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STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

FOR INDEX OF SHEETS, SEE SHEET NO. 3

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4-5

TRAFFIC DATA

SN 039-0074 2023 ADT = 1150 20% Trucks

TOWNSHIPS

VERGENNES

DESIGN DESIGNATION : N/A

COORDINATE SYSTEM : N/A

POSTED SPEED : 55 MPH



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

PROJECT ENGINEER: DAVID WILLSON & DEREK SNIDER PROJECT MANAGER: EHREN KIRBY

PROPOSED **HIGHWAY PLANS**

FAP ROUTE 686 (IL 4) **SECTION 114BJR-1 CONTRACT MAINTENANCE** JOINT REPLACEMENT **JACKSON COUNTY**

C-99-079-24



GROSS LENGTH = 1857.6 FT. = 0.3518 MILE NET LENGTH = 1857.6 FT. = 0.3518 MILE

CONTRACT NO. 78A55



STATE OF ILLINOIS **DEPARTMENT OF TRANSPORTATION** SUBMITTED March 22 20 24 Kick H. Brom REGIONAL ENGINEER May 10, 2024 ENGINEER OF DESIGN AND ENVIRONMENT May 10, 2024 DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION **PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS**

SN 039-0074

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red By: Susan Re DISTRICT STUDIES & PLANS ENGINEER ned By: Mancharter DISTRICT LAND ACQUISITION ENGINEER DISTRICT PROGRAM DEVELOPMENT ENGINEER DISTRICT OPERATIONS ENGINEER DISTRICT PROJECT IMPLEMENTATION ENGINEER DISTRICT CONSTRUCTION ENGINEER ned By: An Day DISTRICT MATERIALS ENGINEER F.A.P RTE. 686 EET SECTION COUNTY COUNTY TOTAL SHEE SHEETS NO. JACKSON 14 2 114BJR-1 CONTRACT NO. 78A55 TO STA. ROIECT

<u>GENERAL NOTES</u>		INDEX OF SHE
THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT AND SHOULDER SLOPES	1	COVER SHEET
SHALL NOT EXCEED 10%. THE SHOULDER ON THE OUTSIDE OF SUPERELEVATED CURVES SHALL BE FLATTENED ACCORDINGLY.	2	SIGNATURE SHEE
ON ALL SUPERELEVATED CURVES, THE PROPOSED BASE COURSE WIDENING	3	GENERAL NOTES,
SHALL BE CONSTRUCTED WITH A SLOPE CONFORMING TO THE RATE OF	4-5	SUMMARY OF QUA
SUPERELEVATION OF THE EXISTING PAVEMENT.	6	GENERAL PLAN AN
	7	TYPICALS AND ST
	8	STAGE I DETAILS
	9	STAGE II DETAILS
COMMITMENTS: NONE	10	JOINT RECONSTR
	11	PREFORMED JOIN
	12	BAR SPLICER AND
	13	TEMPORARY CON
	14	CAUTION ONE LAN

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000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
420001-10	PAVEMENT JOINTS
701001-02	OFF-ROAD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-ROAD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS \ge 45 MPH
701321-18	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEED \ge 45 MPH
701901-09	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
862001-01	UNINTERRUPTABLE POWER SUPPLY (UPS)

USER NAME = david.a.wilson	DESIGNED -	REVISED -		GENERAL NOTES. INDEX OF SHEETS AND STANDARDS				F.A.P RTE	SECTION	COUNTY TOTAL SH		
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- , INDEX OF SHEETS AND STANDARDS
- IANTITIES
- ND ELEVATION SN 039-0074
- TAGING SN 039-0074

- RUCTION DETAILS AT ABUTMENTS SN 039-0074
- NT STRIP SEAL DETAILS
- MECHANICAL SPLICER DETAILS
- NCRETE BARRIER DETAILS
- NE ROAD SIGN DETAILS

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	SUMMARY OF QUANTITIES	COUNTY: ROUTE: FUNDING: LOCATION:	JACKSON CO. FAP 686 (IL 4) 100% STATE RURAL
CODE NUMBER	ITEM DESCRIPTION	UNIT	SN 039-0074 0047
35400500	PORTLAND CEMENT CONCRETE BASE COURSE WIDENING 10"	SQ YD	147
4 <mark>4004250</mark>	PAVED SHOULDER REMOVAL	SQ YD	147
50102400	CONCRETE REMOVAL	CU YD	23.9
50 <mark>3</mark> 00255	CONCRETE SUPERSTRUCTURE	CU YD	23.9
50300300	PROTECTIVE COAT	SQ YD	36
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	2,700
50800515	BAR SPLICERS	EACH	28
52000110	PREFORMED JOINT STRIP SEAL	FOOT	80
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	2
67100100	MOBILIZATION	L SUM	:
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	:
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	:
70100500	TRAFFIC CONTROL AND PROTECTION, STANDARD 701326	LISUM	:
70103 8 15	TRAFFIC CONTROL SURVEILLANCE	CAL DA	;

	USER NAME = david.a.wilson	DESIGNED -	REVISED -		SUMMARY OF QUANTITIES				F.A.P RTE	SECTION	COUNTY	TOTAL SHEET		
		DRAWN -	REVISED _	STATE OF ILLINOIS										114BJR-1
1	PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRACT	NO. 78A55
2	PLOT DATE = 3/19/2024	DATE -	REVISED -		SCALE:	SHEET	OF 14	SHEETS	STA.	TO STA.		ILLINOIS FED. A	ID PROJECT	

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SUMMARY O	QUANTITIES	- CONT
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	UMMARY OF QUANTITIES - CONT	COUNTY: ROUTE: FUNDING: LOCATION:	JACK SON CO. FAP 686 (IL 4) 100% STATE RURAL	
CODE NUMBER	ITEM DESCRIPTION	UNIT	SN 039-0074 0047	
70106 <mark>50</mark> 0	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH		
7010 <mark>670</mark> 0	TEMPORARY RUMBLE STRIPS	EACH		
70107025	CHANGEABLE MESSAGE SIGN	CAL DA		
70300100	SHORT TERM PAVEMENT MARKING	FOOT	1	
70300 <mark>15</mark> 0	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	:	
70300221	TEMPORARY PAVEMENT MARKING - LINE 4"- PAINT	FOOT	4,0	
7040010 <mark>0</mark>	TEMPORARY CONCRETE BARRIER	FOOT	2.	
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2:	
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH		
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH		
78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	4,0	
78300201	PAVEMENT MARKING REMOVAL - GRINDING	SQ FT	2,6	
86200300	UNINTERRUPTABLE POWER SUPPLY, EXTENDED	EACH		

* SPECIALTY ITEM

		DESIGNED -	REVISED -		SUMMARY OF QUANTITIES				F.A.P RTE.	SECTION	COUNTY	TOTAL SHEET SHEETS NO.		
		DRAWN -	REVISED _	STATE OF ILLINOIS							686	114BJR-1	JACKSON	14 5
3	PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION									CONTRAC	T NO. 78A55
	PLOT DATE = 3/19/2024	DATE -	REVISED -		SCALE: SHEET OF 14 SHEETS STA. TO STA.				TO STA.	1	ILLINOIS FED. A	ID PROJECT		

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	DRAWN -	REVISED -	STATE OF ILLINOIS	SN 039-0074				686	114BJR-1	JACKSON	14 6	
PLOT SCALE = 0.16666633 ' / in	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION							CONTRACT	NO. 78A55	
PLOT DATE = 4/16/2024	DATE -	REVISED -		SCALE:	SHEET	OF 14	SHEETS STA.	TO STA.		ILLINOIS FED. A	D PROJECT	

ITEM	UNIT	QUANTITY
Concrete Removal	Cu. Yd.	23.9
Concrete Superstructure	Cu. Yd.	23.9
Protective Coat	Sq. Yd.	36
Reinforcement Bars, Epoxy Coated	Pound	2700
Bar Splicers	Each	28
Preformed Joint Strip Seal	Foot	88



ST	STAGING			F.A.P RTE SECTION			COUNTY	TOTAL SHEETS	SHEET NO.
074		686 114BJR-					JACKSON	14	7
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	DRAWN -	REVISED -	STATE OF ILLINOIS						686	114BJR-1	JACKSON	14 11	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION										NO. 78A55
PLOT DATE = 4/11/2024	DATE -	REVISED -		SCALE:	SHEET	OF 14	SHEETS STA		TO STA.	ILLINOIS FED. AID PROJEC			

Notes:

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

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

The manufacturer's recommended installation methods shall be followed.

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

The Maximum space between locking edge rail segments shall be c" 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. 39" constant slope barrier shown, 44" constant slope barrier 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.



WELDED RAIL



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	88



STANDARD BAR SPLICER ASSEMBLY PLAN

Only bar splicer assemblies as presented on the approved QPL list may be used.

Threaded splicer bar length = min. lap length + $1\frac{1}{2}$ " + thread length

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

Bar	No. assemblies	Minimum
size	required	lap length
#5	18	3'-2"
#6	10	3'-10"
	size #5	size required #5 18



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.

BSD-1

5-15-2023

USER NAME = david.a.wilson	DESIGNED -	REVISED -		BAR SPLICER AND MECHANICAL SPLICER DETAILS		F.A RT	A.P	SECTION	COUNTY	TOTAL SHEETS	SHEET
	DRAWN -	REVISED -	STATE OF ILLINOIS			68	86	114BJR-1	JACKSON	14	12
PLOT SCALE = 0.16666633 '/ in.	CHECKED -	REVISED -	DEPARTMENT OF TRANSPORTATION						CONTRACT	NO 78A	55
PLOT DATE = 3/13/2024	DATE -	REVISED -		SCALE:	SHEET OF 14 SHEETS STA. TO ST	TA.		ILLINOIS FED. A	AID PROJECT		



STANDARD MECHANICAL SPLICER

Location	Bar	No. assemblies
Location	size	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

See approved list of bar splicer assemblies and mechanical splice alternatives.



SCALE: SHEET OF 14 SHEET





BAR SPLICER FOR #4 BAR - DETAIL III

Cost of retainer assembly is included with Temporary Concrete Barrier. A retainer assembly shall be located at the approximate \mathcal{C} of each temporary concrete barrier.

The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than $1\frac{1}{2}$ ", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

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

BARRIER DETAILS		F.A.P RTE	SECTION			COUNTY	TOTAL SHEETS	SHEET NO.	
			686	114B	JR-1		JACKSON	14	13
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)AI	AD SIGN DETAILS			F.A.P SECTION			COUNTY	TOTAL SHEETS	SHEET NO.	
			686	114BJR-1			JACKSON	14	14	
							CONTRACT	NO. 78/	455	
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