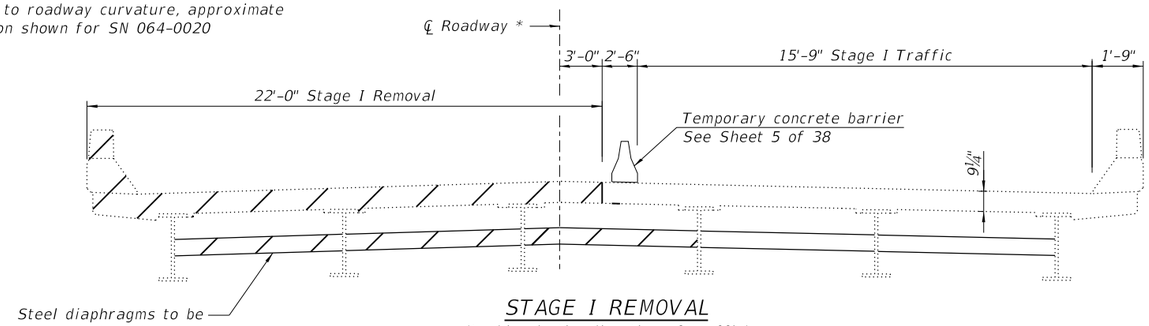
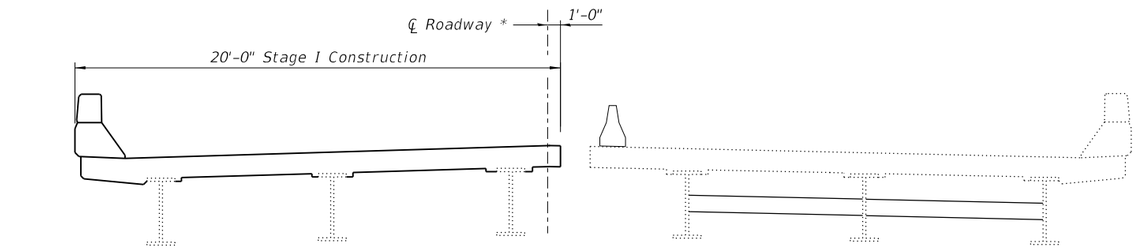
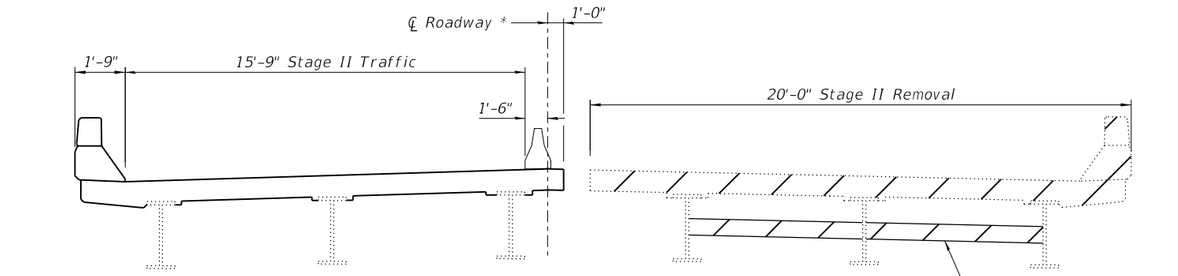
* Due to roadway curvature, approximate location shown for SN 064-0020



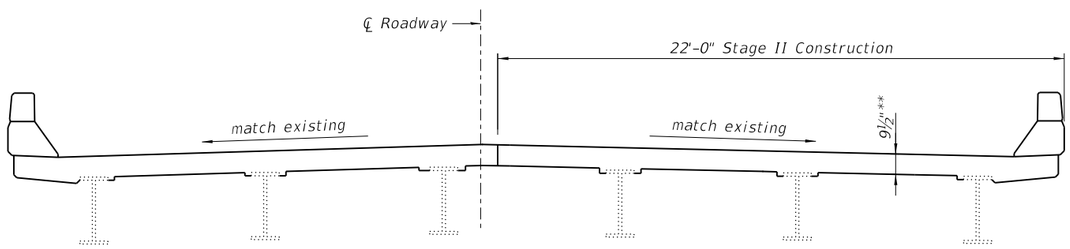
STAGE I REMOVAL
(Looking in the direction of traffic)



STAGE I CONSTRUCTION
(Looking in the direction of traffic)



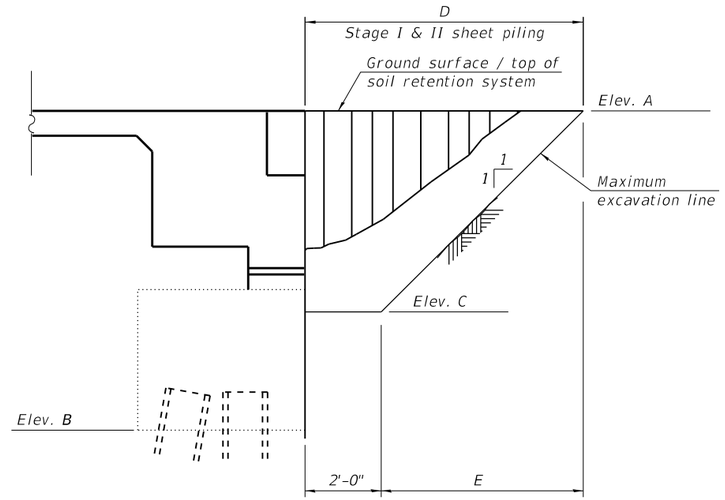
STAGE II REMOVAL
(Looking in the direction of traffic)



STAGE II CONSTRUCTION
(Looking in the direction of traffic)

** Prior to grinding

Note:
Hatched area indicates, Concrete Removal at abutments, and Structural Steel Removal.
SN 064-0021 shown, SN 064-0020 is superelevated.



TEMPORARY SOIL RETENTION SYSTEM

Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
SN 064-0020 W. Abut.	395.61	386.70	390.59	7'-1"	5'-1"
SN 064-0020 E. Abut.	396.71	387.74	391.64	7'-1"	5'-1"
SN 064-0021 W. Abut.	395.93	387.14	390.35	7'-7"	5'-7"
SN 064-0021 E. Abut.	396.31	387.55	390.76	7'-7"	5'-7"

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

MODEL: Default
FILE NAME: L:\DOT\1806810\WO_1\Draw\Structures\SN 0020 & 0021\003_0020-0021_Stage Construction Details.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

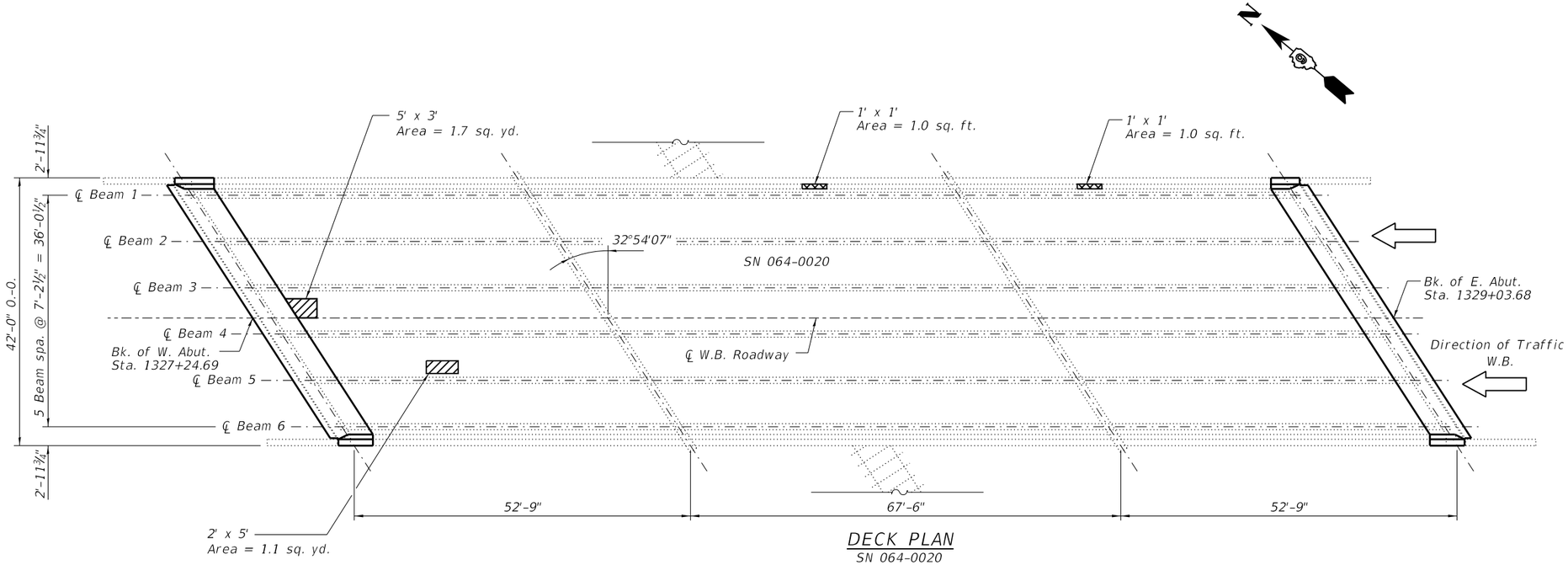
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 3 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	101
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

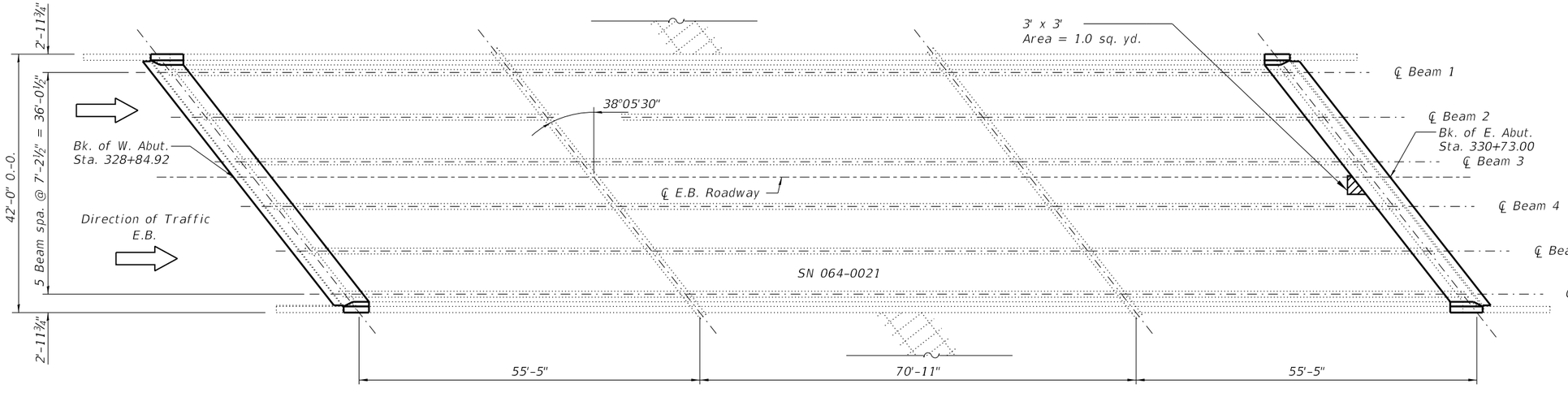
Notes:
The Resident Engineer will determine final patch locations and quantities in the field after removal of the concrete wearing surface, before bridge deck patching operations begin.

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

Protective Shield shall be placed the full out to out width of each bridge for the full length of span 2 over I.C. Railroad.



DECK PLAN
SN 064-0020



DECK PLAN
SN 064-0021

Legend

Full Depth, Type II

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

BILL OF MATERIAL

ITEM	UNIT	SN 064-0020	SN 064-0021	TOTAL
Protective Shield	Sq. Yd.	315	331	646
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	2	0	2
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	3	1	4

MODEL: Default
FILE NAME: L:\IDOT\190606100\WO_10\raw\Structures\SN 0020 & 0021\004_0020-0021_Top of Deck Patch Plan.dgn

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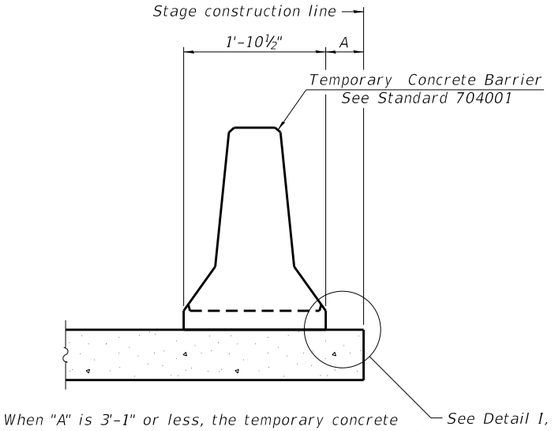
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

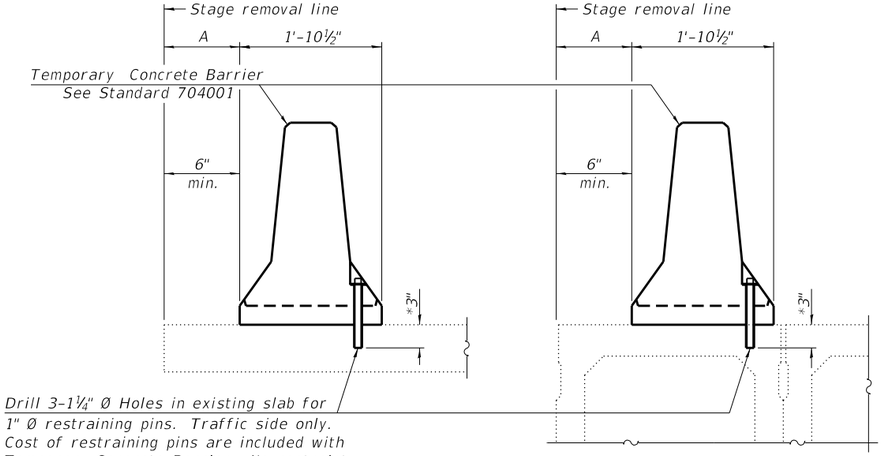
DECK PATCHING PLAN
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 4 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	102
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



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

NEW SLAB OR NEW DECK BEAM



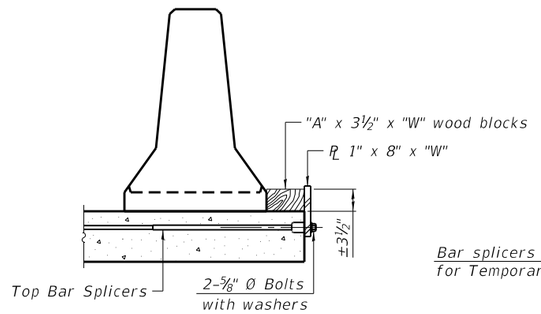
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

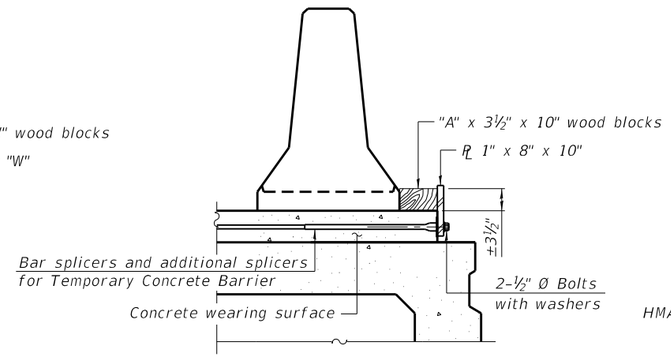
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

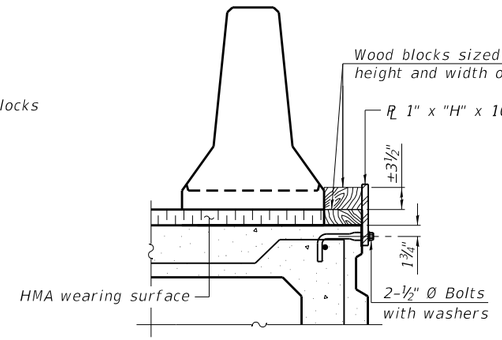
SECTIONS THRU SLAB OR DECK BEAM



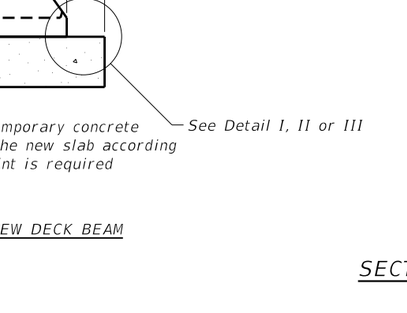
DETAIL I



DETAIL II

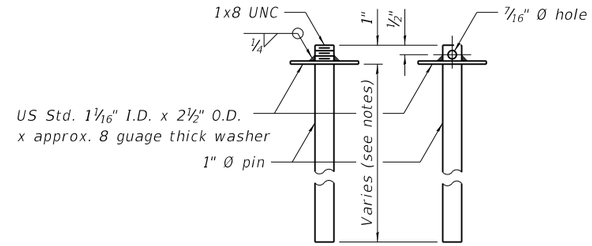


DETAIL III

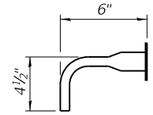


STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)

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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - 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.

R-27

2-17-2017

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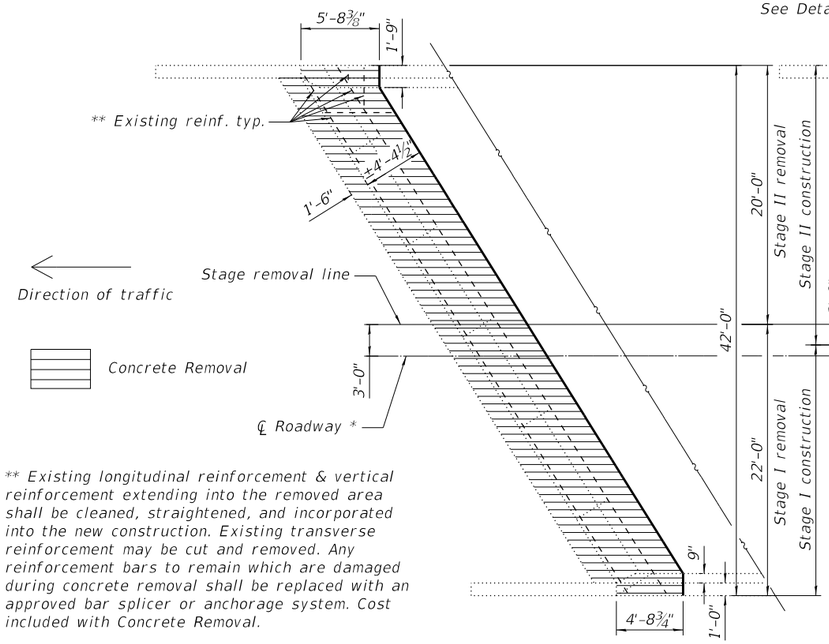
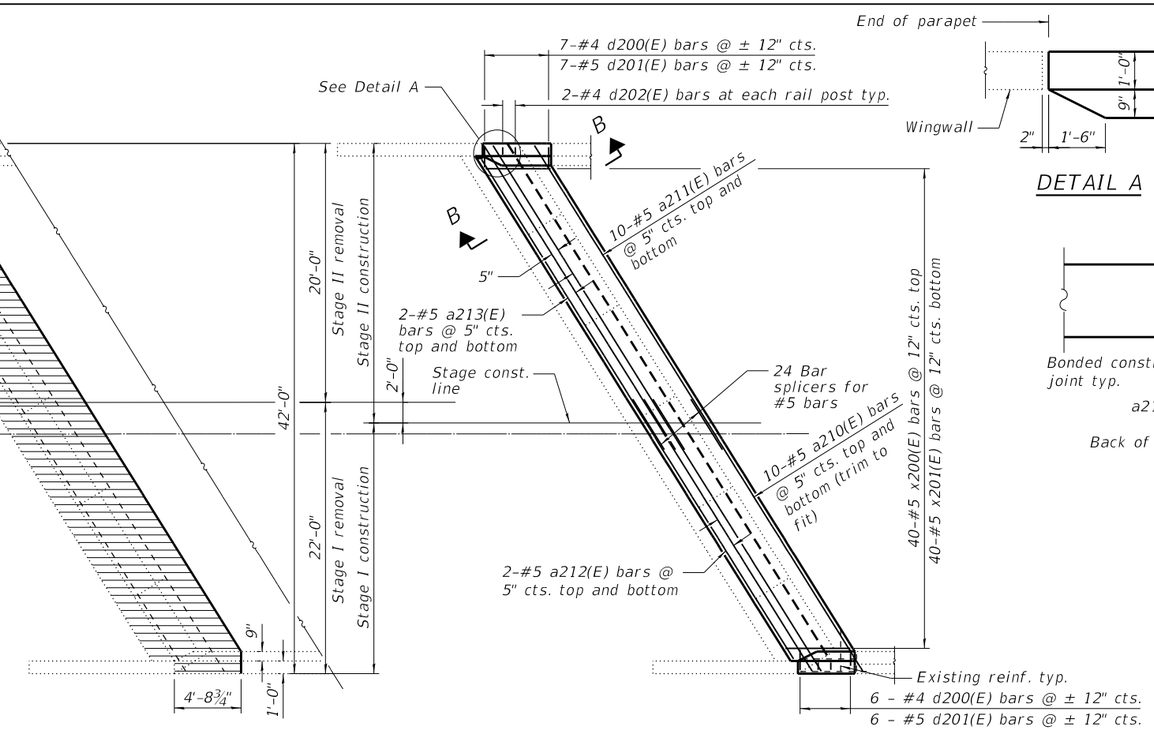
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 5 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	103
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

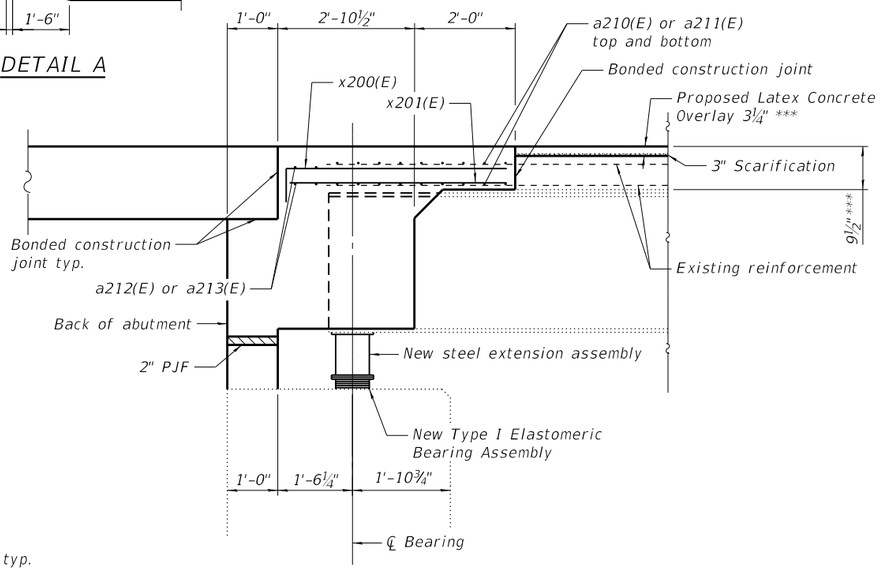


ABUTMENT PLAN SHOWING CONCRETE REMOVAL



ABUTMENT PLAN SHOWING CONCRETE REPLACEMENT

DETAIL A

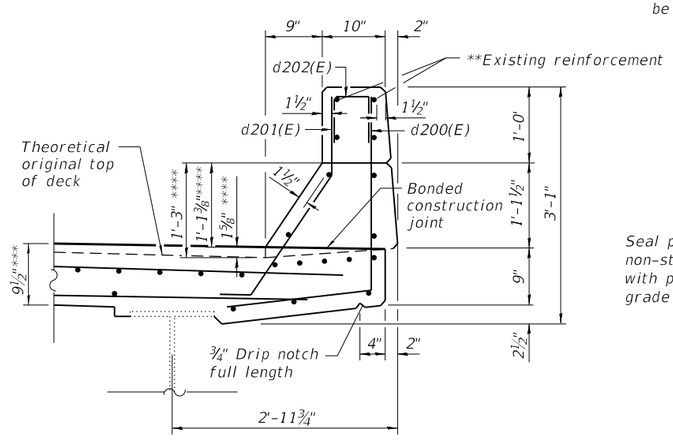


SECTION B-B
TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT

(Dimensions measured at right angles)
For section showing deck removal see Sheet 12 of 38.

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar

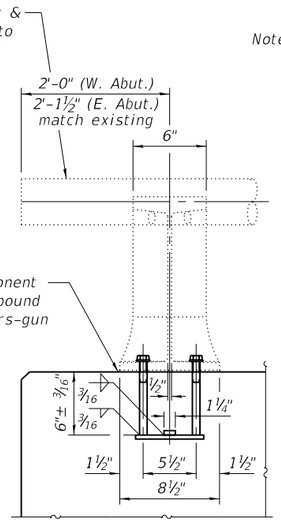
Note: d200(E) and d201(E) bars spaced at 12" cts.



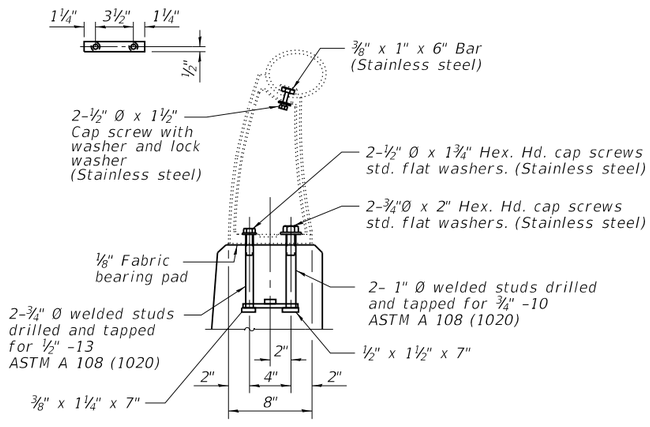
SECTION THRU PARAPET

**** Dimensions based on original 7½" deck. Proposed parapet section to align with existing parapet section.*

Existing aluminum end post & hand rail terminal section to be removed and re-erected

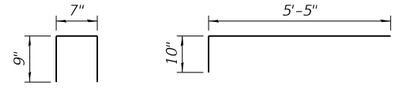


Note: Rail shall be removed and re-erected as necessary to allow structure modifications. Cost included in Concrete Removal.

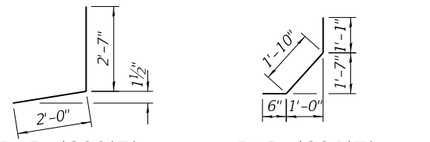


RAIL POST DETAILS

*** Prior to grinding.*



BAR d202(E) BAR x200(E)



BAR d200(E) BAR d201(E)

TWO SUPERSTRUCTURE ENDS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a210(E)	40	#5	23'-6"	
a211(E)	40	#5	25'-10"	
a212(E)	8	#5	22'-2"	
a213(E)	8	#5	24'-6"	
d200(E)	26	#4	4'-7"	
d201(E)	26	#5	3'-5"	
d202(E)	8	#4	2'-1"	
x200(E)	80	#5	6'-3"	
x201(E)	80	#5	5'-5"	
Concrete Removal			Cu. Yd.	12.0
Concrete Superstructure			Cu. Yd.	49.8
Reinforcement Bars, Epoxy Coated			Pound	3620
Bar Splicers			Each	48

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE - NO. 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 6 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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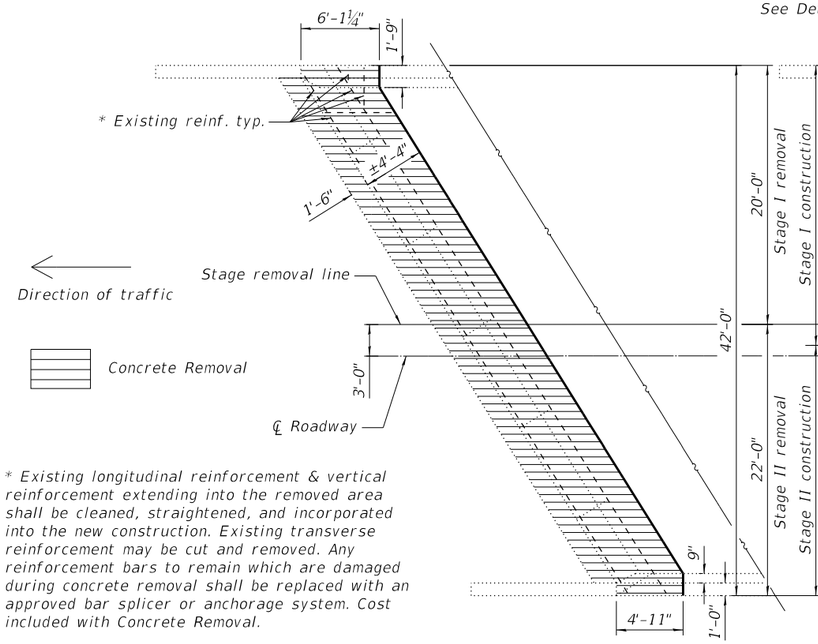
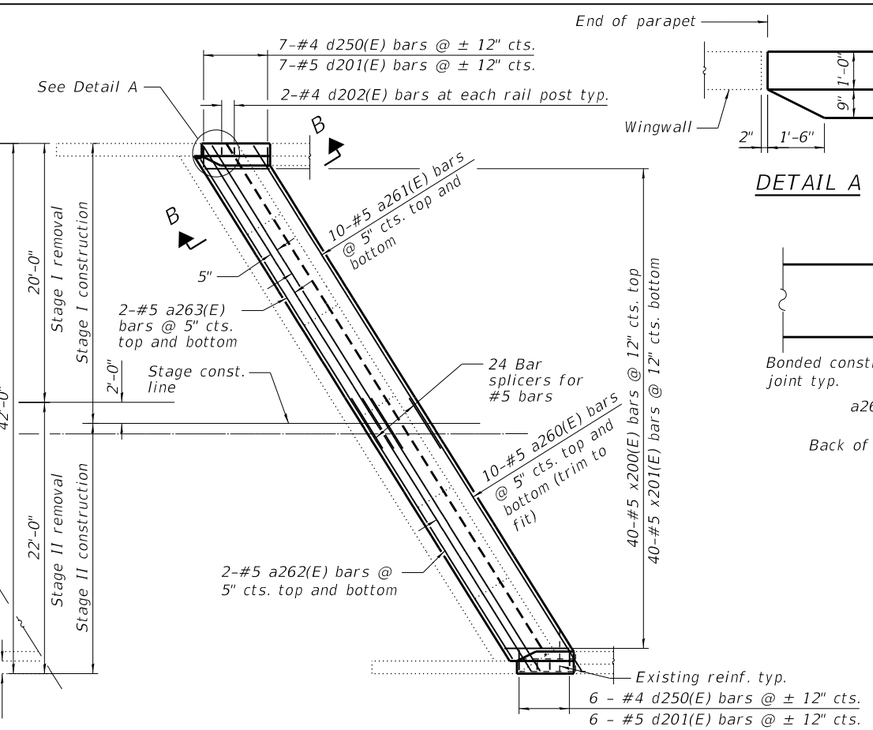
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



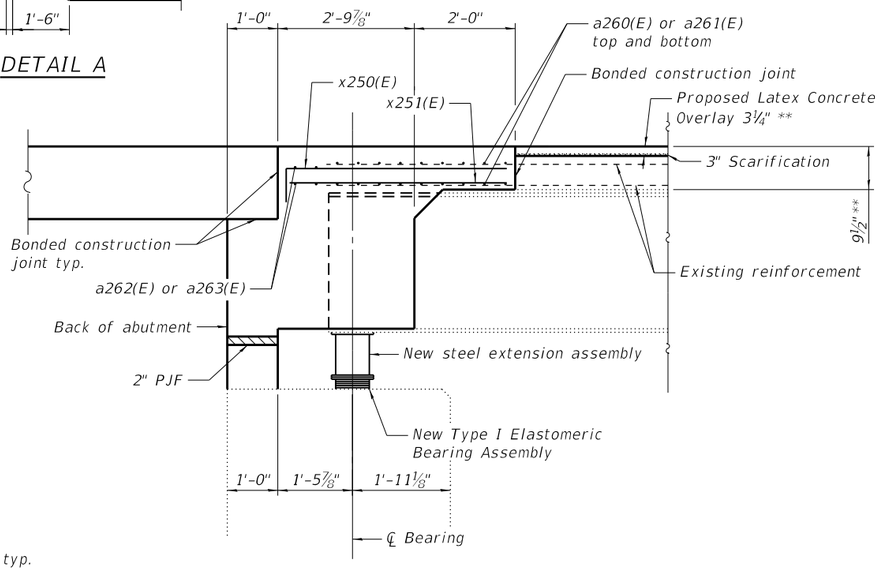
* Existing longitudinal reinforcement & vertical reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement may be cut and removed. Any reinforcement bars to remain which are damaged during concrete removal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

ABUTMENT PLAN SHOWING CONCRETE REMOVAL



ABUTMENT PLAN SHOWING CONCRETE REPLACEMENT

DETAIL A

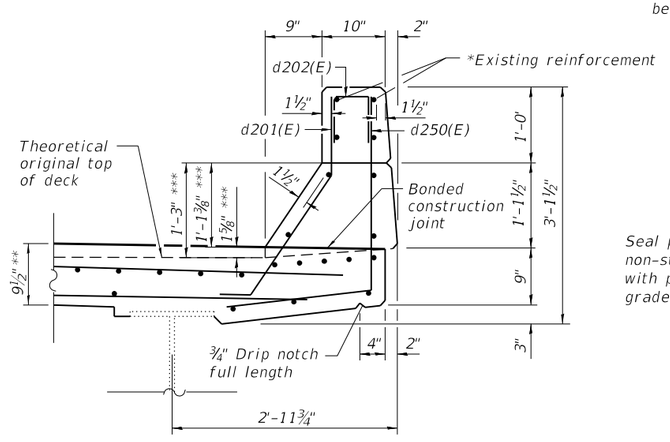


SECTION B-B TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT

(Dimensions measured at right angles)
For section showing deck removal see Sheet 12 of 38.

SN 064-0021 east abutment shown, SN 064-0021 west abutment similar

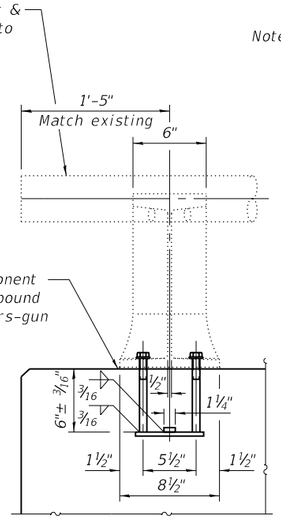
Note: d200(E) and d201(E) bars spaced at 12" cts.



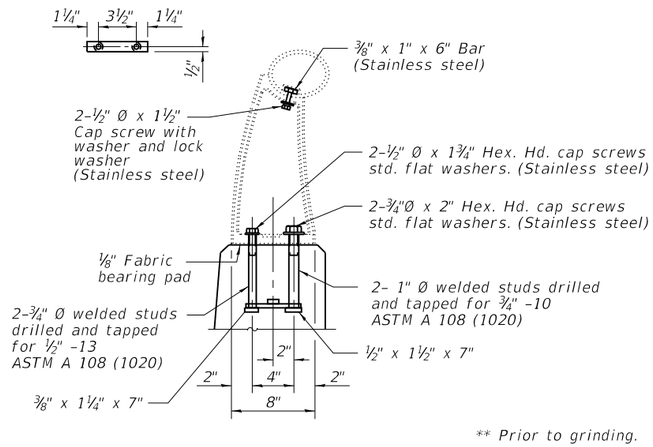
SECTION THRU PARAPET

*** Dimensions based on original 7½" deck. Proposed parapet section to align with existing parapet section.

Existing aluminum end post & hand rail terminal section to be removed and re-erected

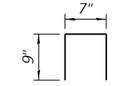


Note: Rail shall be removed and re-erected as necessary to allow structure modifications. Cost included in Concrete Removal.

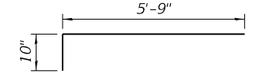


RAIL POST DETAILS

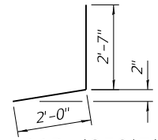
** Prior to grinding.



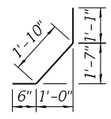
BAR d202(E)



BAR x200(E)



BAR d250(E)



BAR d201(E)

TWO SUPERSTRUCTURE ENDS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a260(E)	40	#5	25'-0"	
a261(E)	40	#5	27'-6"	
a262(E)	8	#5	23'-6"	
a263(E)	8	#5	26'-0"	
d250(E)	26	#4	4'-7"	
d201(E)	26	#5	3'-5"	
d202(E)	8	#4	2'-1"	
x250(E)	80	#5	6'-7"	
x251(E)	80	#5	5'-9"	
Concrete Removal			Cu. Yd.	12.7
Concrete Superstructure			Cu. Yd.	55.6
Reinforcement Bars, Epoxy Coated			Pound	3830
Bar Splicers			Each	48

MODEL: Default
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	CHECKED - AS	REVISED -		
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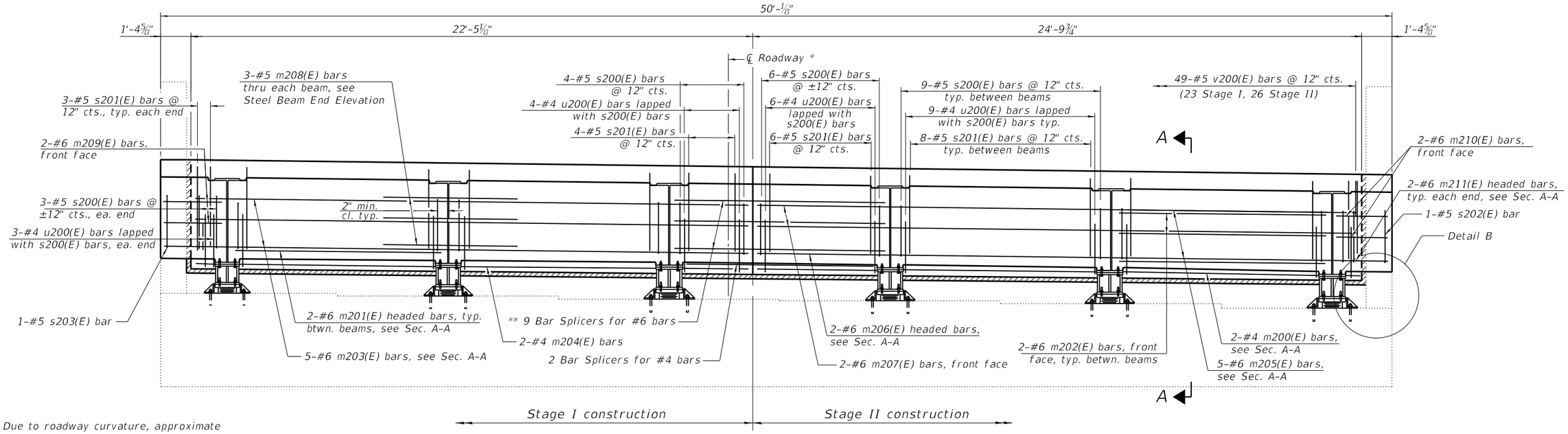
PLOT DATE = 11/17/2020 - 6:53:19 PM	CHECKED - JTH	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	105
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

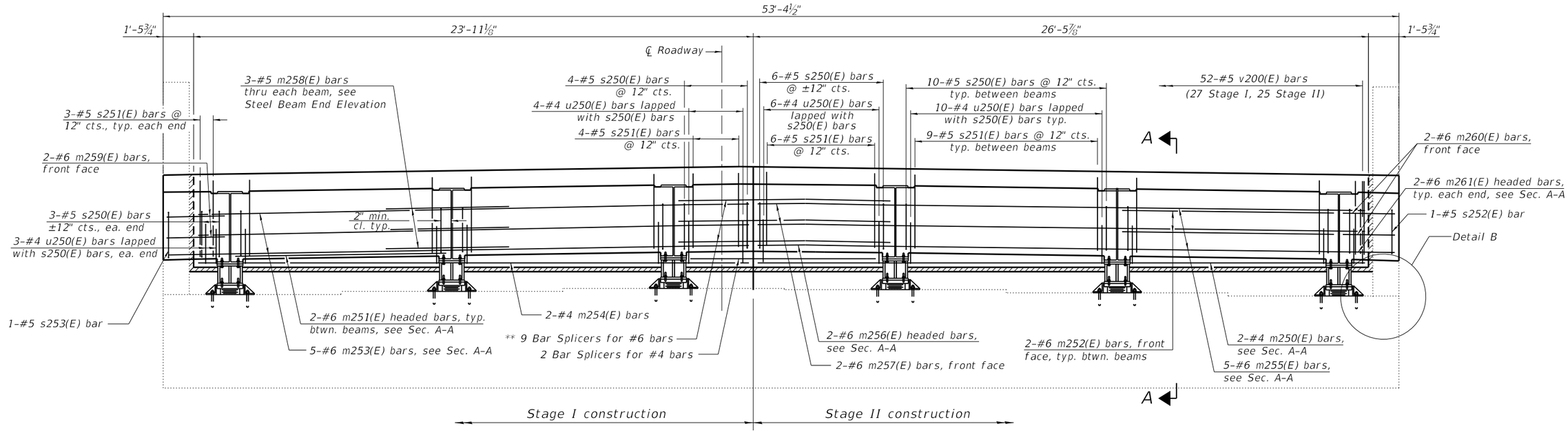


* Due to roadway curvature, approximate location shown.

** Bar Splicers shall act as bars when length is less than required lap length. See Sheet 16 of 38.

DIAPHRAGM ELEVATION AT ABUTMENT SN 064-0020

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar



DIAPHRAGM ELEVATION AT ABUTMENT SN 064-0021

SN 064-0021 east abutment shown, SN 064-0021 west abutment similar

Note:
See Sheet 9 of 38 for additional diaphragm details and Bill of Material.

MODEL: Default
FILE NAME: L:\DOT\190610\WO_1\Draw\Structures\SN 0020 & 0021\006_0020-0021_Diaphragm Details 1.dgn

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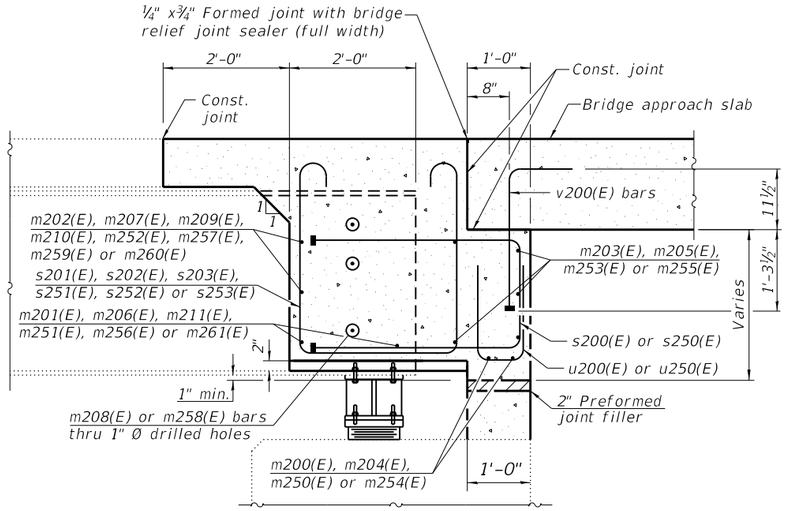
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/17/2020 - 6:53:22 PM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

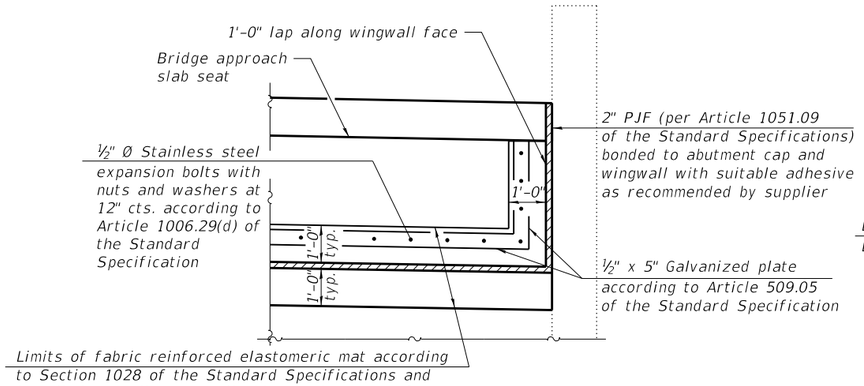
DIAPHRAGMS
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 8 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	106
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



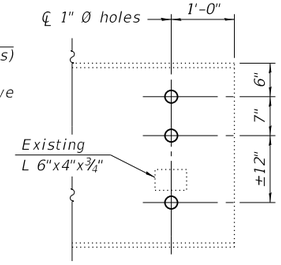
SECTION A-A

(Dimensions measured at right angles)

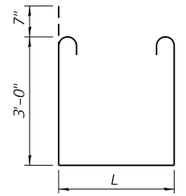


ELEVATION

(Looking at back of abutment)

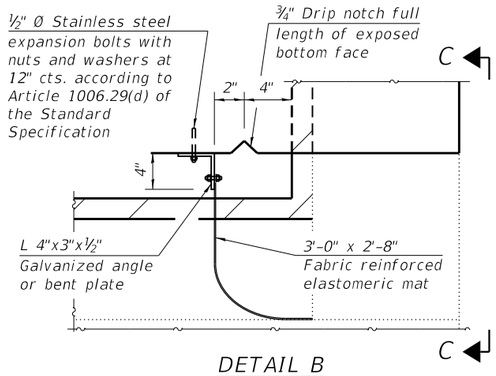


STEEL BEAM END ELEVATION

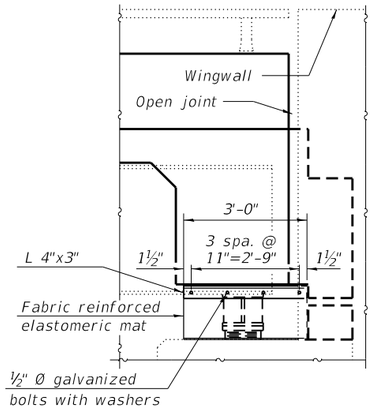


Bar s201(E), s202(E), s203(E), s251(E), s252(E) & s253(E)

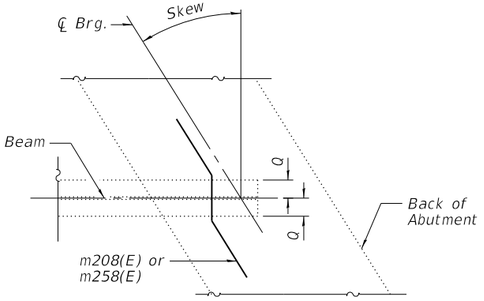
Bar	L
s201(E)	3'-0"
s202(E)	1'-9"
s203(E)	2'-10"
s251(E)	3'-2"
s252(E)	1'-9"
s253(E)	3'-0"



DETAIL B



SECTION C-C

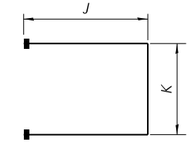


PARTIAL PLAN AT BEAMS

(Showing bottom flange of beam)

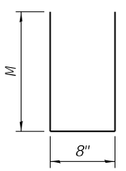
SN	Skew	Q
064-0020	32°54'07"	5¾"
064-0021	38°05'30"	6"

Bar	J	K
s200(E)	4'-2"	1'-9"
s250(E)	4'-4"	1'-11"



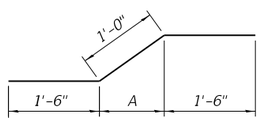
Bar s200(E) & s250(E)

Bar	M
u200(E)	1'-11"
u250(E)	2'-2"

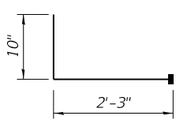


Bar u200(E) & u250(E)

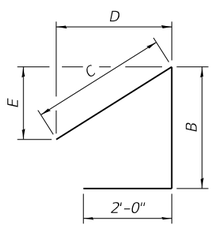
Bar	A
m208(E)	10⅛"
m258(E)	9½"



Bar m208(E) & m258(E)



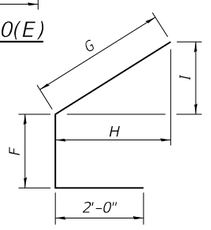
Bar v200(E)



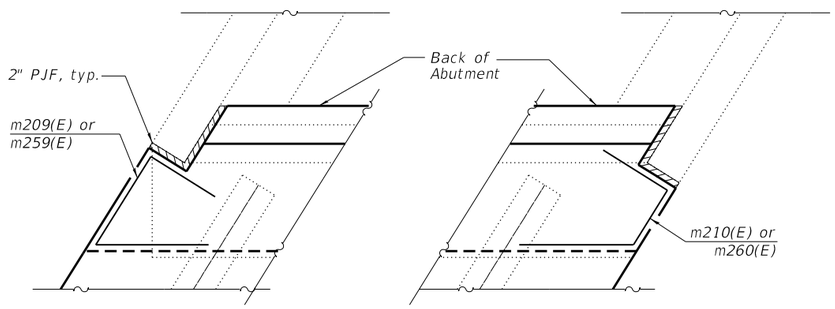
Bar m209(E) & m259(E)

Bar	B	C	D	E
m209(E)	2'-10"	3'-2"	2'-7⅞"	1'-8⅝"
m259(E)	3'-0"	3'-4"	2'-7½"	2'-⅝"

Bar	F	G	H	I
m210(E)	1'-9"	3'-2"	2'-7⅞"	1'-8⅝"
m260(E)	1'-9"	3'-4"	2'-7½"	2'-⅝"



Bar m210(E) & m260(E)



PARTIAL PLAN

SN 064-0020
TWO DIAPHRAGMS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
m200(E)	4	#4	24'-6"	
m201(E)	16	#6	8'-2"	
m202(E)	16	#6	8'-2"	
m203(E)	10	#6	22'-0"	
m204(E)	4	#4	22'-0"	
m205(E)	10	#6	24'-6"	
m206(E)	4	#6	5'-1"	
m207(E)	4	#6	5'-1"	
m208(E)	36	#5	4'-0"	
m209(E)	4	#6	8'-0"	
m210(E)	4	#6	6'-11"	
m211(E)	8	#6	3'-1"	
s200(E)	104	#5	10'-1"	
s201(E)	96	#5	10'-2"	
s202(E)	2	#5	8'-11"	
s203(E)	2	#5	10'-0"	
u200(E)	104	#4	4'-6"	
v200(E)	98	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	4340
Bar Splicers			Each	22

SN 064-0021
TWO DIAPHRAGMS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
m250(E)	4	#4	26'-1"	
m251(E)	16	#6	8'-8"	
m252(E)	16	#6	8'-8"	
m253(E)	10	#6	23'-6"	
m254(E)	4	#4	23'-6"	
m255(E)	10	#6	26'-1"	
m256(E)	4	#6	5'-5"	
m257(E)	4	#6	5'-5"	
m258(E)	36	#5	4'-0"	
m259(E)	4	#6	8'-4"	
m260(E)	4	#6	7'-1"	
m261(E)	8	#6	3'-4"	
s250(E)	112	#5	10'-7"	
s251(E)	104	#5	10'-8"	
s252(E)	2	#5	9'-3"	
s253(E)	2	#5	10'-6"	
u250(E)	112	#4	5'-0"	
v200(E)	104	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	4790
Bar Splicers			Each	22

Notes:

Cost of fabric reinforced elastomeric mats, galvanized angles and plates, stainless steel expansion bolts with nuts and washers, galvanized bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706.

Cost included with Reinforcement Bars, Epoxy Coated.

The s200(E), s201(E), s202(E), s203(E), s250(E), s251(E), s252(E), s253(E), u200(E), u250(E) and v200(E) bars are placed parallel to beams and spaced at right angles to beams.

Concrete Superstructure quantity included in quantity shown on Sheet 6 and 7 of 38.

MODEL: Default
FILE NAME: L:\DOT\1900810\WO_1\Draw\Structures\SN 0020 & 0021\090_0020-0021_Diaphragm Details & Z.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 9 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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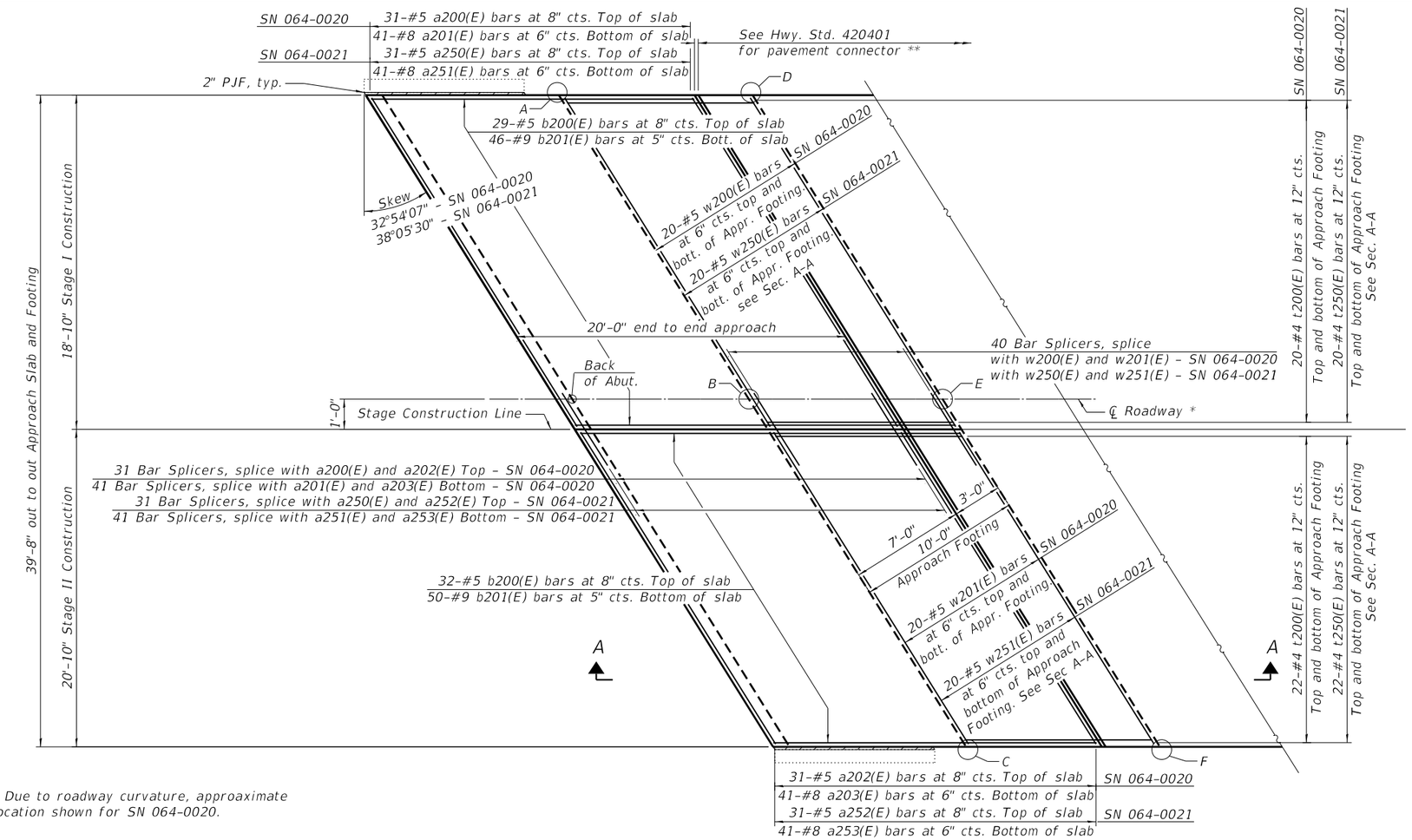
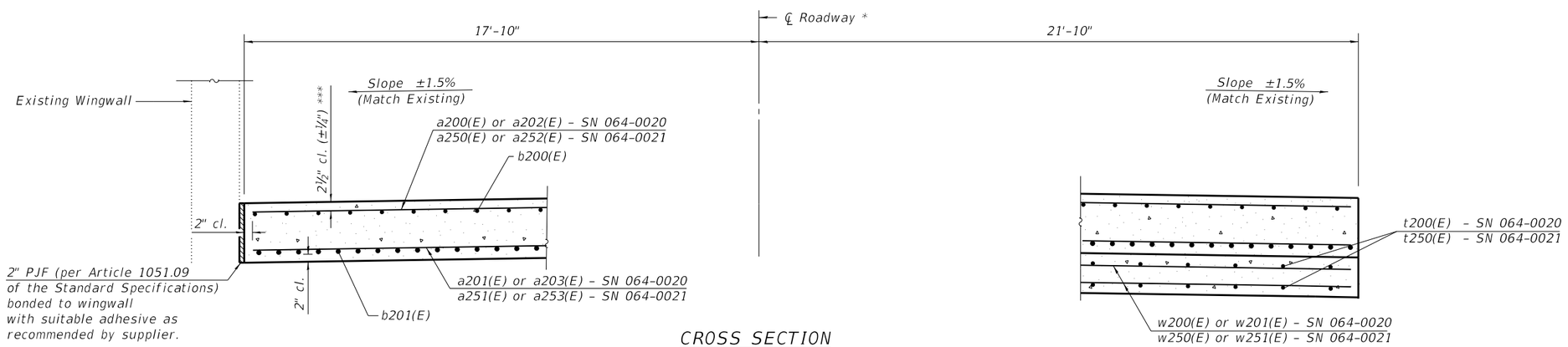
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



* Due to roadway curvature, approximate location shown for SN 064-0020.

PLAN

SN 064-0020 west approach slab shown, SN 064-0020 east approach slab similar
SN 064-0021 east approach slab shown, SN 064-0021 west approach slab similar



*** Prior to grinding.

NEAR ABUTMENT

CROSS SECTION

(Looking in the direction of traffic)

AT APPROACH FOOTING

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

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

S.N. 064-0020				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

S.N. 064-0021				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

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

See Section A-A on Sheet 11 of 38.

MODEL: Default
FILE NAME: L:\IDOT\1900891\WO_1\DrawStructures\SN 0020 & 0021\010_0020-0021_Approach Slab Detail 1.dgn

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	CHECKED - AS	REVISED -			
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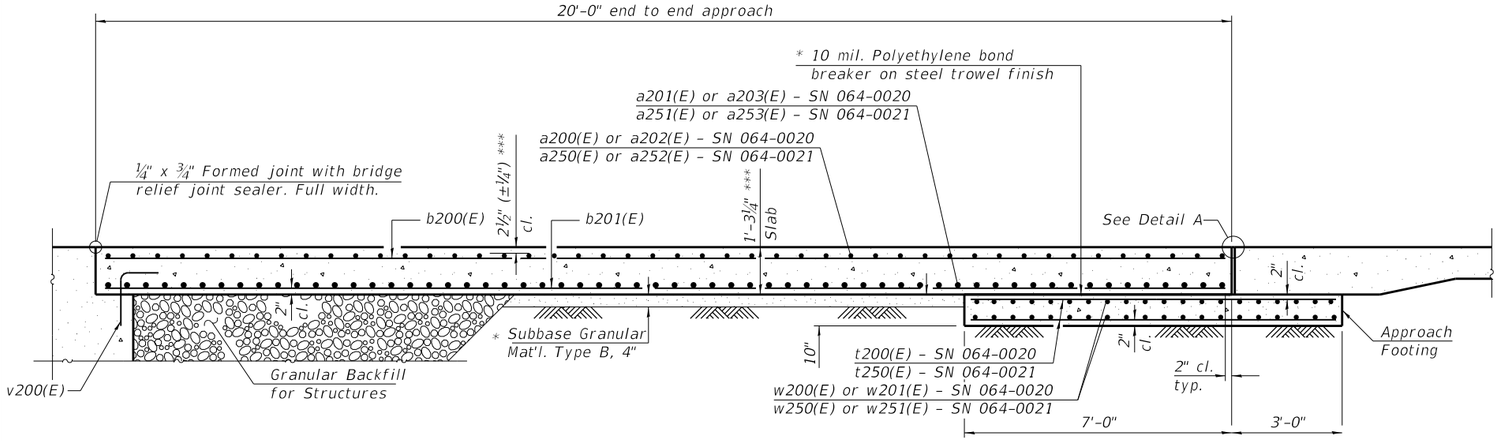
PLOT DATE = 11/17/2020 - 6:53:27 PM	CHECKED - JTH	REVISED -		SHEET 10 OF 38 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	108
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

Notes:

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

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

Approach footing concrete shall be paid for as Concrete Structures.

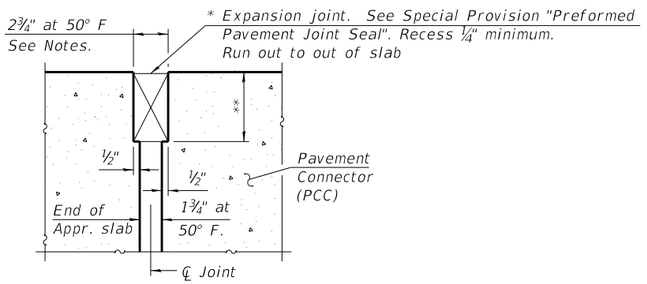
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 38.

TWO APPROACHES SN 064-0020 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a200(E)	62	#5	22'-1"	——
a201(E)	82	#8	22'-1"	——
a202(E)	62	#5	24'-6"	——
a203(E)	82	#8	24'-6"	——
b200(E)	122	#5	19'-8"	——
b201(E)	192	#9	19'-8"	——
t200(E)	168	#4	11'-7"	——
w200(E)	80	#5	22'-1"	——
w201(E)	80	#5	24'-6"	——
Concrete Structures			Cu. Yd.	29.2
Concrete Superstructure (Approach Slab)			Cu. Yd.	74.7
Reinforcement Bars, Epoxy Coated			Pound	33740
Bar Splicers			Each	224



DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations.

*** Prior to grinding.

TWO APPROACHES SN 064-0021 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a250(E)	62	#5	23'-7"	——
a251(E)	82	#8	23'-7"	——
a252(E)	62	#5	26'-2"	——
a253(E)	82	#8	26'-2"	——
b200(E)	122	#5	19'-8"	——
b201(E)	192	#9	19'-8"	——
t250(E)	168	#4	12'-4"	——
w250(E)	80	#5	23'-7"	——
w251(E)	80	#5	26'-2"	——
Concrete Structures			Cu. Yd.	31.1
Concrete Superstructure (Approach Slab)			Cu. Yd.	74.7
Reinforcement Bars, Epoxy Coated			Pound	34990
Bar Splicers			Each	224

MODEL: Default
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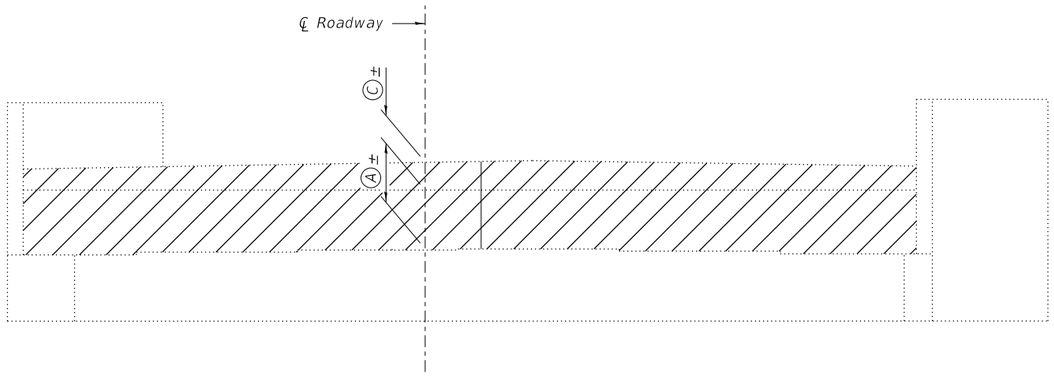
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 11 OF 38 SHEETS

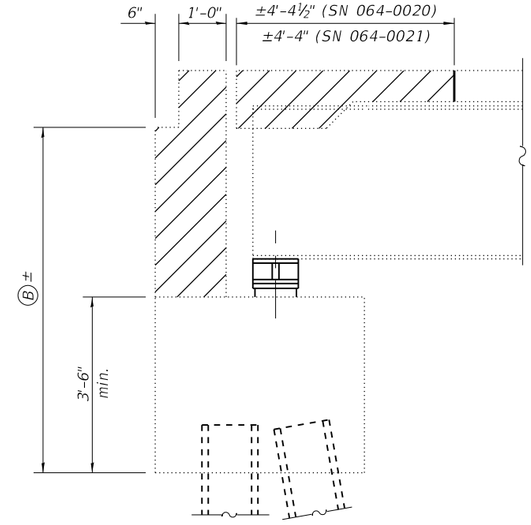
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	109
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



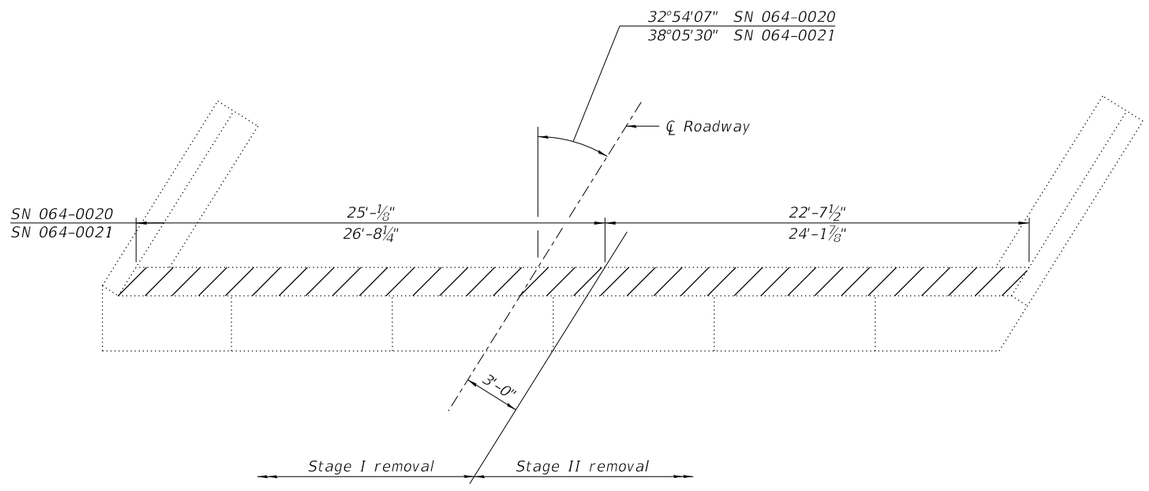
ELEVATION

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar
SN 064-0021 east abutment shown, SN 064-0021 west abutment similar

Location	Dim. A	Dim. B	Dim. C
064-0020 – West Abutment	3'-1½"	7'-3¾"	1'-4½"
064-0020 – East Abutment	3'-2¼"	7'-3¾"	1'-4½"
064-0021 – West Abutment	3'-4½"	7'-0"	1'-6¾"
064-0021 – East Abutment	3'-3"	6'-11¼"	1'-6¾"



SECTION THRU ABUTMENT



PLAN

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar
SN 064-0021 east abutment shown, SN 064-0021 west abutment similar

LEGEND

Concrete Removal

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	45.3

Concrete Removal quantity for deck concrete included in Bill of Material on sheet 6 and 7 of 38.

MODEL: Default
FILE NAME: L:\IDOT\1906610\WO_1\Drawn\Structures\SN 0020 & 0021\012_0020-0021_Abutment Removal.dgn

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	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		
PLOT DATE = 11/17/2020 - 6:53:30 PM	CHECKED - JTH	REVISED -		SHEET 12 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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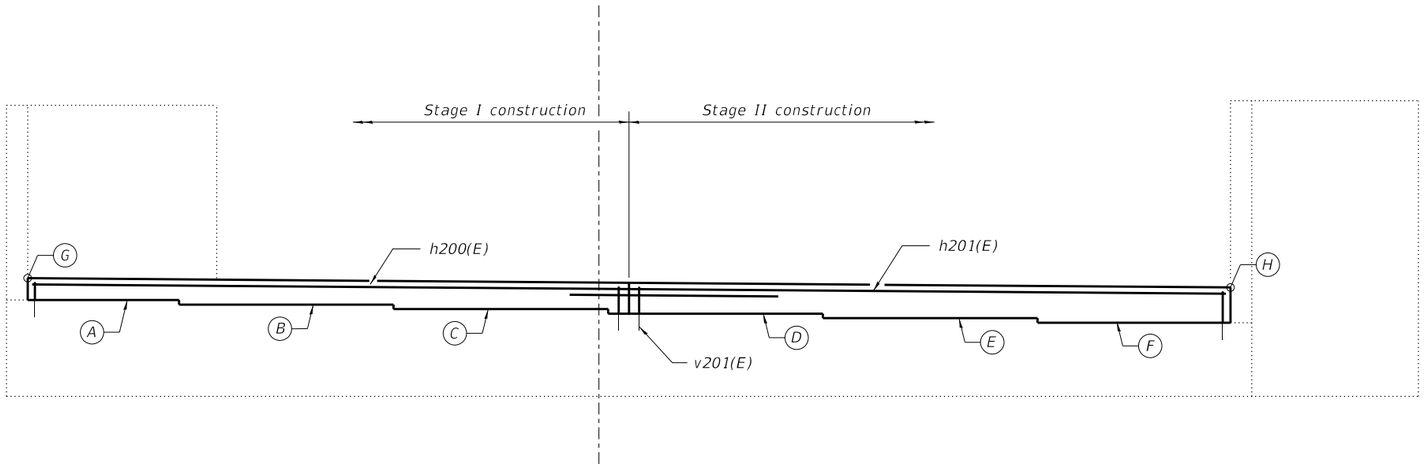
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

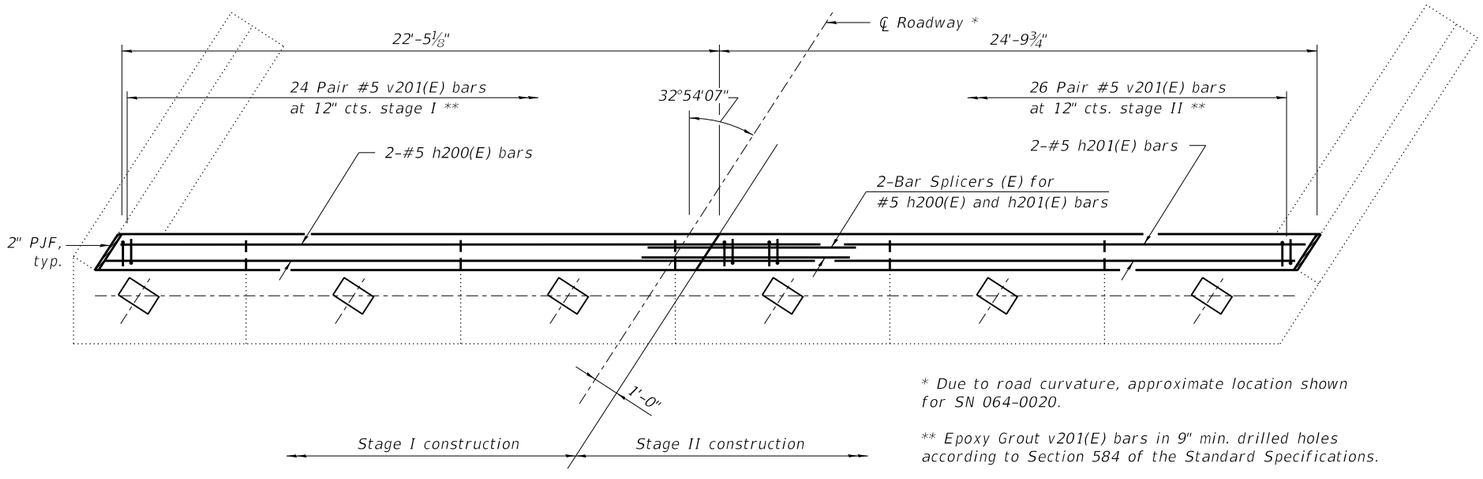


ELEVATION

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar

Location	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G	Elev. H
064-0020 - West Abutment	391.55	391.28	391.01	390.74	390.47	390.20	392.43	391.09
064-0020 - East Abutment	392.59	392.32	392.05	391.78	391.51	391.24	393.49	392.13

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

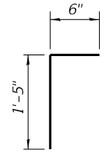


* Due to road curvature, approximate location shown for SN 064-0020.

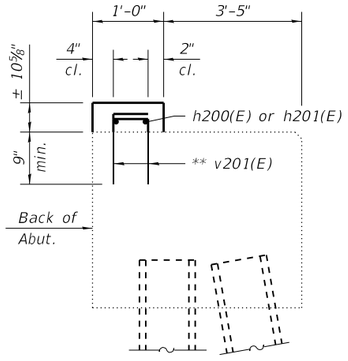
** Epoxy Grout v201(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.

PLAN

SN 064-0020 west abutment shown, SN 064-0020 east abutment similar



Bar v201(E)



SECTION THRU EXISTING PILE CAP

TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h200(E)	4	#5	22'-1"	
h201(E)	4	#5	24'-6"	
v201(E)	196	#5	1'-11"	
Concrete Structures			Cu. Yd.	3.1
Reinforcement Bars, Epoxy-Coated			Pound	590
Bar Splicers			Each	4

MODEL: Default
FILE NAME: C:\DOT\190661616WO_1\Draw\Structures\SN 0020 & 0021\013_0020-0021_Abutment Details 0020.dgn

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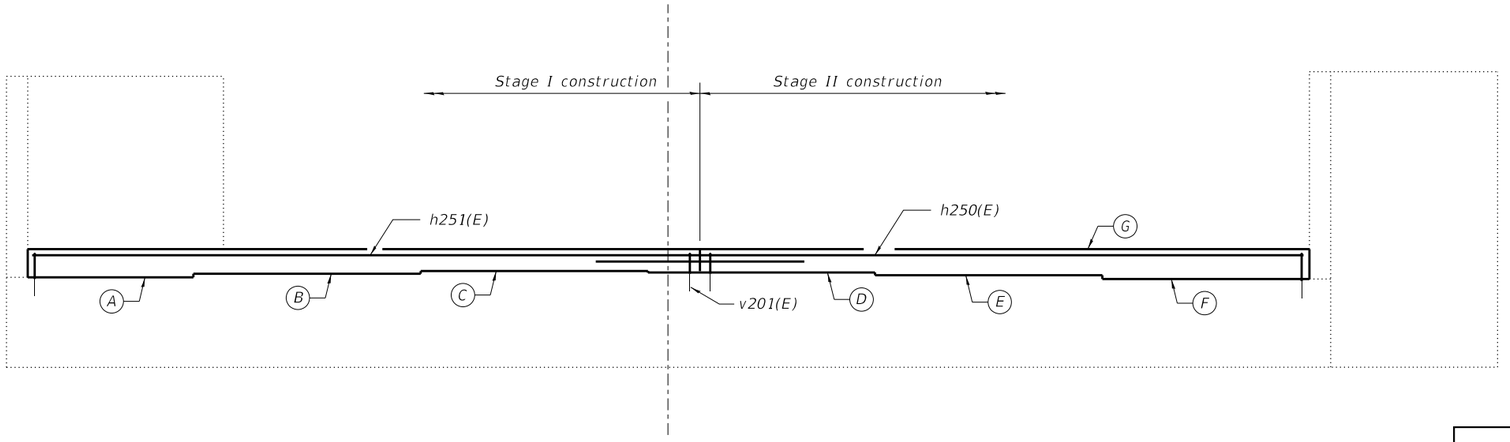
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS - SN. 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 13 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	111
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

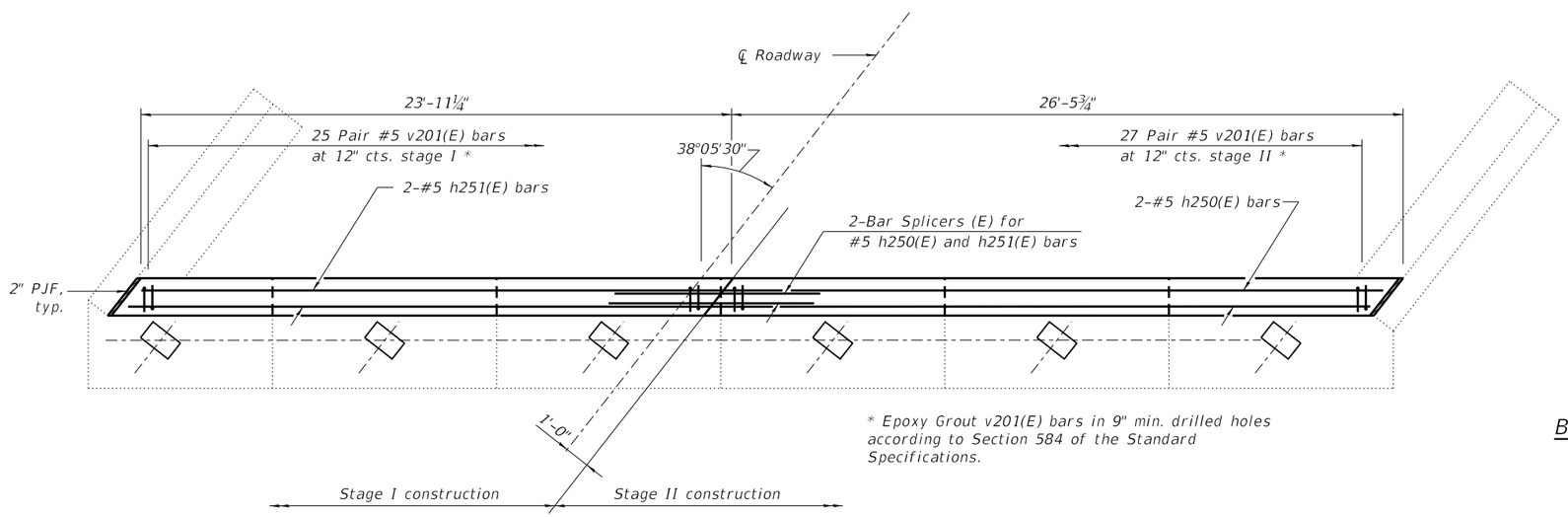


ELEVATION

SN 064-0021 east abutment shown, SN 064-0021 west abutment similar

Location	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G
064-0021 - West Abutment	390.71	390.85	390.96	390.90	390.79	390.64	391.52
064-0021 - East Abutment	391.12	391.26	391.37	391.31	391.20	391.05	391.93

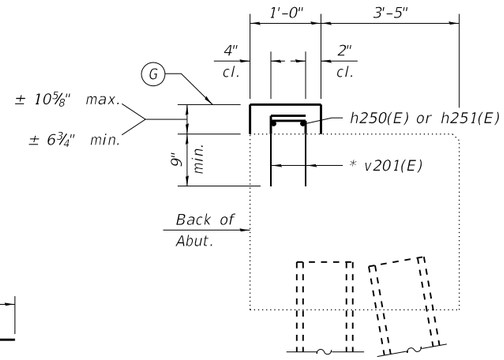
Elevations are based on existng plans and are provided as a reference point. Actual elevations and dimensions in the field may vary.



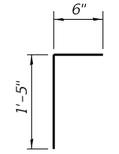
* Epoxy Grout v201(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.

PLAN

SN 064-0021 east abutment shown, SN 064-0021 west abutment similar



SECTION THRU EXISTING PILE CAP



Bar v201(E)

TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h250(E)	4	#5	26'-2"	
h251(E)	4	#5	23'-7"	
v201(E)	208	#5	1'-11"	
Concrete Structures			Cu. Yd.	2.7
Reinforcement Bars, Epoxy-Coated			Pound	630
Bar Splicers			Each	4

MODEL: Default
FILE NAME: L:\DOT\1906610\WO_10\raw\Structures\SN 0020 & 0021\01\4_0020-0021_Abutment Details 0021.dgn

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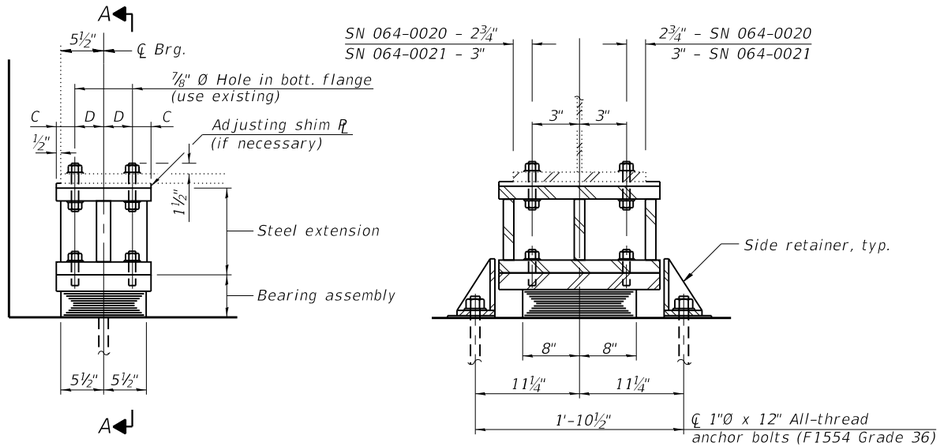
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT DETAILS - NO. 064-0021
STRUCTURE NO. 064-0020 (W.B.) & NO. 064-0021 (E.B.)
SHEET 14 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	112
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

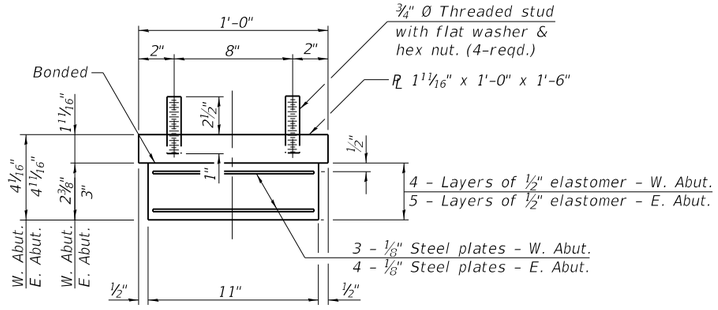


ELEVATION AT ABUT.

SECTION A-A

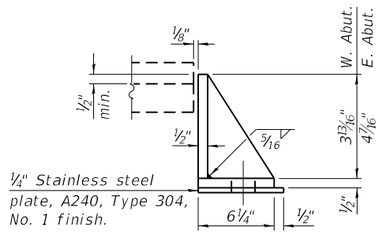
℄ 1"Ø x 12" All-thread anchor bolts (F1554 Grade 36) with 2¼" x 2¼" x 5/16" PL washer under nut.

TYPE I ELASTOMERIC EXP. BRG.



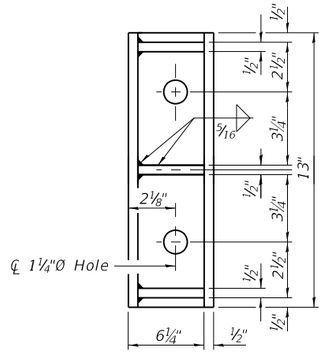
BEARING ASSEMBLY

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



SIDE RETAINER

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



INTERIOR BEAM REACTION TABLE

	Existing Service Loads	Proposed Service Loads
R DL (k)	18.9	45.4
R DW (k)	3.7	5.5
R L (K)	37.7 (HS20)	69.9 (HL-93)
Imp (K)	11.3	16.5
R Total (K)	71.5	137.3

Notes:

New steel extension, shim plates and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 37 tons.

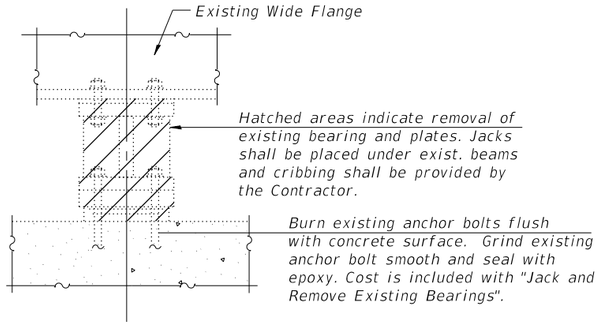
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu of ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of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

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

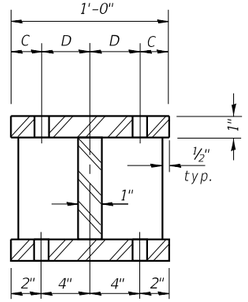
Cost of Side retainers and Stainless Steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

BILL OF MATERIAL

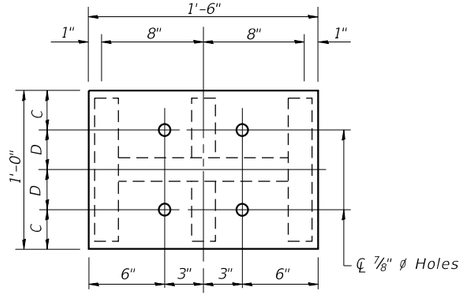
Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	5260
Elastomeric Bearing Assembly, Type I	Each	24
Anchor Bolts, 1"	Each	96
Jack and Remove Existing Bearings	Each	24



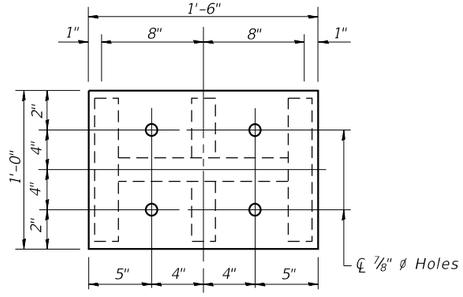
BEARING REMOVAL



SECTION B-B

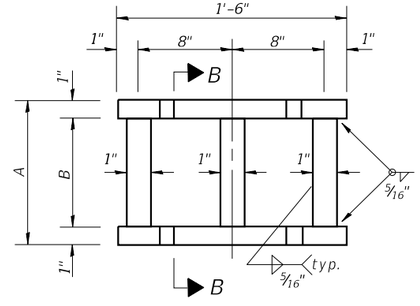


PLAN TOP-PLATE

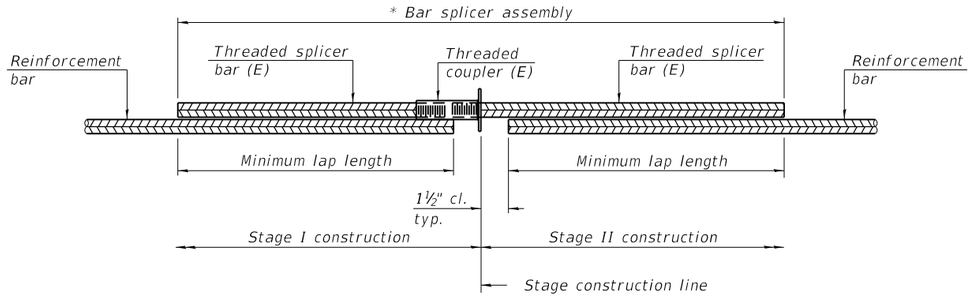


PLAN BOTTOM-PLATE

Location	A	B	C	D
064-0020 W. Abutment	9 9/16"	7 9/16"	4"	2"
064-0020 E. Abutment	8 15/16"	6 15/16"	3¾"	2¼"
064-0021 W. Abutment	9 9/16"	7 9/16"	4"	2"
064-0021 E. Abutment	8 15/16"	6 15/16"	3 5/8"	2 3/8"



STEEL EXTENSION



STANDARD BAR SPLICER ASSEMBLY PLAN

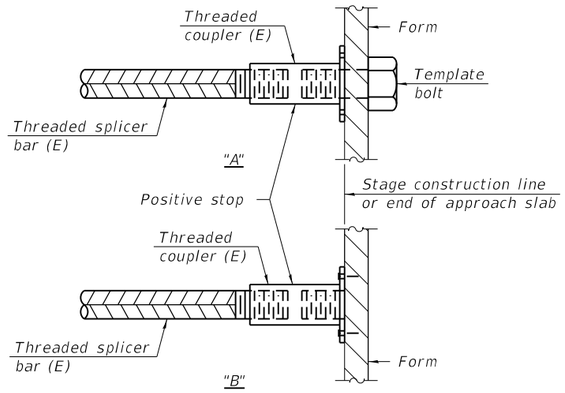
(All components shall be provided from one supplier)

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

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

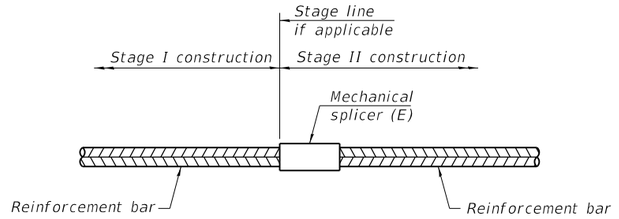
Location	Bar size	No. assemblies required	Minimum lap length
064-0020 W. Abut. Superstructure	#5	24	3'-6"
064-0020 W. Abut. Diaphragm	#6	5	4'-0"
064-0020 W. Abut. Diaphragm	#6	2	**
064-0020 W. Abut. Diaphragm	#6	2	***
064-0020 W. Abut. Diaphragm	#4	2	2'-5"
064-0020 W. Approach Slab	#5	31	3'-6"
064-0020 W. Approach Slab	#8	41	6'-9"
064-0020 W. Approach Slab Footing	#5	40	3'-6"
064-0020 W. Abut.	#5	2	3'-6"
064-0020 E. Abut. Superstructure	#5	24	3'-6"
064-0020 E. Abut. Diaphragm	#6	5	4'-0"
064-0020 E. Abut. Diaphragm	#6	2	**
064-0020 E. Abut. Diaphragm	#6	2	***
064-0020 E. Abut. Diaphragm	#4	2	2'-5"
064-0020 E. Approach Slab	#5	31	3'-6"
064-0020 E. Approach Slab	#8	41	6'-9"
064-0020 E. Approach Slab Footing	#5	40	3'-6"
064-0020 E. Abut.	#5	2	3'-6"
064-0021 W. Abut. Superstructure	#5	24	3'-6"
064-0021 W. Abut. Diaphragm	#6	5	4'-0"
064-0021 W. Abut. Diaphragm	#6	2	****
064-0021 W. Abut. Diaphragm	#6	2	*****
064-0021 W. Abut. Diaphragm	#4	2	2'-5"
064-0021 W. Approach Slab	#5	31	3'-6"
064-0021 W. Approach Slab	#8	41	6'-9"
064-0021 W. Approach Slab Footing	#5	40	3'-6"
064-0021 W. Abut.	#5	2	3'-6"
064-0021 E. Abut. Superstructure	#5	24	3'-6"
064-0021 E. Abut. Diaphragm	#6	5	4'-0"
064-0021 E. Abut. Diaphragm	#6	2	****
064-0021 E. Abut. Diaphragm	#6	2	*****
064-0021 E. Abut. Diaphragm	#4	2	2'-5"
064-0021 E. Approach Slab	#5	31	3'-6"
064-0021 E. Approach Slab	#8	41	6'-9"
064-0021 E. Approach Slab Footing	#5	40	3'-6"
064-0021 E. Abut.	#5	2	3'-6"

** 4'-0" minimum lap on Stage II side, 2'-9" bar on Stage I side.
*** 4'-0" minimum lap on Stage II side, 2'-9" headed bar on Stage I side.
**** 4'-0" minimum lap on Stage II side, 2'-11" bar on Stage I side.
***** 4'-0" minimum lap on Stage II side, 2'-11" headed bar on Stage I side.



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1 1-1-2020

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 16 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	114
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

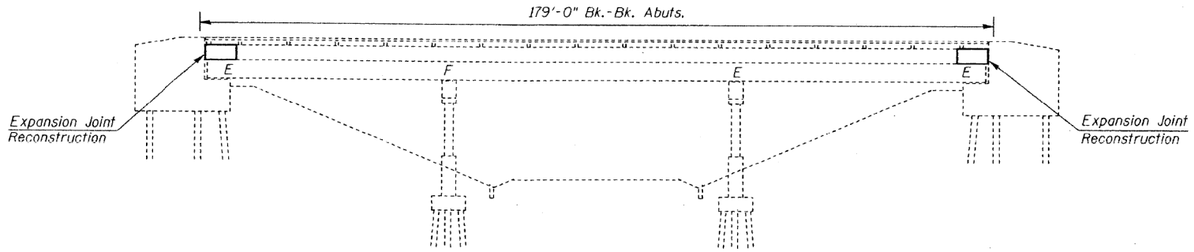
BM: #36A - "X" in top concrete whistle post 110' Lt. W.B. Lane Sta. 1327+50 Elev. 370.25

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	154
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO.
SHEETS

* 64(1.2.2-1.3-1.3)RS-1 BSMART FY2002-2

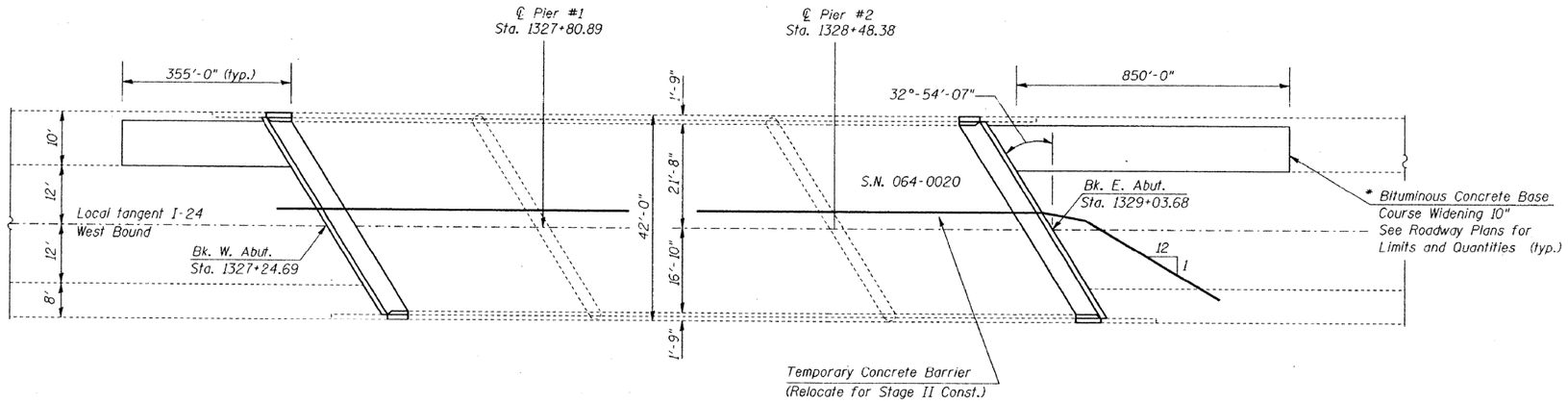


ELEVATION

Traffic control for these structures shall follow Standard 701402

TOTAL BILL OF MATERIAL

ITEM	UNIT	064-0020
Silicone Joint Sealer, 1½"	FOOT	50
Polymer Concrete	CU FT	7.0
Bridge Deck Microsilica Concrete Overlay 2¼"	SQ YD	729
Bar Splicers	EACH	24
Concrete Bridge Deck Scarification (1/2")	SQ YD	729
Deck Slab Repair (Partial)	SQ YD	58.3
Concrete Superstructure	CU YD	13.9
Concrete Removal	CU YD	12.7
Bridge Deck Grooving	SQ YD	710
Reinforcement Bars, Epoxy Coated	POUND	1690
Temporary Concrete Barrier	FOOT	400
Relocate Temporary Concrete Barrier	FOOT	416
Temporary Concrete Barrier, Terminal Section	EACH	1
Elastomeric Bearing Assembly, Type I	EACH	12
Elastomeric Bearing Assembly, Type II	EACH	6
Jack and Remove Existing Bearings	EACH	18
Furnishing and Erecting Structural Steel	POUND	6740
Plug Existing Deck Drain	EACH	8
Floor Drain Extension	EACH	8
Silicone Joint Sealer, 2½"	FOOT	50
Structural Steel Removal	POUND	3410



PLAN

* The Contractor will be allowed the option of placing P.C.C. Pavement in lieu of the Bituminous Concrete used in preparing shoulders for staged traffic. There will be no additional compenstation if the P.C.C. Pavement is used. Shoulder work must be completed before the barrier wall is erected.

CONSTRUCTION SEQUENCE

1. SHOULDER RECONSTRUCTION
2. MILL STAGE I
3. BUILD STAGE I
4. MILL STAGE II
5. BUILD STAGE II

DESIGN STRESSES

FIELD UNITS

New Construction

f'_c = 3500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (Structural steel)

Existing Structure

f'_c = 1400 psi (super, sub)
f_s = 20,000 psi (struct.) A36
f_s = 20,000 psi (reinforcement)

SCOPE OF WORK

Replace shoulder with bituminous concrete base course widening.
Scarify existing deck surface.
Remove concrete at abutment joints.
Reconstruct expansion joints with silicone sealer and polymer concrete nosings.
Partial depth patching, new microsilica overlay.
Eliminate drains within 10' of any substructure element.
Extend drains to remain in use.
Replace bearings and diaphragms at the abutments.

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

FOR INFORMATION ONLY

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER I.C. RAILROAD
SECTION 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2
S.N. 064-0020 (W.B.)
MASSAC COUNTY

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 17 OF 38 SHEETS

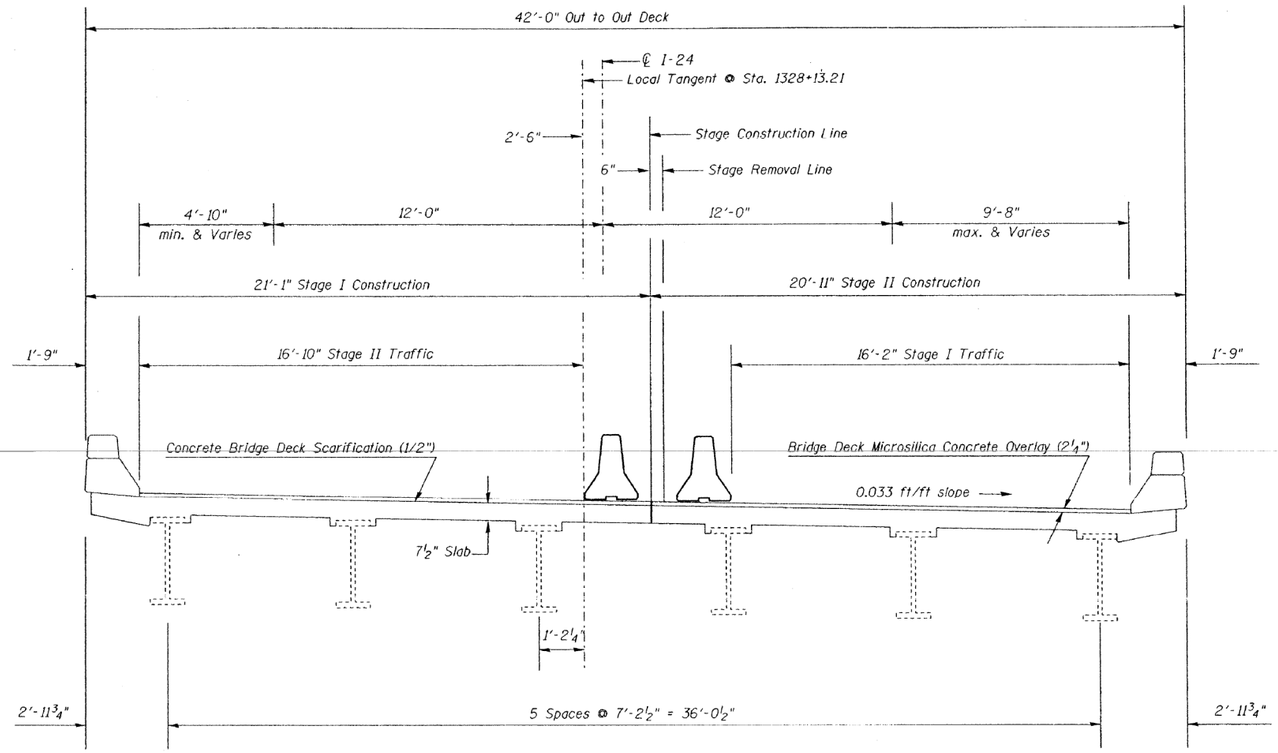
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	115
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	155
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO.
SHEETS

* 641.2.2-1.3-1.3)RS-1 BSMART FY2002-2

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



TYPICAL CROSS SECTION

Looking in the Direction of Traffic
S.N. 064-0020

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

GENERAL NOTES

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

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

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

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

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

The inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the Acrylic finish coat shall be *
See Special Provision for "Cleaning and Painting New Metal Structures".

Prior to pouring the new concrete, all loose rust, loose mill scale, and other loose potentially detrimental foreign material shall be removed from the surfaces of the beams or girders in contact with concrete. The cost of this work will be included in the pay item covering removal of the existing concrete. All heavy rust and other tightly adhered potentially detrimental foreign matter shall also be removed from the surfaces of the beams or girders in contact with concrete. Tightly adhered paint may remain unless otherwise noted. This removal shall be accomplished by methods that will not damage the steel. The cost of this work will be paid for according to Article 109.04 of the Standard Specifications.

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at a ambient temperature other than 50°F.

All structural steel shall conform to AASHTO M 270 Gr. 36, unless otherwise noted.

*** Interstate Green, Munsell # 7.5G 4/8**

CROSS SECTION, GENERAL NOTES
S.N. 064-0020 (W.B.)

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: L:\DOT\1908610\WO_1\Draw\Structure\SN 0020 & 0021\018_0020-0021_Existing Plans WB-002.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 18 OF 38 SHEETS

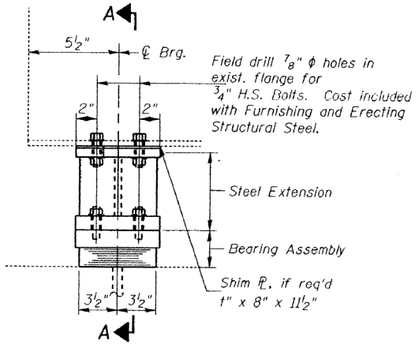
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	116
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

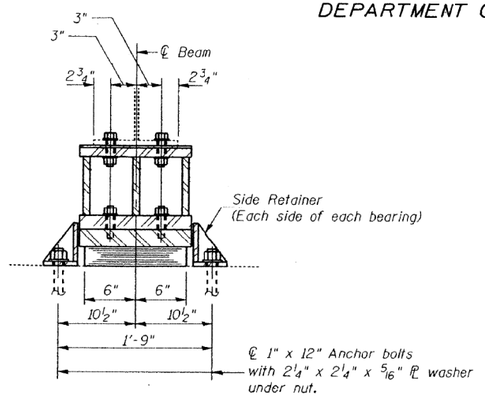
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	159
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO.
SHEETS

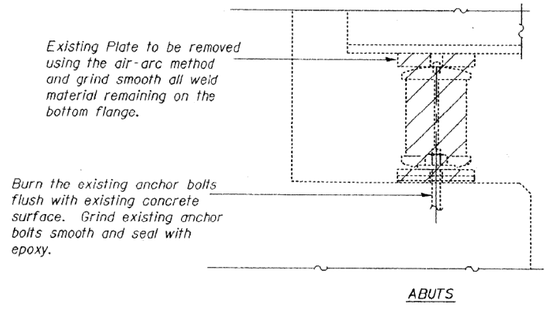
* 64(1.2.2-1.3-1.3)RS-1 BSMART FY2002-2



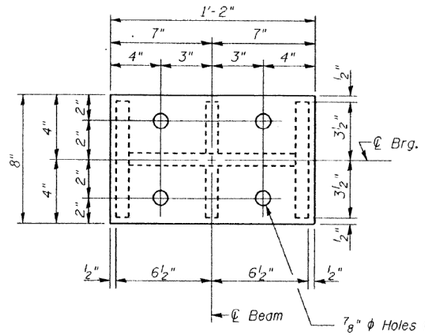
ELEVATION AT W. ABUT.



SECTION A-A



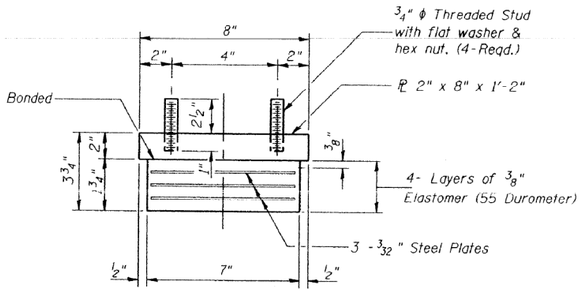
EXISTING BEARING REMOVAL DETAIL
Cost is included with Jack and Remove Existing Bearings



PLAN-TOP & BOTTOM PLATE

TYPE I ELASTOMERIC EXP. BRG.

Notes: See sheet 172 for Anchor Bolt installation.

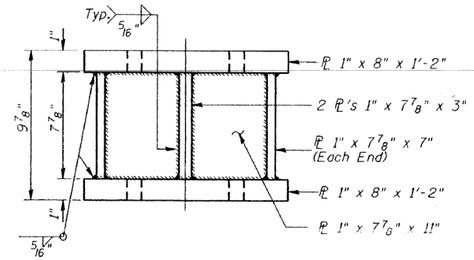


BEARING ASSEMBLY

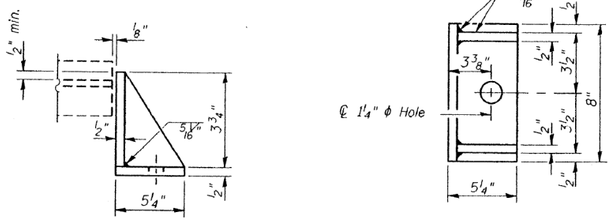
Note: Shim plates shall not be placed under Bearing Assembly.

GIRDER REACTIONS

RL	(K)	22.60
Rt	(K)	37.30
Imp.	(K)	11.19
R (Total)	(K)	71.09



STEEL EXTENSION AT WEST ABUT.



SIDE RETAINER

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

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
The minimum jack capacity required is 35 Tons.
New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".
Hatched areas indicate Jack and Remove Existing Bearings.
Existing diaphragm removal and new diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

WEST ABUTMENT
TYPE I ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0020 (W.B.)

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: L:\IDOT\190861\IWO_1\Dgn\Structures\SN 0020 & 0021\019_0020-0021_Existing Plans WB-003.dgn

CMT
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USER NAME = Misael Cordova		DESIGNED - MAC		REVISED -	
		CHECKED - AS		REVISED -	
PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 6:13:03 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 19 OF 38 SHEETS

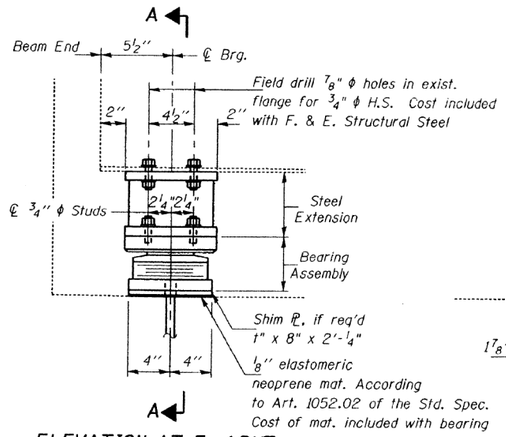
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	117
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

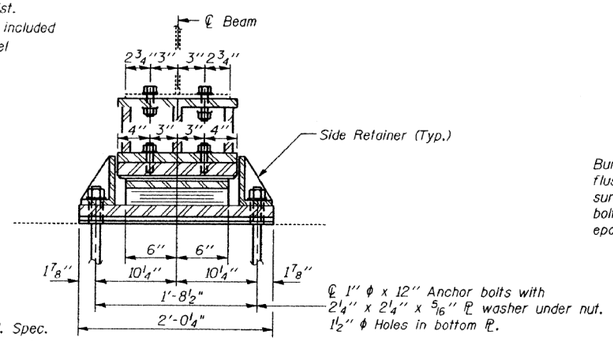
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	160
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. SHEETS

* 641(1.2,2-1.3-1.3)RS-1 BSMART FY2002-2



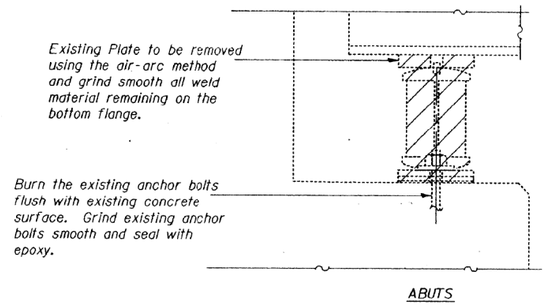
ELEVATION AT E. ABUT.



SECTION A-C

TYPE II TFE ELASTOMERIC EXP. BRG.

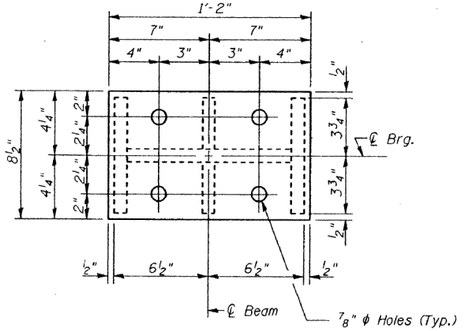
Notes: See sheet 172 for Anchor Bolt installation.



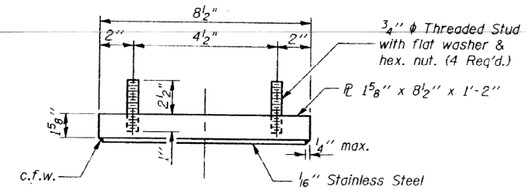
ABUTS

EXISTING BEARING REMOVAL DETAIL

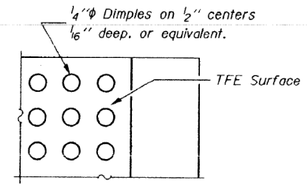
Cost is included with Jack and Remove Existing Bearings



PLAN-TOP & BOTTOM PLATE



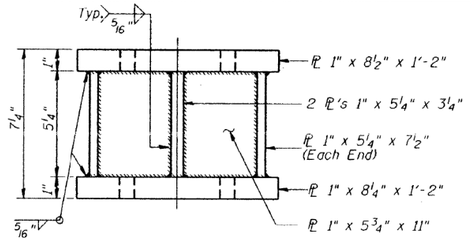
TOP BEARING ASSEMBLY



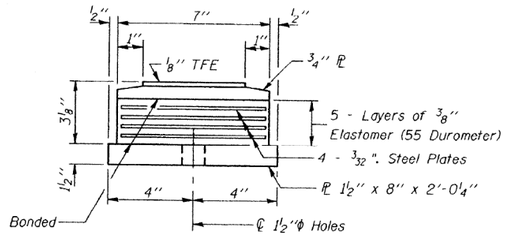
PLAN-TFE SURFACE

Notes:

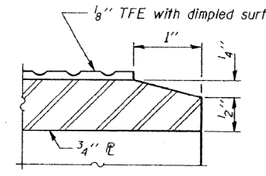
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
The minimum jack capacity required is 35 Tons.
New steel extensions, side retainers, connection bolts, anchor bolts and any shim are included in "Furnishing and Erecting Structural Steel".
Hatched areas indicate Jack and Remove Existing Bearings.
Existing diaphragm removal and new diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.



STEEL EXTENSION AT EAST ABUT.



BOTTOM BEARING ASSEMBLY



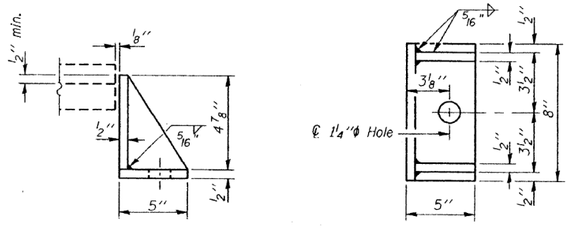
Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

GIRDER REACTIONS

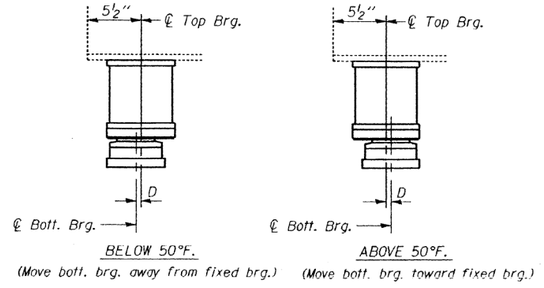
R℄	(K)	22.60
R℄	(K)	37.30
Imp.	(K)	11.19
R (Total)	(K)	71.09

SECTION THRU TFE



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6
Jack and Remove Existing Bearings	Each	6

EAST ABUTMENT
TYPE II ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0020 (W.B.)

FOR INFORMATION ONLY

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

MODEL: Default
FILE NAME: I:\DOT\1906610\WO_1\Draw\Structures\SN 0020 & 0021\020_0020-0021_Existing Plans WB-004.dgn

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USER NAME = Misael Cordova		DESIGNED - MAC		REVISED -	
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PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 6:13:09 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 20 OF 38 SHEETS

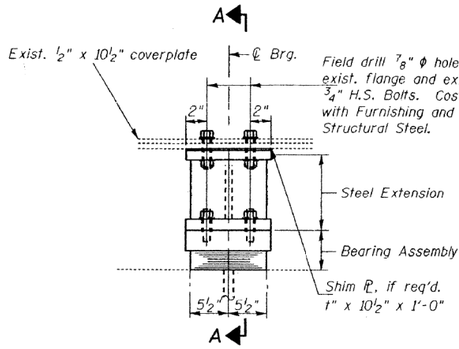
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	118
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

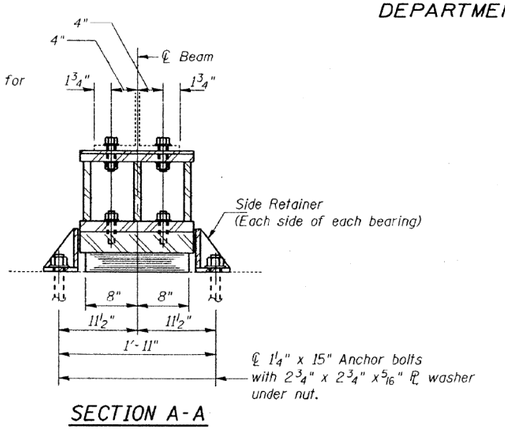
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	161
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO.
SHEETS

* 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2



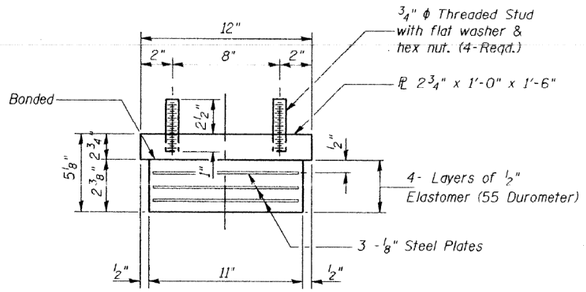
ELEVATION AT PIER #2



SECTION A-S

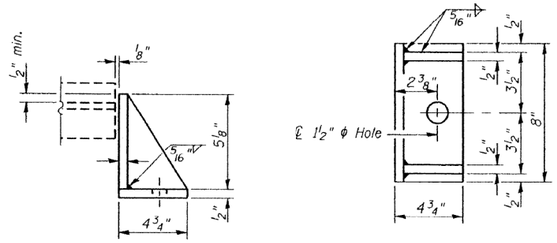
Notes: See sheet 172 for Anchor Bolt installation.

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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



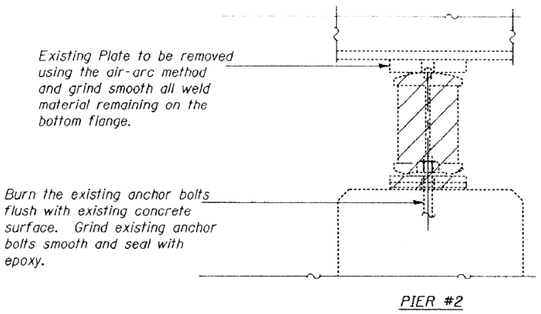
SIDE RETAINER

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

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

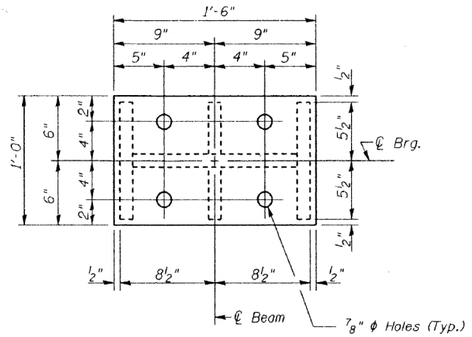
GIRDER REACTIONS

RP	(K)	76.70
RA	(K)	47.10
Imp.	(K)	14.13
R (Total)	(K)	137.93

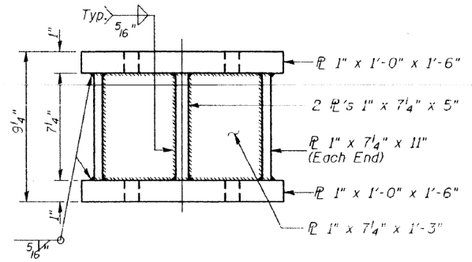


EXISTING BEARING REMOVAL DETAIL

Cost is included with Jack and Remove Existing Bearings



PLAN-TOP & BOTTOM PLATE



STEEL EXTENSION AT PIER #2

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 85 Tons.

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

PIER #2
TYPE I ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0020 (W.B.)

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: L:\DOT\1906610\WO_1\Draw\Structures\SN 0020 & 0021\021_0020-0021_Existing Plans WB-006.dgn

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USER NAME = Misael Cordova		DESIGNED - MAC		REVISED -	
		CHECKED - AS		REVISED -	
PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 6:13:15 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 21 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	119
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

B.M.= 36A-"X" in top concrete whistle post 110' Lt. W.B. Lane Sta. 1327+50 Elev. 370.25

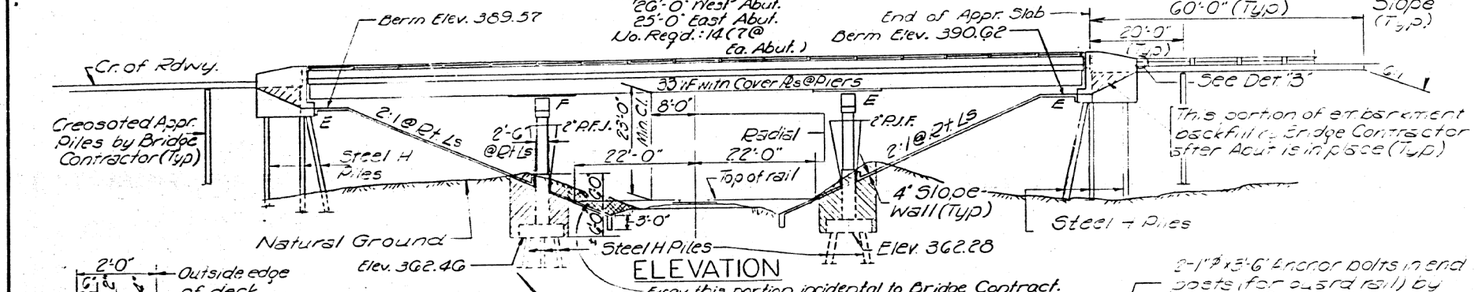
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
S.B.I. F.A.I. 24	64-2VB	MASSAC	79	35
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT- IG-74-1(19)28		

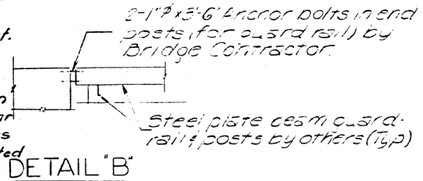
SHEET NO. 1
11 SHEETS

APPROACH PILE DATA

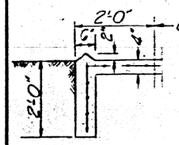
Type: Creosoted
Required Length:
26'-0" West Abut.
25'-0" East Abut.
No. Reqd.: 14 (7 @ ea. Abut.)



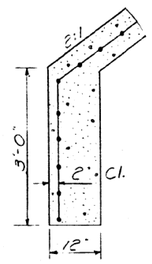
Note: The Engineer shall determine in the field the location of the deck drains in the spans where railroad signal and communication pole lines are involved. The drains shall clear the area defined by the crossarms on the poles by a minimum of 10'-0". No deck drains permitted in the span over railroad tracks.



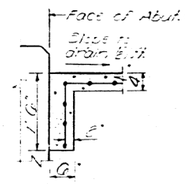
DETAIL "B"



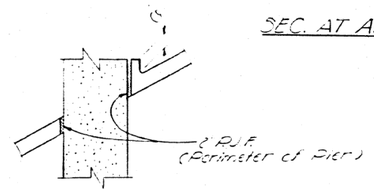
SEC. A-A



SEC. B-B



SEC. AT ABUT.



SEC. C-C

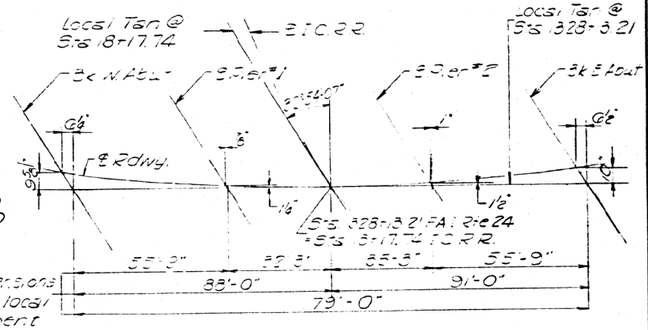
PLAN

CURVE DATA F.A.I. RTE. 24 (W.B.L.)

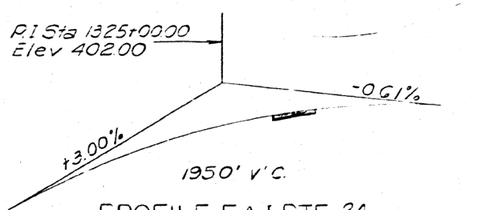
P.I. Sta 1316+00.46
Δ = 33°-32'-34" (Lt.)
D = 10°-00'
R = 573.00'
T = 1483.06'
L = 2875.10'
E = 218.18'
SC = Sta 1301+81.40
CS = Sta 1330+56.50
S.E. 0.033 Ft./Ft.
Remove Crown
Transition Sta 1300+47.40 to Sta 1302+47.40
Full Sup. Sta 1329+88.50 to Sta 1331+88.50

CURVE DATA I.C.R.R.

Δ = 23°-46'
D = 0°-40'

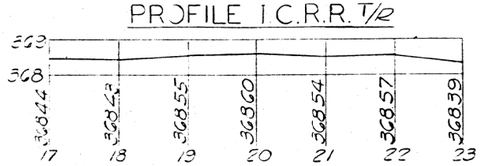


OFF SET DIAGRAM

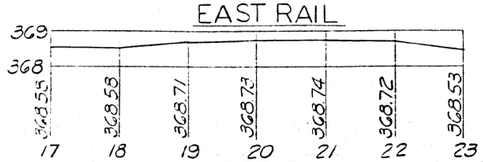


PROFILE F.A.I. RTE. 24
WEST BOUND LANE

PROFILE I.C.R.R. ℄



EAST RAIL

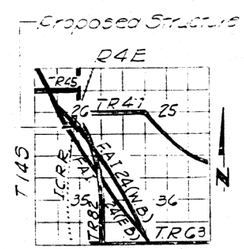


WEST RAIL

DESIGN STRESSES

fc = 1400 psi (Super. & Sub.)
fs = 20,000 psi (Reinf.)
fs = 20,000 psi (Struct.) A-36
Vc = 75 psi (Ftgs.)
n = 10
Allow 4 Def. = L/1000 Non-Comp.

LOADING HS20-44 & ALT.



LOCATION PLAN

FOR INFORMATION ONLY

GENERAL PLAN & ELEVATION
F.A.I. RTE. 24 (W.B.L.) OVER I.C.R.R.
PROJ. IG-24-1(19)28
F.A.I. RTE. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 1328+13.21 (W.B.L.)
STA. 18+17.74 (I.C.R.R.)

DESIGNED Hwf R.C.
CHECKED Lam. E. Malone
DRAWN jacobs
HWL CHECKED SFM

SEPT. 30 1968
EXAMINED — ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED — ENGINEER OF DESIGN
APPROVED — CHIEF HIGHWAY ENGINEER

MODEL: Default
FILE NAME: L:\DOT\1908610\WO_1\Draw\Structure\SN 0020 & 0021\022_0020-0021_Existing Plans WB-006.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 22 OF 38 SHEETS

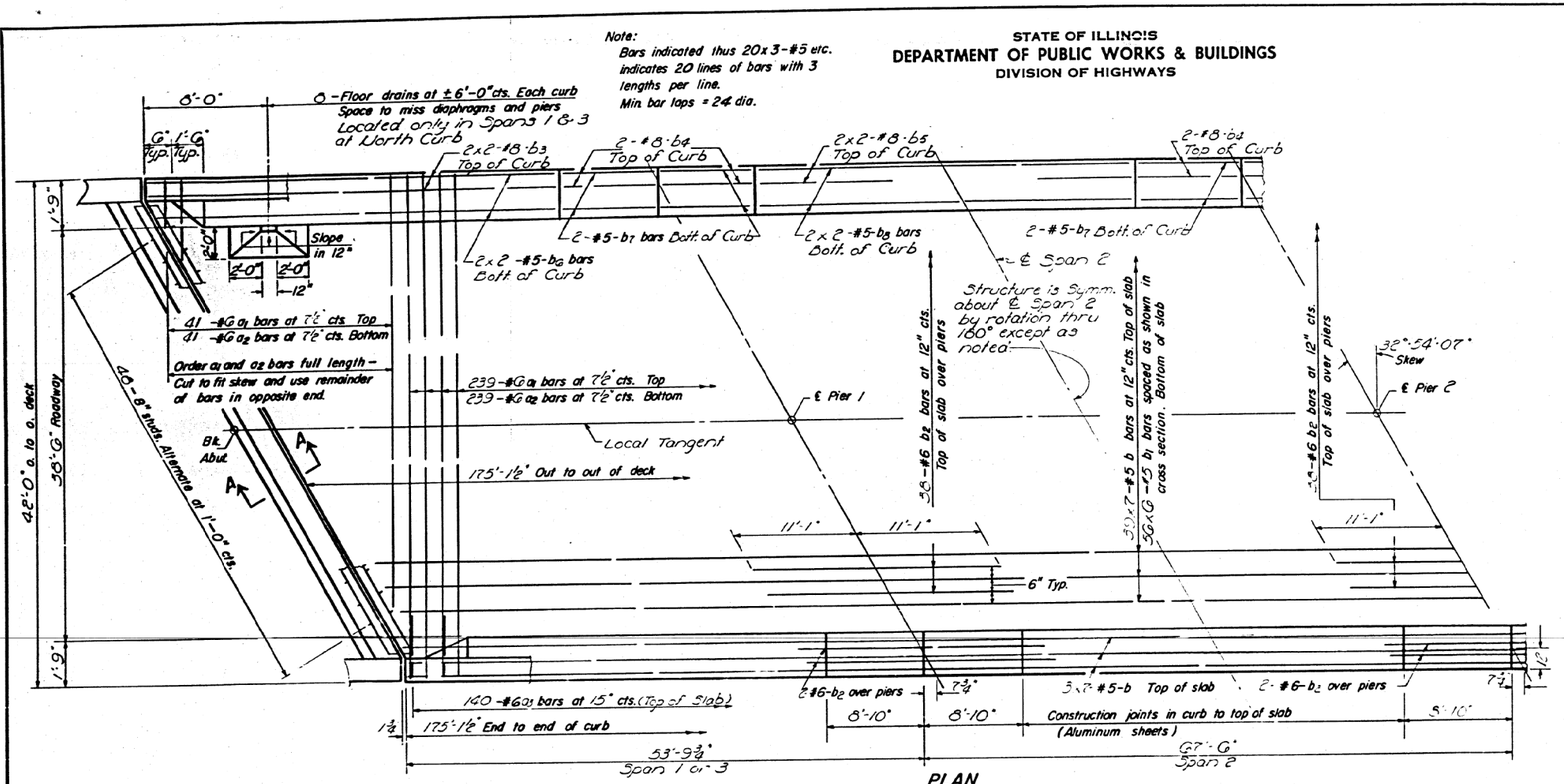
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	120
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	37
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

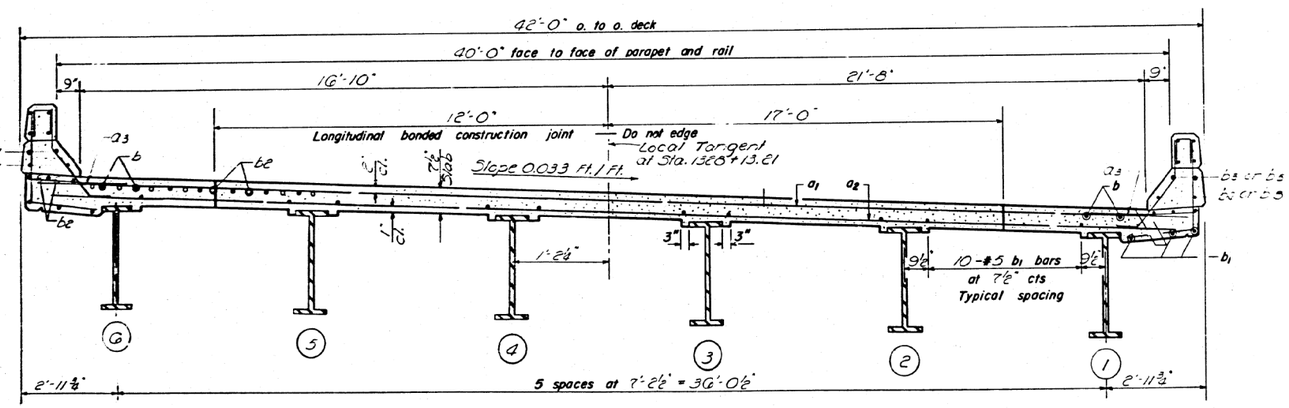
SHEET NO. 2 // SHEETS

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

Note:
Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Min. bar laps = 24 dia.



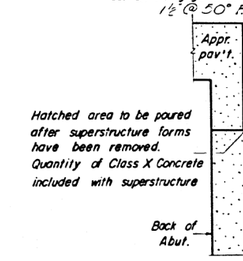
PLAN



NEAR PIER

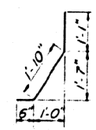
NEAR MIDSPAN

CROSS SECTION
LOOKING WEST



SECTION A–A

BAR d_2.

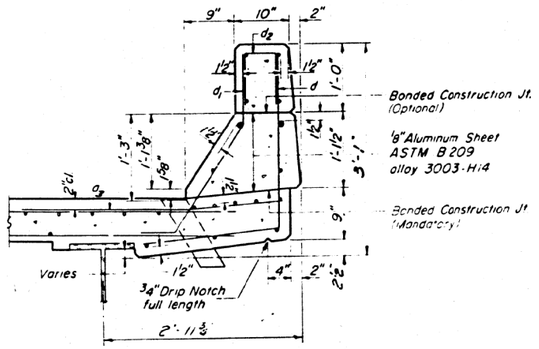


BAR d_1.

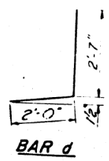
BILL OF MATERIAL

Bar	No	Size	Length	Shape
a_1	280	1G	41'-6"	
a_2	280	1G	41'-0"	
a_3	280	1G	4'-0"	
b	315	#5	26'-0"	
b_1	336	#5	30'-3"	
b_2	241	#6	22'-2"	
b_3	1G	#8	23'-6"	
b_4	1G	#8	6'-7"	
b_5	6	#8	26'-0"	
b_6	1G	#5	23'-0"	
b_7	1G	#5	6'-7"	
b_8	6	#5	23'-6"	
d	350	#4	4'-7"	
d_1	315	#5	3'-5"	
d_2	76	#4	2'-1"	
Reinforcement Bars		Lbs.	3544	
Class X Concrete		Cu. Yd.	203.7	

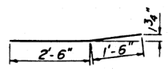
Parapet Reinforcement and Class X Concrete are billed on sheet 1.



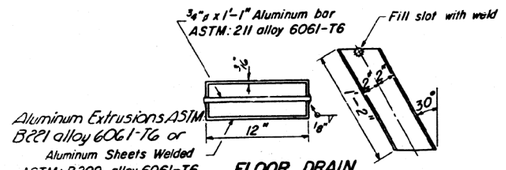
CURB SECTION
Cost of Aluminum Drains and Sheets shall be incidental to Class X Concrete



BAR d



BAR a_3



FLOOR DRAIN

SUPERSTRUCTURE
F.A.I. RT. 24 - SEC. 64-2VB
MASSAC COUNTY
STA. 1328 + 13.21 (N.B.L.)

DESIGNED	Wing Kee
CHECKED	Sam F. Mehta
DRAWN	jaccbs DL Beemer
CHECKED	AwL SFM

EXAMINED — Sept. 30 1968 — ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
PASSED — ENGINEER OF DESIGN
APPROVED — CHIEF HIGHWAY ENGINEER

I-6-R (> 14°) (S.E.)
Rev. 9-25-68 S.Y.K.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

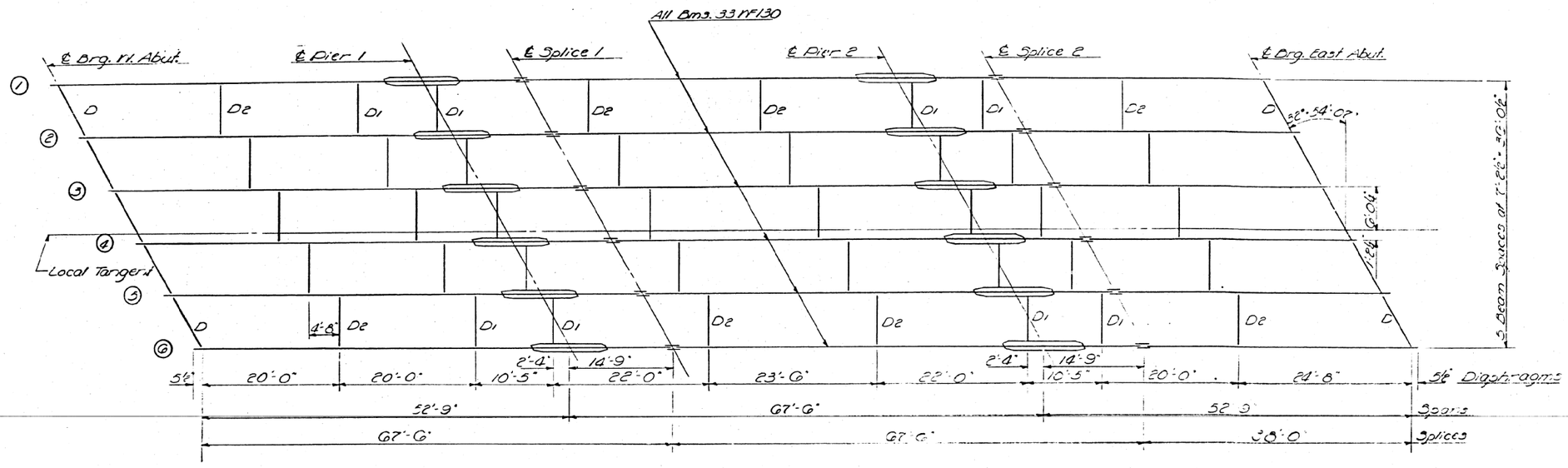
EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 23 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	121
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

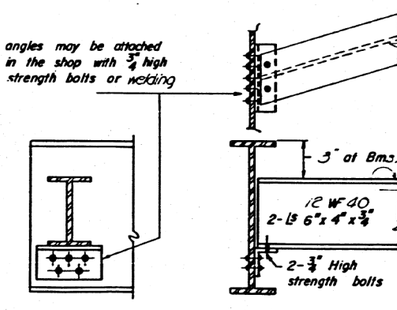
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	40
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

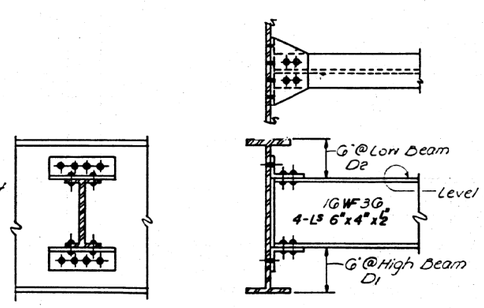
SHEET NO. 5
11 SHEETS



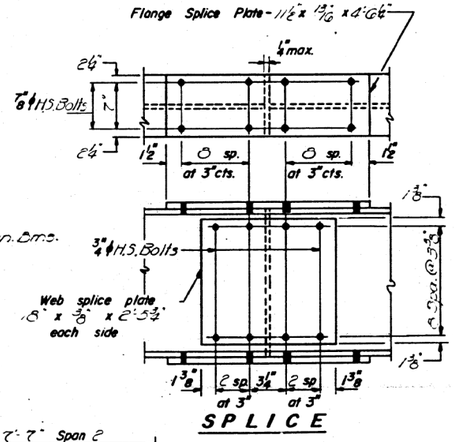
PLAN



DIAPHRAGM D
10 Required



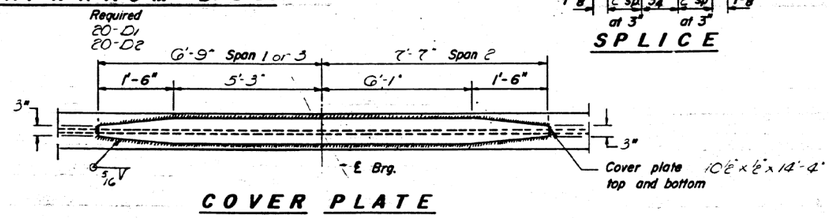
DIAPHRAGM D1 & D2



SPLICE

ELEVATION TOP OF WF

Location \ Beam	1	2	3	4	5	6
℄ Brg. Wt. Abut.	394.003	394.336	394.669	394.901	395.179	395.444
℄ Pier 1	394.400	394.673	394.946	395.218	395.490	395.761
℄ Splice 1	394.486	394.759	395.032	395.304	395.576	395.847
℄ Pier 2	394.779	395.052	395.325	395.597	395.869	396.140
℄ Splice 2	394.861	395.134	395.407	395.679	395.951	396.222
℄ Brg. E. Abut.	395.131	395.404	395.677	395.949	396.221	396.496



COVER PLATE

FOR INFORMATION ONLY

STRUCTURAL STEEL
F.A.I. RT. 24 - SEC. 64-2VB
MASSAC COUNTY
STA. 1328 + 13.21 (N.B.L.)

DESIGNED	Henry Lee		
CHECKED	Lam T. Mahnen	EXAMINED	SEPT. 30 1968
DRAWN	J. Schneller jacobs	PASSED	
CHECKED	HWL SFM	APPROVED	

I-2-CO 9-1-65

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		CHECKED - AS	REVISED -		
PLOT SCALE = N/A		DRAWN - GLD/RAH	REVISED -		
PLOT DATE = 11/17/2020 - 02:13:32 PM		CHECKED - JTH	REVISED -		SHEET 24 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	122
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

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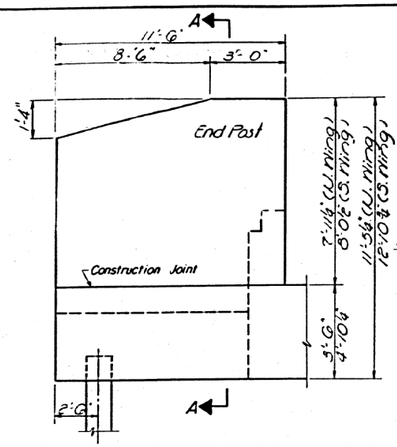
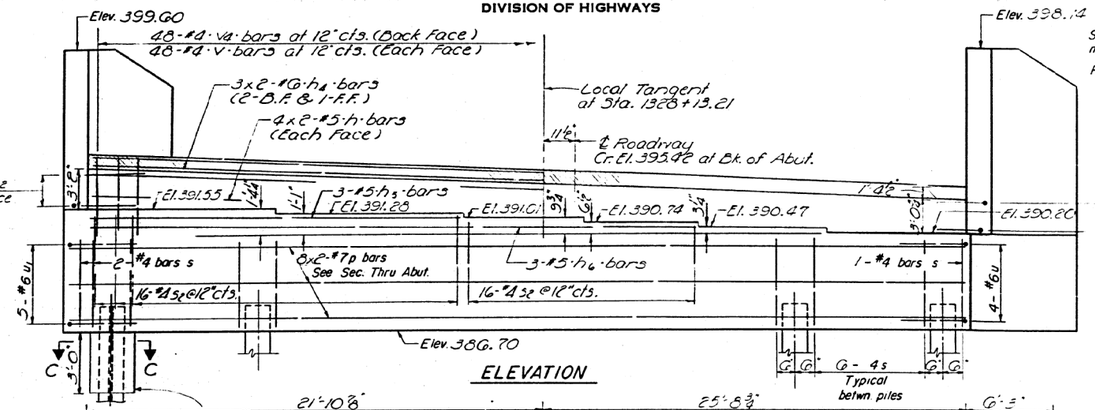
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	42
7TH ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

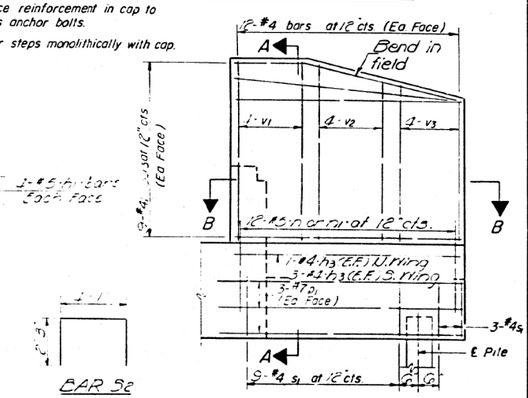
SHEET NO. 7
11 SHEETS



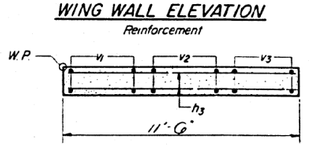
WING WALL ELEVATION



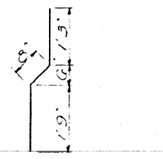
ELEVATION

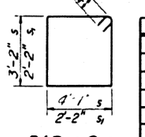


WING WALL ELEVATION
Reinforcement

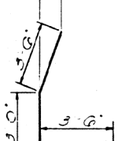


SEC. B-B

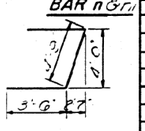




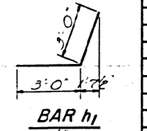
BAR s & s1



BAR u1



BAR n or n1



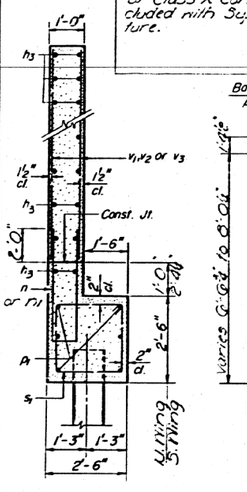
BAR u

BAR h1

BAR h2

CUE ABUTMENT
BILL OF MATERIAL

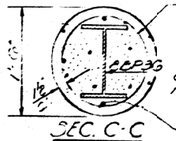
Bar	No	Size	Length	Shape
h	16	#5	23'-3"	
h1	8	#5	6'-0"	⌐
h2	4	#5	6'-0"	L
h3	44	#4	11'-3"	
h4	6	#6	24'-6"	
h5	3	#5	15'-0"	
h6	3	#5	32'-0"	
n	12	#5	9'-3"	⊔
n1	12	#5	12'-3"	⊔
p	16	#7	25'-7"	
p1	12	#7	11'-3"	
s	51	#4	13'-3"	◻
s1	24	#4	9'-3"	◻
Se	32	#4	8'-7"	⊐
u	4	#6	11'-3"	⊐
u1	5	#6	10'-0"	L
v	96	#4	6'-0"	
v1	16	#4	7'-8"	
v2	16	#4	7'-0"	
v3	16	#4	6'-4"	
V4	42	#4	3'-8"	~
Class X Concrete			Cu. Yds.	53.7
Reinforcement Bars			Lbs.	4310
Steel Piles (6BP36)			Lin. Ft.	540
Test Piles (Steel)			Ea.	1



SEC. A-A

NOTE A
Hatched portion to be poured after Superstructure forms have been removed. Quantity of Class X Concrete to be included with Superstructure.

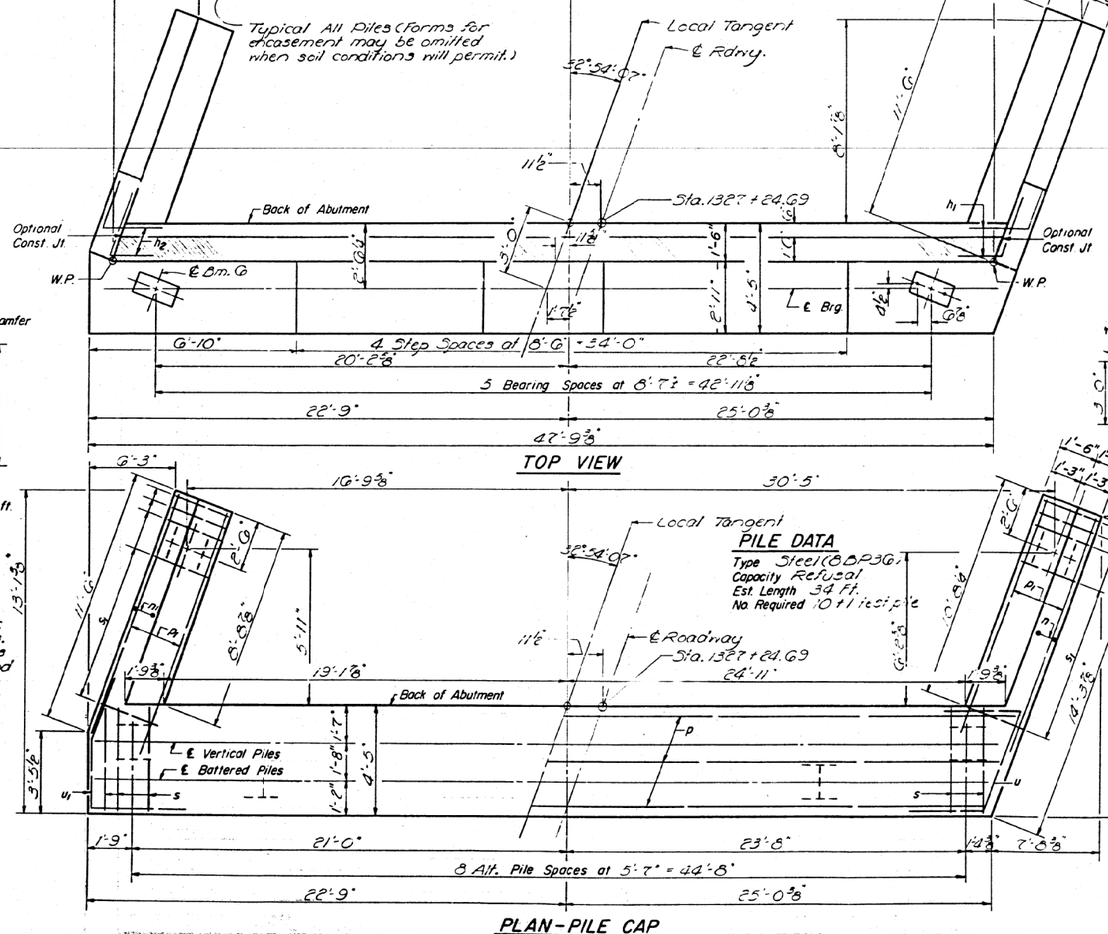
SEC. THRU ABUT.



SEC. C-C

#4 gage welded wire fabric 6x6 mesh weighing 58 lbs. per 100 Sq. Ft. Cost of Class X Concrete Encasement and Reinforcement shall be incidental to the cost of furnishing piles.

1-#4 bars (2'-9" long)



TOP VIEW

PLAN-PILE CAP

DESIGNED Henry Y. C
CHECKED Jan E Mainer
DRAWN S.G. Ferchow Jacobs
CHECKED H.W.L. S.F.M.
EXAMINED SEPT. 30 1968
PASSED
APPROVED
CHIEF HIGHWAY ENGINEER

A-9-R (15°-34°) 2-1-66
Rev. 9-25-68 S.Y.K.

WEST ABUTMENT
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 1328+13.21 (Y.B.L.)

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 25 OF 38 SHEETS

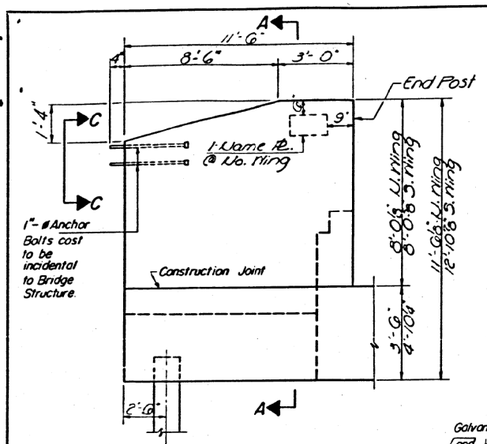
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	123
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

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

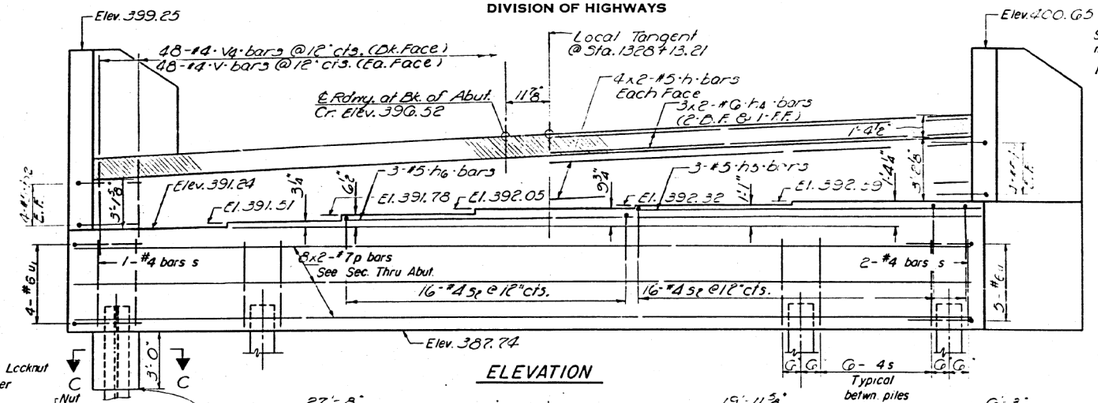
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	43
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 8
11 SHEETS

WING WALL ELEVATION

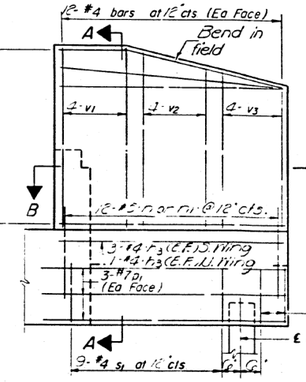


ELEVATION

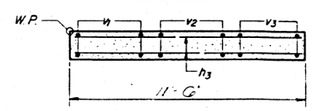


Space reinforcement in cap to miss anchor bolts.

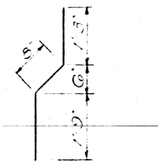
Pour steps monolithically with cap.



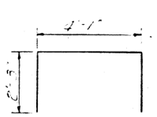
WING WALL ELEVATION
Reinforcement



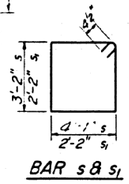
SEC B-B



BAR V6



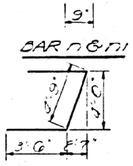
BAR S2



BAR s & s1

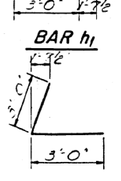
BAR u1

BAR n & n1



BAR u

BAR h1

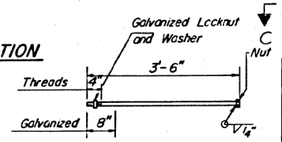


BAR h2

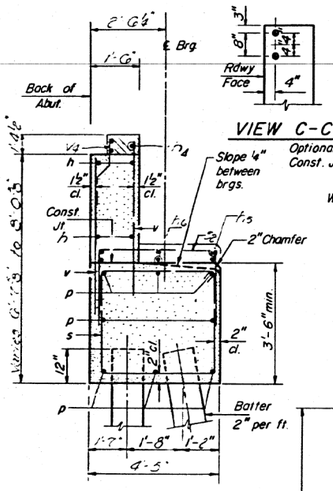
ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	16	#5	24'-3"	
h1	5	#5	6'-0"	
h2	5	#5	6'-0"	
h3	44	#4	11'-3"	
h4	6	#6	24'-6"	
h5	3	#5	15'-0"	
n2	3	#5	32'-0"	
n	12	#5	9'-3"	
n1	12	#5	12'-3"	
p	16	#7	25'-7"	
p1	12	#7	11'-3"	
s	51	#4	15'-3"	
s1	24	#4	9'-5"	
s2	32	#4	8'-7"	
u	5	#6	11'-3"	
u1	4	#6	10'-0"	
v	56	#4	6'-0"	
v1	16	#4	7'-8"	
v2	16	#4	7'-0"	
v3	16	#4	6'-4"	
v4	55	#4	3'-8"	
Class X Concrete		Cu. Yds.	55.9	
Reinforcement Bars		Lbs.	6310	
Steel Piles (BBP36)		Lin. Ft.	550	

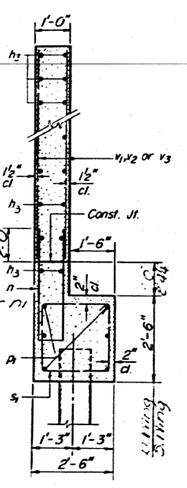
1" ø ANCHOR BOLT



VIEW C-C



SEC. A-A



SEC. THRU ABUT.

Note: For Class X Conc. Encasement of Piles (Sec. C-C) - See Sheet 7.

TOP VIEW

PLAN - PILE CAP

PILE DATA

Type Steel (BBP36)
Capacity Refusal
Est. Length 50 Ft.
No. Required 11

DESIGNED	N. J. Y. C.
CHECKED	Tom E. Hilmes
DRAWN	S.G. Ferchow
CHECKED	HWL CFM

EXAMINED Carl Thummel SEPT 30 1968
PASSED
APPROVED

A-9-R (15°-34°) 2-1-66
Rev. 9-25-68 S.Y.H.

EAST ABUTMENT
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 1328+13.21 (N.B.L.)

FOR INFORMATION ONLY

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FILE NAME: L:\DOT\1950610\WO_1\Draw\Structures\SN 0020 & 0021\026_0020-0021_Editing Plans WB-010.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0020
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 26 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	124
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	46
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. // // SHEETS

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

Boring No. 1 S — Station 1327+40 — Offset CENTERLINE

Surface Water El. NONE
Groundwater El. at Completion NONE
After — Hours —

Ground Surface 371.0 (0)
MEDIUM MOIST BROWN SILTY CLAY A-6(11)
365.5 (-5)
STIFF MOIST LIGHT BROWN TO BROWN SILTY CLAY A-6(9)
360.5 (-10)
VERY STIFF MOIST BROWN SILTY CLAY A-6(12)
358.0
STIFF MOIST LIGHT BROWN TO GREY CLAY A-7-6(25)
355.5 (-15)
VERY STIFF MOIST GREY CLAY SHALE
353.0
HARD DRY LIGHT BROWN TO REDDISH BROWN SANDSTONE (-25)
347.5
BOTTOM OF HOLE = 23.5 FEET (-25)

Elevation	N	Qu t/s.f.	w (%)
	13	0.3S	26
	13	1.8S	25
	9	1.2B	22
	14	2.3B	20
	12	1.8S	29
	51	4.0S	18
	100	In 6"	
	CORED 50% RECOVERY		

SEE PREVIOUS COLUMN

Elevation	N	Qu t/s.f.	w (%)
	CORED 20% RECOVERY		

Boring No. 2 S — Station 1327+83 — Offset 8 FEET RIGHT

Surface Water El. NONE
Groundwater El. at Completion —
After — Hours —

Ground Surface 367.6 (0)
MEDIUM MOIST BROWN TO LIGHT BROWN SILTY CLAY LOAM A-6(8-9)
362.1 (-5)
STIFF MOIST BROWN TO LIGHT GREY SILTY CLAY LOAM A-6(8-9)
359.6
STIFF MOIST BROWN SILTY CLAY LOAM A-6(8-9)
357.1 (-10)
VERY STIFF MOIST BROWN SILTY CLAY TO SILTY CLAY LOAM A-6(10-11)
354.6
STIFF MOIST LIGHT BROWN TO REDDISH BROWN BROKEN SANDSTONE WITH CLAY SEAMS
352.1 (-15)
VERY STIFF MOIST TO DRY LIGHT GREY TO GREY CLAY SHALE

Elevation	N	Qu t/s.f.	w (%)
	12	0.6S	22
	23	1.4S	21
	11	1.3B	21
	14	2.9B	19
	27	1.5	13
	36	3.1S	18
	59	4.4S	18
	98	4.3S	18

SEE PREVIOUS COLUMN
344.6
VERY STIFF DRY GREY TO REDDISH BROWN CLAY SHALE 344.0
HARD DRY BROWN TO GREY SANDSTONE 342.6 (-25)
BOTTOM OF HOLE = 25.0 FEET

Elevation	N	Qu t/s.f.	w (%)
	100 In 7"	3.3S	16
	100 In 2"		

Boring No. 3 S — Station 1328+86 — Offset 8 FEET RIGHT

Surface Water El. NONE
Groundwater El. at Completion 358.5
After 24 Hours 353.5

Ground Surface 368.5 (0)
MEDIUM MOIST BROWN CLAY TO CLAY LOAM A-6(12)
363.0 (-5)
VERY STIFF MOIST LIGHT GREY CLAY TO CLAY SHALE
360.5
VERY STIFF MOIST GREY TO REDDISH BROWN TO GREY CLAY SHALE (-10)
353.0 (-15)
VERY STIFF DRY MOTTLED GREY TO DARK GREY CLAY SHALE

Elevation	N	Qu t/s.f.	w (%)
	7	-	16
	16	2.6S	23
	40	3.7S	21
	46	3.8S	19
	50	4.2S	19
	54	3.1S	16
	59	3.5S	16
	63	4.1S	14

SEE PREVIOUS COLUMN

Elevation	N	Qu t/s.f.	w (%)
	47	3.3S	19
	84	3.1S	19
	65	0.5S	11
	74	3.9S	16
	100 In 8"	2.9S	14
	100 In 9"	3.5S	14
	100 In 4"	1.4S	17
	100 In 6"		25
	CORED 10% RECOVERY		

340.5
MEDIUM MOIST MOTTLED GREY TO LIGHT BROWN FINE GRAINED SAND WITH CLAY SEAMS
338.0
VERY STIFF DRY DARK GRAY CLAY SHALE
330.5
STIFF DRY GREY AND BROWN CLAY SHALE WITH BROKEN SANDSTONE SEAMS
328.5 (-40)
HARD WET LIGHT BROWN BROKEN SANDSTONE 328.0
HARD DAMP LIGHT BROWN BROKEN SANDSTONE.
NOTE: DURING DRILLING IT APPEARED THAT FREE WATER WAS ENCOUNTERED at 40.5 FEET
323.5 (-45)
BOTTOM OF HOLE 45.0 FEET

N-Standard Penetration Test-Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140 # hammer falling 30"

Qu-Unconfined Compressive Strength-t/sf
w-Water Content-percentage of oven dry weight-%

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

FOR INFORMATION ONLY

BORINGS
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 1328 + 13.21 (W.B.L.)

DESIGNED Henry Lee
CHECKED Sam K. McInnis
DRAWN jacobs H.W.L.
CHECKED SFM

EXAMINED Sept 30 1968
PASSED
APPROVED

MODEL: Default
FILE NAME: L:\IDOT\190861\0\WO_1\Draw\Structure\SN 0020 & 0021\027_0020-0021_Existing Plans WB-011.dgn

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USER NAME = Misael Cordova		DESIGNED - MAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS FOR SN 064-0020 STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
		CHECKED - AS	REVISED -		
PLOT SCALE = N/A		DRAWN - GLD/RAH	REVISED -		SHEET 27 OF 38 SHEETS
PLOT DATE = 11/17/2020 - 6:13:49 PM		CHECKED - JTH	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	125
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

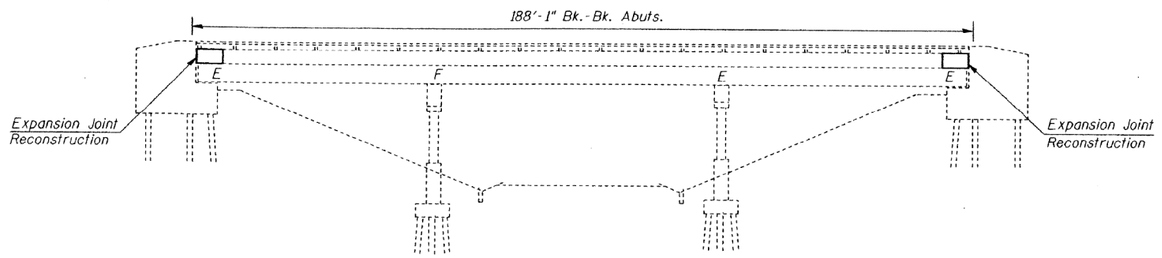
BM: #36A - "X" in top concrete whistle post 110' Lt. W.B. Lane Sta. 1327+50 Elev. 370.25

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	162
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO.
SHEETS

* 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2



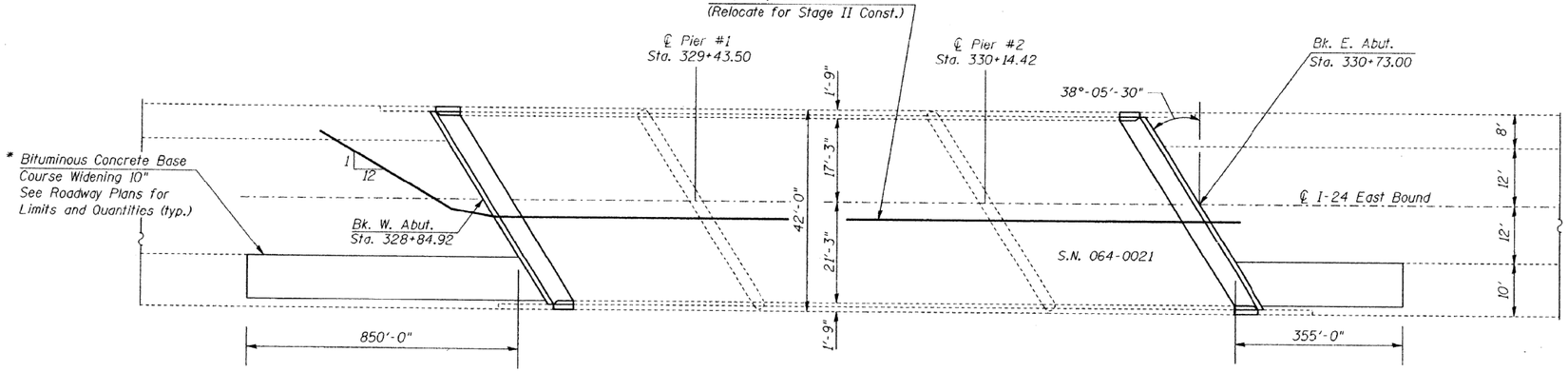
ELEVATION

Traffic control for these structures shall follow Standard 701402

TOTAL BILL OF MATERIAL

ITEM	UNIT	064-0021
Silicone Joint Sealer, 1½"	FOOT	53
Polymer Concrete	CU FT	7.4
Bridge Deck Microsilica Concrete Overlay 2¼"	SQ YD	765
Bar Splicers	EACH	24
Concrete Bridge Deck Scarification (1/2")	SQ YD	765
Deck Slab Repair (Partial)	SQ YD	6.2
Concrete Superstructure	CU YD	14.8
Concrete Removal	CU YD	13.6
Bridge Deck Grooving	SQ YD	746
Reinforcement Bars, Epoxy Coated	POUND	1800
Temporary Concrete Barrier	FOOT	410
Relocate Temporary Concrete Barrier	FOOT	426
Temporary Concrete Barrier, Terminal Section	EACH	1
Elastomeric Bearing Assembly, Type I	EACH	12
Elastomeric Bearing Assembly, Type II	EACH	6
Jack and Remove Existing Bearings	EACH	18
Furnishing and Erecting Structural Steel	POUND	7010
Plug Existing Deck Drain	EACH	16
Floor Drain Extension	EACH	12
Silicone Joint Sealer, 2½"	FOOT	53
Structural Steel Removal	POUND	3620

* The Contractor will be allowed the option of placing P.C.C. Pavement in lieu of the Bituminous Concrete used in preparing shoulders for staged traffic. There will be no additional compenstation if the P.C.C. Pavement is used. Shoulder work must be completed before the barrier wall is erected.



PLAN

CONSTRUCTION SEQUENCE

1. SHOULDER RECONSTRUCTION
2. MILL STAGE I
3. BUILD STAGE I
4. MILL STAGE II
5. BUILD STAGE II

DESIGN STRESSES

FIELD UNITS

New Construction
f'_c = 3500 psi
f_y = 60,000 psi (reinforcement)
f_y = 36,000 psi (Structural Steel)

Existing Structure
f_c = 1400 psi (super. sub)
f_s = 20,000 psi (struct.) A36
f_s = 20,000 psi (reinforcement)

SCOPE OF WORK

Replace shoulder with bituminous concrete base course widening.
Scarify existing deck surface.
Remove concrete at abutment joints.
Reconstruct expansion joints with silicone sealer and polymer concrete nosings.
Partial depth patching, new microsilica overlay.
Eliminate only drains within 10' of any substructure element.
Extend drains to remain in use.
Replace bearings and diaphragms at the abutments.

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

GERMAN RONCANCIO 081-003091 LICENSED STRUCTURAL ENGINEER OF SPRINGFIELD ILLINOIS

German Roncancio 8-7-01

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER I.C. RAILROAD
SECTION 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2
S.N. 064-0021 (E.B.)
MASSAC COUNTY

FOR INFORMATION ONLY

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FILE NAME: L:\DOT\1900610\WO_1\Drawr\Structures\SN 0020 & 0021\020_0020-0021_Existing Plans EB-001.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 28 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	126
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

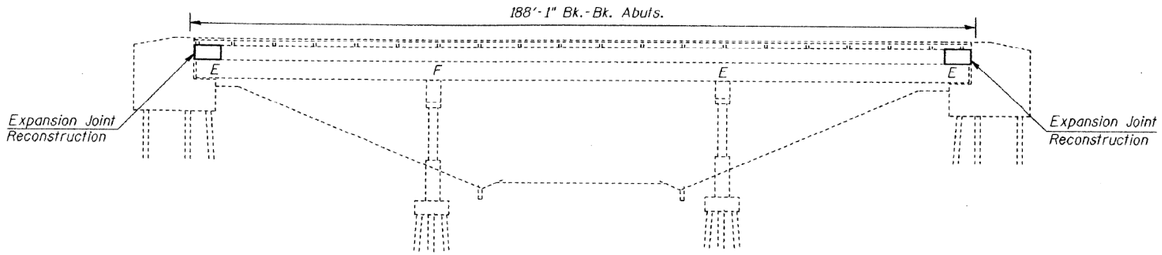
BM: #36A - "X" in top concrete whistle post 110' Lt. W.B. Lane Sta. 1327+50 Elev. 370.25

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	162
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT:	

SHEET NO.
SHEETS

* 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2

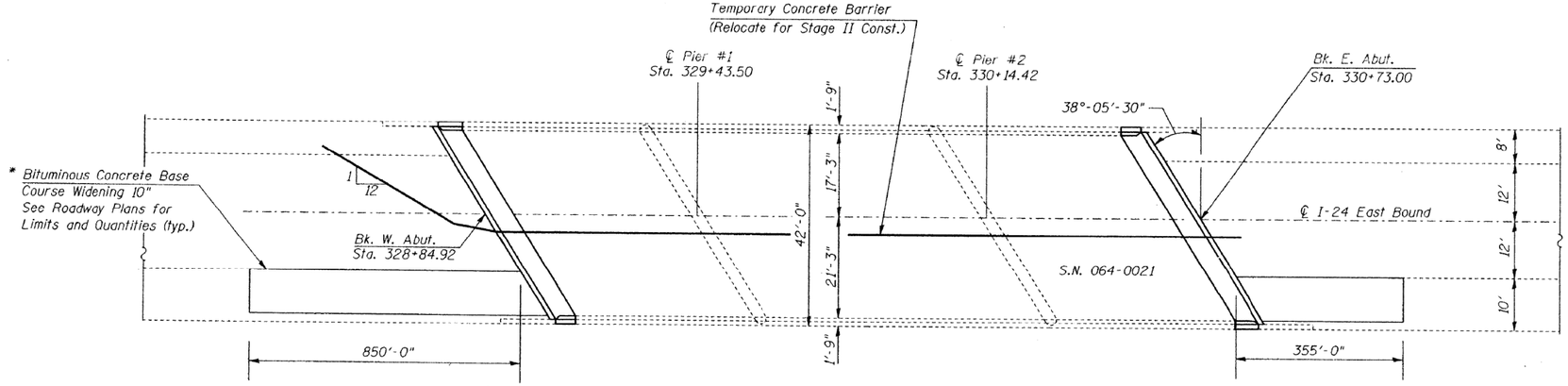


ELEVATION

Traffic control for these structures shall follow Standard 701402

TOTAL BILL OF MATERIAL

ITEM	UNIT	064-0021
Silicone Joint Sealer, 1½"	FOOT	53
Polymer Concrete	CU FT	7.4
Bridge Deck Microsilica Concrete Overlay 2¼"	SQ YD	765
Bar Splicers	EACH	24
Concrete Bridge Deck Scarification (1/2")	SQ YD	765
Deck Slab Repair (Partial)	SQ YD	6.2
Concrete Superstructure	CU YD	14.8
Concrete Removal	CU YD	13.6
Bridge Deck Grooving	SQ YD	746
Reinforcement Bars, Epoxy Coated	POUND	1800
Temporary Concrete Barrier	FOOT	410
Relocate Temporary Concrete Barrier	FOOT	426
Temporary Concrete Barrier, Terminal Section	EACH	1
Elastomeric Bearing Assembly, Type I	EACH	12
Elastomeric Bearing Assembly, Type II	EACH	6
Jack and Remove Existing Bearings	EACH	18
Furnishing and Erecting Structural Steel	POUND	7010
Plug Existing Deck Drain	EACH	16
Floor Drain Extension	EACH	12
Silicone Joint Sealer, 2½"	FOOT	53
Structural Steel Removal	POUND	3620



PLAN

* The Contractor will be allowed the option of placing P.C.C. Pavement in lieu of the Bituminous Concrete used in preparing shoulders for staged traffic. There will be no additional compenstation if the P.C.C. Pavement is used. Shoulder work must be completed before the barrier wall is erected.

CONSTRUCTION SEQUENCE

1. SHOULDER RECONSTRUCTION
2. MILL STAGE I
3. BUILD STAGE I
4. MILL STAGE II
5. BUILD STAGE II

DESIGN STRESSES

FIELD UNITS

New Construction
- f'_c = 3500 psi
- f_y = 60,000 psi (reinforcement)
- f_y = 36,000 psi (Structural Steel)

Existing Structure
- f_c = 1400 psi (super. sub)
- f_s = 20,000 psi (struct.) A36
- f_s = 20,000 psi (reinforcement)

SCOPE OF WORK

Replace shoulder with bituminous concrete base course widening.
Scarify existing deck surface.
Remove concrete at abutment joints.
Reconstruct expansion joints with silicone sealer and polymer concrete nosings.
Partial depth patching, new microsilica overlay.
Eliminate only drains within 10' of any substructure element.
Extend drains to remain in use.
Replace bearings and diaphragms at the abutments.

GERMAN RONCANCIO 081-003091 LICENSED STRUCTURAL ENGINEER OF SPRINGFIELD ILLINOIS

8-7-01

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

FOR INFORMATION ONLY

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER I.C. RAILROAD
SECTION 64(1,2,2-1,3-1,3)RS-1 BSMART FY2002-2
S.N. 064-0021 (E.B.)
MASSAC COUNTY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 29 OF 38 SHEETS

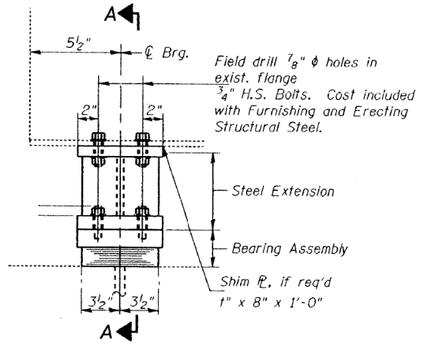
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	127
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

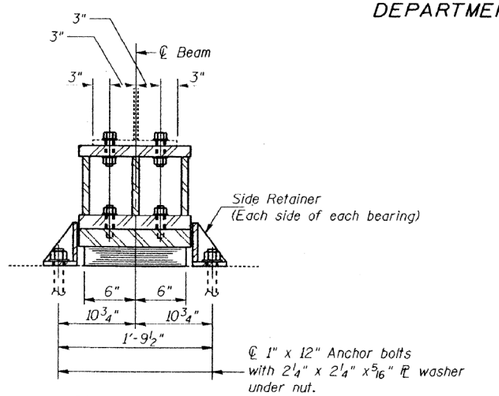
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	167
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO.
SHEETS

* 64(1.2.2-1.3-1.3)RS-1 BSMART FY2002-2



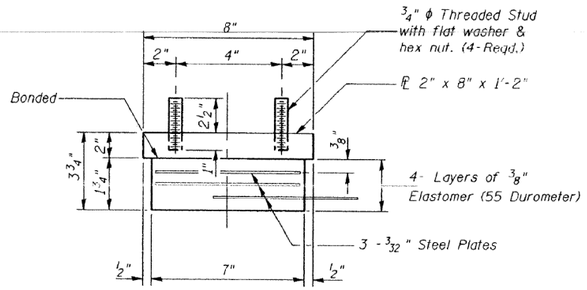
ELEVATION AT W. ABUT.



SECTION A-S

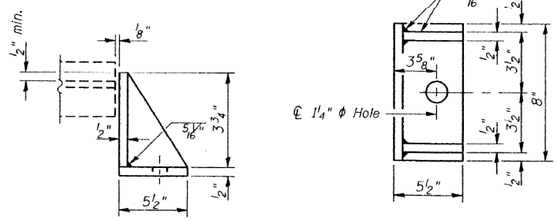
TYPE I ELASTOMERIC EXP. BRG.

Notes: See sheet 172 for Anchor Bolt installation.



BEARING ASSEMBLY

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



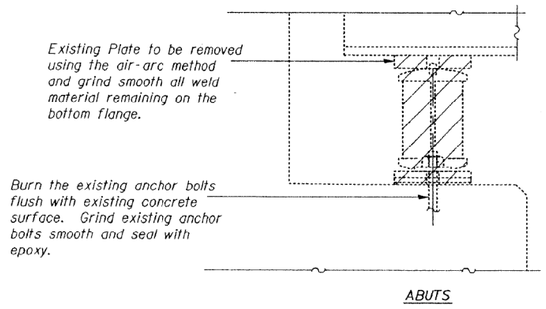
SIDE RETAINER

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

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

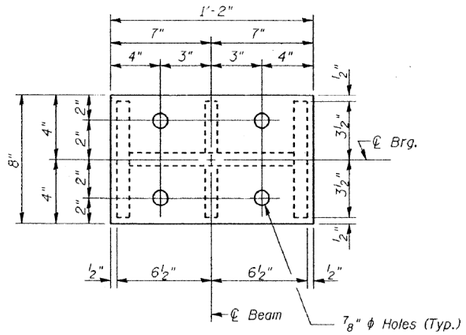
GIRDER REACTIONS

Rℙ	(K)	24.00
R℄	(K)	37.7
Imp.	(K)	11.31
R (Total)	(K)	73.01

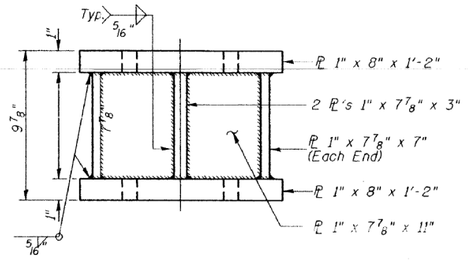


EXISTING BEARING REMOVAL DETAIL

Cost shall be included in the cost of Jack & Remove Existing Bearing.



PLAN-TOP & BOTTOM PLATE



STEEL EXTENSION AT WEST ABUT.

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
The minimum jack capacity required is 37 Tons.
New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".
Hatched areas indicate Jack and Remove Existing Bearings.
Existing diaphragm removal and new diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

WEST ABUTMENT
TYPE I ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0021 (E.B.)

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: L:\IDOT\190861\DWG_1\Draw\Structures\SN 0020 & 0021\030_0020-0021_Existing Plans EEB-003.dgn

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USER NAME = Misael Cordova		DESIGNED - MAC		REVISED -	
		CHECKED - AS		REVISED -	
PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 6:14:07 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 30 OF 38 SHEETS

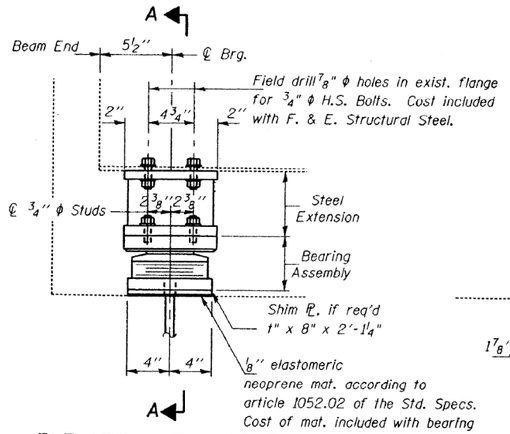
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	128
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

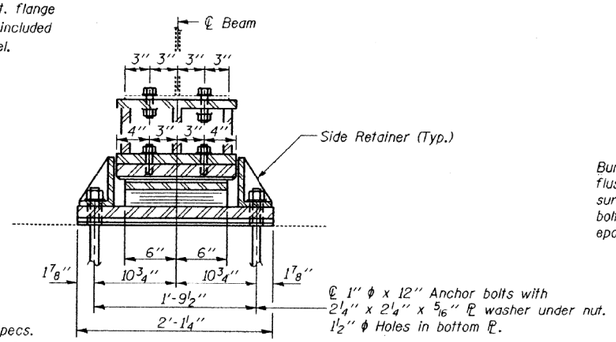
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	168
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO.
SHEETS

* 641.2.2-1.3-1.3)RS-1 BSMART FY2002-2

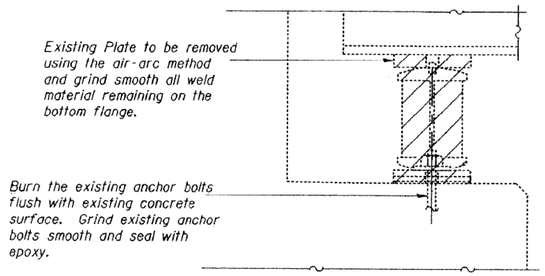


ELEVATION AT E. ABUT.

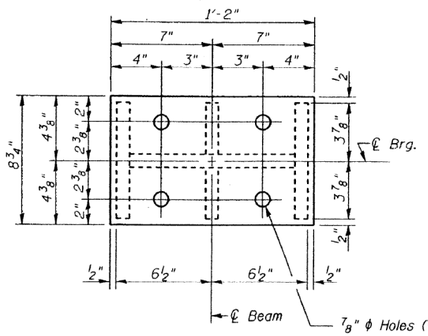


SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

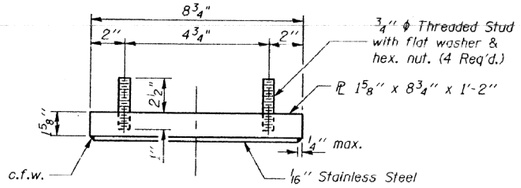


EXISTING BEARING REMOVAL DETAIL
Cost included with Jack and Remove Existing Bearings

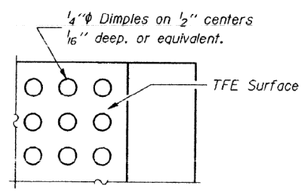


PLAN-TOP & BOTTOM PLATE

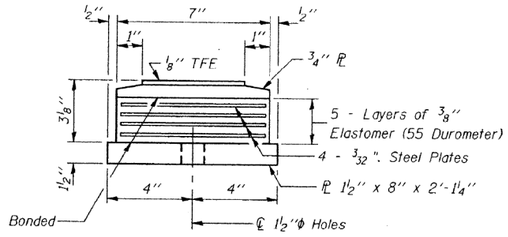
Notes: See sheet 172 for Anchor Bolt installation.



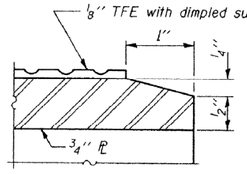
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



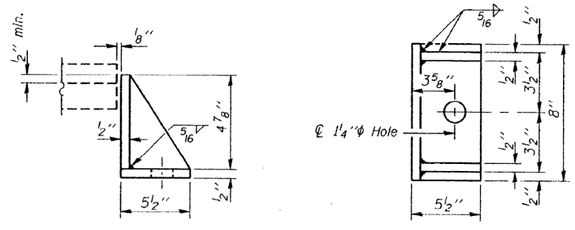
BOTTOM BEARING ASSEMBLY



Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

SECTION THRU TFE



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

Notes:

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

The minimum jack capacity required is 37 Tons.

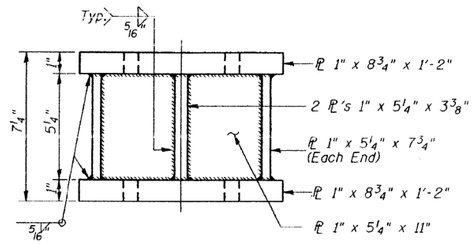
New steel extensions, side retainers, connection bolts, any shim and anchor bolts are included in "Furnishing and Erecting Structural Steel".

Hatched areas indicate Jack and Remove Existing Bearings.

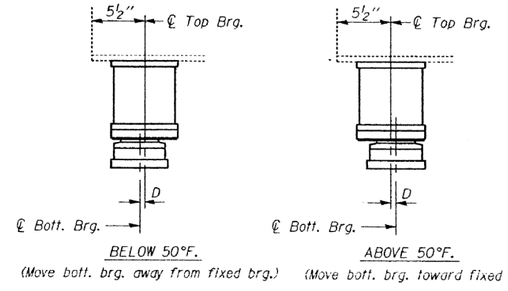
Existing diaphragm removal and new diaphragm erection shall be coordinated with drilling holes in bottom flange for bearing attachment, if necessary, to provide clearance for the drill.

GIRDER REACTIONS

R℄	(K)	24.00
R℄	(K)	37.70
Imp.	(K)	11.31
R (Total)	(K)	73.01



STEEL EXTENSION AT EAST ABUT.



SETTING ANCHOR BOLTS AT EXP. BRG.
D=⅛" per each 100° of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6
Jack and Remove Existing Bearings	Each	6

EAST ABUTMENT
TYPE II ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0021 (E.B.)

FOR INFORMATION ONLY

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

MODEL: Default
FILE NAME: L:\IDOT\190\06100\WO_10\raw\Structures\SN 0020 & 0021\031_0020-0021_Existing Plans EEB-004.dgn

CMT License No.: 184-000613

USER NAME = Misael Cordova		DESIGNED - MAC		REVISED -	
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PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 6:14:13 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 31 OF 38 SHEETS

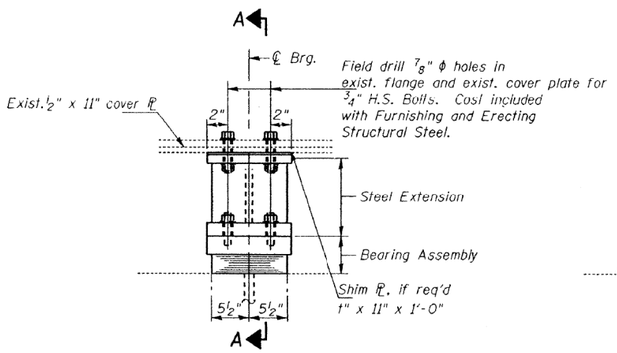
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	129
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

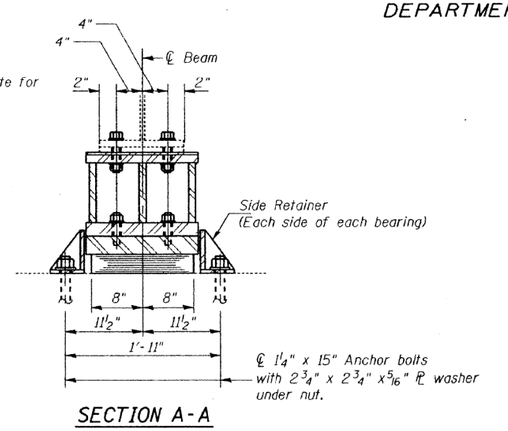
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	234	169
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT:	

SHEET NO.
SHEETS

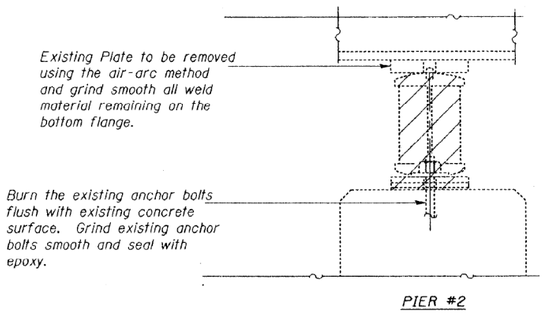
* 64(1,2.2-1.3-1.3)RS-1 BSMART FY2002-2



ELEVATION AT PIER #2

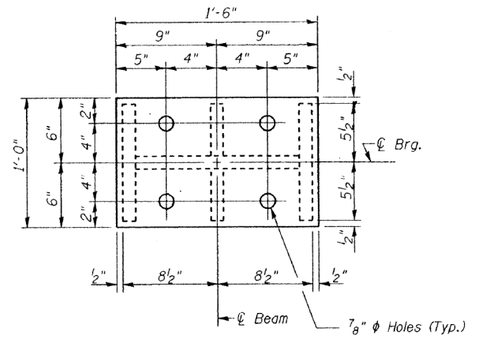


SECTION A-A



EXISTING BEARING REMOVAL DETAILS

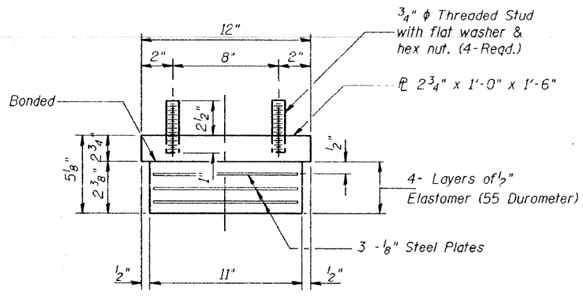
Cost is included with Jack and Remove Existing Bearings



PLAN-TOP & BOTTOM PLATE

TYPE I ELASTOMERIC EXP. BRG.

Notes: See sheet 172 for Anchor Bolt installation.

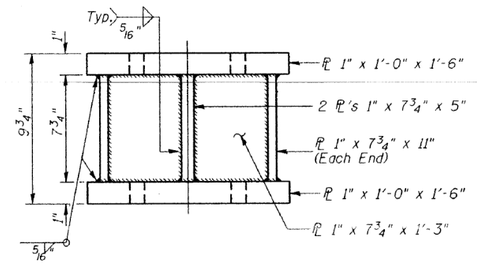


BEARING ASSEMBLY

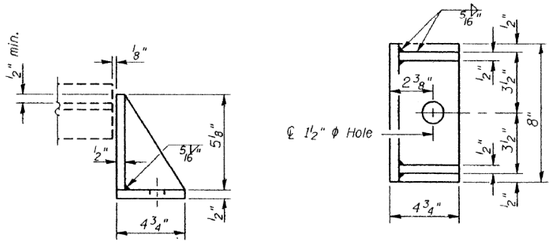
Note: Shim plates shall not be placed under Bearing Assembly.

GIRDER REACTIONS

R℄	(K)	81.10
R℄	(K)	48.60
Imp.	(K)	14.58
R (Total)	(K)	144.28



STEEL EXTENSION AT PIER #2



SIDE RETAINER

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

Notes:

Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. The minimum jack capacity required is 85 Tons.

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

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	6
Jack and Remove Existing Bearings	Each	6

DESIGNED:	CMW
CHECKED:	TWH
DRAWN:	CMW
CHECKED:	TWH

PIER #2
TYPE I ELASTOMERIC BEARING
MASSAC COUNTY
S.N. 064-0021 (E.B.)

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: L:\DOT\1900610WQ_1D\raw\Structures\SN 0020 & 0021\032_0020-0021_Existing Plans EEE-005.dgn

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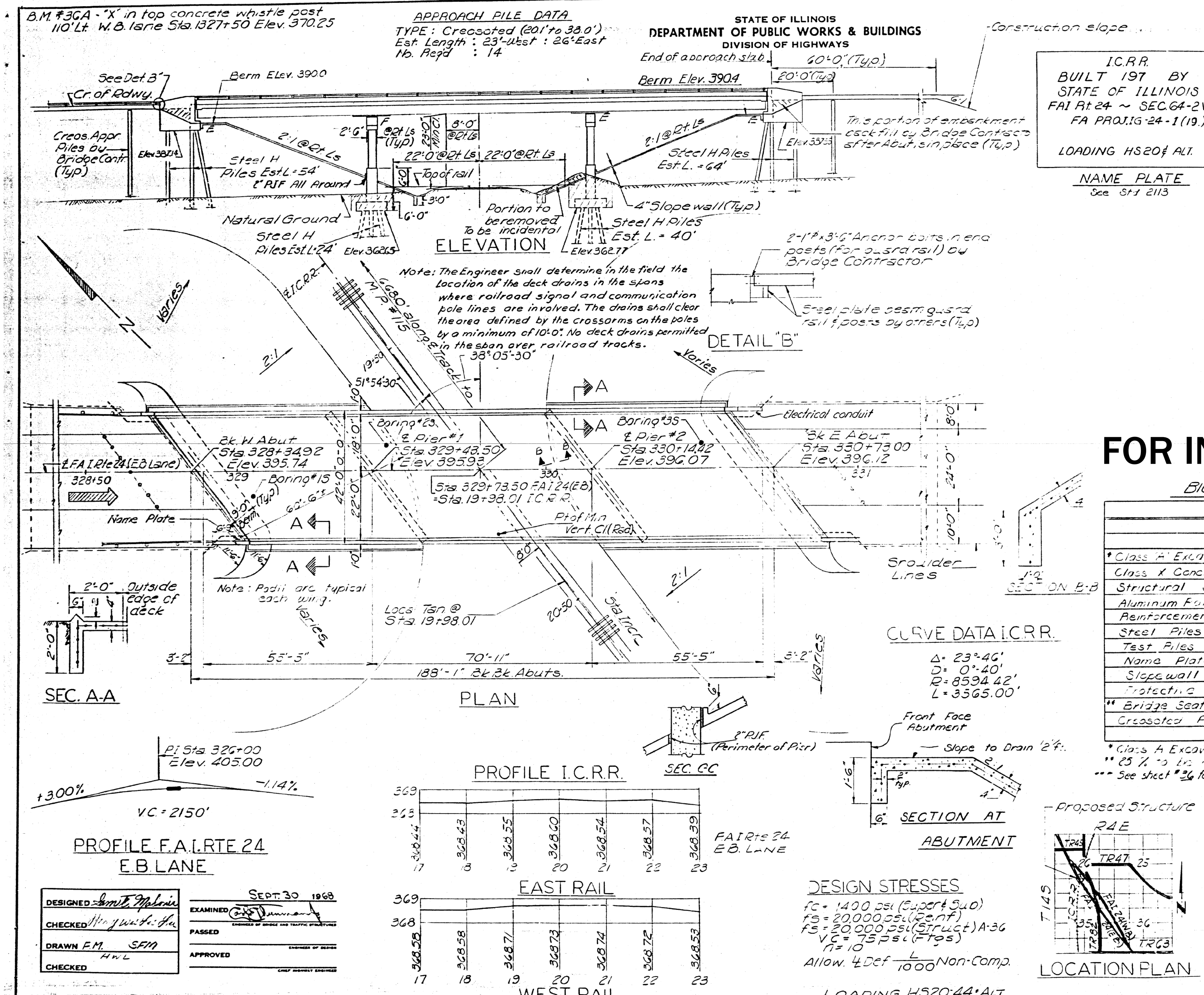
		CHECKED - AS		REVISED -	
PLOT SCALE = N/A		DRAWN - GLD/RAH		REVISED -	
PLOT DATE = 11/17/2020 - 02:14:22 PM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 32 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	130
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

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



GENERAL NOTES

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

Fasteners shall be high strength bolts. Bolts 3/4" ø; open holes 13/16" ø, unless otherwise noted.

Calculated weight of Structural Steel. = 188,220 Lbs.

The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.

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

Anchor bolts shall be set before bolting diaphragms over supports.

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

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

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

The Contractor shall drive 2 Steel H test piles in permanent locations, one at Pier 1 and one at the East Abutment; as directed by the Engineer before ordering the remainder of piles.

Steel H Piles shall be driven to refusal.

FOR INFORMATION ONLY

BILL OF MATERIAL E.B.L. STRUCTURE ***

Item	Unit	Super	Sub	Total
* Class 'A' Excavation for Structures	Cu. Yds.	—	—	233
Class X Concrete	Cu. Yds.	225.9	278.7	504.6
Structural Steel	L.S.	1/2		1/2
Aluminum Railing	Lin. Ft.	368	—	368
Reinforcement Bars	Lbs.	66,990	28,950	95,940
Steel Piles (8 BP36)	Lin. Ft.	—	2586	2586
Test Piles Steel (8 BP36)	Each	—	2	2
Name Plate	Each		—	1
Slopewall "4"	Sq. Yds.	—	—	770
Protective Coat	Sq. Yds.	970	—	970
** Bridge Seat Sealant	Lump Sum	—	—	1/2
Creosoted Piles (20.1' to 33.0')	Lin. Ft.	—	--	343

* Class A Excavation includes excavation for slopewalls.
** 25 % to be applied at each abutment
*** See sheet #36 for Bill of Material W.B.L. Structure.

GENERAL PLAN & ELEVATION
F.A.I. RTE. 24 (E.B.L.) OVER I.C.R.R.
PROJ. IG24-1(19)28
F.A.I. RTE 24 SEC. 64-2VB
MASSAC COUNTY
STA. 329+78.50 (E.B.L.)
STA. 19+98.01 (I.C.R.R.)

DESIGNED	Smit. Malonie
CHECKED	[signature]
DRAWN	F.M. SFM
	HWL
CHECKED	

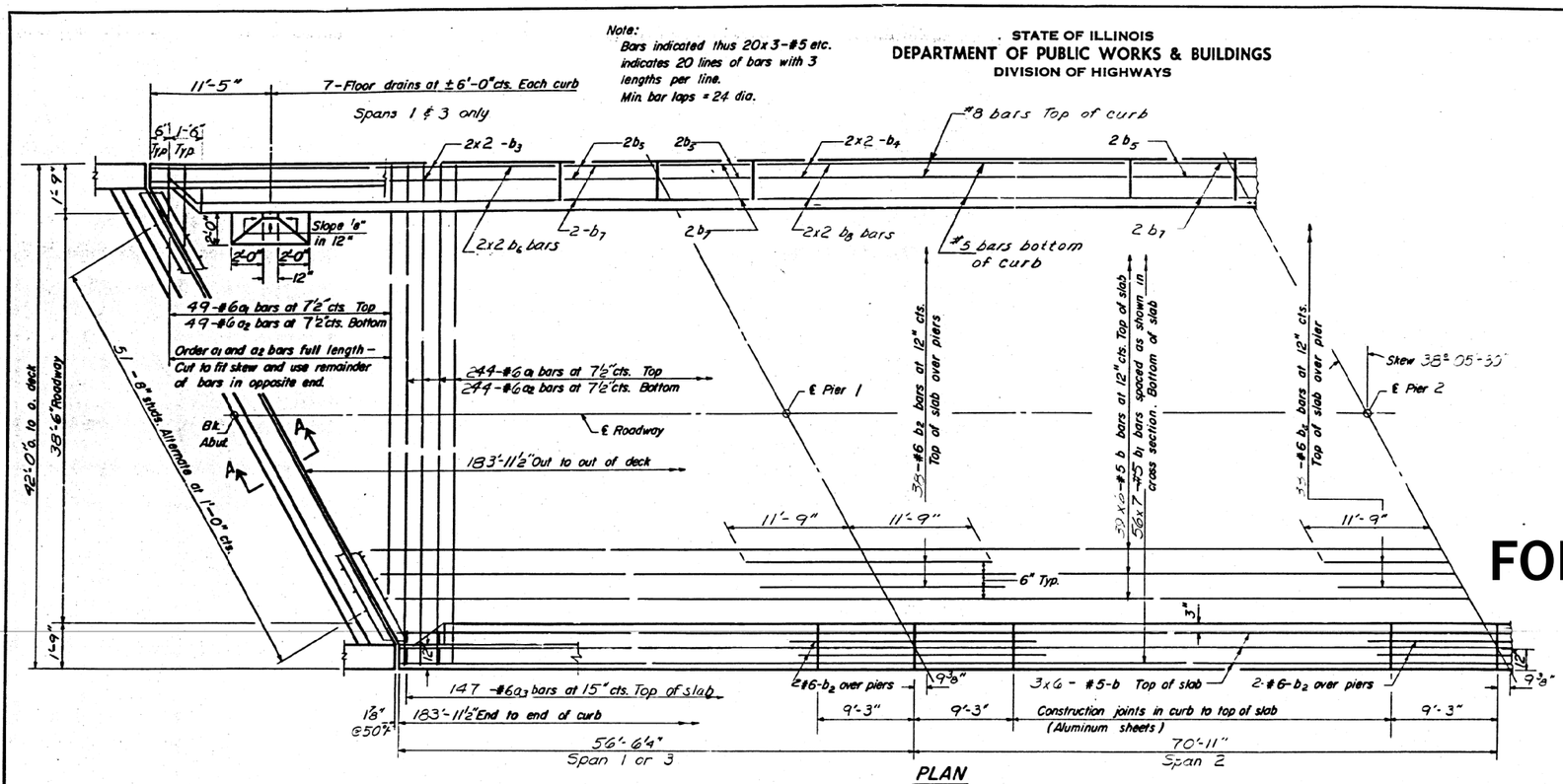
SEPT. 30 1968
EXAMINED [signature] ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED ENGINEER OF DESIGN
APPROVED CHIEF HIGHWAY ENGINEER

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
* 61 * * 24	64-2VB	MASSAC	79	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

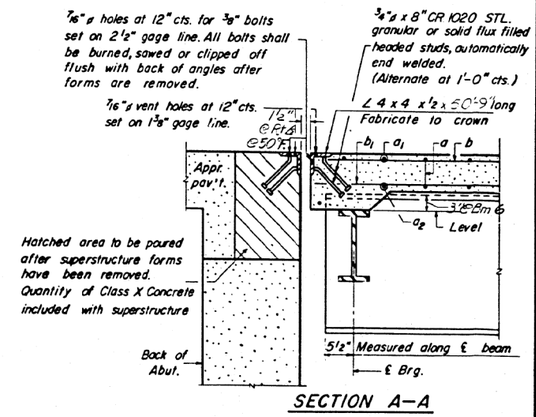
SHEET NO. 2 // SHEETS

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

Note:
Bars indicated thus 20x3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Min. bar laps = 24 dia.



PLAN



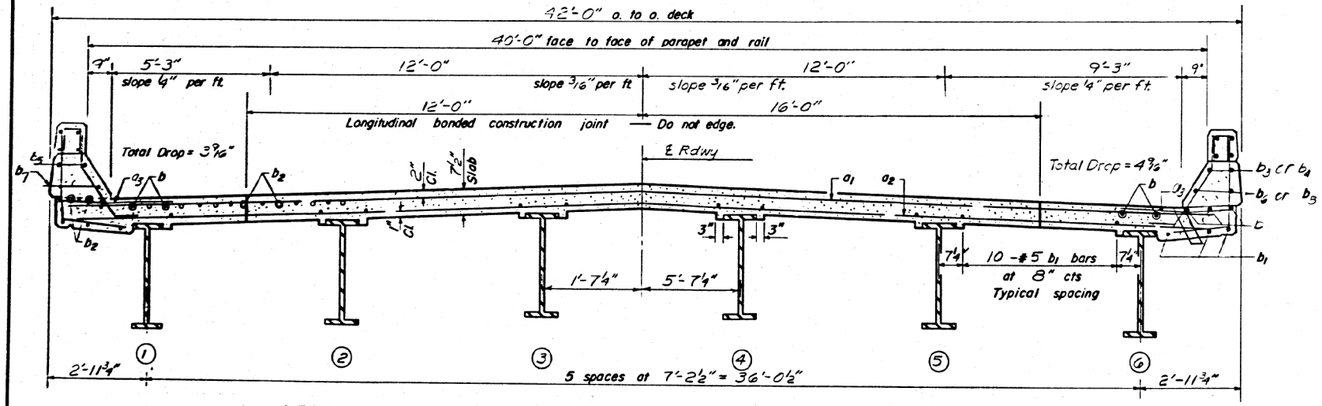
SECTION A-A

FOR INFORMATION ONLY

BILL OF MATERIAL

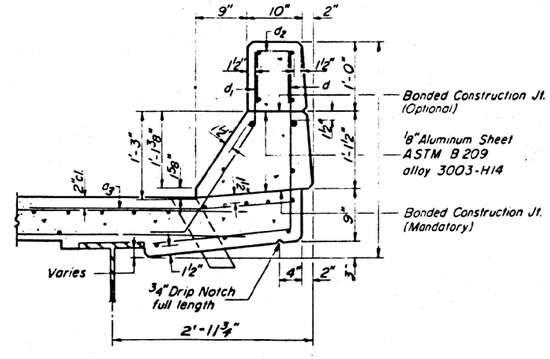
Bar	No.	Size	Length	Shape
a_1	293	#6	41'-3"	—
a_2	293	#6	40'-0"	—
a_3	294	#6	4'-0"	⌒
b	270	#5	31'-9"	—
b_1	392	#5	27'-6"	—
b_2	84	#6	23'-6"	—
b_3	16	#8	24'-6"	—
b_4	8	#8	27'-3"	—
b_5	16	#8	9'-0"	—
b_6	16	#5	24'-3"	—
b_7	16	#5	9'-0"	—
b_8	8	#5	26'-9"	—
d	369	#4	4'-7"	∟
d_1	366	#5	3'-5"	⌐
d_2	88	#4	2'-1"	⊓
Reinforcement Bars			Lbs.	66020
Class X Concrete			Cu. Yd.	214.0

Parapet Reinforcement and Class X Concrete are billed on sheet "6".



NEAR PIER

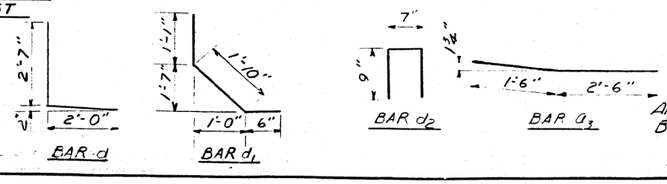
NEAR MIDSPAN

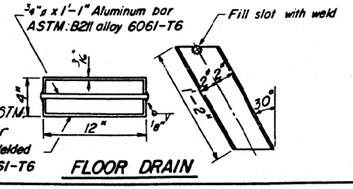


CURB SECTION

Cost of Aluminum Drains and Sheets shall be incidental to Class X Concrete

CROSS SECTION
LOOKING EAST





Aluminum Extrusions ASTM B221 alloy 6061-T6 or Aluminum Sheets Welded ASTM: B209 alloy 6061-T6

FLOOR DRAIN

DESIGNED	Sam Mahrun
CHECKED	H/L
DRAWN	J.R. Burke D.L. Beemer H/L
CHECKED	

EXAMINED Sept. 30 1968
PASSED
APPROVED

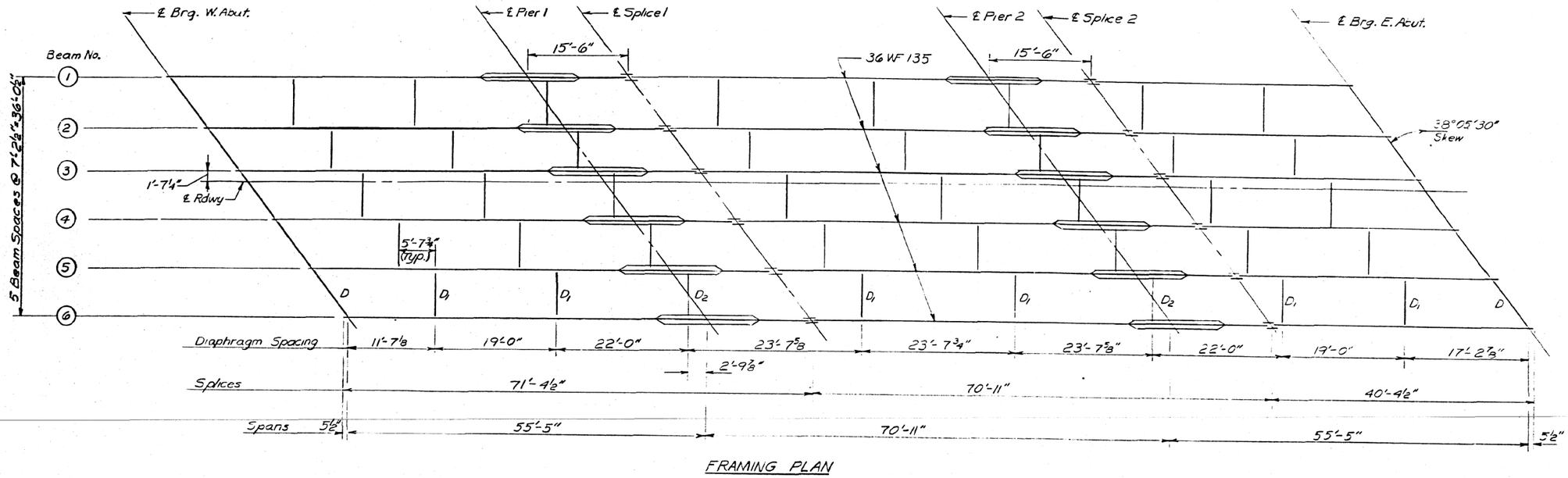
I-6-R (> 14°) 8-1-65 Rev. 1-11-66
Rev. 9-24-65 S.Y.K.

SUPERSTRUCTURE
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 329+78.50 E.B.L.)

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

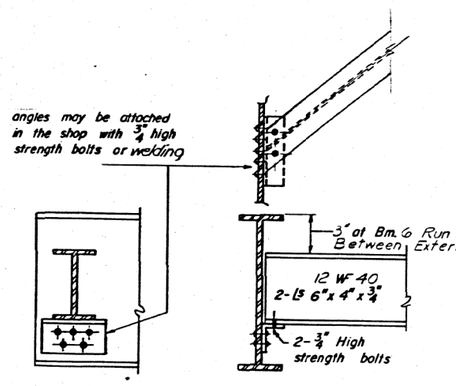
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3
11 SHEETS

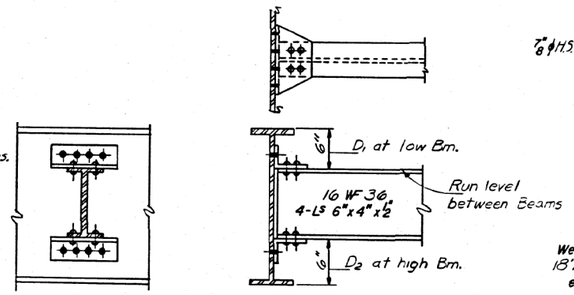


FRAMING PLAN

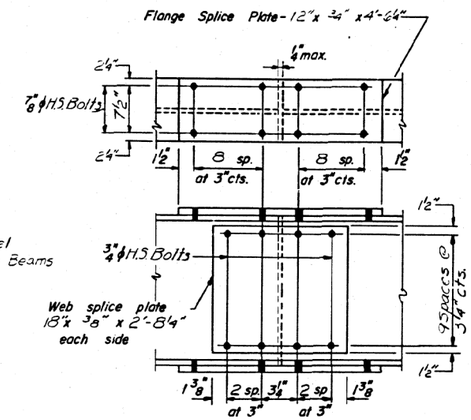
FOR INFORMATION ONLY



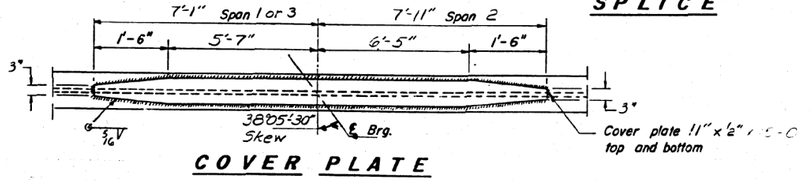
DIAPHRAGM D
10 Required



DIAPHRAGM D1 & D2
30 D1 Required
10 D2 Required



SPLICE



COVER PLATE

STRESS TABLE
INTERIOR BEAMS

	MOMENTS			REACTIONS	
	Asp. 1 or 3	Pier 1 or 2	Asp. 2	Abuts.	Piers
D.L	235.4	505.5	238.3	136.2	482.9
L.L	379.1	346.1	386.9	119.6	148.7
Imp.	105.0	92.1	98.6		
Total	717.5	993.7	723.8	250.8	631.6

Moments are in Ft-Kips
Reactions and Shears are in Kips

TOP OF BEAM ELEVATIONS

Beam	℄ Brg. W.A.	Pier 1	Splice 1	Pier 2	Splice 2	℄ Brg. E.A.
1	394.804	394.933	394.966	395.092	395.127	395.217
2	394.945	395.069	395.104	395.228	395.263	395.353
3	395.059	395.183	395.218	395.342	395.377	395.467
4	394.996	395.122	395.157	395.281	395.316	395.406
5	394.882	395.006	395.041	395.165	395.200	395.291
6	394.732	394.856	394.891	395.015	395.050	395.141

Note:
Diaphragm connections may be adapted to shop welding subject to approval by the Engineer

STRUCTURAL STEEL
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 329+78.50 (℄ BL)

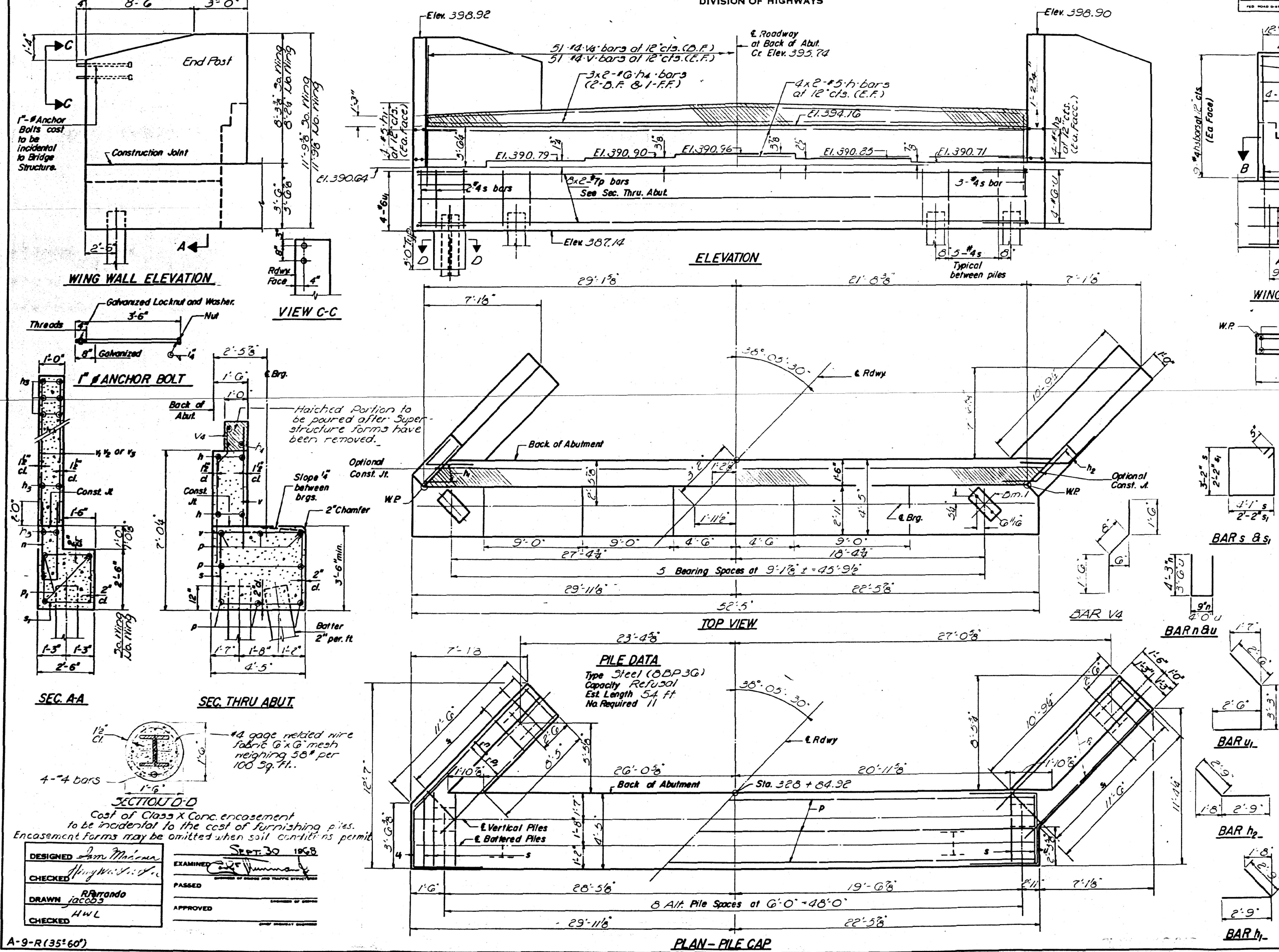
DESIGNED	Tom Malone	
CHECKED	Hughes	
DRAWN	J. Schneller J.P. Baker	
CHECKED	HWL	
EXAMINED	Sept 30 1965	
PASSED		
APPROVED		

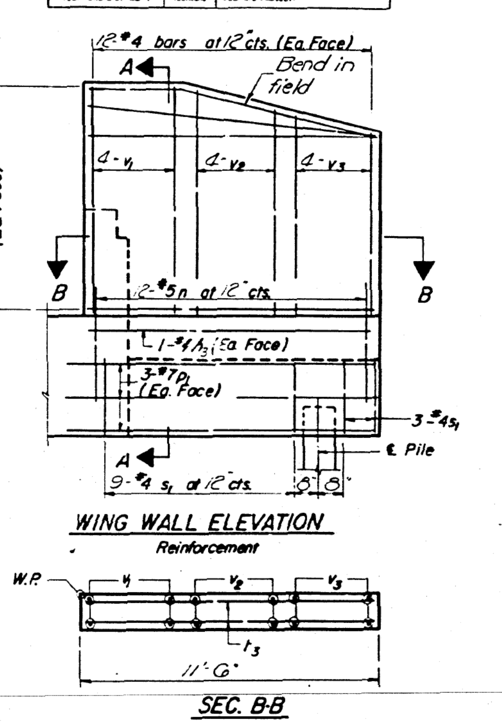
I-2-CD 9-1-65

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	32

SHEET NO. 9
11 SHEETS





ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	26'-0"	—
h_1	3	#5	5'-6"	
h_2	8	#5	5'-6"	
h_3	40	#4	11'-3"	—
h_4	6	#6	26'-3"	—
n	24	#5	9'-3"	⊔
p	16	#7	27'-0"	—
p_1	6	#7	11'-3"	—
p_2	6	#7	12'-6"	—
s	45	#4	15'-4"	◻
s_1	24	#4	9'-6"	◻
u	4	#6	11'-0"	⊏
u_1	4	#6	8'-3"	
v	102	#4	6'-0"	—
v_1	16	#4	8'-0"	—
v_2	16	#4	7'-3"	—
v_3	16	#4	6'-6"	—
V4	51	#4	3'-8"	
Class X Concrete			Cu. Yds.	52.3
Reinforcement Bars			Lbs.	3360
Steel Piles (8BP36)			Lin. Ft.	594

WEST ABUTMENT
F.A.I. RT. 24 - SEC. 64-2VB
MASSAC COUNTY
STA. 329+78.50 E.B.L.

DESIGNED	Sam Malone (?)
CHECKED	[illegible]
DRAWN	R. Arrondo / Jacobs
CHECKED	HWL
EXAMINED	Sept. 30, 1968
PASSED	
APPROVED	

FOR INFORMATION ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)
SHEET 36 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	134
		CONTRACT NO. 78606		
		ILLINOIS FED. AID PROJECT		

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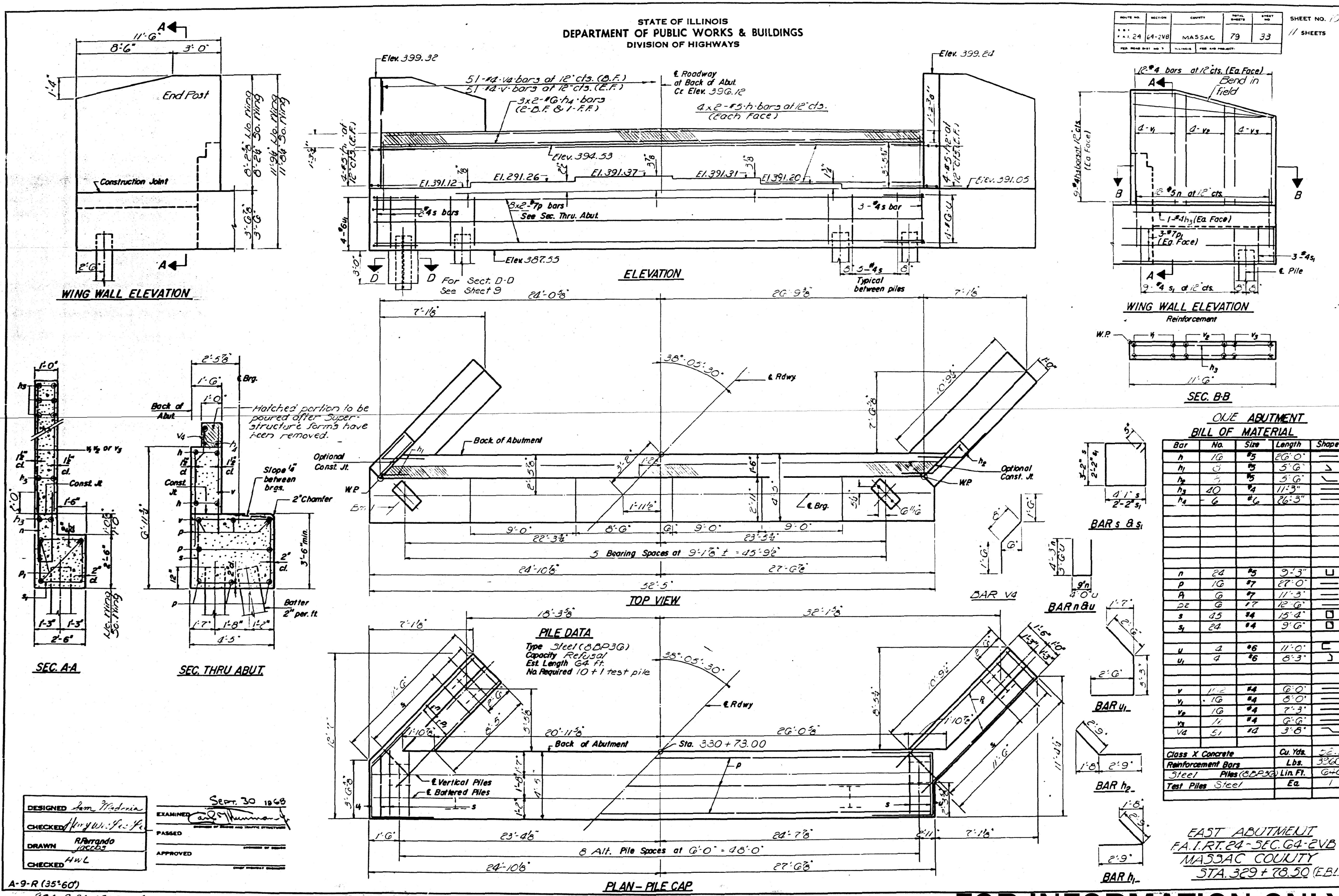

ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	26'-0"	—
h1	8	#5	5'-6"	
h2	8	#5	5'-6"	
h3	40	#4	11'-3"	—
h4	6	#6	26'-3"	—
n	24	#5	9'-3"	⊔
p	16	#7	27'-0"	—
p1	6	#7	11'-3"	—
p2	6	#7	12'-6"	—
s	45	#4	15'-4"	☐
s1	24	#4	9'-6"	☐
u	4	#6	11'-0"	⊏
u1	4	#6	8'-3"	
v	[illegible]	#4	6'-0"	—
v1	16	#4	8'-0"	—
v2	16	#4	7'-3"	—
v3	16	#4	6'-6"	—
V4	51	#4	3'-8"	

Item	Unit	Quantity
Class X Concrete	Cu. Yds.	[illegible]
Reinforcement Bars	Lbs.	3960
Steel Piles (8BP36)	Lin. Ft.	640
Test Piles Steel	Ea.	1

DESIGNED	Sam Madonia	
CHECKED	[illegible]	
DRAWN	R. Ferrando / Jacobs	
CHECKED	HWL	
EXAMINED	[illegible]	ENGINEER OF BRIDGE AND TRAFFIC STRUCTURES
PASSED		ENGINEER OF DESIGN
APPROVED		CHIEF HIGHWAY ENGINEER

FOR INFORMATION ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS FOR SN 064-0021
STRUCTURE NO. 064-0020 (W.B.) & 064-0021 (E.B.)

SHEET 37 OF 38 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	135
		CONTRACT NO. 78606		
		ILLINOIS FED. AID PROJECT		

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2VB	MASSAC	79	34

SHEET NO 11 / 11 SHEETS

Boring No. 1 S — Station 329+46 — Offset 8 FEET RIGHT
Surface Water El. NONE — Groundwater El. at Completion 334.5 — After - Hours -

Ground Surface 366.5

Description	Elevation	N	Qu t/s.f.	w (%)
MEDIUM TO STIFF MOIST BROWN STIFF CLAY LOAM A-6(9)	366.5			
		7	0.6S	26
		12	1.6S	22
STIFF MOIST BROWN SILTY CLAY LM TO SILTY CLAY A-6(9-10)	358.5	8	1.2B	21
VERY STIFF MOIST LIGHT GREY TO REDDISH BROWN CLAY A-7-6(18+) WITH ROTTEN SANDSTONE MIXED IN	356.0	22	2.1S	14
		15	2.6S	24
VERY STIFF MOIST GREY TO REDDISH BROWN CLAY SHALE WITH SOME BROKEN SANDSTONE LAYERS	351.0	44	4.6S	18
		42	3.9S	21
		47	4.0S	18
SEE PREVIOUS COLUMN	342.7	100/8"	4.0S	12
VERY STIFF MOIST GREY SHALE WITH LAYERS OF BROKEN SANDSTONE		80	4.0S	13
VERY STIFF TO HARD MOIST TO DRY GREY CLAY SHALE	338.5	78	3.9S	16
		100/10"	3.9S	15
		100	3.9S	14
HARD DAMP REDDISH BROWN SANDSTONE	331.0	100	In 5"	
36'-38' CORED 13% RECOVERY	328.5			
BOTTOM OF HOLE = 38.0 FEET				

Boring No. 2 S — Station 329+48 — Offset 8 FEET LEFT
Surface Water El. NONE — Groundwater El. at Completion NONE — After - Hours -

Ground Surface 368.0

Description	Elevation	N	Qu t/s.f.	w (%)
MEDIUM MOIST BROWN SILTY CLAY LOAM A-4(8) TO A-6(9)	368.0			
MEDIUM TO STIFF MOIST LIGHT GREY TO BROWN SILTY CLAY LOAM A-4(8) TO A-6(9)	365.0	24	0.9S	18
		13	1.6B	21
VERY STIFF MOIST BROWN CLAY A-6(12)	360.0	12	2.8B	21
VERY STIFF MOIST LIGHT BROWN TO REDDISH BROWN CLAY A-7-6(15+)	357.5	12	2.0B	26
VERY STIFF MOIST LIGHT GREY TO REDDISH BROWN CLAY A-7-6(15+)	355.0	11	2.0B	25
VERY STIFF MOIST LIGHT GREY TO GREY CLAY SHALE	352.5	25	3.7S	19
		68	4.0S	18
		100	4.4S	17
SEE PREVIOUS COLUMN		45	4.0S/	9
		100 in 9"	4.0S	15
HARD MOIST LIGHT GREY TO BROWN BROKEN SANDSTONE	340.0	100	in	8"
	339.2			
BOTTOM OF HOLE = 28.8 FEET				

Boring No. 3 S — Station 330+50 — Offset 8 FEET LEFT
Surface Water El. NONE — Groundwater El. at Completion 354.5 — After 24 Hours 352.5

Ground Surface 366.5

Description	Elevation	N	Qu t/s.f.	w (%)
STIFF MOIST BROWN SILTY CLAY LOAM A-6(9)	366.5			
		9	1.6B	21
		9	1.5S	24
STIFF MOIST BROWN CLAY LOAM 4(8)	358.5	10	1.4S	16
VERY STIFF MOIST MOTTLED GREY TO REDDISH BROWN CLAY A-7-6(15+) WITH SOME GRAVEL MIXED WITHIN	356.0	16	2.3B	21
MEDIUM MOIST GREY TO REDDISH BROWN CLAY LOAM A-4(5) sandy	353.5	23	0.2S	13
VERY STIFF MOIST DARK GREY CLAY A-7-6(20+)	351.0	22	2.6S	23
		30	4.3S	20
		44	3.7S	21
SEE PREVIOUS COLUMN				
VERY STIFF MOIST DARK GREY CLAY SHALE	343.5	65	4.0S	18
		56	3.5S	19
		57	3.9S	20
		96	3.1S	18
		72	3.5S	19
		83	4.3S	18
		52	3.9S	25
VERY STIFF DRY DARK GREY CLAY SHALE	326.0	75	3.7S	17
		59	3.3S	21
		84	3.9S	16
VERY STIFF DRY DARK GREY CLAY SHALE WITH SOME BROKEN SANDSTONE	318.5	100 6"	2.9S	16
HARD DAMP BROWN TO TAN BROKEN SANDSTONE WITH CLAY SHALE LAYERS	316.0	Cored 5% RECOVERY		
BOTTOM OF HOLE = 52.5 FEET	314.0			

DURING DRILLING IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 48.5 FEET

N - Standard Penetration Test - Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"

Qu - Unconfined Compressive Strength - t/sf
w - Water Content - percentage of oven dry weight - %

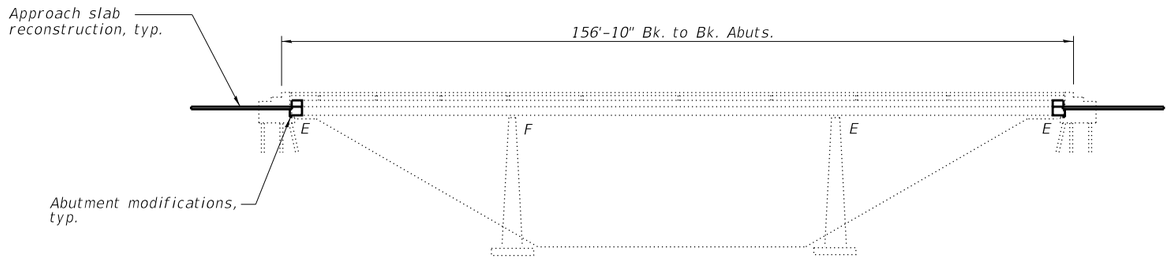
Type failure
B - Bulge Failure
S - Shear Failure
E - Estimated Value
P - Penetrometer

DESIGNED Sam E. Malone
CHECKED Hengwai Pei Lee
DRAWN H.W.L.
CHECKED

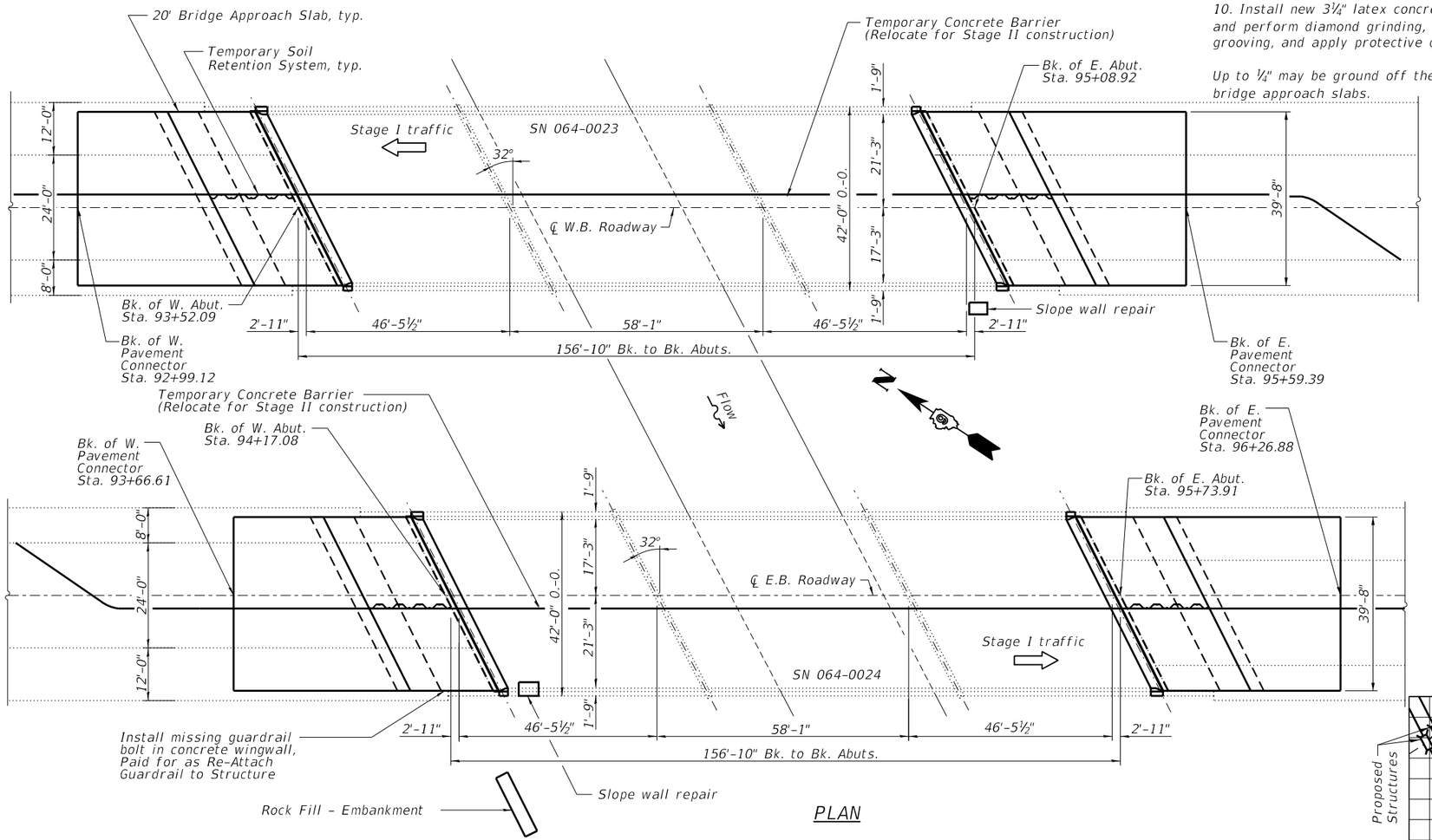
Sept. 30 1968
EXAMINED [signature]
PASSED
APPROVED

BORINGS
F.A.I. RT. 24 SEC. 64-2VB
MASSAC COUNTY
STA. 329 + 78.50 (E.B.L.)

FOR INFORMATION ONLY



ELEVATION



PLAN

SCOPE OF WORK

1. Remove existing 2¼" concrete wearing surface.

2. Perform deck repairs as shown. Remove and replace floor drains within deck repair areas as shown.

3. Replace bearings at abutments.

4. Repair spalled concrete on SN 064-0023 southeast abutment wingwall and modify bridge rail.

5. Install missing guardrail bolt at northwest wingwall of SN 064-0024.

6. Remove and replace bridge approach slabs and pavement connectors including removal of buried pile bent caps.

7. Clean and paint all steel beam ends at each abutment as preparation for concrete encasement.

8. Convert exising stub abutments to semi-integral abutments.

9. Repair slopewalls.

10. Install new 3¼" latex concrete wearing surface and perform diamond grinding, longitudinal bridge deck grooving, and apply protective coat.

Up to ¼" may be ground off the bridge deck and bridge approach slabs.

INDEX OF SHEETS

DESIGN STRESSES

FIELD UNITS

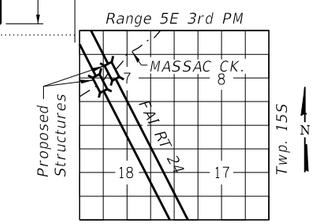
New Construction
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

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

Existing Structure, 1970
fc = 1,200 psi
fs = 20,000 psi (Reinforcement)

LICENSED STRUCTURAL ENGINEER
JOSEPH T. HEGER
081-008156
STATE OF ILLINOIS

11/24/2020
Exp. Date 11/30/2020



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
I-24 OVER MASSAC CREEK
F.A.I. 24, SECTION BRIDGE REPAIR 2021-1
MASSAC COUNTY
STA. 94+30.51 & STA. 94+95.50
SN 064-0023 & 064-0024

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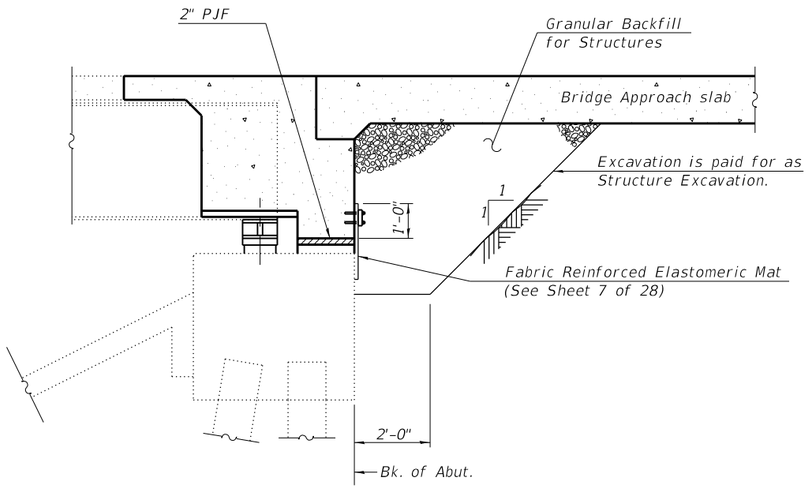
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

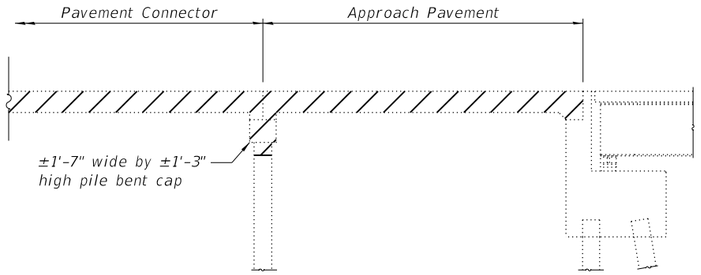
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 1 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	137
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



SECTION THRU SEMI-INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ∠'s)



APPROACH SLAB REMOVAL

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

SLOPE WALL REPAIRS

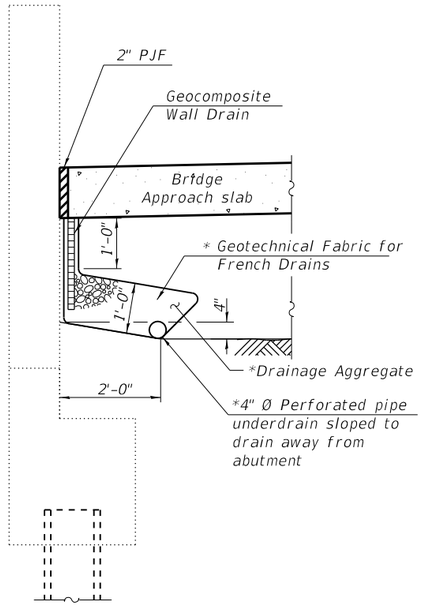
An opening in the slope wall with a voided area up to 16" deep exists at the southeast corner of SN 064-0023.

An opening in the slope wall with a voided area up to 7" deep exists at the southwest corner of SN 064-0024.

The voided areas shall be filled with Slope Wall Slurry Pumping as directed by the Engineer. Approximate quantities have been included. Contractor shall be paid for actual quantity of slurry placed.

Small areas of slope wall may need to be removed to access the voids in the slope walls. Any removals shall be repaired. Cost of removal and repairs shall be included with Slope Wall Slurry Pumping.

An area adjacent to the slope wall at the southwest corner of SN 064-0024 has eroded. Rock Fill - Embankment shall be placed here to prevent further erosion. Approximate quantity is 2.5 cu. yd.



SECTION THRU ABUTMENT WINGWALL

(Horiz. dim. @ Rt. ∠'s)

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

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

TOTAL BILL OF MATERIAL

ITEM	UNIT	SN 064-0023	SN 064-0024	TOTAL
Paved Shoulder Removal	Sq. Yd.	193	192	385
Concrete Removal	Cu. Yd.	38.4	38.5	76.9
Structure Excavation	Cu. Yd.	76	76	152
Floor Drains	Each	14	14	28
Concrete Structures	Cu. Yd.	40.6	40.6	81.2
Concrete Superstructure	Cu. Yd.	44.2	44.3	88.5
Protective Coat	Sq. Yd.	972	972	1944
Concrete Superstructure (Approach Slab)	Cu. Yd.	74.7	74.7	149.4
Furnishing and Erecting Structural Steel	Pound	2690	2690	5380
Reinforcement Bars, Epoxy Coated	Pound	41980	41980	83960
Bar Splicers	Each	298	298	596
Elastomeric Bearing Assembly, Type I	Each	12	12	24
Anchor Bolts, 1"	Each	24	24	48
Temporary Soil Retention System	Sq. Ft.	51	51	102
Granular Backfill for Structures	Cu. Yd.	70	70	140
Geocomposite Wall Drain	Sq. Yd.	17	17	34
Concrete Headwalls for Pipe Drains	Each	4	4	8
Temporary Concrete Barrier	Foot	418	418	837
Relocate Temporary Concrete Barrier	Foot	418	418	837
Impact Attenuators, Temporary (Non-Redirective), Test Level 3	Each	1	1	2
Impact Attenuators, Relocate (Non-Redirective), Test Level 3	Each	1	1	2
Raised Reflective Pavement Marker	Each	3	3	6
Raised Reflective Pavement Marker (Bridge)	Each	1	1	2
Barrier Wall Reflectors, Type B	Each	10	10	20
Raised Reflective Pavement Marker Removal	Each	4	4	8
Re-attach Guardrail to Structure	Each	0	1	1
Bridge Approach Pavement Connector (Special)	Sq. Yd.	290	290	580
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	520	520	1040
Pinning Temporary Concrete Barrier	Each	10	10	20
Raised Reflective Pavement Marker, Reflector Removal	Each	4	4	8
Jack and Remove Existing Bearings	Each	12	12	24
Structural Steel Removal	Pound	3400	3400	6800
Approach Slab Removal	Sq. Yd.	213	213	426
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	0.091	0.091	0.182
Cleaning and Painting Steel Bridge No. 3	L. Sum	1	0	1
Cleaning and Painting Steel Bridge No. 4	L. Sum	0	1	1
Bridge Deck Scarification 3"	Sq. Yd.	612	612	1224
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	5	0	5
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	11	11	22
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	8	17	26
Diamond Grinding (Bridge Section)	Sq. Yd.	895	895	1791
Pipe Underdrains for Structures 4"	Foot	77	77	154
Rock Fill - Embankment	Cu. Yd.	0.0	2.5	2.5
Slope Wall Slurry Pumping	Cu. Yd.	2.2	3.5	5.7
Bridge Deck Latex Concrete Overlay, 3¼ Inches	Sq. Yd.	612	612	1224

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Prior to pouring new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
3. Plan dimensions and details are relative to existing plans and are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
5. Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams and other structural steel from the end of the beam to 1'-6" (measured along the beam) beyond the face of the concrete diaphragm shall be cleaned per Near White Blast Cleaning (SSPC- SP10). The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning (SSPC- SP15).
6. The designated areas cleaned per Near White Blast Cleaning (SSPC- SP10) and per Commercial Grade Power Tool Cleaning (SSPC- SP15) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Topcoat system. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No 7.5G 4/8.
7. All new structural steel and bearing assembly shall be hot-dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel"
8. SSPC QP1 and SSPC QP2 Certification is required for this Contract.
9. To retain the temporary concrete barrier for Stage II traffic, the Contractor shall have the option of using either 2 (#5) bar splicers or 2 cast in place inserts at 6" centers at the mid-depth of the approach slab and pavement connector. The bar splicers or inserts shall have a minimum proof load of 5,000 pounds. Along with the anchoring devices the Contractor shall provide one steel retainer plate and 2 ½" diameter bolt and washers every 6' as shown on Detail II on Standard R-27 (Sheet 5 of 28) from Sta. 92+99.12 to Sta. 93+52.09 and Sta. 95+08.92 to Sta. 95+59.39 for SN 064-0023 and Sta. 93+66.61 to Sta. 94+17.08 and Sta. 95+73.91 to Sta. 96+26.88 for SN 064-0024 for Stage II traffic. This work shall be included in the cost of Temporary Concrete Barrier, no additional compensation shall be provided.
10. Existing structural steel that will be in contact with new structural steel shall be cleaned and painted prior to erection as required by the Special Provision for "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

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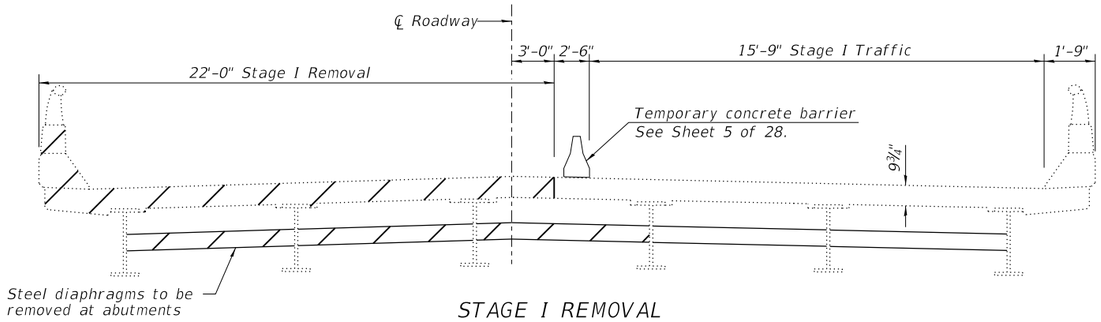
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

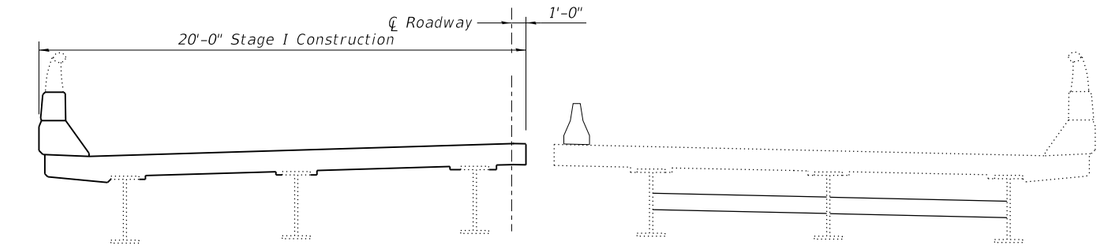
GENERAL DATA
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 2 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	138
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



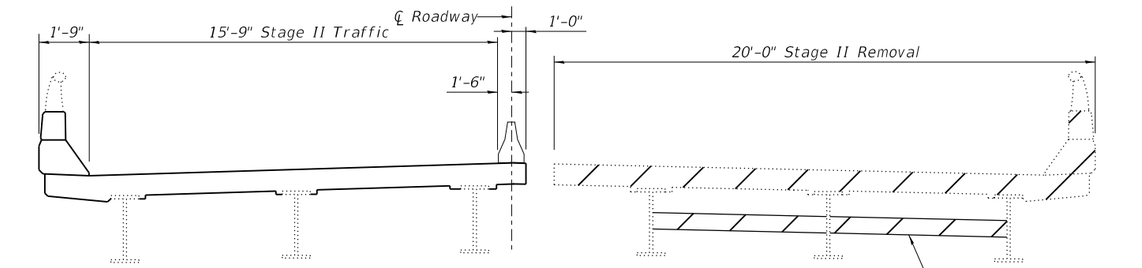
STAGE I REMOVAL

(Looking in the direction of traffic)



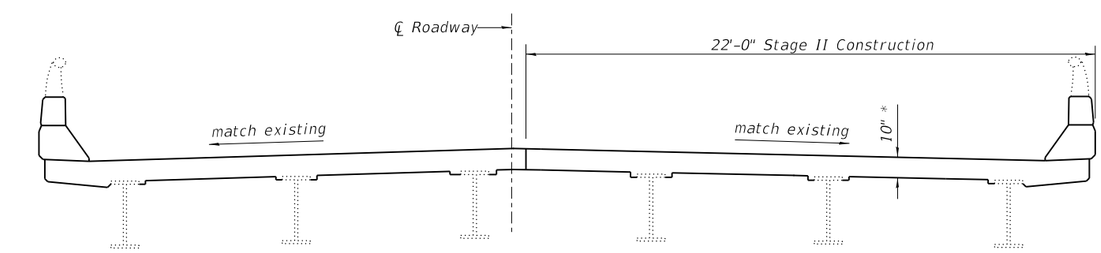
STAGE I CONSTRUCTION

(Looking in the direction of traffic)



STAGE II REMOVAL

(Looking in the direction of traffic)

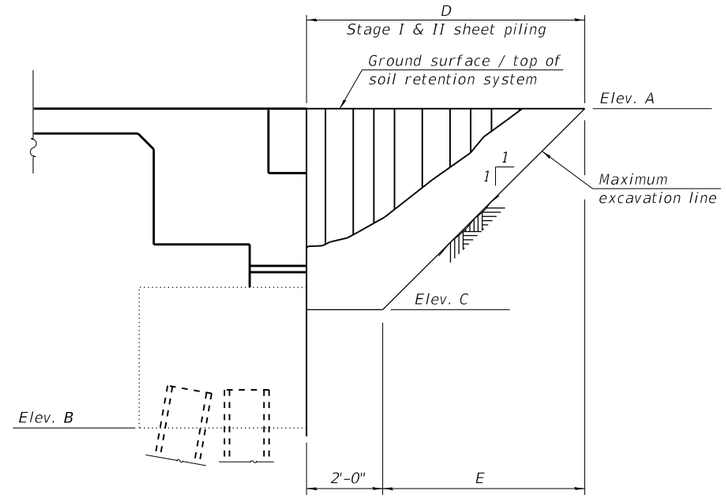


STAGE II CONSTRUCTION

(Looking in the direction of traffic)

*Prior to grinding

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



TEMPORARY SOIL RETENTION SYSTEM

Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
SN 064-0023 W. Abut.	385.24	376.65	379.87	7'-4½"	5'-4½"
SN 064-0023 E. Abut.	385.40	376.73	379.95	7'-5½"	5'-5½"
SN 064-0024 W. Abut.	385.01	376.40	379.62	7'-4¾"	5'-4¾"
SN 064-0024 E. Abut.	385.37	376.69	379.91	7'-5½"	5'-5½"

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

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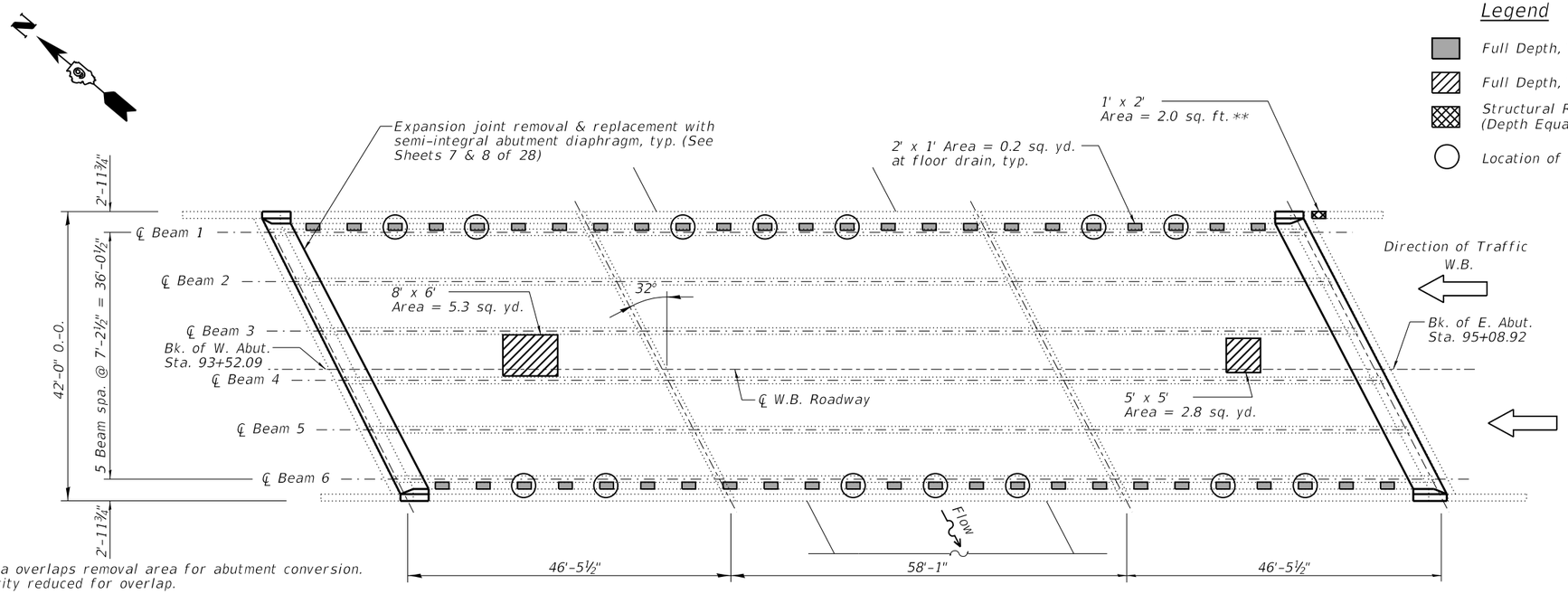
PLOT DATE = 11/24/2020 - 11:20:19 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 3 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	139
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



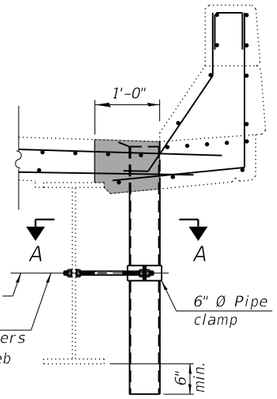
*Area overlaps removal area for abutment conversion. Quantity reduced for overlap.

**Aluminum railing to be trimmed 2" to avoid contact with stationary wingwall from bridge expansion and contraction. End cap shall be salvaged and re-installed. Cost shall be included in the cost of Structural Repair of Concrete (Depth equal to or less than 5 inches).

DECK PLAN
SN 064-0023

Legend

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



SECTION THRU PARAPET

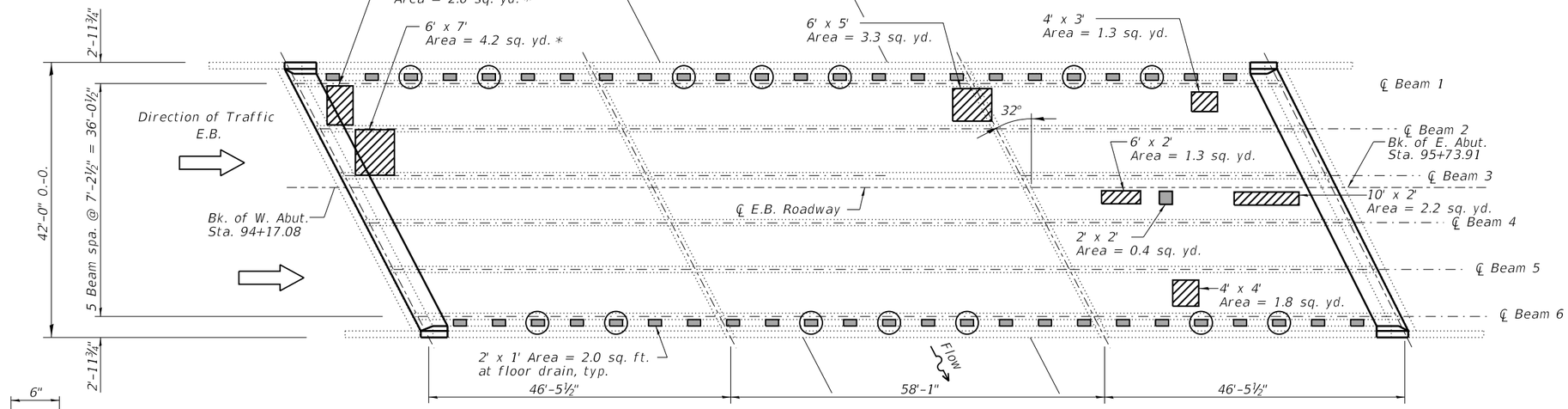
Notes:

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

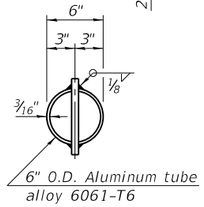
The Engineer shall show actual locations of deck repairs on As-built Plans.

Existing floor drains shall be removed at each existing floor drain location. New 6" circular floor drains shall be installed as shown. See existing plan sheets for drain details. Cost for removal of existing floor drains included with Deck Slab Repair (Full Depth, Type I).

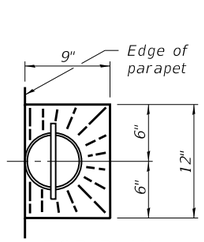
The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting Existing Steel Structures. The exterior surfaces of the drains shall be cleaned according to Society of Protective Coating's Spec. SSPC-SP1 prior to painting.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



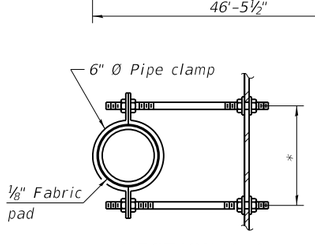
DECK PLAN
SN 064-0024



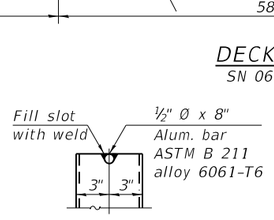
TOP PLAN
(Showing aluminum tube)



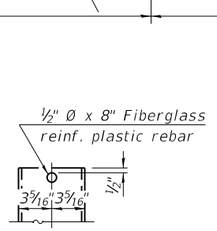
TOP PLAN



SECTION A-A
*Dimension as required by pipe clamp



ALUMINUM TUBE



FIBERGLASS PIPE

BILL OF MATERIAL

ITEM	UNIT	SN 064-0023	SN 064-0024	TOTAL
Floor Drains	Each	14	14	28
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	2	0	2
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	11	11	22
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	8	17	26

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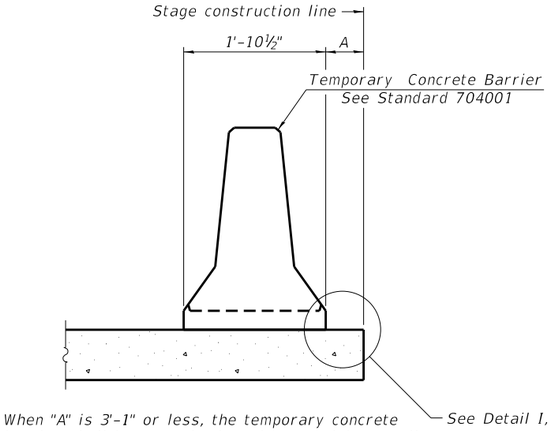
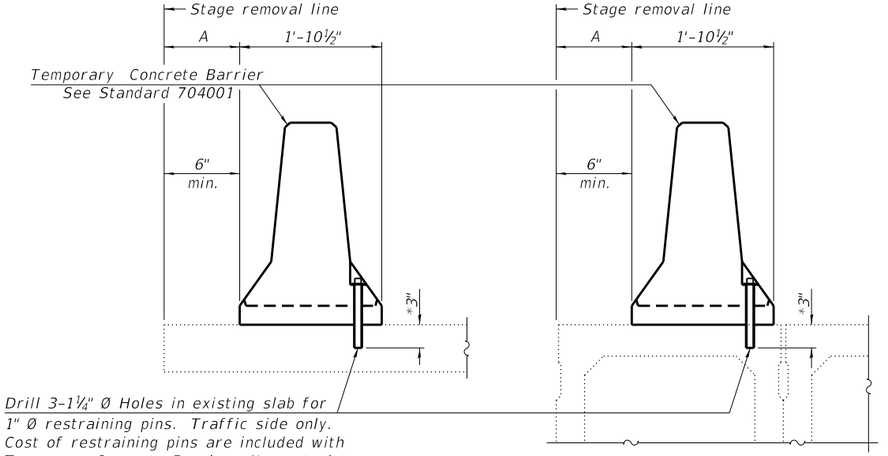
USER NAME = MIsael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DECK PATCHING PLAN STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)	F.A.I. RTE. 24
	CHECKED - AS	REVISED -			SECTION BRIDGE REPAIR 2021-1
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 4 OF 28 SHEETS	COUNTY MASSAC
PLOT DATE = 11/24/2020 - 11:20:21 AM	CHECKED - JTH	REVISED -			TOTAL SHEETS 263
					SHEET NO. 140
					CONTRACT NO. 78606
					ILLINOIS FED. AID PROJECT



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

NEW SLAB OR NEW DECK BEAM



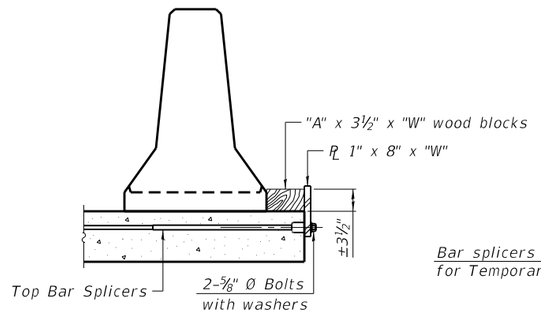
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

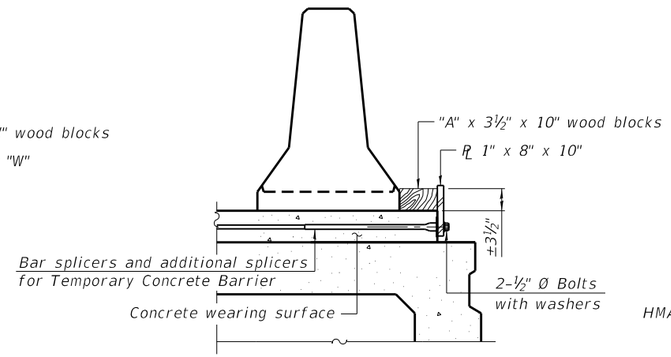
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

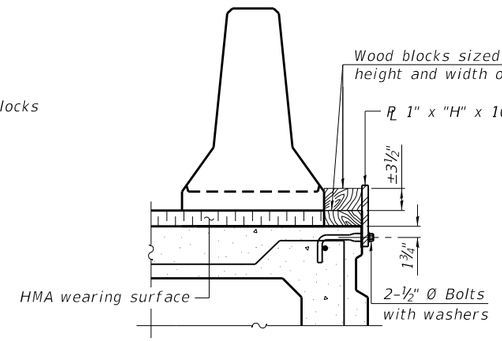
SECTIONS THRU SLAB OR DECK BEAM



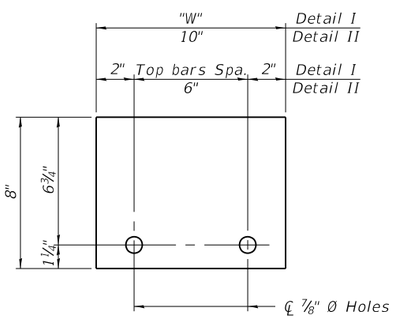
DETAIL I



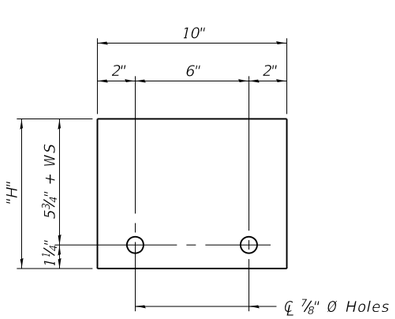
DETAIL II



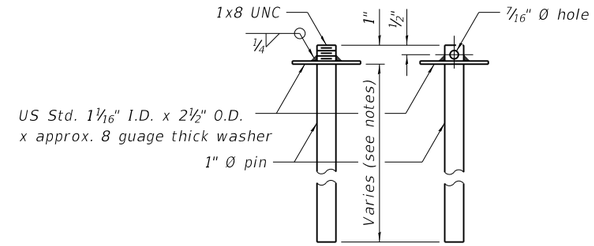
DETAIL III



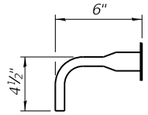
STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - 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.

R-27

2-17-2017

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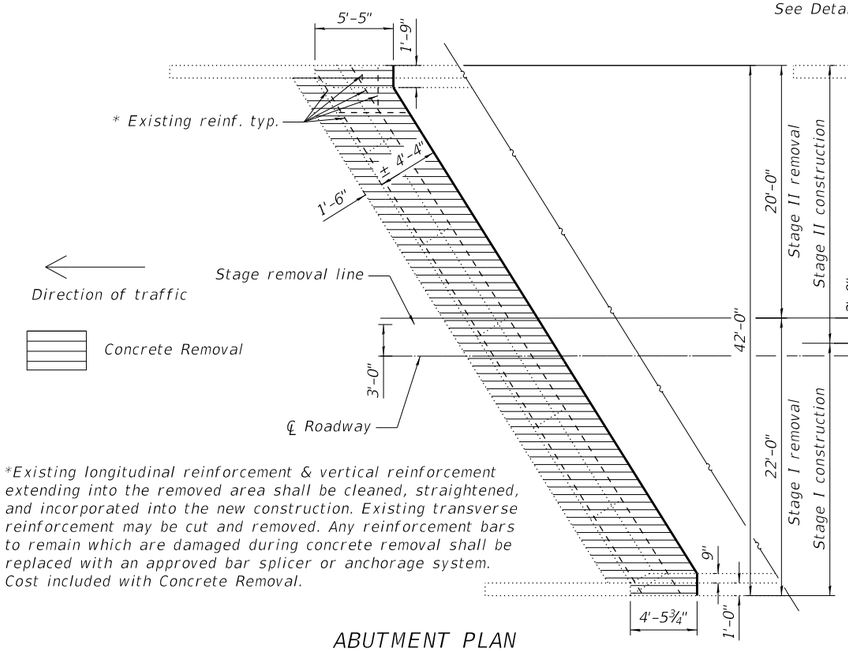
PLOT DATE = 11/24/2020 - 11:20:23 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

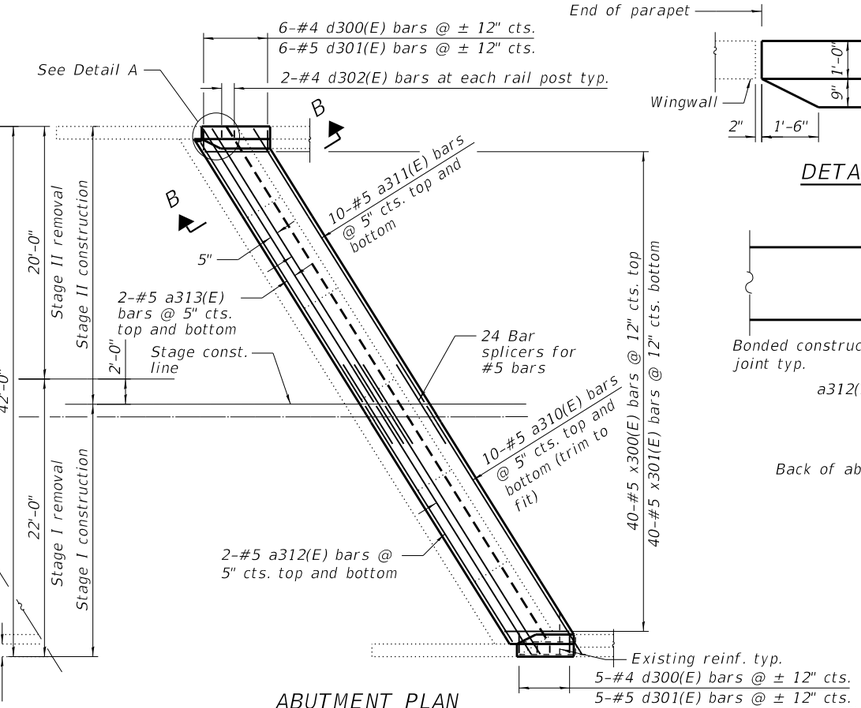
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 5 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	141
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



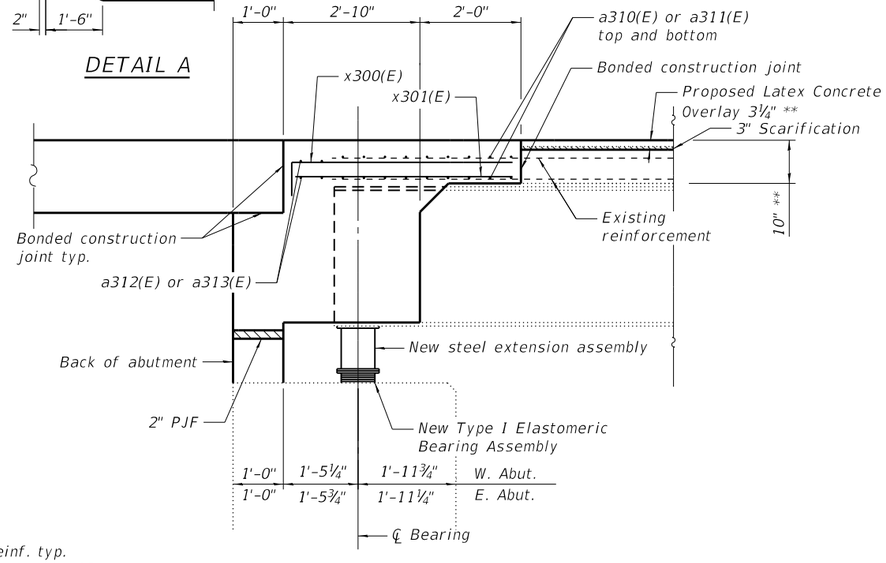
*Existing longitudinal reinforcement & vertical reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement may be cut and removed. Any reinforcement bars to remain which are damaged during concrete removal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

ABUTMENT PLAN SHOWING CONCRETE REMOVAL



ABUTMENT PLAN SHOWING CONCRETE REPLACEMENT

DETAIL A

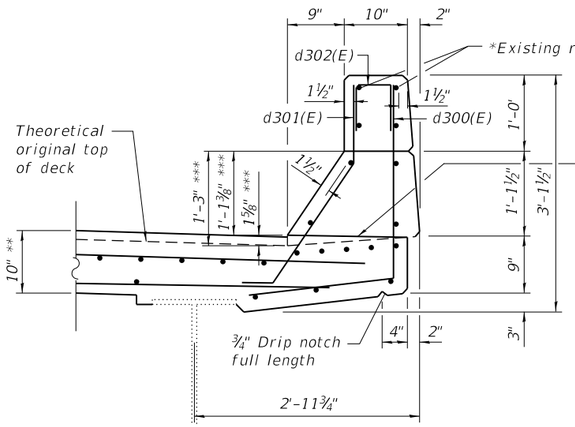


SECTION B-B
TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT

(Dimensions measured at right angles)
For section showing deck removal see sheet 10 of 28.

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar

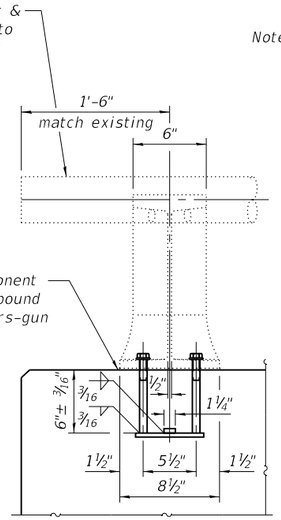
Note: d300(E) and d301(E) bars spaced at 12" cts.



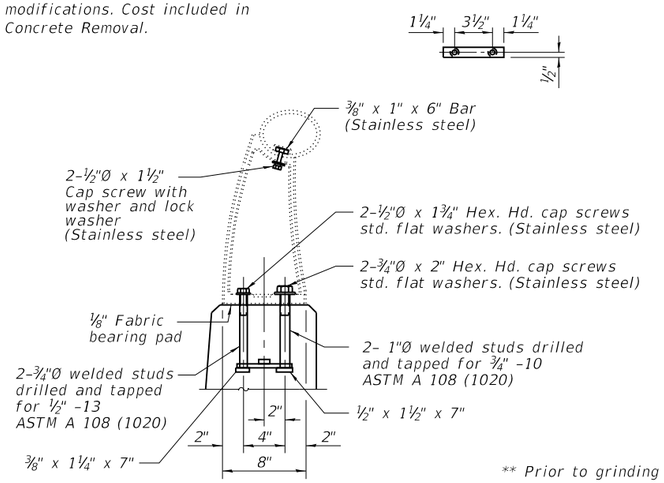
SECTION THRU PARAPET

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

Existing aluminum end post & hand rail terminal section to be removed and re-erected

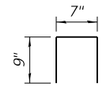


Note: Rail shall be removed and re-erected as necessary to allow structure modifications. Cost included in Concrete Removal.

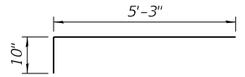


** Prior to grinding

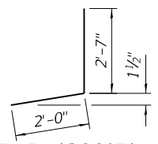
RAIL POST DETAILS



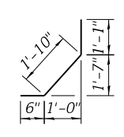
BAR d302(E)



BAR x300(E)



BAR d300(E)



BAR d301(E)

FOUR SUPERSTRUCTURE ENDS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a310(E)	80	#5	23'-2"	
a311(E)	80	#5	25'-6"	
a312(E)	16	#5	21'-10"	
a313(E)	16	#5	24'-2"	
d300(E)	44	#4	4'-7"	
d301(E)	44	#5	3'-5"	
d302(E)	16	#4	2'-1"	
x300(E)	160	#5	6'-1"	
x301(E)	160	#5	5'-3"	
Concrete Removal			Cu. Yd.	24.8
Concrete Superstructure			Cu. Yd.	88.5
Reinforcement Bars, Epoxy Coated			Pound	7040
Bar Splicers			Each	96

MODEL: Default
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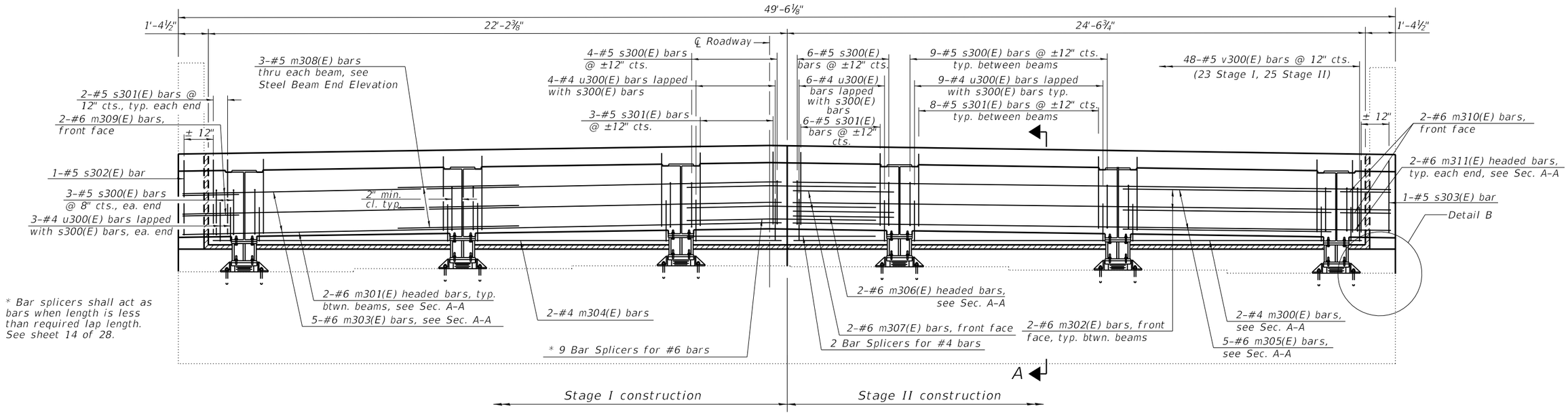
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 6 OF 28 SHEETS

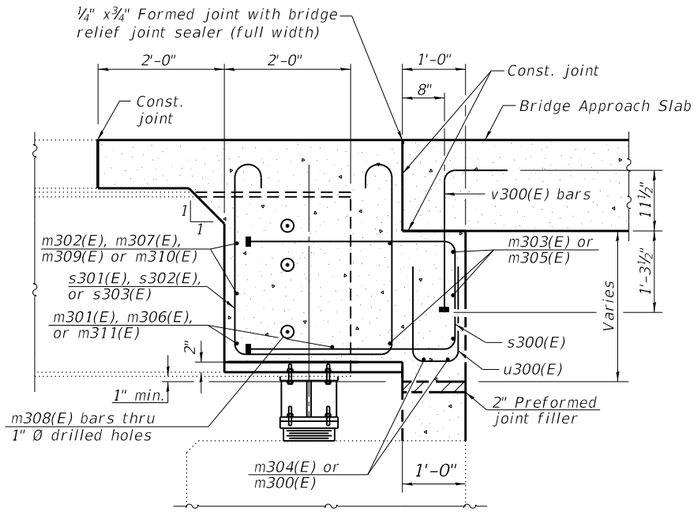
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	142
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



* Bar splicers shall act as bars when length is less than required lap length. See sheet 14 of 28.

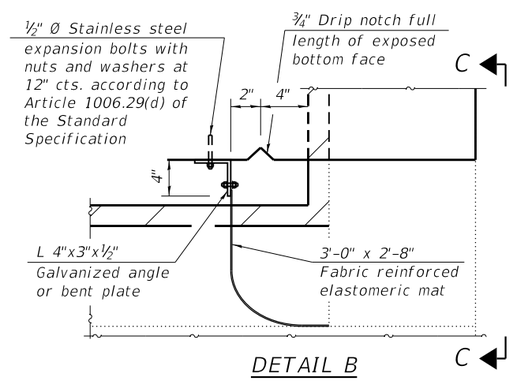
DIAPHRAGM ELEVATION AT ABUTMENT

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar

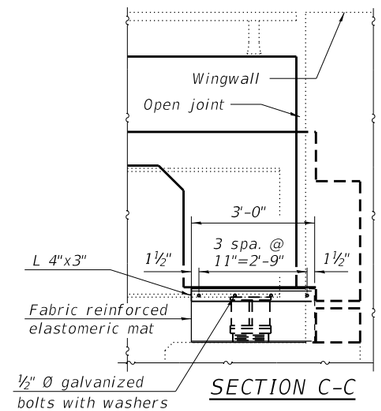


SECTION A-A

(Dimensions measured at right angles)

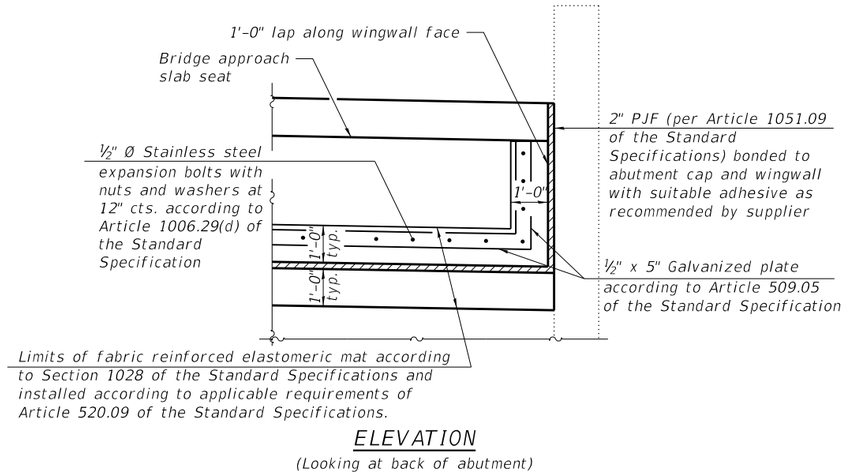


DETAIL B



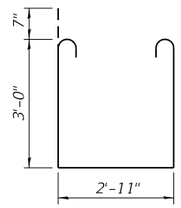
SECTION C-C

Note:
See Sheet 8 of 28 for additional diaphragm details and Bill of Material.

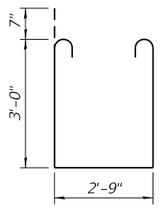


ELEVATION

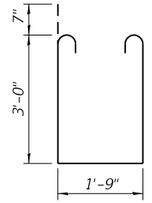
(Looking at back of abutment)



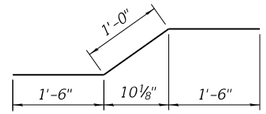
Bar s301(E)



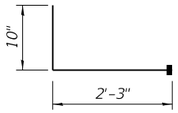
Bar s302(E)



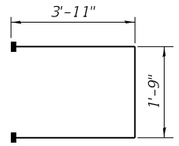
Bar s303(E)



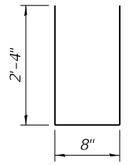
Bar m308(E)



Bar v300(E)



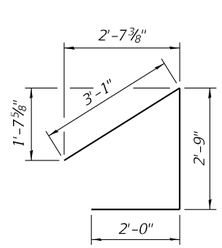
Bar s300(E)



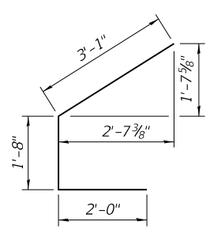
Bar u300(E)

FOUR DIAPHRAGMS
BILL OF MATERIAL

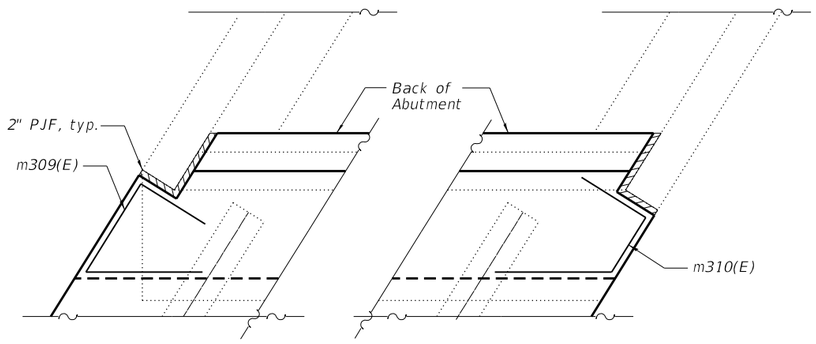
Bar	No.	Size	Length	Shape
m300(E)	8	#4	24'-2"	
m301(E)	32	#6	8'-0"	
m302(E)	32	#6	8'-0"	
m303(E)	20	#6	21'-9"	
m304(E)	8	#4	21'-9"	
m305(E)	20	#6	24'-2"	
m306(E)	8	#6	5'-0"	
m307(E)	8	#6	5'-0"	
m308(E)	72	#5	4'-0"	
m309(E)	8	#6	7'-10"	
m310(E)	8	#6	6'-9"	
m311(E)	16	#6	3'-1"	
s300(E)	208	#5	9'-7"	
s301(E)	180	#5	10'-1"	
s302(E)	4	#5	9'-11"	
s303(E)	4	#5	8'-11"	
u300(E)	192	#4	5'-4"	
v300(E)	208	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	8540
Bar Splicers			Each	44



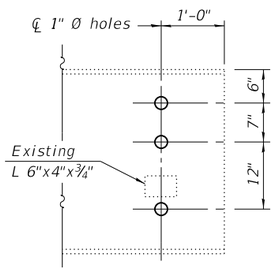
Bar m309(E)



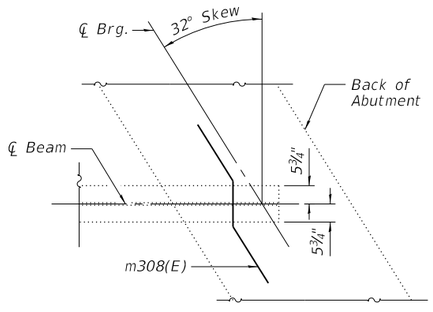
Bar m310(E)



PARTIAL PLAN



STEEL BEAM
END ELEVATION



PARTIAL PLAN AT BEAMS

(Showing bottom flange of beam)

Notes:

Cost of fabric reinforced elastomeric mats, galvanized angles and plates, stainless steel expansion bolts with nuts and washers, galvanized bolts with nuts and washers and installation are included in the cost of Concrete Superstructure.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

The s300(E), s301(E), s302(E), s303(E), u300(E) and v300(E) bars are placed parallel to beams and spaced at right angles to beams.

Concrete Superstructure quantity included in quantity shown on Sheet 6 of 28.

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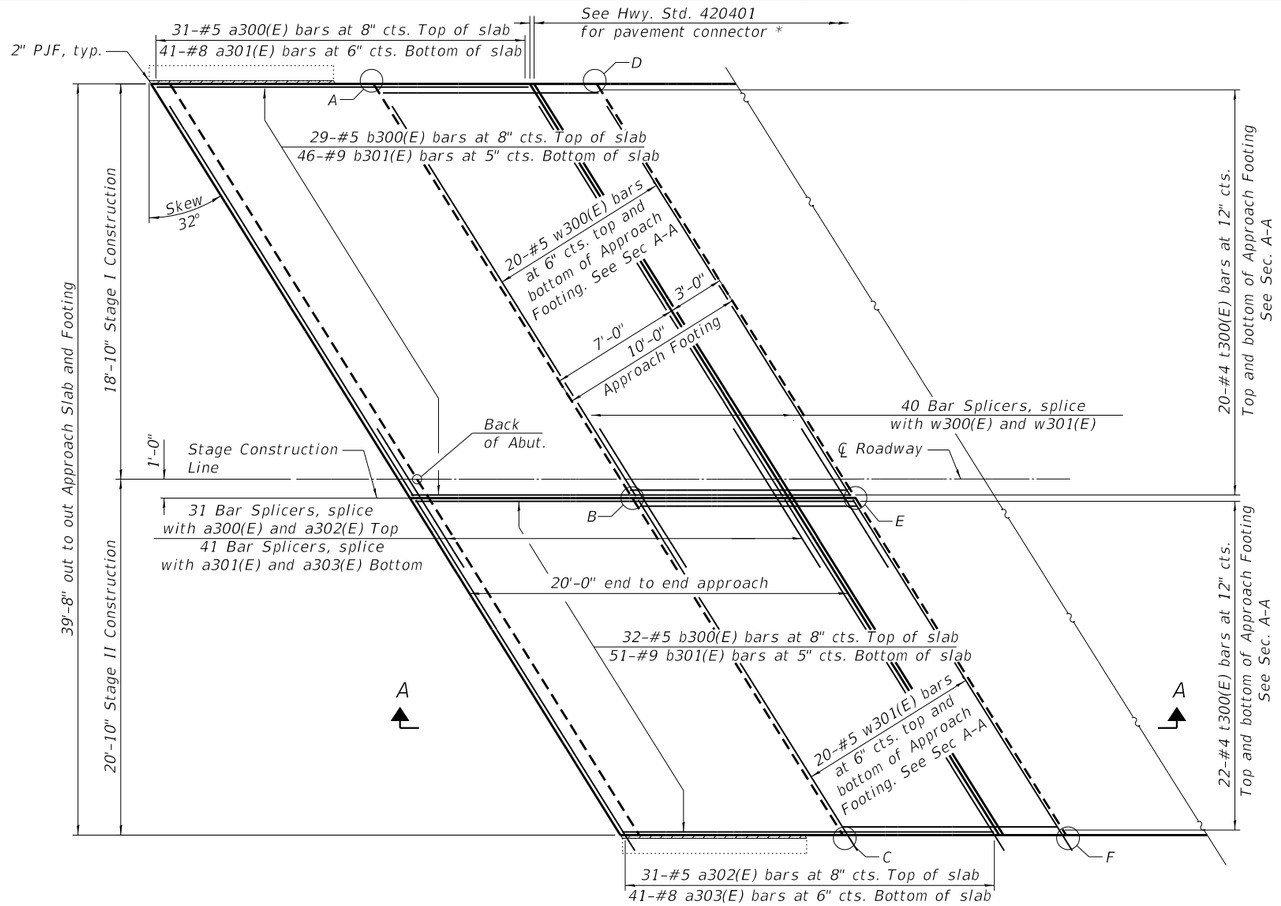
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)

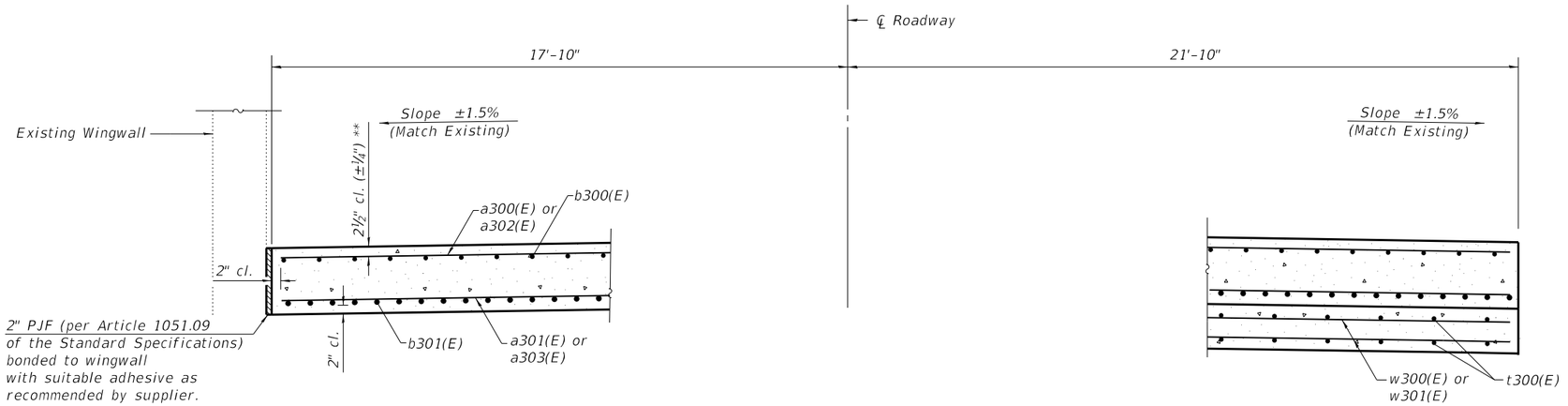
SHEET 8 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	144
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



PLAN

SN 064-0023 west approach slab shown, SN 064-0023 east approach slab similar
SN 064-0024 east approach slab shown, SN 064-0024 west approach slab similar



** Prior to grinding

NEAR ABUTMENT

CROSS SECTION

(Looking in the direction of traffic)

AT APPROACH FOOTING

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

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

S.N. 064-0023				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

S.N. 064-0024				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

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

See Section A-A on Sheet 10 of 28.

MODEL: Default
FILE NAME: I:\DOT\1906610WO_1\Drawn\Structures\SN 0023 & 0024\009_0023-0024_Approach Slab Detail 1.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 9 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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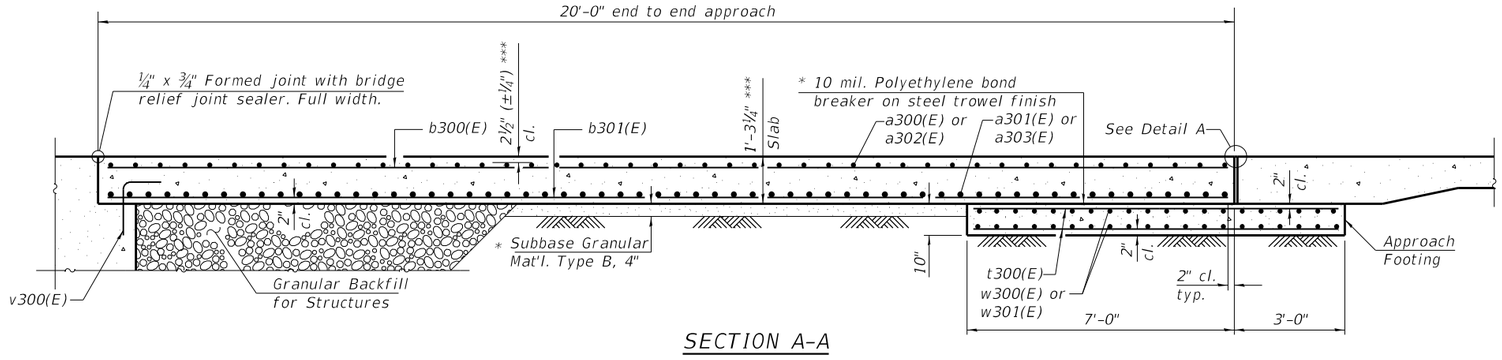
		CONTRACT NO. 78606		
		ILLINOIS FED. AID PROJECT		



SECTION A-A

Notes:

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

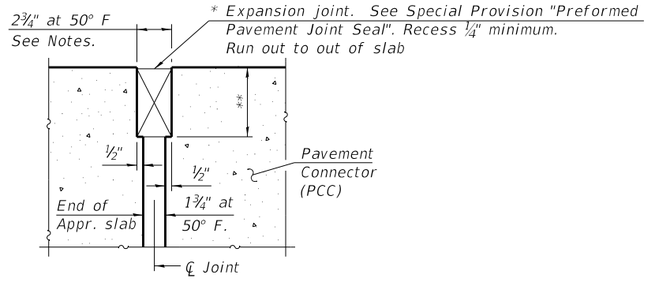
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (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 28.



DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer's recommendation

*** Prior to grinding

FOUR APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a300(E)	124	#5	21'-9"	——
a301(E)	164	#8	21'-9"	——
a302(E)	124	#5	24'-2"	——
a303(E)	164	#8	24'-2"	——
b300(E)	244	#5	19'-8"	——
b301(E)	388	#9	19'-8"	——
t300(E)	336	#4	11'-5"	——
w300(E)	160	#5	21'-9"	——
w301(E)	160	#5	24'-2"	——
Concrete Structures			Cu. Yd.	57.7
Concrete Superstructure (Approach Slab)			Cu. Yd.	149.4
Reinforcement Bars, Epoxy Coated			Pound	67220
Bar Splicers			Each	448

MODEL: Default
FILE NAME: I:\DOT\190610WO_1\Drawl\Structures\SN 0023 & 0024\010_0023-0024_Approach Slab Detail 2.dgn

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BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 10 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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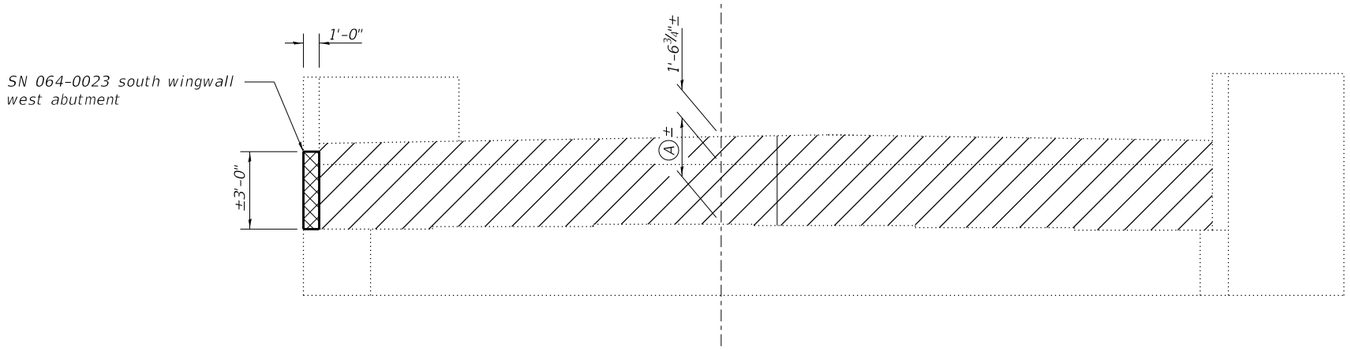
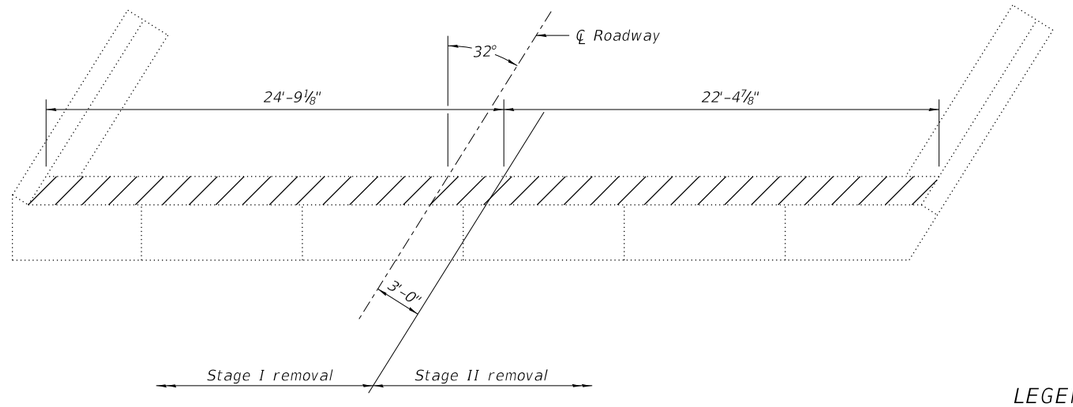
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



ELEVATION

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar

Location	Dim. A	Dim. B
064-0023 – West Abutment	3'-0⅜"	6'-10⅛"
064-0023 – East Abutment	3'-1⅜"	6'-11"
064-0024 – West Abutment	3'-0⅜"	6'-10⅜"
064-0024 – East Abutment	3'-1¼"	6'-11⅛"



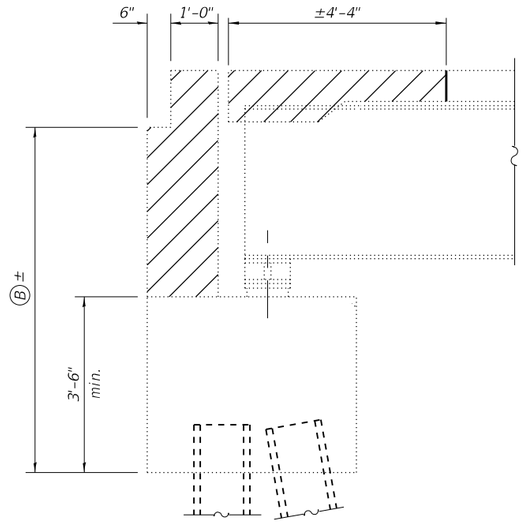
PLAN

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar

LEGEND

Concrete Removal

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



SECTION THRU ABUTMENT

FOUR ABUTMENTS BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	43.5
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	3

Concrete Removal quantity for deck concrete included in Bill of Material on sheet 6 of 28.

MODEL: Default
FILE NAME: I:\DOT\1909610WG_1\Draw\Structures\SN 0023 & 0024\11_0023-0024_Abutment Removal.dgn

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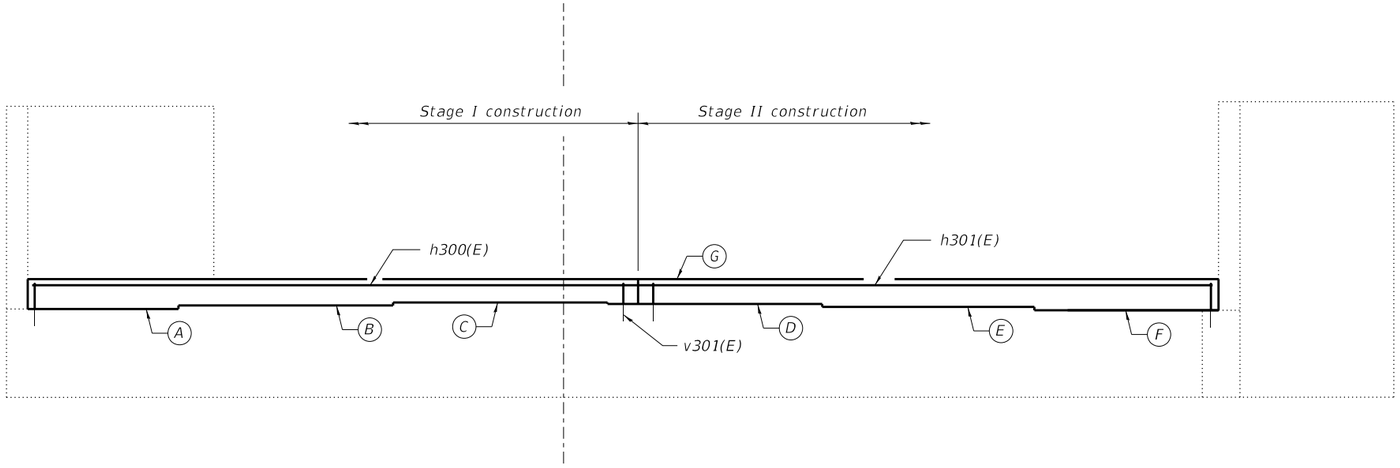
ABUTMENT REMOVAL
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 11 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	147
		CONTRACT NO. 78606		
		ILLINOIS FED. AID PROJECT		

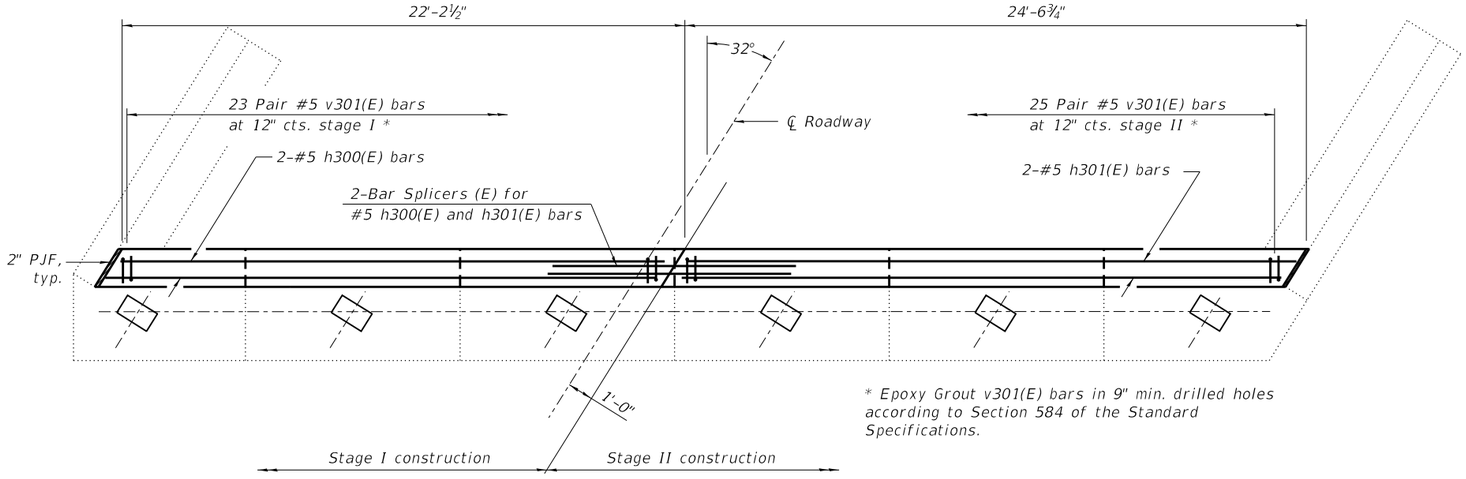


ELEVATION

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar

Location	Elev. A	Elev. B	Elev. C	Elev. D	Elev. E	Elev. F	Elev. G
064-0023 – West Abutment	380.20	380.34	380.46	380.40	380.29	380.15	381.04
064-0023 – East Abutment	380.28	380.42	380.54	380.48	380.37	380.23	381.12
064-0024 – West Abutment	379.99	380.12	380.23	380.16	380.05	379.90	380.79
064-0024 – East Abutment	380.28	380.41	380.52	380.45	380.34	380.19	381.08

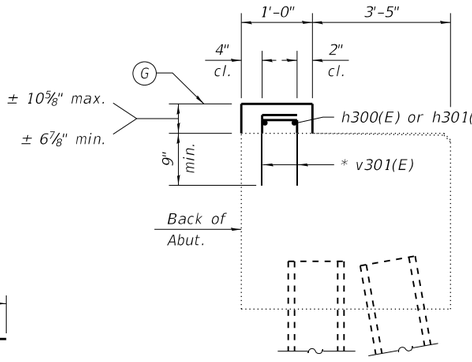
Elevations are based on existng plans and are provided as a reference point. Actual elevations and dimensions in the field may vary.



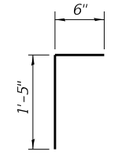
* Epoxy Grout v301(E) bars in 9" min. drilled holes according to Section 584 of the Standard Specifications.

PLAN

SN 064-0023 west abutment shown, SN 064-0023 east abutment similar
SN 064-0024 east abutment shown, SN 064-0024 west abutment similar



SECTION THRU EXISTING PILE CAP



Bar v301(E)

FOUR ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h300(E)	8	#5	21'-9"	——
h301(E)	8	#5	24'-3"	——
v301(E)	384	#5	1'-11"	L
Concrete Structures			Cu. Yd.	23.5
Concrete Reinforcement Bars, Epoxy-Coated			Pound	1160
Bar Splicers			Each	8

MODEL: Default
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STATE OF ILLINOIS
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ABUTMENT DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 12 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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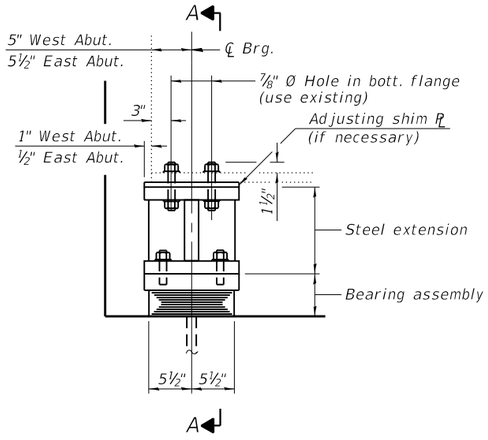
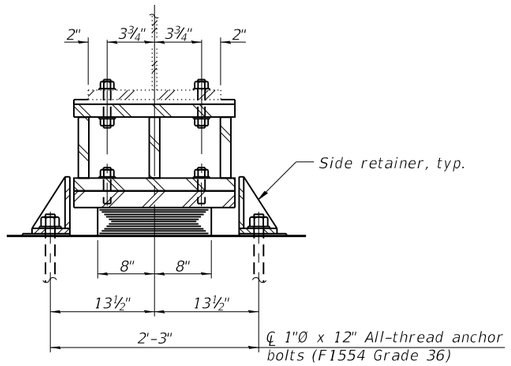
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

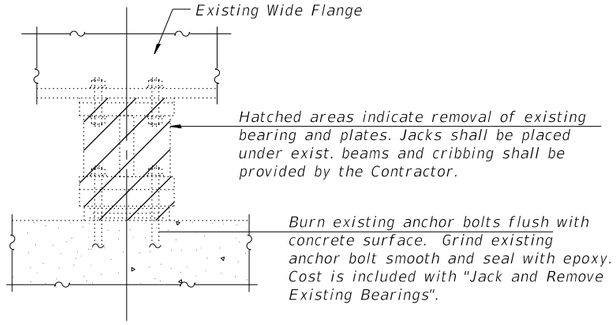


ELEVATION AT ABUT.

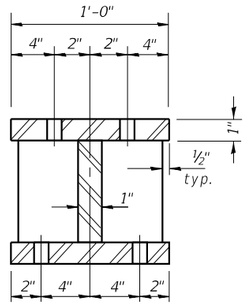


SECTION A-A

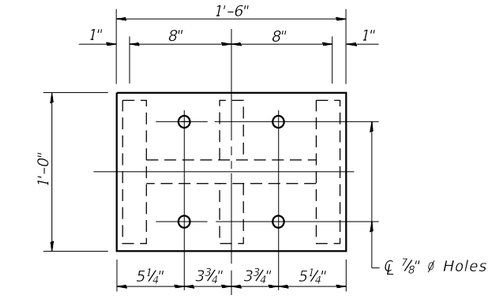
TYPE I ELASTOMERIC EXP. BRG.

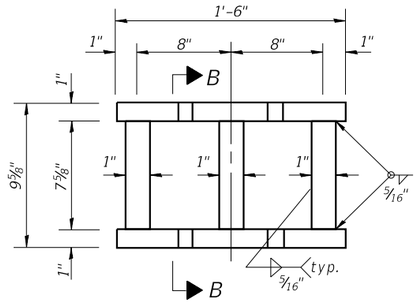


BEARING REMOVAL

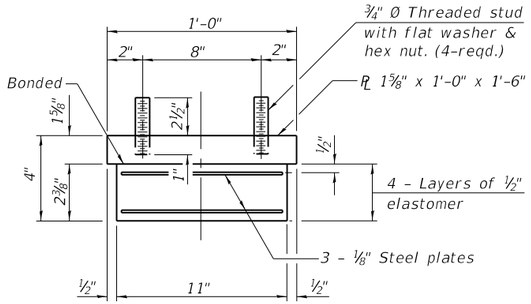


SECTION B-B



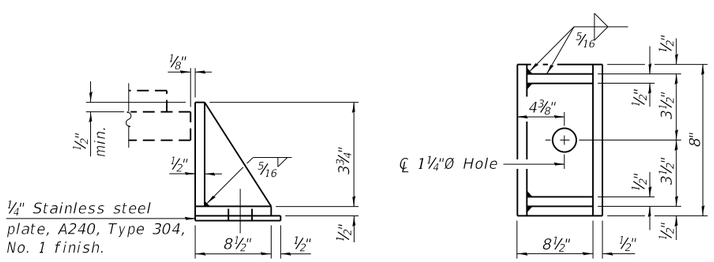


STEEL EXTENSION AT WEST ABUT.



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.

INTERIOR BEAM REACTION TABLE

	Existing Service Loads	Proposed Service Loads
R DL (k)	16.7	43.0
R DW (k)	3.1	5.0
R LL (k)	35.9 (HS20)	63.5 (HL-93)
Imp (k)	10.5	15.3
R Total (k)	66.2	126.8

Notes:

New steel extension, shim plates, and connection bolts are included with Furnishing and Erecting Structural Steel.

Prior to ordering any material, the Contracor shall verify in the field all bearing height and shim thickness dimensions. Adjustment must account for deck heave due to pack rust (if present).

Min. jack capacity = 37 tons.

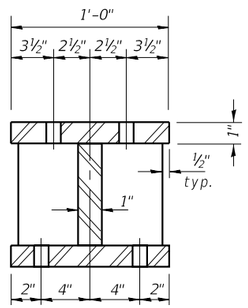
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade(s) and diameter(s) specified. ASTM A307 Grade C anchor bolts may be used in lieu if ASTM F1554 Grade 36 (Fy=36ksi). The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of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

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

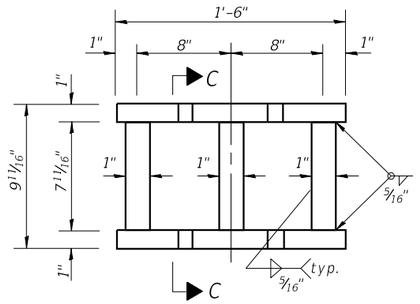
Cost of side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Structural Steel	Pound	5380
Elastomeric Bearing Assembly, Type I	Each	24
Anchor Bolts, 1"	Each	48
Jack and Remove Existing Bearings	Each	24



SECTION C-C



STEEL EXTENSION AT EAST ABUT.

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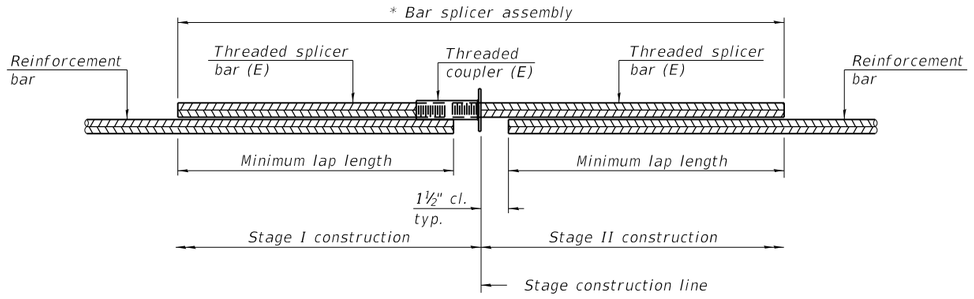
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 13 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	149
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY PLAN

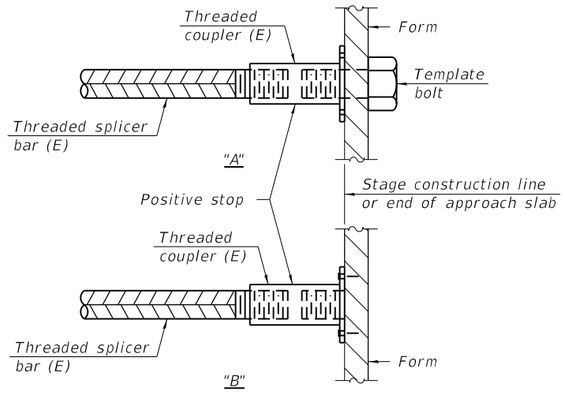
(All components shall be provided from one supplier)

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

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

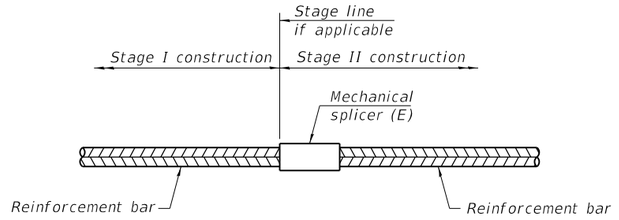
Location	Bar size	No. assemblies required	Minimum lap length
064-0023 W. Abut. Superstructure	#5	24	3'-6"
064-0023 W. Abut. Diaphragm	#6	5	4'-0"
064-0023 W. Abut. Diaphragm	#6	2	**
064-0023 W. Abut. Diaphragm	#6	2	***
064-0023 W. Abut. Diaphragm	#4	2	2'-5"
064-0023 W. Approach Slab	#5	31	3'-6"
064-0023 W. Approach Slab	#8	41	6'-9"
064-0023 W. Approach Slab Footing	#5	40	3'-6"
064-0023 W. Abut.	#5	2	3'-6"
064-0023 E. Abut. Superstructure	#5	24	3'-6"
064-0023 E. Abut. Diaphragm	#6	5	4'-0"
064-0023 E. Abut. Diaphragm	#6	2	**
064-0023 E. Abut. Diaphragm	#6	2	***
064-0023 E. Abut. Diaphragm	#4	2	2'-5"
064-0023 E. Approach Slab	#5	31	3'-6"
064-0023 E. Approach Slab	#8	41	6'-9"
064-0023 E. Approach Slab Footing	#5	40	3'-6"
064-0023 E. Abut.	#5	2	3'-6"
064-0024 W. Abut. Superstructure	#5	24	3'-6"
064-0024 W. Abut. Diaphragm	#6	5	4'-0"
064-0024 W. Abut. Diaphragm	#6	2	**
064-0024 W. Abut. Diaphragm	#6	2	***
064-0024 W. Abut. Diaphragm	#4	2	2'-5"
064-0024 W. Approach Slab	#5	31	3'-6"
064-0024 W. Approach Slab	#8	41	6'-9"
064-0024 W. Approach Slab Footing	#5	40	3'-6"
064-0024 W. Abut.	#5	2	3'-6"
064-0024 E. Abut. Superstructure	#5	24	3'-6"
064-0024 E. Abut. Diaphragm	#6	5	4'-0"
064-0024 E. Abut. Diaphragm	#6	2	**
064-0024 E. Abut. Diaphragm	#6	2	***
064-0024 E. Abut. Diaphragm	#4	2	2'-5"
064-0024 E. Approach Slab	#5	31	3'-6"
064-0024 E. Approach Slab	#8	41	6'-9"
064-0024 E. Approach Slab Footing	#5	40	3'-6"
064-0024 E. Abut.	#5	2	3'-6"

** 4'-0" minimum lap on Stage II side, 2'-8" bar on Stage I side.
*** 4'-0" minimum lap on Stage II side, 2'-8" headed bar on Stage I side.



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

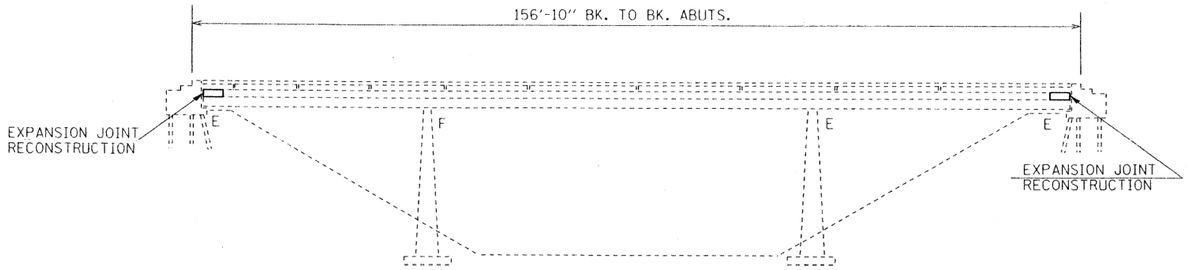
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 14 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	150
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	175
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

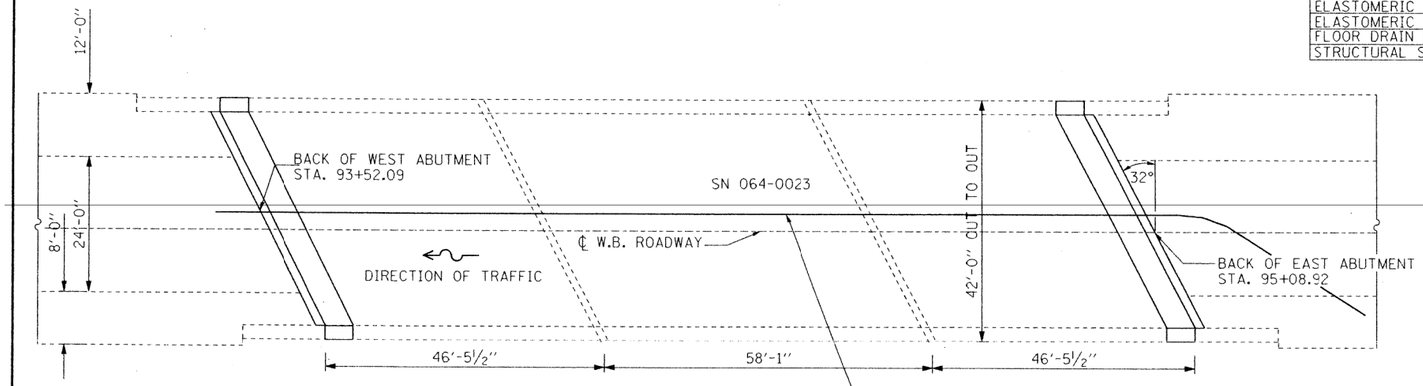
* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2

SHEET 1 OF 11 SHEETS



TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL	0023	0024
JACK AND REMOVE EXISTING BEARINGS	EACH	36	18	18
SILICONE JOINT SEALER, 1½"	FOOT	91	45.5	45.5
SILICONE JOINT SEALER, 2"	FOOT	91	45.5	45.5
POLYMER CONCRETE	CU FT	13.2	6.6	6.6
BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2¼"	SQ YD	1278	639	639
BAR SPLICERS	EACH	56	28	28
CONCRETE BRIDGE DECK SCARIFICATION (1/2")	SQ YD	1278	639	639
DECK SLAB REPAIR (PARTIAL)	SQ YD	25	15	10
CONCRETE SUPERSTRUCTURE	CU YD	25	12.5	12.5
CONCRETE REMOVAL	CU YD	23.2	11.6	11.6
BRIDGE DECK GROOVING	SQ YD	1250	625	625
REINFORCEMENT BARS, EPOXY COATED	POUND	3760	1880	1880
TEMPORARY CONCRETE BARRIER	FOOT	740	370	370
RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	614	307	307
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2	1	1
PLUG EXISTING DECK DRAINS	EACH	28	14	14
FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	14,700	7350	7350
ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	24	12	12
ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	12	6	6
FLOOR DRAIN EXTENSIONS	EACH	68	34	34
STRUCTURAL STEEL REMOVAL	POUND	6800	3400	3400



SCOPE OF WORK

SCARIFY EXISTING DECK SURFACE.

REMOVE CONCRETE AT ABUTMENT JOINTS.

REMOVE AND REPLACE END DIAPHRAGMS.

REMOVE AND REPLACE EXPANSION BEARINGS.

RECONSTRUCT EXPANSION JOINTS WITH SILICONE SEALER AND POLYMER CONCRETE NOSINGS.

FULL AND PARTIAL DEPTH PATCHING. NEW MICROSILICA OVERLAY.

ELIMINATE DRAINS LOCATED WITHIN 10' OF ANY SUBSTRUCTURE ELEMENT. EXTEND REMAINING DRAINS.

DESIGN STRESSES

FIELD UNITS

NEW CONSTRUCTION

f'_c = 3500 psi

f_y = 60,000 psi (REINFORCEMENT)

f_y = 36,000 psi (STRUCTURAL STEEL)

EXISTING STRUCTURE

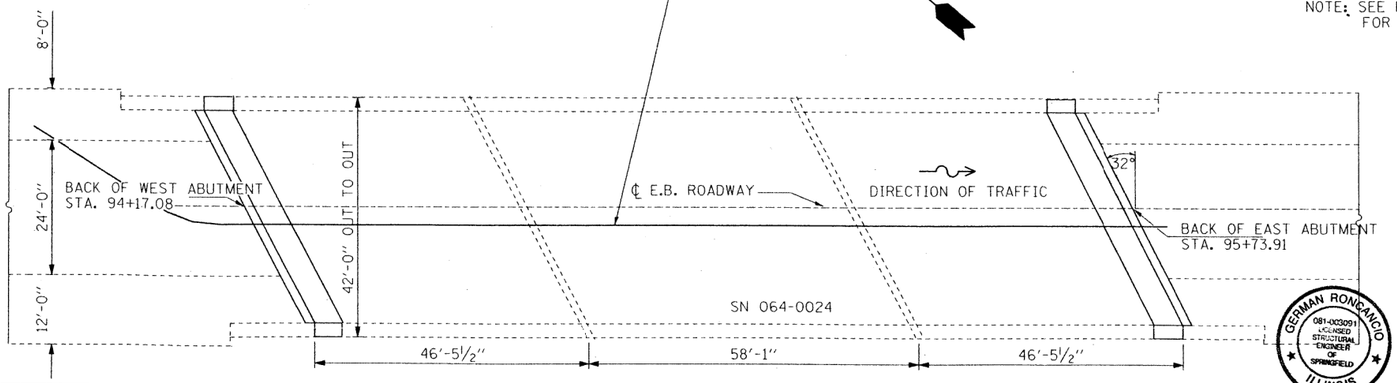
f_c = 1400 psi

f_s = 20,000 psi (REINFORCEMENT)

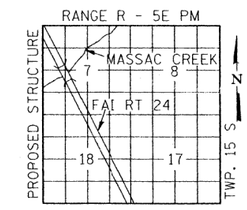
CONSTRUCTION SEQUENCE

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

FOR INFORMATION ONLY



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



LOCATION SKETCH

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

GERMAN RONCANCIO 081-003091 LICENSED STRUCTURAL ENGINEER OF SPRINGFIELD ILLINOIS

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

RC ENGINEERS, LTD.
CONSULTING ENGINEERS · SPRINGFIELD, ILLINOIS

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER MASSAC CREEK
SECTION (64-1) RS-1
SN 064-0023 (W.B.) & 064-0024 (E.B.)
MASSAC COUNTY

MODEL: Default
FILE NAME: L:\DOT\1900610\WO_1\Draw\Structure\SN 0023 & 0024\015_0023-0024_Existing Plans-001.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

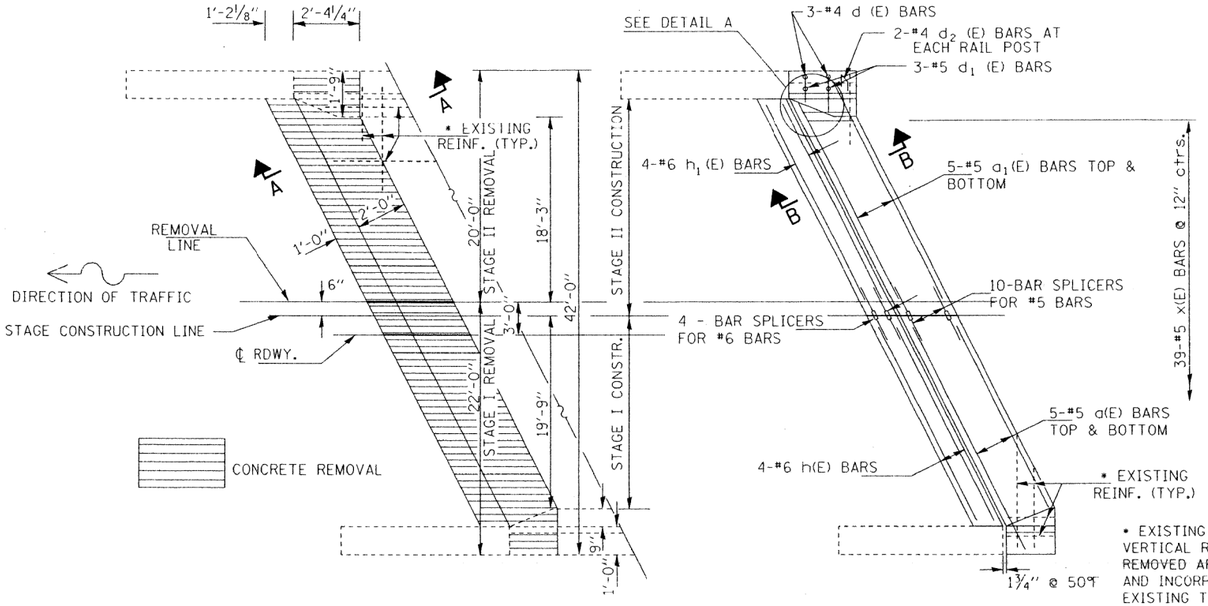
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 15 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	151
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	177
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2

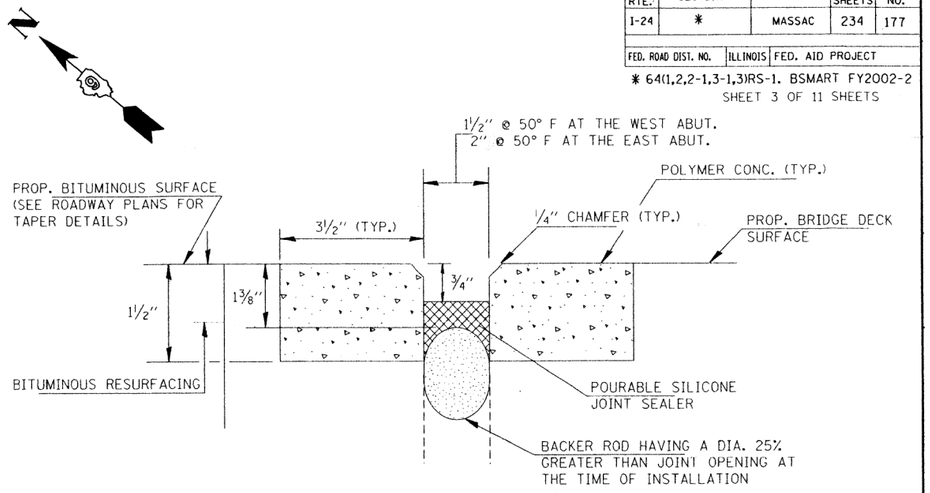
SHEET 3 OF 11 SHEETS



ABUTMENT PLAN
SHOWING CONCRETE REMOVAL

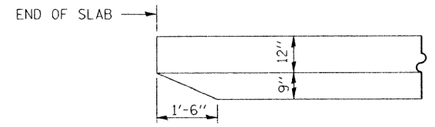
ABUTMENT PLAN
SHOWING CONCRETE REPLACEMENT

* EXISTING LONGITUDINAL REINFORCEMENT & VERTICAL REINFORCEMENT EXTENDING INTO THE REMOVED AREA SHALL BE CLEANED, STRAIGHTENED AND INCORPORATED INTO THE NEW CONSTRUCTION. EXISTING TRANSVERSE REINFORCEMENT MAY BE CUT AND REMOVED.



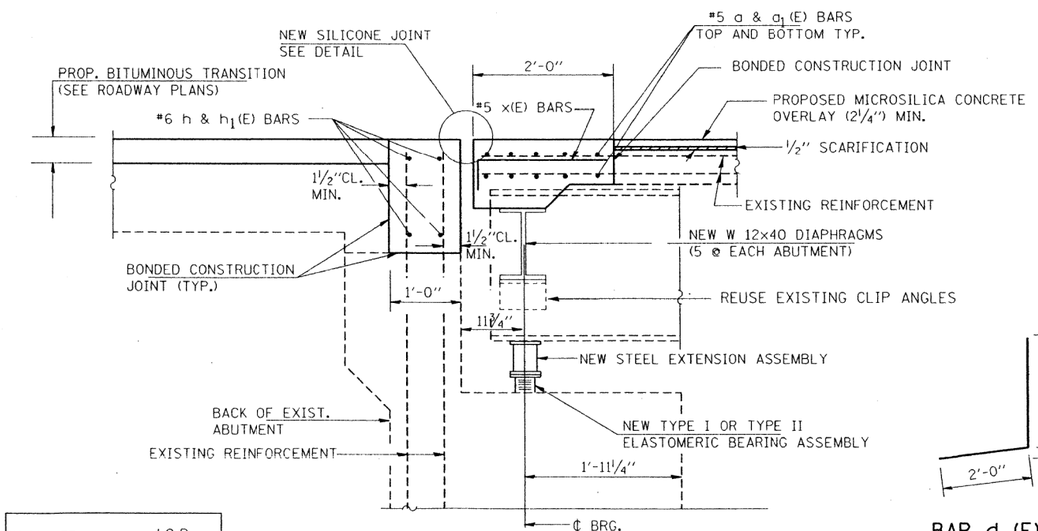
TYPICAL SECTION THROUGH SILICONE JOINT

COST OF REMOVING EXISTING NEOPRENE JOINT INCLUDED IN CONCRETE REMOVAL.

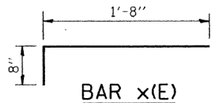


DETAIL A

FOR INFORMATION ONLY



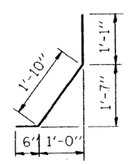
SECTION B-B
TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT
(DIMENSIONS MEASURED AT RT. ∠S.)



BAR x(E)

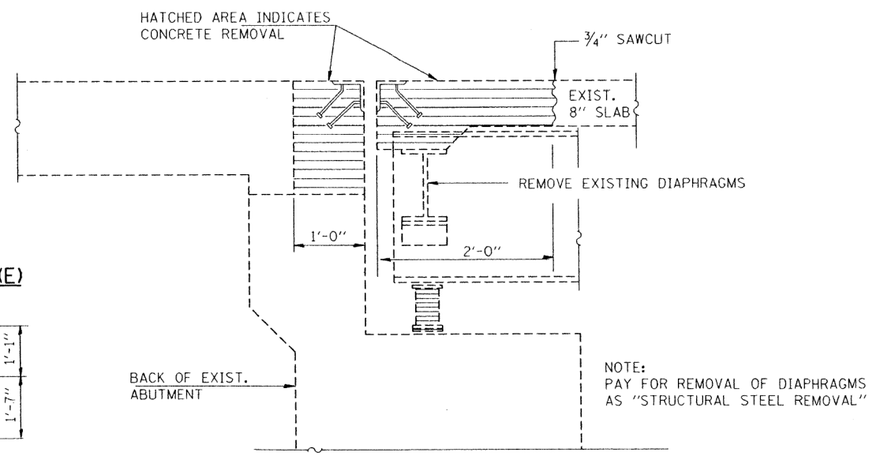
BAR d_2(E)

BAR d (E)



BAR d_1(E)

DETAIL A



SECTION A-A
TYPICAL SECTION THRU EXISTING ABUTMENT

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

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CONCRETE REMOVAL, CONCRETE SUPERSTRUCTURE

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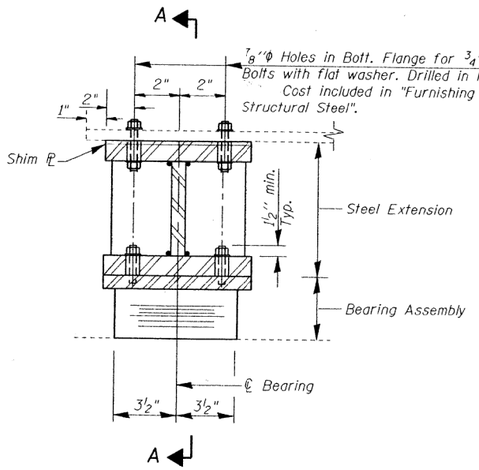
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 16 OF 28 SHEETS

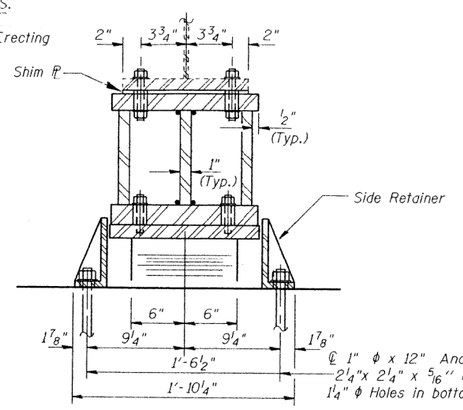
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	152
		CONTRACT NO. 78606		
ILLINOIS	FED. AID PROJECT			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	179
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

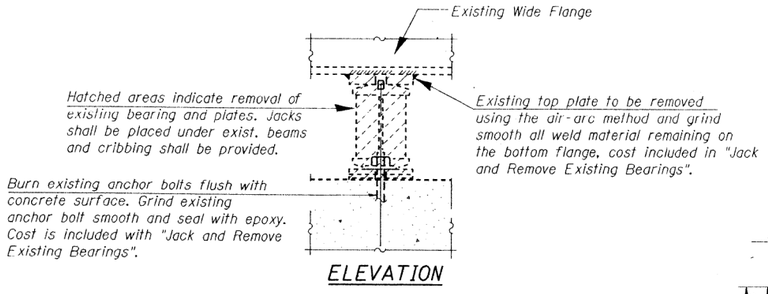
* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2
Sheet 5 of 11 sheets



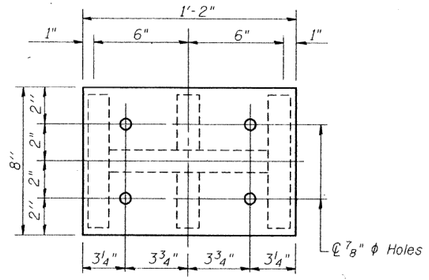
ELEVATION



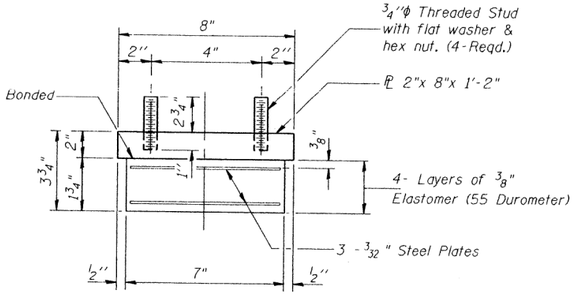
SECTION A-A



ELEVATION



TYPE I ELASTOMERIC BEARING WEST ABUTMENT



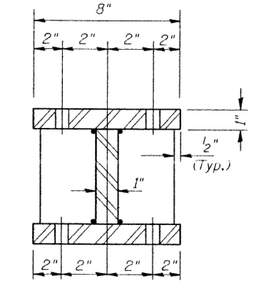
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly

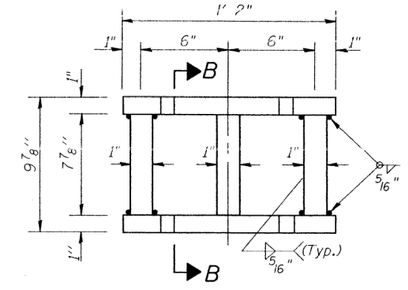
*INTERIOR BEAM REACTION TABLE

	SERVICE LOADS
R ℄ (K)	25.4
R ℄ (K)	35.9
Imp (K)	10.5
R Total (K)	71.8

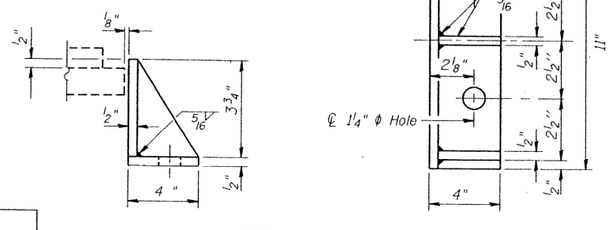
* Min. Jack capacity at each Beam shall be 37 Tons.



SECTION B-B



STEEL EXTENSION AT WEST ABUT.



SIDE RETAINER

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

Notes:

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

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

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

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	12

FOR INFORMATION ONLY

ELASTOMERIC BEARING TYPE I, WEST ABUTMENT

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

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PLOT DATE = 11/24/2020 - 11:21:05 AM		CHECKED - JTH		REVISED -

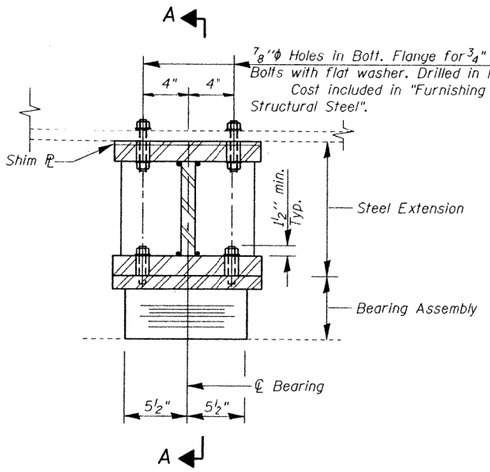
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 17 OF 28 SHEETS

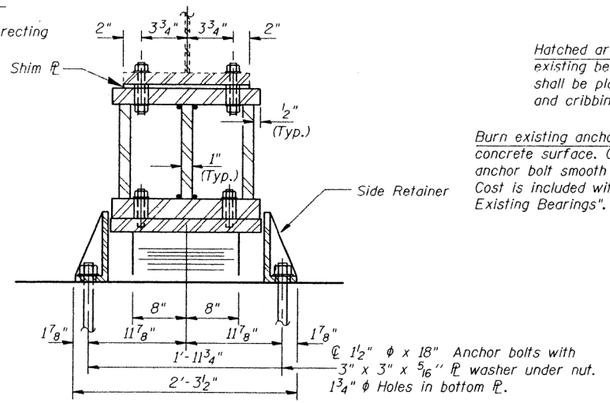
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	153
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	180
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

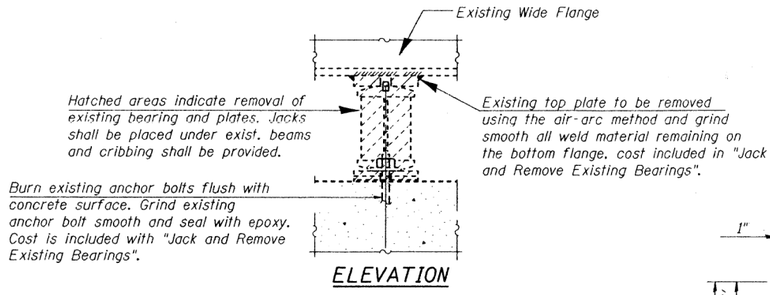
* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2
Sheet 6 of 11 sheets



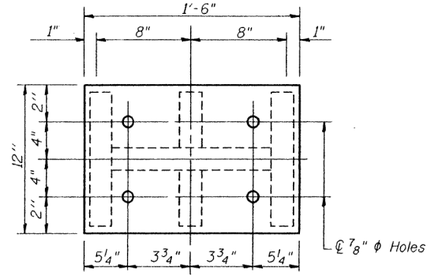
ELEVATION



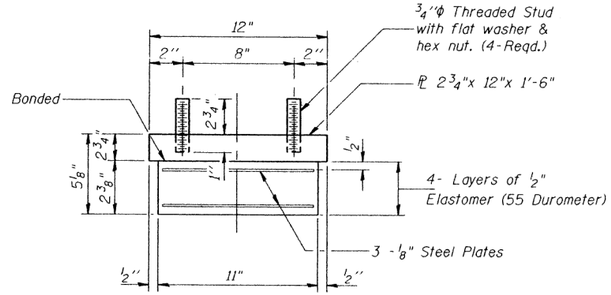
SECTION A-A



ELEVATION



TYPE I ELASTOMERIC BEARING PIER 2



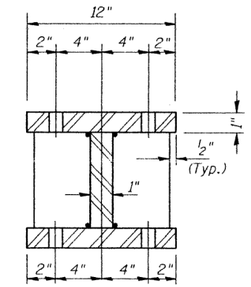
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly

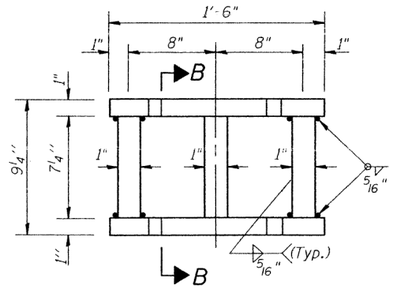
*INTERIOR BEAM REACTION TABLE

	SERVICE LOADS
R PL (K)	85.8
R LL (K)	44.7
Imp (K)	12.6
R Total (K)	143.1

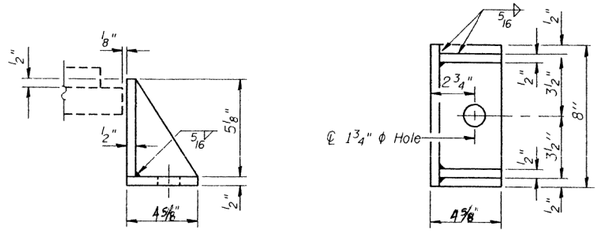
* Min. Jack capacity at each Beam shall be 85 Tons.



SECTION B-B



STEEL EXTENSION AT PIER 2



SIDE RETAINER

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

Notes:

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

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

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

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

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE I	EACH	12

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

FOR INFORMATION ONLY

ELASTOMERIC BEARING TYPE I, PIER 2

RC ENGINEERS, LTD.
CONSULTING ENGINEERS · SPRINGFIELD, ILLINOIS

MODEL: Default
FILE NAME: I:\IDOT\1906861\WO_1\Draw\Structures\SN 0023 & 0024\016_0023-0024_Existing Plans-004.dgn

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PLOT DATE = 11/24/2020 - 11:21:18 AM		CHECKED - JTH		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

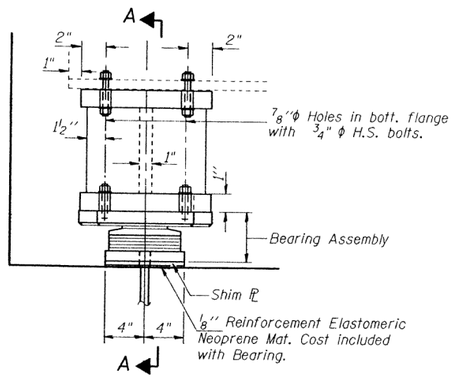
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 18 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	154
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

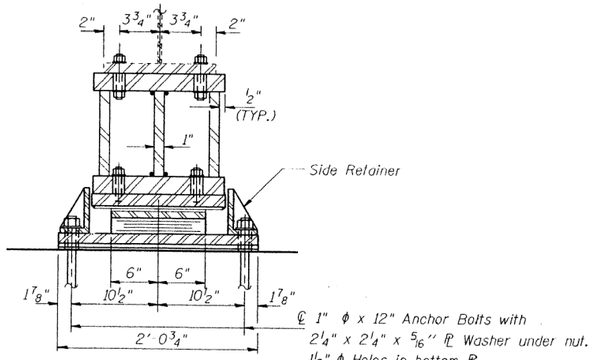
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	181
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2

Sheet 7 of 11 sheets

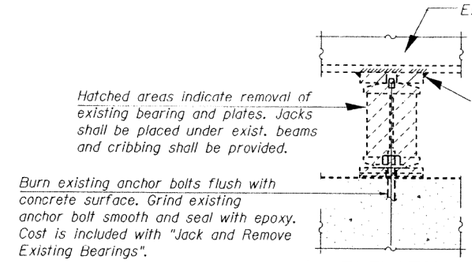


ELEVATION AT ABUT.



SECTION A-A

TYPE II ELASTOMERIC EXP. BRG.



ELEVATION

*INTERIOR BEAM REACTION TABLE

	SERVICE LOADS
R D (K)	25.4
R L (K)	35.9
Imp (K)	10.5
R Total (K)	71.8

* Min. Jack capacity at each Beam shall be 37 Tons.

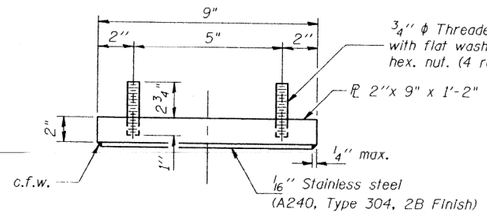
FOR INFORMATION ONLY

Notes:

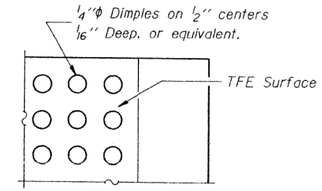
Prior to ordering any material, the contractor shall verify in the field all bearing height dimensions and shim thickness dimensions.

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

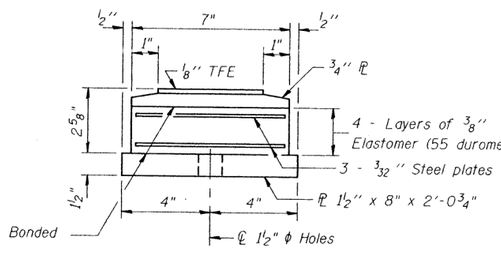
New steel extensions, side retainers, connection bolts, anchor bolts, and shim plates are included in "Furnishing and Erecting Structural Steel".



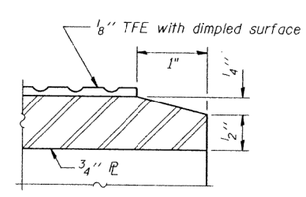
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE



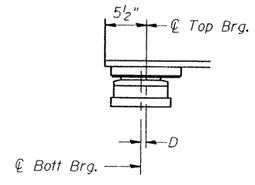
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

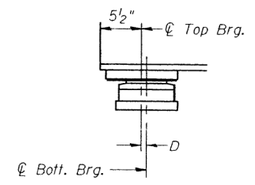
NOTE: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I the bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



Below 50°F.

(Move bott. brg. away from fixed brg.)

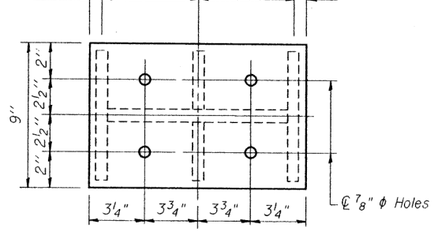


Above 50°F.

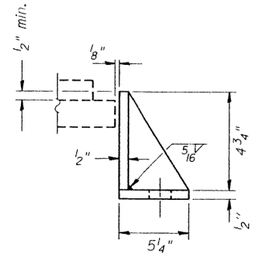
(Move bott. brg. toward fixed brg.)

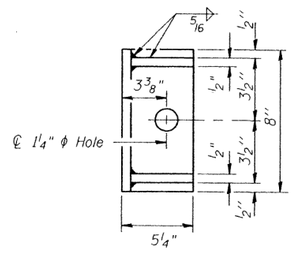
SETTING ANCHOR BOLTS AT EXP. BRG.

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



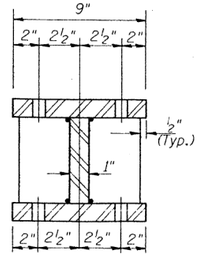
PLAN TOP AND BOTTOM PLATE



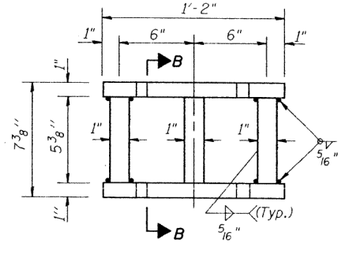


SIDE RETAINER

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



SECTION B-B



STEEL EXTENSION DETAIL

BILL OF MATERIAL

ITEM	UNIT	TOTAL
ELASTOMERIC BEARING ASSEMBLY TYPE II	EACH	12

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

RC ENGINEERS, LTD.
CONSULTING ENGINEERS · SPRINGFIELD, ILLINOIS

ELASTOMERIC BEARING TYPE II, EAST ABUTMENT

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FILE NAME: I:\DOT\190661\0WO_1\Draw\Structures\SN 0023 & 0024\019_0023-0024_Editing Plans-006.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 19 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	155
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

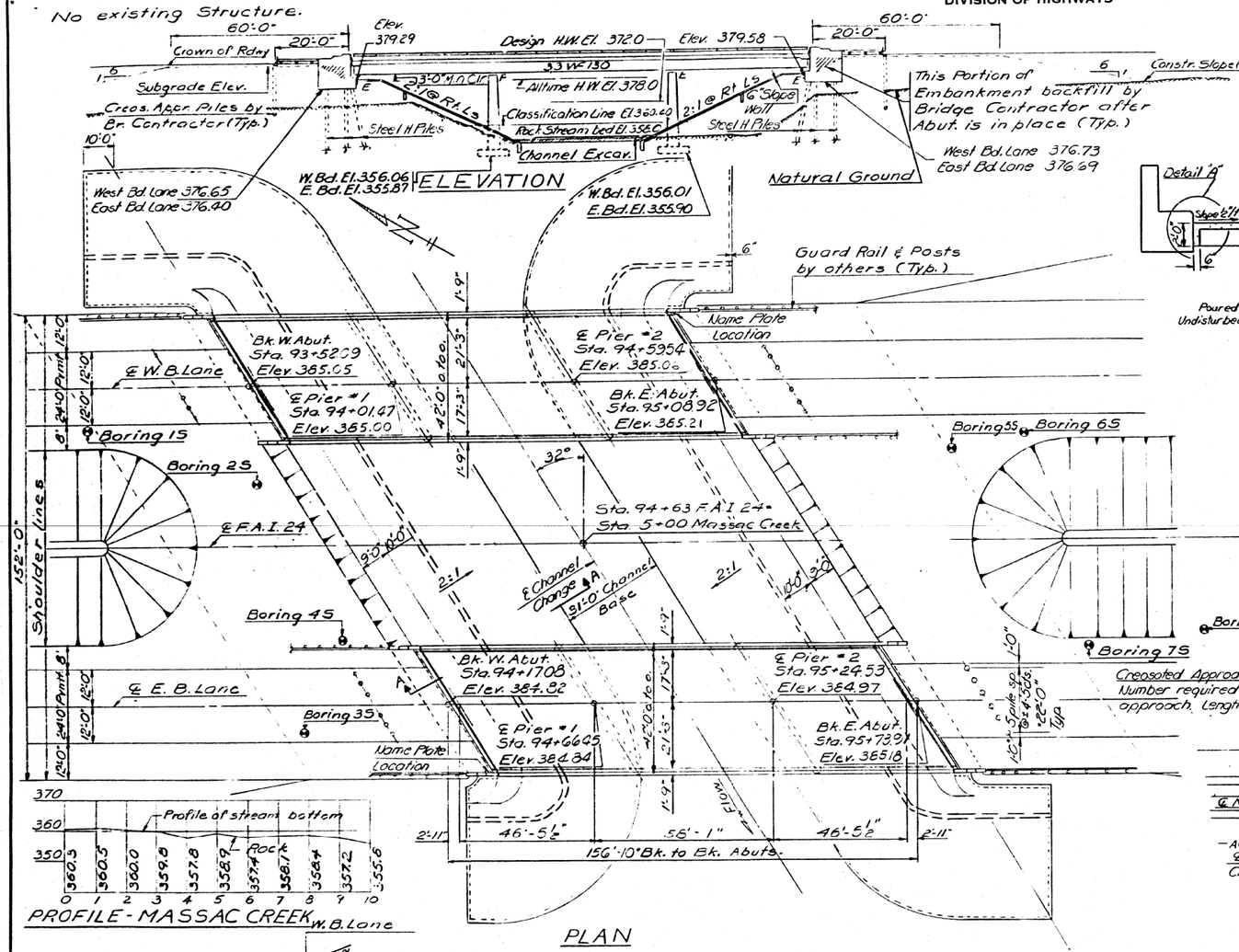
B.M. #7 - Elev. 385.55 Boat Spike in 15" Catalpa
222' Lt. of Sta. 96+08.

No existing Structure.

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.S. F.A.I. 24	64-2B-1	Massac	37	14
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
37 SHEETS



GENERAL NOTES

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

Fasteners shall be high strength bolts. Bolts $\frac{3}{4}$"ø; open holes $\frac{13}{16}$"ø, unless otherwise noted.

Calculated weight of Structural Steel. = 297,040

Diaphragm connections may be adapted to shop welding subject to approval by the Engineer.

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

Anchor bolts shall be set before bolting diaphragms over supports.

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

Layout of slope walls may be varied in the field to suit ground conditions as directed by the Engineer.

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

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

The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.

The contractor shall drive one 8BP36 test pile in a permanent location at the West Abutment - West Bound lane and one in a permanent location at the East Abutment - East Bound lane as directed by the engineer, before ordering the remainder of the piles.

FOR INFORMATION ONLY

PROFILE - MASSAC CREEK

PROPOSED PROFILE F.A.I. RT. 24

DESIGNED	Jan Schaller
CHECKED	James M. Barker
DRAWN	DJB
CHECKED	B

Dec 8 1966
EXAMINED
PASSED
APPROVED

5-17-68 Rev. Ditch and Bar lops

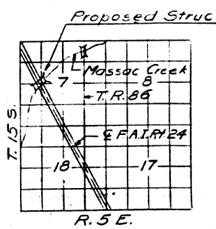
WATERWAY INFORMATION

Drainage Area	13,330 acres
Character: hilly, wooded, cultivated	
Required Opening (50 years freq)	780 Sq. Ft.
Proposed Opening	785 Sq. Ft.
Q = 4550 cfs	
Ordinary Water Elev.	360.10
Low Water Elev.	359.40

DESIGN STRESSES

fc = 1200 p.s.i. Deck
fc = 1400 p.s.i. Sub, Curbs, Par.
Vc = 75 p.s.i. Ftgs.
fs = 20,000 p.s.i. Reinf.
fs = 20,000 p.s.i. Struct. (A-36)
n = 10
℄ Deflection = ~~1500~~

Loading: HS 20-44 & Alt.



LOCATION SKETCH

GENERAL PLAN & ELEVATION
PROJECT: I-24-1(64) 31
F.A.I. RT. 24 OVER MASSAC CREEK
F.A.I. RT. 24 SECTION 64-2B-1
MASSAC COUNTY
STA. 94 + 63.00

MODEL: Default
FILE NAME: c:\DOT\190686\WO_1\Draw\Structures\SN 0023 & 0024\020_0023-0024_Existing Plans-006.dgn

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DEPARTMENT OF TRANSPORTATION

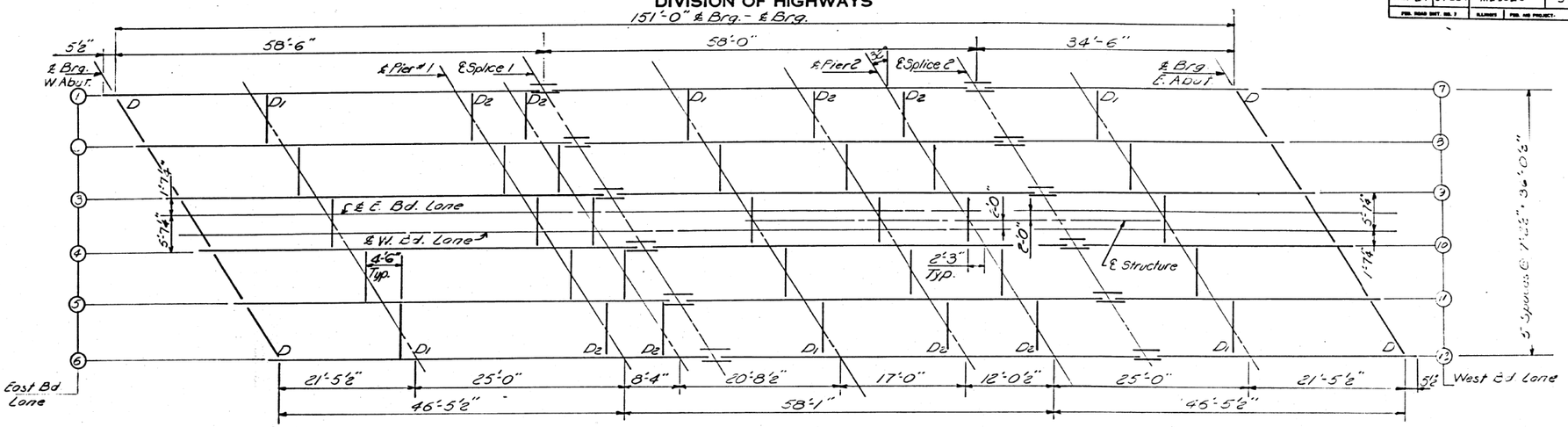
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 20 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	156
			CONTRACT NO. 78606	
		ILLINOIS	FED. AID PROJECT	

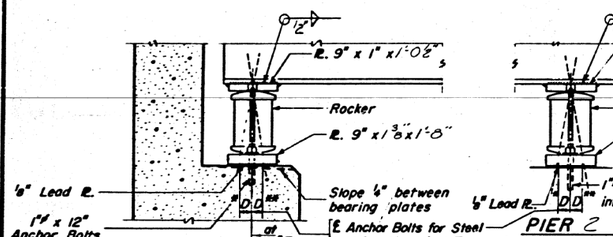
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

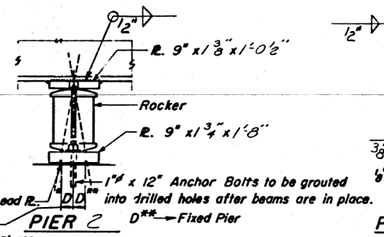
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64 28-1	Massac	37	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

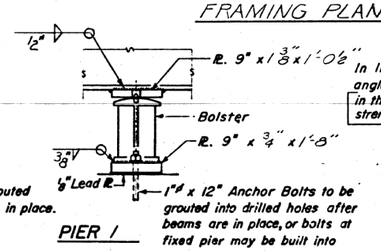
SHEET NO. 3
15 SHEETS

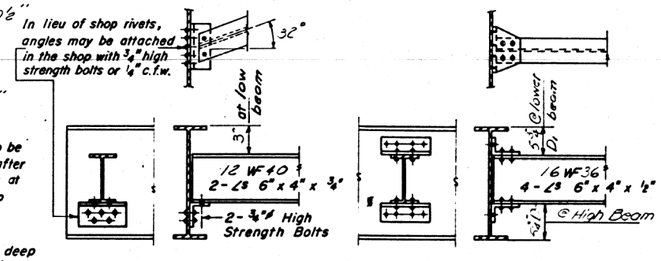


FRAMING PLAN (All beams are 33 WF 130)

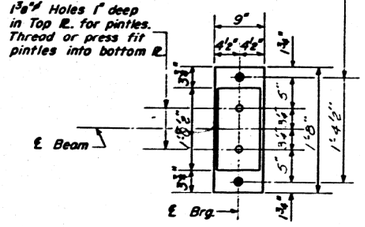


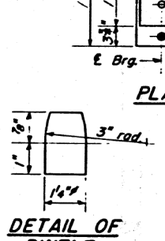


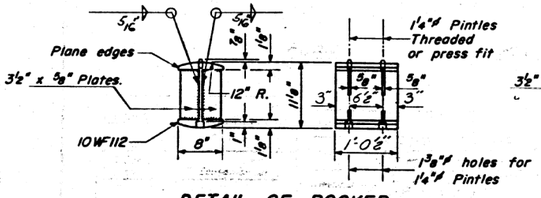


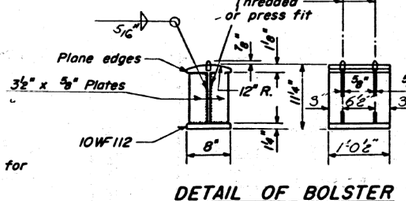


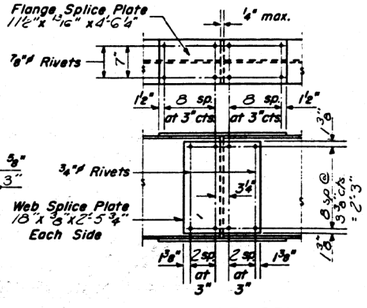
Note: See Sheet # 2 for top of beam elevations & fabrication diagram.











DESIGNED	Harry J. Chilton
CHECKED	James M. Baker
P.G. Barnett	D. Derringer Jr.
DRAWN	W. A. Sansoman Jr.
CHECKED	RS

EXAMINED Dec 8 1962
PASSED W. E. Bauzman
APPROVED N. E. Staff

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

FOR INFORMATION ONLY

STRUCTURAL STEEL
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94+63.00

MODEL: Default
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 21 OF 28 SHEETS

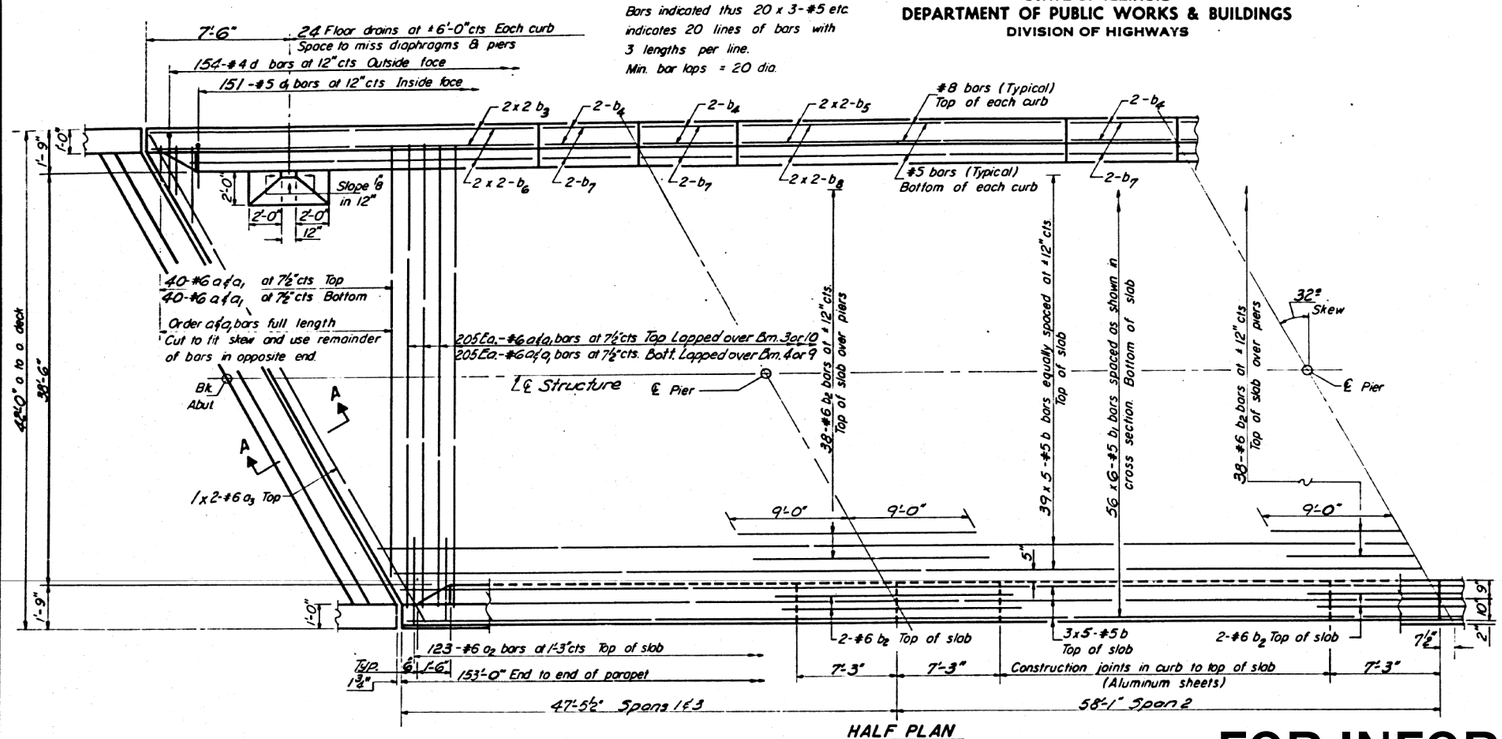
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	157
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-28-1	Massac	37	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 6
15 SHEETS

Note:
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.
Min. bar laps = 20 dia.

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



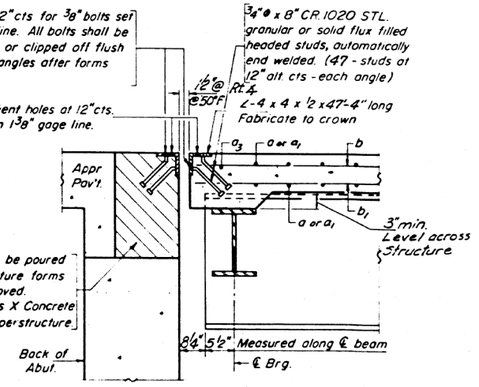
HALF PLAN

7/16"ø holes at 12"cts for 3/8" bolts set on 2½" gage line. All bolts shall be burned, sawed or clipped off flush with back of angles after forms are removed.

3/8"ø x 8" C.R. 1020 STL. granular or solid flux filled headed studs, automatically end welded. (47 - studs at 12" alt cts - each angle)

7/16"ø vent holes at 12"cts. set on 1-3/8" gage line.

1½@ @50°F Rt. ∠-4 x 4 x ½ x 47'-4" long Fabricate to crown



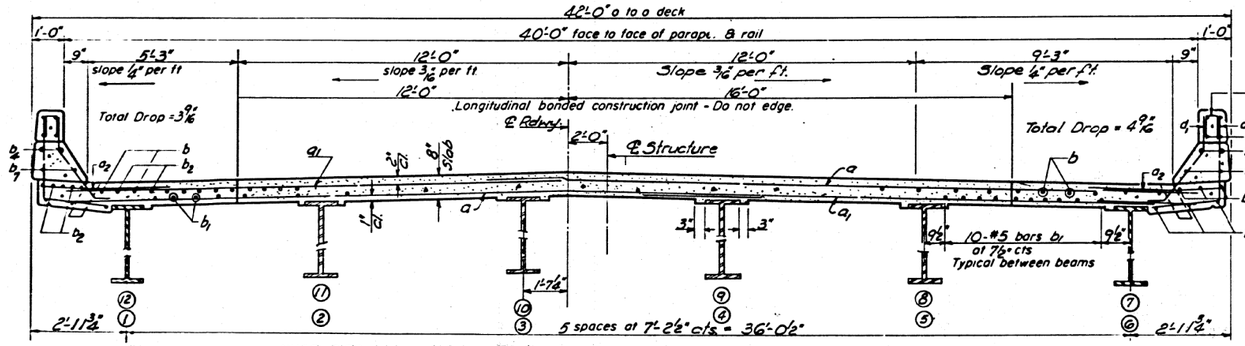
SECTION A-A

FOR INFORMATION ONLY

TWO STRUCTURES

BILL OF MATERIAL

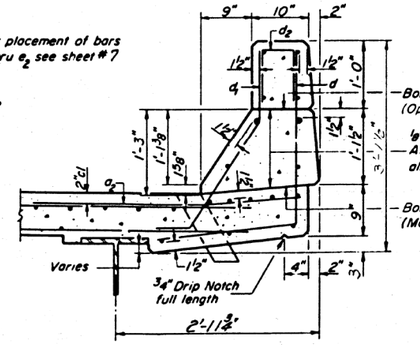
Bar	No	Size	Length	Shape
a	980	#6	27'-6"	
a1	980	#6	20'-6"	
a2	492	#6	4'-0"	
a3	8	#6	25'-6"	
b	450	#5	31'-6"	
b1	672	#5	27'-0"	
b2	168	#6	18'-0"	
b3	32	#8	21'-0"	
b4	32	#8	7'-0"	
b5	16	#8	22'-6"	
b6	32	#5	21'-0"	
b7	32	#5	7'-0"	
b8	16	#5	22'-6"	
d	616	#4	4'-7"	
d1	604	#5	3'-5"	
d2	128	#4	2'-1"	
Reinforcement Bars			Lbs.	121,050
Class X Concrete			Cu Yds	375.7



NEAR PIER

NEAR MIDSPAN

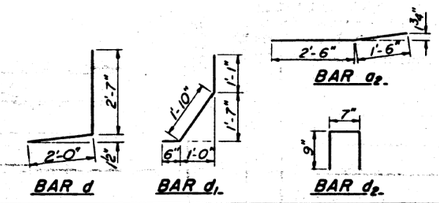
Note For placement of bars d2 & e thru e2 see sheet #7

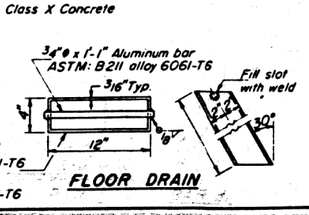


CURB SECTION

Cost of Aluminum Drains and Sheets shall be incidental to Class X Concrete

CROSS SECTION
LOOKING East - E. Bd. Lane
Looking West - W. Bd. Lane
(Brns. 1 thru 6 E. Bd. Lane)
(Brns. 7 thru 12 W. Bd. Lane)





Aluminum Sheets Welded
ASTM: B209 alloy 6061-T6
or Aluminum Extrusions
ASTM: B221 alloy 6061-T6

FLOOR DRAIN

The lengths and quantities of longitudinal reinforcement and Class X Concrete in parapets are not included in above quantities. See sheet #7

SUPERSTRUCTURE
F.A.I. RT. 24 SEC. 64-28-1
MASSAC COUNTY
STA. 94+63.00

DESIGNED	Dan Colvin	EXAMINED	Dec. 8 1966
CHECKED	James M. Burke	PASSED	
DRAWN	D.S.K.	APPROVED	
CHECKED			

1-4106-R (>30°) 3-1-68

USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)	
	CHECKED - AS	REVISED -			
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 22 OF 28 SHEETS	
PLOT DATE = 11/24/2020 - 11:22:05 AM	CHECKED - JTH	REVISED -			

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	158
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

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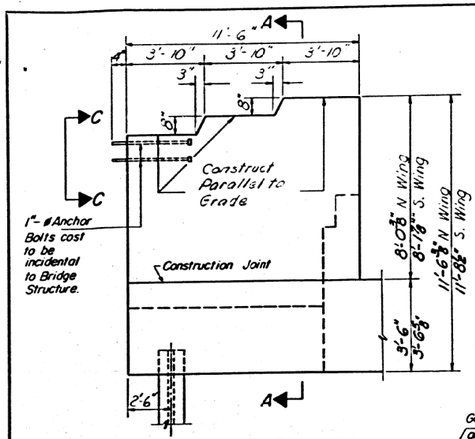
MODEL: Default
FILE NAME: I:\DOT\1900610\WO_1\Drawl\Structure\SN 0023 & 0024\022_0023-0024_Existing Plans-008.dgn

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

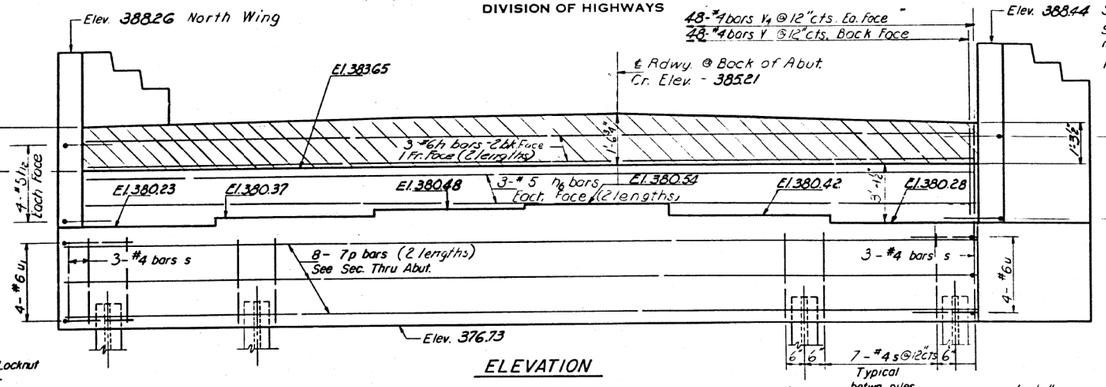
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	64-2B-1	Massac	37	21
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 3
15 SHEETS

WING WALL ELEVATION

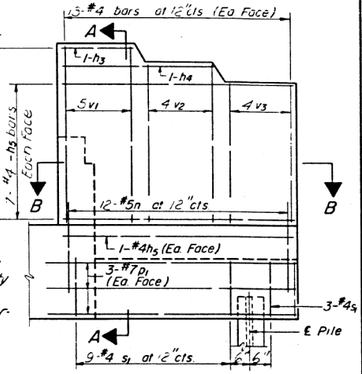


ELEVATION

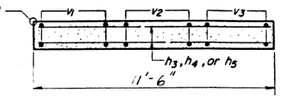


Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.

Note: Hatched portion to be poured after Superstructure forms are removed. Quantity of Class X Concrete included with Superstructure.

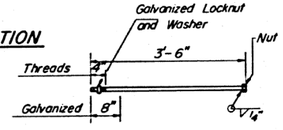


WING WALL ELEVATION
Reinforcement

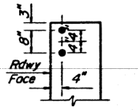


SEC. B-B

1" ø ANCHOR BOLT



VIEW C-C

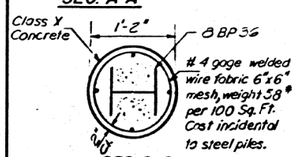


EAR v

ONE ABUTMENT BILL OF MATERIAL

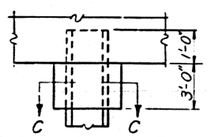
Bar	No	Size	Length	Shape
h	6	#6	24'-3"	
h1	8	#5	7'-0"	
h2	8	#5	7'-0"	
h3	4	#4	3'-6"	
h4	4	#4	7'-3"	
h5	32	#4	11'-3"	
h6	12	#5	24'-0"	
n	24	#5	7'-0"	
p	16	#7	26'-3"	
p1	12	#7	11'-6"	
s	43	#4	15'-4"	
s1	22	#4	9'-6"	
u	4	#6	10'-9"	
u1	4	#6	7'-9"	
v	48	#4	3'-3"	
v1	20	#4	7'-9"	
v2	16	#4	7'-0"	
v3	16	#4	6'-3"	
v4	96	#4	5'-3"	
Class X Concrete			Cu. Yds.	49.8
Reinforcement Bars			Lbs.	3600
Steel H Piles (8BP36)			Lin. Ft.	162

SEC. A-A

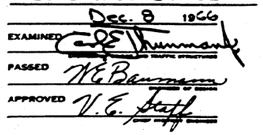


SEC. C-C

SEC. THRU ABUT.

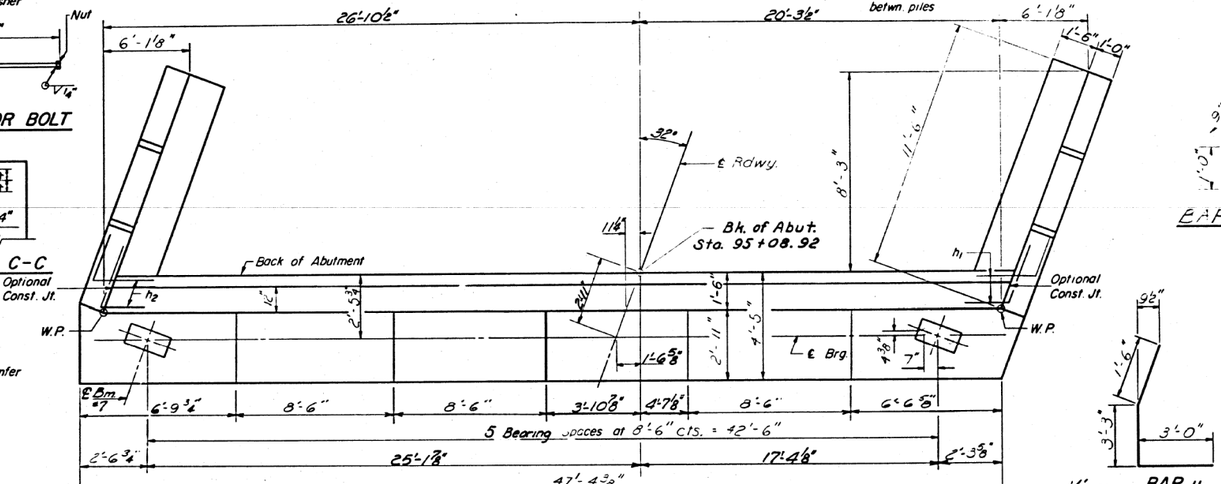


PILE ENCASEMENT DETAIL



A-9-R (15"-34") 2-1-66

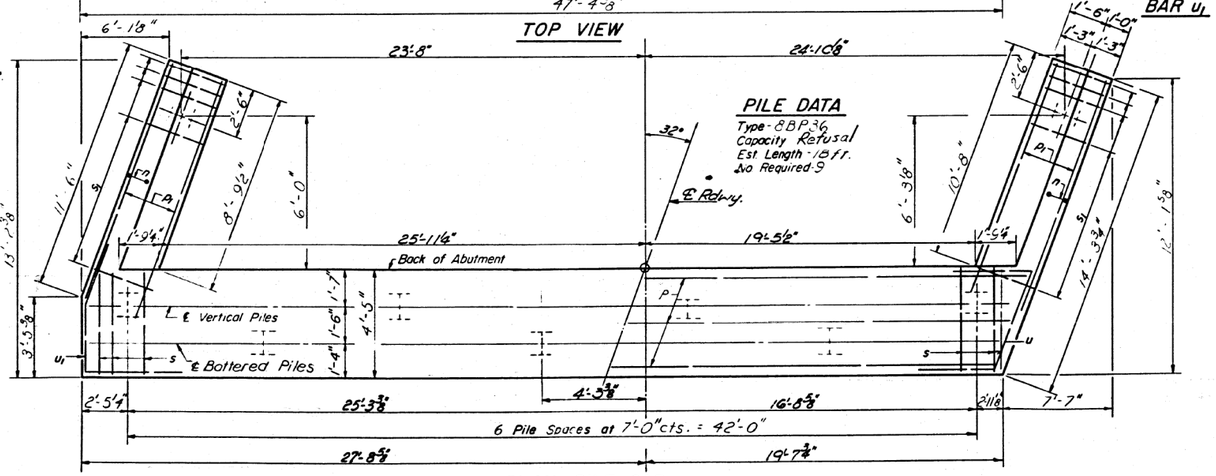
TOP VIEW



PILE DATA

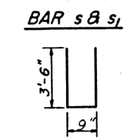
Type - 8BP36
Capacity Refusal
Est Length - 18 Ft.
No Required - 9

PLAN - PILE CAP

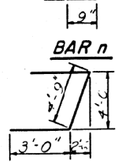


BAR u_1

BAR s & s_1

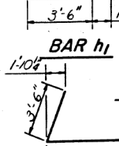


BAR n



BAR u

BAR h_1



BAR h_2

EAST ABUT. - WEST BOUND LANE
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94+63.00

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: c:\DOT\190681\0WO_1\Draw\Structures\SN 0023 & 0024\0023_0023-0024_Existing Plans-009.dgn

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USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	
	CHECKED - AS	REVISED -	
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/24/2020 - 11:22:16 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

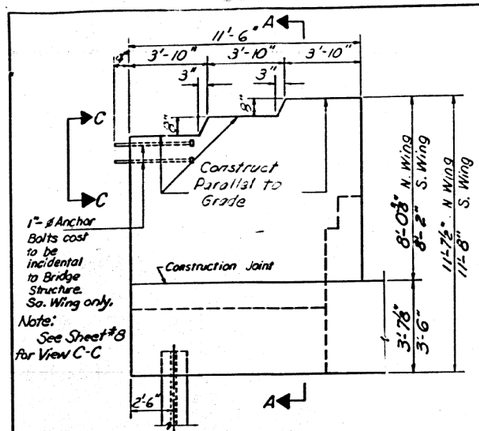
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 23 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	159
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

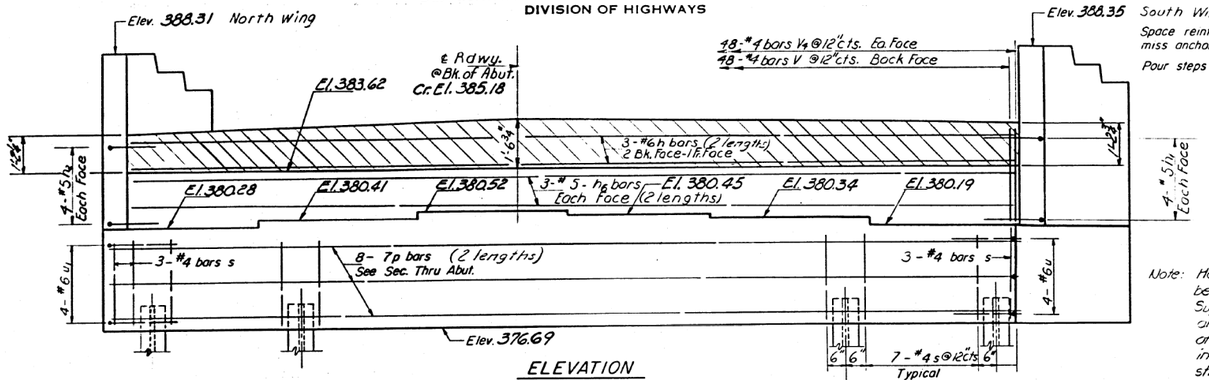
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2B-1	Massac	37	22
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

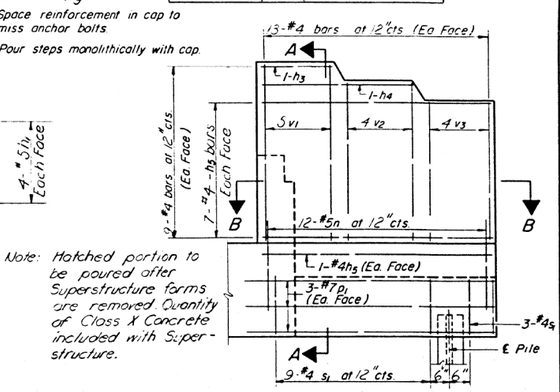
SHEET NO. 5
15 SHEETS



WING WALL ELEVATION

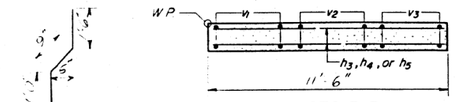


ELEVATION

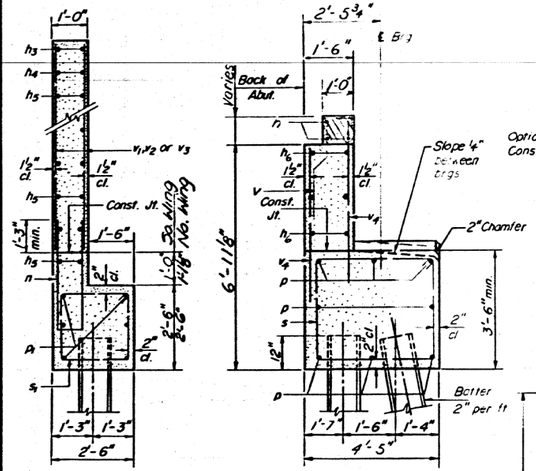


Note: Hatched portion to be poured after Superstructure forms are removed. Quantity of Class X Concrete included with Superstructure.

WING WALL ELEVATION
Reinforcement



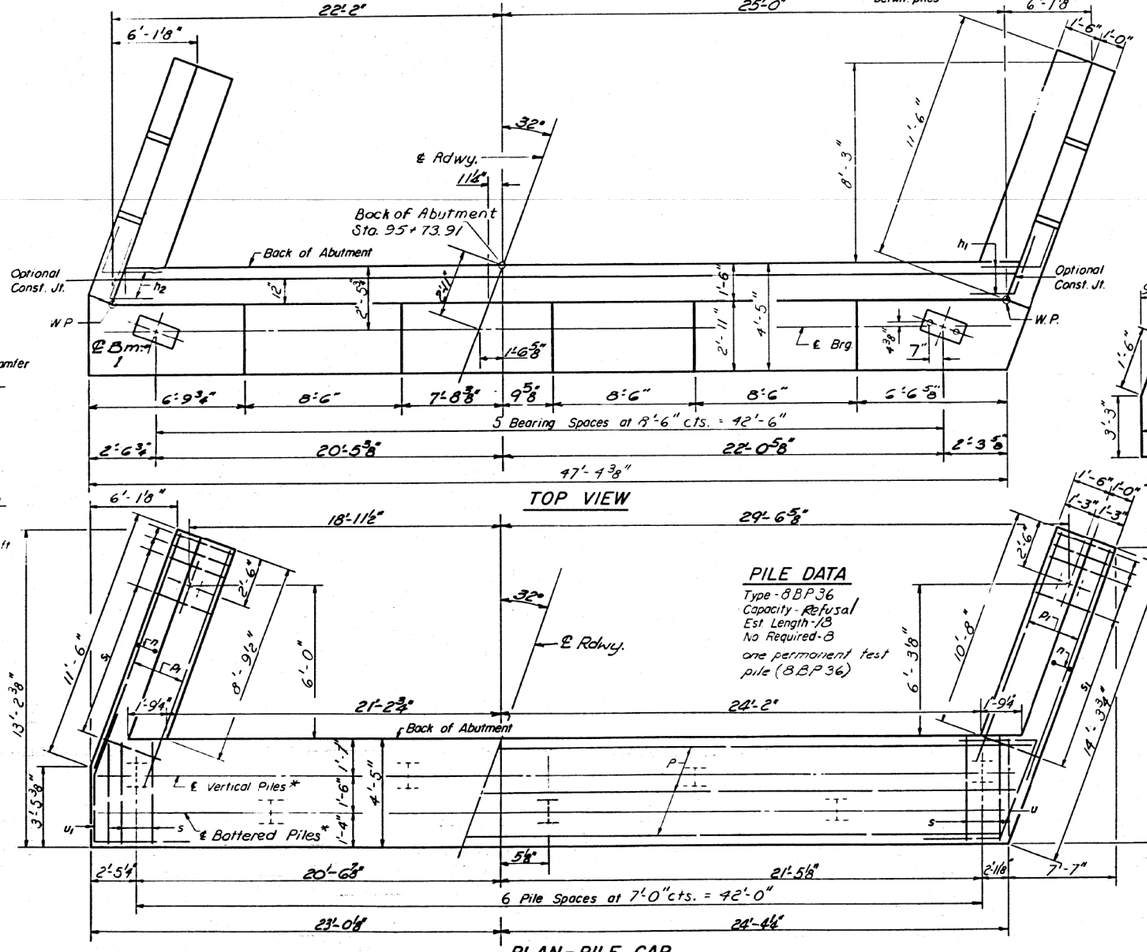
SEC B-B



SEC. A-A

SEC. THRU ABUT.

*Note: See sheet 8 for detail of Pile Encasement.

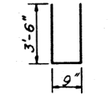


PILE DATA
Type - 8BP36
Capacity - Refusal
Est Length - 18
No Required - 8
one permanent test pile (8BP36)

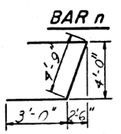
BAR u₁

BAR v

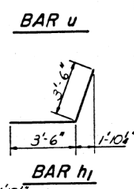
BAR s & s₁



BAR n



BAR u



BAR h₁

BAR h₂

ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	2	#6	24'-3"	
h₁	8	#5	7'-0"	
h₂	8	#5	7'-0"	
h₃	1	#4	3'-6"	
h₄	1	#4	7'-3"	
h₅	32	#4	11'-3"	
h₆	12	#5	24'-0"	
n	24	#5	7'-9"	
p	16	#7	26'-3"	
p₁	12	#7	11'-6"	
s	98	#4	15'-1"	
s₁	24	#4	9'-6"	
u	4	#6	10'-9"	
u₁	4	#6	7'-9"	
v	48	#4	3'-3"	
v₁	20	#4	7'-9"	
v₂	16	#4	7'-0"	
v₃	16	#4	6'-3"	
v₄	96	#4	5'-3"	
Class X Concrete			Cu Yds.	48.8
Reinforcement Bars			Lbs.	3680
Steel H Piles (8BP36)			Lin Ft.	144
Test Piles (8BP36)			Ea.	1

EAST ABUT. - EAST BOUND LANE
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94+63.00

DESIGNED Danny S. Gholston
CHECKED James M. Parker
DRAWN S.G. Ferchow D.D. E.E. G. Ozyurt
CHECKED B

EXAMINED Dec. 8 1966
PASSED W.E. Bruning
APPROVED V.E. Graff

A-9-R (15°-34°) 2-1-66

FOR INFORMATION ONLY

MODEL: Default
FILE NAME: I:\DOT\190961010WO_1\Draw\Structure\SN 0023 & 0024\024_0023-0024_E-Xisting Plans-0110.dgn

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USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -
	CHECKED - AS	REVISED -
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -
PLOT DATE = 11/24/2020 - 11:22:27 AM	CHECKED - JTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

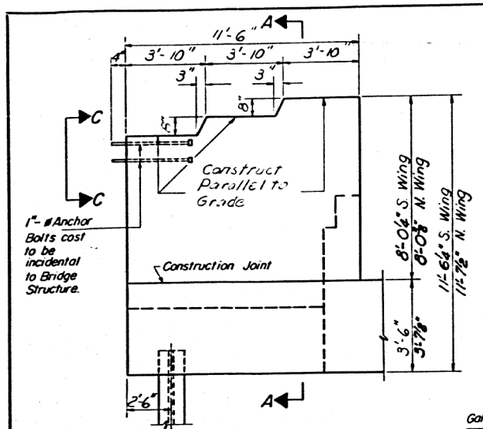
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 24 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	160
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

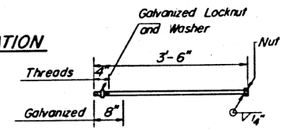
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2B-1	Massac	37	23
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

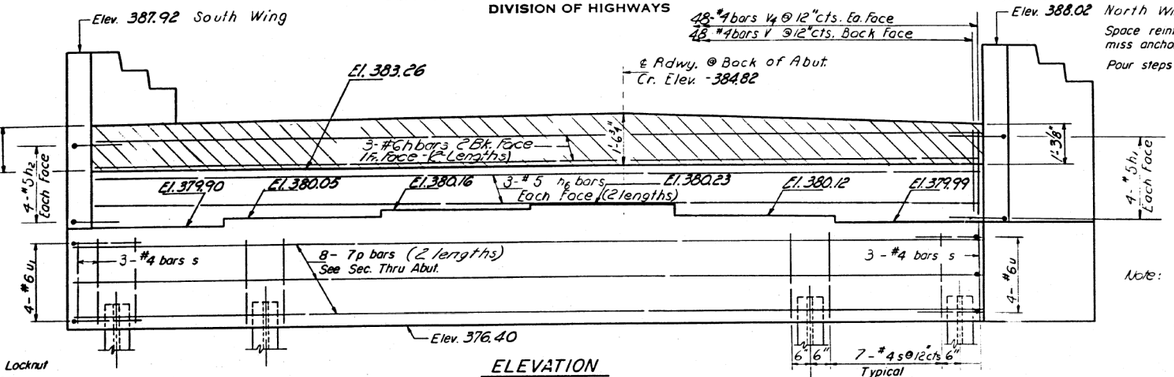
SHEET NO. 13
15 SHEETS



WING WALL ELEVATION

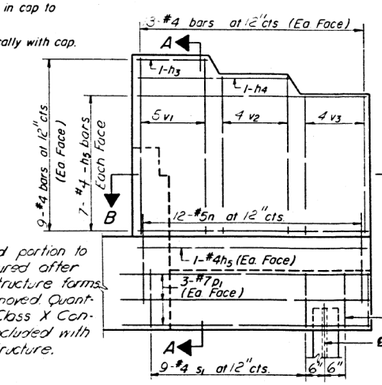


1" ø ANCHOR BOLT



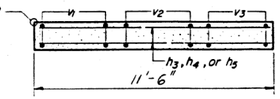
ELEVATION

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

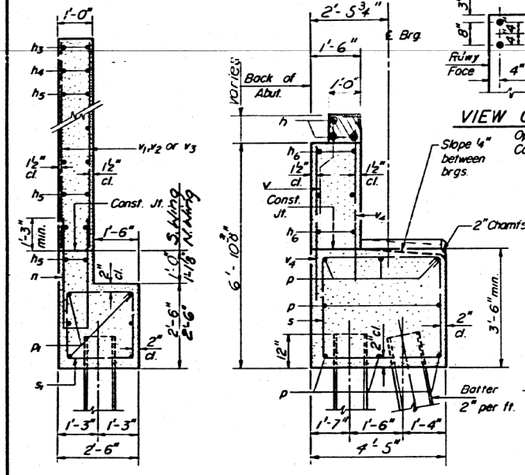


Note: Hatched portion to be poured after Superstructure forms are removed. Quantity of Class X Concrete included with Superstructure.

WING WALL ELEVATION
Reinforcement



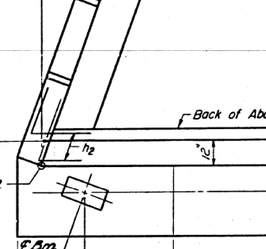
SEC. B-B



SEC. A-A

SEC. THRU ABUT.

*Note: See sheet #8 for detail of Pile Encasement.

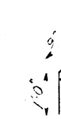


VIEW C-C

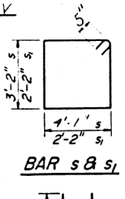
TOP VIEW

PLAN-PILE CAP

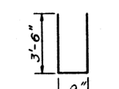
BAR u1



BAR v



BAR s & s1



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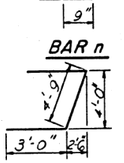

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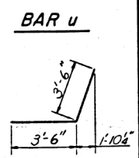
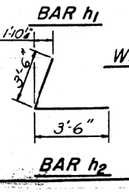


BAR h1



BAR h2

ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	6	#6	24'-3"	
h1	8	#5	7'-0"	
h2	8	#5	7'-0"	
h3	4	#4	3'-6"	
h4	4	#4	7'-3"	
h5	32	#4	11'-3"	
h6	12	#5	24'-0"	
n	24	#5	7'-9"	
p	16	#7	26'-3"	
p1	12	#7	11'-6"	
s	48	#4	15'-4"	
s1	24	#4	9'-6"	
u	4	#6	10'-9"	
u1	4	#6	7'-9"	
v	48	#4	3'-3"	
v1	20	#4	7'-9"	
v2	16	#4	7'-0"	
v3	16	#4	6'-3"	
v4	96	#4	5'-3"	
Class X Concrete			Cu. Yds.	48.8
Reinforcement Bars			Lbs.	3680
Steel H Piles (8BP36)			Lin. Ft.	135

WEST ABUT. - EAST BOUND LANE
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94+63.00

DESIGNED	Daniel J. Reiff
CHECKED	James M. Baker
DRAWN	S.G. Ferchow C.D. G. Ozyurt
CHECKED	

EXAMINED Dec. 8 1966
PASSED M.E. Baumann
APPROVED Y.E. Staff

A-9-R (15°-34°) 2-1-66

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FILE NAME: I:\SDOT\1990610\WO_1\Drawit\Structures\SN 0023 & 0024\0025_0023-0024_Editing Plans-011.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

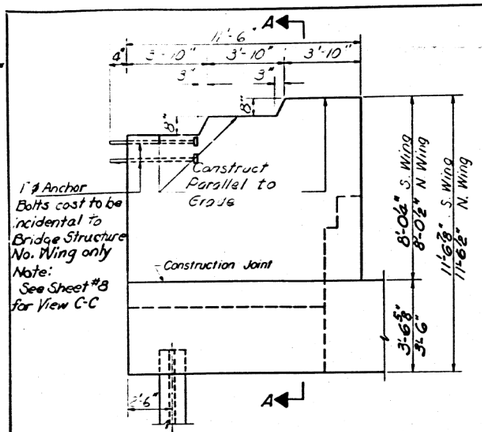
EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 25 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	161
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

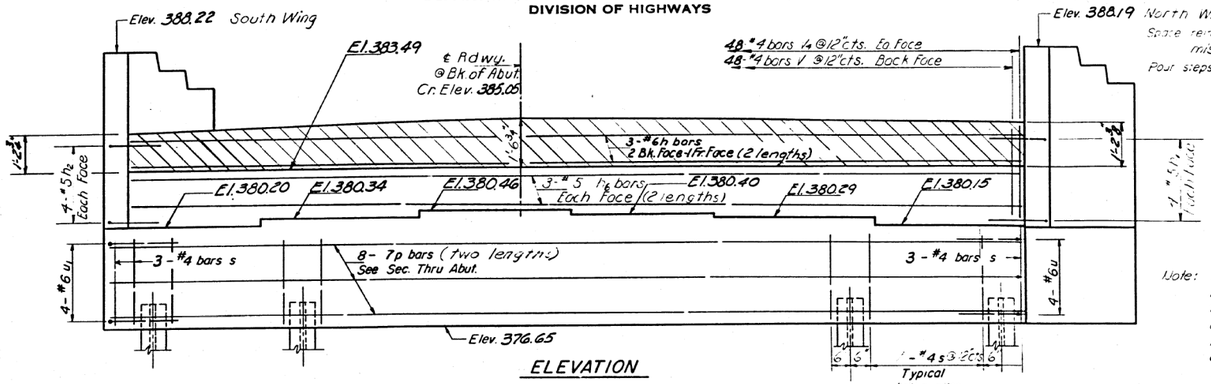
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2B-1	Massac	37	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT.		

SHEET NO. 11
15 SHEETS

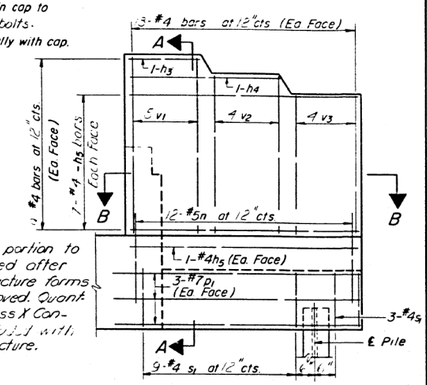


WING WALL ELEVATION



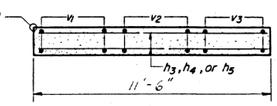
ELEVATION

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

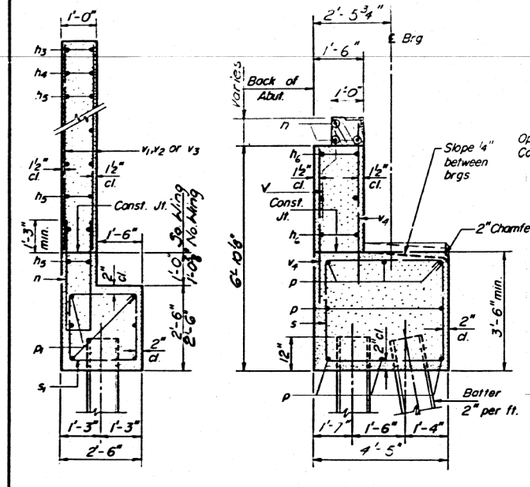


Note: Notched portion to be poured after Superstructure forms are removed. Quantity of Class X Concrete included with Superstructure.

WING WALL ELEVATION
Reinforcement



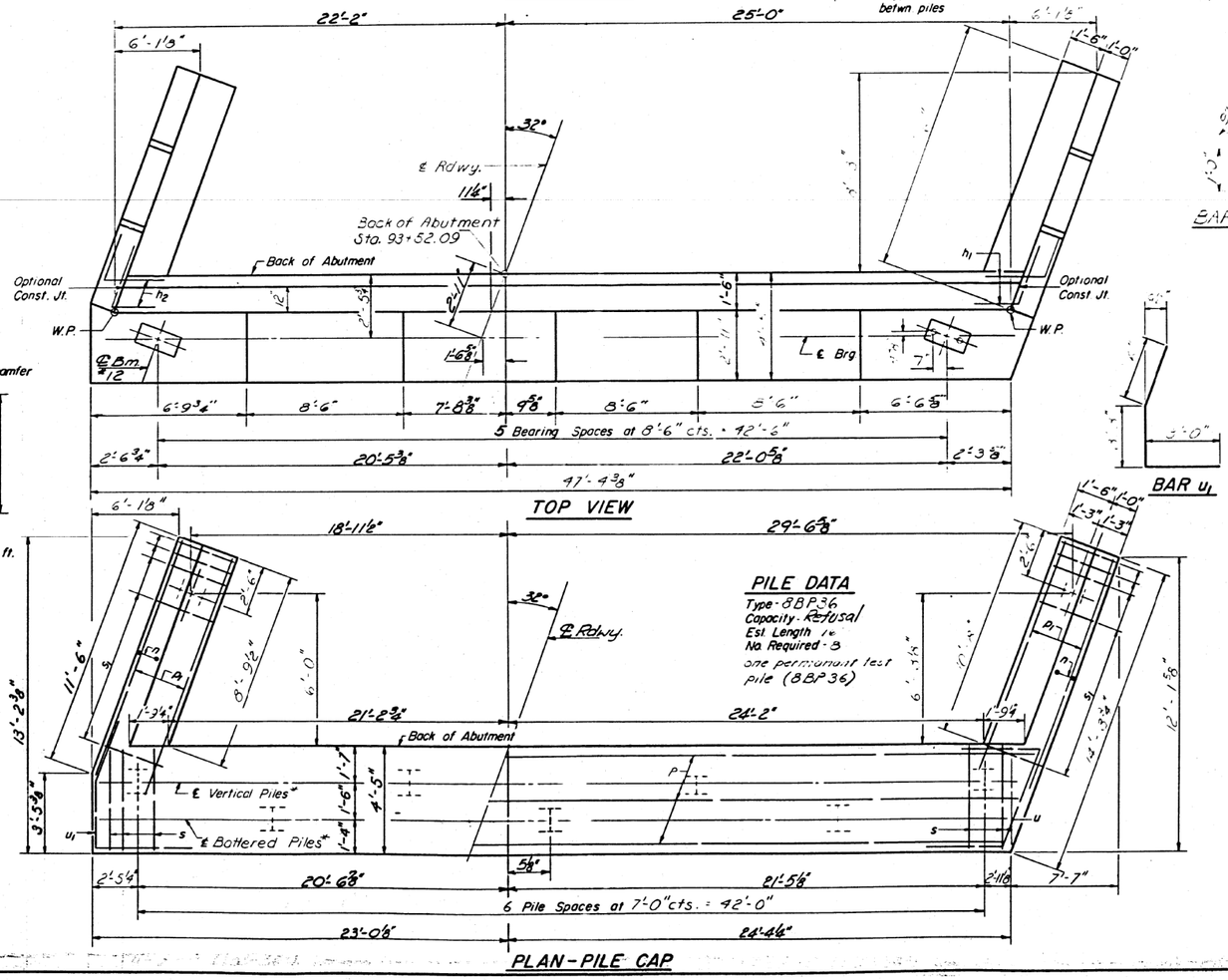
SEC. B-B



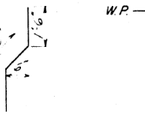
SEC. A-A

SEC. THRU ABUT.

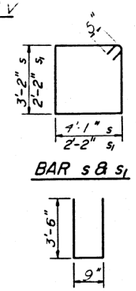
Note: See sheet #8 for detail of Pile Encasement.



PILE DATA
Type - 8BP36
Capacity - Refusal
Est Length 1'-6"
No. Required - 3
one permanent test pile (8BP36)



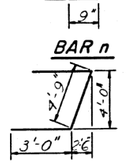
BAR v



BAR s & s1

BAR u1

BAR n



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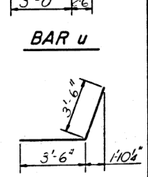
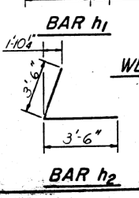


BAR h1



BAR h2

ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	6	#6	24'-3"	
h1	8	#5	7'-0"	
h2	8	#5	7'-0"	
h3	4	#4	3'-6"	
h4	7	#4	7'-3"	
h5	32	#4	11'-3"	
h6	12	#5	24'-0"	
n	29	#5	7'-9"	
p	6	#7	26'-3"	
p1	12	#7	11'-6"	
s	48	#4	15'-4"	
s1	24	#4	9'-6"	
u	4	#6	10'-9"	
u1	4	#6	7'-9"	
v	48	#4	3'-3"	
v1	20	#4	7'-9"	
v2	16	#4	7'-0"	
v3	16	#4	6'-3"	
v4	96	#4	5'-3"	
Class X Concrete			Cu. Yds.	43.3
Reinforcement Bars			Lbs.	3680
Steel H Piles (8BP36)			Lin Ft.	168
Test Piles (8BP36)			Ea.	1

WEST ABUT. - WEST BOUND LANE
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94+63.00

DESIGNED	Harry S. Chute	
CHECKED	James M. Bixler	
DRAWN	S.G. Ferchow G. Ozgurt	O.K.U.
CHECKED	JB	

EXAMINED Dec. 8 1966
PASSED M. E. Bauman
APPROVED V. E. Stauffer

A-9-R (15°-34°) 2-1-66

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 26 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	162
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RTE. 24	64-2B1	Massac	37	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 14
15 SHEETS

BORING #1

COUNTY Massac
Boring No. 1 S
Station 92+98
Offset 36 FEET LEFT

Surface Water El. NONE
Groundwater El. at Completion NONE
After — Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 370.5	0		
MEDIUM MOIST BROWN SILT LOAM A-4(7-8)			
	2	0.65	23
368.0			
VERY LOOSE TO MEDIUM MOIST TO WET BROWN FINE TO COARSE GRAINED SAND			
	4	-	9
-5			
	5	-	9
361.5	12	-	-
DENSE TO HARD BROWN COARSE GRAVEL AND CONGLOMERATE	-10		
358.8			
HARD DRY GREY FINE GRAINED SANDSTONE		Cored 40% Recovery	
356.8	-15		
BOTTOM OF HOLE = 14.7 FEET			
DURING DRILLING IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 8.0 FEET			
	-20		
	-45		

LOCATION OF STRUCTURE NEAR S.E.¼,N.W.¼,SECTION 7 T15S,R4E,3rd P.M.

ROCK ELEVATIONS AT PIERS

94+02 (W.B.L.)	358.0
94+60 (W.B.L.)	358.4
94+66 (E.B.L.)	359.5
95+24 (E.B.L.)	358.4

BORING #2

COUNTY Massac
Boring No. 2 S
Station 93+55
Offset 20 FEET LEFT CENTERLINE

Surface Water El. NONE
Groundwater El. at Completion 362.7
After — Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 371.0	0		
MEDIUM MOIST BROWN SILT LOAM A-4(8)			
	4	-	19
	4	-	19
368.0			
LOOSE DAMP LIGHT BROWN SAND LOAM A-2-4(0)			
	4	-	9
-5	6	-	9
364.5			
	6	-	9
MEDIUM TO HARD MOIST BROWN GRAVEL WITH SOME BROKEN SANDSTONE	5	0.6S	23
	32	-	18
	100	in	
-10		6"	10
360.7	100	in	
SOFT MOIST BROWN CONGLOMERATE		4"	15
359.3			
HARD TO SOFT GREY SEAMY SANDSTONE		CORED 30% RECOVERY	
356.3	-15		
HARD GREY CLAY A-7-6(20) TO CLAY SHALE		CORED 30% RECOVERY	
354.3			
BOTTOM OF HOLE = 16.7 FEET			
	-20		
	-45		

BORING #3

COUNTY Massac
Boring No. 3 S
Station 93+70
Offset 60 FEET RIGHT

Surface Water El. NONE
Groundwater El. at Completion NONE
After — Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 371.0	0		
MEDIUM MOIST BROWN CLAY LOAM A-4(7)			
	3	0.4S	-
366.0	-5		
LOOSE MOIST LIGHT BROWN FINE GRAINED SAND			
	5	-	-
363.5			
MEDIUM TO HARD MOIST BROWN TO REDDISH BROWN SAND AND GRAVEL	24	-	-
-10	100	in 0"	
359.0			
HARD DAMP GREY SANDSTONE		CORED 60% RECOVERY	
356.5	-15		
BOTTOM OF HOLE = 14.5 FEET			
	-20		
	-45		

BORING #4

COUNTY Massac
Boring No. 4S
Station 93+83
Offset 30 FEET RIGHT

Surface Water El. NONE
Groundwater El. at Completion NONE
After — Hours

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 370.0	0		
MEDIUM VERY MOIST BROWN SILTY CLAY LOAM A-4(8)			
	4	0.8S	23
367.5			
LOOSE TO MEDIUM MOIST BROWN FINE TO COARSE GRAINED SAND			
	4	-	4
-5			
	8	-	7
362.5			
MEDIUM WET BROWN GRAVEL AND CONGLOMERATE	100	in 7"	10
360.0	-10		
HARD GREY FINE GRAINED SAND-STONE		CORED 33% RECOVERY	
355.0	-15		
BOTTOM OF HOLE = 15.0 FEET			
DURING DRILLING IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 7.5 FEET			
	-20		
	-45		

N- Standard Penetration Test- Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".

Qu- Unconfined Compressive Strength- t/s.f.
w- Water Content- percentage of oven dry weight- %

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

DESIGNED	Danny L. Chilton	EXAMINED	Dec. 8 1960
CHECKED	James M. Barker	PASSED	W.E. Bauman
DRAWN	D&C J.T. Downing	APPROVED	V.E. Staff
CHECKED	JB		

BORING DATA
F.A.I. RT. 24 SEC. 64-2B1
MASSAC COUNTY
STA. 94+6300

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 27 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	163
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

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

ROUTE NO.	SECT. NO.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-2B-1	Massac	37	28
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 15
15 SHEETS

BORING #5

COUNTY MASSAC
Boring No. 5 S
Station 95+36
Offset 29 FEET LEFT

Surface Water El. NONE
Groundwater El. at Completion 369.0
After — Hours —

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 371.0	0		
MEDIUM MOIST BROWN TO GREY MOTTLED BROWN SILTY CLAY LOAM TO SILT LOAM A-4(8) TO A-6(9)	6	-	26
	6	-	17
	7	-	17
	19	-	10
363.5			
MEDIUM MOIST GREY MOTTLED BROWN FINE SILTY SAND	26	-	9
361.0			
MEDIUM MOIST BROWN CLAYEY GRAVEL 359.9	100	in 7"	
HARD BROWN FINE TO COARSE GRAINED SANDSTONE		CORED 60% RECOVERED	
354.9			
BOTTOM OF HOLE = 16.1 FEET			

BORING #6

COUNTY MASSAC
Boring No. 6 S
Station 95+58
Offset 35 FEET LEFT

Surface Water El. NONE
Groundwater El. at Completion NONE
After 24 Hours NONE

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 372.3	0		
MEDIUM MOIST BROWN SILTY CLAY LOAM A-4(8) TO A-6(9)	4	0.4B	26
368.8			
MEDIUM MOIST GREY MOTTLED BROWN SILT LOAM A-4(8)	9	-	17
365.3	15	-	12
SOFT TO HARD BROWN COARSE GRAINED SANDSTONE	100	in 4"	
364.2			
BOTTOM OF HOLE = 8.1 FEET			

BORING #7

COUNTY MASSAC
Boring No. 7 S
Station 95+80
Offset 34 FEET RIGHT

Surface Water El. NONE
Groundwater El. at Completion NONE
After 24 Hours 360.8

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 371.3	0		
MEDIUM MOIST BROWN SILTY CLAY LOAM A-4(8)	5	-	23
368.8			
MEDIUM VERY MOIST BROWN SILTY CLAY LOAM TO SILT LOAM A-4(8)	4	0.5S	24
	4	0.5S	26
363.8			
MEDIUM VERY MOIST GREY MOTTLED BROWN SILTY CLAY LOAM TO CLAY LOAM A-4(8)	8	0.8S	21
361.3			
DENSE WET BROWN SANDY GRAVEL	100	in 6"	
360.8	100	in 4"	
SOFT WET BROWN COARSE GRAINED SANDSTONE			
359.7			
BOTTOM OF HOLE = 11.6 FEET			
DURING DRILLING IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 10.0 FEET			

BORING #8

COUNTY MASSAC
Boring No. 8 S
Station 96+17
Offset 29 FEET RIGHT CENTERLINE

Surface Water El. NONE
Groundwater El. at Completion NONE
After — Hours —

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 370.0	0		
MEDIUM MOIST BROWN SILTY CLAY LOAM TO SILT LOAM A-4(8)	6	-	25
367.5			
SOFT VERY MOIST BROWN MOTTLED GREY SILTY CLAY LOAM TO CLAY LOAM A-6(8-9)	3	0.3B	23
STIFF VERY MOIST BROWN MOTTLED GREY SILTY CLAY A-6(9)			
364.5			
DENSE MOIST BROWN COARSE GRAVEL	100	in 9"	
363.8			
SOFT TO HARD BROWN COARSE GRAINED SANDSTONE		CORED 75% RECOVERED	
356.6			
BOTTOM OF HOLE = 13.4 FEET			

N- Standard Penetration Test- Blows per foot to drive 2" OD. Split Spoon Sampler 12" with 140# hammer falling 30"

Qu-Unconfined Compressive Strength-t/sf
w- Water Content - percentage of oven dry weight - %

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

DESIGNED Danny S. Chilton
CHECKED James M. Burkus
DRAWN G. Ozyurt
CHECKED

EXAMINED Dec 8 1969
PASSED
APPROVED

BORING DATA
F.A.I. RT. 24 SEC. 64-2B-1
MASSAC COUNTY
STA. 94 + 63.00

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	CHECKED - AS	REVISED -	
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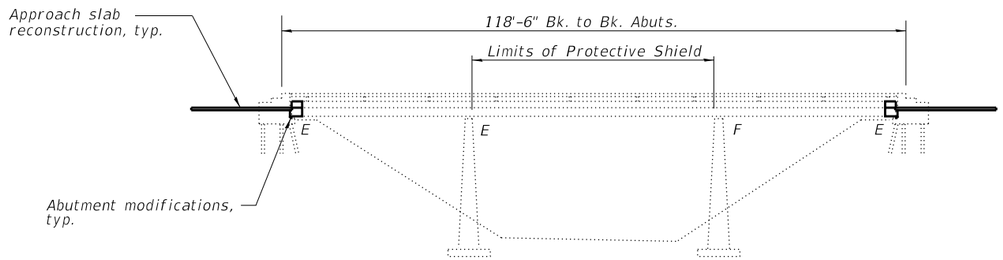
PLOT DATE = 11/24/2020 - 11:23:10 AM	CHECKED - JTH	REVISED -	

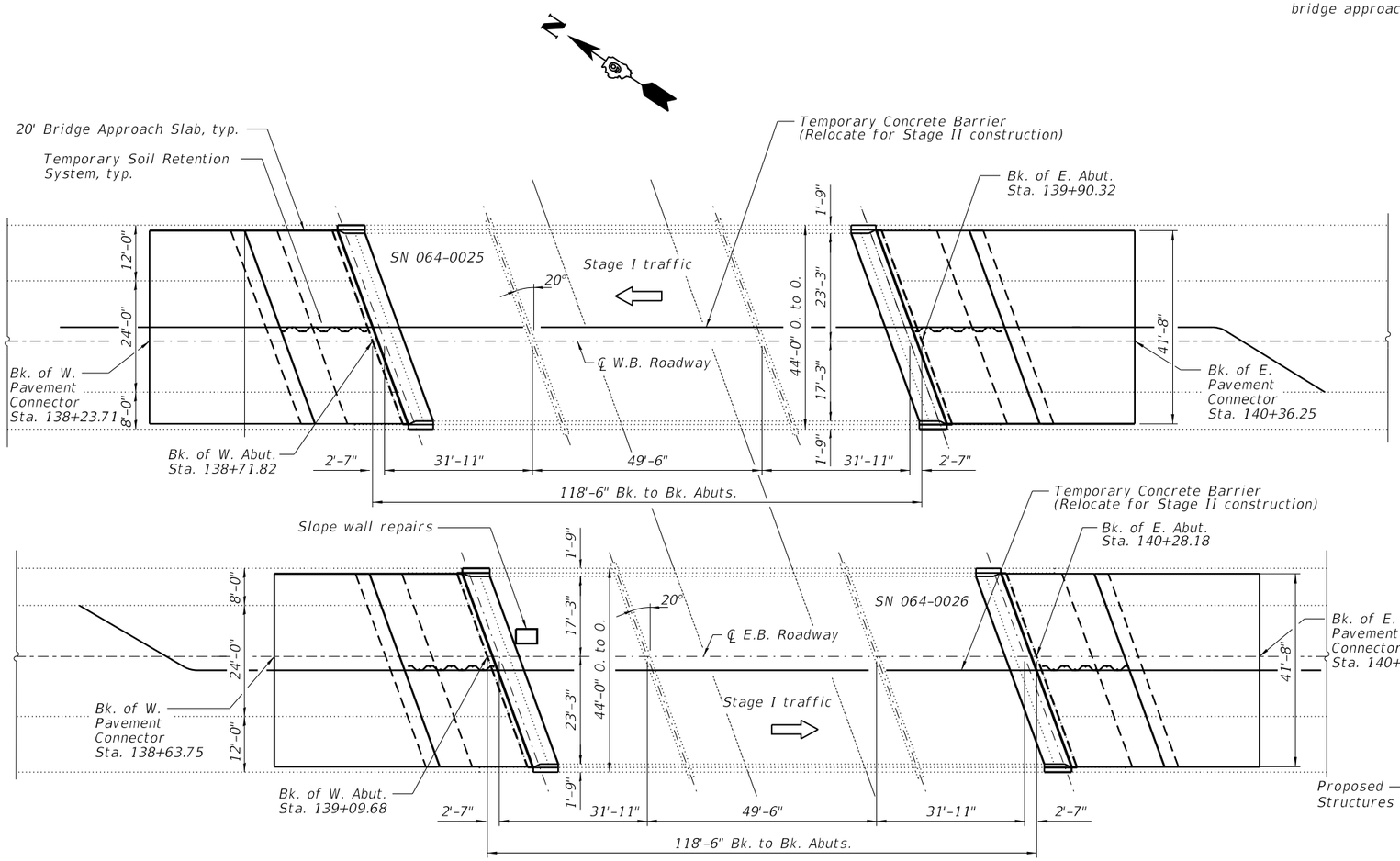
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 28 OF 28 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	164
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



ELEVATION



PLAN

SCOPE OF WORK

1. Remove existing 2¼" concrete wearing surface.

2. Perform deck repairs as shown.

3. Remove and replace bridge approach slabs and pavement connectors including removal of buried pile bent caps.

4. Clean and paint all steel beam ends at each abutment as preparation for concrete encasement.

5. Convert exising stub abutments to integral abutments. Perform concrete repairs on abutment caps and wingwalls as shown.

6. Install new 3¼" latex concrete wearing surface and perform diamond grinding, longitudinal bridge deck grooving and apply protective coat.

Up to ¼" may be ground off the bridge deck and the bridge approach slabs.

INDEX OF SHEETS

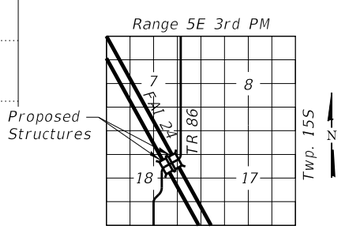
DESIGN STRESSES

FIELD UNITS

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

Existing Structure, 2001 & 1998 Rehabilitation
fc = 1,400 psi
fs = 20,000 psi (Reinforcement)

Existing Structure, 1970
fc = 1,200 psi
fs = 20,000 psi (Reinforcement)



LOCATION SKETCH

LICENSED STRUCTURAL ENGINEER
JOSEPH T. HEGER
081-008156
STATE OF ILLINOIS

11/24/2020

Exp. Date 11/30/2020

GENERAL PLAN AND ELEVATION
I-24 OVER TR 86
F.A.I. 24, SECTION BRIDGE REPAIR 2021-1
MASSAC COUNTY
STA. 139+31.07 & STA. 139+68.93
SN 064-0025 & 064-0026

MODEL: Default
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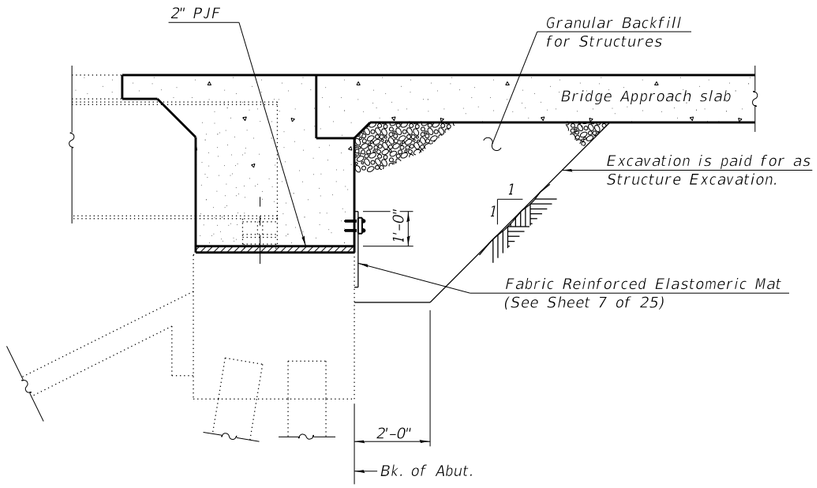
CMT
License No. 184-000613

USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	
	CHECKED - AS	REVISED -	
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/18/2020 - 7:35:09 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

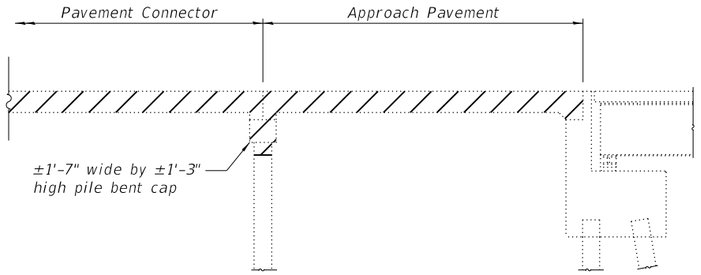
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 1 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	165
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ℄'s)



APPROACH SLAB REMOVAL

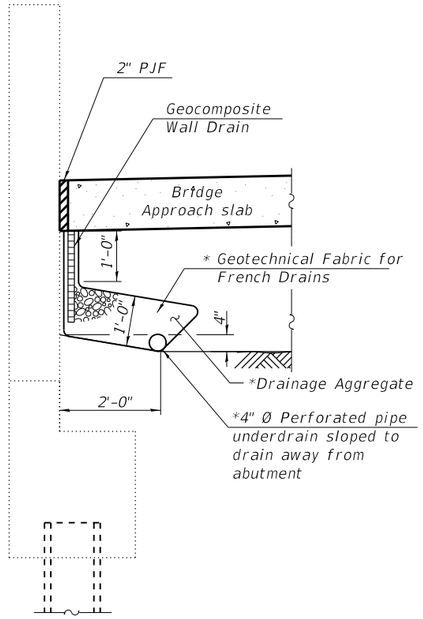
Existing approach slab and pavement connector to be removed. Buried pile bent cap to be completely removed. Piles shall be removed to 2' below finished grade. Approach slab and pavement connector removal shall be paid for as Approach Slab Removal. Pile bent cap removal shall be paid for as Concrete Removal.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

SLOPE WALL REPAIRS

A crack in the slope wall with a small voided area exists at the north abutment of SN 064-0026.

The voided area shall be filled with Slope Wall Slurry Pumping as directed by the Engineer. An approximate quantity has been included. Contractor shall be paid for actual quantity of slurry placed.

Small areas of slope wall may need to be removed to access the void in the slope wall. Any removals shall be repaired. Cost of removal and repairs shall be included with Slope Wall Slurry Pumping.



SECTION THRU ABUTMENT WINGWALL

(Horiz. dim. @ Rt. ℄'s)

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

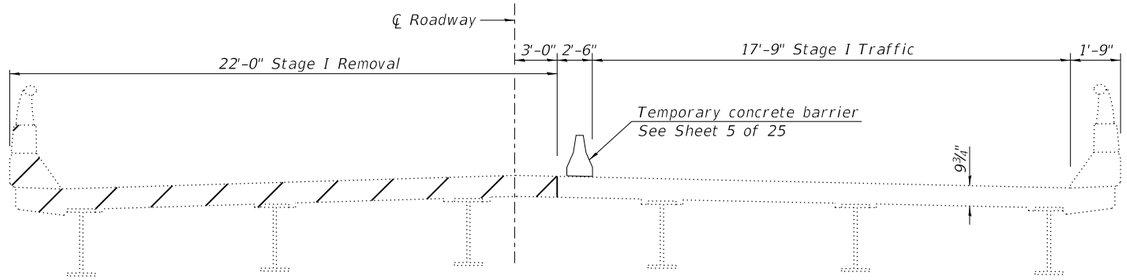
Note:
All drainage system components shall extend 2'-0" from the end of each wingwall except an outlet pipe shall wrap around and extend until intersecting with the side slope. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

TOTAL BILL OF MATERIAL

ITEM	UNIT	SN 064-0025	SN 064-0026	TOTAL
Paved Shoulder Removal	Sq. Yd.	210	210	420
Concrete Removal	Cu. Yd.	35.2	35.3	70.5
Protective Shield	Sq. Yd.	242	242	484
Structure Excavation	Cu. Yd.	70	73	143
Concrete Structures	Cu. Yd.	25.8	25.8	51.6
Concrete Superstructure	Cu. Yd.	67.9	68.2	136.1
Protective Coat	Sq. Yd.	814	813	1627
Concrete Superstructure (Approach Slab)	Cu. Yd.	78.5	78.5	157.0
Reinforcement Bars, Epoxy Coated	Pound	41560	41560	83120
Bar Splicers	Each	300	300	600
Temporary Soil Retention System	Sq. Ft.	59	61	120
Granular Backfill for Structures	Cu. Yd.	70	73	143
Geocomposite Wall Drain	Sq. Yd.	9	9	18
Concrete Headwalls for Pipe Drains	Each	4	4	8
Temporary Concrete Barrier	Foot	373	373	746
Relocate Temporary Concrete Barrier	Foot	373	373	746
Impact Attenuators, Temporary (Non-Redirective), Test Level 3	Each	1	1	2
Impact Attenuators, Relocate (Non-Redirective), Test Level 3	Each	1	1	2
Raised Reflective Pavement Marker	Each	3	3	6
Raised Reflective Pavement Marker (Bridge)	Each	1	1	2
Barrier Wall Reflectors, Type B	Each	9	9	18
Raised Reflective Pavement Marker Removal	Each	4	4	8
Bridge Approach Pavement Connector (Special)	Sq. Yd.	260	260	520
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	417	417	834
Pinning Temporary Concrete Barrier	Each	8	8	16
Raised Reflective Pavement Marker, Reflector Removal	Each	4	4	8
Approach Slab Removal	Sq. Yd.	213	213	426
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	0.091	0.091	0.182
Cleaning and Painting Steel Bridge No. 5	L. Sum	1	0	1
Cleaning and Painting Steel Bridge No. 6	L. Sum	0	1	1
Bridge Deck Scarification 3"	Sq. Yd.	474	474	948
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	1	0	1
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	57	0	57
Diamond Grinding (Bridge Section)	Sq. Yd.	960	955	1915
Pipe Underdrains for Structures 4"	Foot	78	78	156
Slope Wall Slurry Pumping	Cu. Yd.	0	1	1
Bridge Deck Latex Concrete Overlay, 3¼ Inches	Sq. Yd.	474	474	948

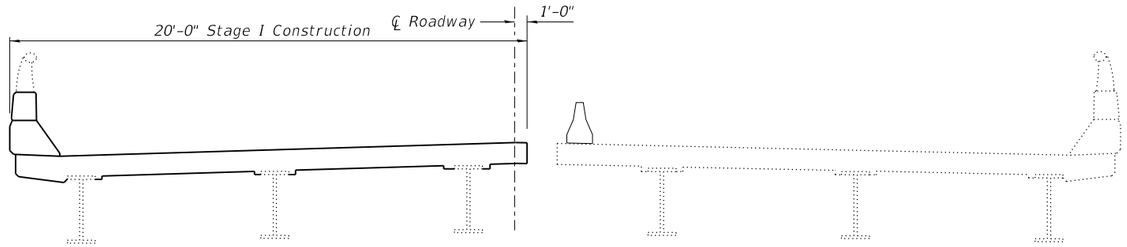
GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Prior to pouring new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
3. Plan dimensions and details are relative to existing plans and are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
5. Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel from the end of the beam to 1'-6" (measured along the beam) beyond the face of the concrete diaphragm shall be cleaned per Near White Blast Cleaning (SSPC- SP10). The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning (SSPC- SP15).
6. The designated areas cleaned per Near White Blast Cleaning (SSPC- SP10) and per Commercial Grade Power Tool Cleaning (SSPC- SP15) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Topcoat system. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No 7.5G 4/8.
7. A minimum of 2 air monitors will be required to monitor abrasive blasting operations at this site. See special provision for Containment and Disposal of Lead Paint Cleaning Residues
8. SSPC QP1 and SSPC QP2 Certification is required for this Contract.
9. To retain the temporary concrete barrier for Stage II Traffic, the Contractor shall have the option of using either 2 (#5) bar splicers or 2 cast in place inserts at 6" centers at the mid-depth of the approach slab and pavement connector. The bar splicers or inserts shall have a minimum proof load of 5,000 pounds. Along with the anchoring devices the Contractor shall provide one steel retainer plate and 2 ½" diameter bolt and washers every 6' as shown on Detail II on Standard R-27 (Sheet 5 of 25) from Sta. 138+23.71 to Sta. 138+72.88 and Sta. 139+89.26 to Sta. 140+36.25 for SN 064-0025 and Sta. 138+63.75 to Sta. 139+10.74 and Sta. 140+27.12 to Sta. 140+76.29 for SN 064-0026 for Stage II traffic. This work shall be included in the cost of Temporary Concrete Barrier, no additional compensation shall be provided.



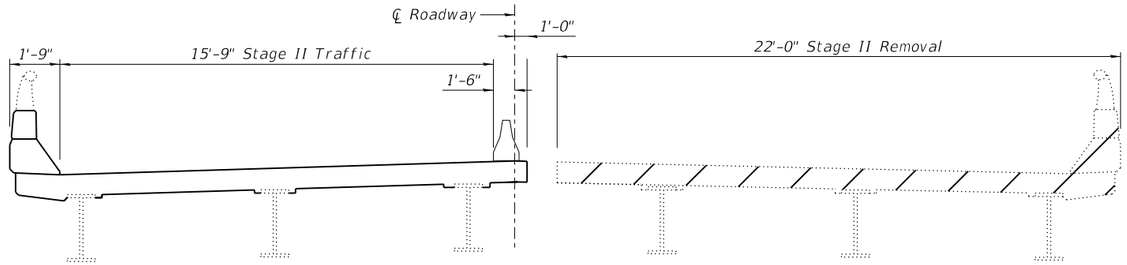
STAGE I REMOVAL

(Looking in the direction of traffic)



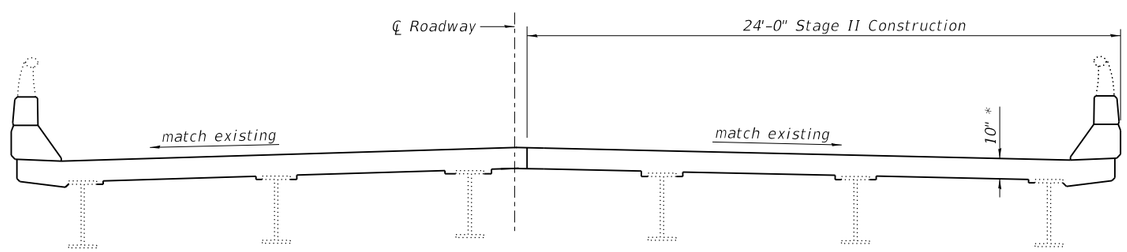
STAGE I CONSTRUCTION

(Looking in the direction of traffic)



STAGE II REMOVAL

(Looking in the direction of traffic)

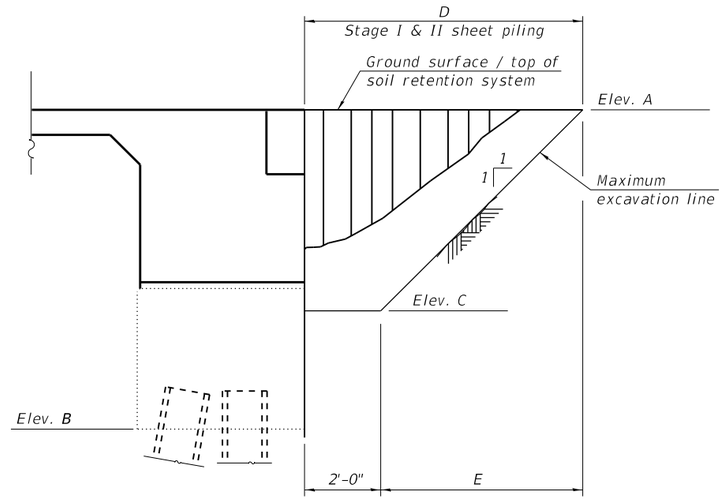


STAGE II CONSTRUCTION

(Looking in the direction of traffic)

* Prior to grinding.

Note:
Hatched area indicates, Concrete Removal at abutments.



TEMPORARY SOIL RETENTION SYSTEM

Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
SN 064-0025 W. Abut.	402.47	394.02	396.52	8'-0"	6'-0"
SN 064-0025 E. Abut.	400.97	392.59	395.09	7'-11"	5'-11"
SN 064-0026 W. Abut.	401.99	393.40	395.90	8'-2"	6'-2"
SN 064-0026 E. Abut.	400.49	391.97	394.47	8'-1"	6'-1"

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

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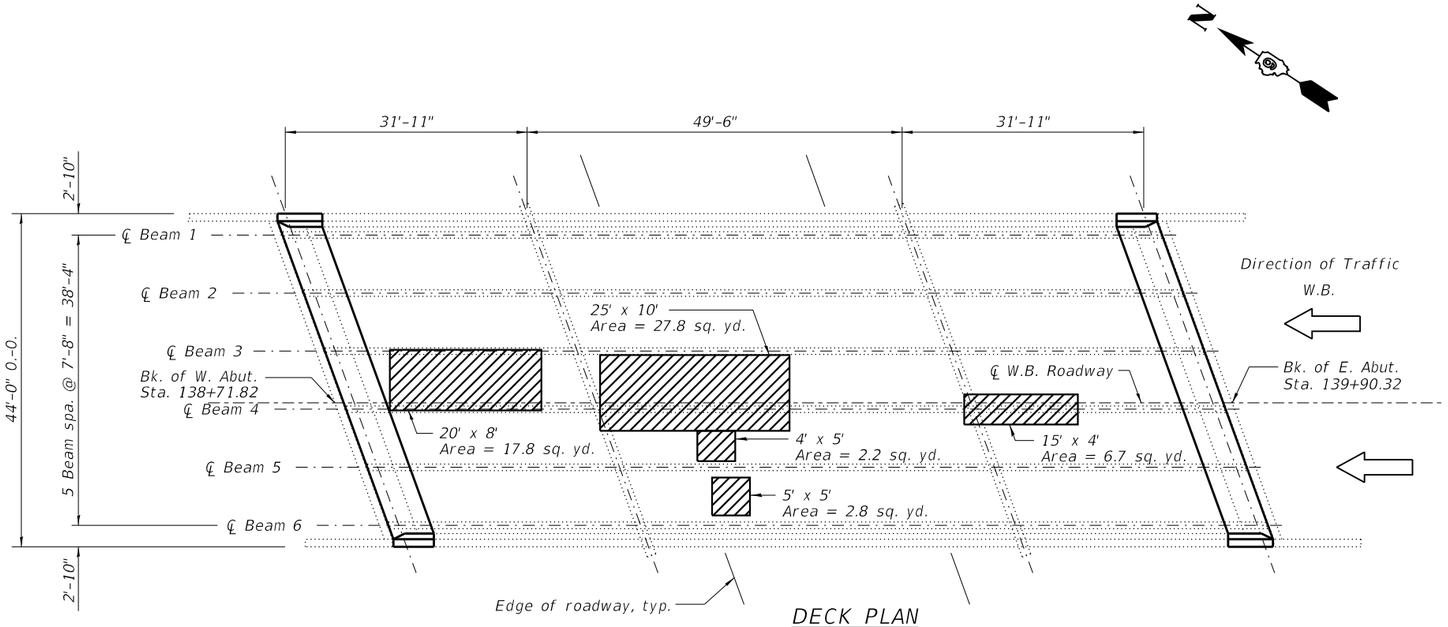
PLOT DATE = 11/18/2020 - 7:35:13 AM		CHECKED - JTH	REVISED -	

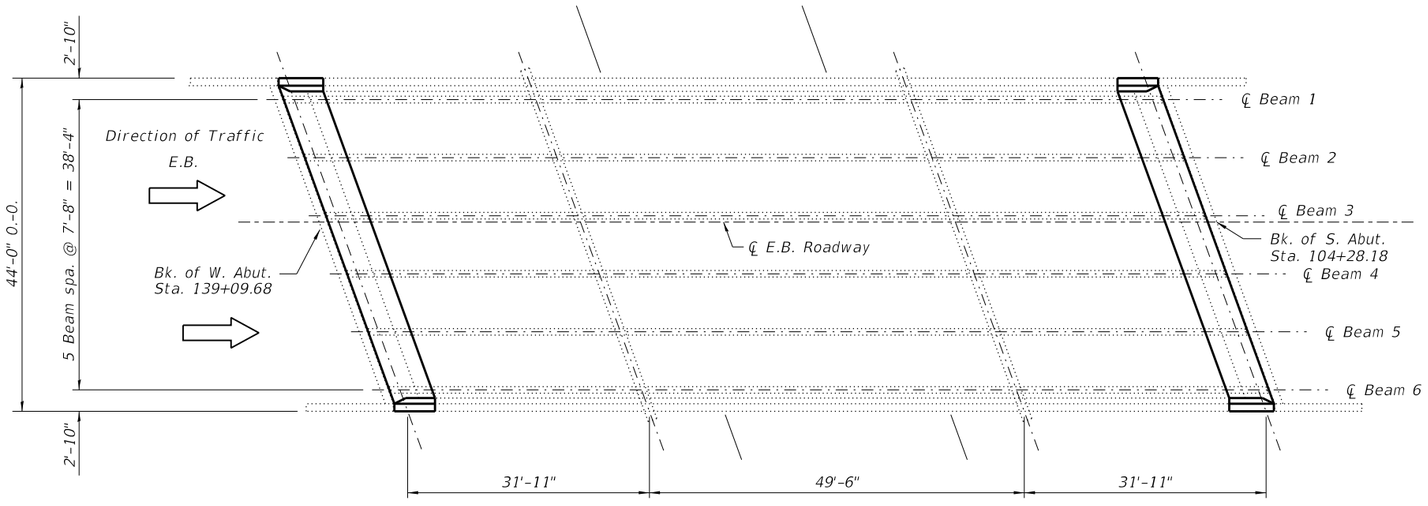
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 3 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	167
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



DECK PLAN
SN 064-0025



DECK PLAN
SN 064-0026

Legend

Full Depth, Type II

Notes:

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

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

Protective Shield shall be placed the full out to out width of each bridge for the full length of span 2 over TR 86 (Massac Creek Road).

BILL OF MATERIAL

ITEM	UNIT	SN 064-0025	SN 064-0026	TOTAL
Protective Shield	Sq. Yd.	242	242	484
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	57	0	57

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License No.: 184-000613

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PATCHING PLAN
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 4 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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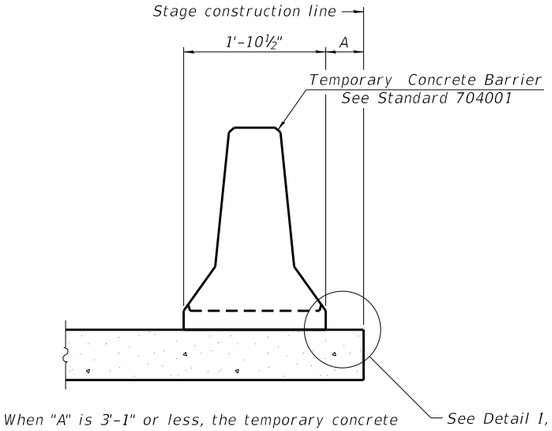
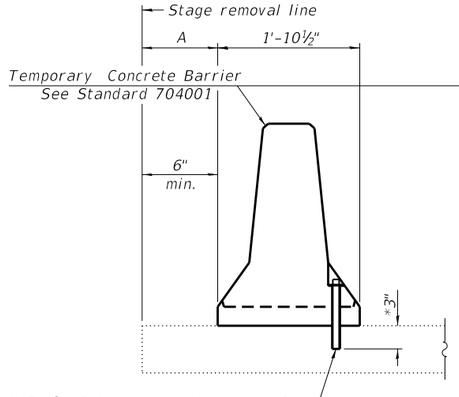
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



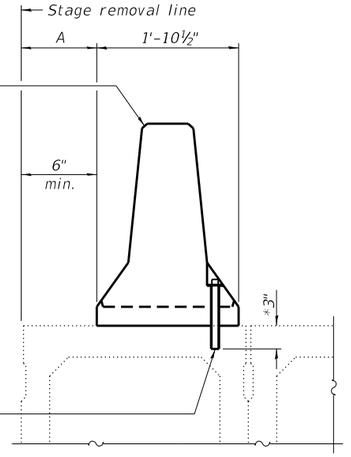
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

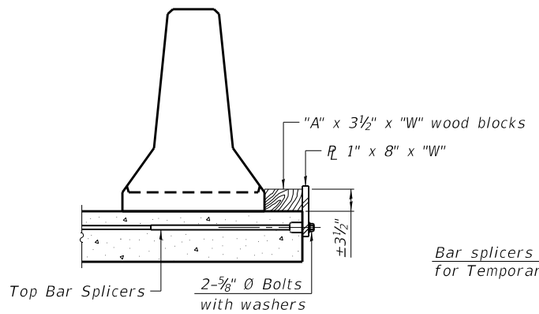
EXISTING SLAB



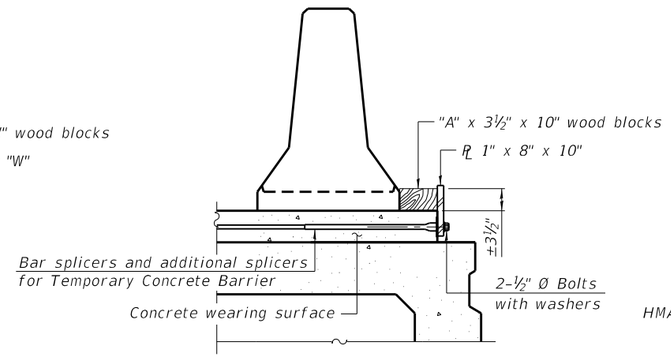
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

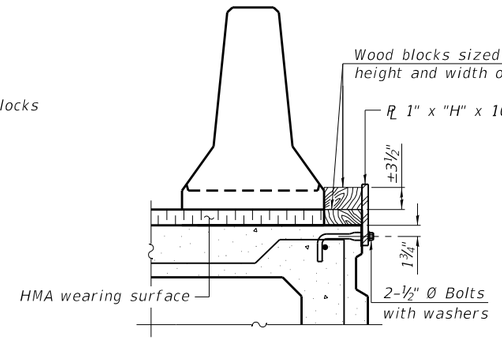
SECTIONS THRU SLAB OR DECK BEAM



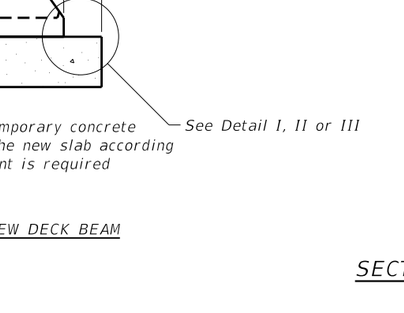
DETAIL I



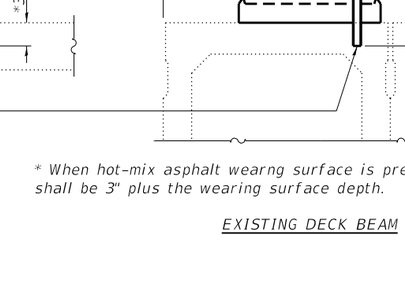
DETAIL II



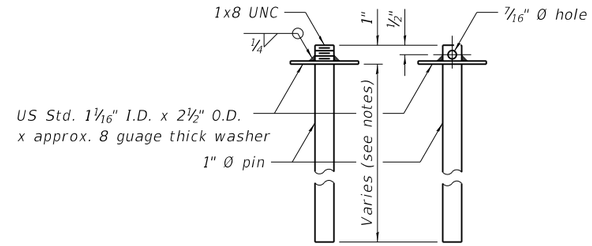
DETAIL III



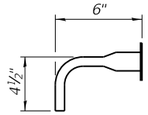
STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - 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.

R-27

2-17-2017

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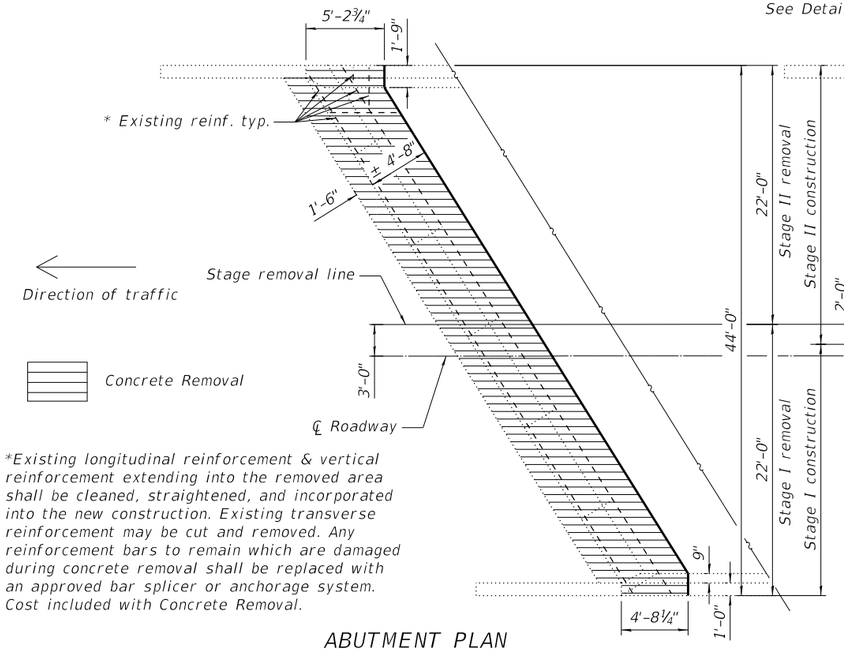
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

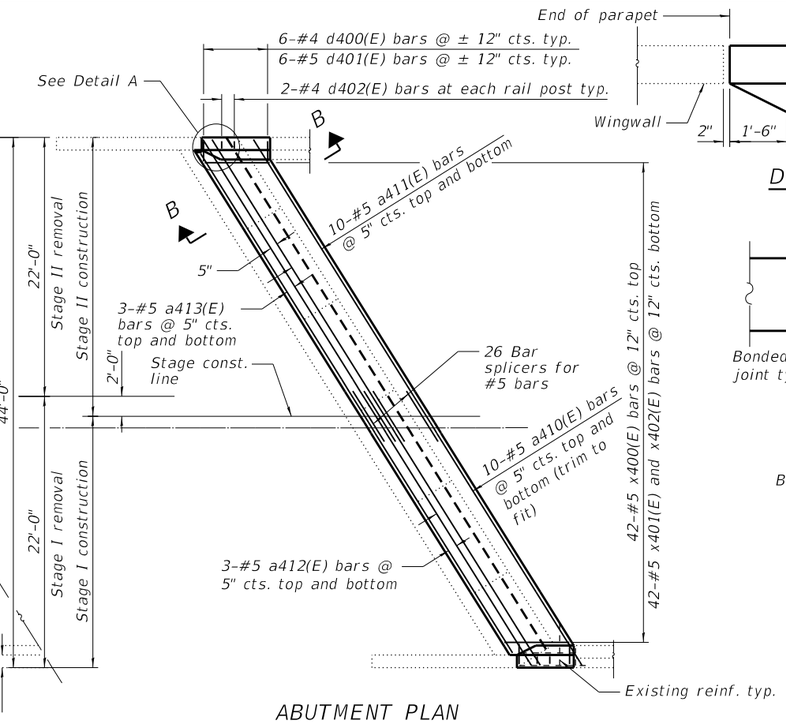
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 5 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	169
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

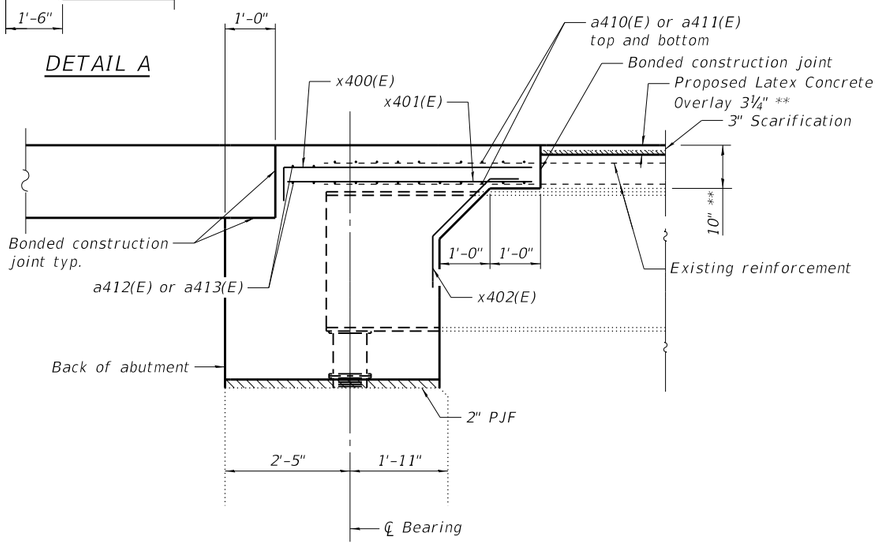


*Existing longitudinal reinforcement & vertical reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement may be cut and removed. Any reinforcement bars to remain which are damaged during concrete removal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

ABUTMENT PLAN SHOWING CONCRETE REMOVAL



ABUTMENT PLAN SHOWING CONCRETE REPLACEMENT

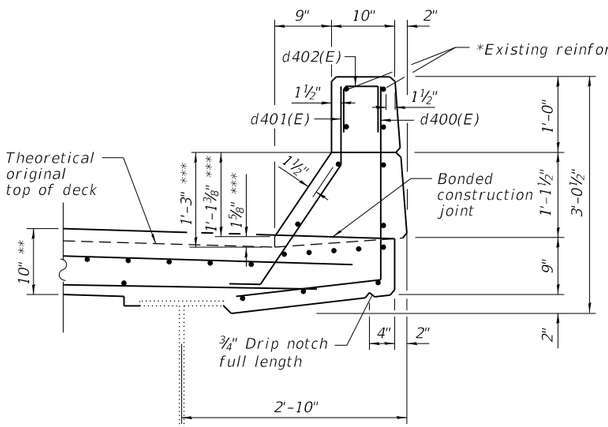


SECTION B-B TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT

(Dimensions measured at right angles)
For section showing deck removal see Sheet 10 of 25.

SN 064-0025 west abutment shown, SN 064-0025 east abutment similar
SN 064-0026 east abutment shown, SN 064-0026 west abutment similar

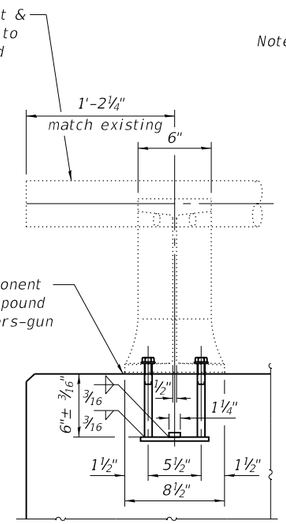
Note: d400(E) and d401(E) bars spaced at 12" cts.



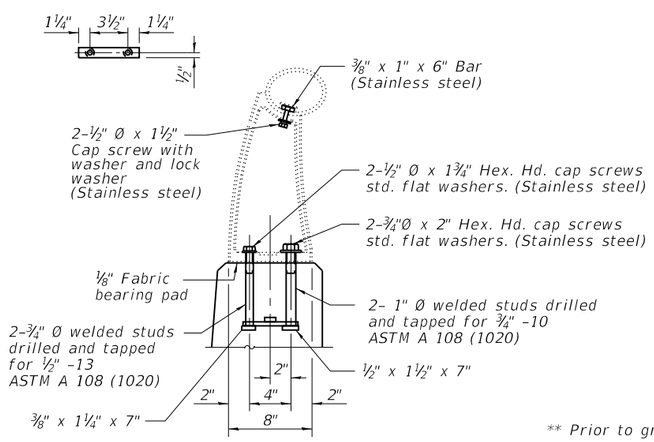
SECTION THRU PARAPET

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

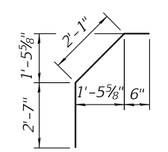
Existing aluminum end post & hand rail terminal section to be removed and re-erected



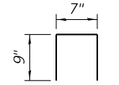
Note: Rail shall be removed and re-erected as necessary to allow structure modifications. Cost included in Concrete Removal.



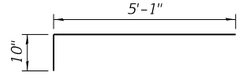
RAIL POST DETAILS



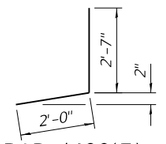
BAR x402(E)



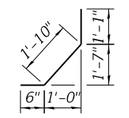
BAR d402(E)



BAR x400(E)



BAR d400(E)



BAR d401(E)

FOUR SUPERSTRUCTURE ENDS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a410(E)	80	#5	20'-11"	
a411(E)	80	#5	25'-3"	
a412(E)	24	#5	19'-8"	
a413(E)	24	#5	24'-0"	
d400(E)	48	#4	4'-7"	
d401(E)	48	#5	3'-5"	
d402(E)	16	#4	2'-1"	
x400(E)	168	#5	5'-11"	
x401(E)	168	#5	5'-1"	
x402(E)	168	#5	5'-2"	
Concrete Removal			Cu. Yd.	24.7
Concrete Superstructure			Cu. Yd.	136.1
Reinforcement Bars, Epoxy Coated			Pound	8120
Bar Splicers			Each	104

** Prior to grinding.

MODEL: Default
FILE NAME: L:\IDOT\1906610\WO_1\Draw\Structure\SN 0025 & 0026\06_0025-0026_Superstructure Detail.dgn

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USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 6 OF 25 SHEETS
PLOT DATE = 11/18/2020 - 7:38:17 AM	CHECKED - JTH	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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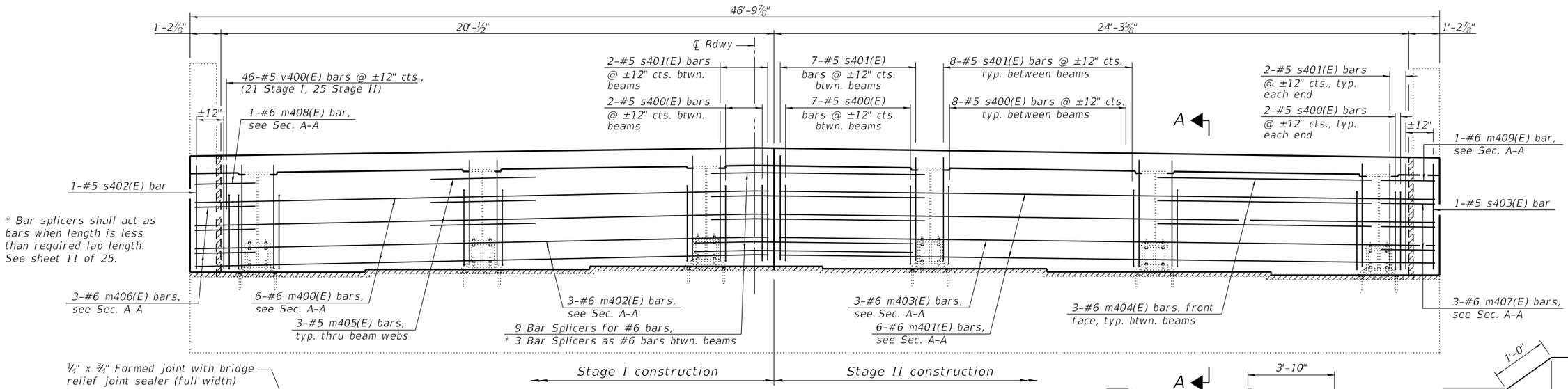
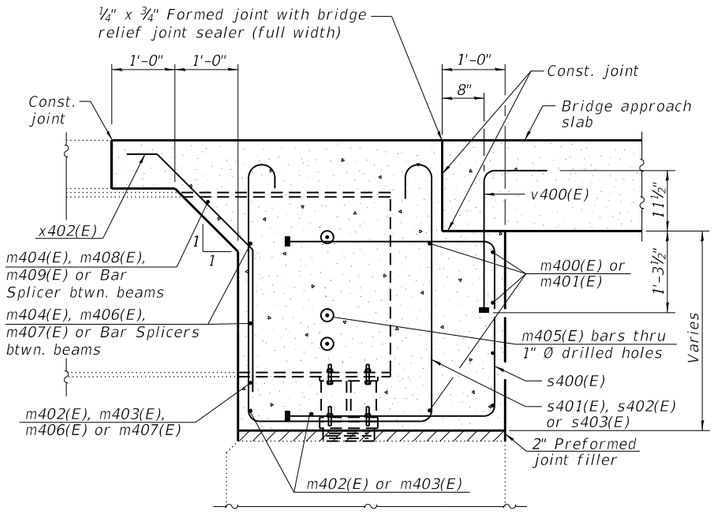
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	



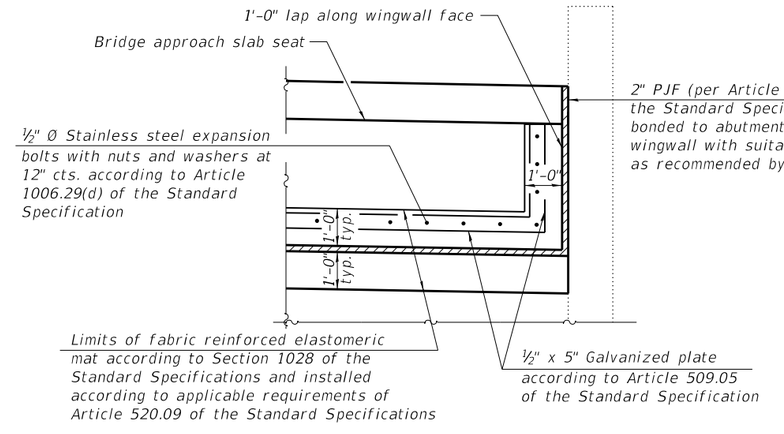
DIAPHRAGM ELEVATION AT ABUTMENT

SN 064-0025 west abutment shown, SN 064-0025 east abutment similar
SN 064-0026 east abutment shown, SN 064-0026 west abutment similar



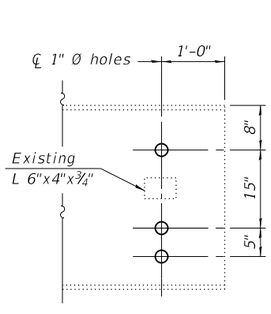
SECTION A-A

(Dimensions measured at right angles)

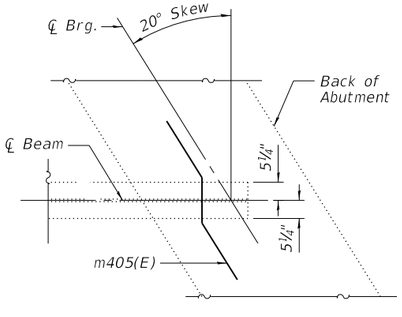


ELEVATION

(Looking at back of abutment)

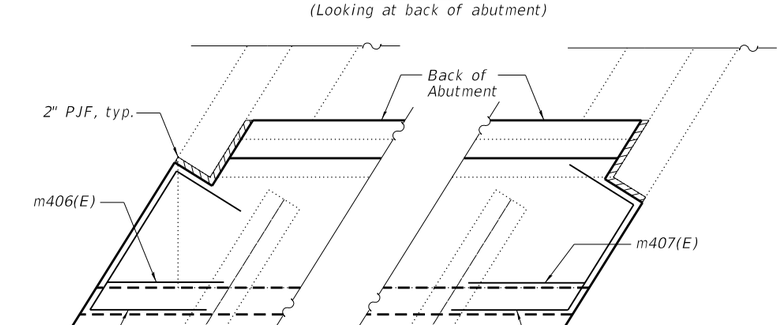


STEEL BEAM END ELEVATION

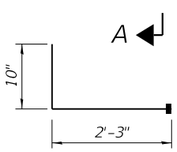


PARTIAL PLAN AT BEAMS

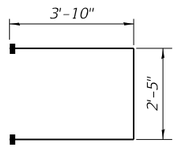
(Showing bottom flange of beam)



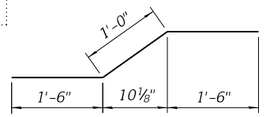
PARTIAL PLAN



Bar v400(E)



Bar s400(E)

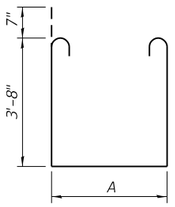


Bar m405(E)

FOUR DIAPHRAGMS BILL OF MATERIAL

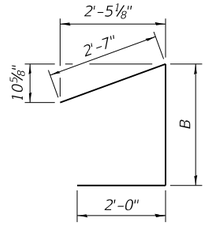
Bar	No.	Size	Length	Shape
m400(E)	24	#6	19'-8"	
m401(E)	24	#6	24'-0"	
m402(E)	12	#6	20'-11"	
m403(E)	12	#6	25'-3"	
m404(E)	48	#6	7'-10"	
m405(E)	72	#5	4'-0"	
m406(E)	12	#6	7'-2"	
m407(E)	12	#6	6'-7"	
m408(E)	4	#6	7'-8"	
m409(E)	4	#6	7'-1"	
s400(E)	180	#5	10'-1"	
s401(E)	180	#5	11'-4"	
s402(E)	4	#5	10'-6"	
s403(E)	4	#5	11'-1"	
v400(E)	184	#5	3'-1"	
Reinforcement Bars, Epoxy Coated		Pound	8320	
Bar Splicers		Each	48	

Bar	A
s401(E)	2'-10"
s402(E)	2'-0"
s403(E)	2'-7"



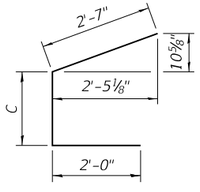
Bar s401(E), s402(E), and s403(E)

Bar	B
m406(E)	2'-7"
m408(E)	3'-1"



Bar m406(E) and m408(E)

Bar	C
m407(E)	2'-0"
m409(E)	2'-6"



Bar m407(E) and m409(E)

Notes:

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

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

The s400(E), s401(E), s402(E), s403(E) and v400(E) bars are placed parallel to beams and spaced at right angles to beams.

Concrete Superstructure quantity included in quantity shown on Sheet 6 of 25.

MODEL: Default
FILE NAME: I:\IDOT\1950610\WO_1\Draw\Structures\SN 0025 & 0026\007_0025-0026_Diaphragm Details.dgn

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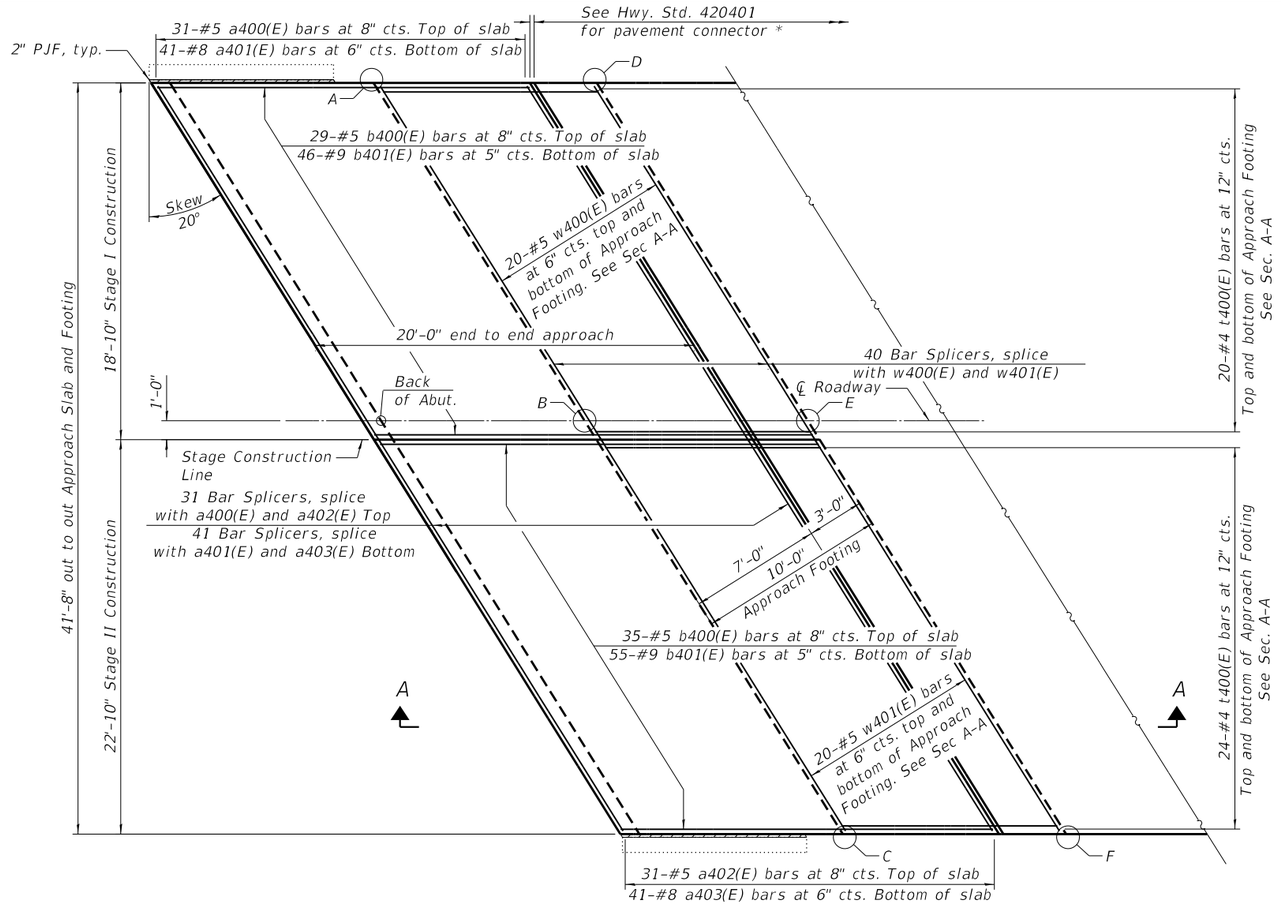
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

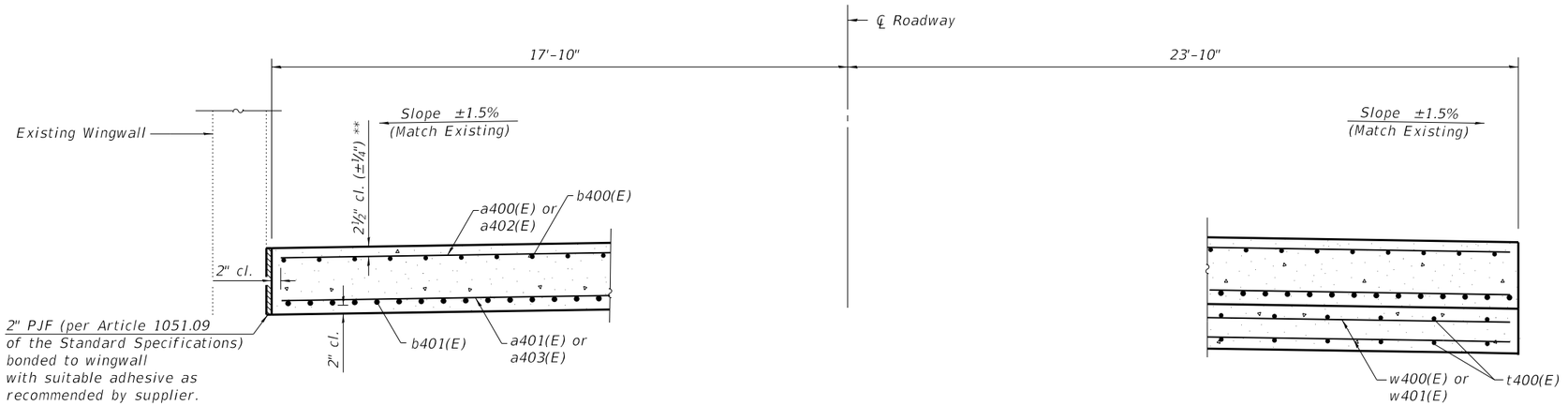
DIAPHRAGM DETAILS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 7 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	171
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



PLAN

SN 064-0025 west approach slab shown, SN 064-0025 east approach slab similar
SN 064-0026 east approach slab shown, SN 064-0026 west approach slab similar



** Prior to grinding.

NEAR ABUTMENT

CROSS SECTION

(Looking in the direction of traffic)

AT APPROACH FOOTING

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

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

S.N. 064-0025				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

S.N. 064-0026				
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

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

See Section A-A on Sheet 9 of 25.

MODEL: Default
FILE NAME: L:\DOT\1909810WO_1\Draw\Structures\SN 0025 & 0026\09_0025-0026_Approach Slab Detail 1.dgn

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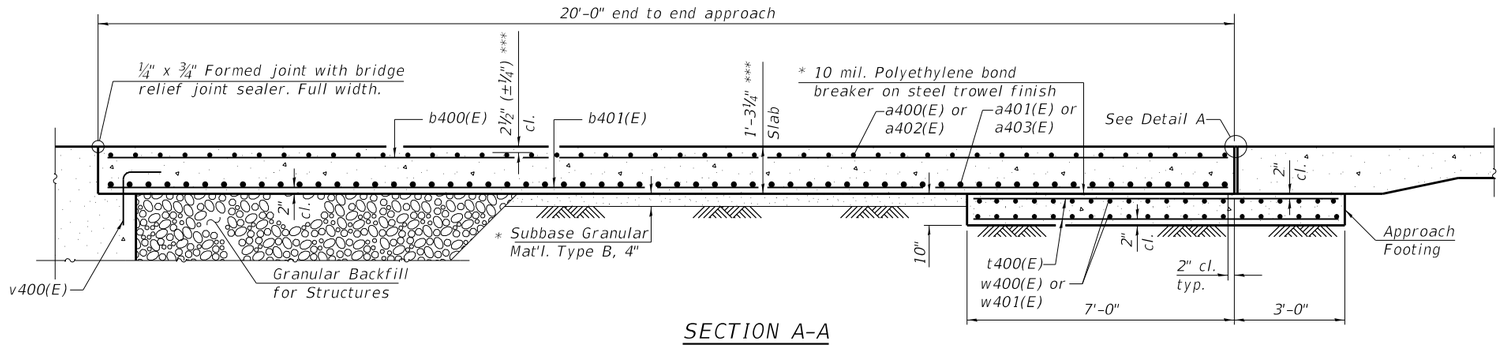
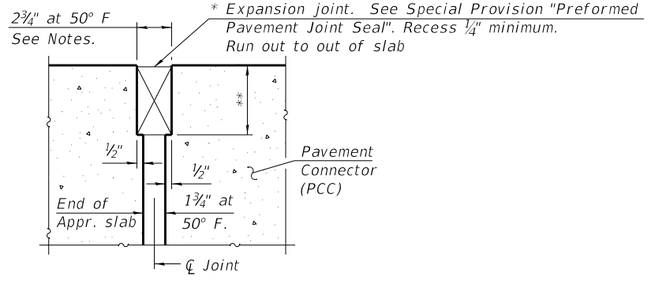
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 8 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	172
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



SECTION A-A



DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations.

*** Prior to grinding.

Notes:

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

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

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (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 25.

FOUR APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a400(E)	124	#5	19'-8"	———
a401(E)	164	#8	19'-8"	———
a402(E)	124	#5	23'-11"	———
a403(E)	164	#8	23'-11"	———
b400(E)	256	#5	19'-8"	———
b401(E)	404	#9	19'-8"	———
t400(E)	352	#4	10'-3"	———
w400(E)	160	#5	19'-8"	———
w401(E)	160	#5	23'-11"	———
Concrete Structures			Cu. Yd.	51.6
Concrete Superstructure (Approach Slab)			Cu. Yd.	157.0
Reinforcement Bars, Epoxy Coated			Pound	66680
Bar Splicers			Each	448

MODEL: Default
FILE NAME: I:\IDOT\190610\WO_1\Drawl\Structures\SN 0023 & 0026\009_0023-0026_Approach Slab Detail 2.dgn

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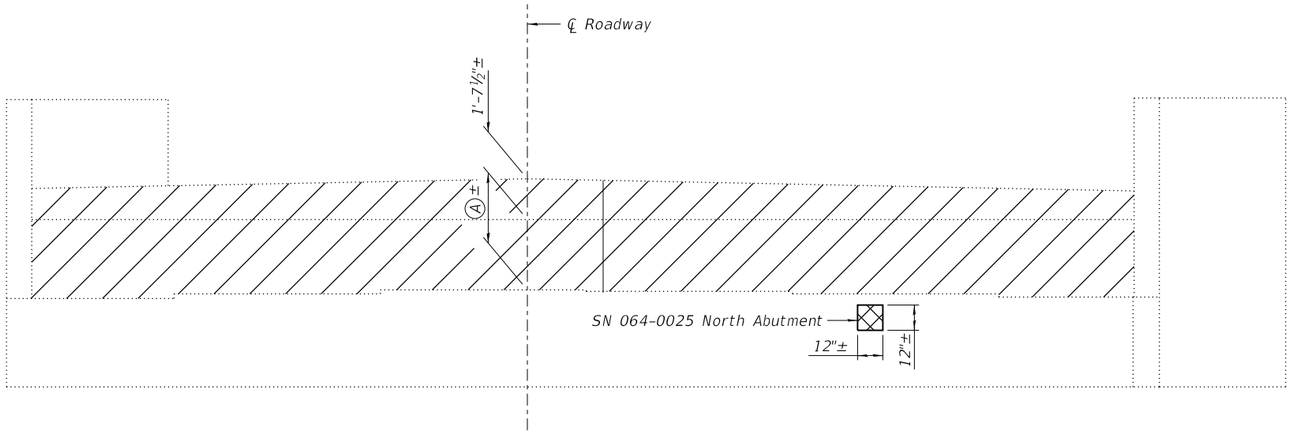
PLOT DATE = 11/24/2020 - 9:33:13 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0023 (W.B.) & 064-0024 (E.B.)
SHEET 9 OF 25 SHEETS

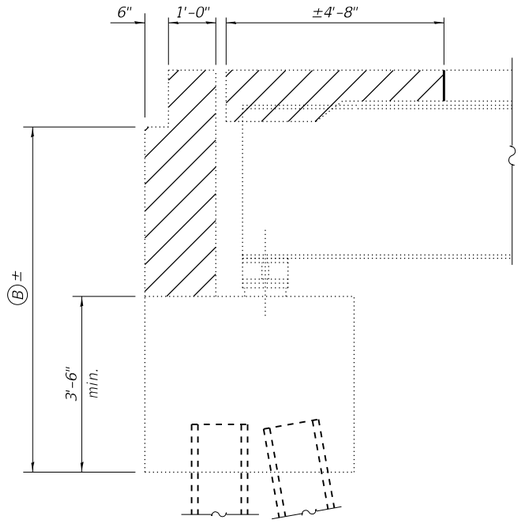
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	173
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



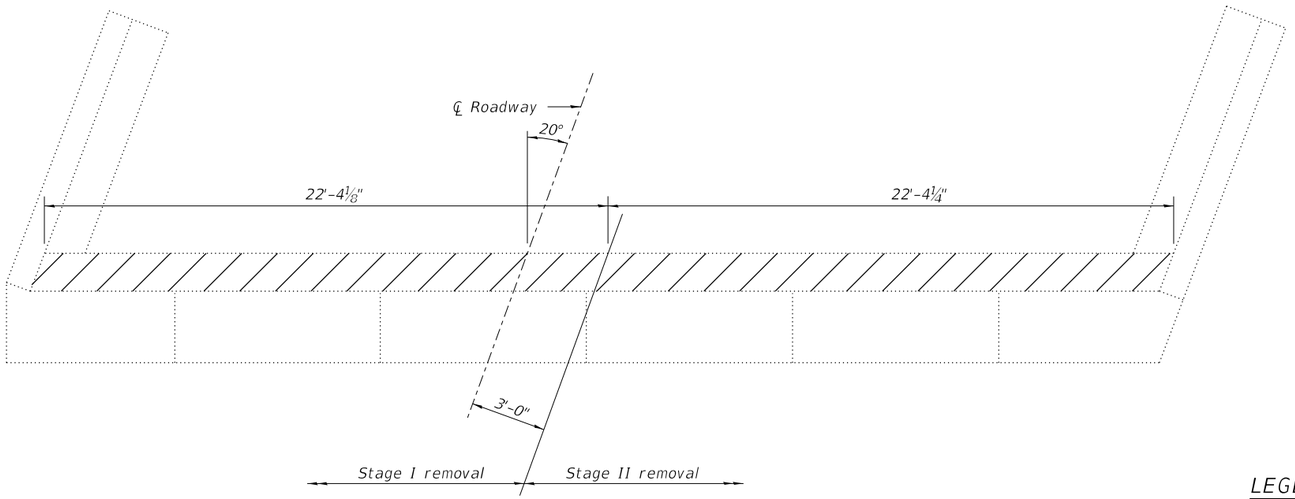
ELEVATION

SN 064-0025 west abutment shown, SN 064-0025 east abutment similar
SN 064-0026 east abutment shown, SN 064-0026 west abutment similar

Location	Dim. A	Dim. B
064-0025 – West Abutment	2'-9⅝"	6'-7½"
064-0025 – East Abutment	2'-8¾"	6'-6¾"
064-0026 – West Abutment	2'-9½"	6'-9⅜"
064-0026 – East Abutment	2'-9"	6'-8½"



SECTION THRU ABUTMENT



PLAN

SN 064-0025 west abutment shown, SN 064-0025 east abutment similar
SN 064-0026 east abutment shown, SN 064-0026 west abutment similar

LEGEND

Concrete Removal

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

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	38.6
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	1

Concrete Removal quantity for deck concrete included in Bill of Material on Sheet 6 of 25.

MODEL: Default
FILE NAME: L:\DOT\1900810\WO_1\Draw\Structures\SN 0025 & 0026\010_0025-0026_Abutment Removal.dgn

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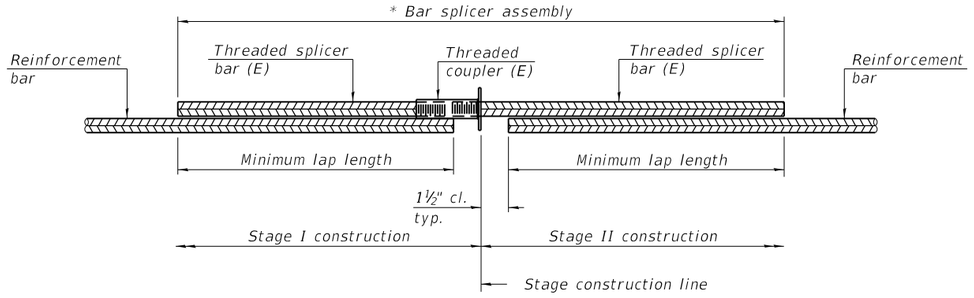
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/18/2020 - 7:35:23 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ABUTMENT REMOVAL
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 10 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	174
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY PLAN

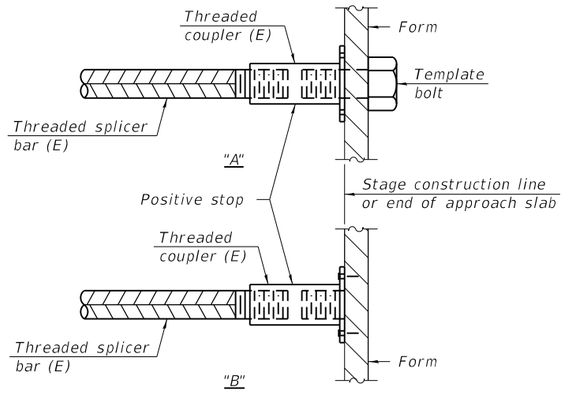
(All components shall be provided from one supplier)

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

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

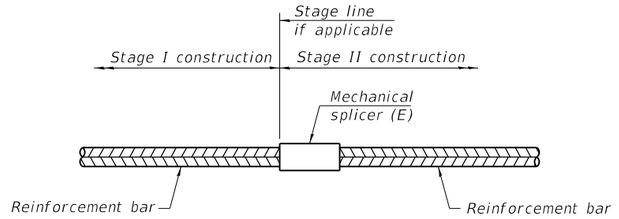
Location	Bar size	No. assemblies required	Minimum lap length
064-0025 W. Abut. Superstructure	#5	26	3'-6"
064-0025 W. Abut. Diaphragm	#6	9	4'-0"
064-0025 W. Abut. Diaphragm	#6	3	**
064-0025 W. Approach Slab	#5	31	3'-6"
064-0025 W. Approach Slab	#8	41	6'-9"
064-0025 W. Approach Slab Footing	#5	40	3'-6"
064-0025 E. Abut. Superstructure	#5	26	3'-6"
064-0025 E. Abut. Diaphragm	#6	9	4'-0"
064-0025 E. Abut. Diaphragm	#6	3	**
064-0025 E. Approach Slab	#5	31	3'-6"
064-0025 E. Approach Slab	#8	41	6'-9"
064-0025 E. Approach Slab Footing	#5	40	3'-6"
064-0026 W. Abut. Superstructure	#5	26	3'-6"
064-0026 W. Abut. Diaphragm	#6	9	4'-0"
064-0026 W. Abut. Diaphragm	#6	3	**
064-0026 W. Approach Slab	#5	31	3'-6"
064-0026 W. Approach Slab	#8	41	6'-9"
064-0026 W. Approach Slab Footing	#5	40	3'-6"
064-0026 E. Abut. Superstructure	#5	26	3'-6"
064-0026 E. Abut. Diaphragm	#6	9	4'-0"
064-0026 E. Abut. Diaphragm	#6	3	**
064-0026 E. Approach Slab	#5	31	3'-6"
064-0026 E. Approach Slab	#8	41	6'-9"
064-0026 E. Approach Slab Footing	#5	40	3'-6"

** 1'-8" bar on Stage I side, 5'-11" bar on Stage II side.



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

MODEL: Default
FILE NAME: L:\BOT\1900610\WO_10\raw\Structures\SN 0025 & 0026\011_0025-0026_Bar Splicer Assembly and Mechanical Splicer Details.dgn

BSD-1 1-1-2020

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USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	
	CHECKED - AS	REVISED -	
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/18/2020 - 7:35:24 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

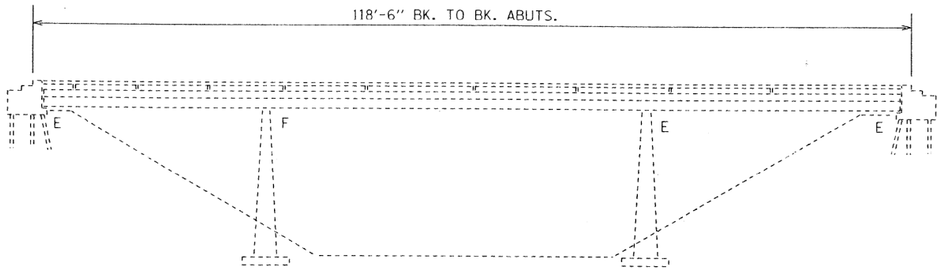
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 11 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	175
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-24	*	MASSAC	234	186
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2

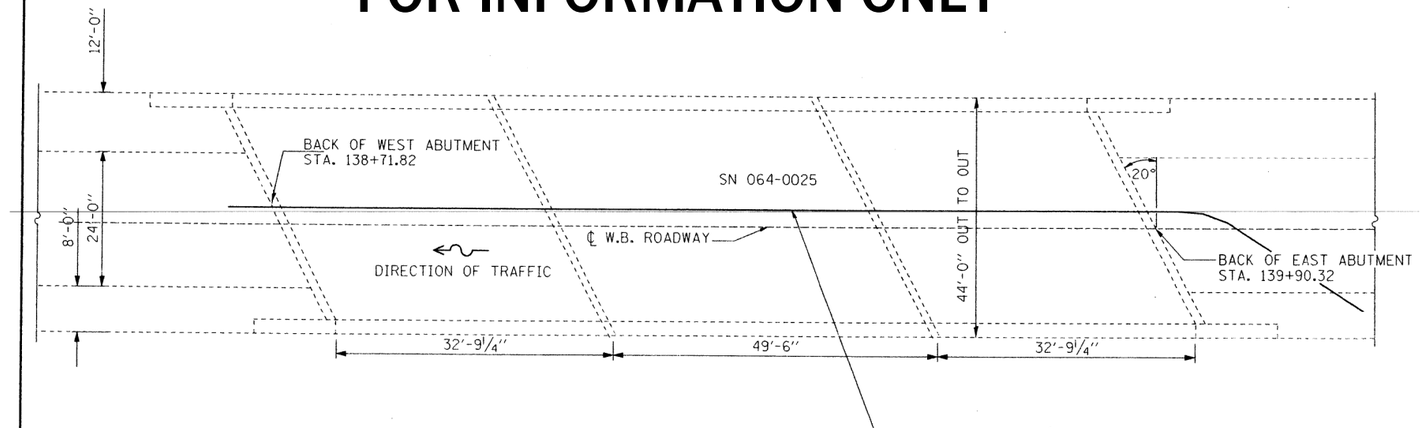
SHEET 1 OF 5 SHEETS



FOR INFORMATION ONLY

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL	0025	0026
SILICONE JOINT SEALER 1"	FOOT	86	43	43
SILICONE JOINT SEALER 2"	FOOT	86	43	43
POLYMER CONCRETE	CU FT	12.6	6.3	6.3
BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2¼"	SQ YD	1030	515	515
CONCRETE BRIDGE DECK SCARIFICATION (1/2")	SQ YD	1030	515	515
BRIDGE DECK GROOVING	SQ YD	986	493	493
TEMPORARY CONCRETE BARRIER	FOOT	660	330	330
RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	554	277	277
TEMPORARY CONCRETE BARRIER, TERMINAL SECTION	EACH	2	1	1
PLUG EXISTING DECK DRAINS	EACH	16	8	8
DECK SLAB REPAIR (PARTIAL)	SQ YD	21.3	15.5	5.8



SCOPE OF WORK

SCARIFY EXISTING DECK SURFACE.

RECONSTRUCT EXPANSION JOINTS WITH SILICONE SEALER AND POLYMER CONCRETE NOSINGS.

~~PARTIAL DEPTH PATCHING. NEW MICROSILICA~~ OVERLAY.

ELIMINATE DRAINS LOCATED WITHIN 10' OF ANY SUBSTRUCTURE ELEMENT.

DESIGN STRESSES

FIELD UNITS

EXISTING STRUCTURE

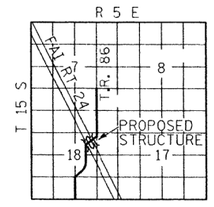
f_c = 1400 psi

f_s = 20,000 psi (REINFORCEMENT)

CONSTRUCTION SEQUENCE

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

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



LOCATION SKETCH

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

GERMAN RONCANCIO 081-003091 LICENSED STRUCTURAL ENGINEER OF SPRINGFIELD ILLINOIS

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

RC ENGINEERS, LTD.
CONSULTING ENGINEERS · SPRINGFIELD, ILLINOIS

GENERAL PLAN AND ELEVATION
F.A.I. ROUTE 24 OVER TR 86
SECTION (64-1) RS-1
SN 064-0025 (W.B.) & 064-0026 (E.B.)
MASSAC COUNTY

MODEL: Default
FILE NAME: L:\IDOT\190861\0WQ_1\Drawl\Structures\SN 0025 & 0026\012_0025-0026_Editing Plans-001.dgn

CMT
License No.: 184-000613

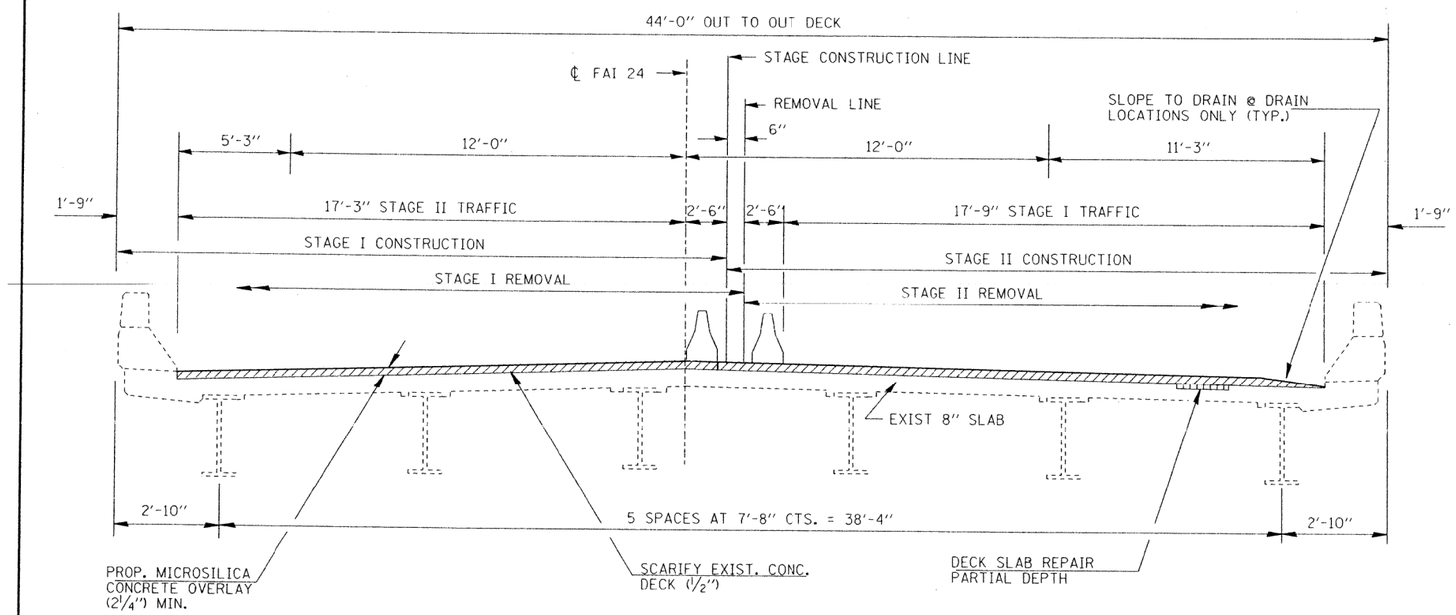
USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)	
	CHECKED - AS	REVISED -			
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -			
PLOT DATE = 11/18/2020 - 7:35:26 AM	CHECKED - JTH	REVISED -		SHEET 12 OF 25 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	176
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1-24	*	MASSAC	234	187
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

* 64(1,2,2-1,3-1,3)RS-1. BSMART FY2002-2

SHEET 2 OF 5 SHEETS



DECK CROSS SECTION

(LOOKING IN DIRECTION OF TRAFFIC)

GENERAL NOTES

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

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

FOR INFORMATION ONLY

RC ENGINEERS, LTD.
CONSULTING ENGINEERS · SPRINGFIELD, ILLINOIS

CROSS SECTION, GENERAL NOTES

MODEL: Default
FILE NAME: L:\IDOT\190861\0WO_1\Draw\Structures\SN 0025 & 0026\013_0025-0026_Existing Plans-002.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 13 OF 25 SHEETS

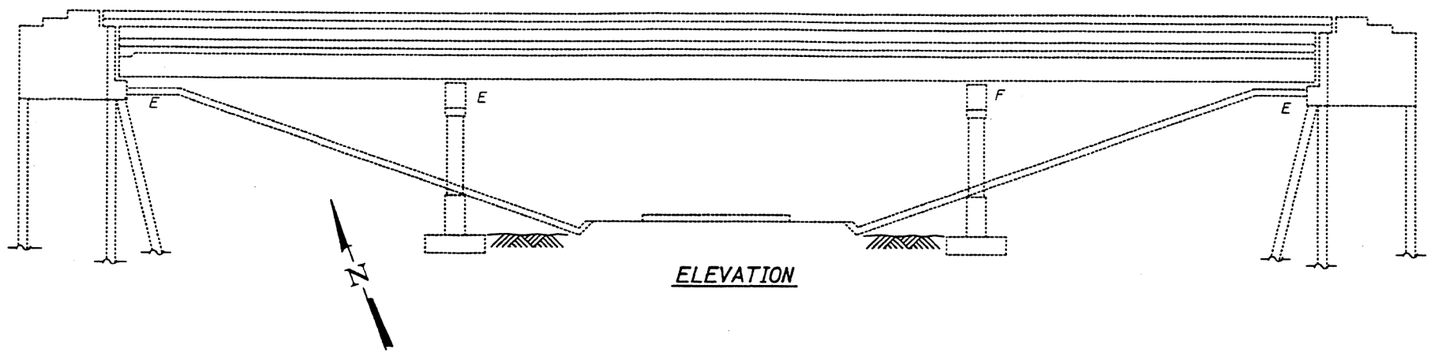
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	177
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

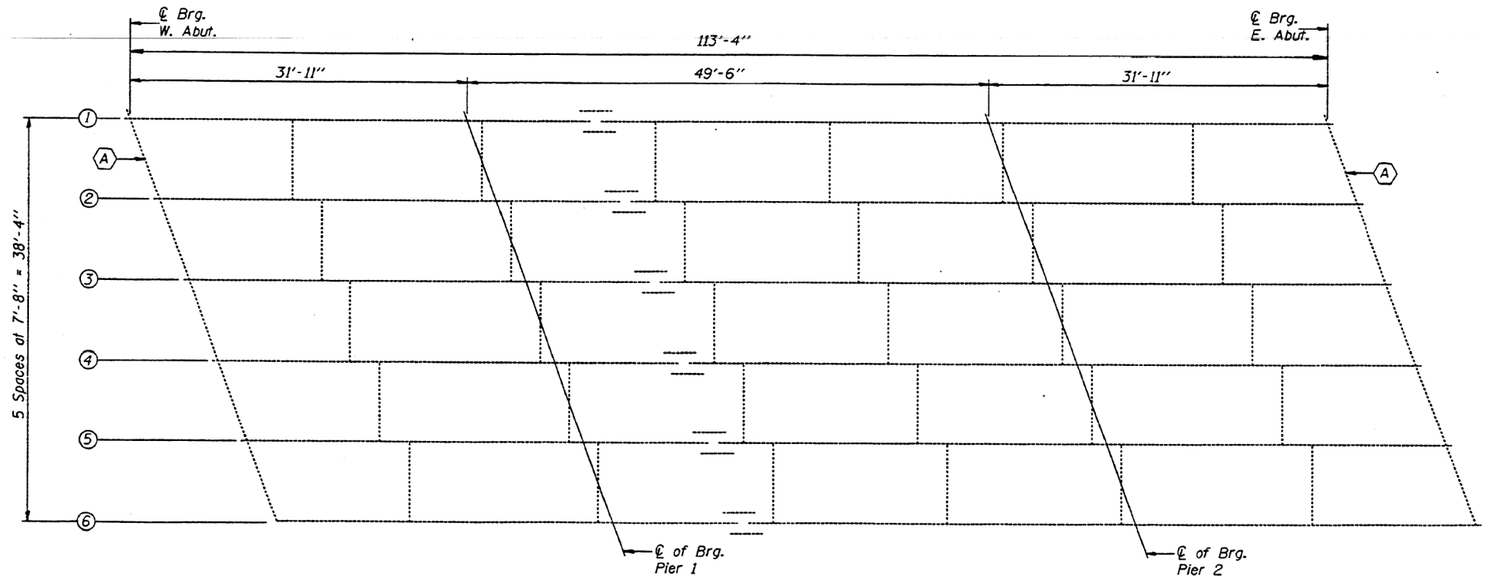
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	19	6
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 1
6 SHEETS

* CONT. BRIDGE MAINT. FY99-1



ELEVATION



PLAN

(A) Existing expansion joint to be removed and replaced with Neoprene Expansion Joint 2".

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36. unless otherwise noted.

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

Reinforcement bars shall conform to the requirements of AASHTO M-31. M-42 or M-53 Grade 60.

Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Bar Splicers	Each	32
Concrete Removal	Cu. Yd.	17.2
Concrete Superstructure	Cu. Yd.	16.3
Floor Drain Extensions	Each	16
Elastomeric Bearing Assembly Type II	Each	12
Furnishing and Erecting Structural Steel	Pound	4740
Jack and Remove Existing Bearings	Each	12
Neoprene Expansion Joint 2"	Foot	88
Reinforcement Bar, Epoxy Coated	Pound	2680

DESIGNED	Curt M. Ezzo
CHECKED	Glen T. Bell
DRAWN	J. March
CHECKED	CME GTB

APRIL 2. 1998

EXAMINED Todd E. Adam
ENGINEER OF STRUCTURAL SERVICES

PASSED
ENGINEER OF BRIDGES AND STRUCTURES

FOR INFORMATION ONLY

BRIDGE REPAIR
F.A.I. 24 SEC. 64-2HB-2
MASSAC COUNTY
STA. 139+50
S.N. 064-0025

MODEL: Default
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USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	
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PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/18/2020 - 7:35:36 AM	CHECKED - JTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 14 OF 25 SHEETS

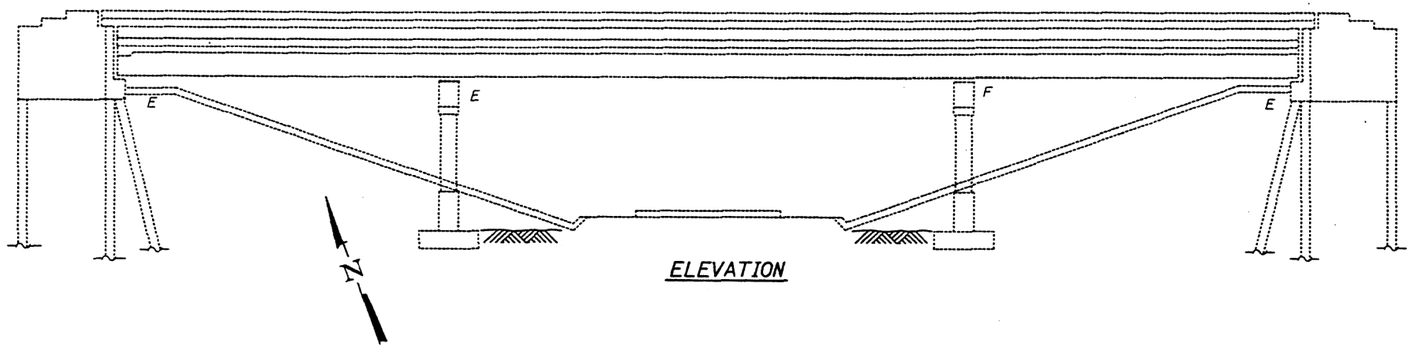
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	178
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

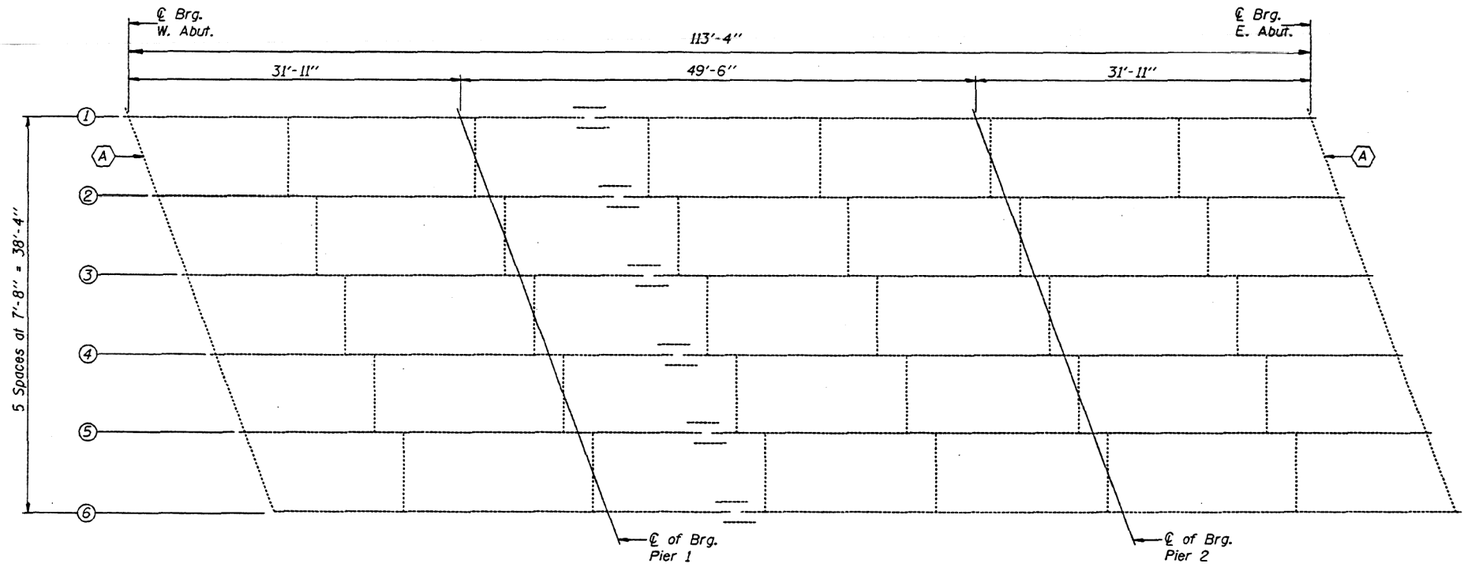
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	19	13
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
6 SHEETS

* CONT. BRIDGE MAINT. FY99-1



ELEVATION



PLAN

(A) Existing expansion joint to be removed and replaced with Neoprene Expansion Joint 2".

GENERAL NOTES

All new structural steel shall conform to AASHTO Classification M-270 Gr. 36. unless otherwise noted.

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

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53 Grade 60.

Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost incidental to "Concrete Removal".

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Bar Splicers	Each	32
Concrete Removal	Cu. Yd.	17.2
Concrete Superstructure	Cu. Yd.	16.3
Flume Drain Extension	Each	16
Elastomeric Bearing Assembly Type II	Each	12
Furnishing and Erecting Structural Steel	Pound	4740
Jack and Remove Existing Bearings	Each	12
Neoprene Expansion Joint 2"	Foot	88
Reinforcement Bar, Epoxy Coated	Pound	2680

FOR INFORMATION ONLY

BRIDGE REPAIR
F.A.I. 24 SEC. 64-2HB-2
MASSAC COUNTY
STA. 139+50
S.N. 064-0026

DESIGNED	Curt M. Espy
CHECKED	Glen T. Dahl
DRAWN	J. March
CHECKED	GTB

APRIL 2. 19 98
EXAMINED
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

MODEL: Default
FILE NAME: I:\DOT\190861KWO_1\Draw\Structures\SN 0025 & 0026\015_0025-0026_Existing Plans-004.dgn

CMT
License No. 184-000613

USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		
PLOT DATE = 11/18/2020 - 7:38:45 AM	CHECKED - JTH	REVISED -		SHEET 15 OF 25 SHEETS

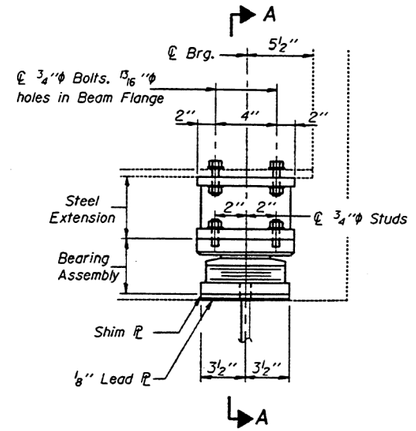
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	179
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

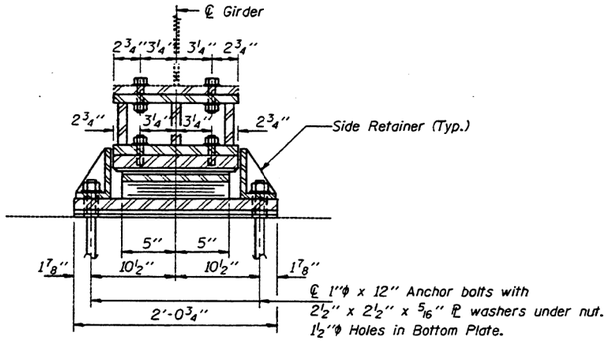
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	*	MASSAC	19	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 4
6 SHEETS

* CONT. BRIDGE MAINT. FY99-1



ELEVATION AT EAST & WEST ABUTMENT

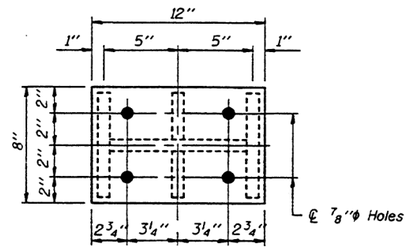


SECTION A-A

GIRDER REACTIONS

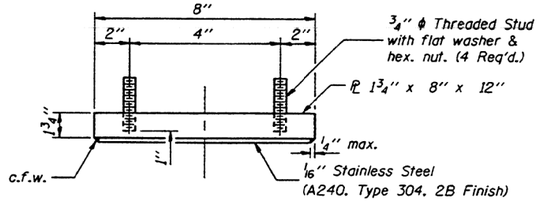
R℄	(K)	12.9
R℄	(K)	33.6
Imp.	(K)	10.1
R (Total)	(K)	56.6

Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, connection bolts, anchor bolts and lead plates are included in "Furnishing and Erecting Structural Steel".
See sheet 6 for Anchor Bolt installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Minimum jack capacity = 25 tons.

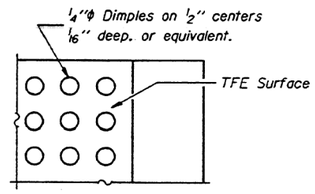


PLAN TOP AND BOTTOM PLATE

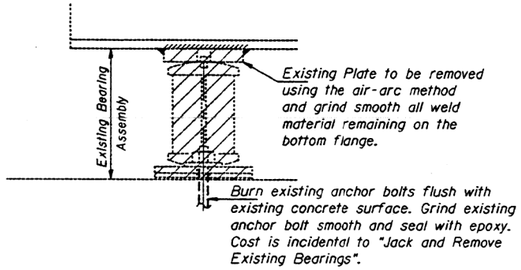
TYPE II TFE ELASTOMERIC EXP. BRG.



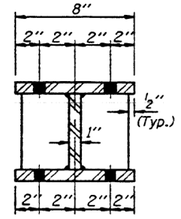
TOP BEARING ASSEMBLY



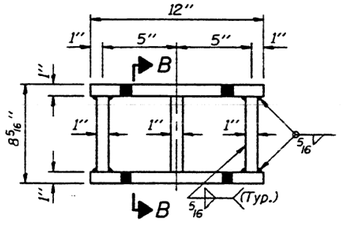
PLAN-TFE SURFACE



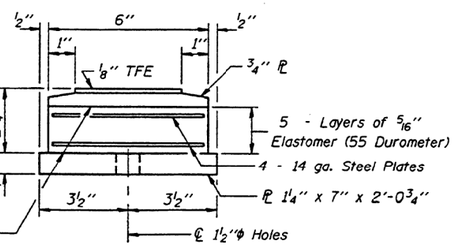
EXISTING BEARING REMOVAL DETAIL



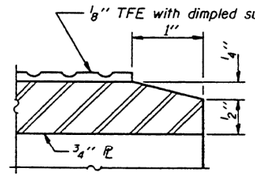
SECTION B-B



STEEL EXTENSION DETAIL



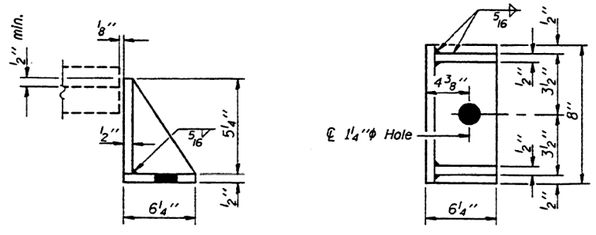
BOTTOM BEARING ASSEMBLY



Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

SECTION THRU TFE

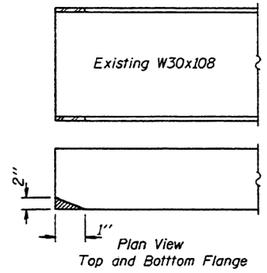


SIDE RETAINER

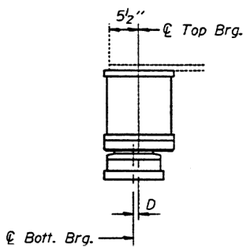
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

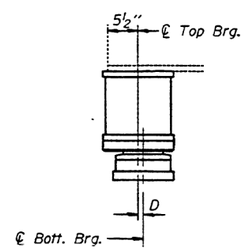
Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	12
Jack and Remove Existing Bearings	Each	12



FLANGE CLIP DETAIL



BELOW 50°F.
(Move bott. brg. away from fixed brg.)



ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

SETTING ANCHOR BOLTS AT EXP. BRG.

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

DESIGNED	C.M.E.	
CHECKED	G.T.B.	
DRAWN	J. March	
CHECKED	G.T.B.	C.M.E.

TYII 1-2-97

APRIL 2. 19 98
EXAMINED Todd E. Adams
ENGINEER OF STRUCTURAL SERVICES
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

FOR INFORMATION ONLY

BEARING REPLACEMENT
EAST AND WEST ABUTMENTS
F.A.I. 24 SEC. 64-2HB-2
MASSAC COUNTY
STA. 139+50
S.N. 064-0026

MODEL: Default
FILE NAME: L:\DOT\190861\0WO_1\Draw\Structures\SN 0025 & 0026\016_0025-0026_Existing Plans-005.dgn

CMT
License No.: 184-000613

USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EXISTING PLANS STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		
PLOT DATE = 11/18/2020 - 7:35:50 AM	CHECKED - JTH	REVISED -		SHEET 16 OF 25 SHEETS

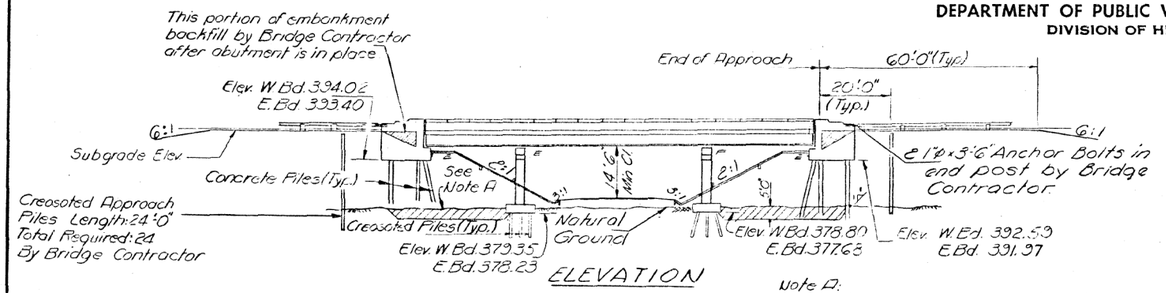
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	180
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	64 2HB-2	MASSAC	57	18
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

SHEET NO. 1
18 SHEETS

BM: #11 Elev. 398.72 Boat Spike in root of 26" Oak 216' Lt. of Station 141+84.

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

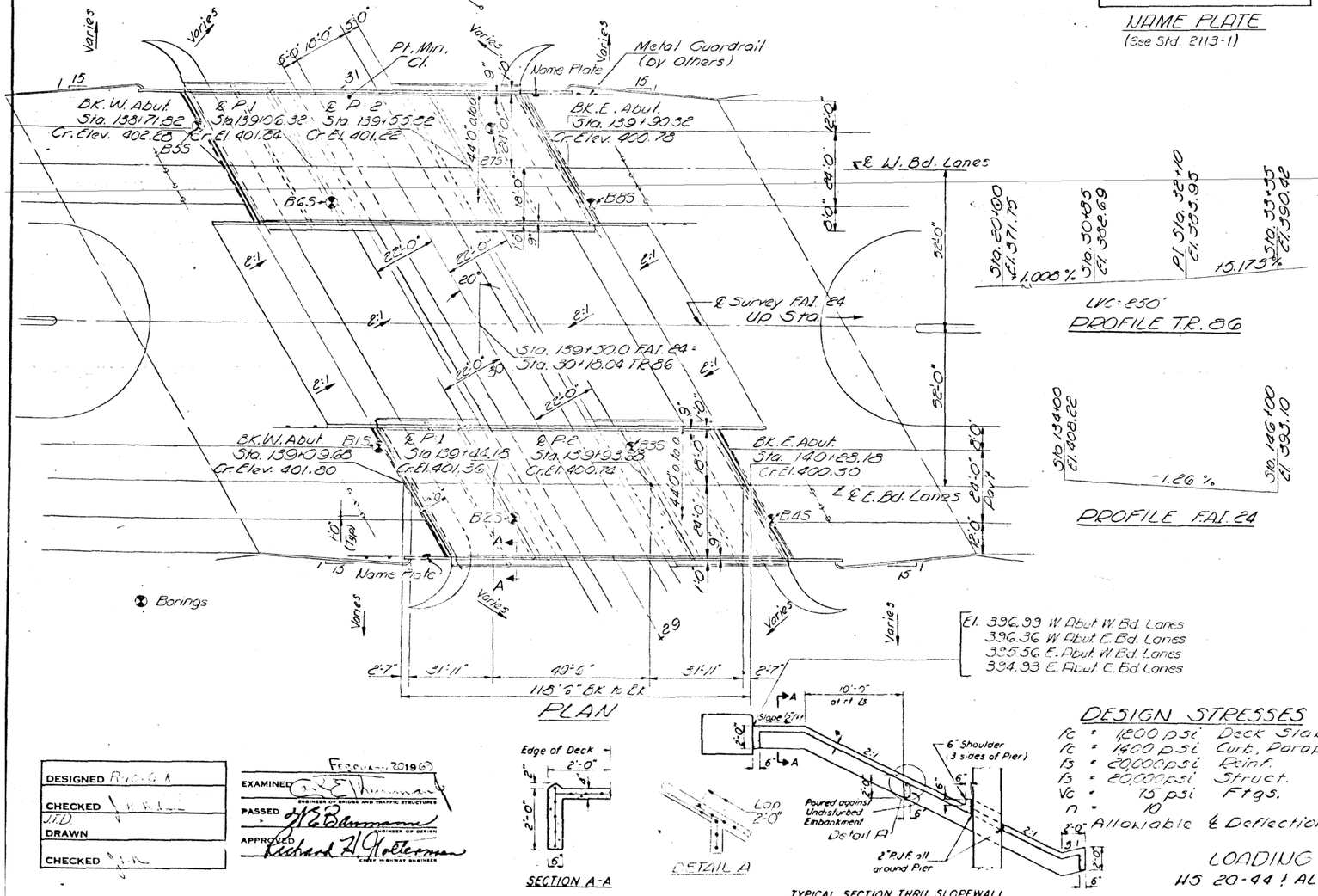


ELEVATION

Note A:
Existing earth under abutment embankments shall be removed by the contractor before embankment cones are placed.
For Limits of removal see sheet 2.

STATION 133+50
BUILT IN BY
STATE OF ILLINOIS
FED. I RT 24 SEC. 64 2HB 2
F.A. PROJ. I-24-1(55)
LOADING HS 20 & ALT.

NAME PLATE
(See Std. 2113-1)



PLAN

PROFILE T.R. 86

PROFILE FAI 24

DESIGNED	R.G.H.
CHECKED	J.T.D.
DRAWN	
CHECKED	A.S.

EXAMINED — February 2019
PASSED — Engineer of Bridge and Traffic Structures
APPROVED — Chief Highway Engineer

SECTION A-A

DETAIL A

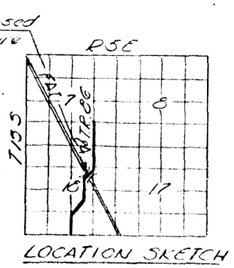
TYPICAL SECTION THRU SLOPEWALL

DESIGN STRESSES

f'c	=	1800 psi Deck Slab
fc	=	1400 psi Curb, Parapet, Sub.
fs	=	20,000 psi Reinf.
fs	=	20,000 psi Struct.
Vc	=	75 psi Ftgs.
n	=	10

Allowable ℄ Deflection = 1/1000

LOADING
HS 20-44 & ALT.



LOCATION SKETCH

GENERAL NOTES

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

Field connections shall be bolted using high strength bolts. Bolts 3/4" ø, open holes 1 1/16" ø unless otherwise noted.

The Basic Lead Silica Chromate paint system shall be used for shop and field painting of structural steel.

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

Anchor bolts shall be set before pouring End blocks over supports.

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

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

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

The contractor shall drive two Concrete Test Piles in a permanent location. One at the East Abut-East Bound Lanes; one at the West Abut-West Bound Lanes and two Timber Test Piles, One in the vicinity of Pier 1 of East Bound Lanes one in the vicinity of Pier 2 of West Bound Lanes as directed by the Engineer before ordering the remainder of piles.

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

FOR INFORMATION ONLY

TOTAL BILL OF MATERIAL

Item	Units	Super	Sub.	Total
Class A Excavation for Structures	Cu. Yds.			70
Class X Concrete	Cu. Yds.	318.4	418.1	736.5
* Structural Steel	L. Sum	1		1
Reinforcement Bars	Lbs.	79,610	42,600	22,210
Concrete Piles	Lin. Ft.		1565	1565
Creosoted Piles (2:1 Batter)	Lin. Ft.		3067	3067
Aluminum Railing	Lin. Ft.	460		460
Preformed Joint Sealer	Lin. Ft.	189		189
Test Piles (Concrete)	Each		2	2
Test Piles (Timber)	Each		2	2
Slope Wall (4)	Sq. Yds.			1130
Protective Coat	Sq. Yds.			1280
Name Plates	Each			2
Earth Excavation	Cu. Yds.			2750

* CALCULATED WEIGHT OF STRUCTURAL STEEL = 190,340 LBS.

F.A. PROJ. I-24-1(55)
GENERAL PLAN & ELEVATION
FAI RTE 24 OVER T.R. RT. 86
FAI RTE 24 SEC. 64-2HB-2
MASSAC COUNTY
STATION 139+50

MODEL: Default
FILE NAME: L:\DOT\1806901WO_1\DrawStructures\SN 0025 & 0026\017_0025-0026_Existing Plans-006.dgn

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

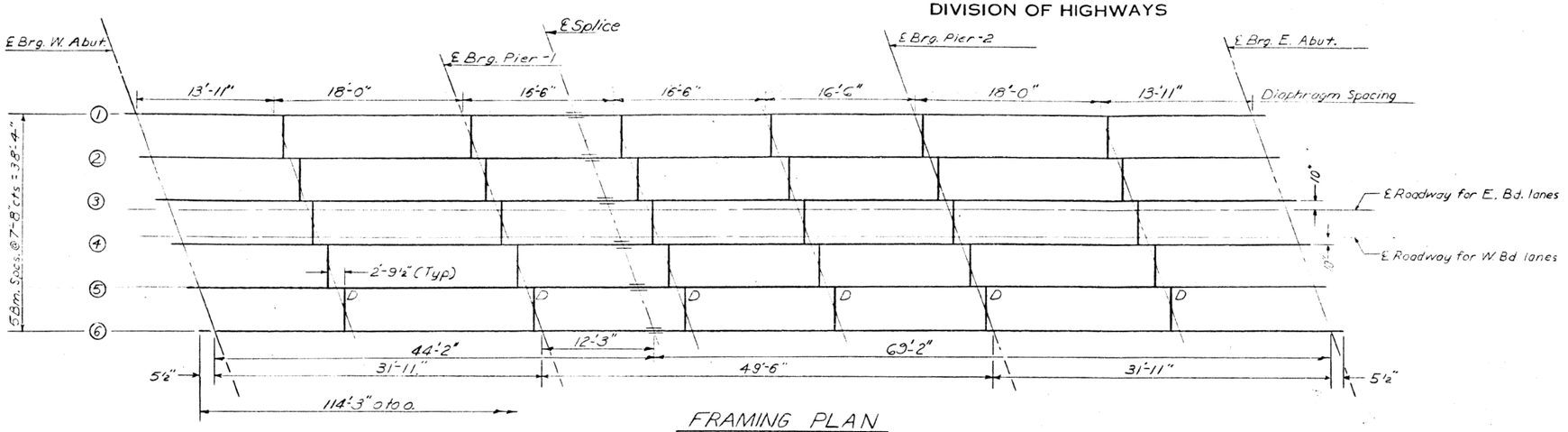
EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 17 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	181
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

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

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	64 2HB-2	MASSAC	57	24
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 7
18 SHEETS



FRAMING PLAN
(All Beams 30WF108)

FOR INFORMATION ONLY

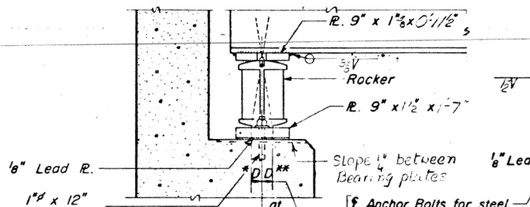
ELEVATIONS TOP OF WF

EAST BOUND LANES

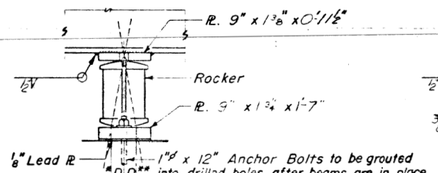
Beam / Location	1	2	3	4	5	6
℄ Brg. W. Abut	400.87	400.97	401.06	400.93	400.76	400.57
℄ Brg. Pier 1	400.47	400.57	400.66	400.53	400.36	400.17
℄ Splice	400.32	400.42	400.51	400.38	400.21	400.02
℄ Brg. Pier 2	399.54	399.34	400.03	399.90	399.73	399.54
℄ Brg. E. Abut.	399.44	399.54	399.63	399.50	399.33	399.14

WEST BOUND LANES

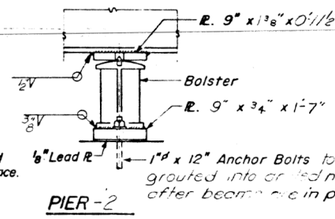
Beam / Location	1	2	3	4	5	6
℄ Brg. W. Abut.	401.25	401.37	401.47	401.53	401.37	401.13
℄ Brg. Pier 1	400.85	400.97	401.07	401.13	400.97	400.73
℄ Splice	400.70	400.82	400.92	400.98	400.82	400.64
℄ Brg. Pier 2	400.22	400.34	400.44	400.50	400.34	400.16
℄ Brg. E. Abut.	399.82	399.34	400.04	400.10	399.94	399.74



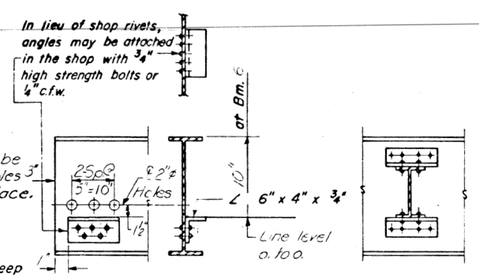
SECTION AT ABUTMENT



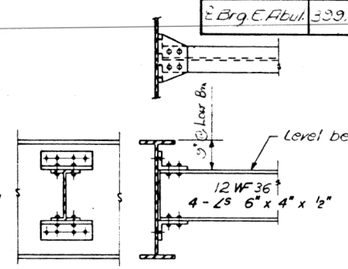
PIER-1



PIER-2



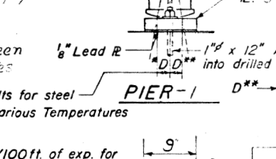
END OF BEAM DETAILS
Showing Beams 2 thru 5. For Beams 1 & 6 see Detail A.



DIAPHRAGM D
60 Required

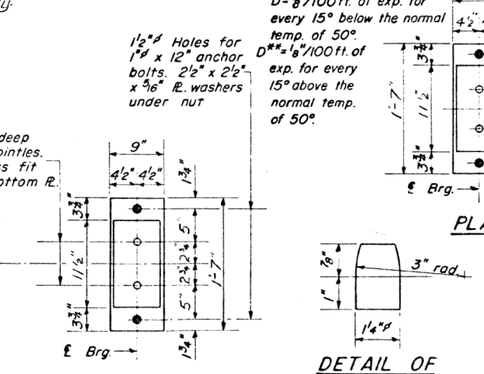
Note 1. Diaphragm connections may be adapted to field framing subject to approval by the Engineer.

PLAN

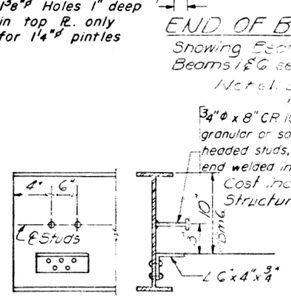


PLAN

PLAN

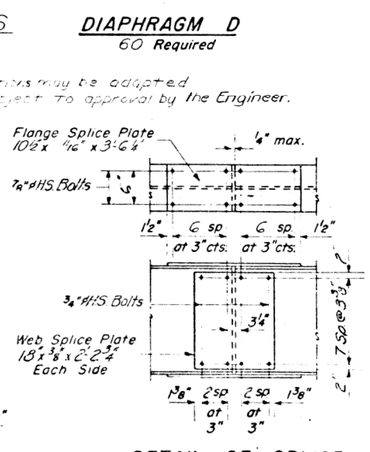


DETAIL OF PINTLE

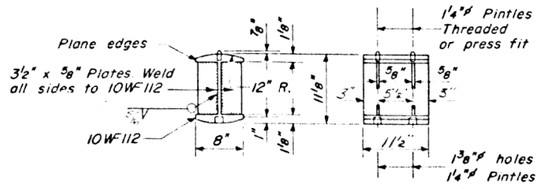


DETAIL A

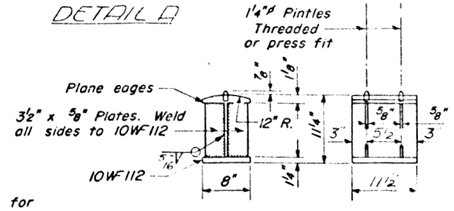
¾"ø x 8" CR 1020 STL granular or solid flux filled headed studs, automatically end welded in shop. Cost incidental to Structural Steel.



DETAIL OF SPLICE



DETAIL OF ROCKER AT PIER-1 & ABUTMENTS



DETAIL OF BOLSTER AT PIER-2

TABLE OF STRESSES

Moments and Reactions - Interior Beams

	Moments (Ft. Kips)			Reactions (Kips)	
	4 Span	Pier 1	5 Span 2	Abut.	Pier 1
D.L.	65.37	223.51	204.37	12.69	57.22
L.L.	196.64	652.13	647.86	33.61	46.2
IMP.	58.33	194.83	194.36	10.08	13.86
Total	321.30	1070.47	1046.61	56.38	117.28

Note: 2
For Detail of Beam Hold Down Assembly, See Sheet # 6.

STRUCTURAL STEEL
F.A.I. RT. [illegible] SECTION 64-2HB-2
MASSAC COUNTY
STATION 139+50

DESIGNED R.H.G.K
CHECKED J.T.H.
P.G. Barnett
DRAWN W. A. Sausaman Jr.
CHECKED J.T.H.

EXAMINED Feb. 20 1969
PASSED H.E. Baumann
APPROVED Richard L. Holtermann

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

MODEL: Default
FILE NAME: I:\IDOT\190691\WO_1\Draw\Structure\SN 0025 & 0026\019_0025-0026_Existing Plans-007.dgn

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	CHECKED - AS	REVISED -			
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 18 OF 25 SHEETS	
PLOT DATE = 11/18/2020 - 7:36:01 AM	CHECKED - JTH	REVISED -			

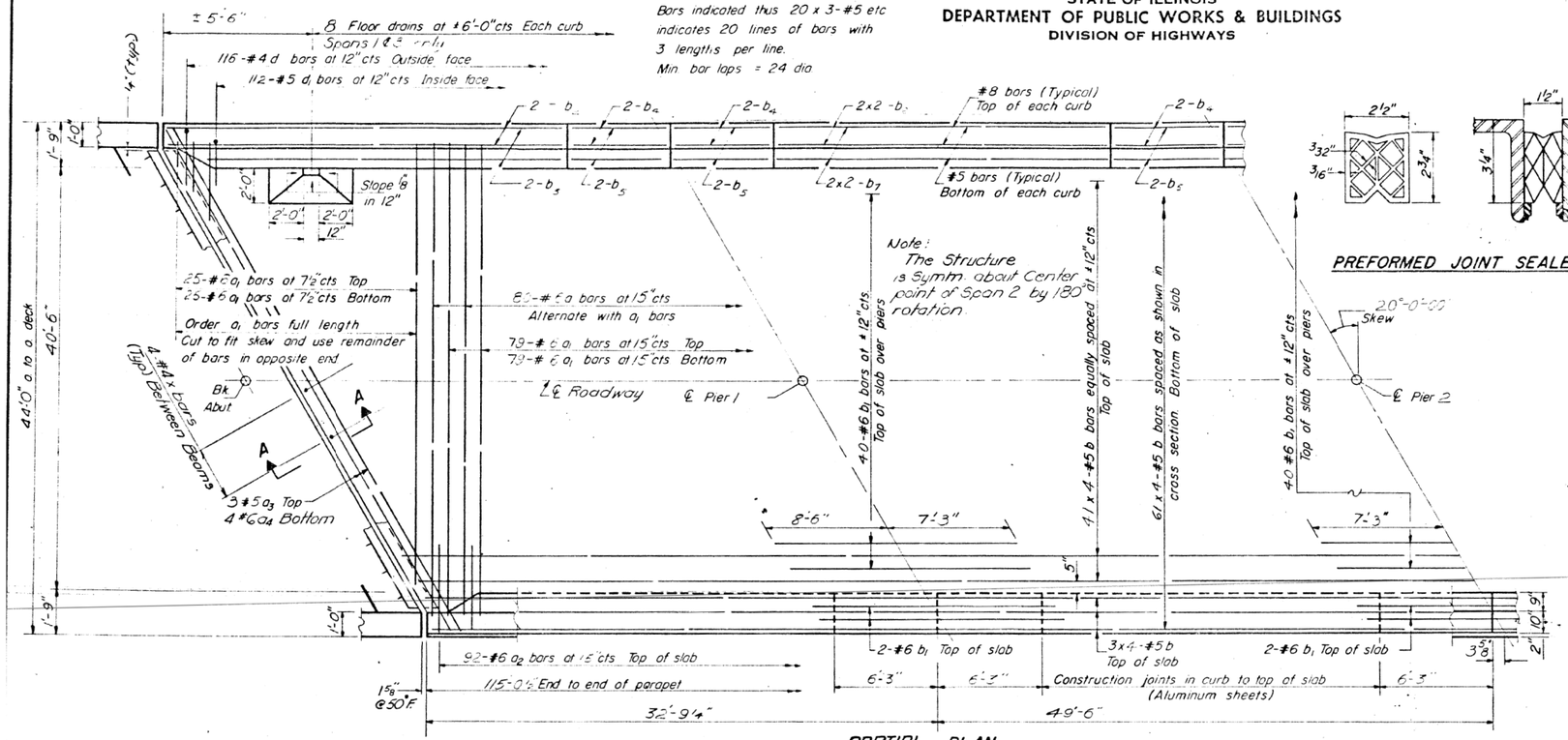
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	182
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	64 2HB-2	MASSAC	57	20
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

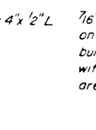
SHEET NO. 3
18 SHEETS

Note:
Bars indicated thus 20 x 3-#5 etc indicates 20 lines of bars with 3 lengths per line.
Min. bar laps = 24 dia.

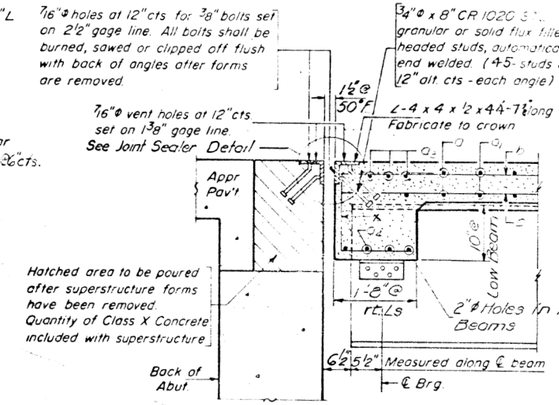
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS



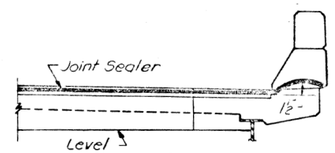
PARTIAL PLAN



PREFORMED JOINT SEALER



SECTION A-A



LONGITUDINAL SECTION

TWO SUPERSTRUCTURES

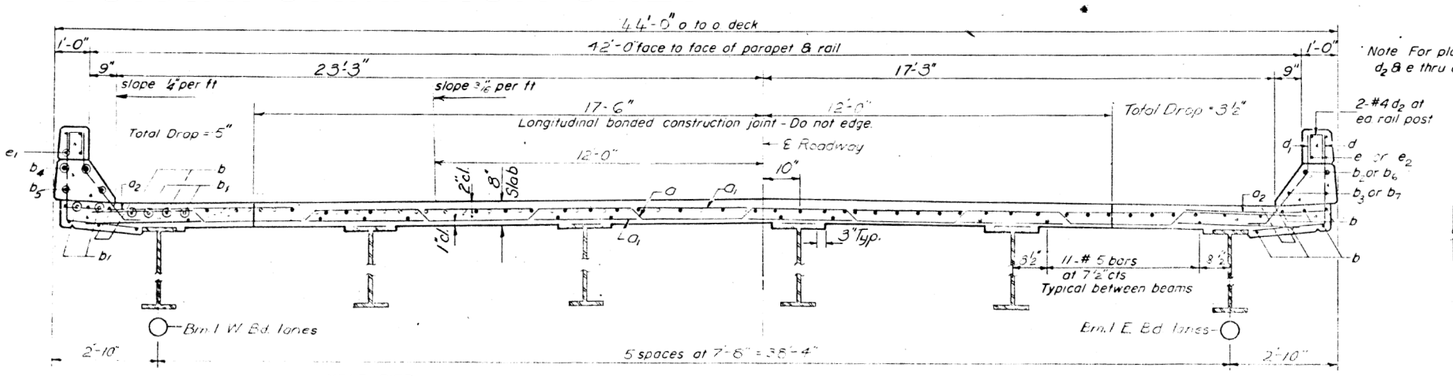
BILL OF MATERIAL

Bar	No	Size	Length	Shape
a	160	#6	44'-0"	
a_1	41	#6	42'-0"	
a_2	368	#6	4'-0"	
a_3	12	#5	44'-0"	
a_4	16	#6	40'-6"	
b	864	#5	29'-3"	
b_1	176	#6	15'-3"	
b_2	16	#8	26'-3"	
b_3	16	#5	25'-3"	
b_4	32	#8	5'-0"	
b_5	32	#5	6'-0"	
b_6	16	#8	19'-6"	
b_7	16	#5	13'-0"	
d	464	#4	4'-7"	
d_1	448	#5	3'-5"	
d_2	112	#4	2'-1"	
X	80	#4	44'-11"	
Reinforcement Bars		Lbs	75410	
* Structural Steel		Lbs	130340	
Class X Concrete		Cu Yds	353.6	
Preformed Jt. Seal		Ft	739	

* Weight of bearing assemblies with load plates and anchor bolts are included as structural steel.
Est Wt. = 12,550 Lbs.

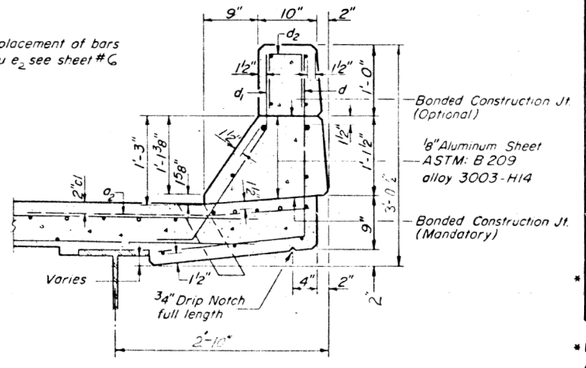
The lengths and quantities of longitudinal reinforcement and Class X Concrete in parapets are not included in above quantities. See sheet #6

FOR INFORMATION ONLY



NEAR PIER

NEAR MIDSPAN



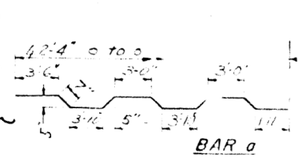
CURB SECTION

Cost of Aluminum Drains and Sheets shall be incidental to Class X Concrete

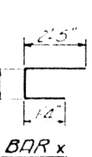
CROSS SECTION
(E.BD. LANES LOOKING WEST
W.BD. LANES LOOKING EAST)

DESIGNED R.J.O. G.K.
CHECKED
DRAWN R.G.K.
CHECKED

EXAMINED Feb. 20 1969
PASSED
APPROVED Richard H. Gotterman



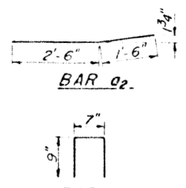
BAR a



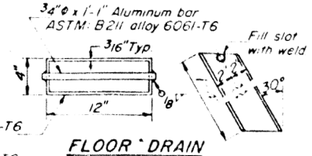
BAR x

BAR d

BAR d_1



Aluminum Sheets Welded ASTM: B209 alloy 6061-T6 or Aluminum Extrusions ASTM: B221 alloy 6061-T6



FLOOR DRAIN

I-41 to 6-R (>15° thru 30°) 3-1-68

CONSTRUCTIVE
EXISTING PLANS
ONLY

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 19 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	183
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			

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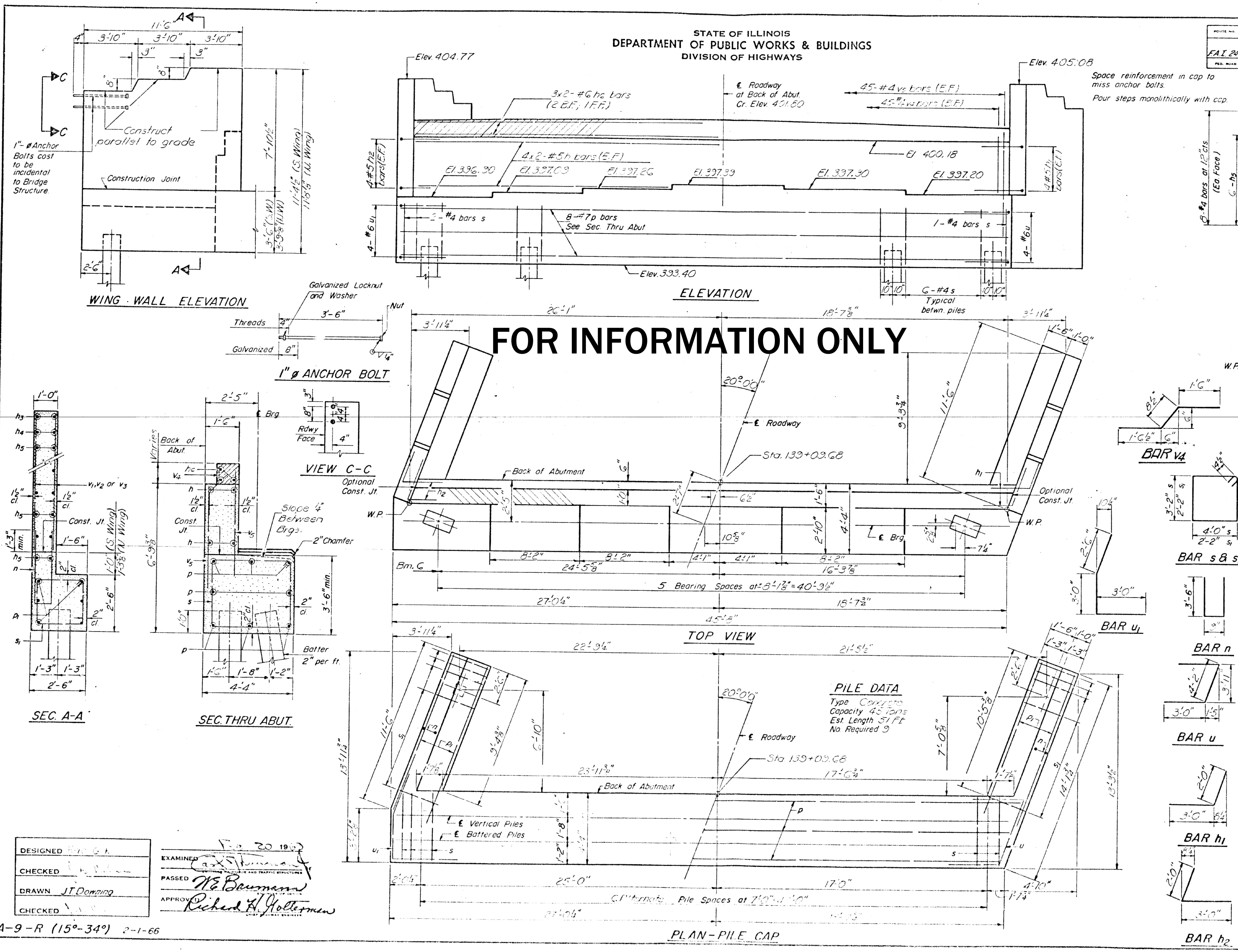
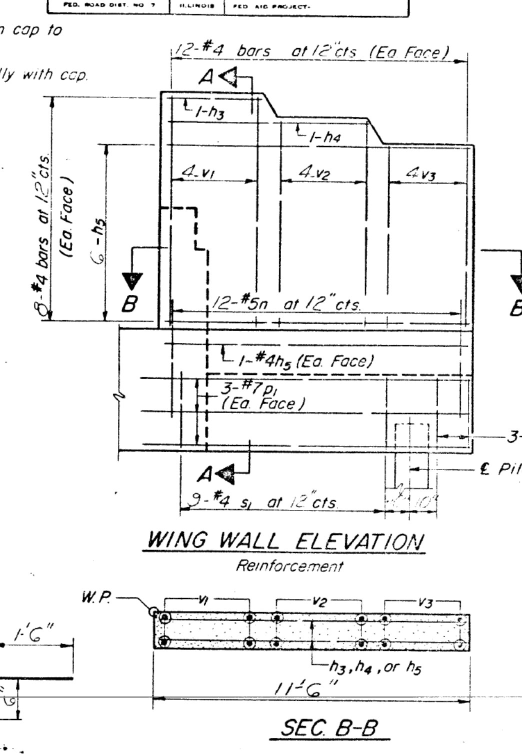
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	64 2HB-2	MASSAC	57	25

SHEET NO. 5
18 SHEETS

FOR INFORMATION ONLY





ONE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	16	#5	[illegible]	—
h1	8	#5	5'-0"	⌐
h2	8	#5	5'-0"	L
h3	4	#4	3'-7"	—
h4	4	#4	7'-5"	—
h5	28	#4	11'-3"	—
h6	6	#6	23'-3"	—
n	24	#5	[illegible]	U
p	3	#7	[illegible]	—
p1	12	#7	[illegible]	—
s	39	#4	[illegible]	◻
s1	24	#4	3'-5"	◻
u	4	#6	10'-2"	⊐
u1	4	#6	6'-6"	L
v5	90	#4	5'-6"	—
v1	16	#4	7'-5"	—
v2	16	#4	[illegible]	—
v3	16	#4	[illegible]	—
v4	45	#4	[illegible]	—
Class X Concrete			Cu. Yds.	[illegible]
Reinforcement Bars			Lbs.	[illegible]
Concrete Piles			Lin. Ft.	[illegible]

WEST ABUTMENT
E. BD. LANES
FAI RT 24 SEC. 64-2HB2
MASSAC COUNTY
STA. 139+50

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PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -
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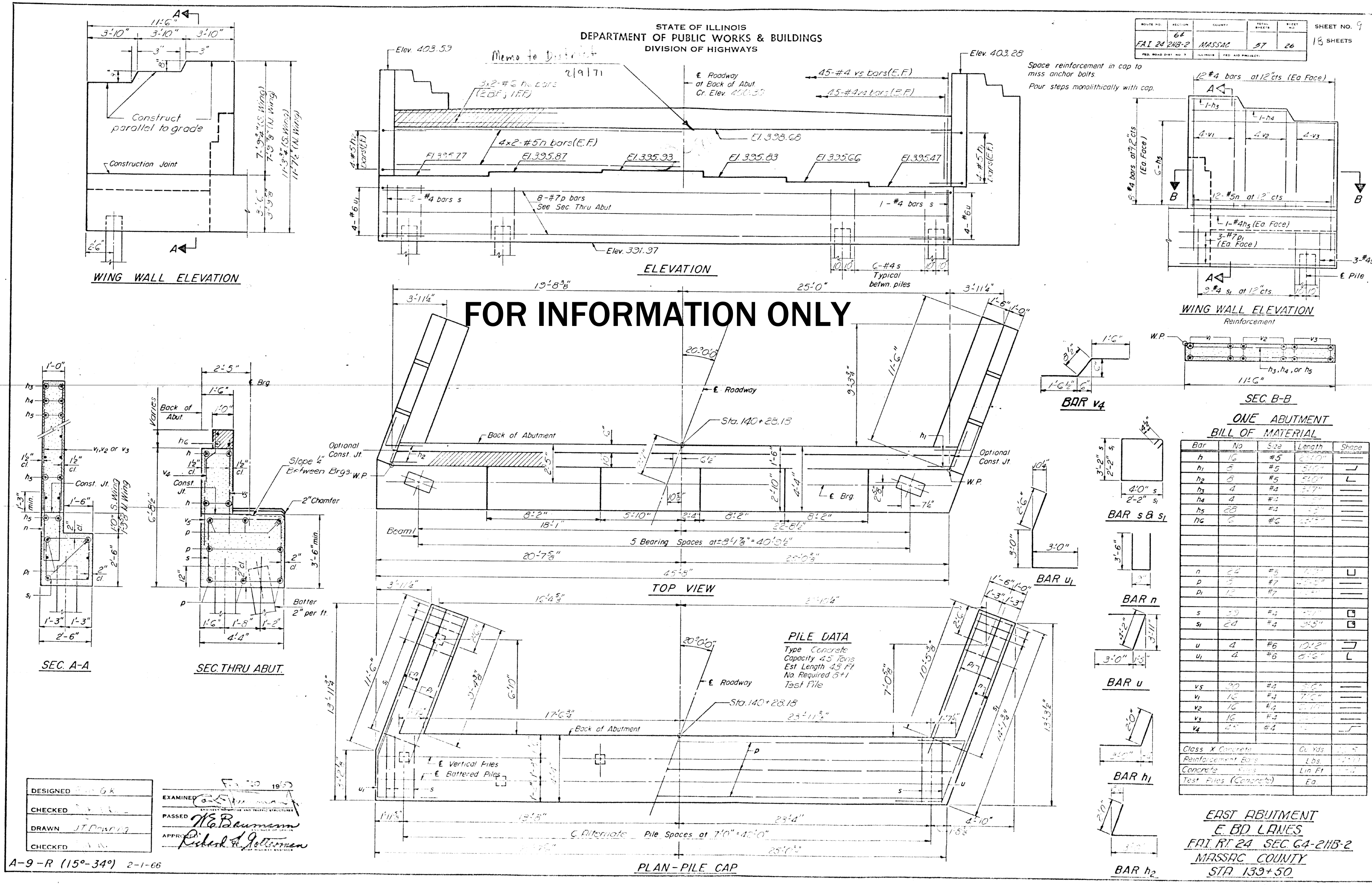
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 20 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	184

CONTRACT NO. 78606
ILLINOIS FED. AID PROJECT

MODEL: Default
FILE NAME: L:\IDOT\19086\10\WO_1\Draw\Structures\SN 0025 & 0026\020_0025-0026_Existing Plans-009.dgn



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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)

SHEET 21 OF 25 SHEETS

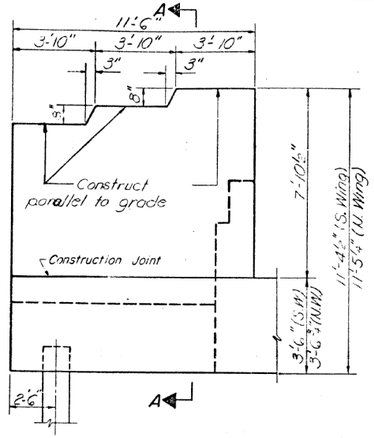
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	185
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: L:\IDOT\19086\10\WO_1\Draw\Structures\SN 0025 & 0026\21_0025-0026_Existing Plans-010.dgn

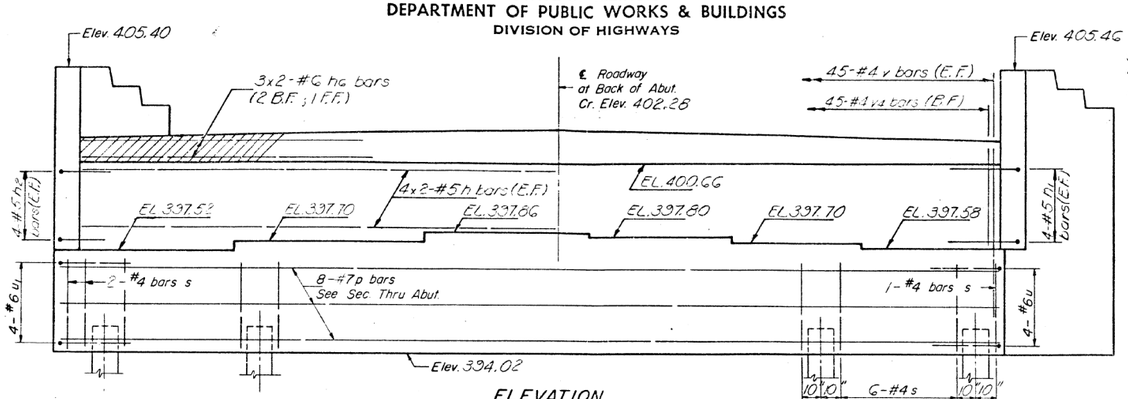
STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 24	64 2HB-2	MASSAC	57	27
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 19
18 SHEETS



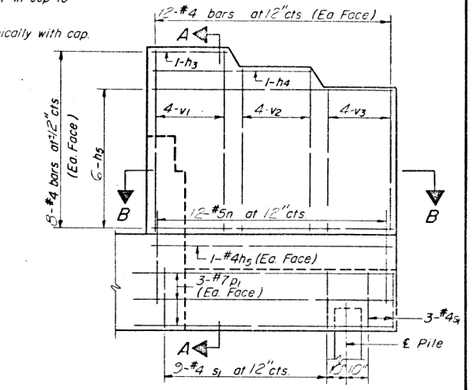
WING WALL ELEVATION



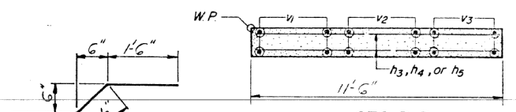
ELEVATION

Space reinforcement in cap to miss anchor bolts.

Pour steps monolithically with cap.



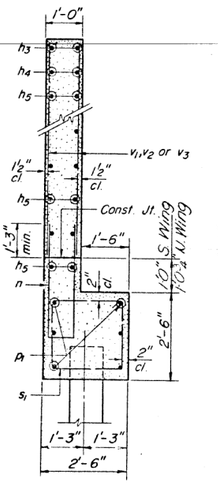
WING WALL ELEVATION
Reinforcement



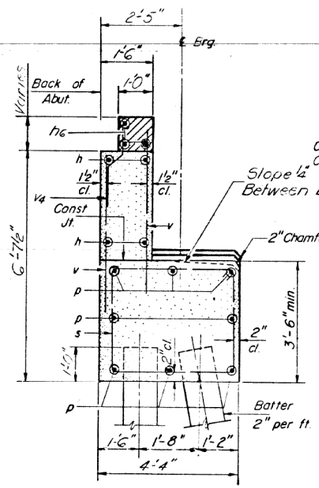
SEC. B-B

BAR v4

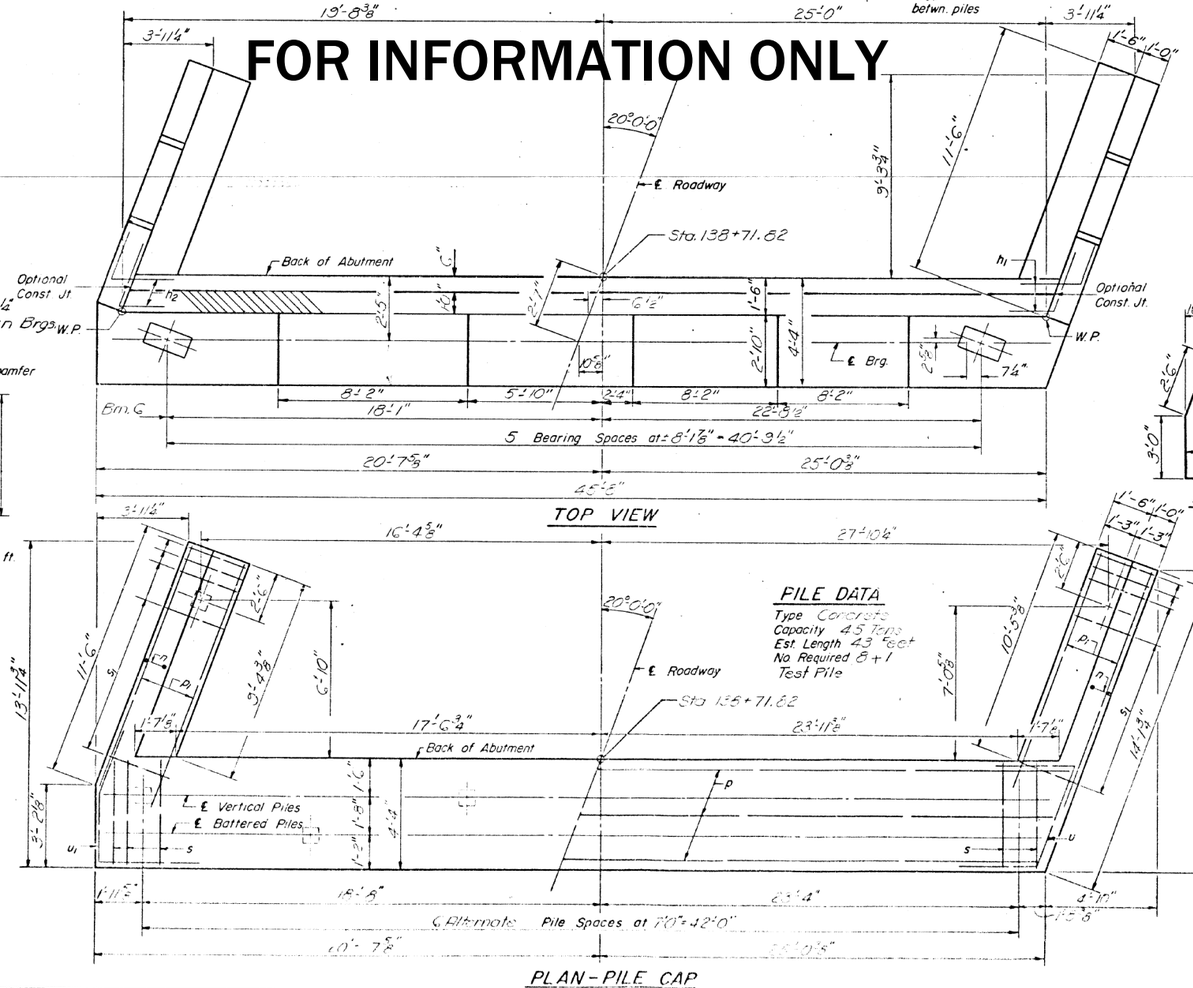
FOR INFORMATION ONLY



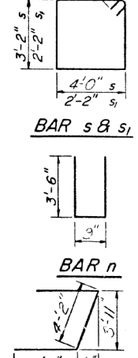
SEC. A-A



SEC. THRU ABUT.



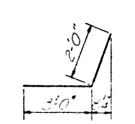
BAR u1



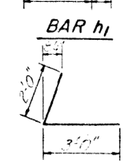
BAR s & s1

BAR n

BAR u



BAR h1



BAR h2

QUE ABUTMENT
BILL OF MATERIAL

Bar	No	Size	Length	Shape
h	13	#5	22'-1"	
h1	8	#5	5'-10"	
h2	8	#5	5'-0"	
h3	4	#4	3'-7"	
h4	4	#4	7'-5"	
h5	28	#4	11'-3"	
h6	6	#6	23'-3"	
n	24	#5	3'-3"	
p	8	#7	23'-5"	
p1	12	#7	11'-3"	
s	33	#4	15'-1"	
s1	24	#4	3'-5"	
u	4	#6	10'-2"	
u1	4	#6	6'-6"	
v	90	#4	5'-5"	
v1	16	#4	7'-6"	
v2	16	#4	8'-10"	
v3	16	#4	10'-2"	
v4	45	#4	4'-7"	
Class X Concrete			Cu Yds	47.7
Reinforcement Bars			Lbs.	4,230
Concrete Piles			Lin Ft	344
Test Piles (Concrete)			Ea	1

WEST ABUTMENT
W. BD. LANES
F.A.I. RT. 24 SEC. 64-2HB-2
MASSAC COUNTY
STA. 139+50

DESIGNED	R. G. K.
CHECKED	
DRAWN	J.T. Downing
CHECKED	

EXAMINED Feb 20 1966
PASSED W.E. Baumann
APPROVED Richard H. Gotterman
ENGINEER OF BRIDGES AND TRAFFIC STRUCTURES
CHIEF ENGINEER

A-9-R (15°-34°) 2-1-66

MODEL: Default
FILE NAME: L:\IDOT\190891\01WO_1\Drawl\Structures\SN 0025 & 0026\022_0025-0026_Existing Plans-011.dgn

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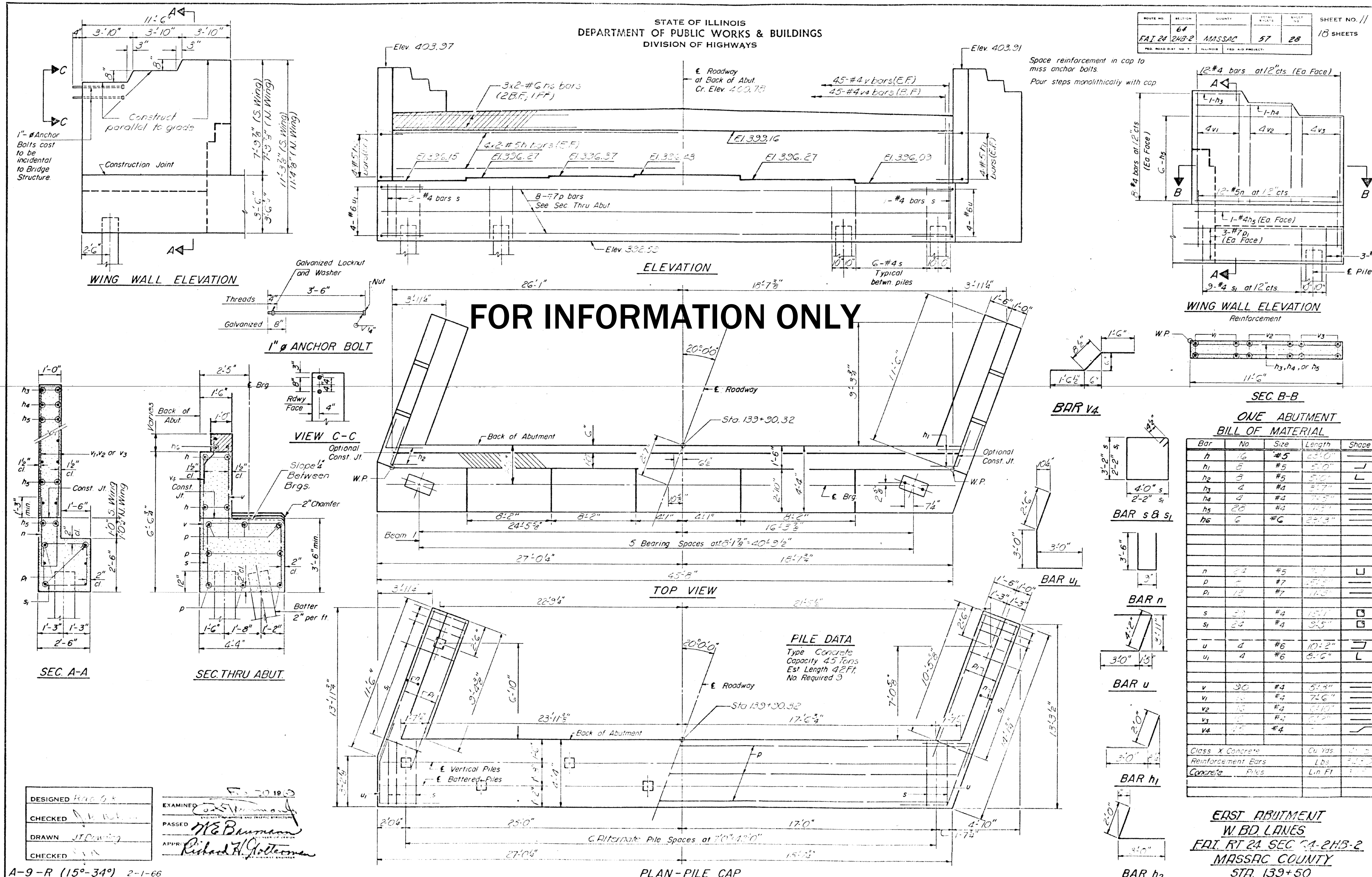
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 22 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	186
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



ONE ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h	16	#5	[illegible]	
h_1	8	#5	5'-0"	
h_2	8	#5	5'-0"	
h_3	4	#4	3'-7"	
h_4	4	#4	7'-5"	
h_5	28	#4	[illegible]	
h_6	6	#6	23'-3"	
n	24	#5	[illegible]	
p	[illegible]	#7	[illegible]	
p_1	12	#7	11'-9"	
s	[illegible]	#4	[illegible]	
s_1	24	#4	9'-5"	
u	4	#6	10'-2"	
u_1	4	#6	8'-6"	
v	90	#4	5'-3"	
v_1	16	#4	7'-6"	
v_2	16	#4	[illegible]	
v_3	[illegible]	#4	[illegible]	
v_4	45	#4	[illegible]	
Class X Concrete			Cu. Yds.	[illegible]
Reinforcement Bars			Lbs.	[illegible]
Concrete Piles			Lin. Ft.	[illegible]

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)

SHEET 23 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	187
		CONTRACT NO. 78606		
		ILLINOIS FED. AID PROJECT		

FOR INFORMATION ONLY

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

	68			
FAI 24	2HB-2	MASSAC	57	33

SHEET NO. 16
18 SHEETS

Boring No. 1S Station 139+00 Offset 40' RT CENTERLINE MED.
Surface Water El. NONE
Groundwater El. at Completion 363.6
After 24 Hours 367.2

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 379.4	0		
SOFT MOIST BROWN SILTY CLAY LOAM A-4(8)			
	3	0.3B	21
373.9	-5		
MEDIUM MOIST BROWN MOTTLED GREY CLAY LOAM A-4(8)	6	0.7B	22
371.4			
STIFF TO VERY STIFF MOIST GREY CLAY A7-6(18)	14	1.7S	32
	-10		
	15	1.7S	35
	13	2.8S	33
	-15		
	11	2.0S	32
361.4			
STIFF TO VERY STIFF MOIST GREY MOTTLED ORANGE CLAY A7-6(18)	10	1.8S	28
	-20		
	9	2.7S	23
SEE PREVIOUS COLUMN 356.4			
MEDIUM VERY MOIST BROWN MOTTLED GREY CLAY TO CLAY LOAM A-6(9)	16	0.8B	29
354.4	-25		
	8	-	-
	36	-	-
	-30		
LOOSE TO DENSE GREY MOTTLED BROWN SAND	40	-	-
	22	-	-
	-35		
	32	-	-
		-	-
	35	-	-

Elevation	N	Qu t/s.f.	w (%)
Ground Surface	40		
	53	-	-
VERY DENSE TO DENSE GREY MOTTLED BROWN SAND			
	35	-	-
	45		
332.9	39	-	-
BOTTOM OF HOLE = 46.5 FEET			
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 23.0 FEET	50/5"		
	50/3"		
	50/2"		

Boring No. 2 S Station 139+48.5 Offset 46' RT CENTERLINE MED.
Surface Water El. NONE
Groundwater El. at Completion 362.1
After 24 Hours 365.2

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 378.6	0		
SOFT MOIST BROWN CLAY LOAM A-4(8)			
375.6			
MEDIUM MOIST BROWN MOTTLED GREY SANDY CLAY LOAM A-4(4)	8	0.6S	19
	-5		
	12	0.7S	24
370.6			
STIFF TO VERY STIFF MOIST GREY CLAY A7-6(15)+	15	1.6S	52
	-10		
	14	1.8S	46
	13	2.4S	72
363.1	-15		
VERY STIFF MOIST BROWN MOTTLED YELLOW CLAY TO CLAY LOAM A-6(9)	13	1.5S	34
360.6			
VERY STIFF MOIST GREY CLAY A7-6(15)+	9	2.6S	46
	-20		
	9	2.4S	41

Elevation	N	Qu t/s.f.	w (%)
SEE PREVIOUS COLUMN 355.6			
	23	-	-
	-23		
	29	-	-
DENSE TO VERY DENSE GREY FINE GRAINED SAND			
	33	-	-
	-30		
	50	-	-
	36	-	-
	-35		
	46	-	-
339.6			
BOTTOM OF HOLE = 39.0 FEET	-40		

Boring No. 3 S Station 139+89.3 Offset 52' RT CENTERLINE MEDIAN
Surface Water El. NONE
Groundwater El. at Completion 365.0
After 24 Hours 365.9

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 378.5	0		
SOFT TO MEDIUM MOIST BROWN MOTTLED GREY SILT LOAM TO SILTY CLAY LOAM A-4(8)			
	9	0.7S	23
373.0	-5		
MEDIUM MOIST BROWN MOTTLED GREY CLAY LOAM A-4(3)	11	0.8S	25
370.5			
MEDIUM MOIST GREY CLAY A7-6(14-15)	7	1.0B	32
368.0	-10		
STIFF TO VERY STIFF MOIST GREY CLAY A7-6(15)+	10	1.9S	59
	9	2.6S	59
342.0	-15		
BOTTOM OF HOLE = 36.5 FEET			
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 19.0 FEET	8	2.1B	35
360.5			
MEDIUM MOIST GREY SANDY LOAM A-4(0)	13	-	-
	-20		
358.0			
SEE NEXT COLUMN	27	-	-

Elevation	N	Qu t/s.f.	w (%)
	-25		
	27	-	-
	31	-	-
MEDIUM TO DENSE REDDISH BROWN FINE GRAINED SAND			
	33	-	-
	-30		
	33	-	-
	27	-	-
	-35		
	32	-	-
	-40		

Boring No. 4S Station 140+32.5 Offset 64' RT CENTERLINE MED.
Surface Water El. NONE
Groundwater El. at Completion —
After 72 Hours 365.3

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 378.2	0		
MEDIUM MOIST BROWN MOTTLED GREY SILT LOAM TO SILTY CLAY LOAM A-4(8)			
	9	0.6S	22
	-5		
	8	0.9S	21
370.2			
STIFF MOIST BROWN MOTTLED GREY CLAY TO CLAY LOAM A-6(11-12)	8	1.6S	38
	-10		
367.7			
STIFF TO VERY STIFF MOIST GREY MOTTLED BROWN CLAY A7-6(15)	7	1.2S	65
	9	2.2S	42
	-15		
362.7			
STIFF MOIST BROWN CLAY TO CLAY LOAM A-6(12)	12	1.1S	29
360.2			
SEE NEXT COLUMN	20	-	-
	-20		
	14	-	-

Elevation	N	Qu t/s.f.	w (%)
	72	-	-
	-25		
	4	-	-
	35	-	-
MEDIUM TO VERY DENSE REDDISH BROWN FINE GRAINED SAND	-30		
	50	-	-
	54	-	-
	-35		
	24	-	-
	49	-	-
	-40		
336.7	49	-	-
BOTTOM OF HOLE = 41.5 FEET			
	-45		

Boring No. 5 S Station 138+57.5 Offset 64' LT CENTERLINE MED.
Surface Water El. NONE
Groundwater El. at Completion 365.9
After — Hours —

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 382.9	0		
SOFT MOIST BROWN SILTY CLAY LOAM A-4(8)			
379.9			
VERY STIFF MOIST BROWN MOTTLED GREY SILTY CLAY TO CLAY A-6(12) TO A7-6(13)	7	2.0S	13
	-5		
377.4			
STIFF MOIST GREY CLAY A7-6(10)	7	1.3S	60
	7	1.6S	67
	-10		
372.4			
STIFF TO VERY STIFF MOIST GREY MOTTLED YELLOW CLAY TO CLAY LOAM A-6(10)	8	1.6B	39
	9	2.0S	41
	-15		
367.4			
VERY STIFF MOIST GREY MOTTLED YELLOW CLAY TO CLAY LOAM A-6(10-11)	19	1.7S	31
364.9			
SEE NEXT COLUMN	29	-	-
	-20		
	46	-	-

Elevation	N	Qu t/s.f.	w (%)
	25	-	-
	-25		
	28	-	-
	14	-	-
MEDIUM TO VERY DENSE GREY MOTTLED BROWN FINE GRAINED SAND	-30		
	56	-	-
	26	-	-
	-35		
	15	-	-
	48	-	-
	-40		
341.4	48	-	-
BOTTOM OF HOLE = 41.5 FEET			
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 20.0 FEET	-45		

N- Standard Penetration Test- Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30"

Qu-Unconfined Compressive Strength-t/sf
w- Water Content- percentage of oven dry weight-%

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

DESIGNED J.T.H.
CHECKED J.B.H.
DRAWN S.E. Lindsey
CHECKED J.T.H.

Feb. 20 1969
EXAMINED Carl Thurmond
PASSED W.E. Baumann
APPROVED Richard H. Gotterman

BORINGS
FAI. RT. 24 SEC. 64 2HB-2
MASSAC COUNTY
STA. 139+50

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 24 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	188
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

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

	60			
FAI. 24	24B-2	MASSAC	57	34

SHEET NO. 17
18 SHEETS

Boring No. 6 S
Station 138+12.7
Offset 40' LT CENTERLINE MED

Surface Water El. NONE
Groundwater El. at Completion 364.3
After 24 **Hours** 362.8

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 380.3			
MEDIUM, MOIST BROWN MOTTLED GREY SILT LOAM TO SILTY CLAY LOAM A-4(8)			
	3	0.7S	22
-5			
	9	0.6S	23
372.3			
STIFF MOIST GREY MOTTLED BROWN CLAY A7-6(15)+	6	1.4S	53
-10			
	7	1.4S	62
	7	2.0S	61
-15			
364.8			
STIFF MOIST GREY MOTTLED BROWN CLAY ABOVE CLAY LOAM A-4(12) TO A7-6(13) WITH SANDY SEAMS	13	1.3S	31
362.3			
MEDIUM WET BROWN MOTTLED GREY FINE GRAINED SAND	27	-	-
-20			
359.8			
SEE NEXT COLUMN	33	-	-

Elevation	N	Qu t/s.f.	w (%)
DENSE TO VERY DENSE WET REDDISH BROWN FINE GRAINED SAND			
-25	60	-	-
	50	-	-
-30	56	-	-
348.8	61	-	-
BOTTOM OF HOLE = 31.5 FEET			
-35			
-40			
-45			

Boring No. 7S
Station 139+60
Offset 64' LT MEDIAN

Surface Water El. NONE
Groundwater El. at Completion 365.2
After 24 **Hours** 365.8

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 380.8			
SOFT MOIST BROWN SILTY CLAY LOAM A-4(8)			
	1	0.5S	26
-5			
375.3			
MEDIUM MOIST BROWN MOTTLED GRAY SANDY CLAY LOAM A-4(4)	13	0.8S	18
372.8			
MEDIUM MOIST BROWN STREAKED BLACK & YELLOW SANDY CLAY A-2-4(0)	23	0.8S	16
-10			
370.3			
VERY STIFF MOIST YELLOW MOTTLED GRAY CLAY A-7-6(18)	10	2.3S	39
367.8			
MEDIUM TO DENSE WET FINE GRAINED BROWN MOTTLED PINK SAND	20	-	18
-15			
	38	-	-
	24	-	-
-20			
	21	-	-

Elevation	N	Qu t/s.f.	w (%)
SAME AS PRECEDING			
	11	-	-
-25			
	15	-	-
	42	-	-
-30			
	28	-	-
347.8			
VERY DENSE WET FINE GRAINED PINK MOTTLED BROWN SAND	100	-	-
-35			
344.3	47	-	-
BOTTOM OF HOLE = 36.5 FEET			
DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 19.0 FEET			
-40			
-45			

Boring No. 8 S
Station 139+95
Offset 40' LT MEDIAN

Surface Water El. NONE
Groundwater El. at Completion 365.0
After 24 **Hours** 366.3

Elevation	N	Qu t/s.f.	w (%)
Ground Surface 380.7			
MEDIUM TO SOFT MOIST BROWN MOTTLED GRAY SILT LOAM TO CLAY LOAM A-4(8) SOME GRAVEL			
	8	0.7S	14
-5			
	13	0.2S	11
372.7			
VERY STIFF MOIST BROWN CLAY TO CLAY LOAM A-6(11-12)	14	2.1S	16
-10			
370.2			
VERY STIFF MOIST BROWN CLAY A-7-6(14-15)	11	2.0S	35
367.7			
MEDIUM TO DENSE MOIST REDDISH BROWN SAND LOAM A-2-4(0)	25	-	-
-15			
	45	-	-
362.7			
SEE NEXT COLUMN	31	-	-
-20			
	33	-	-

Elevation	N	Qu t/s.f.	w (%)
DENSE WET REDDISH BROWN FINE GRAINED SAND			
-25	50	-	-
	18	-	-
	44	-	-
-30			
	29	-	-
347.7			
MEDIUM WET REDDISH BROWN FINE GRAINED SAND WITH CLAY SEAMS	18	-	-
-35			
	22	-	-
	23	-	-
-40			
339.2			
BOTTOM OF HOLE = 41.5 FEET			
-45			

FOR INFORMATION ONLY

N- Standard Penetration Test- Blows per foot to drive 2" OD Split Spoon Sampler 12" with 140 # hammer falling 30"

Qu- Unconfined Compressive Strength- t/s.f.
w- Water Content- percentage of oven dry weight- %

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

DESIGNED R.L.O G.K
CHECKED B.A.B
DRAWN S.E. Lindsey
CHECKED J.B.L

EXAMINED Feb 20 1969
PASSED H.E. Baumann
APPROVED Richard H. Holterman

BORINGS
FAI RT. 24 SEC. 64-2HB-2
MASSAC COUNTY
STA 139+50

USER NAME = Misael Cordova	DESIGNED - JTH	REVISED -	
	CHECKED - AS	REVISED -	
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
PLOT DATE = 11/18/2020 - 7:36:54 AM	CHECKED - JTH	REVISED -	

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING PLANS
STRUCTURE NO. 064-0025 (W.B.) & 064-0026 (E.B.)
SHEET 25 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	189
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		

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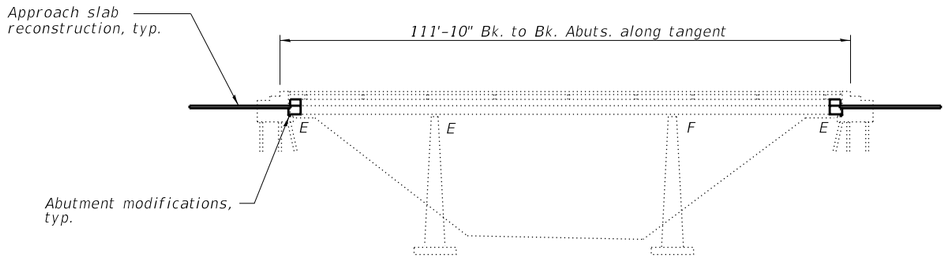


ELEVATION

SCOPE OF WORK

1. Remove existing 2¼" concrete wearing surface.

2. Perform deck repairs as shown.

3. Remove and replace bridge approach slabs and pavement connectors including removal of buried pile bent caps.

4. Clean and paint all steel beam ends at each abutment as preparation for concrete encasement.

5. Convert exising stub abutments to integral abutments. Perform concrete repairs on abutment caps and wingwalls as shown.

6. Perform Grading and Shaping Special and install Rock Fill – Embankment at SN 064-0030.

7. Install new 3¼" latex concrete wearing surface and perform diamond grinding, longitudinal bridge deck grooving and apply protective coat.

Up to ¼" may be ground off the bridge deck and the bridge approach slabs.

INDEX OF SHEETS

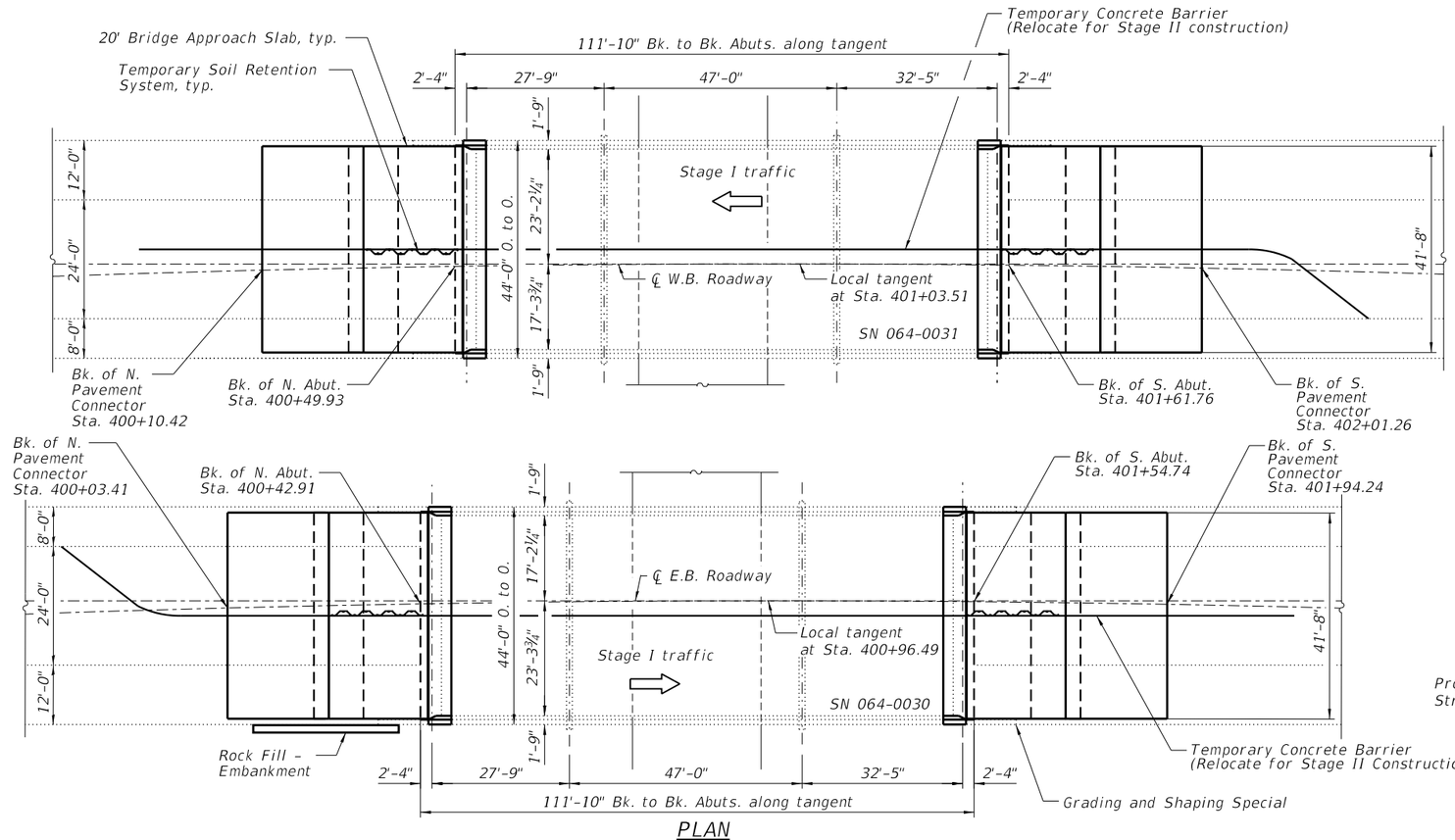
DESIGN STRESSES

FIELD UNITS

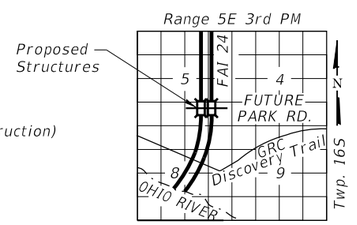
New Construction
f'c = 4,000 psi
fy = 60,000 psi (Reinforcement)

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

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



PLAN



LOCATION SKETCH

GENERAL PLAN AND ELEVATION
I-24 OVER PARK RD.
F.A.I. 24, SECTION BRIDGE REPAIR 2021-1
MASSAC COUNTY
STA. 400+96.49 & STA. 401+03.51
SN 064-0030 & 064-0031

MODEL: Default
FILE NAME: L:\DOT\1900610\WO_10\raw\Structures\SN 0030 & 0031\001_0030-0031_GPE.dgn

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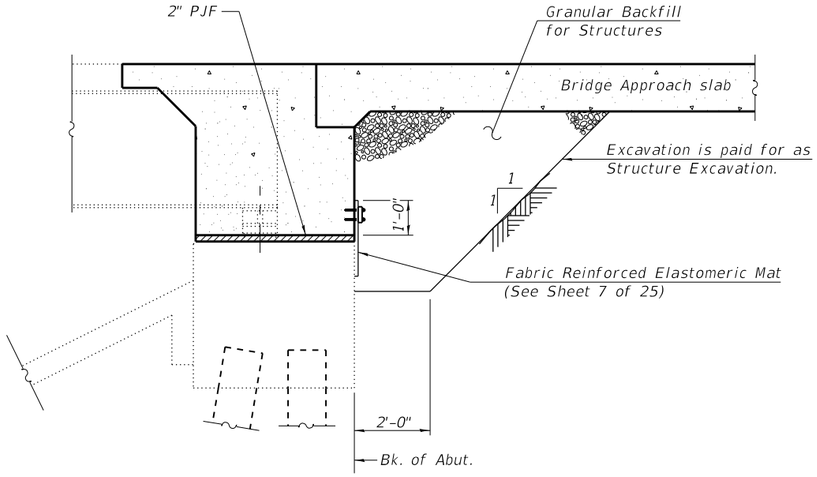
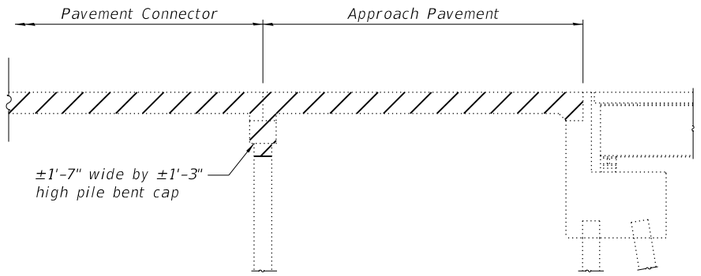
USER NAME = Misael Cordova	DESIGNED - DAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 1 OF 25 SHEETS
PLOT DATE = 11/18/2020 - 7:46:26 AM	CHECKED - JTH	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	190
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. @ Rt. ∠'s)



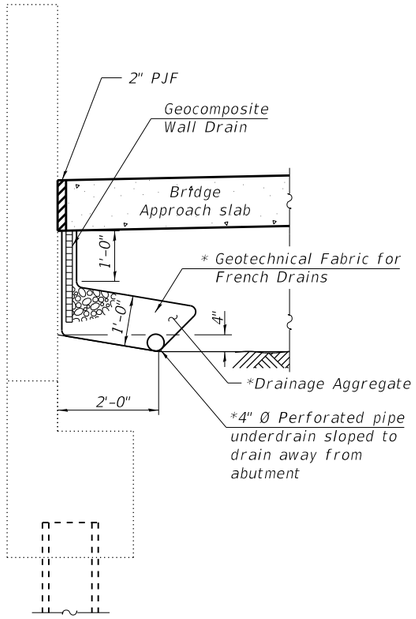
APPROACH SLAB REMOVAL

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

EMBANKMENT REPAIRS

An area along the north edge of the west guardrail of SN 064-0030 has eroded. Rock Fill - Embankment shall be placed here to prevent further erosion. Approximate quantity is 10.0 Cu. Yd.

The embankment cone along the west edge of the south abutment of SN 064-0030 has been built-up with asphalt spoils from previous roadway maintenance. This material shall be removed and the embankment regraded to ensure runoff stays off the abutment seat. This work shall be paid for as Shapong and Grading Special.



SECTION THRU ABUTMENT WINGWALL

(Horiz. dim. @ Rt. ∠'s)

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

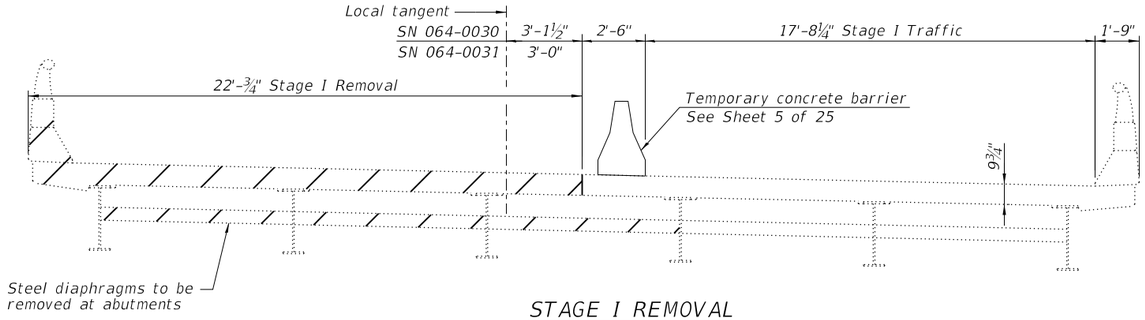
Note:
All drainage system components shall extend 2'-0" from the end of each wingwall except an outlet pipe shall wrap around and extend until intersecting with the side slope. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

TOTAL BILL OF MATERIAL

ITEM	UNIT	SN 064-0030	SN 064-0031	TOTAL
Paved Shoulder Removal	Sq. Yd.	180	180	360
Concrete Removal	Cu. Yd.	31.7	31.5	63.2
Structure Excavation	Cu. Yd.	55	56	111
Concrete Structures	Cu. Yd.	25.8	25.8	51.6
Concrete Superstructure	Cu. Yd.	56.4	56.4	112.8
Protective Coat	Sq. Yd.	778	778	1556
Concrete Superstructure (Approach Slab)	Cu. Yd.	78.5	78.5	157.0
Reinforcement Bars, Epoxy Coated	Pound	39980	39980	79960
Bar Splicers	Each	300	300	600
Temporary Soil Retention System	Sq. Ft.	50	48	98
Granular Backfill for Structures	Cu. Yd.	54	53	107
Geocomposite Wall Drain	Sq. Yd.	9	9	18
Concrete Headwalls for Pipe Drains	Each	4	4	8
Temporary Concrete Barrier	Foot	351	351	702
Relocate Temporary Concrete Barrier	Foot	351	351	702
Impact Attenuators, Temporary (Non-Directive), Test Level 3	Each	1	1	2
Impact Attenuators, Relocate (Non-Directive), Test Level 3	Each	1	1	2
Raised Reflective Pavement Marker	Each	3	3	6
Raised Reflective Pavement Marker (Bridge)	Each	1	1	2
Barrier Wall Reflectors, Type B	Each	9	9	18
Raised Reflective Pavement Marker Removal	Each	4	4	8
Grading and Shaping Special	Sq. Yd.	5	0	5
Bridge Approach Pavement Connector (Special)	Sq. Yd.	190	190	380
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	400	400	800
Pinning Temporary Concrete Barrier	Each	8	8	16
Raised Reflective Pavement Marker, Reflector Removal	Each	4	4	8
Structural Steel Removal	Pound	3070	3070	6140
Approach Slab Removal	Sq. Yd.	213	213	426
Containment and Disposal of Lead Paint Cleaning Residues	L. Sum	0.091	0.091	0.182
Cleaning and Painting Steel Bridge No. 7	L. Sum	1	0	1
Cleaning and Painting Steel Bridge No. 8	L. Sum	0	1	1
Bridge Deck Scarification 3"	Sq. Yd.	449	449	898
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	4	6	10
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	10	5	15
Diamond Grinding (Bridge Section)	Sq. Yd.	682	682	1364
Pipe Underdrains for Structures 4"	Foot	72	72	144
Rock Fill - Embankment	Cu. Yd.	10	0	10
Bridge Deck Latex Concrete Overlay, 3¼ Inches	Sq. Yd.	449	449	898

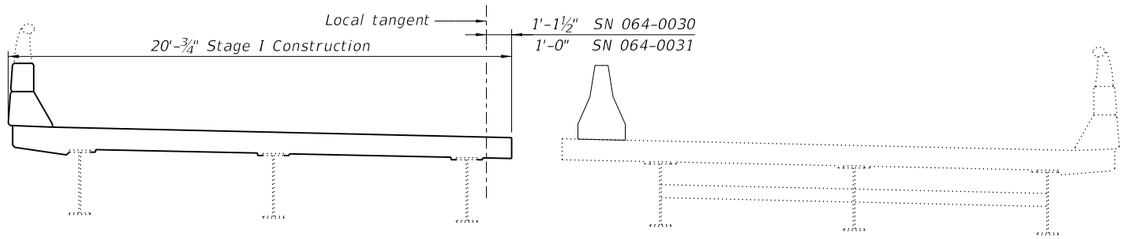
GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Prior to pouring new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.
3. Plan dimensions and details are relative to existing plans and are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
4. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
5. Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". All beams, bearings and other structural steel from the end of the beam to 1'-6" (measured along the beam) beyond the face of the concrete diaphragm shall be cleaned per Near White Blast Cleaning (SSPC- SP10). The exterior surfaces and bottom of the bottom flange of the fascia beams shall be cleaned per Commercial Grade Power Tool Cleaning (SSPC- SP15).
6. The designated areas cleaned per Near White Blast Cleaning (SSPC- SP10) and per Commercial Grade Power Tool Cleaning (SSPC- SP15) shall be painted according to the requirements of the Organic Zinc-Rich Primer/Epoxy Intermediate Coat/Urethane Topcoat system. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No 7.5G 4/8.
7. SSPC QP1 and SSPC QP2 Certification is required for this Contract.
8. To retain the temporary concrete barrier for Stage II Traffic, the Contractor shall have the option of using either 2 (#5) bar splicers or 2 cast in place inserts at 6" centers at the mid-depth of the approach slab and pavement connector. The bar splicers or inserts shall have a minimum proof load of 5,000 pounds. Along with the anchoring devices the Contractor shall provide one steel retainer plate and 2 ½" diameter bolt and washers every 6' as shown on Detail II on Standard R-27 (Sheet 5 of 25) from Sta. 400+03.41 to Sta. 400+42.91 and Sta. 401+54.74 to Sta. 401+94.24 for SN 064-0030 and Sta. 400+10.42 to Sta. 400+49.93 and Sta. 401+61.76 to Sta. 402+01.26 for SN 064-0031 for Stage II traffic. This work shall be included in the cost of Temporary Concrete Barrier, no additional compensation shall be provided.



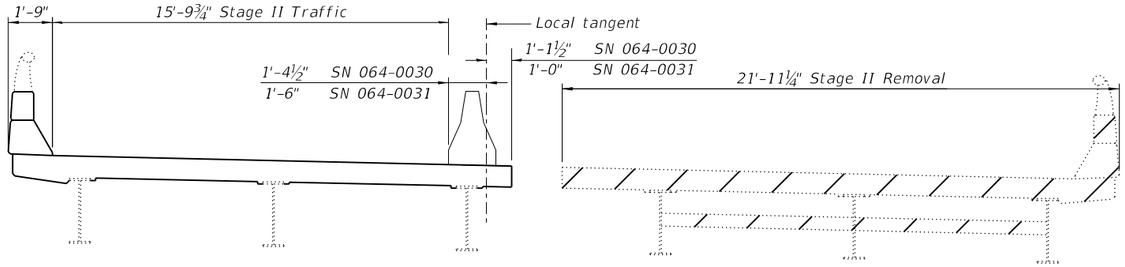
STAGE I REMOVAL

(Looking in the direction of traffic)



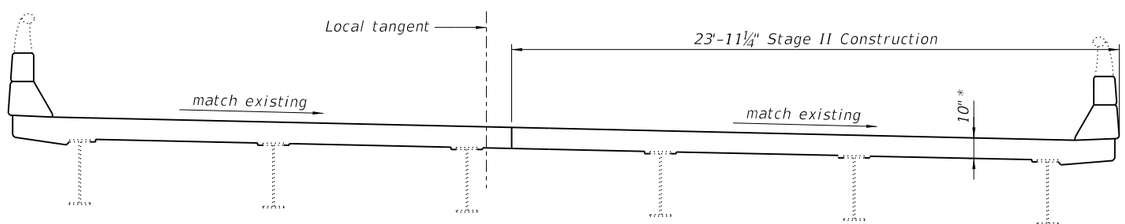
STAGE I CONSTRUCTION

(Looking in the direction of traffic)



STAGE II REMOVAL

(Looking in the direction of traffic)

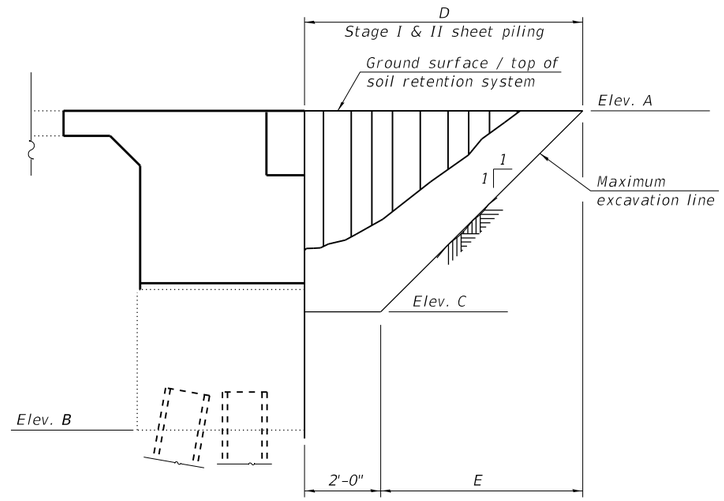


STAGE II CONSTRUCTION

(Looking in the direction of traffic)

* Prior to grinding

Notes:
Hatched area indicates Concrete Removal at abutments.



TEMPORARY SOIL RETENTION SYSTEM

Location	Elev. A	Elev. B	Elev. C	Dim. D	Dim. E
SN 064-0030 N. Abut.	359.46	351.45	354.18	7'-0"	5'-0"
SN 064-0030 S. Abut.	361.32	353.24	355.97	7'-5"	5'-5"
SN 064-0031 N. Abut.	359.43	351.51	354.24	7'-3"	5'-3"
SN 064-0031 S. Abut.	361.32	353.33	356.06	7'-4"	5'-4"

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

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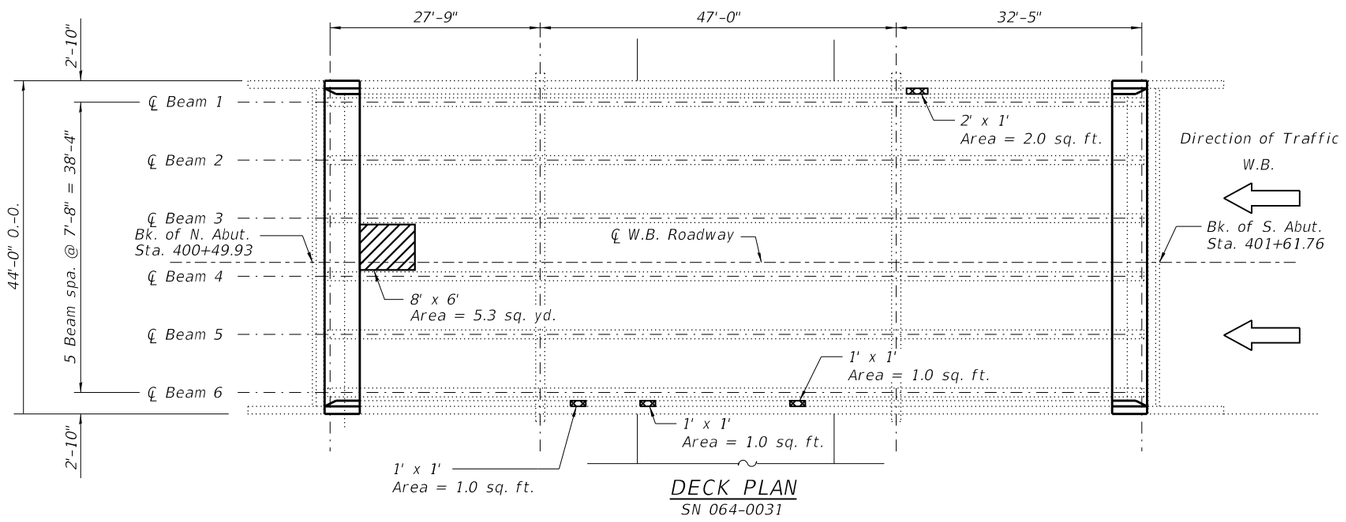
PLOT DATE = 11/18/2020 - 7:46:29 AM	CHECKED - JTH	REVISED -	

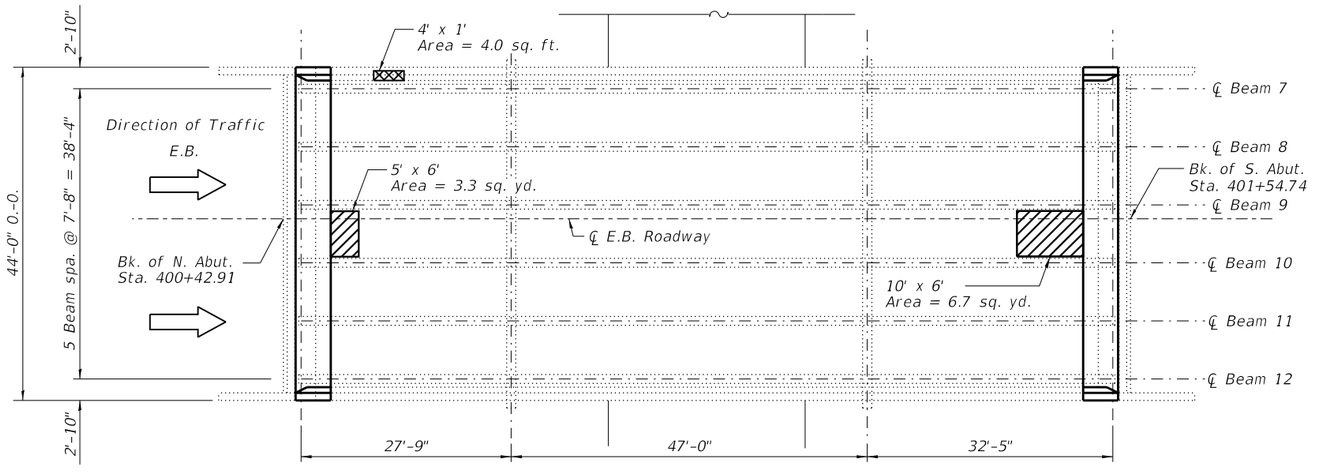
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 3 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	192
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



DECK PLAN
SN 064-0031



DECK PLAN
SN 064-0030

Legend

Full Depth, Type II

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

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

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

BILL OF MATERIAL

ITEM	UNIT	SN 064-0030	SN 064-0031	TOTAL
Structural Repair of Concrete (Depth Equal to or Less Than 5 Inches)	Sq. Ft.	4.0	5.0	9.0
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	10	5	15

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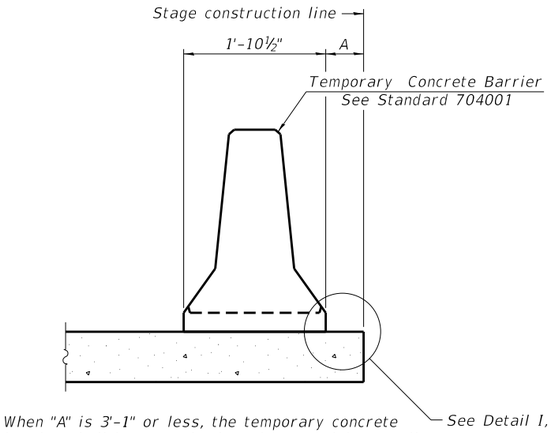
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

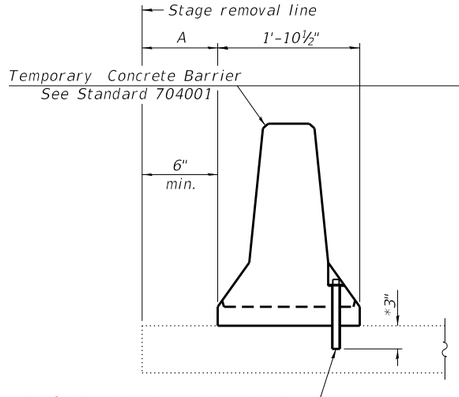
DECK PATCHING PLAN
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 4 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	193
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		



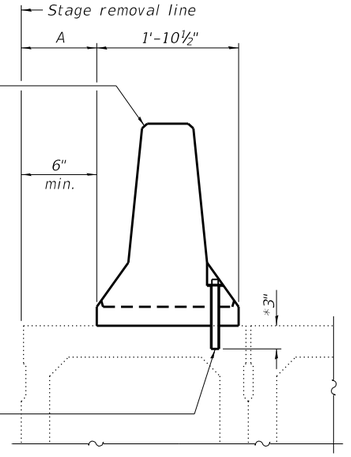
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



Drill 3-1¼" 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".

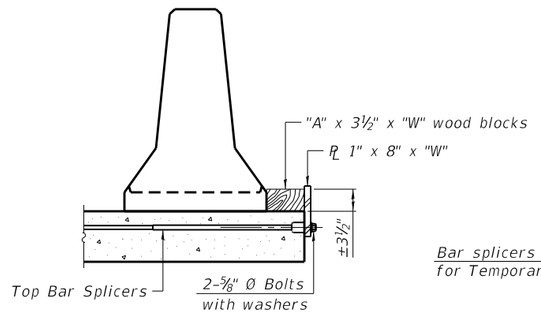
EXISTING SLAB



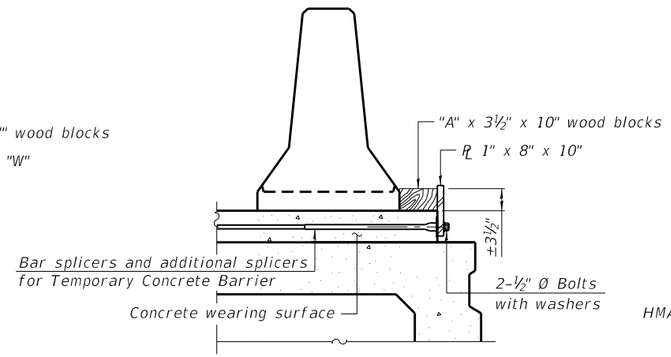
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

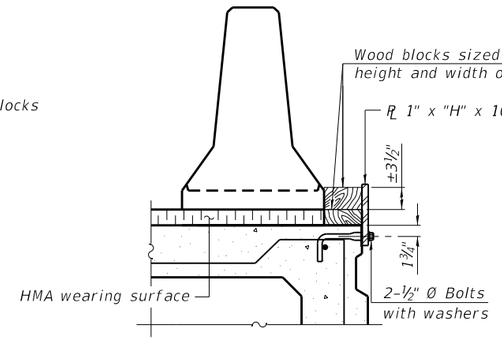
SECTIONS THRU SLAB OR DECK BEAM



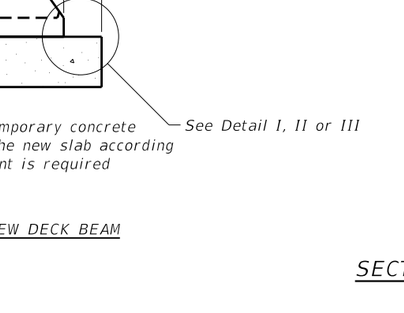
DETAIL I



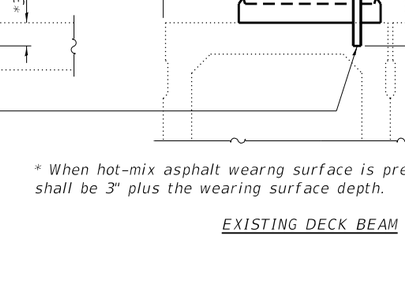
DETAIL II



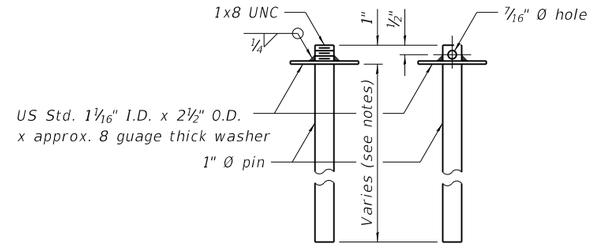
DETAIL III



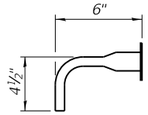
STEEL RETAINER PL 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - 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.

R-27

2-17-2017

MODEL: Default
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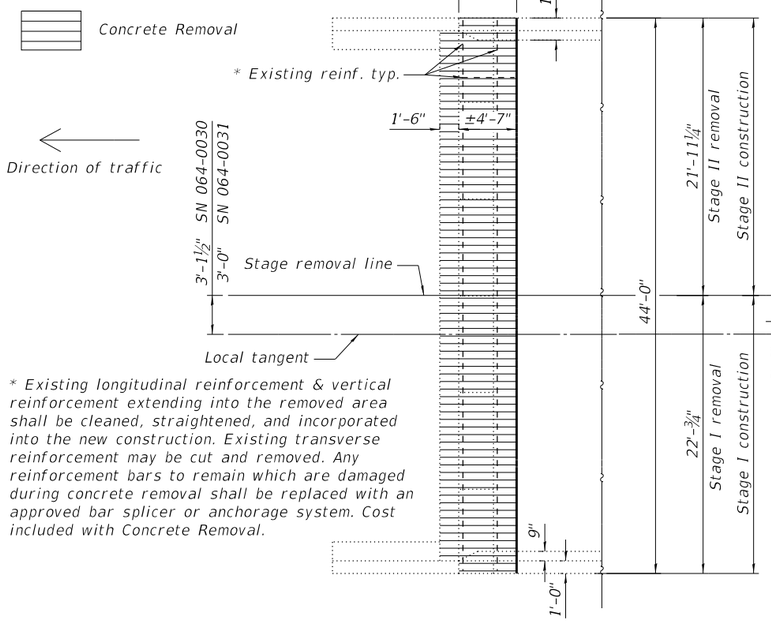
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

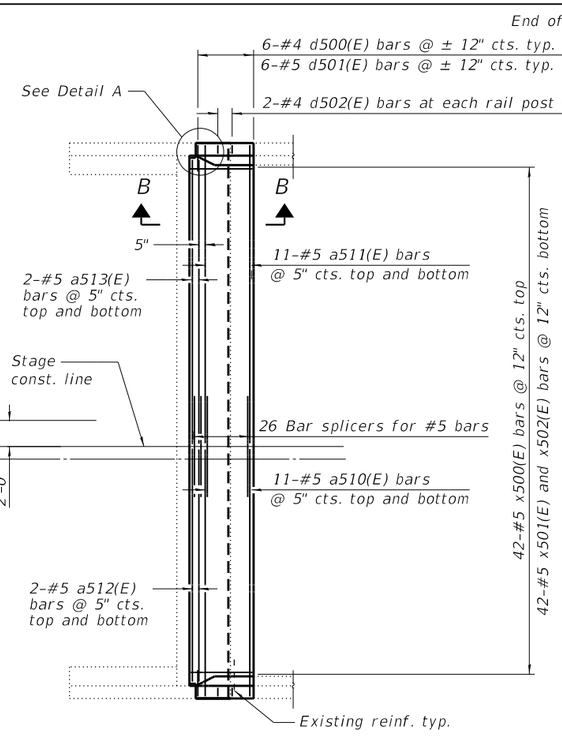
TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 5 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	194
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



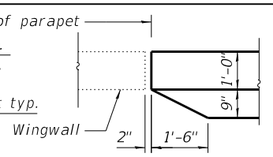
* Existing longitudinal reinforcement & vertical reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement may be cut and removed. Any reinforcement bars to remain which are damaged during concrete removal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

ABUTMENT PLAN SHOWING CONCRETE REMOVAL

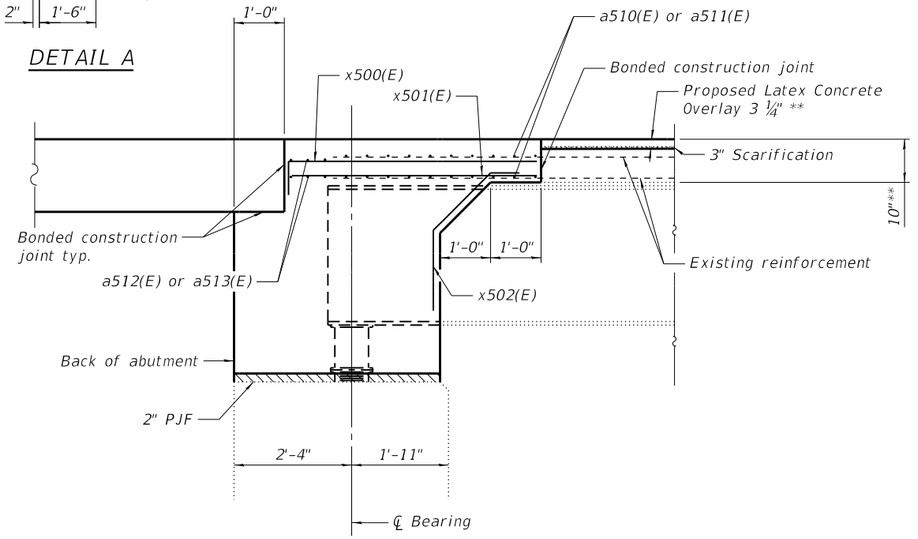


ABUTMENT PLAN SHOWING CONCRETE REPLACEMENT

SN 064-0030 south abutment shown, SN 064-0030 north abutment similar
SN 064-0031 north abutment shown, SN 064-0031 south abutment similar



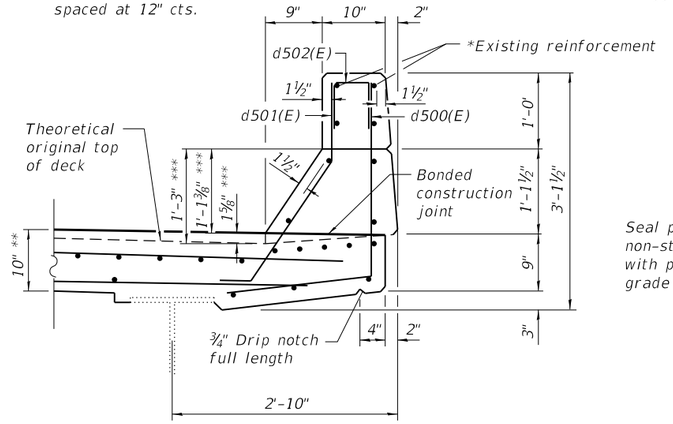
DETAIL A



SECTION B-B
TYPICAL SECTION THRU REPAIRED EXISTING ABUTMENT

(Dimensions measured at right angles)
For section showing deck removal see Sheet 10 of 25

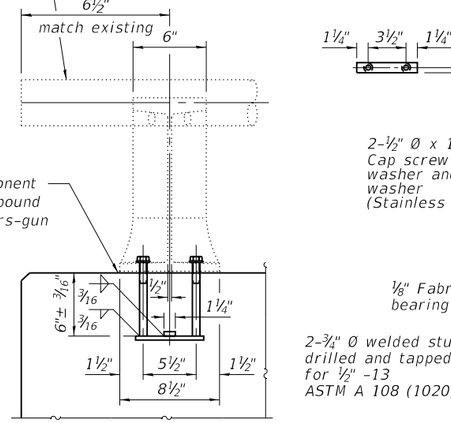
Note: d500(E) and d501(E) bars spaced at 12" cts.



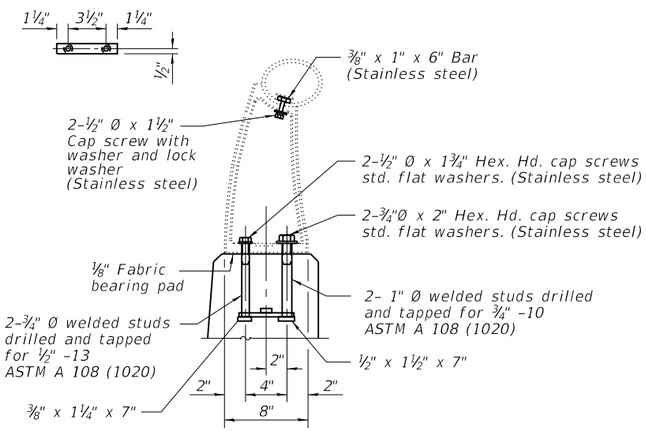
SECTION THRU PARAPET

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

Existing aluminum end post & hand rail terminal section to be removed and re-erected

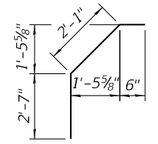


Note: Rail shall be removed and re-erected as necessary to allow structure modifications. Cost included in Concrete Removal.

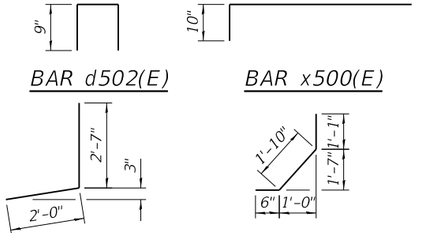


RAIL POST DETAILS

*** Prior to grinding.*



BAR x502(E)



BAR d502(E)
BAR x500(E)
BAR d500(E)
BAR d501(E)

FOUR SUPERSTRUCTURE ENDS
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a510(E)	88	#5	19'-9"	
a511(E)	88	#5	23'-7"	
a512(E)	16	#5	18'-7"	
a513(E)	16	#5	22'-5"	
d500(E)	48	#4	4'-7"	
d501(E)	48	#5	3'-5"	
d502(E)	16	#4	2'-1"	
x500(E)	168	#5	5'-7"	
x501(E)	168	#5	4'-9"	
x502(E)	168	#5	5'-2"	
Concrete Removal			Cu. Yd.	23.3
Concrete Superstructure			Cu. Yd.	112.8
Reinforcement Bars, Epoxy Coated			Pound	7720
Bar Splicers			Each	104

MODEL: Default
FILE NAME: L:\DOT\1806810WO_1\DrawStructures\SN 0030 & 0031\006_0030-0031_Superstructure Details.dgn

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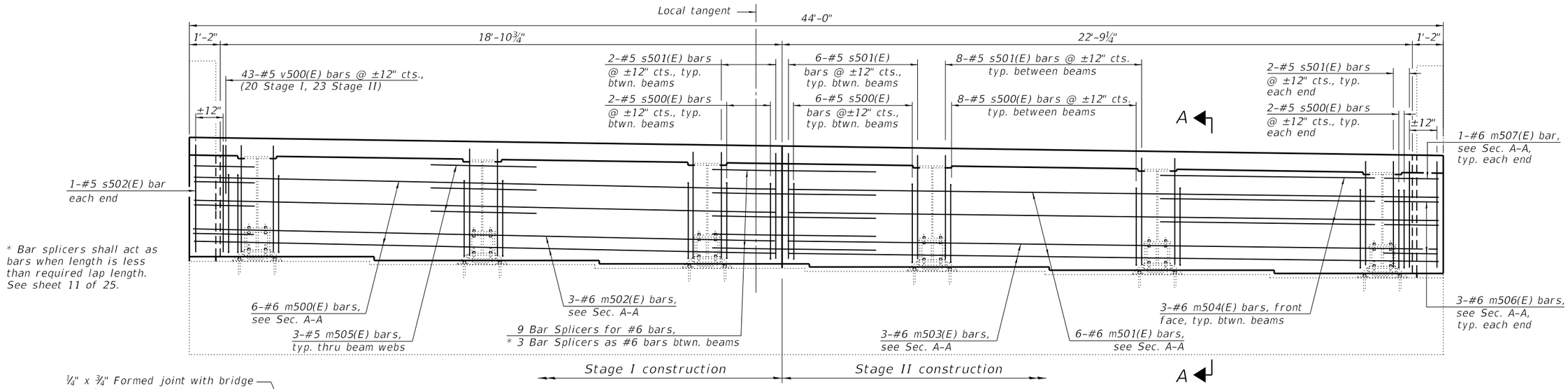
USER NAME = Misael Cordova	DESIGNED - DAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		SHEET 6 OF 25 SHEETS
PLOT DATE = 11/18/2020 - 7:46:34 AM	CHECKED - JTH	REVISED -		

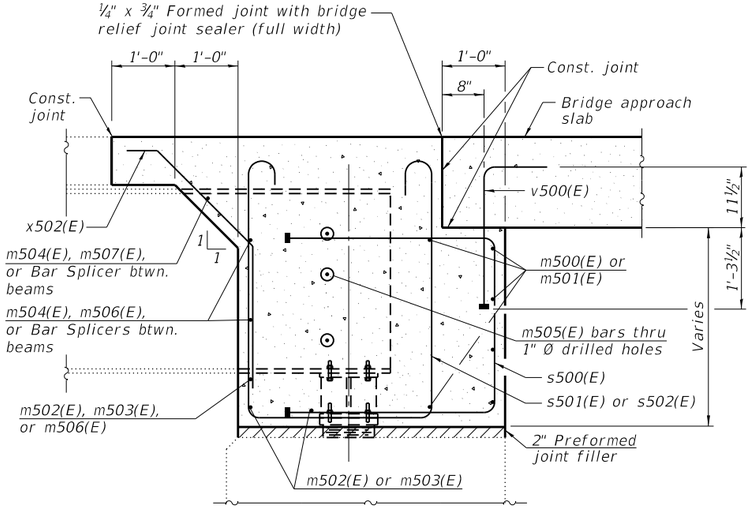
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	195
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



DIAPHRAGM ELEVATION AT ABUTMENT

SN 064-0030 south abutment shown, SN 064-0030 north abutment similar
SN 064-0031 north abutment shown, SN 064-0031 south abutment similar

Bar	A
s501(E)	2'-9"
s502(E)	2'-1"

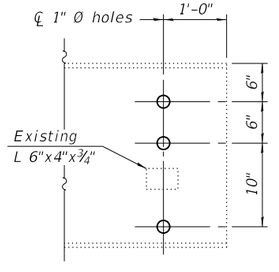


SECTION A-A

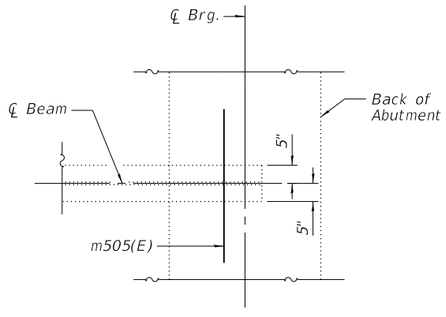
(Dimensions measured at right angles)

ELEVATION

(Looking at back of abutment)

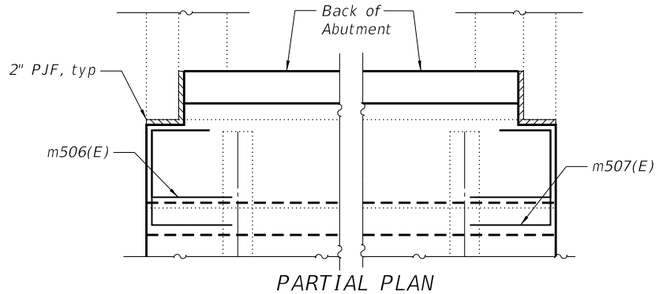


STEEL BEAM END ELEVATION

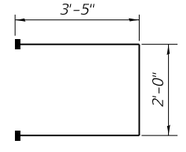


PARTIAL PLAN AT BEAMS

(Showing bottom flange of beam)

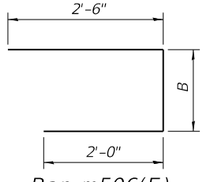


PARTIAL PLAN

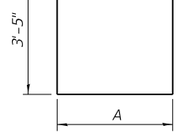


Bar s500(E)

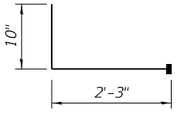
Bar	B
m506(E)	2'-1"
m507(E)	2'-7"



Bar m506(E) and m507(E)



Bar s501(E) and s502(E)



Bar v500(E)

FOUR DIAPHRAGMS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
m500(E)	24	#6	18'-7"	
m501(E)	24	#6	22'-5"	
m502(E)	12	#6	19'-9"	
m503(E)	12	#6	23'-7"	
m504(E)	48	#6	7'-4"	
m505(E)	72	#5	4'-0"	
m506(E)	24	#6	6'-7"	
m507(E)	8	#6	7'-1"	
s500(E)	176	#5	8'-10"	
s501(E)	176	#5	10'-9"	
s502(E)	8	#5	10'-1"	
v500(E)	172	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Pound	7660
Bar Splicers			Each	48

Notes:

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

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

Concrete Superstructure quantity included in quantity shown on Sheet 6 of 25.

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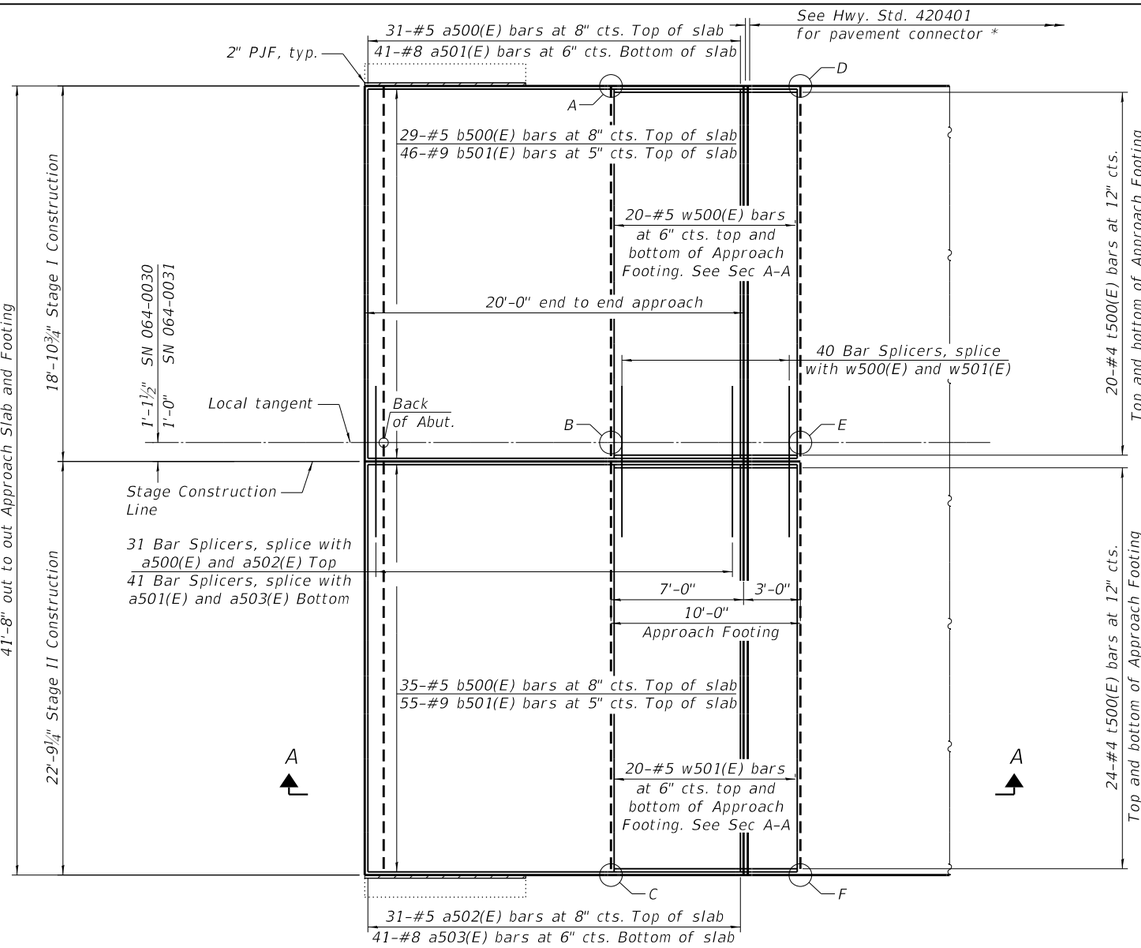
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

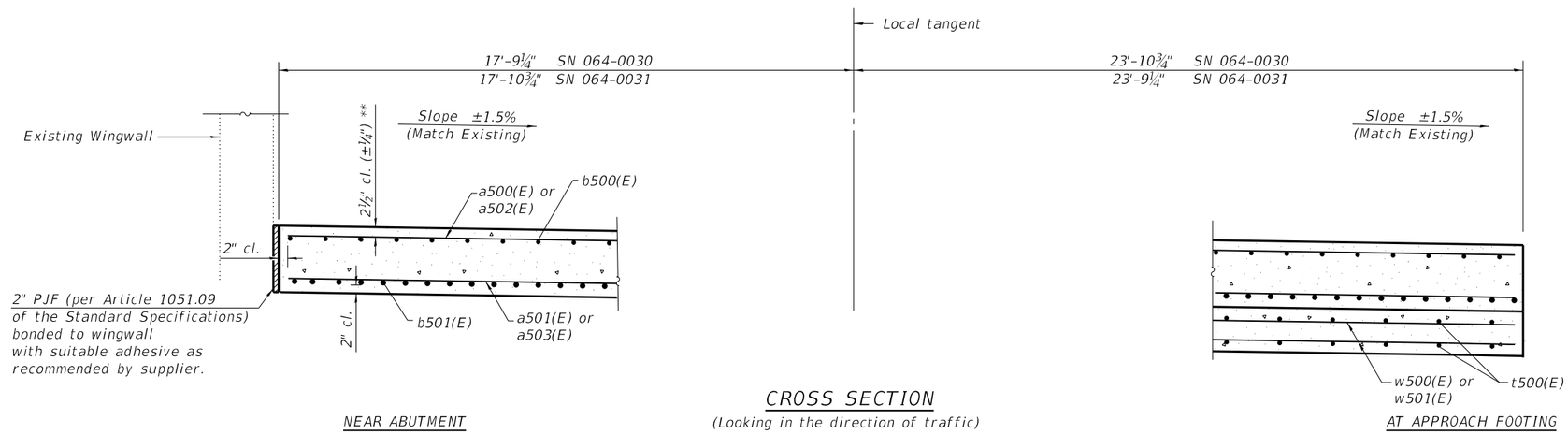
DIAPHRAGM DETAILS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 7 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	196
		CONTRACT NO. 78606		
		ILLINOIS	FED. AID PROJECT	



PLAN

SN 064-0030 south approach slab shown, SN 064-0030 north approach slab similar
SN 064-0031 north approach slab shown, SN 064-0031 south approach slab similar



** Prior to grinding.

NEAR ABUTMENT

CROSS SECTION

(Looking in the direction of traffic)

AT APPROACH FOOTING

* Pavement connector shall be paid for as Bridge Approach Pavement Connector (Special). The pavement connector shall be constructed per Hwy. Std. 4200401 except that the 15'-0" length shall be 20'-6". See Special provision for additional details.

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

S.N. 064-0030				
	North Approach		South Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

S.N. 064-0031				
	North Approach		South Approach	
Point	Top	Bottom	Top	Bottom
A				
B				
C				
D				
E				
F				

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

See Section A-A on Sheet 9 of 25.

(Sheet 1 of 2)

MODEL: Default
FILE NAME: L:\DOT\1900610WQ_1D\raw\Structures\SN 0030 & 0031\038_0030-0031_Approach Slab Detail 1.dgn

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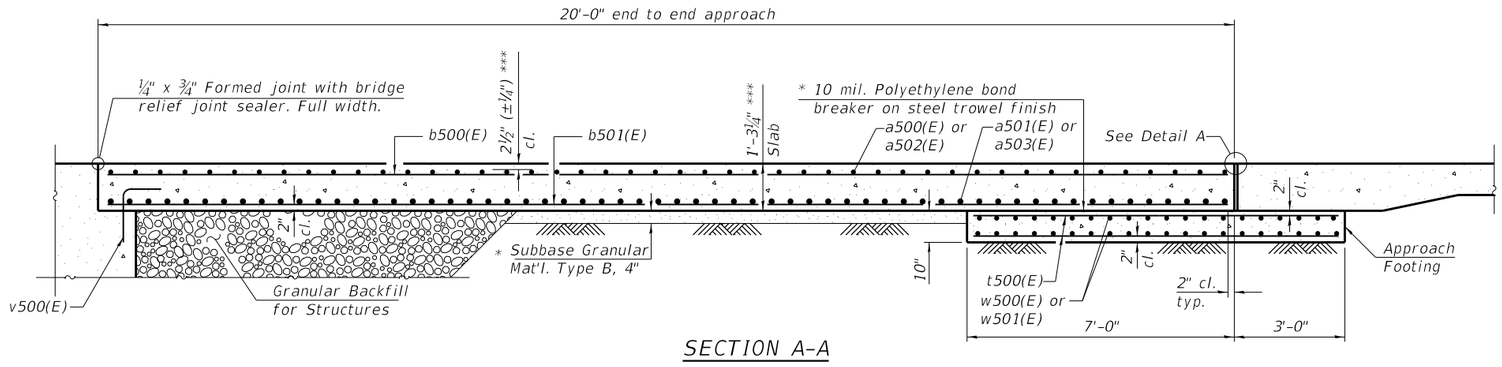
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROACH SLAB DETAILS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 8 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	197
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



SECTION A-A

Notes:

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

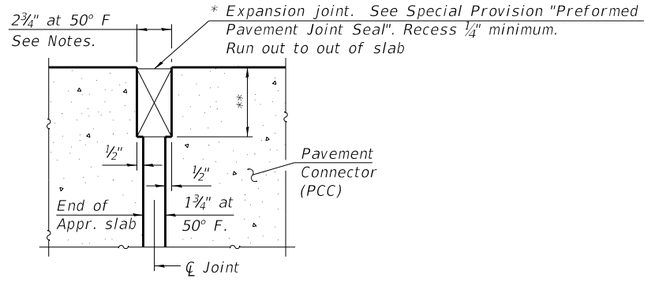
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (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 25.



DETAIL A
(@ Rt. ∠'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations.

*** Prior to grinding.

FOUR APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a500(E)	124	#5	18'-6"	——
a501(E)	164	#8	18'-6"	——
a502(E)	124	#5	22'-5"	——
a503(E)	164	#8	22'-5"	——
b500(E)	256	#5	19'-8"	——
b501(E)	404	#9	19'-8"	——
t500(E)	352	#4	9'-8"	——
w500(E)	160	#5	18'-6"	——
w501(E)	160	#5	22'-5"	——
Concrete Structures			Cu. Yd.	51.6
Concrete Superstructure (Approach Slab)			Cu. Yd.	157.0
Reinforcement Bars, Epoxy Coated			Pound	64580
Bar Splicers			Each	448

MODEL: Default
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PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -	
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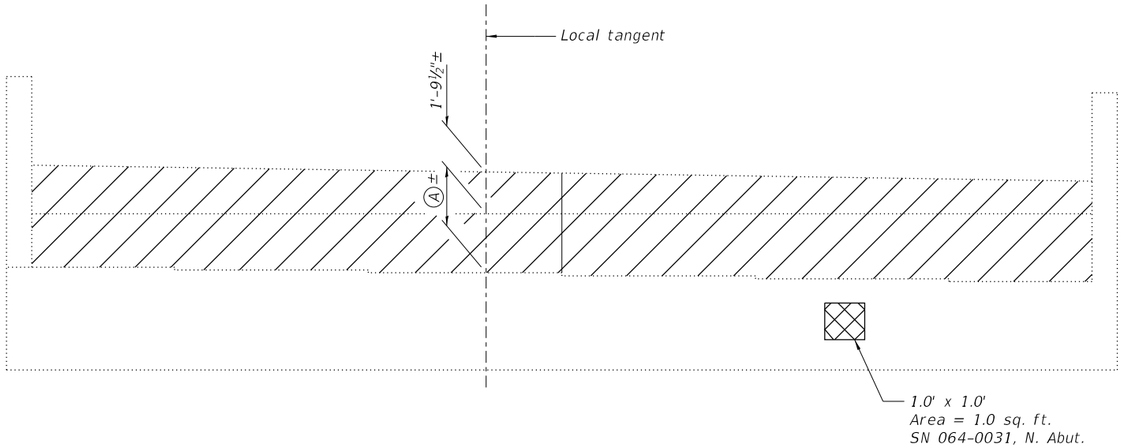
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

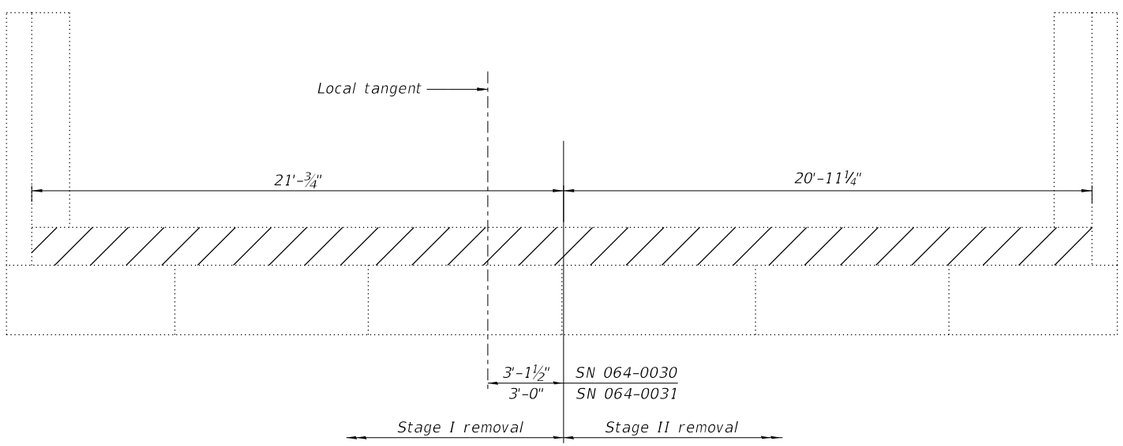
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
SHEET 9 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	198
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



ELEVATION

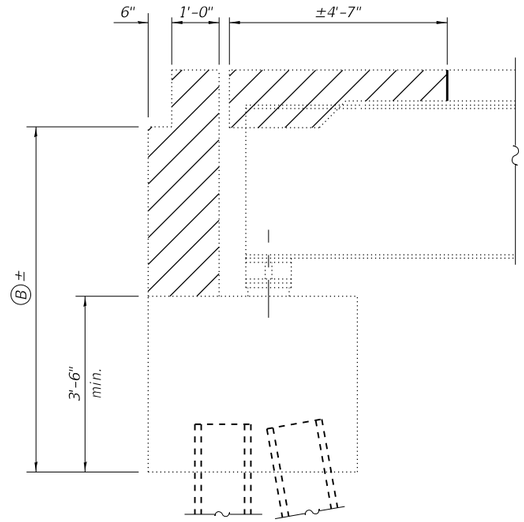
SN 064-0030 south abutment shown, SN 064-0030 north abutment similar
SN 064-0031 north abutment shown, SN 064-0031 south abutment similar



PLAN

SN 064-0030 south abutment shown, SN 064-0030 north abutment similar
SN 064-0031 north abutment shown, SN 064-0031 south abutment similar

Location	Dim. A	Dim. B
064-0030 – North Abutment	2'-6¾"	6'-3½"
064-0030 – South Abutment	2'-7"	6'-3¾"
064-0031 – North Abutment	2'-5½"	6'-2¼"
064-0031 – South Abutment	2'-5⅞"	6'-2⅝"



SECTION THRU ABUTMENT

LEGEND

Concrete Removal

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

BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Removal	Cu. Yd.	32.7
Structural Repair of Concrete (Depth Equal to or Less than 5 Inches)	Sq. Ft.	1.0

Concrete Removal quantity or deck concrete included in Bill of Material on sheet 6 of 25.

MODEL: Default
FILE NAME: L:\IDOT\1900610\WO_1\Draw\Structures\SN 0030 & 0031\010_0030-0031_Abutment Removal.dgn

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PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -			
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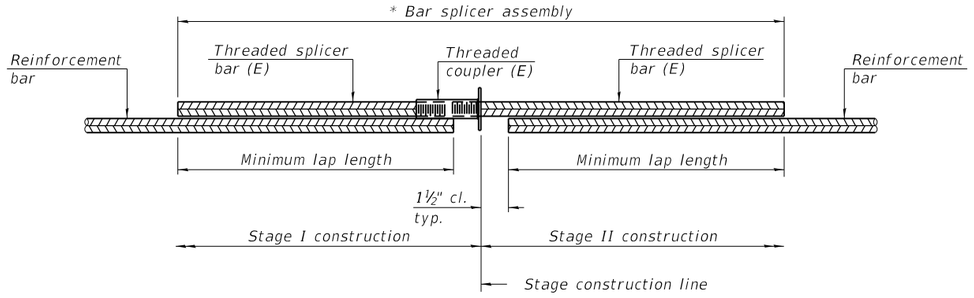
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	199
		CONTRACT NO. 78606		
	ILLINOIS FED. AID PROJECT			



STANDARD BAR SPLICER ASSEMBLY PLAN

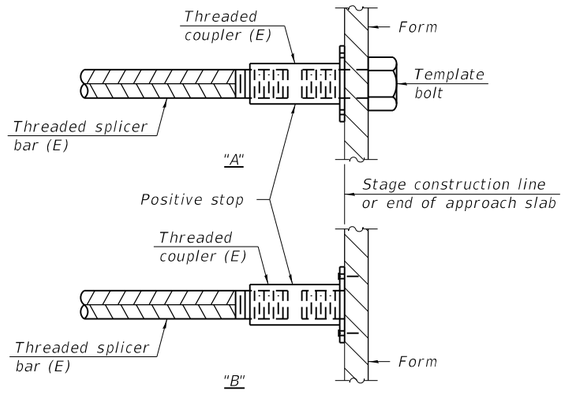
(All components shall be provided from one supplier)

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

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

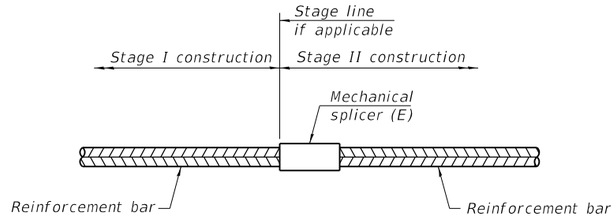
Location	Bar size	No. assemblies required	Minimum lap length
064-0030 N. Abut. Superstructure	#5	26	3'-6"
064-0030 N. Abut. Diaphragm	#6	9	4'-0"
064-0030 N. Abut. Diaphragm	#6	3	**
064-0030 N. Approach Slab	#5	31	3'-6"
064-0030 N. Approach Slab	#8	41	6'-9"
064-0030 N. Approach Slab Footing	#5	40	3'-6"
064-0030 S. Abut. Superstructure	#5	26	3'-6"
064-0030 S. Abut. Diaphragm	#6	9	4'-0"
064-0030 S. Abut. Diaphragm	#6	3	**
064-0030 S. Approach Slab	#5	31	3'-6"
064-0030 S. Approach Slab	#8	41	6'-9"
064-0030 S. Approach Slab Footing	#5	40	3'-6"
064-0031 N. Abut. Superstructure	#5	26	3'-6"
064-0031 N. Abut. Diaphragm	#6	9	4'-0"
064-0031 N. Abut. Diaphragm	#6	3	**
064-0031 N. Approach Slab	#5	31	3'-6"
064-0031 N. Approach Slab	#8	41	6'-9"
064-0031 N. Approach Slab Footing	#5	40	3'-6"
064-0031 S. Abut. Superstructure	#5	26	3'-6"
064-0031 S. Abut. Diaphragm	#6	9	4'-0"
064-0031 S. Abut. Diaphragm	#6	3	**
064-0031 S. Approach Slab	#5	31	3'-6"
064-0031 S. Approach Slab	#8	41	6'-9"
064-0031 S. Approach Slab Footing	#5	40	3'-6"

** 1'-7" bar on Stage I side, 5'-5" bar on Stage II side.



INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

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

BSD-1 1-1-2020

MODEL: Default
FILE NAME: L:\DOT\1900610\WQ_1\Draw\Structures\SN 0030 & 0031\011_0030-0031_Bar Splicer Assembly and Mechanical Splicer Details.dgn

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USER NAME = Misael Cordova	DESIGNED - DAC	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 064-0030 (E.B.) & 064-0031 (W.B.)
	CHECKED - AS	REVISED -		
PLOT SCALE = N/A	DRAWN - GLD/RAH	REVISED -		
PLOT DATE = 11/18/2020 - 7:46:45 AM	CHECKED - JTH	REVISED -		SHEET 11 OF 25 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	BRIDGE REPAIR 2021-1	MASSAC	263	200
		CONTRACT NO. 78606		
	ILLINOIS	FED. AID PROJECT		