F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30*	1
	ILLINOIS	CONTRACT NO. 74842		

* 30 + 1 = 31 TOTAL SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROPOSED HIGHWAY PLANS

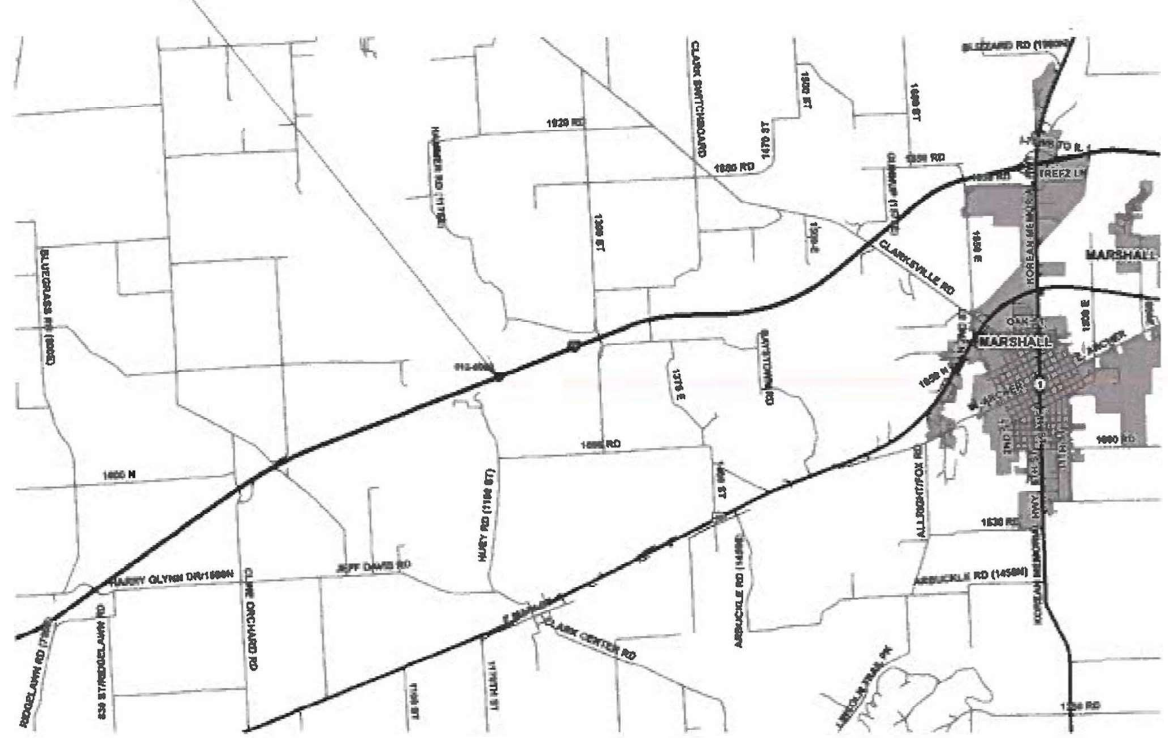
FAI ROUTE 70 (I–70)
SECTION (12–51B)BR–2
PROJECT NHPP–NGQS(464)
BRIDGE NEW DECK
CLARK COUNTY

C–97–064–18

FOR INDEX OF SHEETS, SEE SHEET NO. 2

ADT = 23,300 (2021)

NEW BRIDGE DECK
SN 012–0052
STA. 1348 + 41



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D-97-029-18

LOCATION OF SECTION INDICATED THUS:–

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

0 — 50' — 100' — 1" = 50'
0 — 50' — 100' — 1" = 40'
0 — 50' — 100' — 1" = 30'
0 — 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 EXCAVATORS
1–800–892–0123
OR 811

PROJECT ENGINEER: MATT BOWER
PROJECT MANAGER: DESTINY WILLIAMS
PHONE: (217)–342–8359

CONTRACT NO. 74842

GROSS LENGTH = 240.5 FT. = 0.046 MILE
NET LENGTH = 240.5 FT. = 0.046 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED February 15 20 23
Jeffrey P Myers
REGIONAL ENGINEER

March 24, 2023
ENGINEER OF DESIGN AND ENVIRONMENT

March 24, 2023
Stephen M Travia
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

REV. - MS

HIGHWAY STANDARDS

STANARD NO.	DESCRIPTION
000001-08	STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
515001-04	NAME PLATE FOR BRIDGES
630001-12	STEEL PLATE BEAM GUARDRAIL
631031-18	TRAFFIC BARRIER TERMINAL, TYPE 6
642001-03	SHOULDER RUMBLE STRIPS, 16"
701101-05	OFF-ROAD OPERATIONS, MULTILANE, 15' (4.5 M) TO 24" (600 MM) FROM PAVEMENT EDGE
701106-02	OFF-ROAD OPERATIONS, MULTILANE, MORE THAN 15' (4.5 M) AWAY
701400-11	APPROACH LANE CLOSURE. FREEWAY / EXPRESSWAY
701402-12	LANE CLOSURE, FREEWAY / EXPRESSWAY, WITH BARRIER
701426-09	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPERATION, FOR SPEEDS > 45 MPH
701428-01	TRAFFIC CONTROL, SETUP AND REMOVAL, FREEWAY / EXPRESSWAY
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
420001-10	PAVEMENT JOINTS
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
725001-01	OBJECT AND TERMINAL MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
701406-13	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY

INDEX OF SHEETS

GENERAL NOTES

THE WORK ON THIS PROJECT IS LOCATED AT EXISTING STRUCTURE NUMBER 012-0052 THAT CARRIES I-70 OVER MILL CREEK IN CLARK COUNTY. THE WORK INCLUDED IN SECTION (12-51B)BR-2 CONSISTS OF REMOVING AND REPLACING THE CONCRETE DECK, BRIDGE APPROACH PAVEMENTS, HOT-MIX ASPHALT RESURFACING. GUARDRAIL, PAVEMENT MARKING, AND ANY OTHER WORK NECESSARY TO COMPLETE THE SECTION.

THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE TO THIS PROJECT:									
LOCATION(S)	MIXTURE USE(S)	PG	DESIGN AIR VOIDS	MIXTURE COMPOSITION	FRICTION AGGREGATE	MIXTURE WEIGHT	QUALITY MANAGEMENT PROGRAM	SUBLOT SIZE	MATERIAL TRANSFER DEVICE (REQUIRED?)
MAINLINE	POLY HMA SURF CSE, IL-9.5, MIX "D", N90 (2")	SBS PG 70-22	4.0% @ N=90	IL - 9.5	MIXTURE D	N90	QCQA	N/A	N/A
SHOULDERS	POLYMERIZED HMA SURFACE CSE, IL-9.5, MIX "D", N90 (2")	SBS PG 70-22	4.0% @ N=90	IL - 9.5	MIXTURE D	N90	QC/QA	3000	N/A
SHOULDERS	POLYMERIZED HMA BINDER COURSE, IL-19.0, N90 (2 4"LIFTS)	SBS PG 70-22	4.0% @ N=90	IL - 19.0	N/A	N90	QC/QA	3000	N/A

REV. - MS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, HIGHWAY STANDARDS, AND GENERAL NOTES

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	2
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: 90% FED 10% STATE FAI 70 I-70 0013		
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	120	120		
40604164	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE,	TON	30	30		
	IL-9.5, MIX "D", N90					
42000080	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH	SQ YD	133	133		
	SLAB					
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	267	267		
44000189	HOT-MIX ASPHALT SURFACE REMOVAL, 10"	SQ YD	602	602		
48203037	HOT-MIX ASPHALT SHOULDERS, 10"	SQ YD	602	602		
50104720	REMOVAL OF EXISTING CONCRETE DECK	EACH	1	1		
50300100	FLOOR DRAINS	EACH	18	18		
50300225	CONCRETE STRUCTURES	CU YD	25.4	25.4		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	352.1	352.1		
50300300	PROTECTIVE COAT	SQ YD	1599	1599		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	139410	139410		
50800515	BAR SPLICERS	EACH	1089	1089		

REV. - MS

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 3 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	3
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			

SUMMARY OF QUANTITIES

	CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE: 90% FED 10% STATE FAI 70 I-70 0013		
	51500100	NAME PLATES	EACH	1	1		
	58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	7	7		
*	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	475	475		
*	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2	2		
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	2	2		
	63200310	GUARDRAIL REMOVAL	FOOT	288	288		
	64200116	SHOULDER RUMBLE STRIPS, 16 INCH	FOOT	577	577		
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	6	6		
	67100100	MOBILIZATION	L SUM	1	1		
	70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	1	1		
	70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1	1		
	70107007	PAVEMENT MARKING BLACKOUT TAPE, 7"	FOOT	1311	1311		

* SPECIALTY ITEM

SUMMARY OF QUANTITIES

	CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE 90% FED 10% STATE FAI 70 I-70 0013		
	70107025	CHANGEABLE MESSAGE SIGN	CAL DA	14	14		
	70300100	SHORT TERM PAVEMENT MARKING	FOOT	77	77		
	70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	791	791		
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	572	572		
	70400125	PINNING TEMPORARY CONCRETE BARRIER	EACH	91	91		
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	536	536		
	70600250	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1		
	70600350	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3	EACH	1	1		
*	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	2	2		
*	78004630	PREFORMED PLASTIC PAVEMENT MARKING, TYPE D - LINE 6"	FOOT	969	969		
*	78011035	GROOVING FOR RECESSED PAVEMENT MARKING 7"	FOOT	969	969		
*	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	12	12		
*	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	22	22		

* SPECIALTY ITEM

SUMMARY OF QUANTITIES

CODE NO	ITEM	UNIT	TOTAL QUANTITIES	CONSTRUCTION TYPE CODE		
				FAI 70 I-70 0013		
78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	12	12		
X0900084	CONCRETE SUPERSTRUCTURE (APPROACH SLAB),	CU YD	120	120		
	SPECIAL					
X5030250	BRIDGE DECK GROOVING (LONGITUDINAL)	SQ YD	797	797		
Z0001495	BRIDGE APPROACH SHOULDER REMOVAL	SQ YD	50	50		
Z0004552	APPROACH SLAB REMOVAL	SQ YD	288	288		
Z0018004	DRAINAGE SCUPPERS, DS-12	EACH	4	4		
Z0029090	DIAMOND GRINDING (BRIDGE SECTION)	SQ YD	1195	1195		

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 6 OF 6 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	6
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			

BITUMINOUS MATERIALS (TACK COAT)						
				MAINLINE	AREA	
STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ FT)	(POUND)
1346+25.75		1346+75.75	50.00	24	1200.0	60.0
1350+06.25		1350+56.25	50.00	24	1200.0	60.0
					TOTAL=	120

POLYMERIZED HMA SURFACE COURSE, IL-9.5 MIX "D", N90							
				MAINLINE	AREA		
STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)	THICKNESS (IN)	(TON)
1346+25.75		1346+75.75	50.00	24	133.3	2.00	14.9
1350+06.25		1350+56.25	50.00	24	133.3	2.00	14.9
						TOTAL=	30

PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB					
					AREA
STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)
1346+75.75		1346+90.75	15.00	40	66.7
1349+91.25		1350+06.25	15.00	40	66.7
				TOTAL =	133

HMA SURFACE REMOVAL 2"					
					AREA
STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)
1346+25.75		1346+75.75	50.00	24	133.3
1350+06.25		1350+56.25	50.00	24	133.3
				TOTAL =	267

	HMA SHOULDERS 10"					AREA
	STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)
LT	1344+75.00		1346+75.75	200.75	6	133.8
LT	1350+06.25		1350+56.25	50.00	6	33.3
RT	1344+00.00		1346+75.75	275.75	12	367.7
RT	1350+06.25		1350+56.25	50.00	12	66.7
					TOTAL =	602

	HMA SURFACE REMOVAL 10"				AREA
	STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)
LT	1344+75.00		1346+75.75	200.75	6	133.8
LT	1350+06.25		1350+56.25	50.00	6	33.3
RT	1344+00.00		1346+75.75	275.75	12	367.7
RT	1350+06.25		1350+56.25	50.00	12	66.7
					TOTAL =	602

				63000001	63100085	63100167
				STEEL PLATE BEAM GUARDRAIL TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 6	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT
	STATION	TO	STATION	(FOOT)	(EACH)	(EACH)
LT	1343+73.08		1344+23.08			1
LT	1344+23.08		1346+85.58	262.5		
LT	1346+85.58		1347+23.08		1	
RT	1344+23.08		1344+73.08			1
RT	1344+73.08		1346+85.58	212.50		
RT	1346+85.58		1347+23.08		1	
			TOTAL =	475	2	2

	GUARDRAIL REMOVAL			
	STATION	TO	STATION	LENGTH (FT)
LT	1345+68.00		1347+23.00	155.00
RT	1345+90.00		1347+23.00	133.00
			TOTAL =	288

	SHOULDES RUMBLE STRIPS, 16 INCH			
	STATION	TO	STATION	LENGTH (FT)
LT	1344+75.00		1346+75.75	200.75
LT	1350+06.25		1350+56.25	50.00
RT	1344+00.00		1346+75.75	275.75
RT	1350+06.25		1350+56.25	50.00
			TOTAL =	577

PAVEMENT MARKING BLACKOUT TAPE, 7"				
	STATION	TO	STATION	LENGTH (FT)
STAGE 1				
CENTERLINE	1344+85.75		1346+50.75	41.25
LT	1344+85.75		1350+56.25	570.50
STAGE 2				
CENTERLINE	1344+15.75		1346+50.75	58.75
RT	1344+15.75		1350+56.25	640.50
			TOTAL =	1311

SHORT TERM PAVEMENT MARKING				
	STATION	TO	STATION	LENGTH (FT)
CENTERLINE	1346+25.75		1350+56.25	43.05
LT	1346+25.75		1350+56.25	17.22
RT	1346+25.75		1350+56.25	17.22
			TOTAL =	77

SHORT TERM PAVEMENT MARKING REMOVAL						
	STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
CENTERLINE	1346+25.75		1350+56.25	43.05	0.33	14.4
LT	1346+25.75		1350+56.25	17.22	0.33	5.7
RT	1346+25.75		1350+56.25	17.22	0.33	5.7
REMOVAL FOR BLACKOUT TAPE						
	STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	AREA (SQ FT)
STAGE 1						
CENTERLINE	1344+85.75		1346+50.75	41.25	0.58	24.06
LT	1344+85.75		1350+56.25	570.50	0.58	332.79
STAGE 2						
CENTERLINE	1344+15.75		1346+50.75	58.75	0.58	34.27
RT	1344+15.75		1350+56.25	640.50	0.58	373.63
					TOTAL =	791

TEMPORARY CONCRETE BARRIER				
	STATION	TO	STATION	LENGTH (FT)
STAGE 1				
	1344+70.75		1350+06.25	535.50
STAGE 2				
	1344+34.75		1344+70.75	36.00
			TOTAL =	572

	PINNING TEMPORARY CONCRETE BARRIER				
	STATION	TO	STATION	LENGTH (FT)	EACH
STAGE 1					
	1346+75.75		1350+06.25	330.50	79
	TRANSITIONS ON EACH END 3 PINS EACH				6
STAGE 2					
	TRANSITIONS ON EACH END 3 PINS EACH				6
				TOTAL =	91

RELOCATE TEMPORARY CONCRETE BARRIER				
	STATION	TO	STATION	LENGTH (FT)
STAGE 1 TO STAGE 2	1344+70.75		1350+06.25	535.50
			TOTAL =	536

PREFORMED PLASTIC PAVEMENT MARKING, TYPE D-LINE 6"					
	STATION	TO	STATION	LENGTH (FT)	COLOR
CENTERLINE	1346+25.75		1350+56.25	107.63	WHITE
LT	1346+25.75		1350+56.25	430.50	YELLOW
RT	1346+25.75		1350+56.25	430.50	WHITE
			TOTAL =	969	

	GUARDRAIL REFLECTORS, TYPE A				
	STATION	TO	STATION	LENGTH (FT)	EACH
LT	449+00.00		452+48.54	348.5	5
RT	447+52.00		451+36.31	384.3	5
RT	451+75.57		452+48.54	73.0	4
LT	453+87.33		455+74.98	187.7	4.0
RT	453+87.33		455+37.48	150.2	4.0
				TOTAL =	22

BRIDGE APPROACH SHOULDER REMOVAL						
						AREA
	STATION	TO	STATION	LENGTH (FT)	WIDTH (FT)	(SQ YD)
LT	452+49.54		452+63.54	14.00	8	12.4
RT	452+49.54		452+63.54	14.00	8	12.4
LT	453+72.48		453+86.48	14.00	8	12.4
RT	453+72.48		453+86.48	14.00	8	12.4
					TOTAL =	50

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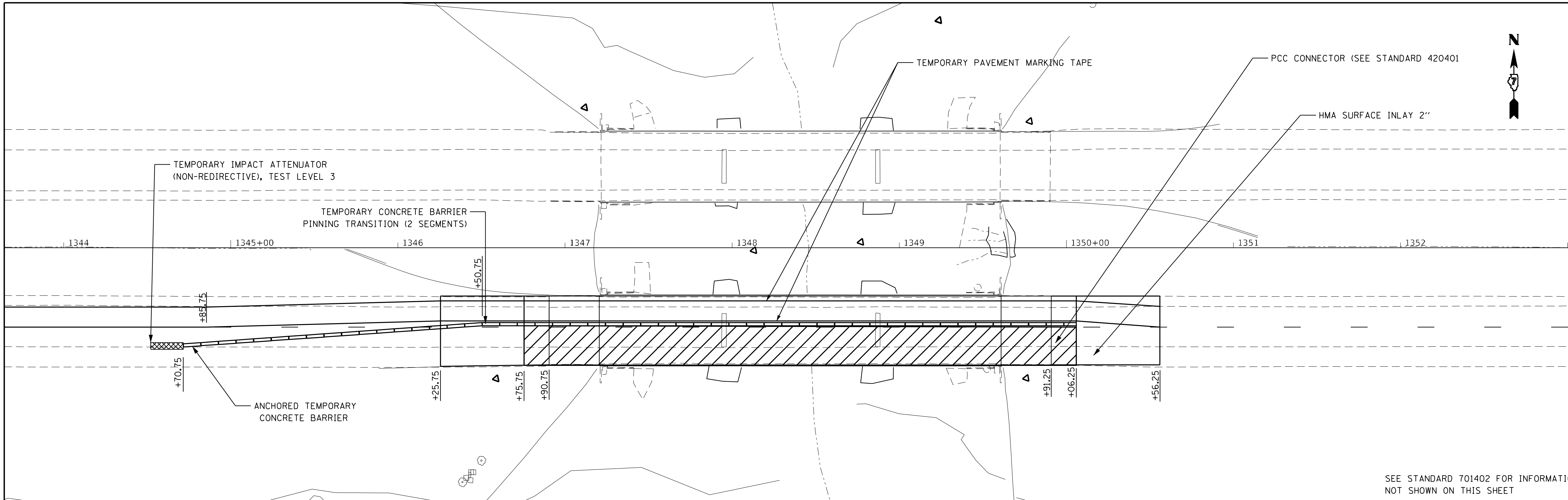
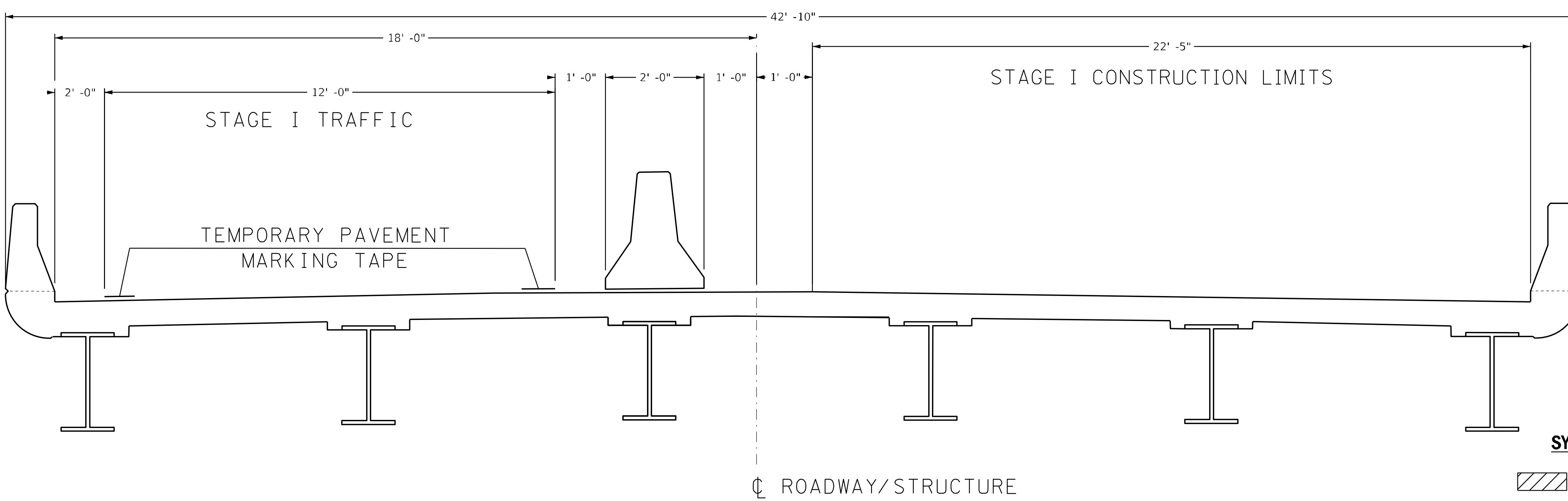
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	7
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		





SYMBOLS

WORK AREA

TEMPORARY CONCRETE BARRRIER

IMPACT ATTENUATOR

STAGE CONSTRUCTION I SN 012-0052 (EB) - LOOKING EAST

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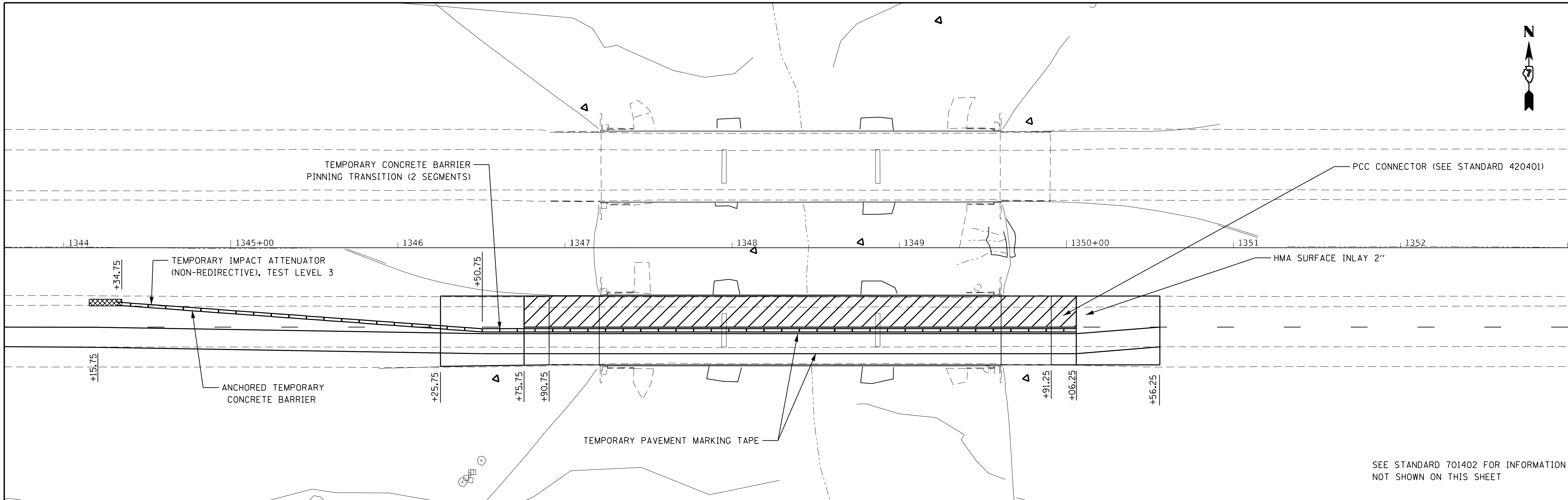
TRAFFIC CONTROL STAGING
STAGE I

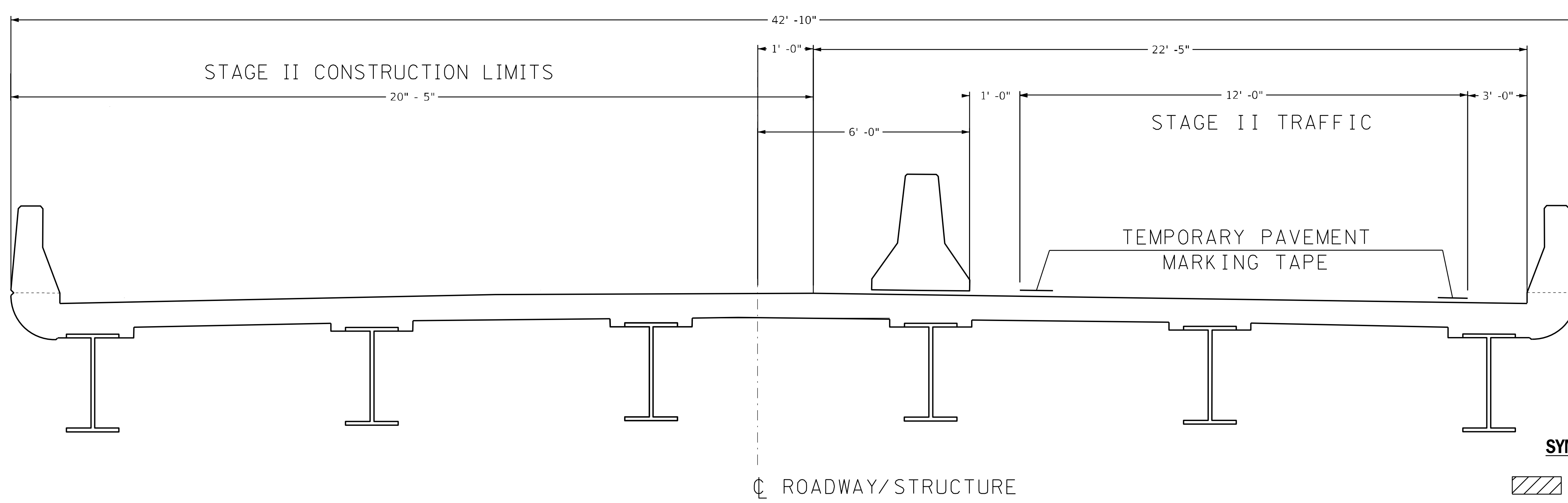
SCALE: SHEET 1 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	8

CONTRACT NO. 74842

ILLINOIS FED. AID PROJECT





SYMBOLS

WORK AREA

TEMPORARY CONCRETE BARRRIER

IMPACT ATTENUATOR

STAGE CONSTRUCTION II SN 012–0052 (EB) – LOOKING EAST

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL STAGING
STAGE II

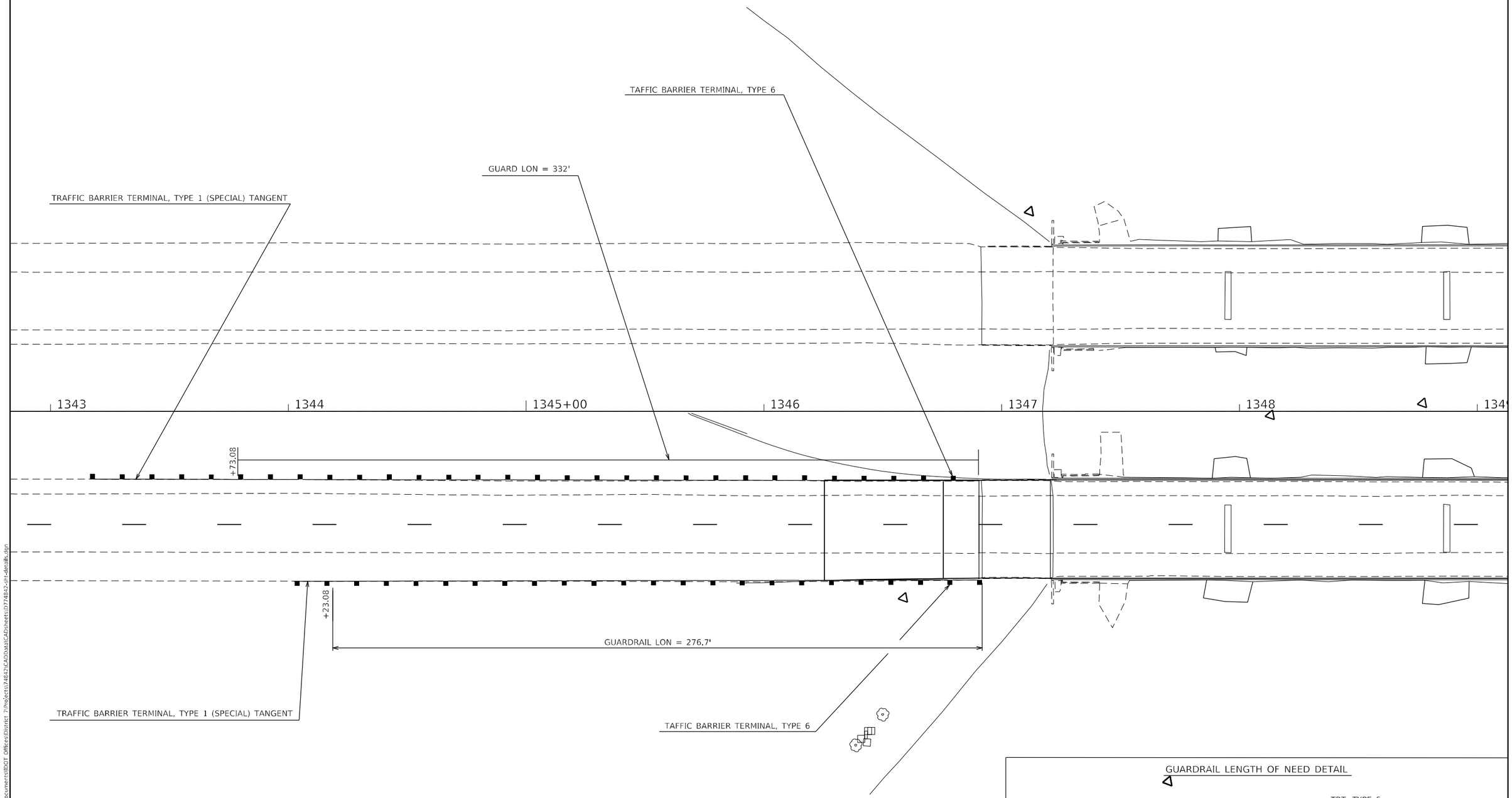
SCALE: SHEET 2 OF 2 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	9

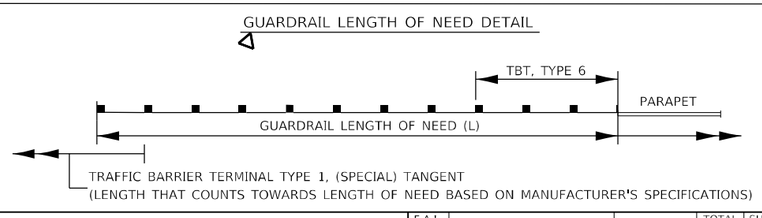
CONTRACT NO. 74842

ILLINOIS FED. AID PROJECT

GUARDRAIL PLAN SHEET



GUARDRAIL LENGTH OF NEED DETAIL



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USER NAME = Mona.Steffen	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 2/16/2023	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GUARDRAIL PLAN SHEET
STRUCTURE 012-0052

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	10
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		

BENCHMARKS: BM 507A, Brass Disk in top of Southwest Wingwall SN 012-0052. Elev. 564.122, 68' Rt., Sta. 1347+10.
BM 508, Cut Square on Northeast corner, SN 012-0052. Elev. 567.996, 28' Rt., Sta. 1349+50.

EXISTING STRUCTURE NO. 012-0052 (E.B.): Three span steel plate girder bridge with concrete deck on pile bent abutments and hammerhead piers supported on steel piles. 240'-6" Bk-Bk Abutments. 43'-2" Out-Out Deck. Constructed as F.A.I. Route 70, Section 12-51B at Station 1348+41 in 1968. Redecked as Section (12-51B) BR in 2002. Profile grade raised with reconstruction of bearing seats at piers and abutments. Abutments converted to semi-integral with new bearings.

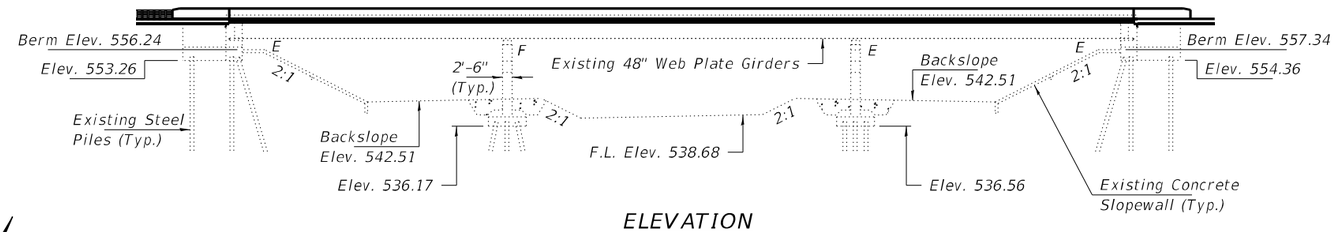
Structure to be re-decked using stage construction.

No Salvage

SCOPE OF WORK

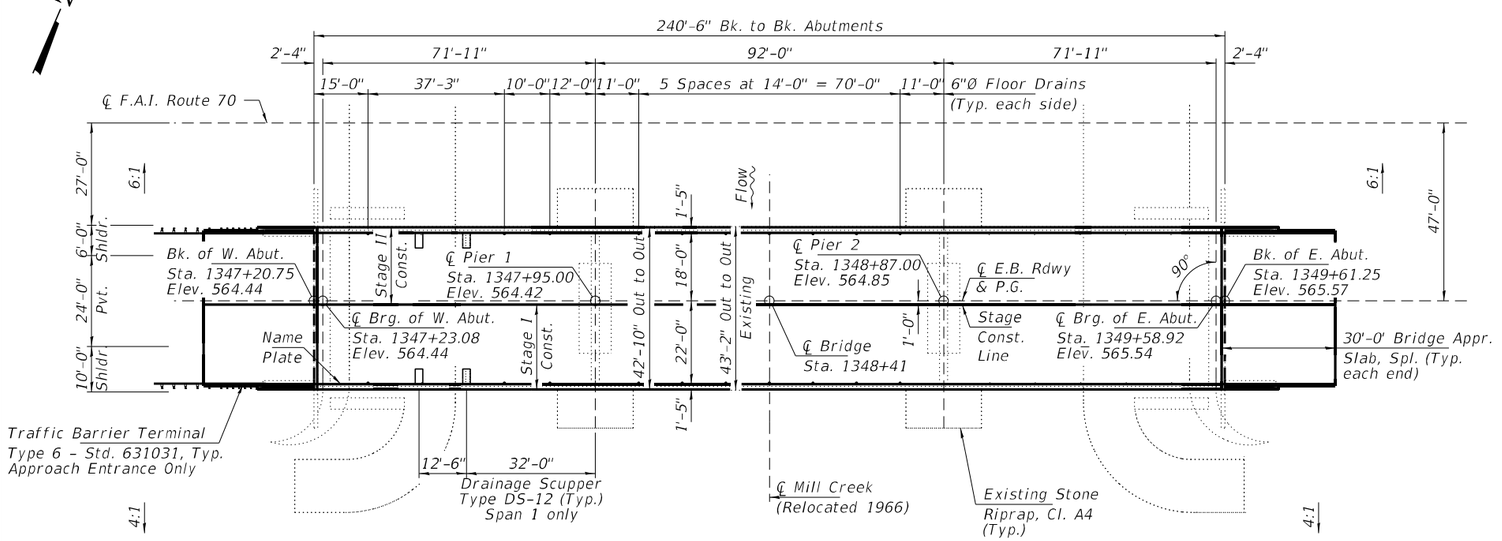
1. Maintain one lane of eastbound traffic utilizing stage construction.
2. Remove and replace the existing concrete deck.
3. Remove and replace the existing concrete approach slabs.
4. Install Traffic Barrier Terminal Type 6.

INDEX OF STRUCTURE SHEETS



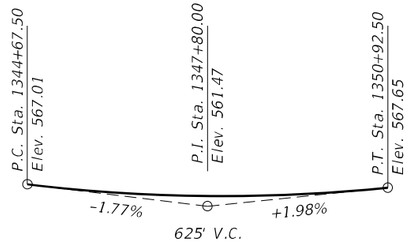
ELEVATION

Existing Creekbed Elevations vary from Elev. 537.68 to Elev. 539.08 (1998 Survey)



PLAN

Note:
Up to ¼ inch may be ground off the bridge deck and the bridge approach slabs.



625' V.C.

PROFILE GRADE

(at ℄ Roadway) The profile grade shows the final elevation after grinding.

STATION 1348+41.00
RE-BUILT 202_ BY
STATE OF ILLINOIS
F.A.I. RTE. 70 - SEC. (12-51B) BR-2
LOADING HS20-44 & ALT.
STR. NO. 012-0052

NAME PLATE

See Std. 515001

Existing Name Plates shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridge.

LOADING HS20-44 & ALT.

Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.065g
Site Coefficient (S) = 1.5

EXISTING DESIGN STRESSES

ORIGINAL STRUCTURE

f'c = 1,400 psi
fs = 20,000 psi (Structural Steel)
fs = 20,000 psi (Reinforcement)

2002 CONSTRUCTION

f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fy = 36,000 psi (Structural Steel - AASHTO M270, GR. 36)
fy = 50,000 psi (Structural Steel - AASHTO M270, GR. 50)

PROPOSED DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (Structural Steel - AASHTO M270, GR. 50)

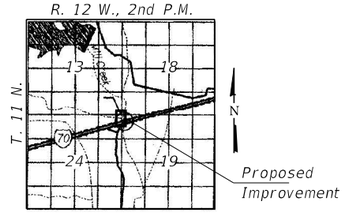
DESIGN SCOUR ELEVATION TABLE

Event/Limit State	Design Scour Elevations (ft.)				Item 113
	W. Abut.	Pier 1	Pier 2	E. Abut.	
Q100	553.26	521.11	521.47	554.36	5
Q200	553.26	518.97	519.24	554.36	
Design	553.26	521.11	521.47	554.36	
Check	553.26	518.97	519.24	554.36	

STEVEN W. MEGGINSON
LICENSED STRUCTURAL ENGINEER
081-6064
SPRINGFIELD, IL
STATE OF ILLINOIS

Steven W. Megginson 03/13/2023
ILLINOIS STRUCTURAL ENGINEER NO. 081-6064 Expires 11-30-2024

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



LOCATION SKETCH

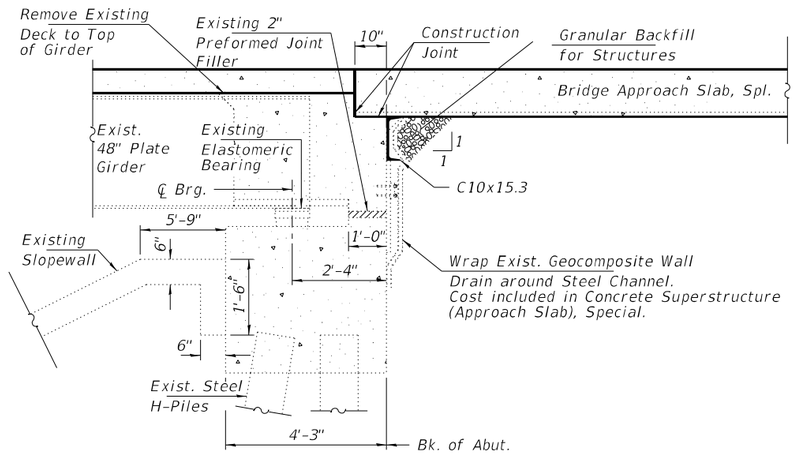
GENERAL PLAN & ELEVATION
I-70 E.B. OVER MILL CREEK
F.A.I. RTE. 70 - SEC. (12-51B) BR-2
CLARK COUNTY
STATION 1348+41.00
STR. NO. 012-0052

FILE NAME = 200285-shl-bridge.dgn	USER NAME = gmeicalf	DESIGNED - S.M.S.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC. 3395 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -	
	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION
STRUCTURE NO. 012-0052
SHEET NO. 1 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	11
		CONTRACT NO. 74842		
		ILLINOIS FED. AID PROJECT		



SECTION THRU SEMI-INTEGRAL ABUTMENT

GENERAL NOTES

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 (SSPC-SP3 Standards). 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 paid for according to Article 109.04 of the Standard Specifications.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer.

Any cracks that cannot be removed by grinding ¼ inch deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

If the Contractor elects to use cantilever forming brackets on the exterior beams or girders, the brackets shall be placed at the same locations as required for the hardwood blocks in Article 503.06(b) of the Standard Specifications. If additional cantilever forming brackets are required, hardwood blocking shall be wedged between the exterior and first interior beam at each of these additional bracket locations.

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

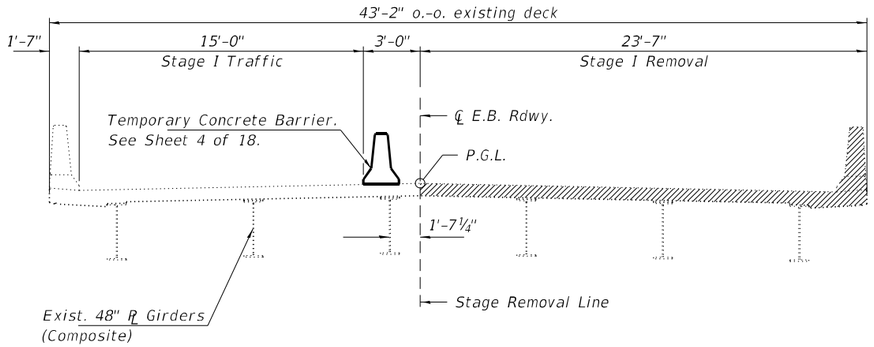
Cleaning and field painting of structural steel shall be done under a sperate painting contract.

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

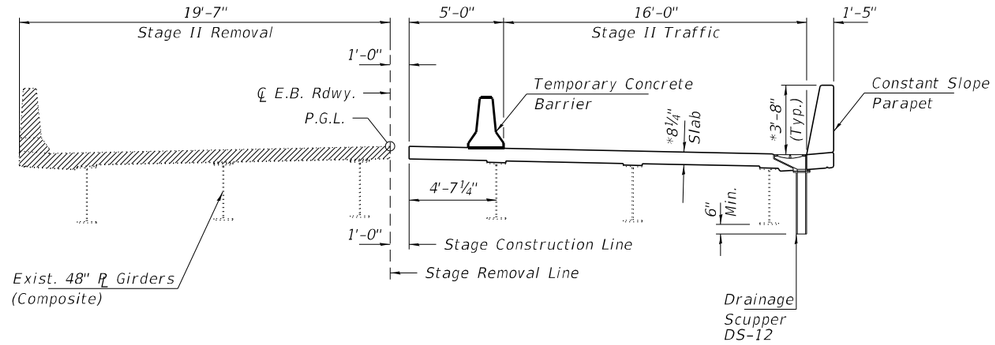
Protective Coat shall be applied to the top surface of the concrete deck and approach slabs and top and inside face of parapets.

TOTAL BILL OF MATERIAL

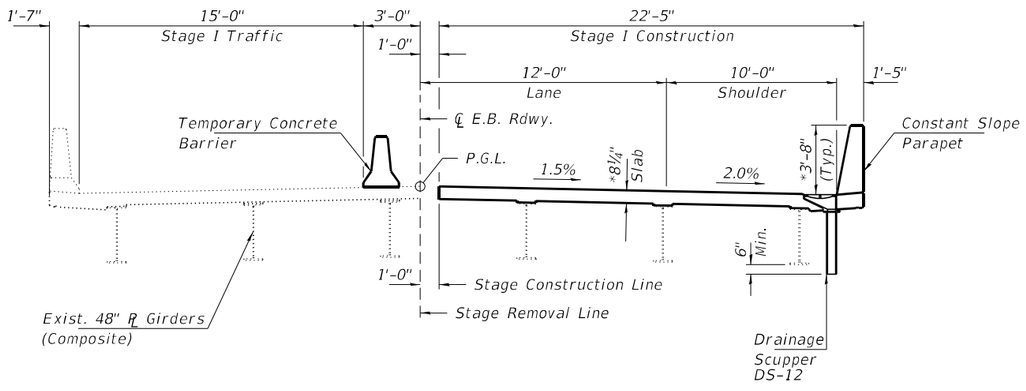
ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Concrete Deck	Each	1		1
Floor Drains	Each	18		18
Concrete Structures	Cu. Yd.		25.4	25.4
Concrete Superstructure	Cu. Yd.	352.1		352.1
Protective Coat	Sq. Yd.	1,599		1,599
Reinforcement Bars, Epoxy Coated	Pound	134,960	4,450	139,410
Bar Splicers	Each	1,009	80	1,089
Name Plates	Each	1		1
Granular Backfill for Structures	Cu. Yd.		7	7
Drainage Scuppers, DS-12	Each	4		4
Diamond Grinding (Bridge Section)	Sq. Yd.	1,195		1,195
Concrete Superstructure (Approach Slab), Special	Cu. Yd.	120.0		120.0
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	797		797



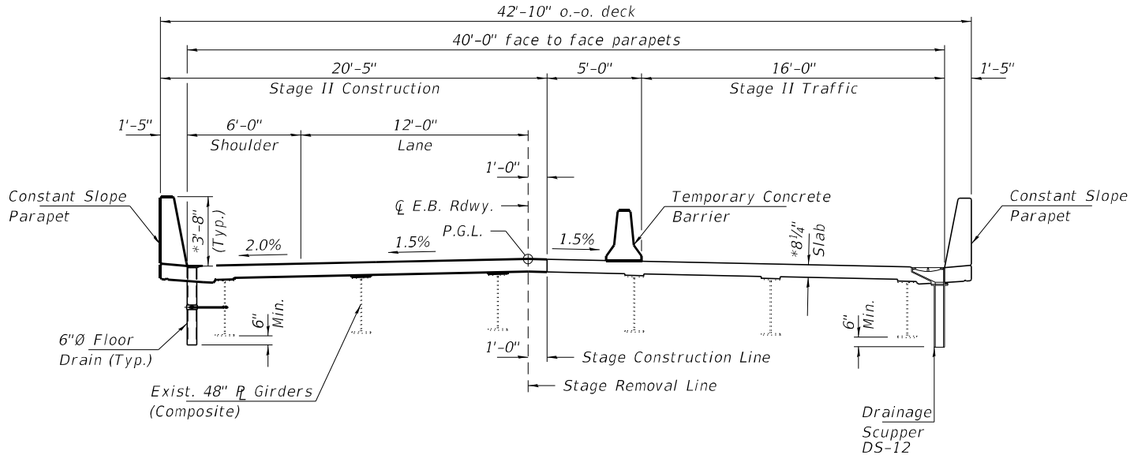
STAGE I REMOVAL



STAGE II REMOVAL



STAGE I CONSTRUCTION



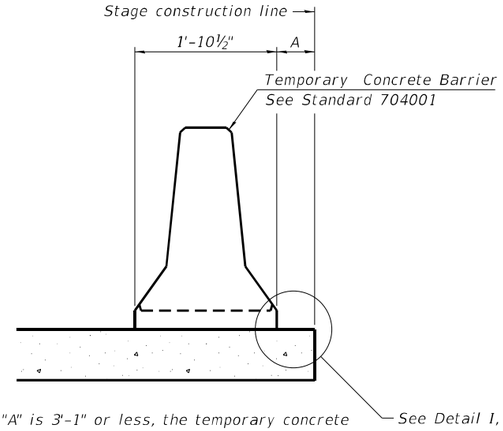
STAGE II CONSTRUCTION

Notes:
All sections are looking East.
Hatched areas indicate Removal of Existing Concrete Deck.
See Roadway Plans for quantity of Temporary Concrete Barrier.

* Prior to Grinding

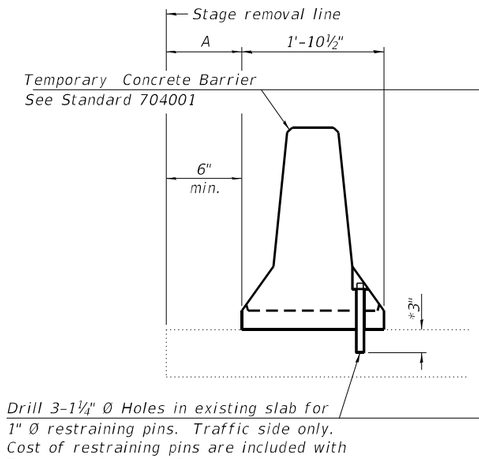
FILE NAME = 200285-shi-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE CONSTRUCTION DETAILS STRUCTURE NO. 012-0052
HAMPTON, LENZINI AND RENWICK, INC. 3395 STEVENSON DRIVE SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		SHEET NO. 3 OF 18 SHEETS
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PC / SE CORP. 184.002959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -		
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	13
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		



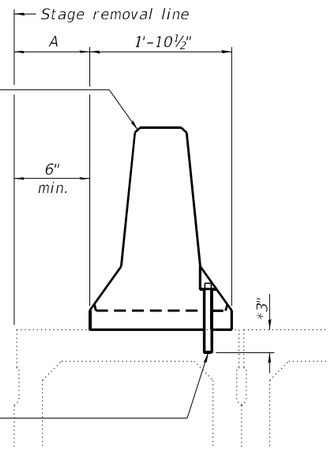
When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



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

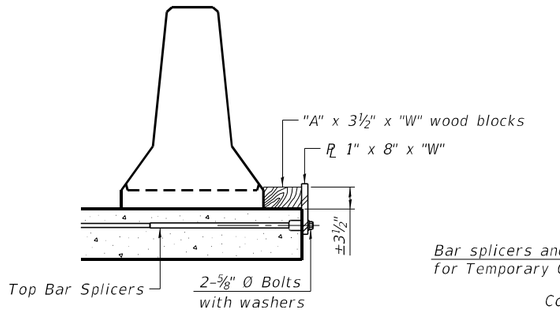
EXISTING SLAB



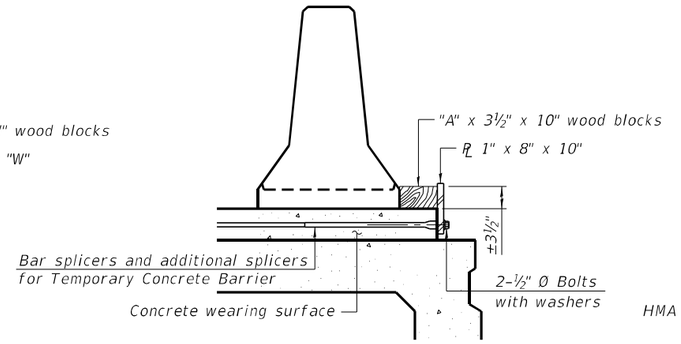
* When hot-mix asphalt wearing surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

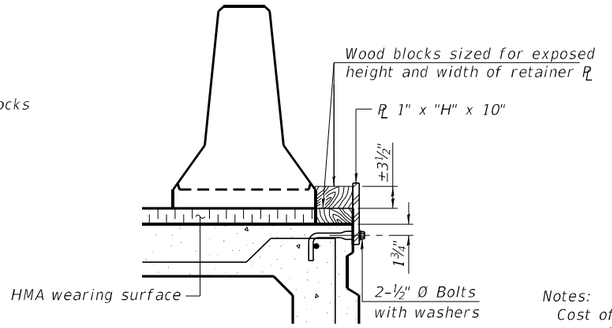
SECTIONS THRU SLAB OR DECK BEAM



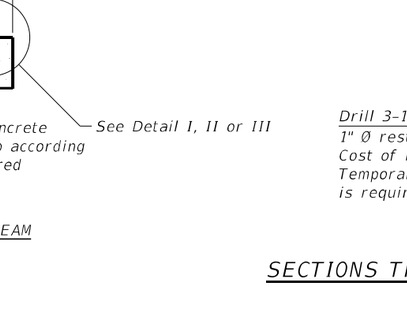
DETAIL I



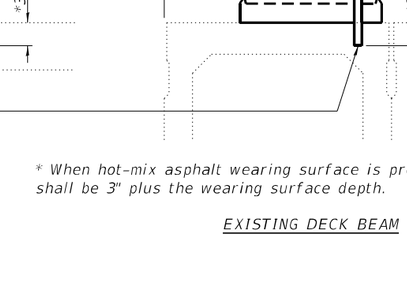
DETAIL II



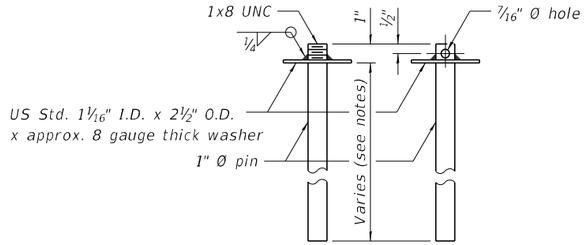
DETAIL III



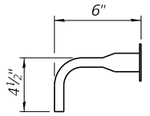
STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



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



RESTRAINING PIN



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

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

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

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

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

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

RAILING CRITERIA

NCHRP 350 Test Level	3
Railing Weight (plf)	440

R-27

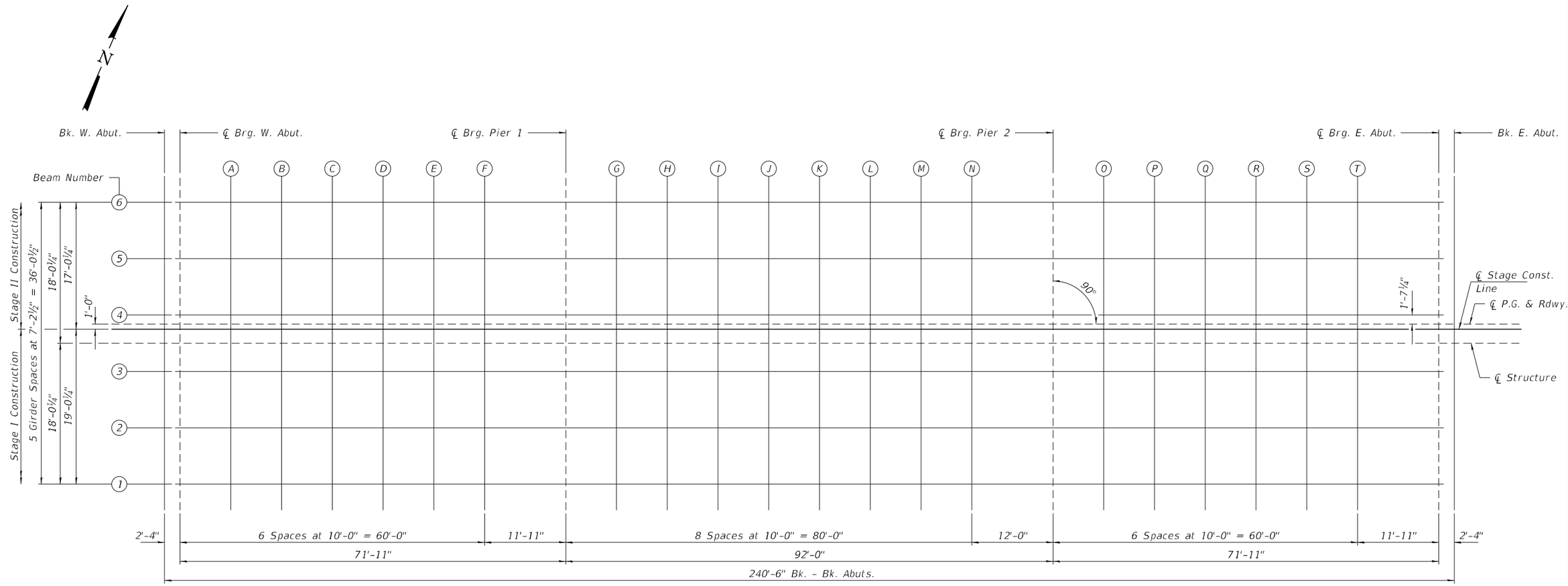
10-12-2021

FILE NAME = 200285-shl-bridge.dgn | USER NAME = gmetcalf | DESIGNED - S.M.S. | REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3585 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PC / SE CORP. 184.000959 | CHECKED - S.W.M. | REVISED -
PLOT SCALE = $SCALES | DRAWN - R.D.H. | REVISED -
PLOT DATE = 3/13/2023 | CHECKED - S.W.M. | REVISED -

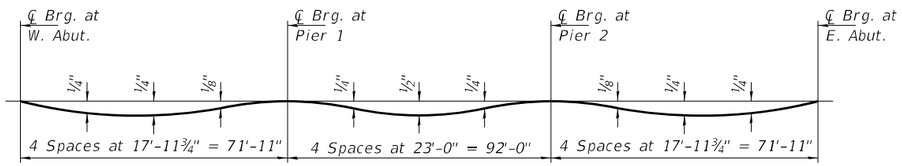
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER
STRUCTURE NO. 012-0052
SHEET NO. 4 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	14
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			



PLAN

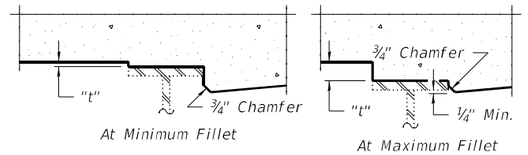


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

Note:

The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections and grinding as shown on sheets 6, 7 & 8 of 18.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection and Grinding" shown on sheets 6, 7 & 8 of 18, minus the initial slab thickness prior to grinding, equals the fillet heights "t" above top flange of beams.

The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on sheets 6, 7 & 8 of 18. For grinding the deck, see Special Provisions.

FILLET HEIGHTS

FILE NAME = 200285-shi-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 012-0052	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC. 3365 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -			70	(12-51B) BR-2	CLARK	30	15
	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -					CONTRACT NO. 74842		
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -		SHEET NO. 5 OF 18 SHEETS			ILLINOIS	FED. AID PROJECT	

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	-16.02	564.18	564.20
℄ Brg. W. Abut.	1347+23.08	-16.02	564.18	564.20
A	1347+33.08	-16.02	564.16	564.19
B	1347+43.08	-16.02	564.14	564.19
C	1347+53.08	-16.02	564.14	564.19
D	1347+63.08	-16.02	564.13	564.18
E	1347+73.08	-16.02	564.14	564.17
F	1347+83.08	-16.02	564.14	564.17
℄ Brg. Pier 1	1347+95.00	-16.02	564.16	564.18
G	1348+05.00	-16.02	564.18	564.21
H	1348+15.00	-16.02	564.21	564.25
I	1348+25.00	-16.02	564.24	564.30
J	1348+35.00	-16.02	564.29	564.35
K	1348+45.00	-16.02	564.33	564.40
L	1348+55.00	-16.02	564.39	564.44
M	1348+65.00	-16.02	564.44	564.49
N	1348+75.00	-16.02	564.51	564.54
℄ Brg. Pier 2	1348+87.00	-16.02	564.59	564.61
O	1348+97.00	-16.02	564.67	564.70
P	1349+07.00	-16.02	564.76	564.79
Q	1349+17.00	-16.02	564.84	564.89
R	1349+27.00	-16.02	564.94	564.99
S	1349+37.00	-16.02	565.04	565.09
T	1349+47.00	-16.02	565.15	565.19
℄ Brg. E. Abut.	1349+58.92	-16.02	565.28	565.30
Bk. E. Abut.	1349+61.25	-16.02	565.31	565.33

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	-8.81	564.31	564.33
℄ Brg. W. Abut.	1347+23.08	-8.81	564.31	564.33
A	1347+33.08	-8.81	564.29	564.32
B	1347+43.08	-8.81	564.27	564.32
C	1347+53.08	-8.81	564.26	564.31
D	1347+63.08	-8.81	564.26	564.31
E	1347+73.08	-8.81	564.26	564.30
F	1347+83.08	-8.81	564.27	564.30
℄ Brg. Pier 1	1347+95.00	-8.81	564.29	564.31
G	1348+05.00	-8.81	564.31	564.34
H	1348+15.00	-8.81	564.34	564.38
I	1348+25.00	-8.81	564.38	564.43
J	1348+35.00	-8.81	564.42	564.48
K	1348+45.00	-8.81	564.46	564.53
L	1348+55.00	-8.81	564.52	564.57
M	1348+65.00	-8.81	564.57	564.62
N	1348+75.00	-8.81	564.64	564.67
℄ Brg. Pier 2	1348+87.00	-8.81	564.72	564.74
O	1348+97.00	-8.81	564.80	564.82
P	1349+07.00	-8.81	564.88	564.92
Q	1349+17.00	-8.81	564.97	565.01
R	1349+27.00	-8.81	565.07	565.12
S	1349+37.00	-8.81	565.17	565.22
T	1349+47.00	-8.81	565.28	565.32
℄ Brg. E. Abut.	1349+58.92	-8.81	565.41	565.43
Bk. E. Abut.	1349+61.25	-8.81	565.44	565.46

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	-1.60	564.42	564.44
℄ Brg. W. Abut.	1347+23.08	-1.60	564.41	564.43
A	1347+33.08	-1.60	564.39	564.43
B	1347+43.08	-1.60	564.38	564.43
C	1347+53.08	-1.60	564.37	564.42
D	1347+63.08	-1.60	564.37	564.41
E	1347+73.08	-1.60	564.37	564.41
F	1347+83.08	-1.60	564.38	564.40
℄ Brg. Pier 1	1347+95.00	-1.60	564.40	564.42
G	1348+05.00	-1.60	564.42	564.45
H	1348+15.00	-1.60	564.45	564.49
I	1348+25.00	-1.60	564.48	564.54
J	1348+35.00	-1.60	564.52	564.58
K	1348+45.00	-1.60	564.57	564.64
L	1348+55.00	-1.60	564.62	564.68
M	1348+65.00	-1.60	564.68	564.73
N	1348+75.00	-1.60	564.74	564.77
℄ Brg. Pier 2	1348+87.00	-1.60	564.83	564.85
O	1348+97.00	-1.60	564.91	564.93
P	1349+07.00	-1.60	564.99	565.03
Q	1349+17.00	-1.60	565.08	565.13
R	1349+27.00	-1.60	565.17	565.23
S	1349+37.00	-1.60	565.28	565.33
T	1349+47.00	-1.60	565.38	565.42
℄ Brg. E. Abut.	1349+58.92	-1.60	565.52	565.54
Bk. E. Abut.	1349+61.25	-1.60	565.55	565.57

P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	0.00	564.44	564.46
℄ Brg. W. Abut.	1347+23.08	0.00	564.44	564.46
A	1347+33.08	0.00	564.42	564.45
B	1347+43.08	0.00	564.40	564.45
C	1347+53.08	0.00	564.40	564.45
D	1347+63.08	0.00	564.39	564.44
E	1347+73.08	0.00	564.40	564.43
F	1347+83.08	0.00	564.40	564.43
℄ Brg. Pier 1	1347+95.00	0.00	564.42	564.44
G	1348+05.00	0.00	564.44	564.47
H	1348+15.00	0.00	564.47	564.51
I	1348+25.00	0.00	564.51	564.56
J	1348+35.00	0.00	564.55	564.61
K	1348+45.00	0.00	564.59	564.66
L	1348+55.00	0.00	564.65	564.70
M	1348+65.00	0.00	564.70	564.75
N	1348+75.00	0.00	564.77	564.80
℄ Brg. Pier 2	1348+87.00	0.00	564.85	564.87
O	1348+97.00	0.00	564.93	564.96
P	1349+07.00	0.00	565.02	565.05
Q	1349+17.00	0.00	565.10	565.15
R	1349+27.00	0.00	565.20	565.25
S	1349+37.00	0.00	565.30	565.35
T	1349+47.00	0.00	565.41	565.45
℄ Brg. E. Abut.	1349+58.92	0.00	565.54	565.56
Bk. E. Abut.	1349+61.25	0.00	565.57	565.59

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	1.00	564.43	564.45
℄ Brg. W. Abut.	1347+23.08	1.00	564.42	564.44
A	1347+33.08	1.00	564.40	564.44
B	1347+43.08	1.00	564.39	564.44
C	1347+53.08	1.00	564.38	564.43
D	1347+63.08	1.00	564.38	564.42
E	1347+73.08	1.00	564.38	564.42
F	1347+83.08	1.00	564.39	564.42
℄ Brg. Pier 1	1347+95.00	1.00	564.41	564.43
G	1348+05.00	1.00	564.43	564.45
H	1348+15.00	1.00	564.46	564.50
I	1348+25.00	1.00	564.49	564.55
J	1348+35.00	1.00	564.53	564.59
K	1348+45.00	1.00	564.58	564.65
L	1348+55.00	1.00	564.63	564.69
M	1348+65.00	1.00	564.69	564.73
N	1348+75.00	1.00	564.76	564.79
℄ Brg. Pier 2	1348+87.00	1.00	564.84	564.86
O	1348+97.00	1.00	564.92	564.94
P	1349+07.00	1.00	565.00	565.04
Q	1349+17.00	1.00	565.09	565.13
R	1349+27.00	1.00	565.18	565.23
S	1349+37.00	1.00	565.29	565.34
T	1349+47.00	1.00	565.39	565.43
℄ Brg. E. Abut.	1349+58.92	1.00	565.53	565.55
Bk. E. Abut.	1349+61.25	1.00	565.56	565.58

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	5.60	564.36	564.38
℄ Brg. W. Abut.	1347+23.08	5.60	564.35	564.37
A	1347+33.08	5.60	564.33	564.37
B	1347+43.08	5.60	564.32	564.36
C	1347+53.08	5.60	564.31	564.36
D	1347+63.08	5.60	564.31	564.35
E	1347+73.08	5.60	564.31	564.35
F	1347+83.08	5.60	564.32	564.34
℄ Brg. Pier 1	1347+95.00	5.60	564.34	564.36
G	1348+05.00	5.60	564.36	564.38
H	1348+15.00	5.60	564.39	564.43
I	1348+25.00	5.60	564.42	564.48
J	1348+35.00	5.60	564.46	564.53
K	1348+45.00	5.60	564.51	564.58
L	1348+55.00	5.60	564.56	564.62
M	1348+65.00	5.60	564.62	564.67
N	1348+75.00	5.60	564.68	564.71
℄ Brg. Pier 2	1348+87.00	5.60	564.77	564.79
O	1348+97.00	5.60	564.85	564.87
P	1349+07.00	5.60	564.93	564.97
Q	1349+17.00	5.60	565.02	565.07
R	1349+27.00	5.60	565.11	565.17
S	1349+37.00	5.60	565.22	565.27
T	1349+47.00	5.60	565.32	565.36
℄ Brg. E. Abut.	1349+58.92	5.60	565.46	565.48
Bk. E. Abut.	1349+61.25	5.60	565.49	565.51

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	12.81	564.25	564.27
℄ Brg. W. Abut.	1347+23.08	12.81	564.24	564.26
A	1347+33.08	12.81	564.22	564.26
B	1347+43.08	12.81	564.21	564.25
C	1347+53.08	12.81	564.20	564.25
D	1347+63.08	12.81	564.19	564.24
E	1347+73.08	12.81	564.20	564.23
F	1347+83.08	12.81	564.21	564.23
℄ Brg. Pier 1	1347+95.00	12.81	564.22	564.24
G	1348+05.00	12.81	564.25	564.28
H	1348+15.00	12.81	564.28	564.32
I	1348+25.00	12.81	564.31	564.37
J	1348+35.00	12.81	564.35	564.41
K	1348+45.00	12.81	564.40	564.46
L	1348+55.00	12.81	564.45	564.50
M	1348+65.00	12.81	564.51	564.55
N	1348+75.00	12.81	564.57	564.60
℄ Brg. Pier 2	1348+87.00	12.81	564.66	564.68
O	1348+97.00	12.81	564.73	564.76
P	1349+07.00	12.81	564.82	564.85
Q	1349+17.00	12.81	564.91	564.95
R	1349+27.00	12.81	565.01	565.06
S	1349+37.00	12.81	565.10	565.16
T	1349+47.00	12.81	565.21	565.25
℄ Brg. E. Abut.	1349+58.92	12.81	565.35	565.37
Bk. E. Abut.	1349+61.25	12.81	565.38	565.40

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. W. Abut.	1347+20.75	20.02	564.10	564.12
℄ Brg. W. Abut.	1347+23.08	20.02	564.10	564.12
A	1347+33.08	20.02	564.08	564.11
B	1347+43.08	20.02	564.06	564.11
C	1347+53.08	20.02	564.05	564.10
D	1347+63.08	20.02	564.05	564.10
E	1347+73.08	20.02	564.05	564.09
F	1347+83.08	20.02	564.06	564.09
℄ Brg. Pier 1	1347+95.00	20.02	564.08	564.10
G	1348+05.00	20.02	564.10	564.13
H	1348+15.00	20.02	564.13	564.17
I	1348+25.00	20.02	564.17	564.22
J	1348+35.00	20.02	564.21	564.27
K	1348+45.00	20.02	564.26	564.32
L	1348+55.00	20.02	564.31	564.36
M	1348+65.00	20.02	564.36	564.41
N	1348+75.00	20.02	564.43	564.46
℄ Brg. Pier 2	1348+87.00	20.02	564.51	564.53
O	1348+97.00	20.02	564.59	564.61
P	1349+07.00	20.02	564.67	564.71
Q	1349+17.00	20.02	564.76	564.81
R	1349+27.00	20.02	564.86	564.91
S	1349+37.00	20.02	564.96	565.01
T	1349+47.00	20.02	565.07	565.11
℄ Brg. E. Abut.	1349+58.92	20.02	565.20	565.22
Bk. E. Abut.	1349+61.25	20.02	565.23	565.25

NORTH EDGE OF SHOULDER

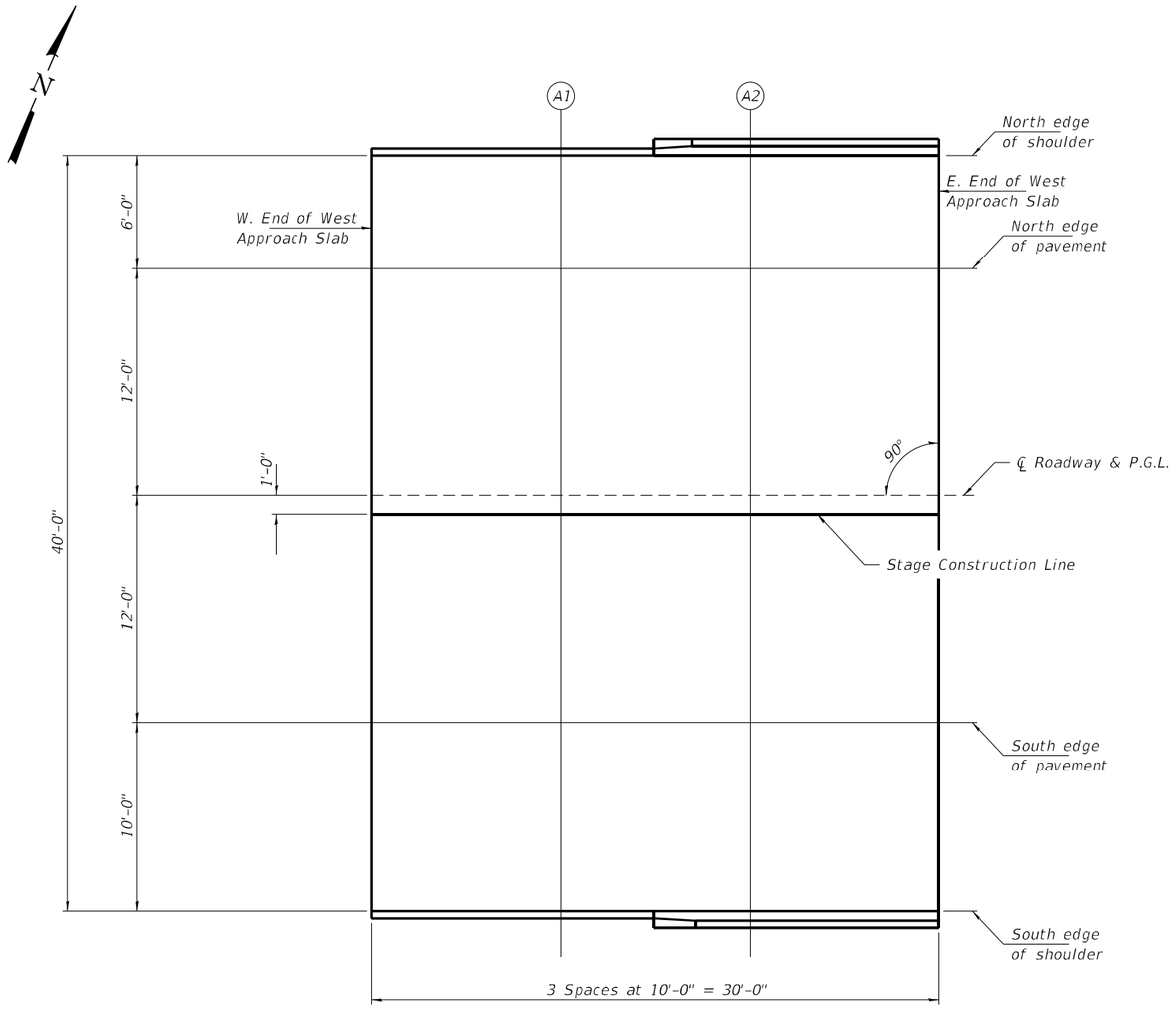
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	-18.00	564.24	564.26
A1	1347+01.58	-18.00	564.20	564.22
A2	1347+11.58	-18.00	564.17	564.19
E. End West Appr. Slab	1347+21.58	-18.00	564.14	564.16

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	-12.00	564.36	564.38
A1	1347+01.58	-12.00	564.32	564.34
A2	1347+11.58	-12.00	564.29	564.31
E. End West Appr. Slab	1347+21.58	-12.00	564.26	564.28

℄ ROADWAY & P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	0.00	564.54	564.56
A1	1347+01.58	0.00	564.51	564.53
A2	1347+11.58	0.00	564.47	564.49
E. End West Appr. Slab	1347+21.58	0.00	564.44	564.46



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	1.00	564.53	564.55
A1	1347+01.58	1.00	564.49	564.51
A2	1347+11.58	1.00	564.45	564.47
E. End West Appr. Slab	1347+21.58	1.00	564.43	564.45

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	12.00	564.36	564.38
A1	1347+01.58	12.00	564.32	564.34
A2	1347+11.58	12.00	564.29	564.31
E. End West Appr. Slab	1347+21.58	12.00	564.26	564.28

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
W. End West Appr. Slab	1346+91.58	22.00	564.16	564.18
A1	1347+01.58	22.00	564.13	564.15
A2	1347+11.58	22.00	564.09	564.11
E. End West Appr. Slab	1347+21.58	22.00	564.06	564.08

FILE NAME = 200285-shi-bridge.dgn | USER NAME = gmeltcalf | DESIGNED - S.M.S. | REVISED -
CHECKED - S.W.M. | REVISED -
PLOT SCALE = $SCALES | DRAWN - R.D.H. | REVISED -
PLOT DATE = 3/13/2023 | CHECKED - S.W.M. | REVISED -

HAMPTON, LENZINI AND RENWICK, INC.
3395 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORP. 184.000959

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 012-0052
SHEET NO. 9 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	19
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		

NORTH EDGE OF SHOULDER

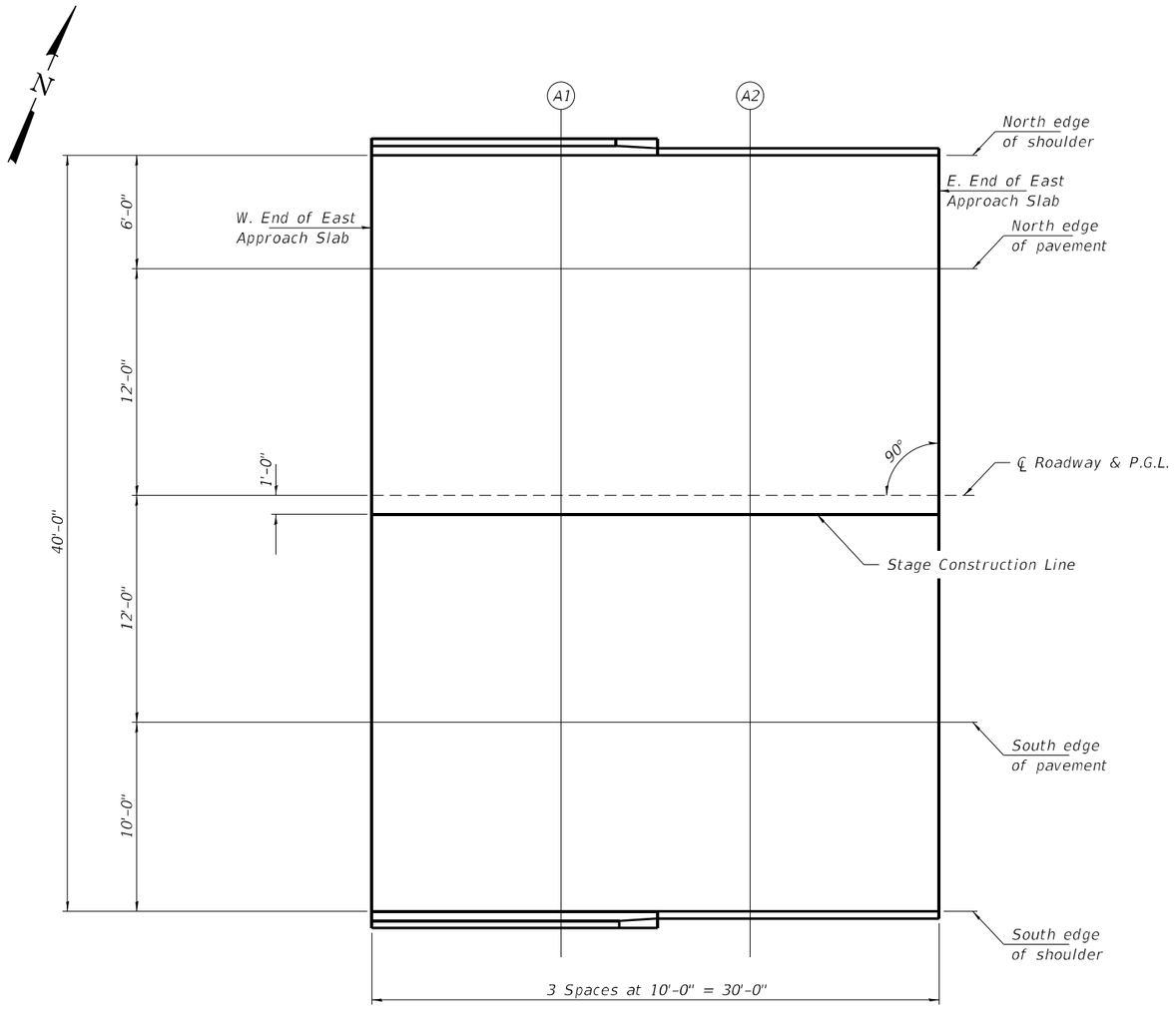
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	-18.00	565.26	565.28
A1	1349+70.42	-18.00	565.39	565.41
A2	1349+80.42	-18.00	565.51	565.53
W. End East Appr. Slab	1349+90.42	-18.00	565.65	565.67

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	-12.00	565.38	565.40
A1	1349+70.42	-12.00	565.51	565.53
A2	1349+80.42	-12.00	565.63	565.65
W. End East Appr. Slab	1349+90.42	-12.00	565.77	565.79

℄ ROADWAY & P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	0.00	565.56	565.58
A1	1349+70.42	0.00	565.68	565.70
A2	1349+80.42	0.00	565.81	565.83
W. End East Appr. Slab	1349+90.42	0.00	565.94	565.96



PLAN

STAGE CONSTRUCTION LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	1.00	565.55	565.57
A1	1349+70.42	1.00	565.67	565.69
A2	1349+80.42	1.00	565.80	565.82
W. End East Appr. Slab	1349+90.42	1.00	565.93	565.95

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	12.00	565.38	565.40
A1	1349+70.42	12.00	565.51	565.53
A2	1349+80.42	12.00	565.63	565.65
W. End East Appr. Slab	1349+90.42	12.00	565.77	565.79

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Grinding
E. End East Appr. Slab	1349+60.42	22.00	565.18	565.20
A1	1349+70.42	22.00	565.30	565.32
A2	1349+80.42	22.00	565.43	565.45
W. End East Appr. Slab	1349+90.42	22.00	565.56	565.58

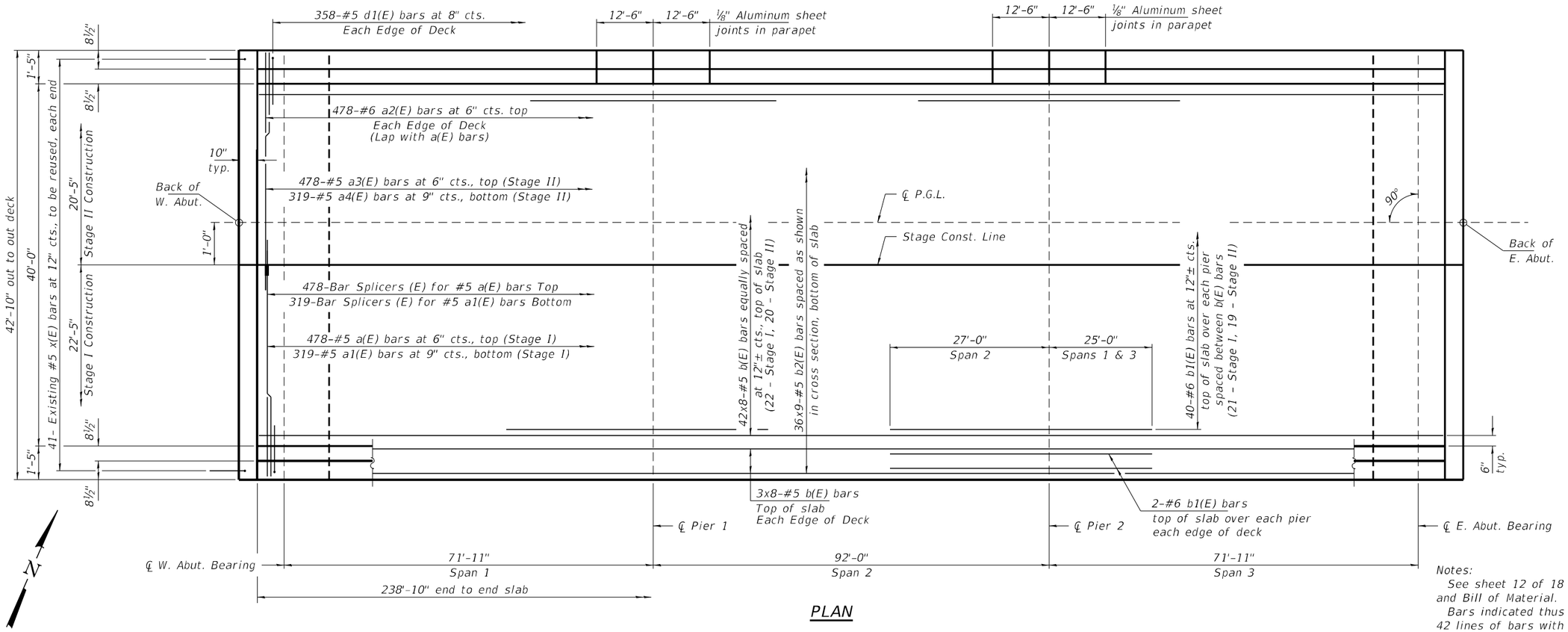
FILE NAME = 200285-shi-bridge.dgn | USER NAME = gmeltcalf | DESIGNED - S.M.S. | REVISED -
CHECKED - S.W.M. | REVISED -
PLOT SCALE = $SCALES | DRAWN - R.D.H. | REVISED -
PLOT DATE = 3/13/2023 | CHECKED - S.W.M. | REVISED -

HAMPTON, LENZINI AND RENWICK, INC.
3395 STEVENSON DRIVE, SUITE 201
SPRINGFIELD, ILLINOIS 62703
ILLINOIS PROFESSIONAL DESIGN FIRM
LS / PE / SE CORP. 184.000959

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

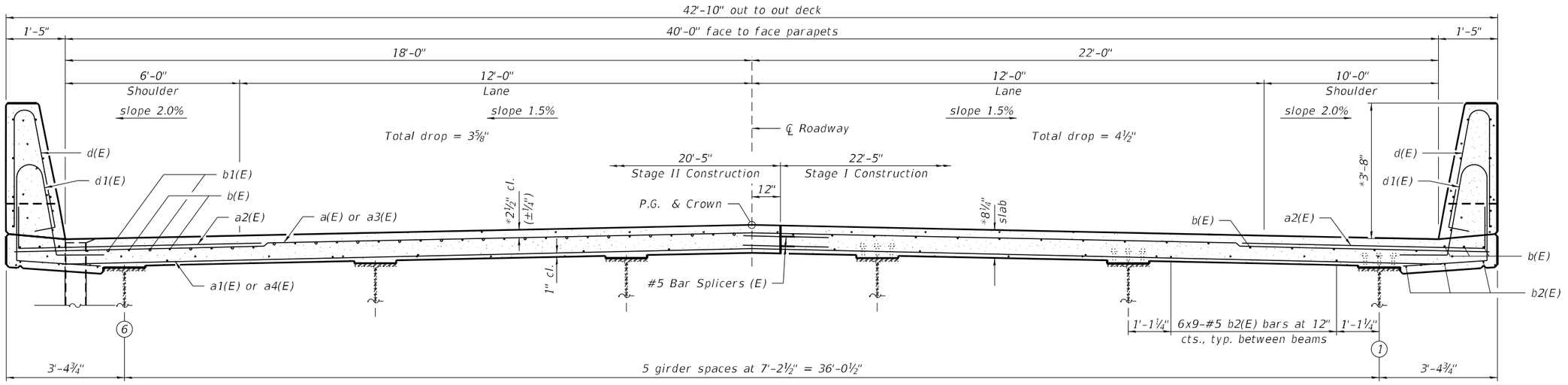
TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 012-0052
SHEET NO. 10 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	20
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		



PLAN

Notes:
See sheet 12 of 18 for superstructure details and Bill of Material.
Bars indicated thus 42 x 8-#5 etc. indicates 42 lines of bars with 8 lengths per line.



NEAR PIER NEAR MIDSPAN

CROSS SECTION

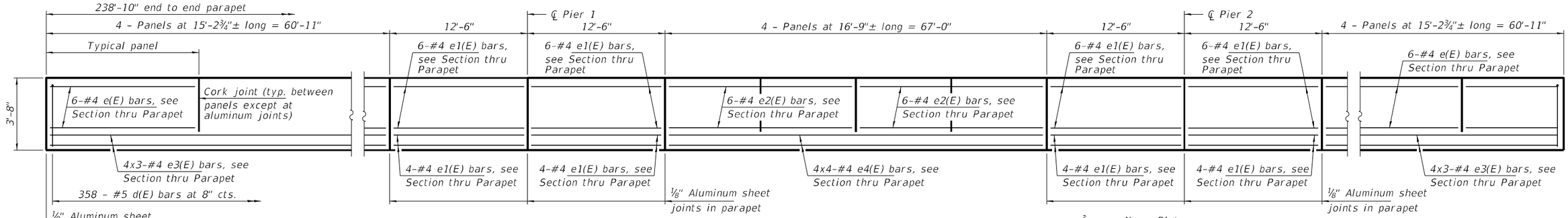
(Looking East)

* Prior to Grinding

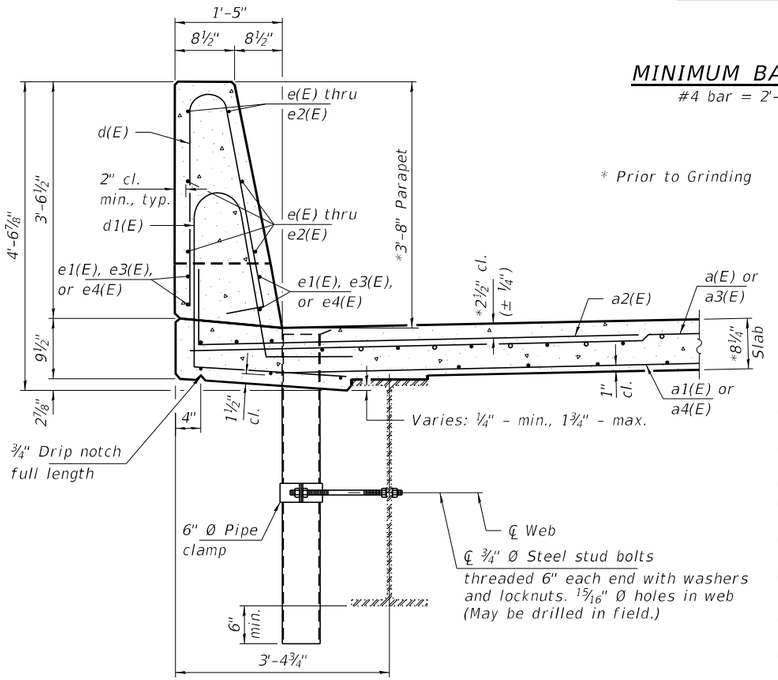
MINIMUM BAR LAP

#5 bar = 3'-6"

FILE NAME = 200285-shl-bridge.dgn	USER NAME = gmelcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 012-0052	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -			70	(12-51B) BR-2	CLARK	30	21
3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -					CONTRACT NO. 74842		
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -		SHEET NO. 11 OF 18 SHEETS			ILLINOIS FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET



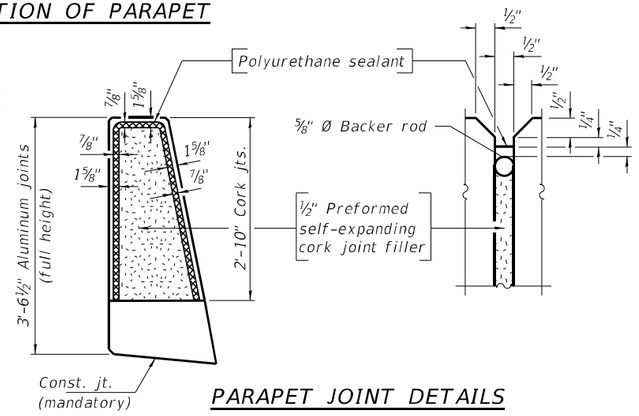
* Prior to Grinding

SECTION THRU PARAPET

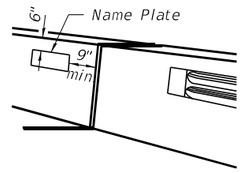
See sheet 1 of 18 for Floor Drain and Scupper locations.

MINIMUM BAR LAP

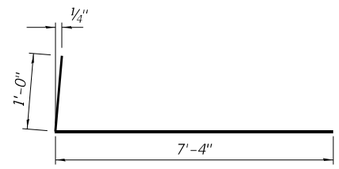
#4 bar = 2'-5"



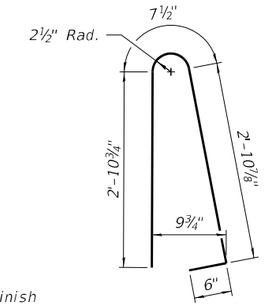
PARAPET JOINT DETAILS



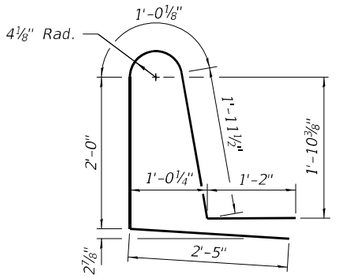
NAME PLATE LOCATION DETAIL



BAR a2(E)



BAR d(E)



BAR d1(E)

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 M 232. Cost of clamping device included with Floor Drains.

The ⅛" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

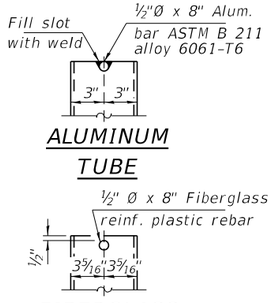
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

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.

SUPERSTRUCTURE BILL OF MATERIAL

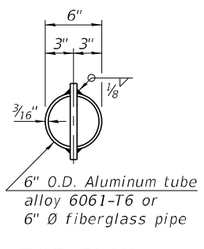
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	478	#5	22'-1"	———
a1(E)	319	#5	20'-10"	———
a2(E)	956	#6	8'-4"	———
a3(E)	478	#5	20'-1"	———
a4(E)	319	#5	18'-10"	———
a5(E)	32	#5	2'-0"	———
b(E)	384	#5	32'-11"	———
b1(E)	88	#6	52'-0"	———
b2(E)	324	#5	29'-8"	———
d(E)	716	#5	7'-0"	
d1(E)	716	#5	8'-7"	
e(E)	96	#4	14'-10"	———
e1(E)	80	#4	12'-2"	———
e2(E)	48	#4	19'-5"	———
e3(E)	48	#4	21'-10"	———
e4(E)	32	#4	18'-6"	———
Floor Drains			Each	18
Concrete Superstructure			Cu. Yd.	343.6
Protective Coat			Sq. Yd.	1,297
Reinf. Bars, Epoxy Coated			Pound	91,290
Diamond Grinding (Bridge Section)			Sq. Yd.	955
Bridge Deck Grooving (Longitudinal)			Sq. Yd.	637

Existing reinforcement shall be cleaned and incorporated into the new construction. Cost included with Removal of Existing Concrete Deck.



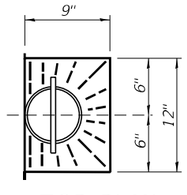
ALUMINUM TUBE

FIBERGLASS PIPE

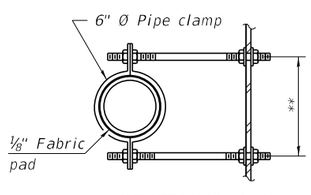


TOP PLAN

(Showing aluminum tube)

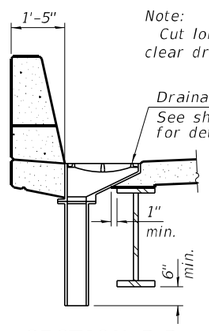


TOP PLAN



SECTION A-A

**Dimension as required by pipe clamp



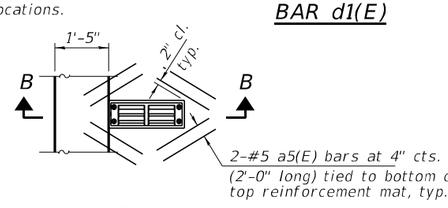
SECTION B-B

Note:

Cut longitudinal reinforcement to clear drainage scuppers.

Drainage Scupper, DS-12

See sheets 1 of 18 for details and locations.



PLAN

FILE NAME = 200285-shl-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	
HAMPTON, LENZINI AND RENWICK, INC.		CHECKED - S.W.M.	REVISED -	
3245 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -	
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP: 184.000959	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -	

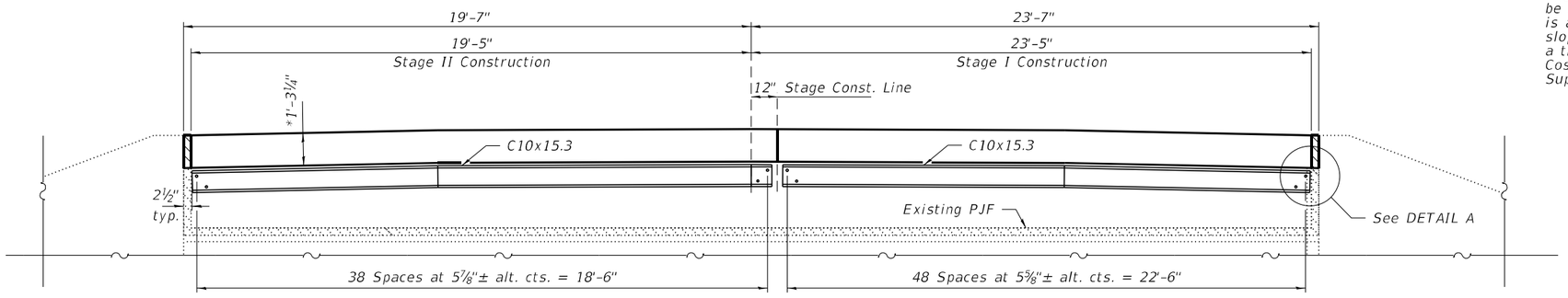
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 012-0052

SHEET NO. 12 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	22
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			

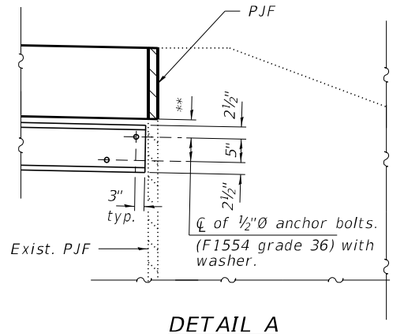
** The support channel for the approach slab shall be set along the bottom of the slab. The Contractor is allowed to use full penetration butt welds at the slope changes or use a straight channel section with a thickened slab to achieve bearing on the channel. Cost of either option is included in Concrete Superstructures (Approach Slab), Special.



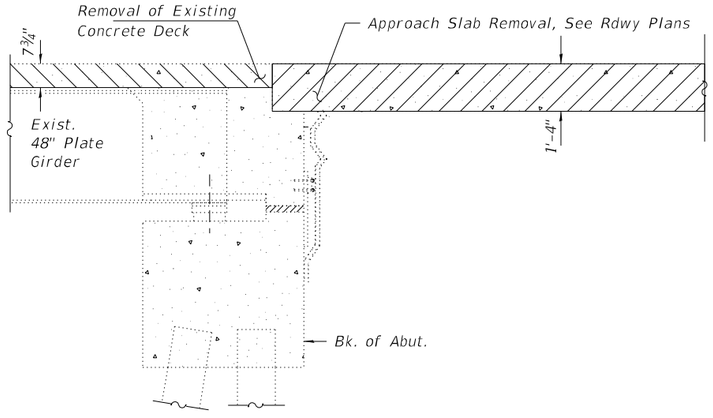
ELEVATION

(West abutment looking East)
(East abutment similar)

* Prior to Grinding

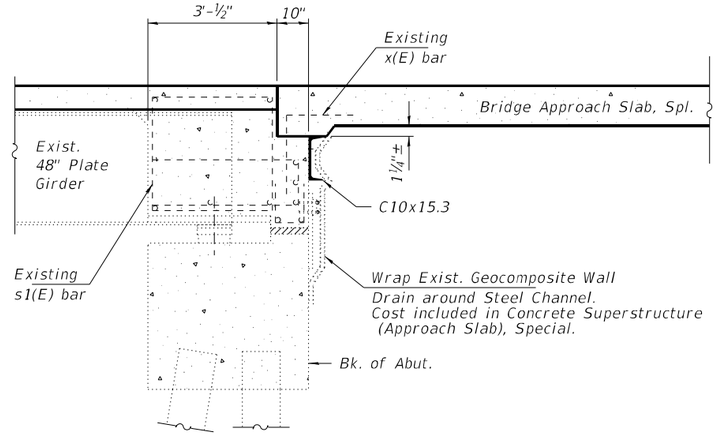


DETAIL A



SECTION THRU SEMI-INTEGRAL ABUTMENT

Hatched areas indicate removal.



SECTION THRU SEMI-INTEGRAL ABUTMENT

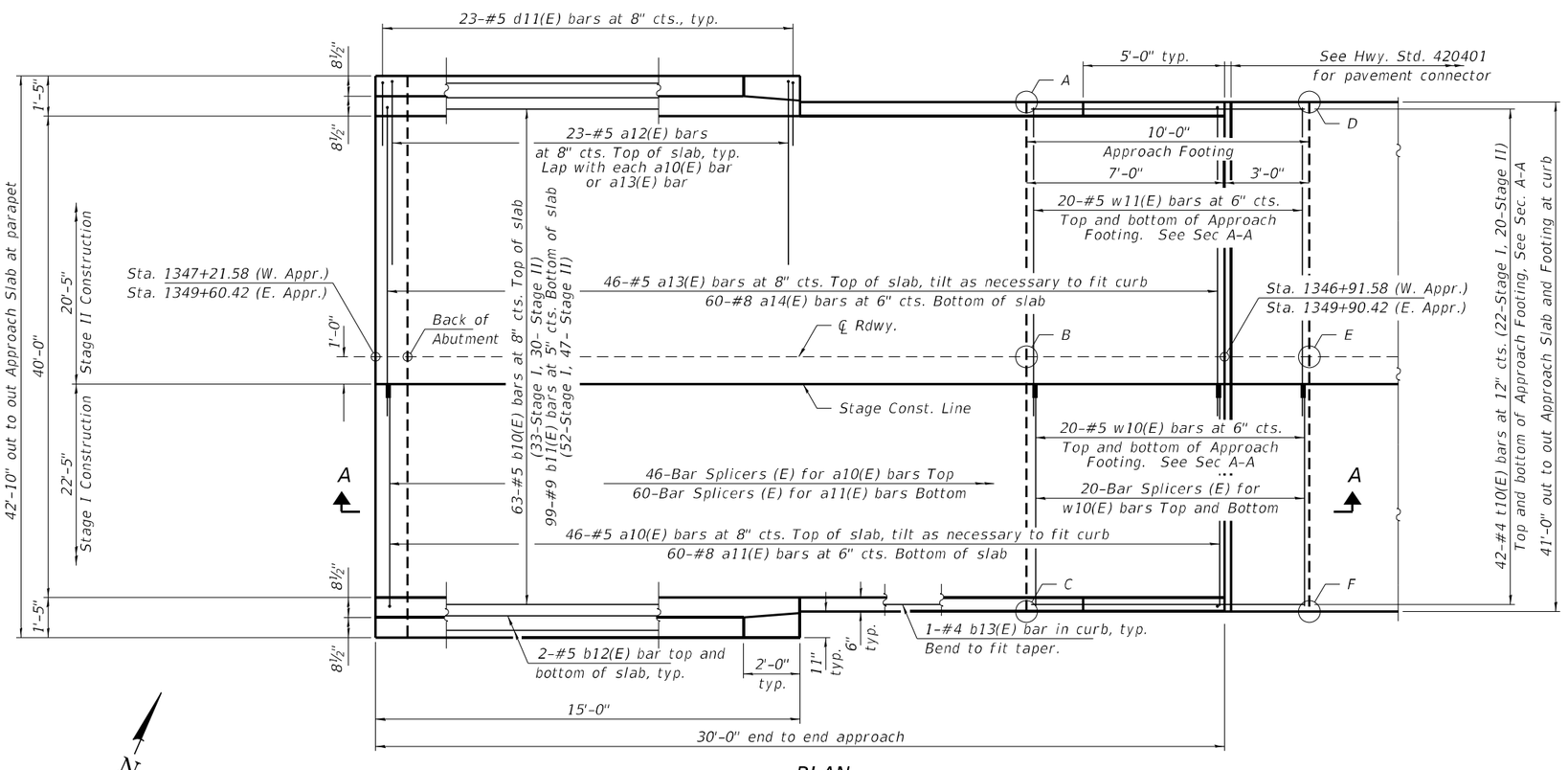
Existing s1(E) and x(E) bars shall remain in place. If reinforcement is damaged, it shall be replaced, at the Contractor's expense. Replacement bars shall be drilled and grouted according to 584 of the Standard Specifications.

NOTES:

Channel shall be AASHTO M270 Grade 50.
All steel shall be galvanized per AASHTO M111.
Anchor bolts shall be ASTM F1554 all-thread (or an Engineer approved alternate material) of the grade and diameter specified.
Drilled and set anchor bolts shall be installed according to Article 521.06 of the Standard Specifications.
Cost of channels and anchor bolts is included in Concrete Superstructure (Approach Slab), Special.

FILE NAME = 200285-shi-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 012-0052
HAMPTON, LENZINI AND RENWICK, INC. 3345 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PC / SE CORP. 184.002959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -		SHEET NO. 13 OF 18 SHEETS
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	23
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		

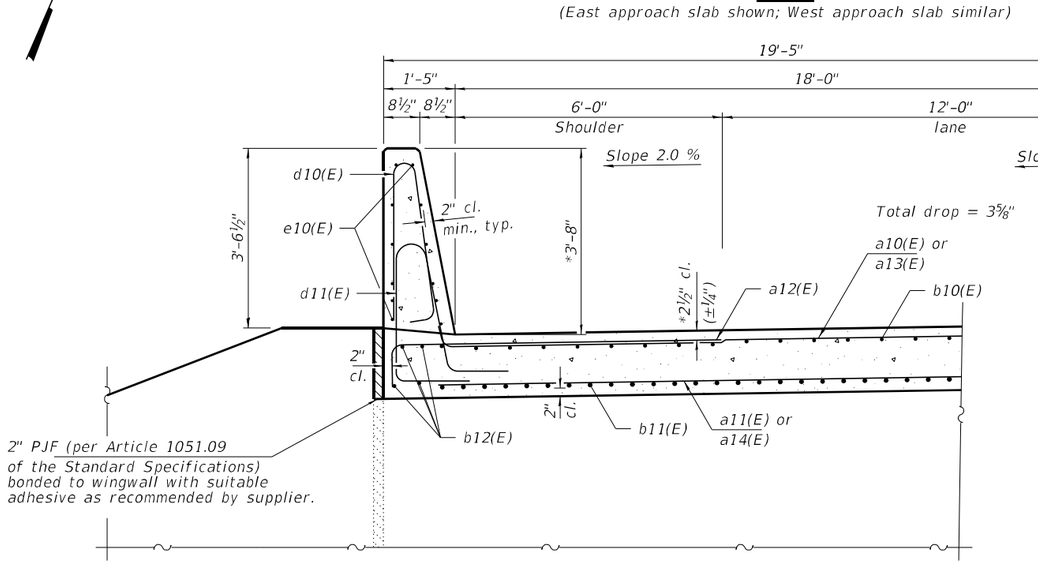


PLAN

(East approach slab shown; West approach slab similar)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

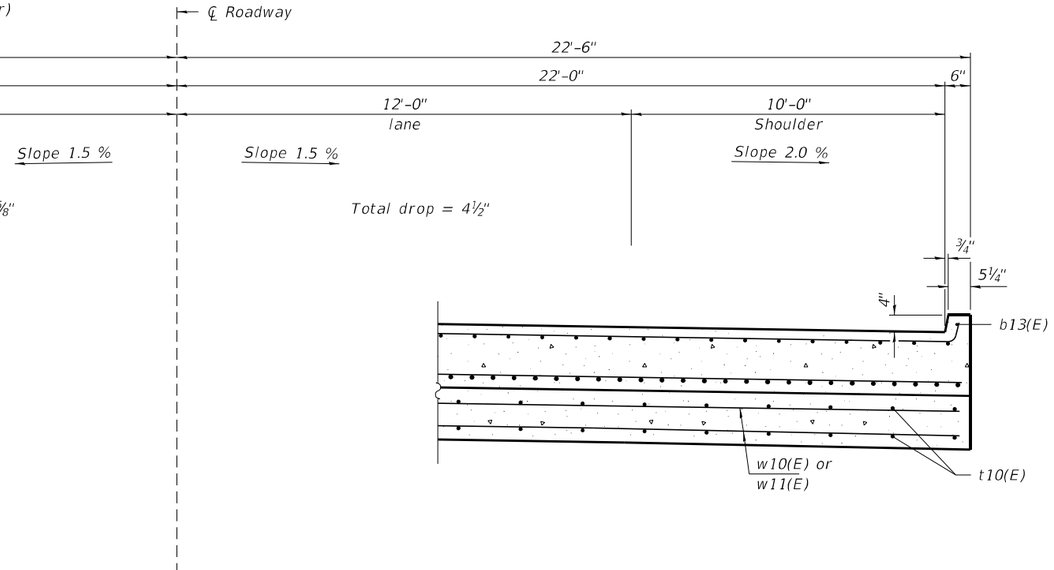
West Approach			East Approach		
Point/ Location	Top	Bottom	Point/ Location	Top	Bottom
A -	562.90	562.06	A -	564.31	563.48
B -	563.29	562.45	B -	564.62	563.79
C -	562.97	562.14	C -	564.23	563.40
D -	562.94	562.10	D -	564.45	563.61
E -	563.33	562.49	E -	564.75	563.92
F -	563.01	562.18	F -	564.36	563.53



NEAR ABUTMENT

CROSS SECTION

(Looking East)



AT APPROACH FOOTING

* Prior to Grinding

BAIA-CIP-44CS-0 10-12-2021

(Sheet 1 of 2)

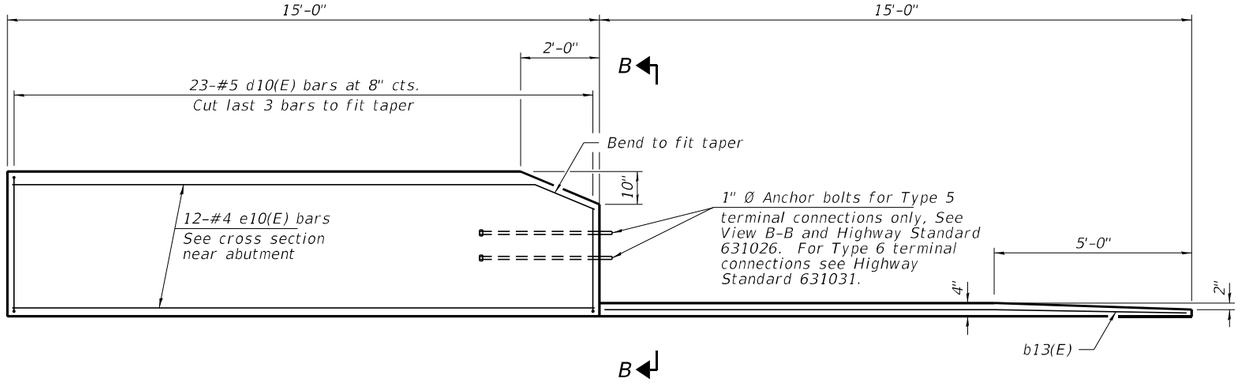
FILE NAME = 200285-shl-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3345 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP: 184.002959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

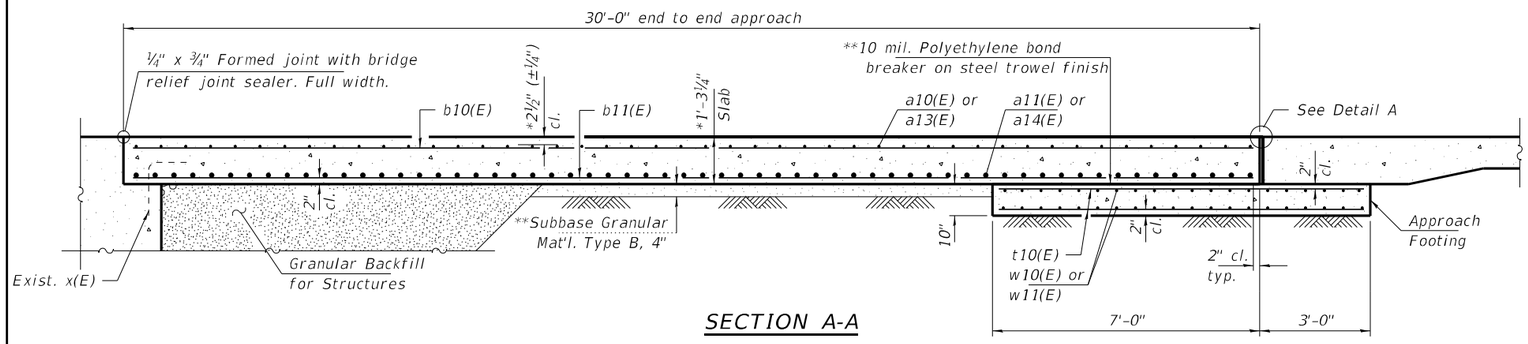
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 012-0052

SHEET NO. 14 OF 18 SHEETS

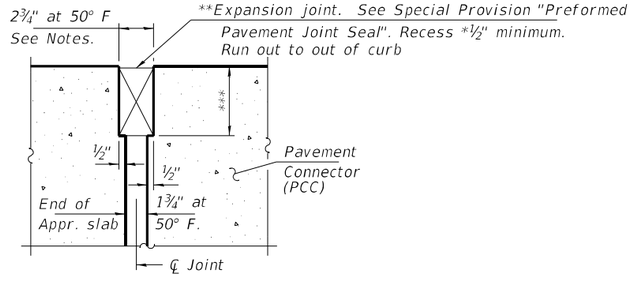
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	24
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		



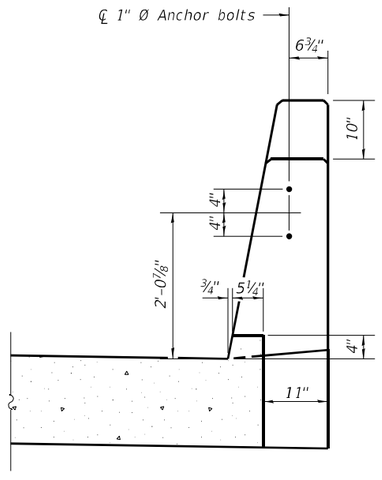
INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A



DETAIL A



VIEW B-B

* Prior to Grinding

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

*** Per manufacturer recommendations

Notes:

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

Parapet concrete shall be paid for as Concrete Superstructure.

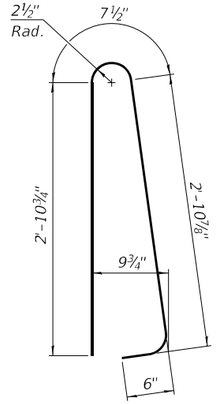
Approach slab shall be paid for as Concrete Superstructure (Approach Slab), Special.

Approach footing concrete shall be paid for as Concrete Structures.

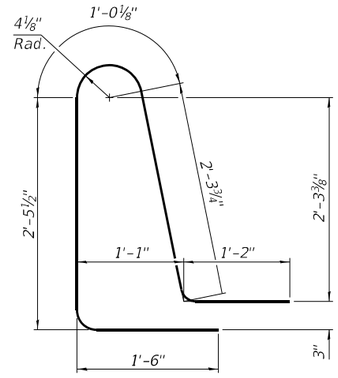
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

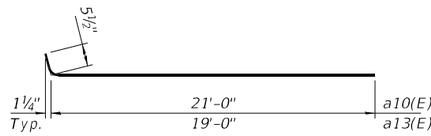
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 18.



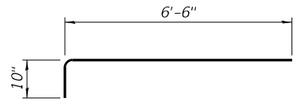
BAR d10(E)



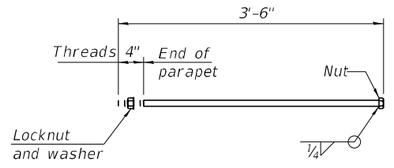
BAR d11(E)



BAR a10(E) & a13(E)



BAR a12(E)



*1" Ø ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)

(Sheet 2 of 2)

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	92	#5	21'-6"	
a11(E)	120	#8	21'-2"	
a12(E)	92	#5	7'-4"	
a13(E)	92	#5	19'-6"	
a14(E)	120	#8	19'-2"	
b10(E)	126	#5	29'-8"	
b11(E)	198	#9	29'-8"	
b12(E)	16	#5	14'-8"	
b13(E)	4	#4	14'-8"	
d10(E)	92	#5	7'-0"	
d11(E)	92	#5	8'-6"	
e10(E)	48	#4	14'-8"	
t10(E)	168	#4	9'-8"	
w10(E)	80	#5	21'-2"	
w11(E)	80	#5	19'-2"	
Concrete Structures			Cu. Yd.	25.4
Concrete Superstructure			Cu. Yd.	8.5
Protective Coat			Sq. Yd.	302
Reinforcement Bars, Epoxy Coated			Pound	48,120
Diamond Grinding (Bridge Section)			Sq. Yd.	240
Concrete Superstructure (Approach Slab), Special			Cu. Yd.	120.0
Bridge Deck Grooving (Longitudinal)			Sq. Yd.	160

BAIA-CIP-44CS-0 10-12-2021

FILE NAME = 200285-sht-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3345 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703 ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959		CHECKED - S.W.M.	REVISED -
	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 012-0052

SHEET NO. 15 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	25
		CONTRACT NO. 74842		
		ILLINOIS	FED. AID PROJECT	

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Span 2
Is	(in^4)	17,085	23,615	17,085
Ic(n)	(in^4)	41,970	–	41,970
Ic(3n)	(in^4)	31,720	–	31,720
Ss	(in^3)	690	940	690
Sc(n)	(in^3)	962	–	962
Sc(3n)	(in^3)	883	–	883
Z	(in^3)	–	–	–
w_D	(k/')	0.94	1.52	0.94
M_D	('k)	311	-1,018	315
s_D	(k/')	0.53	–	0.53
M_{sD}	('k)	197	–	230
M_L	('k)	567	-412	629
M_I	('k)	144	-100	160
$\frac{5}{3}[M_L+I]$	('k)	1,185	-853	1,315
Ma	('k)	2,201	-2,432	2,417
* Mu	('k)	2,673	–	2,673
fs D non-comp	(ksi)	5.4	13.0	5.5
fs D comp	(ksi)	2.7	–	3.1
fs $\frac{5}{3}[M_L+I]$	(ksi)	14.8	10.9	16.4
fs (Overload)	(ksi)	22.9	23.9	25.0
** fs (Total)	(ksi)	–	31.1	–
VR	(k)	55.5	–	59.3

INTERIOR GIRDER REACTION TABLE			
		Abut.	Pier
R_D	(k)	82.8	136.0
R_L	(k)	43.7	56.7
R_I	(k)	11.1	13.7
R_{TOTAL}	(k)	137.6	206.4

* Compact Section
** Braced Non-compact and partially braced section.

Note:
R_D and R_{TOTAL} for Abut's. include load due to approach slabs

Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total and Overload) due to non-composite dead loads ($in.^4$ and $in.^3$).

Ic(n), Sc(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing fs(Total and Overload) due to short-term composite live loads ($in.^4$ and $in.^3$).

Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing fs(Total and Overload) due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

Z: Plastic Section Modulus of the steel section in non-composite areas ($in.^3$).

w_D: Un-factored non-composite dead load (kips/ft.).

M_D: Un-factored moment due to non-composite dead load (kip-ft.).

s_D: Un-factored long-term composite (superimposed) dead load (kips/ft.)

M_{sD}: Un-factored moment due to long-term composite (superimposed) dead load (kip-ft.).

M_L: Un-factored live load moment (kip-ft.).

MI: Un-factored moment due to impact (kip-ft.).

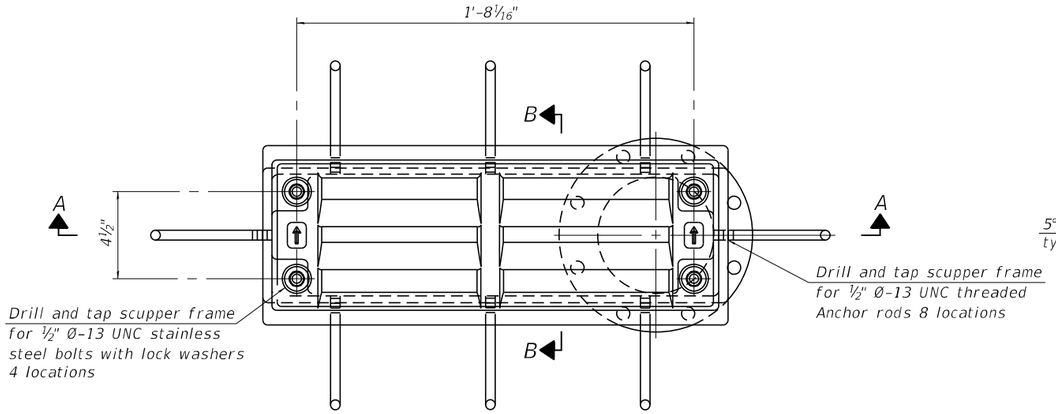
Ma: Factored design moment (kip-ft.).
$1.3\ [M_D + M_{sD} + \frac{5}{3}(M_L + MI)]$

Mu: Compact composite moment capacity according to AASHTO LFD 10.50.1.1 or compact non-composite moment capacity according to AASHTO LFD 10.48.1 (kip-ft.).

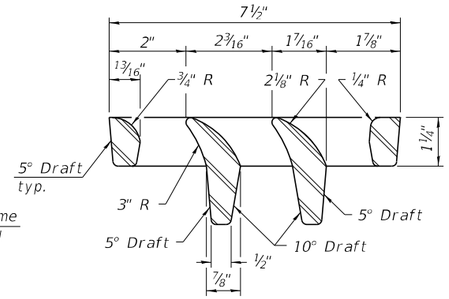
fs (Overload): Sum of stresses as computed from the moments below (ksi).
$M_D + M_{sD} + \frac{5}{3}(M_L + MI)$

fs (Total): Sum of stresses as computed from the moments below on non-compact section (ksi).
$1.3\ [M_D + M_{sD} + \frac{5}{3}(M_L + MI)]$

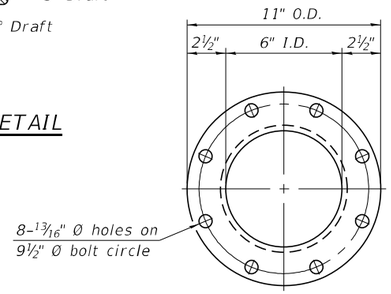
VR: Maximum$_L$ + impact shear range within the composite portion of the span for stud shear connector design (kips).



PLAN



VANE GRATE DETAIL



Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, anchor rods, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

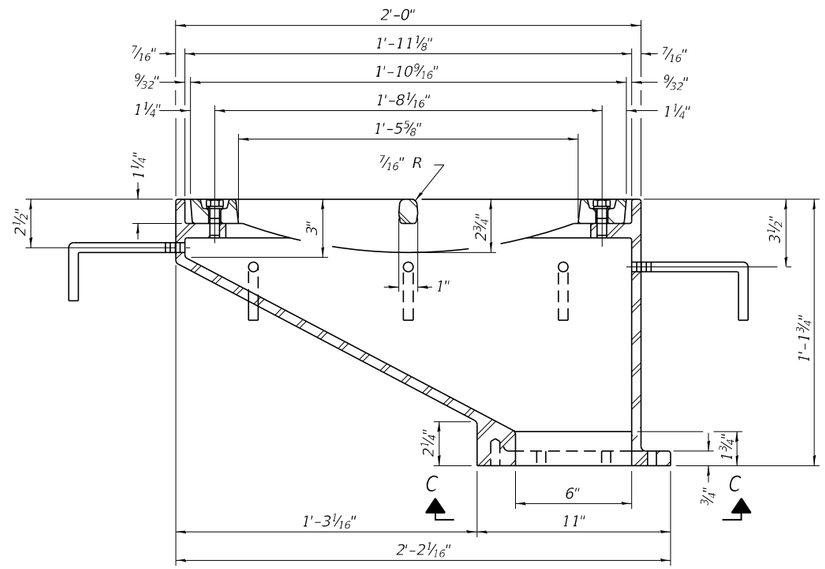
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

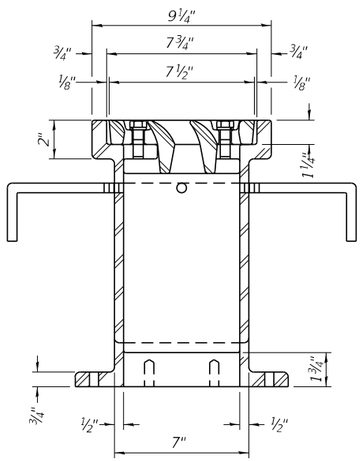
Cost of the grate, frame, downspout, anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scupper, DS-12.

Downspouts and exterior exposed surfaces of the scupper frame below deck shall be pigmented or painted to match the color of the adjacent beam.

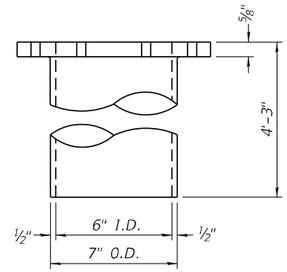


SECTION A-A

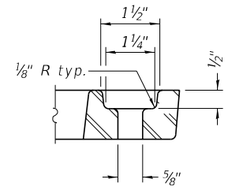
See sheet 12 of 18 for scupper location relative to parapet.



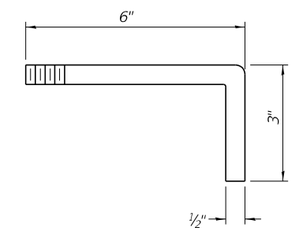
SECTION B-B



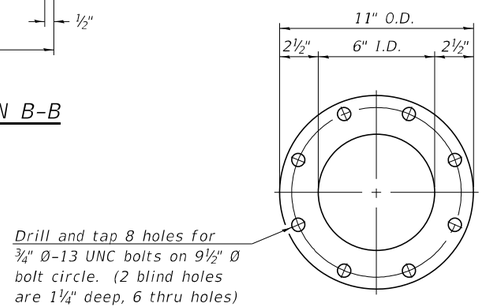
DOWNSPOUT



GRATE BOLT HOLE DETAIL



ANCHOR ROD DETAIL



VIEW C-C

BILL OF MATERIAL

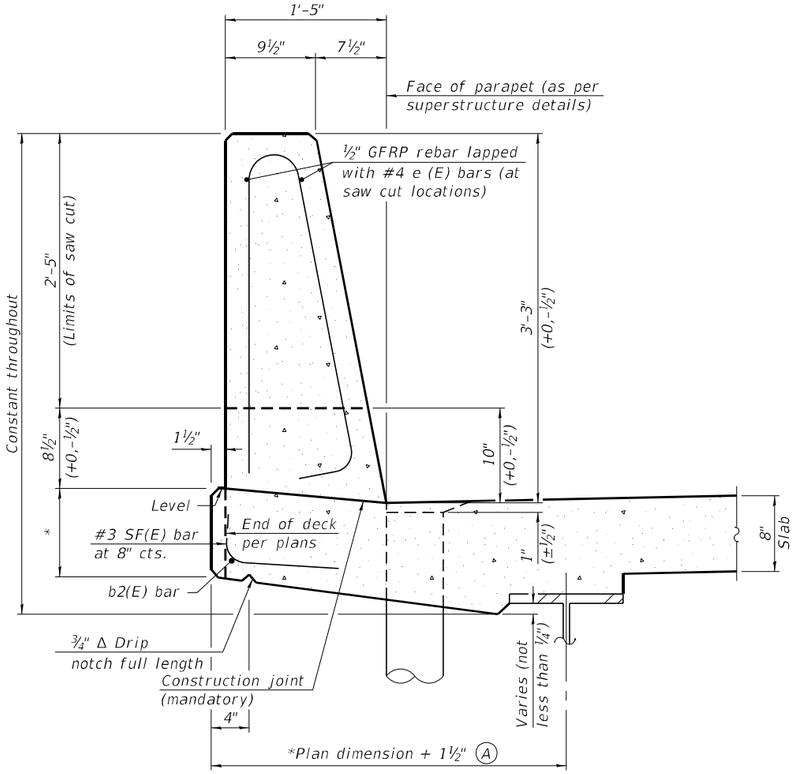
ITEM	UNIT	QUANTITY
Drainage Scupper, DS-12	Each	4

DS-12 1-1-2020

FILE NAME = 200285-shl-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -	
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.000959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -	
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -	

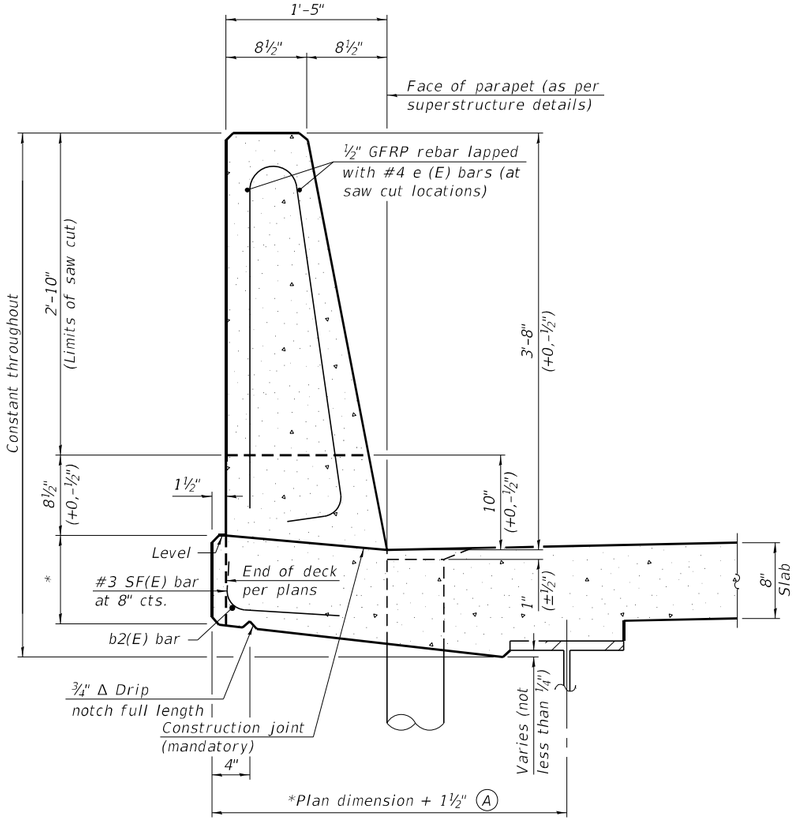
DRAINAGE SCUPPER, DS-12
STRUCTURE NO. 012-0052
SHEET NO. 17 OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	27
		CONTRACT NO. 74842		
		ILLINOIS FED. AID PROJECT		



39" CONSTANT-SLOPE PARAPET SECTION

(Showing dimensions, d(E), and ½" Ø GFRP rebar)



44" CONSTANT-SLOPE PARAPET SECTION

(Showing dimensions, d(E), and ½" Ø GFRP rebar)

*See Superstructure Details.

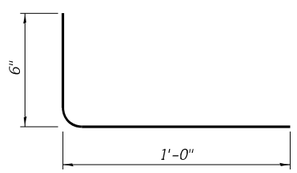
Notes:

All dimensions shall remain the same as shown on superstructure details, except dimension A which is to be revised as shown. Additional concrete needed to revise dimension A = 0.00348 cu. yds./ft. for 39" and 44" parapets.

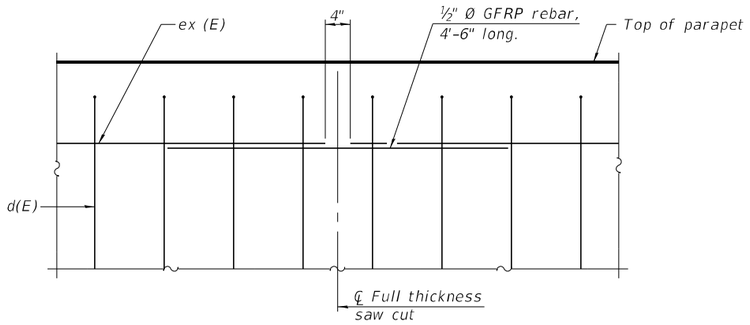
Place full depth aluminum sheets as shown on superstructure details.

Replace all cork joint filler locations with a full thickness saw cut.

Steel superstructure shown. Other superstructure types similar.



SF(E) BAR



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

SFP 39-44 11-1-2022

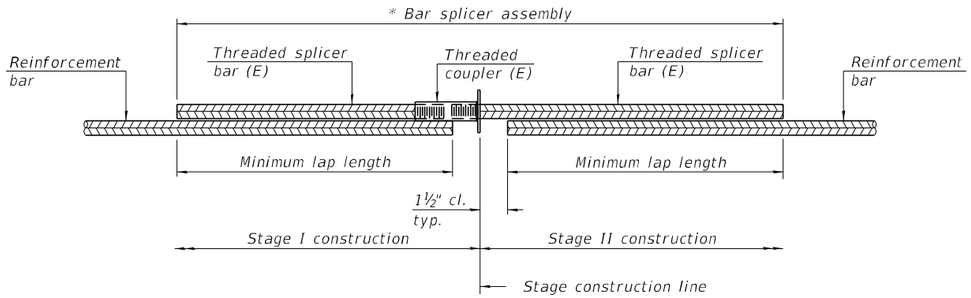
FILE NAME = 200285-shh-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -
HAMPTON, LENZINI AND RENWICK, INC. 3085 STEVENSON DRIVE SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PE / SE CORP. 184.002959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 012-0052

SHEET NO. 17a OF 18 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	27a
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		



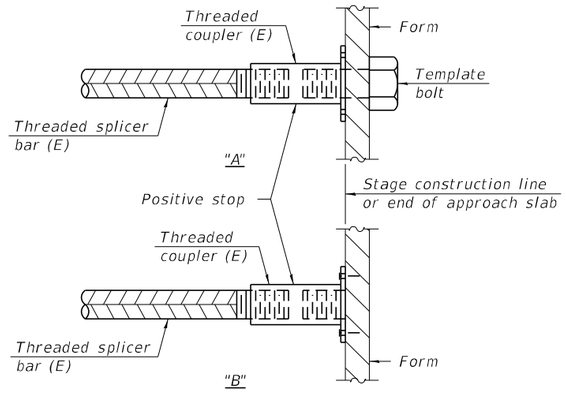
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

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

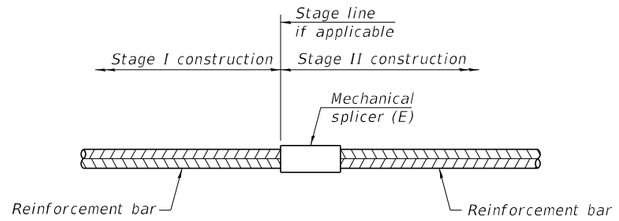
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
Top of Slab	#5	478	3'-0"
Bottom of Slab	#5	319	3'-6"
Top of Approach Slab	#5	92	3'-0"
Bottom of Approach Slab	#8	120	4'-9"
Approach Slab Footing	#5	80	3'-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

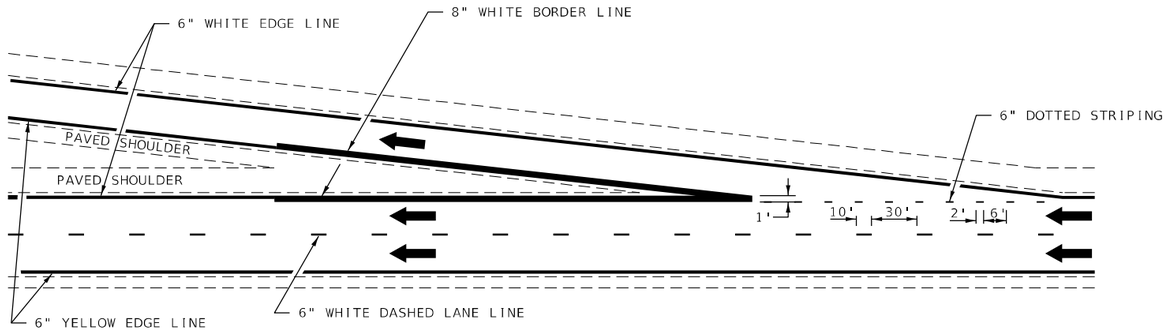
Location	Bar size	No. assemblies required

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.

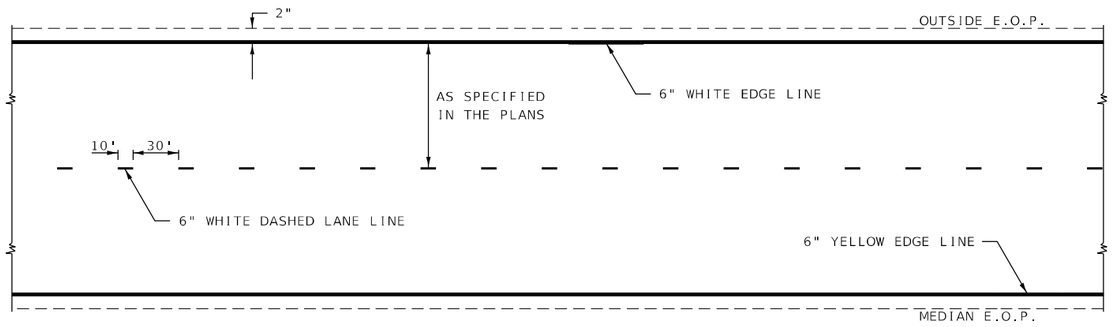
BSD-1 1-1-2020

FILE NAME = 200285-shi-bridge.dgn	USER NAME = gmetcalf	DESIGNED - S.M.S.	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS STRUCTURE NO. 012-0052
HAMPTON, LENZINI AND RENWICK, INC. 3345 STEVENSON DRIVE, SUITE 201 SPRINGFIELD, ILLINOIS 62703		CHECKED - S.W.M.	REVISED -		
ILLINOIS PROFESSIONAL DESIGN FIRM LS / PC / SE CORP. 184.002959	PLOT SCALE = $SCALES	DRAWN - R.D.H.	REVISED -		SHEET NO. 18 OF 18 SHEETS
	PLOT DATE = 3/13/2023	CHECKED - S.W.M.	REVISED -		

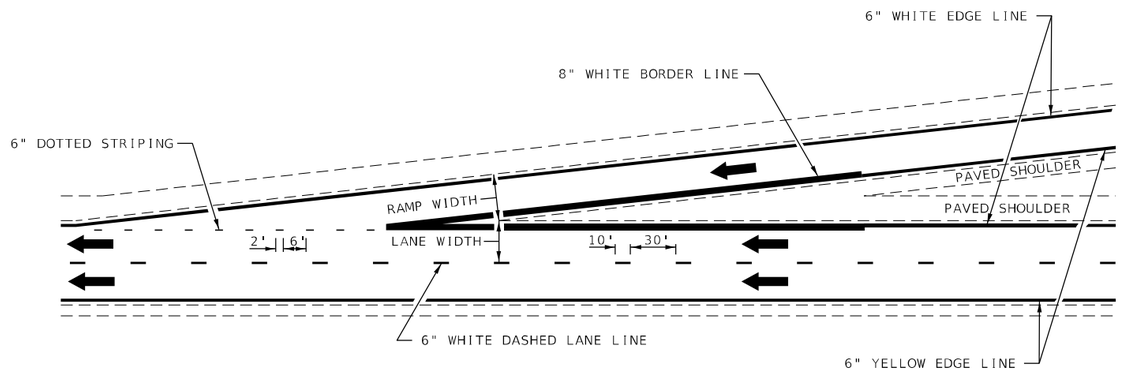
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B) BR-2	CLARK	30	28
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		



TYPICAL EXIT RAMP MARKING



TYPICAL CENTERLINE & EDGELINE MARKINGS



TYPICAL ENTRANCE RAMP MARKING

NOT TO SCALE

DISTRICT 7 DETAIL NO. 78000002

USER NAME = Mona.Steffen	DESIGNED -	REVISED -	MKS 04-08
	DRAWN -	REVISED -	DRM 01-09
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	DRM 12-10
PLOT DATE = 2/16/2023	DATE -	REVISED -	MAD 01-20

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL APPLICATIONS OF FREEWAY/EXPRESSWAY PAVEMENT MARKING

SCALE: | SHEET 1 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	29
		CONTRACT NO. 74842		
	ILLINOIS FED. AID PROJECT			

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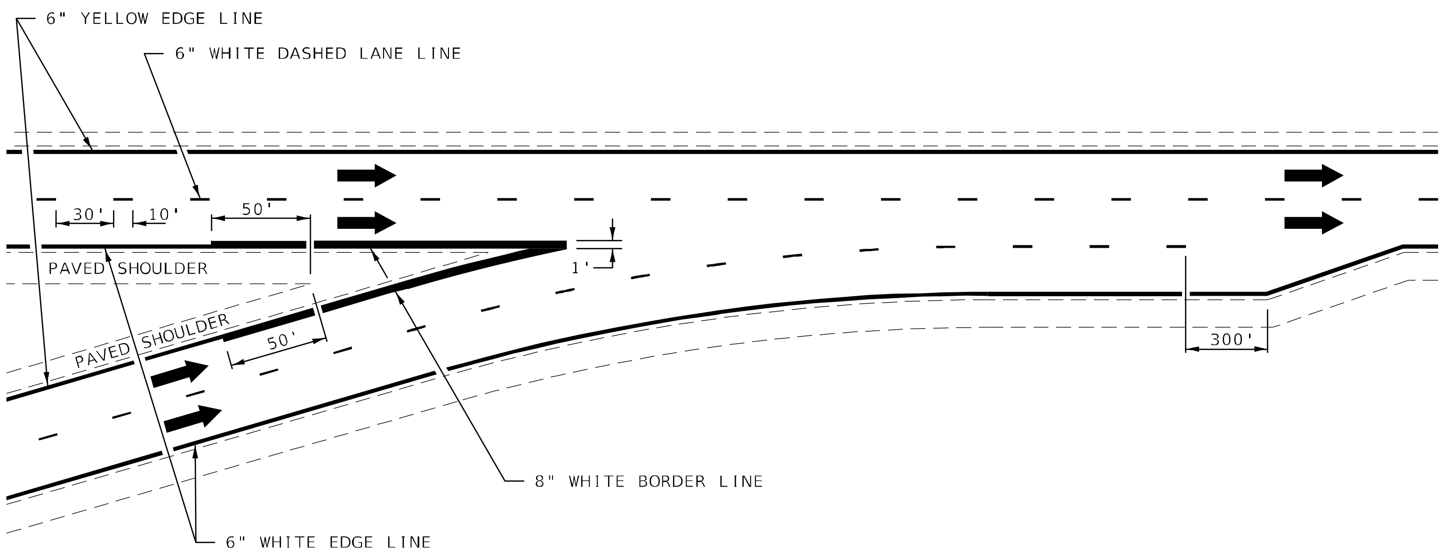
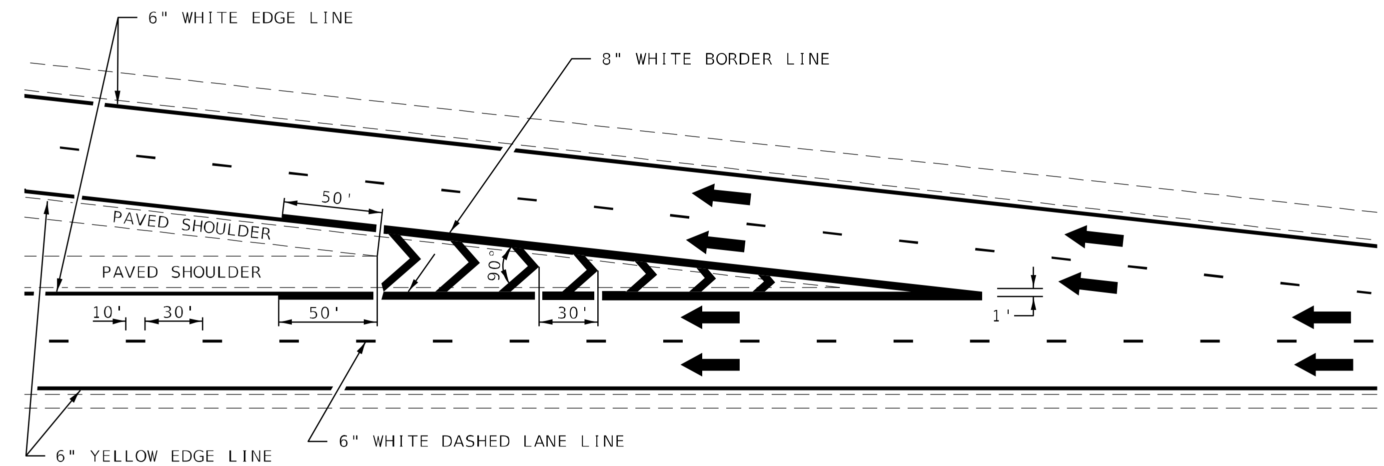
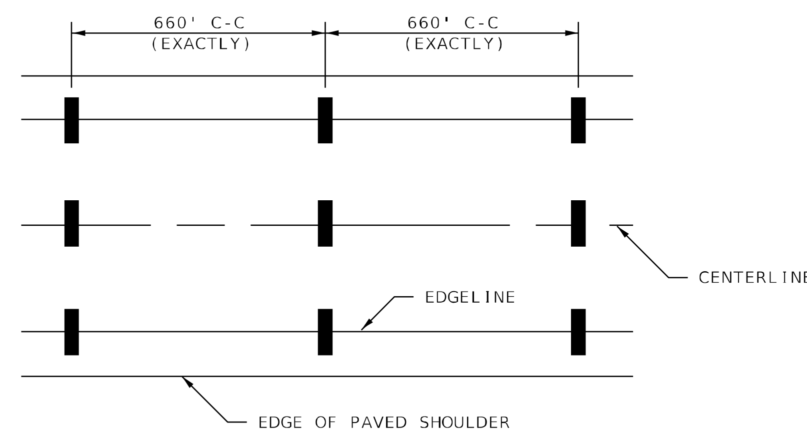


TYPICAL CONVERGENCE MARKING

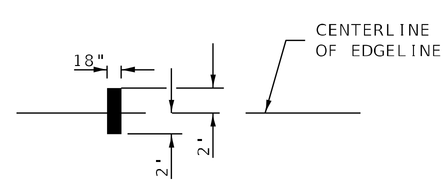


TYPICAL DIVERGENCE MARKING

AERIAL SPEED CHECK ZONES



IT WILL BE NECESSARY TO HAVE A REPRESENTATIVE OF THE STATE POLICE PRESENT SO THAT THE ACCURACY OF MEASUREMENT CAN BE ATTESTED TO IN COURT.



NOT TO SCALE

DISTRICT 7 DETAIL NO. 78000002

USER NAME = Mona,Steffen	DESIGNED -	REVISED - MMO 12-99	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED - DRM 08-04	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED - MKS 04-08	
PLOT DATE = 2/16/2023	DATE -	REVISED - DRM 01-09	

TYPICAL APPLICATIONS OF FREEWAY/EXPRESSWAY PAVEMENT MARKING

SCALE: | SHEET 2 OF 2 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
70	(12-51B)BR-2	CLARK	30	30
		CONTRACT NO. 74842		
	ILLINOIS	FED. AID PROJECT		

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