

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

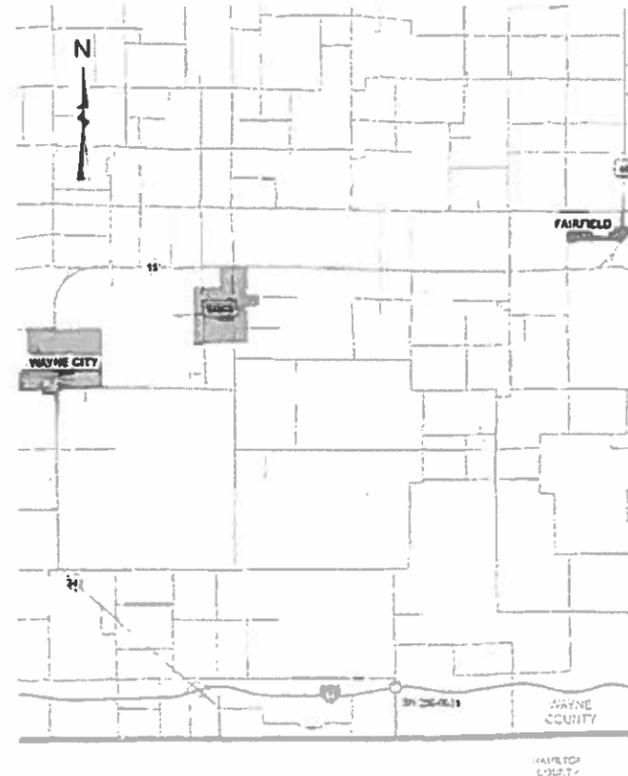
F.A.I. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	1
		ILLINOIS	CONTRACT NO 74896	

FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED
HIGHWAY PLANS

FAI ROUTE 64 (I-64)
SECTION D7 BRIDGE REPAIRS 2019-2
PROJECT
BRIDGE BEAM REPAIR
WAYNE COUNTY

C-97-025-19



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 EXCAVATORS
1-800-882-0123
OR 811

PROJECT ENGINEER: TOM RONAN
PROJECT MANAGER: RYAN WEI
PHONE: (217)-342-8320
CONTRACT NO. 74896

GROSS LENGTH = x.xx FT. = x.xxx MILE
NET LENGTH = x.xx FT. = x.xxx MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED *Foremaney 19 20 19*
Jeff M Smith 16
REGIONAL ENGINEER

May 10 2019
cc E.A. etc
ENGINEER OF DESIGN AND ENVIRONMENT

May 10 2019
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

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OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	ITEM
1	COVER SHEET
2	INDEX OF SHEETS, GENERAL NOTES, & HIGHWAY STANDARDS
3-4	SUMMARY OF QUANTITIES
5	STAGE CONSTRUCTION DETAILS
6-15	TRAFFIC CONTROL PLAN SHEETS
16-17	DETOUR SHEETS
18-24	STRUCTURE PLAN SHEETS AND DETAILS

GENERAL NOTES

THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS: "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED APRIL 1, 2016; AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL.

THIS PROJECT IS LOCATED OVER I-64 3.5 MILES EAST OF THE RT. 242 INTERCHANGE IN WAYNE COUNTY. THIS WORK INCLUDES THE FOLLOWING REPAIRS TO STRUCTURE 096-0031 CARRYING COUNTY RD 1200E OVER I-64: REMOVAL AND REPLACEMENT OF THE BRIDGE DECK AND PARAPET WALL OVER THE DAMAGED BEAM, REMOVAL AND REPLACEMENT OF THE DAMAGED PPC I-BEAM, TRAFFIC CONTROL, AND ALL OTHER WORK NECESSARY TO COMPLETE THIS PROJECT.

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

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

STD. NO.	DESCRIPTION
000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
643001-02	SAND MODULE IMPACT ATTENUATORS
701101-05	OFF-ROAD OPERATIONS, MULTI-LANE, 15' AWAY TO EDGE OF PAVEMENT
701106-02	OFF-ROAD OPERATIONS, MULTI-LANE, 15' MINIMUM AWAY FROM PAVEMENT EDGE
701400-09	APPROACH TO LANE CLOSURE, FREEWAY / EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY / EXPRESSWAY
701402-12	LANE CLOSURE, FREEWAY / EXPRESSWAY, WITH BARRIER
701406-12	LANE CLOSURE, FREEWAY / EXPRESSWAY, DAY OPERATIONS ONLY
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER

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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INDEX, STANDARDS
& GENERAL NOTES**

SCALE: SHEET 1 OF 1 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	2
CONTRACT NO. 74896				
		ILLINOIS	FED. AID PROJECT	

100%
STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0013		
50102400	CONCRETE REMOVAL	CU YD	18.5	18.5		
50157300	PROTECTIVE SHIELD	SO YD	84	84		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	18.5	18.5		
50300260	BRIDGE DECK GROOVING	SO YD	38.4	38.4		
50300300	PROTECTIVE COAT	SO YD	77.5	77.5		
50401005	FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48 IN.	FOOT	81	81		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	60	60		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	3650	3650		
50800530	MECHANICAL SPLICERS	EACH	171	171		
52000050	PREFORMED JOINT SEAL 4"	FOOT	30	30		
52100520	ANCHOR BOLTS, 1"	EACH	2	2		
67000500	ENGINEER'S FIELD OFFICE, TYPE B	CAL MO	3	3		
67100100	MOBILIZATION	L SUM	1	1		

100%
STATE

SUMMARY OF QUANTITIES			TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
CODE NO	ITEM	UNIT		0013		
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD	EACH	1	1		
	701402					
70100800	TRAFFIC CONTROL AND PROTECTION, STANDARD	L SUM	1	1		
	701401					
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	14	14		
70200100	NIGHTTIME WORK ZONE LIGHTING	L SUM	1	1		
70400100	TEMPORARY CONCRETE BARRIER	FOOT	225	225		
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	175	175		
70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1		
70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1		
XX009289	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR	L SUM	1	1		
	21					
X5210015	ELASTOMERIC BEARING ASSEMBLY, TYPE I (SPECIAL)	EACH	1	1		

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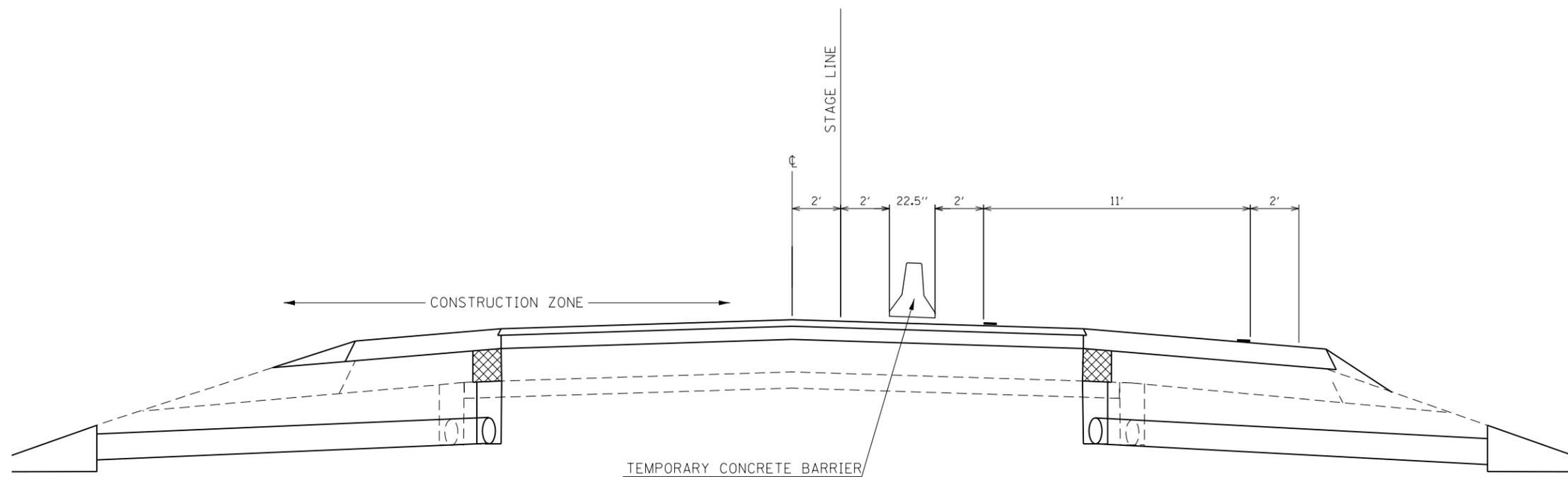
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF
QUANTITIES

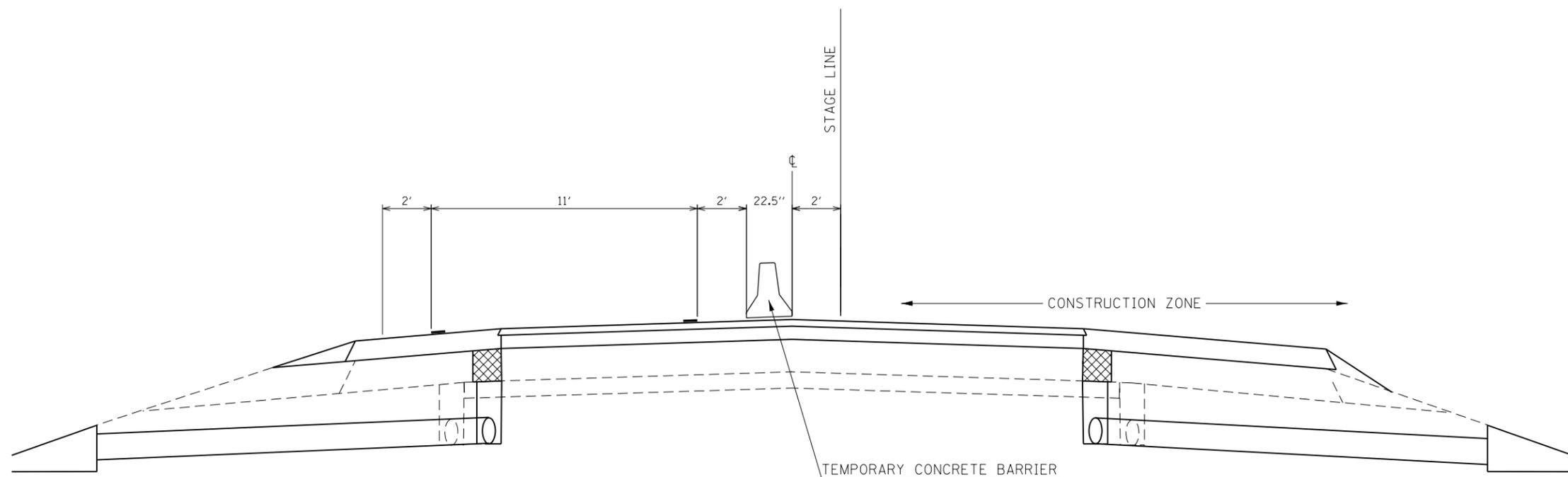
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72	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	3
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				

STAGE I CONSTRUCTION DETAILS



STAGE II CONSTRUCTION DETAILS



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE CONSTRUCTION DETAILS

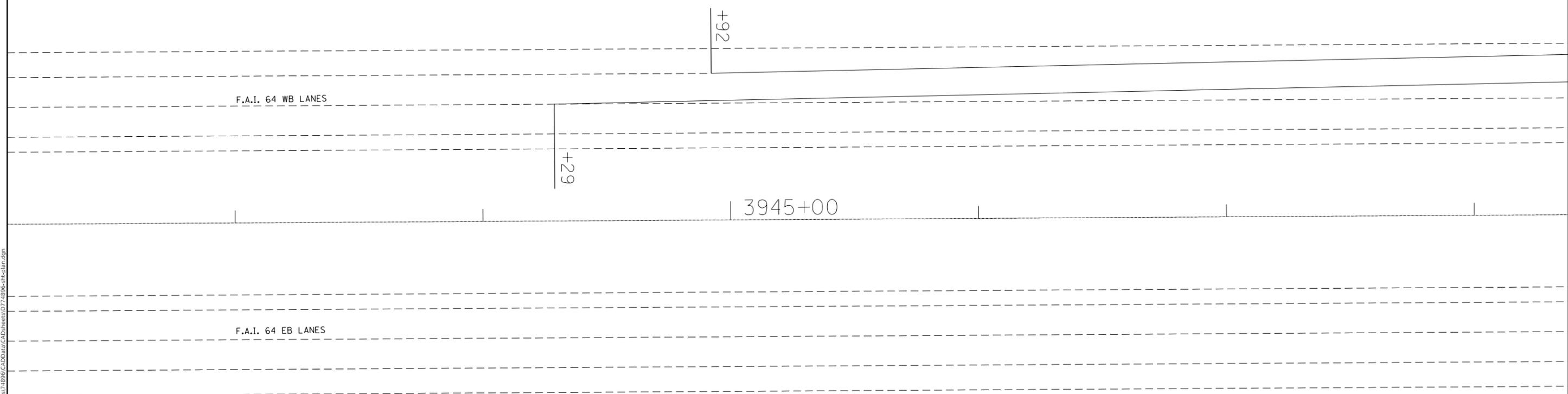
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	5
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

- DIRECTIONAL INDICATOR BARRICADE
W/STEADY BURN MONODIRECTIONAL
LIGHT
- TYPE II BARRICADE DRUM OR
VERTICAL BARRICADE W/STEADY
BURN MONODIRECTIONAL LIGHT
- IMPACT ATTENUATORS, TEMPORARY
(NON-REDIRECTIVE) TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- CONSTRUCTION ZONE



NOTE: SEE CORRESPONDING TRAFFIC CONTROL STANDARDS FOR LAYOUT OF TRAFFIC CONTROL DEVICES NOT SHOWN ON THIS DETAIL. ALL PAVEMENT MARKING SHOWN ON THIS DETAIL, INCLUDING BLACKOUT TAPE, AS WELL AS THE CORRESPONDING TRAFFIC CONTROL STANDARD SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD BEING UTILIZED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. REMOVAL OF THESE PAVEMENT MARKINGS SHALL BE INCLUDED OIN THE COST OF TRAFFIC CONTROL STANDARD AS WELL.

LENSES ON THE REFLECTIVE PAVEMENT MARKERS IN THE TAPER AREAS SHALL BE REMOVED, STORED AND REINSTALLED UPON THE REMOVAL OF THE LANE CLOSURE. ANY BROKEN OR MISSING LENSES SHALL BE REPLACED. THIS WORK SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD.

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STATE OF ILLINOIS
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STAGE I TRAFFIC CONTROL

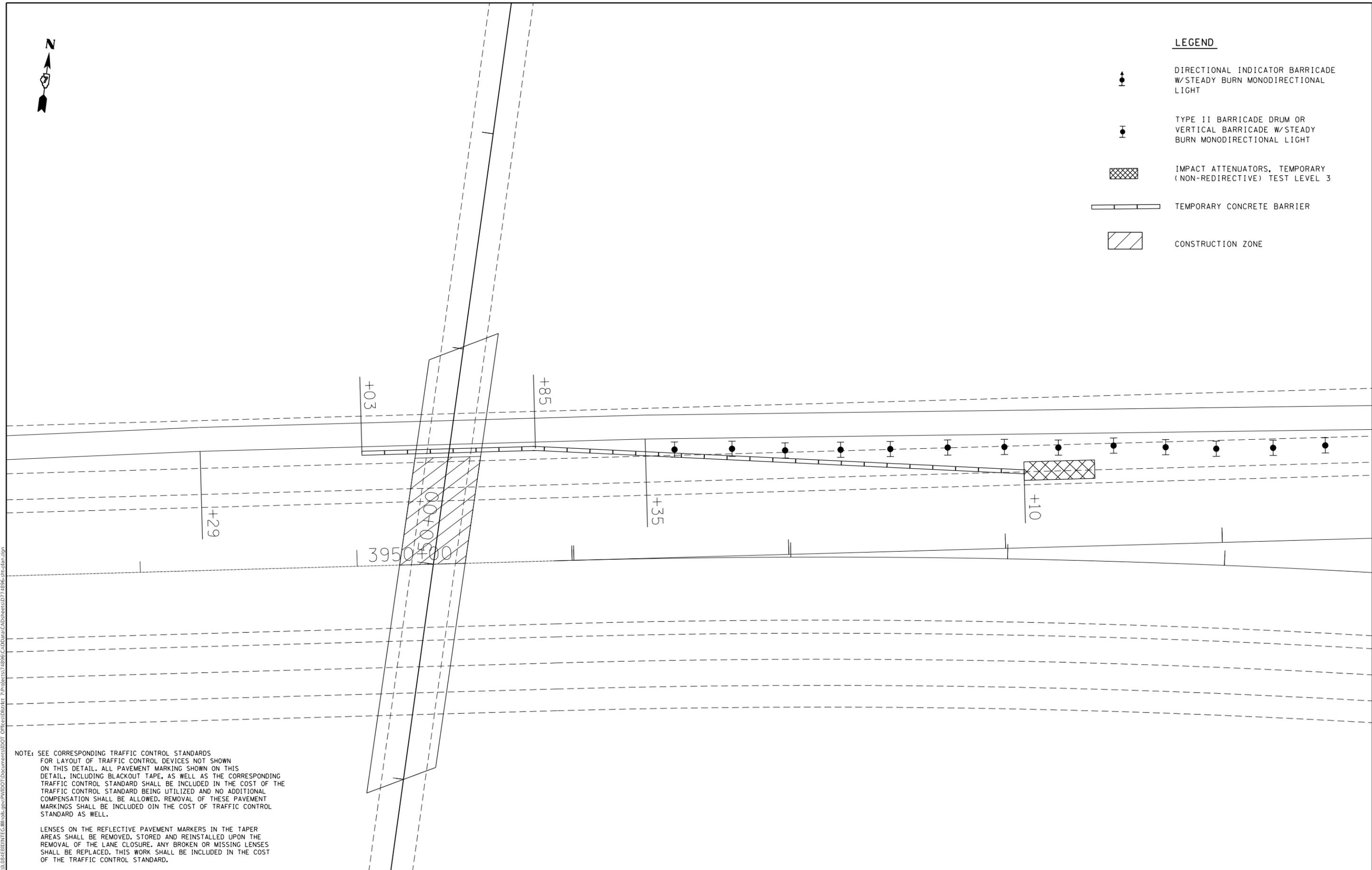
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64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	6
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

- ↑
DIRECTIONAL INDICATOR BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT
- ↑
TYPE II BARRICADE DRUM OR VERTICAL BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT
- IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- CONSTRUCTION ZONE



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE I TRAFFIC CONTROL			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

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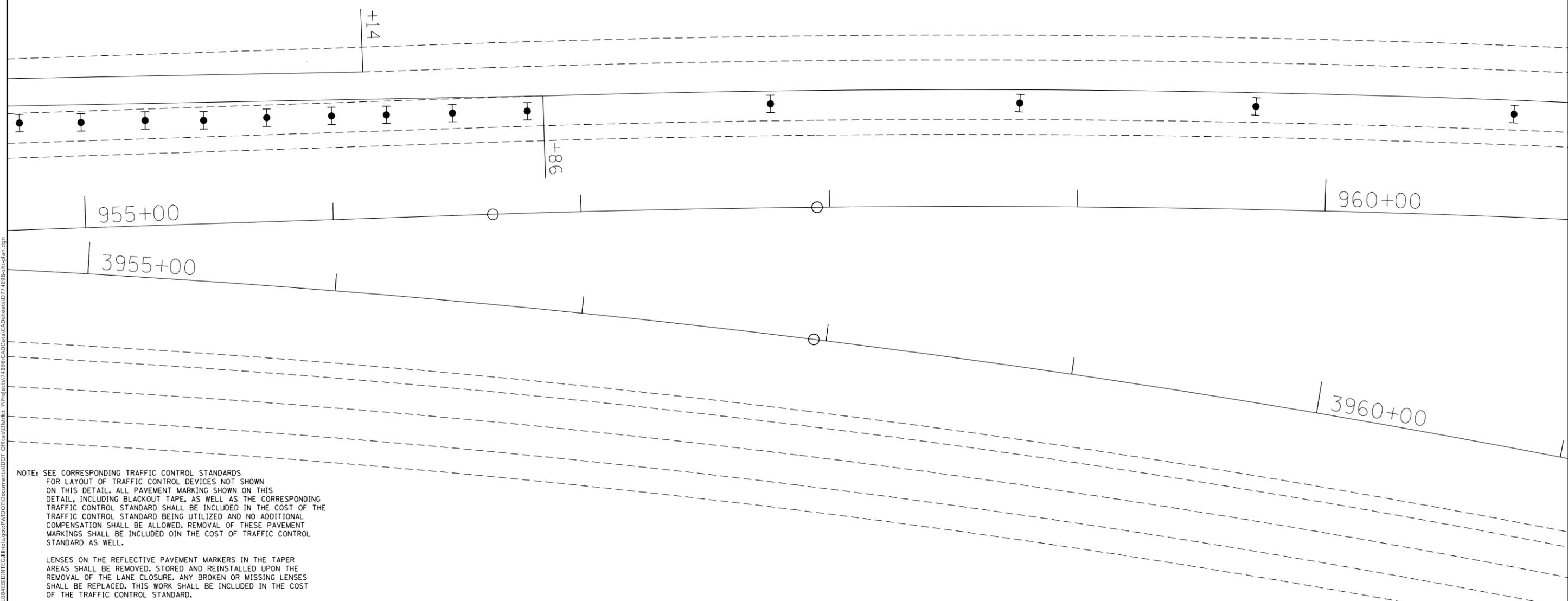
DIRECTIONAL INDICATOR BARRICADE
 W/STEADY BURN MONODIRECTIONAL
 LIGHT
- 

TYPE II BARRICADE DRUM OR
 VERTICAL BARRICADE W/STEADY
 BURN MONODIRECTIONAL LIGHT
- 

IMPACT ATTENUATORS, TEMPORARY
 (NON-REDIRECTIVE) TEST LEVEL 3
- 

TEMPORARY CONCRETE BARRIER
- 

CONSTRUCTION ZONE



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STATE OF ILLINOIS
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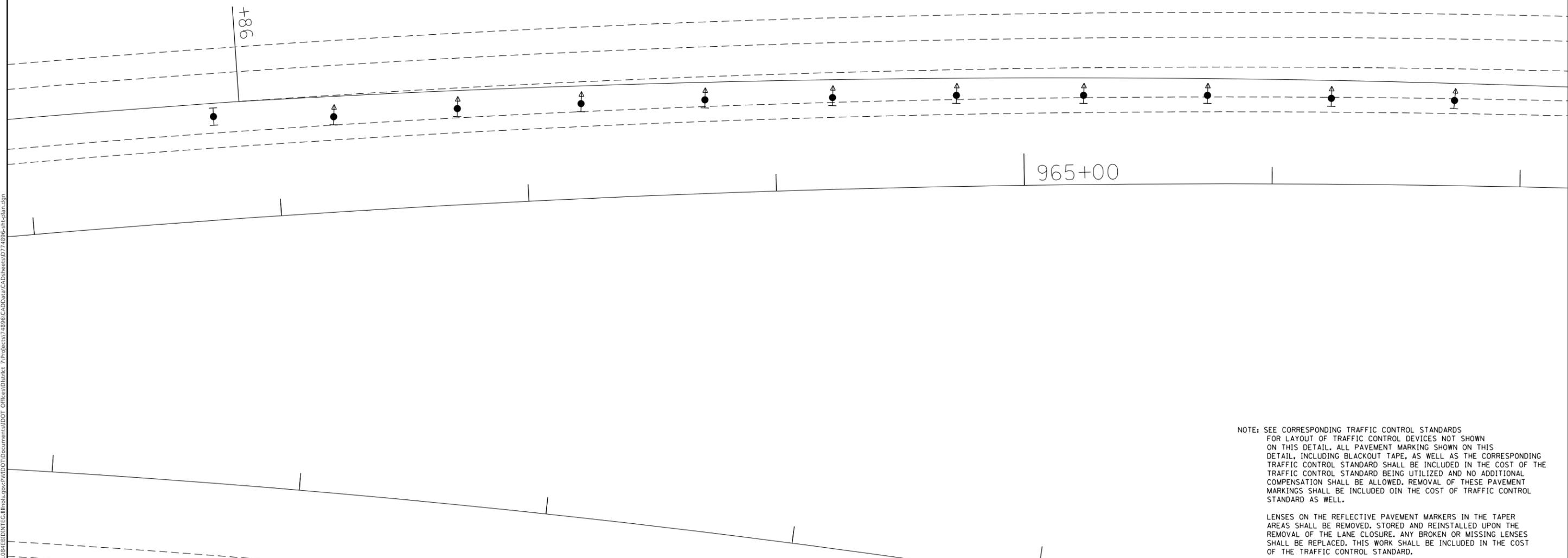
STAGE I TRAFFIC CONTROL	
SCALE:	SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	8
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

- DIRECTIONAL INDICATOR BARRICADE
W/STEADY BURN MONODIRECTIONAL
LIGHT
- TYPE II BARRICADE DRUM OR
VERTICAL BARRICADE W/STEADY
BURN MONODIRECTIONAL LIGHT
- IMPACT ATTENUATORS, TEMPORARY
(NON-REDIRECTIVE) TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- CONSTRUCTION ZONE



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**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE I TRAFFIC CONTROL

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	9
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

- ▲

DIRECTIONAL INDICATOR BARRICADE
W/STEADY BURN MONODIRECTIONAL
LIGHT
- ⊥

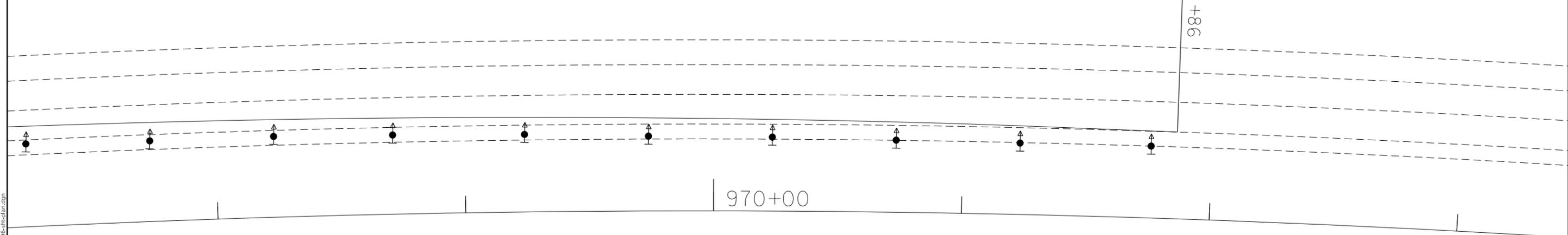
TYPE II BARRICADE DRUM OR
VERTICAL BARRICADE W/STEADY
BURN MONODIRECTIONAL LIGHT
- ▨

IMPACT ATTENUATORS, TEMPORARY
(NON-REDIRECTIVE) TEST LEVEL 3
- ▬

TEMPORARY CONCRETE BARRIER
- ▧

CONSTRUCTION ZONE

← LAYOUT TRAFFIC CONTROL AND PROTECTION STANDARD 701402
LAYOUT TRAFFIC CONTROL AND PROTECTION STANDARD 701400 →



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STAGE I TRAFFIC CONTROL

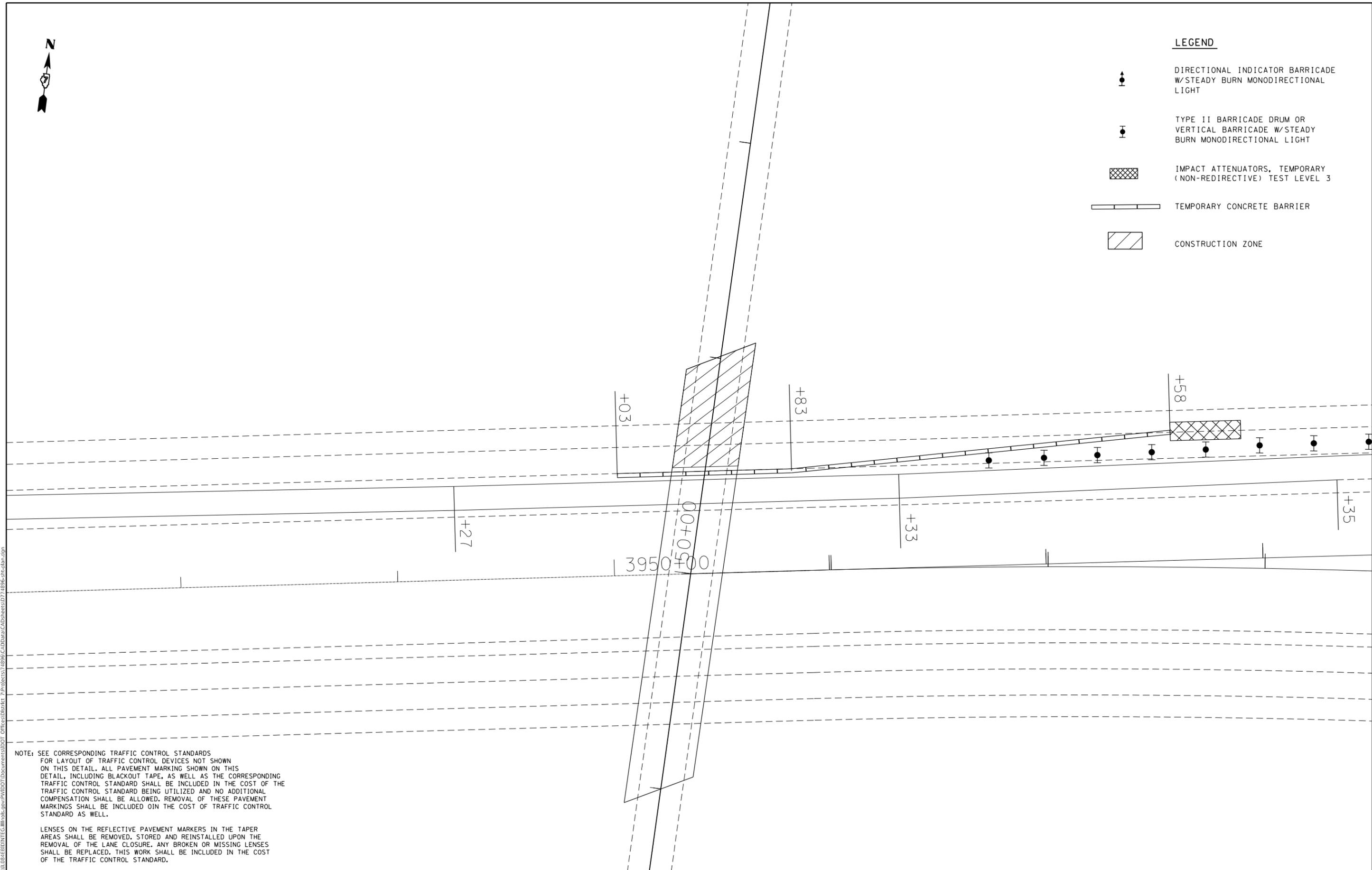
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64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	10
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

- 
 DIRECTIONAL INDICATOR BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT
- 
 TYPE II BARRICADE DRUM OR VERTICAL BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT
- 
 IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) TEST LEVEL 3
- 
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STAGE II TRAFFIC CONTROL

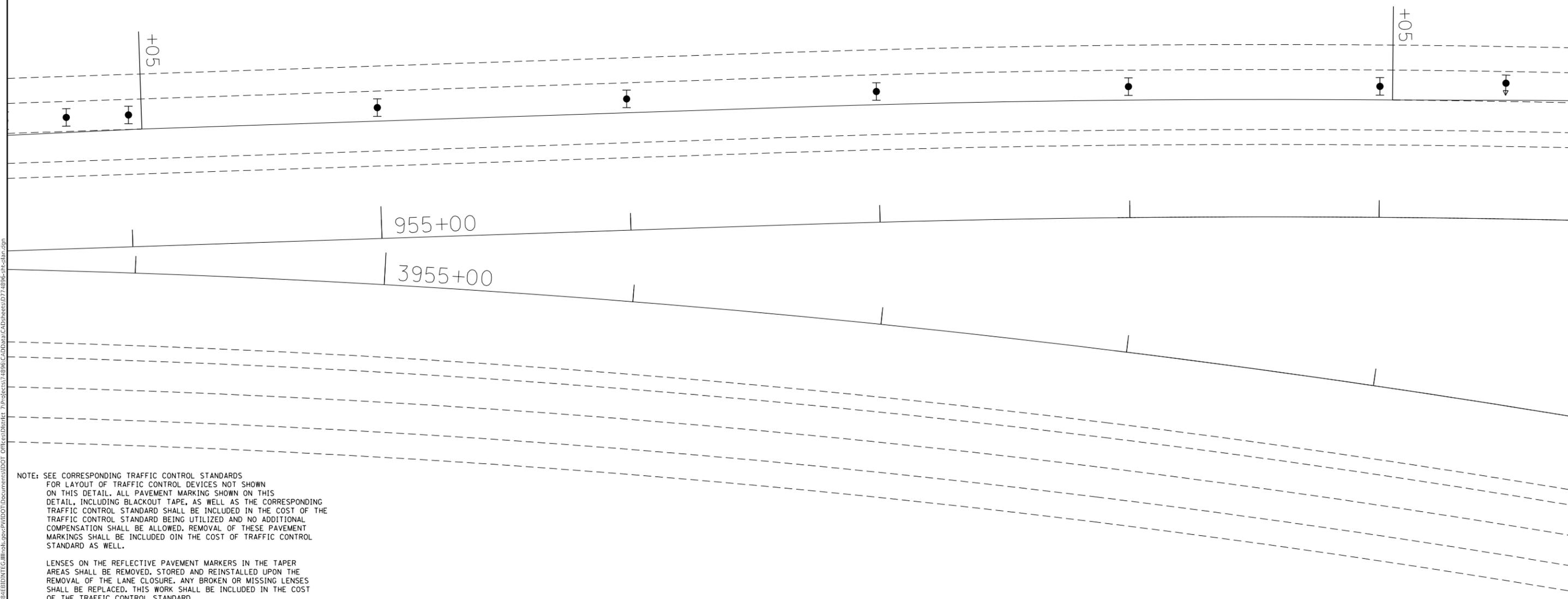
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64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	12
			CONTRACT NO. 74896	
		ILLINOIS FED. AID PROJECT		



LEGEND

- DIRECTIONAL INDICATOR BARRICADE
 W/STEADY BURN MONODIRECTIONAL
 LIGHT
- TYPE II BARRICADE DRUM OR
 VERTICAL BARRICADE W/STEADY
 BURN MONODIRECTIONAL LIGHT
- IMPACT ATTENUATORS, TEMPORARY
 (NON-REDIRECTIVE) TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- CONSTRUCTION ZONE



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DEPARTMENT OF TRANSPORTATION**

STAGE II TRAFFIC CONTROL	
SCALE:	SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	13
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



LEGEND

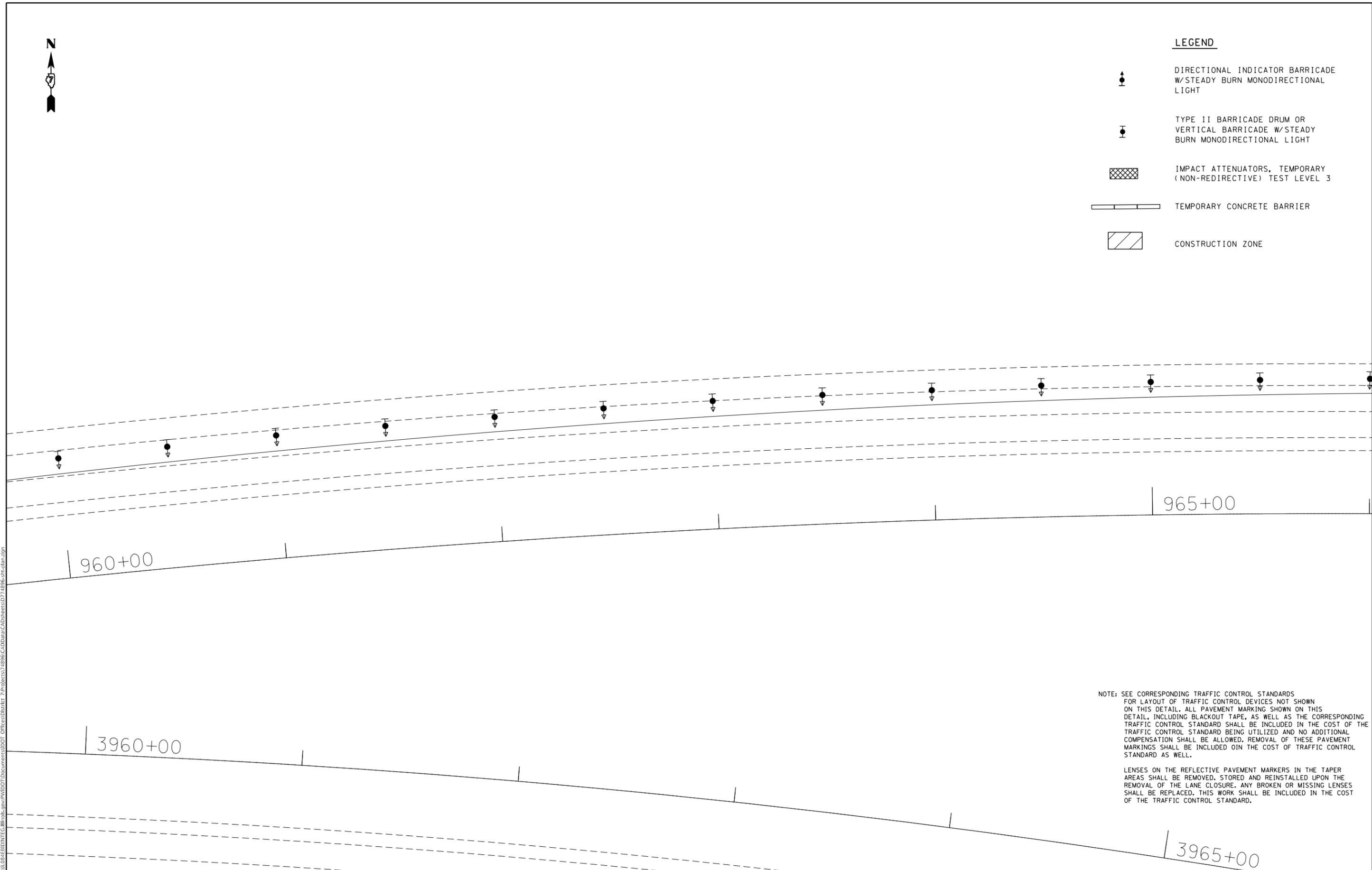
 DIRECTIONAL INDICATOR BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT

 TYPE II BARRICADE DRUM OR VERTICAL BARRICADE W/STEADY BURN MONODIRECTIONAL LIGHT

 IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE) TEST LEVEL 3

 TEMPORARY CONCRETE BARRIER

 CONSTRUCTION ZONE



NOTE: SEE CORRESPONDING TRAFFIC CONTROL STANDARDS FOR LAYOUT OF TRAFFIC CONTROL DEVICES NOT SHOWN ON THIS DETAIL. ALL PAVEMENT MARKING SHOWN ON THIS DETAIL, INCLUDING BLACKOUT TAPE, AS WELL AS THE CORRESPONDING TRAFFIC CONTROL STANDARD SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD BEING UTILIZED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. REMOVAL OF THESE PAVEMENT MARKINGS SHALL BE INCLUDED OIN THE COST OF TRAFFIC CONTROL STANDARD AS WELL.

LENSES ON THE REFLECTIVE PAVEMENT MARKERS IN THE TAPER AREAS SHALL BE REMOVED, STORED AND REINSTALLED UPON THE REMOVAL OF THE LANE CLOSURE. ANY BROKEN OR MISSING LENSES SHALL BE REPLACED. THIS WORK SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD.

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	DRAWN -	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 2/19/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE II TRAFFIC CONTROL

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	14
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74896	



LEGEND

- DIRECTIONAL INDICATOR BARRICADE
W/STEADY BURN MONODIRECTIONAL
LIGHT
- TYPE II BARRICADE DRUM OR
VERTICAL BARRICADE W/STEADY
BURN MONODIRECTIONAL LIGHT
- IMPACT ATTENUATORS, TEMPORARY
(NON-REDIRECTIVE) TEST LEVEL 3
- TEMPORARY CONCRETE BARRIER
- CONSTRUCTION ZONE

← LAYOUT TRAFFIC CONTROL AND PROTECTION STANDARD 701402 | LAYOUT TRAFFIC CONTROL AND PROTECTION STANDARD 701400 →

+05

970+00

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NOTE: SEE CORRESPONDING TRAFFIC CONTROL STANDARDS FOR LAYOUT OF TRAFFIC CONTROL DEVICES NOT SHOWN ON THIS DETAIL. ALL PAVEMENT MARKING SHOWN ON THIS DETAIL, INCLUDING BLACKOUT TAPE, AS WELL AS THE CORRESPONDING TRAFFIC CONTROL STANDARD SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD BEING UTILIZED AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED. REMOVAL OF THESE PAVEMENT MARKINGS SHALL BE INCLUDED OIN THE COST OF TRAFFIC CONTROL STANDARD AS WELL.

LENSES ON THE REFLECTIVE PAVEMENT MARKERS IN THE TAPER AREAS SHALL BE REMOVED, STORED AND REINSTALLED UPON THE REMOVAL OF THE LANE CLOSURE. ANY BROKEN OR MISSING LENSES SHALL BE REPLACED. THIS WORK SHALL BE INCLUDED IN THE COST OF THE TRAFFIC CONTROL STANDARD.

USER NAME = steffenmk	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 40,0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 2/19/2019	DATE -	REVISED -	

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

STAGE II TRAFFIC CONTROL

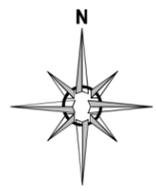
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F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	15
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				

SIGN LEGEND

www.invarion.com

 M1-1-24	 M4-8-2412	 M1-6R(O)-2115	 M5-1L(O)-3018	 M6-3(O)-2115
 M3-4-2412	 M4-8a-3024	 M1-6L(O)-2115	 M6-2R(O)-3018	



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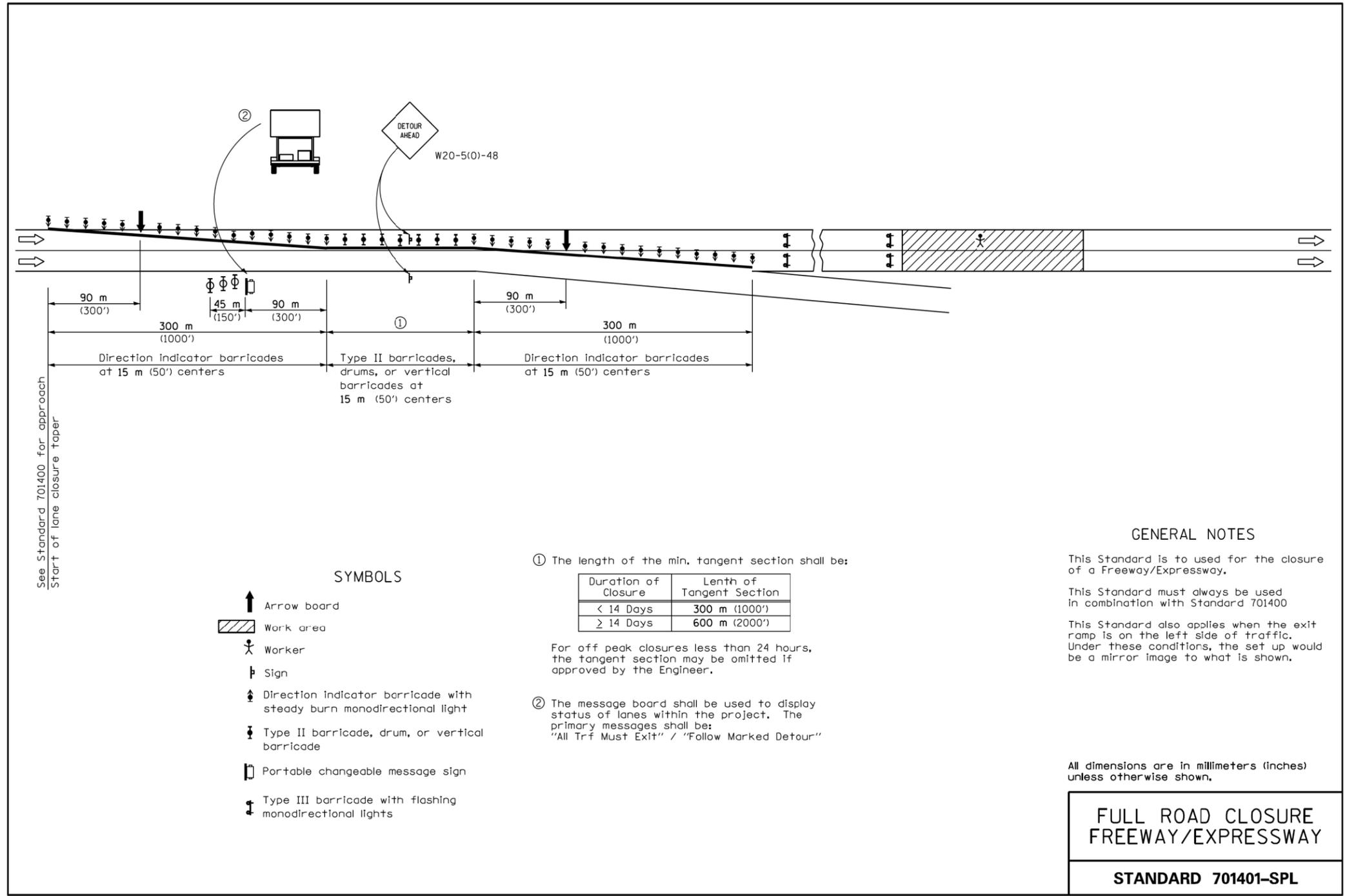
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PLOT DATE = 2/19/2019	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DETOUR SHEET

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-1	WAYNE	24	16
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



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USER NAME = steffemk	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED -	REVISED -
PLOT DATE = 2/19/2019	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

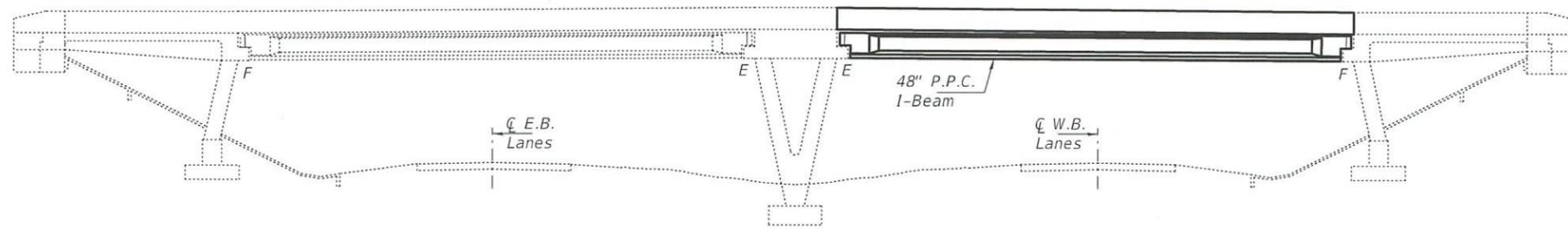
DETOUR SHEET

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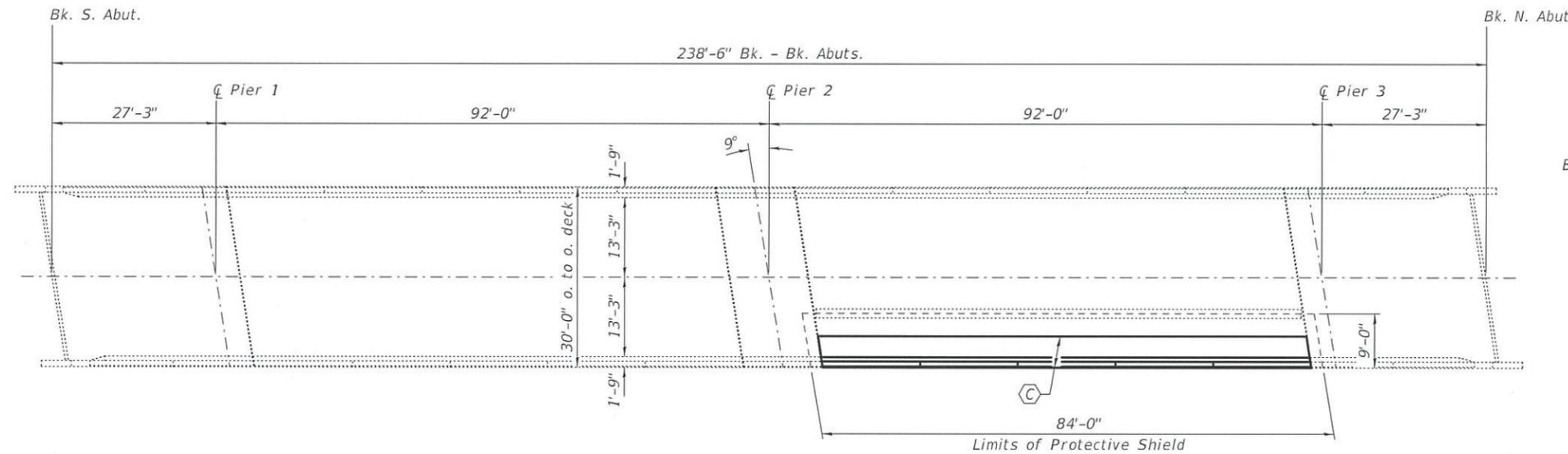
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64	D7 BRIDGE REPAIRS 2019-1	WAYNE	24	17
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74896	

GENERAL NOTES

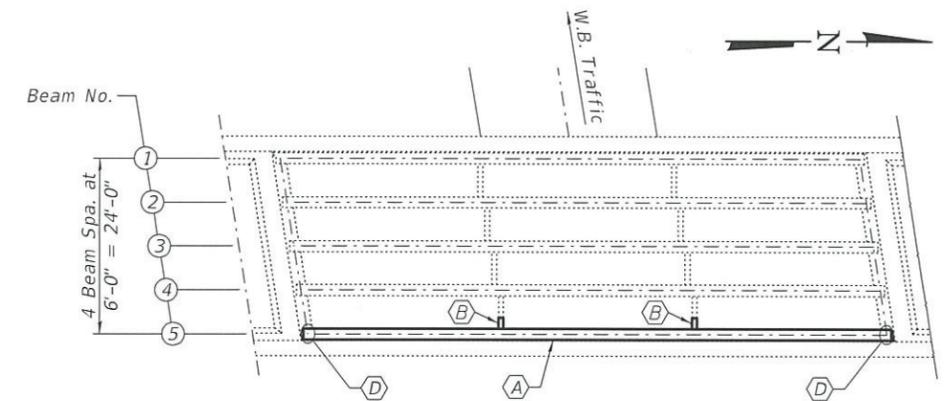
All structural steel shall conform to AASHTO Classification M-270 Gr. 36, unless otherwise noted.
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make 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.
 Joint plates and attached bars shall be shop painted with the inorganic zinc rich primer. No field paint required.
 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 Contractor shall use extreme care during concrete removal so as not to damage the PPC I-Beams.
 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.
 The existing aluminum railing shall be removed, stored, and reinstalled in the areas of construction.



ELEVATION



PLAN



PARTIAL FRAMING PLAN

- (A) - Remove & Replace P.P.C. I-Beam
- (B) - Remove & Replace Diaphragm
- (C) - Deck Removal & Replacment
- (D) - Remove & Replace Bearing

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi (Existing)
 $f'_c = 4,000$ psi (New)
 $f_y = 60,000$ psi (Reinf.)

EXISTING PRESTRESS UNITS

$f'_c = 5,000$ psi
 $f'_ci = 4,000$ psi
 $f'_s = 248,000$ psi ($7/16$ " \emptyset Stress relieved strands)
 $f'_si = 173,600$ psi ($7/16$ " \emptyset Stress relieved strands)

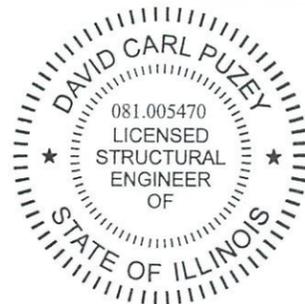
PROPOSED PRESTRESS UNITS

$f'_c = 6,000$ psi
 $f'_ci = 5,000$ psi
 $f'_s = 270,000$ psi ($1/2$ " \emptyset Lowlax strands)
 $f'_si = 201,960$ psi ($1/2$ " \emptyset Lowlax strands)

TOTAL BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	18.5
Concrete Superstructure	Cu. Yd.	18.5
Preformed Joint Seal 2 1/2"	Foot	30
Furnishing & Erecting Precast Prestressed Concrete I-Beams, 48"	Foot	81
Reinforcement Bars, Epoxy Coated	Pound	3650
Mechanical Splicer	Each	171
Protective Shield	Sq. Yd.	84
* Protective Coat	Sq. Yd.	77.5
Bridge Deck Grooving	Sq. Yd.	38.4
Anchor Bolts, 1" \emptyset	Foot	2
Furnishing and Erecting Structural Steel	Pound	60
Removal of Existing Bearings	Each	2
Removing & Re-erecting Existing Railing	Foot	81
Removal of Existing Concrete I-Beam	Each	1
Elastomeric Bearing Assembly, Type 1 (Special)	Each	1

* On new concrete only.



EXPIRES 11-30-2020

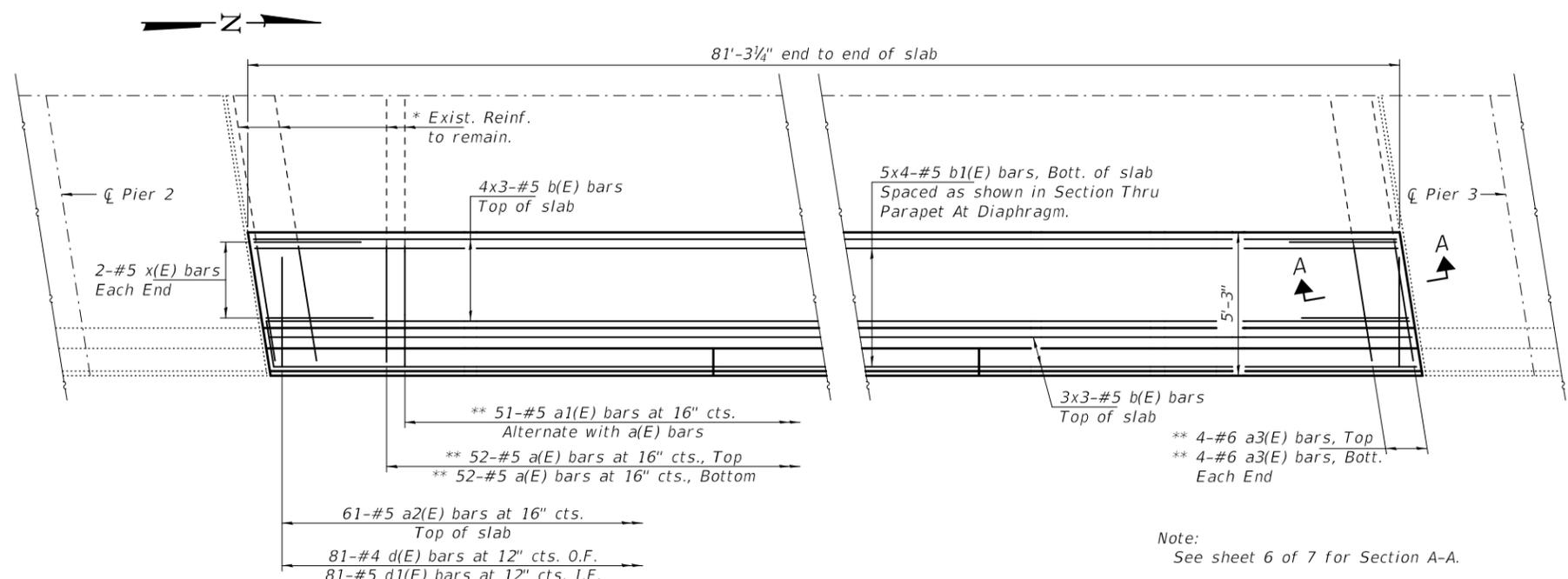
DESIGNED - <i>Cory D. Reinf...</i>	EXAMINED - <i>Tim A. ...</i>	DATE - MAY 6, 2019
CHECKED - <i>daburdell</i>	PASSED - <i>Dr. Carl Puzey</i>	REVISED -
CHECKED - <i>CDK ccc</i>	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
 T.R. 320 OVER F.A.I. RTE. 64
 SN 096-0031

SHEET NO. 1 OF 7 SHEETS

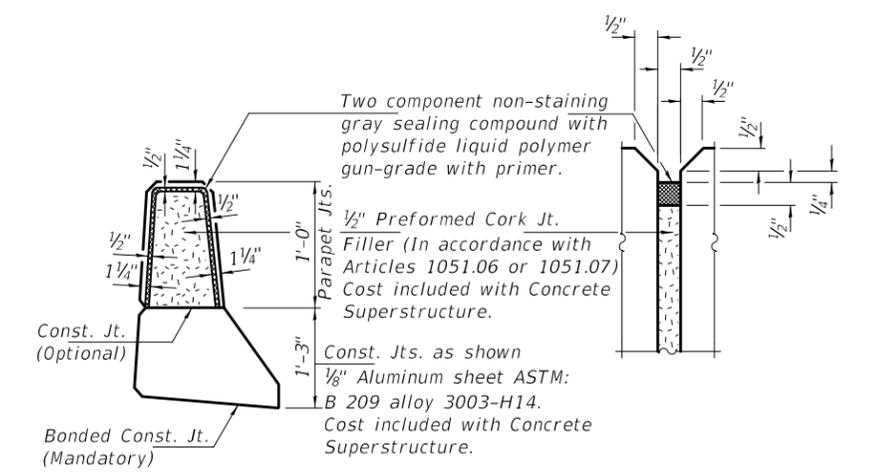
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	18
CONTRACT NO. 74896			ILLINOIS FED. AID PROJECT	



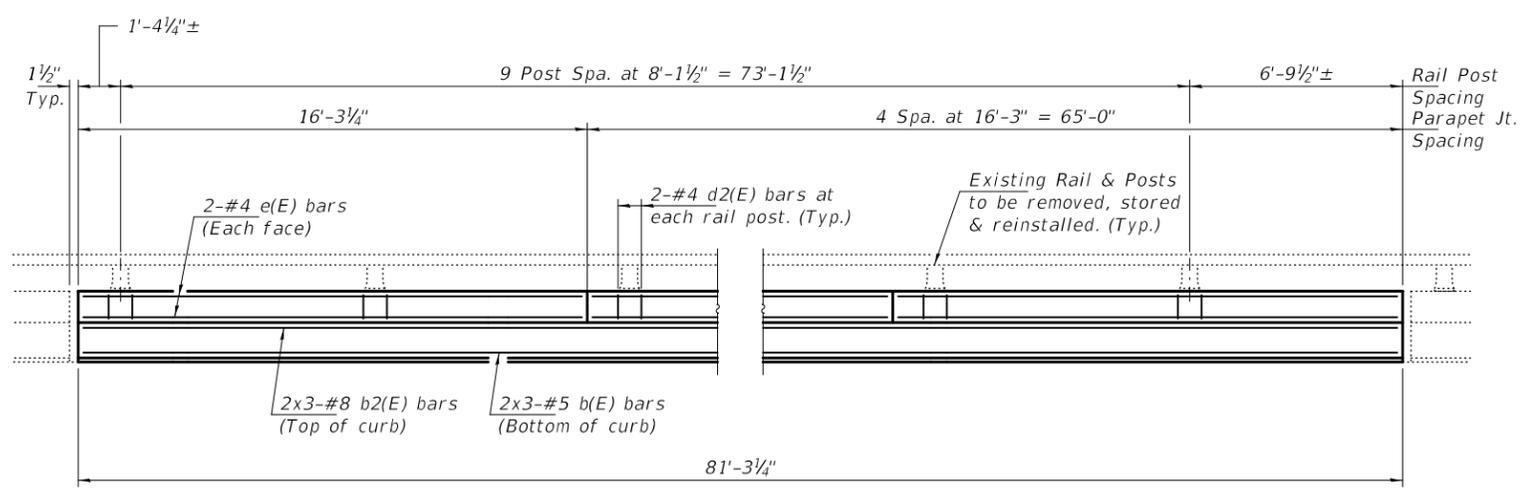
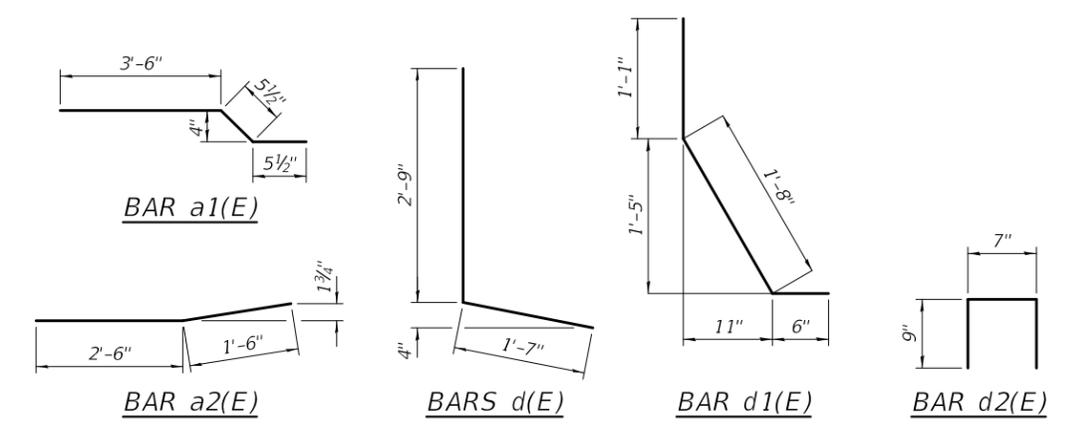
**PARTIAL PLAN - SPAN 2
CONCRETE REMOVAL & REPLACEMENT**

* Cut existing reinforcement in slab 6" from face of concrete removal line. Use Mechanical Splicers.
** Mechanically spliced to existing reinforcement.

Note:
See sheet 6 of 7 for Section A-A.



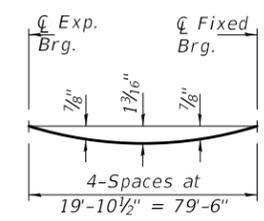
PARAPET JOINT DETAILS



**PARTIAL INSIDE ELEVATION
PARAPET REMOVAL & REPLACEMENT**

MIN. LAP LENGTHS

#5 Bars = 2'-11" (Parapet)
#5 Bars = 3'-4" (Deck)
#8 Bars = 5'-6" (Parapet)



DEAD LOAD DEFLECTION DIAGRAM
(For Fillet Adjustment)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	104	#5	4'-3"	—
a1(E)	51	#5	4'-5"	—
a2(E)	61	#5	4'-0"	—
a3(E)	16	#6	4'-3"	—
b(E)	27	#5	29'-0"	—
b1(E)	20	#5	22'-7"	—
b2(E)	6	#8	31'-8"	—
d(E)	81	#4	4'-4"	L
d1(E)	81	#5	3'-3"	L
d2(E)	20	#4	2'-1"	□
e(E)	20	#4	16'-0"	—
s(E)	4	#4	9'-0"	U
x(E)	4	#5	6'-9"	—
Concrete Removal		Cu. Yd.	18.5	
Concrete Superstructure		Cu. Yd.	17.4	
Mechanical Splicers		Each	171	
Reinforcement Bars, Epoxy Coated		Pound	3650	

Bars indicated thus 2 x 3-#8 etc. indicates 2 line of bars with 3 lengths per line.

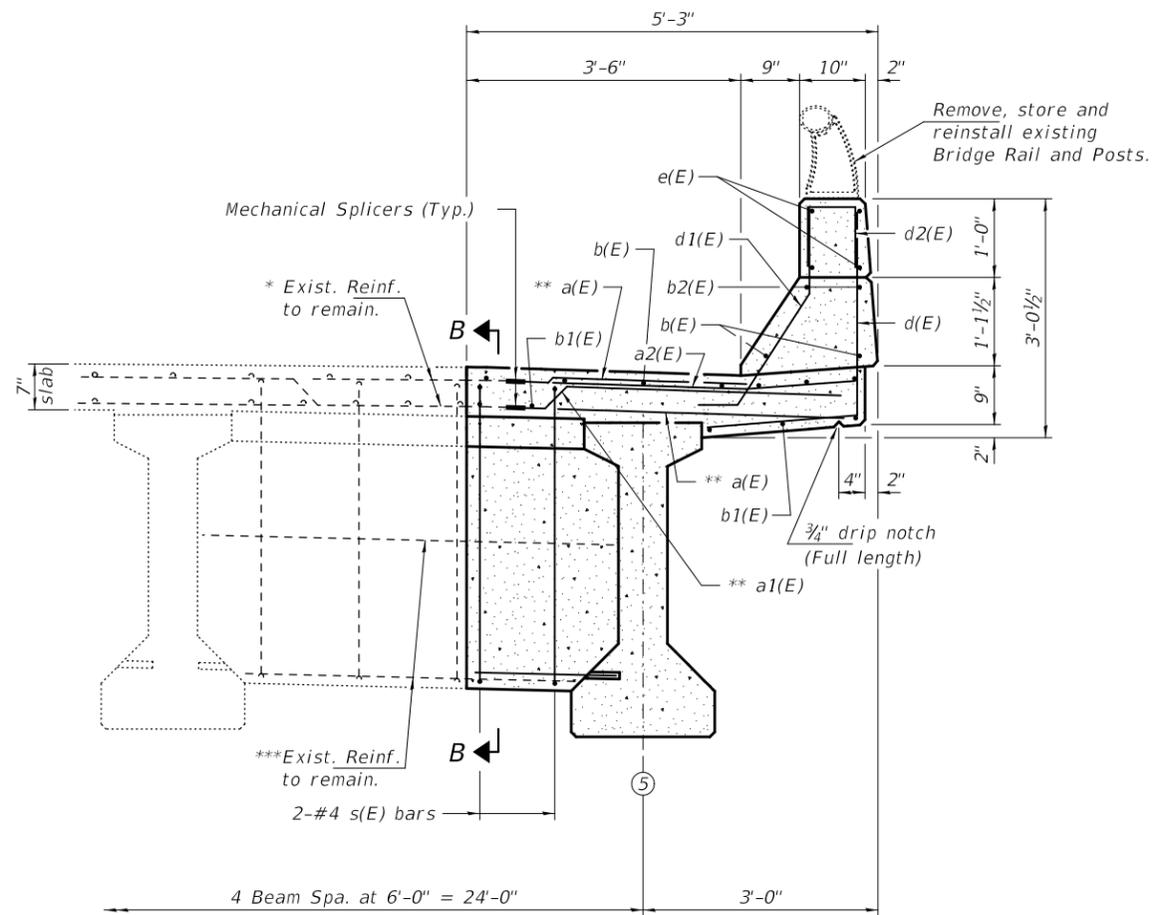
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - MAY 6, 2019
CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl Ringer</i>	REVISER -
CHECKED - CDK CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISER -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**CONCRETE REMOVAL & REPLACEMENT DETAILS
SN 096-0031**

SHEET NO. 2 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	19
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74896	

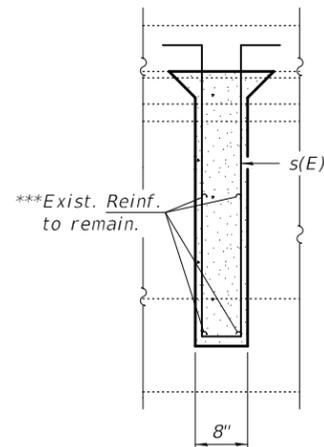


SECTION THRU PARAPET AT DIAPHRAGM

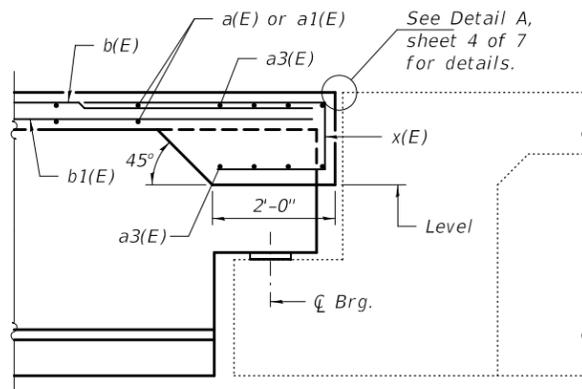
* Cut existing reinforcement in slab 6" from face of concrete removal line. Use Mechanical Splicers.

** Mechanically spliced to existing reinforcement.

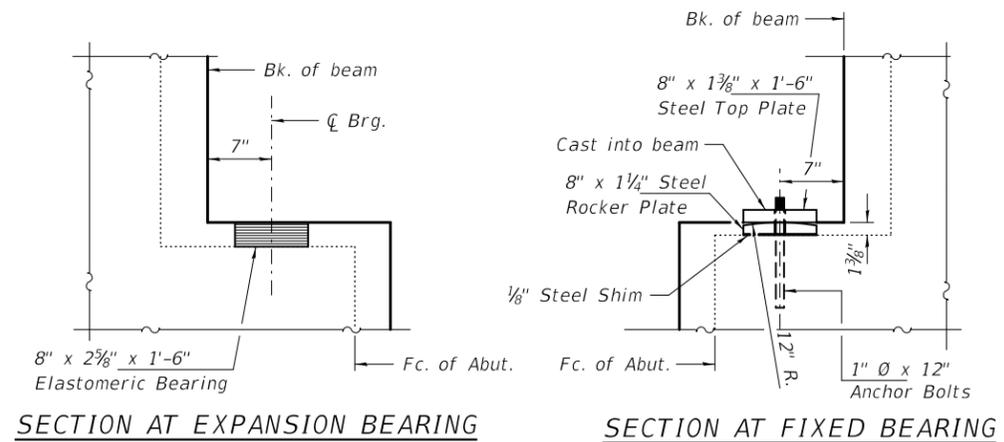
*** Existing reinforcement in diaphragm to be cleaned, straightened and incorporated into new construction.



SECTION B-B

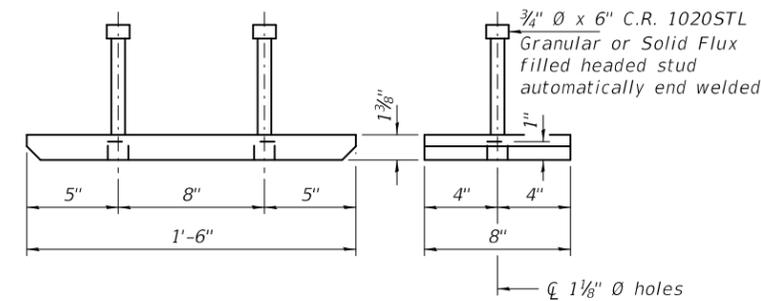


SECTION A-A

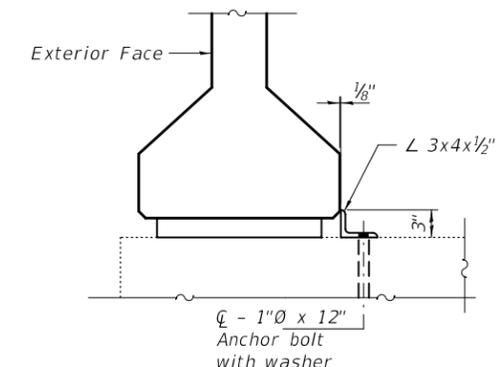


SECTION AT EXPANSION BEARING

SECTION AT FIXED BEARING

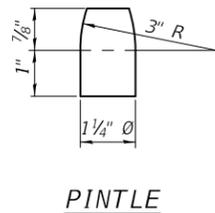


DETAIL OF TOP PLATE

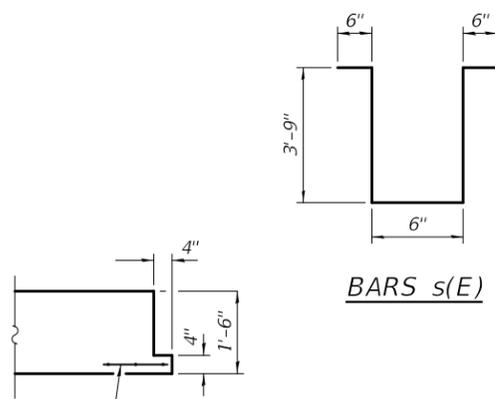


SIDE RETAINER ELEVATION

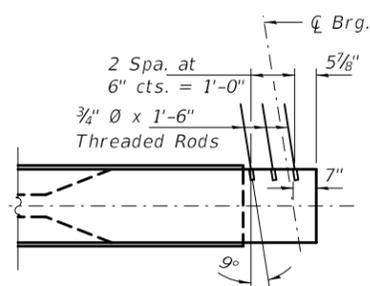
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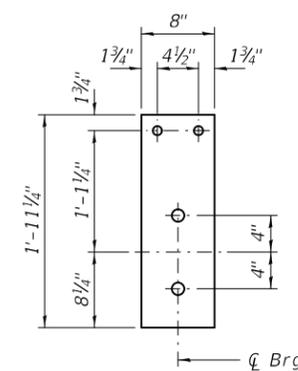
PINTLE



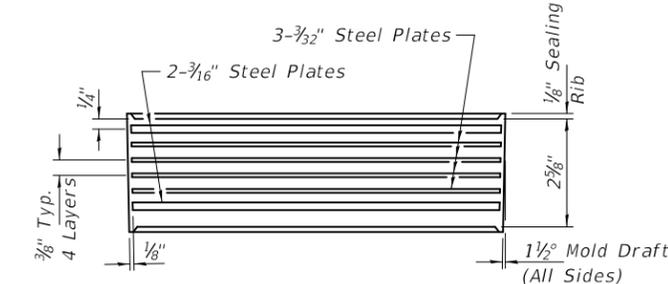
BARS s(E)



THREADED ROD DETAIL



BOTTOM PLATE



ELASTOMERIC BEARING PAD

Bearing pad to be adjusted in accordance with Art. 521 of the Standard Specifications. Cost of materials and labor to fabricate and install the elastomeric bearing is included in the contract unit price each for Elastomeric Bearing Assembly, Type I (Special).

PLAN - BEAM END EXTENSION
(Northeast End of Beam)

DESIGNED - CDK	EXAMINED - <i>Timothy A. Doolittle</i>
CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES
DRAWN - daburdell	PASSED - <i>Carl R. Berger</i>
CHECKED - CDK CCC	ENGINEER OF BRIDGES AND STRUCTURES

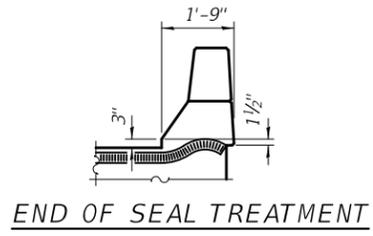
DATE - MAY 6, 2019
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

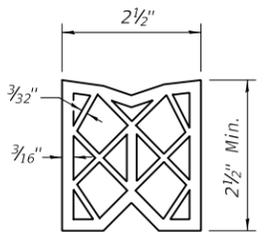
REPAIR DETAILS
SN 096-0031

SHEET NO. 3 OF 7 SHEETS

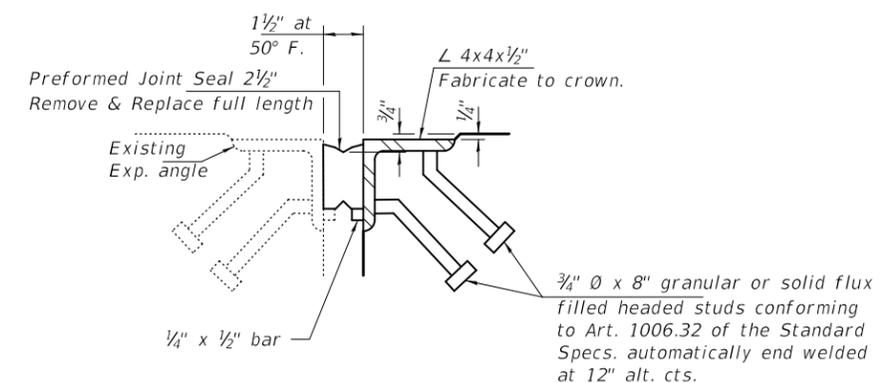
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	20
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				



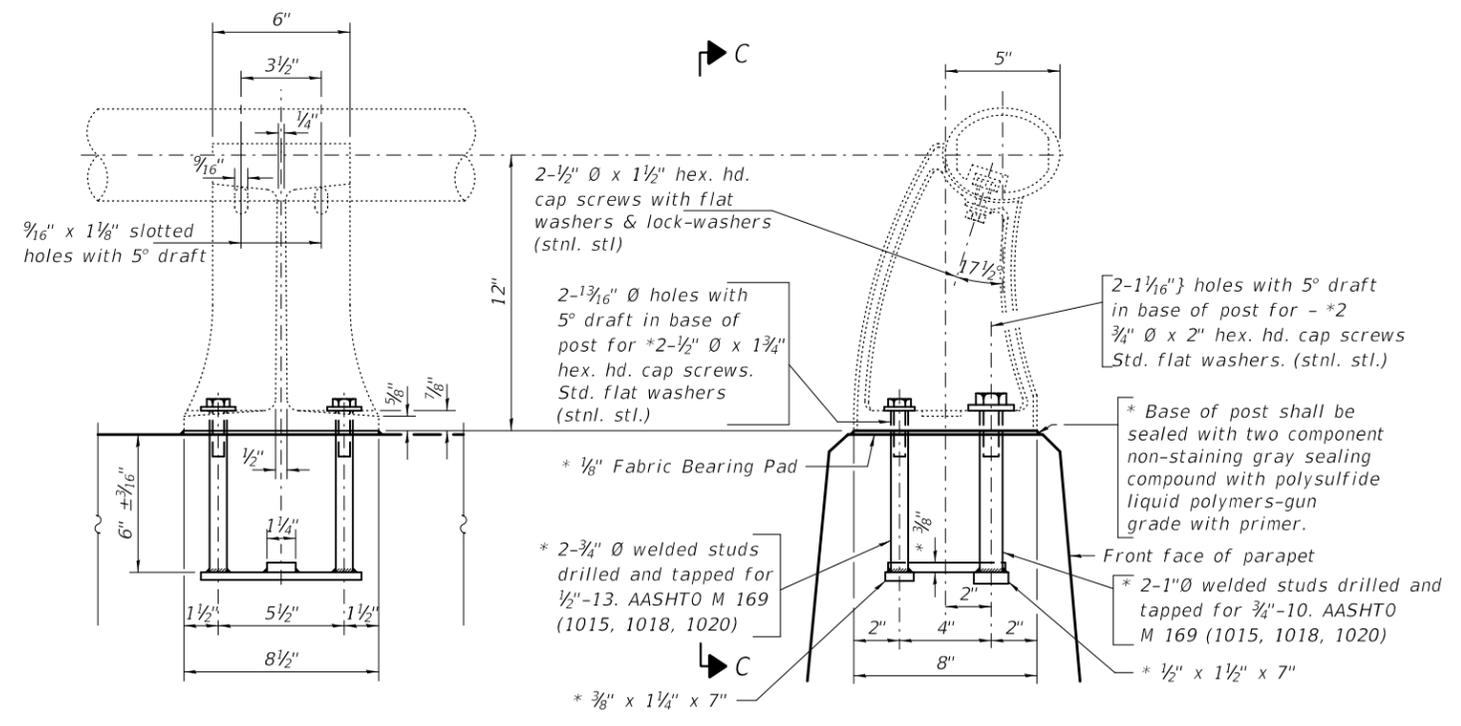
END OF SEAL TREATMENT



PREFORMED JOINT SEAL 2 1/2"



DETAIL A
Cost of Steel R's & Studs included with Concrete Superstructure.



RAIL POST ANCHORAGE DEVICE DETAILS
(10-Required)

* New Rail Post anchorage devices will be required at each location where posts are connected to new construction. Cost shall be included with Concrete Superstructure.

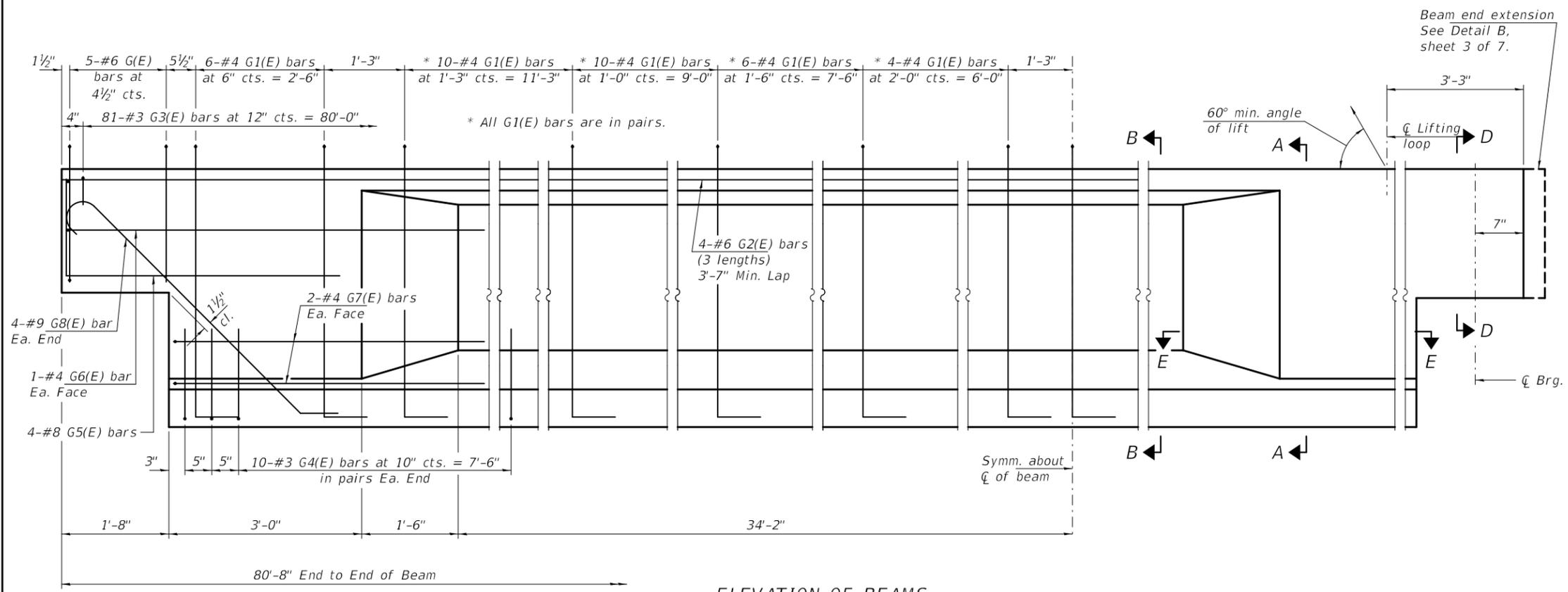
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - MAY 6, 2019
CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl Ringer</i>	REVISED -
CHECKED - CDK CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

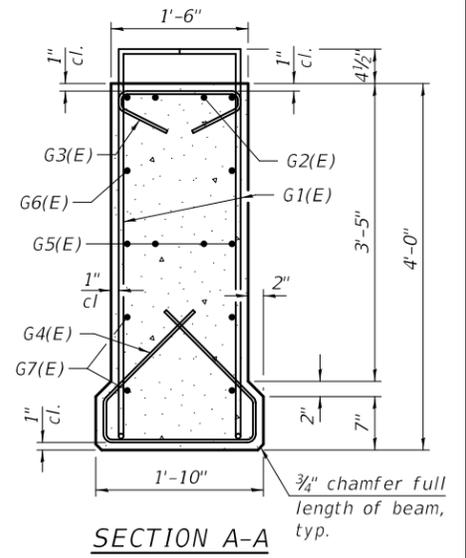
REPAIR DETAILS
SN 096-0031

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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ILLINOIS			CONTRACT NO. 74896	
FED. AID PROJECT				

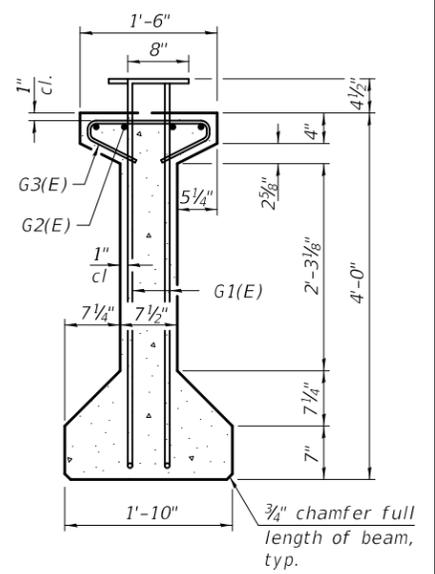
SHEET NO. 4 OF 7 SHEETS



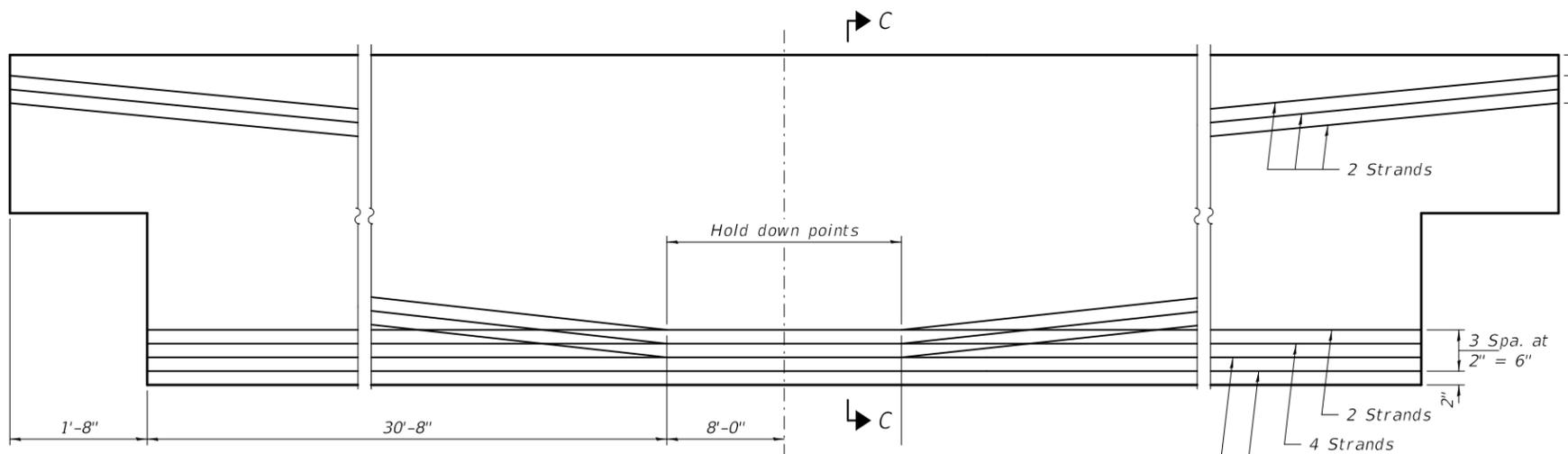
ELEVATION OF BEAMS
(Showing reinforcement & dimensions)



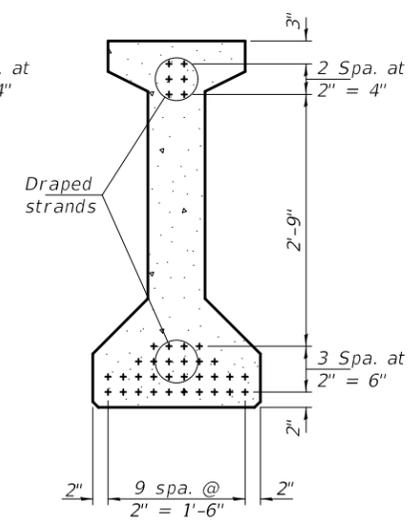
SECTION A-A



SECTION B-B



ELEVATION OF BEAMS
(Showing prestressing steel)



SECTION C-C
(36-1/2" Ø 270 ksi strands)

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
G(E)	10	#6	6'-11"	□
G1(E)	142	#4	5'-6 1/2"	┘┘
G2(E)	12	#6	29'-4"	—
G3(E)	81	#3	2'-9"	┘┘
G4(E)	48	#3	3'-5 1/2"	┘┘
G5(E)	8	#8	5'-9"	┘┘
G6(E)	4	#4	7'-5"	┘┘
G7(E)	8	#4	5'-9"	┘┘
G8(E)	8	#9	6'-3"	┘┘

Notes:
See sheet 6 of 7 for additional details and Bill of Material.
See sheet 6 of 7 for Section D-D & E-E.

PI-4-48

2-17-2017

DESIGNED - CDK
CHECKED - CCC
DRAWN - daburdell
CHECKED - CDK CCC

EXAMINED
PASSED
Timothy A. Daburdell
ENGINEER OF STRUCTURAL SERVICES
Carl R. Ringer
ENGINEER OF BRIDGES AND STRUCTURES

DATE - MAY 6, 2019
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

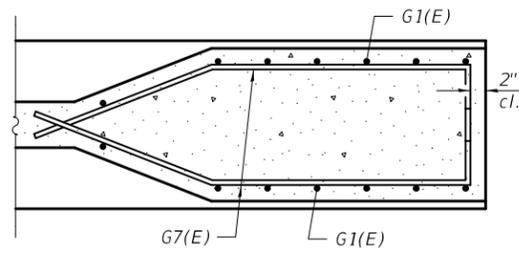
48" PPC I-BEAM
SN 096-0031

SHEET NO. 5 OF 7 SHEETS

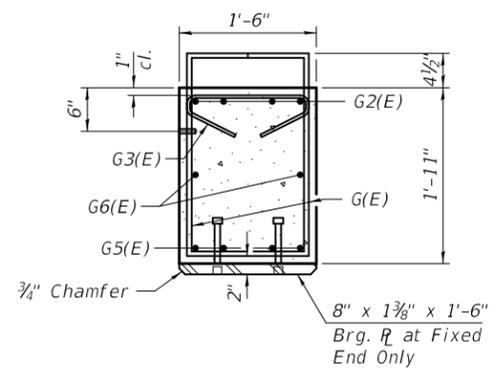
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	22

CONTRACT NO. 74896

ILLINOIS FED. AID PROJECT



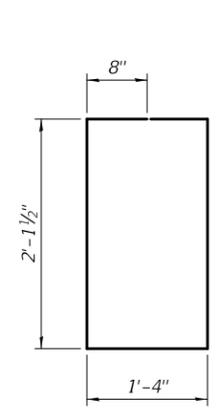
SECTION E-E



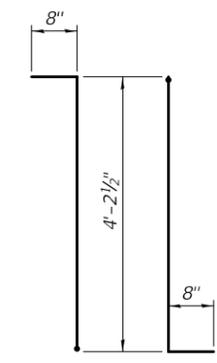
SECTION D-D

NOTES

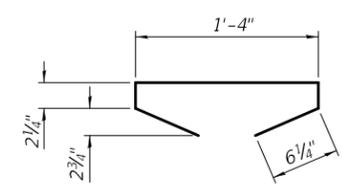
Inserts for 3/4" Ø threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams. Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The beams shall have a final concrete compressive strength, f'c, of 6,000 psi and a release concrete compressive strength, f'ci, of 5,000 psi. A minimum 2 1/2" Ø lifting pin shall be used to engage the lifting loops during handling. Tilt G6(E) bars when necessary to maintain 1 1/2" clearance. The top and bottom plates shall be AASHTO M270 Grade 50. The top and bottom plates shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232. Threaded rods shall be ASTM F 1554 Grade 55. The G6(E) bar assembly shall develop, in tension, at least 125 percent of the yield strength of a grade 60 reinforcement bar times the nominal cross-sectional area of a #8 bar. The assembly shall allow completion of the splice without turning of the hook bar. The hook bar shall be threaded such that the entire coupler can be threaded onto the hook bar. Beams shall not be released from the fabricator until they have attained 45 days of age or older.



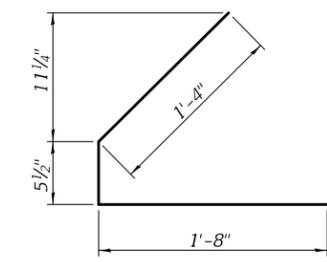
BAR G(E)



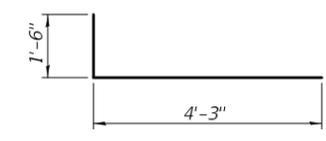
BAR G1(E)



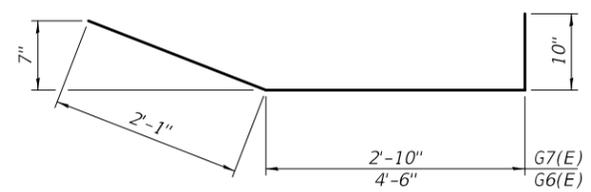
BAR G3(E)



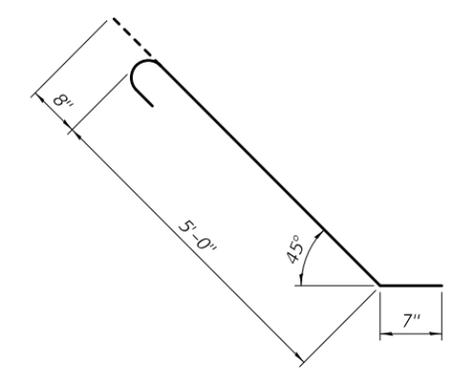
BAR G4(E)



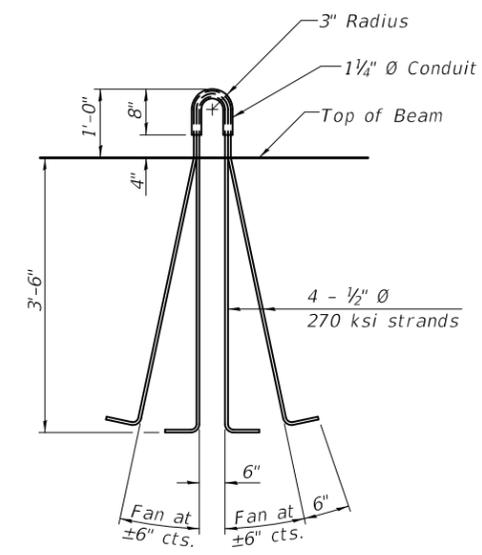
BAR G5(E)



BARS G6(E) & G7(E)



BAR G8(E)



LIFTING LOOP DETAIL

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete I-Beams, 48"	Foot	81

PI-4-48D 2-17-2017

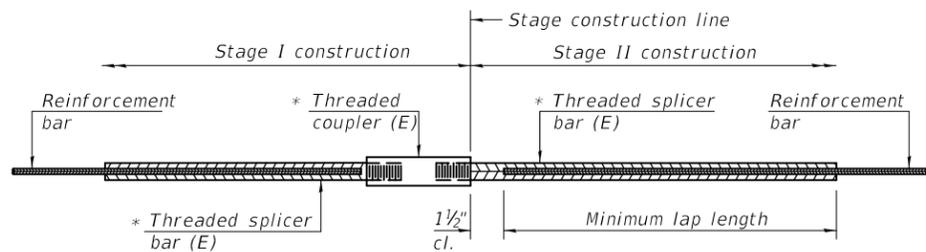
DESIGNED - CDK	EXAMINED - <i>Timothy A. Daburdell</i>	DATE - MAY 6, 2019
CHECKED - CCC	ENGINEER OF STRUCTURAL SERVICES	
DRAWN - <i>daburdell</i>	PASSED - <i>Carl R. Ruyter</i>	REVISED -
CHECKED - CDK CCC	ENGINEER OF BRIDGES AND STRUCTURES	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

48" PPC I-BEAM DETAILS
SN 096-0031

SHEET NO. 6 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	23
ILLINOIS FED. AID PROJECT			CONTRACT NO. 74896	

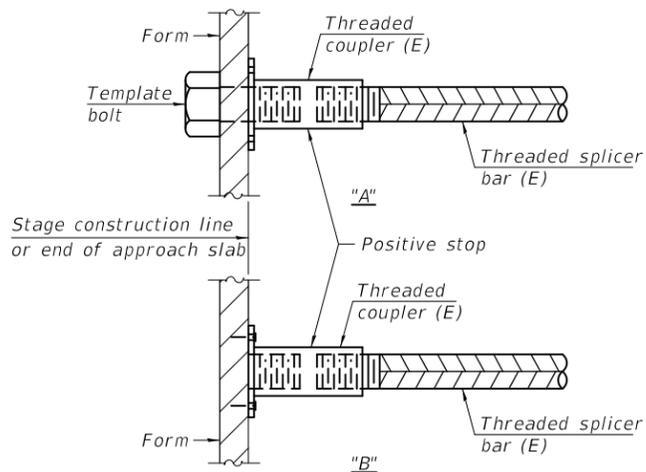


STANDARD BAR SPLICER ASSEMBLY

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

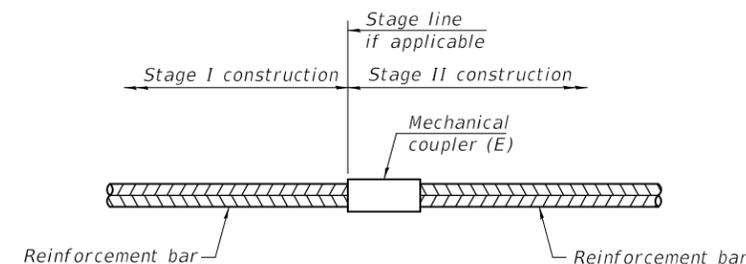
* Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.

Location	Bar size	No. assemblies required	Minimum lap length



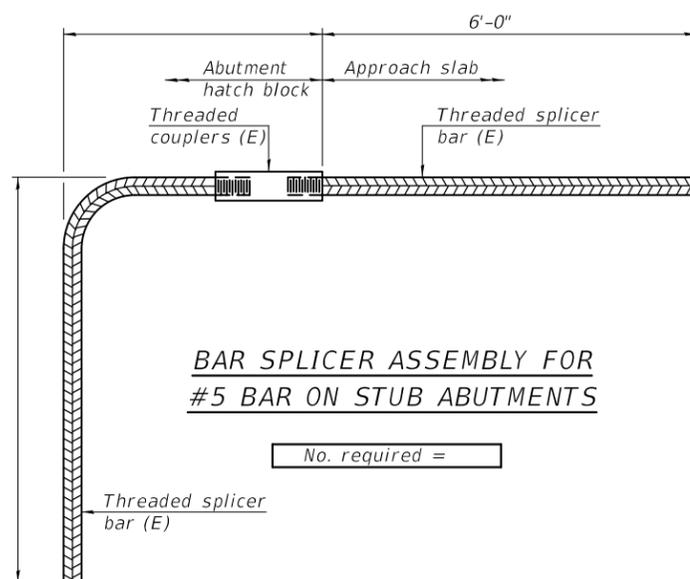
INSTALLATION AND SETTING METHODS

"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
Deck	#5	155
End of Deck	#6	16



BAR SPLICER ASSEMBLY FOR #5 BAR ON STUB ABUTMENTS

No. required =

NOTES

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

BSD-1 2-17-2017

DESIGNED - CDK	EXAMINED	DATE - MAY 6, 2019
CHECKED - CCC	PASSED	REVISOR -
DRAWN - daburdell		REVISOR -
CHECKED - CDK CCC		

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
 SN 096-0031

SHEET NO. 7 OF 7 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
64	D7 BRIDGE REPAIRS 2019-2	WAYNE	24	24
CONTRACT NO. 74896				
ILLINOIS FED. AID PROJECT				