SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
D2 BDR 2019-1	CARROLL	20	1
ILLINOIS	CONTRACT NO. 64N25		

INDEX OF SHEETS 03-08-2019 LETTING ITEM 086

STATE STANDARDS

701901–08 TRAFFIC CONTROL DEVICES
704001–08 TEMPOARAY CONCRETE BARRIER
701321–17 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701201–05 LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS > 45 MPH

CARROLL COUNTY–SALEM TOWNSHIP– SECTION 3,10

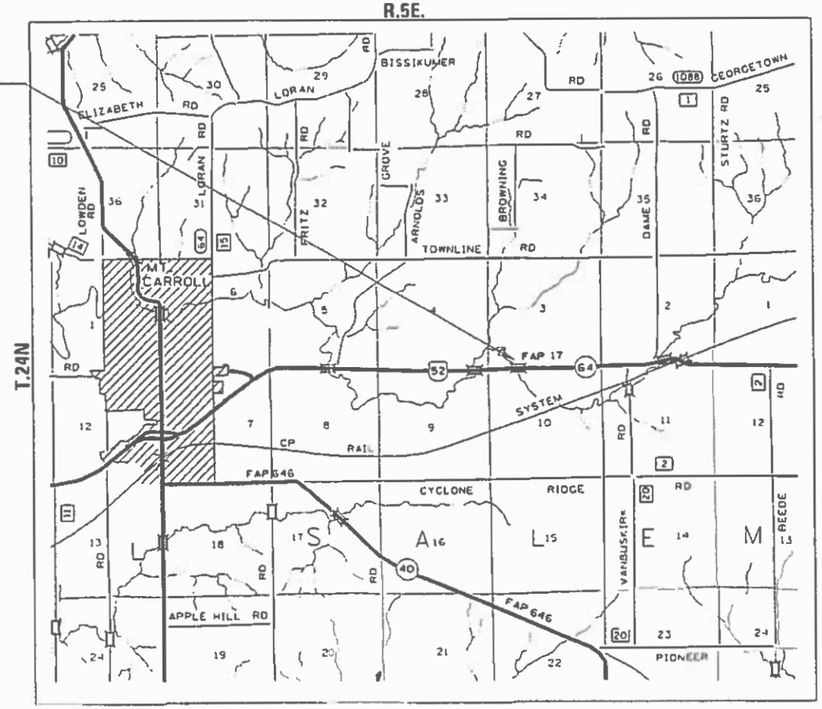
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

FAP ROUTE 17 (US 52 /IL 64)
SECTION D2 BDR 2019–1
PROJECT _____
TYPE of IMPROVEMENT: BRIDGE REHAB
CARROLL COUNTY

C–92–002–19

SN 008–0005



D.92.071-18

LOCATION OF SECTION INDICATED THUS: –

100' 200' 300' — 1" = 100'
10' 20' 30' — 1" = 10'
50' 100' — 1" = 50'
50' 100' — 1" = 40'
50' 100' 300' — 1" = 30'
50' 100' — 1" = 20'

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

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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED 12-3 2018
REGIONAL ENGINEER
Feb 1 19
ENGINEER OF DESIGN AND ENVIRONMENT
Feb 20 19
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PROJECT ENGINEER: KYLE ROLLINS (815) 284–5417
PROJECT MANAGER: MAHMOUD ETEMADI (815) 284–5393

CONTRACT NO. 64N25

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

REV. 2/5/19

SUMMARY OF QUANTITIES

0047
100%
State Funds

CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY
50300300	PROTECTIVE COAT	SQ YD	369
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUNDS	320.0
40600982	HOT–MIX ASPHALT SURFACE REMOVAL– BUTT JOINT	SQ YD	712.0
40600990	TEMPORARY RAMP	SQ YD	36.0
40603310	HOT–MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	60.0
50102400	CONCRETE REMOVAL	CU YD	9.6
50300100	FLOOR DRAINS	EACH	8
50300255	CONCRETE SUPERSTRUCTURE	CU YD	10.5
50300260	BRIDGE DECK GROOVING	SQ YD	340
50800515	BAR SPLICERS	EACH	24
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	1290
52000110	PREFORMED JOINT STRIP SEAL	FOOT	76.5
67100100	MOBILIZATION	L SUM	1
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	2
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	6
70107004	PAVEMENT MARKING BLACKOUT TAPE, 4"	FOOT	652.0
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	490.0
70300904	PAVEMENT MARKING TAPE, TYPE IV 4"	FOOT	2970.0
70400100	TEMPORARY CONCRETE BARRIER	FOOT	675.0
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	675.0

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	2
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

REV. 2/5/19

SUMMARY OF QUANTITIES

0047
100%
State Funds

CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY
70600260	IMPACT ATTENUATORS, TEMPORARY (FULL REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2
70600332	IMPACT ATTENUATORS, RELOCATE (FULL REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2
78007110	PERMANENT PAVEMENT MARKING– LINE 4"	FOOT	815.0
X7030005	TEMPORARY PAVEMENT MARKING REMOVAL	SQ SF	980.0
Z0001905	STRUCTURAL STEEL REPAIR	POUND	1600
Z0006012	BRIDGE DECK LATEX CONCRETE OVERLAY, 2 1/4"	SQ YD	339.1
Z0012130	BRIDGE DECK SCARIFICATION 3/4"	SQ YD	339.1
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	2.0

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	3
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			

REV. 2/5/19

GENERAL NOTES

Location and Mixture Uses(s):	Resurfacing			Full Depth Pavement			Shoulders		
	Surface	Level Binder	Binder	Surface	Top Lift Binder	All Other Lifts	Top Lift	All Lower Lifts	Protective Layer/LB
PG:	PG 64-22	-	-	-	-	-	-	-	-
Design Air Voids	4.0 @ N50	-	-	-	-	-	-	-	-
Mixture Composition (Gradation Mixture)	IL 9.5	-	-	-	-	-	-	-	-
Friction Aggregate	C	-	-	-	-	-	-	-	-
20 Year ESAL	0.3	-	-	-	-	-	-	-	
Mix Unit Weight	112 lbs/sy/in								
Quality Management Program to be Used	QC/QA								
Sublot Tonnage	QC/QA								

STREAM PERMITS

January 7, 2016

Title 17, Chapter I, Section 3700.30 b5 and Section 3704.30 d5 of the IL Administrative Code state that “Routine maintenance and repair of existing structures” are exempt activities for requiring a permit. As such, No IDNR-OWR In-Stream Permits have been procured for this project. None are required provided there is no falling debris, no material placed into the stream, or no in-stream work performed. Any temporary fill in the stream or the compromising of the dike (if applicable) will not be allowed. If the contractor chooses to use an alternate/modified construction method from the aforementioned, they will be responsible for obtaining the proper permits. Absolutely no construction activities will take place without the proper permits being secured. No relief or compensation will be given for any delays, working days charged, or calendar days expired as a result of the re-submittal for the required permits due to the contractor’s alternate/modified construction methods.

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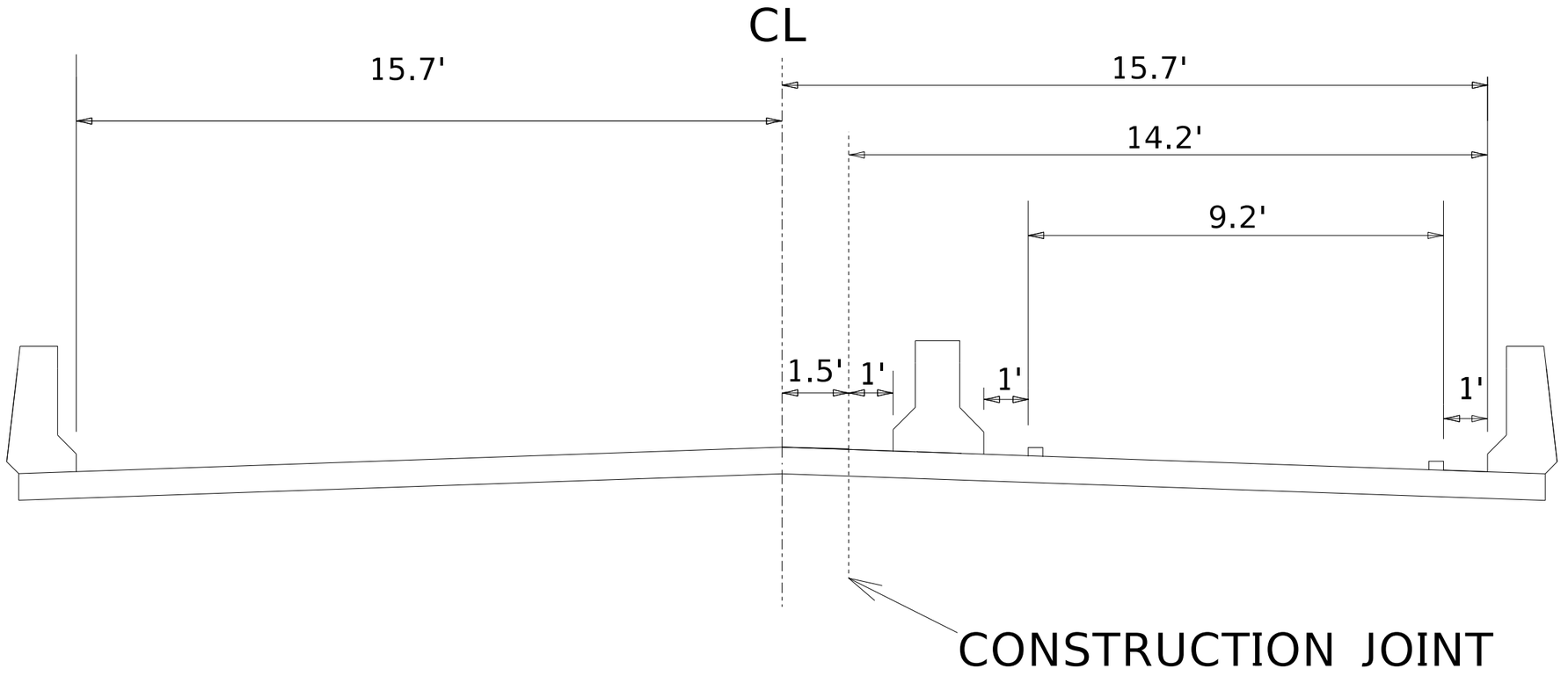
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	4
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			

STAGE I BARRIER WALL TYPICAL



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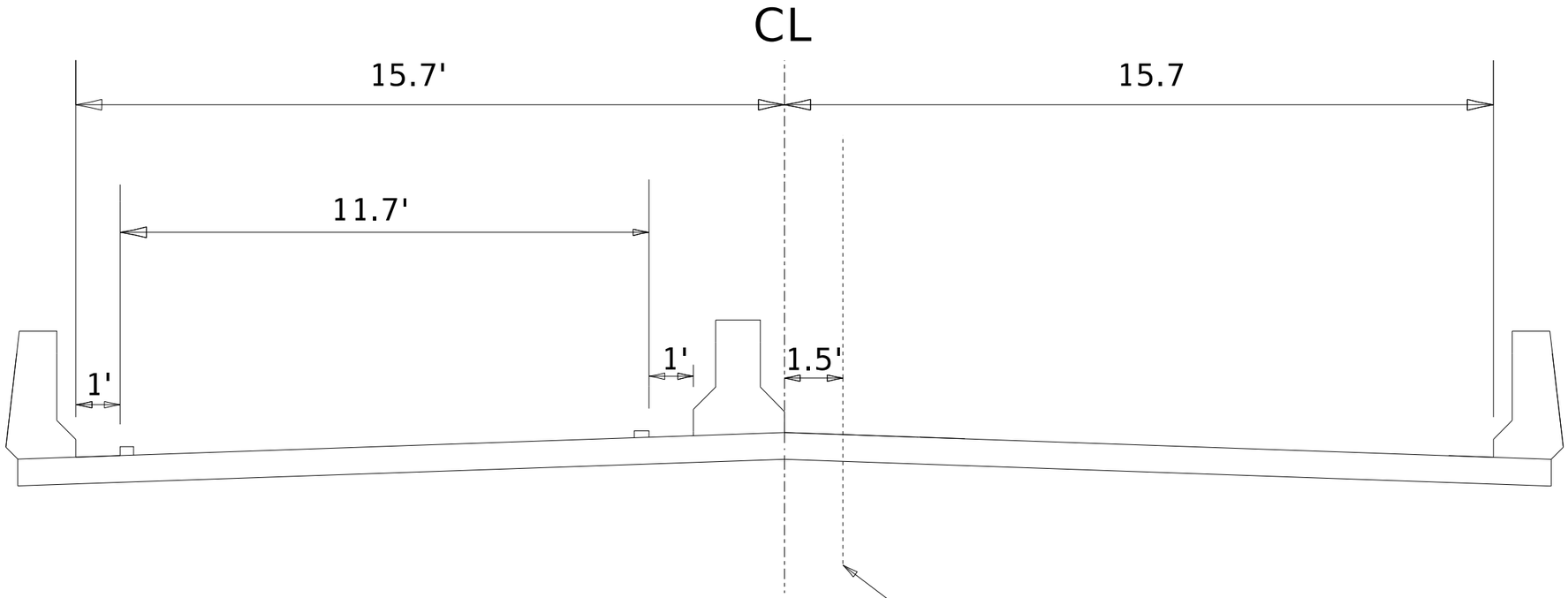
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	5
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

STAGE II BARRIER WALL TYPICAL



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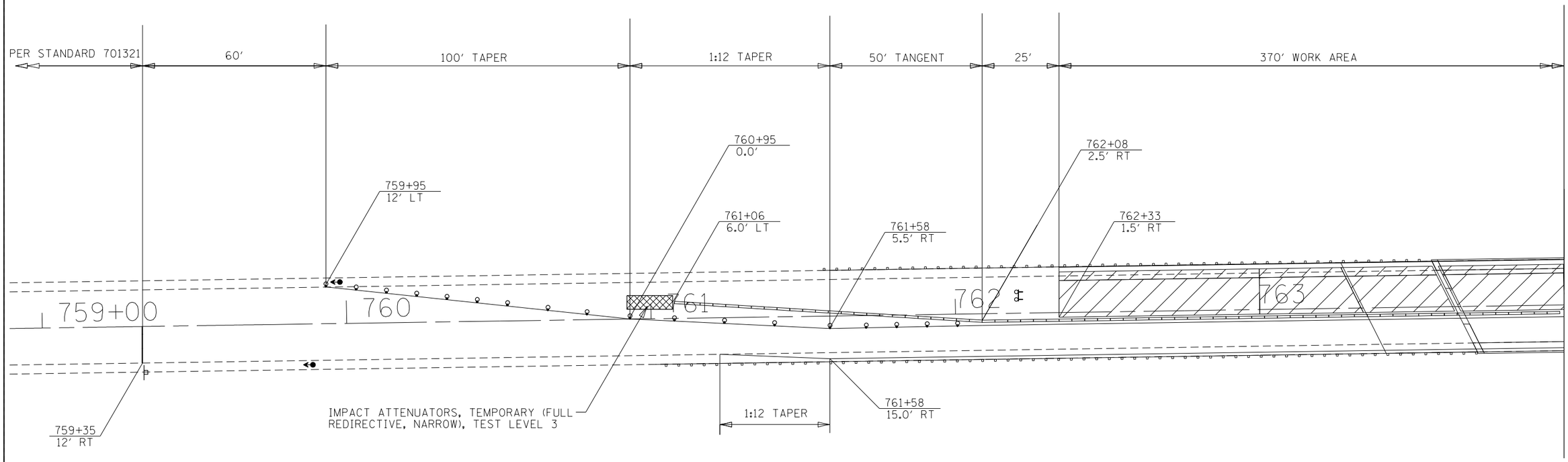
						17	D2 BDR 2019-1	CARROLL	20	6
								CONTRACT NO. 64N25		
							ILLINOIS	FED. AID PROJECT		

TRAFFIC CONTROL PLAN – STAGE I



SYMBOLS

- Work area
- Sign
- Type III barricade with flashing lights
- Traffic signal
- Detector loops
- Impact attenuator
- Drum with steady burning bi-directional light
- Temporary concrete barrier
- Temporary rumble strip (when specified)
- Double vertical panel (see detail)
- Crystal, bidirectional guardrail/barrier wall reflector
- Drum

NOTES

1. Reflectorized temporary pavement marking shall be placed throughout the taper are along-side the work area. The edge line shall be white for right lane closure and yellow for left lane closures.
2. Barrier wall/guardrail markers at 25' (7.6 m). Markers on right shall be crystal and markers on left shall be amber.
3. Offsets shown are from the centerline pavement marking of the direction of travel.
4. Barrier wall offsets are to the construction side of the barrier wall.
5. Refer to Highway Standard 701321 for additional details not shown.

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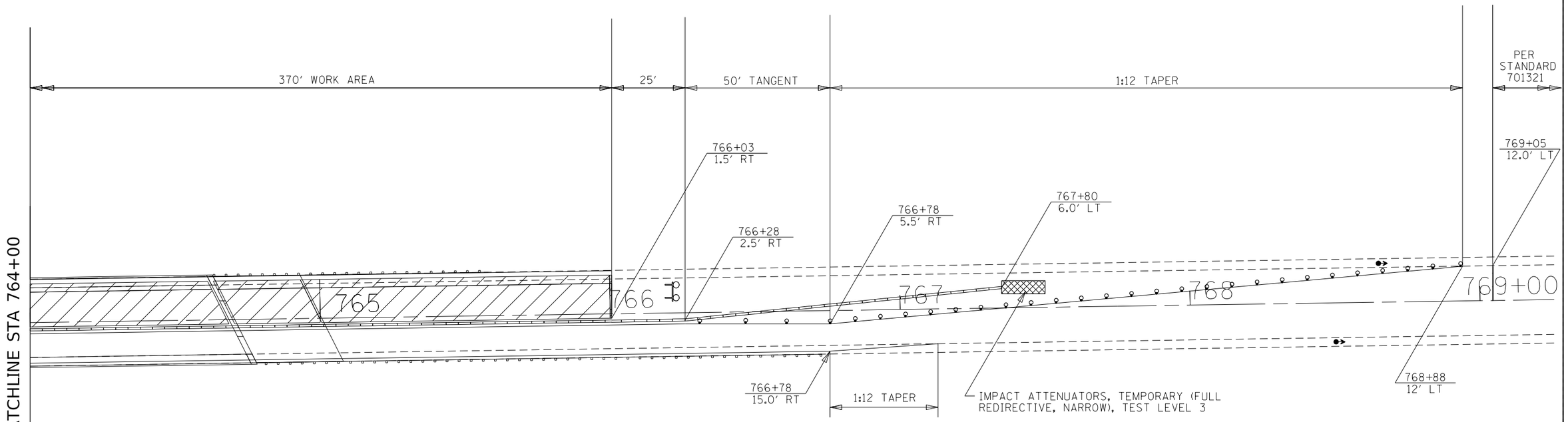
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN – STAGE I

SCALE: _____ | SHEET __ OF __ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	02 BDR 2019-1	CARROLL	20	7
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

TRAFFIC CONTROL PLAN – STAGE I



SYMBOLS

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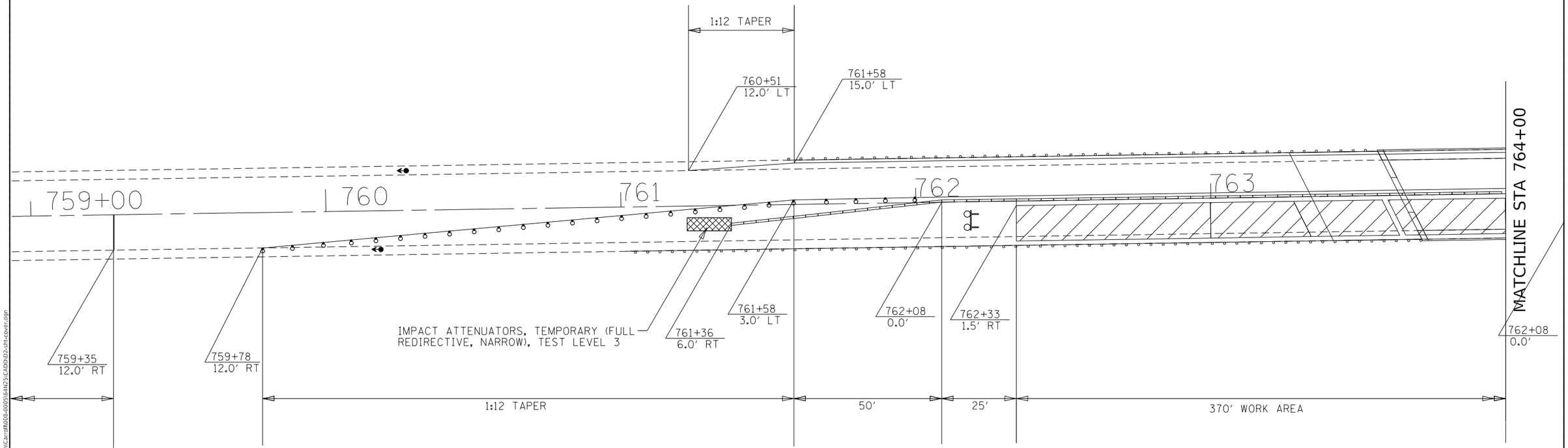
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN – STAGE I

SCALE: _____ | SHEET __ OF __ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	8
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

TRAFFIC CONTROL PLAN – STAGE II



PER STANDARD 701321

SYMBOLS

- Work area
- Sign
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- Traffic signal
- Detector loops
- Impact attenuator
- Drum with steady burning bi-directional light
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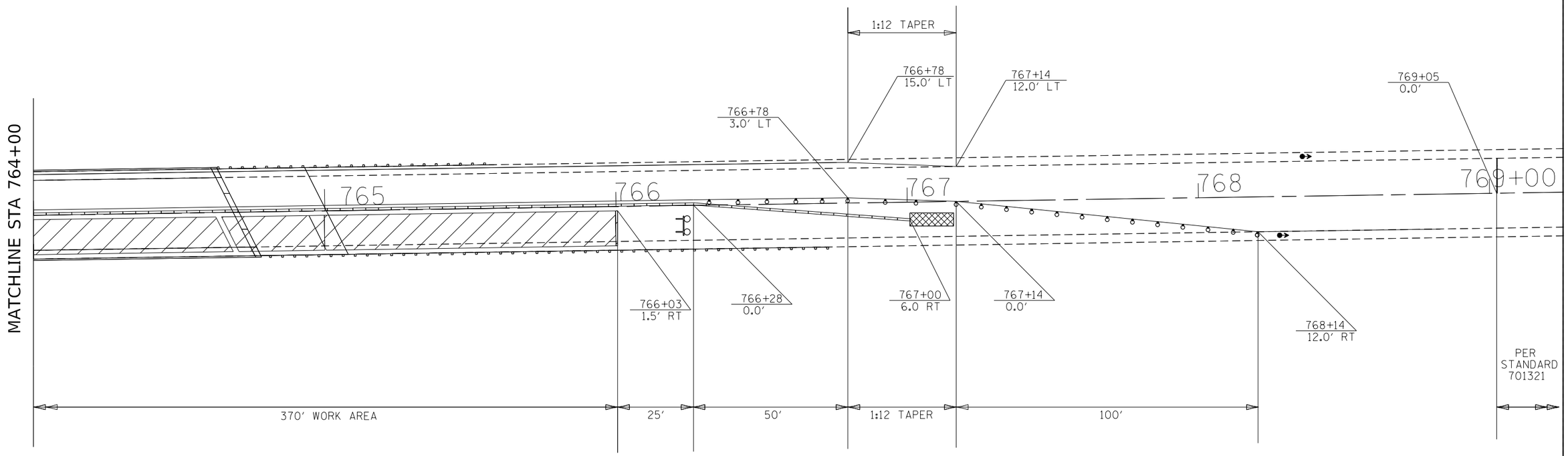
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN – STAGE II

SCALE: _____ | SHEET __ OF __ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	9
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			

TRAFFIC CONTROL PLAN – STAGE II



SYMBOLS

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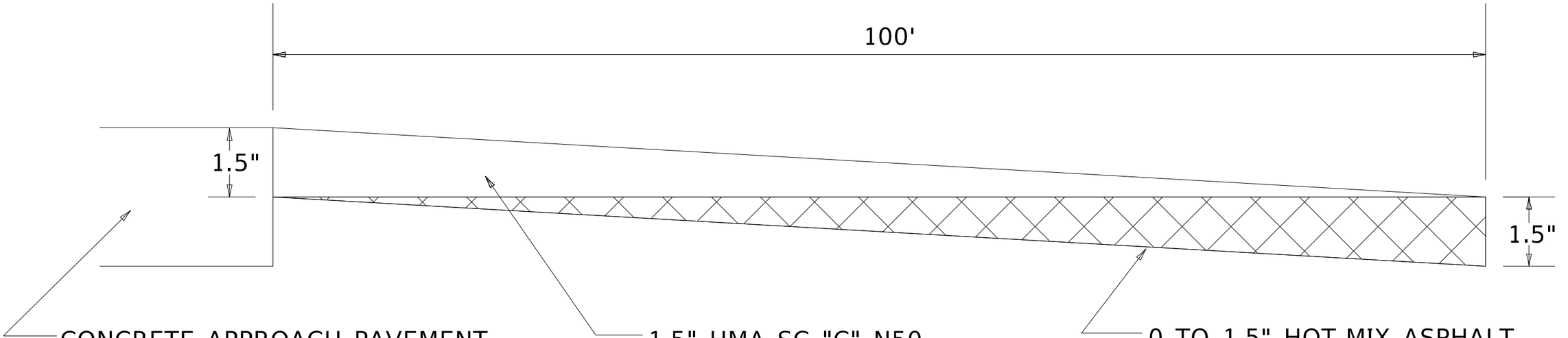
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL PLAN – STAGE II

SCALE: _____ | SHEET __ OF __ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	10
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

HOT-MIX ASPHALT APPROACH
TAPER DETAIL



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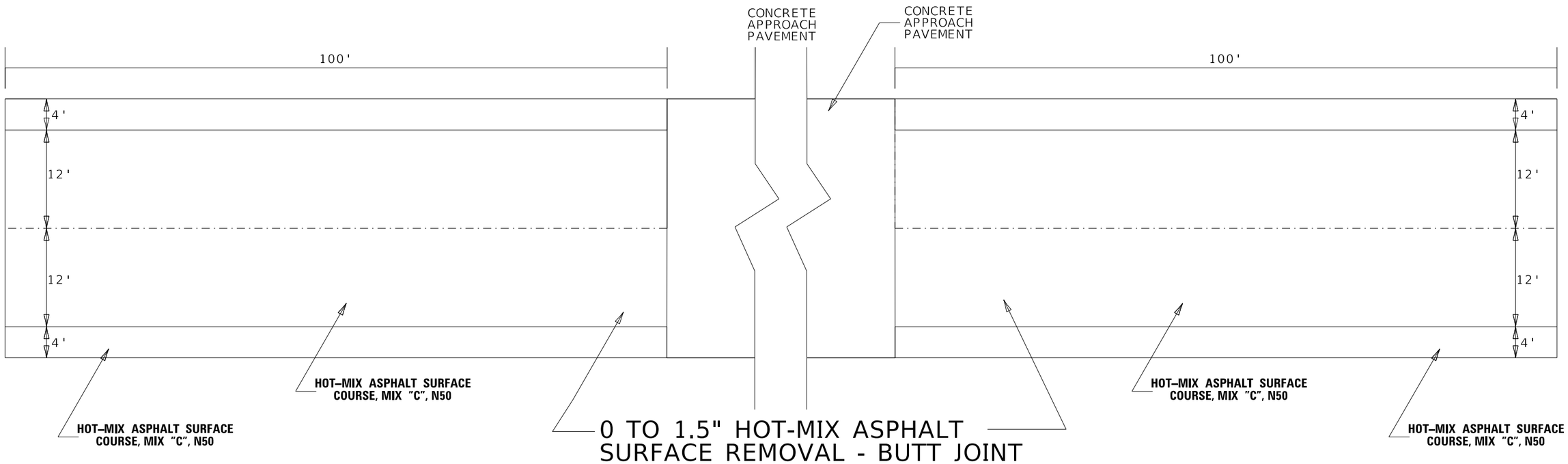
HOT-MIX ASPHALT APPROACH TAPER DETIAL

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ | TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	11
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			

HOT-MIX ASPHALT
APPROACH TAPER



0 TO 1.5" HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT

USER NAME = Rollinsks	DESIGNED - _____	REVISED - _____	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
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HOT–MIX ASPHALT APPROACH TAPER DETIAL

SCALE: _____ | SHEET ___ OF ___ SHEETS | STA. _____ TO STA. _____

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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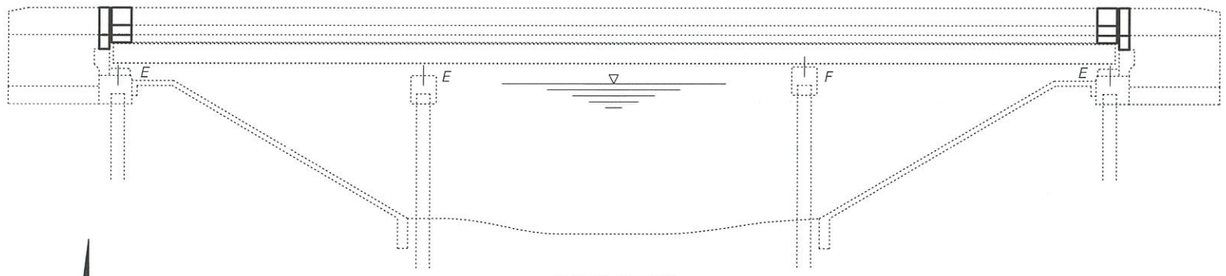
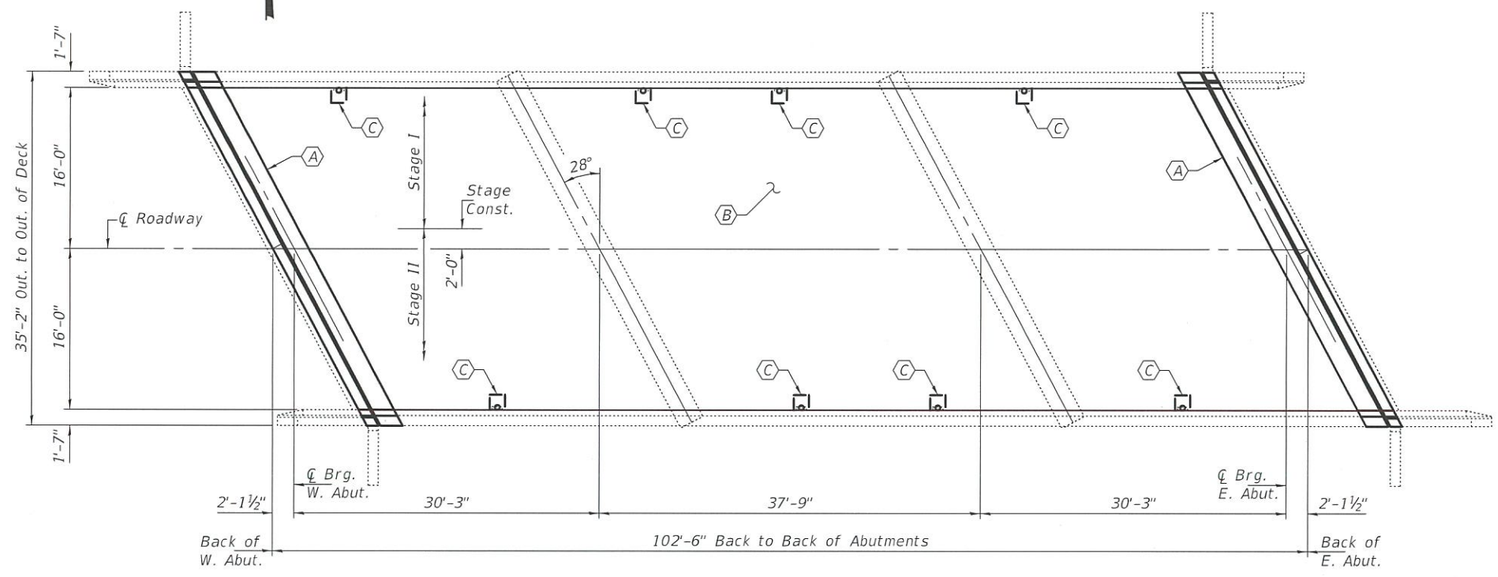
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			



ELEVATION



PLAN

Ⓐ - Remove & Replace existing Expansion Joint

Ⓑ - Scarify Bridge Deck ¾" and install 2¼" Latex Modified Concete Overlay.

Ⓒ - Remove existing floor drains and install new 6"Ø Floor Drains.

GENERAL NOTES

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

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

Reinforcement bars designated (E) shall be epoxy coated.

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

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

Joint openings shall be adjusted according to Article 520.04 of the Std. Specs. when the deck is poured at an ambient temperature other than 50° F.

Fasteners shall be high strength bolts. Bolts ¾"Ø, open holes $^{13}/_{16}$"Ø, unless otherwise noted.

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 that will be in contact with new structural steel shall be cleaned and pointed prior to erection as required by the Special Provision "Cleaning and Painting Contact Surface Areas of Existing Steel Structures".

Cleaning and painting of the existing structural steel shall be as specified in the special provision for "Cleaning and Painting Existing Steel Structures". Areas to be cleaned and painted shall consist of all beam ends, end diaphragms and steel components of the steel bearings at the abutments. Beam end painting shall extend 5 feet from the ends of the beams longitudinally. Also included shall be the exterior surface and the bottom of the bottom flange of fascia beams for the entire length of the structure. This surface preparation shall be accomplished according to the requirements of Near-White Metal Blast Cleaning SSPC-SP 10. The paint system shall be applied as specified for System 1 OZ/E/U. 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 Blue, Munsell No. 10B 3/6

Containment and disposal as specified shall follow the special provision for "Containment and Disposal of Lead Point Cleaning Residue". The use of two air monitors will be required to monitor abrasive blasting operations.

The painting contractor shall be SSPC-QP 1 and SSPC-QP 2 certified for this project and shall maintain certification throughout the duration of the project.

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

Cleaning and painting of beam ends shall be performed after the concrete removal at the joints has been completed and prior to the installation of any forms for the placement of the new concrete at those locations.

Synthetic fibers shall be added to the Bridge Deck Latex Concrete Overlay. See Special Provisions.

TOTAL BILL OF MATERIAL

	ITEM	UNIT	QUANTITY
	Concrete Removal	Cu. Yd.	9.6
	Concrete Superstructure	Cu. Yd.	10.5
	Reinforcement Bars, Epoxy Coated	Pound	1290
	Bar Splicers	Each	24
	Bridge Deck Scarification, ¾"	Sq. Yd.	339.1
	Bridge Deck Latex Concrete Overlay, 2¼"	Sq. Yd.	339.1
	Preformed Joint Strip Seal	Foot	76.5
*	Protective Coat	Sq. Yd.	369
	Structural Steel Repair	Pound	1600
	Floor Drain	Each	8
	Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	2.0
	Bridge Deck Grooving	Sq. Yd.	340
	Cleaning and Painting Steel Bridge, No. 1	L.S.	1
	Containment and Disposal of Lead Paint Cleaning Residues, No. 1	L.S.	1

* New concrete and concrete overlay surfaces only.

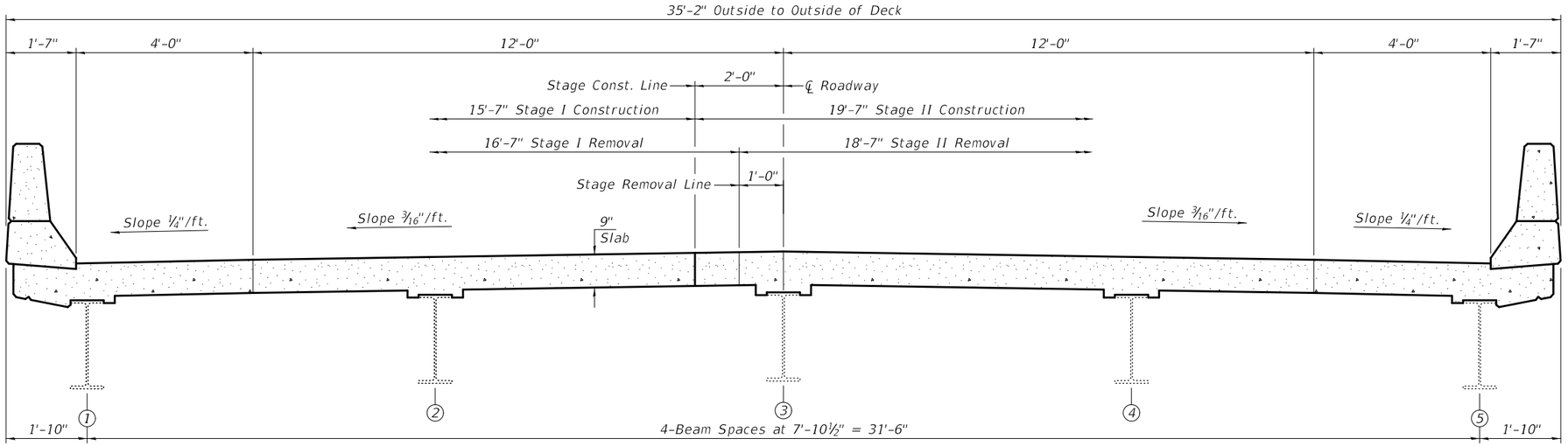
LICENSED STRUCTURAL ENGINEER
DAVID CARL PUZEY
081-005470
SPRINGFIELD
ILLINOIS
STATE OF ILLINOIS

Expires: November 30, 2020

DESIGNED -	EXAMINED	DATE - JANUARY 29, 2019	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED -	ENGINEER OF STRUCTURAL SERVICES		
DRAWN - Steffen	PASSED	REVISED -	
CHECKED - JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

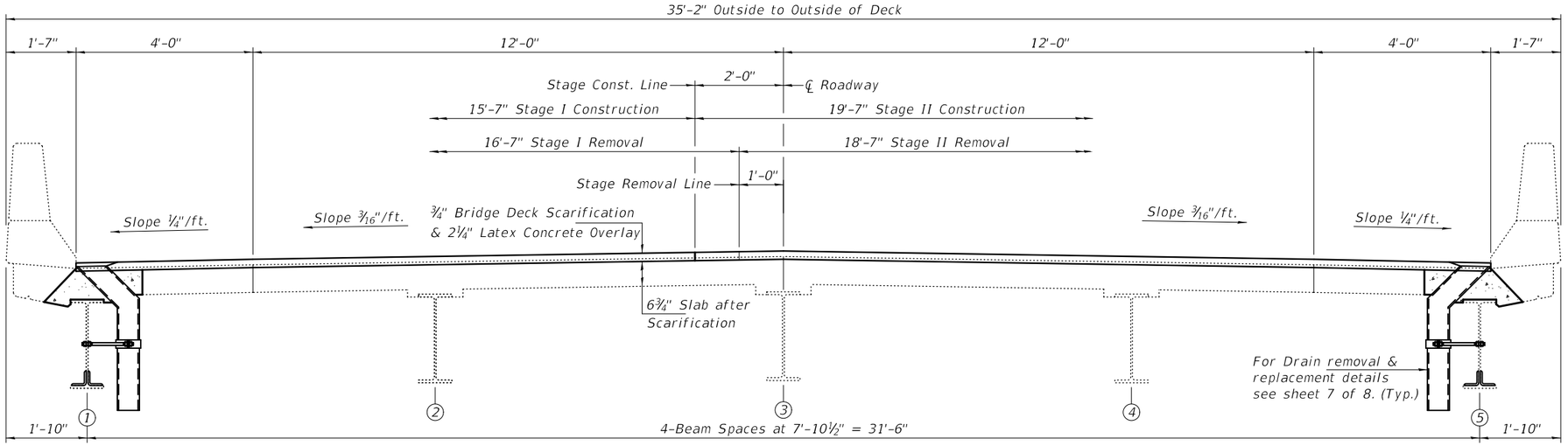
GENERAL PLAN AND ELEVATION
FAP 17 (IL 64 & US 52) OVER STRADDLE CREEK
SN 008-0005
SHEET NO. 1 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	13
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			



CROSS SECTION AT ABUTMENTS

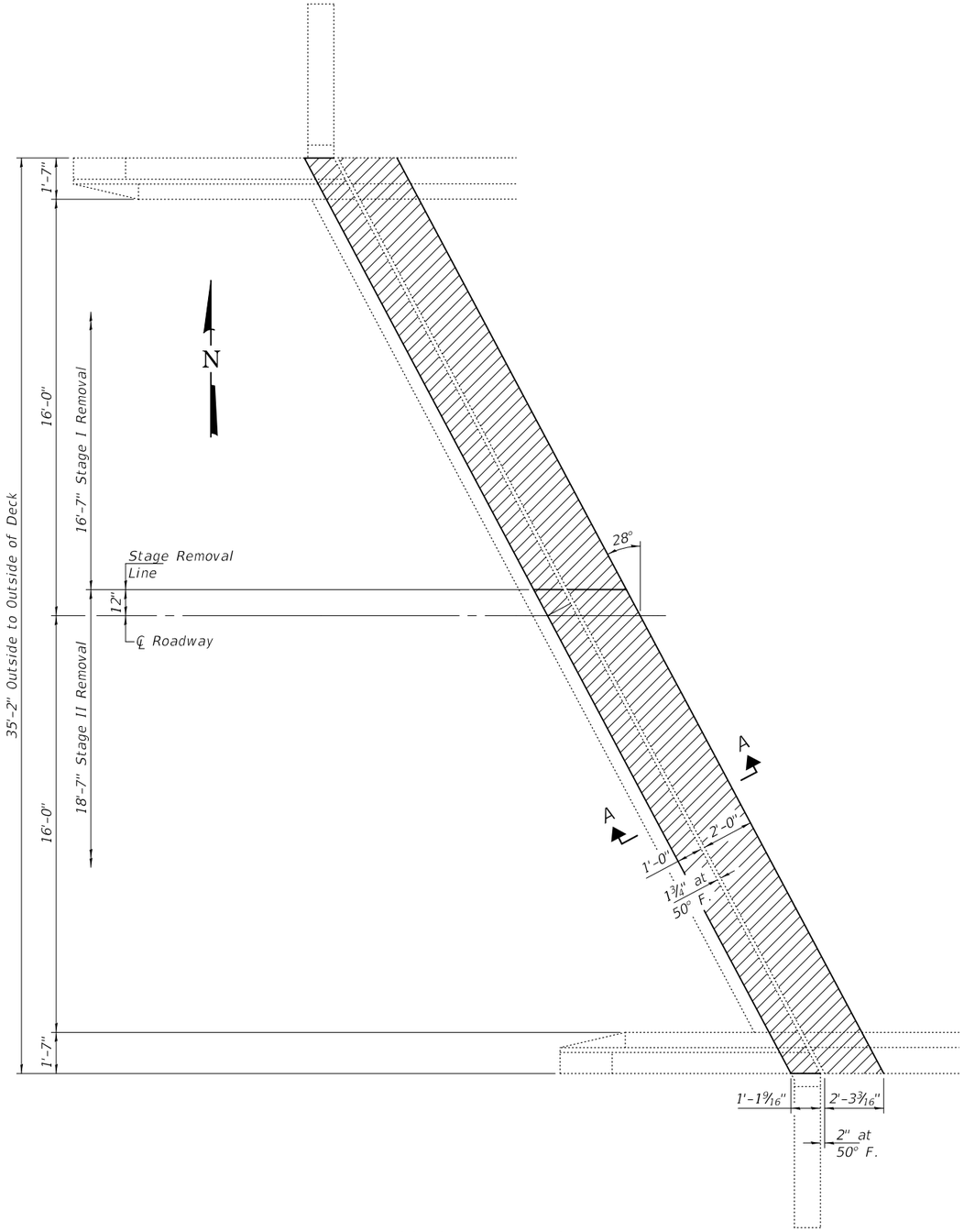
(Looking East)



CROSS SECTION AT MID-SPANS

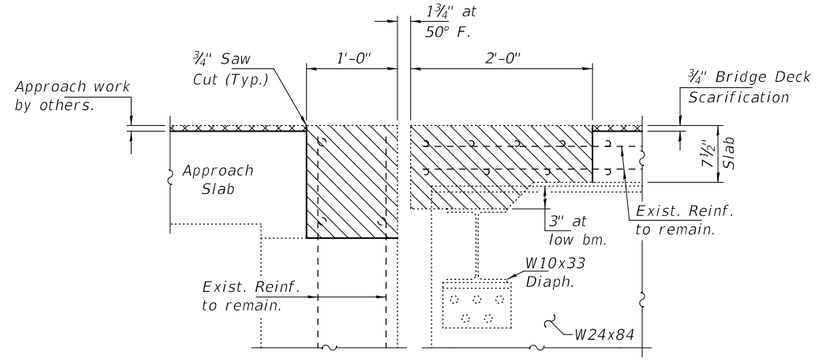
(Looking East)

DESIGNED - JSB	EXAMINED	Timothy A. Bradley Jr. ENGINEER OF STRUCTURAL SERVICES	DATE - JANUARY 29, 2019	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**CROSS SECTIONS & STAGING DETAILS SN 008-0005**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - CDK						17	D2 BDR 2019-1	CARROLL	20	14
DRAWN - *Steffen*	PASSED	*Carl Puzey* ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET NO. 2 OF 8 SHEETS			CONTRACT NO. 64N25		
CHECKED - JSB CDK			REVISED -					ILLINOIS FED. AID PROJECT		



CONCRETE REMOVAL DETAILS

West Abutment shown, East
Abutment similar by rotation.



SECTION A-A

(Dims. at Rt. ∠'s)

Notes:
Hatched areas indicate Concrete Removal.
Cross Hatched areas indicated Bridge Deck Scarification.

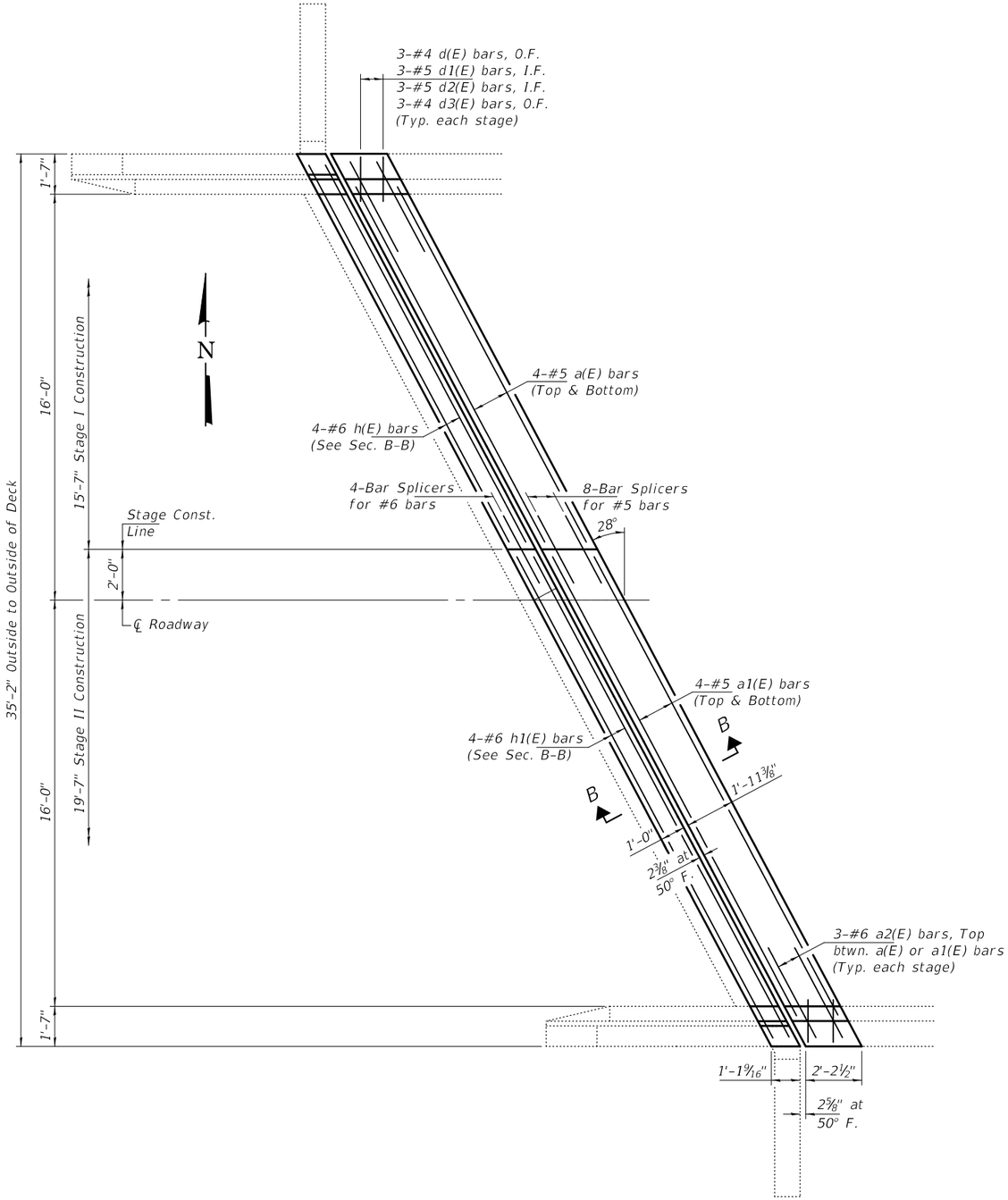
BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	9.6

DESIGNED - JSB	EXAMINED	DATE - JANUARY 29, 2019	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**
CHECKED - CDK	ENGINEER OF STRUCTURAL SERVICES		
DRAWN - Steffen	PASSED	REVISED -	
CHECKED - JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

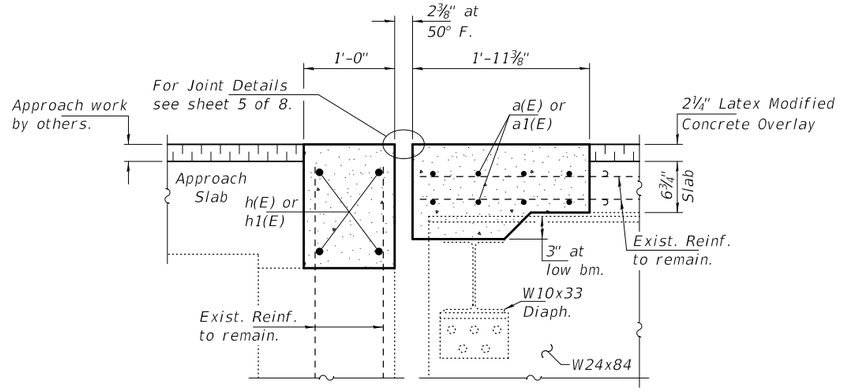
JOINT REMOVAL DETAILS
SN 008-0005
SHEET NO. 3 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	15
		CONTRACT NO. 64N25		
		ILLINOIS	FED. AID PROJECT	



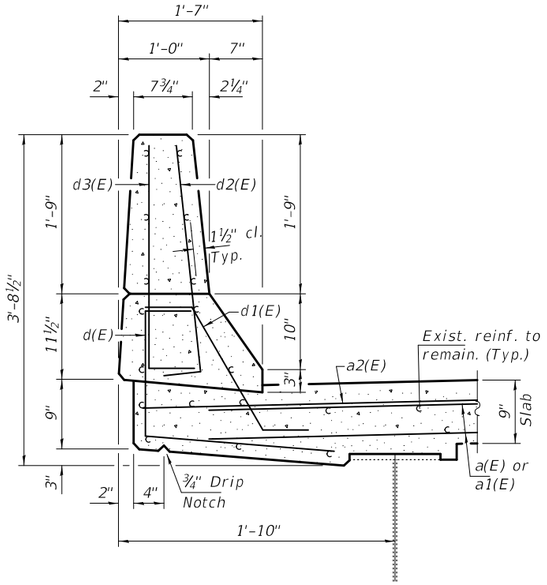
CONCRETE REPLACEMENT DETAILS

West Abutment shown, East Abutment similar by rotation.

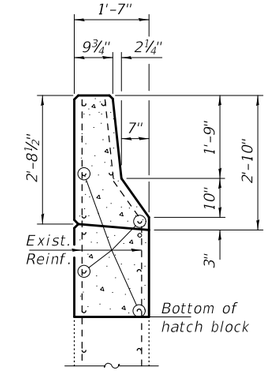


SECTION B-B

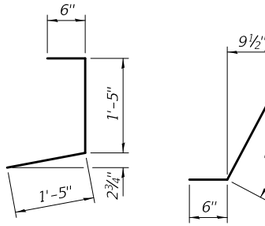
(Dims. at Rt. ∠'s)



SECTION THRU BRIDGE PARAPET

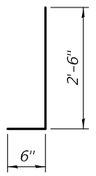


TYPICAL SECTION THRU APPROACH PARAPET



BAR d(E)

BAR d1(E)

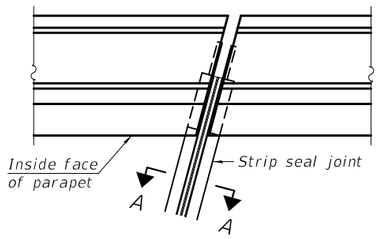


BARS d2(E) & d3(E)

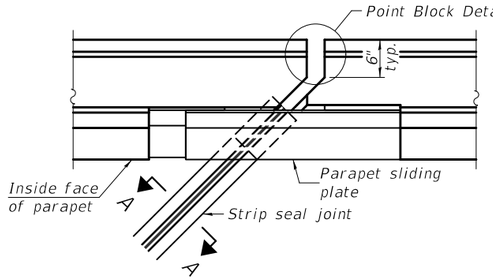
BILL OF MATERIAL
BOTH ABUTMENTS

Bar	No.	Size	Length	Shape
a(E)	16	#5	16'-6"	———
a1E)	16	#5	21'-0"	———
a2E)	12	#6	4'-0"	———
d(E)	12	#4	3'-4"	⌋
d1(E)	12	#5	2'-7"	⌐
d2(E)	12	#5	3'-0"	⌋
d3(E)	12	#4	3'-0"	⌋
h(E)	8	#6	17'-4"	———
h1E)	8	#6	21'-10"	———
Concrete Superstructure			Cu. Yd.	10.5
Bar Splicers			Each	24
Reinforcement Bars, Epoxy Coated			Pound	1290

DESIGNED - JSB	EXAMINED	ENGINEER OF STRUCTURAL SERVICES	DATE - JANUARY 29, 2019	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**JOINT REPLACEMENT DETAILS SN 008-0005**	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - CDK						17	D2 BDR 2019-1	CARROLL	20	16
DRAWN - Steffen	PASSED	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET NO. 4 OF 8 SHEETS			CONTRACT NO. 64N25		
CHECKED - JSB CDK			REVISED -				ILLINOIS FED. AID PROJECT			

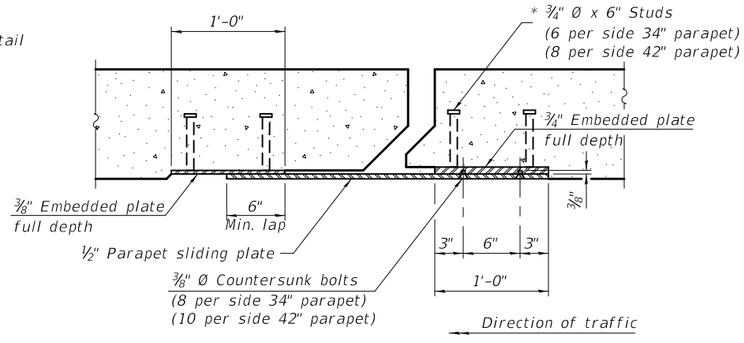


FOR SKEWS ≤ 30°

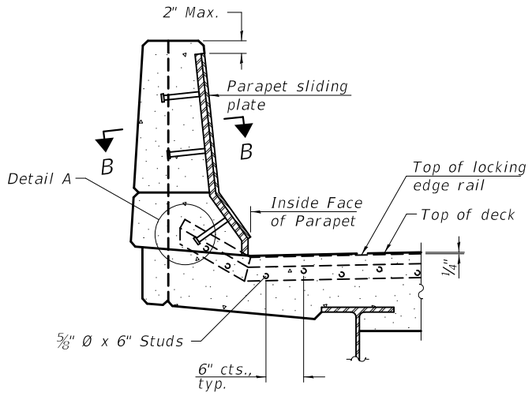


FOR SKEWS > 30°

PLAN AT PARAPET

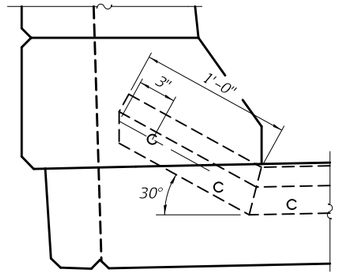


SECTION B-B

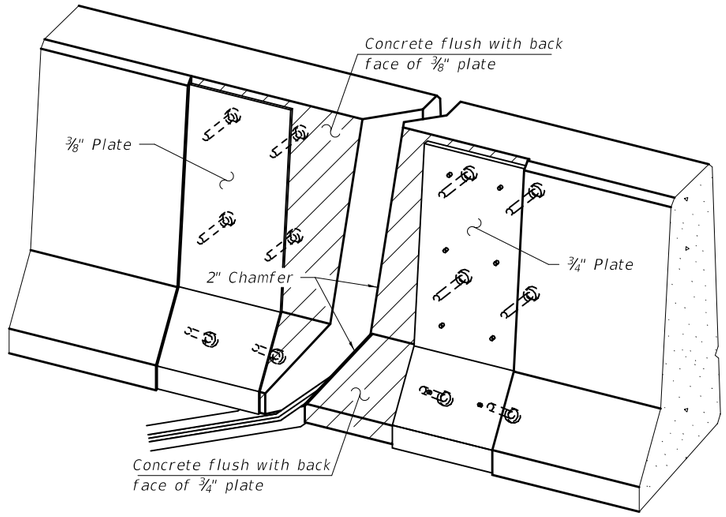


ELEVATION AT PARAPET

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



DETAIL A



TRIMETRIC VIEW

(Showing embedded plates only)

Notes:

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

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

The manufacturer's recommended installation methods shall be followed.

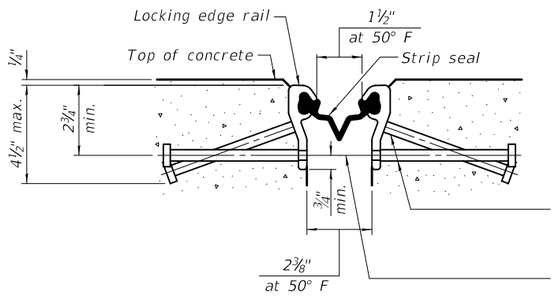
All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

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

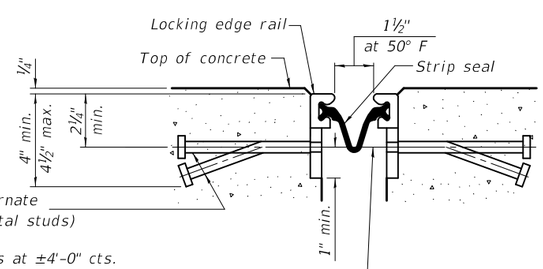
Cost of parapet sliding plates, embedded plates, and anchorage studs included with Preformed Joint Strip Seal.

34" F-shape barrier shown, 42" F-shape similar as noted.

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



SHOWING ROLLED RAIL JOINT



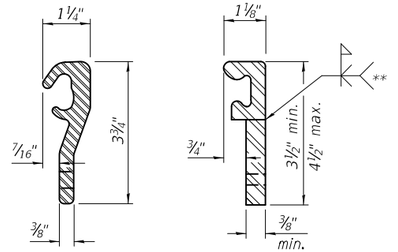
SHOWING WELDED RAIL JOINT

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

⅞" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

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

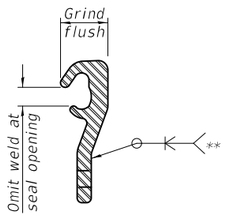


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

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



LOCKING EDGE RAIL SPLICE

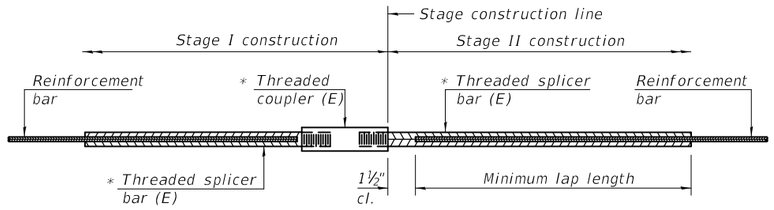
The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	76.5

EJ-SS 8-11-17

DESIGNED - JSB	EXAMINED	ENGINEER OF STRUCTURAL SERVICES	DATE - JANUARY 29, 2019	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PREFORMED JOINT STRIP SEAL DETAILS SN 008-0005	F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CHECKED - CDK						17	D2 BDR 2019-1	CARROLL	20	17
DRAWN - Steffen	PASSED	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		SHEET NO. 5 OF 8 SHEETS			CONTRACT NO. 64N25		
CHECKED - JSB CDK			REVISED -					ILLINOIS	FED. AID PROJECT	

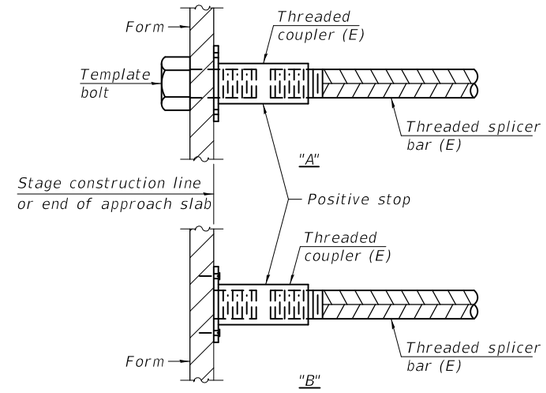


STANDARD BAR SPLICER ASSEMBLY

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

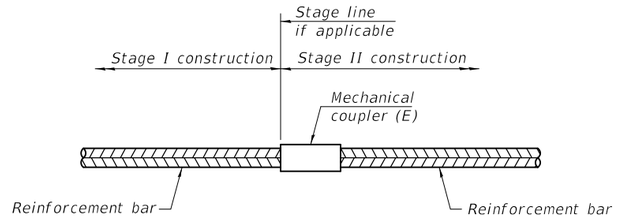
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	16	3'-6"
Abutment	#6	8	4'-0"



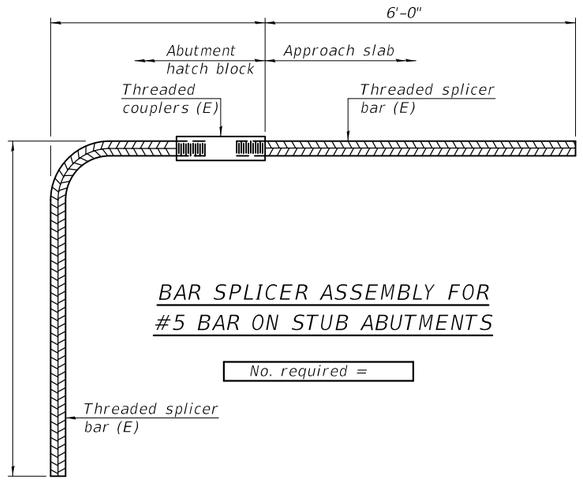
INSTALLATION AND SETTING METHODS

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



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required



NOTES

Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.

All reinforcement shall be lapped and tied to the splicer bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.

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

BSD-1 2-17-2017

DESIGNED - JSB	EXAMINED	DATE - JANUARY 29, 2019	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - CDK	ENGINEER OF STRUCTURAL SERVICES		
DRAWN - Steffen	PASSED	REVISED -	
CHECKED - JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
SN 008-0005
SHEET NO. 6 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	18
		CONTRACT NO. 64N25		
	ILLINOIS	FED. AID PROJECT		

Notes:

Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum

The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.

The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.

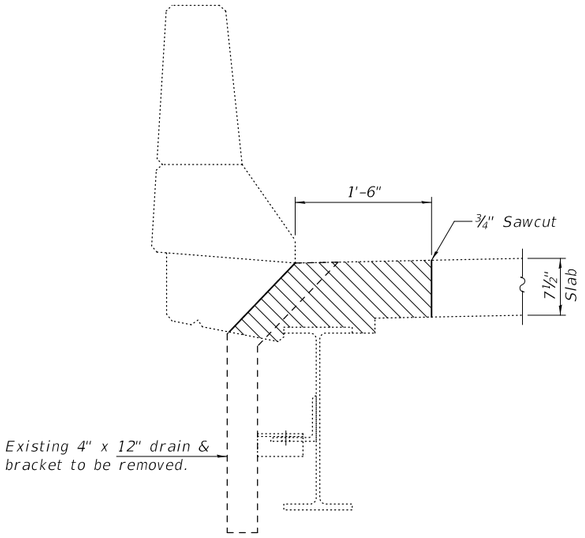
The clamping device shall be galvanized according to AASHTO M232. Cost of clamping device included with Floor Drains.

The Polyurethane Sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

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.

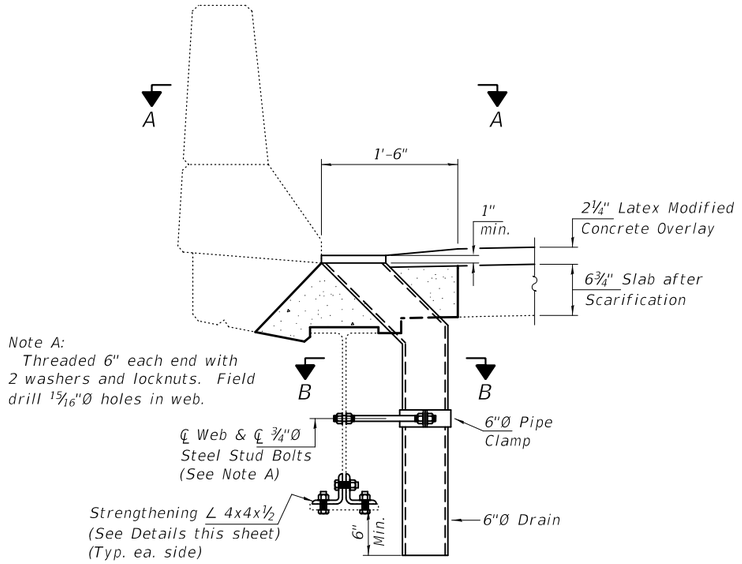
New Floor Drains shall be installed after scarification operations are completed for each stage. Full depth patches approximately 18" square shall be used to remove the existing floor drains and install proposed drains. Cost of existing floor drain removal shall be included with Deck Slab Repair (Full Depth, Type I) and will not be measured for payment separately.

The strengthening angles shall be paid for as Structural Steel Repair.



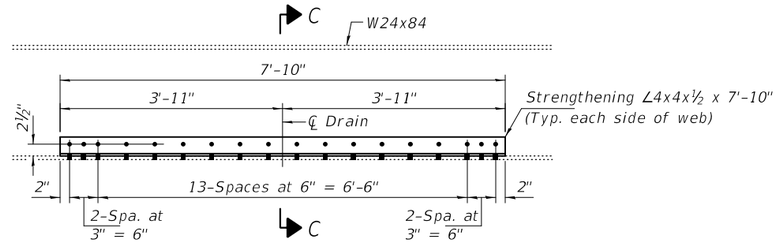
DRAIN REMOVAL DETAIL

(8-Locations)
Hatched areas indicate Deck Slab Repair (Full Depth, Type I).



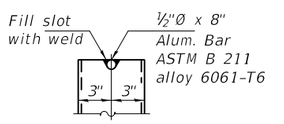
PROPOSED DRAIN DETAIL

(8-Locations)

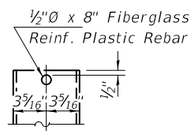


FLANGE STRENGTHENING ON SOUTH FASCIA BEAM

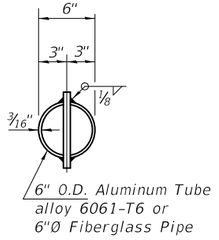
(4-Locations)



ALUMINUM TUBE

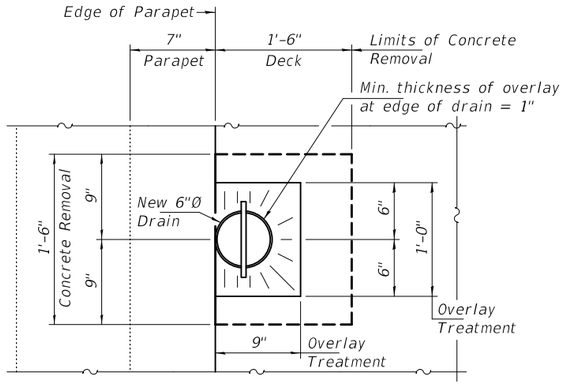


FIBERGLASS PIPE

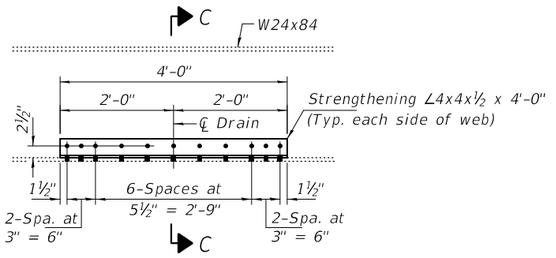


TOP PLAN

(Showing Aluminum Tube)

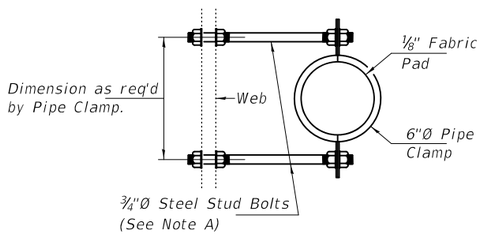


VIEW A-A

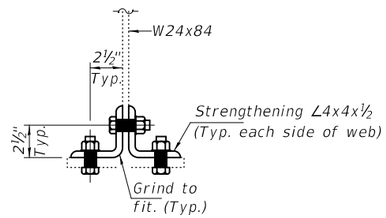


FLANGE STRENGTHENING ON NORTH FASCIA BEAM

(4-Locations)



SECTION B-B



SECTION C-C

DESIGNED - JSB	EXAMINED	DATE - JANUARY 29, 2019	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**FLOOR DRAIN REMOVAL & REPLACEMENT DETAILS SN 008-0005**
CHECKED - CDK	ENGINEER OF STRUCTURAL SERVICES			
DRAWN - Steffen	PASSED	REVISED -		SHEET NO. 7 OF 8 SHEETS
CHECKED - JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -		

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	19
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. 17	4 BR-4	CARROLL	26	13
STA. 191+37		TO STA. 197+18		
FED. ROAD DIST. NO.		ILLINOIS PROJECT		

Sh. # 6 of 13.

I_S and S_S are the moment of inertia and section modulus of the steel section used in computing fs (Total and Overload).

I_C and S_C are the moment of inertia and section modulus of the composite section used in computing fs (Total and Overload).

VR is the maximum Live Load + Impact shear range in span.

Z is the plastic section modulus used to determine the Fully Plastic Moments in the non-composite areas.

M_Ω (Applied Moment) = 1.3 [M_{DL} + M_Sℓ + $\frac{5}{3}$(M_{LL} + I)]

M_U is the Full Plastic Moment Capacity for Compact, Braced section.

fs (Overload) is the sum of the stresses due to M_{DL} + M_Sℓ + $\frac{5}{3}$(M_{LL} + I).

M_{DL} - Moment due to dead loads on non-composite section.

M_Sℓ - Moment due to dead loads on composite section.

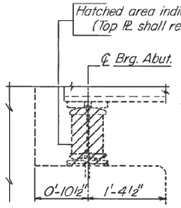
M_{LL} - Moment due to live loads on non-composite or composite section.

I - Live load impact.

The fully plastic moment capacity (M_U) is computed according to AASHTO 10.48.1 to 10.50.1.1.

INTERIOR GIRDER MOMENT TABLE

	04 Sp. 1 / 06 Sp. 3	Pier 1 & 2	05 Sp. 2
I_S (in⁴)	2,370	2,370	2,370
I_C (in⁴)	—	—	7,657
S_S (in³)	196	196	196
S_C (in³)	—	—	315
Z	224	224	—
M_{DL} (k-ft)	.845	.845	.845
M_{DL} (i k)	53.2	99.06	51.46
S_{DL} (k/in²)	.320	.320	.320
M_Sℓ (i k)	21.8	33.35	23.7
M_{LL} (i k)	162.4	122.1	212.0
M. imp. (i k)	48.8	36.6	63.6
$\frac{5}{3}$ (M_{LL} + imp.) (i k)	352.0	264.5	459.3
M_Ω	555.0	516.0	694.7
M_U	616.0	616.0	1,260
fs ℓ non-comp. (k.s.i.)	4.6	8.1	3.2
fs ℓ comp. (k.s.i.)	—	—	1.0
fs $\frac{5}{3}$ (I_{LL} + I)	21.6	16.2	17.5
fs (Overland) (k.s.i.)	26.2	24.3	21.7
VR (k)	—	—	39.8



JACK AND REMOVE EXISTING BEARINGS

(Dimensions are at Rt. ∠'s.)
(Typ. for all Abutments.)

Notes: Jacking, cribbing and bearing replacement shall occur under Stage Construction with a maximum lift of 1".

The maximum dead load reaction with deck removed (per bearing) at each abutment is 1.1 kips.

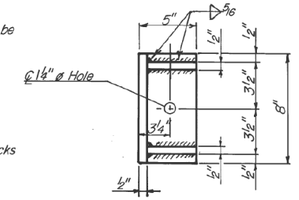
Bearing removal and replacement shall be completed before new deck is poured.

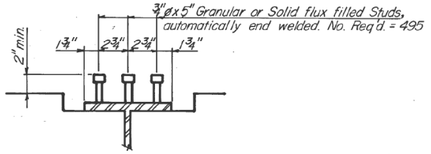
INTERIOR BEAM REACTION

	Abuts.	Pier # 1 / Pier # 2
R ℓ (k)	13.3	44.0
R I_{LL} (k)	33.1	45.2
Imp (k)	9.9	13.6
R (Total)	56.3	102.8

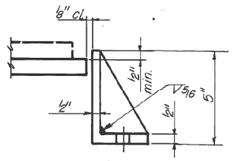
JACK AND REMOVE EXISTING BEARING PROCEDURE

1. The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings. Dead Load = 1.1 k at each beam without concrete deck.
2. During each stage of construction, jacking and removing existing bearings shall be done after deck removal is completed and before the new deck is poured.
3. Jacking shall be limited to a maximum of 1" lift.
4. The existing rockers and bottom plates shall be removed, leaving the existing anchor bolts and top plate intact. The bottom of the existing top plate shall be cleaned and painted as required and as specified for structural steel prior to placing the new elastomeric bearings.
5. The new elastomeric bearings and steel extensions shall be placed and the jacks shall be lowered.



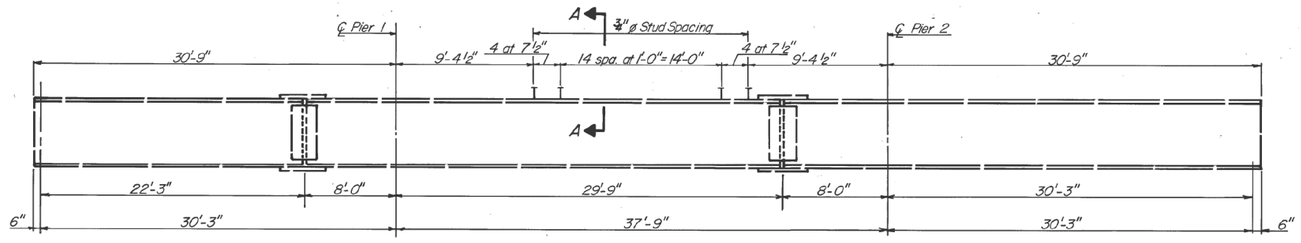


SECTION A-A



SIDE RETAINER

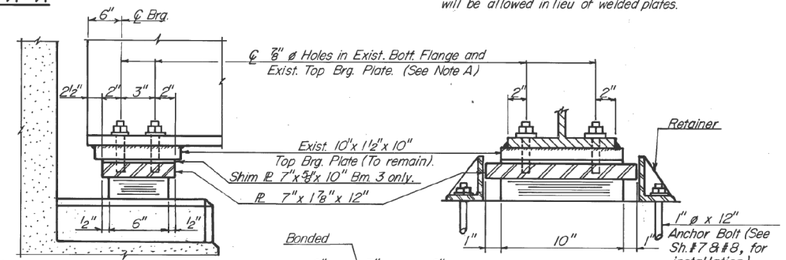
20 Req'd.
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

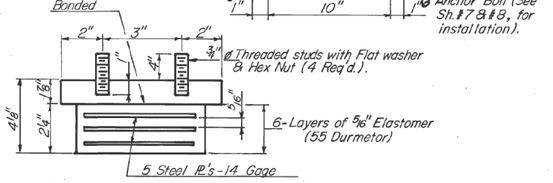


ELEVATION-EXISTING BEAMS

Existing Beams W 24 x 84

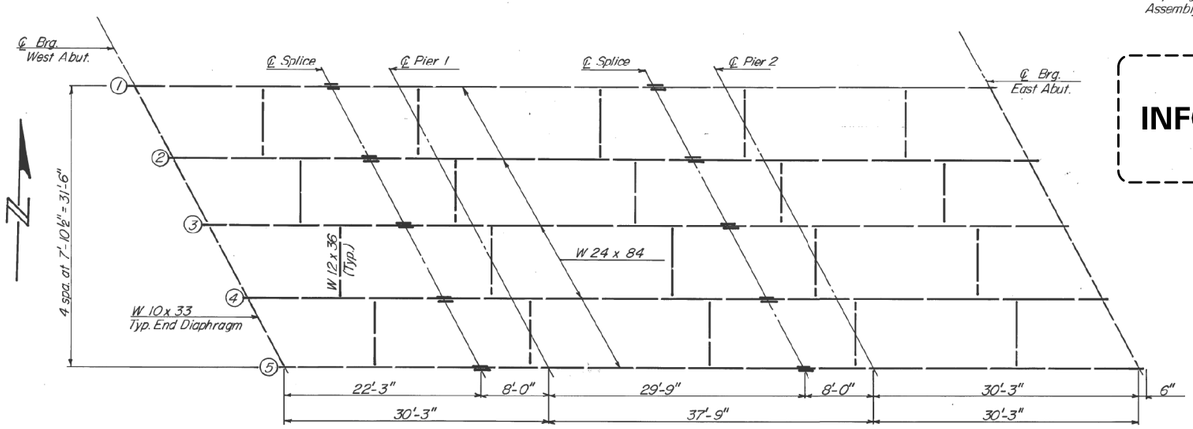
Note A:
Drilling of holes in flange and top plate of existing beam may require some diaphragms with connections to be temporarily removed and replaced after installation of new bearing. Cost of drilling holes, removing and replacing diaphragms shall be incidental to "Elastromeric Bearing Assembly - Type I".





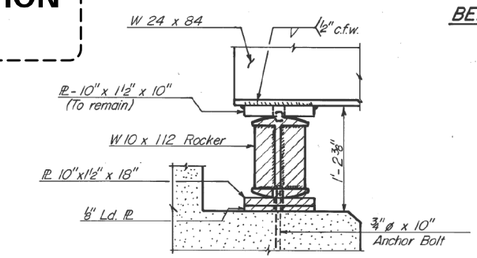
BEARING DETAILS AT ABUTMENTS

10 Req'd.



LAYOUT EXISTING STEEL

FOR INFORMATION ONLY



EXISTING BEARINGS AT ABUTMENTS

To be removed except as noted (Cost incidental to Elastomeric Bearing Assembly (Type I)).

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Elastomeric Bearing Assembly - Type I	Each	10
Jack and Remove Existing Bearings	Each	10

STRUCTURAL STEEL BEARING DETAILS

FA ROUTE 17
SECTION 4BR-4
US RTE. 52 & IL RTE. 64 over
STRADDLE CREEK
STA. 194+50
CARROLL COUNTY
STRUCTURE NO. 0008-0005

Des. L.J.W Ck. CDK Dr. JSB
SANDOVAL ENGINEERS, INC.

DESIGNED - JSB	EXAMINED	DATE - JANUARY 29, 2019	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
CHECKED - CDK	ENGINEER OF STRUCTURAL SERVICES		
DRAWN - Steffen	PASSED	REVISED -	STRUCTURAL STEEL - FOR INFORMATION ONLY SN 008-0005
CHECKED - JSB CDK	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -	SHEET NO. 8 OF 8 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
17	D2 BDR 2019-1	CARROLL	20	20
		CONTRACT NO. 64N25		
	ILLINOIS FED. AID PROJECT			