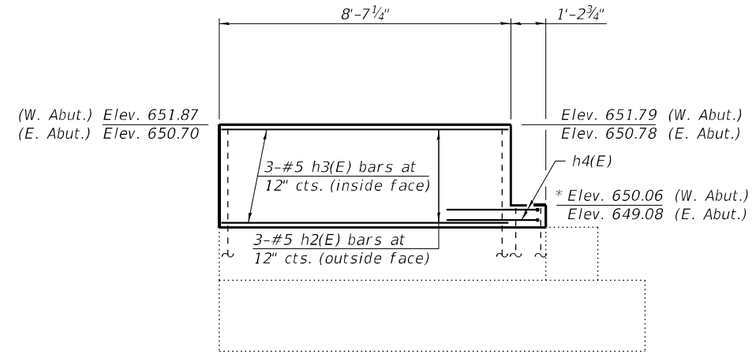


PLAN

(EB W. Abut. & WB E. Abut. shown, EB E. Abut. & WB W. Abut. opposite)

S.N. 092-0010 (EB)

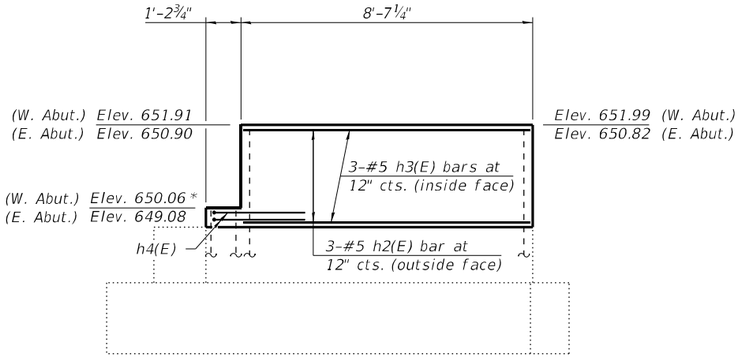
S.N. 092-0011 (WB)



VIEW A-A

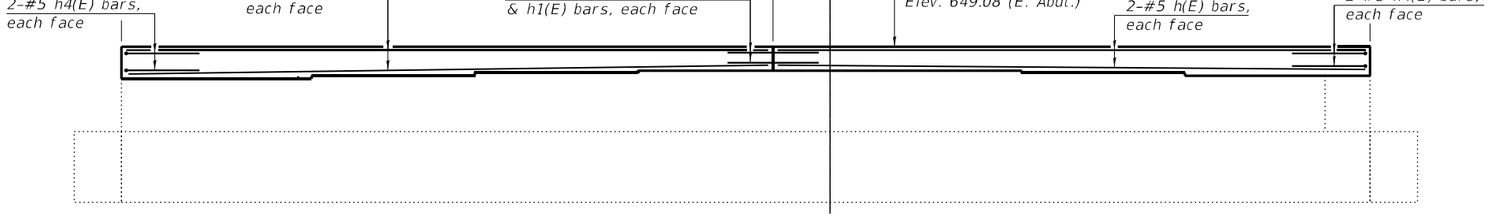
(Outside Wingwall)
(EB W. Abut. & WB E. Abut. Shown, EB E. Abut. & WB W. Abut. opposite)

* Top of back wall shall be ±6" above the highest beam bearing seat.



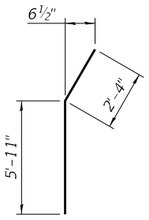
VIEW B-B

(Median Side Wingwall)
(EB W. Abut. & WB E. Abut. Shown, EB E. Abut. & WB W. Abut. opposite)

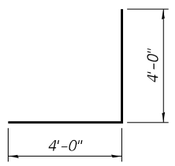


ELEVATION

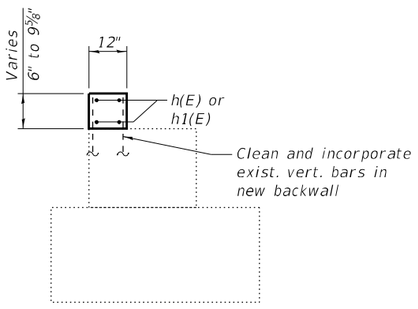
(Looking West at W. Abut.)
(Looking East at E. Abut.)



Bar h3(E)



Bar h4(E)



SECTION C-C

STR. NO. 092-0010 TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	8	#5	20'-8"	
h1(E)	8	#5	22'-7"	
h2(E)	12	#5	8'-3"	
h3(E)	12	#5	8'-3"	
h4(E)	16	#5	8'-0"	
Structure Excavation		Cu. Yd.	66	
Concrete Removal		Cu. Yd.	28.1	
Concrete Structures		Cu. Yd.	7.5	
Reinforcement Bars, Epoxy Coated		Pound	700	
Structural Repair of Concrete (Depth ≤ 5 in.)		Sq. Ft.	2	

STR. NO. 092-0011 TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	8	#5	20'-8"	
h1(E)	8	#5	22'-7"	
h2(E)	12	#5	8'-3"	
h3(E)	12	#5	8'-3"	
h4(E)	16	#5	8'-0"	
Structure Excavation		Cu. Yd.	66	
Concrete Removal		Cu. Yd.	28.1	
Concrete Structures		Cu. Yd.	7.5	
Reinforcement Bars, Epoxy Coated		Pound	700	
Structural Repair of Concrete (Depth ≤ 5 in.)		Sq. Ft.	1	

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	LVM	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

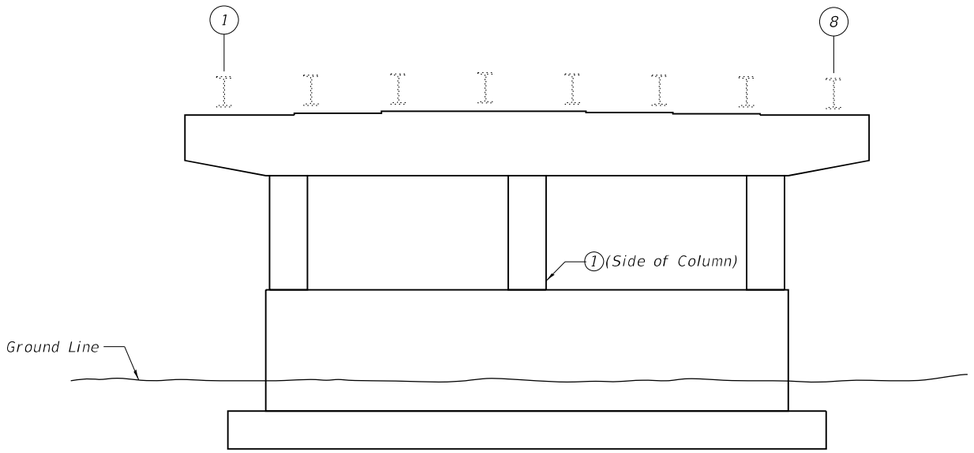
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENTS
STRUCTURE NO. 092-0010 & 092-0011

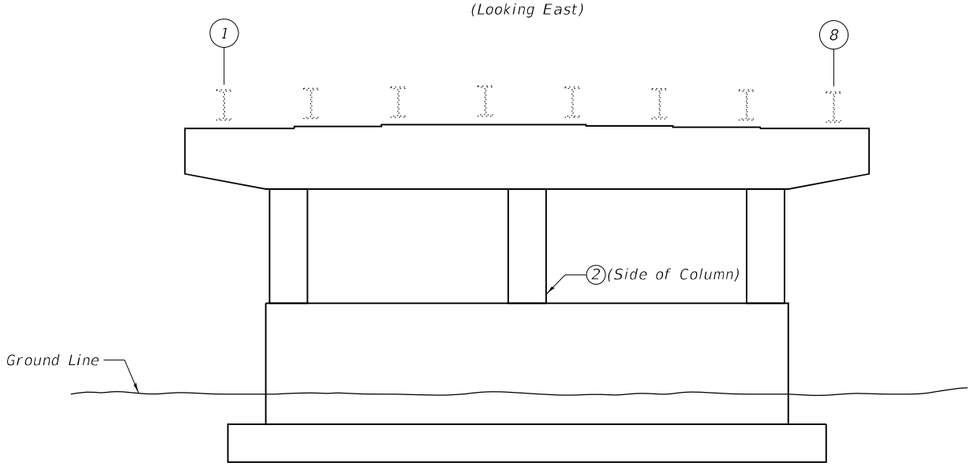
SHEET NO. 20 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	341
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".



ELEVATION - PIER 1
(Looking East)



ELEVATION - PIER 2
(Looking East)

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	1' x 1'	1			
2	2' x 1'	2			
	Totals	3			

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	3

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT DATE = 4/22/2022		CHECKED - BAS	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

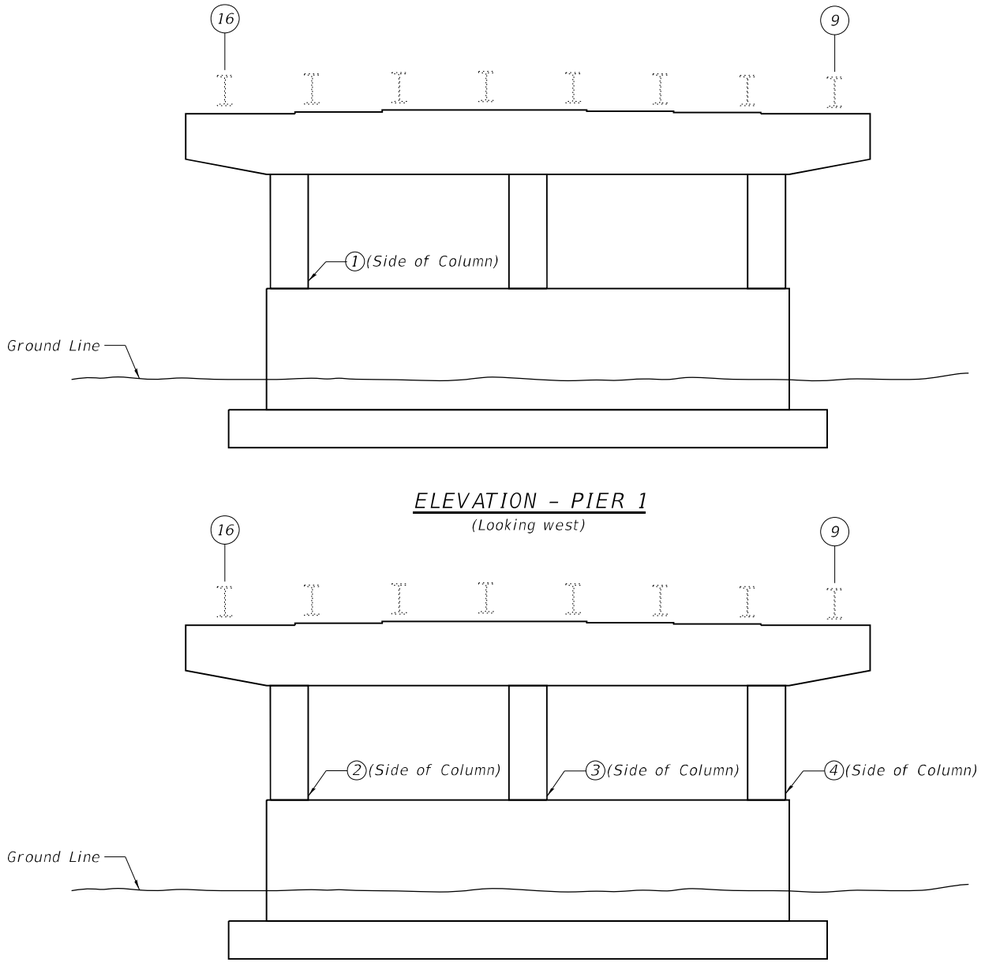
SUBSTRUCTURE REPAIR - PIERS
S.N. 092-0010
SHEET NO. 21 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	342
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

Notes:
Pier repair areas shown are estimated from soundings on October 11 thru 16, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
1	3' x 1'	3			
2	3' x 1'	3			
3	1' x 1'	1			
4	2' x 1'	2			
Totals		9			



ELEVATION – PIER 1
(Looking west)

ELEVATION – PIER 2
(Looking west)

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	9

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

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		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	LVM	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	BAS	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE REPAIR - PIERS
S.N. 092-0011
SHEET NO. 22 OF 23 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	343
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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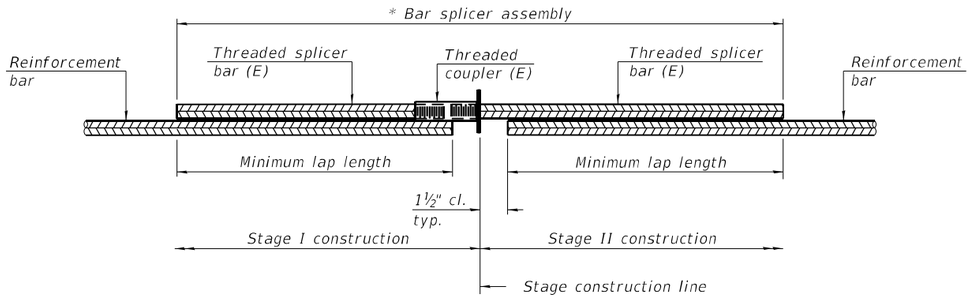


STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

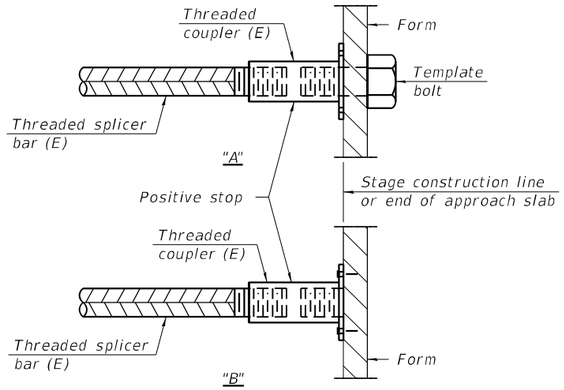
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

STR. NO. 092-0010

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	24	3'-6"
Diaphragm	#6	8	4'-0"
Diaphragm	#4	4	2'-5"
Approach Slab	#5	92	3'-4"
Approach Slab	#8	120	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-2"

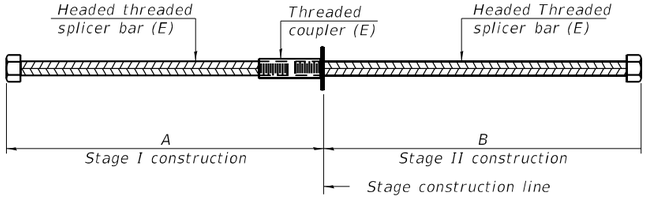
STR. NO. 092-0011

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	24	3'-6"
Diaphragm	#6	8	4'-0"
Diaphragm	#4	4	2'-5"
Approach Slab	#5	92	3'-4"
Approach Slab	#8	120	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-2"



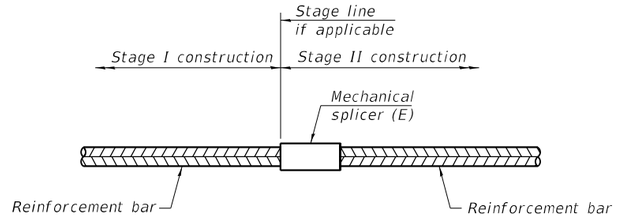
INSTALLATION AND SETTING METHODS

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



HEADED BAR SPLICER ASSEMBLY PLAN

Location	Bar size	No. assemblies required	A	B
Diaphragms -0010	#6	8	1'-9"	3'-6"
Diaphragms -0011	#6	8	1'-9"	3'-6"

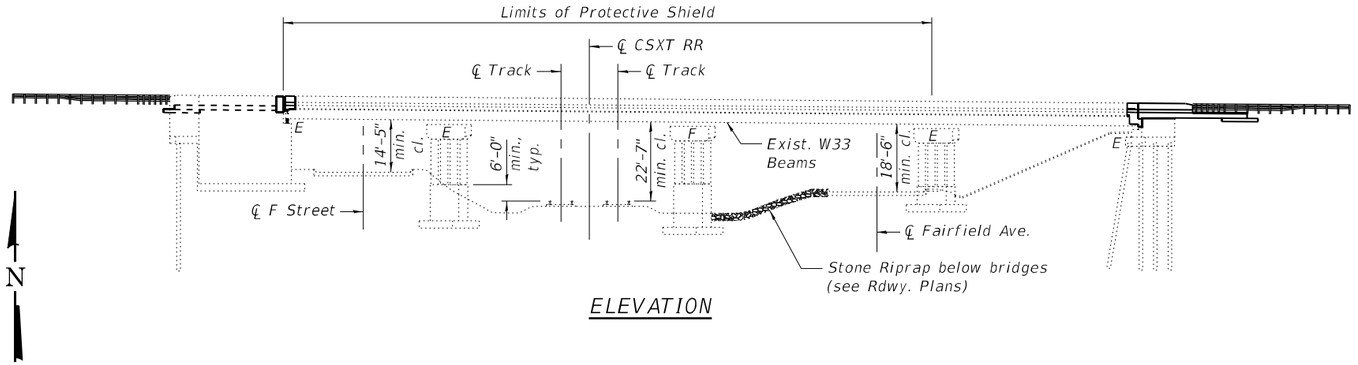


STANDARD MECHANICAL SPLICER

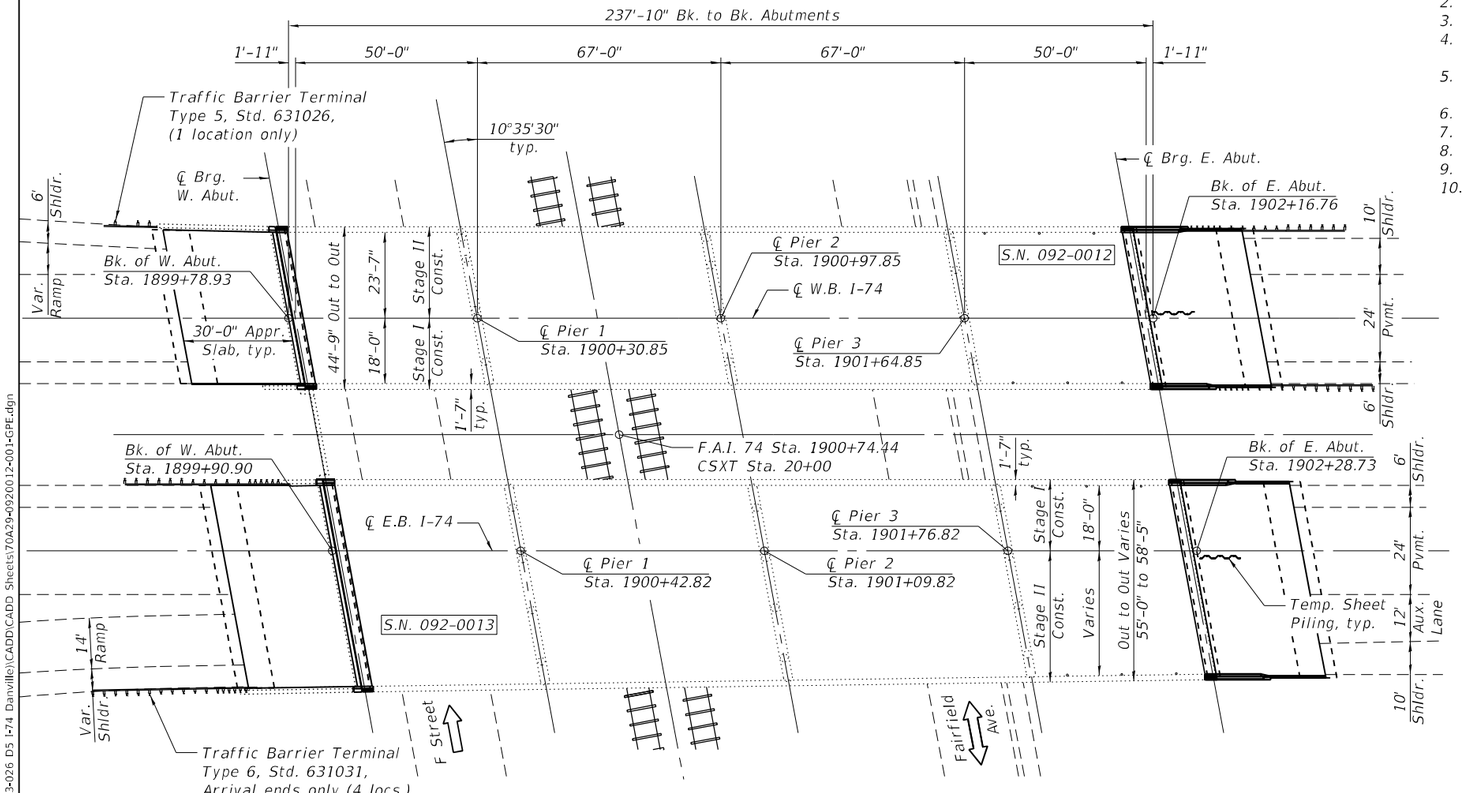
Location	Bar size	No. assemblies required

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

Benchmark – Survey disk on top of the NW wingwall of Structure No. 092-0011 (at G Street). Elev. 656.07.
Existing Structures – Dual Structures, S.N. 092-0012 (W.B.) & 092-0013 (E.B.), composed of four-span continuous wide flange steel beams. Superstructures are supported on pile-supported east stub abutments, west closed abutments, and piers. Built in 1964 as Section 92-11VB-1 at Sta. 1900+80.59; repaired in 1977; repaired in 1992 as Section (92-11VB-1)BR.
Traffic to be maintained using staged construction.
Salvage – None.



ELEVATION



PLAN

PROPOSED SCOPE OF WORK

1. Rehabilitate bridge deck with scarification and latex concrete overlay
2. Remove and replace bridge approach slabs
3. Replace steel beam bearing assemblies at abutments
4. Remove and replace deck joints at west abutment with preformed joint strip seal
5. Remove existing east abutment deck joints and reconstruct with jointless semi-integral abutments
6. Repair concrete deterioration on abutments
7. Repair sections of concrete slope wall
8. Remove and replace steel diaphragms at west abutment
9. Paint beam ends
10. Add side retainers to Pier 1 & Pier 3 bearings

LOADING HS20-44

DESIGN SPECIFICATIONS

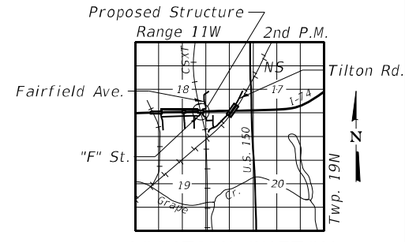
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition (LFD)

DESIGN STRESSES

FIELD UNITS

New Construction:
f'c = 3,500 psi
f'c = 4,000 psi (deck)
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (structural steel)

Exist. Structure:
f'c = 3,500 psi
fy = 60,000 psi (deck reinf.)
fy = 40,000 psi (orig. substr. reinf.)
fy = 36,000 (structural steel)



LOCATION SKETCH

STATE OF ILLINOIS
BRYAN A. SWANSON
081-006716
PEORIA, IL
LICENSED STRUCTURAL ENGINEER

Date Signed: 4-22-22
Exp. Date: 11/30/2022

GENERAL PLAN AND ELEVATION
I-74 OVER F STREET, FAIRFIELD AVE., AND CSXT RAILROAD
F.A.I. 74 – SEC. (92-10,11,12)R
VERMILION COUNTY
STA. 1900+74.44
STR. NO. 092-0012 & 092-0013

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - BAS	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	345
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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GENERAL NOTES

All new fasteners shall be ¾" Ø high-strength steel bolts, unless noted otherwise.

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas, and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The 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.

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.

Existing Name Plates shall be removed, cleaned and incorporated into the new construction. Cost included with Relocating Name Plates.

Synthetic Fibers shall be included in the bridge deck concrete overlay specified. See Special Provisions.

The existing structural steel 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". After removal of deck ends and diaphragms, but prior to new bearing installation and encasement of the steel beams, all beams and other existing structural steel within 5 ft of the beam ends shall be cleaned per Near White Blast Cleaning (SSPC-SP10).

The designated areas cleaned per Near White Blast Cleaning (SSPC-SP10) shall be painted according to the requirements of Paint System 1 (OZ/E/U). The color of the final finish coat for all steel surfaces shall be Gray, Munsell No. 5B 7/1.

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 "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Care shall be taken not to damage rubber bearing or joint components during blasting and cleaning operations. Any damage to these components shall be repaired at the Contractor's expense.

SSPC-QP1 and SPC-QP2 Painting Contractor Certifications will be required for this contract.

All new structural steel shall be hot dip galvanized unless noted otherwise. See Special Provision for "Hot Dip Galvanizing for Structural Steel".

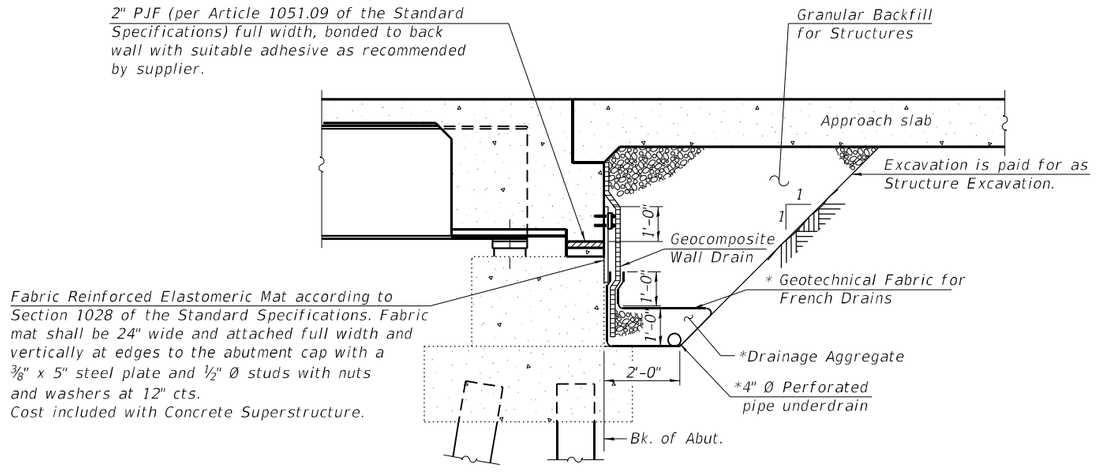
Existing structure plans are available from the District upon request.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	-0012	-0013	TOTAL
	Concrete Removal	Cu. Yd.	28.7	34.0	62.7
	Protective Shield	Sq. Yd.	918	1171	2089
	Structure Excavation	Cu Yd.	43	58	101
	Concrete Structures	Cu. Yd.	32.1	40.0	72.1
	Concrete Superstructure	Cu. Yd.	32.4	40.1	72.5
*	Protective Coat	Sq. Yd.	1389	1783	3172
	Concrete Superstructure (Approach Slab)	Cu. Yd.	122.8	157.1	279.9
	Furnishing and Erecting Structural Steel	Pound	3640	6250	9890
	Reinforcement Bars, Epoxy Coated	Pound	52280	67410	119690
	Bar Splicers	Each	331	331	662
	Preformed Joint Strip Seal	Foot	45	59	104
	Elastomeric Bearing Assembly, Type I	Each	7	9	16
	Elastomeric Bearing Assembly, Type II	Each	7	9	16
	Anchor Bolts, 1"	Each	52	68	120
	Temporary Sheet Piling	Sq. Ft.	89	95	184
	Granular Backfill for Structures	Cu. Yd.	39	54	93
	Epoxy Crack Injection	Foot	15	22	37
	Geocomposite Wall Drain	Sq. Yd.	27	35	62
	Pipe Underdrains for Structures 4"	Foot	66	76	142
	Slope Wall Crack Sealing	Foot			12
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	811	1311	2122
	Jack and Remove Existing Bearings	Each	14	18	32
	Structural Steel Removal	Pound	2400	4620	7020
	Bridge Deck Latex Concrete Overlay 2¾"	Sq. Yd.	1061	1366	2427
	Bridge Deck Scarification ¾"	Sq. Yd.	1061	1366	2427
	Containment and Disposal of Lead Paint Cleaning Residues No. 3	L. Sum	1		1
	Containment and Disposal of Lead Paint Cleaning Residues No. 4	L. Sum		1	1
	Cleaning and Painting Steel Bridge No. 3	L. Sum	1		1
	Cleaning and Painting Steel Bridge No. 4	L. Sum		1	1
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	98	88	186
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1	1	2
	Diamond Grinding (Bridge Section)	Sq. Yd.	1240	1634	2874
	Slope Wall Repair	Sq. Yd.			202
	Slope Wall Slurry Pumping	Cu. Yd.			6
	Temporary Shoring and Cribbing	Each	3	5	8

* On new concrete superstructure, approach slabs, and latex concrete overlay.

INDEX OF SHEETS



SECTION THRU SEMI-INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. L's)
(East Abutment only)

*Included in the cost of Pipe Underdrains for Structures 4".

Note:
All drainage system components shall extend between the wingwalls at each end of abutment, except an outlet pipe shall extend until intersecting with the side slopes or slope wall surface. Any slope wall removal and replacement required for the installation of the outlet pipe shall be included in the cost of Pipe Underdrains for Structures 4". The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT SCALE =		DRAWN - BAS	REVISED -		
PLOT DATE = 4/22/2022		CHECKED - LVM	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 092-0012 & 092-0013
SHEET NO. 2 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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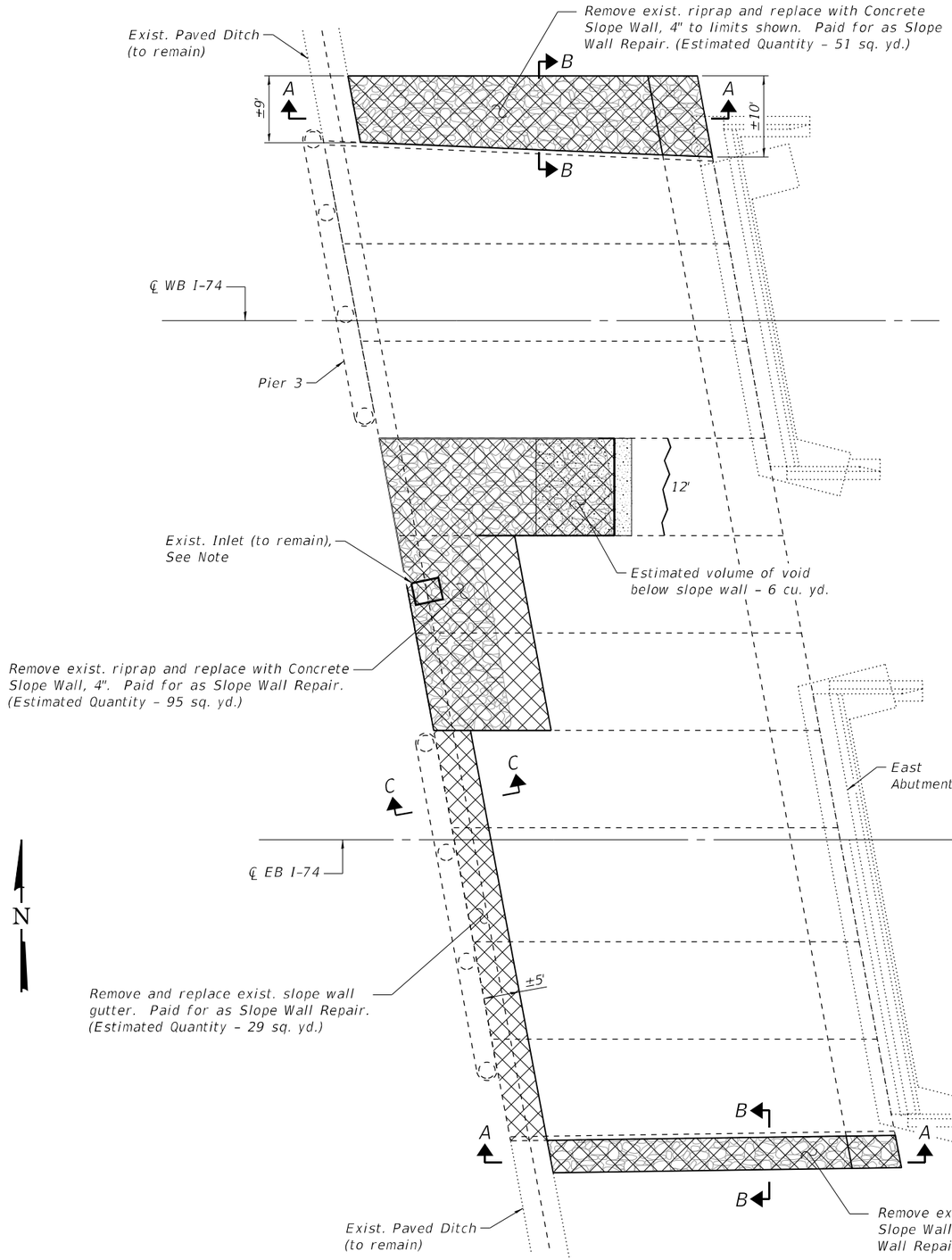
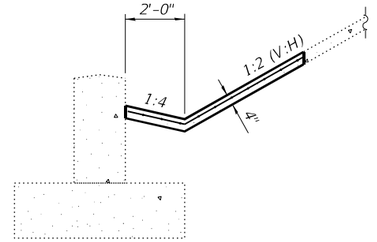
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



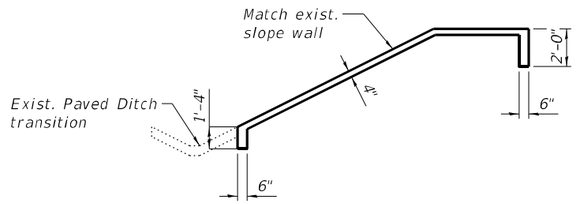
SLOPE WALL REPAIR PLAN

LEGEND

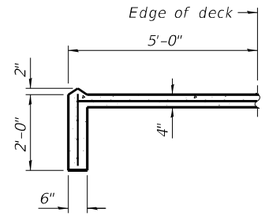
	Remove and Replace Slope Wall (paid for as Slope Wall Repair)
	Slope Wall Slurry Pumping
#	Slope Wall Crack Sealing (Length)



SECTION C-C



SECTION A-A



SECTION B-B

Notes:

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

Voids below the replaced slope wall shall be filled prior to placement of the new concrete slab. Existing riprap not extending above the bottom of the new concrete may remain; fill the remaining void with controlled low-strength material per the Special Provision for Slope Wall Slurry Pumping.

Layout and limits of the slope wall removal and repairs may be varied to suit conditions in the field as directed by the Engineer.

Remove all dirt and riprap from on top of bottom of slope wall. Expose and clean out inlet located between bridges. Cost included with Slope Wall Repair.

Set flow line of slope wall gutter to maintain positive drainage from Paved Ditch to Inlet.

SLOPE WALL BILL OF MATERIAL

Item	Unit	Quantity
Slope Wall Repair	Sq. Yd.	202
Slope Wall Slurry Pumping	Cu. Yd.	6
Slope Wall Crack Sealing	Foot	12

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL PLAN
STRUCTURE NO. 092-0012 & 092-0013
SHEET NO. 3 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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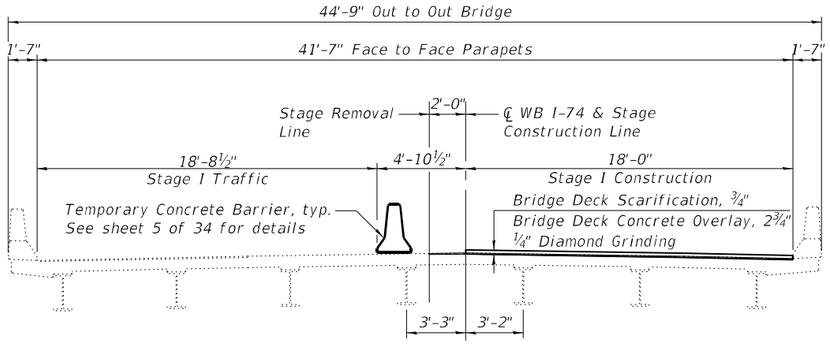
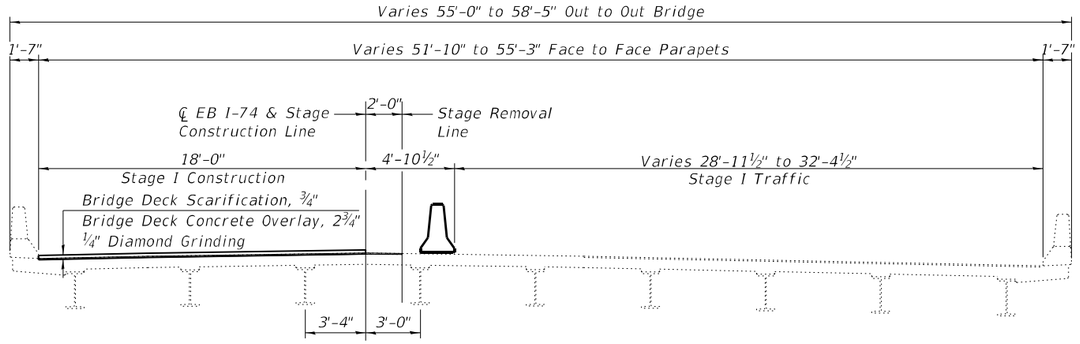
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



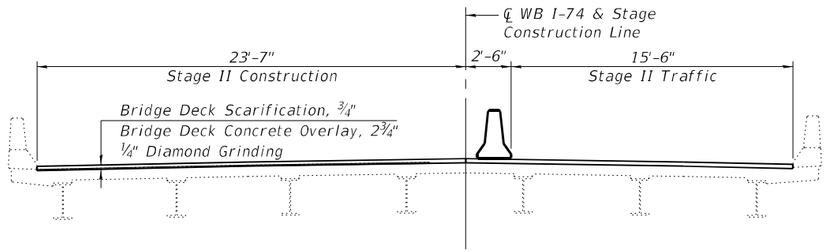
S.N. 092-0012



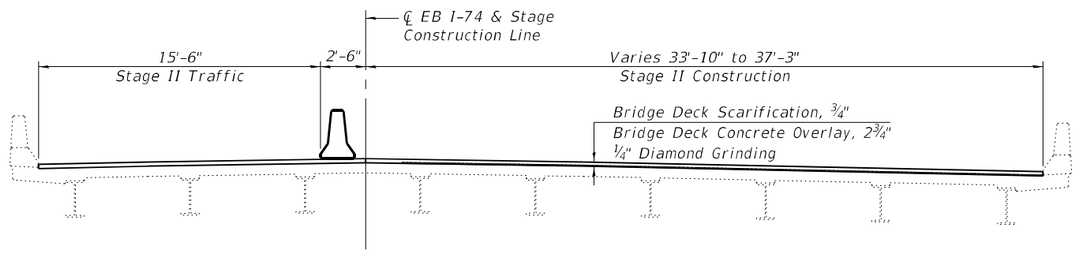
S.N. 092-0013

STAGE I CONSTRUCTION

(Looking East)



S.N. 092-0012



S.N. 092-0013

STAGE II CONSTRUCTION

(Looking East)

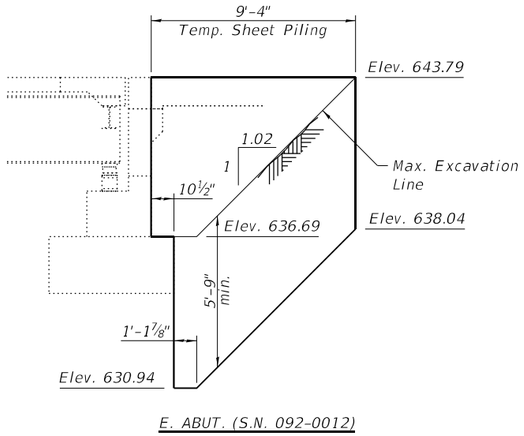
Notes:

Sheet piling shall have a minimum section modulus of 3.1 in³/ft.

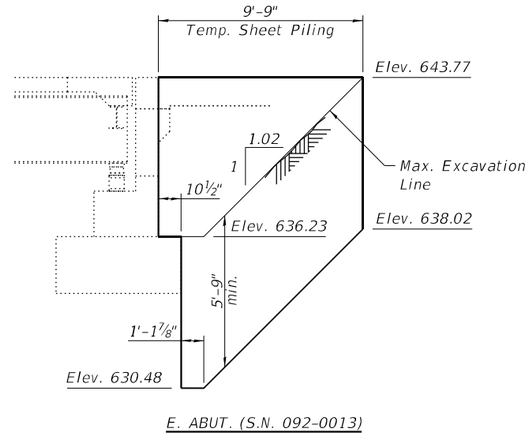
If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design subittal including plan details and calculations will be required for review and acceptance by the Engineer.

The Contractor shall connect the first sheet to the existing abutment wall to ensure stability of sheets driven to the top of the existing footing. This connection shall be reviewed and accepted by the Engineer and included in the cost for Temporary Sheet Piling.

Temporary Sheet Piling will be driven into embankment fill soils consisting of Mixed Clay Loam with unconfined compressive strengths (Qu) varying from 1.0 to 2.2 tsf."



E. ABUT. (S.N. 092-0012)



E. ABUT. (S.N. 092-0013)

TEMPORARY SHEET PILING

(Looking North)

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - BAS	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGING DETAILS
STRUCTURE NO. 092-0012 & 092-0013
SHEET NO. 4 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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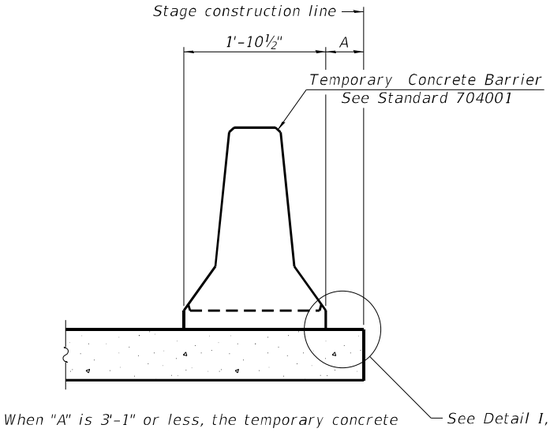
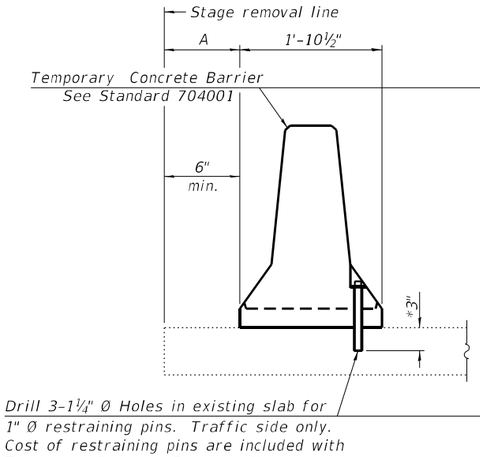
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



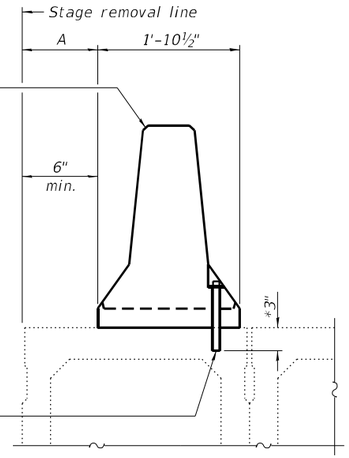
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

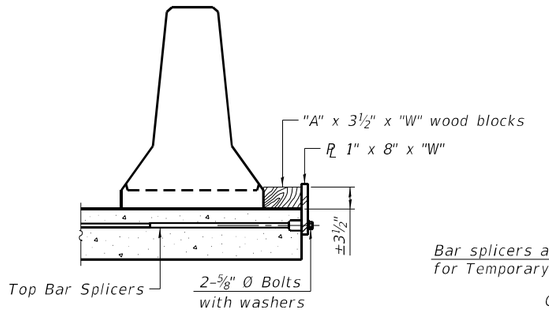
EXISTING SLAB



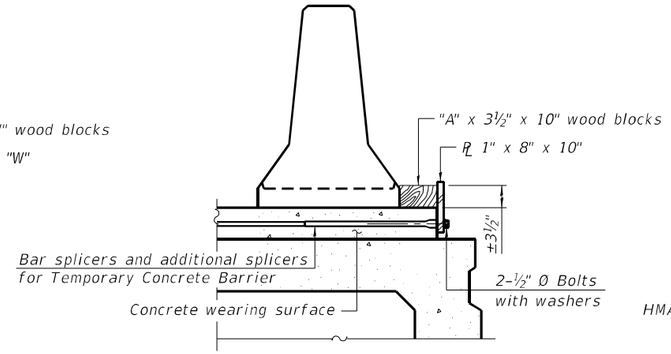
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

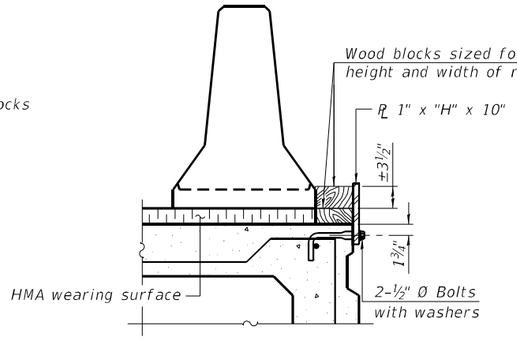
SECTIONS THRU SLAB OR DECK BEAM



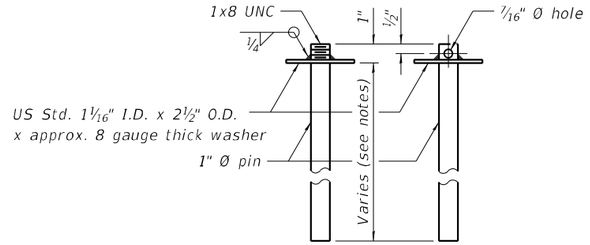
DETAIL I



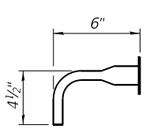
DETAIL II



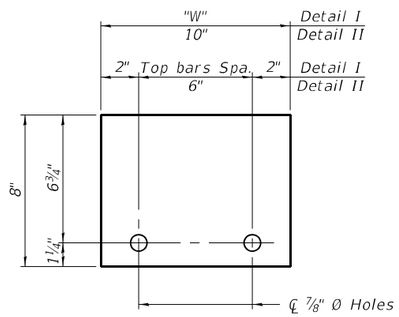
DETAIL III



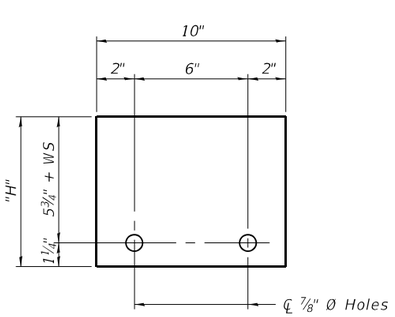
RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III



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



STEEL RETAINER ℄ 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 ℄ 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 1½", 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.

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

10-12-2021

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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - BAS	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		SHEET NO. 5 OF 34 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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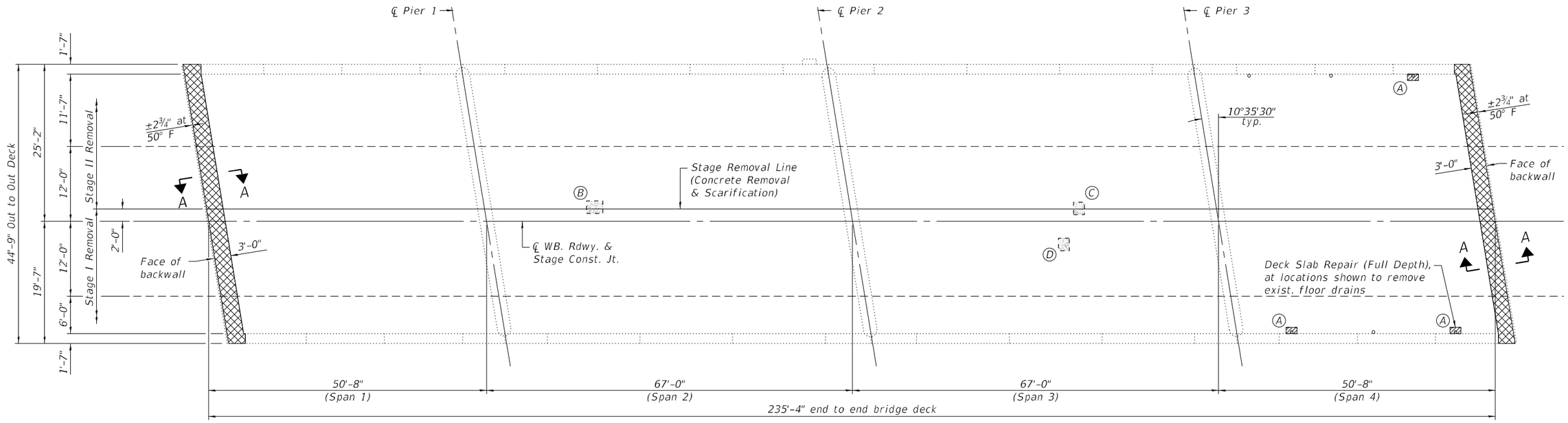
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



N

PLAN – DECK SLAB REPAIRS

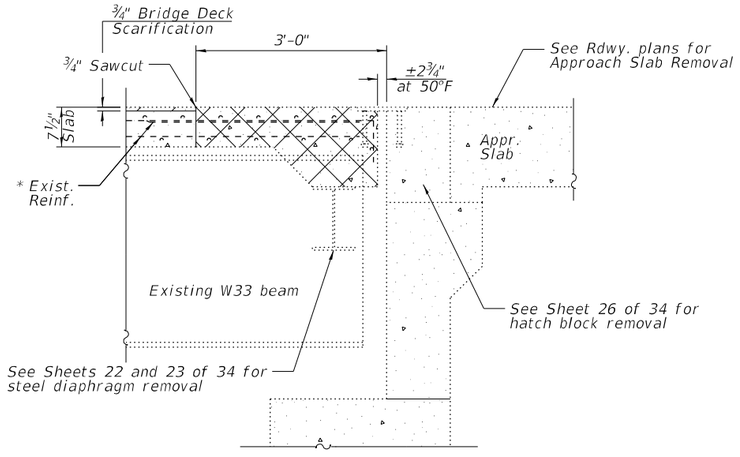
* Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorportated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with Concrete Removal.

LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Concrete Removal

DECK SLAB REPAIR TABLE

Label	Size	Plan Qty. Deck Slab Repair (Part. Depth) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type I) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type II) Sq. Ft.	As Built Deck Slab Repair (FD Type I) Sq. Ft.	As Built Deck Slab Repair (FD Type II) Sq. Ft.
A	1' x 2' x 3 Loc.		6			
B	2' x 3'	6				
C	2' x 2'	4				
D	2' x 2'	4				
Totals		14	6			



SECTION A-A
(Showing Removal)

Notes:
See sheet 8 of 34 for cross section thru bridge deck.
Deck survey performed on December 17, 2020. Locations and sizes shown in the plan view are approximate.
Deck Slab Repair (Partial Depth) is an estimated quantity per the deck survey. This area shall not be paid for separately, but shall be addressed as stated in the Special Provision for Bridge Deck Latex Concrete Overlay.
Actual size and locations of full-depth patches shall be shown on this sheet and documented in the Deck Slab Repair Table under "As Built".

DECK SLAB (S.N. 092-0012) BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Bridge Deck Scarification ¾"	Sq. Yd.	1061
Bridge Deck Latex Concrete Overlay, 2¾ Inches	Sq. Yd.	1061
Concrete Removal	Cu. Yd.	8.4

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MAURER-STUTZ ENGINEERS SURVEYORS

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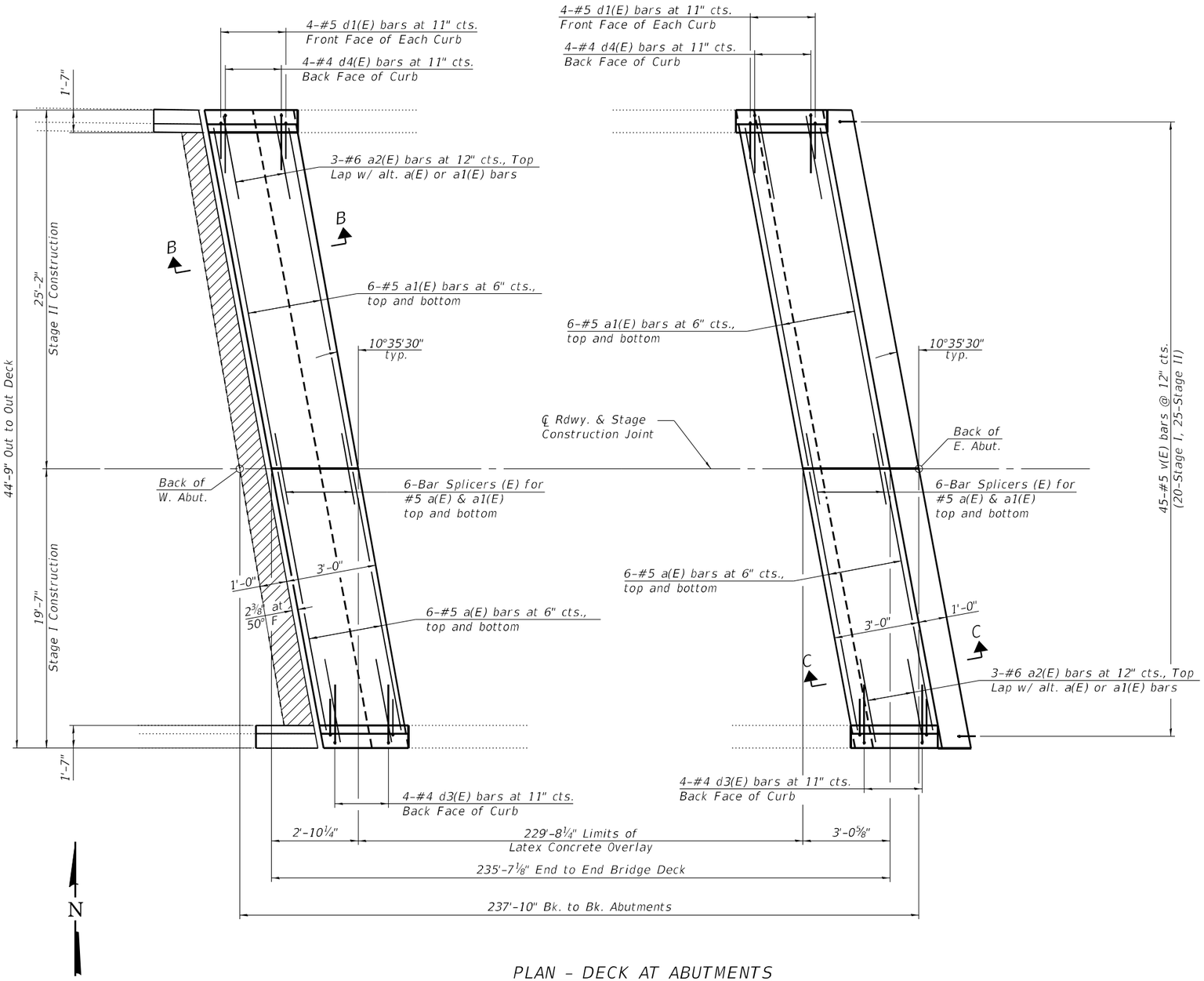
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR PLAN
STRUCTURE NO. 092-0012
SHEET NO. 6 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	350
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



PLAN - DECK AT ABUTMENTS

Notes:
See sheet 9 of 34 for Section B-B, Bill of Material and bar details.
See sheet 10 of 34 for Section C-C.
Spacing for v(E) bars shall be at right angles to ℄ Rdwy.

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 092-0012
	CHECKED - BAS	REVISED -		
PLOT SCALE =	DRAWN - BAS	REVISED -		SHEET NO. 7 OF 34 SHEETS
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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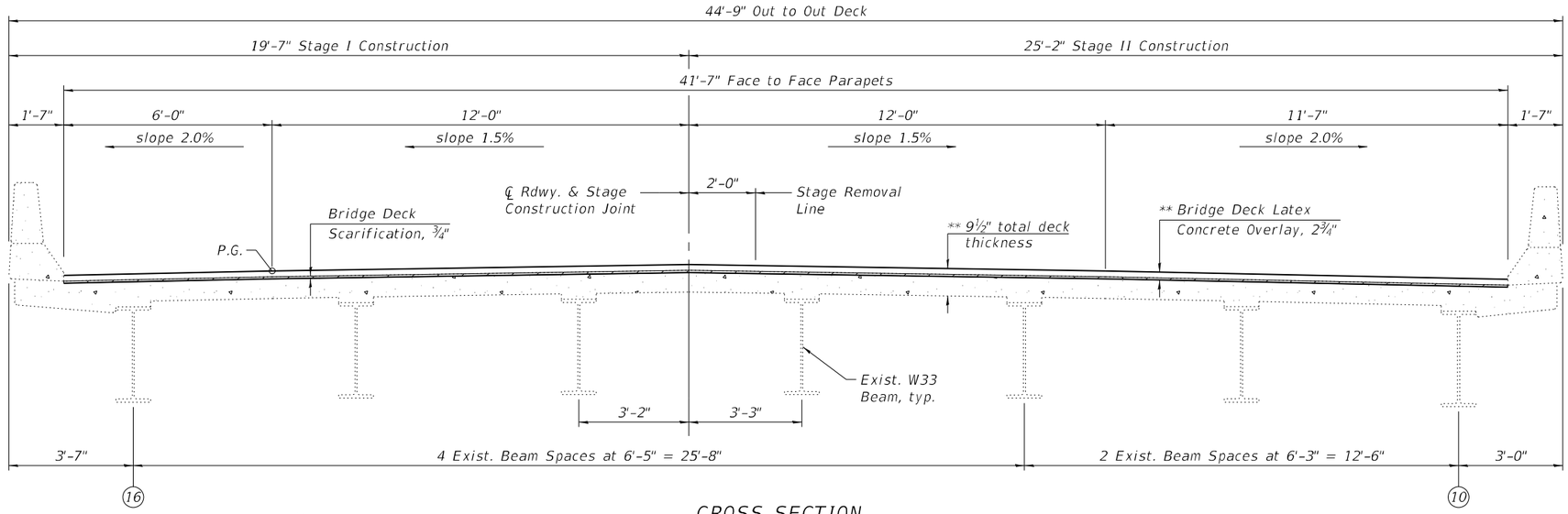
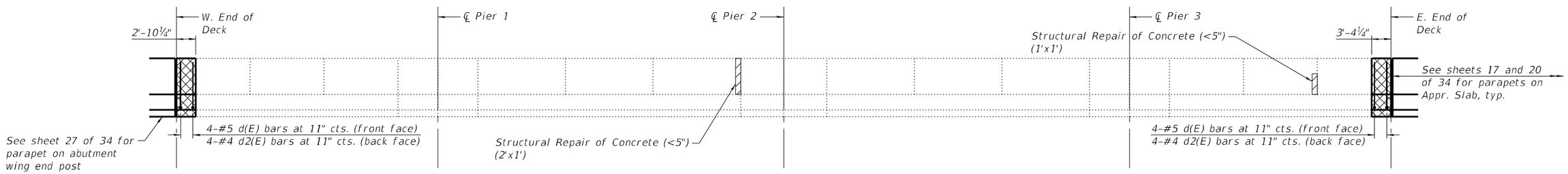
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



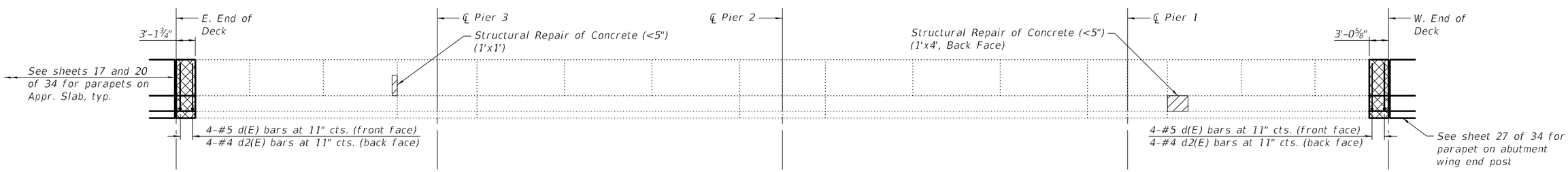
** Prior to ¼" Diamond Grinding

CROSS SECTION
(Looking West)

Notes:
See sheet 9 of 34 for Bill of Material, Section Thru Parapet, and bar details.
Cross-hatched area on parapets indicate Concrete Removal and replacement with Concrete Superstructure



NORTH PARAPET ELEVATION
(Looking North)



SOUTH PARAPET ELEVATION
(Looking South)

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MAURER-STUTZ ENGINEERS SURVEYORS

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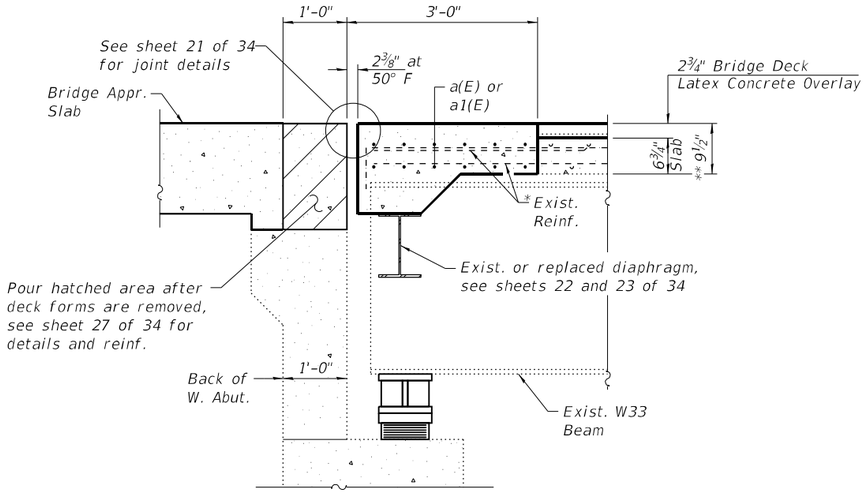
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - BAS	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

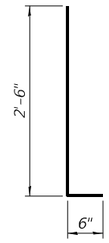
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0012
SHEET NO. 8 OF 34 SHEETS

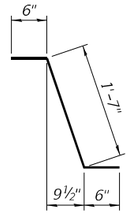
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	352
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



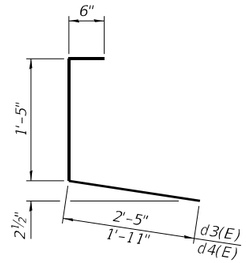
SECTION B-B



BARS d(E) & d2(E)



BAR d1(E)



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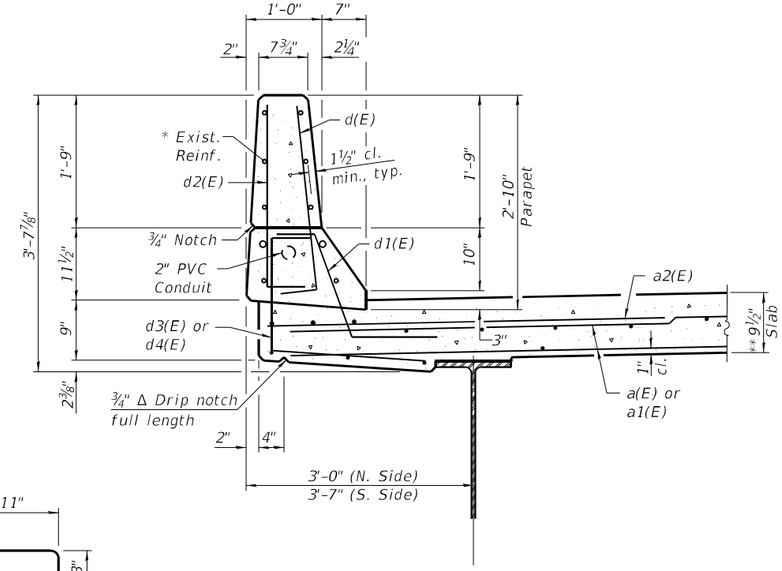
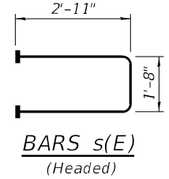


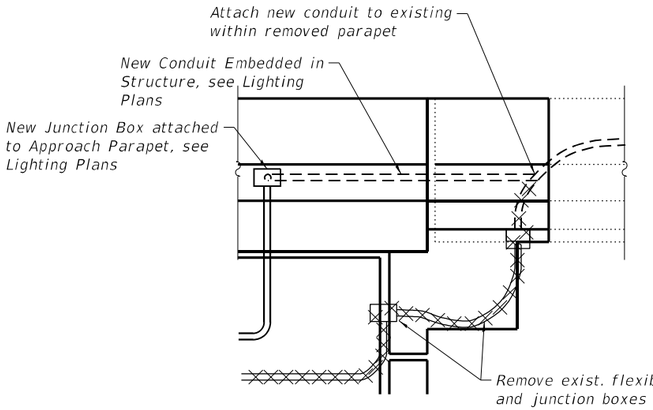
SECTION THRU PARAPET



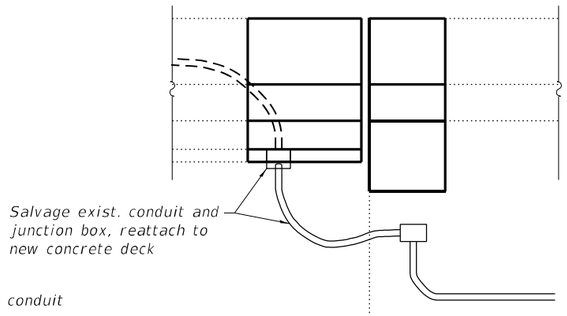
BARS s(E)
(Headed)

* 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.

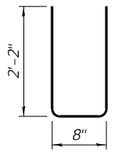
** Prior to ¼" Diamond Grinding



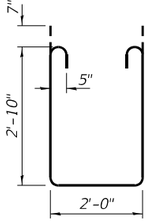
CONDUIT AT ABUTMENT JOINT
(East Abutment, North Parapet)
(Looking South)



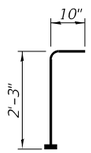
CONDUIT AT ABUTMENT JOINT
(West Abutment, North Parapet)
(Looking South)



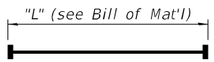
BARS u(E)



BARS s1(E)



BAR v(E)
(Headed)



BARS m2(E), m6(E), & m7(E)
(Headed)

SUPERSTRUCTURE
STR. NO. 092-0012
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	24	#5	19'-1"	
a1(E)	24	#5	24'-9"	
a2(E)	12	#6	6'-0"	
d(E)	16	#5	3'-0"	
d1(E)	16	#5	2'-7"	
d2(E)	16	#4	3'-0"	
d3(E)	8	#4	4'-4"	
d4(E)	8	#4	3'-10"	
m(E)	5	#6	19'-7"	
m1(E)	5	#6	25'-3"	
m2(E)	10	#6	6'-0"	
m3(E)	10	#6	6'-0"	
m6(E)	4	#6	3'-2"	
m7(E)	4	#6	2'-7"	
m8(E)	2	#4	19'-7"	
m9(E)	2	#4	25'-3"	
m100(E)	21	#6	5'-0"	
s(E)	56	#5	7'-6"	
s1(E)	42	#5	8'-10"	
u(E)	56	#4	5'-0"	
v(E)	45	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	3300
Concrete Superstructure			Cu. Yd.	26.0
Structure Repair of Concrete (Depth ≤ 5")			Sq. Ft.	8

MODEL: Default
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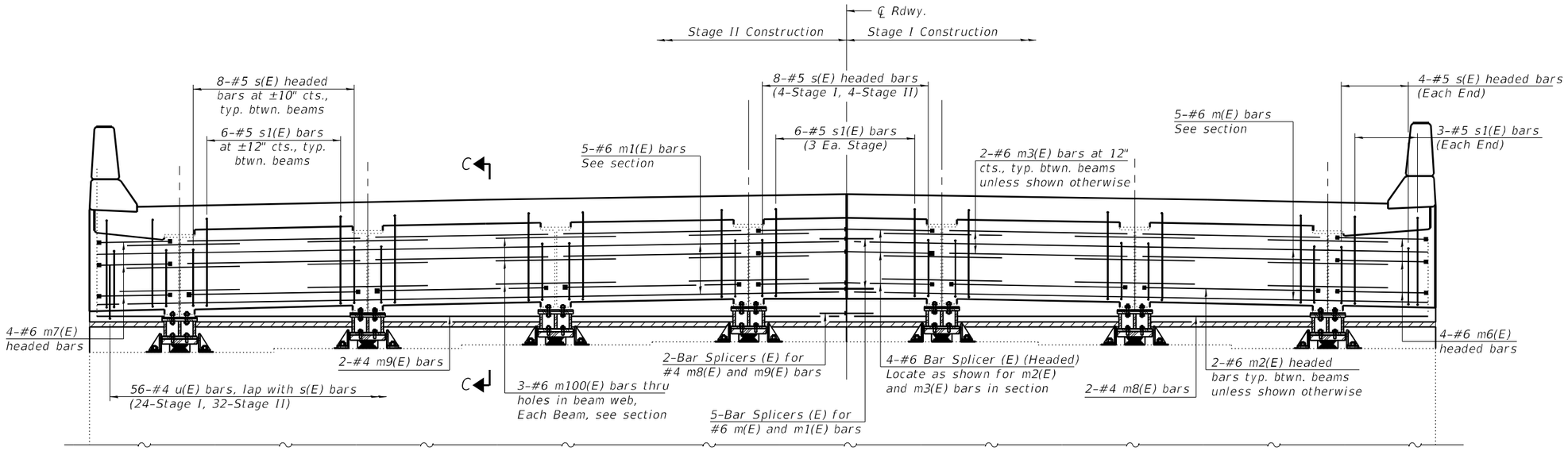
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 092-0012	SHEET NO. 9 OF 34 SHEETS
	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - BAS	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	353
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	



DIAPHRAGM AT ABUTMENT

Notes:

See sheet 7 of 34 for reinforcement in the bridge deck over the diaphragm.

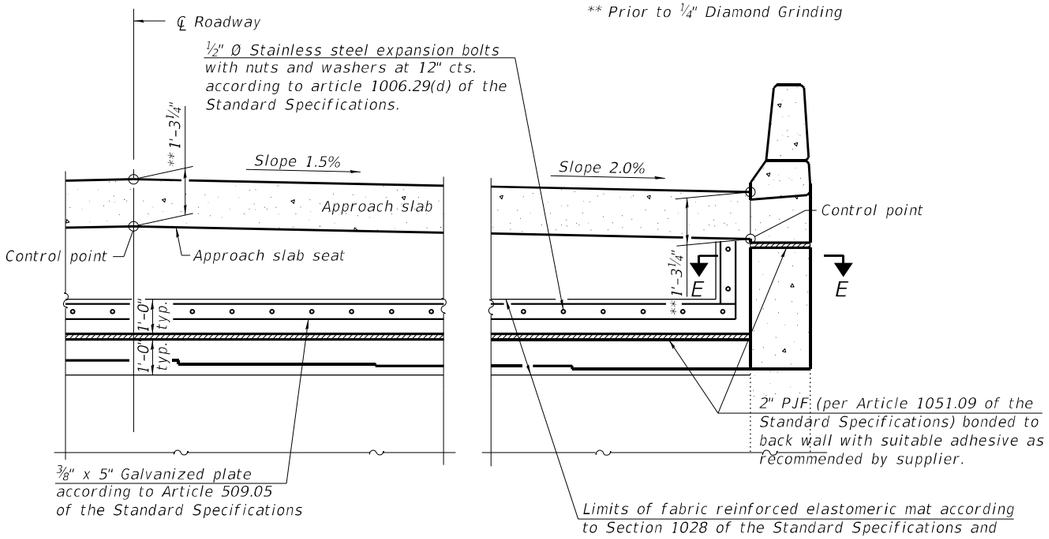
See sheet 9 of 34 for Bill of Material and bar details.

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

See sheet 23 of 34 for hole locations thru beam web.

* *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.*

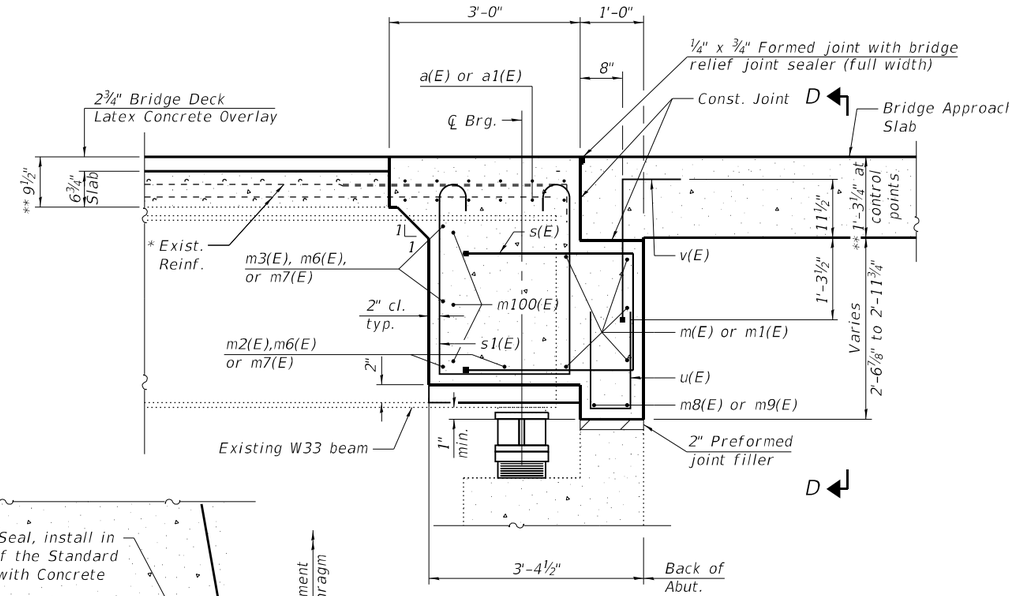
** *Prior to ¼" Diamond Grinding*



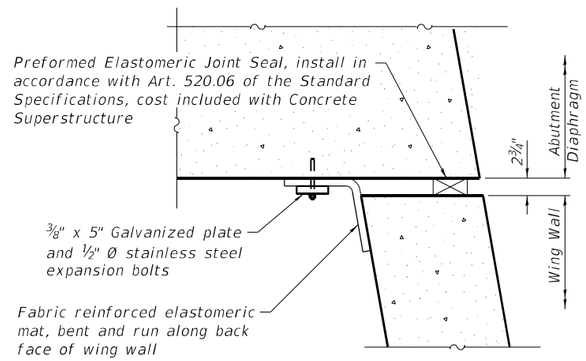
VIEW D-D

Note:

Cost of P.J.F., fabric reinforced elastomeric mat, galvanized plate, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.



SECTION C-C
(Showing Proposed)



SECTION E-E

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MAURER-STUTZ ENGINEERS SURVEYORS

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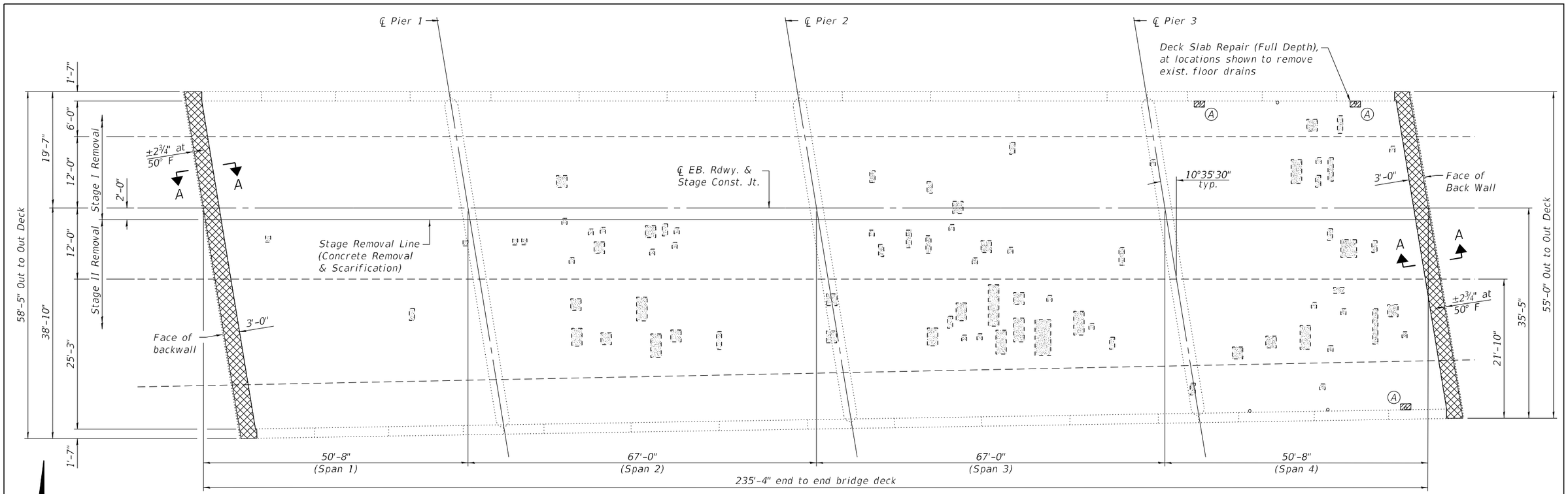
	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - BAS	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DIAPHRAGM
STRUCTURE NO. 092-0012
SHEET NO. 10 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	354
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

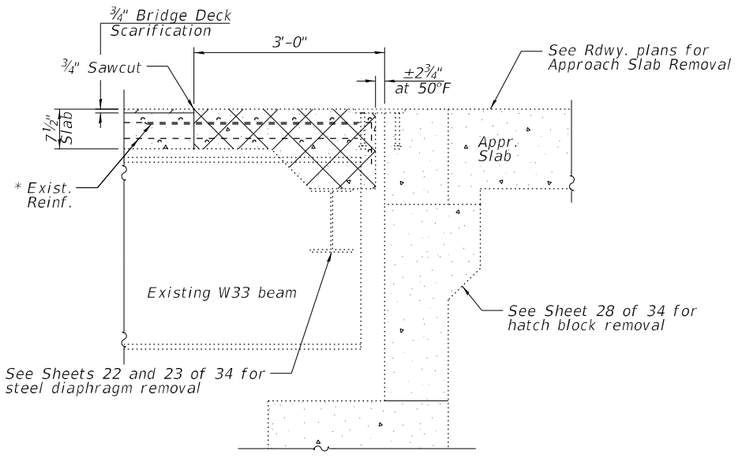


DECK SLAB REPAIR TABLE

Label	Size	Plan Qty. Deck Slab Repair (Part. Depth) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type I) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type II) Sq. Ft.	As Built Deck Slab Repair (FD Type I) Sq. Ft.	As Built Deck Slab Repair (FD Type II) Sq. Ft.
A	1' x 2' x 3 Loc.		6			
	Span 1, Stage II	4				
	Span 2, Stage I	4				
	Span 2, Stage II	64				
	Span 3, Stage I	11				
	Span 3, Stage II	99				
	Span 4, Stage I	23				
	Span 4, Stage II	46				
	Totals	251	6			

PLAN – DECK SLAB REPAIRS

* Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorportated 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.



SECTION A-A
(Showing Removal)

LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Concrete Removal

Notes:

See sheet 13 of 34 for cross section thru bridge deck.

Deck survey performed on December 17, 2020. Locations and sizes shown in the plan view are approximate.

Deck Slab Repair (Partial Depth) is an estimated quantity per the deck survey. This area shall not be paid for separately, but shall be addressed as stated in the Special Provision for Bridge Deck Latex Concrete Overlay.

Actual size and locations of full-depth patches shall be shown on this sheet and documented in the Deck Slab Repair Table under "As Built".

DECK SLAB (S.N. 092-0013) BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	1
Bridge Deck Scarification ¾"	Sq. Yd.	1366
Bridge Deck Latex Concrete Overlay, 2¾ Inches	Sq. Yd.	1366
Concrete Removal	Cu. Yd.	10.3

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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR PLAN
STRUCTURE NO. 092-0013
SHEET NO. 11 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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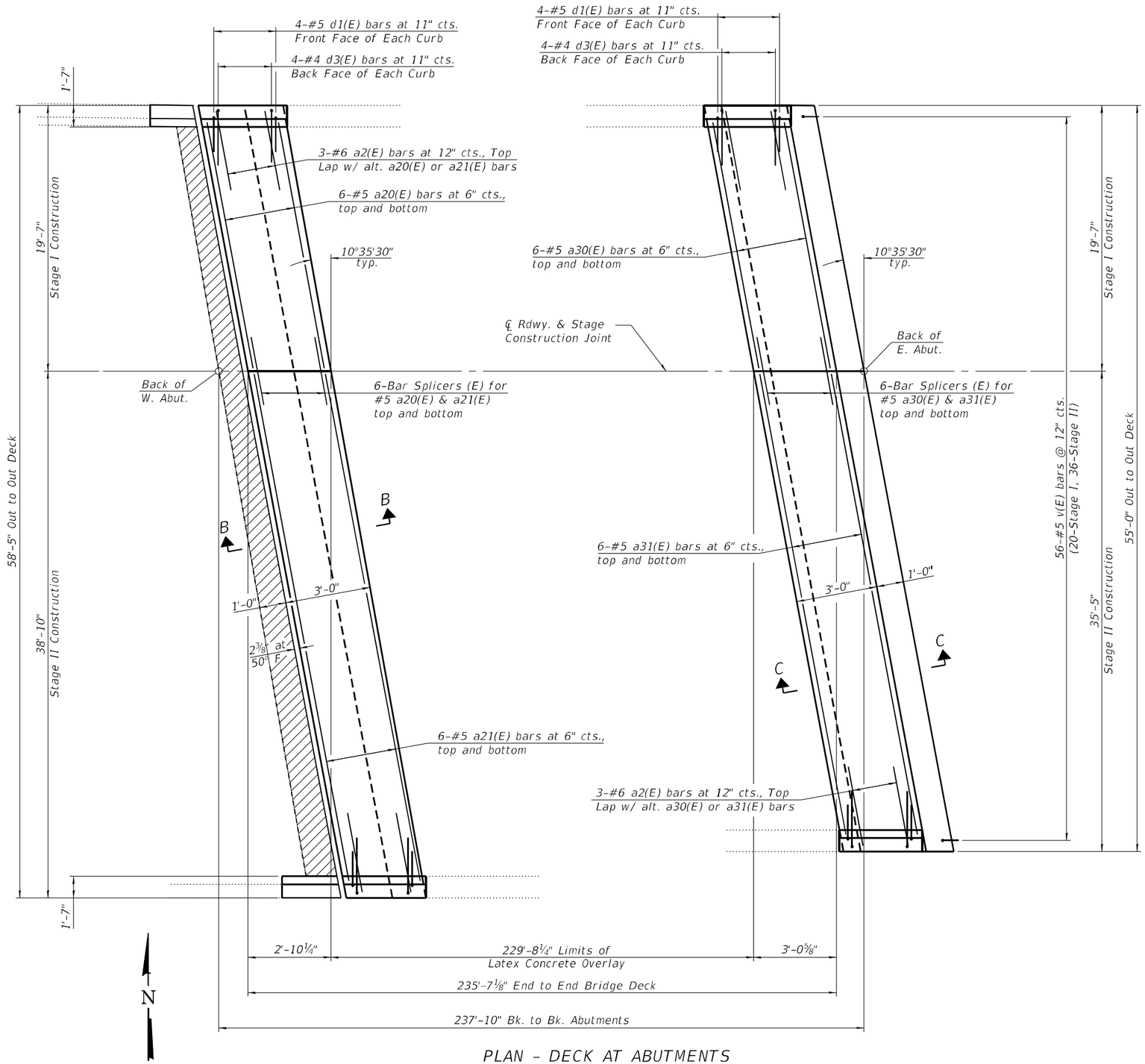
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



PLAN – DECK AT ABUTMENTS

Notes:
See sheet 14 of 34 for Section B-B, Bill of Material and bar details.
See sheet 15 of 34 for Section C-C.
Spacing for v(E) bars shall be at right angles to ℄ Rdwy.

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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - BAS	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0013
SHEET NO. 12 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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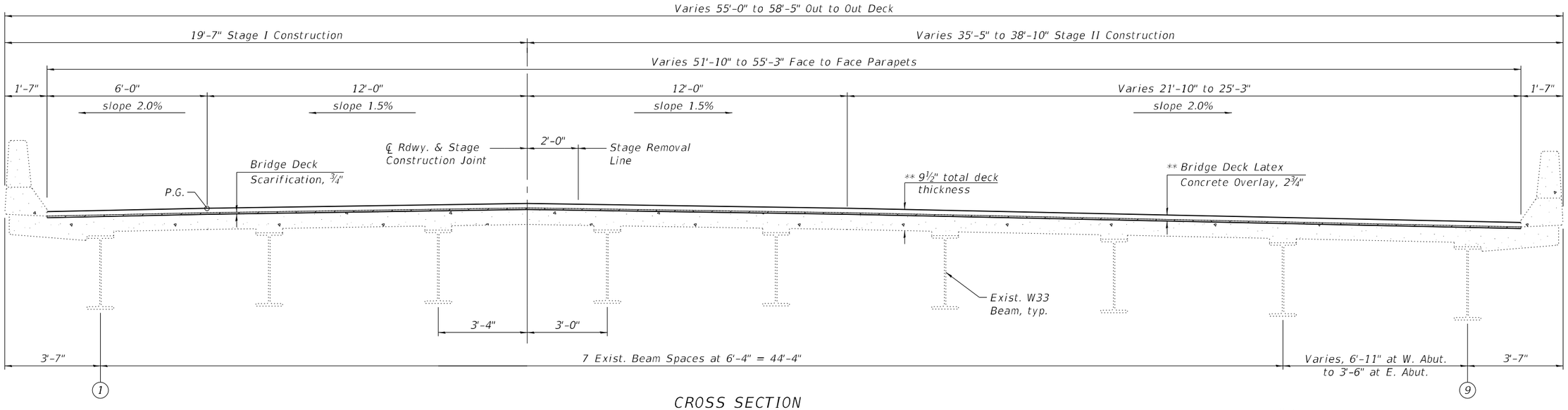
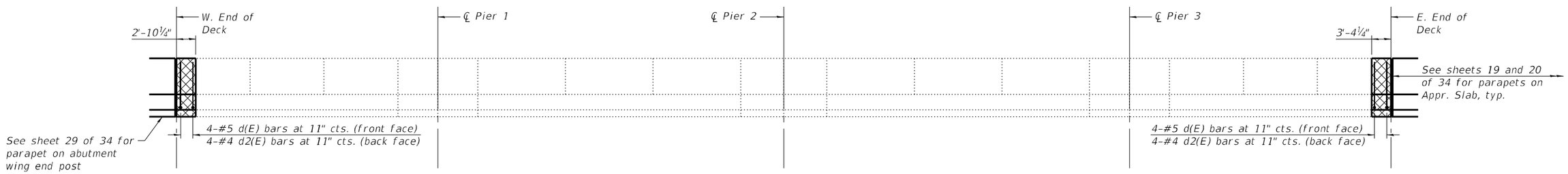
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



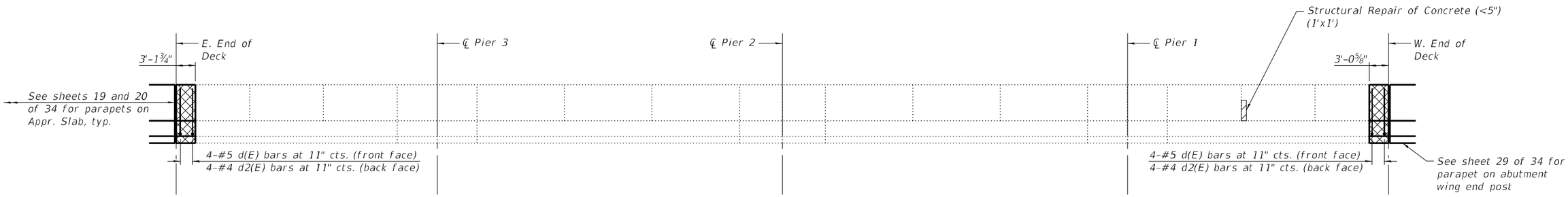
CROSS SECTION
(Looking East)

** Prior to ¼" Diamond Grinding

Notes:
See Sheet 14 of 34 for Bill of Material, Section Thru Parapet, and bar details.
Cross-hatched area on parapets indicate Concrete Removal and replacement with Concrete Superstructure



NORTH PARAPET ELEVATION
(Looking North)



SOUTH PARAPET ELEVATION
(Looking South)

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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0013
SHEET NO. 13 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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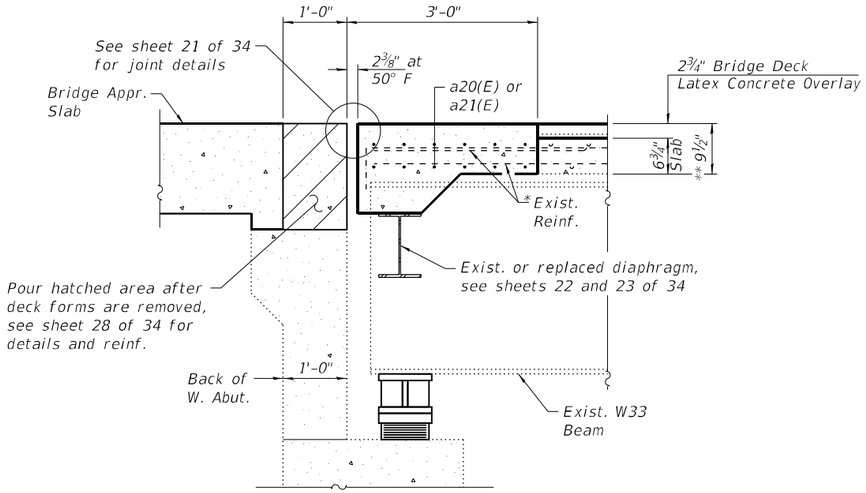
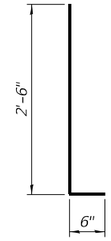
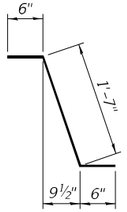
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



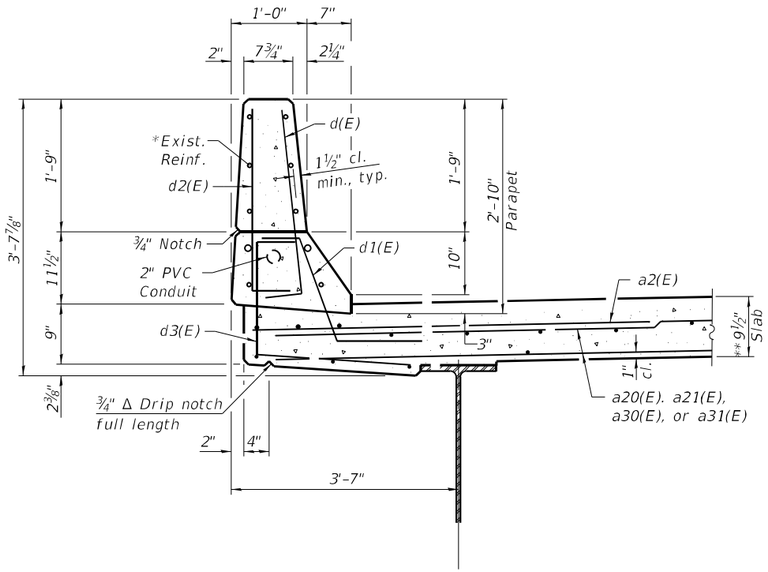
SECTION B-B



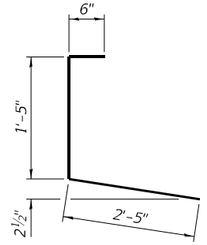
BARS d(E) & d2(E)



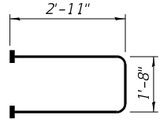
BAR d1(E)



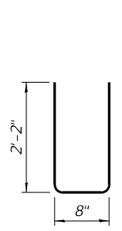
SECTION THRU PARAPET



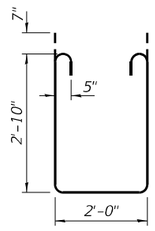
BARS d3(E)



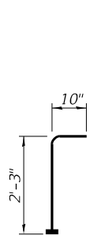
BARS s(E)
(Headed)



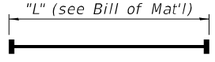
BARS u(E)



BARS s1(E)



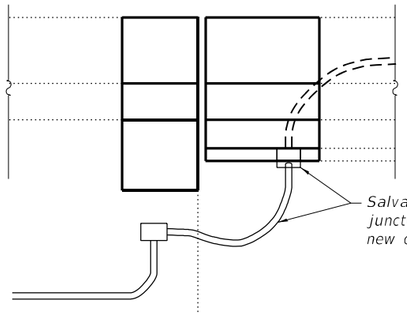
BAR v(E)
(Headed)



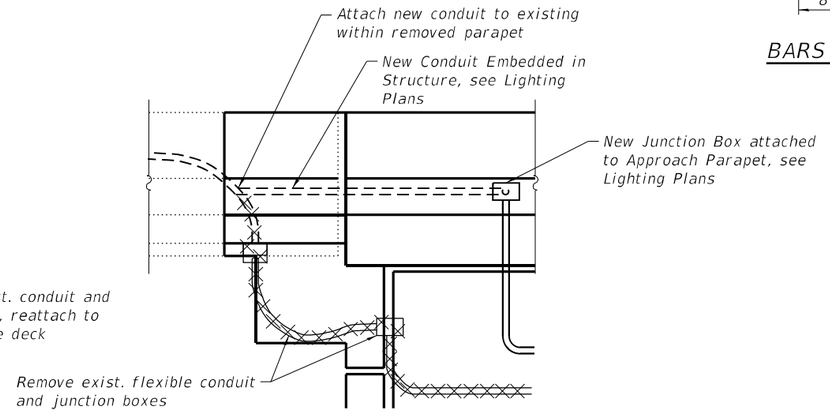
BARS m12(E), m14(E) m16(E), & m17(E)
(Headed)

* Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorportated 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.

** Prior to ¼" Diamond Grinding



CONDUIT AT ABUTMENT JOINT
(West Abutment, South Parapet)
(Looking North)



CONDUIT AT ABUTMENT JOINT
(East Abutment, South Parapet)
(Looking North)

SUPERSTRUCTURE
STR. NO. 092-0013
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	12	#6	6'-0"	
a20(E)	12	#5	19'-1"	
a21(E)	12	#5	38'-8"	
a30(E)	12	#5	19'-1"	
a31(E)	12	#5	35'-2"	
d(E)	16	#5	3'-0"	
d1(E)	16	#5	2'-7"	
d2(E)	16	#4	3'-0"	
d3(E)	16	#4	4'-4"	
m10(E)	5	#6	19'-7"	
m11(E)	5	#6	35'-8"	
m12(E)	12	#6	6'-0"	
m13(E)	12	#6	6'-0"	
m14(E)	2	#6	3'-2"	
m15(E)	2	#6	3'-2"	
m16(E)	8	#6	3'-3"	
m18(E)	2	#4	19'-7"	
m19(E)	2	#4	35'-8"	
m100(E)	27	#6	5'-0"	
s(E)	68	#5	7'-6"	
s1(E)	51	#5	8'-10"	
u(E)	68	#4	5'-0"	
v(E)	56	#5	3'-1"	
Reinforcement Bars, Epoxy Coated		Pound	4060	
Concrete Superstructure		Cu. Yd.	32.2	
Structure Repair of Concrete (Depth ≤ 5")		Sq. Ft.	1	

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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT DATE = 4/22/2022		CHECKED - LVM		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0013
SHEET NO. 14 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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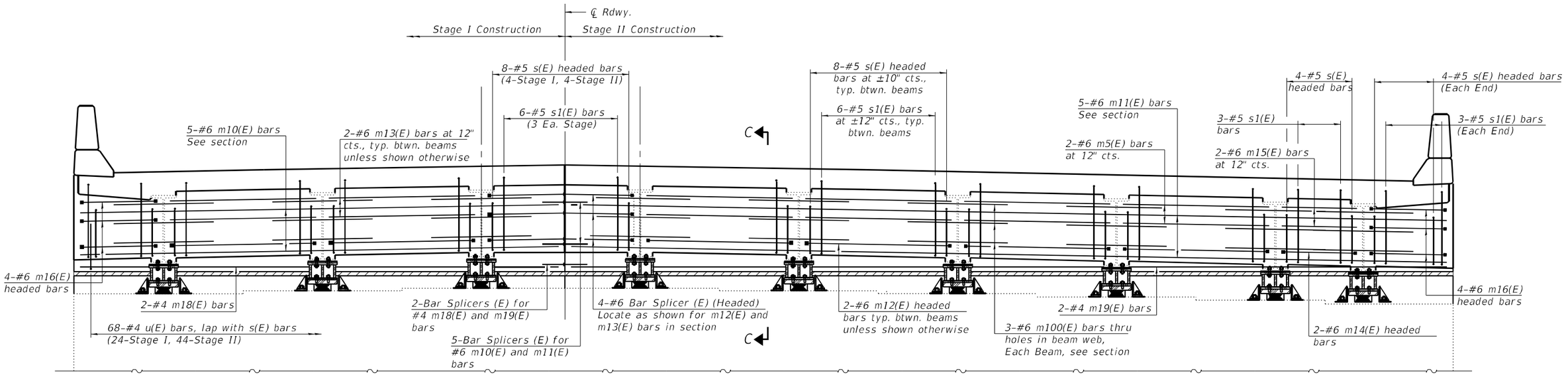
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

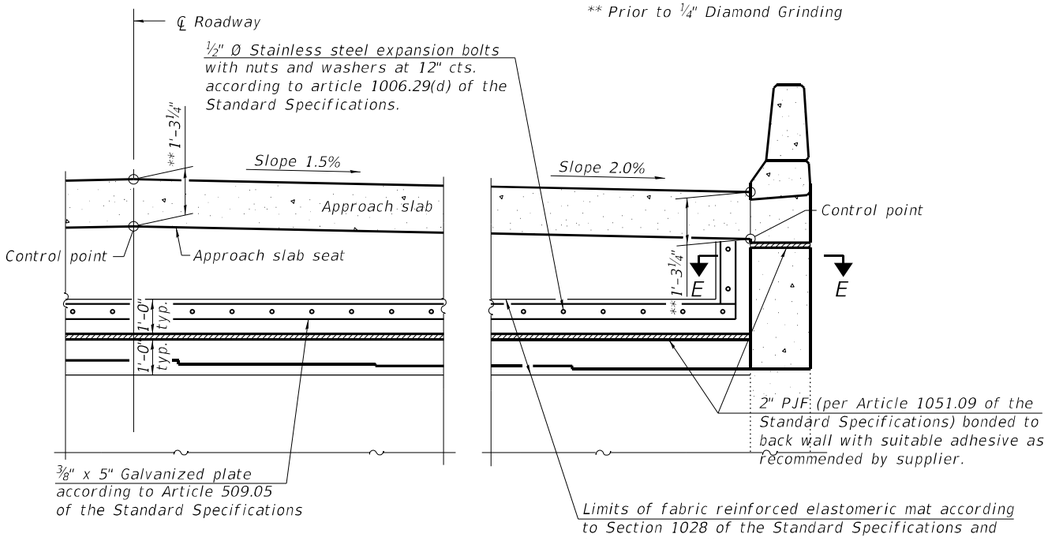


Notes:
See sheet 14 of 34 for Bill of Material, bar details, and reinforcement in the bridge deck over the diaphragm.
The approach slab seat shall have a constant slope determined from the control points shown.
See sheet 23 of 34 for hole locations thru beam web.

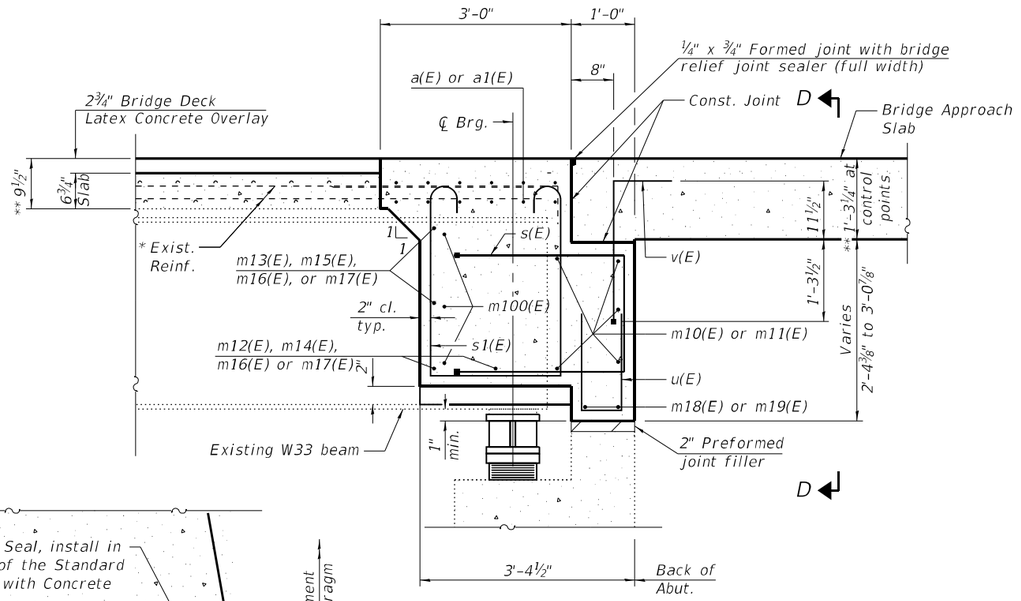
DIAPHRAGM AT ABUTMENT

* 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.

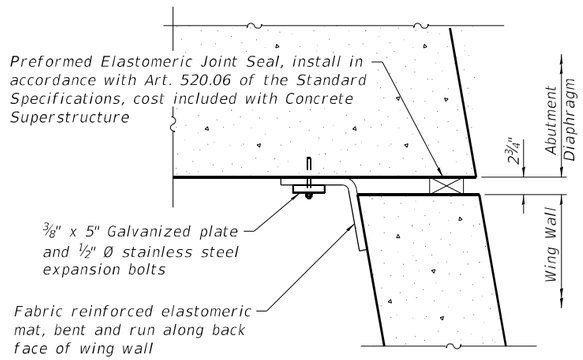
** Prior to ¼" Diamond Grinding



VIEW D-D



SECTION C-C
(Showing Proposed)



SECTION E-E

Note:
Cost of P.J.F., fabric reinforced elastomeric mat, galvanized plate, stainless steel expansion bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.

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MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT DIAPHRAGM
STRUCTURE NO. 092-0013
SHEET NO. 15 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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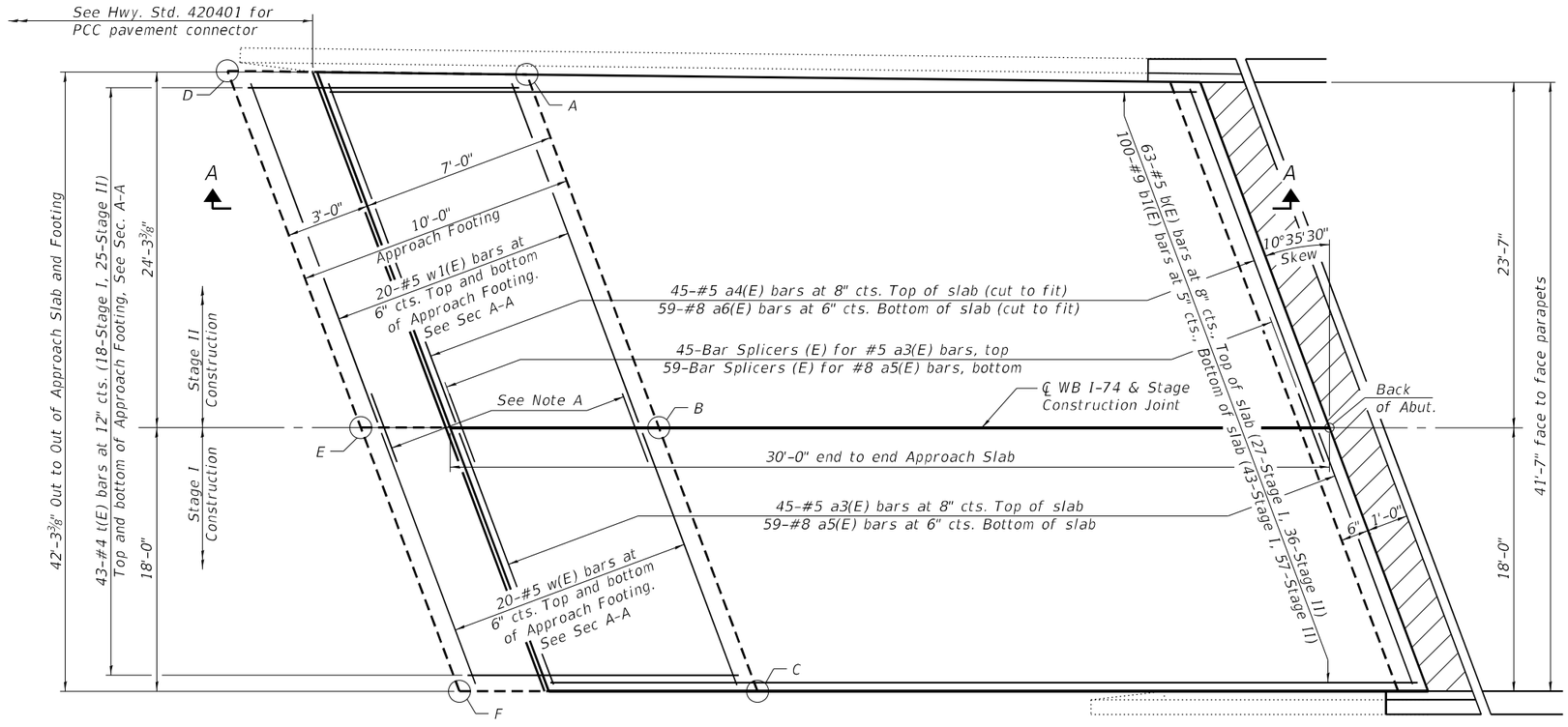
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



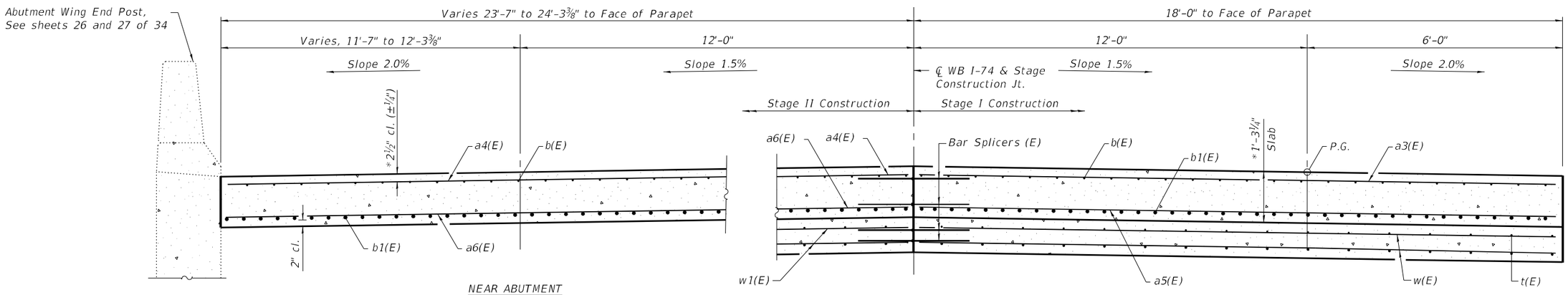
PLAN - WEST APPROACH

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	644.40	643.57
B	644.79	643.96
C	644.46	643.63
D	644.49	643.66
E	644.88	644.05
F	644.55	643.72

Note A - 20-Bar Splicers (E) for #5 w(E) bars, top & bottom

Notes:
See sheet 20 of 34 for Section A-A and Bill of Material.
See sheet 34 of 34 for Bar Splicer details.
See sheet 27 of 34 for details of new hatch block & parapets.



NEAR ABUTMENT

* Prior to ¼" Grinding

CROSS SECTION
(Looking East)

AT APPROACH FOOTING

(Sheet 1 of 5)

MODEL: Default
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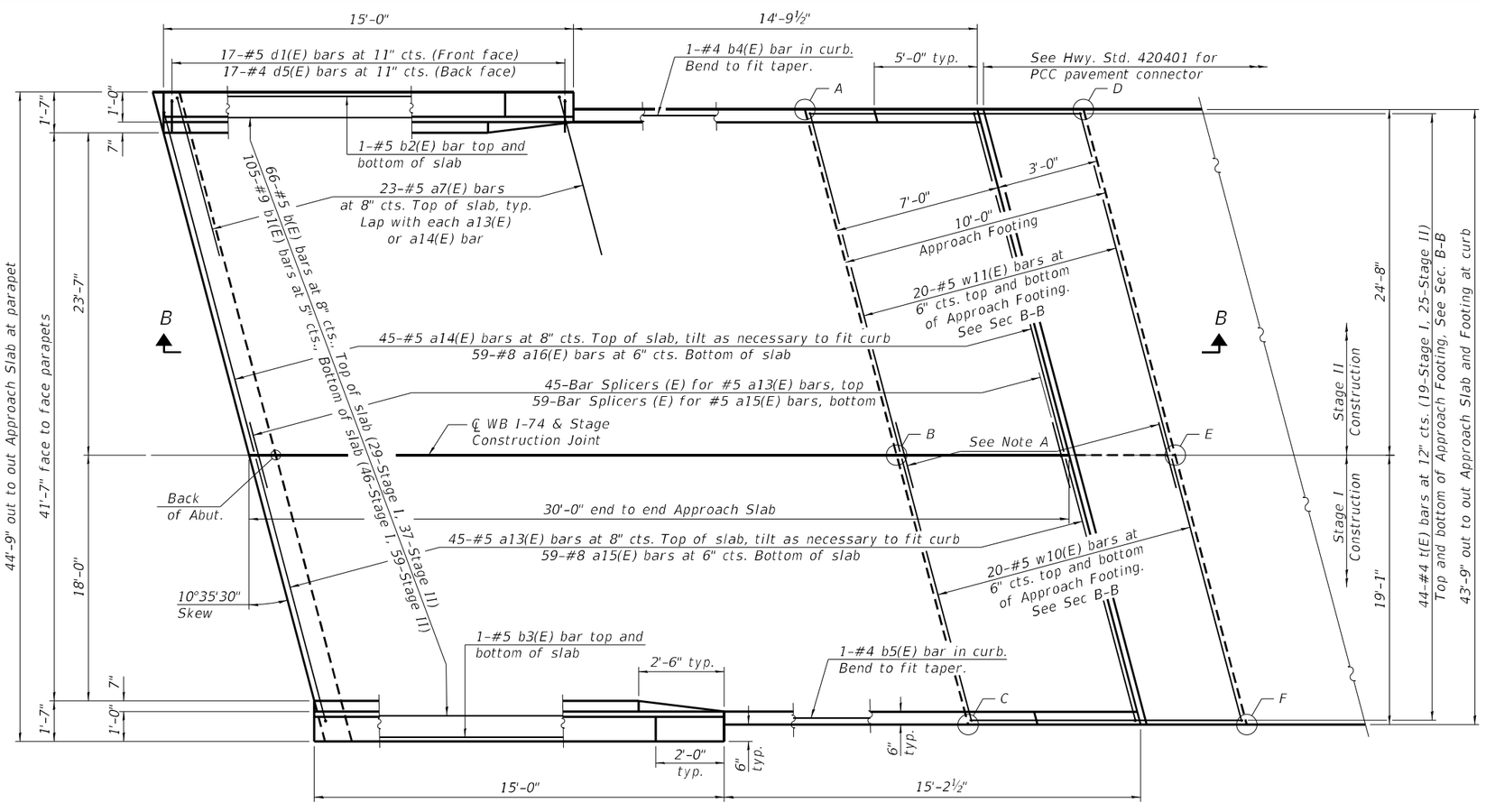
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0012
SHEET NO. 16 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	360
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



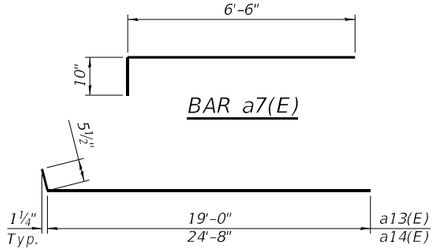
PLAN - EAST APPROACH

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

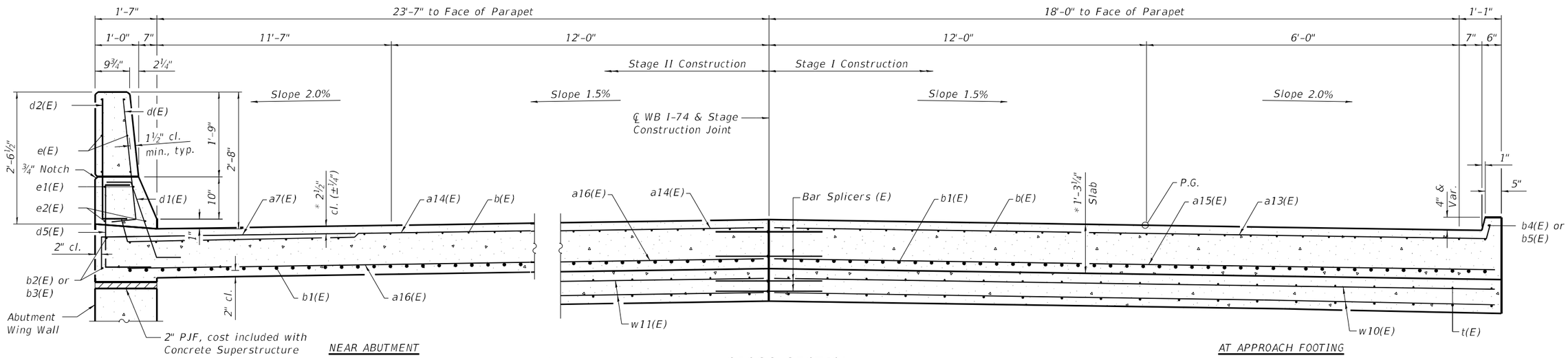
Point	Top	Bottom
A	641.96	641.13
B	642.35	641.52
C	642.00	641.17
D	641.87	641.04
E	642.26	641.43
F	641.91	641.08

Note A - 20-Bar Splicers (E) for #5 w10(E) bars, top & bottom

Notes:
PJF (per Article 1051.09 of the Standard Specifications) below the approach slab shall be bonded to the top of new abutment wingwalls with suitable adhesive as recommended by supplier.
See sheet 20 of 34 for Section B-B, Bill of Material and additional bar details.
See sheet 34 of 34 for Bar Splicer details.



BARS a13(E) & a14(E)



NEAR ABUTMENT

* Prior to ¼" Diamond Grinding

AT APPROACH FOOTING

CROSS SECTION
(Looking East)

MAURER-STUTZ ENGINEERS SURVEYORS

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PLOT SCALE =	DRAWN - BAS	REVISED -		
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		SHEET NO. 17 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	361
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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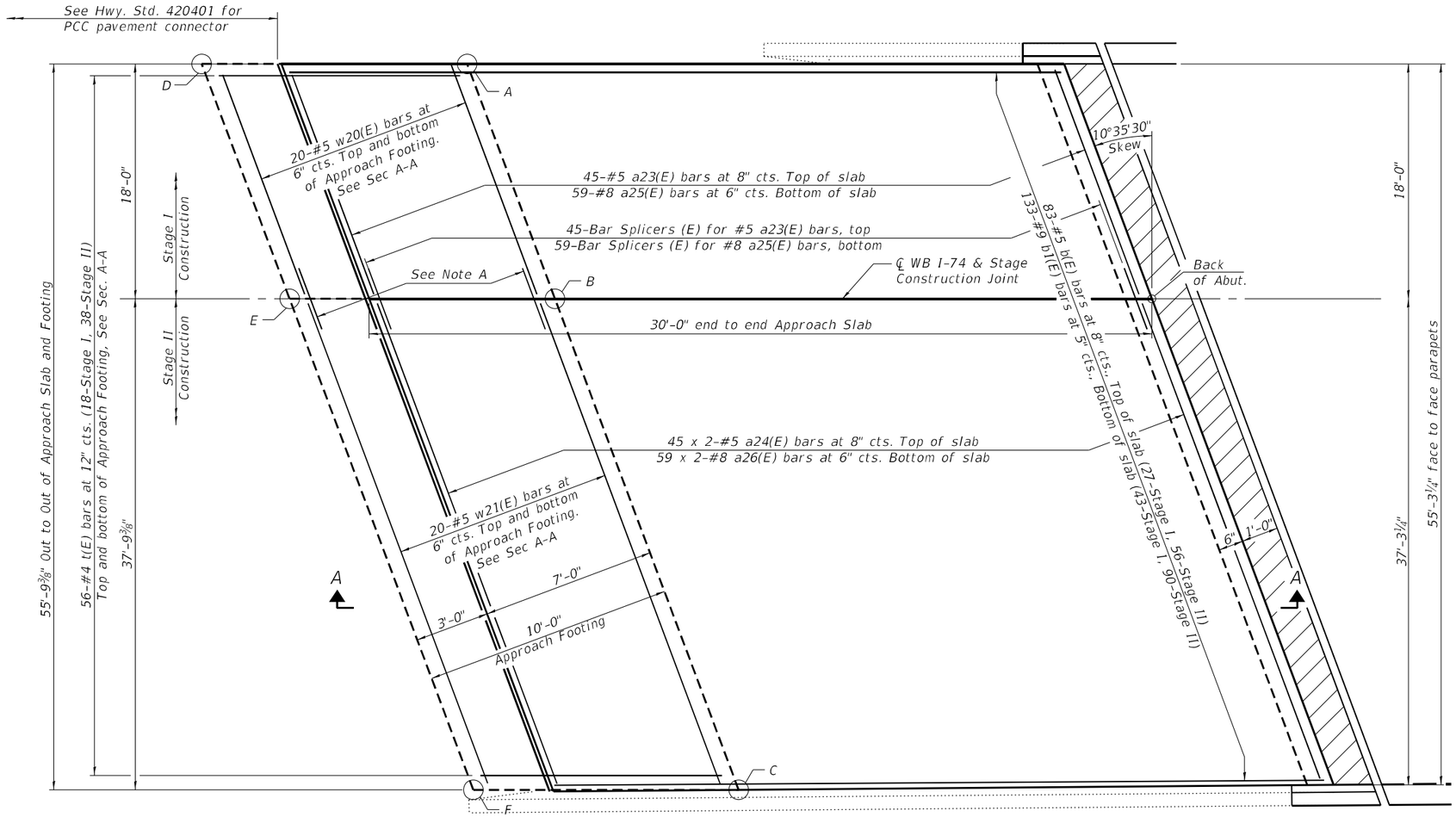


PLAN - WEST APPROACH

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

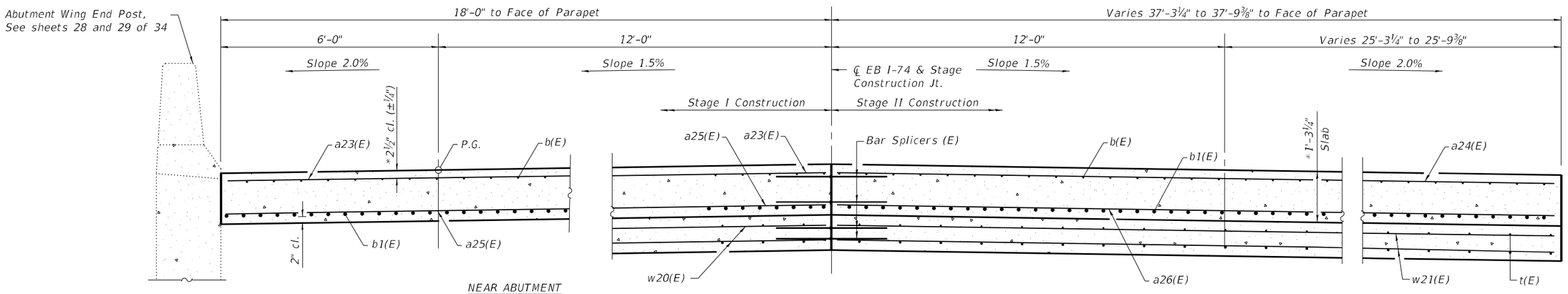
Point	Top	Bottom
A	644.41	643.58
B	644.68	643.85
C	643.93	643.10
D	644.49	643.66
E	644.76	643.93
F	644.01	643.18

MIN. BAR LAP

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

Note A - 20-Bar Splicers (E) for #5 w20(E) bars, top & bottom

Notes:
See sheet 20 of 34 for Section A-A and Bill of Material.
See sheet 34 of 34 for Bar Splicer details.
See sheet 29 of 34 for details of new hatch block & parapets.
Bars indicated thus 45 x 2-#5 etc. indicates 45 lines of bars with 2 lengths per line.



NEAR ABUTMENT

AT APPROACH FOOTING

CROSS SECTION
(Looking East)

* Prior to ¼" Diamond Grinding

(Sheet 3 of 5)

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PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0013
SHEET NO. 18 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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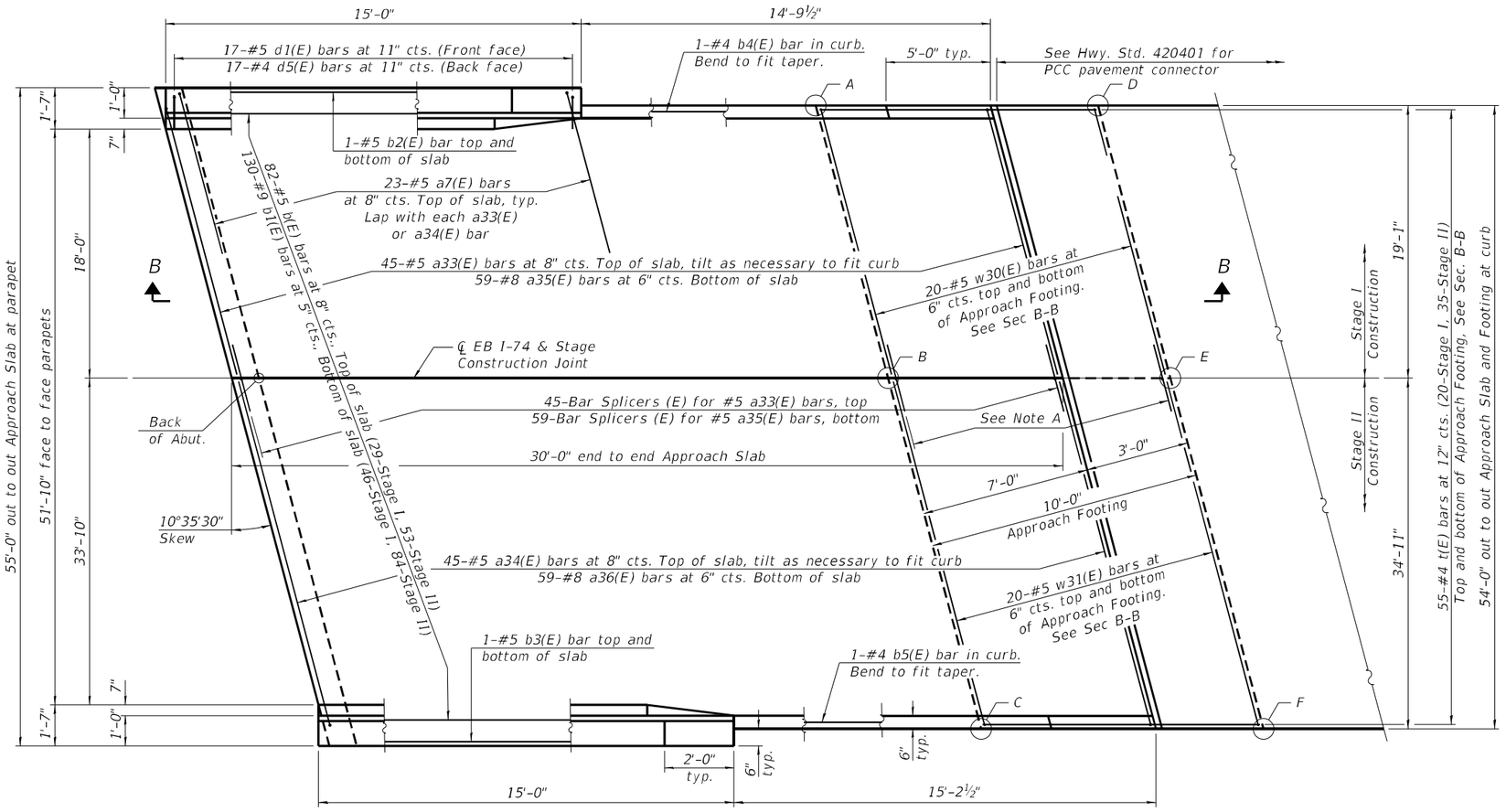
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



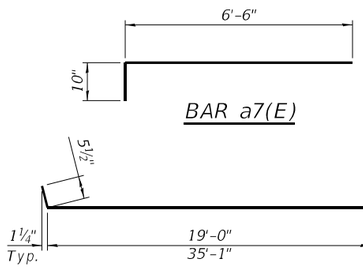
PLAN - EAST APPROACH

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

Point	Top	Bottom
A	642.04	641.21
B	642.34	641.51
C	641.64	640.81
D	641.96	641.13
E	642.25	641.42
F	641.56	640.73

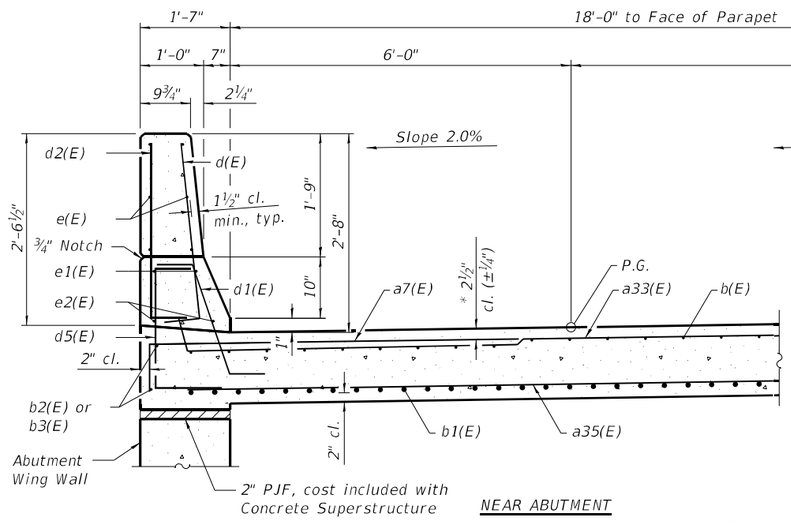
Note A - 20-Bar Splicers (E) for #5 w30(E) bars, top & bottom

Notes:
PJF (per Article 1051.09 of the Standard Specifications) below the approach slab shall be bonded to the top of new abutment wingwalls with suitable adhesive as recommended by supplier.
See sheet 20 of 34 for Section B-B, Bill of Material, and additional bar details.
See sheet 34 of 34 for Bar Splicer details.

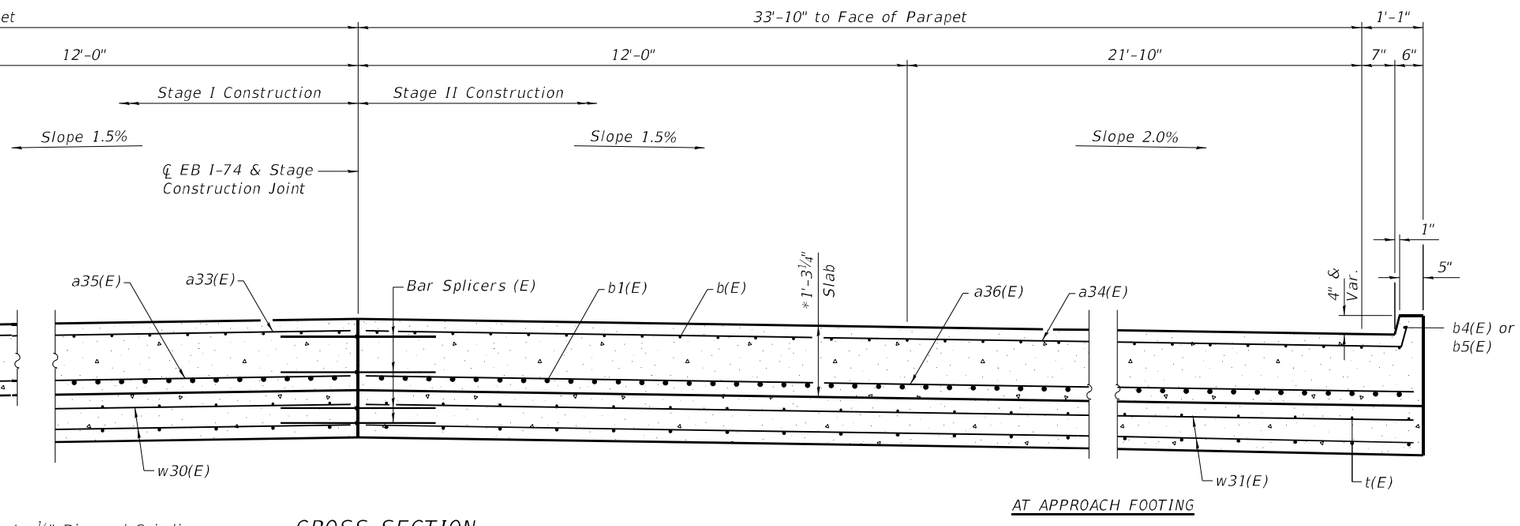


BAR a7(E)

BARS a33(E) & a34(E)



NEAR ABUTMENT



AT APPROACH FOOTING

* Prior to ¼" Diamond Grinding

CROSS SECTION

(Looking East)

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	CHECKED - BAS	REVISED -		
PLOT SCALE =	DRAWN - BAS	REVISED -		SHEET NO. 19 OF 34 SHEETS
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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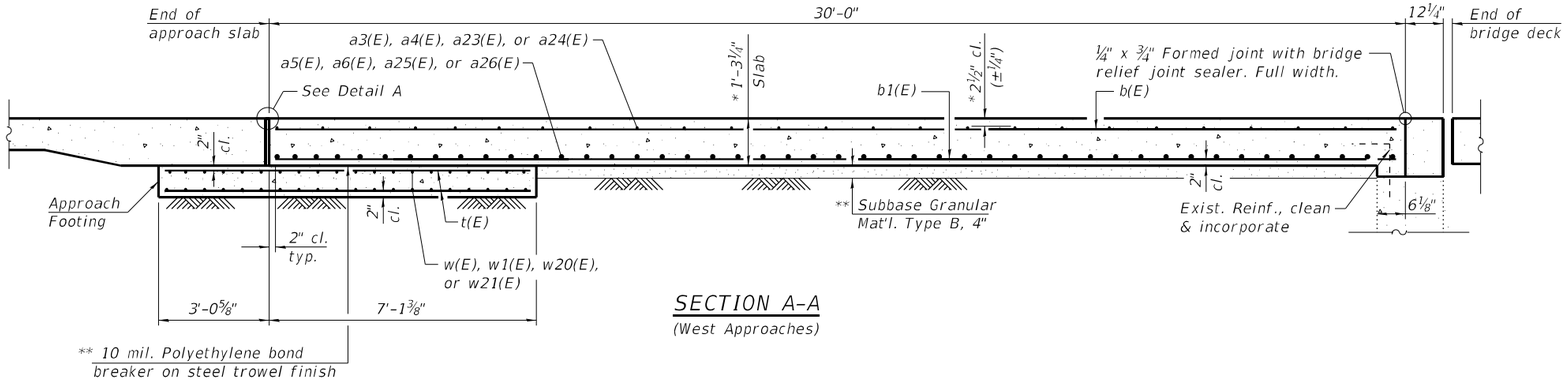
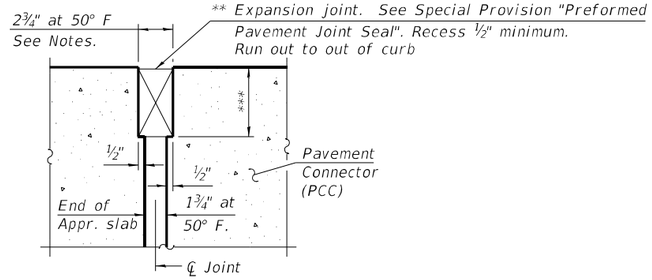
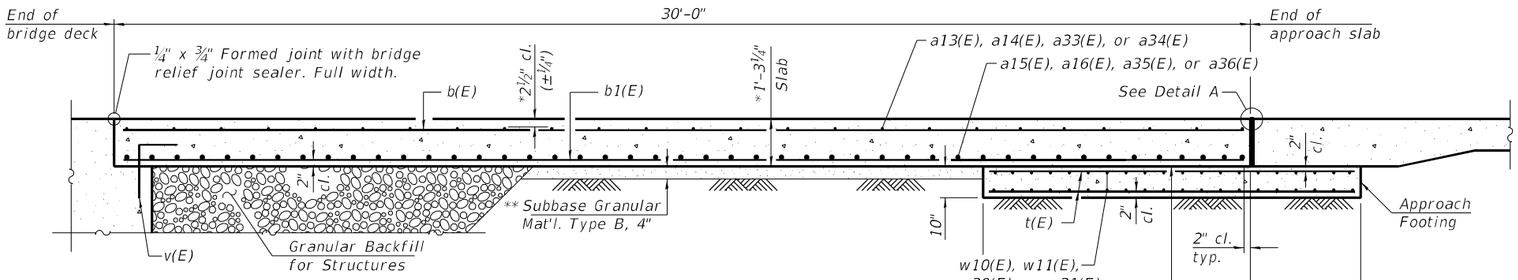
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



SECTION A-A
(West Approaches)



DETAIL A
(@ Rt. ∠'s)

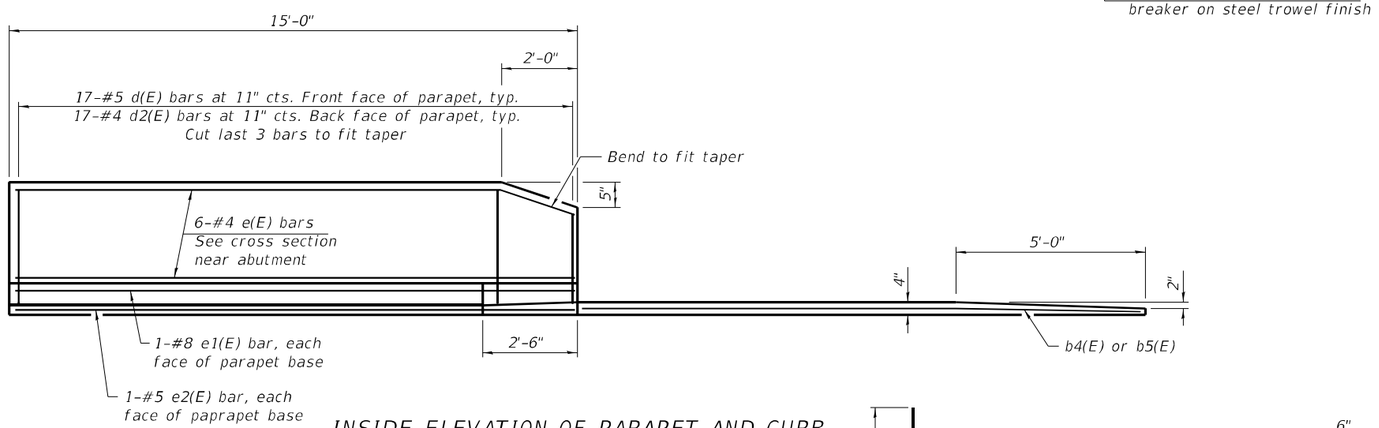


SECTION B-B
(East Approaches)

* Prior to ¼" Diamond Grinding

** Cost included with Concrete Superstructure (Approach Slab).

*** Per manufacturer recommendations



INSIDE ELEVATION OF PARAPET AND CURB
(East Approach only)

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. The length of bridge used to calculate the adjustment shall be equal to the distance from the fixed bearing to the end of the bridge approach slab.

Parapet concrete shall be paid for as Concrete Superstructure.

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

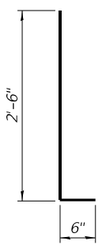
Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

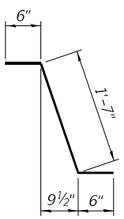
Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, See Sheet 2 of 34.

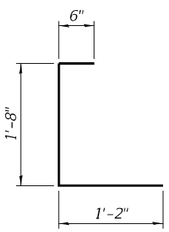
Adjust the profile grade as needed across the length of the bridge approach slab to match the top of bridge deck overlay at the abutment.



BARS d(E) & d2(E)



BAR d1(E)



BAR d5(E)

STR. NO. 092-0012
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a3(E)	45	#5	18'-0"	
a4(E)	45	#5	24'-4"	
a5(E)	59	#8	18'-0"	
a6(E)	59	#8	24'-4"	
a7(E)	46	#5	7'-4"	
a13(E)	45	#5	19'-6"	
a14(E)	45	#5	25'-2"	
a15(E)	59	#8	19'-1"	
a16(E)	59	#8	24'-9"	
b(E)	129	#5	29'-8"	
b1(E)	205	#9	29'-8"	
b2(E)	2	#5	14'-10"	
b3(E)	2	#5	14'-6"	
b4(E)	1	#4	14'-5"	
b5(E)	1	#4	14'-10"	
d(E)	34	#5	3'-0"	
d1(E)	34	#5	2'-7"	
d2(E)	34	#4	3'-0"	
d5(E)	34	#4	3'-4"	
e(E)	12	#4	14'-8"	
e1(E)	4	#8	14'-8"	
e2(E)	4	#5	14'-8"	
t(E)	174	#4	9'-10"	
w(E)	40	#5	17'-11"	
w1(E)	40	#5	24'-4"	
w10(E)	40	#5	19'-1"	
w11(E)	40	#5	24'-9"	
Concrete Superstructure		Cu. Yd.	2.9	
Concrete Superstructure (Approach Slab)		Cu. Yd.	122.8	
Concrete Structures		Cu. Yd.	27.0	
Reinforcement Bars, Epoxy Coated		Pound	48170	

STR. NO. 092-0013
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a7(E)	46	#5	7'-4"	
a23(E)	45	#5	18'-0"	
a24(E)	90	#5	20'-9"	
a25(E)	59	#8	18'-0"	
a26(E)	118	#8	21'-9"	
a33(E)	45	#5	19'-6"	
a34(E)	45	#5	35'-7"	
a35(E)	59	#8	19'-1"	
a36(E)	59	#8	35'-2"	
b(E)	165	#5	29'-8"	
b1(E)	263	#9	29'-8"	
b2(E)	2	#5	14'-10"	
b3(E)	2	#5	14'-6"	
b4(E)	1	#4	14'-5"	
b5(E)	1	#4	14'-10"	
d(E)	34	#5	3'-0"	
d1(E)	34	#5	2'-7"	
d2(E)	34	#4	3'-0"	
d5(E)	34	#4	3'-4"	
e(E)	12	#4	14'-8"	
e1(E)	4	#8	14'-8"	
e2(E)	4	#5	14'-8"	
t(E)	222	#4	9'-10"	
w20(E)	40	#5	17'-11"	
w21(E)	40	#5	38'-1"	
w30(E)	40	#5	19'-1"	
w31(E)	40	#5	35'-2"	
Concrete Superstructure		Cu. Yd.	2.9	
Concrete Superstructure (Approach Slab)		Cu. Yd.	157.1	
Concrete Structures		Cu. Yd.	34.5	
Reinforcement Bars, Epoxy Coated		Pound	62410	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 092-0012 & 092-0013

SHEET NO. 20 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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		CONTRACT NO. 70A29		
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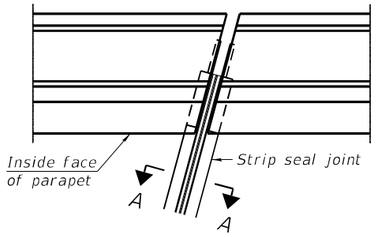
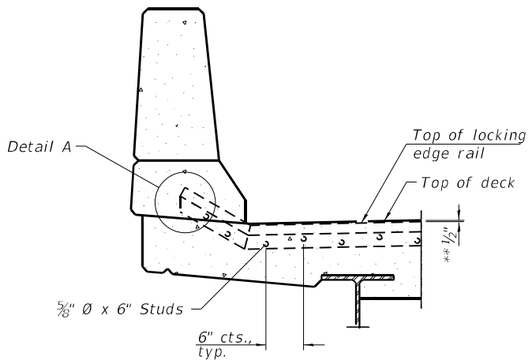
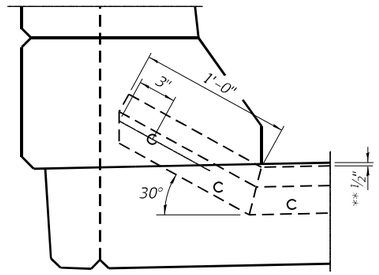


FOR SKEWS ≤ 30°

PLAN AT PARAPET

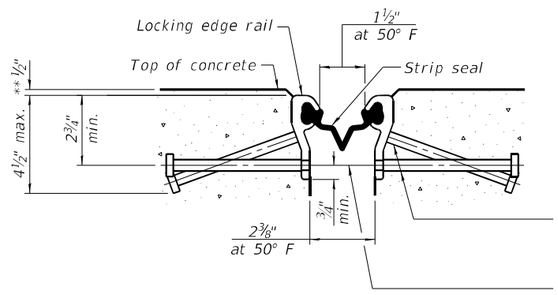


SECTION AT PARAPET

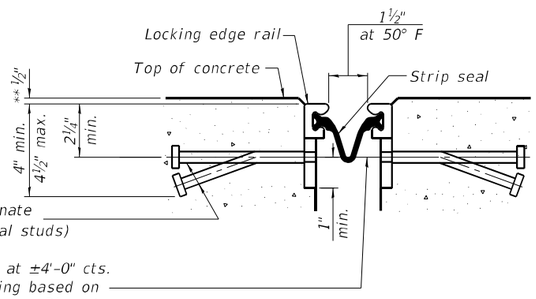


DETAIL A

** Prior to ¼" Diamond Grinding



SHOWING ROLLED RAIL JOINT



SHOWING WELDED RAIL JOINT

* ⅝" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

⅜" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of ¼". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

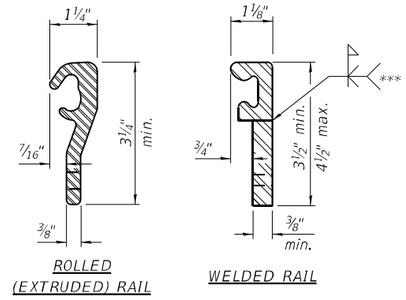
The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4½" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

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

LOCKING EDGE RAIL SPLICE

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

BILL OF MATERIAL
STR. NO. 092-0012

Item	Unit	Total
Preformed Joint Strip Seal	Foot	45

BILL OF MATERIAL
STR. NO. 092-0013

Item	Unit	Total
Preformed Joint Strip Seal	Foot	59

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PLOT DATE = 4/22/2022		CHECKED - LVM	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 092-0012 & 092-0013

SHEET NO. 21 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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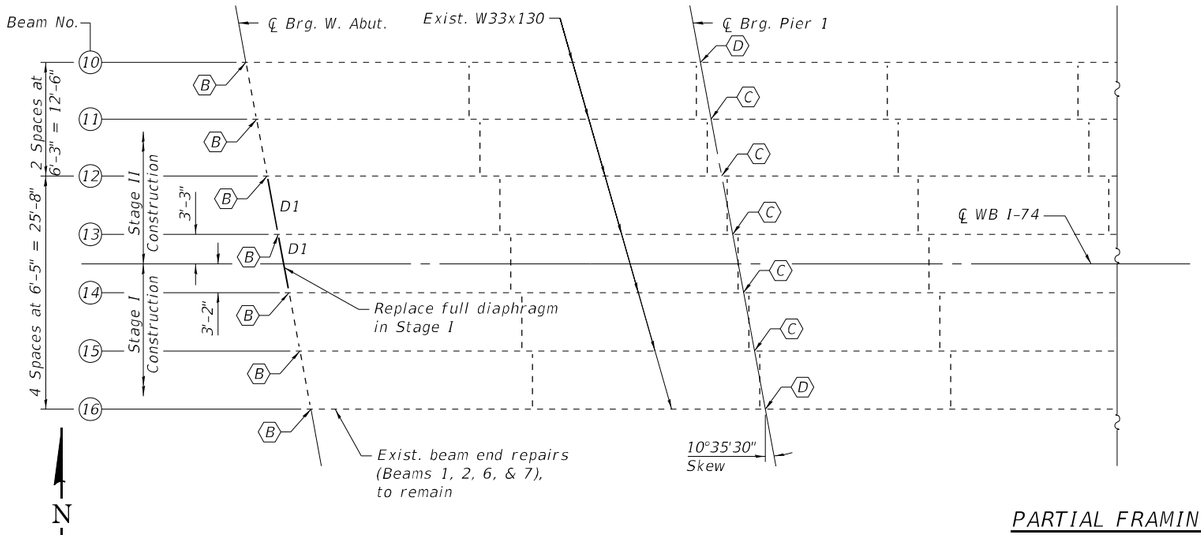
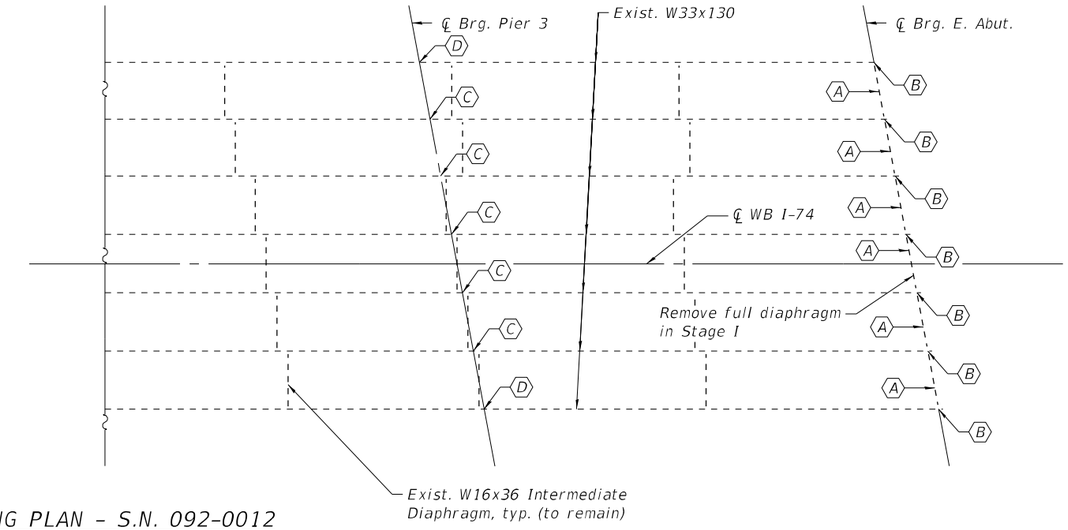
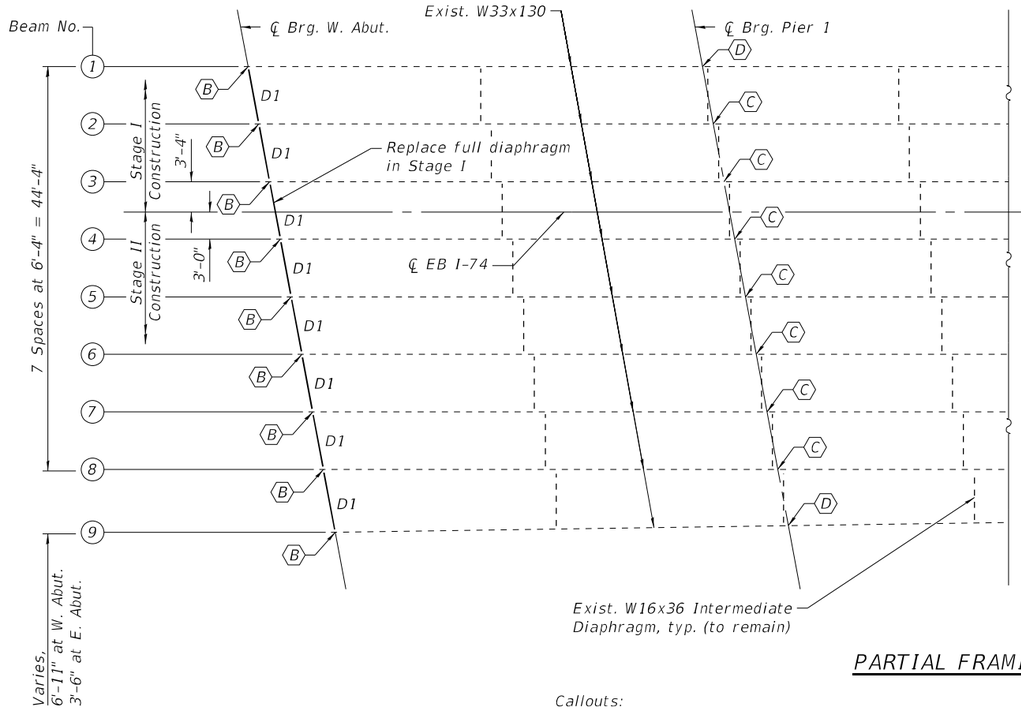
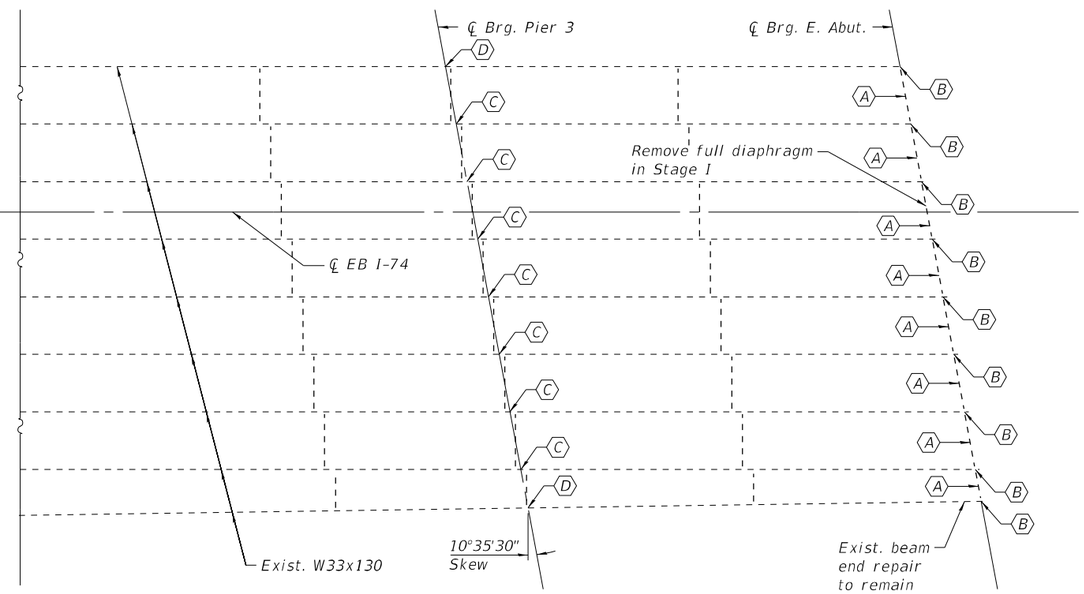
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	





PARTIAL FRAMING PLAN – S.N. 092-0012





PARTIAL FRAMING PLAN – S.N. 092-0013

Callouts:

D1 – Remove and replace W12x40 end diaphragm and clip angles, see sheet 23 of 34 for details.

(A) – Remove existing W12x40 end diaphragm, see sheet 23 of 34 for details.

(B) – Jack and remove existing bearing assembly, replace with new bearing assemblies as shown on sheet 24 or 25 of 34.

(C) – Install new side retainer and 1" Ø anchor bolt on each side of existing bearing assembly, see sheet 25 of 34 for details.

(D) – Install new side retainer and 1" Ø anchor bolt against existing bearing assembly, see sheet 25 of 34 for details.

Notes:
Removal of existing diaphragms shall be paid for as Structural Steel Removal.
Removal of existing bearing assemblies shall be paid for as Jack and Remove Existing Bearings.
See sheet 23 of 34 for Bill of Material.

GIRDER REACTION TABLE (EXIST.)
S.N. 092-0012 & 092-0013

		W. Abut.	E. Abut.
R_{DL}	(k)	20.6	20.6
R_{LL}	(k)	33.3	33.3
R_{IM}	(k)	9.5	9.5
R_{Total}	(k)	63.4	63.4

GIRDER REACTION TABLE (PROP.)
S.N. 092-0012 & 092-0013

		W. Abut.	*E. Abut.
R_{DL}	(k)	20.6	47.3
R_{LL}	(k)	33.3	41.3
R_{IM}	(k)	9.5	11.8
R_{Total}	(k)	63.4	100.4

* New bearing assembly loads (includes approach slab)

MODEL: Default
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4/22/2022 11:51:11 PM

MAURER-STUTZ ENGINEERS SURVEYORS

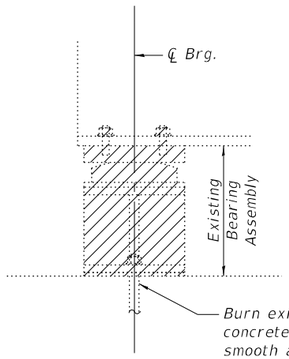
USER NAME = baswanson	DESIGNED - LVM	REVISED -
	CHECKED - BAS	REVISED -
PLOT SCALE =	DRAWN - BAS	REVISED -
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL FRAMING PLAN
STRUCTURE NO. 092-0012 & 092-0013
SHEET NO. 22 OF 34 SHEETS

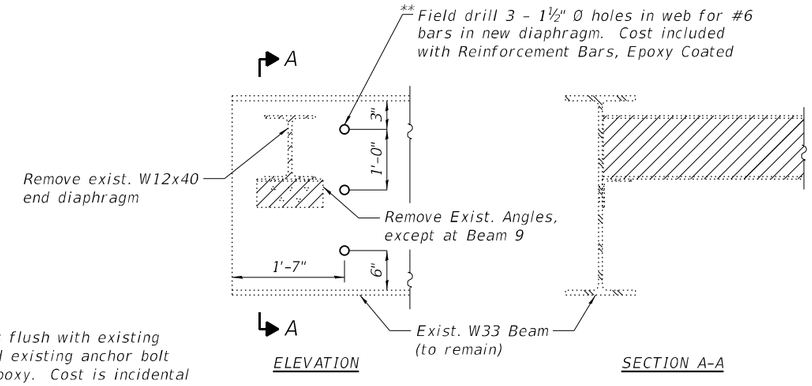
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	366
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

** In lieu of drilling holes through web repair plates on Beam 9, Contractor may remove 3 exist. bolts in the approximate locations of the proposed holes and install in their place ¾" Øx 5'-0" long threaded rods fastened to the beam at center with two nuts and washers. Bend rod to fit within diaphragm. These rods replace the corresponding m100(E) bars in diaphragm. Cost included with Reinforcement Bars, Epoxy Coated.



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

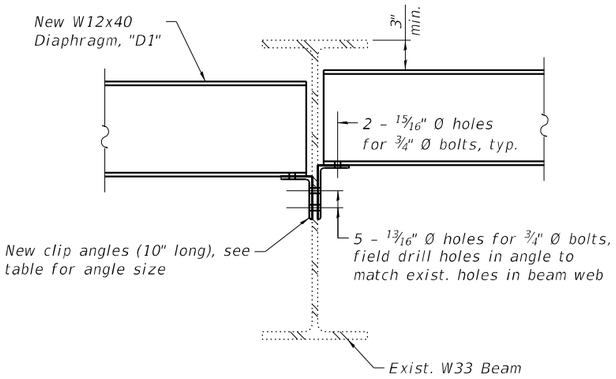
EXISTING BEARING REMOVAL DETAIL



END DIAPHRAGM REMOVAL

(typ. at East Abutment)

To be removed



DIAPHRAGM CLIP ANGLE SIZES

S.N. 092-0012, W. Abut.		
(of web)	N. Side	S. Side
Beam 10	--	exist.
Beam 11	exist.	exist.
Beam 12	* L6x4x¾	L6x4x¾
Beam 13	L6x4x¾	L6x4x¾
Beam 14	L6x4x¾	* L6x4x¾
Beam 15	exist.	exist.
Beam 16	exist.	--
S.N. 092-0013, W. Abut.		
(of web)	N. Side	S. Side
Beam 1	--	L6x4x¾
Beam 2	L6x4x¾	L6x4x¾
Beam 3	L6x4x¾	L6x4x¾
Beam 4	L6x4x¾	L6x4x¾
Beam 5	L7x4x¾	L6x4x¾
Beam 6	L8x4x¾	L6x4x¾
Beam 7	L8x4x¾	L6x4x¾
Beam 8	L8x4x¾	L6x4x¾
Beam 9	L6x4x¾	--

NEW DIAPHRAGM D1

(10 diaphragms at West Abutment))

* Field drill all holes in angle to match holes in exist. beam web and exist. diaphragm

Notes:

Removal of the existing steel extensions and side retainers at the abutments shall be included in the cost of Jack and Remove Existing Bearings.

Minimum jack capacity shall be 30 tons.

Removal of steel end diaphragms shall be paid for as Structural Steel Removal.

New diaphragms shall be paid for as Furnishing and Erecting Structural Steel.

BILL OF MATERIAL
STR. NO. 092-0012

Item	Unit	Quantity
Elastomeric Bearing Assembly, Type I	Each	7
Elastomeric Bearing Assembly, Type II	Each	7
Anchor Bolts, 1"	Each	52
Furnishing and Erecting Structural Steel	Pound	3640
Jack and Remove Existing Bearings	Each	14
Structural Steel Removal	Pound	2400

BILL OF MATERIAL
STR. NO. 092-0013

Item	Unit	Quantity
Elastomeric Bearing Assembly, Type I	Each	9
Elastomeric Bearing Assembly, Type II	Each	9
Anchor Bolts, 1"	Each	68
Furnishing and Erecting Structural Steel	Pound	6250
Jack and Remove Existing Bearings	Each	18
Structural Steel Removal	Pound	4620

MODEL: Default
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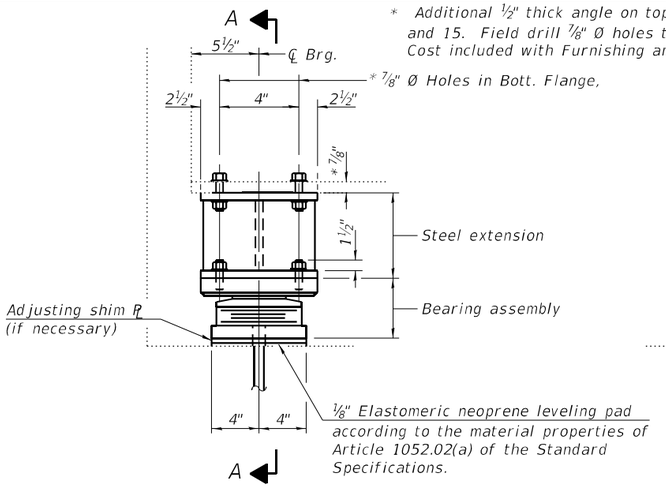
4/22/2022 11:51:11 PM

MAURER-STUTZ ENGINEERS SURVEYORS

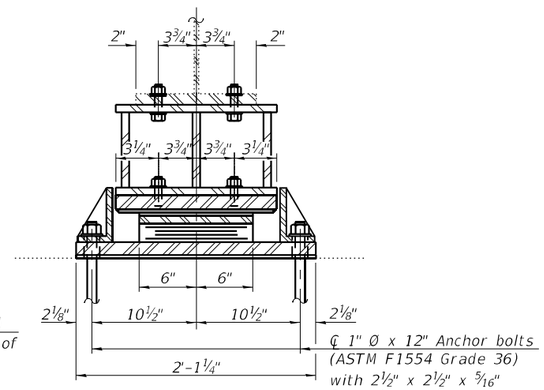
USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STRUCTURAL STEEL DETAILS STRUCTURE NO. 092-0012 & 092-0013	
	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - BAS	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		SHEET NO. 23 OF 34 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	367
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



ELEVATION AT ABUT.

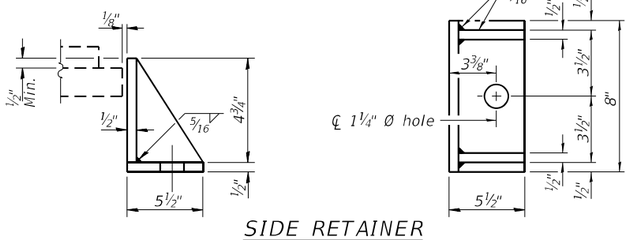
* Additional ½" thick angle on top of beam flange at Beams 9, 10, 14, and 15. Field drill ⅞" Ø holes thru angle for installation of bolts. Cost included with Furnishing and Erecting Structural Steel.



SECTION A-A

TYPE II ELASTOMERIC EXP. BRG.

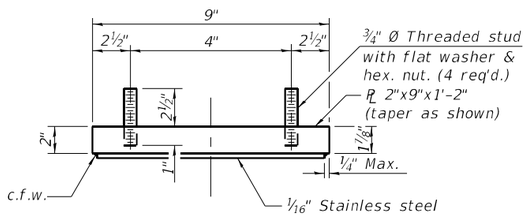
(typ. at West Abutments)



SIDE RETAINER

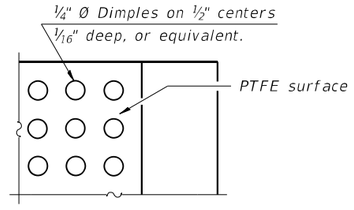
(at W. Abut.)

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (Cost included with Elastomeric Bearing Assemblies, Type II)

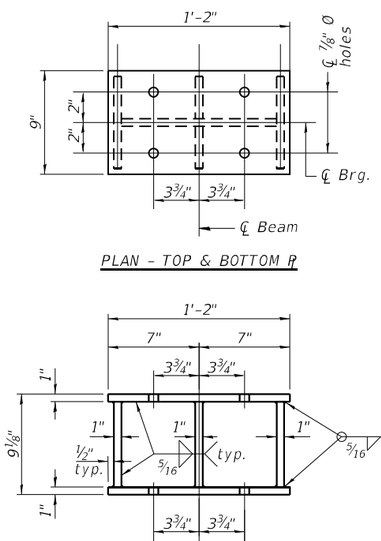


TOP BEARING ASSEMBLY

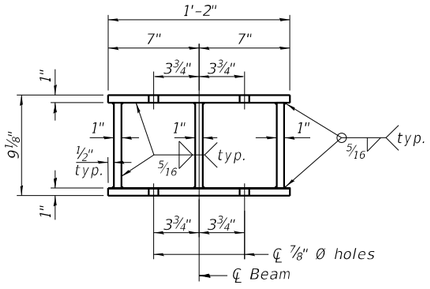
(Looking North)



PLAN-PTFE SURFACE



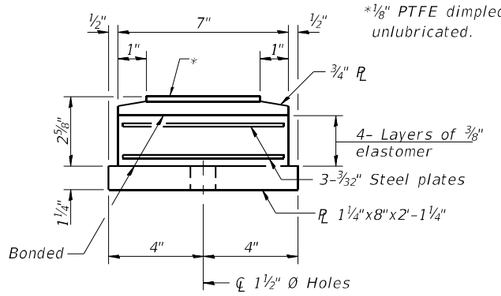
SECTION



ELEVATION

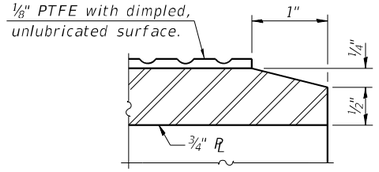
STEEL EXTENSION

PLAN - TOP & BOTTOM ℙ

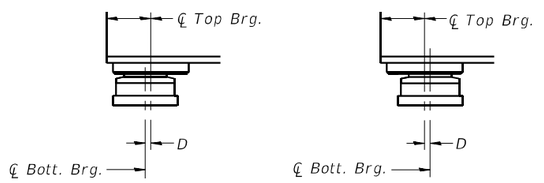


*⅛" PTFE dimpled, unlubricated.

BOTTOM BEARING ASSEMBLY



SECTION THRU PTFE



D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.

Notes:

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

Steel extensions, shim plates, and connection bolts shall be paid for as Furnishing and Erecting Structural Steel.

Side retainers and stainless steel plates provided for new Elastomeric Bearing Assemblies shall be included in the cost of Elastomeric Bearing Assembly, of the corresponding type.

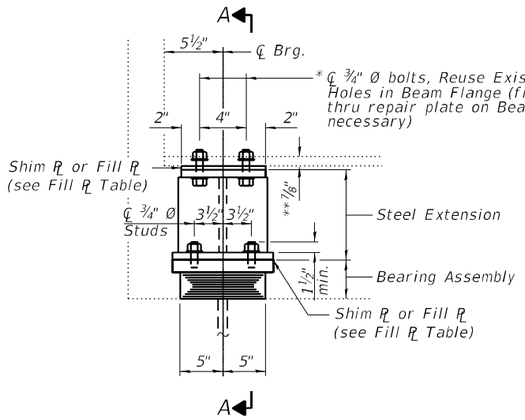
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

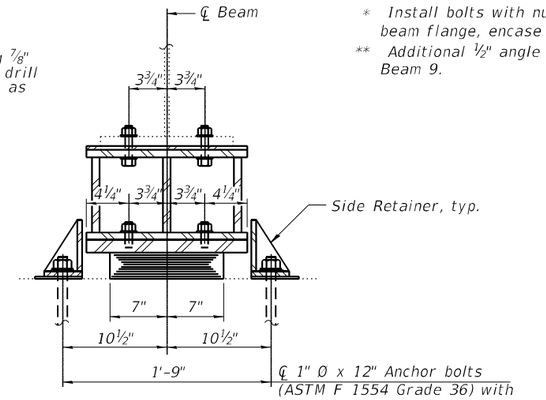
Provide two ⅛" adjusting shims for each bearing in addition to all other plates of the Bearing Assembly and placed as shown on the bearing details.

See sheet 23 of 34 for Bill of Material.

The Top and Bottom Bearing Plates shall be shop painted with the inorganic zinc rich primer per AASHTO M300 Type I. Cost included with Elastomeric Bearing Assembly, Type II.



ELEVATION AT ABUT.



SECTION A-A

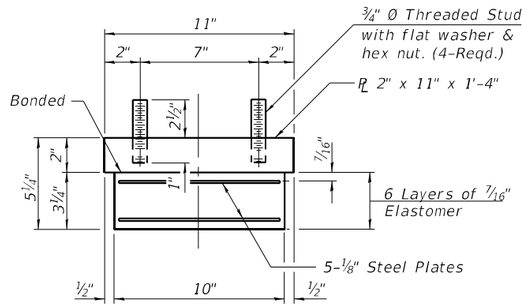
* Install bolts with nut and washer on top of beam flange, encase in concrete diaphragm

** Additional ½" angle on top of beam flange at Beam 9.

TYPE I ELASTOMERIC EXP. BRG.

(typ. at East Abutments)

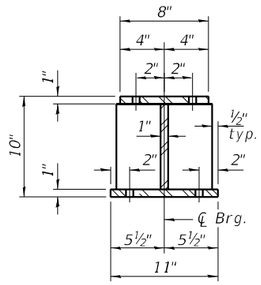
Note:
Shim plates shall not be placed under Bearing Assembly.



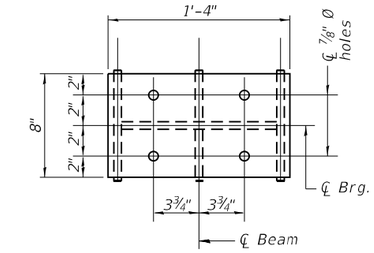
BEARING ASSEMBLY

FILL PLATE THICKNESS

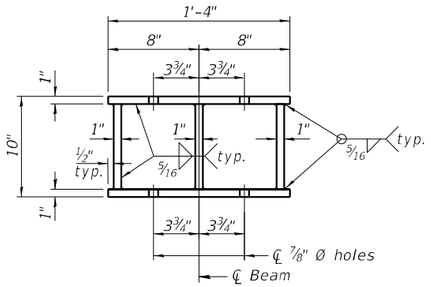
S.N. 092-0012, E. Abut.	
Beam 10	1¾"
Beam 11	--
Beam 12	¼"
Beam 13	--
Beam 14	--
Beam 15	½"
Beam 16	--
S.N. 092-0013, E. Abut.	
Beam 1	⅜"
Beam 2	¼"
Beam 3	--
Beam 4	--
Beam 5	⅜"
Beam 6	½"
Beam 7	⅝"
Beam 8	¼"
Beam 9	½"



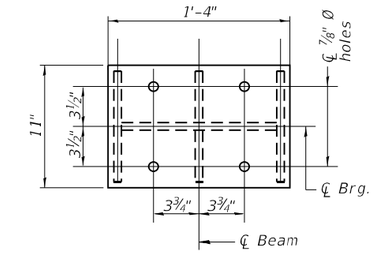
SECTION



PLAN - TOP PL

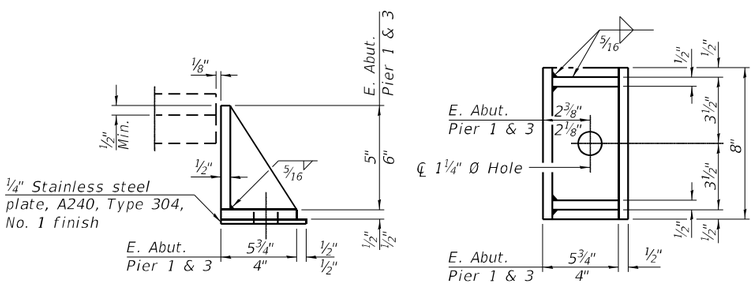


ELEVATION



PLAN - BOTTOM PL

STEEL EXTENSION



SIDE RETAINER

(at E. Abut., Pier 1, & Pier 3)

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

Notes:

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

Steel extensions, shim plates, and connection bolts shall be paid for as Furnishing and Erecting Structural Steel.

Side retainers and stainless steel plates provided for new Elastomeric Bearing Assemblies shall be included in the cost of Elastomeric Bearing Assembly, of the corresponding type. Where placed against exist. pier bearing assemblies, side retainers shall be paid for as Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Provide two ⅛" adjusting shims for each bearing in addition to all other plates of the Bearing Assembly and placed as shown on the bearing details.

See sheet 23 of 34 for Bill of Material.

The Top Bearing Plates shall be shop painted with the inorganic zinc rich primer per AASHTO M300 Type I. Cost included with Elastomeric Bearing Assembly, Type I.

LEGEND

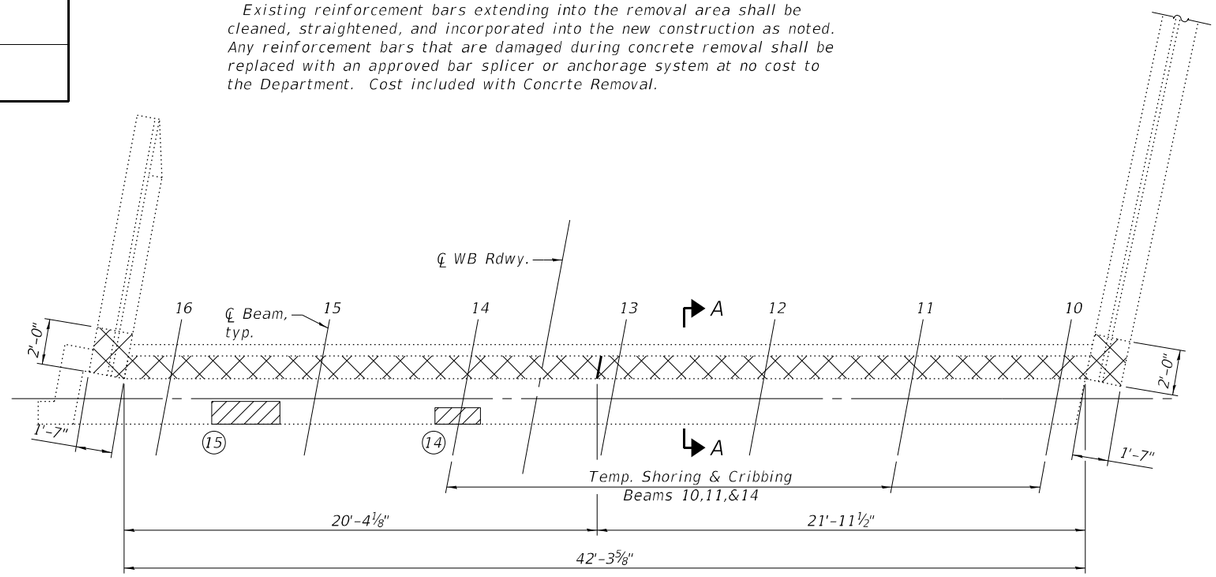
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal
#	Epoxy Crack Injection (Length)

Notes:
Repair areas shown are estimated from soundings on October 13, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".
See sheet 27 of 34 for Bill of Material.
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrte Removal.

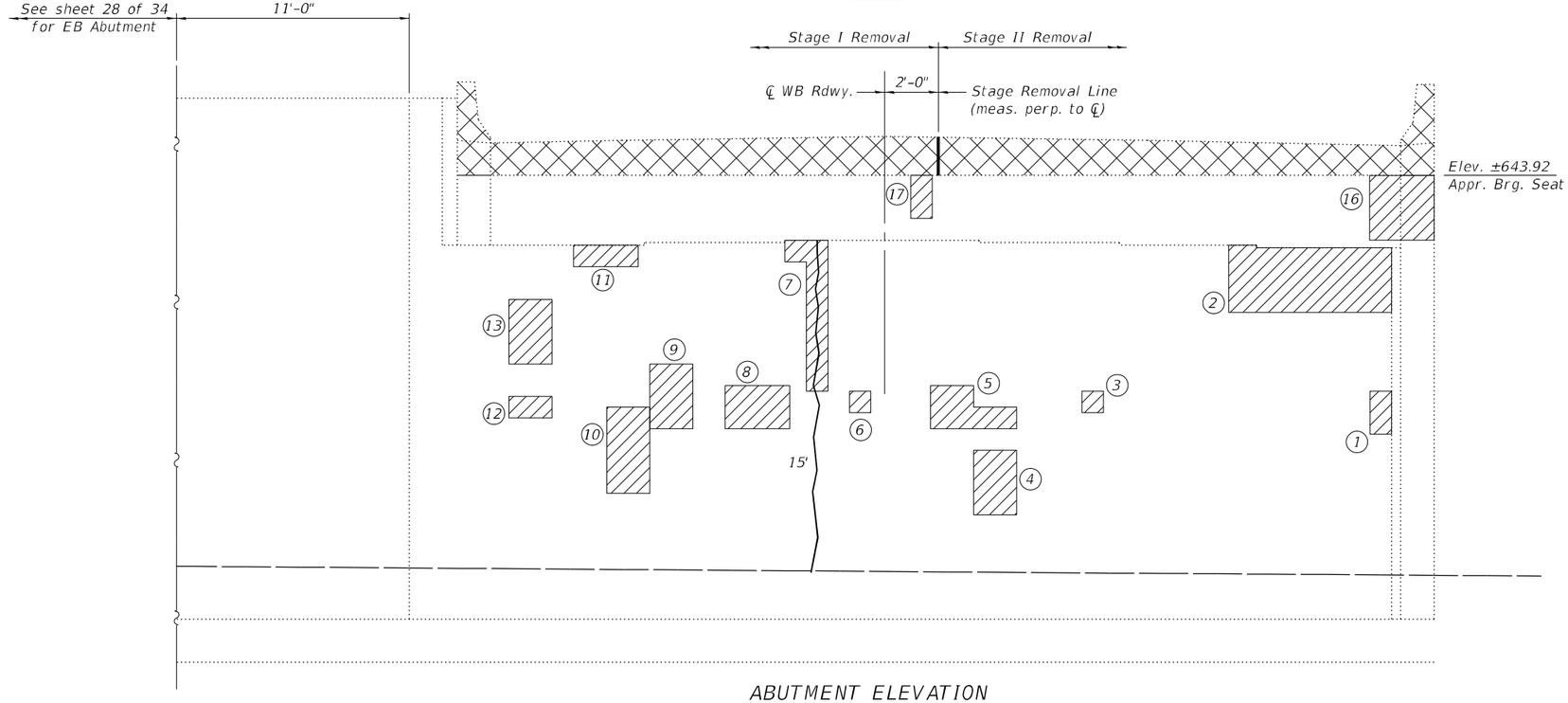
GIRDER REACTION TABLE		
		W. Abutment
$R_{\mathbb{P}}$	(k)	20.6
$R_{\mathbb{L}}$	(k)	33.3
R_{1M}	(k)	9.5
R_{Total}	(k)	63.4

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
2	8' x 2.5'	20			
3	1' x 1'	1			
4	3' x 2'	6			
5	4' x 2'	6			
6	1' x 1'	1			
7	7' x 2'	8			
8	3' x 2'	6			
9	3' x 2'	6			
10	4' x 2'	8			
11	3' x 1'	3			
12	2' x 1'	2			
13	3' x 2'	6			
14	2' x .5'	1			
15	4' x .5'	2			
16	3' x 3'	9			
17	2' x 1'	2			
	Totals	89			

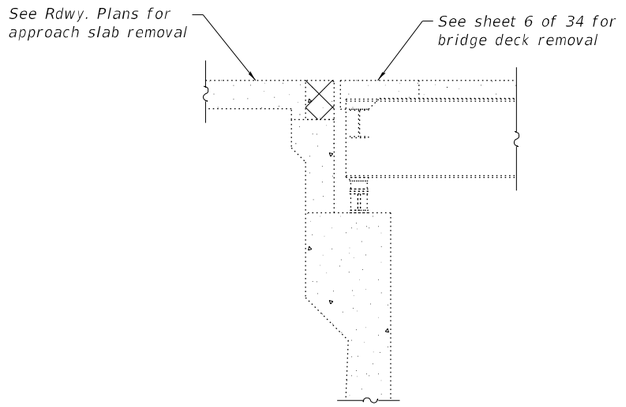


PLAN



ABUTMENT ELEVATION

(Looking West)



SECTION A-A

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4/22/2022 11:51:14 PM

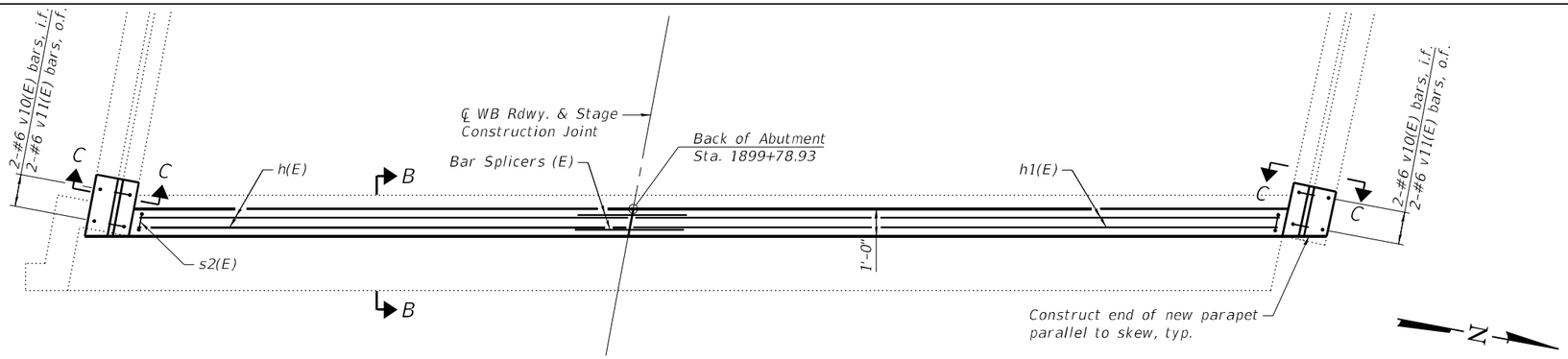
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

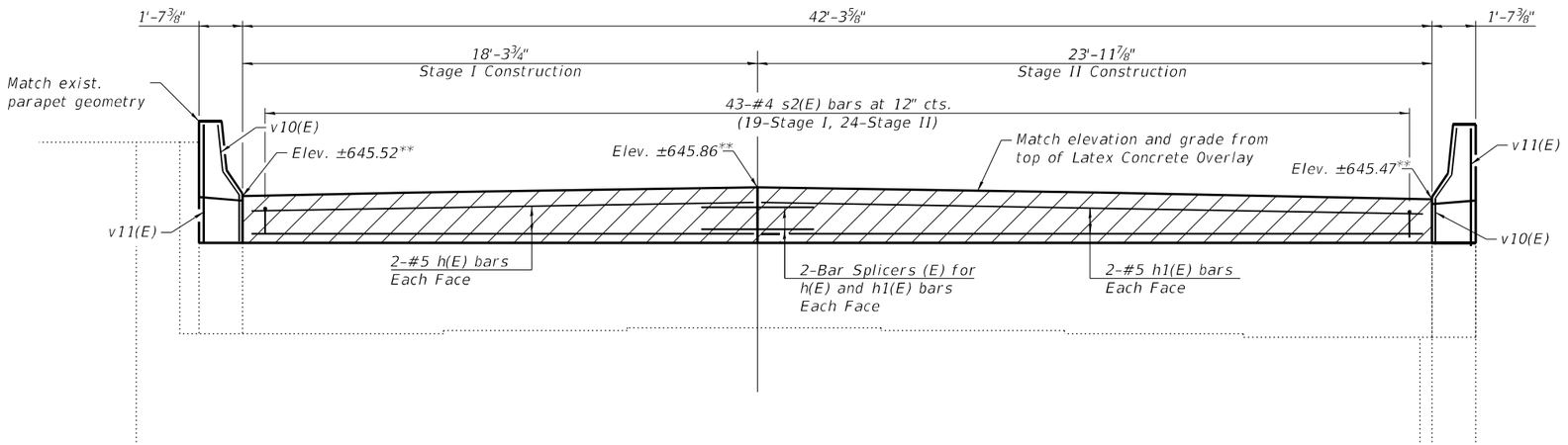
WEST ABUTMENT REMOVAL
STRUCTURE NO. 092-0012
SHEET NO. 26 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	370
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



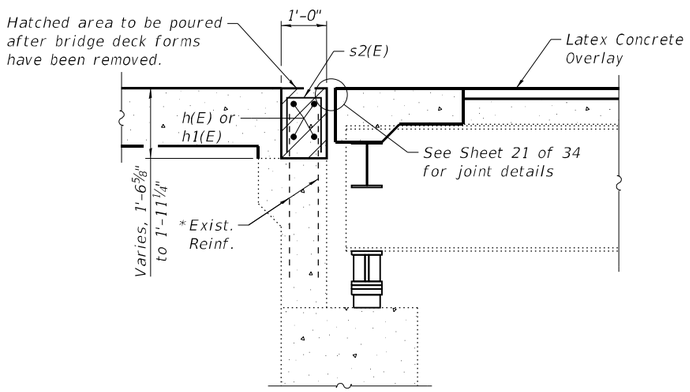
PLAN

** Prior to Diamond Grinding. Top surface of hatch block shall match the elevation and profile grade of the top of Latex Concrete Overlay

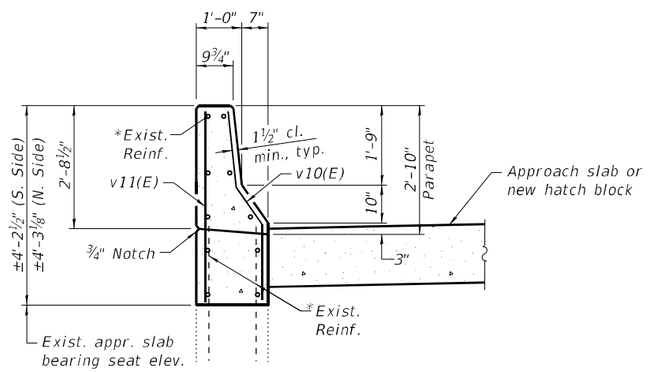


* Clean and incorporate existing reinforcement bars extending into new hatch block and parapet. Vertical bars into the parapet greater than 2' above the removal line may be removed .

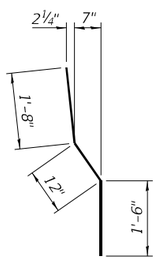
ELEVATION



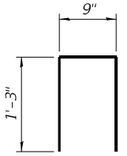
SECTION B-B



SECTION C-C



BAR v10(E)



BAR s2(E)

STR. NO. 092-0012
WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	17'-11"	———
h1(E)	4	#5	23'-8"	———
s2(E)	43	#4	3'-3"	⊓
v10(E)	4	#6	4'-2"	⌇
v11(E)	4	#6	4'-0"	———
Concrete Removal			Cu. Yd.	3.3
Concrete Superstructure			Cu. Yd.	3.5
Reinforcement Bars, Epoxy Coated			Pound	320
Structural Repair of Concrete (Depth ≤ 5 in.)			Sq. Ft.	89
Temporary Shoring and Cribbing			Each	3
Epoxy Crack Injection			Foot	15

MODEL: Default
FILE NAME: S:\237\2019\23719020.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-0920012-027-W; Abut -0012.dgn

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT STRUCTURE NO. 092-0012
	CHECKED - BAS	REVISED -		
PLOT SCALE =	DRAWN - BAS	REVISED -		
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		SHEET NO. 27 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	371
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

LEGEND

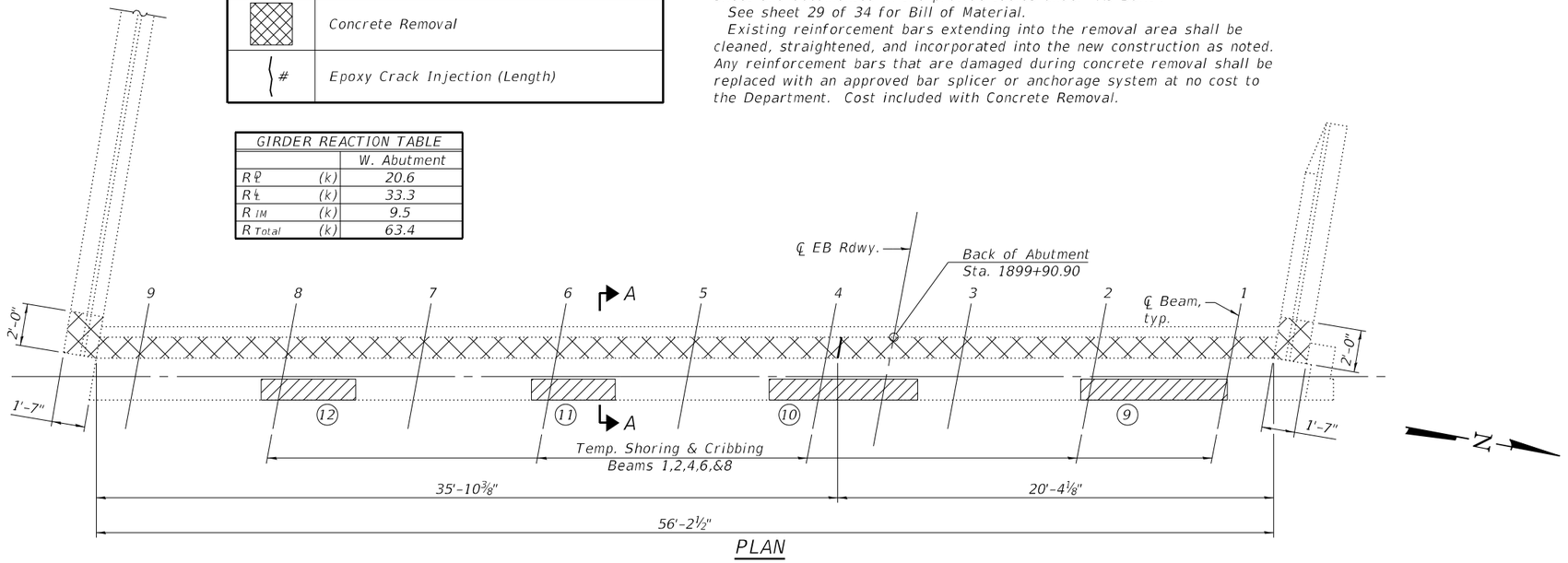
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal
#	Epoxy Crack Injection (Length)

Notes:
Repair areas shown are estimated from soundings on October 13, 2020. Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".
See sheet 29 of 34 for Bill of Material.
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.

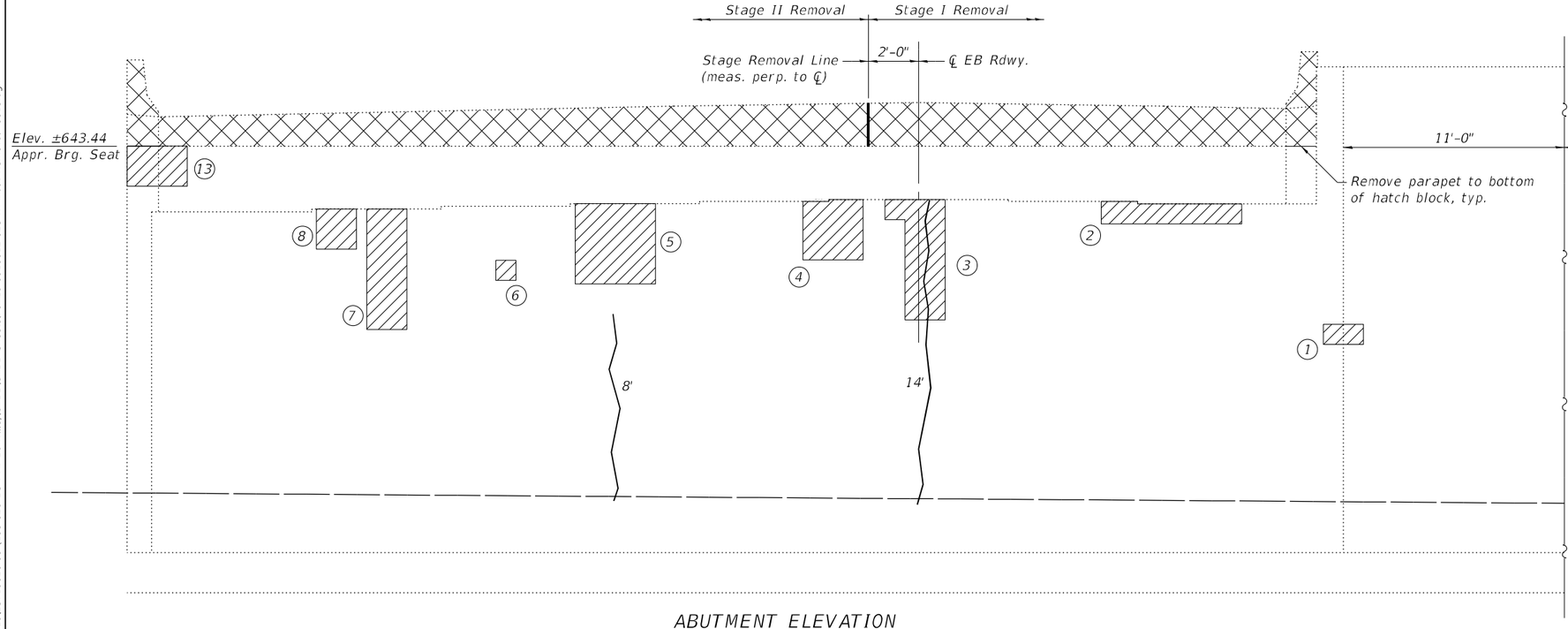
GIRDER REACTION TABLE		
		W. Abutment
R_{DL}	(k)	20.6
R_{LL}	(k)	33.3
R_{IM}	(k)	9.5
R_{Total}	(k)	63.4

STRUCTURAL REPAIR OF CONCRETE TABLE

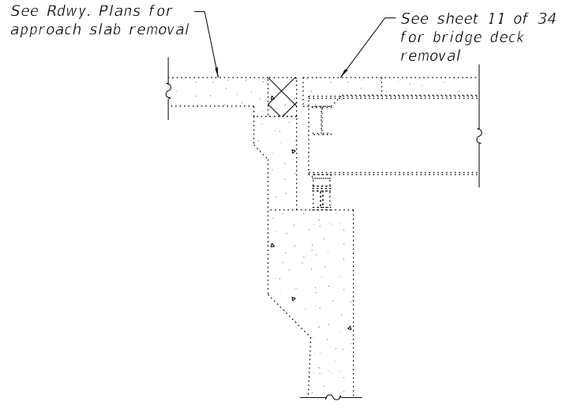
Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	2' x 1'	2			
2	7' x 1'	7			
3	6' x 3'	13			
4	3' x 3'	9			
5	4' x 4'	16			
6	1' x 1'	1			
7	6' x 2'	12			
8	2' x 2'	4			
9	6' x .5'	3			
10	8' x .5'	4			
11	4' x .5'	2			
12	4' x .5'	2			
13	3' x 2'	6			
Totals		81			



PLAN



ABUTMENT ELEVATION
(Looking West)



SECTION A-A

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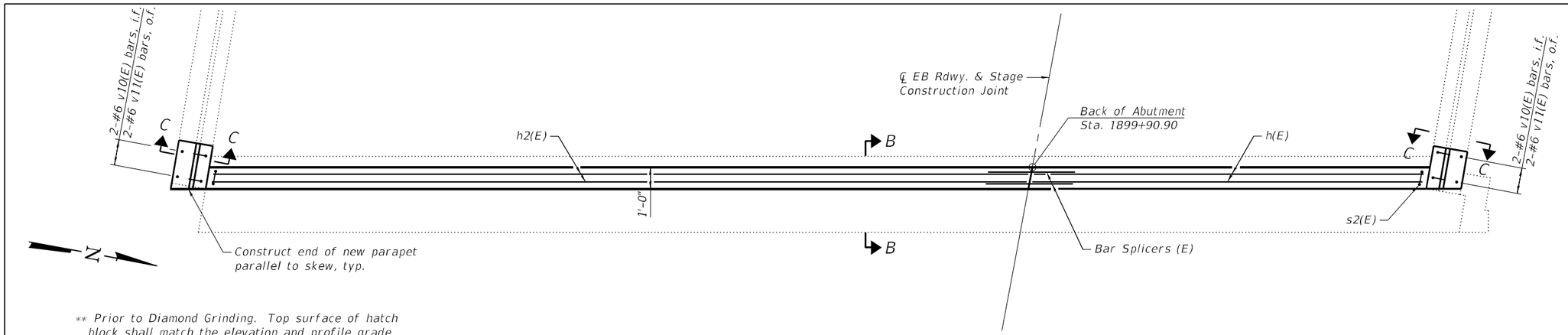
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

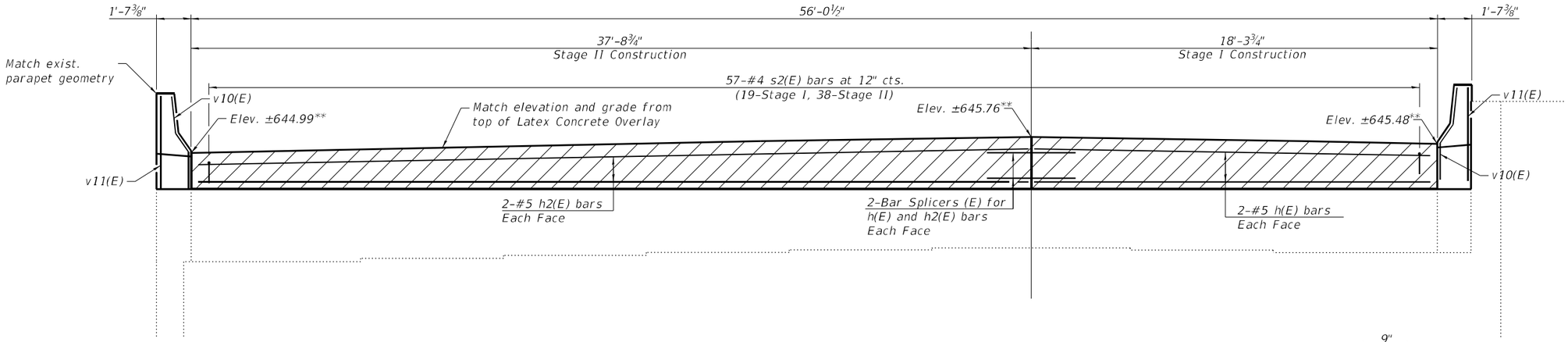
WEST ABUTMENT REMOVAL
STRUCTURE NO. 092-0013
SHEET NO. 28 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	372
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



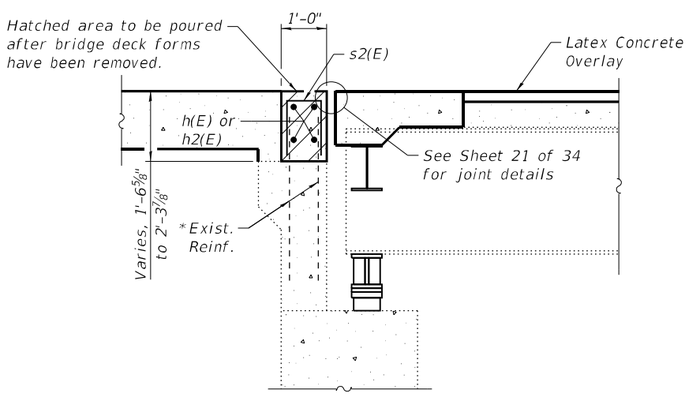
** Prior to Diamond Grinding. Top surface of hatch block shall match the elevation and profile grade of the top of Latex Concrete Overlay

PLAN

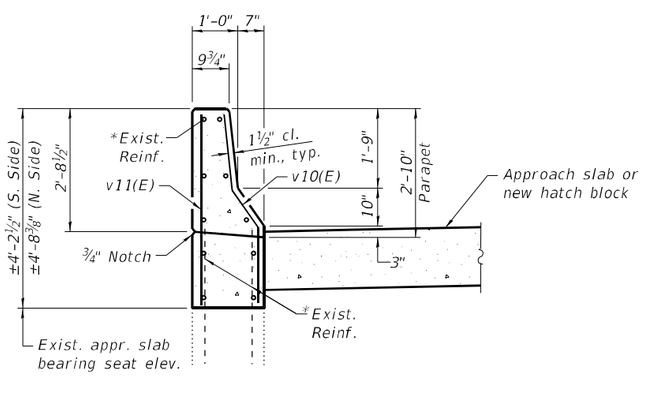


* Clean and incorporate existing reinforcement bars extending into new hatch block and parapet. Vertical bars into the parapet greater than 2' above the removal line may be removed .

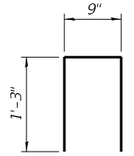
ELEVATION



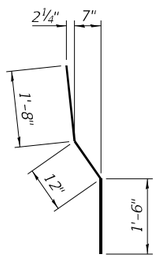
SECTION B-B



SECTION C-C



BAR s2(E)



BAR v10(E)

STR. NO. 092-0013 WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	4	#5	17'-11"	———
h2(E)	4	#5	37'-4"	———
s2(E)	57	#4	3'-3"	⊓
v10(E)	4	#6	4'-2"	⌇
v11(E)	4	#6	4'-0"	———
Concrete Removal			Cu. Yd.	4.7
Concrete Superstructure			Cu. Yd.	5.0
Reinforcement Bars, Epoxy Coated			Pound	400
Structural Repair of Concrete (Depth ≤ 5 in.)			Sq. Ft.	81
Temporary Shoring and Cribbing			Each	5
Epoxy Crack Injection			Foot	22

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT
STRUCTURE NO. 092-0013
SHEET NO. 29 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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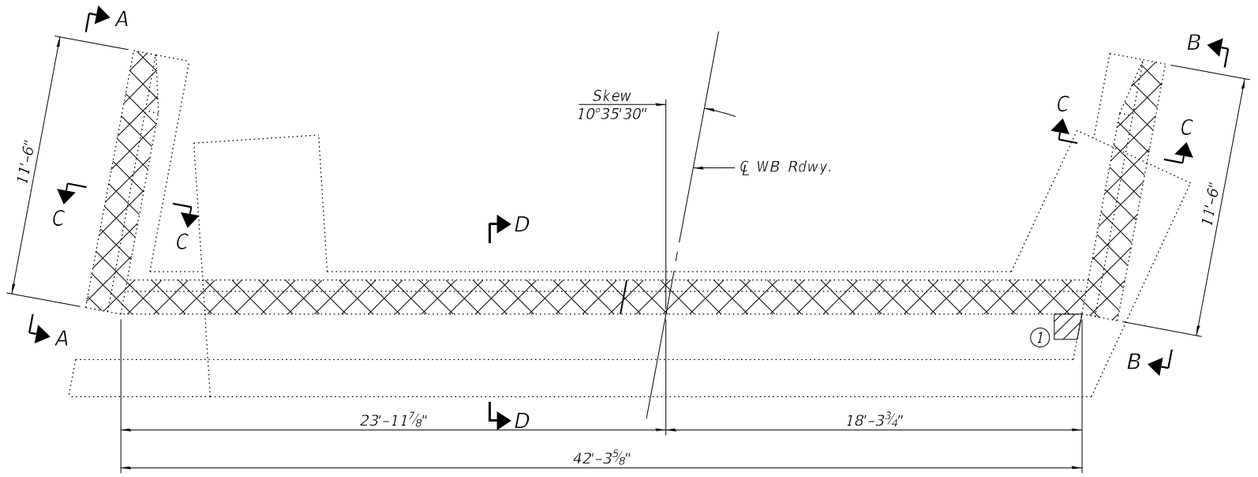
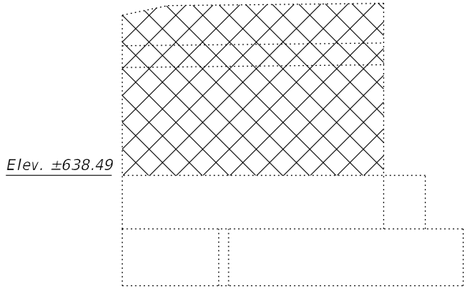
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

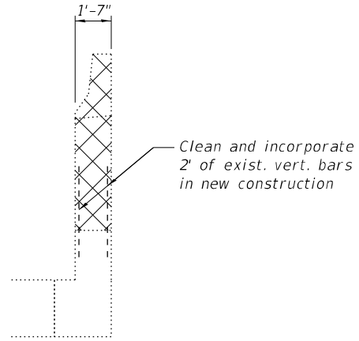


PLAN

N



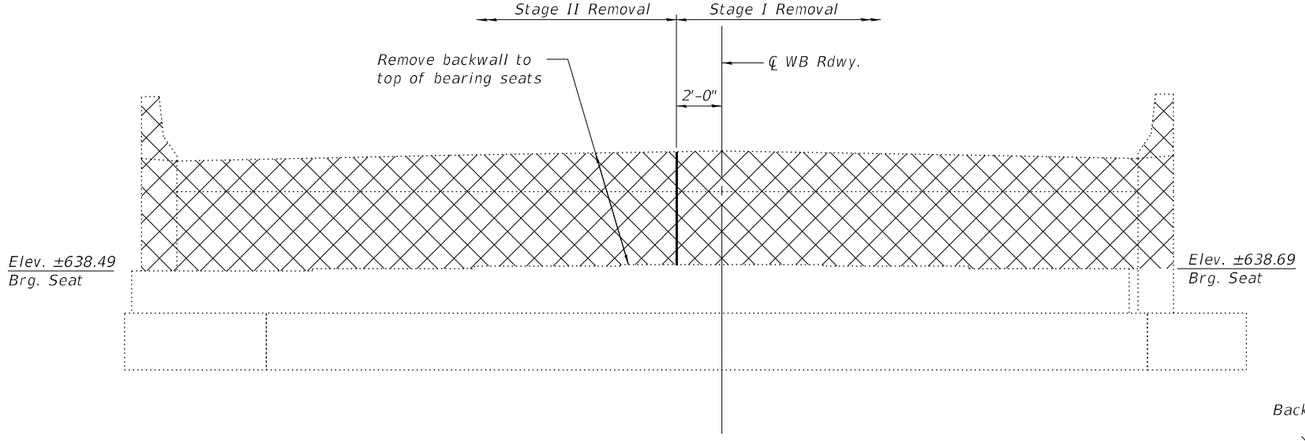
VIEW A-A



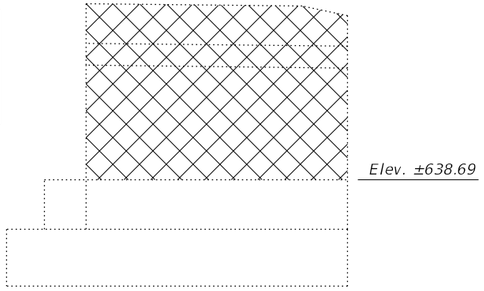
SECTION C-C

LEGEND

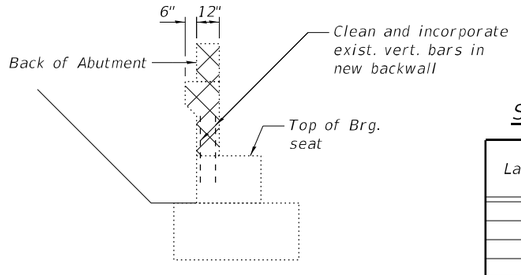
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal



ELEVATION
(Looking East)



VIEW B-B

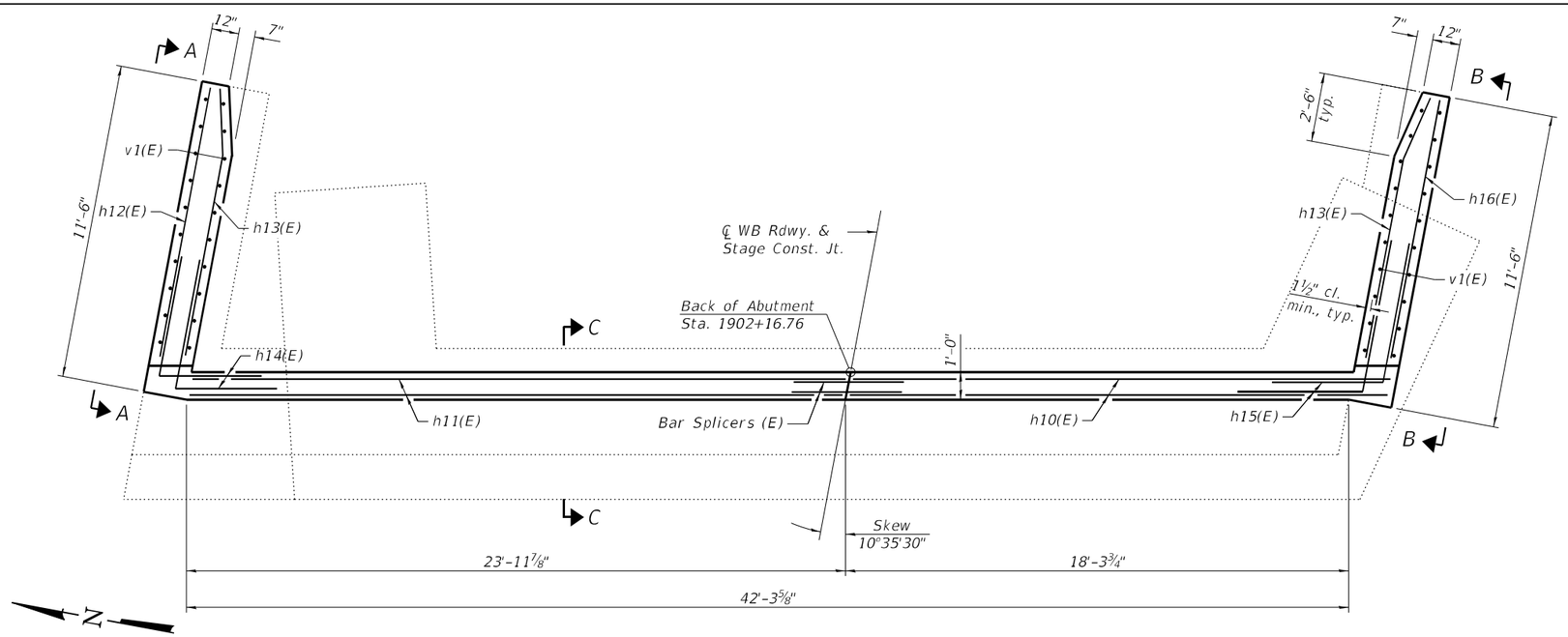


SECTION D-D

Notes:
Existing reinforcement bars extending into the removal area shall be cleaned, straightened, and incorporated into the new construction as noted. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system at no cost to the Department. Cost included with Concrete Removal.
See Sheet 2 of 34 for limits of Structure Excavation.
See Sheet 31 of 34 for Bill of Material.

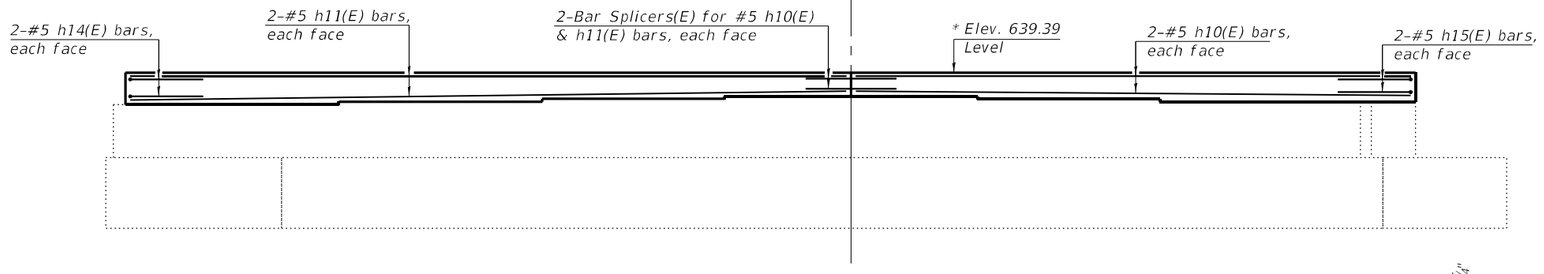
STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
1	1' x 1'	1			
	Totals	1			

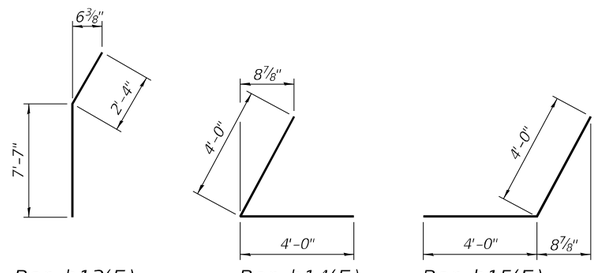


PLAN

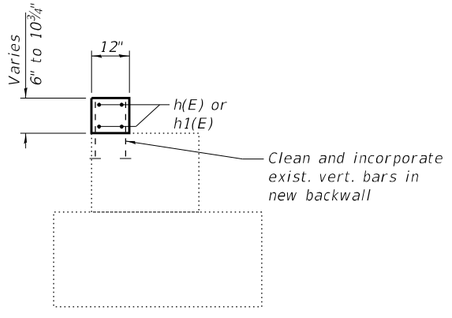
* Top of back wall shall be ±6" above the highest beam bearing seat.



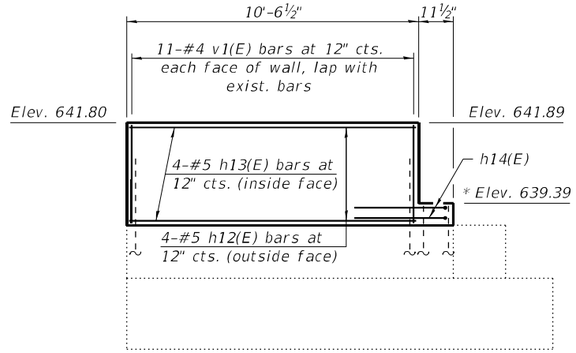
ELEVATION
(Looking East)



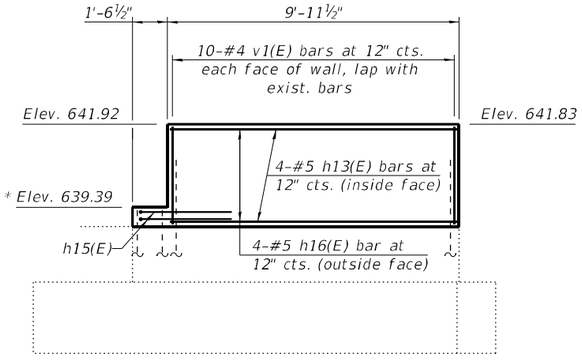
Bar h13(E) Bar h14(E) Bar h15(E)



SECTION C-C



VIEW A-A



VIEW B-B

STR. NO. 092-0012
EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10(E)	4	#5	19'-7"	
h11(E)	4	#5	23'-7"	
h12(E)	4	#5	10'-2"	
h13(E)	8	#5	9'-11"	
h14(E)	4	#5	8'-0"	
h15(E)	4	#5	8'-0"	
h16(E)	4	#5	9'-7"	
v1(E)	42	#4	2'-11"	
Structure Excavation		Cu. Yd.	43	
Concrete Removal		Cu. Yd.	17.0	
Concrete Structures		Cu. Yd.	5.1	
Reinforcement Bars, Epoxy Coated		Pound	490	
Structural Repair of Concrete (Depth ≤ 5 in.)		Sq. Ft.	1	

MODEL: Default
FILE NAME: S:\23\2019\23719020.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-092001 2-031-E. Abut -0012.dgn

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - LVM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EAST ABUTMENT STRUCTURE NO. 092-0012	
	CHECKED - BAS	REVISED -			
PLOT SCALE =	DRAWN - BAS	REVISED -			
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -		SHEET NO. 31 OF 34 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	375
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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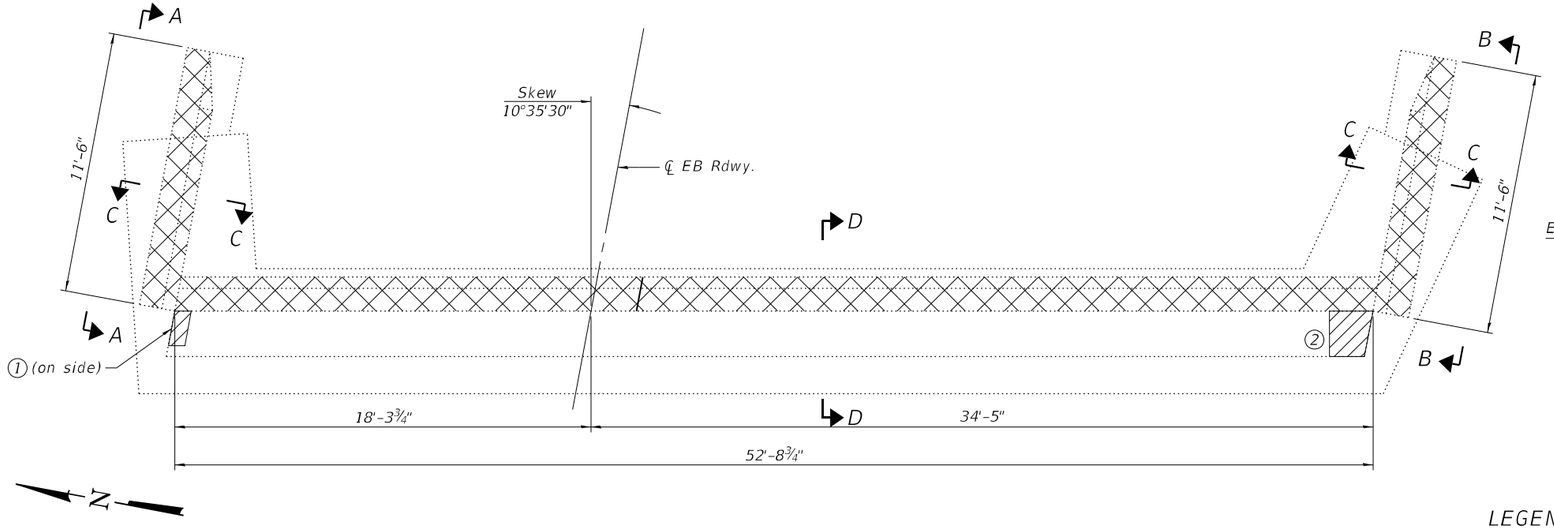
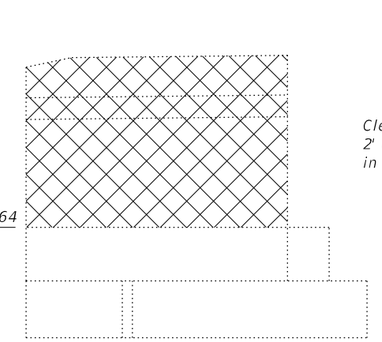
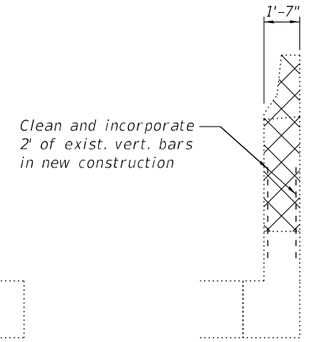


PLAN



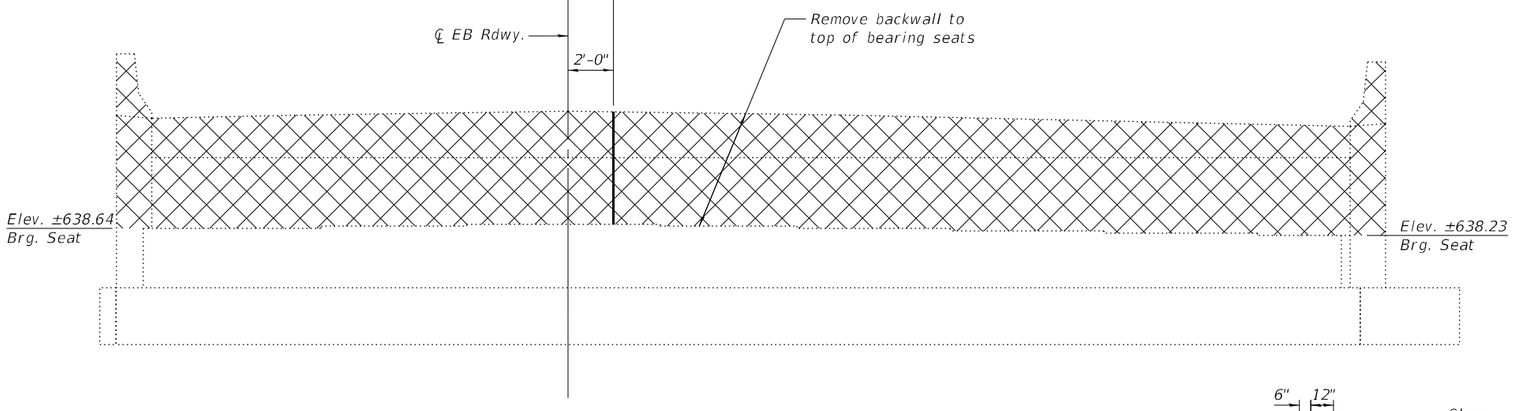
VIEW A-A



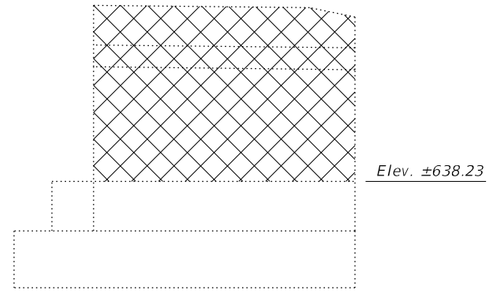
SECTION C-C

LEGEND

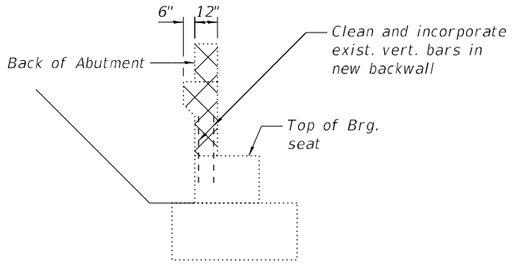
	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Concrete Removal



ELEVATION
(Looking East)



VIEW B-B



SECTION D-D

Notes:
Existing reinforcement bars that will be reused in the new construction shall not be cut or damaged. Damaged bars shall be replaced with new reinforcement bars drilled and epoxy grouted into existing concrete at no cost to the Department.
See Sheet 2 of 34 for limits of Structure Excavation.
See Sheet 33 of 34 for Bill of Material.

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
1	2' x 1'	2			
2	2' x 2"	4			
	Totals	6			

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	baswanson	DESIGNED -	LVM	REVISED -	
		CHECKED -	BAS	REVISED -	
PLOT SCALE =		DRAWN -	BAS	REVISED -	
PLOT DATE =	4/22/2022	CHECKED -	LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REMOVAL
STRUCTURE NO. 092-0013
SHEET NO. 32 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	376
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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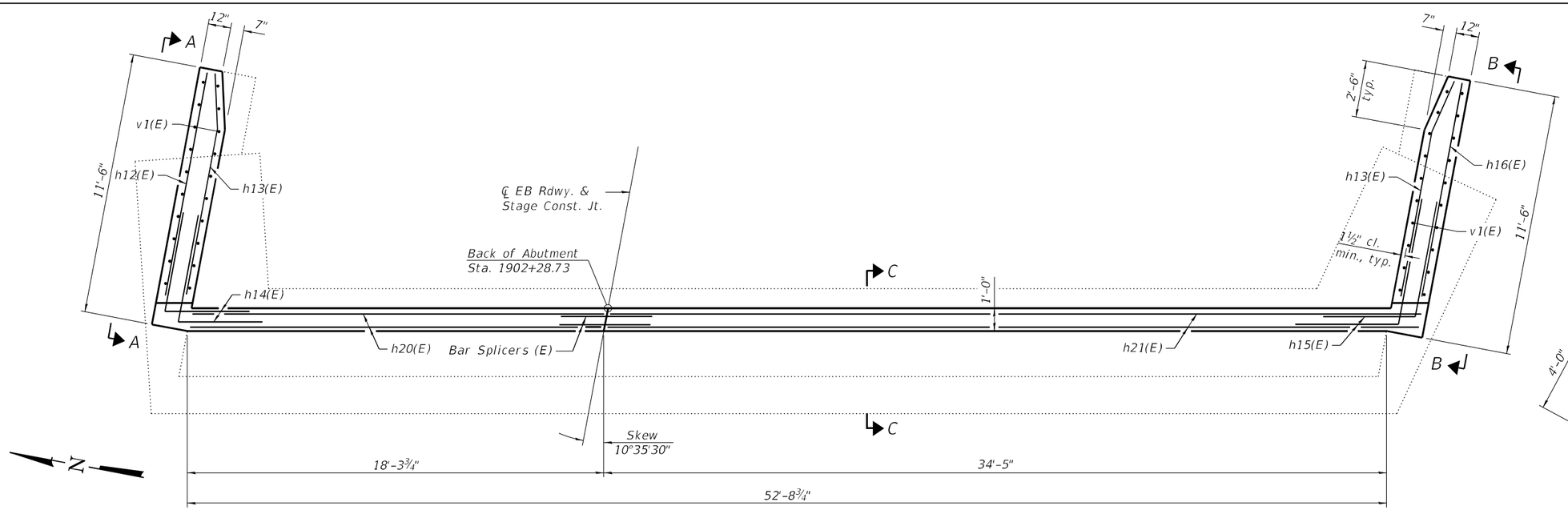
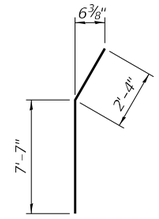
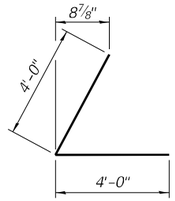


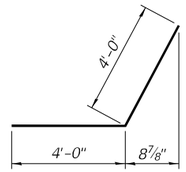
PLAN



Bar h13(E)



Bar h14(E)



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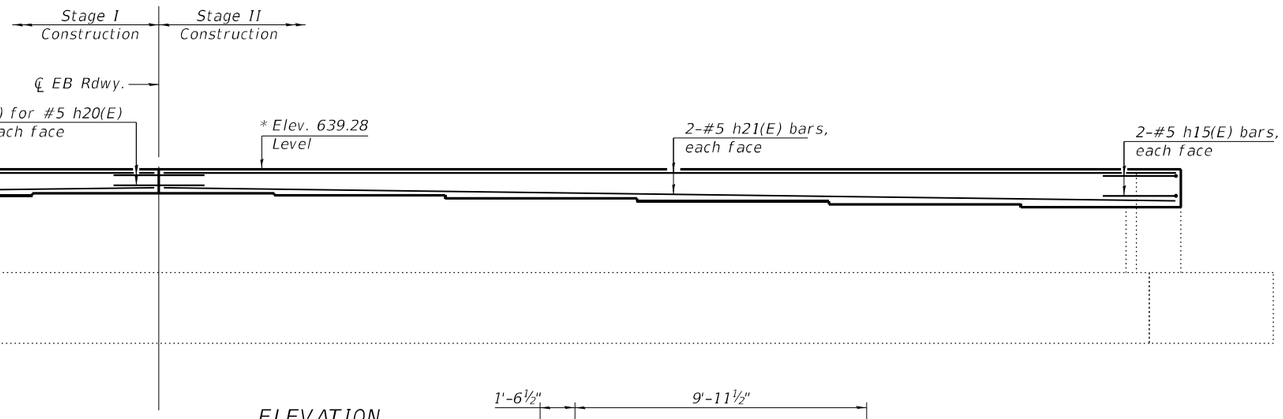
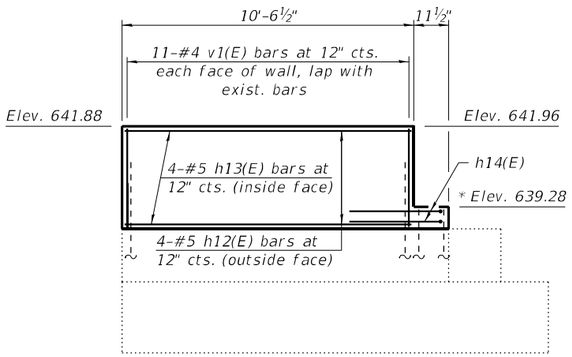
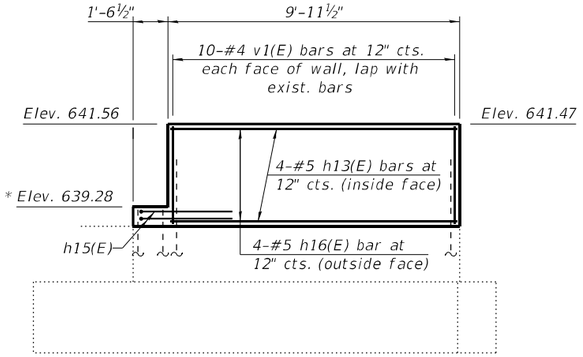


ELEVATION
(Looking East)



VIEW A-A



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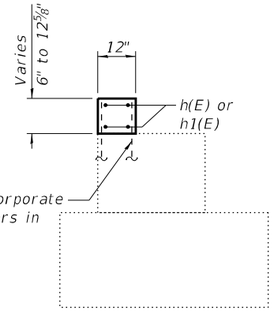

SECTION C-C

STR. NO. 092-0013
EAST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h12(E)	4	#5	10'-2"	
h13(E)	8	#5	9'-11"	
h14(E)	4	#5	8'-0"	
h15(E)	4	#5	8'-0"	
h16(E)	4	#5	9'-7"	
h20(E)	4	#5	18'-0"	
h21(E)	4	#5	35'-9"	
v1(E)	42	#4	2'-11"	
Structure Excavation			Cu. Yd.	58
Concrete Removal			Cu. Yd.	19.0
Concrete Structures			Cu. Yd.	5.5
Reinforcement Bars, Epoxy Coated			Pound	540
Structural Repair of Concrete (Depth ≤ 5 in.)			Sq. Ft.	6

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MAURER-STUTZ ENGINEERS SURVEYORS

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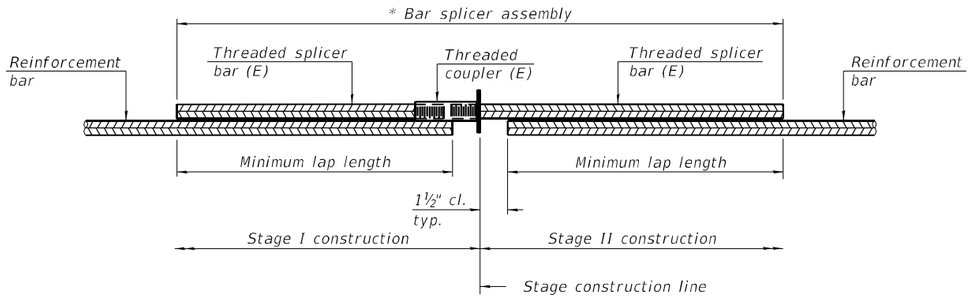
PLOT DATE = 4/22/2022		CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT
STRUCTURE NO. 092-0013
SHEET NO. 33 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	377
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	



STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

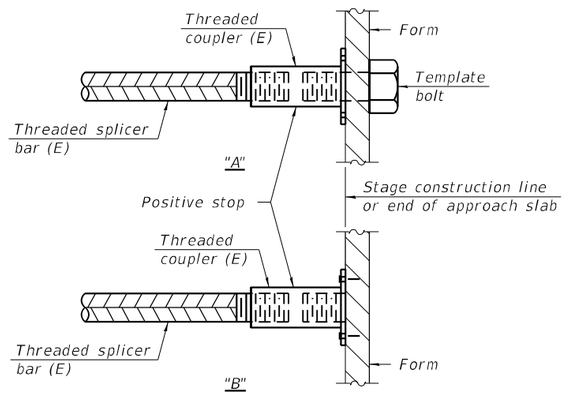
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

STR. NO. 092-0012

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	24	3'-6"
Diaphragm	#6	5	4'-0"
Diaphragm	#4	2	2'-5"
Approach Slab	#5	90	3'-4"
Approach Slab	#8	118	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-7"

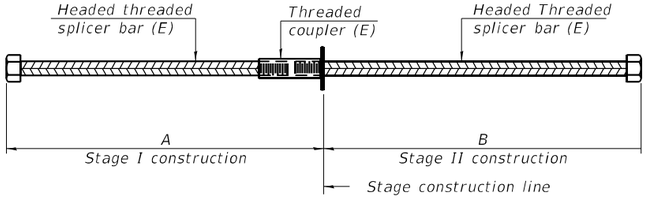
STR. NO. 092-0013

Location	Bar size	No. assemblies required	Minimum lap length
Bridge Deck	#5	24	3'-6"
Diaphragm	#6	5	4'-0"
Diaphragm	#4	2	2'-5"
Approach Slab	#5	90	3'-4"
Approach Slab	#8	118	4'-9"
Approach Footing	#5	80	3'-2"
Abutments	#5	8	3'-7"



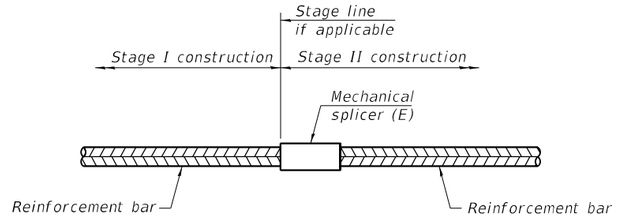
INSTALLATION AND SETTING METHODS

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



HEADED BAR SPLICER ASSEMBLY PLAN

Location	Bar size	No. assemblies required	A	B
Diaphragms -0012	#6	4	3'-0"	3'-1"
Diaphragms -0013	#6	4	3'-2"	2'-10"



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - BAS	REVISED -	
PLOT SCALE =	DRAWN - BAS	REVISED -	
PLOT DATE = 4/22/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

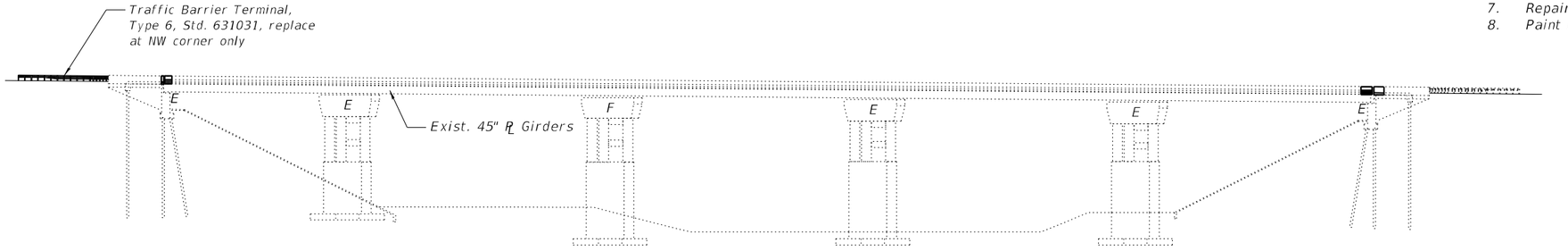
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 092-0012 & 092-0013
SHEET NO. 34 OF 34 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	378
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

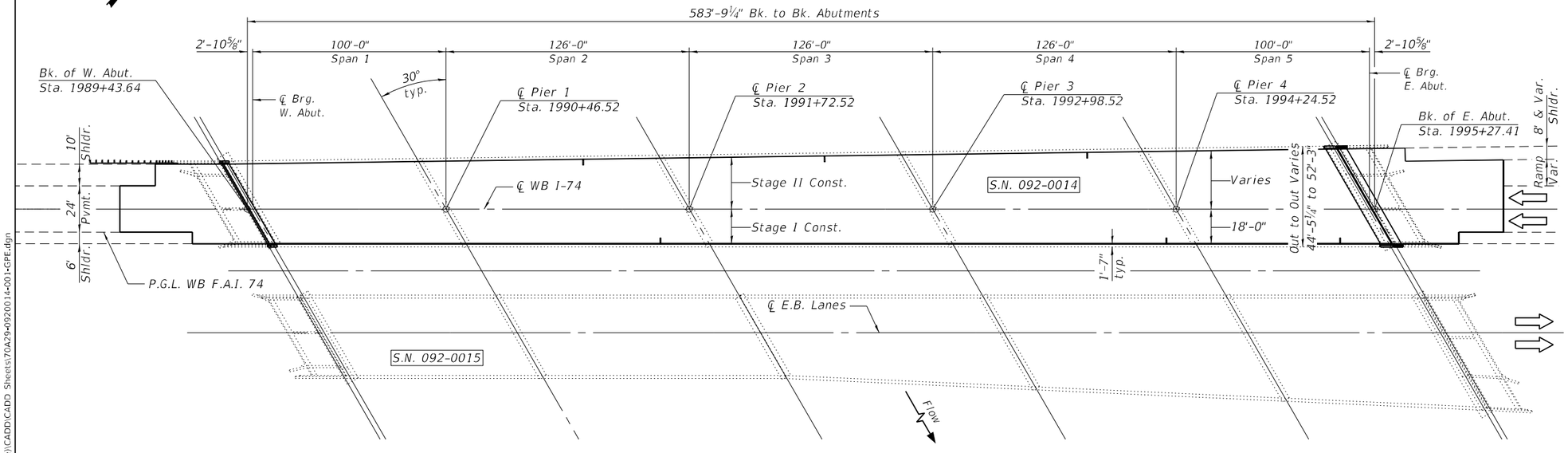
Existing structures 092-0014 & 092-0015 were built in 1963 as F.A.I. 74, Section 92-12B at Station 1992+54. Each structure consisted of five continuous spans of two steel plate girders with steel floorbeams and reinforced concrete deck superstructure with double column piers and vaulted abutments. Overall length is 583'-9¼" and clear roadway width is 30'-0". In 1990 the structures were reconstructed as F.A.I. 74, Section (92-12B)BR. The superstructures and decks were removed and replaced with 45" Web ℄ Girders. Structure 092-0014 has 7 girders spaced for a clear roadway width of 41'-3¾" at the West Abutment and 49'-1" at the East Abutment.
Traffic to be maintained using staged construction.
Salvage - None.

PROPOSED SCOPE OF WORK - S.N. 092-0014

1. *Rehabilitate bridge deck and concrete approach pavement with scarification and latex concrete overlay*
2. *Remove and replace HLMR bearing assemblies at west abutment*
3. *Remove and replace deck joint at west abutment with preformed joint strip seal*
4. *Remove and replace deck joint at east abutment with modular expansion joint*
5. *Repair concrete delaminations on abutment wall and back walls*
6. *Repair sections of concrete slope wall*
7. *Repair steel beam ends at west abutment*
8. *Paint beam ends*



ELEVATION
(S.N. 092-0014, WB)



PLAN
(Stations shown per original bridge plans)

LOADING HS20-44

DESIGN SPECIFICATIONS

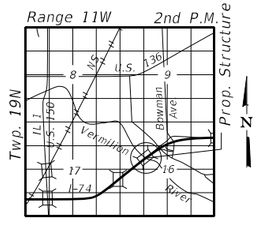
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition (LFD)

DESIGN STRESSES

FIELD UNITS

New Construction:
f'c = 3,500 psi
f'c = 4,000 psi (deck)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Str. Steel)

Exist. Structure:
f'c = 3,500 psi
fy = 60,000 psi (deck reinf.)
fy = 40,000 psi (orig. substr. reinf.)
fy = 36,000 (structural steel)
fy = 50,000 (plate girder flanges)



LOCATION SKETCH

BRYAN A. SWANSON 081-006716 LICENSED STRUCTURAL ENGINEER PEORIA, IL STATE OF ILLINOIS

Date Signed: 4-22-22
Exp. Date: 11/30/2022

GENERAL PLAN AND ELEVATION
I-74 OVER VERMILION RIVER
F.A.I. 74 - SEC. (92-10,11,12)R
VERMILION COUNTY
STATION 1992+54.00
STRUCTURE NO. 092-0014

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch	DESIGNED - BAS	REVISED -	
	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	379
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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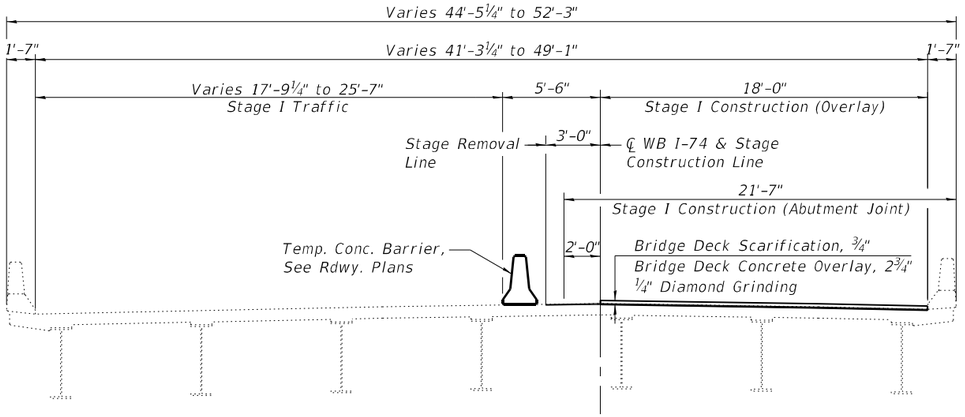
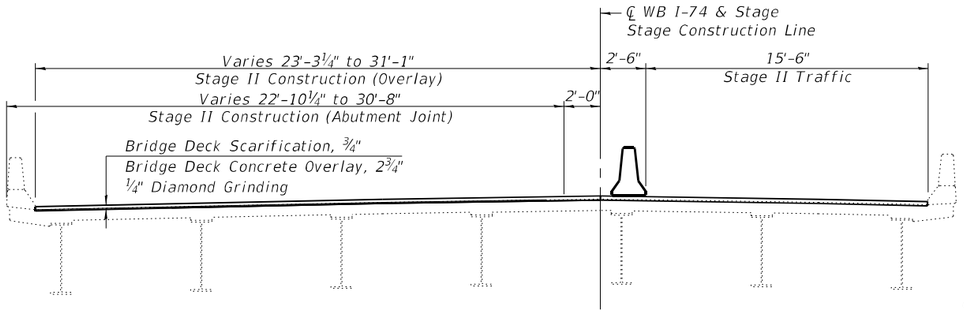


STAGE I CONSTRUCTION

(Looking East)



STAGE II CONSTRUCTION

(Looking East)

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

	ITEM	UNIT	TOTAL
	Stone Riprap, Class A4	Sq. Yd.	73
	Filter Fabric	Sq. Yd.	73
	Concrete Removal	Cu. Yd.	32.5
	Concrete Superstructure	Cu. Yd.	36.4
*	Protective Coat	Sq. Yd.	3534
	Reinforcement Bars, Epoxy Coated	Pound	6310
	Bar Splicers	Each	48
	Mechanical Splicers	Each	253
	Preformed Joint Strip Seal	Foot	50
	Modular Expansion Joint, 6"	Foot	57
	Anchor Bolts, 1"	Each	28
	Slope Wall Crack Sealing	Foot	81
	Inlet Boxes to be Adjusted (Special)	Each	1
	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	2482
	High Load Multi-Rotational Bearings, Guided Expansion, 100K	Each	7
	Jack and Remove Existing Bearings	Each	7
	Structural Steel Repair	Pound	2200
	Bridge Deck Latex Concrete Overlay 2¾"	Sq. Yd.	3443
	Bridge Deck Scarification ¾"	Sq. Yd.	3443
	Cleaning and Painting Steel Bridge No. 5	L. Sum	1
	Containment and Disposal of Non-Lead Paint Cleaning Residues No. 5	L. Sum	1
	Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	96
	Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	7
	Drainage Scuppers to be Adjusted	Each	6
	Diamond Grinding (Bridge Section)	Sq. Yd.	3200
	Polymer Concrete	Cu. Ft.	5
	Relocating Name Plates	Each	2
	Slope Wall Repair	Sq. Yd.	18
	Slope Wall Slurry Pumping	Cu. Yd.	7

* On new concrete superstructure and latex concrete overlay.

GENERAL NOTES

All new fasteners shall be ¾" Ø high-strength steel bolts, unless noted otherwise.

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ¼ in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas, and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The 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.

Existing Name Plates shall be removed, cleaned and incorporated into the new construction. Cost included with Relocating Name Plates.

Synthetic Fibers shall be included in the bridge deck concrete overlay specified. See Special Provisions.

Existing structure plans are available from the District upon request.

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". After removal of deck ends, but prior to new modular joint and bearing installation or structural steel repair, all beams, diaphragms, and other existing structural steel within 5 ft of the beam ends shall be cleaned per Near White Blast Cleaning (SSPC-SP10).

The designated areas cleaned per Near White Blast Cleaning (SSPC-SP10) shall be painted according to the requirements of Paint System 1 (OZ/E/U). The color of the final finish coat for all steel surfaces shall be Gray, Munsell No. 5B 7/1.

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 "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Containment of cleaning residue is required to control nuisance dust. See special provisions.

SSPC-QP1 Painting Contractor Certifications will be required for this contract.

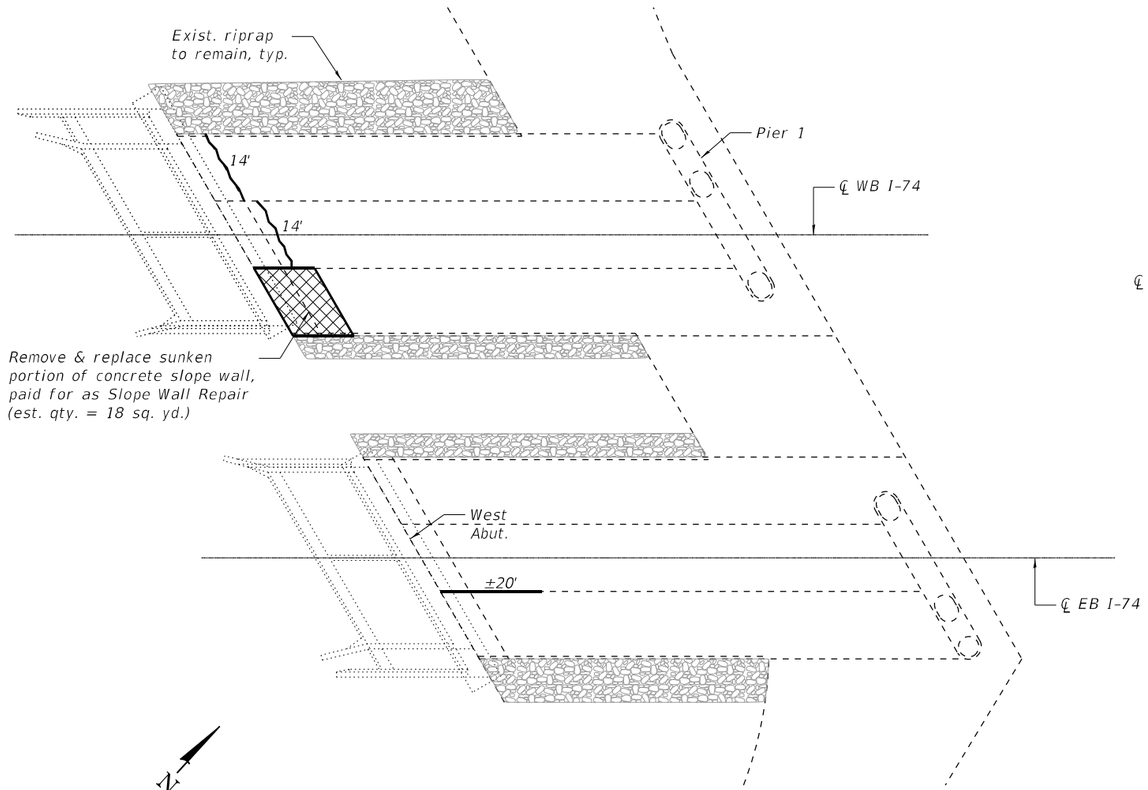
All new structural steel shall be hot dip galvanized unless noted otherwise. See special provision for "Hot Dip Galvanizing for Structural Steel".

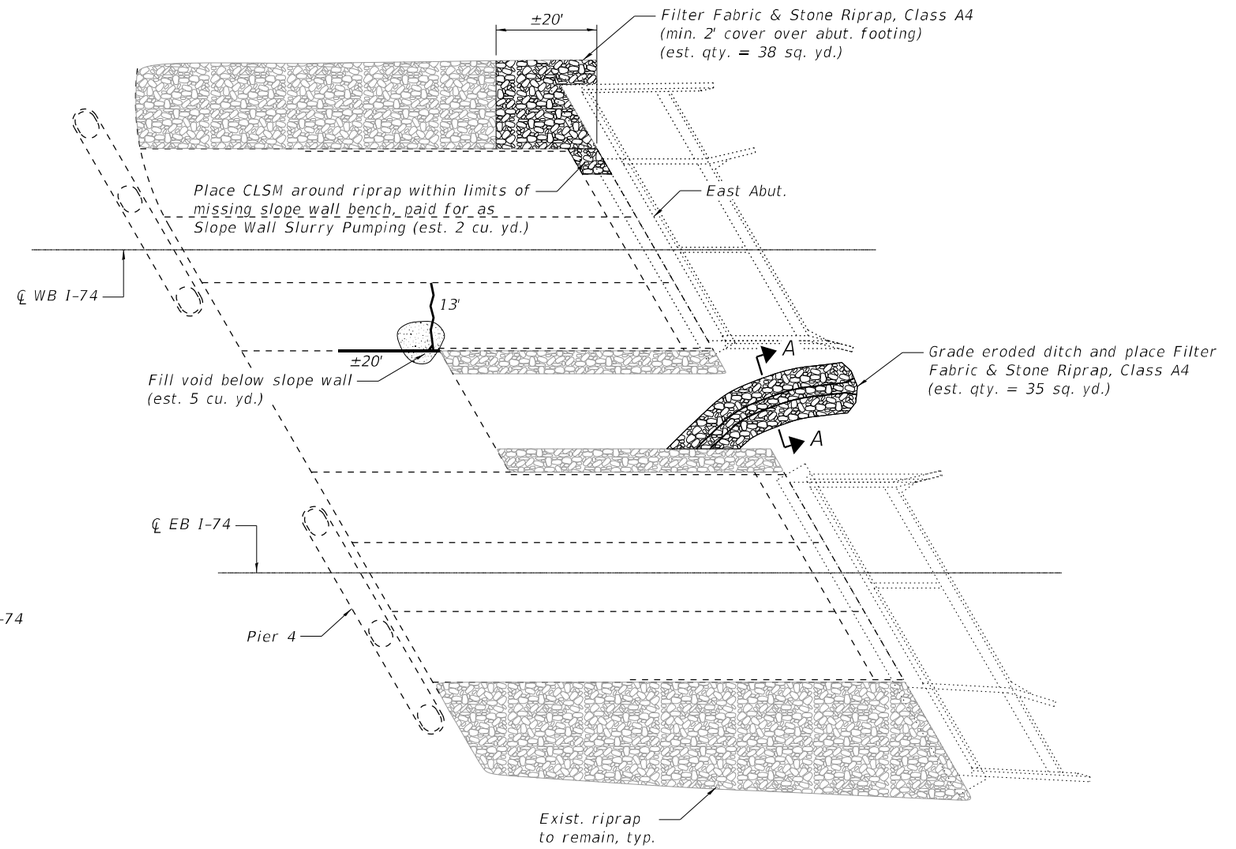
Expansion joints shall be fabricated and installed according to the manufacturer's recommendations and as approved by the Engineer.

Expansion joints shall be fabricated to conform to the existing cross slopes of the bridge.

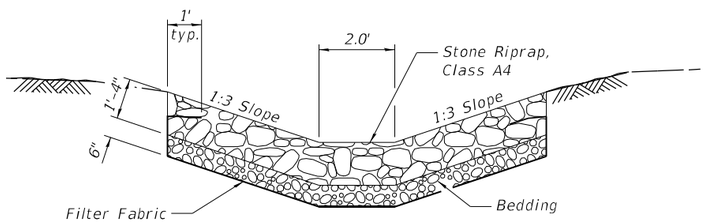
Modular expansion joints shall be assembled in their final relative position with the ends in place for shop inspection and acceptance.

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.





SLOPE WALL REPAIR PLAN



SECTION A-A

LEGEND

	Remove and Replace Slope Wall (paid for as Slope Wall Repair)
	Slope Wall Slurry Pumping
#	Slope Wall Crack Sealing (Length)

Notes:

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

The quantities provided for Crack Wall Sealing are estimated. Open joints shall be sealed at the direction of the Engineer, and the locations documented on the As-Built drawings.

Layout and limits of the slope wall removal and repairs may be varied to suit conditions in the field as directed by the Engineer.

SLOPE WALL BILL OF MATERIAL

Item	Unit	Quantity
Slope Wall Repair	Sq. Yd.	18
Slope Wall Slurry Pumping	Cu. Yd.	7
Slope Wall Crack Sealing	Foot	81
Stone Riprap, Class A4	Sq. Yd.	73
Filter Fabric	Sq. Yd.	73

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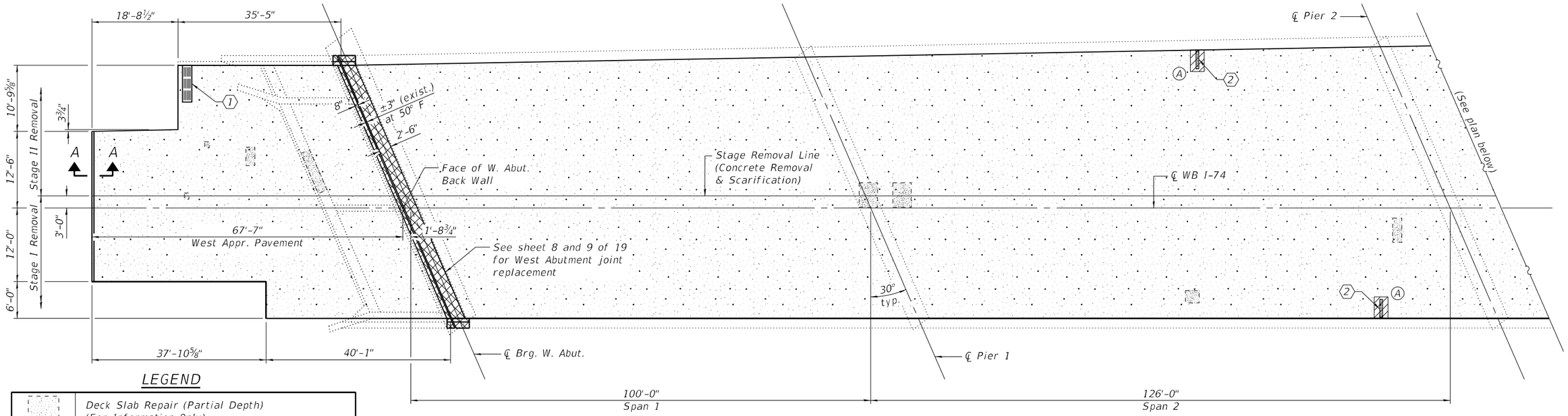
PLOT DATE = 4/21/2022		CHECKED - LVM		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPE WALL REPAIRS
STRUCTURE NO. 092-0014 & 092-0015
SHEET NO. 3 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	381
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



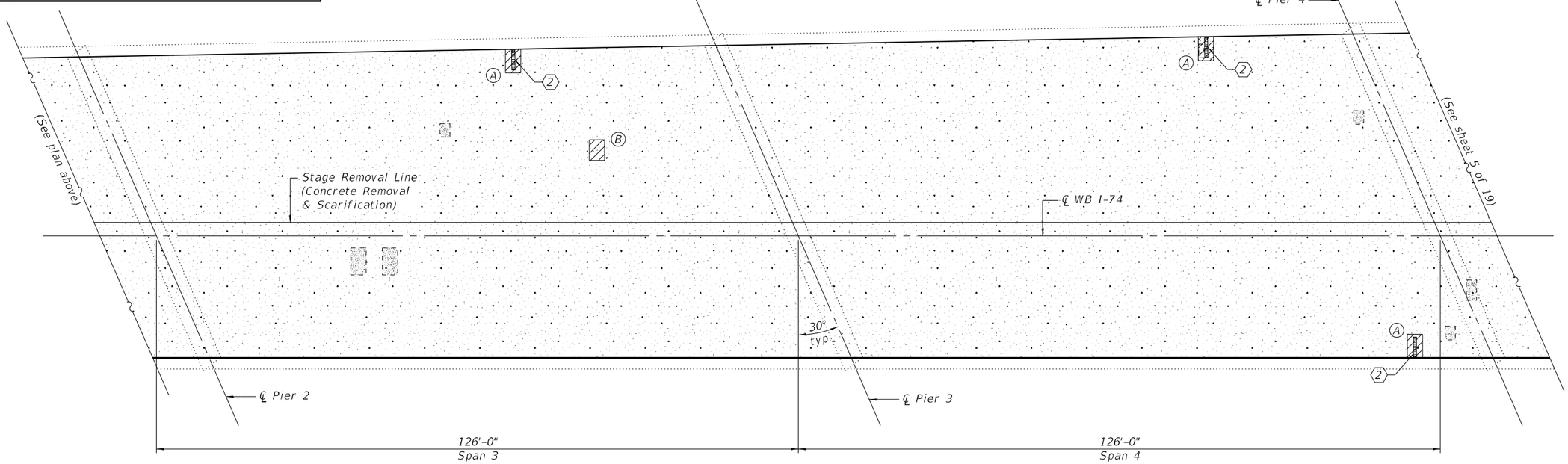
LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Bridge Deck Scarification, ¾" and Bridge Deck Latex Concrete Overlay, 2¾"
	Concrete Removal and Concrete Superstructure, see sheets 8 thru 11 of 19

PLAN - DECK SLAB REPAIRS

(West End)

Notes:
See sheet 5 of 19 for callouts, Deck Repair Table, Section A-A, Bill of Material, and additional notes.



PLAN - DECK SLAB REPAIRS

(Spans 3 & 4)

(Sheet 1 of 2)

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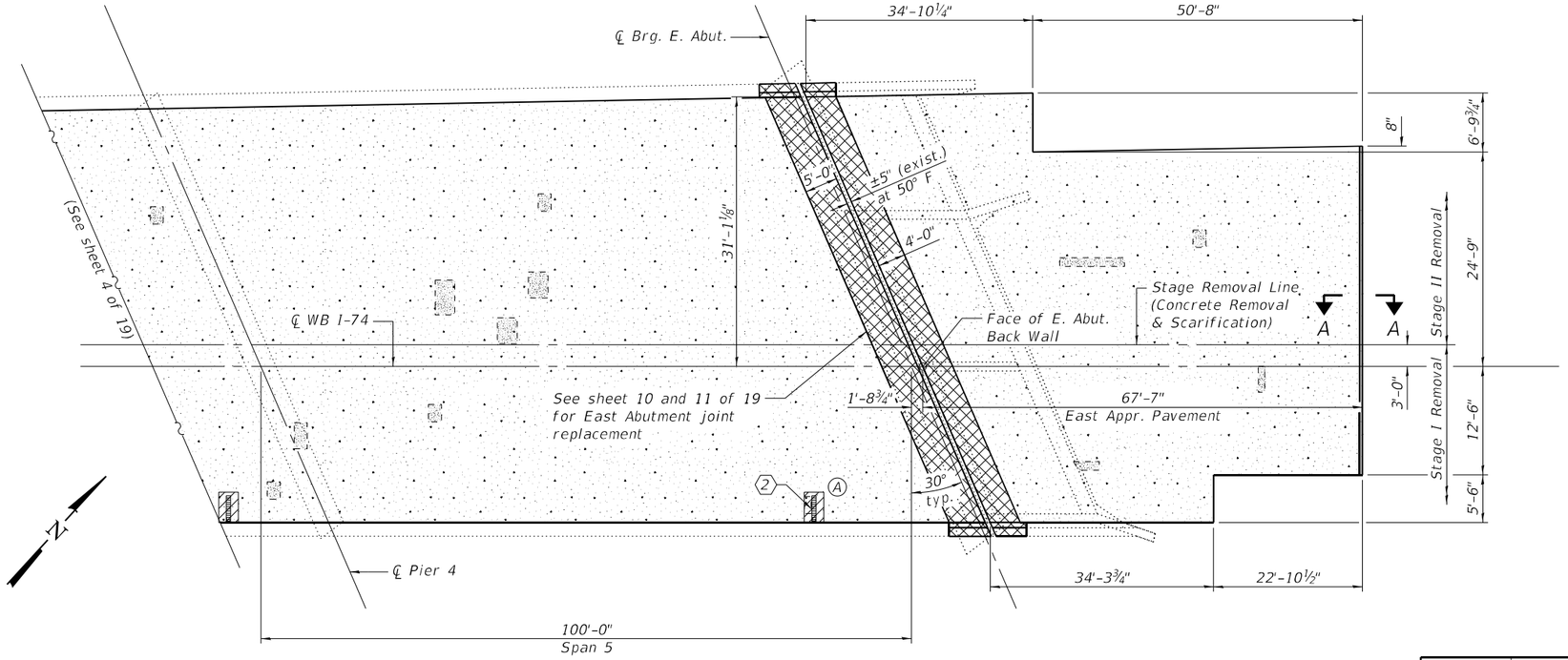
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK SLAB REPAIR PLAN
STRUCTURE NO. 092-0014
SHEET NO. 4 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	382
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



PLAN – DECK SLAB REPAIRS
(East End)

DECK SLAB REPAIR TABLE

Label	Size	Plan Qty. Deck Slab Repair (Part. Depth) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type I) Sq. Ft.	Plan Qty. Deck Slab Repair (FD Type II) Sq. Ft.	As Built Deck Slab Repair (FD Type I) Sq. Ft.	As Built Deck Slab Repair (FD Type II) Sq. Ft.
A	2' x 4' x 6 Loc.			48		
B	3' x 3'			9		
	W. Appr., Stage II	22				
	Span 2, Stage I	14				
	Span 2, Stage II	32				
	Span 3, Stage I	24				
	Span 3, Stage II	4				
	Span 4, Stage I	4				
	Span 4, Stage II	4				
	Span 5, Stage I	14				
	Span 5, Stage II	34				
	E. Appr., Stage I	7				
	E. Appr., Stage II	14				
	Totals	173		57		

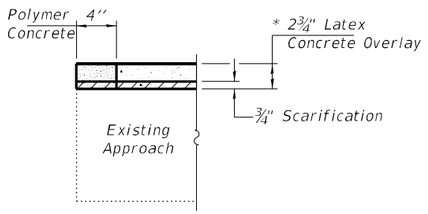
LEGEND

	Deck Slab Repair (Partial Depth) (For Information Only)
	Deck Slab Repair (Full Depth)
	Bridge Deck Scarification, ¾" and Bridge Deck Latex Concrete Overlay, 2¾"
	Concrete Removal and Concrete Superstructure, see sheets 8 thru 11 of 19

Callouts:

(1) – Adjust elevation of frame and grate on inlet box to match overlay. See sheet 14 of 19 for details.

(2) – Remove and reinstall drainage scupper and install adjusting ring to raise the grate elevation to match the overlay. See sheet 13 of 19 for details. Cost of removal and installing the existing scupper within the deck repair shall be included with Drainage Scuppers to be Adjusted.



SECTION A-A

* Prior to ¼" Diamond Grinding.

Notes:

See sheet 6 of 19 for cross section thru bridge deck.

Deck survey performed on December 14, 2020. Locations and sizes shown in the plan view are approximate.

Deck Slab Repair (Partial Depth) is an estimated quantity per the deck survey. This area shall not be paid for separately, but shall be addressed as stated in the Special Provision for Bridge Deck Latex Concrete Overlay.

Actual size and locations of full-depth patches shall be shown on this sheet and documented in the Deck Slab Repair Table under "As Built".

DECK SLAB BILL OF MATERIAL

ITEM	UNIT	TOTAL
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	7
Bridge Deck Scarification ¾"	Sq. Yd.	3443
Bridge Deck Latex Concrete Overlay, 2¾ Inches	Sq. Yd.	3443

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MAURER-STUTZ ENGINEERS SURVEYORS

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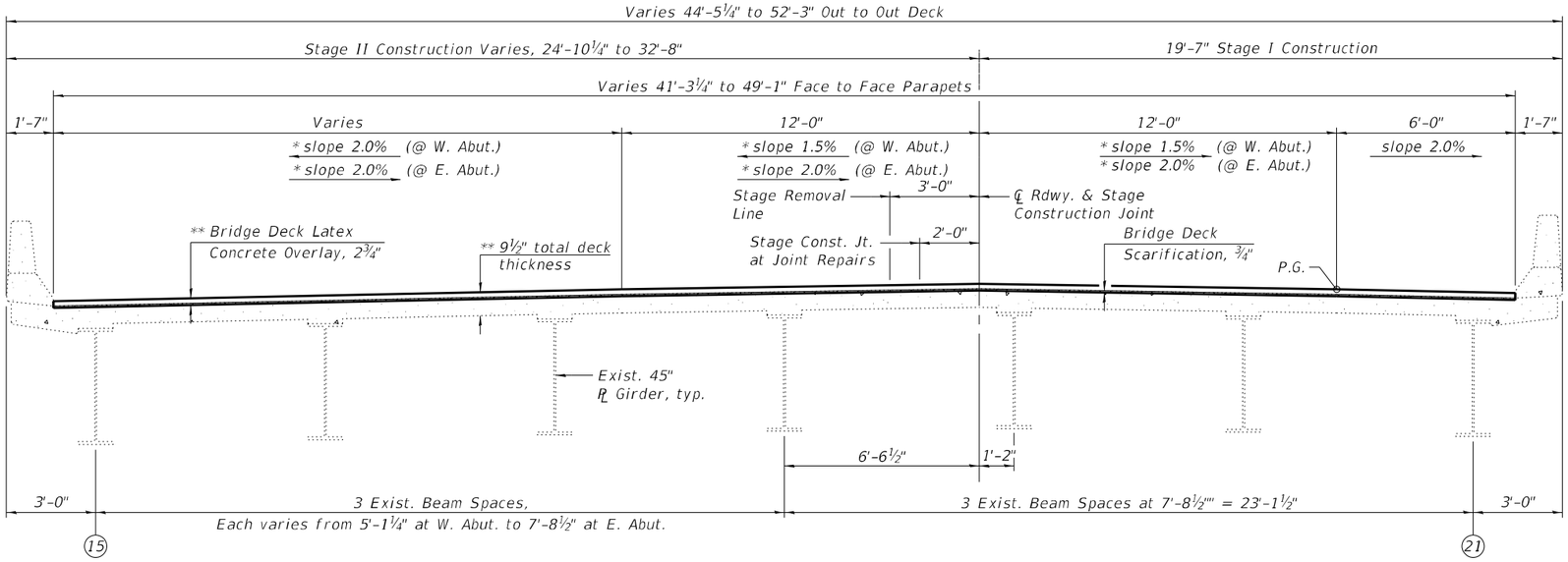
	CHECKED - JDK	REVISED -			
PLOT SCALE =	DRAWN - JDK	REVISED -			
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -		SHEET NO. 5 OF 19 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	383
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

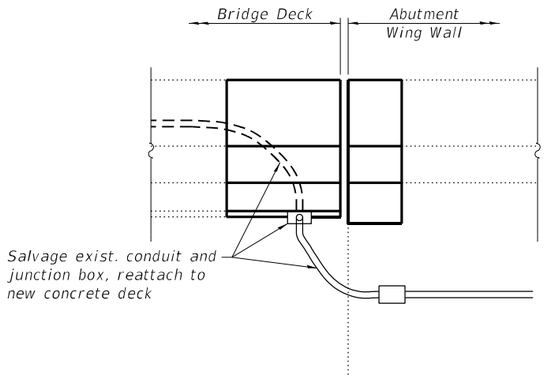


CROSS SECTION – BRIDGE DECK
(Looking East)

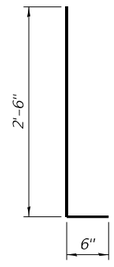
* Cross slope varies from normal crown at Sta. 1993+42.56 to 2.0% superelevation at Sta. 1994+84.56.

** Prior to ¼" Diamond Grinding

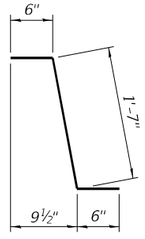
Notes:
Actual bridge cross slopes and superelevation transition locations shall be measured and documented in the field prior to scarification.
Stations shown for the superelevation transition are according to the original bridge plans. Stations per the existing alignment may be different.



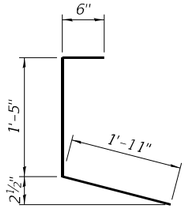
CONDUIT AT ABUTMENT JOINT
(Both Abutments, North Parapet)
(Looking South, West Abut. shown)



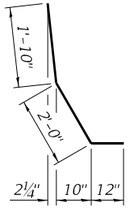
BARS d(E) & d2(E)



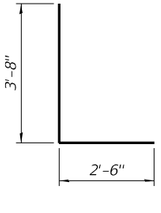
BAR d1(E)



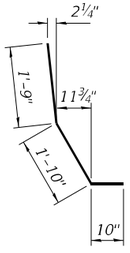
BAR d3(E)



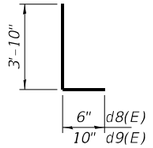
BAR d4(E)



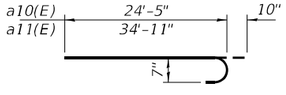
BAR d5(E)



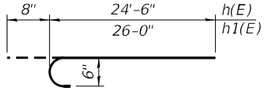
BAR d7(E)



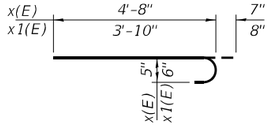
BARS d8(E) & d9(E)



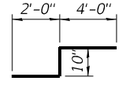
BAR a10(E) & a11(E)



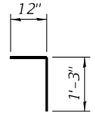
BARS h(E) & h1(E)



BARS x(E) & x1(E)



BAR z(E)



BAR d6(E)

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch	DESIGNED - BAS	REVISED -	
	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 092-0014
SHEET NO. 6 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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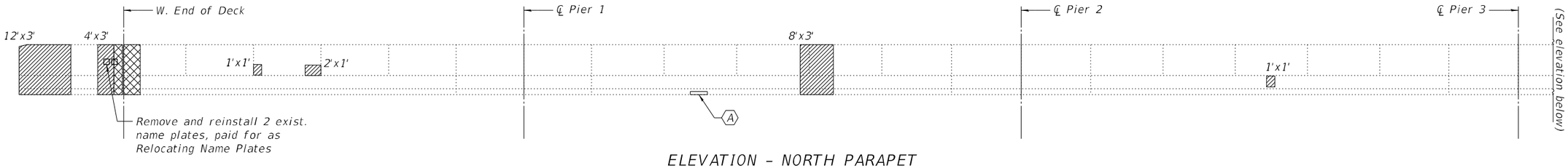
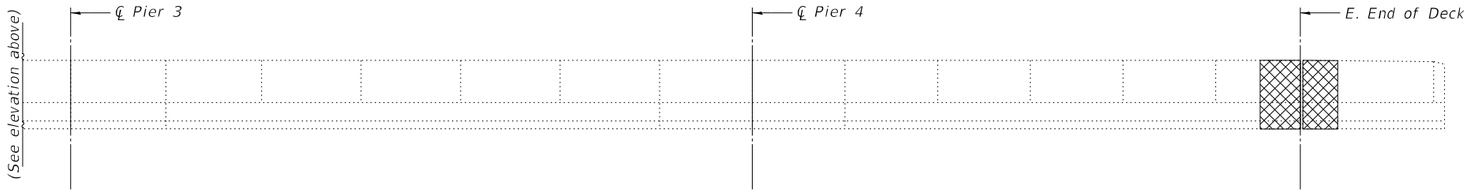
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



ELEVATION – NORTH PARAPET
(West End, Looking North)



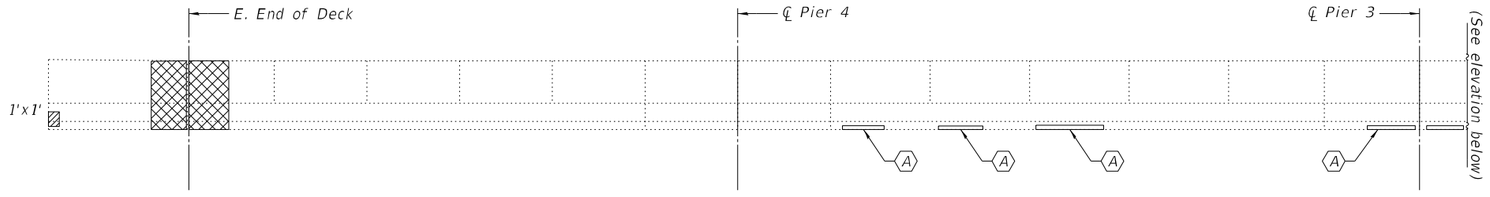
ELEVATION – NORTH PARAPET
(East End, Looking North)

LEGEND

	Structural Repair of Concrete (Depth ≤ 5")
	Removal and replacement of parapet, See sheets 8 thru 11 of 19

Callouts:

A – Void at base of parapet, remove loose or damaged concrete and fill during placement of Latex Concrete Overlay, cost of concrete removal included with Bridge Deck Scarification.

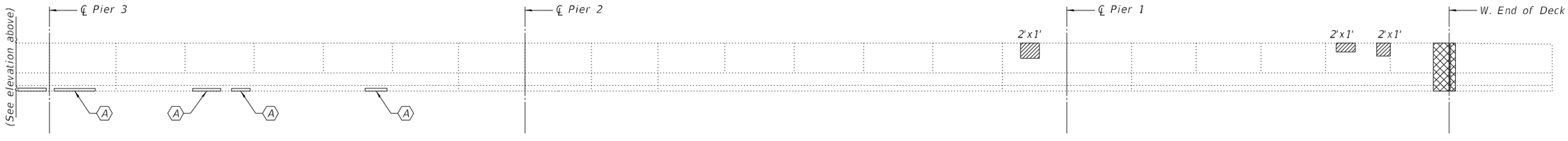


ELEVATION – SOUTH PARAPET
(East End, Looking South)

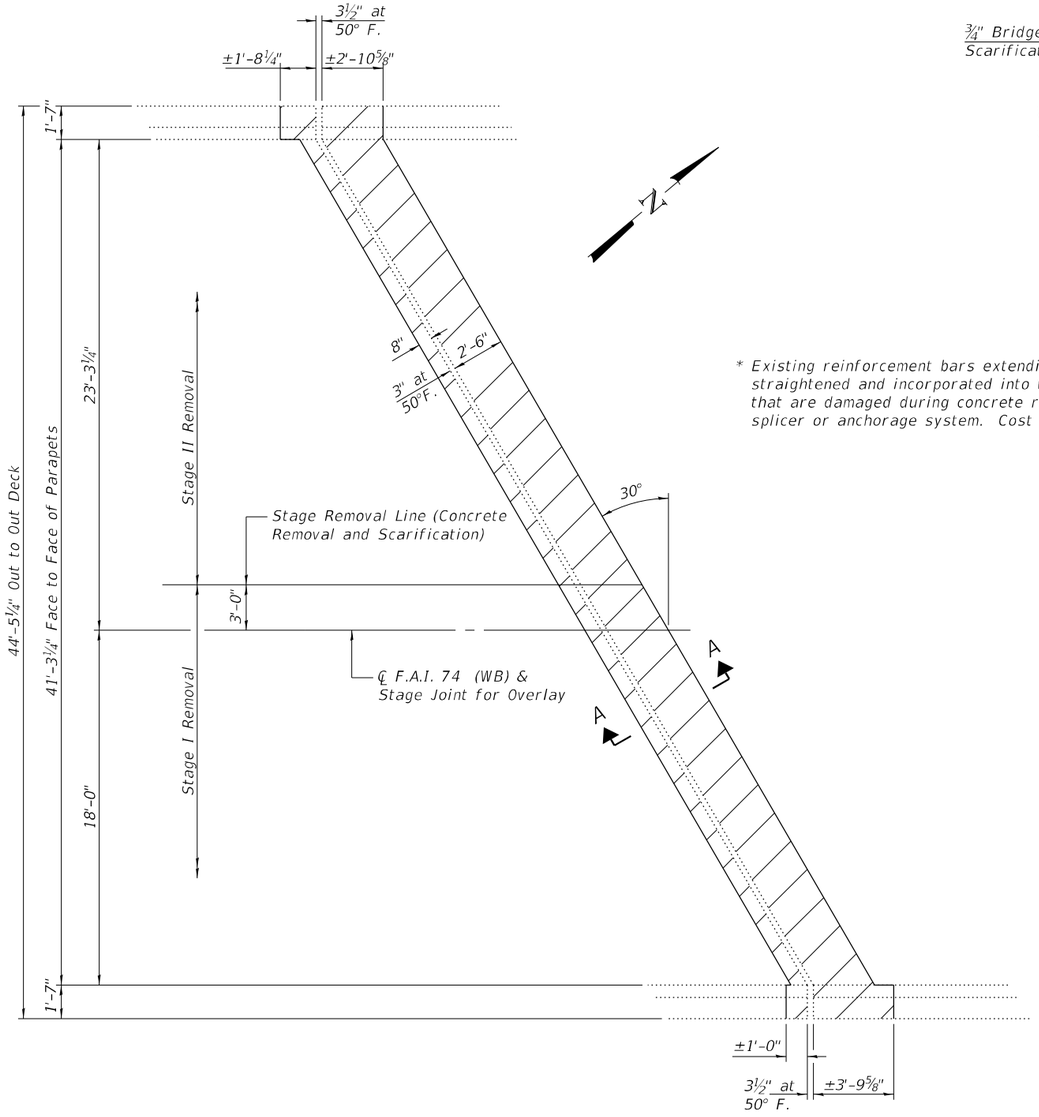
Notes:
See sheets 8 thru 11 of 19 for sections thru bridge deck and approach parapets.
Parapets were sounded on December 14, 2020. Locations and sizes of the concrete repairs shown are approximate. Actual sizes of parapet repairs should be documented on the As Built drawings.

PARAPETS
BILL OF MATERIAL

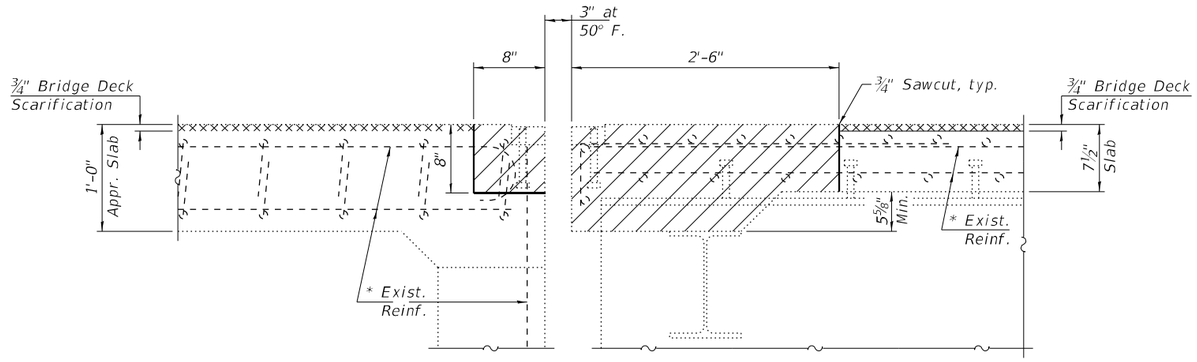
ITEM	UNIT	TOTAL
Structural Repair of Concrete (Depth ≤ 5 Inches)	Sq. Ft.	83
Relocating Name Plates	Each	2



ELEVATION – SOUTH PARAPET
(West End, Looking South)

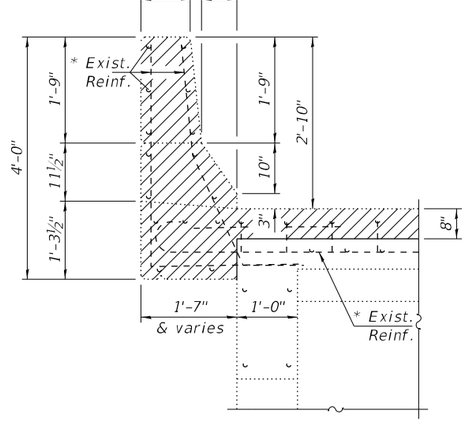


CONCRETE REMOVAL AT WEST ABUTMENT

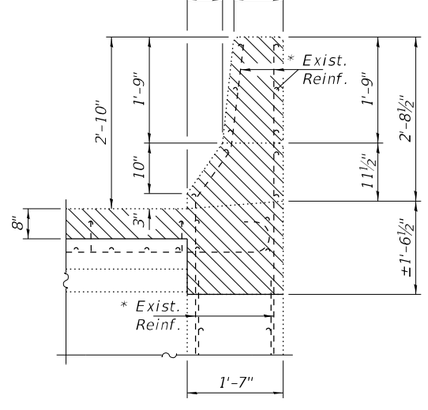


SECTION A-A
(Near ℄ Roadway)
(Dims. at Rt. ℄'s to end of deck)

* 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.



SECTION THRU SOUTH APPROACH PARAPET



SECTION THRU NORTH APPROACH PARAPET

Notes:
Hatched areas indicate Concrete Removal.
For Bridge Deck Parapet Dimensions and Details and Bill of Material, see sheet 9 of 19.

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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch	DESIGNED - BAS	REVISED -	
	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT JOINT REMOVAL DETAILS
STRUCTURE NO. 092-0014
SHEET NO. 8 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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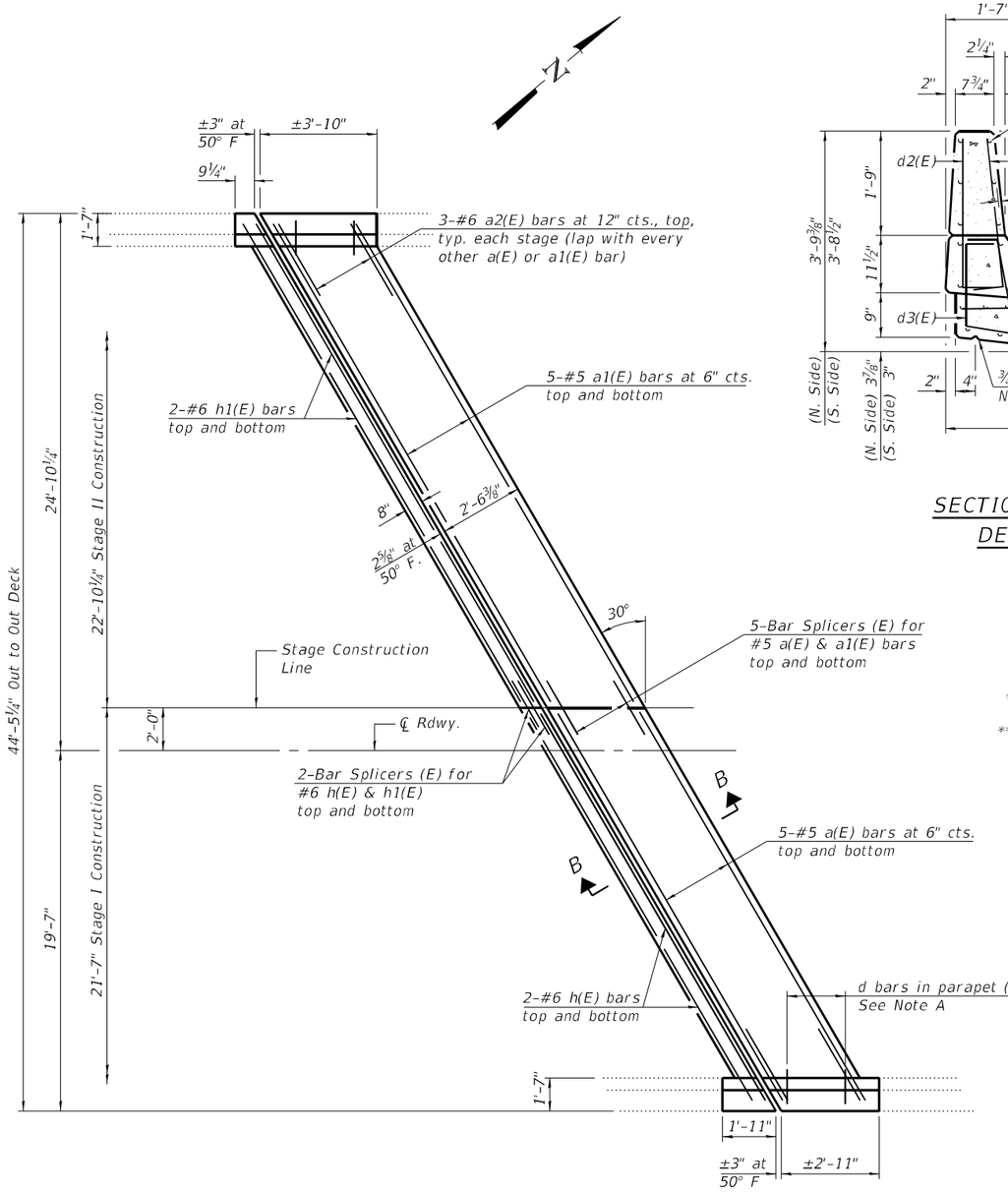
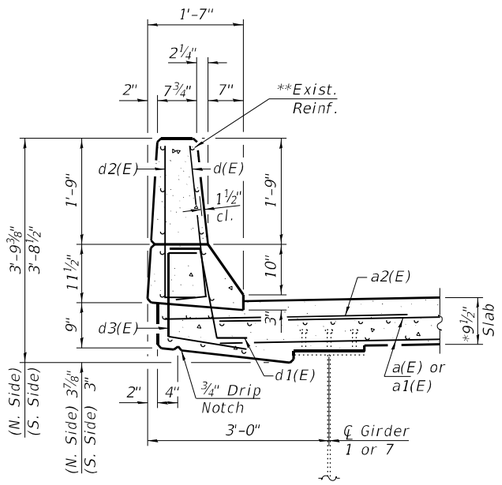
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

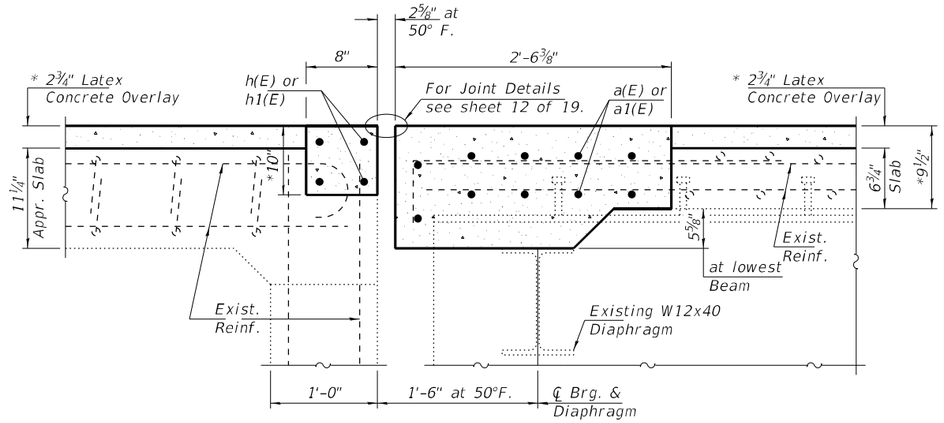


Note A:
4-#5 d(E) bars at 11" cts. (i.f.)
4-#5 d1(E) bars at 11" cts. (i.f.)
4-#4 d2(E) bars at 11" cts. (o.f.)
4-#4 d3(E) bars at 11" cts. (o.f.)
(See Section thru Bridge Deck Parapet)

CONCRETE REPLACEMENT AT WEST ABUTMENT



SECTION THRU BRIDGE DECK PARAPET



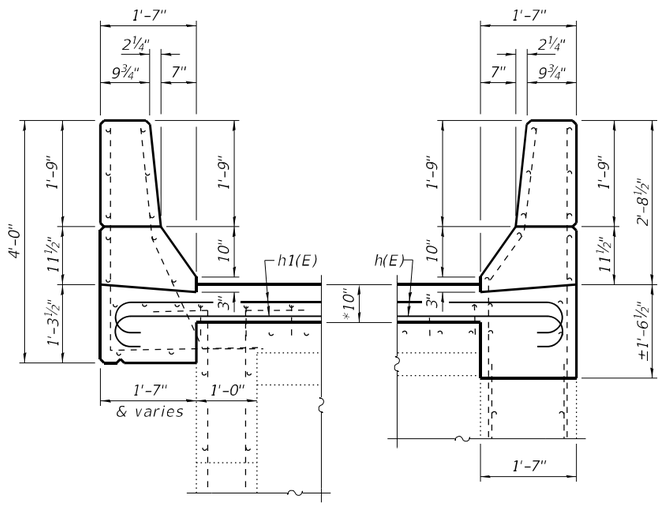
SECTION B-B

(Near ℄ Roadway)
(Dims. at RT L's to end of deck)

Notes:
Dimensions of joint opening are based on a Rolled Rail Strip Seal Joint. If the Contractor elects to use the Welded Rail Strip Seal Joint, deck dimensions may require adjustments to satisfy the details on sheet 12 of 19.
See sheet 19 of 19 for details of Bar Splicers.
See sheet 6 of 19 for bar details.

* Prior to ¼" Diamond Grinding

** 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.



SECTION THRU SOUTH APPROACH PARAPET

SECTION THRU NORTH APPROACH PARAPET

WEST ABUTMENT JOINT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	10	#5	23'-7"	
a1(E)	10	#5	25'-0"	
a2(E)	6	#6	6'-0"	
d(E)	8	#5	3'-0"	
d1(E)	8	#5	2'-7"	
d2(E)	8	#4	3'-0"	
d3(E)	8	#4	3'-10"	
h(E)	4	#6	25'-2"	
h1(E)	4	#6	26'-8"	
Concrete Removal			Cu. Yd.	7.2
Concrete Superstructure			Cu. Yd.	8.2
Reinforcement Bars, Epoxy Coated			Pound	960

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

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	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT JOINT REPLACEMENT DETAILS
STRUCTURE NO. 092-0014
SHEET NO. 9 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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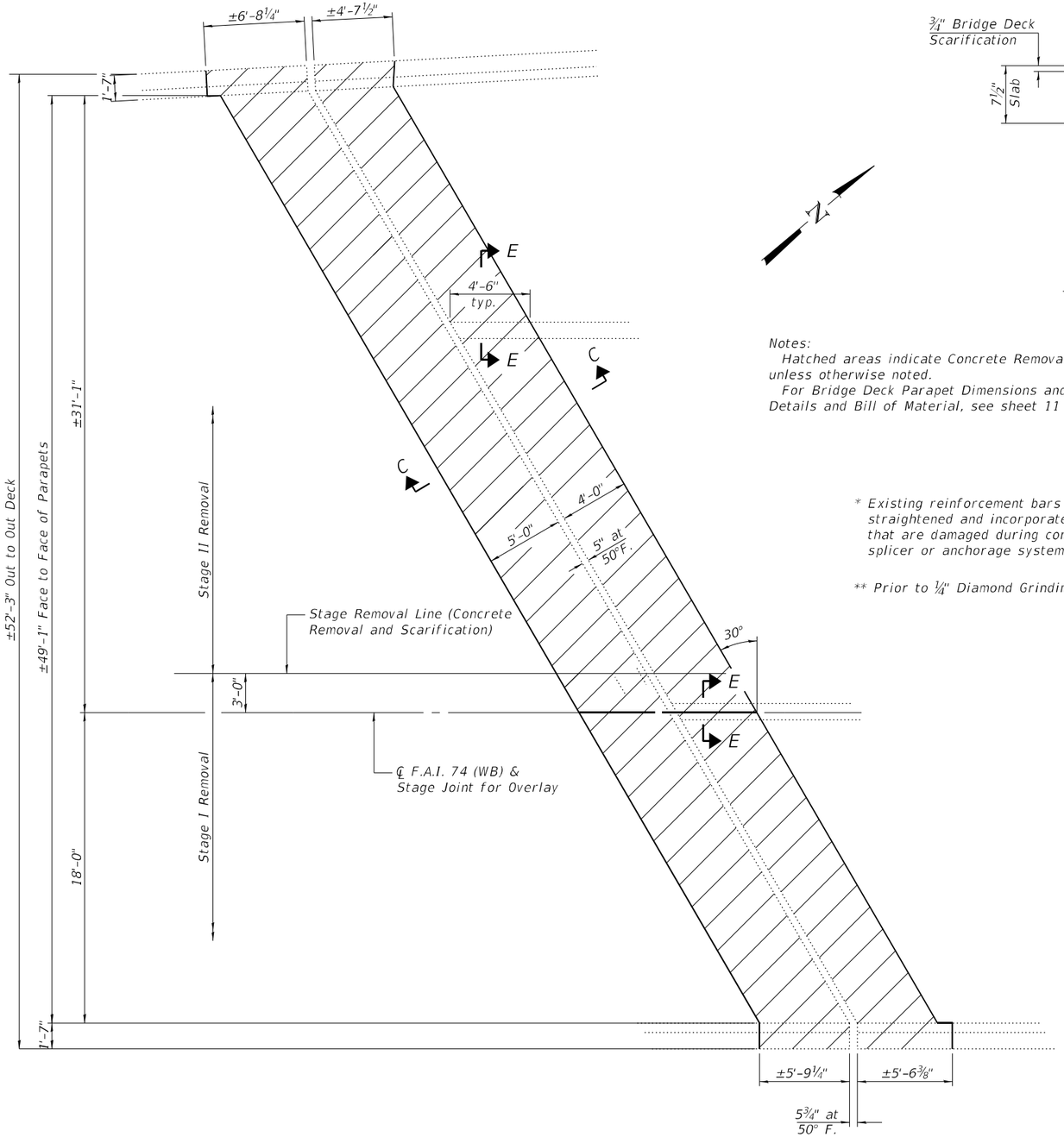
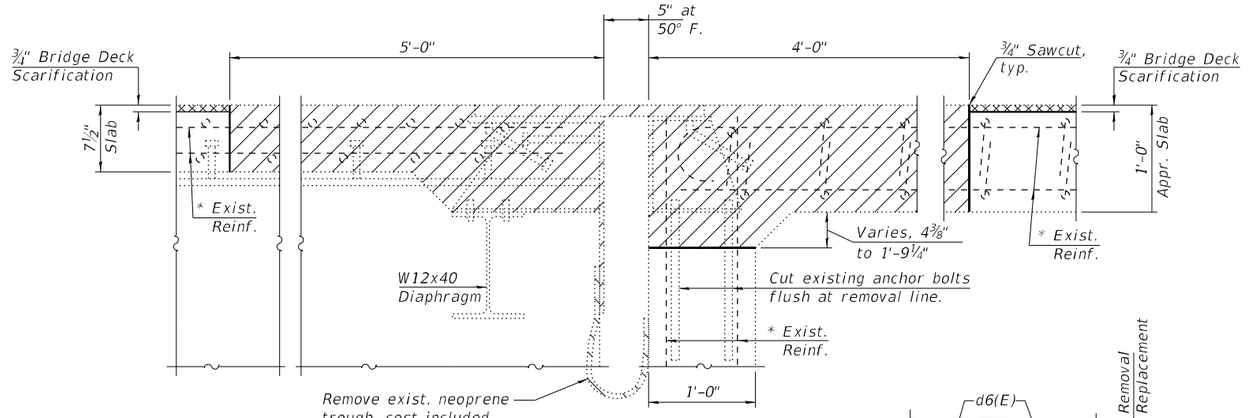
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

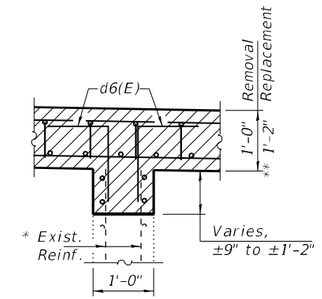


CONCRETE REMOVAL AT EAST ABUTMENT



SECTION C-C
(Near ℄ Roadway)
(Dims. at Rt. L's to end of deck)

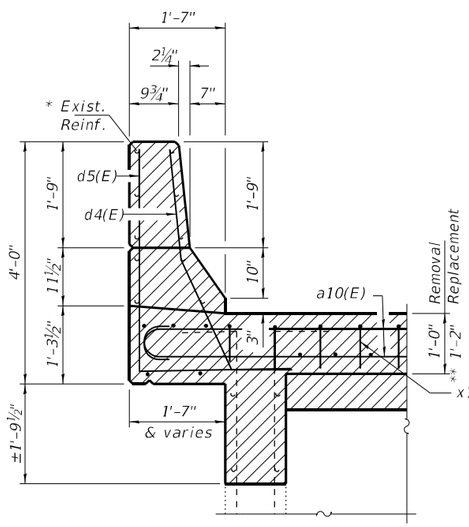
Notes:
Hatched areas indicate Concrete Removal unless otherwise noted.
For Bridge Deck Parapet Dimensions and Details and Bill of Material, see sheet 11 of 19.



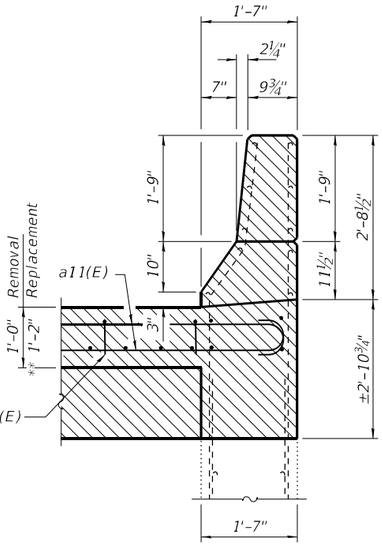
SECTION E-E
Hatched area indicates Concrete Removal & Replacement.

* 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.

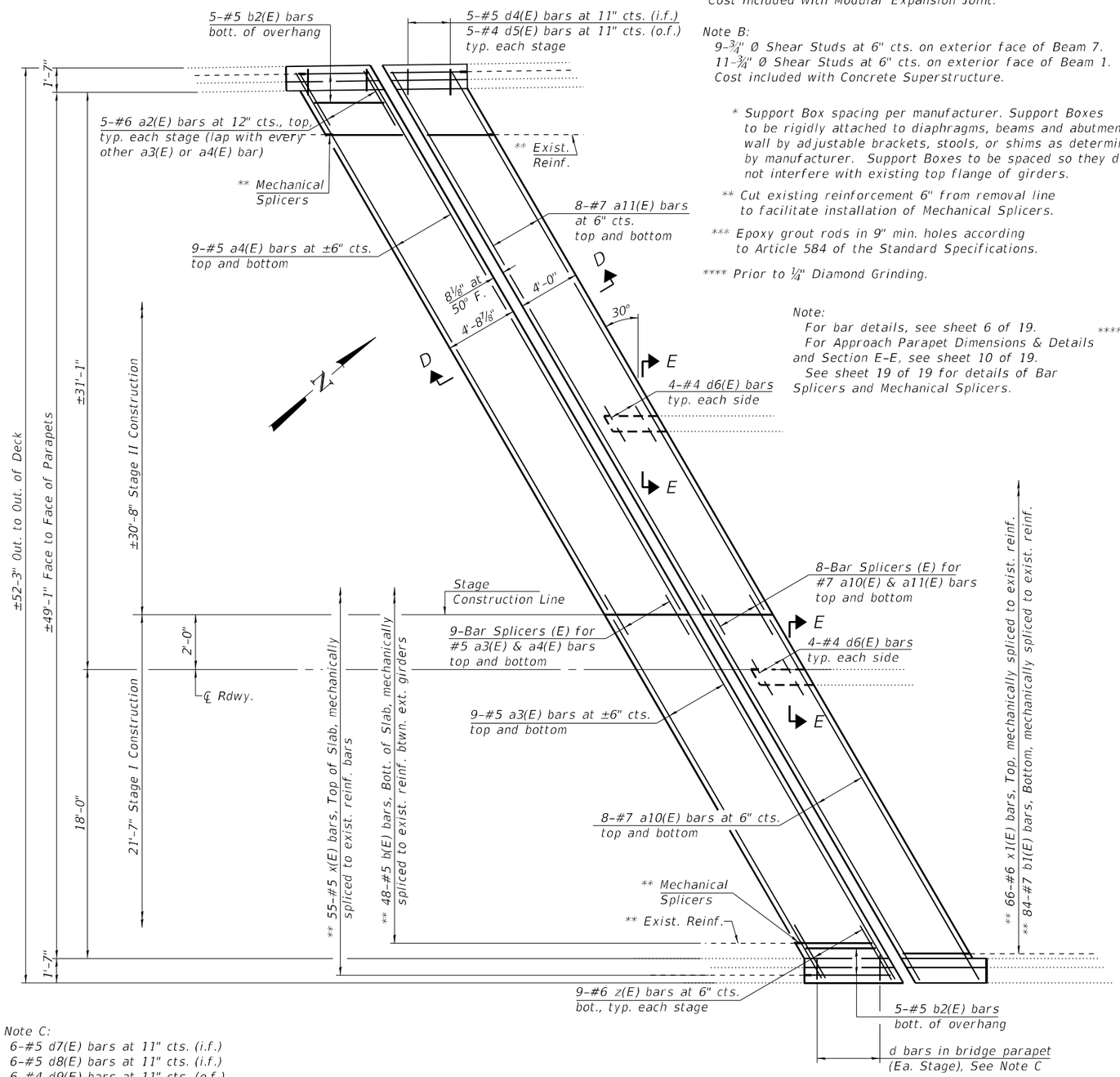
** Prior to ¼" Diamond Grinding.



SECTION THRU SOUTH APPROACH PARAPET
Hatched area indicates Concrete Removal & Replacement.



SECTION THRU NORTH APPROACH PARAPET
Hatched area indicates Concrete Removal & Replacement.



Note C:
6-#5 d7(E) bars at 11" cts. (i.f.)
6-#5 d8(E) bars at 11" cts. (i.f.)
6-#4 d9(E) bars at 11" cts. (o.f.)
(See Section thru Bridge Deck Parapet)

CONCRETE REPLACEMENT AT EAST ABUTMENT

Note A:
Lower existing W12x40 diaphragm if required.
Cost included with Modular Expansion Joint.

Note B:
9-¾" Ø Shear Studs at 6" cts. on exterior face of Beam 7.
11-¾" Ø Shear Studs at 6" cts. on exterior face of Beam 1.
Cost included with Concrete Superstructure.

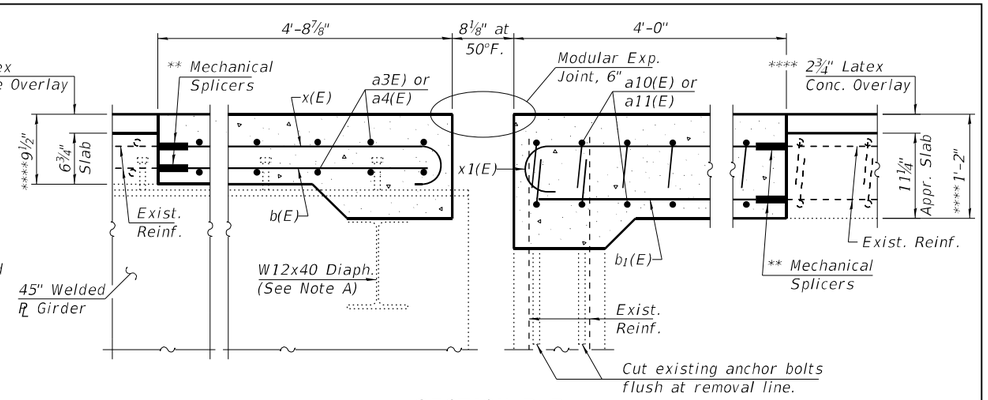
* Support Box spacing per manufacturer. Support Boxes to be rigidly attached to diaphragms, beams and abutment wall by adjustable brackets, stools, or shims as determined by manufacturer. Support Boxes to be spaced so they do not interfere with existing top flange of girders.

** Cut existing reinforcement 6" from removal line to facilitate installation of Mechanical Splicers.

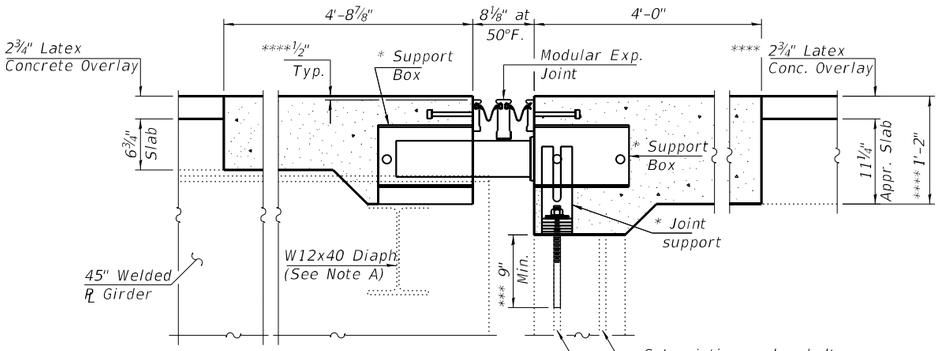
*** Epoxy grout rods in 9" min. holes according to Article 584 of the Standard Specifications.

**** Prior to ¼" Diamond Grinding.

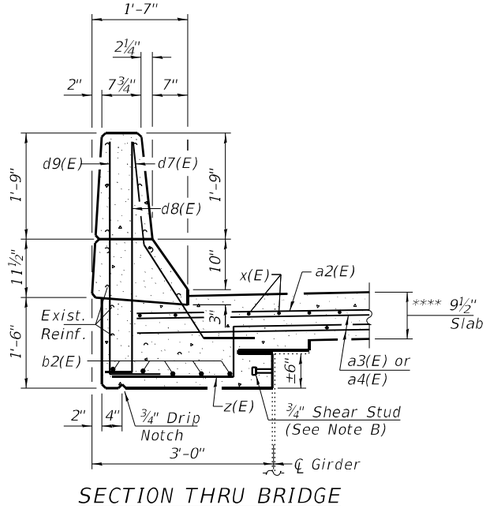
Note:
For bar details, see sheet 6 of 19.
For Approach Parapet Dimensions & Details and Section E-E, see sheet 10 of 19.
See sheet 19 of 19 for details of Bar Splicers and Mechanical Splicers.



SECTION D-D
(Modular Joint not shown for clarity.)



SECTION D-D
(Reinforcement not shown for clarity.)



SECTION THRU BRIDGE DECK PARAPET

EAST ABUTMENT JOINT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a2(E)	10	#6	6'-0"	
a3(E)	18	#5	24'-4"	
a4(E)	18	#5	34'-10"	
a10(E)	16	#7	25'-3"	
a11(E)	16	#7	35'-9"	
b(E)	48	#5	4'-9"	
b1(E)	84	#7	3'-11"	
b2(E)	10	#5	5'-1"	
d4(E)	10	#5	4'-10"	
d5(E)	10	#4	6'-2"	
d6(E)	16	#4	2'-3"	
d7(E)	12	#5	4'-5"	
d8(E)	12	#5	4'-4"	
d9(E)	12	#4	4'-8"	
x(E)	55	#5	5'-3"	
x1(E)	66	#6	4'-6"	
z(E)	18	#6	6'-10"	
Concrete Removal			Cu. Yd.	25.3
Concrete Superstructure			Cu. Yd.	28.2
Reinforcement Bars, Epoxy Coated			Pound	5350
Modular Expansion Joint, 6"			Foot	57

MODEL: Default
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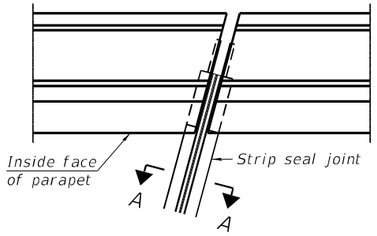
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch		DESIGNED - BAS	REVISED -		
		CHECKED - JDK	REVISED -		
PLOT SCALE =		DRAWN - JDK	REVISED -		
PLOT DATE = 4/21/2022		CHECKED - LVM	REVISED -		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

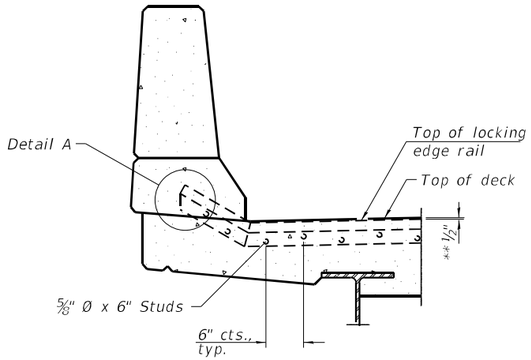
EAST ABUTMENT JOINT REPLACEMENT DETAILS
STRUCTURE NO. 092-0014
SHEET NO. 11 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	389
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	

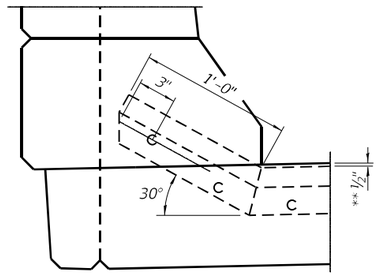


FOR SKEWS ≤ 30°

PLAN AT PARAPET

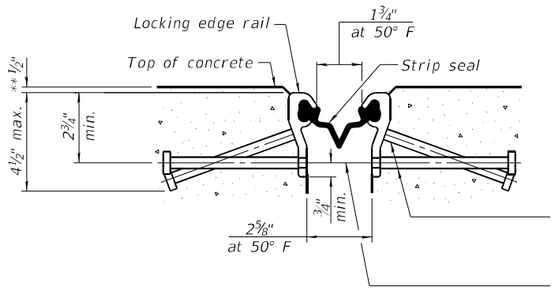


SECTION AT PARAPET

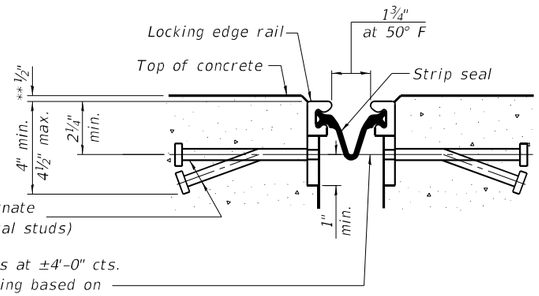


DETAIL A

** Prior to Diamond Grinding



SHOWING ROLLED RAIL JOINT



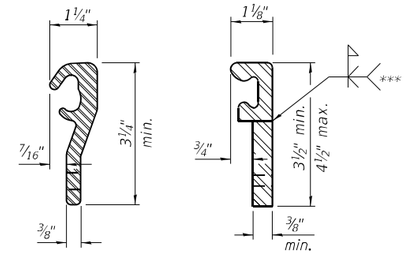
SHOWING WELDED RAIL JOINT

* 5/8" Ø x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8" Ø threaded rods in 7/16" Ø holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned or sawed off flush with the plates after concrete is set.

SECTION A-A

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

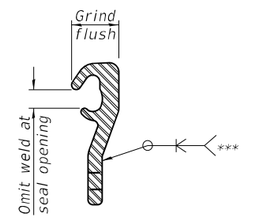


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

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

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	50

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch	DESIGNED - BAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL STRUCTURE NO. 092-0014
	CHECKED - JDK	REVISED -		
PLOT SCALE =	DRAWN - JDK	REVISED -		SHEET NO. 12 OF 19 SHEETS
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	390
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: S:\23\2019\23719020.00 (193-026 DS I-74 Danville)\CADD\CADD Sheets\70A29-092001 4-012-PJSS.dgn

4/21/2022 6:02:30 PM

Notes:

All structural steel shall be AASHTO M270 Grade 36. The adjusting scupper ring and ¾" Ø pipe sleeve spacers shall be galvanized.

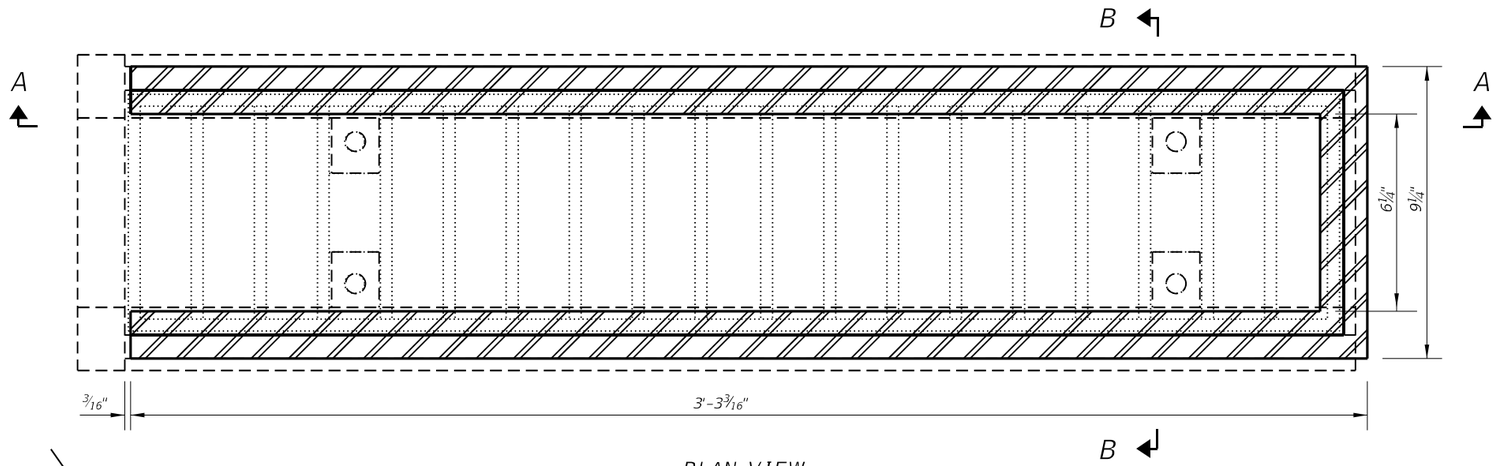
Bolts shall be ½" Ø AASHTO M164 Type 1, mechanically galvanized.

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished based at the unit price bid for the work.

Shop plans for proposed adjusting scupper ring shall be submitted for approval prior to fabrication.

Contractor shall ensure that no damage is done to existing grates to be reused.

Cost of all labor and materials necessary to remove existing grates, clean existing scuppers, install adjusting scupper rings and reinstalling grates is included in the cost per unit Each for Drainage Scuppers to be Adjusted.

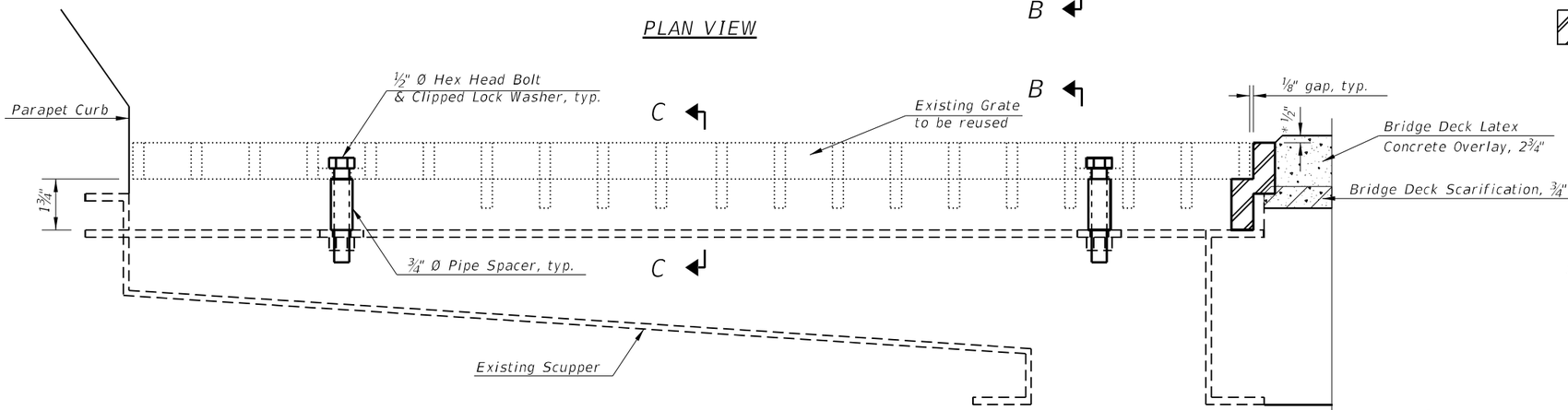


PLAN VIEW

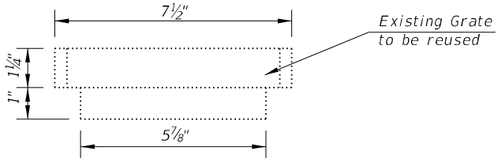
LEGEND

Adjusting Scupper Ring

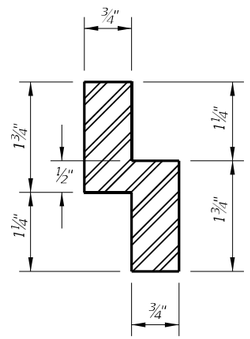
* Prior to Diamond Grinding



SECTION A-A



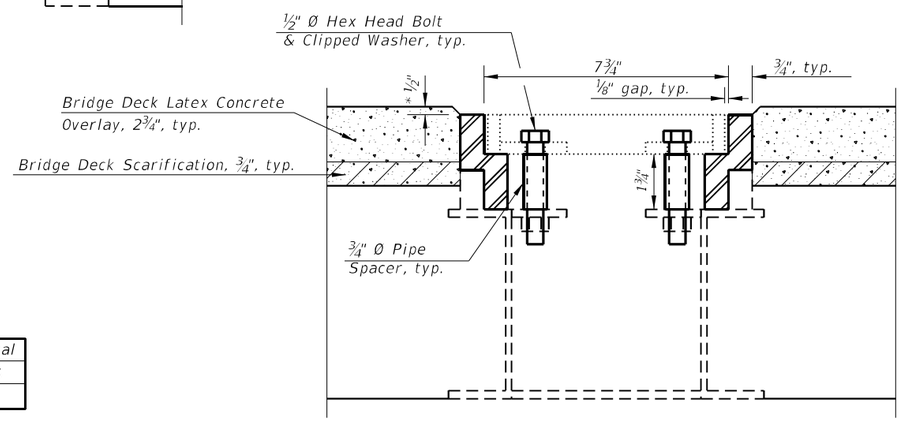
SECTION C-C



ADJUSTING SCUPPER RING

BILL OF MATERIAL

Item	Unit	Total
Drainage Scuppers To Be Adjusted	Each	6



SECTION B-B

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4/21/2022 6:02:36 PM

MAURER-STUTZ ENGINEERS SURVEYORS

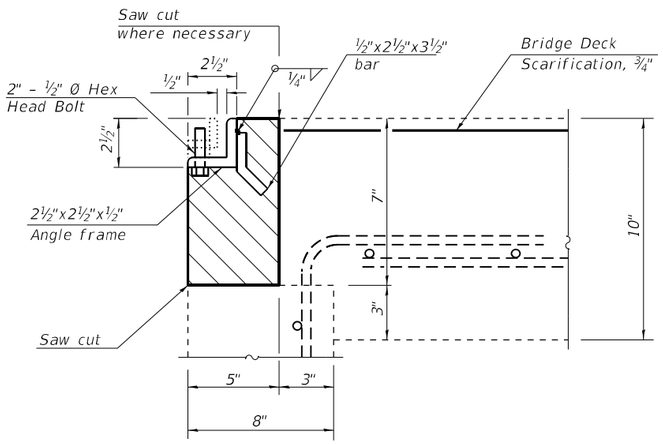
USER NAME = jdkoch	DESIGNED - BAS	REVISED -	
	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DRAINAGE SCUPPER ADJUSTMENT DETAILS
STRUCTURE NO. 092-0014

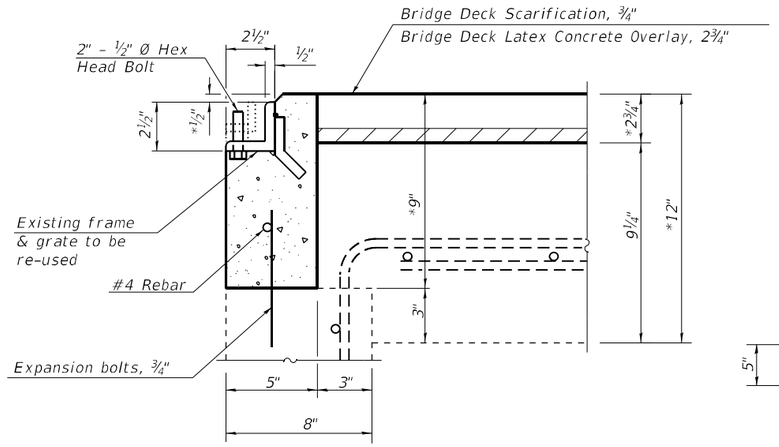
SHEET NO. 13 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	391
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			



DETAIL "A" - EXISTING

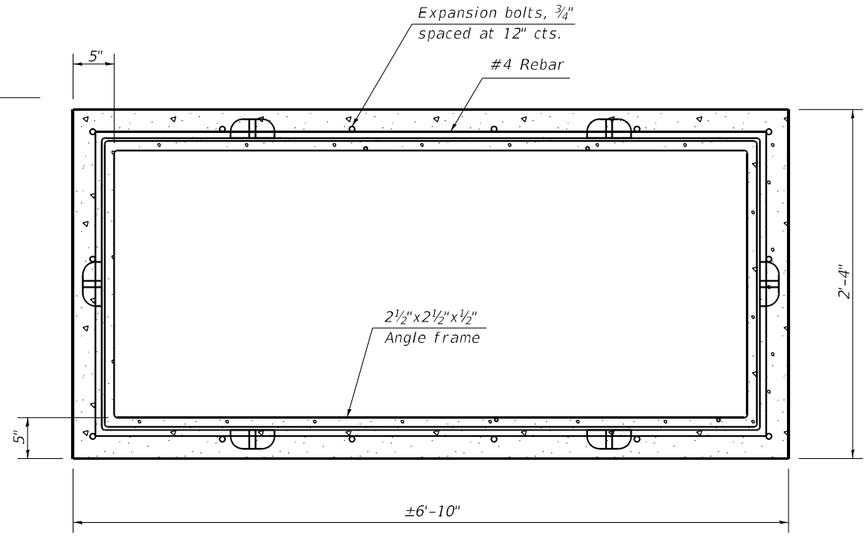
Concrete Removal



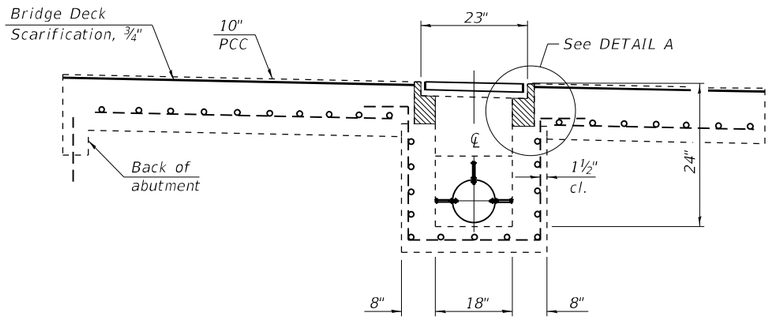
DETAIL "A" - PROPOSED

Class S.I. Concrete

* Prior to Diamond Grinding

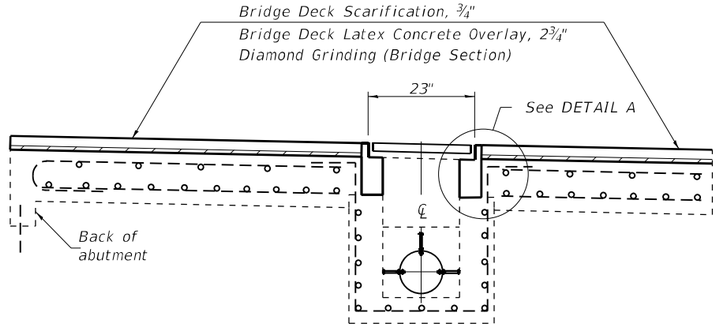


PLAN - PROPOSED
(GRATING OMITTED FOR CLARITY)



EXISTING TYPE D INLET BOX PROFILE
BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN

(Existing Approach Shoulder Pavement Std. 2324-6)



PROPOSED PROFILE
BRIDGE APPROACH SHOULDER PAVEMENT AND DRAIN

Notes:
Expansion bolts shall extend a minimum of 4" into the proposed concrete.

All work and materials shall be in accordance with applicable portions of Section 602.

This work will be paid for at the Contract unit price each for "Inlet Boxes to be Adjusted (Special)" which shall include all labor, equipment and material necessary to complete the work.

ESTIMATED QUANTITIES

(for information only)

ITEM	UNIT	TOTAL
Concrete Removal	Cu Yd	0.13
Reinforcement Bars (Epoxy)	Pound	11.4
Class S.I. Concrete	Cu Yd	0.16
Expansion Bolts, ¾"	Each	18

BILL OF MATERIALS

ITEM	UNIT	TOTAL
Inlet Boxes to be Adjusted (Special)	Each	1

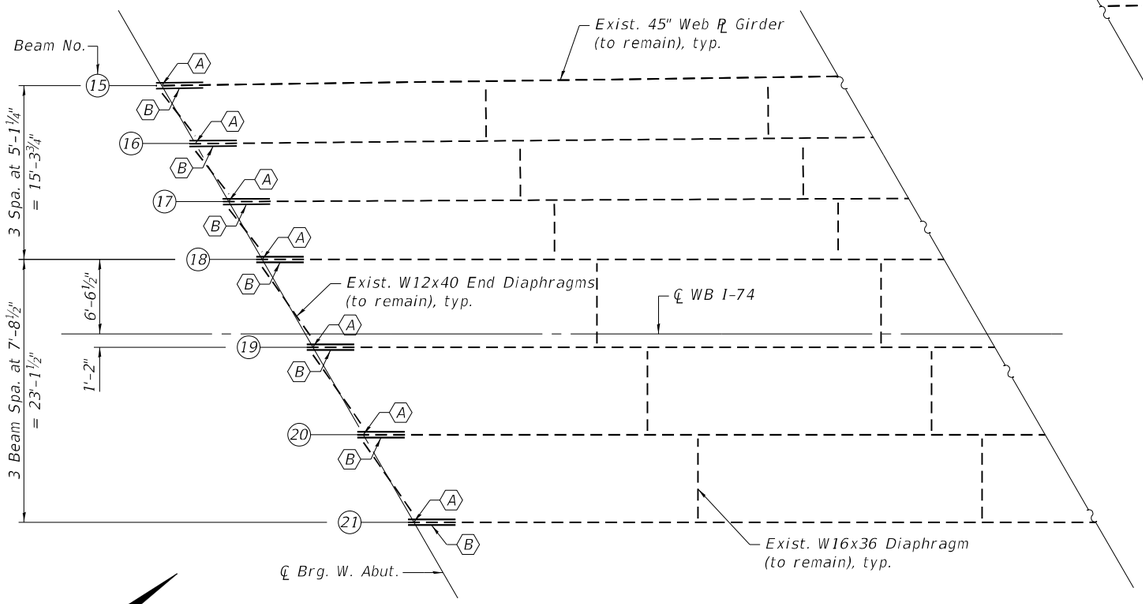
MODEL: Default
FILE NAME: S:\237\2019\237190020.00 (193-026 DS I-74 Danville)\CADD\CADD Sheets\70A29-0920014-014-Inlet Box Adj.dgn

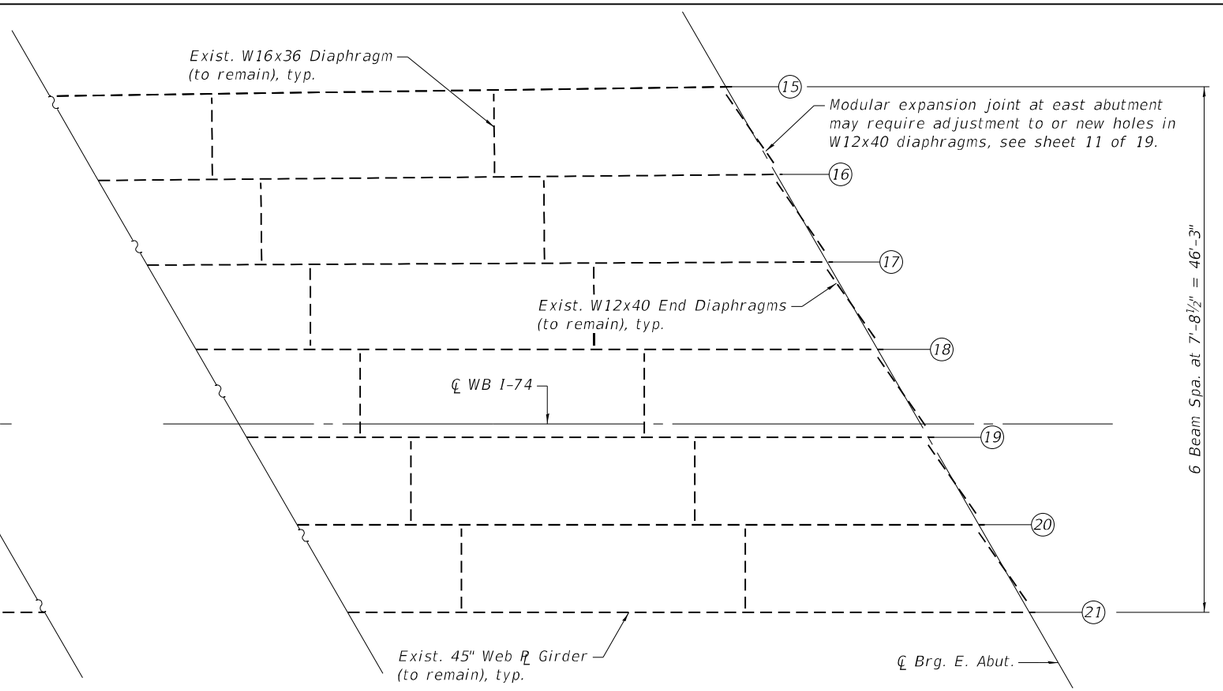
4/21/2022 6:02:42 PM

MAURER-STUTZ ENGINEERS SURVEYORS

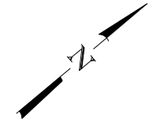
USER NAME = jdkoch	DESIGNED - BAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	INLET BOX TO BE ADJUSTED STRUCTURE NO. 092-0014
	CHECKED - JDK	REVISED -		
PLOT SCALE =	DRAWN - JDK	REVISED -		
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -		SHEET NO. 14 OF 19 SHEETS

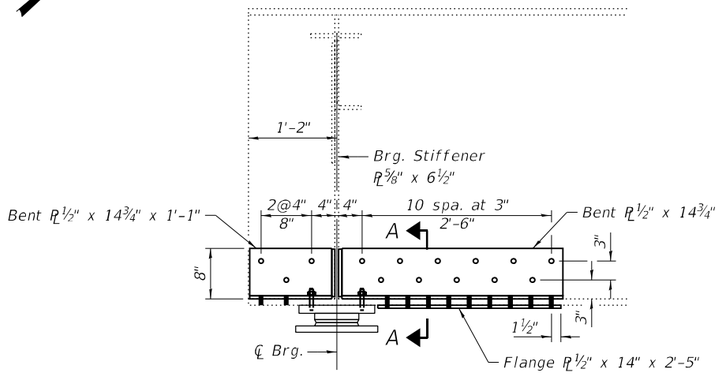
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	392
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



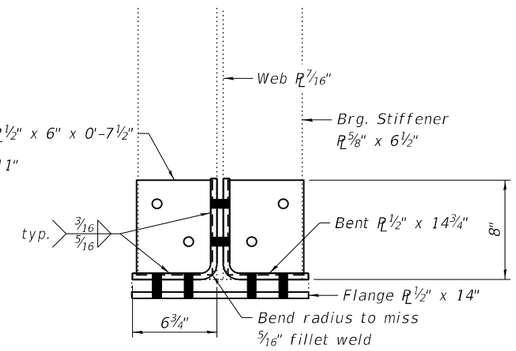


PARTIAL FRAMING PLAN – S.N. 092-0014

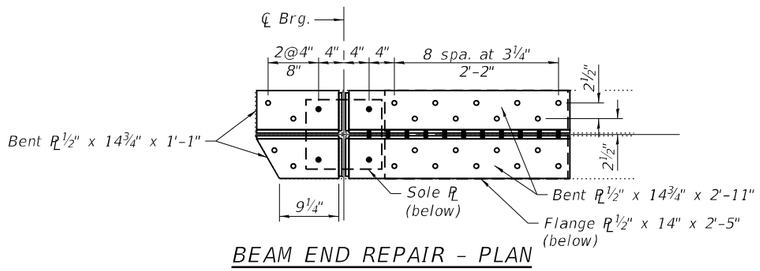




BEAM END REPAIR – ELEVATION



SECTION A-A



BEAM END REPAIR – PLAN

BOLT HOLE LEGEND

- – Drill 1¼" Ø hole in Bent ℄ using template to match ctr. of hole in bott. flange, 1" Ø threaded stud from Bearing Assembly
- – 13/16" Ø hole in Bent ℄ or End ℄ and field drill 13/16" Ø hole in beam web, flange, or stiffener ℄ to match, ¾" Ø H.S. bolt

Callouts:

(A) – Jack and remove existing bearing assembly, replace with new bearing assemblies as shown on sheet 16 of 19.

(B) – Beam End Repair, see detail on this sheet

GIRDER REACTION TABLE (EXIST.)			
		S.N. 092-00014 (WB)	
		W. Abut.	E. Abut.
R ℄	(k)	42.3	42.3
R ℄	(k)	44.8	44.8
R IM	(k)	10.0	10.0
R Total	(k)	97.1	97.1

Notes:

Cost of furnishing and erecting steel for beam end repairs shall be included with Structural Steel Repair. See Special Provision.

All structural steel for the beam end repairs shall conform to the requirements of AASHTO M 270, Grade 50.

Structural steel plates for the beam end repairs shall be hot dip galvanized. See Special Provisions for Hot Dip Galvanizing for Structural Steel.

Removal of existing bearing assemblies shall be paid for as Jack and Remove Existing Bearings.

Minimum jack capacity shall be 55 tons.

The existing structural steel beams and diaphragms at each abutment shall be cleaned and painted prior to completing beam repairs or installing new modular expansion joint and bearing assemblies. See general notes on sheet 2 of 19.

Abandoned holes in existing diaphragm at east abutment after removal of existing finger plate expansion joint shall be filled with galvanized H.S. bolts. Cost included with Concrete Removal.

See sheet 16 of 19 for Bill of Material.

MODEL: Default
FILE NAME: S:\237\2019\23719020.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-092O014-015-Framing Plan.dgn

5/11/2022 2:59:45 PM

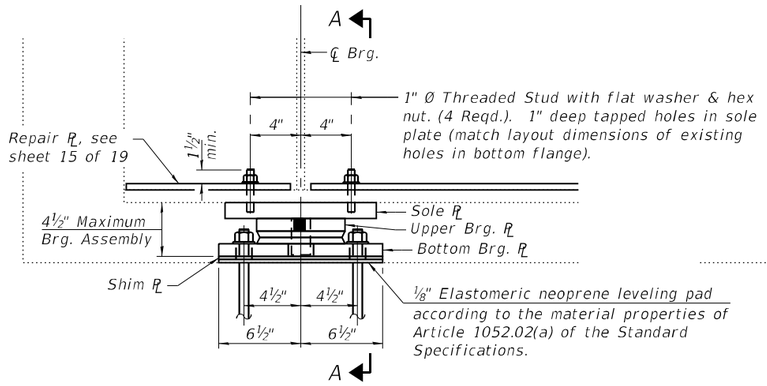
MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = baswanson	DESIGNED - BAS	REVISED -	
	CHECKED - JDK	REVISED -	
PLOT SCALE =	DRAWN - JDK	REVISED -	
PLOT DATE = 5/11/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

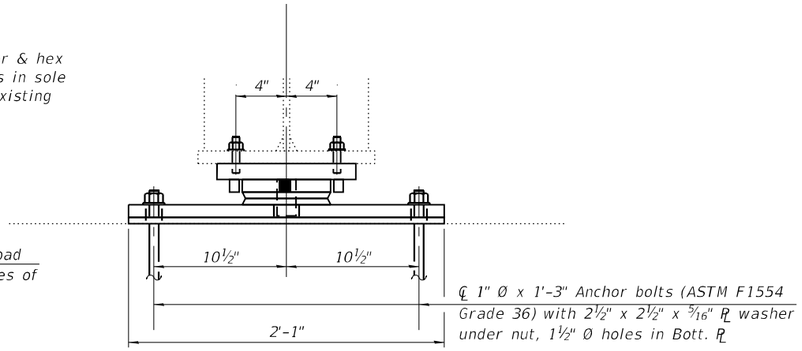
STRUCTURAL STEEL FRAMING PLAN
STRUCTURE NO. 092-0014
SHEET NO. 15 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	393
		CONTRACT NO. 70A29		
	ILLINOIS FED. AID PROJECT			

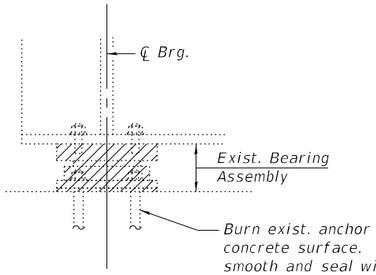


ELEVATION AT ABUTMENT

(at West Abutment only)

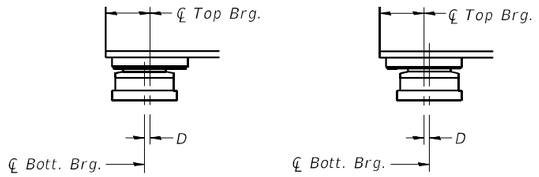


SECTION A-A



EXISTING BEARING REMOVAL DETAIL

HLMR EXPANSION BEARING ASSEMBLY

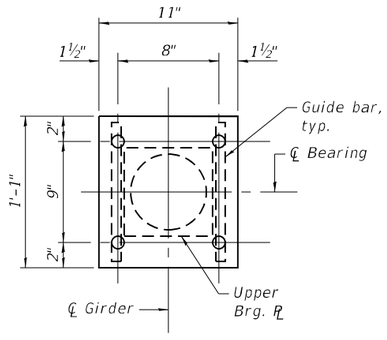


BELOW 50°F. ABOVE 50°F.

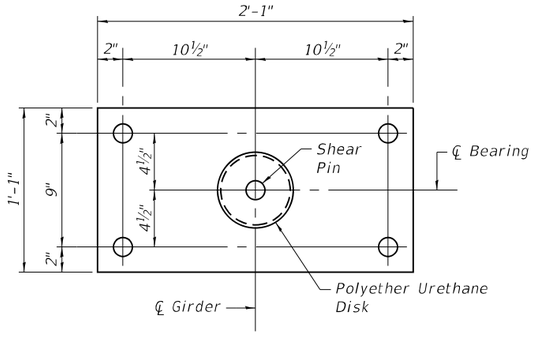
D=⅛" per each 100° of expansion for every 15° temp. change from the normal temp. of 50°F.

EXPANSION BEARING ORIENTATION

The above diagrams are for informational purposes only to show the amount of expected offset "D" for the current temperature in the field.



SOLE PL AND UPPER BEARING PL



BOTTOM BEARING PL AND DISK PLAN

BILL OF MATERIAL

Item	Unit	Total
Jack and Remove Existing Bearings	Each	7
High Load Multi-Rotational Bearings, Guided Expansion, 100k	Each	7
Anchor Bolts	Each	28
Structural Steel Repair	Pound	2200

Notes:

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. 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.

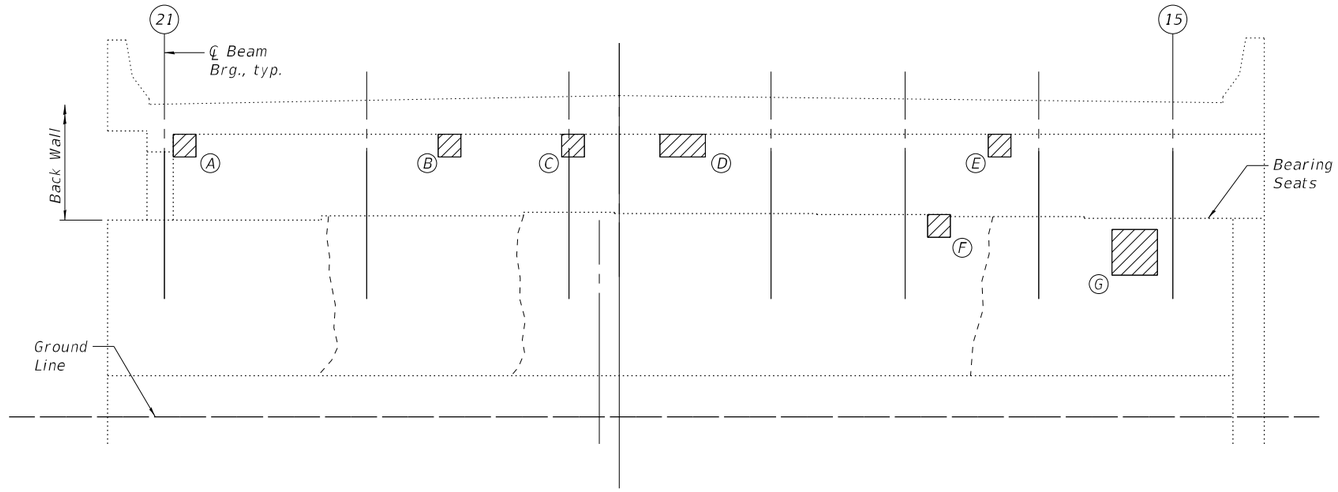
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.

Provide two ⅛" adjusting shims for each bearing in addition to all other plates of the Bearing Assembly and placed as shown on the bearing details.

The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270, Grade 50.

All new anchor bolts, nuts, and washers shall be hot dip galvanized. Steel plates of the Bearing Assembly shall be hot dip galvanized except where prohibited by the manufacturer. See Special Provisions for Hot Dip Galvanizing for Structural Steel.

Bearings shall be designed for a vertical load of 100 kips, a horizontal load of 5.2 kips, and a total required movement of 3". Reactions are given for service loads. See sheet 15 of 19 for bearing reactions.



ELEVATION – WEST ABUTMENT
(Looking West)

Notes:
Repair areas shown are estimated from soundings on October 13, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty. SRC ≤5" Sq. Ft.	Plan Qty. SRC >5" Sq. Ft.	As Built SRC ≤5" Sq. Ft.	As Built SRC >5" Sq. Ft.
A	1' x 1'	1			
B	1' x 1'	1			
C	1' x 1'	1			
D	2' x 1'	2			
E	1' x 1'	1			
F	1' x 1'	1			
G	2' x 2'	4			
Totals		11			

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	11

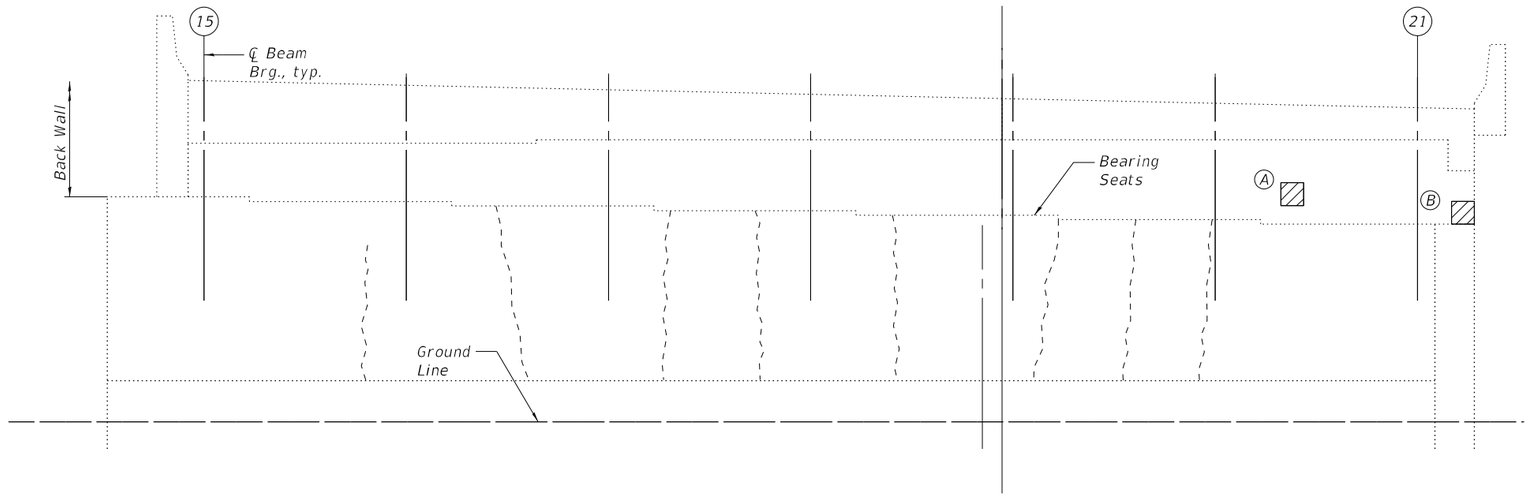
MODEL: Default
FILE NAME: S:\237\2019\23719020.00 (193-026 D5 I-74 Danville)\CADD\CADD Sheets\70A29-092001A-017-W; Abut. Repairs.dgn

4/21/2022 6:02:59 PM

MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME = jdkoch	DESIGNED - BAS	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT REPAIRS STRUCTURE NO. 092-0014
	CHECKED - JDK	REVISED -		
PLOT SCALE =	DRAWN - JDK	REVISED -		SHEET NO. 17 OF 19 SHEETS
PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	395
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		



ELEVATION – EAST ABUTMENT
(Looking East)

Notes:
Repair areas shown are estimated from soundings on October 13, 2020.
Actual size and locations of completed repairs shall be shown on this sheet and documented in the provide tables under "As Built".

STRUCTURAL REPAIR OF CONCRETE TABLE

Label	Size	Plan Qty.		As Built	
		SRC ≤5"	SRC >5"	SRC ≤5"	SRC >5"
		Sq. Ft.	Sq. Ft.	Sq. Ft.	Sq. Ft.
A	1' x 1'	1			
B	1' x 1'	1			
Totals		2			

LEGEND

	Structural Repair of Concrete (Depth Equal to or Less than 5 inches)
	Structural Repair of Concrete (Depth Greater Than 5 inches)

BILL OF MATERIAL

Item	Unit	Quantity
Structural Repair of Concrete (Depth ≤ 5 in.)	Sq. Ft.	2

MODEL: Default
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MAURER-STUTZ ENGINEERS SURVEYORS

USER NAME =	jdkoch	DESIGNED -	BAS	REVISED -
		CHECKED -	JDK	REVISED -
PLOT SCALE =		DRAWN -	JDK	REVISED -
PLOT DATE =	4/21/2022	CHECKED -	LVM	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT REPAIRS
STRUCTURE NO. 092-0014
SHEET NO. 18 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	396
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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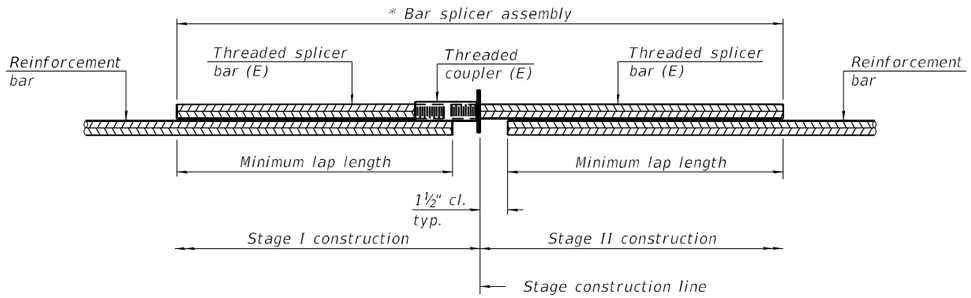


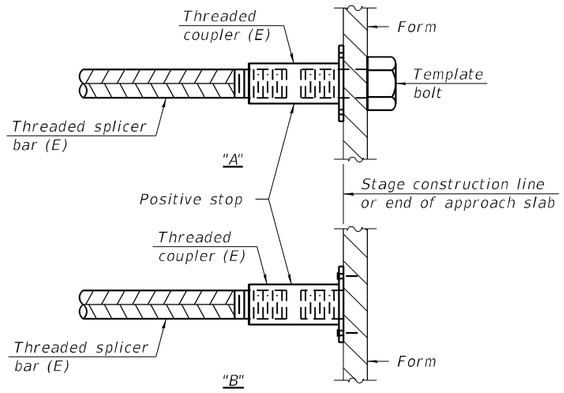
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

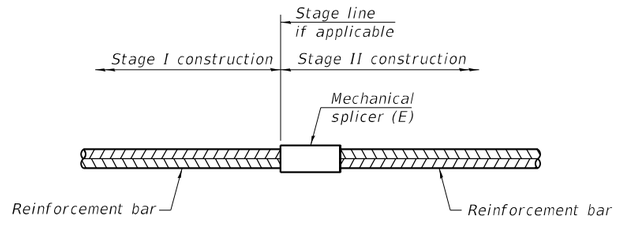
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
West Abutment	#5	10	3'-6"
West Abutment	#6	4	3'-7"
East Abutment	#5	18	3'-6"
East Abutment	#7	16	4'-8"



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
East Abutment	#5	103
East Abutment	#6	66
East Abutment	#7	84

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

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	CHECKED - JDK	REVISED -	
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PLOT DATE = 4/21/2022	CHECKED - LVM	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 092-0014
SHEET NO. 19 OF 19 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	397
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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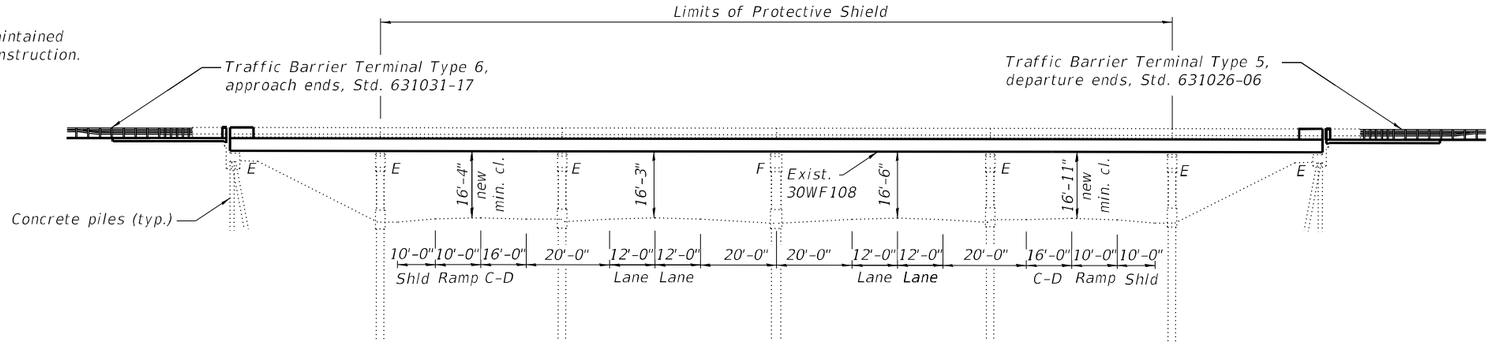
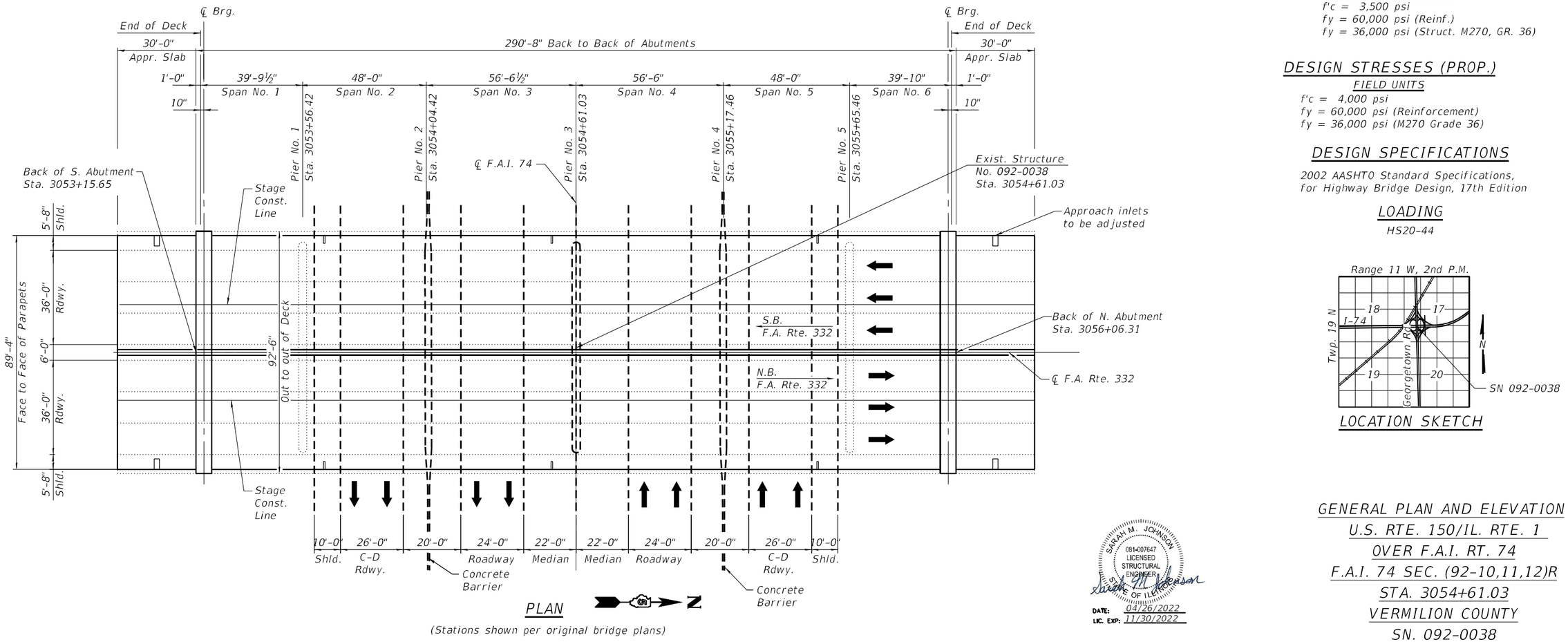
Existing Structure S.N. 092-0038 built in 1963, reconstructed in 1995. 6-Span Steel Beam R.C. Deck.
Total width out to out = 92'-6". Total length bk. to bk. abut. = 290'-8". R.C. Piers and Abuts.

No Salvage.

Traffic to be maintained during Stage Construction.



ELEVATION



PLAN

(Stations shown per original bridge plans)

INDEX OF SHEETS

DESIGN STRESSES (EXIST.)

ORIGINAL STRUCTURES
f'c = 1,400 psi (allow.)
fs = 20,000 psi (Reinf.)
fs = 20,000 psi (Struct.)

1995 RECONSTRUCTION
f'c = 3,500 psi
fy = 60,000 psi (Reinf.)
fy = 36,000 psi (Struct. M270, GR. 36)

DESIGN STRESSES (PROP.)

FIELD UNITS
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (M270 Grade 36)

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications, for Highway Bridge Design, 17th Edition

LOADING

HS20-44

LOCATION SKETCH

SARAH M. JOHNSON
081-007647
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS

DATE: 04/26/2022
LIC. EXP: 11/30/2022

GENERAL PLAN AND ELEVATION
U.S. RTE. 150/IL. RTE. 1
OVER F.A.I. RT. 74
F.A.I. 74 SEC. (92-10,11,12)R
STA. 3054+61.03
VERMILION COUNTY
SN. 092-0038

Prairie Engineers, P.C.
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professional design firm no. 184-005965

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PLOT SCALE = 0.166666 ' / in.	DRAWN - JLM	REVISED -
PLOT DATE = 4/25/2022	CHECKED - SMJ	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 26 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	398
		CONTRACT NO. 70A29		
	ILLINOIS	FED. AID PROJECT		

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GENERAL NOTES

Fasteners shall be high strength bolts. Holes shall be 13/16" dia for 3/4" dia. bolts, unless otherwise noted.

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

Reinforcement bars designated (E) shall be epoxy coated.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer.

Any cracks that cannot be removed by grinding ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

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

Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Concrete Sealer shall be applied to the repaired areas of the piers.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Areas of repairs shown are estimated. The engineer shall show actual locations of the repairs on as-built plans.

Protective coat shall be applied to new Concrete Superstructure surfaces only. Applicable areas include exposed new concrete deck ±6'-11" width along joints, new overlay, and interior and top surfaces of repaired parapet only.

All new structural steel shall be hot-dipped galvanized, except as noted See Special Provisions for "Hot Dip Galvanizing For Structural Steel", see also notes on sheet 16.

Synthetic Fibers shall be included in the bridge deck concrete overlay specified. See special provisions.

Up to ¼ inch may be ground off the bridge deck and the bridge approach slabs.

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.

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 "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

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

Existing structure plans are available from the District upon request.

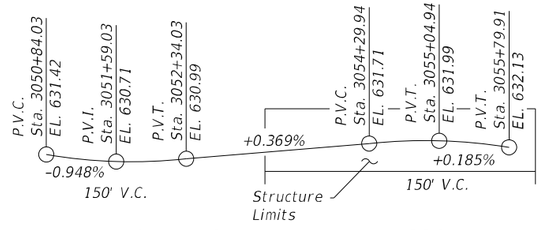
SCOPE OF WORK:

1. Complete bridge scarification 3/4".
2. Complete deck patching, removal of deck ends and hatch blocks.
3. Complete structural repair of concrete on substructure.
4. Remove and replace approach slab Type B curb.
5. Perform epoxy injection on longitudinal cracks in approach slabs.
6. Complete steel beam repairs and end diaphragm replacements.
7. Replace bearings at abutments.
8. Install shear studs at beam ends.
9. Cast deck ends and hatch blocks.
10. Place preformed joint strip seal.
11. Adjust inlets in approaches and scuppers in deck.
12. Place bridge deck latex concrete overlay 2 3/4".
13. Fill gaps between deck and beams w/ epoxy injection.
14. Complete slope wall crack sealing.
15. Complete diamond grinding and bridge deck grooving.

TOTAL BILL OF MATERIAL

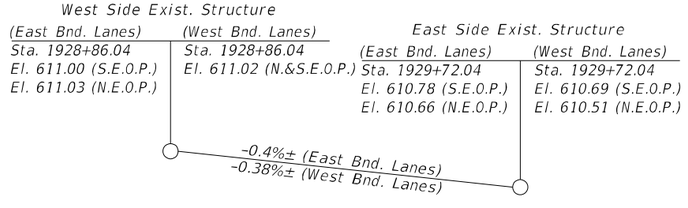
	ITEM	UNIT	SUPER	SUB	TOTAL
	Concrete Removal	Cu. Yd.	49.0	–	49.0
	Concrete Superstructure	Cu. Yd.	57.0	–	57.0
	Protective Shield	Sq. Yd.	2,148	–	2,148
	Concrete Structures	Cu. Yd.	24.0	–	24.0
†	Bridge Deck Grooving (Longitudinal)	Sq. Yd.	2,805	–	2,805
	Protective Coat	Sq. Yd.	3,415	–	3,415
	Furnishing and Erecting Structural Steel	Pound	12,840	–	12,840
	Stud Shear Connectors	Each	448	–	448
	Reinforcement Bars, Epoxy Coated	Pound	8,450	–	8,450
	Bar Splicers	Each	88	–	88
	Preformed Joint Strip Seal	Foot	183.0	–	183.0
	Elastomeric Bearing Assembly Type II	Each	32	–	32
	Concrete Sealer	Sq. Ft.	–	1,120.0	1,120.0
	Epoxy Crack Injection	Foot	120	–	120
†	Jack and Remove Existing Bearings	Each	32	–	32
†	Structural Steel Removal	Pound	8,030	–	8,030
†	Structural Steel Repair	Pound	5,940	–	5,940
†	Bridge Deck Latex Concrete Overlay 2¾"	Sq. Yd.	3,258	–	3,258
†	Bridge Deck Scarification ¾"	Sq. Yd.	3,258	–	3,258
†	Structural Repair of Concrete Depth <=5"	Sq. Ft.	–	135.0	135.0
†	Deck Slab Repair (Full Depth, Type 1)	Sq. Yd.	17	–	17
†	Drainage Scuppers to be Adjusted	Each	6	–	6
†	Inlet Boxes to be Adjusted (Special)	Each	4	–	4
†	Epoxy Injection	Foot	108	–	108
†	Temporary Support System	L Sum	1	–	1
†	Diamond Grinding (Bridge Section)	Sq. Yd.	2,958	–	2,958
†	Slope Wall Crack Sealing	Foot	–	120.5	120.5
	Anchor Bolts 1"	Each	64	–	64

† Special Provision



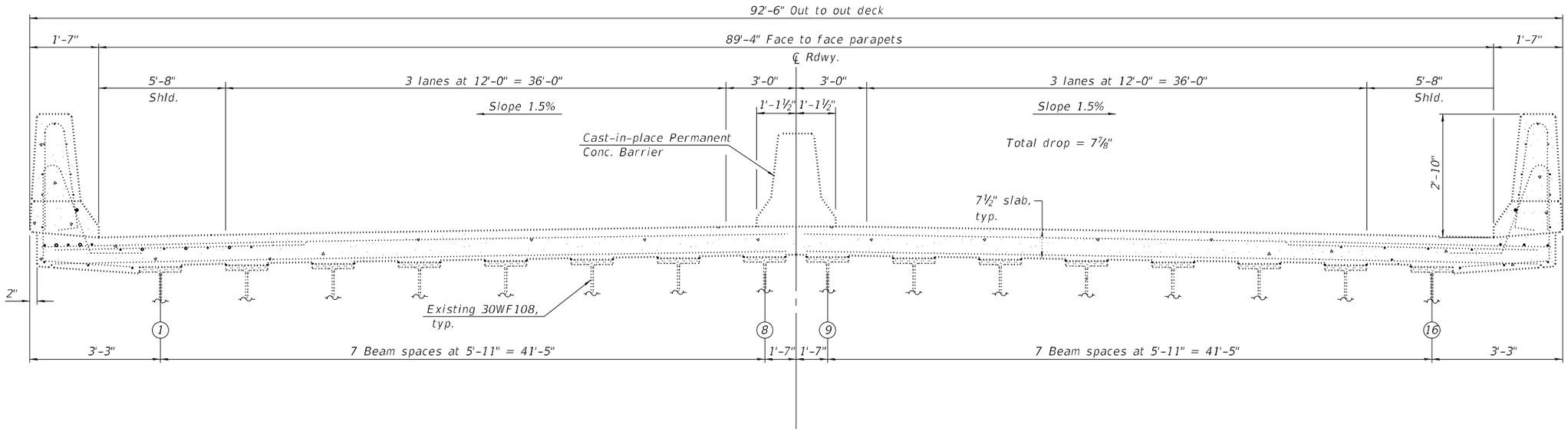
PROFILE GRADE F.A. RTE. 332

(From 1995 Reconstruction Plans)



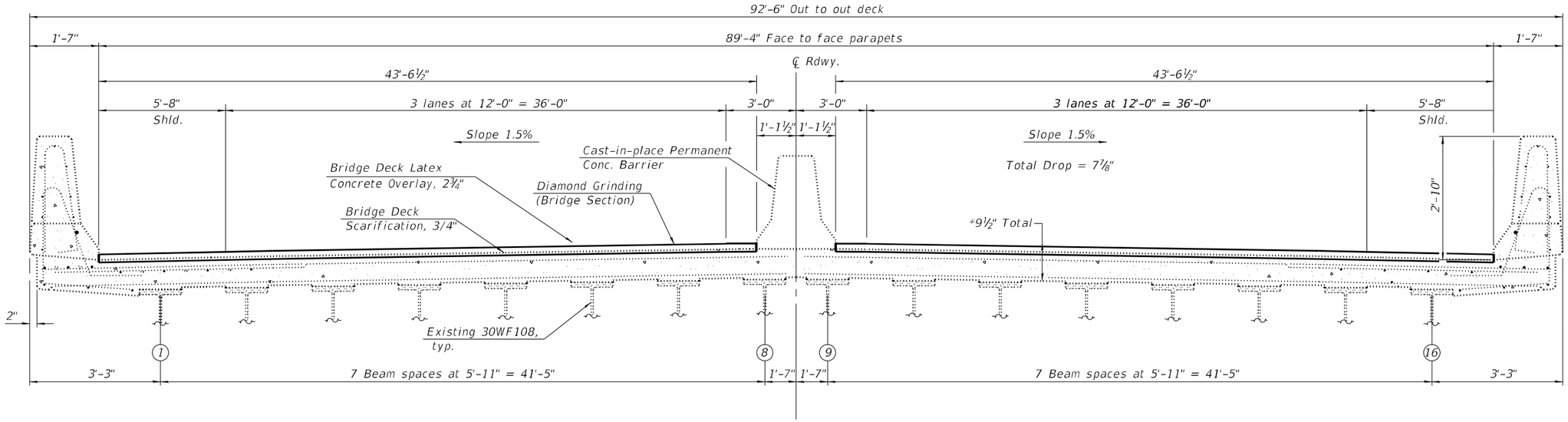
PROFILE GRADE F.A.I.-74

(From 1995 Reconstruction Plans)



EXISTING DECK CROSS SECTION

(Looking North)



PROPOSED DECK CROSS SECTION

(Looking North)

*Prior to grinding

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING AND PROPOSED TYPICAL CROSS SECTIONS
S.N. 092-0038

SHEET 3 OF 26 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
74	(92-10,11,12)R	VERMILION	698	400
		CONTRACT NO. 70A29		
		ILLINOIS	FED. AID PROJECT	