034

FOR INDEX OF SHEETS, SEE SHEET NO. 2

FOR SUMMARY OF QUANTITIES, SEE SHEET NO. 4

TRAFFIC DATA

SN064-0027 (EB)

FUNCTIONAL CLASSIFICATION:	FEDERAL-AID INTERSTATE MAIN ROUTE
ADT:	9080 (2018)
PV:	61.3%
TRUCKS:	38.7%
DESIGN SPEED:	70 MPH
POSTED SPEED:	70 MPH

TRAFFIC DATA

SN064-0028 (WB)

FUNCTIONAL CLASSIFICATION:	FEDERAL-AID INTERSTATE MAIN ROUTE
ADT:	9000 (2018)
PV:	57.5%
TRUCKS:	42.5%
DESIGN SPEED:	70 MPH
POSTED SPEED:	70 MPH

TRAFFIC DATA

COUNTRY CLUB ROAD (CH 13)

FUNCTIONAL CLASSIFICATION: MINOR ARTERIAL (NON-URBAN)

ADT:	2550 (2018)
PV:	92.7%
TRUCKS:	7.3%
DESIGN SPEED:	55 MPH
POSTED SPEED:	55 MPH

TOWNSHIPS

MASSAC COUNTY UNIT ROAD DISTRICT

DESIGN DESIGNATION : N.A.

COORDINATE SYSTEM : NAD 1983 STATE PLANE ILLINOIS EAST FIPS 1201 FEET (HORIZONTAL) NAVD88 (VERTICAL)

POSTED SPEED : 70 MPH

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

PROJECT ENGINEER: DAVID PICHE
PROJECT DESIGNER: ESCA CONSULTANTS, INC.

CONTRACT NO. 78502

ERIC L. HENKEL 36488 LICENSED PROFESSIONAL ENGINEER OF STATE OF ILLINOIS

EXPIRES 11-30-19

SIGNATURE

10-01-18
DATE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

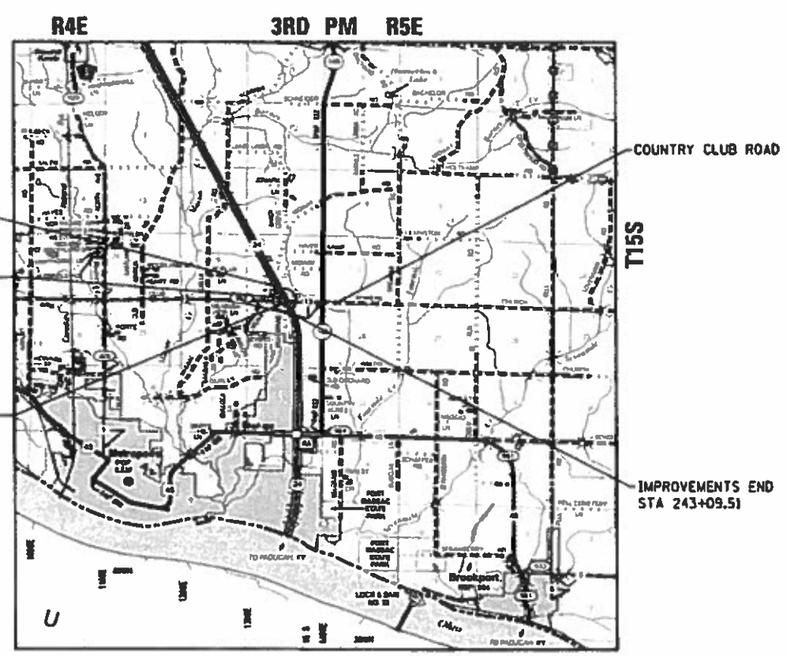
01-18-2019 LETTING ITEM 034

ESCA PROJECT NO. 1295.03

F.A.I. RTE.	SECTION		COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1		MASSAC	158	1
		ILLINOIS	CONTRACT NO. 78502		

PROPOSED HIGHWAY PLANS

FAI ROUTE 24 (I-24)
SECTION (64-3HB)BR-1
PROJECT NHPP-MH26(027)
BRIDGE REPLACEMENT
OVER CH 13 (COUNTRY CLUB ROAD)
MASSAC COUNTY
C-99-001-16



LOCATION MAP

APPROXIMATE SCALE

0 1 2 3 4 5 6 MILES

0 5000 10000 15000 20000 25000 30000 FEET

GROSS LENGTH = 439.72 FT. = 0.083 MILES

NET LENGTH = 439.72 FT. = 0.083 MILES

D-99-001-16

LOCATION OF SECTION INDICATED THUS:-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED Oct 11 20 18

Jeffrey L Keirn
REGION FIVE ENGINEER

Dec 7 20 18
E. A. Cks
ENGINEER OF DESIGN AND ENVIRONMENT

Dec 7 20 18
David P. Piche
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

ESCA CONSULTANTS, INC.

ESCA JOB NO. 1295.03

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

LIST OF ILLINOIS DOT HIGHWAY STANDARDS

STANDARD NO.	DESCRIPTION
000001-07	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
202001-01	EARTH MEDIAN DITCH CHECK
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-09	PAVEMENT JOINTS
420101-06	24' (7.2M) JOINTED PCC PAVEMENT
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
421001-03	BAR REINFORCEMENT FOR CRC PAVEMENT
515001-03	NAME PLATE FOR BRIDGES
542401-03	METAL FLARED END SECTION FOR PIPE CULVERTS
601001-05	PIPE UNDERDRAINS
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
602301-04	INLET - TYPE A
602401-05	PRECAST MANHOLE TYPE A 4' (1.22M) DIAMETER
602601-06	PRECAST REINFORCED CONCRETE FLAT SLAB TOP
602701-02	MANHOLE STEPS
604001-04	FRAME AND LIDS TYPE 1
604036-03	GRATE TYPE 8
610001-08	SHOULDER INLET WITH CURB
630001-12	STEEL PLATE BEAM GUARDRAIL
630201-07	PCC/HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-15	TRAFFIC BARRIER TERMINAL, TYPE 6
635001-02	DELINEATORS
642001-02	SHOULDER RUMBLE STRIPS, 16 In.
665001-02	WOVEN WIRE FENCE
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5m) AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE
701011-04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701101-05	OFF-RD OPERATIONS, MULTILANE, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE
701106-02	OFF-RD OPERATIONS, MULTILANE, MORE THAN 15' (4.5m) AWAY
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701306-04	LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE, 2L, 2W MOVING OPERATIONS - DAY ONLY
701400-09	APPROACH TO LANE CLOSURE, FREEWAY/EXPRESSWAY
701401-12	LANE CLOSURE, FREEWAY/EXPRESSWAY
701406-12	LANE CLOSURE, FREEWAY/EXPRESSWAY, DAY OPERATIONS ONLY
701416-11	LANE CLOSURE, FREEWAY/EXPRESSWAY, WITH CROSSOVER AND BARRIER
701426-09	LANE CLOSURE, MULTILANE, INTERMITTENT OR MOVING OPER., FOR SPEEDS ≥ 45 MPH
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
720011-01	METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
725001-01	OBJECT AND TERMINAL MARKERS
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS
782006	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
B.L.R. 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

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16.	C.H. 13 (COUNTRY CLUB ROAD) & HILLEBRAND ROAD TYPICAL SECTIONS
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58.	REMOVAL PLAN
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60.	PAVEMENT CONNECTOR DETAILS
61.	PAVEMENT TRANSITION DETAILS
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63.	STEP CONSTRUCTION ON EXISTING FILL DETAILS
64.	BRIDGE OR ROAD CLOSURE DETAILS
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67.-70.	PAVEMENT MARKING PLANS
71.	GENERAL PLAN & ELEVATION
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154.-158.	C.H. 13 (COUNTRY CLUB ROAD) CROSS SECTIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PREPARED BY: _____
DISTRICT STUDIES & PLANS ENGINEER

EXAMINED BY: _____
DISTRICT LAND ACQUISITION ENGINEER

EXAMINED BY: _____
DISTRICT PROGRAM DEVELOPMENT ENGINEER

EXAMINED BY: _____
DISTRICT OPERATIONS ENGINEER

EXAMINED BY: _____
DISTRICT PROJECT IMPLEMENTATION ENGINEER

EXAMINED BY: _____
DISTRICT CONSTRUCTION ENGINEER

EXAMINED BY: _____
DISTRICT MATERIALS ENGINEER

ESCA CONSULTANTS, INC.

USER NAME = slub	DESIGNED - SKM	REVISED -	
ESCA PROJECT NO. 1215.83	DRAWN - SKM	REVISED -	
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018 10:21:14 PM	DATE - 09/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS AND HIGHWAY STANDARDS

SCALE: NA | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	2
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

GENERAL NOTES

1. FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL HOT-MIX ASPHALT	2.016 TONS/CU YD
ALL AGGREGATE	2.05 TONS/CU YD
EARTH	110 LBS/CU FT
BITUMINOUS MATERIALS:	
ON PAVEMENT	0.05 POUND/SQ FT
INTERMEDIATE LIFTS	0.025 POUND/SQ FT
ON AGGREGATE SURFACE	0.25 POUND/SQ FT

2. IF SO DIRECTED BY THE ENGINEER, DITCHES ADJACENT TO EMBANKMENTS SHALL BE CONSTRUCTED PRIOR TO STARTING THE CONSTRUCTION OF THE EMBANKMENT FILL.

3. TREES SHALL BE PRESERVED THROUGHOUT THIS SECTION AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. GENERALLY, TREES OUTSIDE THE CLEAR ZONE, OR CONSTRUCTION LIMITS, AND WHICH DO NOT INTERFERE WITH CONSTRUCTION, SHALL NOT BE DISTURBED.

4. AT ALL LOCATIONS WHERE THE PROPOSED HOT MIX ASPHALT OR CONCRETE PAVEMENT JOINS AN EXISTING HOT MIX ASPHALT OR CONCRETE PAVEMENT, A FULL DEPTH SAWED JOINT SHALL BE CONSTRUCTED. THE COST OF THIS JOINT WILL BE INCLUDED IN THE COST OF THE TYPE OF PAVEMENT BEING CONSTRUCTED.

5. THE CONTRACTOR SHALL STAMP STATIONING IN THE HOT MIX ASPHALT SURFACE AT 300 FT INTERVALS ON THE INSIDE EDGE OF THE OUTSIDE SHOULDER AND AS DIRECTED BY THE ENGINEER. THE STATION SYMBOL STAMPS USED SHALL BE FURNISHED BY THE CONTRACTOR. THEY SHALL BE 5 1/2 IN. TALL OF A DESIGN APPROVED BY THE ENGINEER, AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR.

6. THE QUANTITY OF SHORT TERM PAVEMENT MARKING SHOWN IN THE PLANS IS BASED ON ONE APPLICATION ON THE COMPLETED SURFACE AND THAT NECESSARY AFTER REMOVAL OF TRAFFIC CONTROL. SHORT TERM PAVEMENT MARKING ON HMA SURFACE COURSE OR PCC SHALL BE TAPE.

7. EXISTING PIPE UNDERDRAIN OUTLETS IN THE FORESLOPES OR MEDIAN SLOPES SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. ANY DAMAGE TO AN UNDERDRAIN OUTLET RESULTING FROM CONSTRUCTION ACTIVITY SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

8. CONNECTING OF NEW OR EXISTING STORM SEWER TO NEW OR EXISTING INLETS OR MANHOLES SHALL BE MADE IN A MANNER WHICH RESULTS IN A NEAT AND WATERTIGHT JOINT. WHEN PLACED THROUGH THE WALL OF AN INLET OR MANHOLE, STORM SEWER PIPE SHALL BE PLACED OR CUT FLUSH WITH THE FACE OF THE WALL AND DRESSED WITH MORTAR TO PROVIDE A SMOOTH ROUNDED OR BEVELED EDGE. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED AS INCLUDED IN THE CONTRACT UNIT PRICES OF THE STORM SEWERS OR STRUCTURES INVOLVED.

9. AFTER A LIFT OF HOT MIX ASPHALT HAS BEEN PLACED, THE LANE SHALL REMAIN CLOSED TO TRAFFIC UNTIL THE NEW MAT HAS COOLED TO 150 DEGREES FAHRENHEIT.

10. THERE ARE NO AVAILABLE WASTE SITES ON THE EXISTING RIGHT OF WAY WITHIN THE PROJECT LIMITS. DISPOSAL WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS.

11. 16'-0" MINIMUM CLEARANCE UNDERNEATH BOTH STRUCTURES SHALL BE VERIFIED BY THE ENGINEER.

12. TRIM EDGES OF EXISTING HOT MIX ASPHALT SURFACE FLUSH WITH EXISTING PAVEMENT PRIOR TO CONSTRUCTING NEW BASE COURSE WIDENING.

13. HMA SHOULDERS SHALL BE MILLED TO THE SAME DEPTH AS ADJACENT ROADWAY TO FACILITATE PLACEMENT OF NEW HOT-MIX ASPHALT SHOULDERS.

14. EXISTING TRAFFIC BARRIER TERMINALS TO BE REMOVED SHALL BE PAID FOR AS GUARDRAIL REMOVAL.

15. BEFORE ORDERING PIPE CULVERTS, PIPE DRAINS, OR STORM SEWERS, THE CONTRACTOR SHALL CONSULT THE ENGINEER FOR EXACT LENGTHS.

16. RUMBLE STRIPS SHALL BE CONSTRUCTED ON ALL NEW HMA SHOULDERS ON I-24. RUMBLE STRIPS WILL BE PAID PER FOOT AS SHOULDER RUMBLE STRIPS 16 INCH. THE RUMBLE STRIPS ADJACENT TO BOTH EASTBOUND LANES OF I-24 SHALL NOT BE INSTALLED UNTIL AFTER COMPLETION OF STAGE III.

17. REFER TO HIGHWAY STANDARD 420101 FOR CONSTRUCTION DETAILS OF PCC PAVEMENT FOR CROSSOVERS.

18. THE TEMPORARY PAVEMENT MARKING USED WITH HIGHWAY STANDARD 701416 IN STAGES II & III SHALL BE PAINT. SUPPLY, INSTALLATION, AND REMOVAL OF REFLECTORIZED PAVEMENT MARKING PAINT AND TAPE USED FOR TRAFFIC CONTROL AS SHOWN ON THE TRAFFIC CONTROL DRAWINGS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF TRAFFIC CONTROL AND PROTECTION.

19. TEMPORARY RAMPS SHALL BE CONSTRUCTED AT LOCATIONS DETERMINED BY THE ENGINEER. THIS WORK SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE SQUARE YARD PRICE FOR HOT-MIX ASPHALT SURFACE REMOVAL.

20. THE EXISTING ROAD SIGNS THAT INTERFERE WITH CONSTRUCTION WILL BE REMOVED OR RELOCATED AS DIRECTED BY THE ENGINEER ACCORDING TO ARTICLE 107.25 OF THE STANDARD SPECIFICATIONS. AFTER THE CONSTRUCTION IS COMPLETED, THE CONTRACTOR WILL RE-ERECT THE SIGNS AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

21. EARTH MEDIAN DITCH CHECKS SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION.

22. LONGITUDINAL JOINT SEALANT SHALL BE PLACED UNDER THE SURFACE LIFT ON I-24 AND UNDER THE SURFACE LIFT AND UNDER THE TOP BINDER LIFT ON COUNTRY CLUB ROAD IN ACCORDANCE WITH ARTICLE 406 OF THE STANDARD SPECIFICATIONS. LONGITUDINAL JOINT SEALANT SHALL BE INCLUDED IN THE COST OF POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE ON I-24 AND HOT-MIX ASPHALT SURFACE COURSE ON COUNTRY CLUB ROAD.

23. EARTHWORK QUANTITIES CONSIDER USING EXCAVATED MATERIAL FROM COUNTRY CLUB ROAD IN THE CONSTRUCTION OF THE CROSSOVERS.

24. THE STEEL PLATE BEAM GUARDRAIL QUANTITIES SHOWN ASSUME THAT THE SPLICE LOCATIONS FALL 3'-1 1/2" SHORT OF THE PAY LIMITS OF TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL. THEREFORE, AN ADDITIONAL QUARTER PANEL OF STEEL PLATE BEAM GUARDRAIL IS INCLUDED IN THE QUANTITIES AT EACH LOCATION AND IS INCLUDED IN THE LENGTH OF NEED. ADJUSTMENTS OF QUANTITIES AND OF LOCATIONS OF TERMINAL ENDS MAY BE NECESSARY IN THE FIELD AS DIRECTED BY THE ENGINEER.

25. THE CONTRACTOR SHALL PERFORM MOWING ON EACH SIDE OF COUNTRY CLUB ROAD, HILLEBRAND ROAD, AND THE TEMPORARY CROSSOVERS IN ACCORDANCE WITH THE MOWING SPECIAL PROVISION. MOWING ALONG THESE ROADS AND CROSSOVERS SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE COST OF MOWING ALONG THE INTERSTATE 24 IMPROVEMENTS.

COMMITMENTS

1. THE 8" FULL DEPTH PAVEMENT AND HMA SHOULDERS ON COUNTRY CLUB ROAD SHALL BE CONSTRUCTED AS SHOWN IN THE PLANS PRIOR TO THE BRIDGE CONSTRUCTION. THE SURFACE COURSE SHALL NOT BE PLACED ON COUNTRY CLUB ROAD UNTIL AFTER THE BRIDGE CONSTRUCTION HAS BEEN COMPLETED. THE PROPOSED PAVEMENT ELEVATIONS SHALL NOT BE HIGHER THAN THOSE SHOWN ON THE PLANS.

2. LETTER OF UNDERSTANDING L-9-18-004 WITH MASSAC COUNTY.

3. NO OTHER COMMITMENTS AS OF OCTOBER 1ST, 2018.

HMA MIXTURES REQUIREMENTS

MIXTURE USE	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT SHOULDERS (BOTTOM LIFTS)	HOT-MIX ASPHALT SHOULDERS (TOP LIFT)	POLYMERIZED LEVELING BINDER	HOT-MIX ASPHALT SURFACE COURSE	HOT-MIX ASPHALT PAVEMENT (FULL DEPTH), 8"	TEMPORARY PAVEMENT (TOP LIFT)	TEMPORARY PAVEMENT (BOTTOM LIFTS)
AC/PG	SBS PG 76-22	PG 64-22	PG 64-22	PG 64-22	PG 64-22	PG 64-22	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4.0% @ Ndes=90	4.0% @ Ndes=70	4.0% @ Ndes=70	4.0% @ Ndes=90	4.0% @ Ndes=70	4.0% @ Ndes=70	4.0% @ Ndes=90	4.0% @ Ndes=70
MIX COMPOSITION	IL-9.5	IL-19.0	IL-9.5	IL-19.0	IL-9.5	IL-19.0	IL-9.5	IL-19.0
FRICTION AGGREGATE	MIX D	N/A	MIX C	N/A	MIX C	N/A	MIX C	N/A
LOCATIONS	I-24 MAINLINE	I-24 & CCR	I-24 & CCR	I-24 MAINLINE	CCR & HILLEBRAND RD	COUNTRY CLUB ROAD	CROSSOVERS	CROSSOVERS
MIXTURE WEIGHT	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN	112 LBS/SQ YD/IN
ABR% (MAX)	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION	SEE BDE SPECIAL PROVISION
QUALITY MANAGEMENT PROGRAM	QCQA	QCQA	QCQA	QCQA	QCQA	QCQA	QCQA	QCQA
SUBLOT SIZE	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SUMMARY OF QUANTITIES

URBAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
20200100	EARTH EXCAVATION	CU YD	9150	9150	
20800150	TRENCH BACKFILL	CU YD	82	82	
25000210	SEEDING, CLASS 2A	ACRE	7.25	7.25	
25000350	SEEDING, CLASS 7	ACRE	7.25	7.25	
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	655	655	
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	655	655	
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	655	655	
25000700	AGRICULTURAL GROUND LIMESTONE	TON	14.5	14.5	
25100115	MULCH, METHOD 2	ACRE	14.25	14.25	
25100630	EROSION CONTROL BLANKET	SQ YD	2505	2505	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	1450	1450	
28000305	TEMPORARY DITCH CHECKS	FOOT	1265	1265	
28000500	INLET AND PIPE PROTECTION	EACH	12	12	
30300112	AGGREGATE SUBGRADE IMPROVEMENT 12"	SQ YD	2306	2306	

⊛ SPECIALTY ITEM

REV. - MS

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
31100100	SUBBASE GRANULAR MATERIAL, TYPE A	TON	144	144	
31100700	SUBBASE GRANULAR MATERIAL, TYPE A 8"	SQ YD	7293	7293	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	9930	9930	
40600295	POLYMERIZED BITUMINOUS MATERIALS (TACK COAT)	POUND	905	905	
40600845	POLYMERIZED LEVELING BINDER (MACHINE METHOD), N90	TON	32	32	
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	651	651	
40603315	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	TON	206	206	
40603545	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	TON	160	160	
40701841	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8"	SQ YD	1870	1870	
42000080	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB	SQ YD	496	496	
42001300	PROTECTIVE COAT	SQ YD	512	512	
44000100	PAVEMENT REMOVAL	SQ YD	7256	7256	
44000151	HOT-MIX ASPHALT SURFACE REMOVAL, 1/2"	SQ YD	1620	1620	
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	431	431	

⊛ SPECIALTY ITEM

REV. - MS

SUMMARY OF QUANTITIES

URBAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
44004000	PAVED DITCH REMOVAL	FOOT	45	45	
44004250	PAVED SHOULDER REMOVAL	SQ YD	2091	2091	
48101200	AGGREGATE SHOULDERS, TYPE B	TON	7	7	
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	1868	1868	
48203003	HOT-MIX ASPHALT SHOULDERS, 1 1/2"	SQ YD	860	860	
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SQ YD	1280	1280	
48203100	HOT-MIX ASPHALT SHOULDERS	TON	175	175	
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1		1
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1		1
50104400	CONCRETE HEADWALL REMOVAL	EACH	4	4	
50200100	STRUCTURE EXCAVATION	CU YD	700		700
50300100	FLOOR DRAINS	EACH	16		16
50300225	CONCRETE STRUCTURES	CU YD	480.4		480.4
50300255	CONCRETE SUPERSTRUCTURE	CU YD	473.9	0.1	473.8

⊛ SPECIALTY ITEM

REV. - MS

SUMMARY OF QUANTITIES

URBAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
50300300	PROTECTIVE COAT	SQ YD	2172		2172
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	252.6		252.6
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1
50500505	STUD SHEAR CONNECTORS	EACH	8676		8676
50800105	REINFORCEMENT BARS	POUND	19	19	
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	261880		261880
51100100	SLOPE WALL 4 INCH	SQ YD	1088		1088
51201900	FURNISHING STEEL PILES HP14X89	FOOT	4290		4290
51202000	FURNISHING STEEL PILES HP14X102	FOOT	1648		1648
51202305	DRIVING PILES	FOOT	5938		5938
51203900	TEST PILE STEEL HP14X89	EACH	4		4
51204000	TEST PILE STEEL HP14X102	EACH	4		4
51500100	NAME PLATES	EACH	2		2
52100510	ANCHOR BOLTS, 3/4"	EACH	48		48

⊛ SPECIALTY ITEM

REV. - MS

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
52100520	ANCHOR BOLTS, 1"	EACH	48		48
542D0223	PIPE CULVERTS, CLASS D, TYPE 1 18"	FOOT	62	62	
5421D015	PIPE CULVERTS, CLASS D, TYPE 1 15" (TEMPORARY)	FOOT	148	148	
5421D024	PIPE CULVERTS, CLASS D, TYPE 1 24" (TEMPORARY)	FOOT	512	512	
54213453	END SECTIONS 18"	EACH	2	2	
54262712	METAL FLARED END SECTIONS 12"	EACH	8	8	
58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	270		270
59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	178		178
60100060	CONCRETE HEADWALLS FOR PIPE DRAINS	EACH	8	8	
60100945	PIPE DRAINS 12"	FOOT	153	153	
60108100	PIPE UNDERDRAINS 4" (SPECIAL)	FOOT	67	67	
61000050	CONCRETE THRUST BLOCKS	EACH	4	4	
61000225	TYPE F INLET BOX, STANDARD 610001	EACH	4	4	
61000335	TYPE G INLET BOX, STANDARD 610001	EACH	4	4	
⊛ 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	712.4	712.4	

⊛ SPECIALTY ITEM

REV. - MS

MODEL: PLOT05
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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018 1:02:17 PM	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NA | SHEET NO. 5 OF 9 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	8
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

URBAN

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE — ROADWAY 0010 ROADWAY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE — STRUCTURE 0010 S. N. 064-0045/46
⊛	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	587.6	587.6	
⊛	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4	
⊛	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	7	7	
⊛	63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	1	1	
	63200310	GUARDRAIL REMOVAL	FOOT	866	866	
	63500105	DELINEATORS	EACH	2	2	
	64200116	SHOULDER RUMBLE STRIPS, 16 INCH	FOOT	6364	6364	
	66500105	WOVEN WIRE FENCE, 4'	FOOT	242	242	
	67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	29	29	
	67100100	MOBILIZATION	L SUM	1	1	
	70103815	TRAFFIC CONTROL SURVEILLANCE	CAL DA	25	25	
	70107025	CHANGEABLE MESSAGE SIGN	CAL DA	252	252	
	70300100	SHORT TERM PAVEMENT MARKING	FOOT	3548	3548	
	70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	1185	1185	
	70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	42190	42190	

⊛ SPECIALTY ITEM

REV. - MS

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	URBAN TOTAL QUANTITY	CONSTRUCTION CODE 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	2837.5	2837.5	
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	2137.5	2137.5	
	70500665	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2	2	
	70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	4	4	
⊛	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	10	10	
⊛	78009004	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	34250	34250	
⊛	78100100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	14	14	
	78100200	TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER	EACH	956	956	
⊛	78100300	REPLACEMENT REFLECTOR	EACH	41	41	
⊛	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	31	31	
⊛	78200010	BARRIER WALL REFLECTORS, TYPE B	EACH	589	589	
	78300200	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	EACH	5	5	
	X0301993	REMOVE AND REINSTALL CONCRETE HEADWALL FOR PIPE DRAIN	EACH	1	1	
	X0327980	PAVEMENT MARKING REMOVAL - WATER BLASTING	SQ FT	13860	13860	

⊛ SPECIALTY ITEM
⊛⊛⊛ 100% STATE

REV. - MS

MODEL: PLOT07
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ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED - SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018 1:02:17 PM	DATE - 07/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: NA | SHEET NO. 7 OF 9 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	10
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

SUMMARY OF QUANTITIES

URBAN

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE: 90% FEDERAL 10% STATE STRUCTURE 0010 S. N. 064-0045/46
❀❀❀	X2503100	MOWING	UNIT	25	25	
	X5030250	BRIDGE DECK GROOVING (LONGITUDINAL)	SQ YD	1050		1050
	X5420355	END SECTIONS 24" (SPECIAL)	EACH	3	3	
	X6020073	INLETS, TYPE A, TYPE 8 GRATE, TEMPORARY	EACH	4	4	
	X6028104	TEMPORARY MANHOLES, TYPE A, 4'-DIAMETER, TYPE 1 FRAME, OPEN LID	EACH	2	2	
	X6062400	CONCRETE GUTTER (SPECIAL)	FOOT	23	23	
	X6650202	WOVEN WIRE FENCE REMOVAL	FOOT	284	284	
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1	
	X7030005	TEMPORARY PAVEMENT MARKING REMOVAL	SQ FT	14063	14063	
	X7050169	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1, SPECIAL (FLARED)	EACH	2	2	
	X7830050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	41	41	
	Z0016001	DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	10		10

❀ SPECIALTY ITEM
❀❀❀ 100% STATE

REV. - MS

SUMMARY OF QUANTITIES

URBAN

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE 90% FEDERAL 10% STATE ROADWAY 0010 ROADWAY	CONSTRUCTION CODE 90% FEDERAL 10% STATE STRUCTURE 0010 S.N. 064-0045/46
Z0016002	DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	30		30
Z0029090	DIAMOND GRINDING (BRIDGE SECTION)	SQ YD	1924		1924
Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	320		320
Z0062456	TEMPORARY PAVEMENT	SQ YD	6340	6340	
Ø Z0076600	TRAINEES	HOUR	500	500	
Ø Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	500	500	

⊛ SPECIALTY ITEM

Ø 0042

REV. - MS

MODEL: PLOT09
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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS	USER NAME = skm	DESIGNED - SKM	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018 1:02:18 PM	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

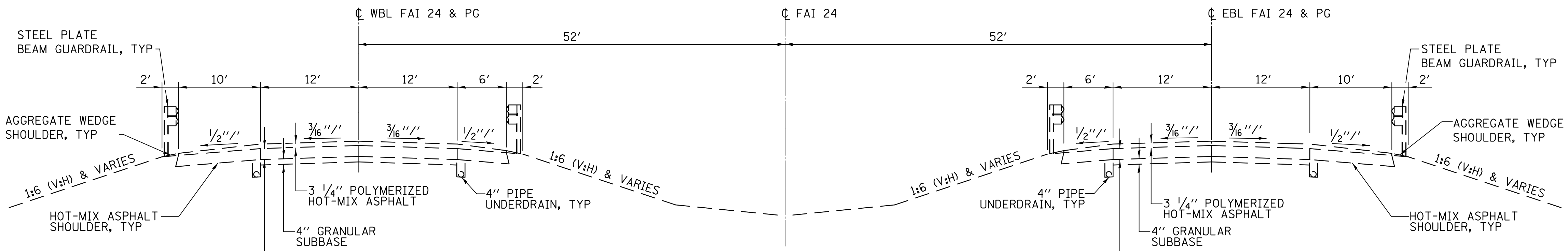
SUMMARY OF QUANTITIES

SCALE: NA | SHEET NO. 9 OF 9 SHEETS | STA. | TO STA.

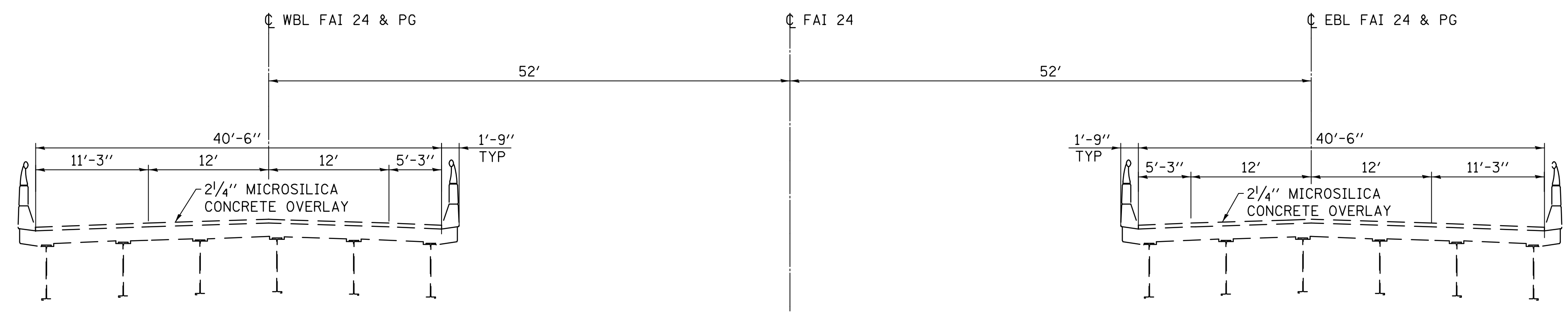
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	12

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

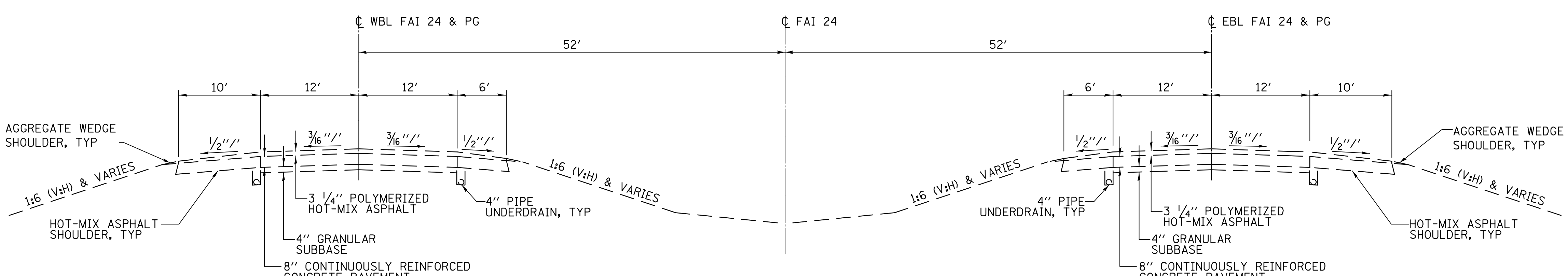


EXISTING TYPICAL SECTION
STA 241+69.64 TO STA 244+80.29* WBL
STA 236+89.11 TO STA 239+87.16 EBL



* 0.021 '/' SUPERELEVATED PAVEMENT FROM STA 245+23 TO STA 278+00. SUPERELEVATION TRANSITION FROM STA 242+63 TO 245+23

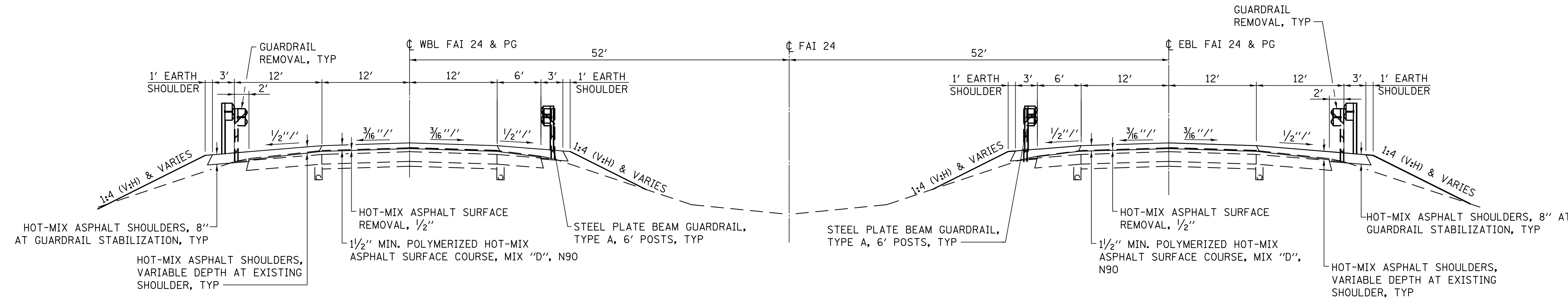
EXISTING TYPICAL SECTION
STA 240+39.14 TO STA 241+69.64 WBL
STA 239+87.16 TO STA 241+17.66 EBL



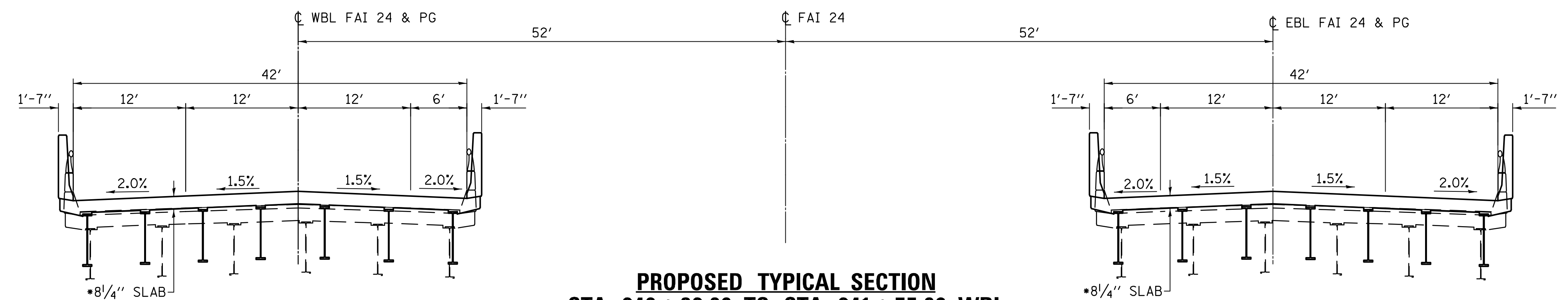
EXISTING TYPICAL SECTION
STA 232+00 TO STA 240+39.14 WBL
STA 232+00 TO STA 236+89.11 EBL
STA 244+80.29 TO STA 250+00 WBL*
STA 241+17.66 TO STA 250+00 EBL*

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - RTM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-24 TYPICAL SECTIONS	
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -			
	PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -			
	PLOT DATE = 10/4/2018 1:02:19 PM	DATE - 04/18	REVISED -		SCALE: NONE	SHEET NO. 1 OF 4 SHEETS STA. 232+00.00 TO STA. 250+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	13
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

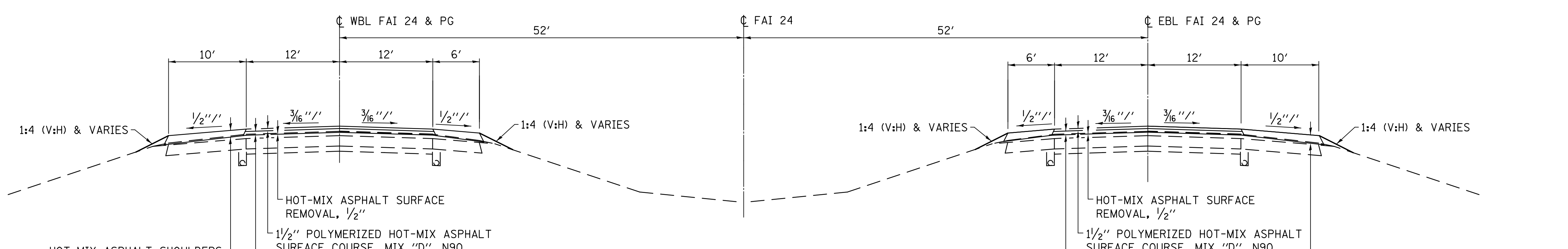


PROPOSED TYPICAL SECTION
STA 242+30.23 TO STA 243+30 WBL
STA 238+30 TO STA 239+26.57 EBL



PROPOSED TYPICAL SECTION
STA 240+32.89 TO STA 241+75.89 WBL
STA 239+80.91 TO STA 241+23.91 EBL

* PRIOR TO GRINDING

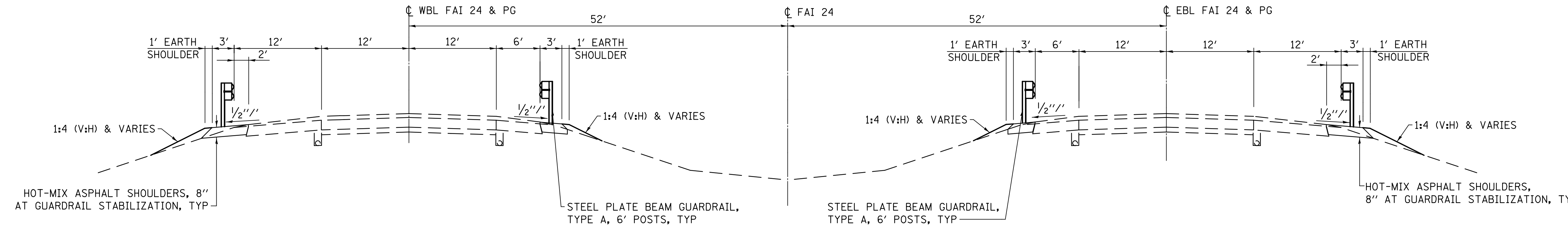


PROPOSED TYPICAL SECTION
STA 238+30 TO STA 239+81.55 WBL
STA 241+75.25 TO STA 243+30 EBL

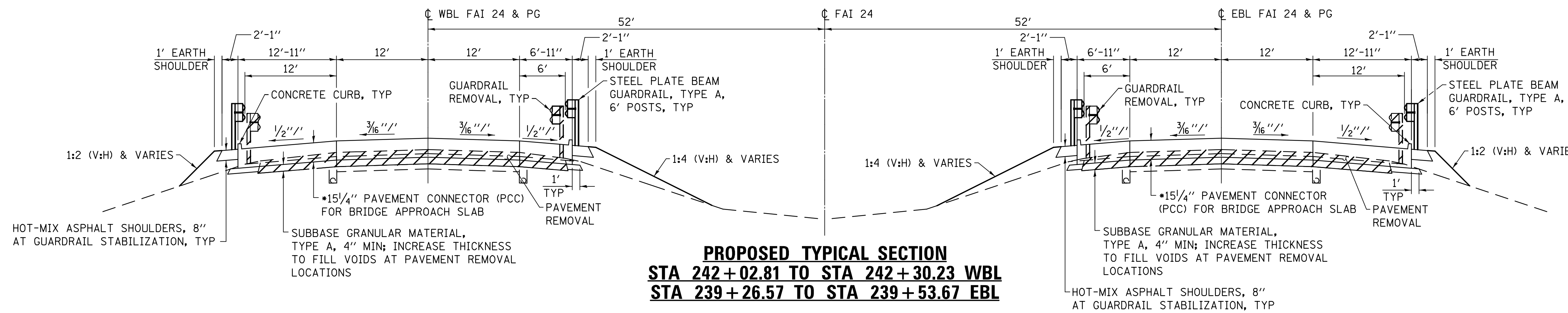
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - RTM/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-24 TYPICAL SECTIONS	F.A.I. RTE. 24
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -			SECTION (64-3HB)BR-1
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: NONE	COUNTY MASSAC
	PLOT DATE = 10/4/2018 1:02:19 PM	DATE - 04/18	REVISED -		SHEET NO. 2 OF 4 SHEETS STA. 238+30.00 TO STA. 243+30.00	TOTAL SHEETS 158, SHEET NO. 14

CONTRACT NO. 78502

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT

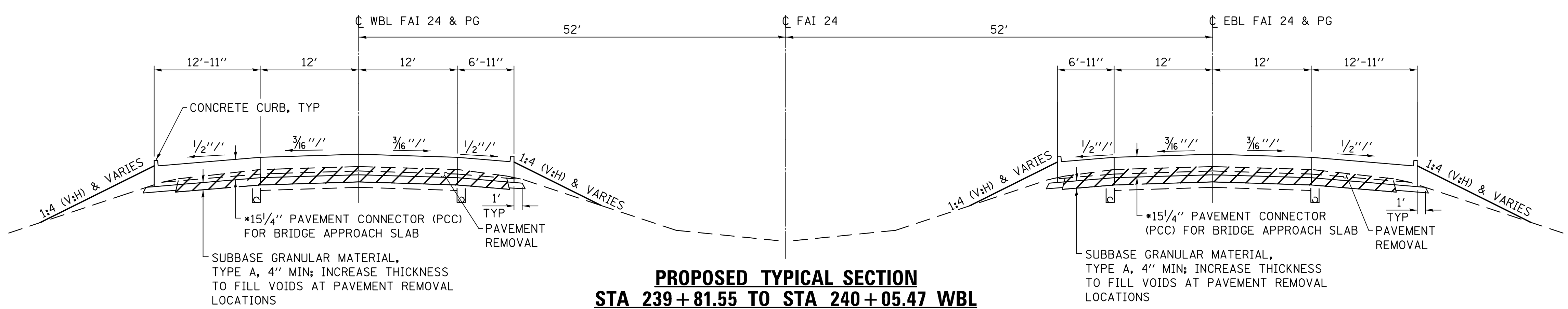


PROPOSED TYPICAL SECTION
STA 243+30 TO STA 244+91 WBL
STA 236+64 TO STA 238+30 EBL



PROPOSED TYPICAL SECTION
STA 242+02.81 TO STA 242+30.23 WBL
STA 239+26.57 TO STA 239+53.67 EBL

* PRIOR TO GRINDING



PROPOSED TYPICAL SECTION
STA 239+81.55 TO STA 240+05.47 WBL
STA 241+51.01 TO STA 241+75.25 EBL

ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED - RTM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 0.1667 ′ / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018 1:02:20 PM	DATE - 04/18	REVISED -

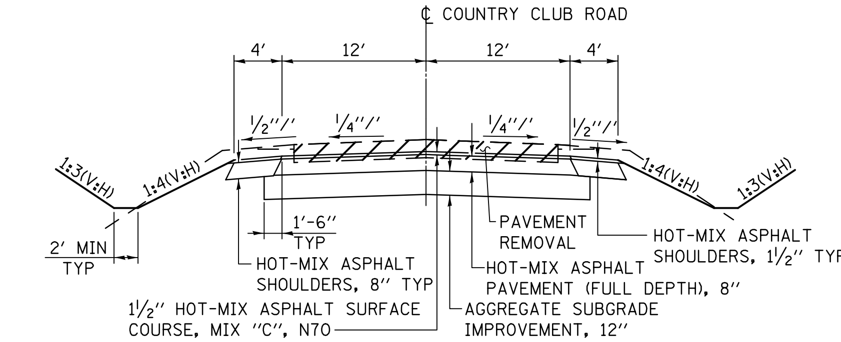
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-24 TYPICAL SECTIONS

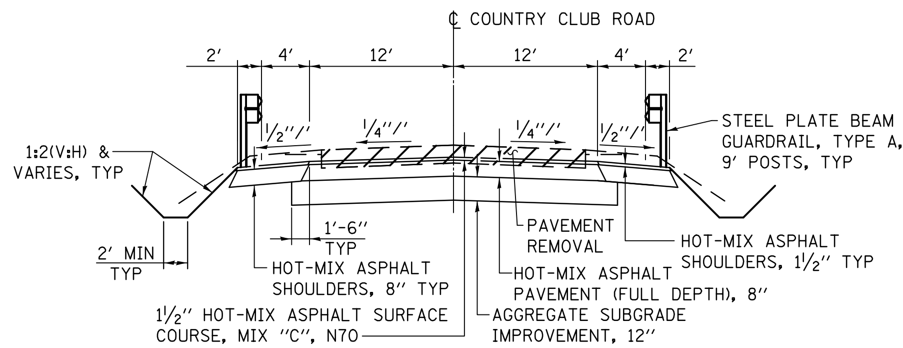
SCALE: NONE | SHEET NO. 3 OF 4 SHEETS | STA. 239+26.57 TO STA. 244+91.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	15
		CONTRACT NO. 78502		

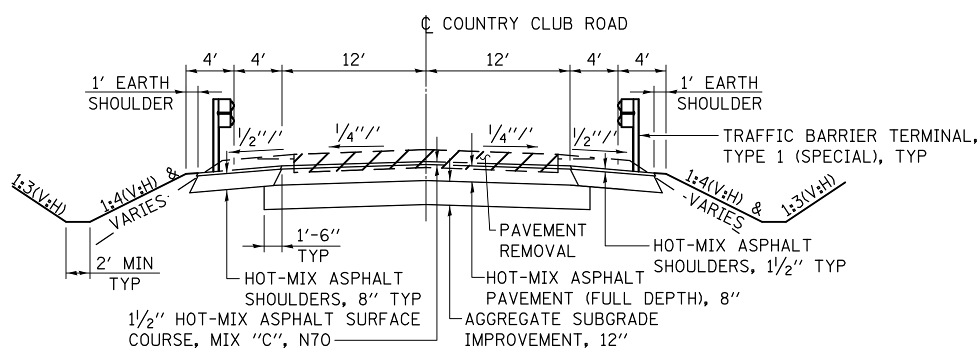
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



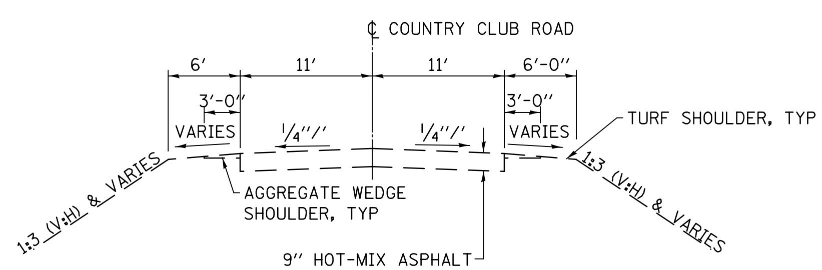
PROPOSED TYPICAL SECTION
LT STA 16+50.00 TO STA 17+80.00
RT STA 16+50.00 TO STA 18+15.00
LT STA 22+43.00 TO STA 23+50.00
RT STA 22+14.00 TO STA 23+50.00



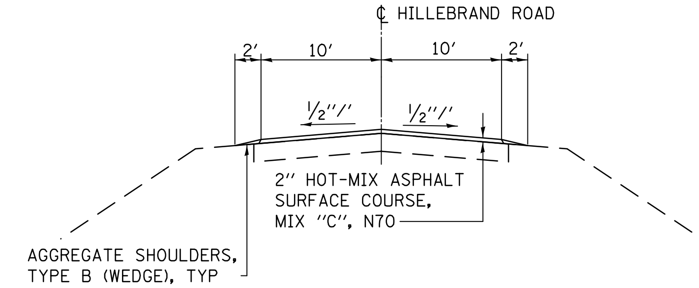
PROPOSED TYPICAL SECTION
LT STA 18+45.80 TO STA 21+77.10
RT STA 18+92.00 TO STA 21+48.30



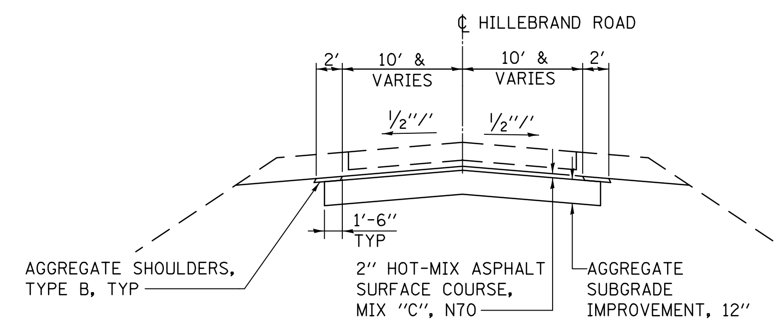
PROPOSED TYPICAL SECTION
LT STA 17+80.00 TO STA 18+45.80
RT STA 18+15.00 TO STA 18+92.00
LT STA 21+77.10 TO STA 22+43.00
RT STA 21+48.30 TO STA 22+14.00



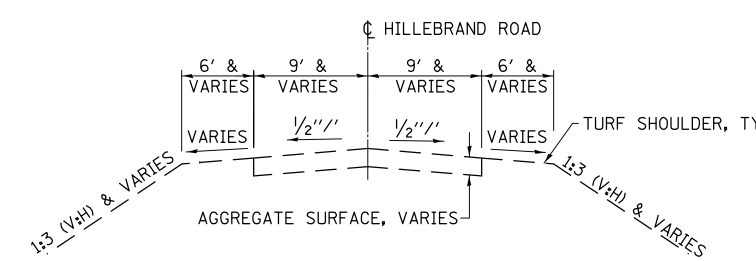
EXISTING TYPICAL SECTION
STA 10+00 TO STA 30+00



PROPOSED TYPICAL SECTION
HILLEBRAND ROAD
STA 0+80.00 TO STA 1+80.00



PROPOSED TYPICAL SECTION
HILLEBRAND ROAD
STA 0+18.54 TO STA 0+80.00



EXISTING TYPICAL SECTION
HILLEBRAND ROAD

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - RTM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	C.H. 13(COUNTRY CLUB ROAD) & HILLEBRAND ROAD TYPICAL SECTIONS	F.A.I. RTE. 24 / SECTION (64-3HB)BR-1 / COUNTY MASSAC / TOTAL SHEETS 158 / SHEET NO. 16
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -			CONTRACT NO. 78502
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: NONE / SHEET NO. 4 OF 4 SHEETS / STA. TO STA.	FED. ROAD DIST. NO. / ILLINOIS / FED. AID PROJECT
	PLOT DATE = 10/4/2018 1:02:21 PM	DATE - 04/18	REVISED -			

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION	EXCAVATION TO BE USED IN EMBANKMENT (ADJ FOR SHRINKAGE)	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
COUNTRY CLUB RD, LT	2070	1553	6	+1547
COUNTRY CLUB RD, RT	2220	1665	1	+1664
NORTH CROSSOVERS	500	375	1223	-848
SOUTH CROSSOVERS	570	428	1558	-1130
I-24 WB (LT)	1880	1410	472	+938
I-24 EB (RT)	1910	1433	468	+965
TOTALS	9150	6864	3728	+3136

EXCAVATION TO BE USED IN EMBANKMENT = EARTH EXCAVATION * 0.75

REMOVAL SCHEDULE

LOCATION	PAVED SHOULDER REMOVAL	PAVEMENT REMOVAL	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	HOT-MIX ASPHALT SURFACE REMOVAL, 1/2"
	SQ YD	SQ YD	SQ YD	SQ YD	SQ YD
I-24 WB STA 238+73.09 TO STA 239+81.55					495
I-24 WB STA 242+30.23 TO STA 243+09.51					351
I-24 EB STA 238+69.79 TO STA 239+26.57					262
I-24 EB STA 241+75.25 TO STA 242+89.17					512
I-24 WB STA 226+30.71 TO STA 229+84.44	236				
I-24 WB STA 233+46.28 TO STA 237+00	236				
I-24 WB STA 247+00 TO STA 251+93.29	331				
I-24 WB STA 255+43.74 TO STA 260+57.64	345				
I-24 EB STA 226+30.71 TO STA 229+84.44	236				
I-24 EB STA 233+28.95 TO STA 237+00	247				
I-24 EB STA 248+00 TO STA 251+11.04	206				
I-24 EB STA 256+18.16 TO STA 260+00	254				
I-24 WB STA 238+30 TO STA 238+73.09			194		
I-24 EB STA 238+30 TO STA 238+69.79			184		
I-24 WB STA 235+00 TO STA 240+45, LT				91	
I-24 WB STA 241+80 TO STA 250+70, LT				148	
I-24 EB STA 242+89.17 TO STA 243+30			182		
I-24 WB STA 243+09.51 TO STA 243+30			91		
I-24 EB STA 234+00 TO STA 238+30, RT				72	
I-24 EB STA 243+30 TO STA 250+50, RT				120	
COUNTRY CLUB RD STA 16+50 TO STA 23+50		1924			
TOTALS	2091	1924	651	431	1620

STORM SEWER SCHEDULE

LOCATION	TRENCH BACKFILL	METAL FLARED END SECTIONS 12"	PIPE CULVERTS, CLASS D, TYPE 1 18"	END SECTIONS 18"	PIPE DRAINS 12"	CONCRETE THRUST BLOCKS	TYPE F INLET BOX	TYPE G INLET BOX
	CU YD	EACH	FOOT	EACH	FOOT	EACH	EACH	EACH
STA 239+33.31		1			16			1
STA 239+34.19		1			30	1	1	
STA 239+89.00		1			17			1
STA 239+89.00		1			10	1	1	
STA 241+68.00		1			16			1
STA 241+68.00		1			30	1	1	
STA 242+22.60		1			18	1	1	
STA 242+23.48		1			16			1
COUNTRY CLUB ROAD	10		62	2				
TOTALS	10	8	62	2	153	4	4	4

MEDIAN CROSSOVERS SCHEDULE

LOCATION	TRENCH BACKFILL	SUBBASE GRANULAR MATERIAL, TYPE A 8"	AGGREGATE SHOULDERS, TYPE B 6"	TEMPORARY PAVEMENT	PIPE CULVERTS, CLASS D, TYPE 1 15" (TEMPORARY)	PIPE CULVERTS, CLASS D, TYPE 1 24" (TEMPORARY)	END SECTIONS 24" (SPECIAL)	INLETS, TYPE A, TYPE 8 GRATE, TEMPORARY	TEMPORARY MANHOLES, TYPE A, 4'-DIA, T1 FRAME, OPEN LID	PAVEMENT REMOVAL
	CU YD	SQ YD	SQ YD	SQ YD	FOOT	FOOT	EACH	EACH	EACH	SQ YD
NORTH CROSSOVERS	55	3337	526	2900	40	366	2	2	1	1940
SOUTH CROSSOVERS	17	3956	645	3440	108	146	1	2	1	2276
TOTALS	72	7293	1171	6340	148	512	3	4	2	4216

PAVING SCHEDULE

LOCATION	BITUMINOUS MATERIALS (TACK COAT)	POLYMERIZED BITUMINOUS MATERIALS (TACK COAT)	POLYMERIZED LEVELING BINDER (MACHINE METHOD), N90	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70	POLYMERIZED HOT-MIX ASPHALT SURFACE COURSE, MIX "D", N90	AGGREGATE SUBGRADE IMPROVEMENT 12"	HOT-MIX ASPHALT PAVEMENT (FULL-DEPTH), 8"
	POUND	POUND	TON	TON	TON	SQ YD	SQ YD
NORTH OF SN 064-0046		272	17		41		
SOUTH OF SN 064-0046		180			37		
NORTH OF SN 064-0045		174			40		
SOUTH OF SN 064-0045		279	15		42		
COUNTRY CLUB ROAD	5040			160		2100	1870
HILLEBRAND ROAD	920			46		206	
TOTALS	5960	905	32	206	160	2306	1870

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2A	SEEDING, CLASS 7	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	MULCH, METHOD 2
	ACRE	ACRE	POUND	POUND	POUND	TON	ACRE
NORTHEAST QUADRANT	0.55	0.55	50	50	50	1.1	1.00
NORTHWEST QUADRANT	0.40	0.40	36	36	36	0.8	1.00
SOUTHWEST QUADRANT	0.75	0.75	68	68	68	1.5	1.50
SOUTHEAST QUADRANT	0.35	0.35	32	32	32	0.7	0.50
NORTH MEDIAN	2.15	2.15	194	194	194	4.3	4.25
SOUTH MEDIAN	3.05	3.05	275	275	275	6.1	6.00
TOTALS	7.25	7.25	655	655	655	14.5	14.25

BRIDGE APPROACH SCHEDULE

LOCATION	SUBBASE GRANULAR MATERIAL, TYPE A	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB	PROTECTIVE COAT	PAVEMENT REMOVAL
	TON	SQ YD	SQ YD	SQ YD
SN 064-0046 NORTH APPROACH	36	124	126	277
SN 064-0046 SOUTH APPROACH	36	124	126	277
SN 064-0045 NORTH APPROACH	36	124	126	283
SN 064-0045 SOUTH APPROACH	36	124	126	279
TOTALS	144	496	504	1116

SHOULDER SCHEDULE

LOCATION	BITUMINOUS MATERIALS (TACK COAT)	AGGREGATE SHOULDERS, TYPE B 6"	AGGREGATE SHOULDERS, TYPE B	HOT-MIX ASPHALT SHOULDERS	HOT-MIX ASPHALT SHOULDERS, 1 1/2"	HOT-MIX ASPHALT SHOULDERS, 8"	SHOULDER RUMBLE STRIPS, 16 INCH
	POUND	SQ YD	TON	TON	SQ YD	SQ YD	FOOT
I-24 WB STA 235+00 TO STA 240+45	41			10			634
I-24 WB STA 241+80 TO STA 250+70	70			17			940
I-24 EB STA 234+00 TO STA 239+26.57	32			8			624
I-24 EB STA 241+75.25 TO STA 250+50	55			13			1030
SN 064-0046 NORTHEAST CORNER	115			24			
SN 064-0046 NORTHWEST CORNER	68			15			
SN 064-0046 SOUTHEAST CORNER	385			13		125	
SN 064-0046 SOUTHWEST CORNER	300			10		105	
SN 064-0045 NORTHEAST CORNER	245			10		80	
SN 064-0045 NORTHWEST CORNER	343			15		110	
SN 064-0045 SOUTHEAST CORNER	70			15			
SN 064-0045 SOUTHWEST CORNER	116			25			
I-24 WB STA 226+30.71 TO STA 229+84.44		79					354
I-24 WB STA 233+46.28 TO STA 237+00		79					354
I-24 WB STA 247+00 TO STA 251+93.29		110					494
I-24 WB STA 255+43.74 TO STA 260+57.64		114					514
I-24 EB STA 226+30.71 TO STA 229+84.44		79					354
I-24 EB STA 233+28.95 TO STA 237+00		82					372
I-24 EB STA 248+00 TO STA 251+11.04		69					312
I-24 EB STA 256+18.16 TO STA 260+00		85					382
COUNTRY CLUB RD	2130				860	860	
HILLEBRAND RD			7				
TOTALS	3970	697	7	175	860	1280	6364

PIPE UNDERDRAIN SCHEDULE

LOCATION	CONCRETE HEADWALL REMOVAL	CONCRETE HEADWALLS FOR PIPE DRAINS	PIPE UNDERDRAINS 4" (SPECIAL)	REMOVE AND REINSTALL CONCRETE HEADWALL FOR PIPE DRAIN
	EACH	EACH	FOOT	EACH
STA 233+00	1	1	17	
STA 234+00	1	1	7	1
STA 254+98	1	1	29	
STA 254+99	1	1	14	
SN 064-0046		2		
SN 064-0045		2		
TOTALS	4	8	67	1

EROSION CONTROL SCHEDULE

LOCATION	EROSION CONTROL BLANKET	TEMPORARY EROSION CONTROL SEEDING	TEMPORARY DITCH CHECKS	INLET AND PIPE PROTECTION
	SQ YD	POUND	FOOT	EACH
NORTHEAST QUADRANT	347	110	100	
NORTHWEST QUADRANT	416	80	45	
SOUTHWEST QUADRANT	457	150	80	1
SOUTHEAST QUADRANT	614	70	60	
NORTH MEDIAN	334	430	330	5
SOUTH MEDIAN	337	610	650	6
TOTALS	2505	1450	1265	12

PAVEMENT MARKING SCHEDULE

LOCATION	SHORT TERM PAVEMENT MARKING		SHORT TERM PAVEMENT MARKING REMOVAL	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"		RAISED REFLECTIVE PAVEMENT MARKER	REPLACEMENT REFLECTOR	RAISED REFLECTIVE PAVEMENT MARKER REMOVAL	PAVEMENT MARKING REMOVAL - WATER BLASTING	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL
	FOOT		SQ FT	FOOT		EACH	EACH	EACH	SQ FT	EACH
	WHITE	YELLOW		WHITE	YELLOW					
WB I-24										
STA 221+00 TO STA 289+00	980	280	420	8600	6850	7	20	3	5150	20
FOR STAGE II	196	72	89						1205	
FOR STAGE III		36	12						270	
EB I-24										
STA 189+50 TO STA 266+00	1120	320	480	9650	7650	7	21	2	5770	21
FOR STAGE II		32	11						225	
FOR STAGE III	200	72	92						1240	
COUNTRY CLUB ROAD	80	160	81	1300	200					
SUBTOTALS	2576	972	1185	19550	14700	14	41	5	13860	41
TOTALS	3548		1185	34250		14	41	5	13860	41

GUARDRAIL SCHEDULE

LOCATION	GUARDRAIL REMOVAL	TBT, TYPE 6	SPBGR, TYPE A, 6' POSTS	SPBGR, TYPE A, 9' POSTS	TEMPORARY TBT, TYPE 6	TERMINAL MARKER - DIRECT APPLIED	GUARDRAIL REFLECTORS, TYPE A	TBT, TYPE 1 (SPECIAL), FLARED	TBT, TYPE 1 (SPECIAL), TANGENT	TEMPORARY TBT, TYPE 1 SPECIAL, (FLARED)
	FOOT	EACH	FOOT	FOOT	EACH	EACH	EACH	EACH	EACH	EACH
SN 064-0046 SOUTHWEST CORNER	289	1	215.6			1	4		1	
SN 064-0046 SOUTHEAST CORNER	150	1	140.6			1	3		1	
SN 064-0045 NORTHWEST CORNER	277	1	140.6			1	3		1	
SN 064-0045 NORTHEAST CORNER	150	1	215.6			1	4		1	
SN 064-0045 SOUTHEAST CORNER					1	1	3			1
SN 064-0028 NORTHWEST CORNER					1	1	3			1
COUNTRY CLUB ROAD, LT				331.3		2	6		2	
COUNTRY CLUB ROAD, RT				256.3		2	5	1	1	
TOTALS	866	4	712.4	587.6	2	10	31	1	7	2

ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED - SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018 1:02:22 PM	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULES OF QUANTITIES

SCALE: NA | SHEET NO. 3 OF 4 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	19

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

TEMPORARY PAVEMENT MARKING SCHEDULE

LOCATION	TEMPORARY PAVEMENT MARKING - LINE 4"		TEMPORARY PAVEMENT MARKING REMOVAL
	FOOT		SQ FT
	WHITE	YELLOW	
AFTER STAGE II			
WB I-24			
STA 236+50 TO STA 289+00	1350		450
STA 235+00 TO STA 250+70	1580		527
STA 232+00 TO STA 289+00		5720	1906
EB I-57			
STA 206+30 TO STA 260+00	6710		2236
STA 216+30 TO STA 260+00		4370	1457
AFTER STAGE III			
WB I-24			
STA 226+00 TO STA 280+71	6910		2303
STA 226+00 TO STA 270+76		4500	1500
EB I-24			
STA 189+50 TO STA 250+50	1550		517
STA 234+00 TO STA 250+50	1650		550
STA 189+50 TO STA 253+00		6350	2117
COUNTRY CLUB ROAD			
STA 16+50 TO STA 23+50	1300	200	500
SUBTOTALS	21050	21140	14063
TOTALS	42190		14063

TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER SCHEDULE

LOCATION	TEMPORARY RAISED REFLECTIVE PAVEMENT MARKER	
	EACH	
	WHITE	YELLOW
STAGE I		
NORTH TAPER		66
SOUTH TAPER		66
STAGE II		
NORTH TAPER	51	
SOUTH TAPER		51
NORTH CROSSOVERS	55	55
SOUTH CROSSOVERS	67	67
STAGE III		
NORTH TAPER		51
SOUTH TAPER	51	
NORTH CROSSOVERS	57	57
SOUTH CROSSOVERS	65	65
STAGE IV		
NORTH TAPER		66
SOUTH TAPER		66
SUBTOTALS	346	610
TOTALS	956	

TEMPORARY CONCRETE BARRIER SCHEDULE

LOCATION	TEMPORARY CONCRETE BARRIER	RELOCATE TEMPORARY CONCRETE BARRIER	BARRIER WALL REFLECTORS, TYPE B	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3
	FOOT	FOOT	EACH	EACH
COUNTRY CLUB ROAD	687.5		58	4
STAGE II TRAFFIC CONTROL				
STA 232+00 TO STA 253+50	2150		269	
STAGE III TRAFFIC CONTROL				
STA 231+65 TO STA 253+00		2137.5	262	
TOTALS	2837.5	2137.5	589	4

WOVEN WIRE FENCE SCHEDULE

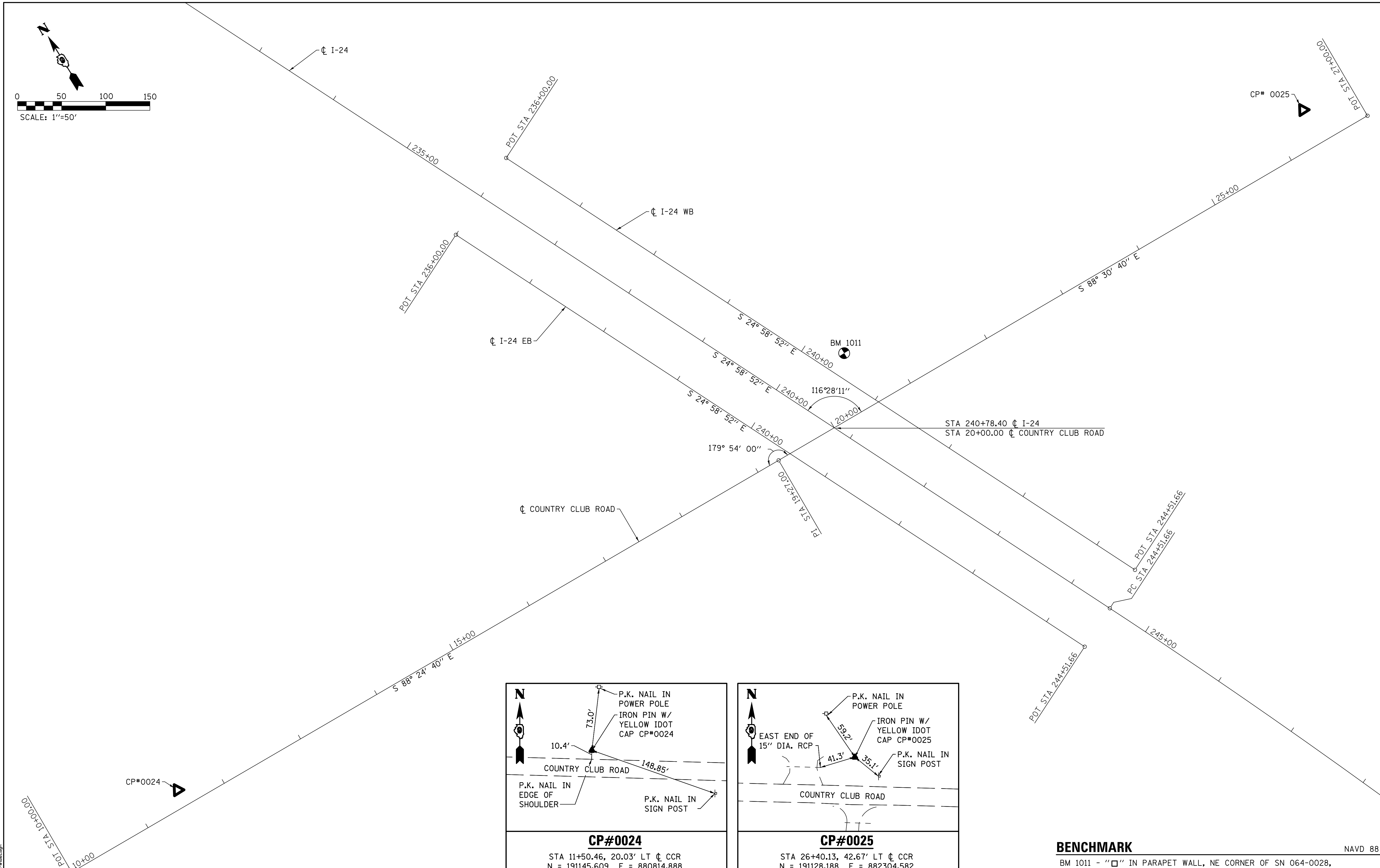
LOCATION	WOVEN WIRE FENCE, 4'	WOVEN WIRE FENCE REMOVAL
	FOOT	FOOT
NORTHEAST QUADRANT	18	18
NORTHWEST QUADRANT	40	40
SOUTHWEST QUADRANT	40	40
SOUTHEAST QUADRANT	40	40
NORTH MEDIAN	52	73
SOUTH MEDIAN	52	73
TOTALS	242	284

CONCRETE WINGWALL EXTENSION SCHEDULE

LOCATION	CONCRETE SUPERSTRUCTURE	REINFORCEMENT BARS
	CU YD	POUND
NORTHWEST WINGWALL SN 064-0028	0.1	19
TOTALS	0.1	19

CONCRETE GUTTER (SPECIAL) SCHEDULE

LOCATION	PAVED DITCH REMOVAL	CONCRETE GUTTER (SPECIAL)	PROTECTIVE COAT
	FOOT	FOOT	FOOT
HILLEBRAND RD STA 0+58 TO 0+80, LT	45	23	8
TOTALS	45	23	8



CP#0024

STA 11+50.46, 20.03' LT ℄ CCR
N = 191145.609 E = 880814.888

CP#0025

STA 26+40.13, 42.67' LT ℄ CCR
N = 191128.188 E = 882304.582

BENCHMARK

NAVD 88

BM 1011 - ''□'' IN PARAPET WALL, NE CORNER OF SN 064-0028,
25' LT ℄ WBL I-24, STA 240+41, EL 429.30

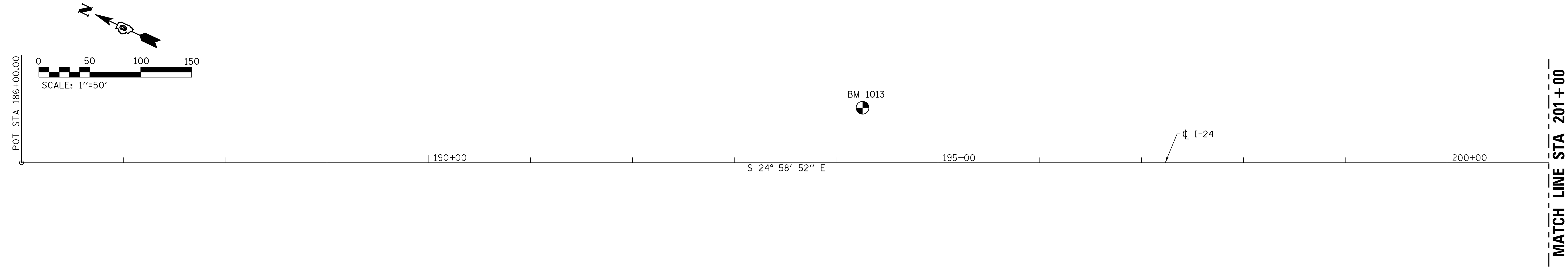
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - KAH	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - KAH	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018	DATE - 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALIGNMENT, TIES, AND BENCHMARKS

SCALE: 1''=50' | SHEET NO. 1 OF 4 SHEETS | STA. 10+00.00 TO STA. 27+00.00

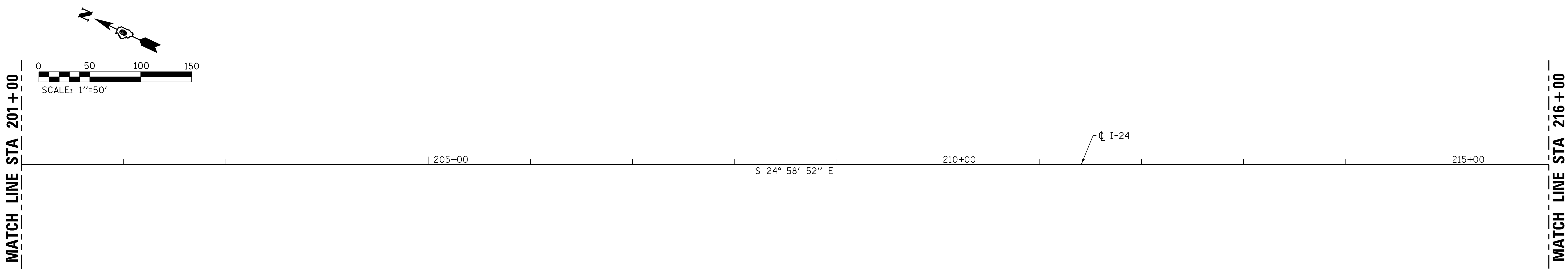
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	21
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

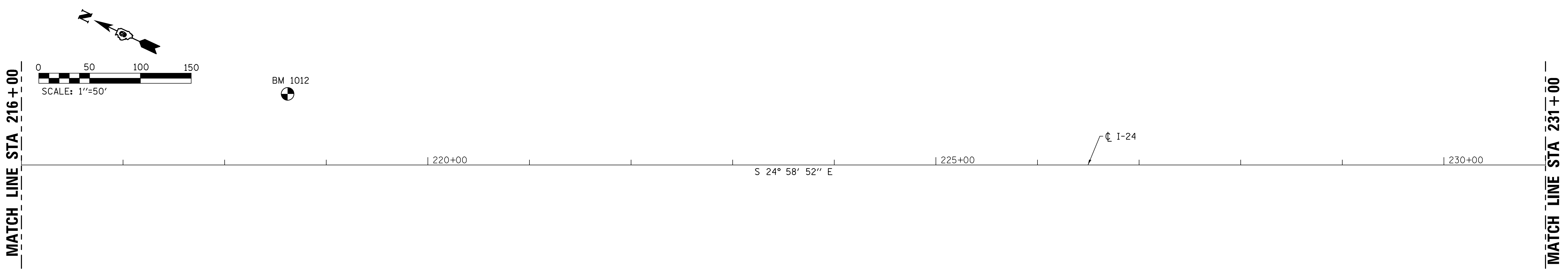


BENCHMARK

NAVD 88

BM 1013 - "□" IN CENTER OF HEADWALL AT STA 194+26, 54′ LT ℄ I-24,
EL 395.32





BENCHMARK

NAVD 88

BM 1012 - "□" IN CENTER OF HEADWALL AT STA 218+62, 70′ LT ℄ I-24,
EL 398.29

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - KAH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	ESCA PROJECT NO. 1295.03	DRAWN - KAH	REVISED -	
	PLOT SCALE = 0.1667 ′ / in.	CHECKED - ELH	REVISED -	
	PLOT DATE = 10/4/2018	DATE - 06/18	REVISED -	

ALIGNMENT, TIES, AND BENCHMARKS

SCALE: 1″=50′ | SHEET NO. 2 OF 4 SHEETS | STA. 186+00.00 TO STA. 231+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	22
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

PRINT DRIVER = I_PD_E_B_0.pltcfg
PEN TABLE = IDOT_VER02.tbl
MODEL NAME = PLOT
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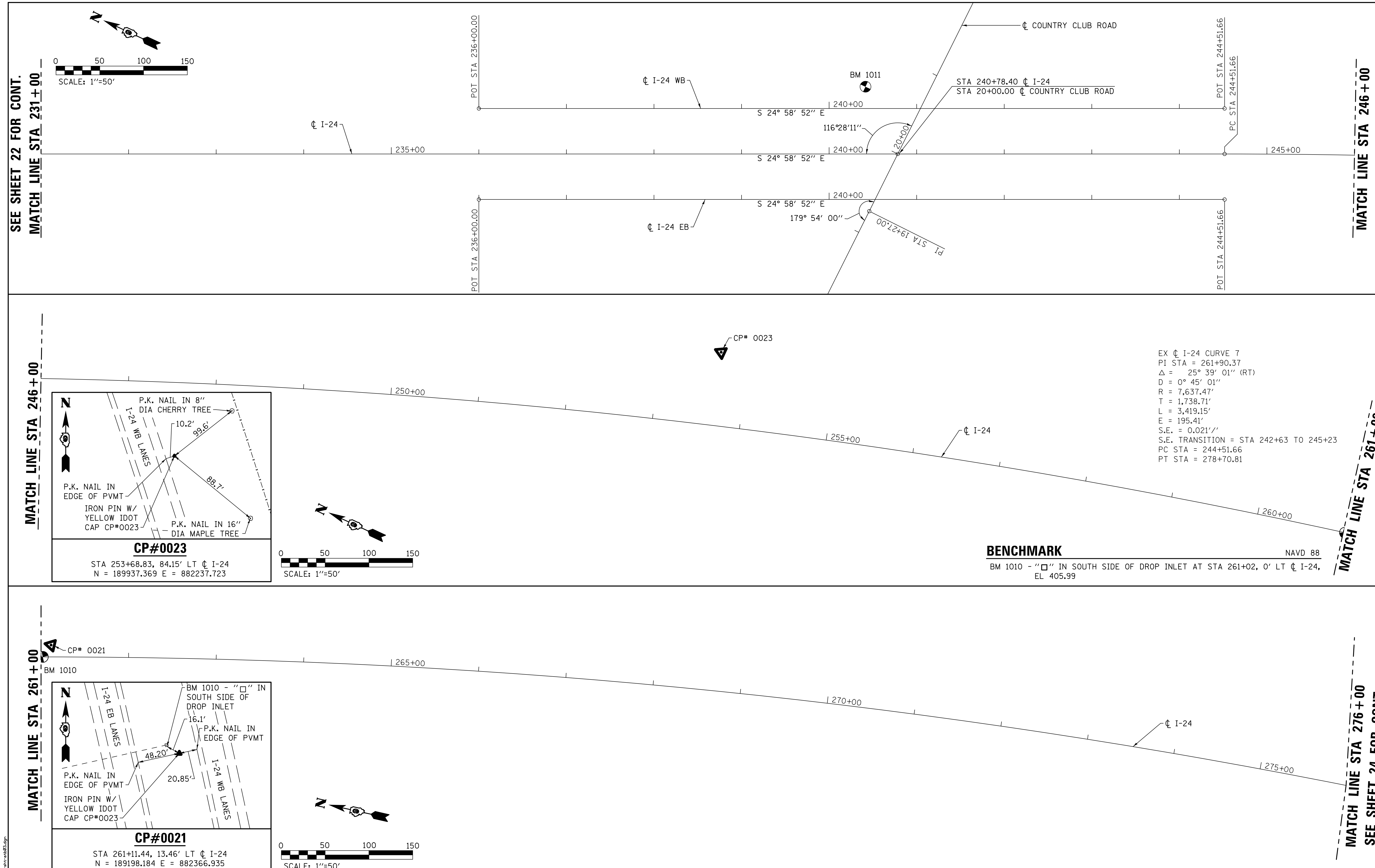


ESCA CONSULTANTS, INC.

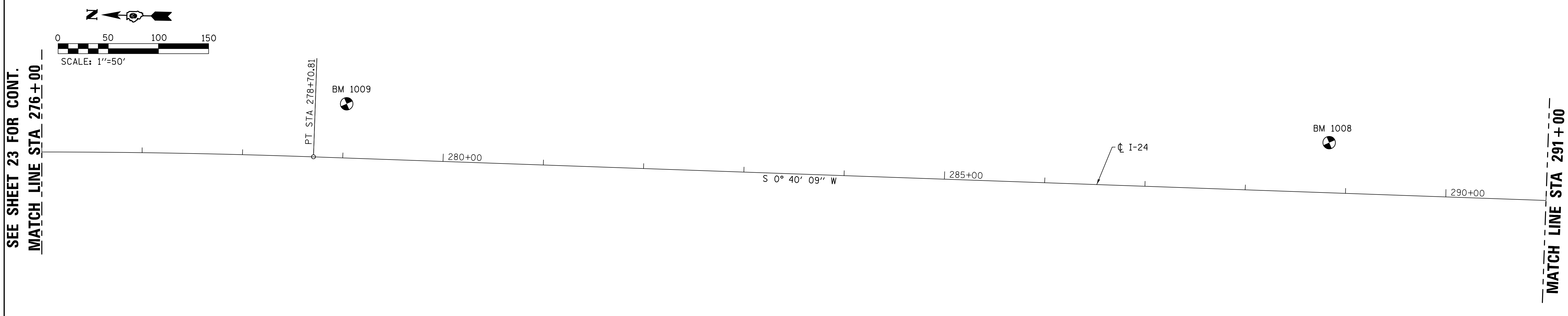
USER NAME = skm	DESIGNED - KAH	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - KAH	REVISED -
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/5/2018	DATE - 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALIGNMENT, TIES, AND BENCHMARKS

SCALE: 1"=50' | SHEET NO. 3 OF 4 SHEETS | STA. 231+00.00 TO STA. 276+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	23
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

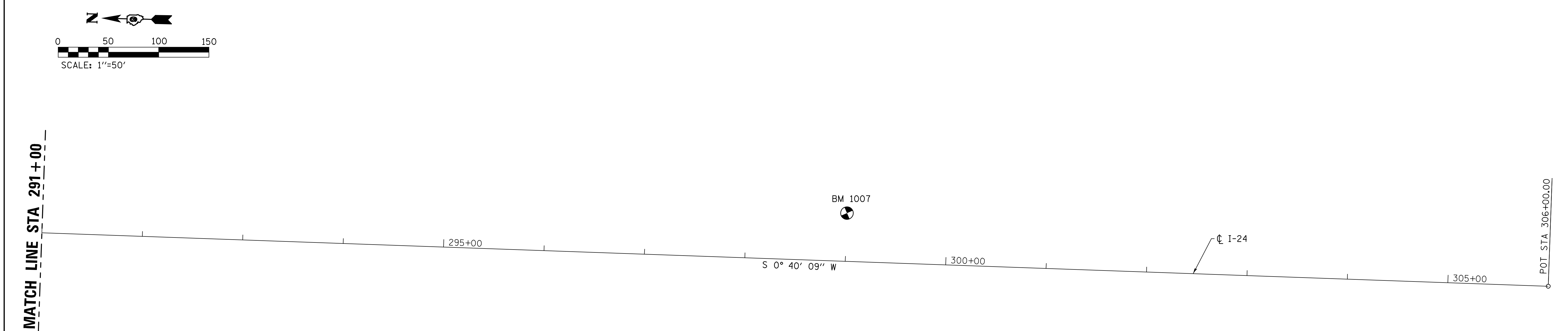


BENCHMARKS

NAVD 88

BM 1008 -"□" IN CENTER OF HEADWALL AT STA 288+82, 50' LT ℄ I-24, EL 383.54

BM 1009 -"□" IN CENTER OF HEADWALL AT STA 279+02, 54' LT ℄ I-24, EL 387.58



BENCHMARK

NAVD 88

BM 1007 -"□" IN CENTER OF HEADWALL AT STA. 299+00, 48' LT ℄ I-24, EL 381.79

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - KAH	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - KAH	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018	DATE - 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ALIGNMENT, TIES, AND BENCHMARKS

SCALE: 1''=50' | SHEET NO. 4 OF 4 SHEETS | STA. 276+00.00 TO STA.306+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	24
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

EX ROW

LEGEND

HMA SHOULDERS

1½" POLYMERIZED HMA SURFACE COURSE, MIX "D", N90

N

0 20 40 60

SCALE IN FEET
SECTON 20, T15S, R5E, 3RD PM

EXISTING PIPE
UNDERDRAIN TO REMAIN

170'

10'
24'
6'

HMA

℄ WBL I-24 AND
PROFILE GRADE

℄ I-24

235+00

GRASS MEDIAN

STA 236+59
STA 236+64
+88.0
L.O.N. PT
+25.5
2:1
TAPER
3'
5'

TBT TY 1
SPL (TAN)
215.6' SPBGR TY A
6' POSTS

MATCH LINE STA 238+00
SEE SHEET 26 FOR CONT.

℄ EBL I-24 AND
PROFILE GRADE

EXISTING PIPE
UNDERDRAIN TO REMAIN

EXIT 37 SIGN

STA 237+09
STA 237+18
+42.0
L.O.N. PT
+79.5

TBT TY 1
SPL (TAN)
SPBGR TY A
6' POSTS

EX ROW

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = SKM	DESIGNED	RTM/SKM	REVISED -
ESCA PROJECT 1295.03	DRAWN	SKM	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED	ELH	REVISED -
PLOT DATE = 10/4/2018	DATE	10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-24 PLAN

SCALE: 1" = 20' | SHEET NO. 1 OF 3 SHEETS | STA. 232+00 | TO STA. 238+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	25
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			

B.M. #1011 ELEV. 429.30
CHISELED SQUARE IN
NORTH EAST PARAPET
WALL OF SN 064-0028
STA 240+41, 25' LT

LEGEND

HMA SHOULDERS

1½" POLYMERIZED HMA SURFACE COURSE, MIX "D", N90

SEE SHEET 25 FOR CONT.
MATCH LINE STA 238+00

MATCH LINE STA 244+00
SEE SHEET 27 FOR CONT.

EX ROW

STA 241+04.39
℄ WBL AT SN 064-0028 &
PROPOSED STRUCTURE
(26°-33'-26" SKEW)

COUNTRY CLUB ROAD

PAVEMENT CONNECTOR (PCC)
FOR BRIDGE APPROACH SLAB,
SEE PAVEMENT CONNECTOR
DETAILS SHEET, TYP

18' WOVEN WIRE
FENCE, 4'

B.M. #1011

STA 239+89.00
TYPE F INLET BOX,
STANDARD 610001

+81.55

170'

10'
24'
6'

BUTT JOINT
STA 238+30

I-24 WESTBOUND

EXISTING PIPE
UNDERDRAIN TO REMAIN

STA 239+89.00
TYPE G INLET BOX,
STANDARD 610001

GRASS MEDIAN

240+00

20+00

52' WOVEN WIRE
FENCE, 4' TYP
EACH SIDE

STA 240+78.40 F.A.I. 24 (I-24)
STA 20+00.00 C.H. 13 (COUNTRY CLUB ROAD)

℄ I-24

SPBGR TY A
6' POSTS

TBT TY 6

+41.1

+26.57

STA 239+33.31
TYPE G INLET BOX,
STANDARD 610001

3'
6'
24'
12'

BUTT JOINT
STA 238+30

I-24 EASTBOUND

170'

3'

STA 239+34.19
TYPE F INLET BOX,
STANDARD 610001

PI STA 19+27.00

40' WOVEN WIRE
FENCE, 4'

140.6' SPBGR TY A
6' POSTS

+20.1

TBT TY 6

179°-54'-00"

STA 240+52.41
℄ EBL AT SN 064-0027 &
PROPOSED STRUCTURE
(26°-33'-26" SKEW)

℄ COUNTRY CLUB ROAD

EXISTING PAVED DITCH

CONCRETE GUTTER (SPECIAL)

4'

STA 17+82.50
HILLEBRAND ROAD

20'

EX ROW

EX ROW

EX ROW

EX ROW

40' WOVEN WIRE
FENCE, 4'

STA 242+22.60
TYPE F INLET BOX,
STANDARD 610001

TBT TY 6

140.6' SPBGR TY A
6' POSTS

TBT TY 1
SPL (TAN)

+30.23

+36.7

+77.3

3'
12'
24'
6'
5'
10'

HMA

℄ WBL I-24
& PROFILE GRADE

BUTT JOINT
STA 243+30

HMA

HMA

STA 242+23.48
TYPE G INLET BOX,
STANDARD 610001

+15.7

TBT TY 6

215.6' SPBGR TY A
6' POSTS

STA 241+68.00
TYPE G INLET BOX,
STANDARD 610001

℄ EBL I-24
& PROFILE GRADE

BUTT JOINT
STA 243+30

HMA

HMA

HMA

STA 241+68.00
TYPE F INLET BOX,
STANDARD 610001

+75.25

PAVEMENT CONNECTOR (PCC)
FOR BRIDGE APPROACH SLAB,
SEE PAVEMENT CONNECTOR
DETAILS SHEET, TYP

EX ROW

EX ROW

EX ROW

EX ROW

N

0 20 40 60

SCALE IN FEET
SECTON 29, T15S, R5E, 3RD PM

USER NAME = SKM	DESIGNED RTM/SKM	REVISED -	
ESCA PROJECT 1295.03	DRAWN SKM	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE 10/18	REVISED -	

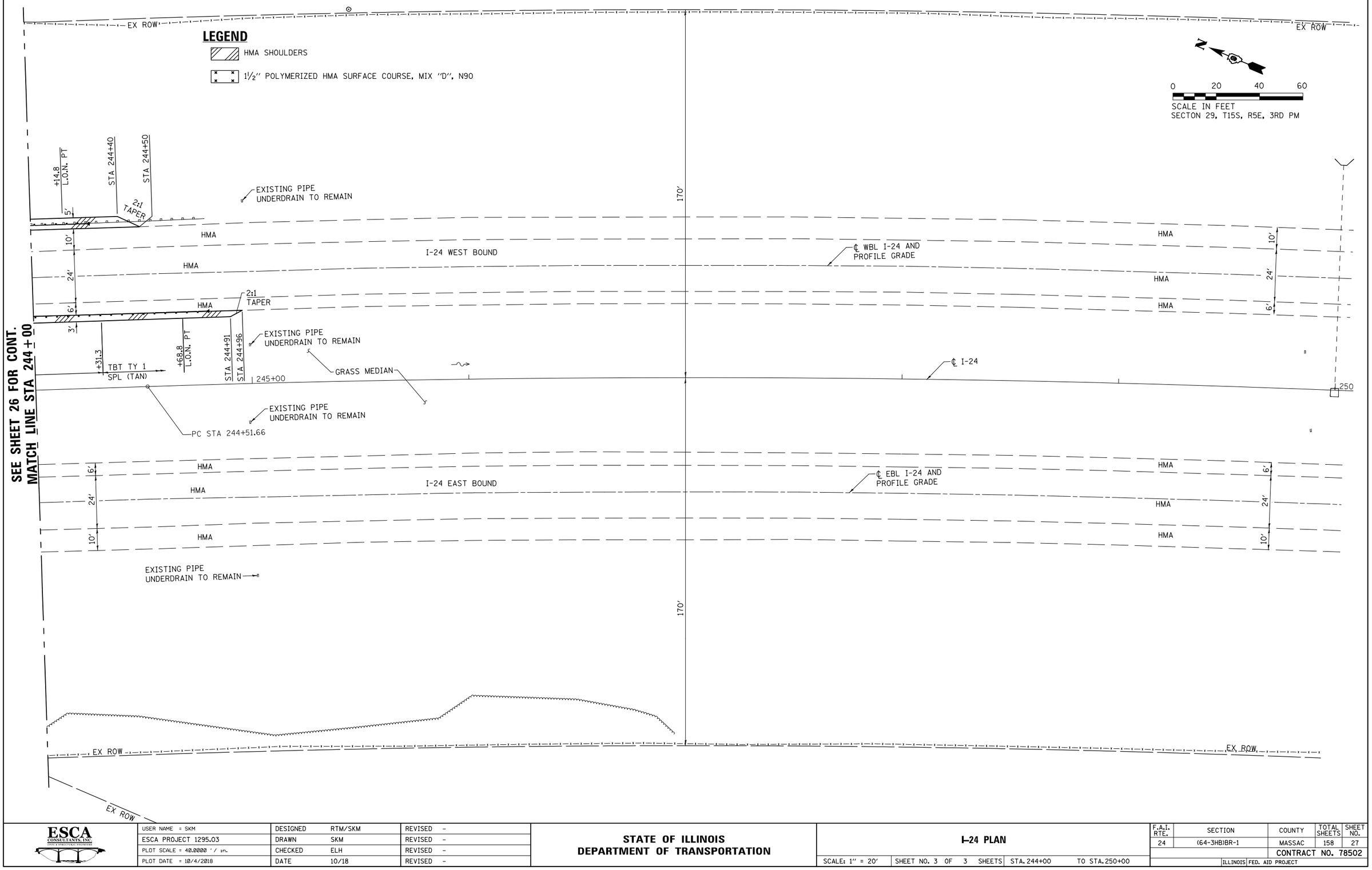
ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

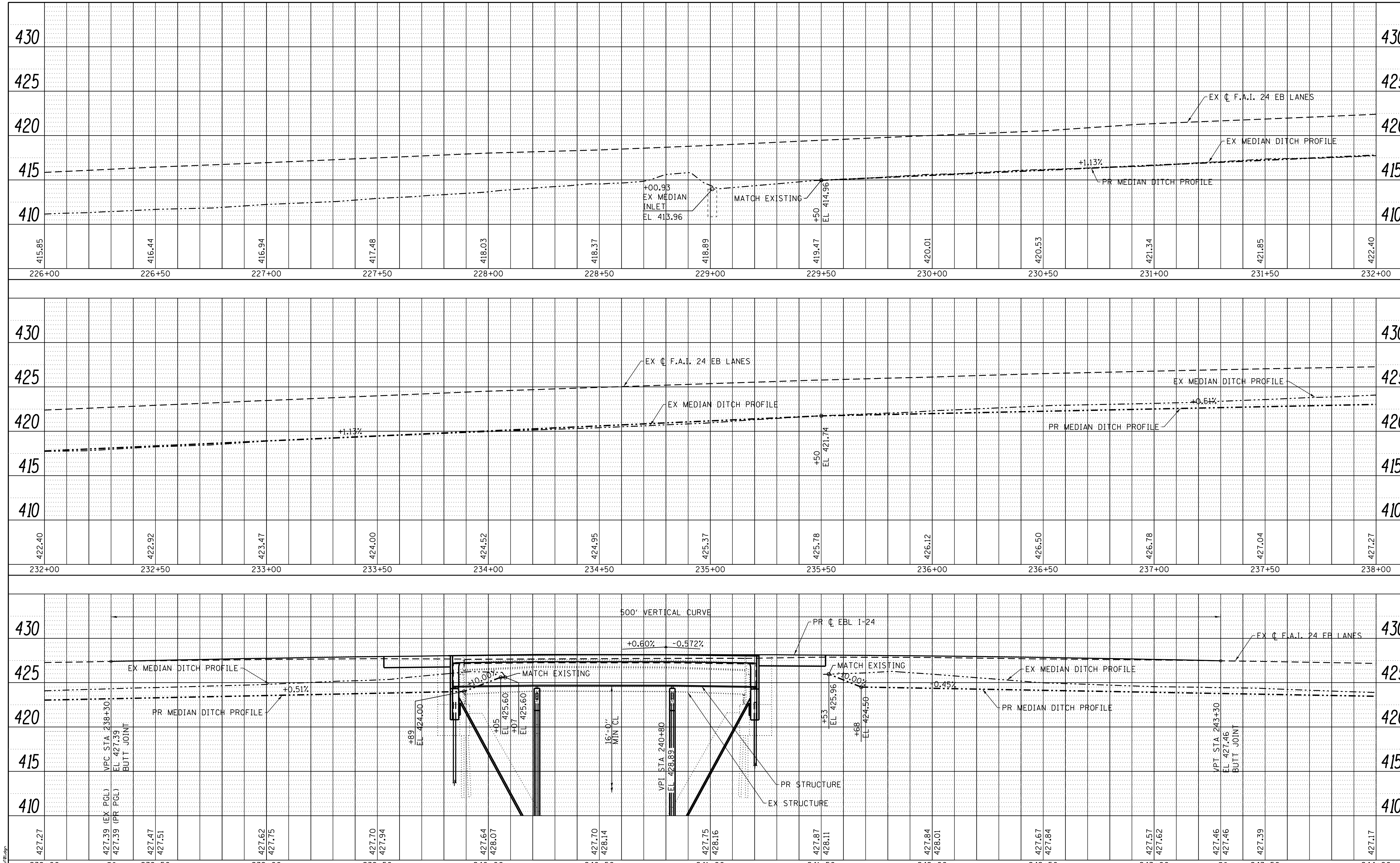
I-24 PLAN

SCALE: 1" = 20' | SHEET NO. 2 OF 3 SHEETS | STA. 238+00 TO STA. 244+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	26
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			

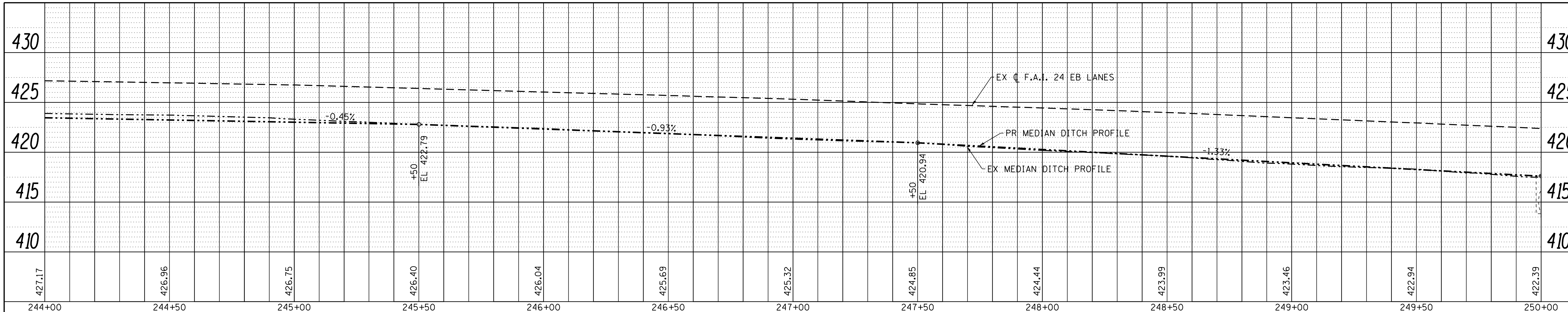


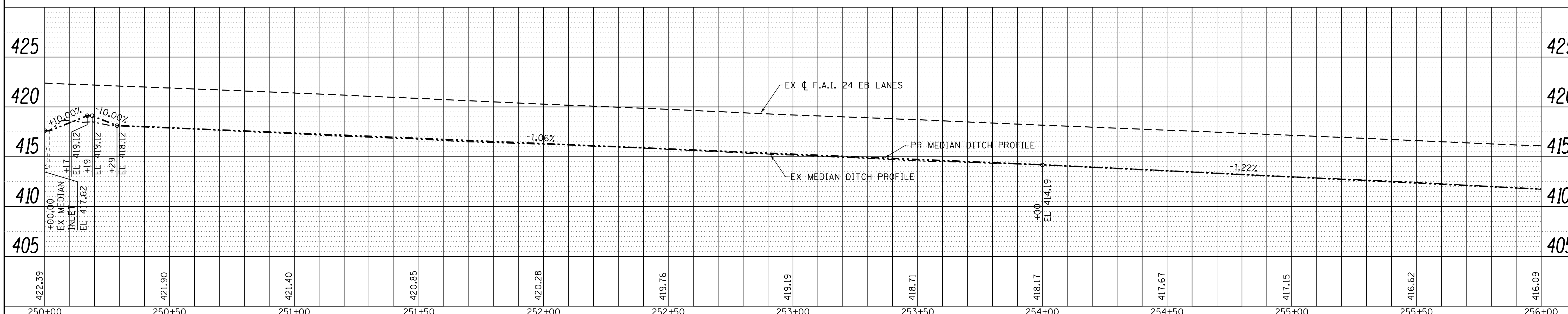
ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED	RTM/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-24 PLAN			F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	ESCA PROJECT 1295.03	DRAWN	SKM	REVISED -					24	(64-3HB)BR-1	MASSAC	158	27
	PLOT SCALE = 40.0000 ' / in.	CHECKED	ELH	REVISED -							CONTRACT NO. 78502		
	PLOT DATE = 10/4/2018	DATE	10/18	REVISED -		SCALE: 1" = 20'	SHEET NO. 3 OF 3 SHEETS	STA. 244+00 TO STA. 250+00			ILLINOIS FED. AID PROJECT		

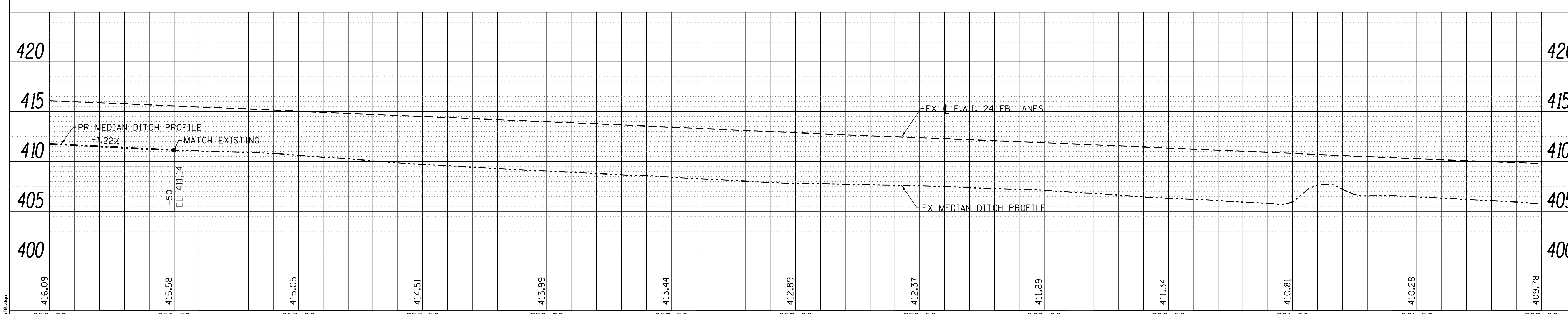


PROFILE | NOTE BOOK ____ NO. ____ | SURVEYED | PLOTTED | GRADES CHECKED | B.M. NOTED | STRUCTURE NOTAT'NS CH'KD | BY | DATE

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED RTM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-24 EASTBOUND PROFILE	F.A.I. RTE. 24 / SECTION (64-3HB)BR-1 / COUNTY MASSAC / TOTAL SHEETS 158 / SHEET NO. 28
	ESCA PROJECT 1295.03	DRAWN SKM	REVISED -			CONTRACT NO. 78502
	PLOT SCALE = 40.0000 ' / in.	CHECKED ELH	REVISED -		SCALE: AS SHOWN / SHEET NO. 1 OF 2 SHEETS / STA. 226+00 TO STA. 244+00	ILLINOIS FED. AID PROJECT
	PLOT DATE = 10/4/2018	DATE 04/18	REVISED -			







PROFILE — NOTE BOOK NO. ___ — SURVEYED / PLOTTED / GRADES CHECKED / B.M. NOTED / STRUCTURE NOTAT'NS CH'KD — BY — DATE

ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED RTM	REVISED -	
ESCA PROJECT 1295.03	DRAWN SKM	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE 04/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

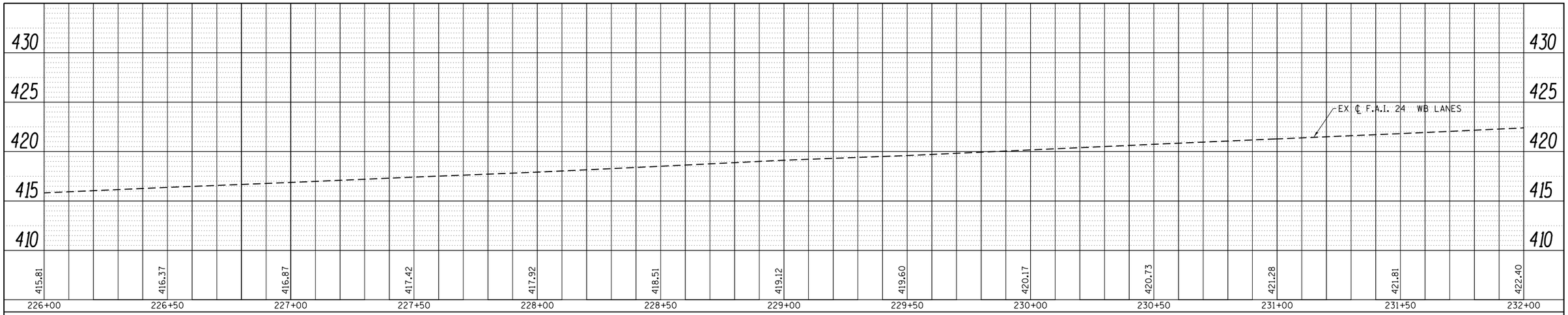
I-24 EASTBOUND PROFILE

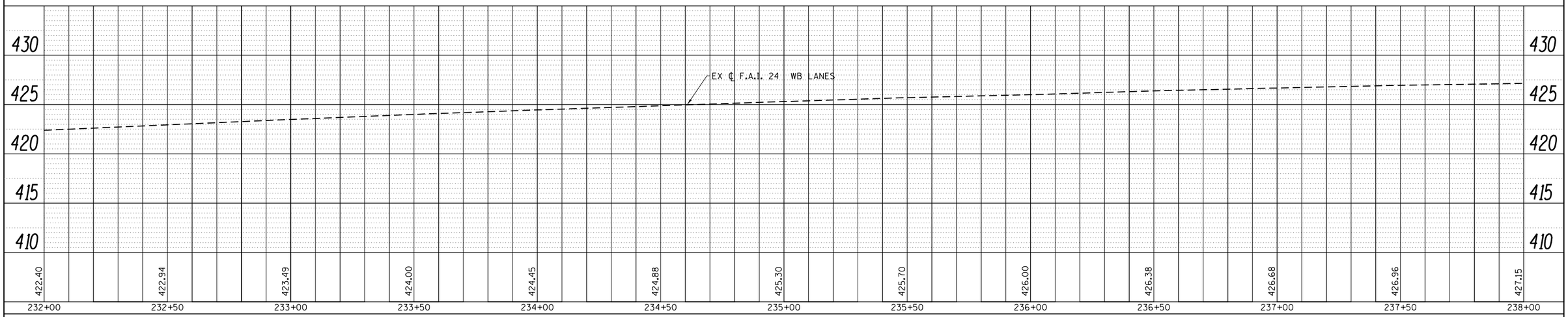
SCALE: AS SHOWN | SHEET NO. 2 OF 2 SHEETS | STA. 244+00 TO STA. 262+00

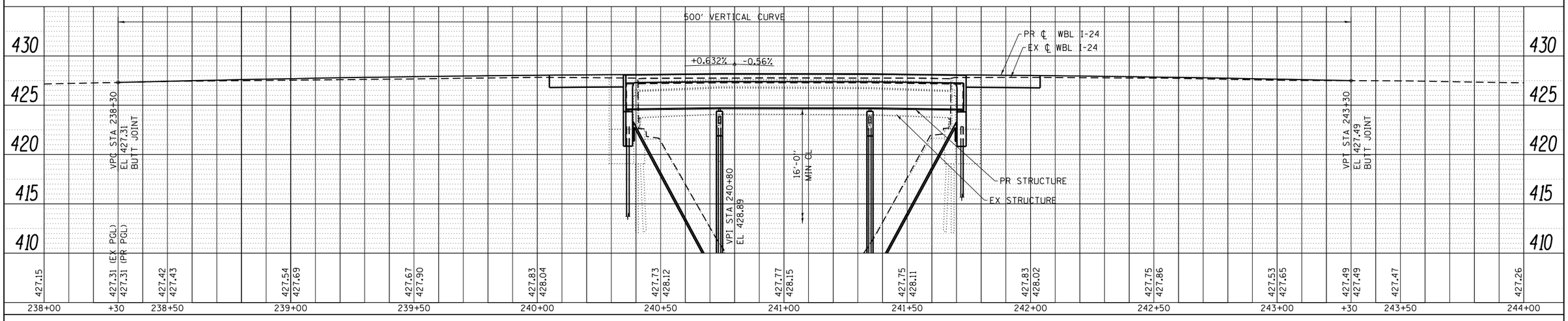
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	29

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT







PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
NOTE BOOK B.M. NOTED
NO. _____ STRUCTURE NOTATNS CHKD

DATE	BY

ESCA CONSULTANTS, INC.

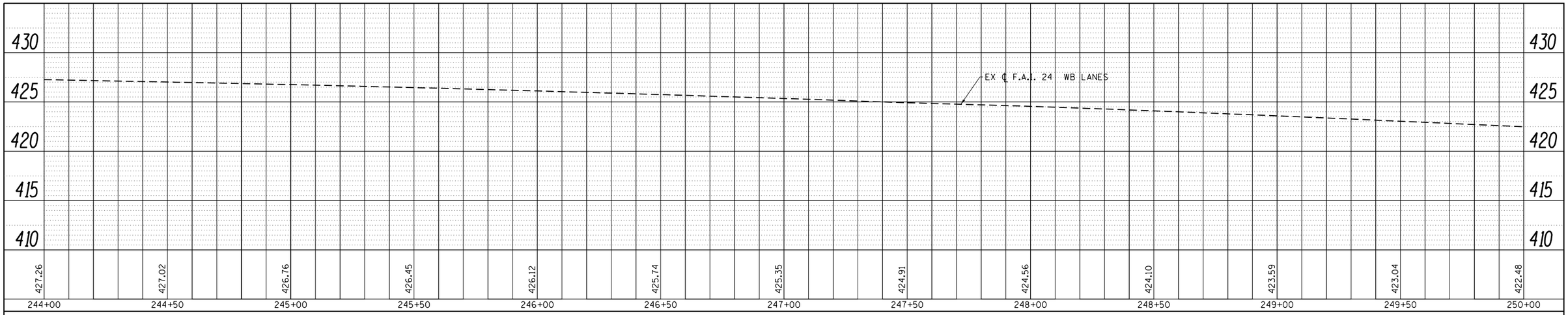
USER NAME = skm	DESIGNED - RTM	REVISED -
ESCA PROJECT 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	DATE - 04/18	REVISED -

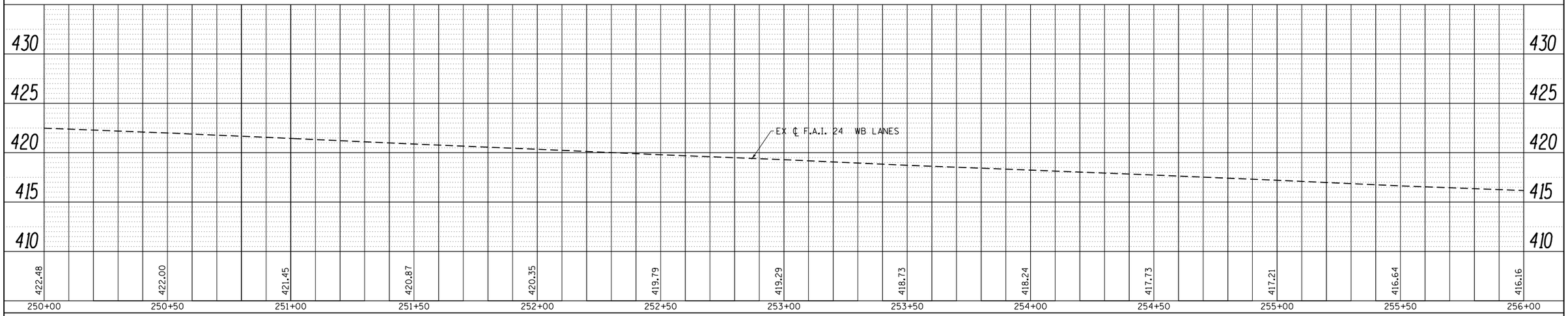
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

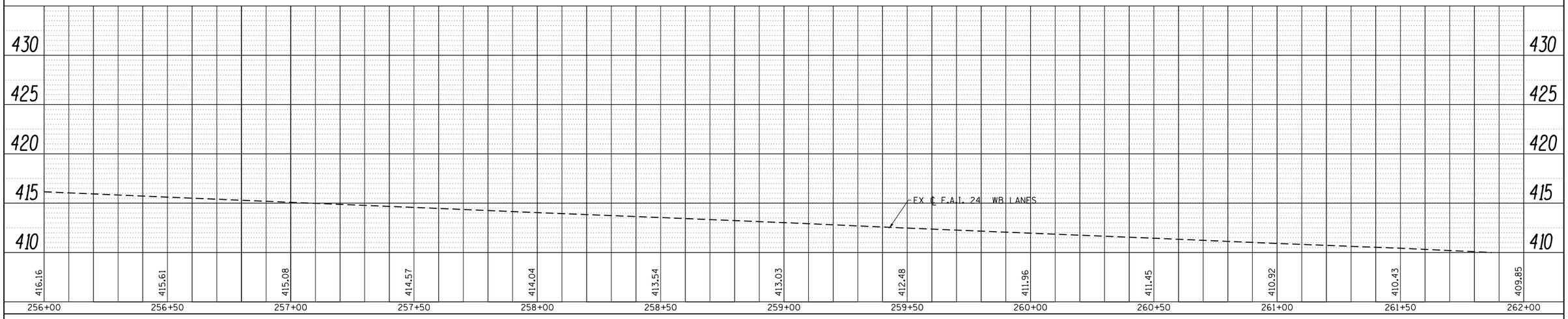
I-24 WESTBOUND PROFILE

SCALE: AS SHOWN | SHEET NO. 1 OF 2 SHEETS | STA. 226+00 TO STA. 244+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	30
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			







PROFILE
SURVEYED
PLOTTED
CROSS CHECKED
NOTE BOOK
NO.
BY
DATE
B.M. NOTED
STRUCTURE NOTATNS CHKD

ESCA CONSULTANTS, INC.

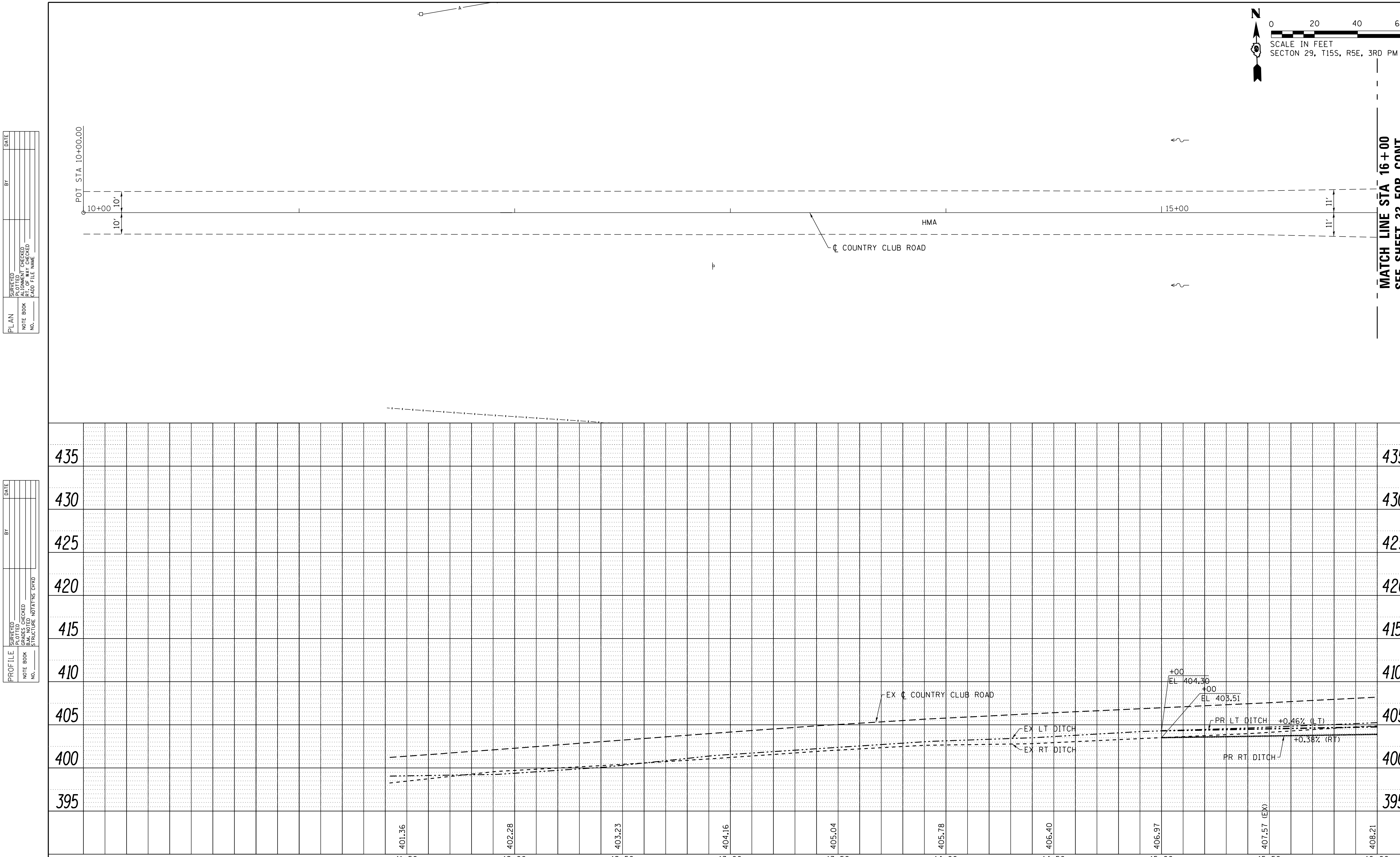
USER NAME = skm	DESIGNED - RTM	REVISED -
ESCA PROJECT 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = 40.0000 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	DATE - 04/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-24 WESTBOUND PROFILE

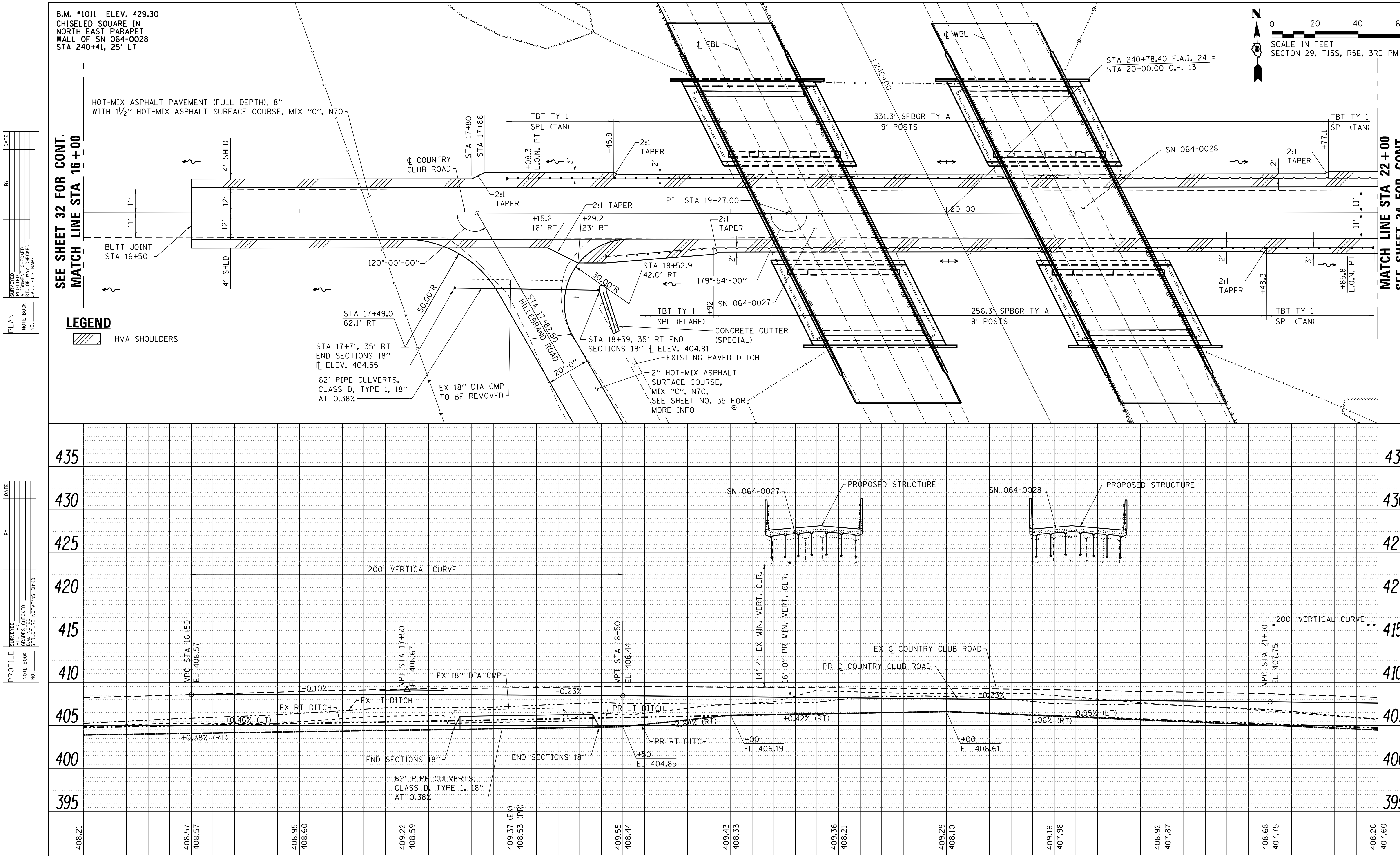
SCALE: AS SHOWN | SHEET NO. 2 OF 2 SHEETS | STA. 244+00 | TO STA. 262+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	31
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			



ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS	USER NAME = skm	DESIGNED - RTM/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	C.H. 13 (COUNTRY CLUB ROAD) PLAN AND PROFILE
	ESCA PROJECT NO. 1295.03	DRAWN - RTM/KAH/SKM	REVISED -		
	SCALES: (HORIZ) 1"=20' (VERT) 1"=5'	CHECKED - ELH	REVISED -		
	PLOT DATE = 10/4/2018	DATE - 10/18	REVISED -		SCALE: AS SHOWN · SHEET NO. 1 OF 3 SHEETS · STA. 10+00 TO STA. 16+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	32
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		



ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - RTM/SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - RTM/KAH/SKM	REVISED -
SCALES: (HORIZ) 1"=20' (VERT) 1"=5'	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

C.H. 13 (COUNTRY CLUB ROAD) PLAN AND PROFILE

SCALE: AS SHOWN | SHEET NO. 2 OF 3 SHEETS | STA. 16+00 TO STA. 22+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	33
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			

PLAN
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
CADD FILE NAME
NOTE BOOK
NO.
BY
DATE

PROFILE
SURVEYED
PLOTTED
CROSSES CHECKED
BM. NOTED
STRUCTURE NOTATNS CHKD
NOTE BOOK
NO.
BY
DATE

SEE SHEET 33 FOR CONT.
MATCH LINE STA 22+00

N

0 20 40 60
SCALE IN FEET
SECTON 29, T15S, R5E, 3RD PM

TBT TY 1
SPL (TAN)
3'
+14.6
L.O.N. PT
STA 22+37
STA 22+43
4' SHLD
HOT-MIX ASPHALT PAVEMENT (FULL DEPTH), 8"
WITH 1½" HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N70
BUTT JOINT
STA 23+50
EX 18" DIA CMP
STA 25+82
FE EARTH
POT STA 27+00.00
11'
2:1
TAPER
12'
25+00
90°
HMA
STA 22+08
STA 22+14
℄ COUNTRY CLUB ROAD
STA 26+40
FE EARTH

LEGEND

HMA SHOULDERS

435
430
425
420
415
410
405
400
395

200' VERTICAL CURVE
PR ℄ COUNTRY CLUB ROAD
VPI STA 22+50
EL 407.52
VPT STA 23+50
EL 406.77
-0.23%
-0.75%
-0.95% (LT)
-1.06% (RT)
PR LT DITCH
PR RT DITCH
EX ℄ COUNTRY CLUB ROAD
+00
EL 403.82
+00
EL 402.86
EX LT DITCH
EX RT DITCH
EX 18" DIA CMP
EX 18" DIA CMP

408.26 407.60 | 407.84 407.39 | 407.33 (EX) 407.11 (PR) | 406.77 406.77 | 406.01 | 404.97 | 404.20 | 403.31 | 402.38 | 401.48 | 400.53

22+00 22+50 23+00 23+50 24+00 24+50 25+00 25+50 26+00 26+50 27+00

ESCA CONSULTANTS, INC.

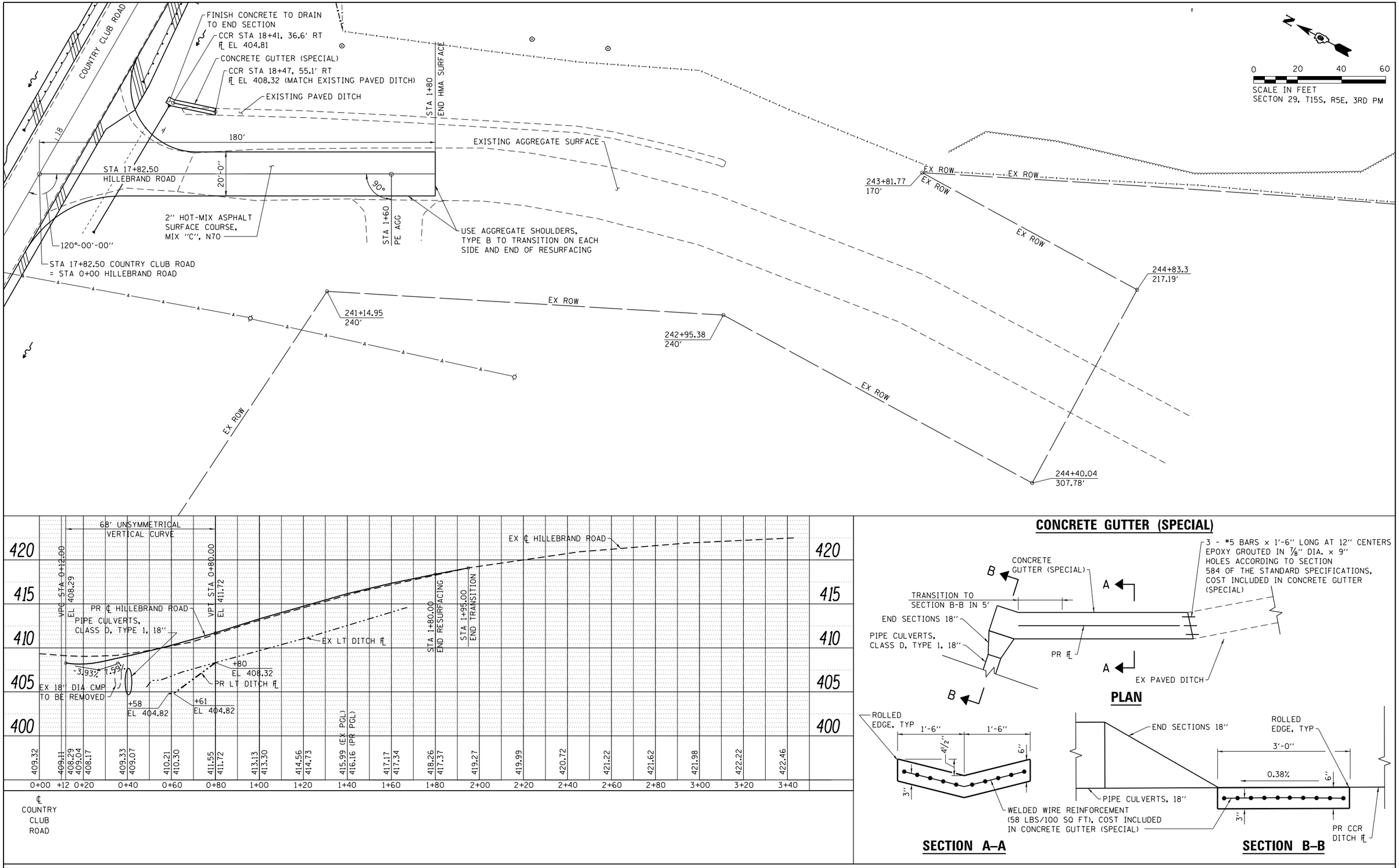
USER NAME = skm	DESIGNED - RTM/SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - RTM/KAH/SKM	REVISED -
SCALES: (HORIZ) 1"=20' (VERT) 1"=5'	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

C.H. 13 (COUNTRY CLUB ROAD) PLAN AND PROFILE

SCALE: AS SHOWN | SHEET NO. 3 OF 3 SHEETS | STA. 22+00 TO STA. 27+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	34
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			



CONCRETE GUTTER (SPECIAL)

PLAN

SECTION A–A

SECTION B–B

PLAN: SURVEYED, PLOTTED, CROSS CHECKED, R.O.W. CHECKED, NOTE BOOK, NO., CADD FILE NAME, BY, DATE

PROFILE: SURVEYED, PLOTTED, CROSS CHECKED, B.M. NOTED, STRUCTURE NOTATNS CHKD, NOTE BOOK, NO., BY, DATE

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

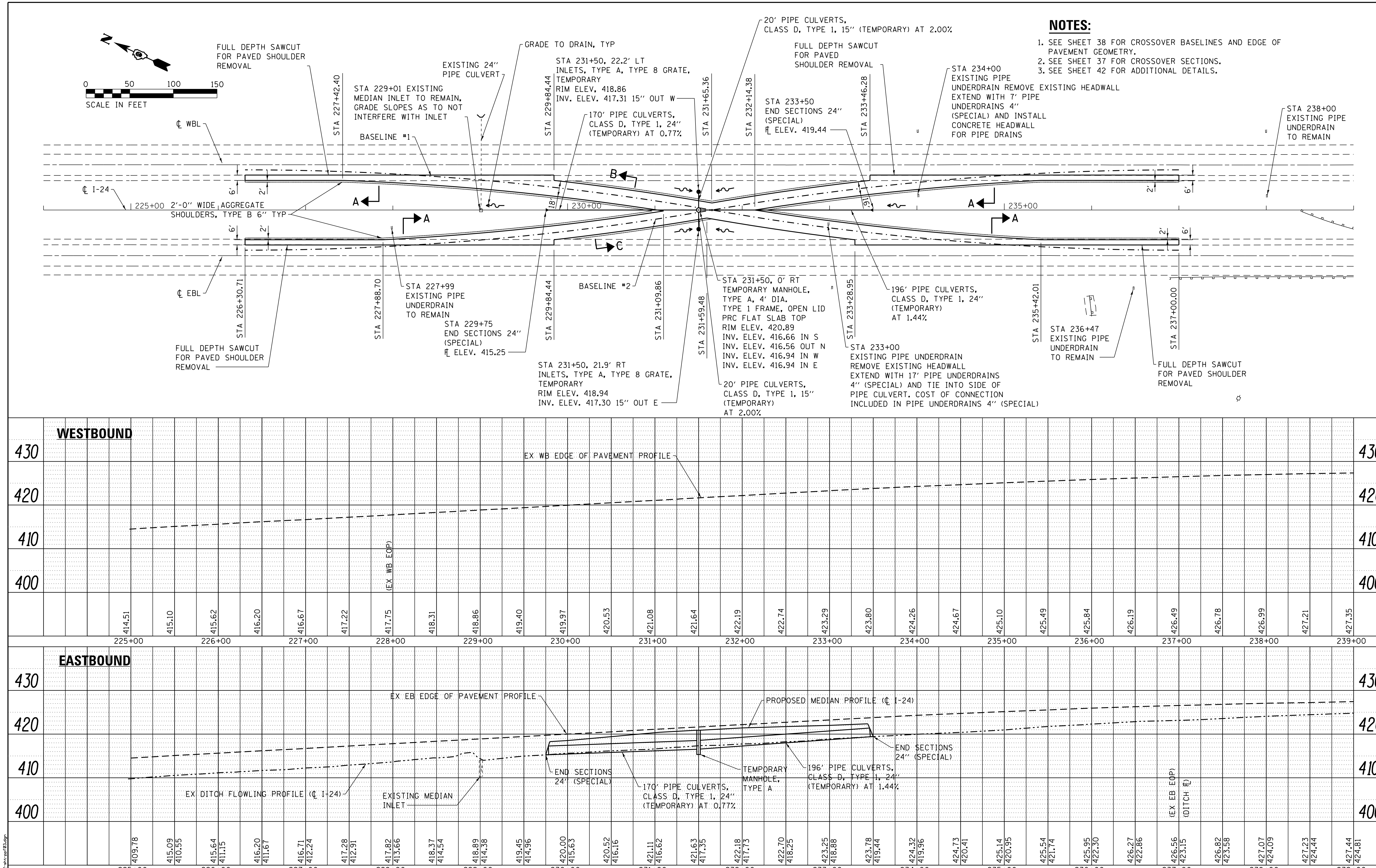
USER NAME = skm	DESIGNED RTM/SKM	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN KAH/SKM	REVISED -	
PLOT SCALE = 40.0000 ' / in.	CHECKED ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE 10/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HILLEBRAND ROAD PLAN AND PROFILE

SCALE: AS SHOWN | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	35
		CONTRACT NO. 78502		
	ILLINOIS	FED. AID PROJECT		



ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM/JMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	ESCA PROJECT 1295.03	DRAWN - JMK	REVISED -	
	PLOT SCALE = 100.0000 ' / in.	CHECKED - ELH	REVISED -	
	PLOT DATE = 10/4/2018	CHECKED - 03/18	REVISED -	

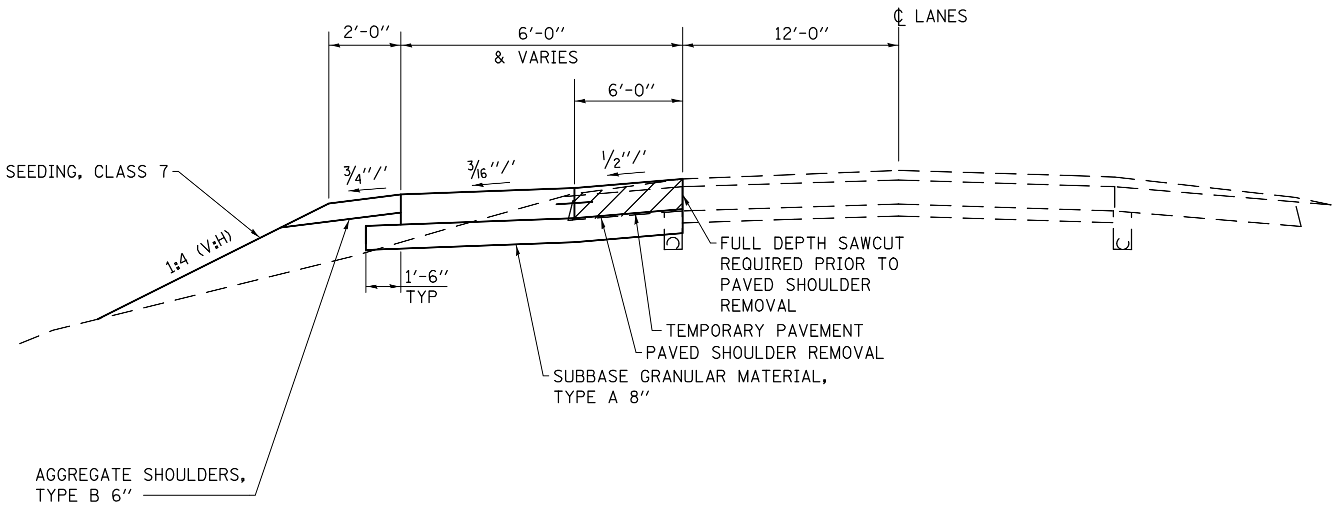
NORTH CROSSOVERS PLAN AND PROFILE

SCALE: AS SHOWN | SHEET 1 OF 1 SHEETS | STA. 224+00 TO STA. 239+00

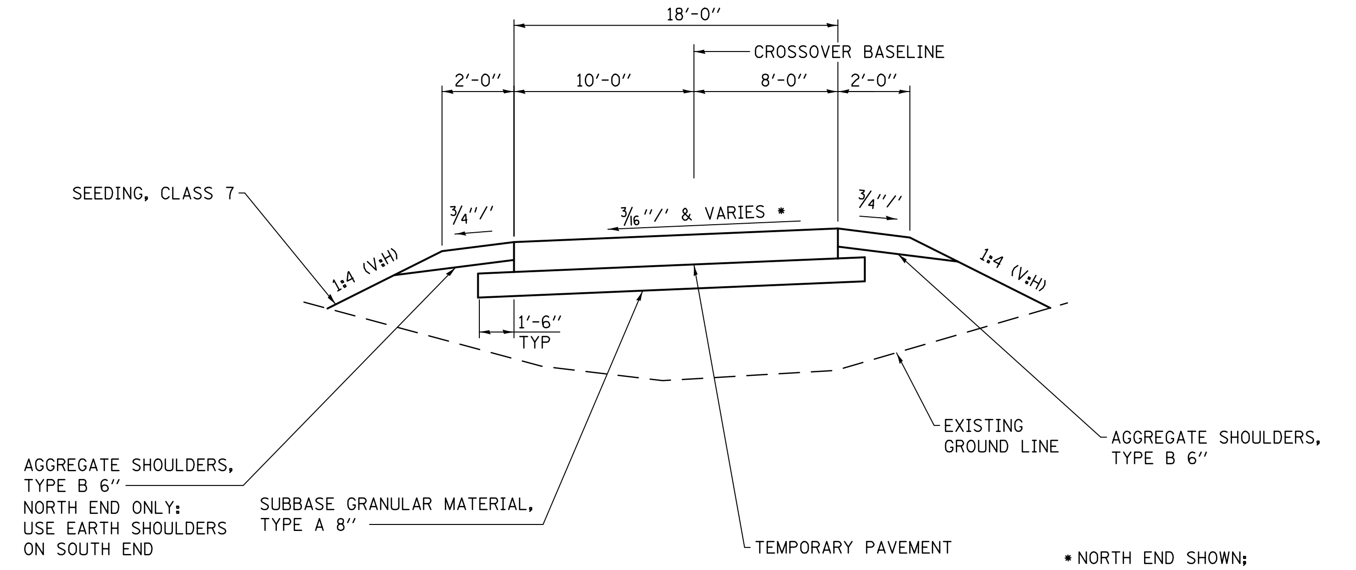
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	36

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT



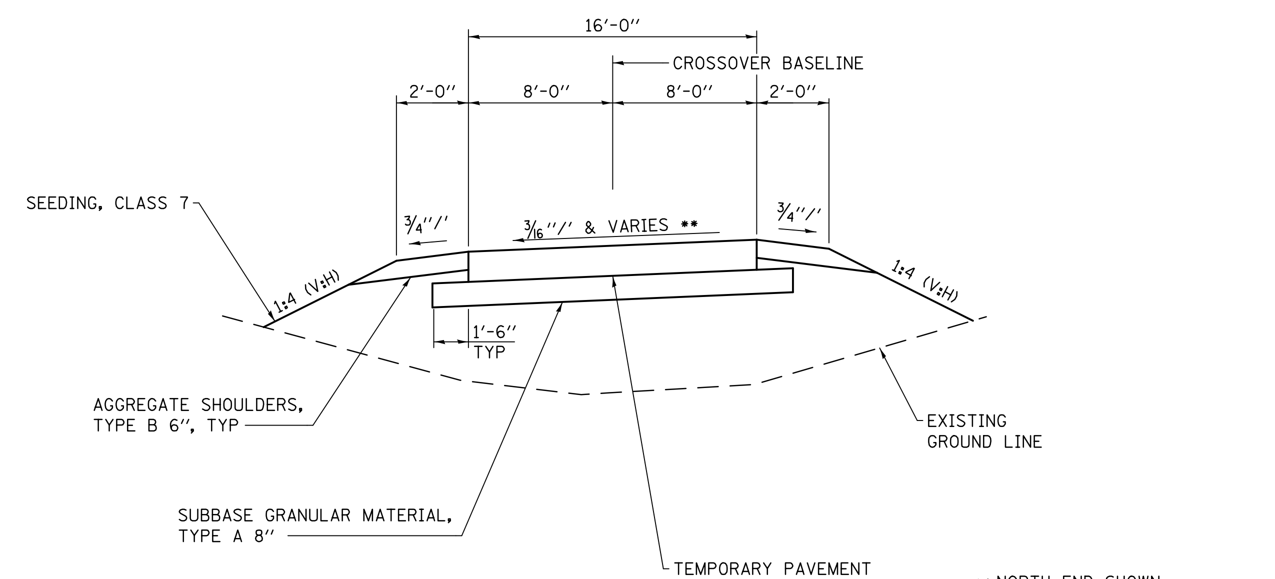
NORTH CROSSOVERS SECTION A



* NORTH END SHOWN;
SOUTH END OPPOSITE CROSSLOPE

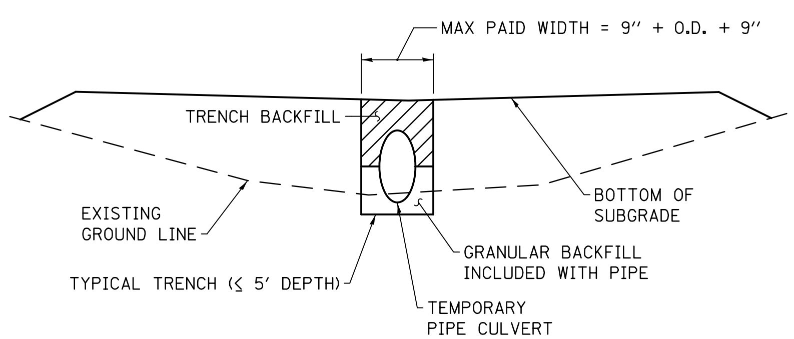
NORTH CROSSOVERS SECTION B

NOTE: CONTRACTOR MAY CONSTRUCT 10" JOINTED PCC PAVEMENT (SHOWN) OR 13½" FULL DEPTH HMA PAVEMENT AS TEMPORARY PAVEMENT



** NORTH END SHOWN;
SOUTH END OPPOSITE CROSSLOPE

NORTH CROSSOVERS SECTION C



CROSSOVERS
TRENCH BACKFILL TYPICAL SECTION***

*** FOR ILLUSTRATIVE PURPOSES ONLY;
TRENCH BACKFILL SHALL BE CONSTRUCTED ACCORDING TO SECTION 208 OF THE STANDARD SPECIFICATIONS. PIPE CULVERTS SHALL BE CONSTRUCTED ACCORDING TO SECTION 542 OF THE STANDARD SPECIFICATIONS.

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -
	ESCA PROJECT NO. 1259.08	DRAWN - JMK	REVISED -
	PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018	DATE - 10/18	REVISED -

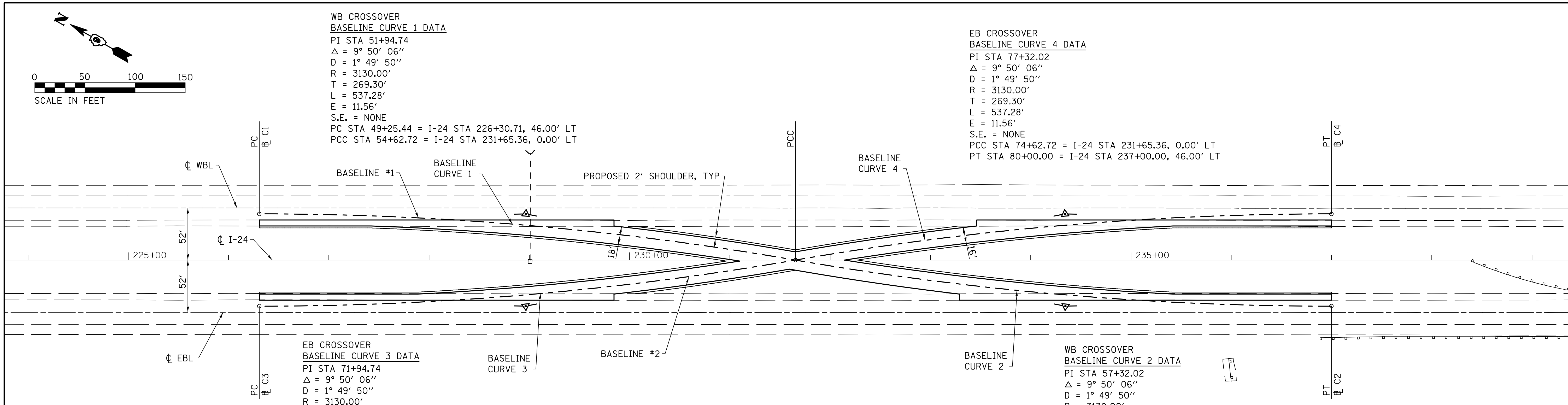
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH CROSSOVERS SECTIONS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. 226+30.71 TO STA. 237+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	37
		CONTRACT NO. 78502		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



WB CROSSOVER
BASELINE CURVE 1 DATA
PI STA 51+94.74
Δ = 9° 50' 06"
D = 1° 49' 50"
R = 3130.00'
T = 269.30'
L = 537.28'
E = 11.56'
S.E. = NONE
PC STA 49+25.44 = I-24 STA 226+30.71, 46.00' LT
PCC STA 54+62.72 = I-24 STA 231+65.36, 0.00' LT

EB CROSSOVER
BASELINE CURVE 4 DATA
PI STA 77+32.02
Δ = 9° 50' 06"
D = 1° 49' 50"
R = 3130.00'
T = 269.30'
L = 537.28'
E = 11.56'
S.E. = NONE
PCC STA 74+62.72 = I-24 STA 231+65.36, 0.00' LT
PT STA 80+00.00 = I-24 STA 237+00.00, 46.00' LT

EB CROSSOVER
BASELINE CURVE 3 DATA
PI STA 71+94.74
Δ = 9° 50' 06"
D = 1° 49' 50"
R = 3130.00'
T = 269.30'
L = 537.28'
E = 11.56'
S.E. = NONE
PC STA 69+25.44 = I-24 STA 226+30.71, 46.00' RT
PCC STA 74+62.72 = I-24 STA 231+65.36, 0.00' RT

WB CROSSOVER
BASELINE CURVE 2 DATA
PI STA 57+32.02
Δ = 9° 50' 06"
D = 1° 49' 50"
R = 3130.00'
T = 269.30'
L = 537.28'
E = 11.56'
S.E. = NONE
PCC STA 54+62.72 = I-24 STA 231+65.36, 0.00' RT
PT STA 60+00.00 = I-24 STA 237+00.00, 46.00' RT

ELEVATION AND OFFSET DATA

℄ I-24 STATION	BASELINE #1		BASELINE #2		E.O.P. LEFT OF ℄			LEFT BREAK POINT			E.O.P. LEFT OF ℄			BREAK POINT			E.O.P. RIGHT OF ℄			RIGHT BREAK POINT			E.O.P. RIGHT OF ℄		
	OFFSET (FT)		OFFSET (FT)		OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION
226+30.71	46.00	LT	46.00	RT	40.00	LT	415.98	-	-	-	34.00	LT	415.61	-	-	-	34.00	RT	415.54	-	-	-	40.00	RT	415.98
226+50.00	45.94	LT	45.94	RT	40.00	LT	416.19	-	-	-	34.00	LT	415.94	-	-	-	34.00	RT	415.94	-	-	-	40.00	RT	416.19
227+00.00	45.23	LT	45.23	RT	40.00	LT	416.68	-	-	-	34.00	LT	416.43	-	-	-	34.00	RT	416.46	-	-	-	40.00	RT	416.71
227+42.40	44.01	LT	44.01	RT	40.00	LT	417.14	-	-	-	34.00	LT	416.89	-	-	-	34.00	RT	416.94	-	-	-	40.00	RT	417.19
227+50.00	43.73	LT	43.73	RT	40.00	LT	417.22	34.00	LT	416.97	33.72	LT	416.96	-	-	-	34.00	RT	417.02	-	-	-	40.00	RT	417.27
227+88.70	42.01	LT	42.01	RT	40.00	LT	417.63	34.00	LT	417.38	32.00	LT	417.35	-	-	-	34.00	RT	417.45	-	-	-	40.00	RT	417.70
228+00.00	41.42	LT	41.42	RT	40.00	LT	417.75	34.00	LT	417.50	31.40	LT	417.46	-	-	-	33.41	RT	417.56	34.00	RT	417.57	40.00	RT	417.82
228+50.00	38.31	LT	38.31	RT	40.00	LT	418.31	34.00	LT	418.06	28.28	LT	417.97	-	-	-	30.29	RT	418.04	34.00	RT	418.12	40.00	RT	418.37
229+00.00	34.39	LT	34.39	RT	40.00	LT	418.85	34.00	LT	418.60	24.36	LT	418.49	-	-	-	26.36	RT	418.50	34.00	RT	418.64	40.00	RT	418.89
229+50.00	29.67	LT	29.67	RT	40.00	LT	419.40	34.00	LT	419.15	19.62	LT	418.93	-	-	-	21.63	RT	418.98	34.00	RT	419.22	40.00	RT	419.47
229+84.43	25.95	LT	25.95	RT	40.00	LT	419.79	34.00	LT	419.36	15.88	LT	419.26	-	-	-	17.90	RT	419.29	34.00	RT	419.44	40.00	RT	419.84
230+00.00	24.14	LT	24.14	RT	32.19	LT	419.68	-	-	-	14.07	LT	419.41	-	-	-	16.08	RT	419.43	-	-	-	32.20	RT	419.73
230+50.00	17.79	LT	17.79	RT	25.86	LT	420.16	-	-	-	7.70	LT	419.89	-	-	-	9.72	RT	419.88	-	-	-	25.86	RT	420.14
231+00.00	10.62	LT	10.62	RT	18.71	LT	420.59	-	-	-	0.52	LT	420.32	-	-	-	2.53	RT	420.32	-	-	-	18.71	RT	420.60
231+09.86	9.11	LT	9.11	RT	17.20	LT	420.68	-	-	-	-	-	-	1.01	RT	420.44	-	-	-	-	-	-	17.20	RT	420.68
231+50.00	2.62	LT	2.62	RT	10.73	LT	421.04	-	-	-	-	-	-	0.62	RT	420.89	-	-	-	-	-	-	10.74	RT	421.02
231+59.48	1.01	LT	1.01	RT	9.13	LT	421.12	-	-	-	-	-	-	0.53	RT	420.99	-	-	-	-	-	-	9.13	RT	421.11
231+65.36	0.00	LT	0.00	RT	8.12	LT	421.17	-	-	-	-	-	-	0.48	RT	421.05	-	-	-	-	-	-	10.15	RT	421.19
232+00.00	5.81	RT	5.81	LT	13.91	LT	421.63	-	-	-	-	-	-	0.14	RT	421.43	-	-	-	-	-	-	15.94	RT	421.66
232+14.38	8.10	RT	8.10	LT	16.20	LT	421.83	-	-	-	-	-	-	0.00	RT	421.58	-	-	-	-	-	-	18.22	RT	421.85
232+50.00	13.48	RT	13.48	LT	21.57	LT	422.30	-	-	-	5.40	LT	422.06	-	-	-	5.40	RT	422.06	-	-	-	23.59	RT	422.31
233+00.00	20.34	RT	20.34	LT	28.40	LT	422.96	-	-	-	12.27	LT	422.71	-	-	-	12.27	RT	422.72	-	-	-	30.42	RT	422.96
233+28.95	23.93	RT	23.93	LT	32.00	LT	423.29	-	-	-	15.87	LT	423.04	-	-	-	15.87	RT	423.06	34.00	RT	423.13	40.00	RT	423.56
233+46.28	25.95	RT	25.95	LT	40.00	LT	423.76	34.00	LT	423.32	17.90	LT	423.24	-	-	-	17.90	RT	423.26	34.00	RT	423.49	40.00	RT	423.74
234+00.00	31.59	RT	31.59	LT	40.00	LT	424.25	34.00	LT	424.00	23.55	LT	423.85	-	-	-	23.55	RT	423.91	34.00	RT	424.07	40.00	RT	424.32
234+50.00	36.00	RT	36.00	LT	40.00	LT	424.67	34.00	LT	424.42	27.97	LT	424.33	-	-	-	27.97	RT	424.40	34.00	RT	424.49	40.00	RT	424.74
235+00.00	39.60	RT	39.60	LT	40.00	LT	425.10	34.00	LT	424.85	31.59	LT	424.81	-	-	-	31.59	RT	424.85	34.00	RT	424.89	40.00	RT	425.14
235+42.01	42.01	RT	42.01	LT	40.00	LT	425.43	-	-	-	34.00	LT	425.18	-	-	-	34.00	RT	425.22	-	-	-	40.00	RT	425.47
235+50.00	42.40	RT	42.40	LT	40.00	LT	425.49	-	-	-	34.00	LT	425.24	-	-	-	34.00	RT	425.28	-	-	-	40.00	RT	425.53
236+00.00	44.40	RT	44.40	LT	40.00	LT	425.84	-	-	-	34.00	LT	425.59	-	-	-	34.00	RT	425.71	-	-	-	40.00	RT	425.96
236+50.00	45.60	RT	45.60	LT	40.00	LT	426.19	-	-	-	34.00	LT	425.94	-	-	-	34.00	RT	426.02	-	-	-	40.00	RT	426.27
237+00.00	46.00	RT	46.00	LT	40.00	LT	426.50	-	-	-	34.00	LT	426.09	-	-	-	34.00	RT	426.06	-	-	-	40.00	RT	426.56

NOTE:
THE CONTRACTOR SHALL CONSTRUCT THIS MEDIAN CROSSOVER USING THE ELEVATION AND OFFSET DATA TABLE FOUND ON THIS SHEET. VALUES SHOWN ARE BASED ON THE ORIGINAL ROADWAY PLANS AND FIELD SURVEY. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN THE FIELD AS APPROVED BY THE ENGINEER.

ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED - JMK	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -	
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018 1:02:42 PM	DATE - 03/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

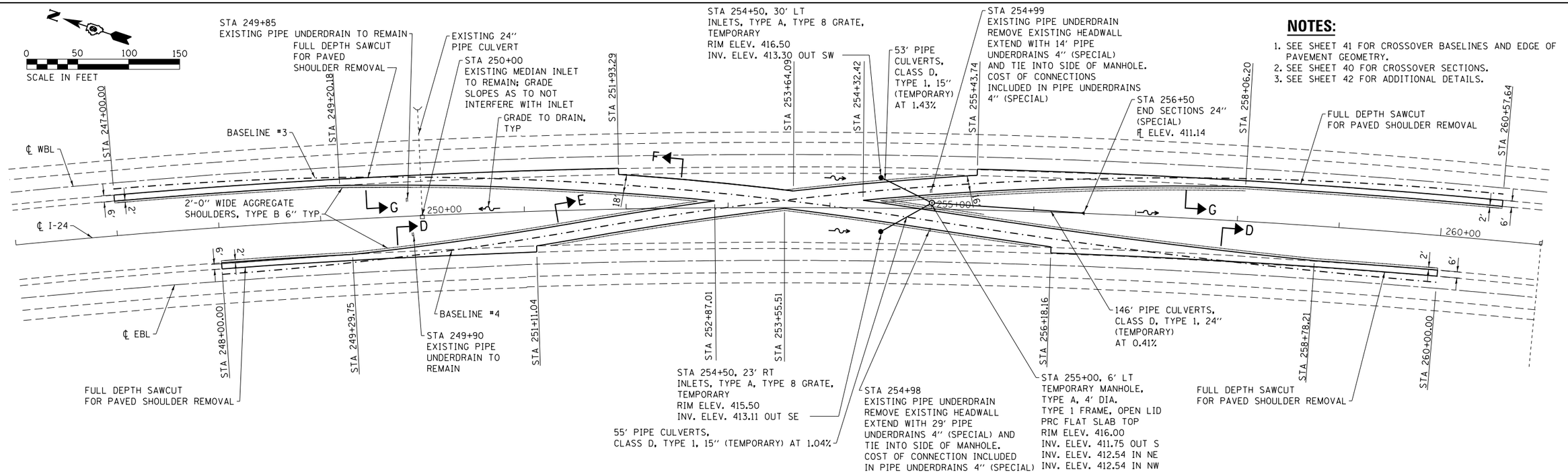
NORTH CROSSOVERS
ELEVATIONS AND OFFSETS

SCALE: 1"=50'-0" | SHEET NO. 1 OF 1 SHEETS | STA. 224+00.00 TO STA. 239+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	38

CONTRACT NO. 78502

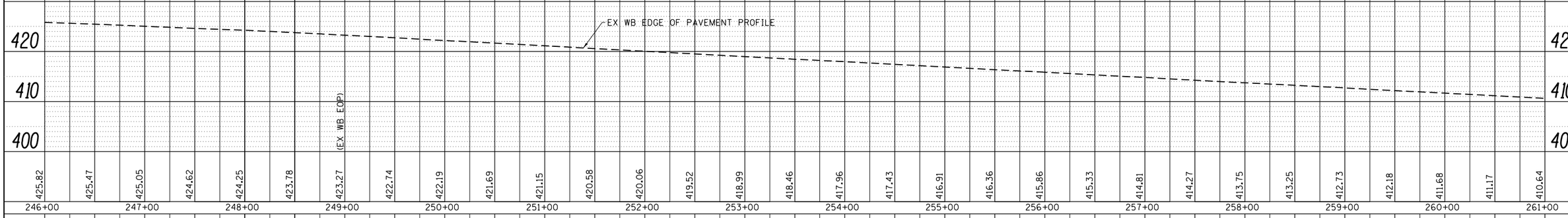
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT AID



NOTES:

1. SEE SHEET 41 FOR CROSSOVER BASELINES AND EDGE OF PAVEMENT GEOMETRY.
2. SEE SHEET 40 FOR CROSSOVER SECTIONS.
3. SEE SHEET 42 FOR ADDITIONAL DETAILS.

PLAN
BY | DATE
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
NOTE BOOK
CADD FILE NAME
NO.



PROFILE
BY | DATE
SURVEYED
PLOTTED
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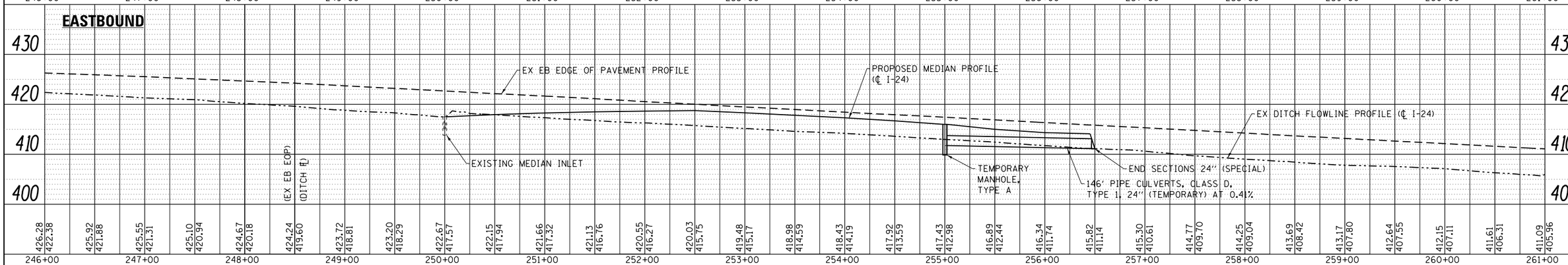


ESCA CONSULTANTS, INC.

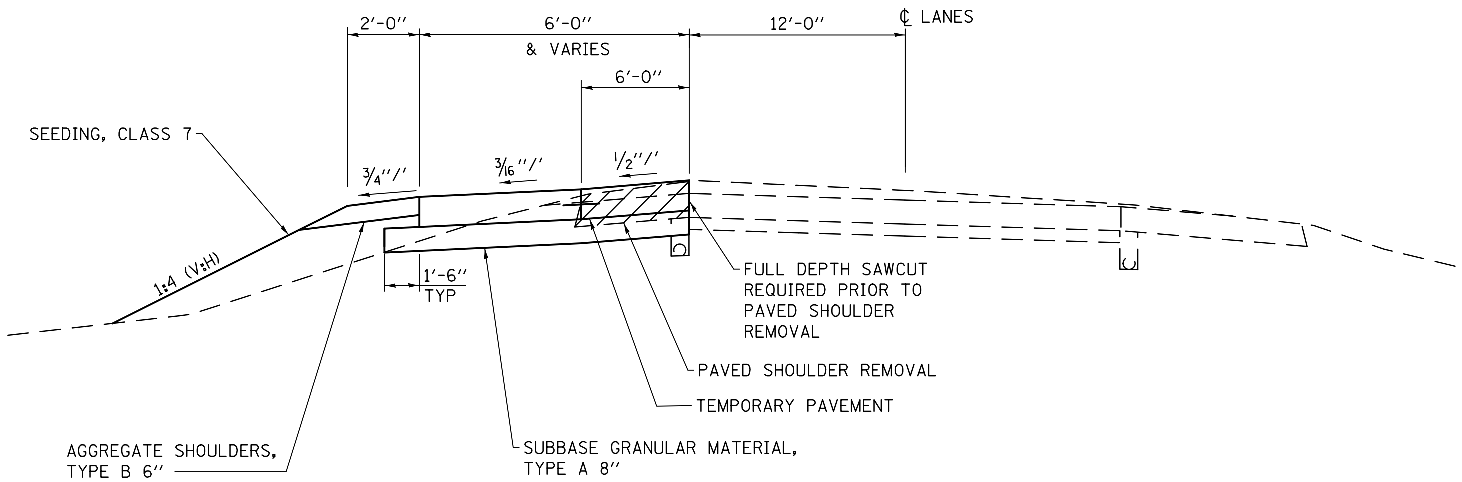
USER NAME = skm	DESIGNED - SKM/JMK	REVISED -
ESCA PROJECT 1295.03	DRAWN - JMK	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	CHECKED - 03/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

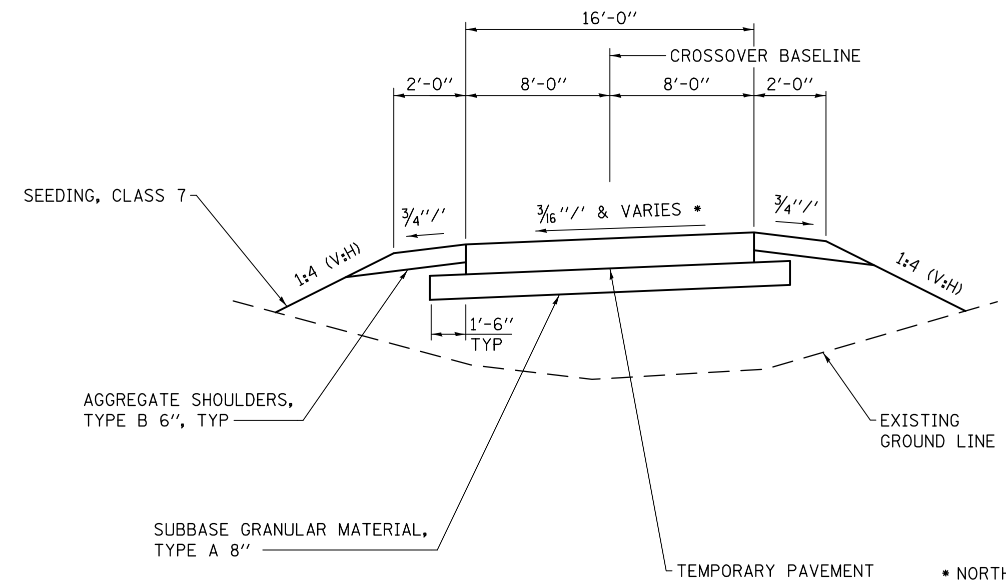
SOUTH CROSSOVERS
PLAN AND PROFILE

SCALE: AS SHOWN | SHEET 1 OF 1 SHEETS | STA. 246+00 TO STA. 261+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	39
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			



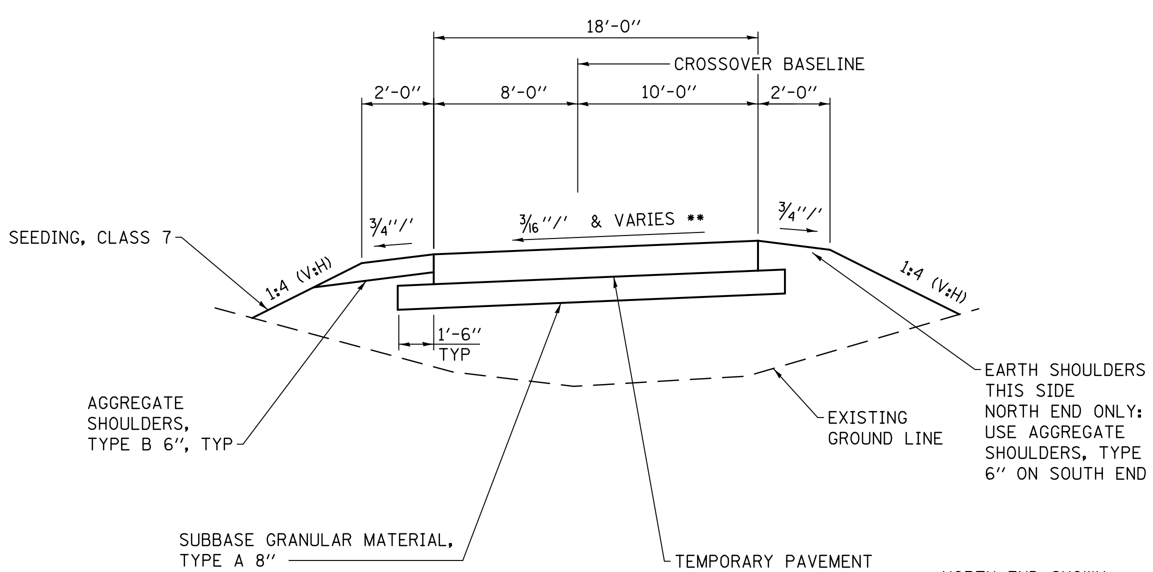
SOUTH CROSSOVERS SECTION D



* NORTH END SHOWN;
SOUTH END OPPOSITE CROSSLOPE

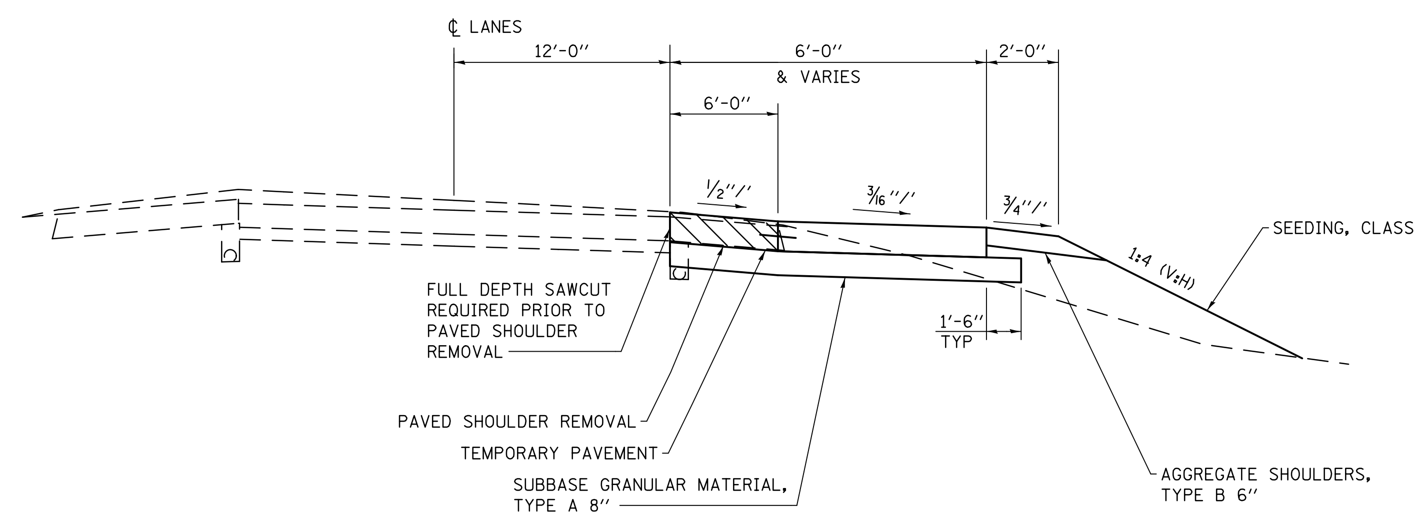
SOUTH CROSSOVERS SECTION E

NOTE: CONTRACTOR MAY CONSTRUCT 10" JOINTED PCC PAVEMENT (SHOWN) OR 13½" FULL DEPTH HMA PAVEMENT AS TEMPORARY PAVEMENT



** NORTH END SHOWN;
SOUTH END OPPOSITE CROSSLOPE

SOUTH CROSSOVERS SECTION F



SOUTH CROSSOVERS SECTION G

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -
	PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018	DATE - 10/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

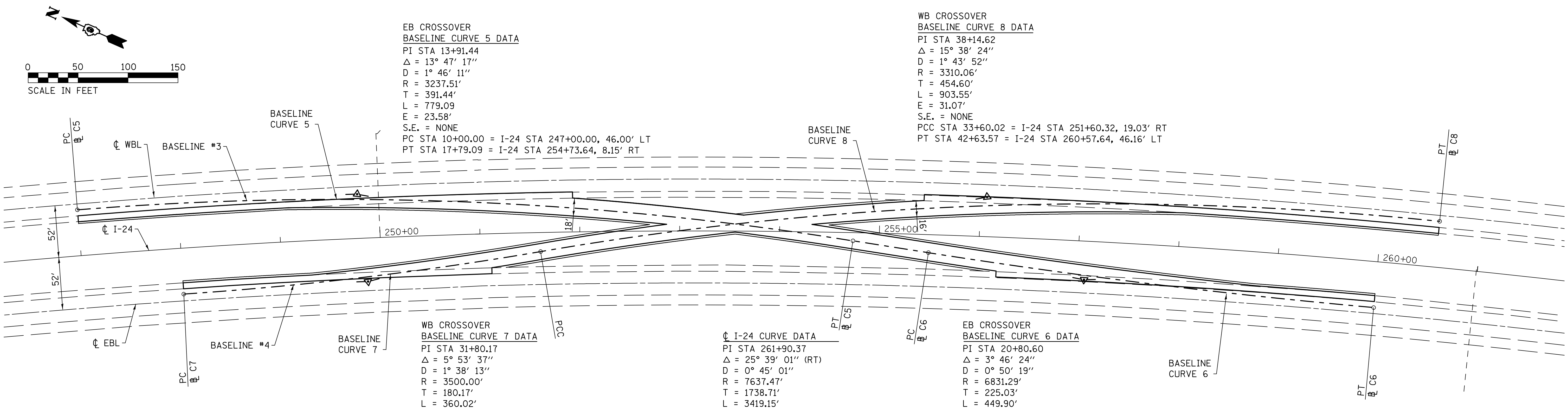
SOUTH CROSSOVERS SECTIONS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. 247+00.00 TO STA. 260+57.48

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	40

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



EB CROSSOVER
BASELINE CURVE 5 DATA
PI STA 13+91.44
Δ = 13° 47′ 17″
D = 1° 46′ 11″
R = 3237.51′
T = 391.44′
L = 779.09
E = 23.58′
S.E. = NONE
PC STA 10+00.00 = I-24 STA 247+00.00, 46.00′ LT
PT STA 17+79.09 = I-24 STA 254+73.64, 8.15′ RT

WB CROSSOVER
BASELINE CURVE 8 DATA
PI STA 38+14.62
Δ = 15° 38′ 24″
D = 1° 43′ 52″
R = 3310.06′
T = 454.60′
L = 903.55′
E = 31.07′
S.E. = NONE
PCC STA 33+60.02 = I-24 STA 251+60.32, 19.03′ RT
PT STA 42+63.57 = I-24 STA 260+57.64, 46.16′ LT

WB CROSSOVER
BASELINE CURVE 7 DATA
PI STA 31+80.17
Δ = 5° 53′ 37″
D = 1° 38′ 13″
R = 3500.00′
T = 180.17′
L = 360.02′
E = 4.63′
S.E. = NONE
PC STA 30+00.00 = I-24 STA 248+00.00, 46.00′ RT
PCC STA 33+60.02 = I-24 STA 251+60.32, 19.03′ RT

℄ I-24 CURVE DATA
PI STA 261+90.37
Δ = 25° 39′ 01″ (RT)
D = 0° 45′ 01″
R = 7637.47′
T = 1738.71′
L = 3419.15′
E = 195.41′
S.E. = 0.021′/′
S.E. TRANSITION STA 242+63 TO STA 245+23
PC STA 244+51.66
PT STA 278+70.81

EB CROSSOVER
BASELINE CURVE 6 DATA
PI STA 20+80.60
Δ = 3° 46′ 24″
D = 0° 50′ 19″
R = 6831.29′
T = 225.03′
L = 449.90′
E = 3.71′
S.E. = NONE
PC STA 18+55.57 = I-24 STA 255+49.62, 18.03′ RT
PT STA 23+05.47 = I-24 STA 260+00.00, 46.00′ RT

ELEVATION AND OFFSET DATA

℄ I-24 STATION	BASELINE #3		BASELINE #4		E.O.P. LEFT OF ℄			LEFT BREAK POINT			E.O.P. LEFT OF ℄			BREAK POINT			E.O.P. RIGHT OF ℄			RIGHT BREAK POINT			E.O.P. RIGHT OF ℄		
	OFFSET (FT)		OFFSET (FT)		OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION	OFFSET (FT)		ELEVATION
247+00.00	46.00	LT	-	-	40.00	LT	425.04	-	-	-	34.00	LT	424.64	-	-	-	-	-	-	-	-	-	-	-	-
247+50.00	45.77	LT	-	-	40.00	LT	424.62	-	-	-	34.00	LT	424.37	-	-	-	-	-	-	-	-	-	-	-	-
248+00.00	45.09	LT	46.00	RT	40.00	LT	424.26	-	-	-	34.00	LT	424.01	-	-	-	34.62	RT	424.37	-	-	-	40.62	RT	424.71
248+50.00	43.96	LT	45.48	RT	40.00	LT	423.77	-	-	-	34.00	LT	423.52	-	-	-	34.47	RT	424.02	-	-	-	40.47	RT	424.27
249+00.00	42.38	LT	43.93	RT	40.00	LT	423.26	-	-	-	34.00	LT	423.01	-	-	-	34.51	RT	423.50	-	-	-	40.51	RT	423.75
249+09.96	42.01	LT	43.50	RT	40.00	LT	423.16	-	-	-	34.00	LT	422.91	-	-	-	34.52	RT	423.40	-	-	-	40.52	RT	423.65
249+29.75	41.22	LT	42.52	RT	40.00	LT	422.95	34.00	LT	422.70	33.21	LT	422.69	-	-	-	34.51	RT	423.20	-	-	-	40.51	RT	423.45
249+50.00	40.34	LT	41.35	RT	40.00	LT	422.74	34.00	LT	422.49	32.33	LT	422.46	-	-	-	33.33	RT	422.98	34.44	RT	422.99	40.44	RT	423.24
250+00.00	37.85	LT	37.72	RT	40.00	LT	422.19	34.00	LT	421.94	29.84	LT	421.88	-	-	-	29.69	RT	422.35	34.39	RT	422.45	40.39	RT	422.70
250+50.00	34.91	LT	33.05	RT	40.00	LT	421.69	34.00	LT	421.44	26.89	LT	421.34	-	-	-	25.01	RT	421.72	34.36	RT	421.93	40.36	RT	422.18
251+00.00	31.51	LT	27.33	RT	40.00	LT	421.15	34.00	LT	420.90	23.49	LT	420.74	-	-	-	19.27	RT	421.07	34.12	RT	421.42	40.12	RT	421.67
251+11.04	30.70	LT	25.93	RT	40.00	LT	421.02	34.00	LT	420.77	22.68	LT	420.60	-	-	-	17.86	RT	420.92	34.02	RT	421.12	40.02	RT	421.55
251+50.00	27.67	LT	20.55	RT	40.00	LT	420.58	34.00	LT	420.33	19.64	LT	420.11	-	-	-	12.46	RT	420.36	-	-	-	28.63	RT	420.76
251+93.29	23.97	LT	14.14	RT	40.00	LT	420.13	34.00	LT	419.76	15.94	LT	419.61	-	-	-	6.05	RT	419.75	-	-	-	22.22	RT	420.12
252+25.00	21.05	LT	9.62	RT	31.09	LT	419.49	-	-	-	13.01	LT	419.22	-	-	-	1.55	RT	419.31	-	-	-	17.70	RT	419.68
252+87.01	14.80	LT	1.31	RT	24.86	LT	418.73	-	-	-	6.76	LT	418.46	6.76	LT	418.46	-	-	-	-	-	-	9.37	RT	418.83
253+00.00	13.41	LT	0.35	LT	23.47	LT	418.57	-	-	-	-	-	-	6.83	LT	418.32	-	-	-	-	-	-	7.72	RT	418.66
253+55.51	7.10	LT	7.10	LT	17.17	LT	417.90	-	-	-	-	-	-	7.12	LT	417.75	-	-	-	-	-	-	0.96	RT	417.94
253+64.09	6.08	LT	8.09	LT	16.15	LT	417.80	-	-	-	-	-	-	7.16	LT	417.67	-	-	-	-	-	-	1.98	RT	417.88
254+00.00	1.64	LT	12.12	LT	20.17	LT	417.51	-	-	-	-	-	-	7.35	LT	417.31	-	-	-	-	-	-	6.42	RT	417.63
254+32.42	2.57	RT	15.56	LT	23.61	LT	417.21	-	-	-	7.52	LT	416.97	7.52	LT	416.97	-	-	-	-	-	-	10.64	RT	417.39
255+00.00	11.67	RT	22.15	LT	30.19	LT	416.60	-	-	-	14.12	LT	416.36	-	-	-	1.58	RT	416.49	-	-	-	19.73	RT	416.90
255+43.74	17.29	RT	25.99	LT	40.00	LT	416.41	34.00	LT	416.00	17.96	LT	415.92	-	-	-	7.21	RT	416.13	-	-	-	25.36	RT	416.54
256+00.00	23.97	RT	30.44	LT	40.00	LT	415.84	34.00	LT	415.59	22.42	LT	415.42	-	-	-	13.91	RT	415.70	-	-	-	32.02	RT	416.09
256+18.16	25.93	RT	31.76	LT	40.00	LT	415.65	34.00	LT	415.40	23.74	LT	415.25	-	-	-	15.88	RT	415.55	34.00	RT	415.81	40.00	RT	416.19
256+50.00	29.15	RT	33.93	LT	40.00	LT	415.32	34.00	LT	415.06	25.92	LT	414.95	-	-	-	19.11	RT	415.28	34.00	RT	415.61	40.00	RT	415.86
257+00.00	33.64	RT	36.99	LT	40.00	LT	414.80	34.00	LT	414.55	28.98	LT	414.48	-	-	-	23.60	RT	414.87	34.00	RT	415.09	40.00	RT	415.34
257+50.00	37.42	RT	39.61	LT	40.00	LT	414.26	34.00	LT	414.01	31.60	LT	413.98	-	-	-	27.40	RT	414.42	34.00	RT	414.56	40.00	RT	414.81
258+05.39	40.81	RT	42.01	LT	40.00	LT	413.69	-	-	-	34.00	LT	413.44	-	-	-	30.80	RT	413.91	34.00	RT	413.97	40.00	RT	414.22
258+50.00	42.92	RT	43.55	LT	40.00	LT	413.24	-	-	-	34.00	LT	412.99	-	-	-	32.91	RT	413.46	34.00	RT	413.48	40.00	RT	413.73
258+79.06	44.01	RT	44.36	LT	40.00	LT	412.94	-	-	-	34.00	LT	412.69	-	-	-	34.00	RT	413.17	-	-	-	40.00	RT	413.42
259+00.00	44.63	RT	44.86	LT	40.00	LT	412.72	-	-	-	34.00	LT	412.47	-	-	-	34.00	RT	412.95	-	-	-	40.00	RT	413.20
259+50.00	45.66	RT	45.74	LT	40.00	LT	412.17	-	-	-	34.00	LT	411.92	-	-	-	34.00	RT	412.41	-	-	-	40.00	RT	412.66
260+00.00	46.00	RT	46.19	LT	40.00	LT	411.68	-	-	-	34.00	LT	411.43	-	-	-	34.00	RT	411.74	-	-	-	40.00	RT	412.16
260+57.64	-	-	46.16	LT	40.00	LT	411.08	-	-	-	34.00	LT	410.74	-	-	-	-	-	-	-	-	-	-	-	-

NOTE:

THE CONTRACTOR SHALL CONSTRUCT THIS MEDIAN CROSSOVER USING THE ELEVATION AND OFFSET DATA TABLE FOUND ON THIS SHEET. VALUES SHOWN ARE BASED ON THE ORIGINAL ROADWAY PLANS AND FIELD SURVEY. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN THE FIELD AS APPROVED BY THE ENGINEER.

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -
PLOT SCALE = 0.1667 ′ / in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018 1:02:44 PM	DATE - 03/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

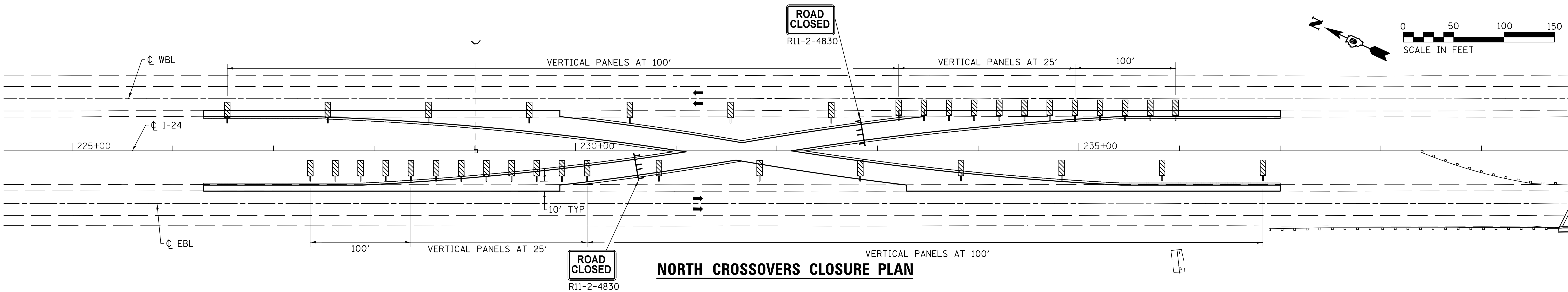
SOUTH CROSSOVERS
ELEVATIONS AND OFFSETS

SCALE: 1″=50′-0″ | SHEET NO. 1 OF 1 SHEETS | STA. 246+50.00 TO STA. 261+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	41

CONTRACT NO. 78502

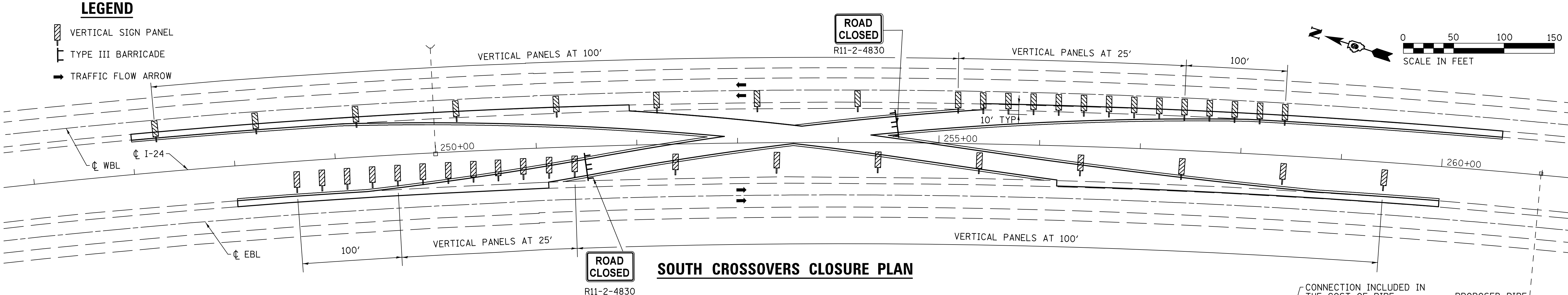
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT AID



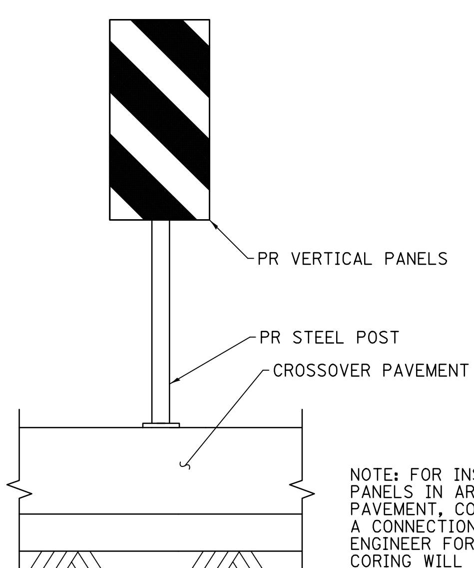
NORTH CROSSOVERS CLOSURE PLAN

LEGEND

- VERTICAL SIGN PANEL
- TYPE III BARRICADE
- TRAFFIC FLOW ARROW



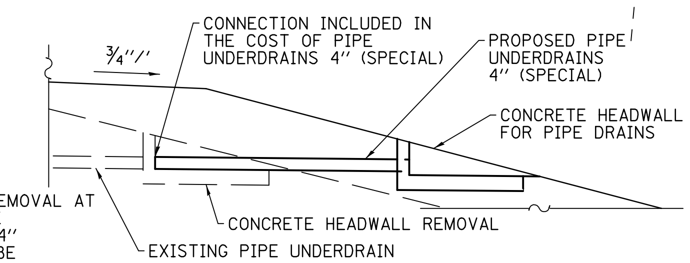
SOUTH CROSSOVERS CLOSURE PLAN



NOTE: FOR INSTALLATION OF VERTICAL PANELS IN AREAS OF CROSSOVER PAVEMENT, CONTRACTOR SHALL SUBMIT A CONNECTION DETAIL TO THE ENGINEER FOR APPROVAL. PAVEMENT CORING WILL NOT BE ALLOWED. AT LOCATIONS OTHER THAN PAVEMENT, TELESCOPING STEEL POLES WILL BE PLACED 1" BELOW SURFACE, AND WORK SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER. WHEN OPENING CROSSOVER, PANELS WILL BE REMOVED. COST OF PANELS, POSTS, SLEEVES, POST CONNECTION, TYPE III BARRICADES AND SIGNS SHALL BE INCLUDED IN TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

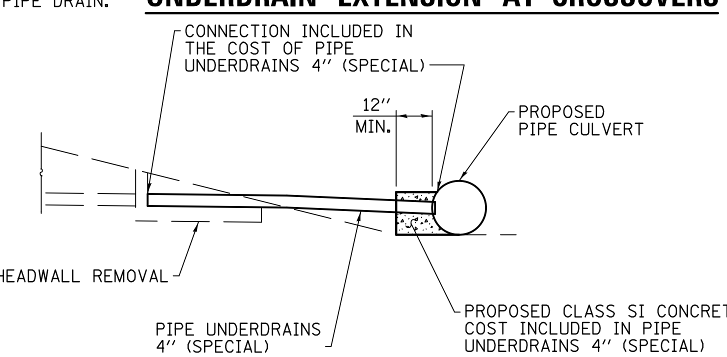
CROSSOVER CLOSURE SCHEDULE

LOCATION	VERTICAL SIGN PANELS	TELESCOPING STEEL SIGN SUPPORTS	TYPE III BARRICADES	SIGN PANEL, TYPE 2
	EACH	EACH	EACH	SQ FT
NORTH CROSSOVERS	38	38	4	20
SOUTH CROSSOVERS	42	42	4	20
TOTALS	80	80	8	40



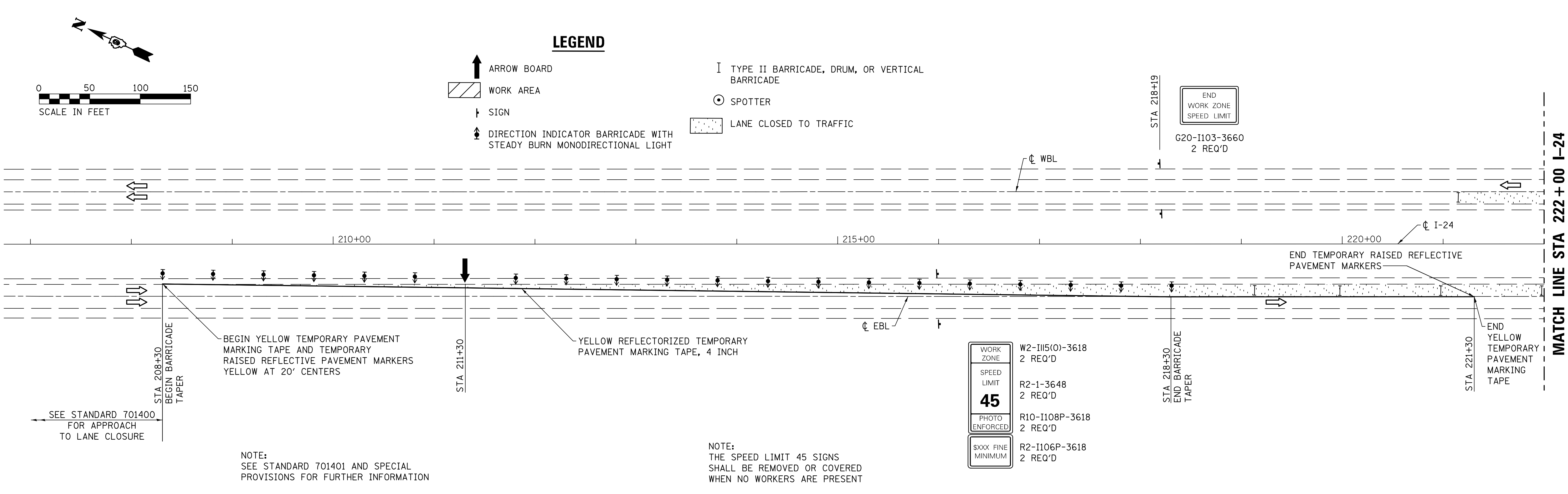
NOTE: DURING CROSSOVERS REMOVAL AT UNDERDRAIN EXTENSIONS, THE PROPOSED PIPE UNDERDRAIN 4" (SPECIAL) EXTENSION SHALL BE REMOVED. THE CONCRETE HEADWALL FOR PIPE DRAINS SHALL BE REINSTALLED AT THE ORIGINAL END OF THE UNDERDRAIN. THIS WORK WILL BE PAID FOR AS REMOVE AND REINSTALL CONCRETE HEADWALL FOR PIPE DRAIN.

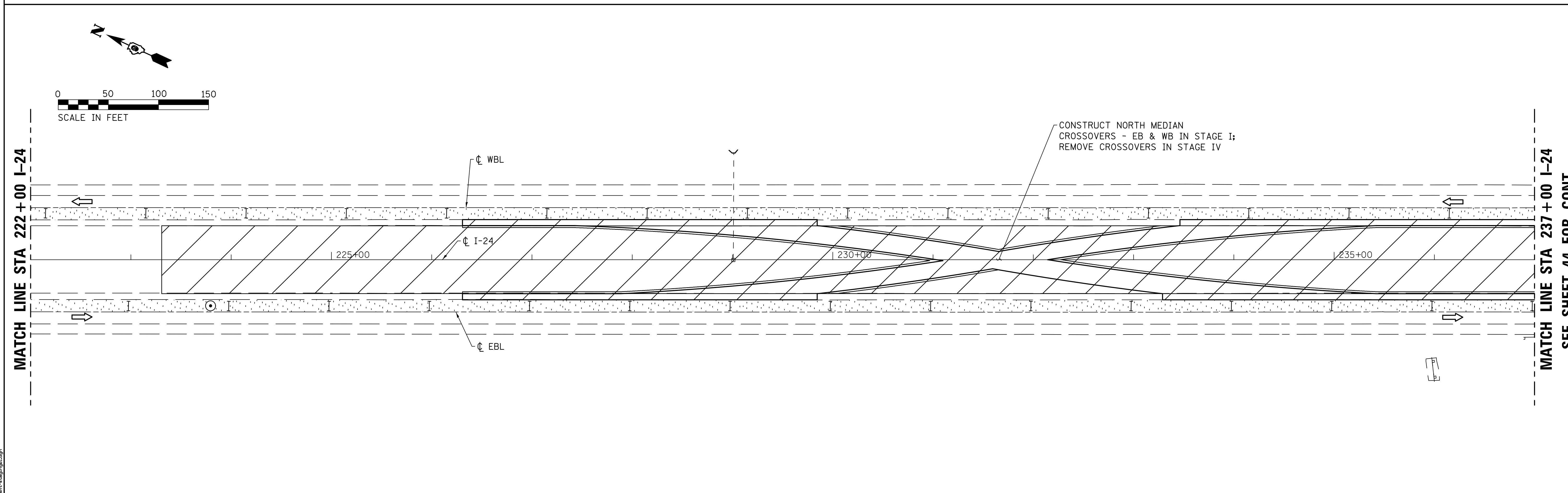
UNDERDRAIN EXTENSION AT CROSSOVERS



NOTE: DURING CROSSOVERS REMOVAL AT UNDERDRAIN CULVERT CONNECTIONS, THE PROPOSED PIPE UNDERDRAIN 4" (SPECIAL) SHALL BE REMOVED. A NEW CONCRETE HEADWALL FOR PIPE DRAINS SHALL BE REINSTALLED AT THE ORIGINAL END OF THE UNDERDRAIN. THIS WORK WILL BE PAID FOR AS CONCRETE HEADWALLS FOR PIPE DRAINS.

UNDERDRAIN CONNECTION TO MEDIAN CULVERT





ESCA CONSULTANTS, INC.

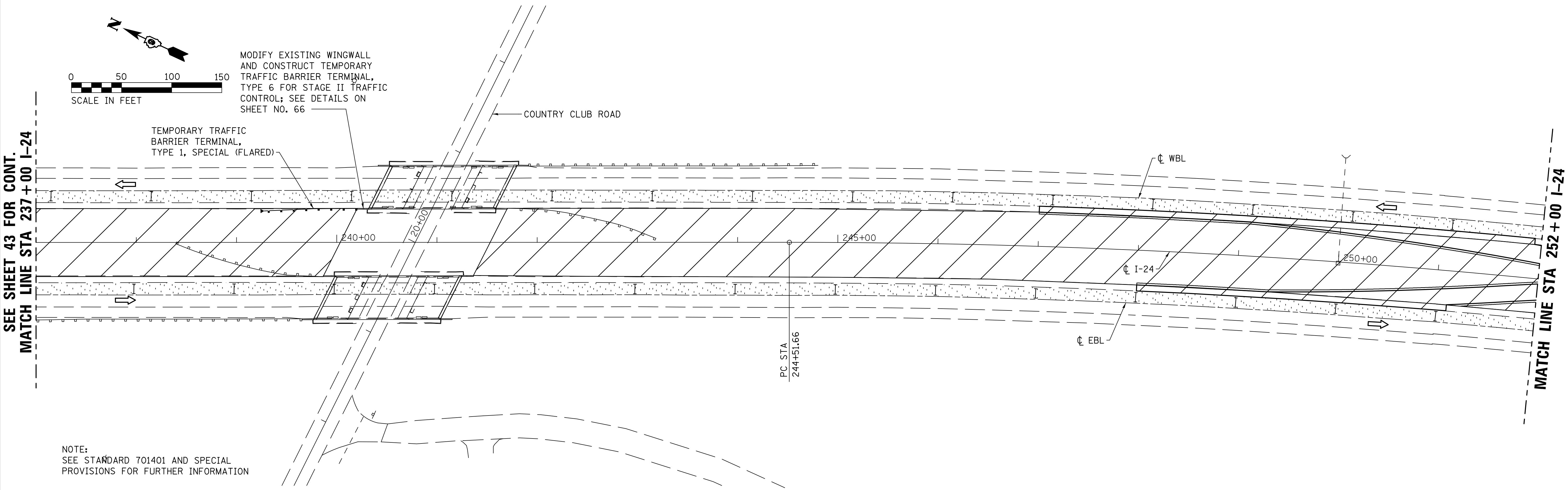
USER NAME = skm	DESIGNED - JMK	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -	
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018 1:02:47 PM	DATE - 10/18	REVISED -	

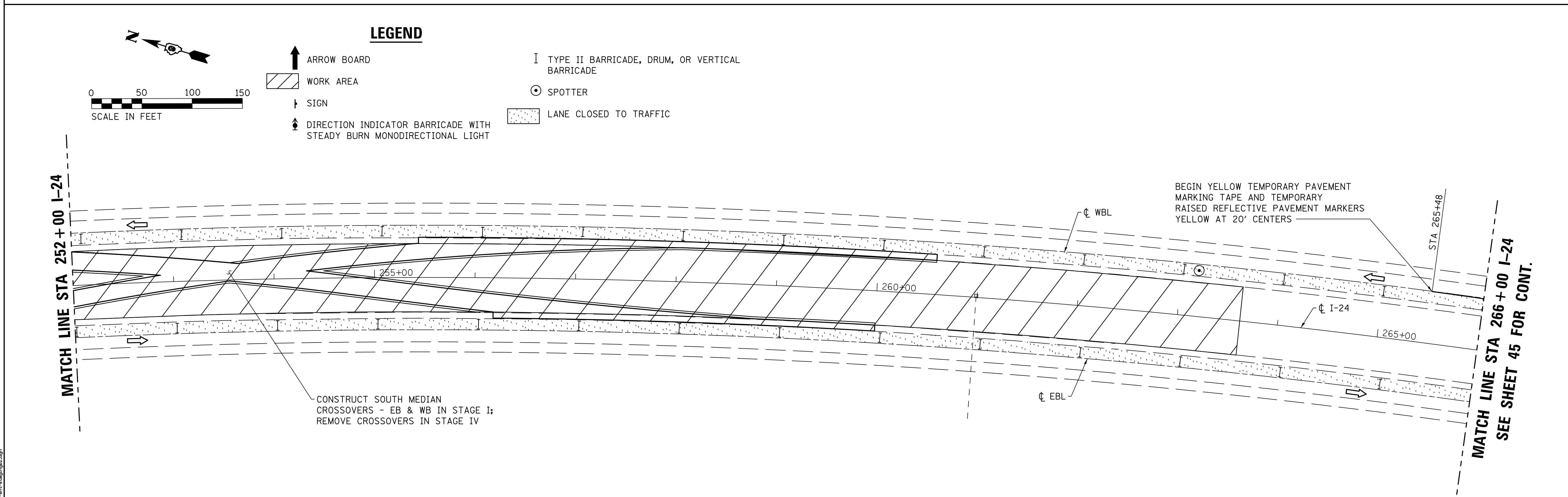
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGES I AND IV TRAFFIC CONTROL

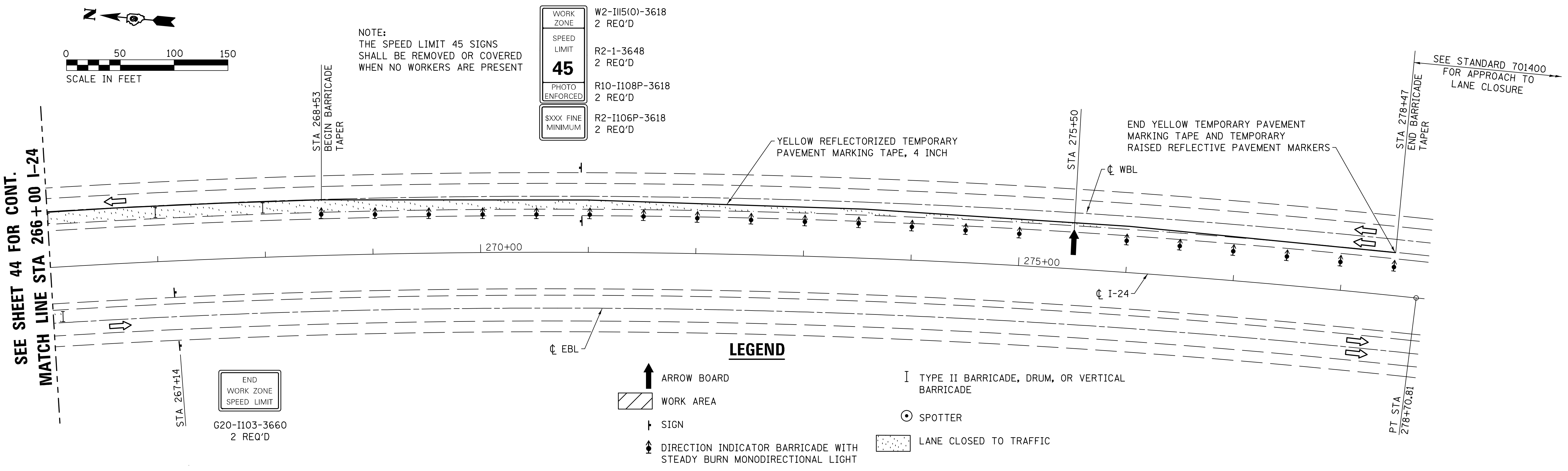
SCALE: 1"=50' | SHEET NO. 1 OF 3 SHEETS | STA. 207+00 TO STA. 237+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	43
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGES I AND IV TRAFFIC CONTROL	F.A.I. RTE. 24 / SECTION (64-3HB)BR-1 / COUNTY MASSAC / TOTAL SHEETS 158 / SHEET NO. 44
	ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -			CONTRACT NO. 78502
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: 1"=50' / SHEET NO. 2 OF 3 SHEETS / STA. 237+00 TO STA. 266+00	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
	PLOT DATE = 10/4/2018 1:02:49 PM	DATE - 10/18	REVISED -			



NOTE:
SEE STANDARD 701401 AND SPECIAL PROVISIONS FOR FURTHER INFORMATION

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGES I AND IV TRAFFIC CONTROL
	ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -		
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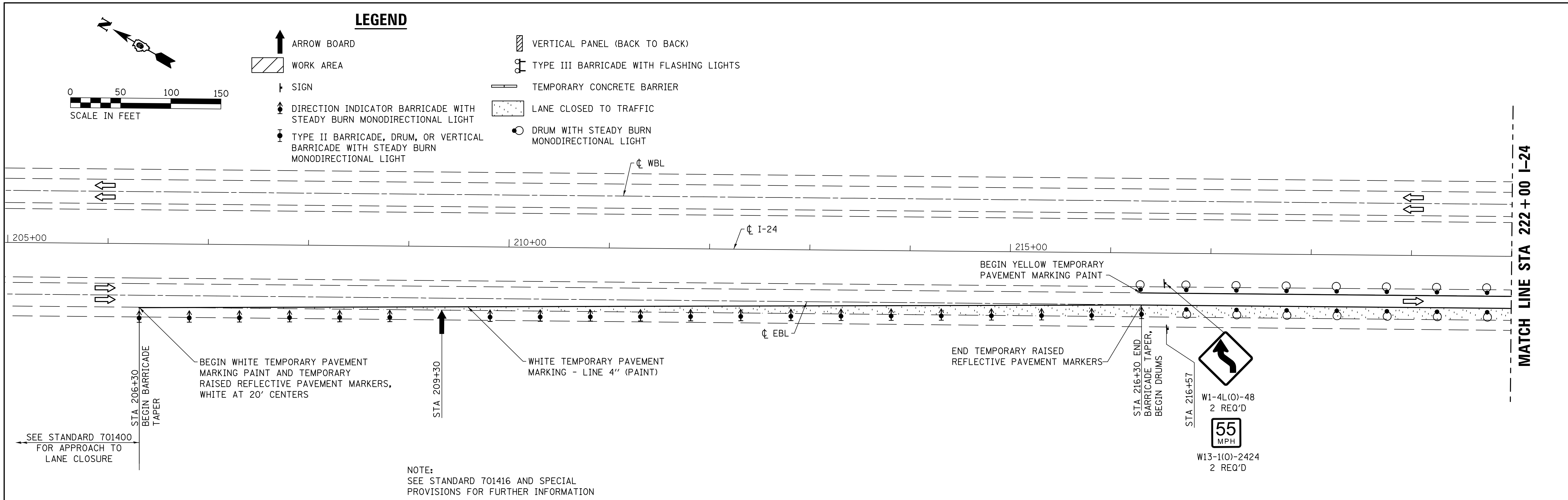
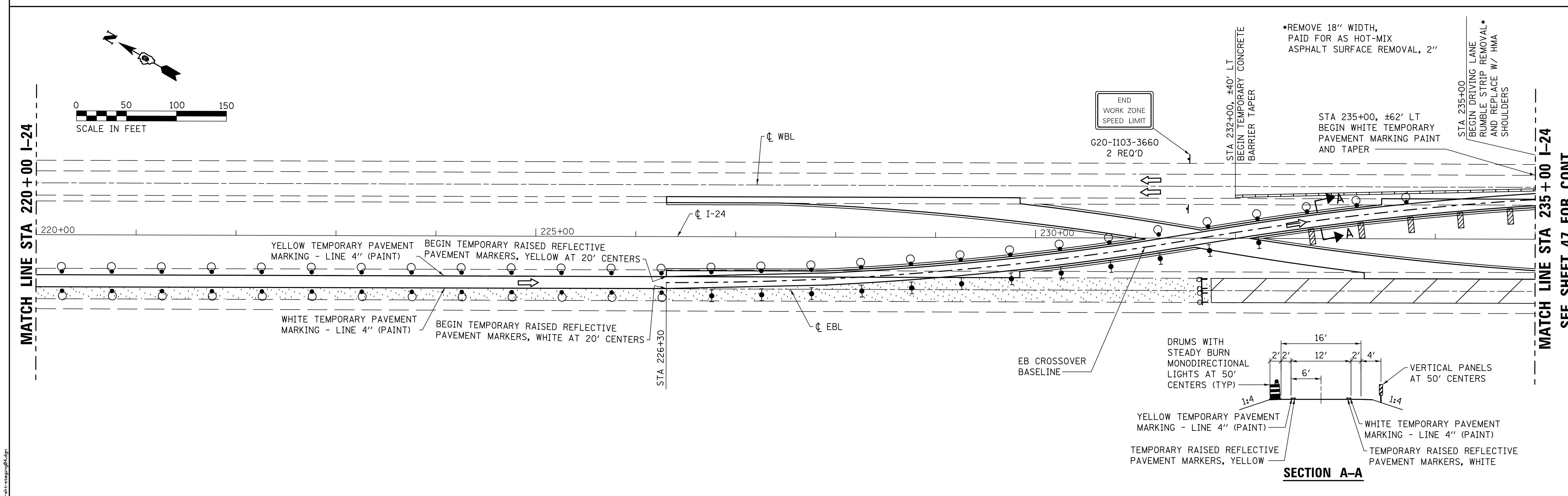
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	45
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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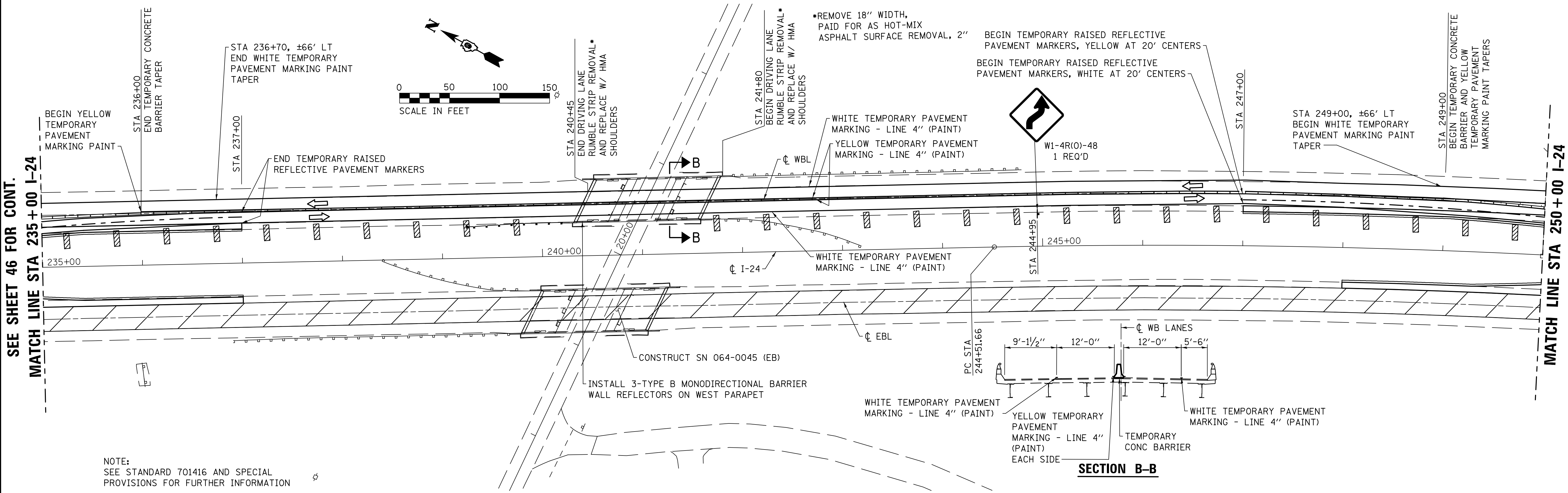
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
	PLOT DATE = 10/4/2018 1:02:51 PM	DATE - 10/18	REVISED -	

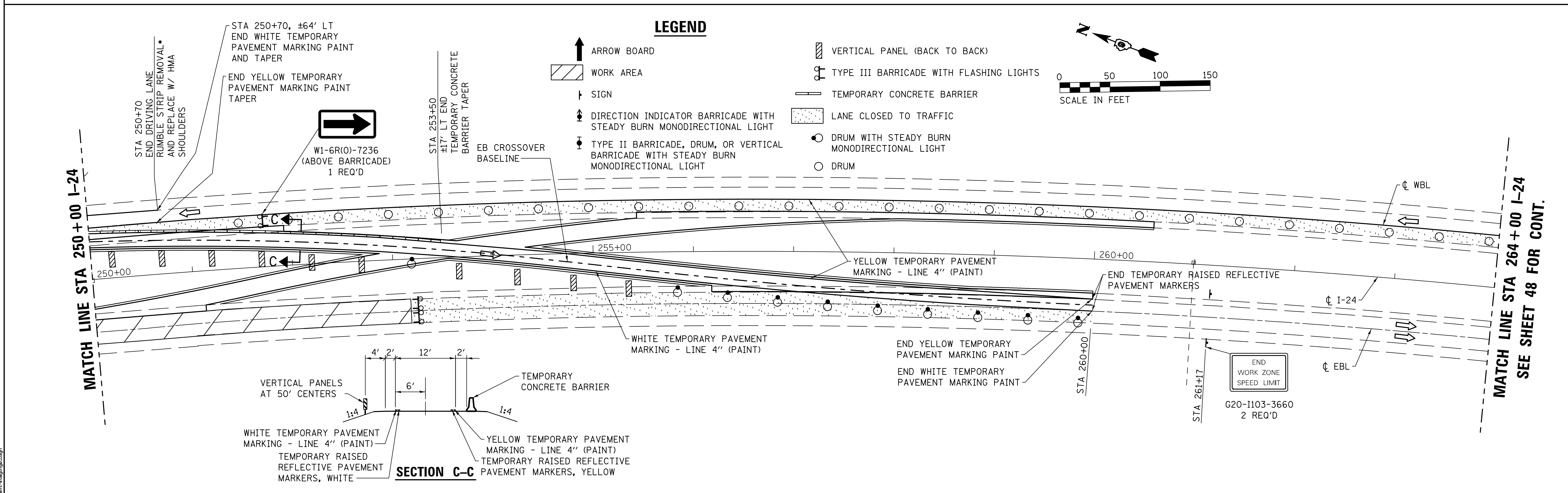
STAGE II TRAFFIC CONTROL

SCALE: 1"=50' | SHEET NO. 1 OF 3 SHEETS | STA. 205+00 TO STA. 235+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	46
		CONTRACT NO. 78502		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT





ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE II TRAFFIC CONTROL
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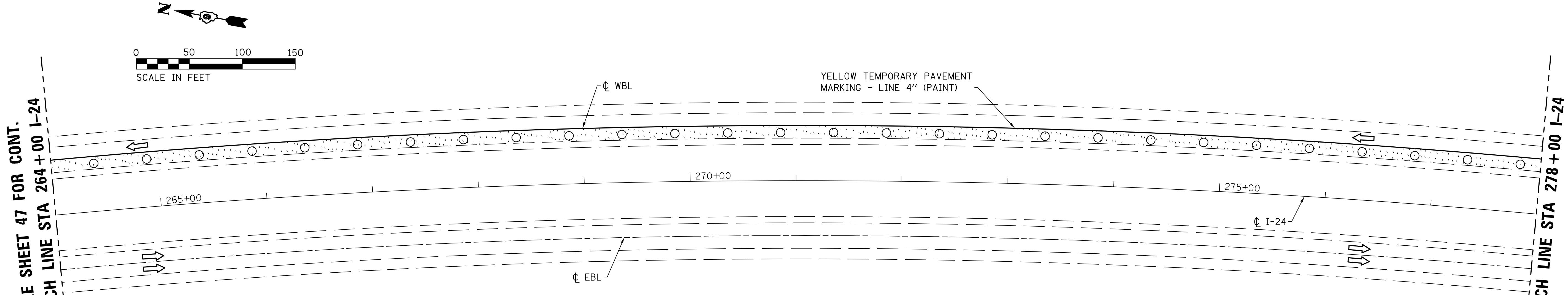
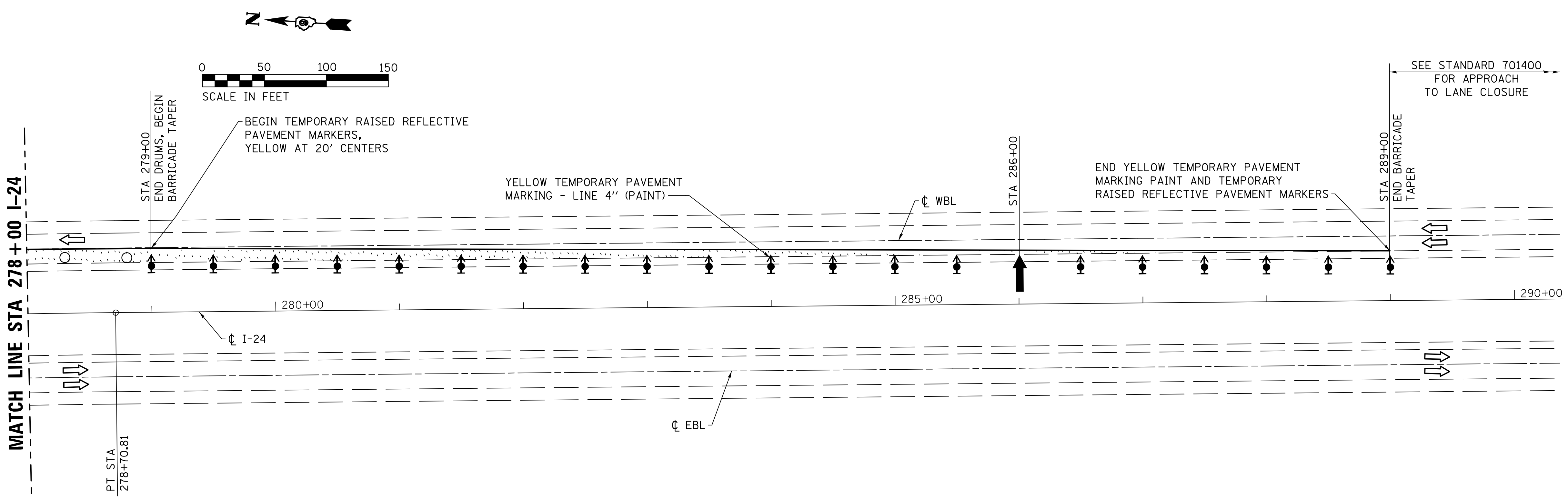
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	47
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



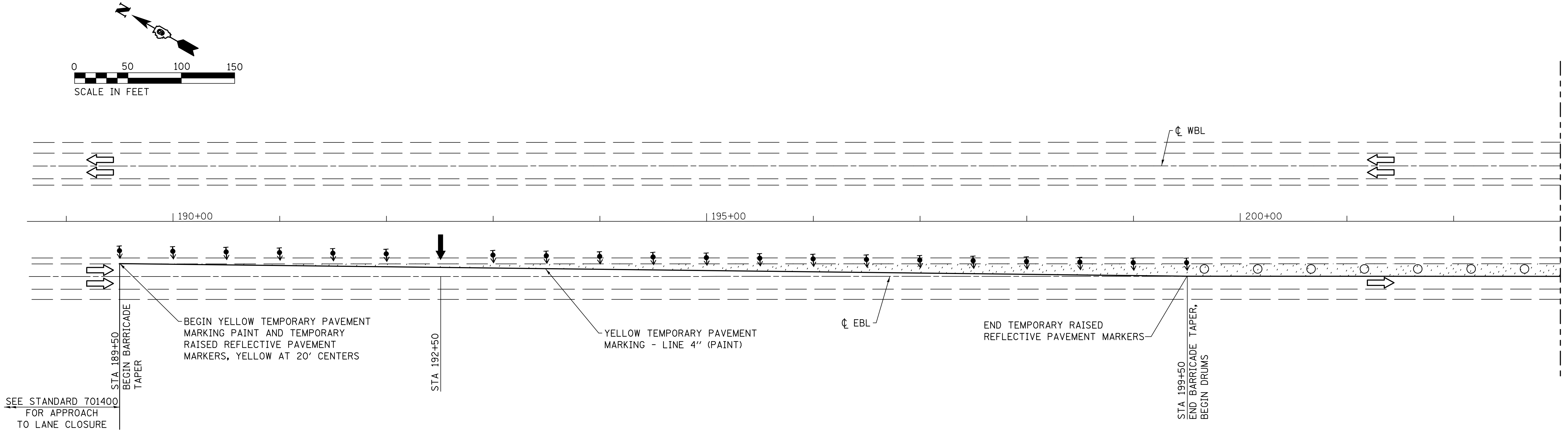
LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- DIRECTION INDICATOR BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- VERTICAL PANEL (BACK TO BACK)
- TYPE III BARRICADE WITH FLASHING LIGHTS
- TEMPORARY CONCRETE BARRIER
- LANE CLOSED TO TRAFFIC
- DRUM WITH STEADY BURN MONODIRECTIONAL LIGHT
- DRUM

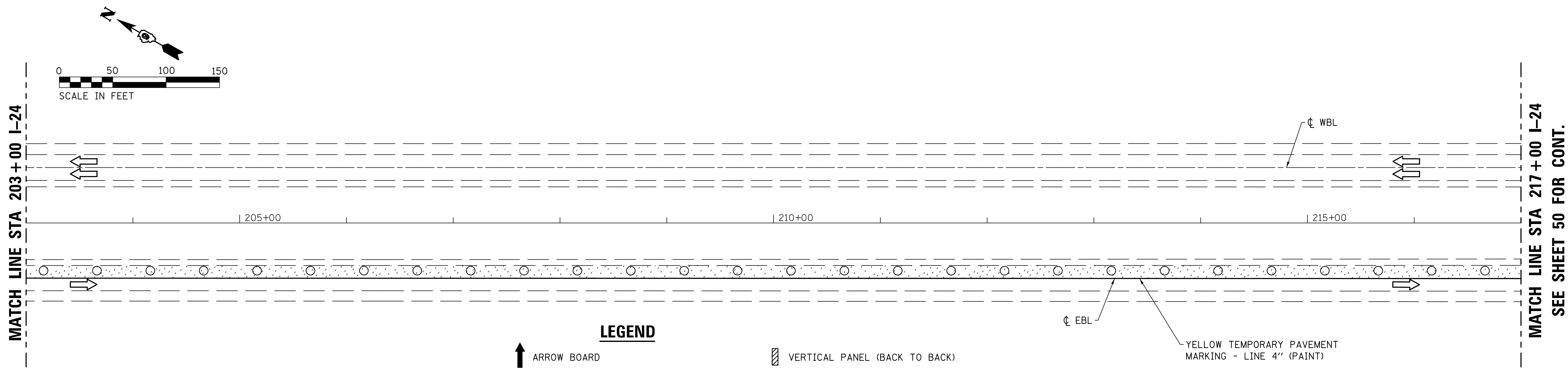
NOTE:
SEE STANDARD 701416 AND SPECIAL PROVISIONS FOR FURTHER INFORMATION



ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE II TRAFFIC CONTROL	F.A.I. RTE. 24	SECTION (64-3HB)BR-1	COUNTY MASSAC	TOTAL SHEETS 158	SHEET NO. 48
	ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -					CONTRACT NO. 78502		
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: 1"=50'	SHEET NO. 3 OF 3 SHEETS	STA. 264+00 TO STA. 290+00			
	PLOT DATE = 10/4/2018 1:02:53 PM	DATE - 03/18	REVISED -		FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT			



NOTE:
SEE STANDARD 701416 AND SPECIAL PROVISIONS FOR FURTHER INFORMATION



LEGEND

- ARROW BOARD
- WORK AREA
- SIGN
- DIRECTION INDICATOR BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- TYPE II BARRICADE, DRUM, OR VERTICAL BARRICADE WITH STEADY BURN MONODIRECTIONAL LIGHT
- VERTICAL PANEL (BACK TO BACK)
- TYPE III BARRICADE WITH FLASHING LIGHTS
- TEMPORARY CONCRETE BARRIER
- LANE CLOSED TO TRAFFIC
- DRUM WITH STEADY BURN MONODIRECTIONAL LIGHT
- DRUM

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ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

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ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -
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PLOT DATE = 10/4/2018 1:02:54 PM	DATE - 03/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

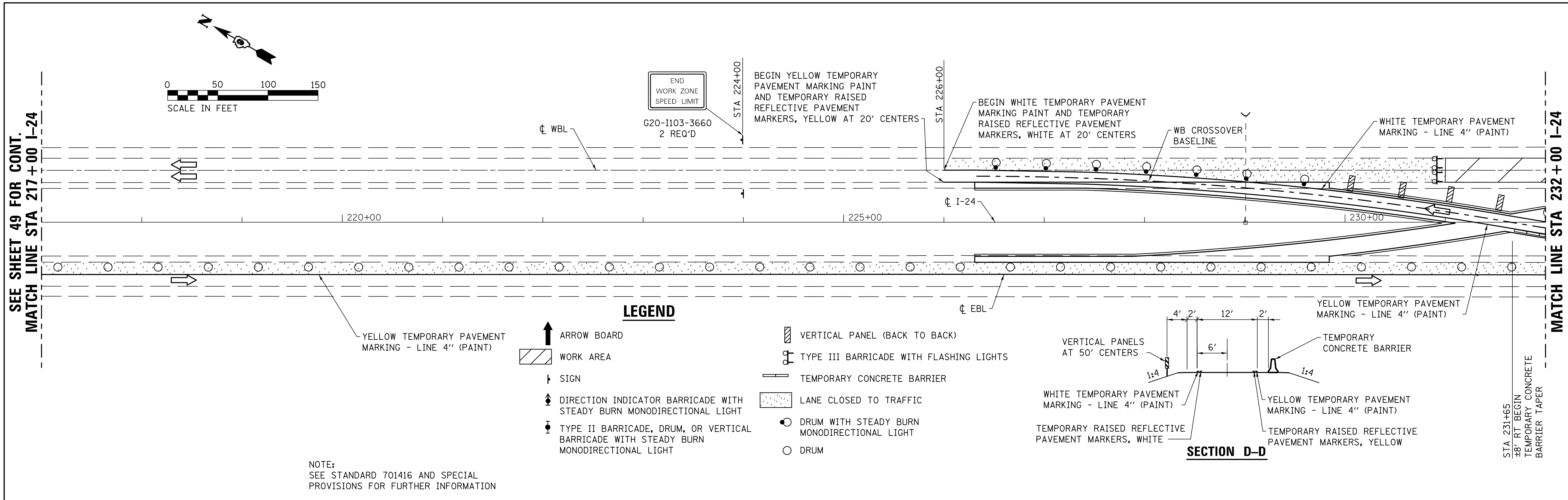
STAGE III TRAFFIC CONTROL

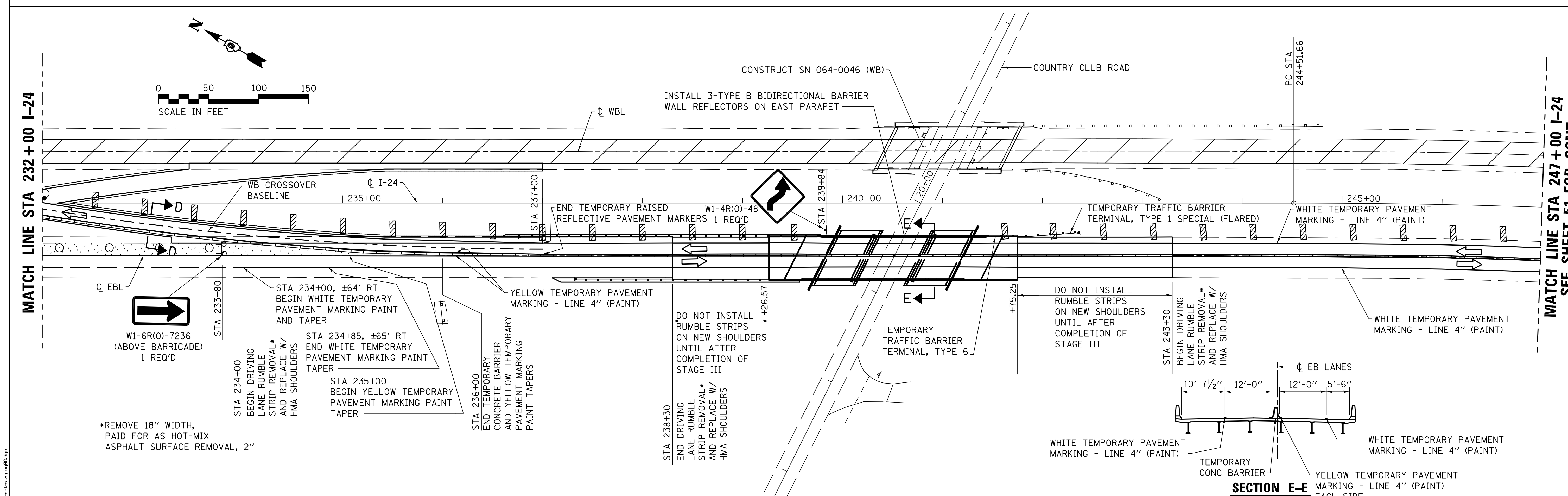
SCALE: 1"=50' | SHEET NO. 1 OF 4 SHEETS | STA. 189+00 TO STA. 217+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	49

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT





ESCA CONSULTANTS, INC.

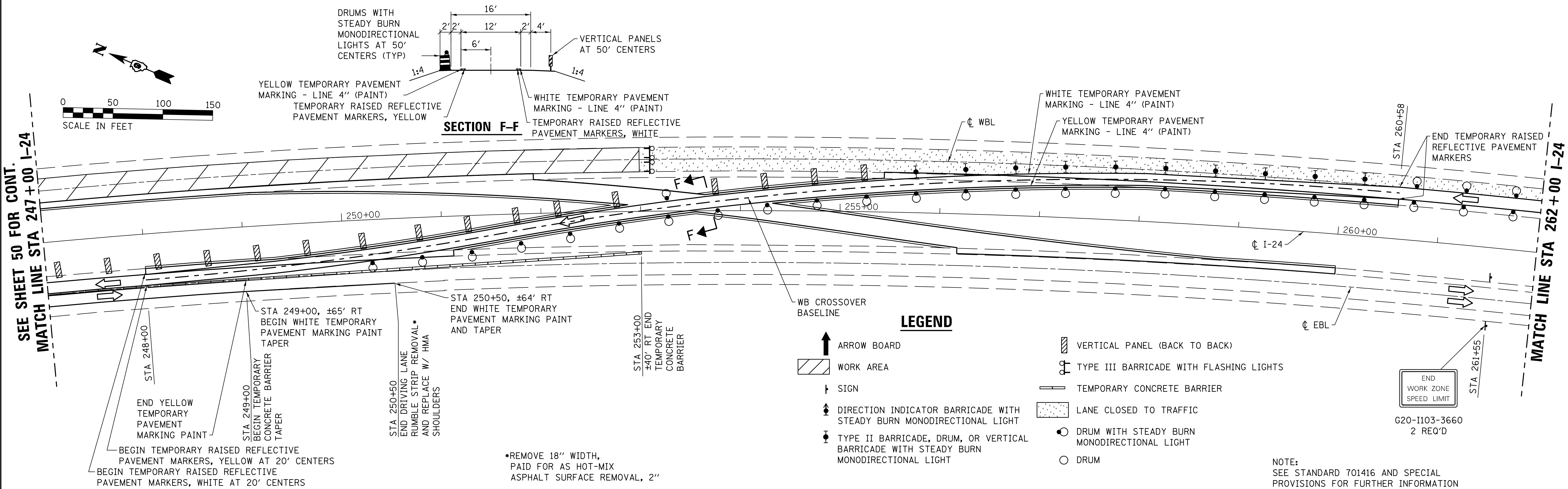
USER NAME = skm	DESIGNED - JMK/SKM	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -	
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018 1:02:55 PM	DATE - 10/18	REVISED -	

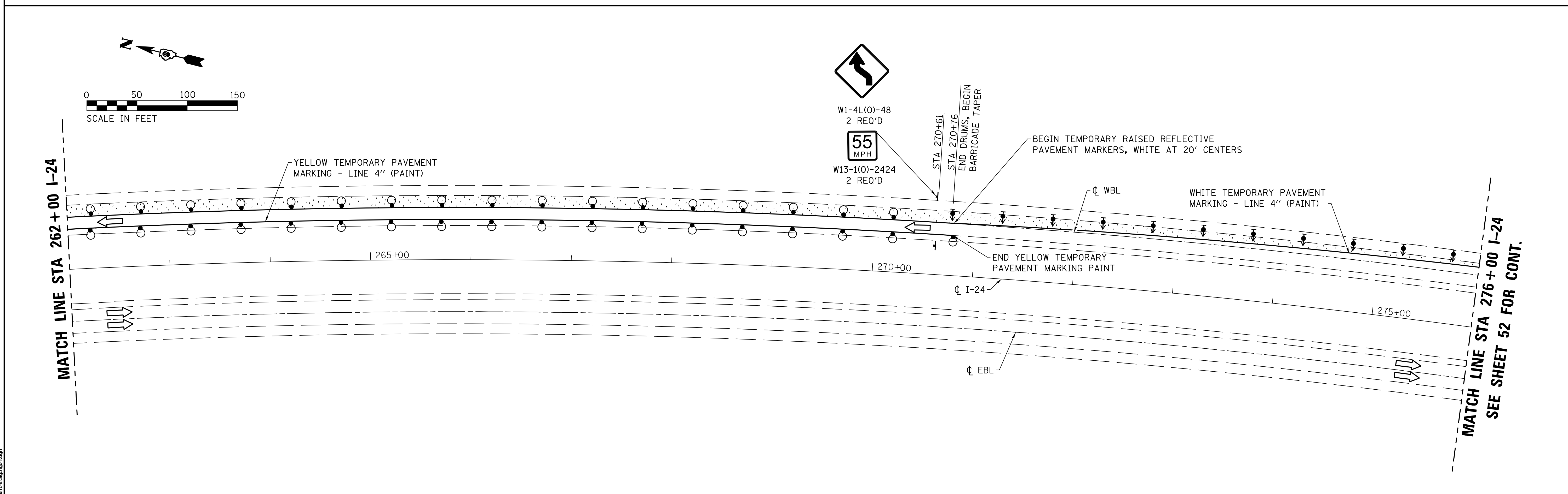
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STAGE III TRAFFIC CONTROL

SCALE: 1"=50' | SHEET NO. 2 OF 4 SHEETS | STA. 217+00 TO STA. 247+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	50
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			





ESCA CONSULTANTS, INC.

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DESIGNED - JMK/SKM
DRAWN - JMK/SKM
CHECKED - ELH
DATE - 10/18

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

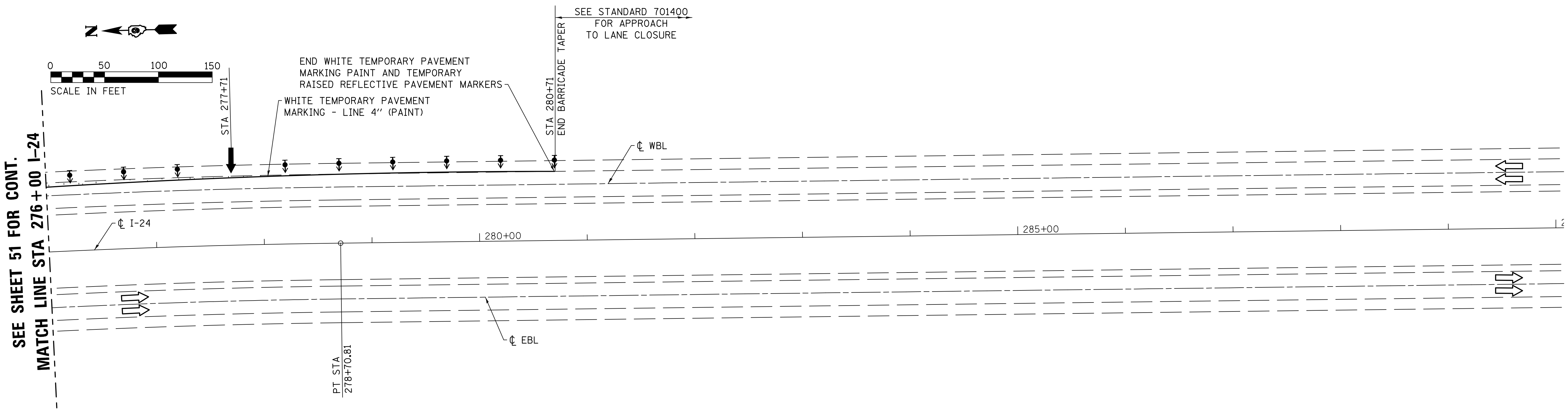
STAGE III TRAFFIC CONTROL

SCALE: 1''=50' | SHEET NO. 3 OF 4 SHEETS | STA. 247+00 TO STA. 276+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	51

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



NOTE:
SEE STANDARD 701416 AND SPECIAL
PROVISIONS FOR FURTHER INFORMATION

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK/SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STAGE III TRAFFIC CONTROL
	ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -		
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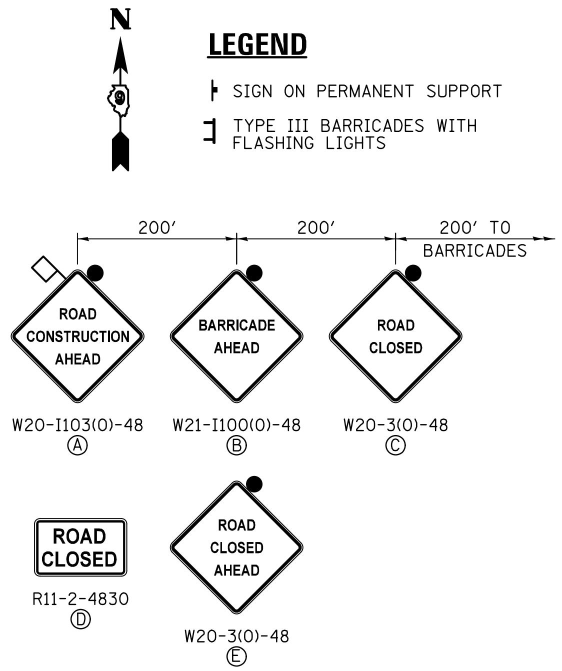
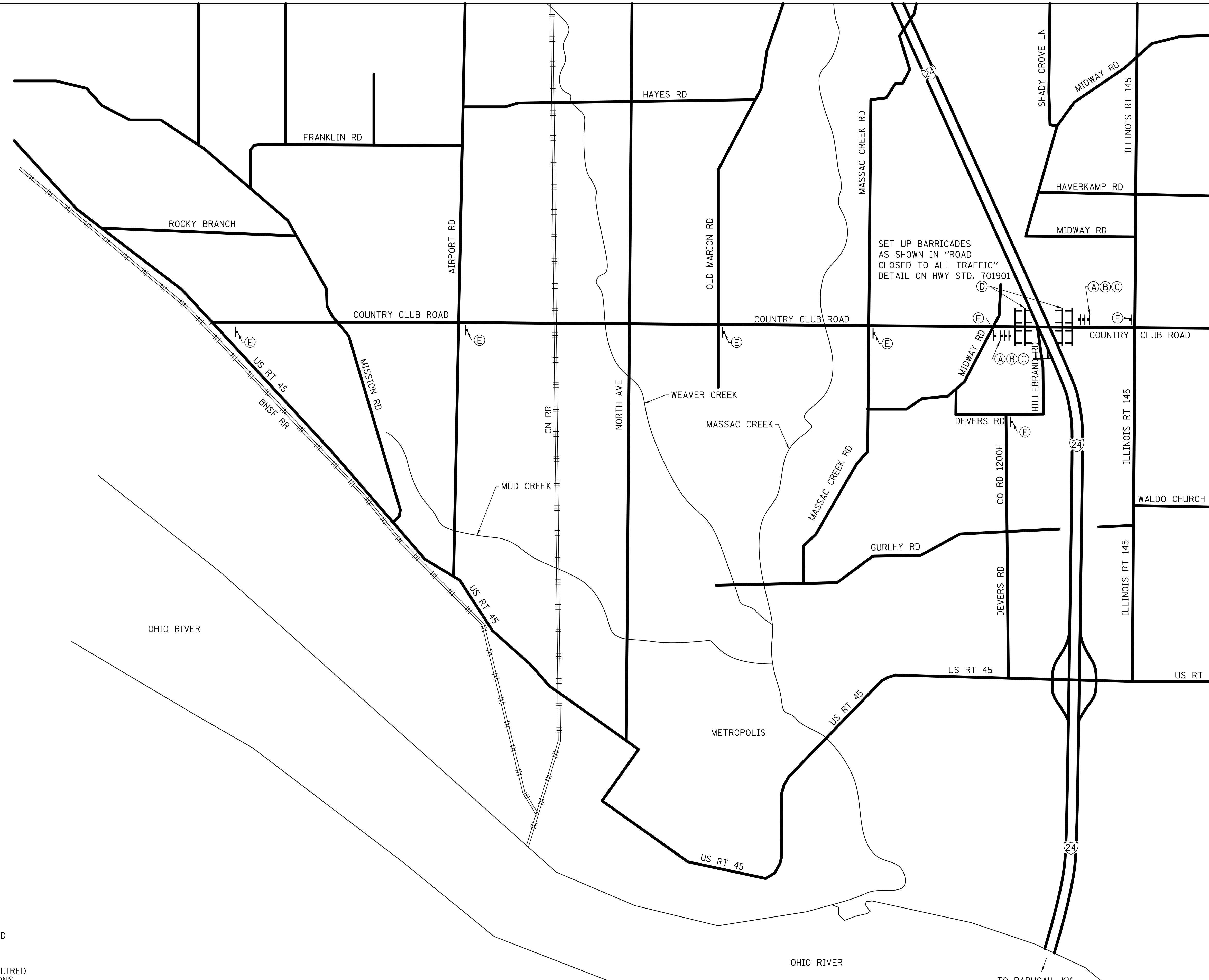
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	52
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.
2. ALL SIGNS NOT ATTACHED TO BARRICADES SHALL BE POST MOUNTED.
3. LOCATIONS OF TRAFFIC CONTROL DEVICES MAY BE ADJUSTED BY THE ENGINEER.
4. SEE STANDARD 701901 FOR ADDITIONAL DETAILS.
5. ALL TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE INCLUDED IN THE LUMP SUM AMOUNT FOR TRAFFIC CONTROL AND PROTECTION, (SPECIAL).
6. COUNTRY CLUB ROAD MAY BE CLOSED INTERMITTENTLY WHEN REQUIRED FOR BRIDGE REMOVAL AND CONSTRUCTION. SEE SPECIAL PROVISIONS.

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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

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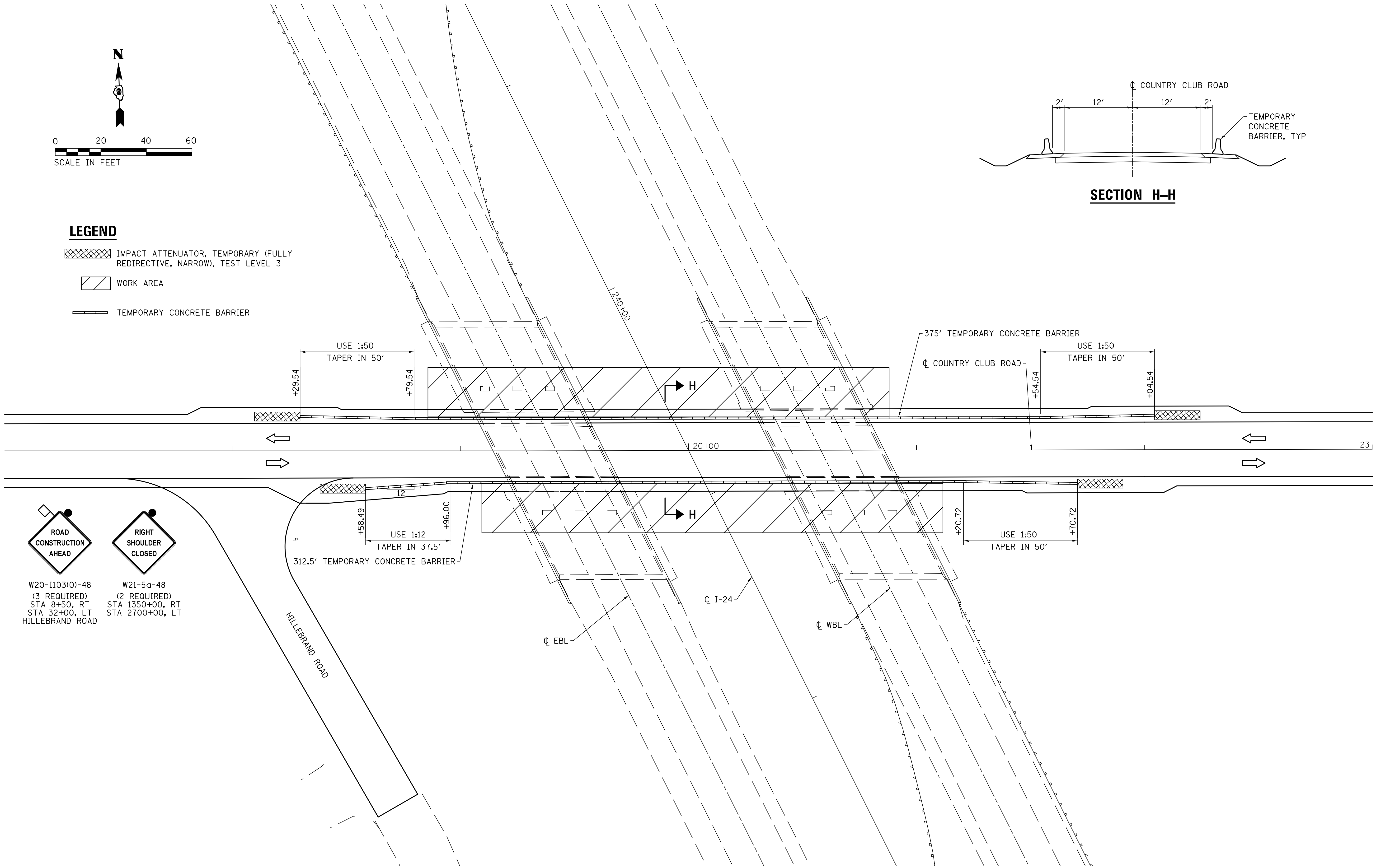
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

C.H. 13 (COUNTRY CLUB ROAD) CLOSURE PLAN

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	53
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
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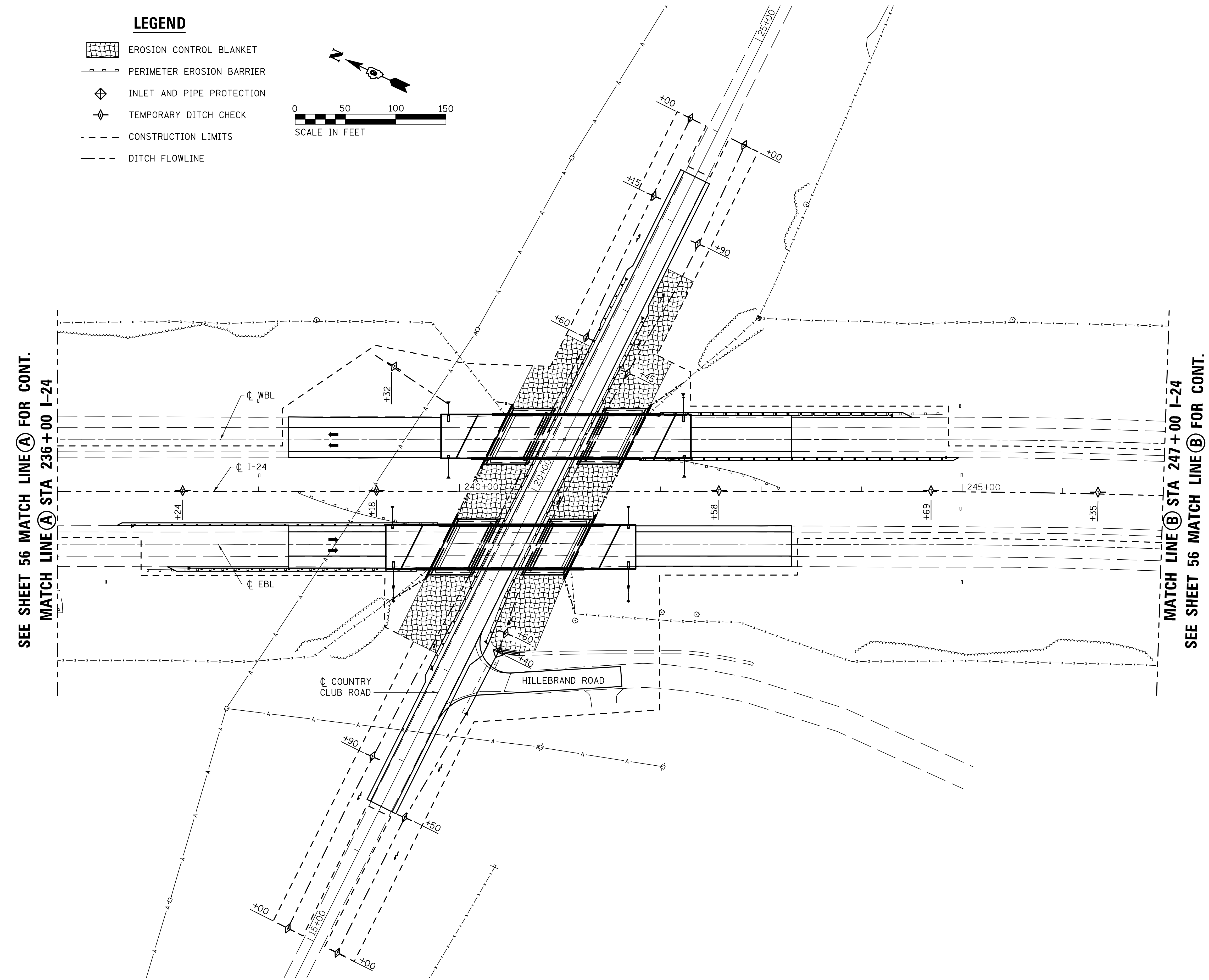
C.H. 13 (COUNTRY CLUB ROAD) SHOULDER CLOSURE

SCALE: AS SHOWN | SHEET NO. 1 OF 1 SHEETS | STA. 17+00 TO STA. 23+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	54
		CONTRACT NO. 78502		

FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT



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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

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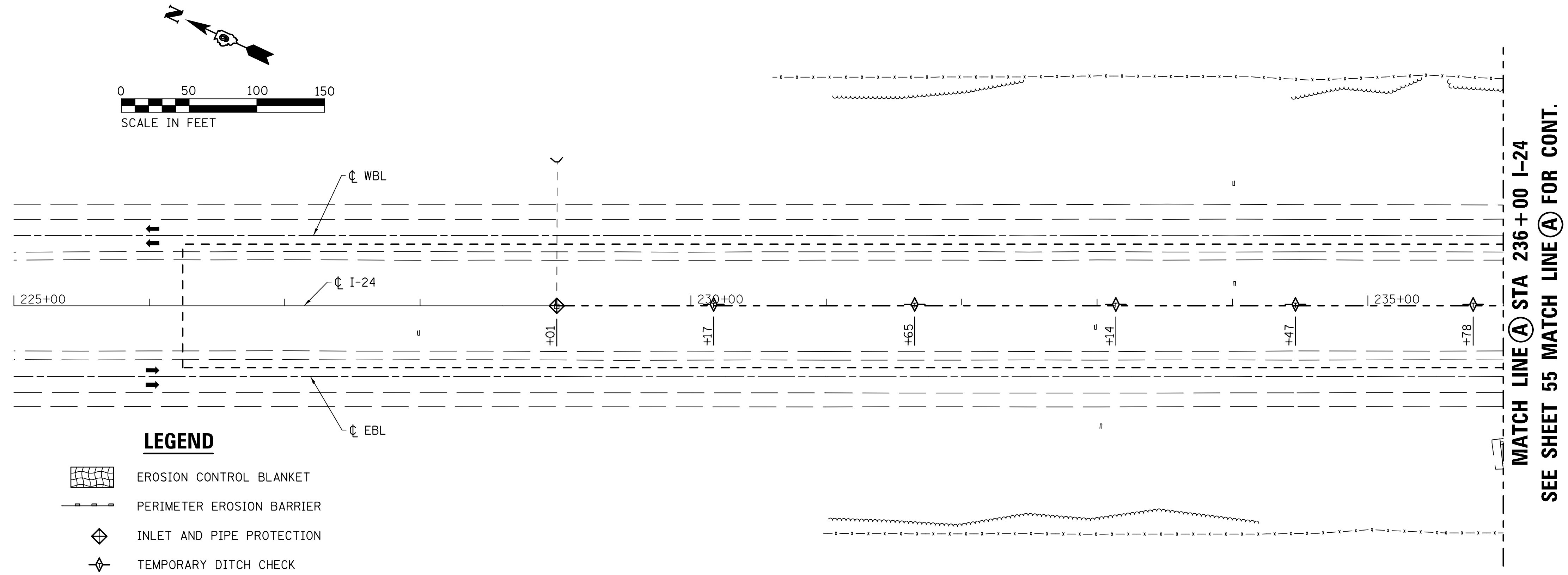
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLANS

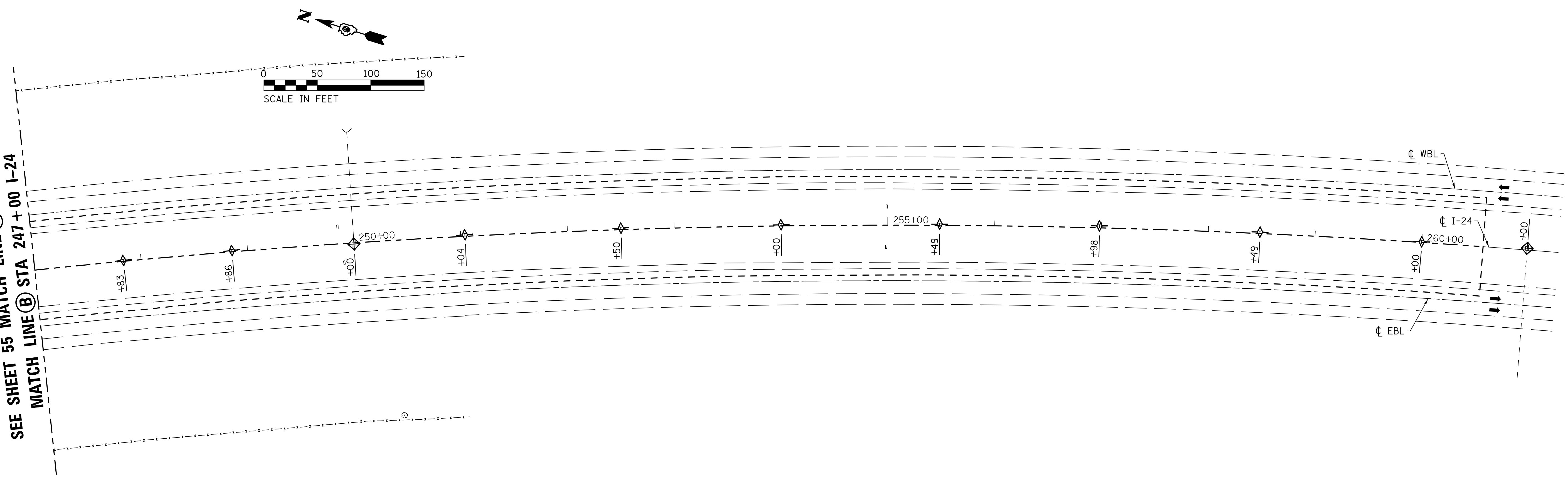
SCALE: 1"=50' | SHEET NO. 1 OF 3 SHEETS | STA. 236+00 TO STA. 247+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	55
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



LEGEND

- EROSION CONTROL BLANKET
- PERIMETER EROSION BARRIER
- INLET AND PIPE PROTECTION
- TEMPORARY DITCH CHECK
- CONSTRUCTION LIMITS
- DITCH FLOWLINE



ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -	
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	PLOT DATE = 10/4/2018 1:03:00 PM	DATE - 04/18	REVISED -	

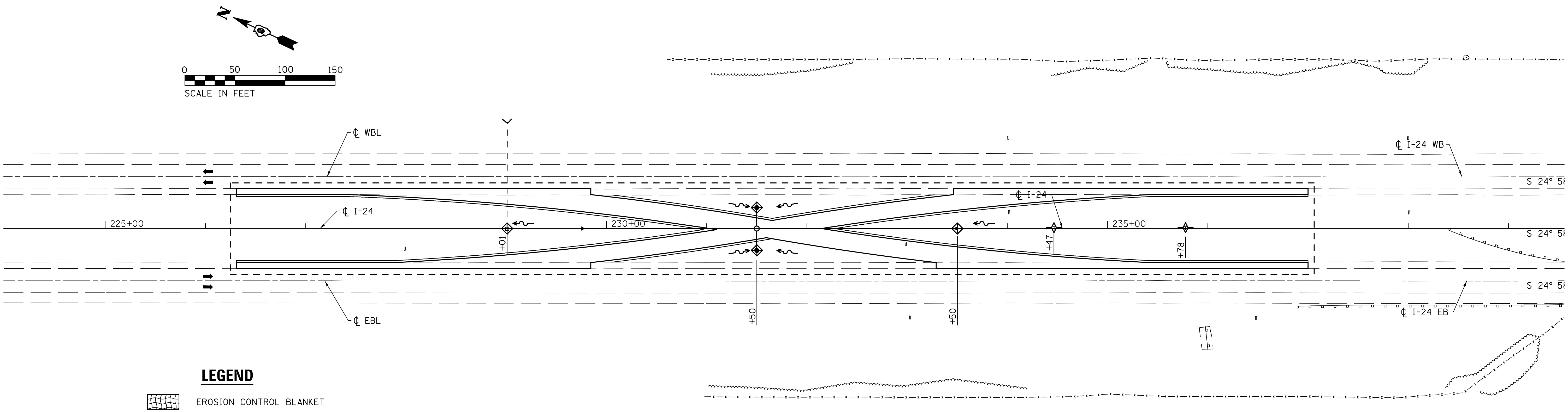
EROSION CONTROL PLANS

SCALE: 1"=50' | SHEET NO. 2 OF 3 SHEETS | STA. 225+00 TO STA. 261+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	56

CONTRACT NO. 78502

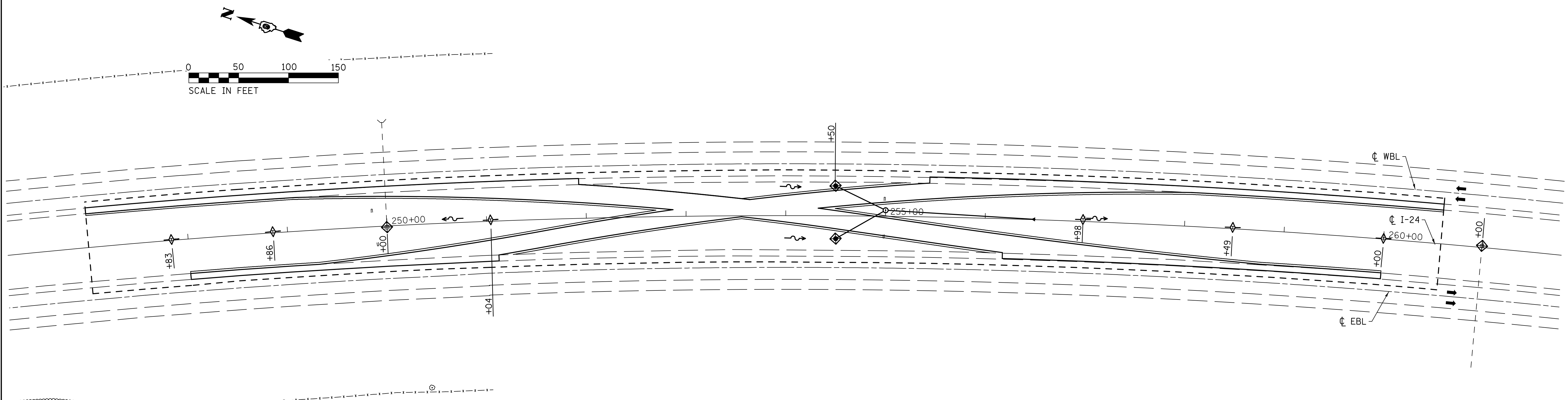
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



LEGEND

- EROSION CONTROL BLANKET
- INLET AND PIPE PROTECTION
- TEMPORARY DITCH CHECK
- CONSTRUCTION LIMITS

NORTH CROSSOVERS CONSTRUCTION EROSION CONTROL PLAN



SOUTH CROSSOVERS CONSTRUCTION EROSION CONTROL PLAN

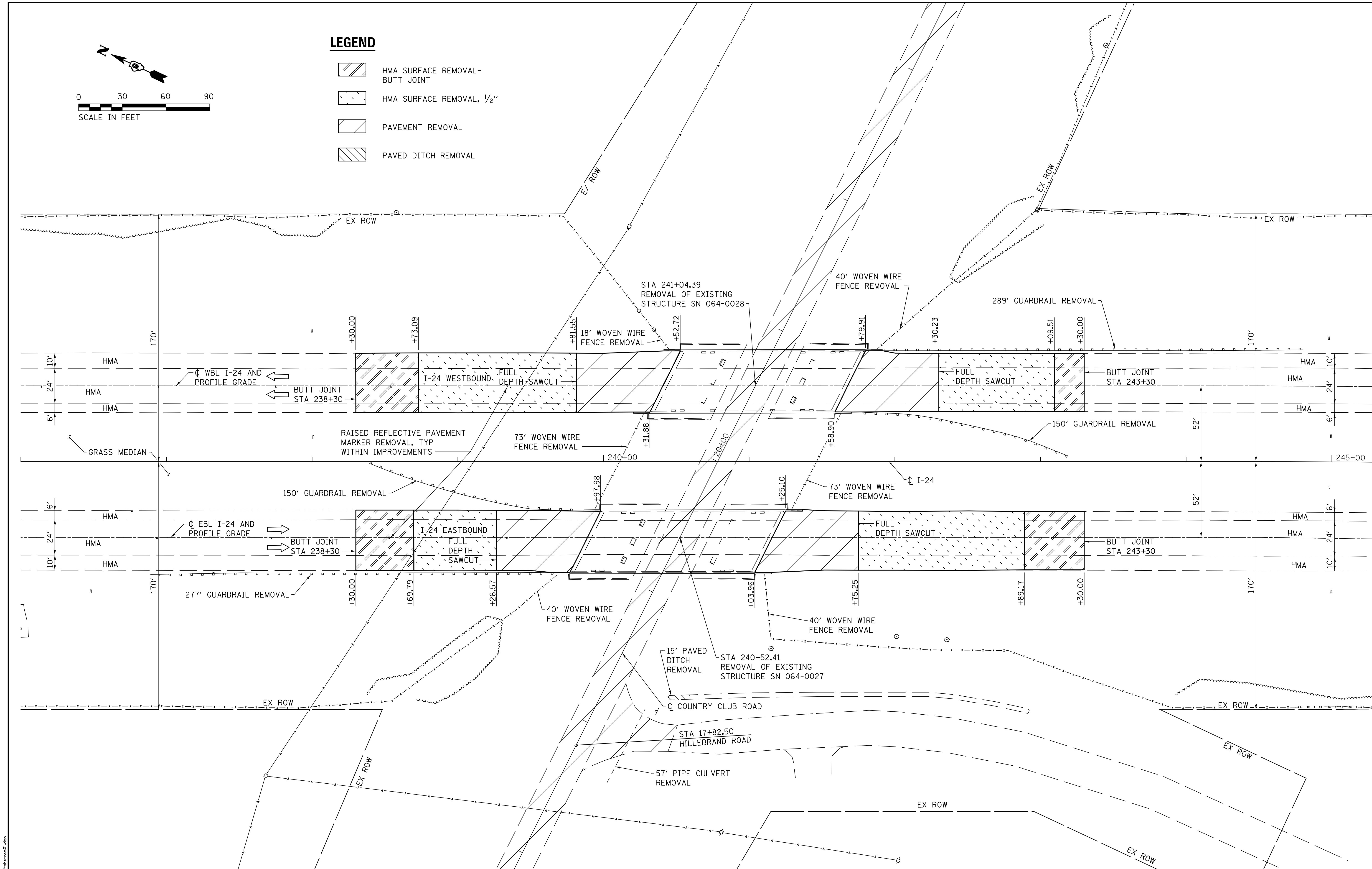
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018 1:03:01 PM	DATE - 04/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EROSION CONTROL PLANS

SCALE: 1"=50' | SHEET NO. 3 OF 3 SHEETS | STA. 224+00 TO STA. 261+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	57
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



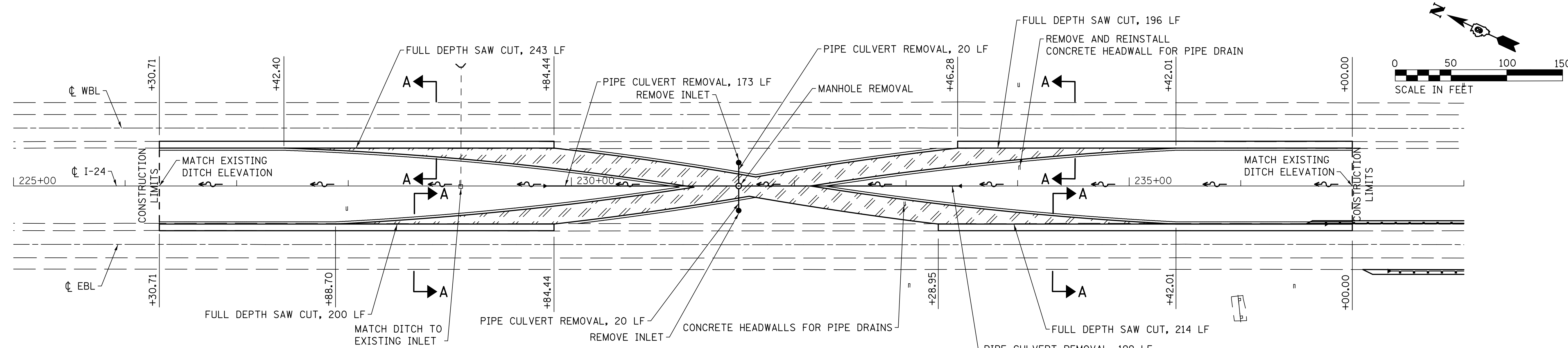
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -	
	PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -	
	PLOT DATE = 10/4/2018 1:03:02 PM	DATE - 10/18	REVISED -	

REMOVAL PLAN

SCALE: 1"=30' | SHEET NO. 1 OF 1 SHEETS | STA. 236+00 TO STA. 245+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	58
		CONTRACT NO. 78502		

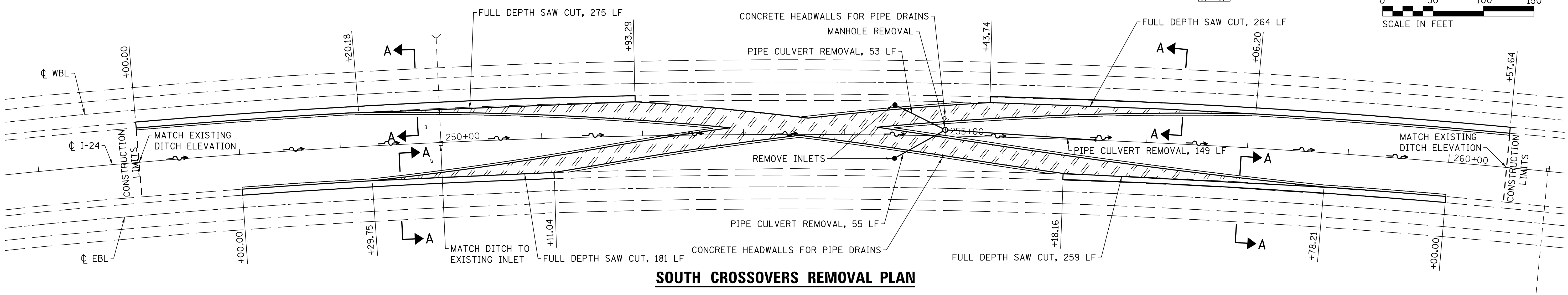
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT



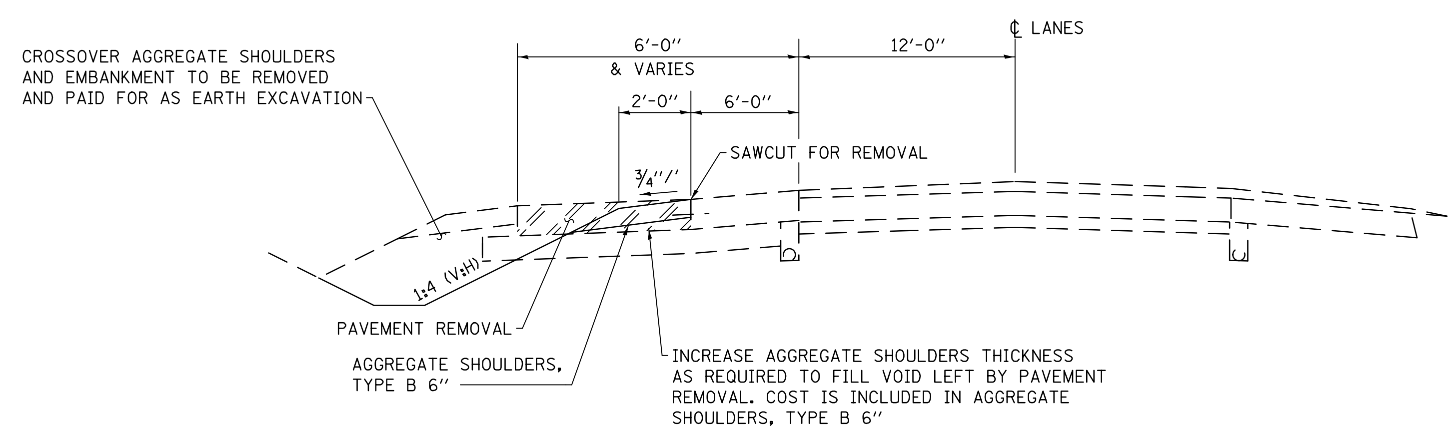
NORTH CROSSOVERS REMOVAL PLAN

LEGEND

PAVEMENT REMOVAL

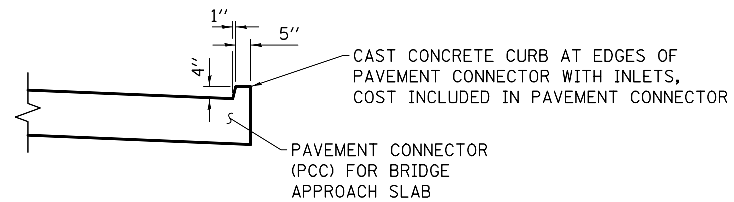


SOUTH CROSSOVERS REMOVAL PLAN

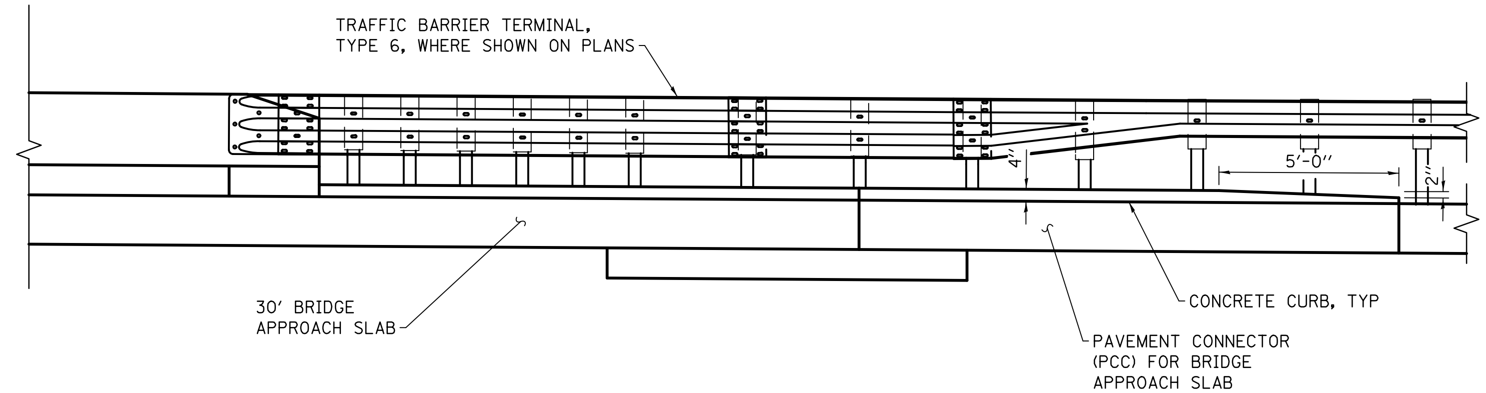


SECTION A-A

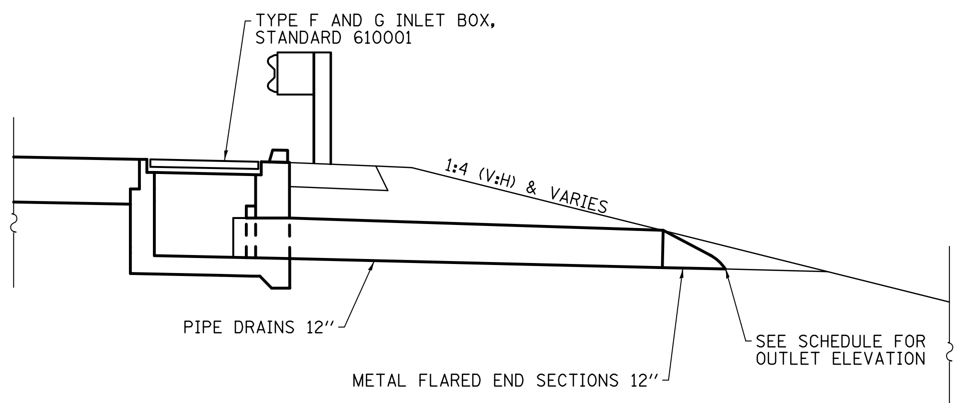
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	CROSSOVERS REMOVAL PLANS	F.A.I. RTE. 24	SECTION (64-3HB)BR-1	COUNTY MASSAC	TOTAL SHEETS 158	SHEET NO. 59
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -					CONTRACT NO. 78502		
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: AS SHOWN | SHEET NO. 1 OF 1 SHEETS | STA. 225+00 TO STA. 261+00					
	PLOT DATE = 10/4/2018 1:03:03 PM	DATE - 04/18	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



SECTION B–B

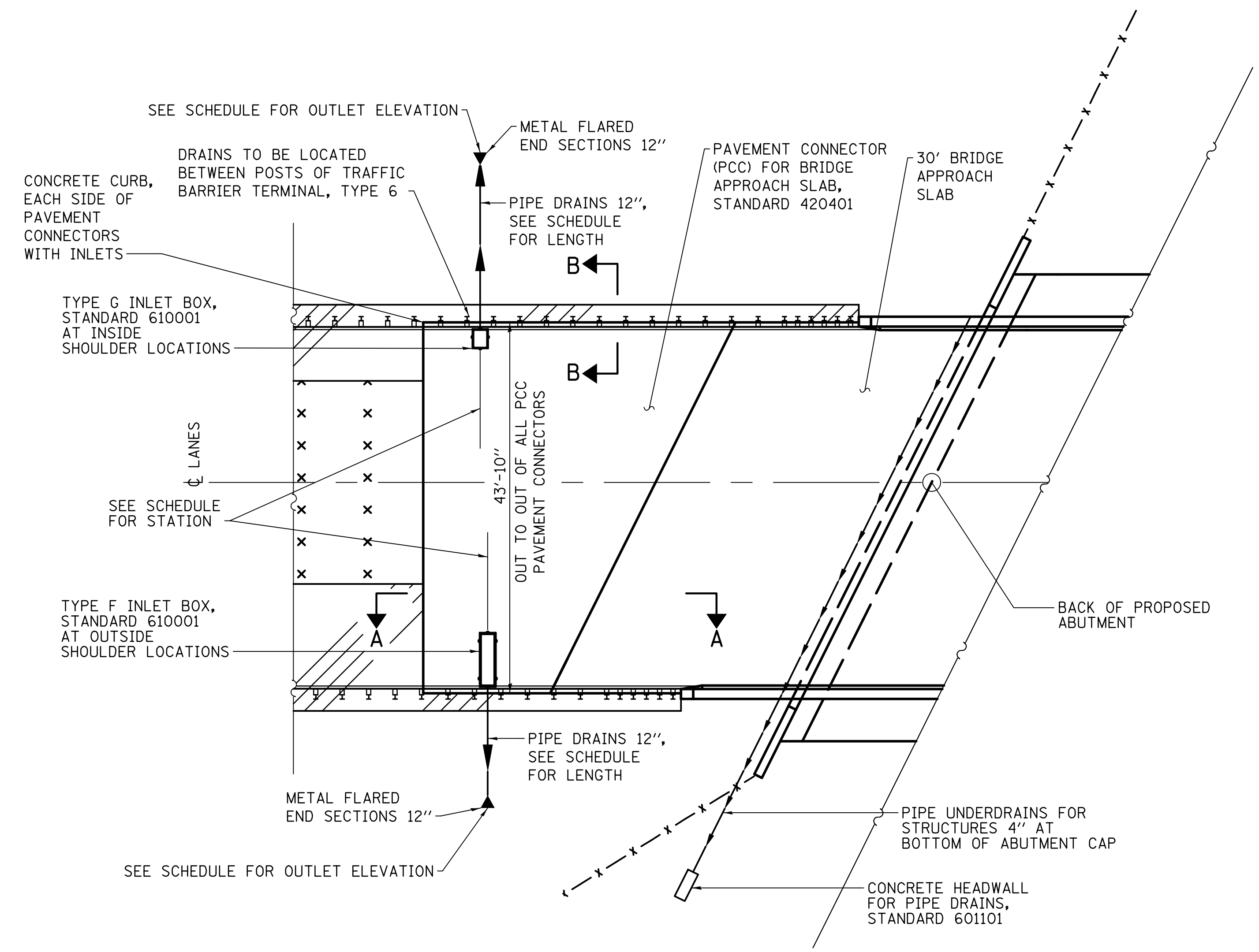


SECTION A–A



SECTION AT TYPE F AND TYPE G INLET BOX

PCC PAVEMENT CONNECTOR DRAINAGE SCHEDULE								
LOCATION			INLET BOX, STD. 610001		CONCRETE THRUST BLOCKS	PIPE DRAINS 12″	METAL FLARED END SECTIONS 12″	OUTLET ELEVATION
			TYPE G	TYPE F				
STATION	LANE	OFFSET	EACH	EACH	EACH	FOOT	EACH	
239+33.31	EBL	RIGHT	1			16	1	424.46
239+34.19	EBL	RIGHT		1	1	30	1	424.00
239+89.00	WBL	LEFT	1			17	1	424.60
239+89.00	WBL	LEFT		1	1	10	1	424.35
241+68.00	EBL	RIGHT	1			16	1	424.60
241+68.00	EBL	RIGHT		1	1	30	1	424.30
242+22.60	WBL	LEFT		1	1	18	1	424.15
242+23.48	WBL	LEFT	1			16	1	424.50
		TOTALS	4	4	4	153	8	



PLAN

(NORTH ABUTMENT OF EASTBOUND SN 064-0045 SHOWN; OTHER LOCATIONS SIMILAR)

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MODEL NAME = PLOT
FILE NAME = D978502-sht-detailsIØ.dgn

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - SKM	REVISED -
ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
PLOT SCALE = Ø.1667 ′ / in.	CHECKED - ELH	REVISED -
PLOT DATE = 1Ø/4/2Ø18	DATE - 04/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

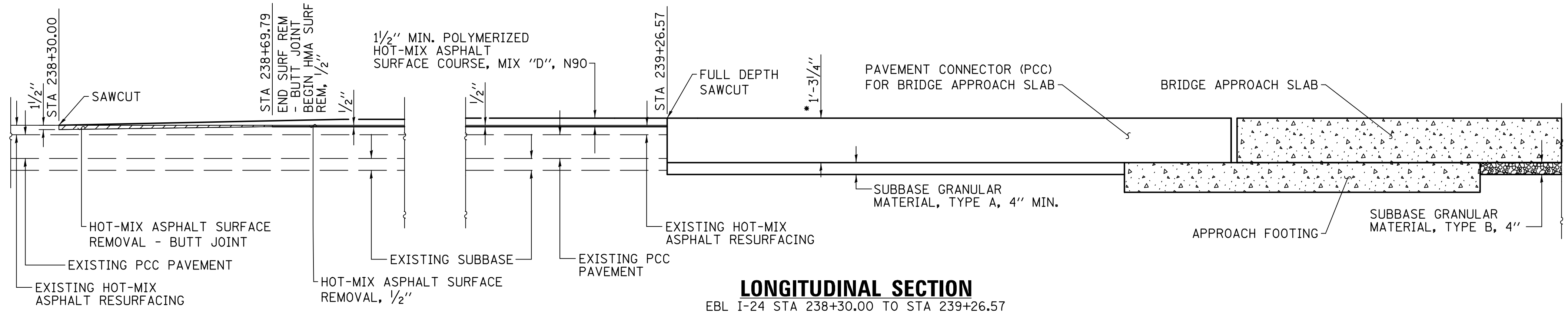
PAVEMENT CONNECTOR DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	60

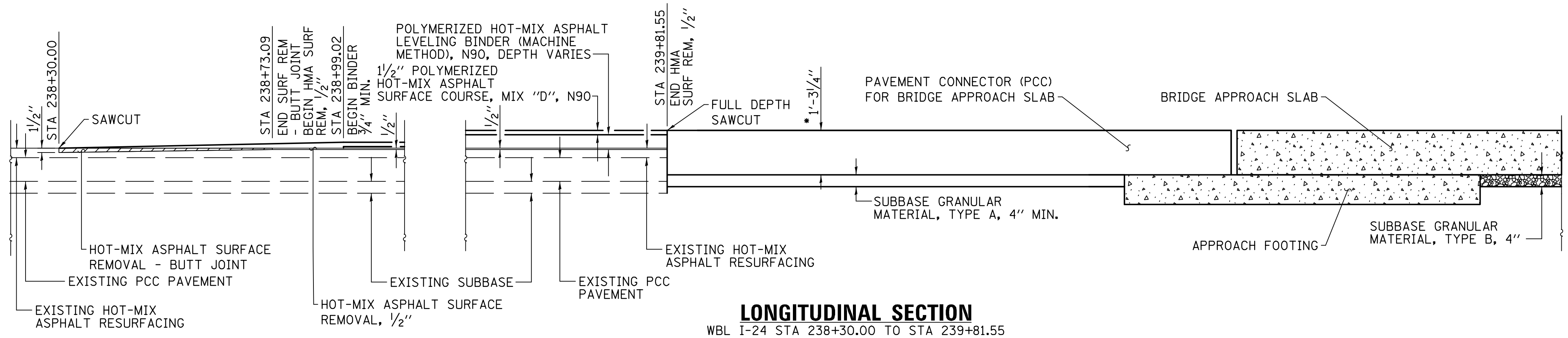
CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT



LONGITUDINAL SECTION

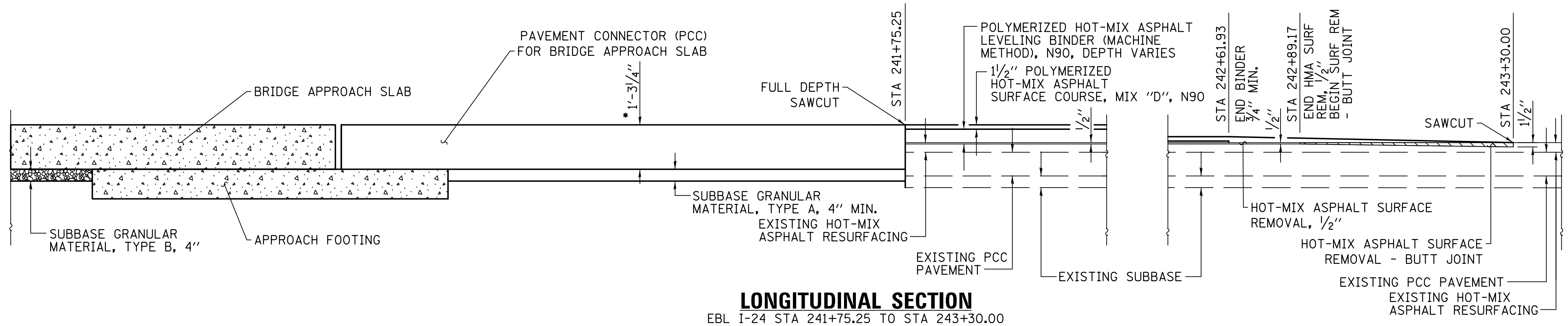
EBL I-24 STA 238+30.00 TO STA 239+26.57



LONGITUDINAL SECTION

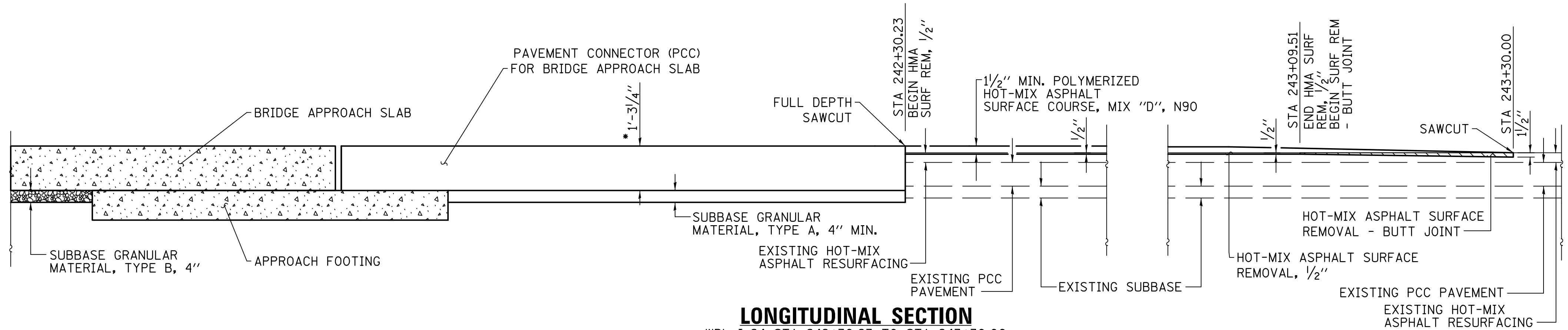
WBL I-24 STA 238+30.00 TO STA 239+81.55

• PRIOR TO GRINDING



LONGITUDINAL SECTION

EBL I-24 STA 241+75.25 TO STA 243+30.00



LONGITUDINAL SECTION

WBL I-24 STA 242+30.23 TO STA 243+30.00

ESCA CONSULTANTS, INC.

USER NAME = skm	DESIGNED - SKM	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -	
PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE - 05/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

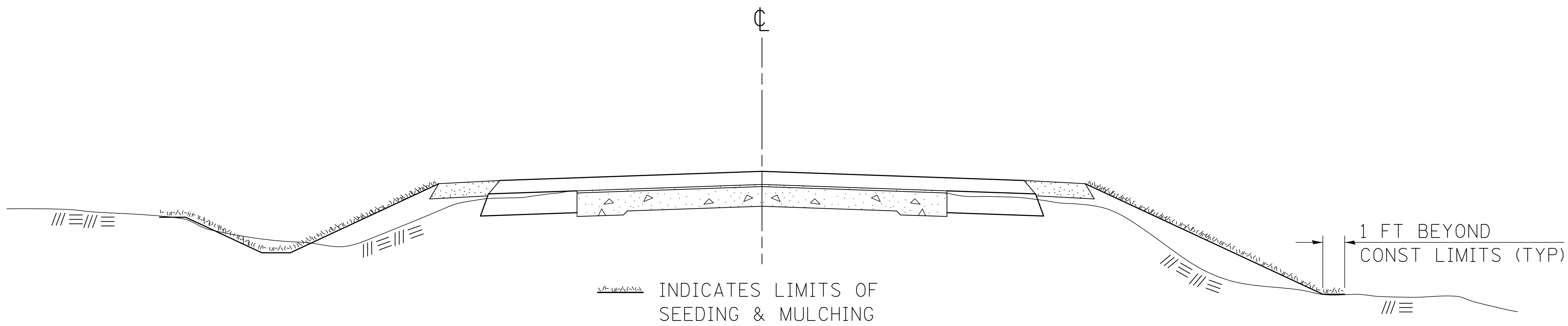
PAVEMENT TRANSITION DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. 236+30 TO STA. 243+30

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	61
		CONTRACT NO. 78502		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

SEEDING & MULCHING



GENERAL NOTES

IN GENERAL, ALL EARTH SURFACES DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE SEEDED AND MULCHED UPON COMPLETION OF ALL GRADING OPERATIONS.

FERTILIZER NUTRIENTS AND LIMESTONE SHALL BE APPLIED TO ALL SEEDED AREAS.

SECTIONS 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK EXCEPT AS SPECIFIED HEREIN OR AS NOTED IN THE SPECIAL PROVISIONS.

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
REVISED	6-3-99
REVISED	3-27-08

STD. 9-12

PRINT DRIVER = I_PD_E_B_0.pltcfg
PEN TABLE = IDOT_VER02.tbl
MODEL NAME = PLOT
FILE NAME = D978502-sht-details01.dgn

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -	
PLOT SCALE = 0.1667 '/ in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE - 03/18	REVISED -	

SEEDING AND MULCHING DETAILS

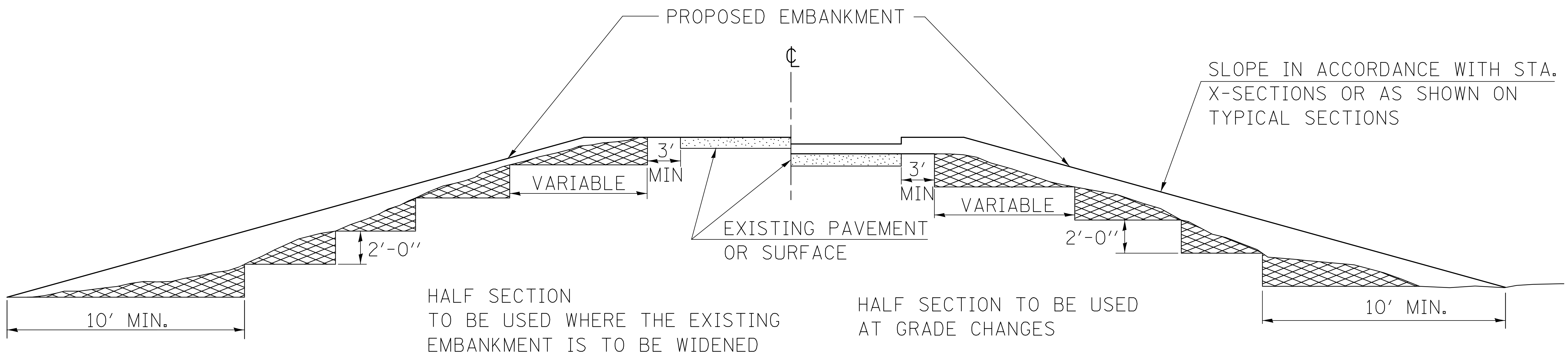
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	62

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

TYPICAL CROSS SECTION SHOWING STEP CONSTRUCTION ON EXISTING FILL



MATERIAL TO BE REMOVED AND REPLACED IN THE EMBANKMENT IN ACCORDANCE WITH ART. 205.04 OF THE STANDARD SPECIFICATION. COST TO BE INCLUDED IN THE VARIOUS ITEMS OF EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED BECAUSE OF THIS WORK.

STD. 9-16

REVISIONS	
REDRAWN	2-15-89
REVISED	8-15-94
CHECKED	6-3-99
RESIZED	5-7-08

PRINT DRIVER = I_PD_E_B_0.pltcfg
PEN TABLE = IDOT_VER02.tbl
MODEL NAME = PLOT
FILE NAME = D978502-sht-details02.dgn

ESCA CONSULTANTS, INC.
CIVIL & STRUCTURAL ENGINEERS

USER NAME = skm	DESIGNED - JMK	REVISED -	
ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -	
PLOT SCALE = 0.1667 ′ / in.	CHECKED - ELH	REVISED -	
PLOT DATE = 10/4/2018	DATE - 03/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

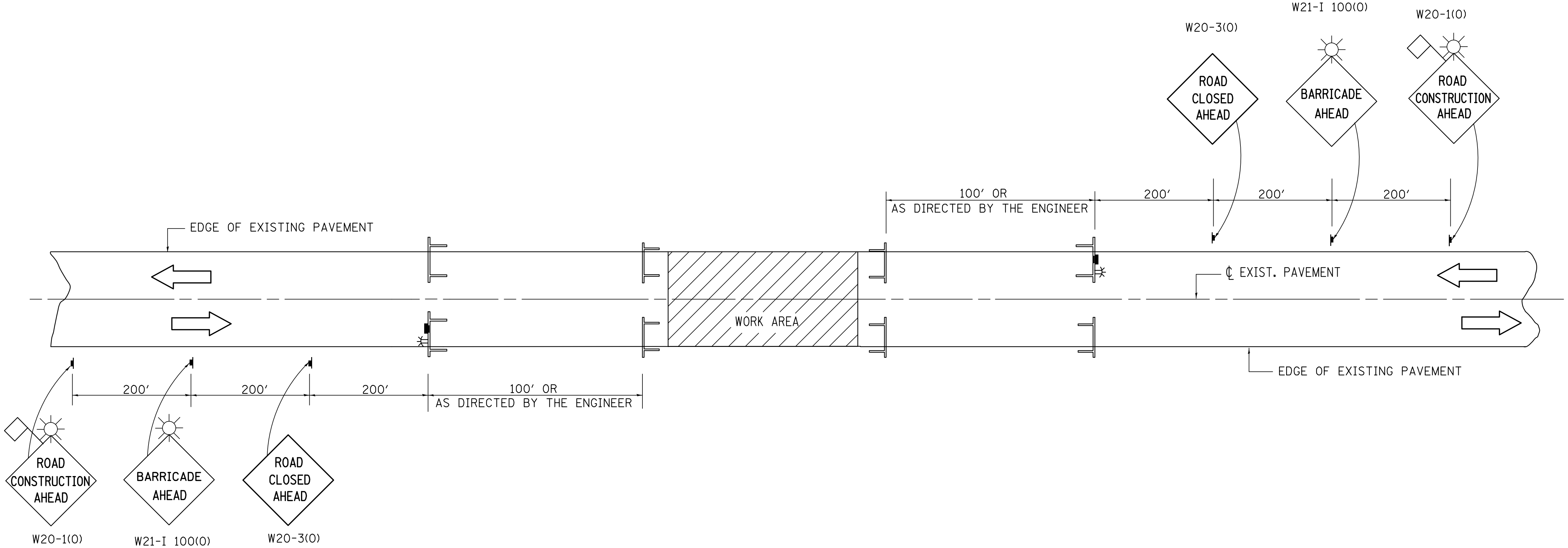
STEP CONSTRUCTION ON EXISTING FILL DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	63
		CONTRACT NO. 78502		

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR BRIDGE OR ROAD CLOSURE



GENERAL NOTES

1. FLASHING BEACONS SHALL BE INSTALLED ABOVE THE TYPE III BARRICADES AT THE LOCATIONS SHOWN ABOVE. THE BEACONS SHALL BE ATTACHED 18 TO 24 INCHES ABOVE THE BARRICADES IN ALIGNMENT WITH TRAFFIC APPROACHING FROM EACH DIRECTION.

2. EACH BEACON SHALL HAVE A YELLOW LENS WITH A NOMINAL DIAMETER OF 8 INCHES, A PARABOLIC REFLECTOR, AN AC POWERED CLEAR LAMP WITH A MINIMUM RATING OF 64 WATTS, AND A CONTROLLER WHICH IS SET TO PROVIDE BETWEEN 50 AND 60 FLASHES PER MINUTE WITH EQUAL ON AND OFF INTERVALS. THE BEACONS WILL BE KEPT BURNING 24 HOURS PER DAY.

3. THE CONTROLLER SHALL BE HOUSED IN A WEATHERPROOF CABINET AND MOUNTED ON A POST OR POLE. THE ELECTRICAL CABLE MUST EITHER BE AERIALLY SUSPENDED, OR BURIED WITH A MINIMUM OF 2 INCHES OF COVER.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGEMENTS AND COST OF 110 VOLT ELECTRICAL SERVICE.

5. THE ENGINEER MAY REQUIRE THAT DRUMS, EITHER 55 GALLON OR 30 GALLON, BE USED TO SUPPLEMENT THE BARRICADES IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

6. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS.

7. FLASHING LIGHTS SHALL BE USED ON EACH APPROACH IN ADVANCE OF THE WORK AREA DURING HOURS OF DARKNESS. THESE LIGHTS SHALL BE INSTALLED ABOVE THE FIRST TWO SIGNS IN EACH SERIES.

8. WHEN A SIDE ROAD INTERSECTS THE HIGHWAY ON WHICH WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED AS DIRECTED BY THE ENGINEER.

9. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS.

10. ALL WARNING SIGNS SHALL HAVE MINIMUM DIMENSIONS OF 48 IN. BY 48 IN. AND SHALL HAVE A BLACK LEGEND AND BORDER ON AN ORANGE REFLECTORIZED BACKGROUND.

11. FORMS BT 725 AND 726 ARE REQUIRED.

12. ALL ITEMS NECESSARY TO COMPLETE THIS DETAIL SHALL BE INCLUDED IN THE LUMP SUM AMOUNT FOR TRAFFIC CONTROL AND PROTECTION, (SPECIAL).

13. TYPE III BARRICADES AND R11-2 SIGNS SHALL BE POSITIONED AS SHOWN IN "ROAD CLOSED TO ALL TRAFFIC" DETAIL ON HIGHWAY STANDARD 701901.

SYMBOLS

- WORK AREA
- SIGN WITH 18 IN. BY 18 IN. (MINIMUM) ORANGE FLAG ATTACHED
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH FLASHING BEACON AND "ROAD CLOSED" SIGN STD. R11-2)
- FLASHING BEACON

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK	REVISED -
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	PLOT DATE = 10/4/2018	DATE - 03/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE OR ROAD CLOSURE DETAILS

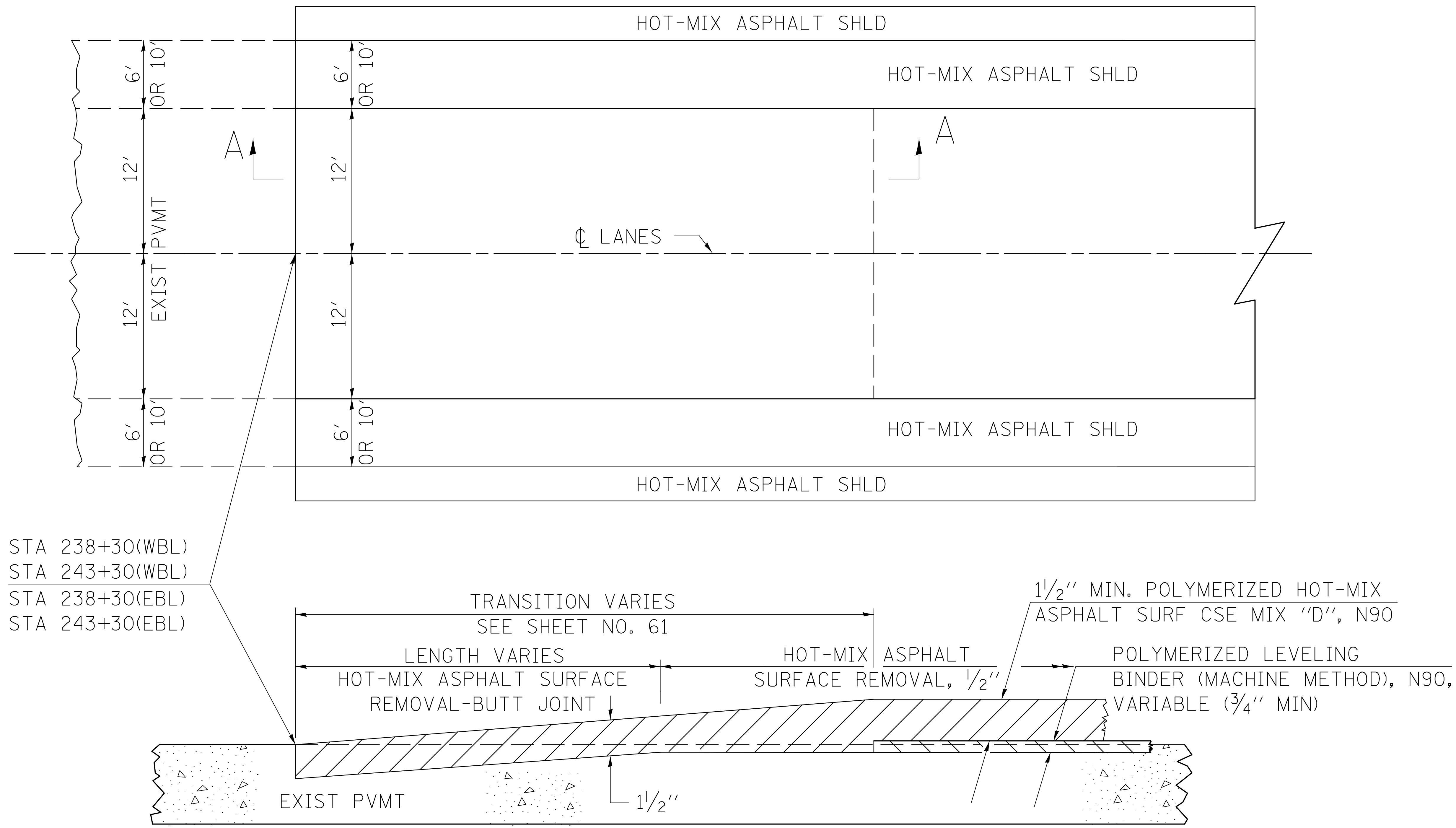
SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	64

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

BUTT JOINT



SECTION A-A

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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

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ESCA PROJECT NO. 1295.03	DRAWN - JMK/SKM	REVISED -
PLOT SCALE = 0.167 '/ in.	CHECKED - ELH	REVISED -
PLOT DATE = 10/4/2018	DATE - 05/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

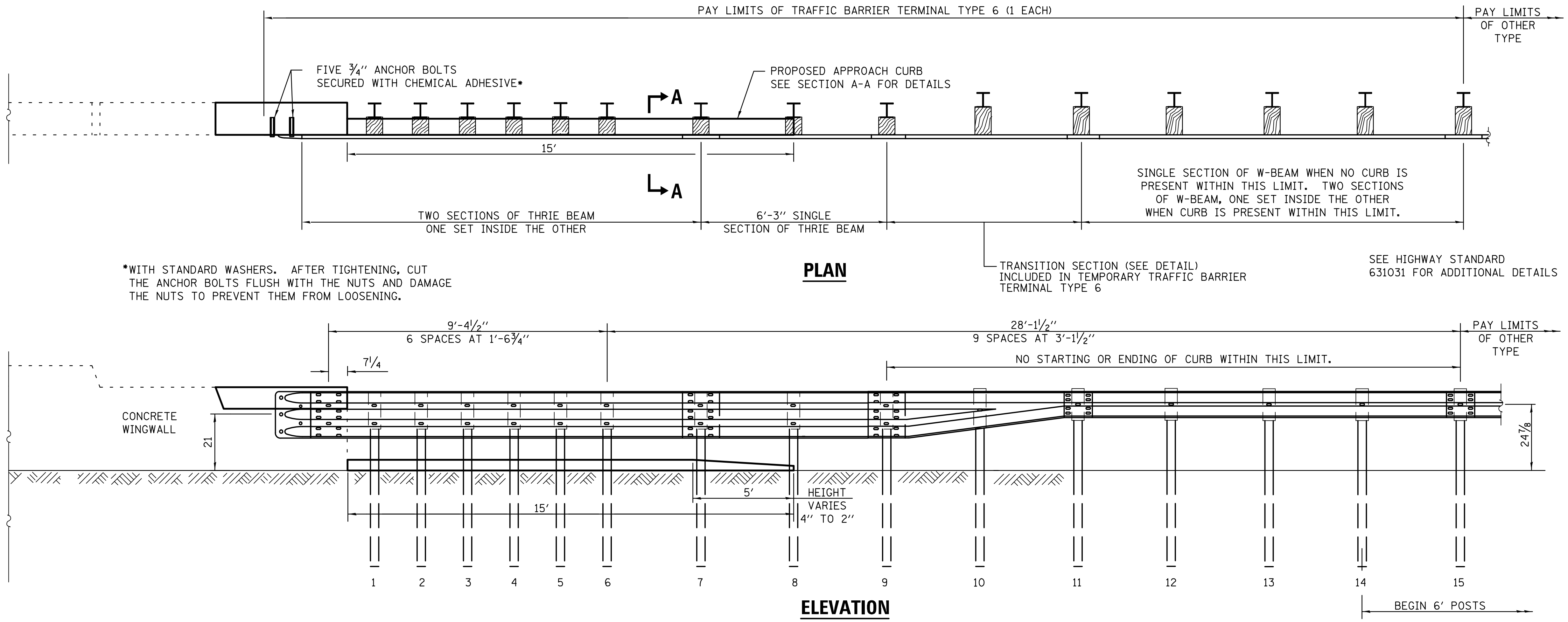
BUTT JOINT DETAILS

SCALE: NONE | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

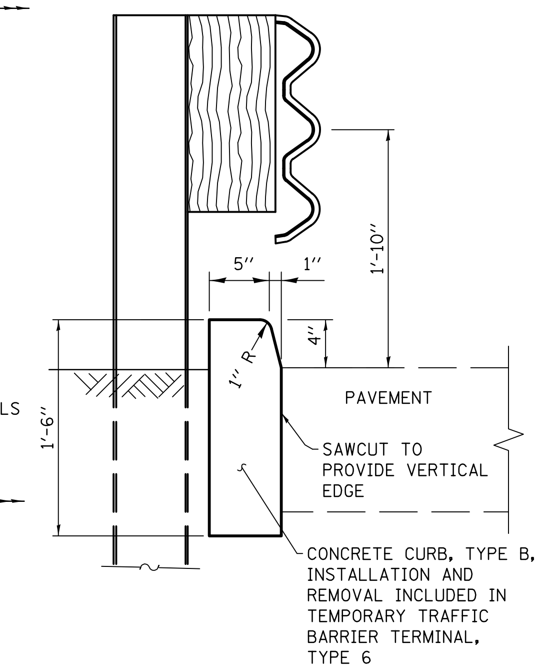
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	65

CONTRACT NO. 78502

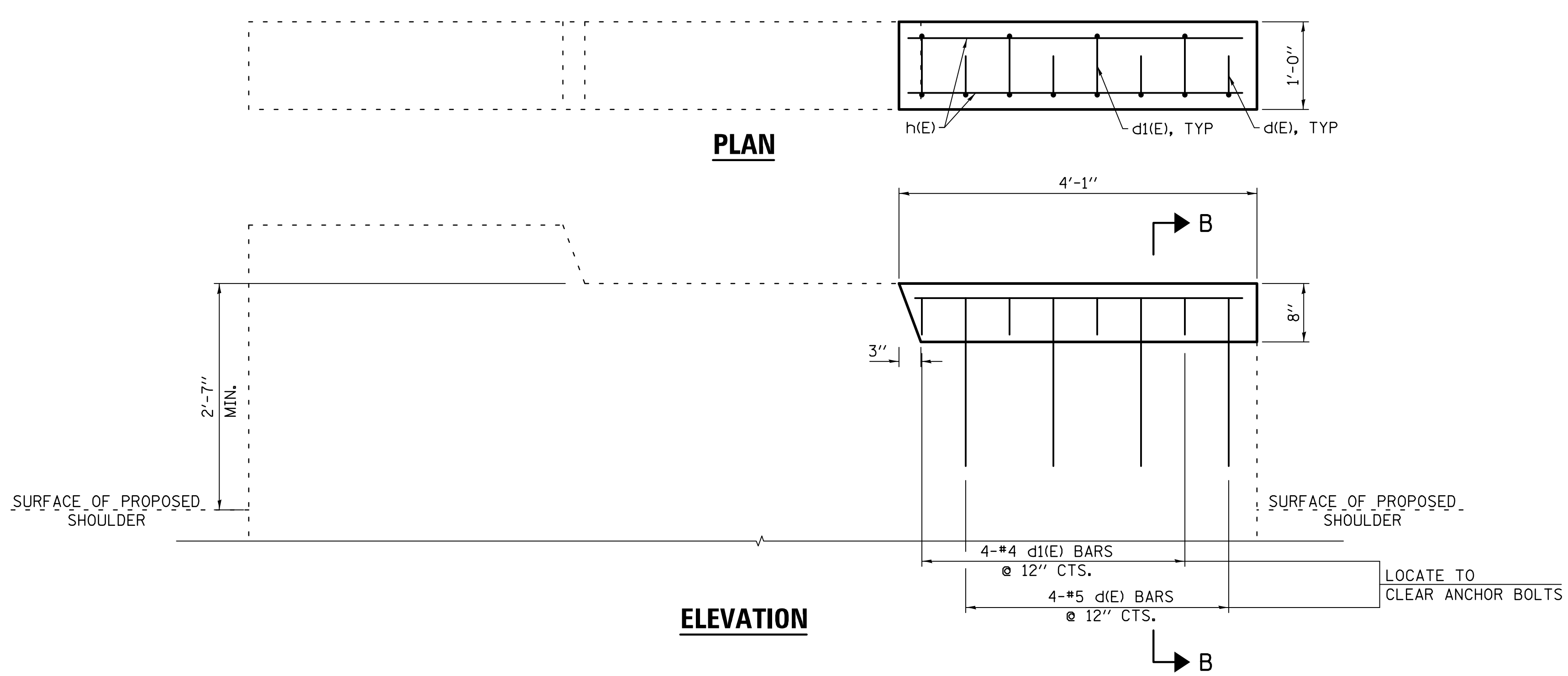
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

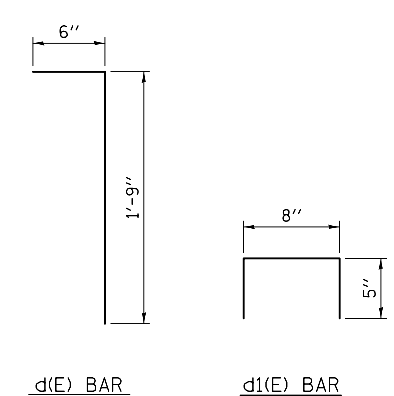


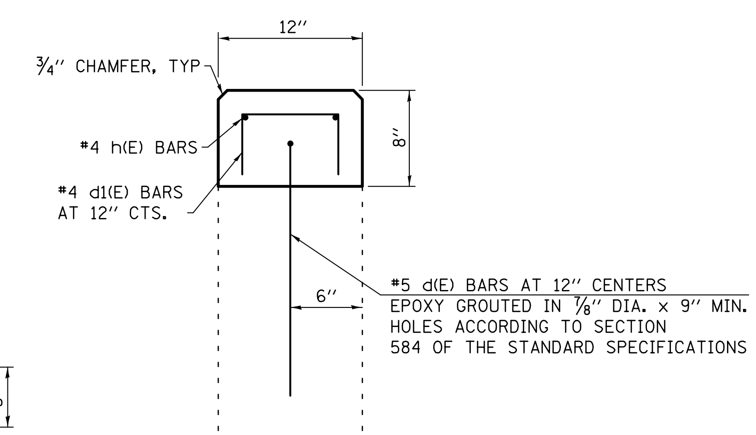
TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 6



SECTION A–A







SECTION B–B

NORTHWEST WINGWALL EXTENSION ON SN 064–0028

BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
d(E)	4	#5	2'-3"	
d1(E)	4	#4	1'-6"	
h(E)	2	#4	3'-10"	
CONCRETE SUPERSTRUCTURE		CU YD	.1	
REINFORCEMENT BARS		POUND	19	

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018 1:03:07 PM	DATE - 04/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

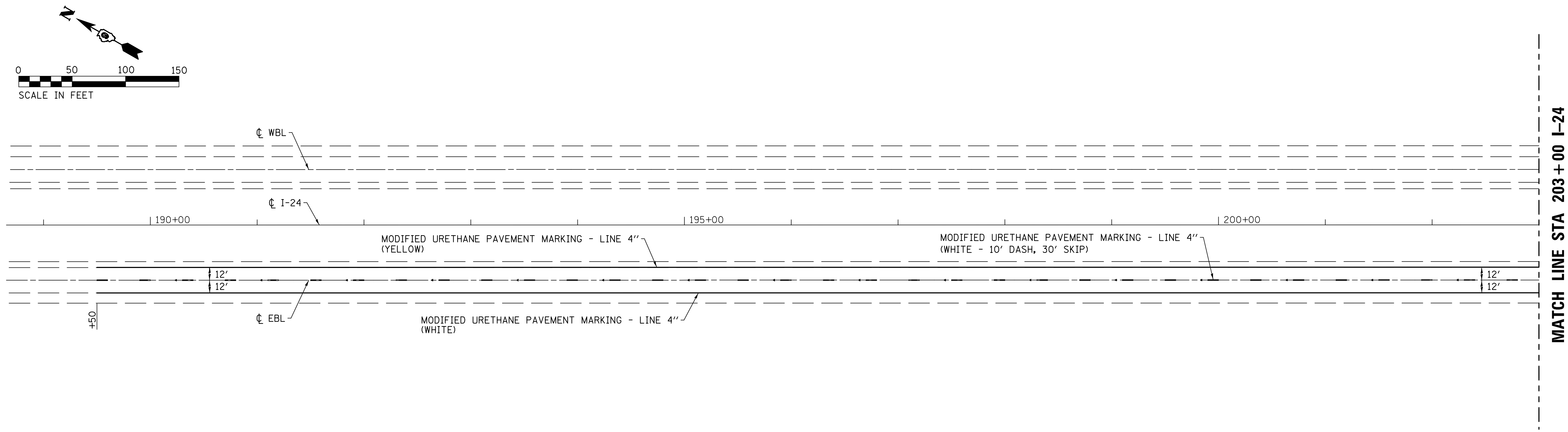
ROADWAY DETAILS

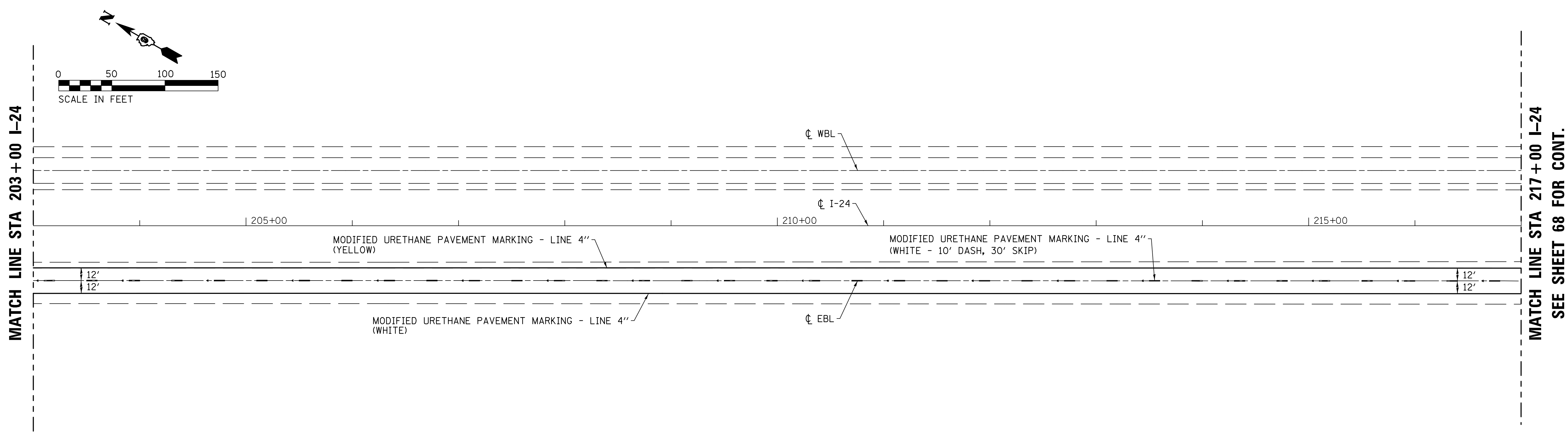
SCALE: AS SHOWN | SHEET NO. 1 OF 1 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	66

CONTRACT NO. 78502

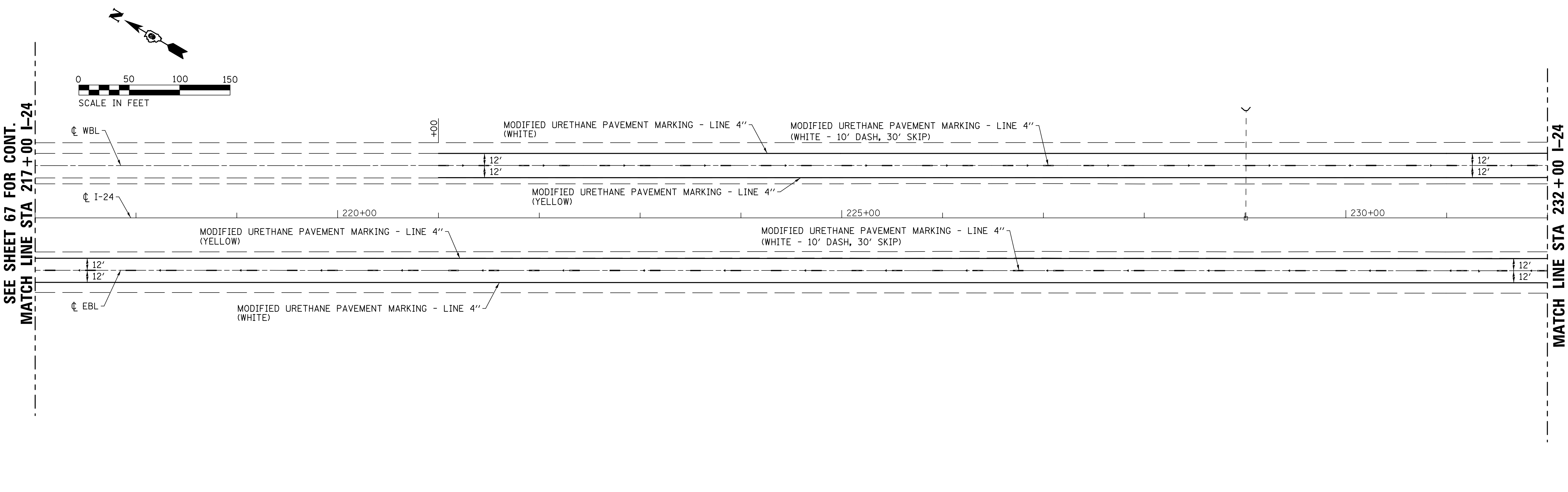
FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT

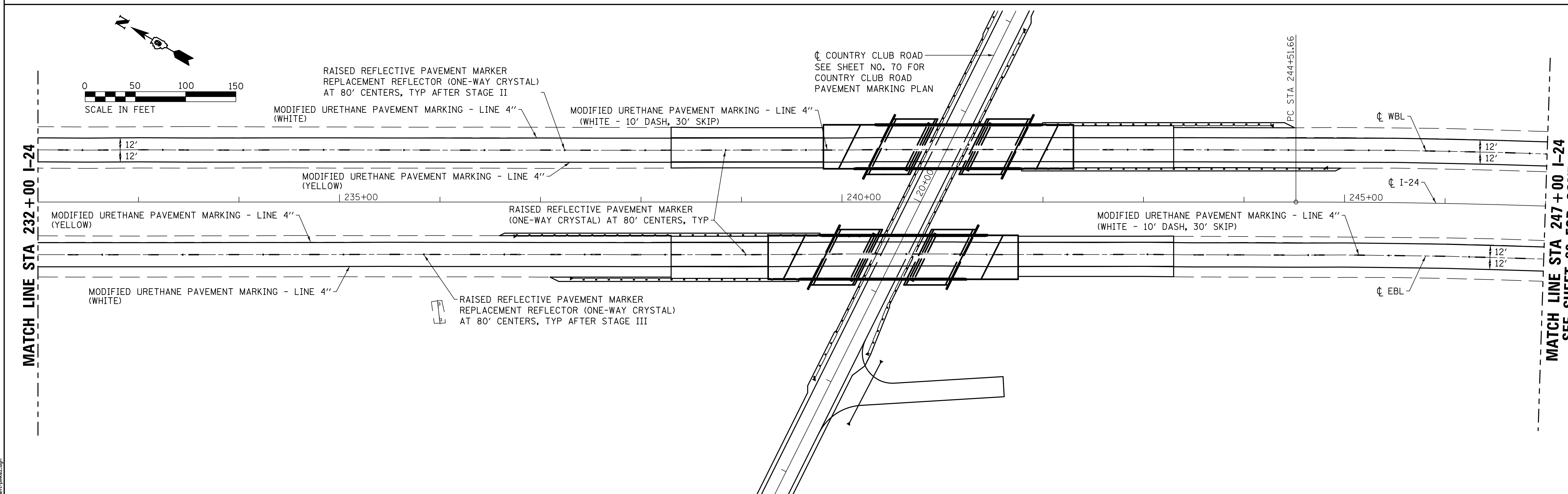




ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -		
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		
	PLOT DATE = 10/4/2018 1:03:07 PM	DATE - 05/18	REVISED -		SCALE: 1"=50' | SHEET NO. 1 OF 4 SHEETS | STA. 189+00 TO STA. 217+00

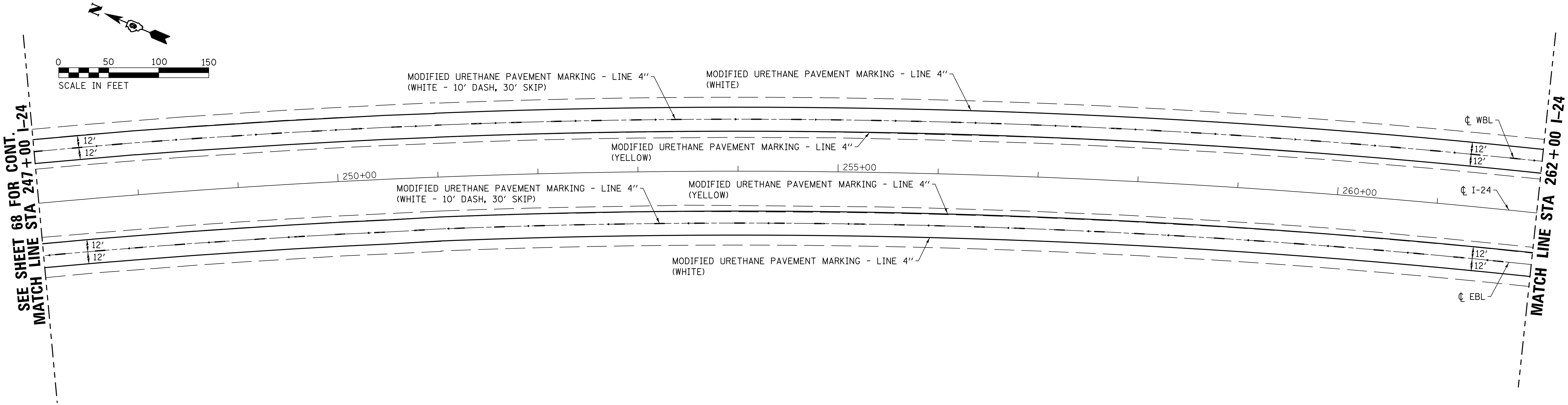
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	67
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

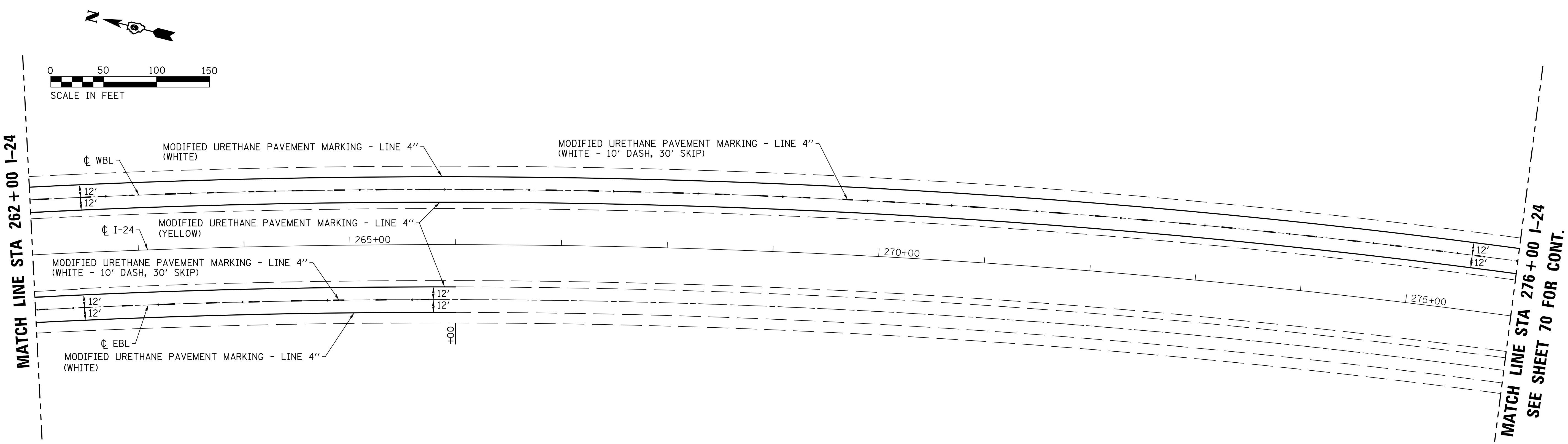




ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -		
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		
	PLOT DATE = 10/4/2018 1:03:08 PM	DATE - 05/18	REVISED -		SCALE: 1"=50' SHEET NO. 2 OF 4 SHEETS STA. 217+00 TO STA. 247+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	68
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





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FILE NAME = D978502-sht-pmk03.dgn

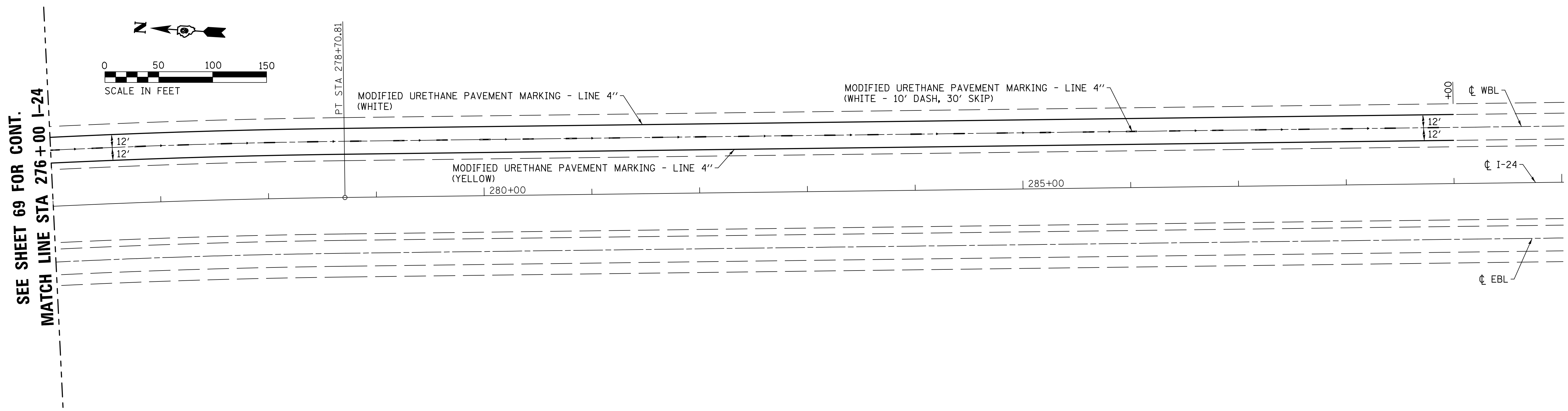
ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS	USER NAME = skm	DESIGNED - SKM	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018 1:03:08 PM	DATE - 05/18	REVISED -

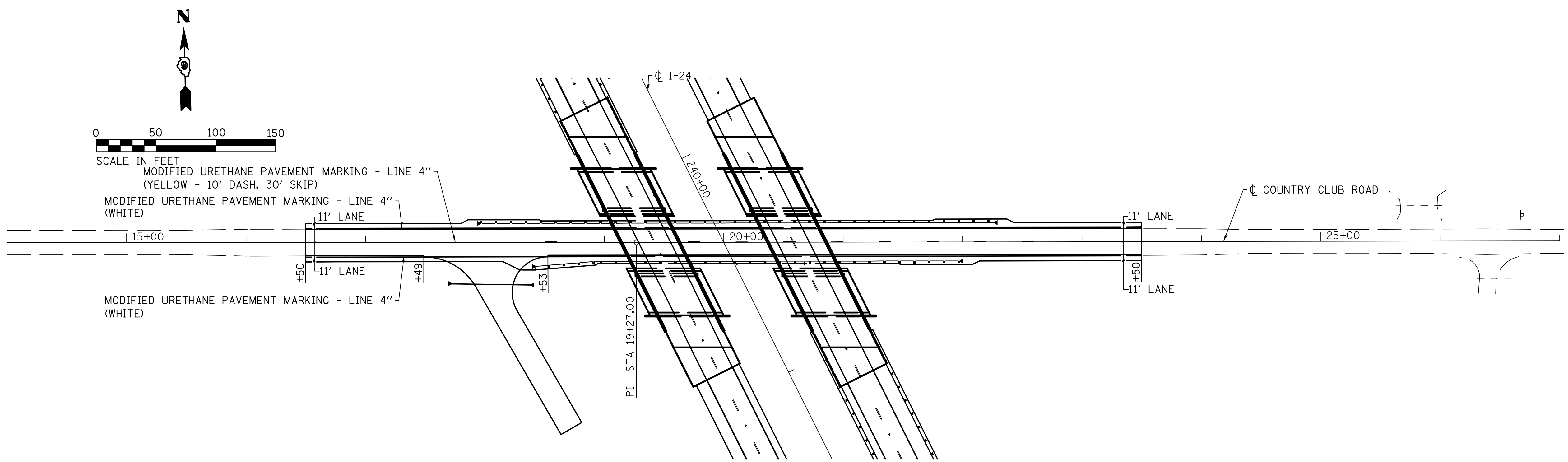
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKING PLANS

SCALE: 1"=50'	SHEET NO. 3 OF 4 SHEETS	STA. 247+00 TO STA. 276+00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	69
		CONTRACT NO. 78502		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		





COUNTRY CLUB ROAD PAVEMENT MARKING PLAN

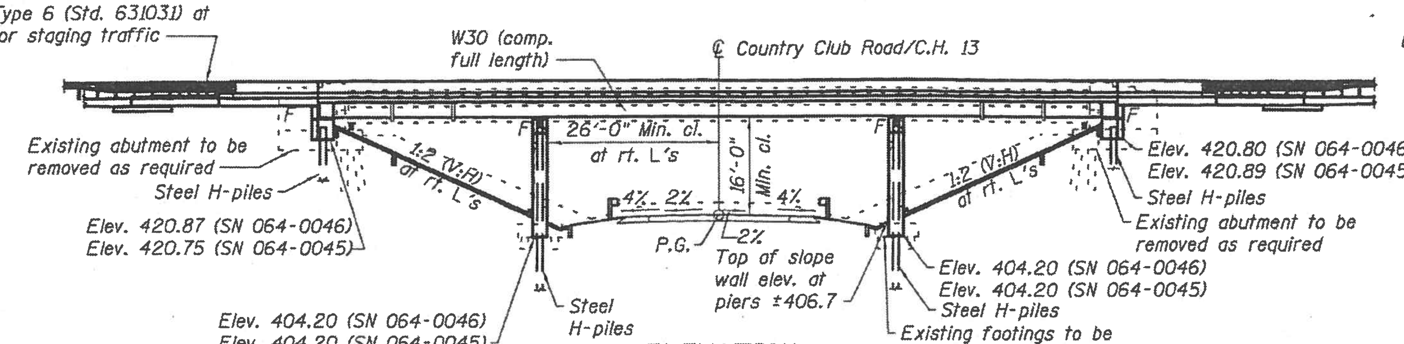
ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - SKM	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PAVEMENT MARKING PLANS	F.A.I. RTE. 24	SECTION (64-3HB)BR-1	COUNTY MASSAC	TOTAL SHEETS 158	SHEET NO. 70
	ESCA PROJECT NO. 1295.03	DRAWN - SKM	REVISED -					CONTRACT NO. 78502		
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -		SCALE: 1"=50'	SHEET NO. 4 OF 4 SHEETS	STA. 276+00 TO STA. 290+00			
	PLOT DATE = 10/4/2018 1:03:09 PM	DATE - 05/18	REVISED -			FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BENCHMARK: BM1011 - Chiseled square in northeast parapet wall of SN 064-0028 Sta. 240+41, 25' LT, Elev. 429.30 (NAVD 88)

EXISTING STRUCTURES:
SN 064-0027 and SN 064-0028 were originally built in 1970 as F.A.I. 24, Section 64-3HB. The three-span structures consist of concrete decks, each supported by 6 continuous steel beams. The spans are supported by concrete multi-column piers and open abutments. The piers and abutments are supported on pile foundations. Back to back abutments is 130'-6". The superstructure width is 44'-0" out to out. The skew is 26°-33'-26". Interstate traffic shall be maintained utilizing crossovers. Country Club Road will be closed intermittently as required.

No salvage.

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



ELEVATION

(Showing SN 064-0046, SN 064-0045 similar)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 3
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.496g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 1.141g
Soil Site Class = D

LOADING HL-93

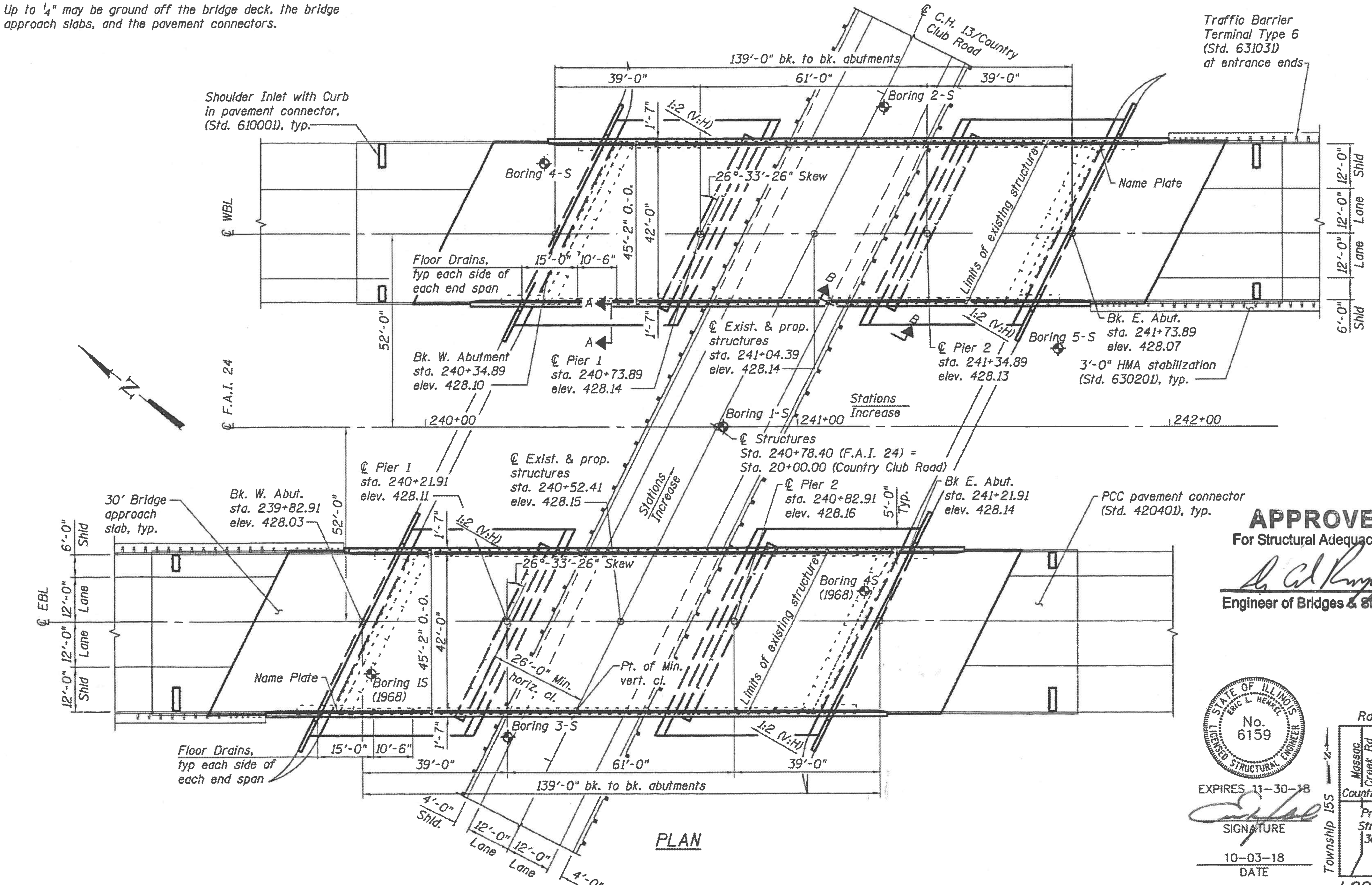
Allow 50 psf for future wearing surface

DESIGN SPECIFICATIONS

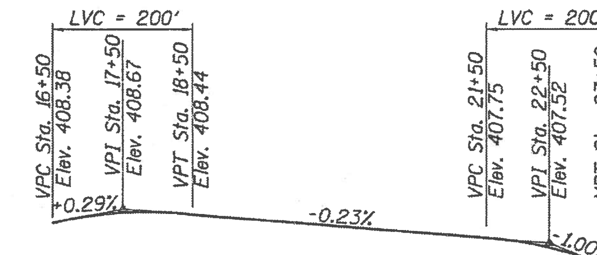
2017 AASHTO LRFD
Bridge Design Specifications
8th Edition

DESIGN STRESSES FIELD UNITS

f'c = 3,500 psi (substructure)
f'c = 4,000 psi (superstructure)
fy = 50,000 psi (AASHTO M270 Grade 50)
fy = 60,000 psi (reinforcement)

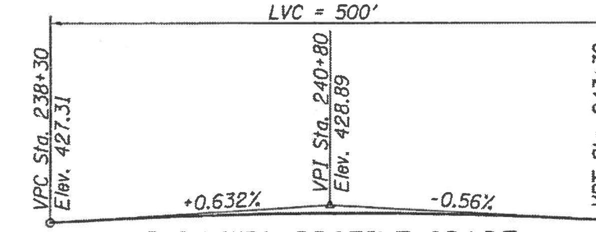


PLAN



C.H. 13/COUNTRY CLUB ROAD PROFILE GRADE

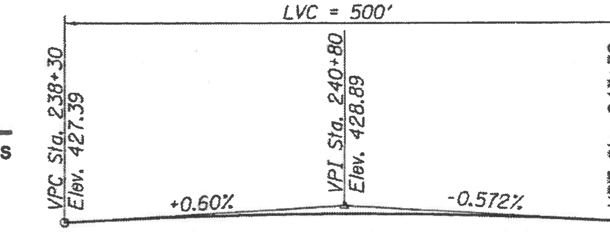
(Along ℄ roadway)



I-24 WBL PROFILE GRADE

(Along ℄ lanes)
(PG shows the final elevations after grinding)

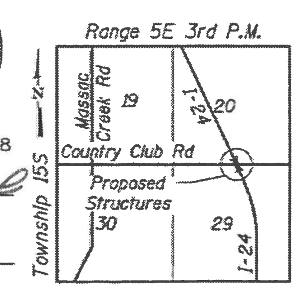
APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures



I-24 EBL PROFILE GRADE

(Along ℄ lanes)
(PG shows the final elevations after grinding)

STATE OF ILLINOIS
ERIC L. HENKEL
No. 6159
LICENSED STRUCTURAL ENGINEER
EXPIRES 11-30-18
SIGNATURE
10-03-18
DATE



LOCATION SKETCH

GENERAL PLAN & ELEVATION
I-24 OVER COUNTRY CLUB ROAD
F.A.I. RTE. 24 - SECTION (64-3HB)BR-1
MASSAC COUNTY
STATION 240+78.40
STRUCTURE NO. 064-0045 (EB)
STRUCTURE NO. 064-0046 (WB)

ESCA CONSULTANTS, INC.

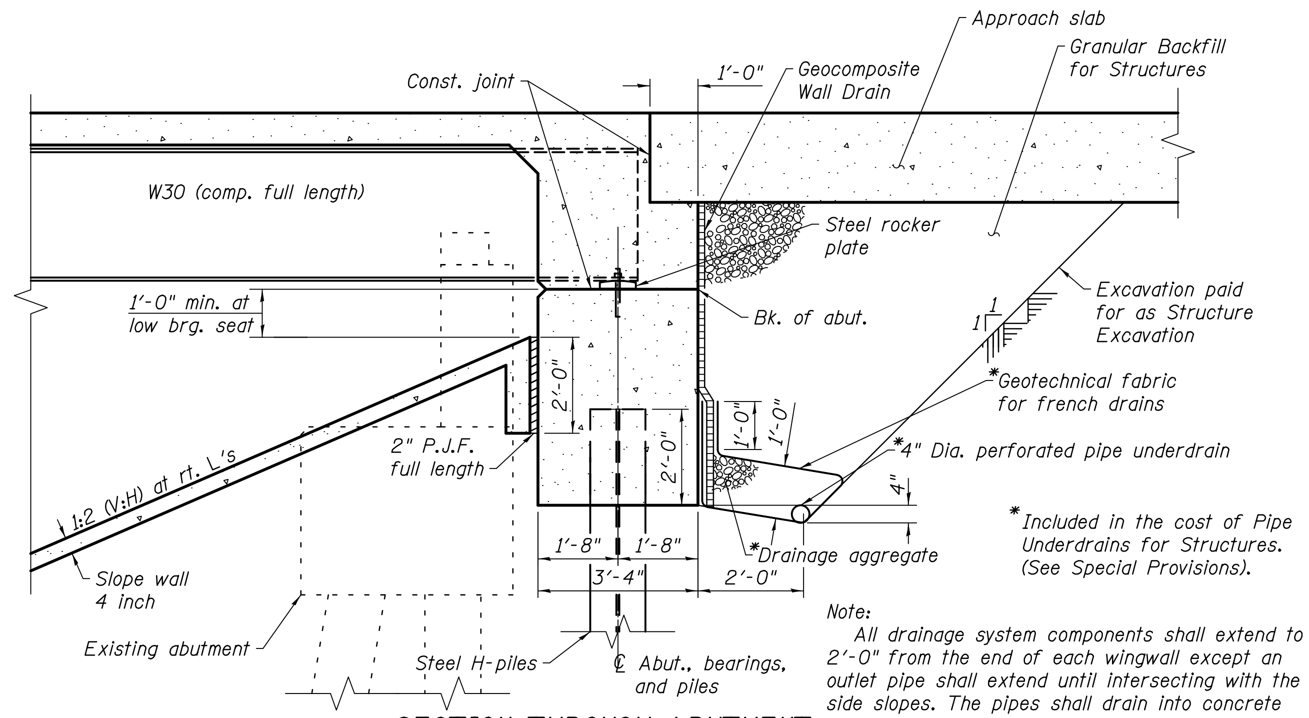
USER NAME = kja	DESIGNED - RTM 09/17	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
ESCA PROJECT NO. 1295.83	CHECKED - RDP 09/17	REVISED -	
PLOT SCALE = 8.17 ' / in.	DRAWN - KAH 06/18	REVISED -	
PLOT DATE = 10/1/2018 11:13:30 AM	CHECKED - ELH/RTM 09/18	REVISED -	SHEET NO. 1 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	71
		CONTRACT NO. 78502		

ILLINOIS FED. AID PROJECT

GENERAL NOTES

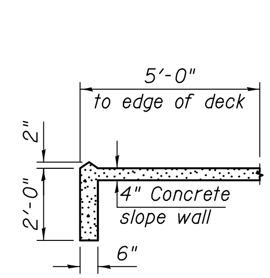
1. Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts. Bolts 7/8" ○, holes 15/16" ○, unless otherwise noted.
2. Calculated weight of Structural Steel = 171,990 lbs. (Grade 50)
   34,210 lbs. (Grade 36)
3. No field welding is permitted except as specified in the contract documents.
4. Reinforcement bars designated (E) shall be epoxy coated.
5. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
6. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.
7. The Inorganic Zinc Rich Primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8.
8. Slipforming of the parapets is not allowed.
9. Removal of SN 064-0027 (EB) will be paid for as Removal of Existing Structures No. 1 and removal of SN 064-0028 (WB) will be paid for as Removal of Existing Structures No. 2.
10. Quantities of Deck Slab Repair are included to repair 064-0028 prior to allowing two-way traffic over the structure. Quantities of Deck Slab Repair are included to repair 064-0027 as necessary. The quantities used shall be determined by the Engineer.
11. Slope wall shall be reinforced with welded wire fabric 6"X6"-W4.0XW4.0, weighing 58 lbs per 100 sq.ft.
12. The cost of concrete slope wall removal and bridge rail removal are included in the Removal of Existing Structures.



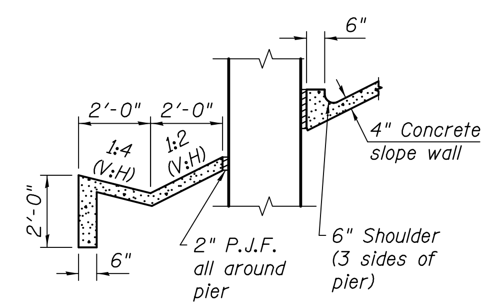
SECTION THROUGH ABUTMENT

(Horizontal dimensions at rt. L's)

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



SECTION A-A



SECTION B-B

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Structures No. 1	Each			1
Removal of Existing Structures No. 2	Each			1
Structure Excavation	Cu. Yd.		700	700
Floor Drains	Each	16		16
Concrete Structures	Cu. Yd.	60.6	419.8	480.4
Concrete Superstructure	Cu. Yd.	473.8		473.8
Protective Coat	Sq. Yd.	2172		2172
Concrete Superstructure (Approach Slab)	Cu. Yd.	252.6		252.6
Furnishing and Erecting Structural Steel	L Sum	1		1
Stud Shear Connectors	Each	8676		8676
Reinforcement Bars, Epoxy Coated	Pound	214800	47080	261880
Slope Wall 4 Inch	Sq. Yd.		1088	1088
Furnishing Steel Piles HP14x89	Foot		4290	4290
Furnishing Steel Piles HP14x102	Foot		1648	1648
Driving Piles	Foot		5938	5938
Test Pile Steel HP14x89	Each		4	4
Test Pile Steel HP14x102	Each		4	4
Name Plates	Each	2		2
Anchor Bolts, 3/4"	Each	48		48
Anchor Bolts, 1"	Each	48		48
Geocomposite Wall Drain	Sq. Yd.		178	178
Bridge Deck Grooving (Longitudinal)	Sq. Yd.	1050		1050
Granular Backfill for Structures	Cu. Yd.		270	270
Diamond Grinding (Bridge Section)	Sq. Yd.	1924		1924
Pipe Underdrains for Structures 4"	Foot		320	320
Deck Slab Repair (Full Depth, Type I)	Sq. Yd.	10		10
Deck Slab Repair (Full Depth, Type II)	Sq. Yd.	30		30

STRUCTURE INDEX OF SHEETS

General Plan & Elevation	Sheet No. 1 of 29
General Data	Sheet No. 2 of 29
Top of Slab Elevations	Sheet No. 3 of 29
Top of Slab Elevations (WB)	Sheet No. 4 of 29
Top of Slab Elevations (EB)	Sheet No. 5 of 29
Top of Approach Slab Elevations (WB)	Sheet No. 6 of 29
Top of Approach Slab Elevations (EB)	Sheet No. 7 of 29
Superstructure	Sheet No. 8 of 29
Superstructure Details	Sheet No. 9 of 29
Diaphragm Details	Sheet No. 10 of 29
Bridge Approach Slab Details (1 of 2)	Sheet No. 11 of 29
Bridge Approach Slab Details (2 of 2)	Sheet No. 12 of 29
Steel Framing Plan & Details	Sheet No. 13 of 29
Steel Framing Details	Sheet No. 14 of 29
Bearing Details	Sheet No. 15 of 29
West Abutment (WB)	Sheet No. 16 of 29
East Abutment (WB)	Sheet No. 17 of 29
West Abutment (EB)	Sheet No. 18 of 29
East Abutment (EB)	Sheet No. 19 of 29
Piers (WB)	Sheet No. 20 of 29
Piers (EB)	Sheet No. 21 of 29
HP Pile Details	Sheet No. 22 of 29
Boring Logs	Sheet No. 23-29 of 29

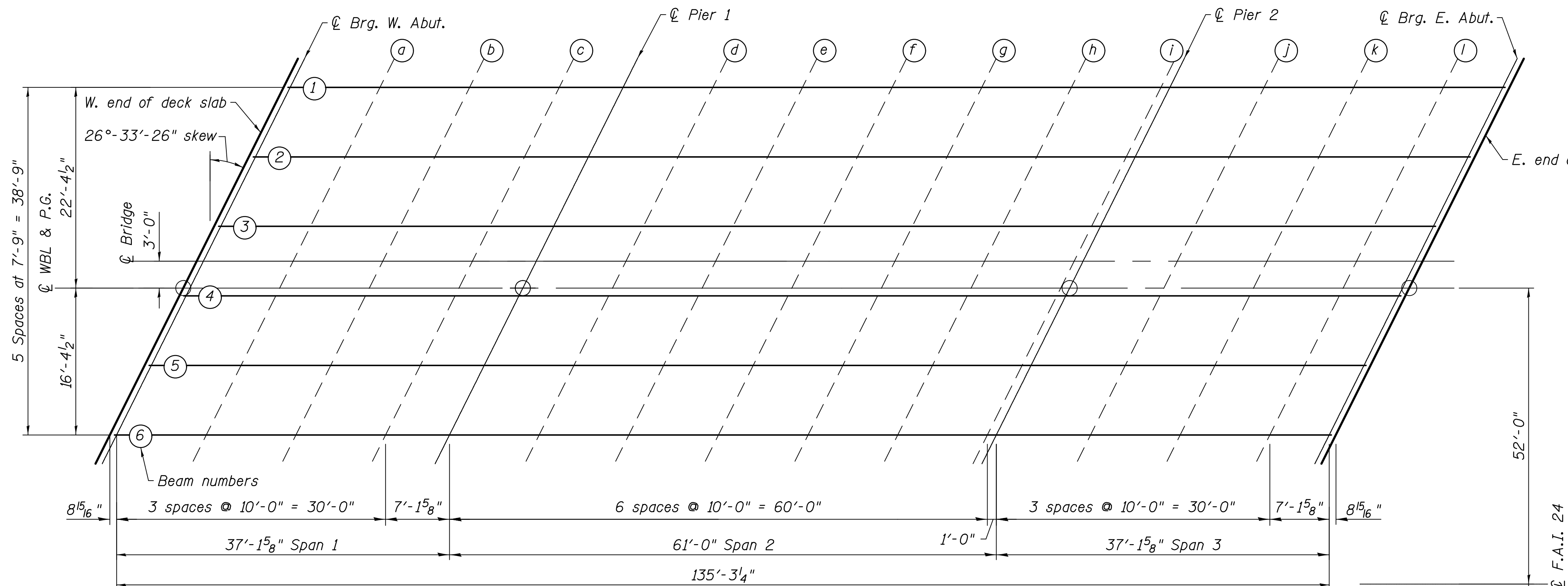
STATION 240+52.41
BUILT 201_ BY
STATE OF ILLINOIS
F.A.I. RT. 24 SEC. (64-3HB)BR-1
LOADING HL-93
STR. NO. 064-0045

EASTBOUND

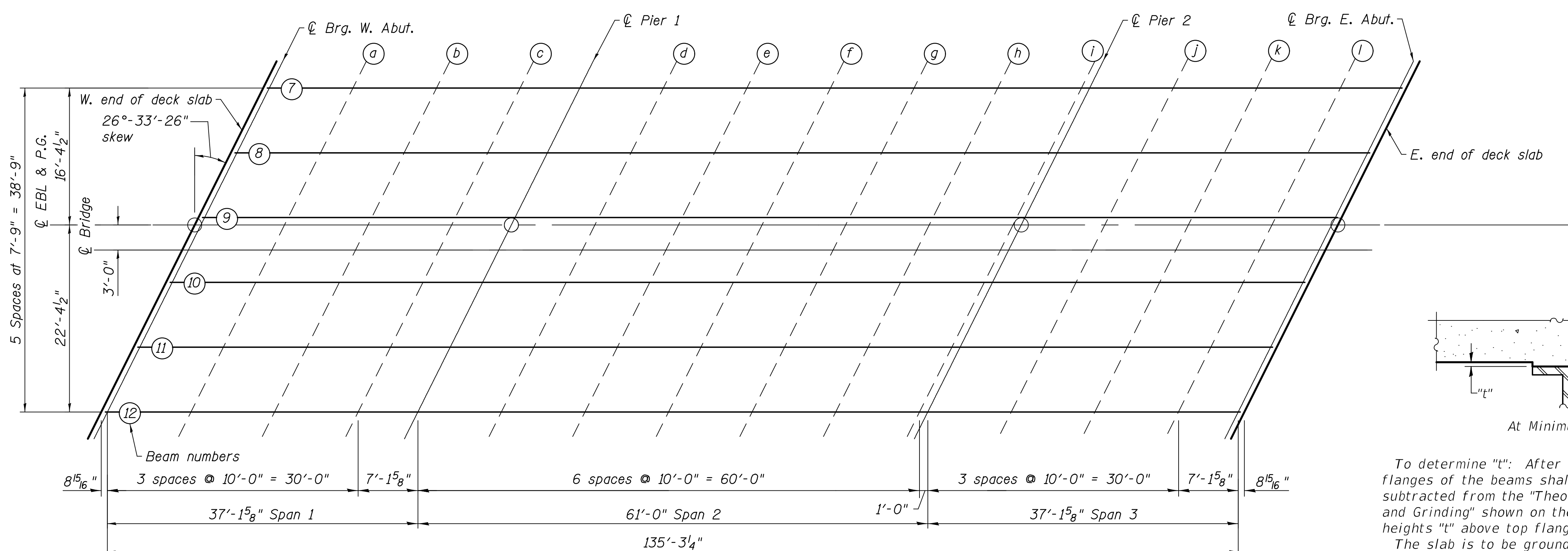
STATION 241+04.39
BUILT 201_ BY
STATE OF ILLINOIS
F.A.I. RT. 24 SEC. (64-3HB)BR-1
LOADING HL-93
STR. NO. 064-0046

WESTBOUND

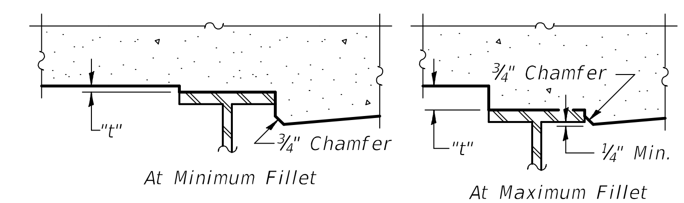
NAME PLATES
See Std. 515001



PLAN - WBL



PLAN - EBL



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown on this sheet. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection and Grinding" shown on the following sheets, minus slab thickness, 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 the following sheets. For grinding the deck, see Special Provisions.

FILLET HEIGHTS

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF SLAB ELEVATIONS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)	F.A.I. RTE. 24	SECTION (64-3HB)BR-1
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -			COUNTY MASSAC	TOTAL SHEETS 158 / SHEET NO. 73
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -			CONTRACT NO. 78502	
	PLOT DATE = 10/4/2018 1:03:16 PM	CHECKED - ELH/RTM 09/18	REVISED -		SHEET NO. 3 OF 29 SHEETS	ILLINOIS FED. AID PROJECT	

BEAM 1

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+47.19	-22.38	427.73	427.75
℄ Brg. W. Abut.	240+47.93	-22.38	427.73	427.75
a	240+57.93	-22.38	427.74	427.77
b	240+67.93	-22.38	427.75	427.77
c	240+77.93	-22.38	427.76	427.77
℄ Pier 1	240+85.07	-22.38	427.76	427.78
d	240+95.07	-22.38	427.76	427.81
e	241+05.07	-22.38	427.76	427.84
f	241+15.07	-22.38	427.76	427.84
g	241+25.07	-22.38	427.75	427.82
h	241+35.07	-22.38	427.74	427.79
i	241+45.07	-22.38	427.73	427.75
℄ Pier 2	241+46.07	-22.38	427.73	427.75
j	241+56.07	-22.38	427.72	427.73
k	241+66.07	-22.38	427.70	427.72
l	241+76.07	-22.38	427.68	427.71
℄ Brg. E. Abut.	241+83.21	-22.38	427.67	427.69
E. end of slab	241+83.96	-22.38	427.67	427.69

BEAM 2

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+43.31	-14.63	427.88	427.90
℄ Brg. W. Abut.	240+44.06	-14.63	427.88	427.90
a	240+54.06	-14.63	427.90	427.92
b	240+64.06	-14.63	427.90	427.93
c	240+74.06	-14.63	427.91	427.93
℄ Pier 1	240+81.20	-14.63	427.91	427.93
d	240+91.20	-14.63	427.92	427.96
e	241+01.20	-14.63	427.91	427.99
f	241+11.20	-14.63	427.91	428.00
g	241+21.20	-14.63	427.91	427.98
h	241+31.20	-14.63	427.90	427.95
i	241+41.20	-14.63	427.89	427.91
℄ Pier 2	241+42.20	-14.63	427.89	427.91
j	241+52.20	-14.63	427.88	427.89
k	241+62.20	-14.63	427.86	427.89
l	241+72.20	-14.63	427.84	427.86
℄ Brg. E. Abut.	241+79.34	-14.63	427.83	427.85
E. end of slab	241+80.08	-14.63	427.83	427.85

BEAM 3

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+39.44	-6.88	428.01	428.03
℄ Brg. W. Abut.	240+40.19	-6.88	428.01	428.03
a	240+50.19	-6.88	428.02	428.05
b	240+60.19	-6.88	428.03	428.05
c	240+70.19	-6.88	428.04	428.05
℄ Pier 1	240+77.33	-6.88	428.04	428.06
d	240+87.33	-6.88	428.04	428.09
e	240+97.33	-6.88	428.04	428.12
f	241+07.33	-6.88	428.04	428.11
g	241+17.33	-6.88	428.04	428.11
h	241+27.33	-6.88	428.03	428.08
i	241+37.33	-6.88	428.02	428.04
℄ Pier 2	241+38.33	-6.88	428.02	428.04
j	241+48.33	-6.88	428.01	428.03
k	241+58.33	-6.88	428.00	428.02
l	241+68.33	-6.88	427.98	428.01
℄ Brg. E. Abut.	241+75.47	-6.88	427.97	427.99
E. end of slab	241+76.21	-6.88	427.97	427.99

BEAM 4

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+35.57	0.88	428.09	428.11
℄ Brg. W. Abut.	240+36.31	0.88	428.09	428.11
a	240+46.31	0.88	428.11	428.13
b	240+56.31	0.88	428.12	428.14
c	240+66.31	0.88	428.12	428.14
℄ Pier 1	240+73.45	0.88	428.13	428.15
d	240+83.45	0.88	428.13	428.18
e	240+93.45	0.88	428.13	428.21
f	241+03.45	0.88	428.13	428.21
g	241+13.45	0.88	428.13	428.20
h	241+23.45	0.88	428.13	428.18
i	241+33.45	0.88	428.12	428.14
℄ Pier 2	241+34.45	0.88	428.12	428.14
j	241+44.45	0.88	428.11	428.12
k	241+54.45	0.88	428.09	428.12
l	241+64.45	0.88	428.08	428.10
℄ Brg. E. Abut.	241+71.59	0.88	428.06	428.08
E. end of slab	241+72.34	0.88	428.06	428.08

BEAM 5

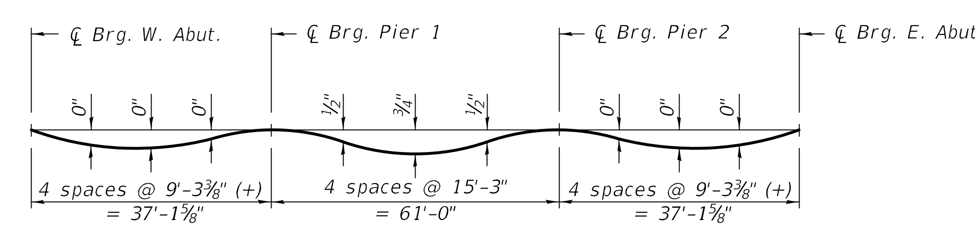
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+31.69	8.63	427.97	427.99
℄ Brg. W. Abut.	240+32.44	8.63	427.97	427.99
a	240+42.44	8.63	427.99	428.01
b	240+52.44	8.63	428.00	428.02
c	240+62.44	8.63	428.01	428.02
℄ Pier 1	240+69.58	8.63	428.01	428.03
d	240+79.58	8.63	428.02	428.06
e	240+89.58	8.63	428.02	428.10
f	240+99.58	8.63	428.02	428.10
g	241+09.58	8.63	428.02	428.09
h	241+19.58	8.63	428.01	428.06
i	241+29.58	8.63	428.00	428.02
℄ Pier 2	241+30.58	8.63	428.00	428.02
j	241+40.58	8.63	427.99	428.01
k	241+50.58	8.63	427.98	428.00
l	241+60.58	8.63	427.97	427.99
℄ Brg. E. Abut.	241+67.72	8.63	427.96	427.98
E. end of slab	241+68.46	8.63	427.95	427.97

BEAM 6

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+27.82	16.38	427.83	427.85
℄ Brg. W. Abut.	240+28.57	16.38	427.83	427.85
a	240+38.57	16.38	427.84	427.87
b	240+48.57	16.38	427.85	427.88
c	240+58.57	16.38	427.86	427.88
℄ Pier 1	240+65.71	16.38	427.87	427.89
d	240+75.71	16.38	427.88	427.92
e	240+85.71	16.38	427.88	427.96
f	240+95.71	16.38	427.88	427.96
g	241+05.71	16.38	427.88	427.95
h	241+15.71	16.38	427.88	427.93
i	241+25.71	16.38	427.87	427.89
℄ Pier 2	241+26.71	16.38	427.87	427.89
j	241+36.71	16.38	427.86	427.88
k	241+46.71	16.38	427.85	427.87
l	241+56.71	16.38	427.83	427.86
℄ Brg. E. Abut.	241+63.85	16.38	427.82	427.84
E. end of slab	241+64.59	16.38	427.82	427.84

PROFILE GRADE WBL

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	240+36.01	0.00	428.11	428.13
℄ Brg. W. Abut.	240+36.75	0.00	428.11	428.13
a	240+46.75	0.00	428.12	428.15
b	240+56.75	0.00	428.13	428.15
c	240+66.75	0.00	428.14	428.16
℄ Pier 1	240+73.89	0.00	428.14	428.16
d	240+83.89	0.00	428.15	428.19
e	240+93.89	0.00	428.15	428.23
f	241+03.89	0.00	428.15	428.23
g	241+13.89	0.00	428.14	428.21
h	241+23.89	0.00	428.14	428.19
i	241+33.89	0.00	428.13	428.15
℄ Pier 2	241+34.89	0.00	428.13	428.15
j	241+44.89	0.00	428.12	428.14
k	241+54.89	0.00	428.11	428.13
l	241+64.89	0.00	428.09	428.11
℄ Brg. E. Abut.	241+72.03	0.00	428.08	428.10
E. end of slab	241+72.77	0.00	428.08	428.10



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.

BEAM 7

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+92.21	-16.38	427.79	427.81
℄ Brg. W. Abut.	239+92.95	-16.38	427.79	427.81
a	240+02.95	-16.38	427.81	427.83
b	240+12.95	-16.38	427.83	427.85
c	240+22.95	-16.38	427.84	427.86
℄ Pier 1	240+30.09	-16.38	427.85	427.87
d	240+40.09	-16.38	427.87	427.91
e	240+50.09	-16.38	427.88	427.95
f	240+60.09	-16.38	427.88	427.97
g	240+70.09	-16.38	427.89	427.97
h	240+80.09	-16.38	427.89	427.94
i	240+90.09	-16.38	427.89	427.91
℄ Pier 2	240+91.09	-16.38	427.89	427.91
j	241+01.09	-16.38	427.89	427.91
k	241+11.09	-16.38	427.88	427.91
l	241+21.09	-16.38	427.88	427.90
℄ Brg. E. Abut.	241+28.23	-16.38	427.87	427.89
E. end of slab	241+28.98	-16.38	427.87	427.89

BEAM 8

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+88.34	-8.63	427.92	427.94
℄ Brg. W. Abut.	239+89.08	-8.63	427.92	427.94
a	239+99.08	-8.63	427.94	427.97
b	240+09.08	-8.63	427.96	427.98
c	240+19.08	-8.63	427.98	427.99
℄ Pier 1	240+26.22	-8.63	427.99	428.01
d	240+36.22	-8.63	428.00	428.05
e	240+46.22	-8.63	428.01	428.09
f	240+56.22	-8.63	428.02	428.11
g	240+66.22	-8.63	428.02	428.09
h	240+76.22	-8.63	428.03	428.08
i	240+86.22	-8.63	428.03	428.05
℄ Pier 2	240+87.22	-8.63	428.03	428.05
j	240+97.22	-8.63	428.03	428.05
k	241+07.22	-8.63	428.02	428.05
l	241+17.22	-8.63	428.02	428.04
℄ Brg. E. Abut.	241+24.36	-8.63	428.01	428.03
E. end of slab	241+25.11	-8.63	428.01	428.03

BEAM 9

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+84.46	-0.88	428.02	428.04
℄ Brg. W. Abut.	239+85.21	-0.88	428.03	428.05
a	239+95.21	-0.88	428.05	428.07
b	240+05.21	-0.88	428.07	428.09
c	240+15.21	-0.88	428.09	428.10
℄ Pier 1	240+22.35	-0.88	428.10	428.12
d	240+32.35	-0.88	428.11	428.16
e	240+42.35	-0.88	428.12	428.20
f	240+52.35	-0.88	428.13	428.22
g	240+62.35	-0.88	428.14	428.22
h	240+72.35	-0.88	428.14	428.19
i	240+82.35	-0.88	428.14	428.16
℄ Pier 2	240+83.35	-0.88	428.14	428.16
j	240+93.35	-0.88	428.14	428.16
k	241+03.35	-0.88	428.14	428.17
l	241+13.35	-0.88	428.14	428.16
℄ Brg. E. Abut.	241+20.49	-0.88	428.13	428.15
E. end of slab	241+21.23	-0.88	428.13	428.15

BEAM 10

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+80.59	6.88	427.92	427.94
℄ Brg. W. Abut.	239+81.33	6.88	427.93	427.95
a	239+91.33	6.88	427.95	427.97
b	240+01.33	6.88	427.97	427.99
c	240+11.33	6.88	427.99	428.01
℄ Pier 1	240+18.47	6.88	428.00	428.02
d	240+28.47	6.88	428.02	428.06
e	240+38.47	6.88	428.03	428.11
f	240+48.47	6.88	428.04	428.13
g	240+58.47	6.88	428.05	428.13
h	240+68.47	6.88	428.05	428.10
i	240+78.47	6.88	428.05	428.07
℄ Pier 2	240+79.47	6.88	428.05	428.07
j	240+89.47	6.88	428.05	428.07
k	240+99.47	6.88	428.05	428.08
l	241+09.47	6.88	428.05	428.07
℄ Brg. E. Abut.	241+16.61	6.88	428.04	428.06
E. end of slab	241+17.36	6.88	428.04	428.06

BEAM 11

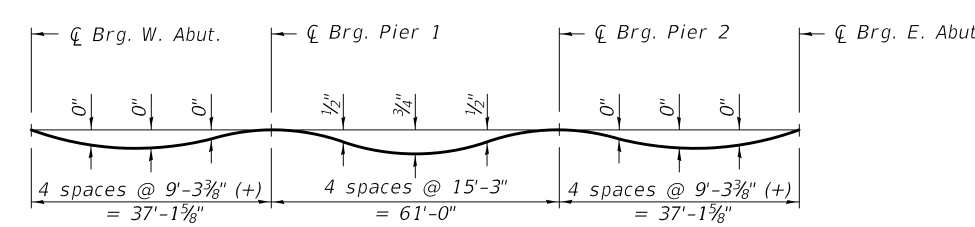
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+76.72	14.63	427.79	427.81
℄ Brg. W. Abut.	239+77.46	14.63	427.79	427.81
a	239+87.46	14.63	427.81	427.84
b	239+97.46	14.63	427.83	427.85
c	240+07.46	14.63	427.85	427.87
℄ Pier 1	240+14.60	14.63	427.87	427.89
d	240+24.60	14.63	427.88	427.93
e	240+34.60	14.63	427.89	427.97
f	240+44.60	14.63	427.91	428.00
g	240+54.60	14.63	427.91	427.99
h	240+64.60	14.63	427.92	427.97
i	240+74.60	14.63	427.92	427.94
℄ Pier 2	240+75.60	14.63	427.92	427.94
j	240+85.60	14.63	427.93	427.94
k	240+95.60	14.63	427.92	427.95
l	241+05.60	14.63	427.92	427.94
℄ Brg. E. Abut.	241+12.74	14.63	427.92	427.94
E. end of slab	241+13.49	14.63	427.92	427.94

BEAM 12

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+72.84	22.38	427.62	427.64
℄ Brg. W. Abut.	239+73.59	22.38	427.62	427.64
a	239+83.59	22.38	427.65	427.67
b	239+93.59	22.38	427.67	427.69
c	240+03.59	22.38	427.69	427.71
℄ Pier 1	240+10.73	22.38	427.70	427.72
d	240+20.73	22.38	427.72	427.77
e	240+30.73	22.38	427.73	427.81
f	240+40.73	22.38	427.75	427.84
g	240+50.73	22.38	427.76	427.83
h	240+60.73	22.38	427.76	427.81
i	240+70.73	22.38	427.77	427.79
℄ Pier 2	240+71.73	22.38	427.77	427.79
j	240+81.73	22.38	427.77	427.79
k	240+91.73	22.38	427.77	427.79
l	241+01.73	22.38	427.77	427.79
℄ Brg. E. Abut.	241+08.87	22.38	427.76	427.78
E. end of slab	241+09.61	22.38	427.76	427.78

PROFILE GRADE EBL

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
W. end of slab	239+84.03	0.00	428.04	428.06
℄ Brg. W. Abut.	239+84.77	0.00	428.04	428.06
a	239+94.77	0.00	428.06	428.09
b	240+04.77	0.00	428.08	428.10
c	240+14.77	0.00	428.10	428.12
℄ Pier 1	240+21.91	0.00	428.11	428.13
d	240+31.91	0.00	428.12	428.17
e	240+41.91	0.00	428.14	428.21
f	240+51.91	0.00	428.14	428.23
g	240+61.91	0.00	428.15	428.23
h	240+71.91	0.00	428.16	428.21
i	240+81.91	0.00	428.16	428.18
℄ Pier 2	240+82.91	0.00	428.16	428.18
j	240+92.91	0.00	428.16	428.18
k	241+02.91	0.00	428.15	428.18
l	241+12.91	0.00	428.15	428.17
℄ Brg. E. Abut.	241+20.05	0.00	428.14	428.16
E. end of slab	241+20.79	0.00	428.14	428.16



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.

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ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0:2 ':' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:17 PM	CHECKED - ELH/RTM 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS (EB)
STRUCTURE NO. 064-0045 (EB)

SHEET NO. 5 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	75
		CONTRACT NO. 78502		
	ILLINOIS	FED. AID PROJECT		

WEST APPROACH SLAB (WB)

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	240+18.01	-24.00	427.66	427.68
A1	240+28.01	-24.00	427.67	427.69
A2	240+38.01	-24.00	427.69	427.71
E. end of W. Appr.	240+48.01	-24.00	427.70	427.72

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	240+12.01	-12.00	427.89	427.91
A1	240+22.01	-12.00	427.90	427.92
A2	240+32.01	-12.00	427.92	427.94
E. end of W. Appr.	240+42.01	-12.00	427.93	427.95

℄ WBL & P.G.

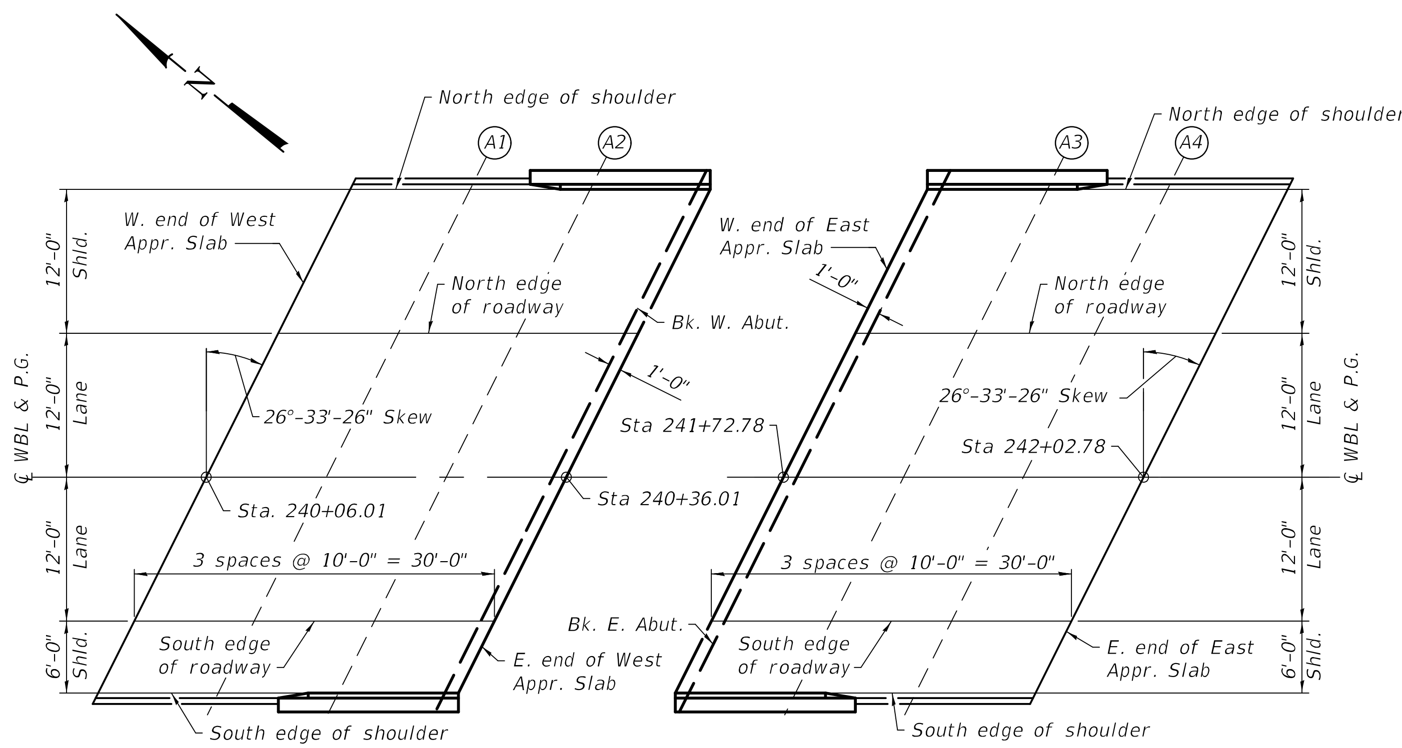
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	240+06.01	0.00	428.05	428.07
A1	240+16.01	0.00	428.07	428.09
A2	240+26.01	0.00	428.09	428.11
E. end of W. Appr.	240+36.01	0.00	428.11	428.13

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	240+00.01	12.00	427.86	427.88
A1	240+10.01	12.00	427.88	427.90
A2	240+20.01	12.00	427.90	427.92
E. end of W. Appr.	240+30.01	12.00	427.92	427.94

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+97.01	18.00	427.73	427.75
A1	240+07.01	18.00	427.76	427.78
A2	240+17.01	18.00	427.78	427.80
E. end of W. Appr.	240+27.01	18.00	427.79	427.81



W. APPROACH SLAB   E. APPROACH SLAB

PLAN

EAST APPROACH SLAB (WB)

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+84.78	-24.00	427.63	427.65
A3	241+94.78	-24.00	427.61	427.63
A4	242+04.78	-24.00	427.58	427.60
E. end of E. Appr.	242+14.78	-24.00	427.56	427.58

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+78.78	-12.00	427.88	427.90
A3	241+88.78	-12.00	427.86	427.88
A4	241+98.78	-12.00	427.84	427.86
E. end of E. Appr.	242+08.78	-12.00	427.81	427.83

℄ WBL & P.G.

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+72.78	0.00	428.08	428.10
A3	241+82.78	0.00	428.06	428.08
A4	241+92.78	0.00	428.03	428.05
E. end of E. Appr.	242+02.78	0.00	428.01	428.03

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+66.78	12.00	427.91	427.93
A3	241+76.78	12.00	427.89	427.91
A4	241+86.78	12.00	427.87	427.89
E. end of E. Appr.	241+96.78	12.00	427.84	427.86

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+63.78	18.00	427.79	427.81
A3	241+73.78	18.00	427.77	427.79
A4	241+83.78	18.00	427.75	427.77
E. end of E. Appr.	241+93.78	18.00	427.73	427.75

WEST APPROACH SLAB (EB)

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+63.03	-18.00	427.68	427.70
A1	239+73.03	-18.00	427.71	427.73
A2	239+83.03	-18.00	427.73	427.75
E. end of W. Appr.	239+93.03	-18.00	427.76	427.78

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+60.03	-12.00	427.79	427.81
A1	239+70.03	-12.00	427.82	427.84
A2	239+80.03	-12.00	427.85	427.87
E. end of W. Appr.	239+90.03	-12.00	427.87	427.89

℄ EBL & P.G.

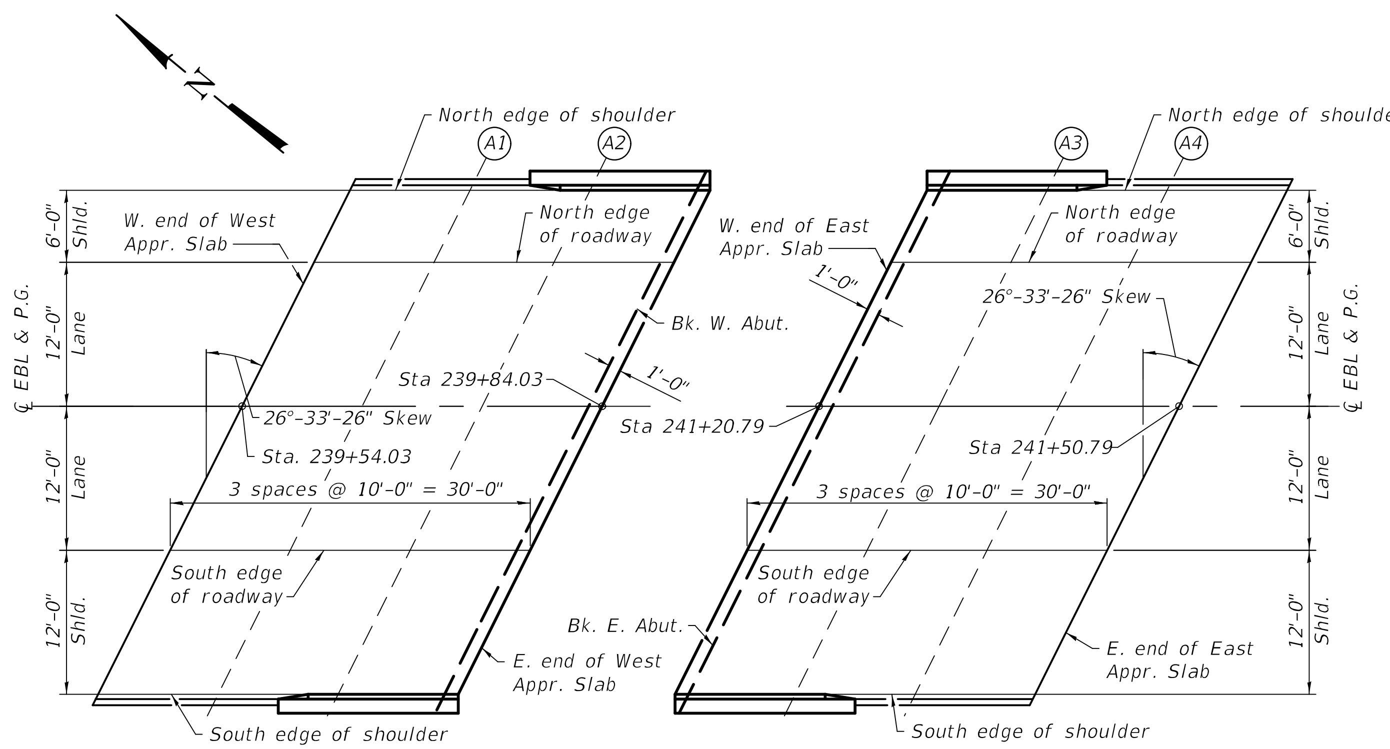
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+54.03	0.00	427.95	427.97
A1	239+64.03	0.00	427.98	428.00
A2	239+74.03	0.00	428.01	428.03
E. end of W. Appr.	239+84.03	0.00	428.04	428.06

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+48.03	12.00	427.75	427.77
A1	239+58.03	12.00	427.79	427.81
A2	239+68.03	12.00	427.81	427.83
E. end of W. Appr.	239+78.03	12.00	427.84	427.86

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of W. Appr.	239+42.03	24.00	427.50	427.52
A1	239+52.03	24.00	427.53	427.55
A2	239+62.03	24.00	427.56	427.58
E. end of W. Appr.	239+72.03	24.00	427.59	427.61



W. APPROACH SLAB

E. APPROACH SLAB

PLAN

EAST APPROACH SLAB (EB)

NORTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+29.79	-18.00	427.84	427.86
A3	241+39.79	-18.00	427.82	427.84
A4	241+49.79	-18.00	427.81	427.83
E. end of E. Appr.	241+59.79	-18.00	427.79	427.81

NORTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+26.79	-12.00	427.96	427.98
A3	241+36.79	-12.00	427.95	427.97
A4	241+46.79	-12.00	427.93	427.95
E. end of E. Appr.	241+56.79	-12.00	427.92	427.94

℄ EBL & P.G.

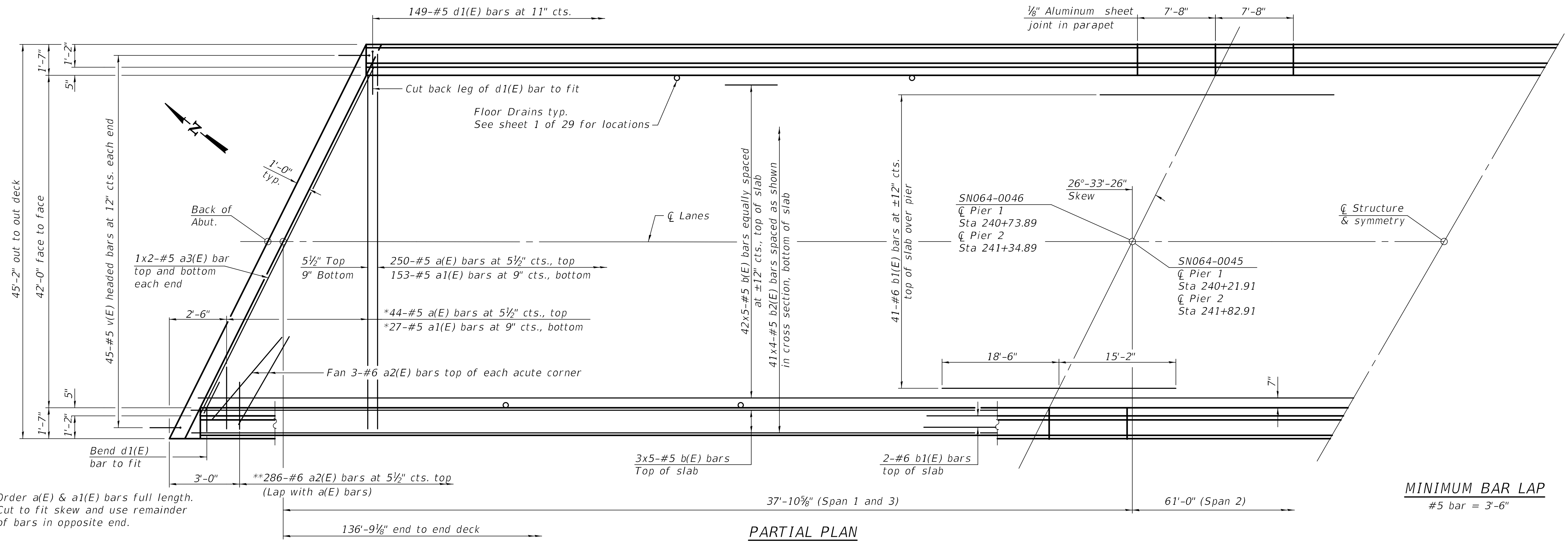
Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+20.79	0.00	428.14	428.16
A3	241+30.79	0.00	428.13	428.15
A4	241+40.79	0.00	428.12	428.14
E. end of E. Appr.	241+50.79	0.00	428.11	428.13

SOUTH EDGE OF ROADWAY

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+14.79	12.00	427.97	427.99
A3	241+24.79	12.00	427.96	427.98
A4	241+34.79	12.00	427.95	427.97
E. end of E. Appr.	241+44.79	12.00	427.94	427.96

SOUTH EDGE OF SHOULDER

Location	Station	Offset (ft.)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
W. end of E. Appr.	241+08.79	24.00	427.73	427.75
A3	241+18.79	24.00	427.73	427.75
A4	241+28.79	24.00	427.72	427.74
E. end of E. Appr.	241+38.79	24.00	427.71	427.73



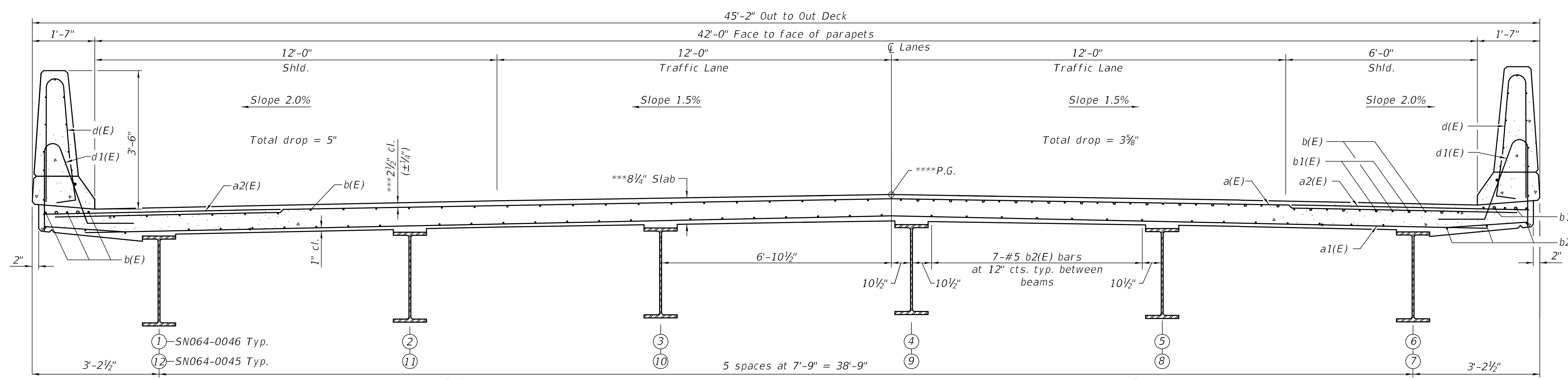
*Order a(E) & a1(E) bars full length. Cut to fit skew and use remainder of bars in opposite end.

**Field cut to fit as required at end of deck

PARTIAL PLAN

MINIMUM BAR LAP

#5 bar = 3'-6"



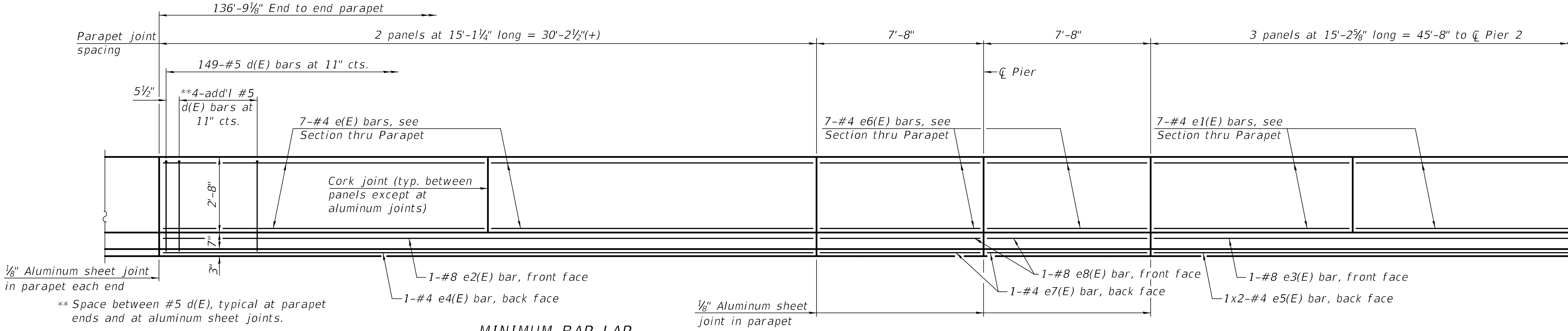
CROSS SECTION

(SN 064-0046 looking east)
(SN 064-0045 looking west)

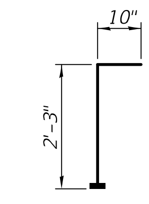
***Prior to grinding
****After grinding

Notes:
See sheet 9 of 29 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

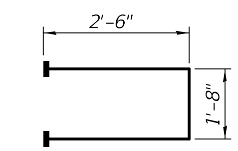
ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)	F.A.I. RTE. 24	SECTION (64-3HB)BR-1	COUNTY MASSAC	TOTAL SHEETS 158	SHEET NO. 78
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -					CONTRACT NO. 78502		
	PLOT SCALE = 0.2 '/ in.	DRAWN - KAH 06/18	REVISED -							
	PLOT DATE = 10/4/2018 1:03:19 PM	CHECKED - ELH/RTM 06/18	REVISED -		SHEET NO. 8 OF 29 SHEETS		ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF PARAPET

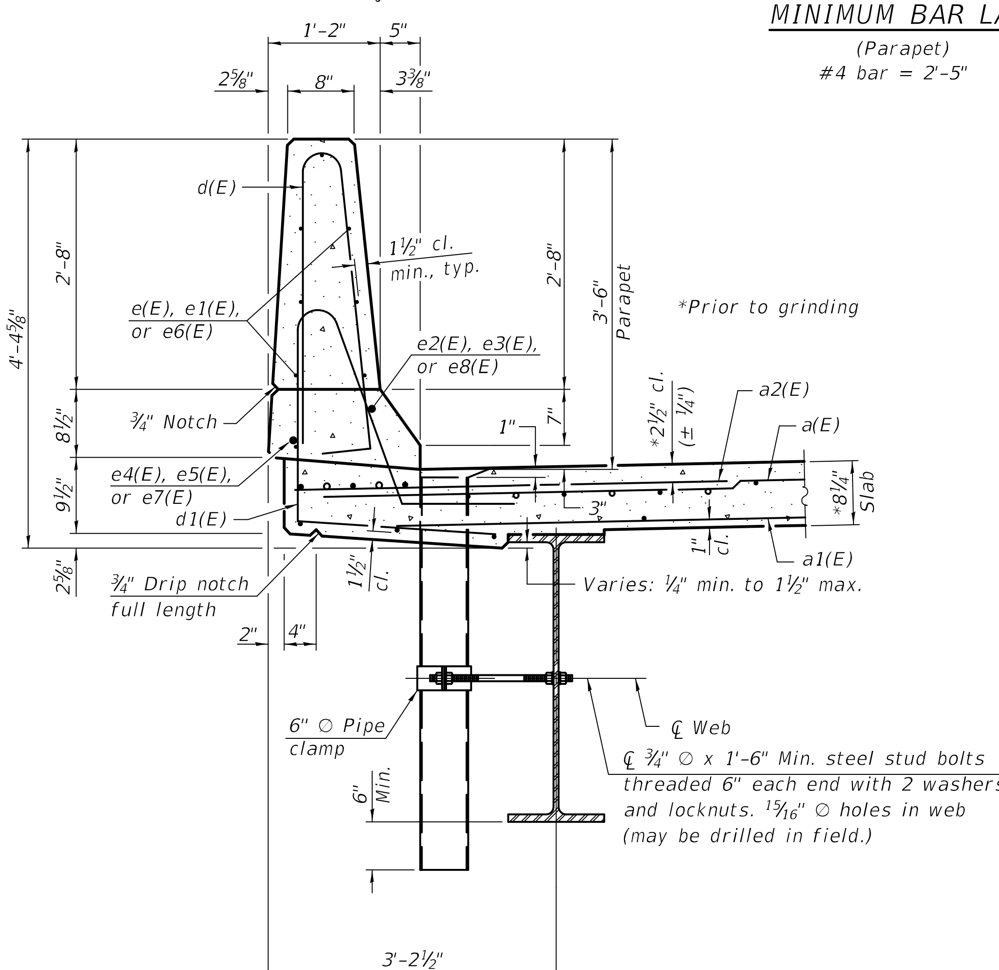


BAR v(E)
(Headed)

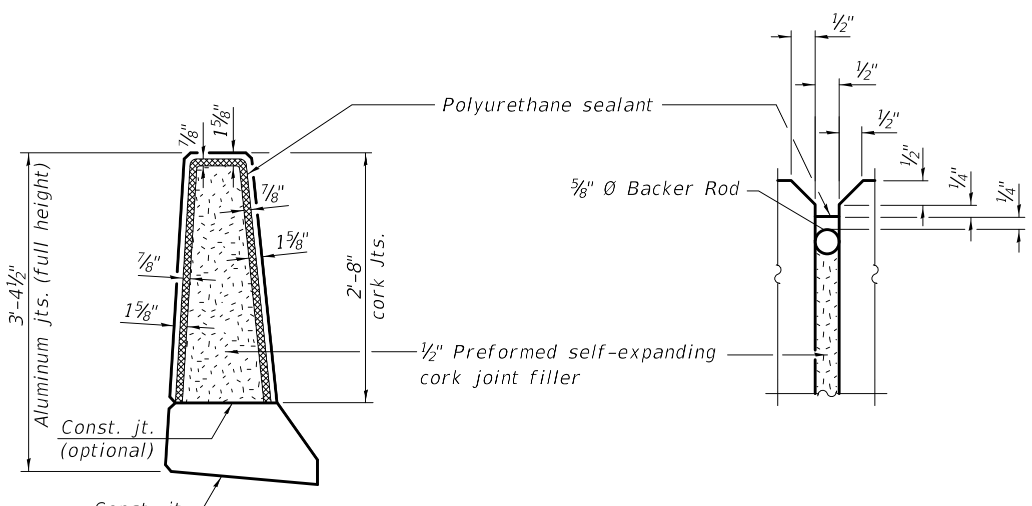


BAR s(E)
(Headed)

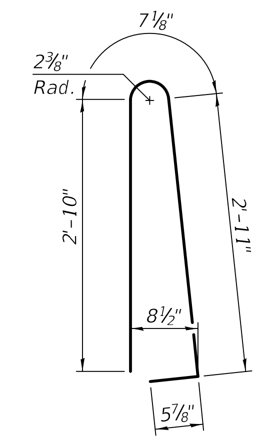
MINIMUM BAR LAP
(Parapet)
#4 bar = 2'-5"



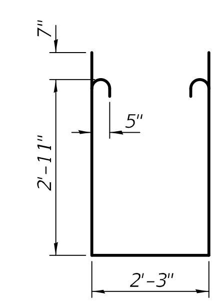
SECTION THRU PARAPET



PARAPET JOINT DETAILS



BAR d(E)



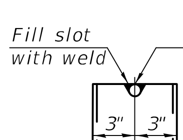
BAR s1(E)

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.

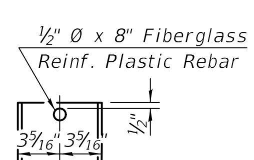
SUPERSTRUCTURE
BILL OF MATERIAL
(SN 064-0045 and SN 064-0046)

Bar	No.	Size	Length	Shape
a(E)	588	#5	44'-6"	
a1(E)	360	#5	43'-0"	
a2(E)	1156	#6	6'-6"	
a3(E)	16	#5	26'-10"	
b(E)	480	#5	30'-1"	
b1(E)	180	#6	33'-8"	
b2(E)	328	#5	36'-9"	
d(E)	724	#5	6'-10"	
d1(E)	596	#5	7'-11"	
e(E)	112	#4	14'-9"	
e1(E)	84	#4	14'-10"	
e2(E)	8	#8	29'-10"	
e3(E)	4	#8	45'-4"	
e4(E)	8	#4	29'-10"	
e5(E)	8	#4	24'-0"	
e6(E)	112	#4	7'-4"	
e7(E)	16	#4	7'-4"	
e8(E)	16	#8	7'-4"	
m(E)	24	#6	27'-10"	
m1(E)	60	#6	8'-3"	
m2(E)	24	#6	3'-0"	
m3(E)	48	#5	4'-0"	
s(E)	172	#5	6'-8"	
s1(E)	192	#5	9'-3"	
v(E)	180	#5	3'-1"	
Reinforcement Bars, Epoxy Coated			Lbs.	111,960
Concrete Superstructure			Cu. Yds.	458.4

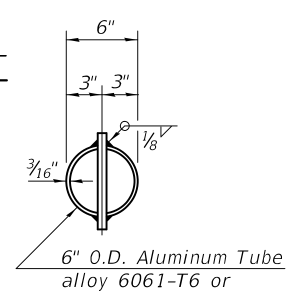
Bars indicated thus 1 x 2-#8 etc. indicates 1 line of bars with 2 lengths per line.



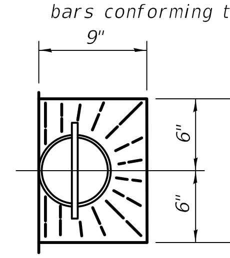
ALUMINUM TUBE



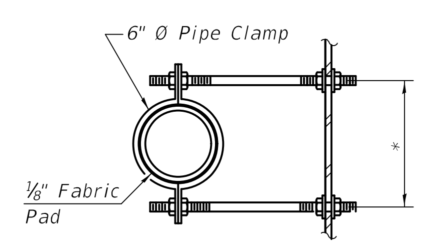
FIBERGLASS PIPE



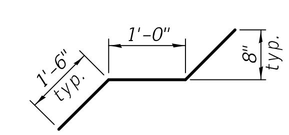
TOP PLAN
(Showing Aluminum Tube)



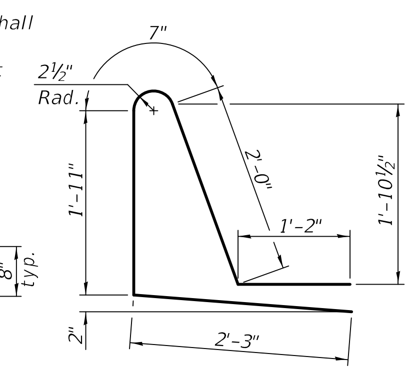
TOP PLAN



SECTION A-A
*Dimension as required by Pipe Clamp



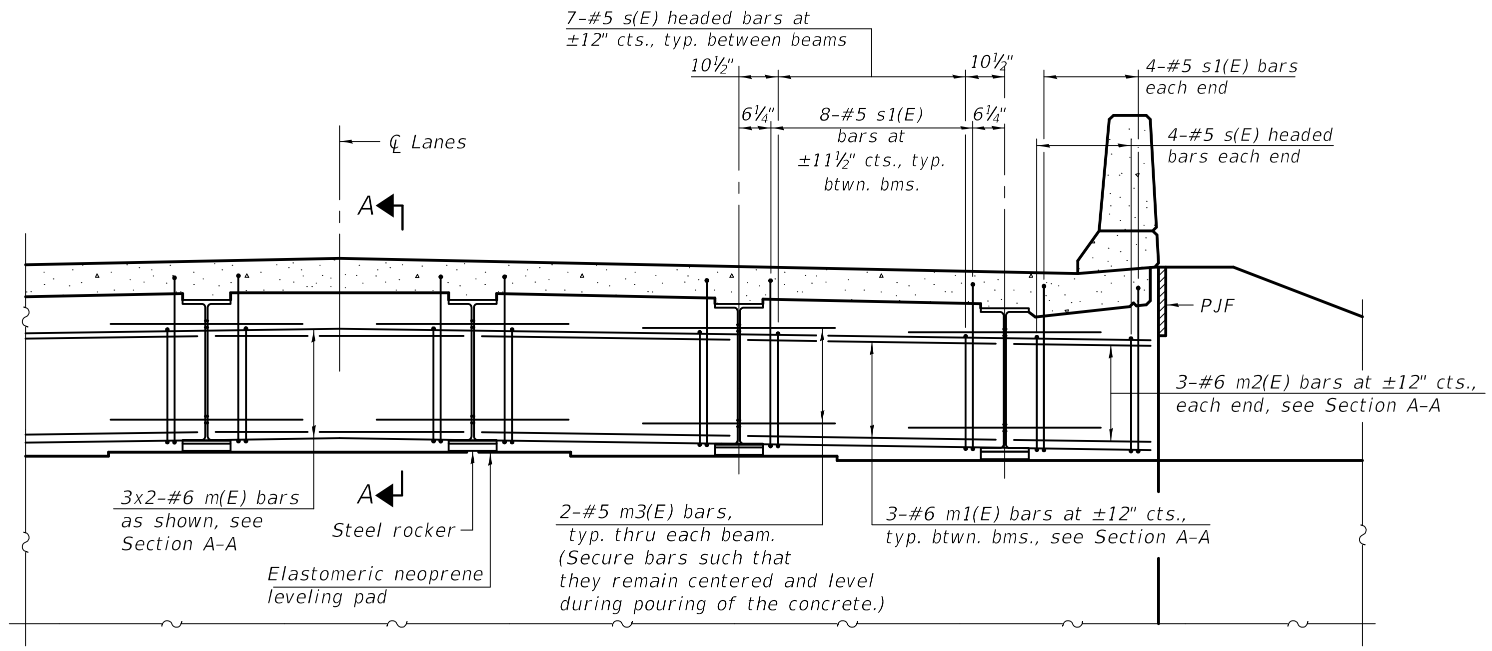
BAR m3(E)



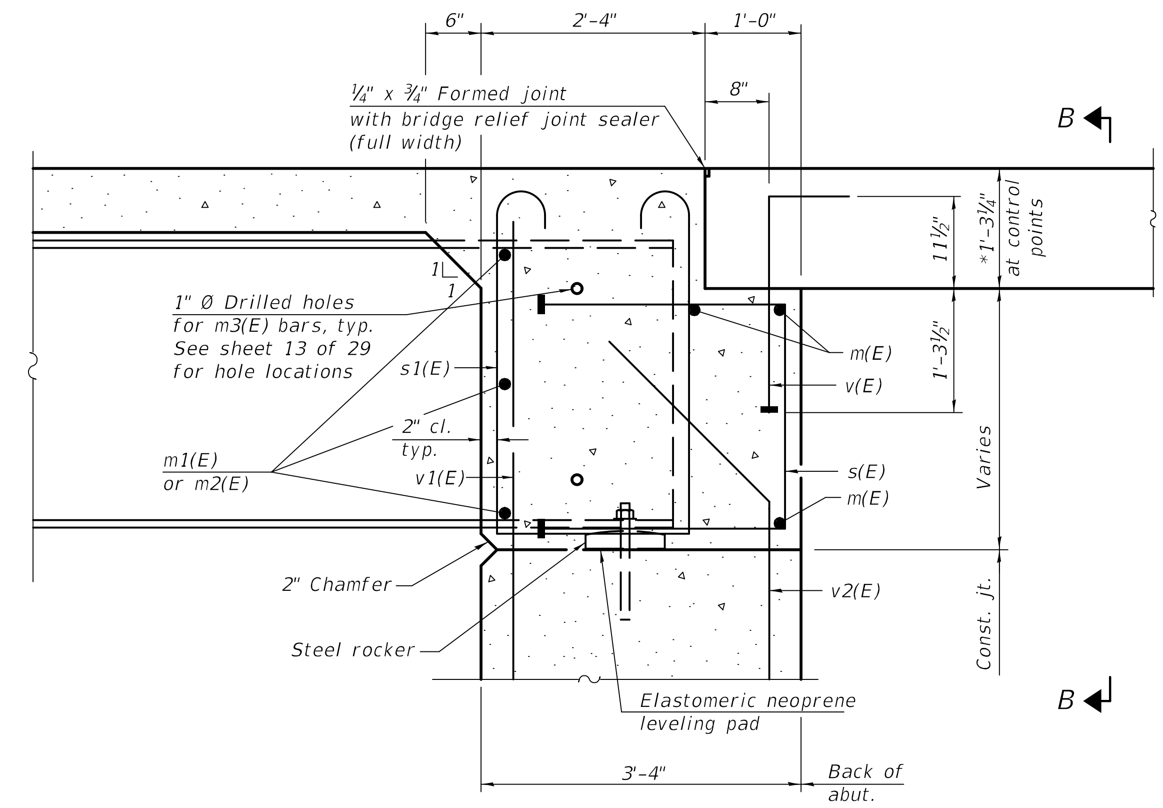
BAR d1(E)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		
	PLOT SCALE = 0:2 '/' / in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:20 PM	CHECKED - ELH/RTM 09/18	REVISED -		SHEET NO. 9 OF 29 SHEETS

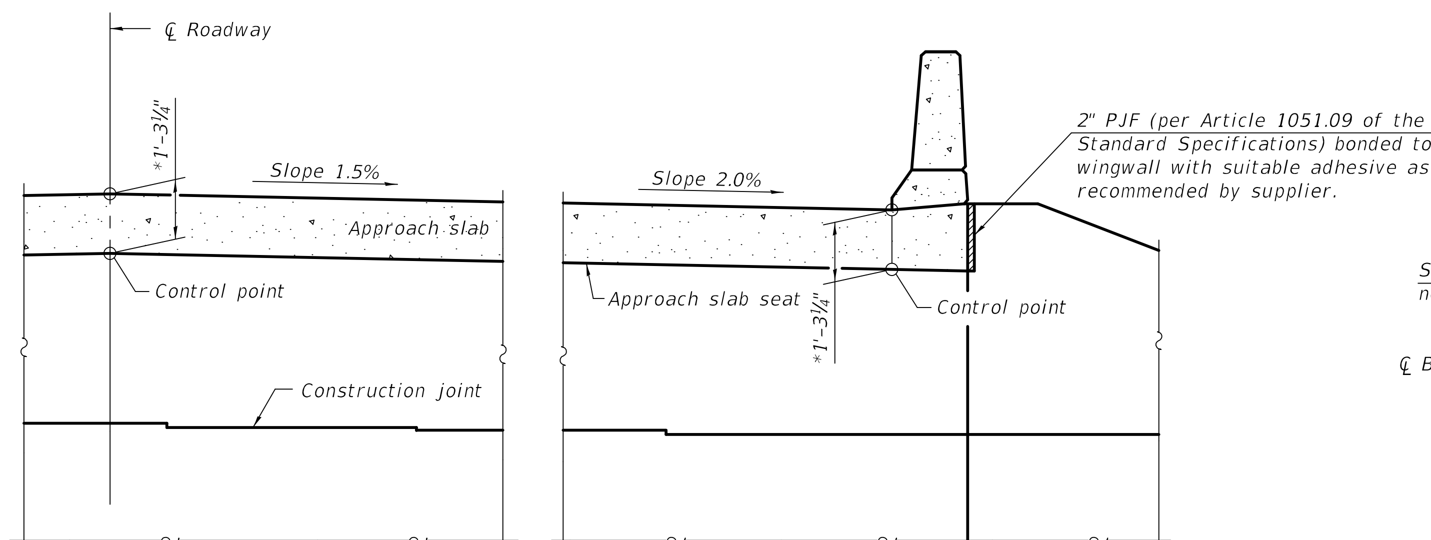
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	79
CONTRACT NO. 78502				
ILLINOIS FED. AID PROJECT				



DIAPHRAGM AT ABUTMENT

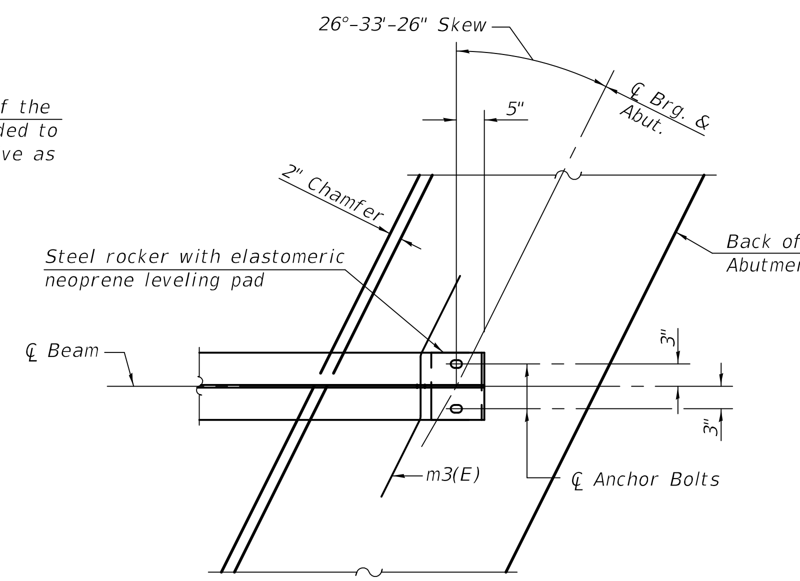


SECTION A-A
(at Rt. ∠'s)



SECTION B-B

*Prior to grinding



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:

Reinforcement bars in diaphragm are billed with superstructure on sheet 9 of 29.

Concrete in diaphragm is included with Concrete Superstructure on sheet 9 of 29.

For details of bars s(E), s1(E), m3(E), and v(E) see sheet 9 of 29.

The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the control points shown.

For bearing details see sheet 15 of 29.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

The v1(E) and v2(E) bars are included with the abutment drawings on sheets 16, 17, 18, and 19 of 29.

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:21 PM	CHECKED - ELH/RTM 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

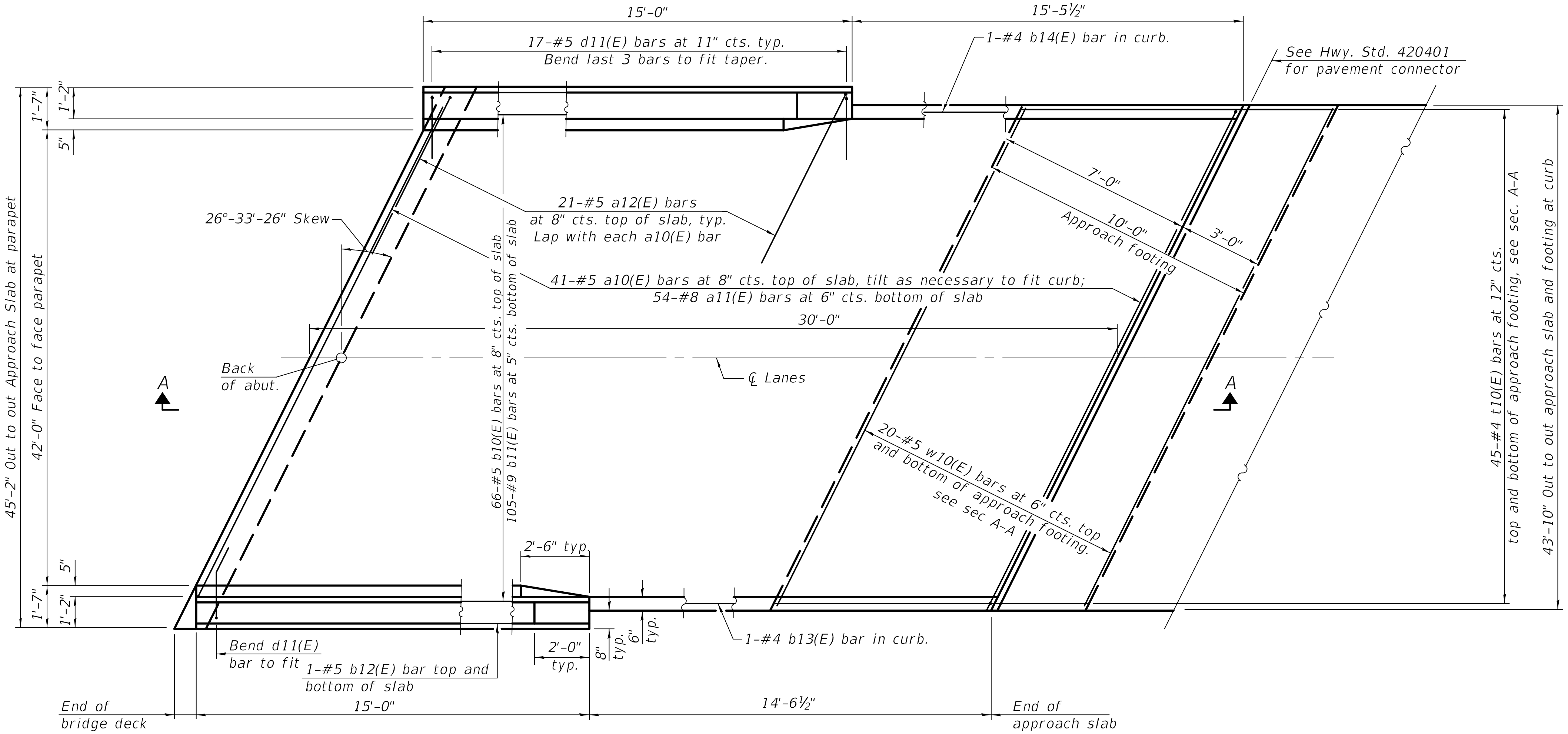
DIAPHRAGM DETAILS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)

SHEET NO. 10 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	80

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT



PLAN

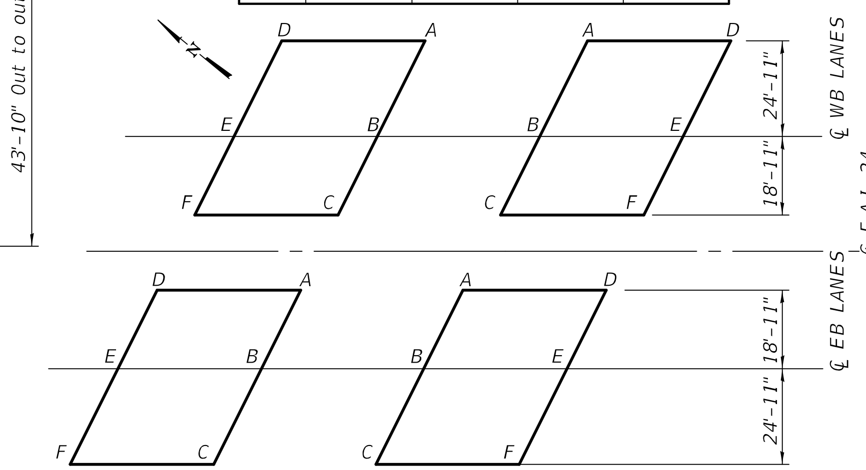
See sheet 12 of 29 for Section A-A, bill of material and additional details

WESTBOUND (WB) TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

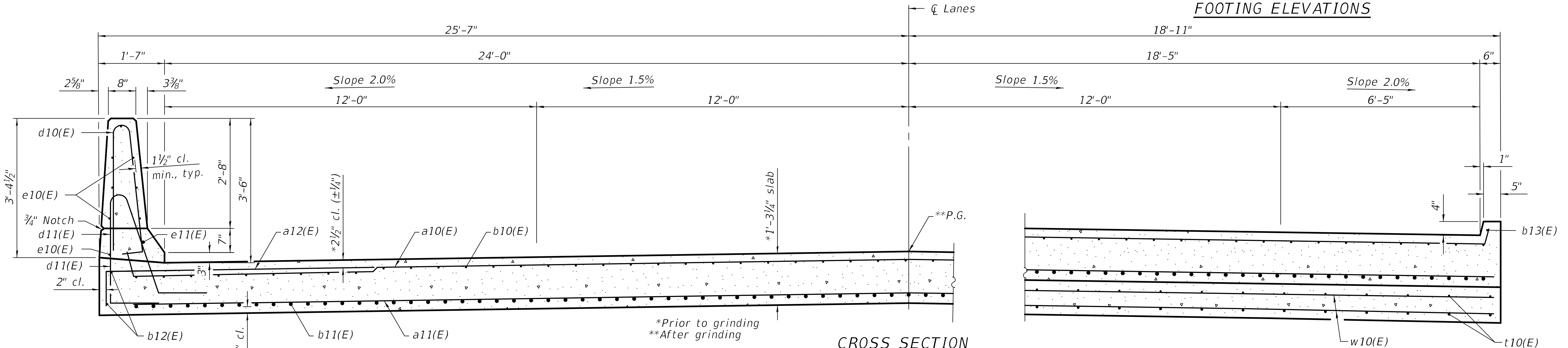
	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A	426.40	425.57	426.31	425.48
B	426.82	425.99	426.78	425.95
C	426.48	425.65	426.48	425.65
D	426.38	425.55	426.28	425.45
E	426.80	425.97	426.75	425.92
F	426.45	425.62	426.45	425.62

EASTBOUND (EB) TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

	West Approach		East Approach	
Point	Top	Bottom	Top	Bottom
A	426.43	425.60	426.54	425.71
B	426.73	425.90	426.87	426.04
C	426.25	425.42	426.44	425.61
D	426.40	425.56	426.52	425.69
E	426.69	425.86	426.85	426.02
F	426.21	425.38	426.43	425.60



LEGEND FOR APPROACH FOOTING ELEVATIONS



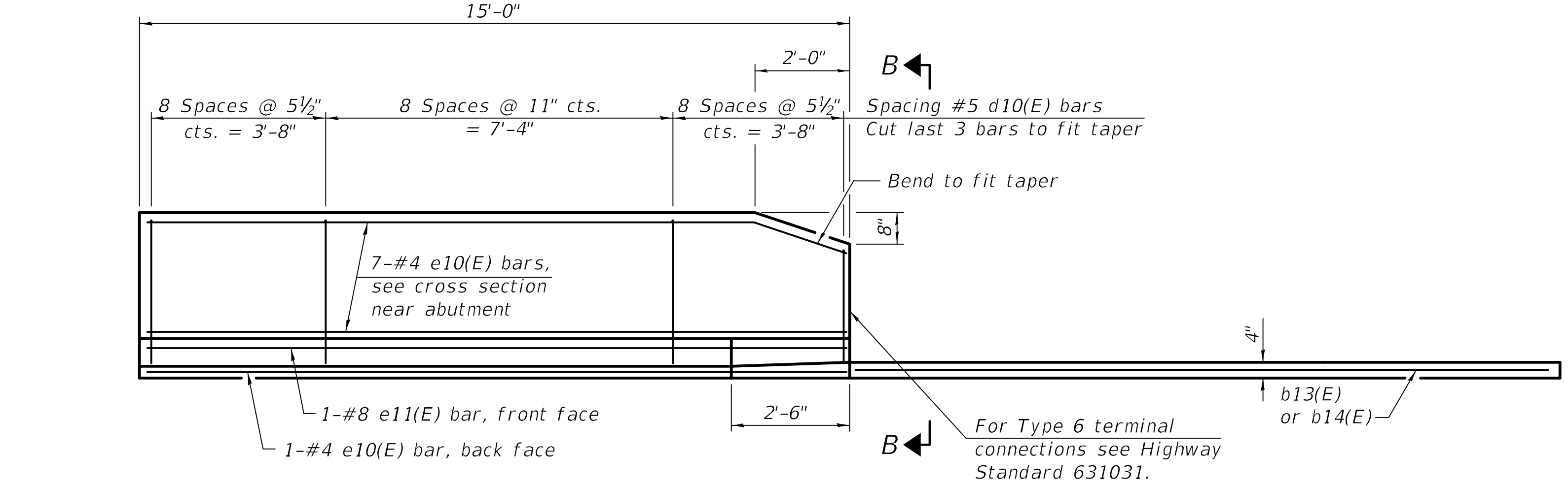
CROSS SECTION

(Westbound Looking East)
(Eastbound Looking West)

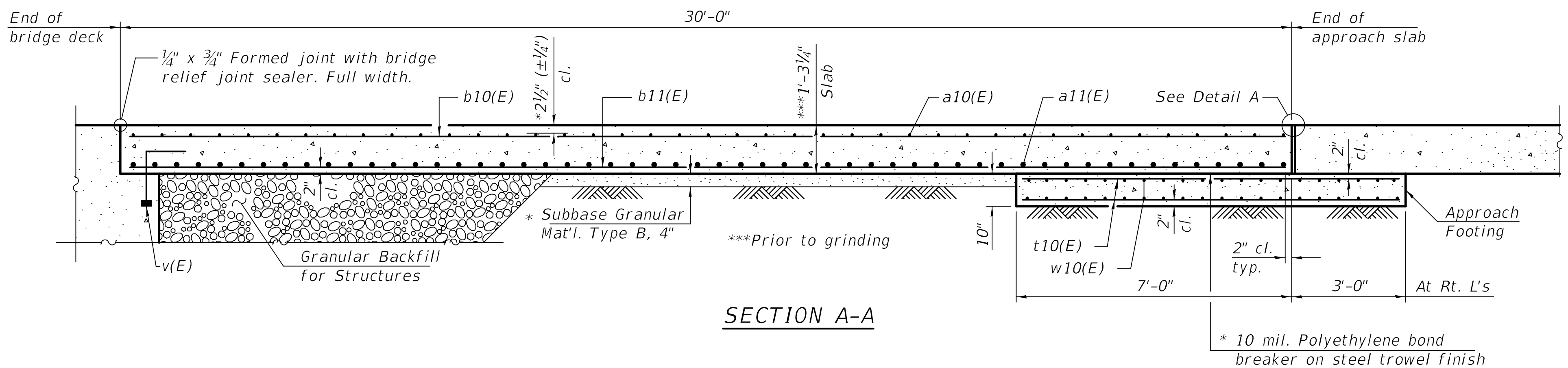
(Sheet 1 of 2)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:22 PM	CHECKED - ELH/RTM 09/18	REVISED -		SHEET NO. 11 OF 29 SHEETS

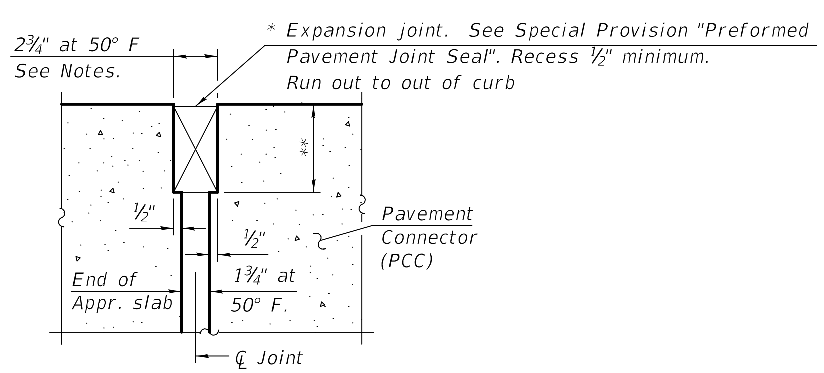
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	81
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET AND CURB



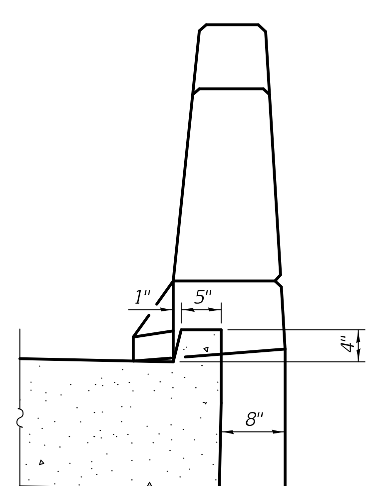
SECTION A-A



DETAIL A
(At Rt. L's)

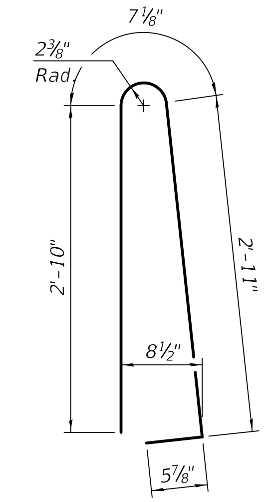
* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

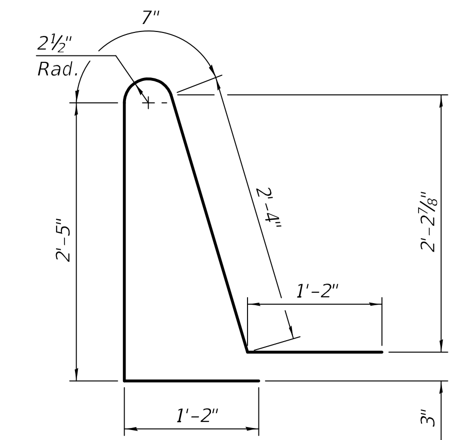


VIEW B-B

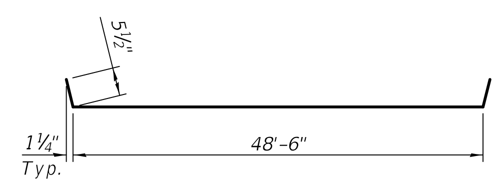
Notes:
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
Parapet concrete shall be paid for as Concrete Superstructure.
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
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 29.



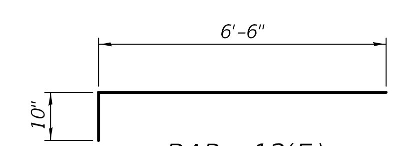
BAR d10(E)



BAR d11(E)



BAR a10(E)



BAR a12(E)

WESTBOUND (WB)
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	82	#5	49'-5"	
a11(E)	108	#8	48'-8"	
a12(E)	84	#5	7'-4"	
b10(E)	132	#5	29'-8"	
b11(E)	210	#9	29'-8"	
b12(E)	8	#5	14'-8"	
b13(E)	2	#4	14'-2"	
b14(E)	2	#4	15'-1"	
d10(E)	100	#5	6'-10"	
d11(E)	68	#5	7'-8"	
e10(E)	32	#4	14'-8"	
e11(E)	4	#8	14'-8"	
t10(E)	180	#4	10'-10"	
w10(E)	80	#5	48'-8"	
Concrete Superstructure		Cu. Yd.	7.7	
Concrete Superstructure (Approach Slab)		Cu. Yd.	126.3	
Concrete Structures		Cu. Yd.	30.3	
Reinforcement Bars, Epoxy Coated		Pound	51420	

EASTBOUND (EB)
TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	82	#5	49'-5"	
a11(E)	108	#8	48'-8"	
a12(E)	84	#5	7'-4"	
b10(E)	132	#5	29'-8"	
b11(E)	210	#9	29'-8"	
b12(E)	8	#5	14'-8"	
b13(E)	2	#4	14'-2"	
b14(E)	2	#4	15'-1"	
d10(E)	100	#5	6'-10"	
d11(E)	68	#5	7'-8"	
e10(E)	32	#4	14'-8"	
e11(E)	4	#8	14'-8"	
t10(E)	180	#4	10'-10"	
w10(E)	80	#5	48'-8"	
Concrete Superstructure		Cu. Yd.	7.7	
Concrete Superstructure (Approach Slab)		Cu. Yd.	126.3	
Concrete Structures		Cu. Yd.	30.3	
Reinforcement Bars, Epoxy Coated		Pound	51420	

(Sheet 2 of 2)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	BRIDGE APPROACH SLAB DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:22 PM	CHECKED - ELH/RTM 09/18	REVISED -		SHEET NO. 12 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	82
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			

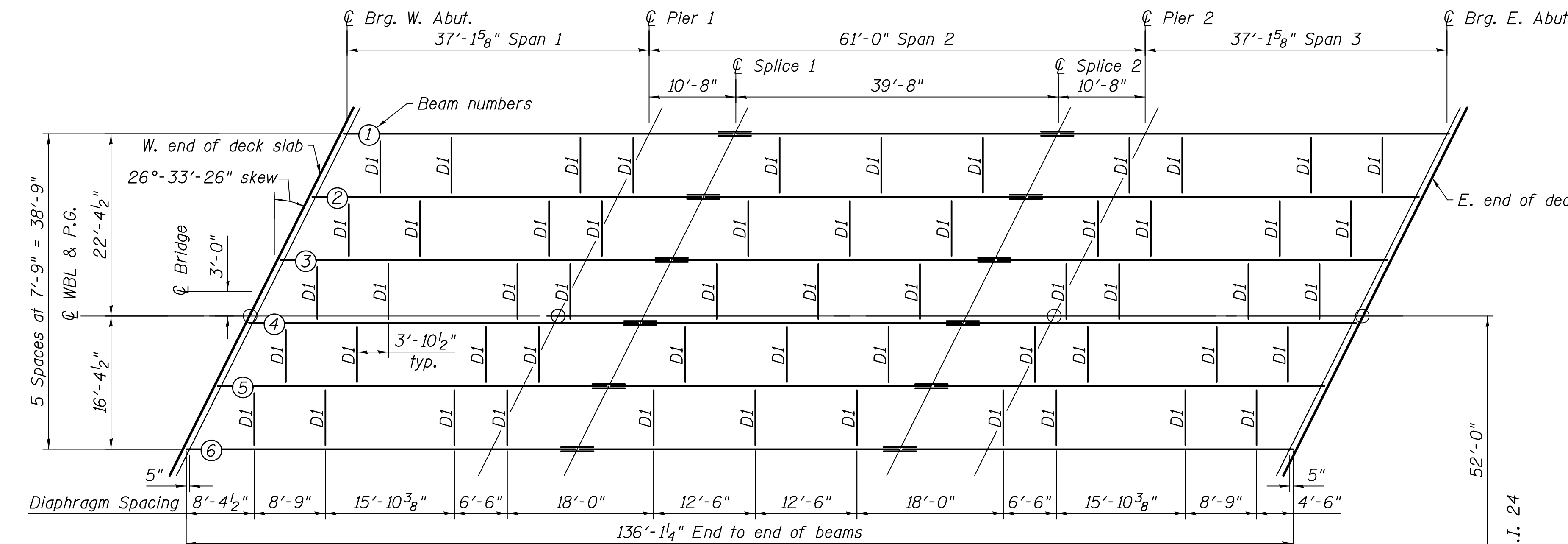
Notes:
See sheet 14 of 29 for additional steel details.
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Load carrying components designated (CVN) denotes Charpy-V-Notch Impact Energy Requirements, Zone 2.

TOP OF BEAM ELEVATIONS (WB)

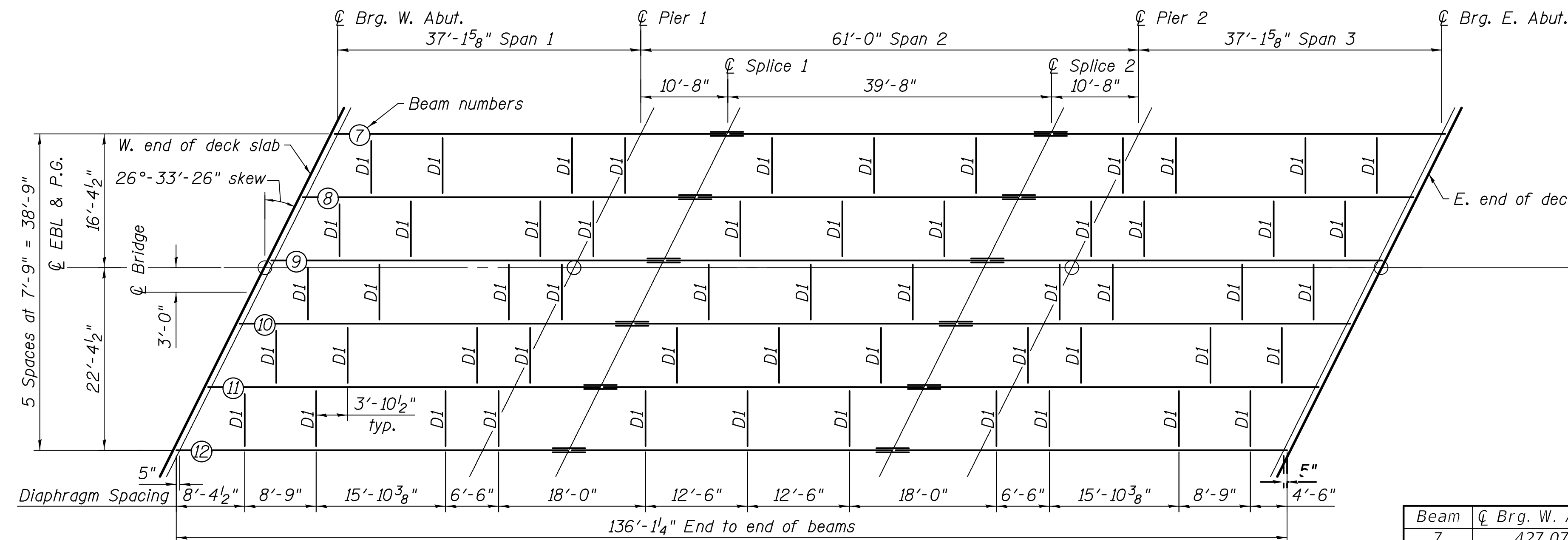
(For fabrication only)

Beam	℄ Brg. W. Abut.	℄ Pier 1	℄ Splice 1	℄ Splice 2	℄ Pier 2	℄ Brg. E. Abut.
1	427.02	427.01	427.01	426.99	426.98	426.95
2	427.17	427.17	427.17	427.15	427.15	427.11
3	427.29	427.29	427.29	427.28	427.27	427.25
4	427.37	427.38	427.38	427.38	427.37	427.34
5	427.25	427.27	427.27	427.26	427.25	427.23
6	427.11	427.13	427.13	427.12	427.12	427.10

Notes:
Elevations shown do not include deflection and are intended only for use in fabrication of steel beams.
Elevations at splice locations are top of flange (not splice plate).



PLAN - WBL



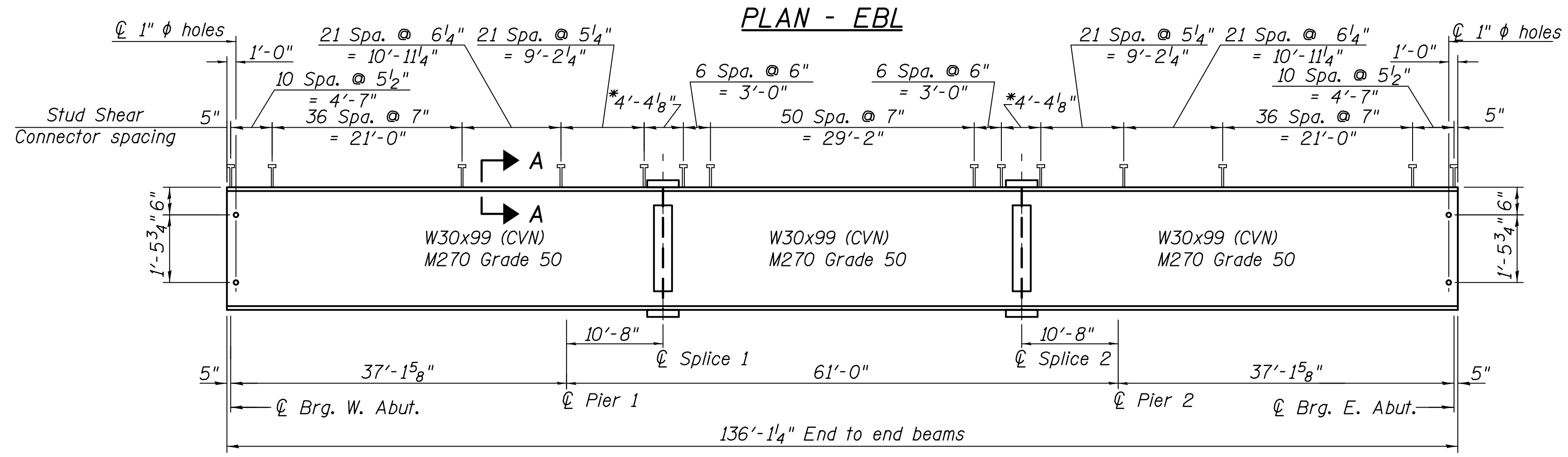
PLAN - EBL

TOP OF BEAM ELEVATIONS (EB)

(For fabrication only)

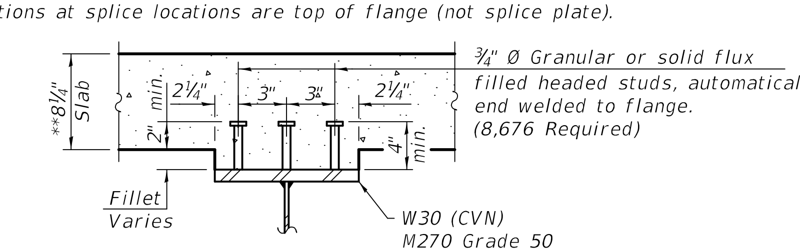
Beam	℄ Brg. W. Abut.	℄ Pier 1	℄ Splice 1	℄ Splice 2	℄ Pier 2	℄ Brg. E. Abut.
7	427.07	427.11	427.12	427.14	427.14	427.15
8	427.20	427.25	427.26	427.28	427.28	427.29
9	427.30	427.35	427.36	427.40	427.40	427.41
10	427.21	427.26	427.27	427.30	427.30	427.32
11	427.08	427.13	427.14	427.17	427.17	427.19
12	426.90	426.95	426.97	427.01	427.02	427.04

Notes:
Elevations shown do not include deflection and are intended only for use in fabrication of steel beams.
Elevations at splice locations are top of flange (not splice plate).



BEAM ELEVATION

* Omit shear connectors over splices



SECTION A-A

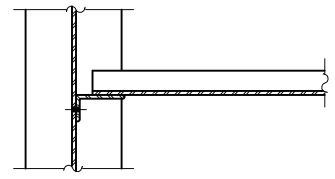
**Prior to grinding

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STEEL FRAMING PLAN & DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		SHEET NO. 13 OF 29 SHEETS
	PLOT SCALE = 0:2 ':' / in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:23 PM	CHECKED - ELH/RTM 09/18	REVISED -		

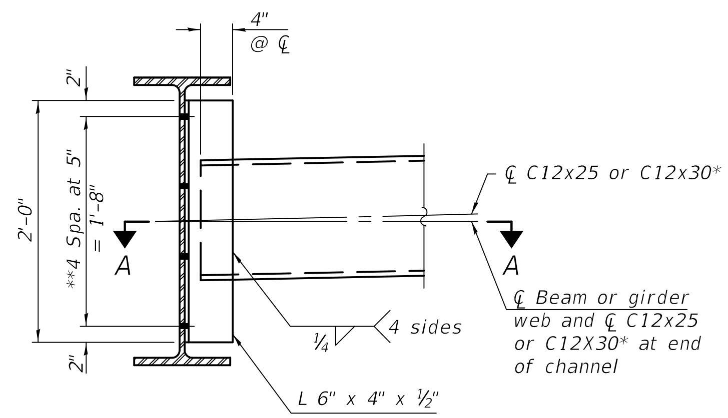
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	83

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT



SECTION A-A



INTERIOR DIAPHRAGM (D1)

(110 Required)

Note:

Two hardened washers required for each set of oversized holes.

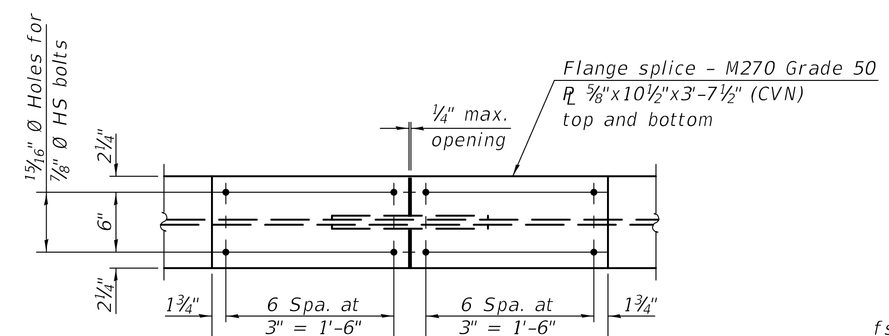
*Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section.

The alternate, if utilized, shall be provided at no additional cost to the Department.

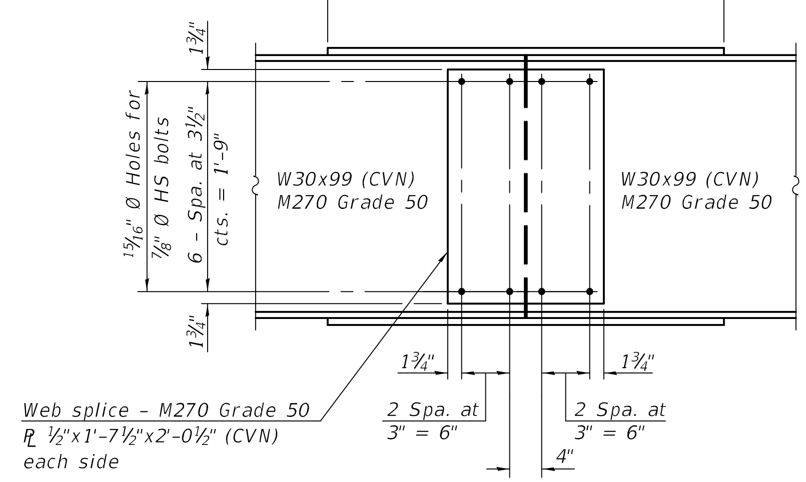
**¾" Ø HS bolts, 15/16" Ø holes

GIRDER REACTION TABLE					
		Abut.		Pier	
		Interior	Exterior	Interior	Exterior
LLDF		0.8	0.61	0.8	0.61
OCF		1.1	1.1	–	–
RDC1	(k)	10.5	10.1	53.1	51.1
RDC2	(k)	2.0	2.0	9.8	9.8
RDW	(k)	4.4	4.0	21.9	21.1
R_{LL}	(k)	50.4	38.4	97.8	74.6
R_{IM}	(k)	13.7	10.4	22.4	17.1
R_{Total}	(k)	81.0	64.9	205.0	173.7

INTERIOR GIRDER MOMENT TABLE				
		0.4 Sp. 1 or 0.6 Sp. 3	Piers	0.5 Sp. 2
Is	(in^4)	3990	3390	3990
Ic(n)	(in^4)	12764	12764	12764
Ic(3n)	(in^4)	9761	9761	9761
Ic(cr)	(in^4)	–	6162	–
Ss	(in^3)	269	269	269
Sc(n)	(in^3)	432	432	432
Sc(3n)	(in^3)	394	394	394
Sc(cr)	(in^3)	–	329	–
DC1	(k/')	0.910	0.910	0.910
MDC1	('k)	53.1	253.3	181.6
DC2	(k/')	0.173	0.173	0.173
MDC2	('k)	9.9	46.8	33.7
DW	(k/')	0.388	0.388	0.388
MDW	('k)	22.3	104.9	75.6
LLDF		0.735	0.700	0.673
M_{LL+IM}	('k)	554.5	743.2	793.8
Mu (Strength I)	('k)	828.6	1426.0	1320.2
Øf Mn	('k)	2347.2	1668.0	2098.0
fs DC1	(ksi)	2.37	11.30	8.10
fs DC2	(ksi)	0.30	1.43	1.03
fs DW	(ksi)	0.68	3.19	2.30
fs (LL+IM)	(ksi)	11.32	18.98	14.84
fs (Service II)	(ksi)	18.07	39.55	30.72
0.95Rh Fyf	(ksi)	47.50	47.50	47.50
fs (Total)(Strength I)	(ksi)	–	–	–
Øf Fn	(ksi)	–	–	–
Vf	(k)	135.7	–	220.7



PLAN



ELEVATION

SPLICE DETAIL

(24 Required)

Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total-Strength I, and Service II) 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-Strength I, and Service II) in uncracked sections 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-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).

Ic(cr), Sc(cr): Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing fs (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).

DC1: Un-factored non-composite dead load (kips/ft.).

MDC1: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).
1.25 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_{LL+IM}

Øf Mn: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).

fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
MDC1/ Snc

fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
MDC2/ Sc(3n) or MDC2/ Sc(cr) as applicable.

fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
MDW/ Sc(3n) or MDW/ Sc(cr) as applicable.

fs (LL+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
M_{LL+IM} / Sc(n) or M_{LL+IM} / Sc(cr) as applicable.

fs (Service II): Sum of stresses as computed below (ksi).
fsDC1 + fsDC2 + fsDW + 1.3 $fs_{(LL+IM)}$

0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

fs (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 $fs_{(LL+IM)}$

Øf Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

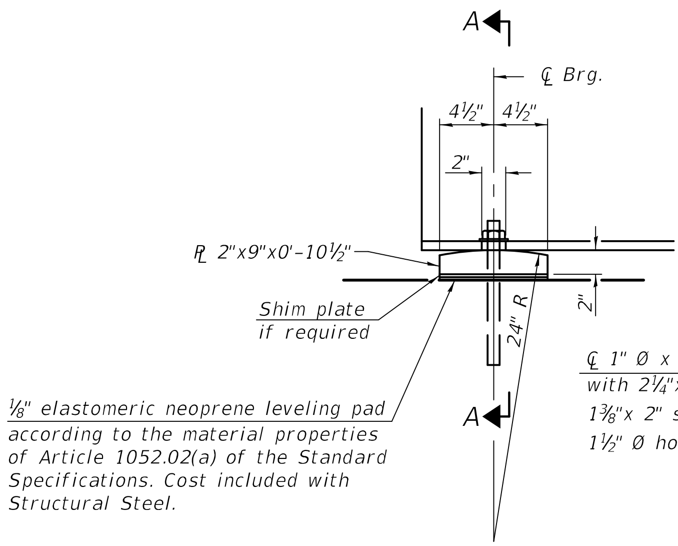
Vf: Maximum factored shear range in span computed according to Article 6.10.10.

LLDF: Live Load Distribution factor computed according to Table 4.6.2.2.2b-1 and Table 4.6.2.2.2d-1.

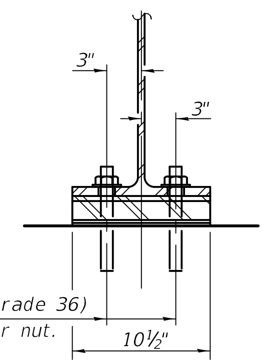
OCF: Obtuse correction factor computed according to Table 4.6.2.2.3c-1 or as simplified in Section 3.3.1 of the Bridge Manual.

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STEEL FRAMING DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:24 PM	CHECKED - ELH/RTM 09/18	REVISED -		SHEET NO. 14 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	84
		CONTRACT NO. 78502		
	ILLINOIS	FED. AID PROJECT		

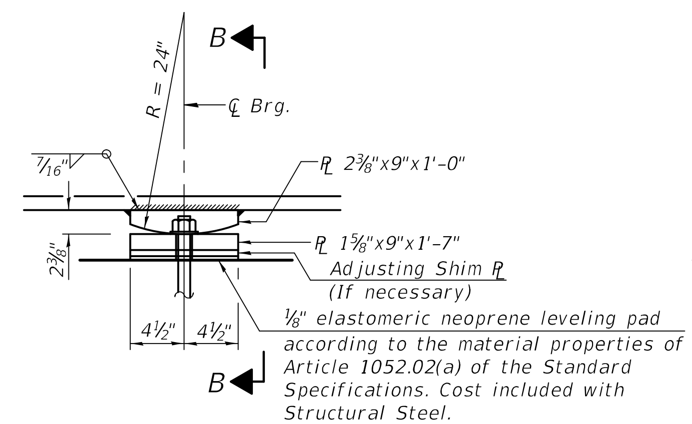


ELEVATION AT ABUTMENT

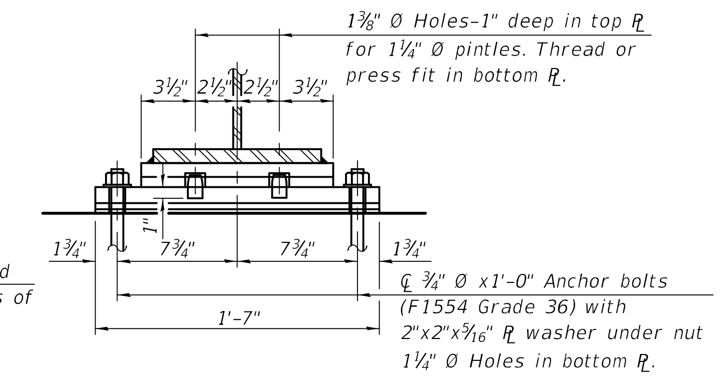


SECTION A-A

FIXED BEARING AT ABUTMENT

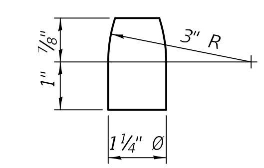


ELEVATION AT PIER



SECTION B-B

FIXED BEARING AT PIER



PINTLE

Notes:

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

Anchor bolts shall be according to Article 521.06 of the Standard Specifications.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

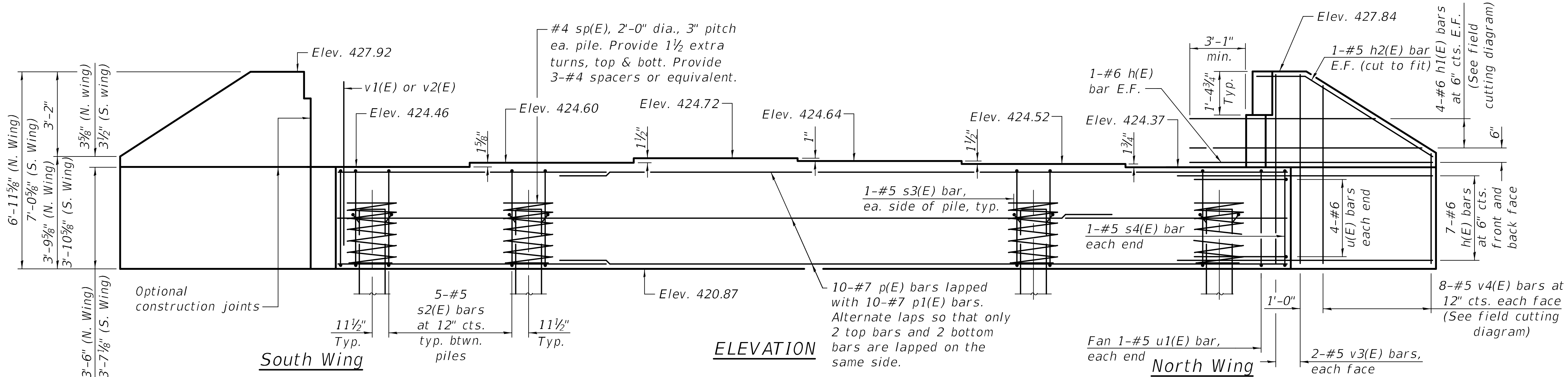
The anchor bolt sizes and grades shown in the Fixed Bearing at Pier detail constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

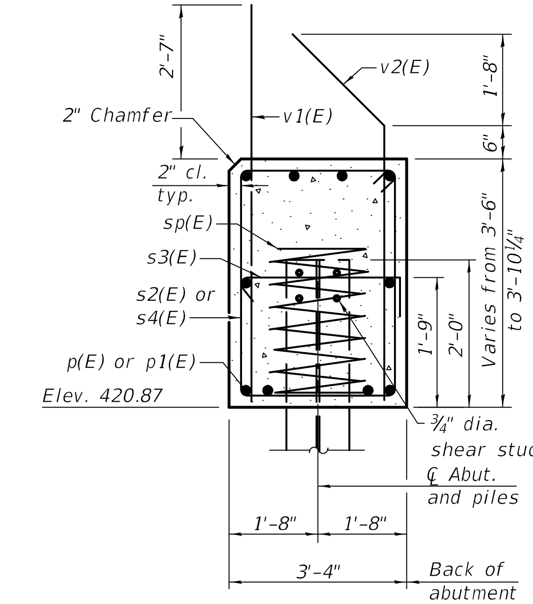
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 36.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, ¾"	Each	48
Anchor Bolts, 1"	Each	48

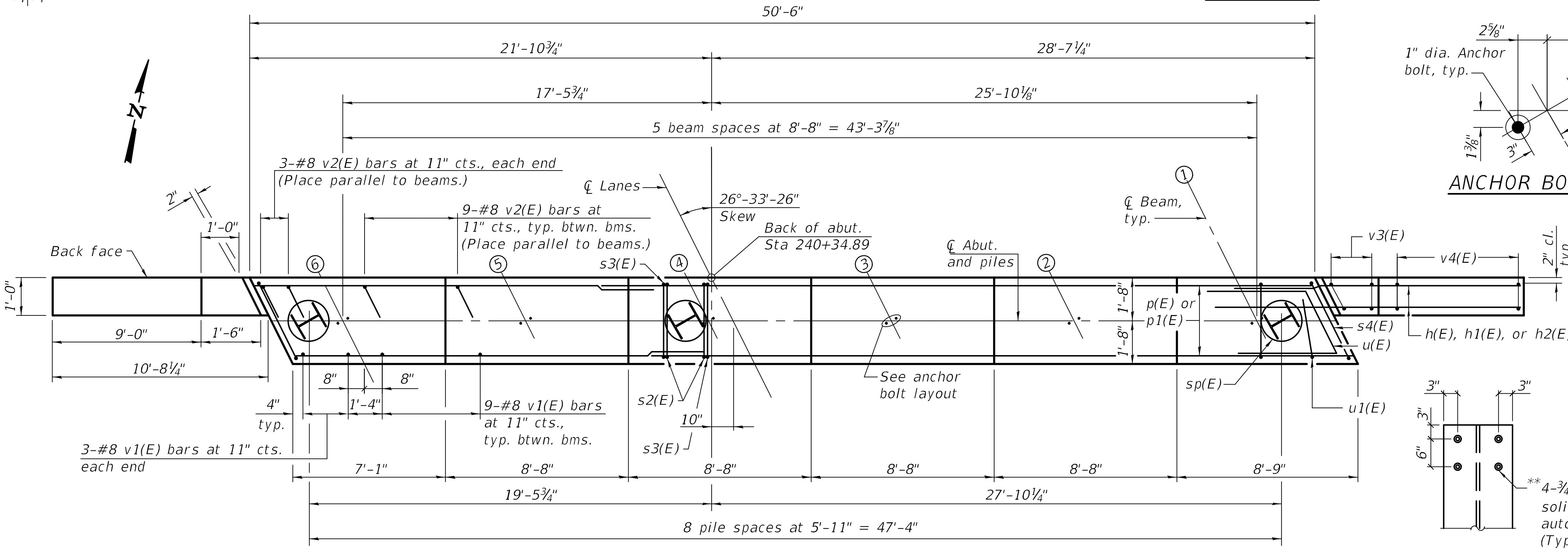
Notes:
Pour steps monolithically with cap.
For details of piles see sheet 22 of 29.
Space reinforcement in cap to miss anchor bolts.



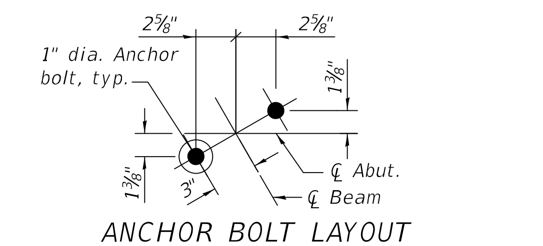


SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN



ANCHOR BOLT LAYOUT

MINIMUM BAR LAP

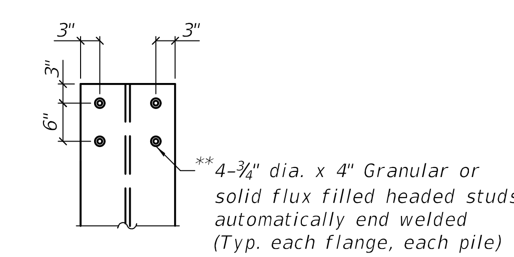
#7 bars = 4'-6"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	13'-9"	
h1(E)	8	#6	22'-0"	
h2(E)	4	#5	10'-1"	
p(E)	10	#7	36'-0"	
p1(E)	10	#7	18'-8"	
* sp(E)	9	#4	2'-0"	
s2(E)	40	#5	13'-3"	
s3(E)	18	#5	4'-0"	
s4(E)	2	#5	14'-0"	
u(E)	8	#6	10'-11"	
u1(E)	2	#5	8'-2"	
v1(E)	51	#8	5'-11"	
v2(E)	51	#8	6'-2"	
v3(E)	8	#5	6'-8"	
v4(E)	16	#5	9'-10"	

Item	Unit	Quantity
Structure Excavation	Cu. Yd.	110
Concrete Structures	Cu. Yd.	27.4
Reinforcement Bars, Epoxy Coated	Pound	5180
Furnishing Steel Piles HP 14x102	Foot	560
Driving Piles	Foot	560
Test Pile Steel HP 14x102	Each	1

*Length is height of spiral

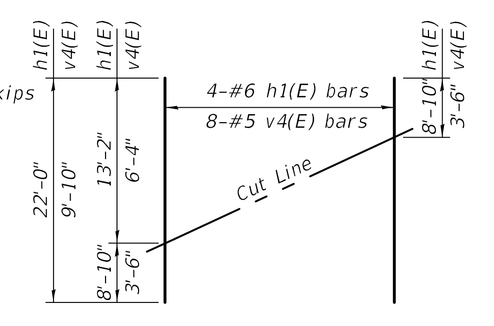


SHEAR STUD DETAIL

**Cost included with Furnishing Piles.

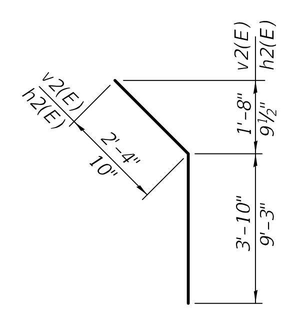
PILE DATA

Type: HP14x102
Nominal Required Bearing: 451 kips
Factored Resistance Available: 248 kips
Est. Length: 70'
No. Production Piles: 8
No. Test Piles: 1

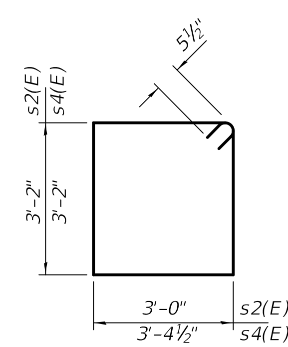


FIELD CUTTING DIAGRAM

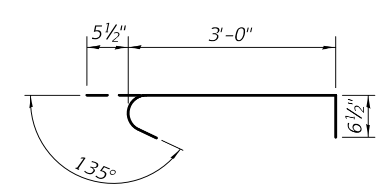
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



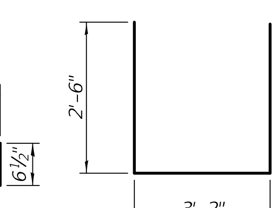
BARS v2(E) & h2(E)



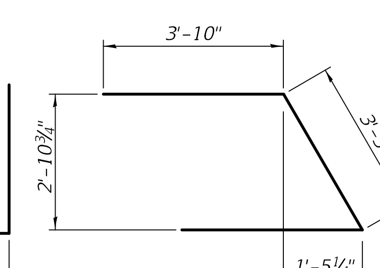
BARS s2(E) & s4(E)



BAR s3(E)



BAR u1(E)



BAR u(E)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - KJA 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0.2 ' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:25 PM	CHECKED - ELH/KJA 09/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

WEST ABUTMENT (WB)
STRUCTURE NO. 064–0046 (WB)

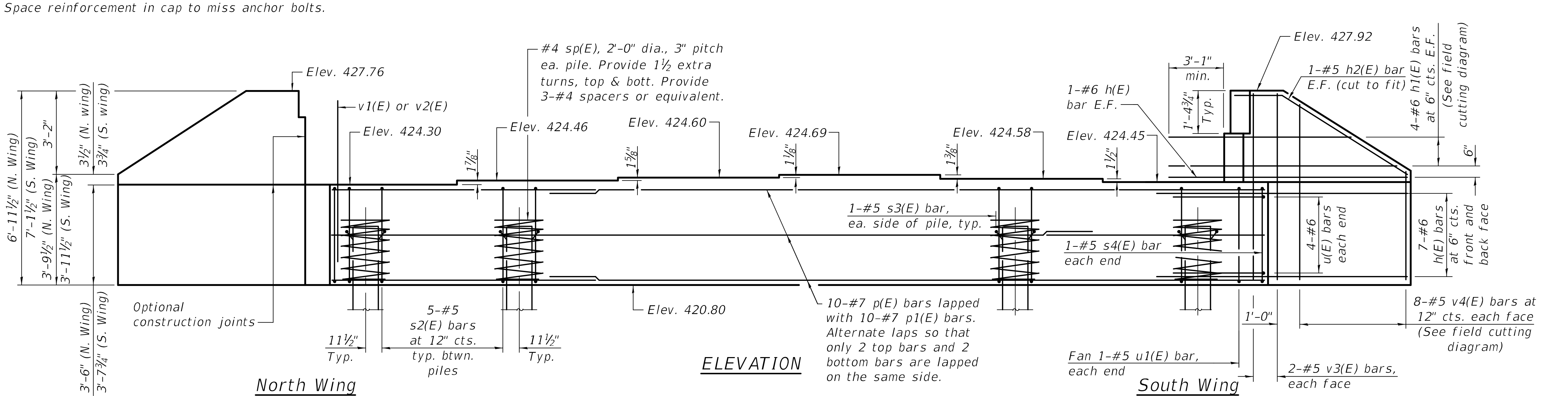
SHEET NO. 16 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	86

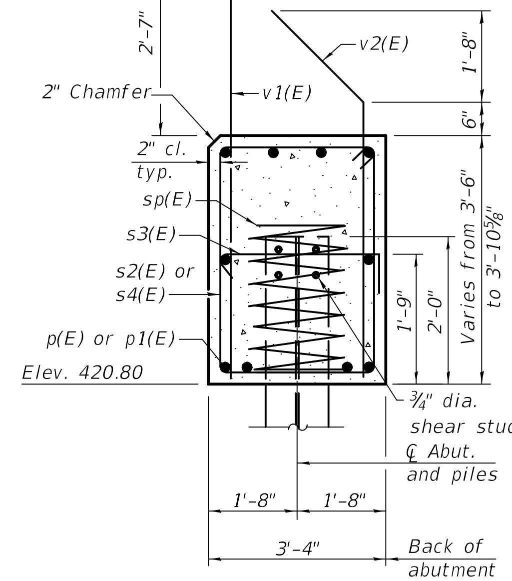
CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT

Notes:
- Pour steps monolithically with cap.
- For details of piles see sheet 22 of 29.
- Space reinforcement in cap to miss anchor bolts.

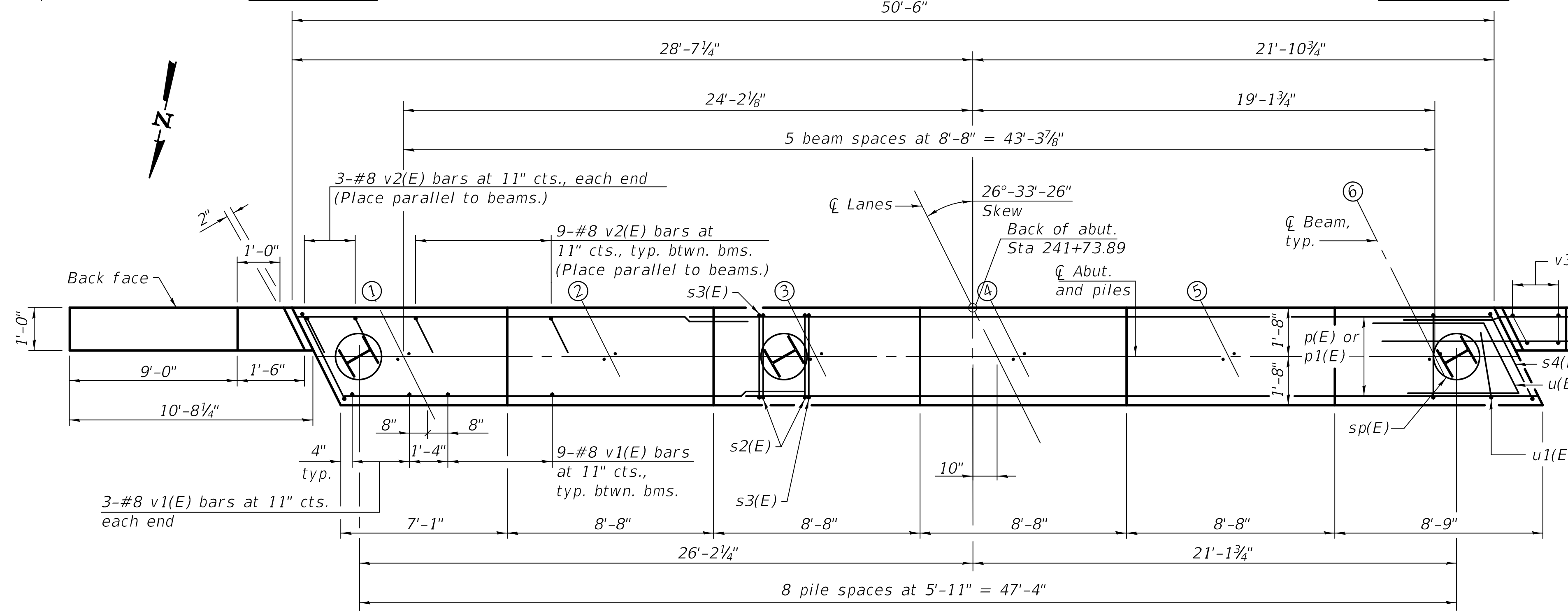


North Wing — ELEVATION — South Wing

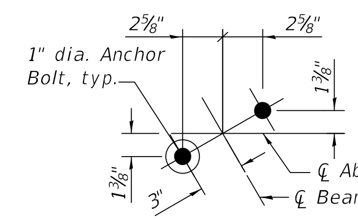


SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN



ANCHOR BOLT LAYOUT

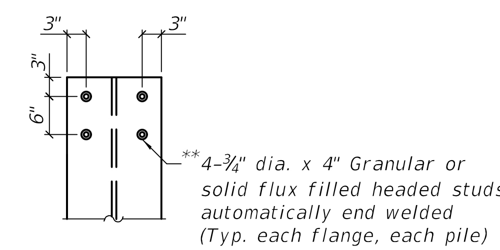
MINIMUM BAR LAP

#7 bars = 4'-6"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	13'-9"	
h1(E)	8	#6	22'-0"	
h2(E)	4	#5	10'-1"	
p(E)	10	#7	36'-0"	
p1(E)	10	#7	18'-8"	
* sp(E)	9	#4	2'-0"	
s2(E)	40	#5	13'-3"	
s3(E)	18	#5	4'-0"	
s4(E)	2	#5	14'-0"	
u(E)	8	#6	10'-11"	
u1(E)	2	#5	8'-2"	
v1(E)	51	#8	5'-11"	
v2(E)	51	#8	6'-2"	
v3(E)	8	#5	6'-8"	
v4(E)	16	#5	9'-10"	
Structure Excavation		Cu. Yd.	111	
Concrete Structures		Cu. Yd.	27.6	
Reinforcement Bars, Epoxy Coated		Pound	5180	
Furnishing Steel Piles HP 14x102		Foot	440	
Driving Piles		Foot	440	
Test Pile Steel HP 14x102		Each	1	

*Length is height of spiral

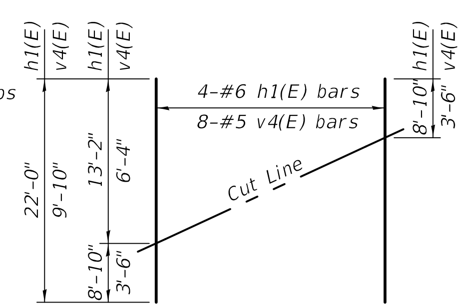


SHEAR STUD DETAIL

**Cost included with Furnishing Piles.

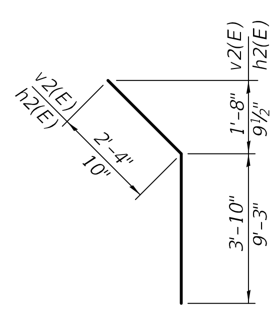
PILE DATA

Type: HP14x102
Nominal Required Bearing: 360 kips
Factored Resistance Available: 198 kips
Est. Length: 55'
No. Production Piles: 8
No. Test Piles: 1

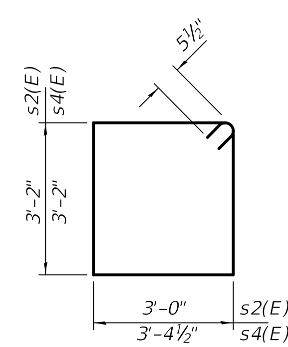


FIELD CUTTING DIAGRAM

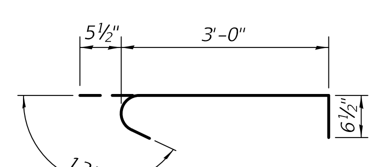
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



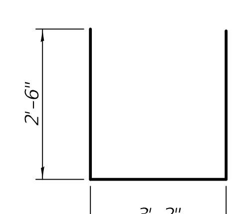
BARS v2(E) & h2(E)



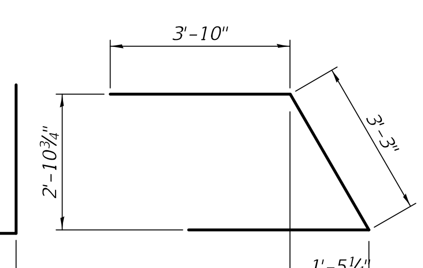
BARS s2(E) & s4(E)



BAR s3(E)



BAR u1(E)



BAR u(E)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - KJA 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0:2 '/' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:26 PM	CHECKED - ELH/KJA 09/18	REVISED -

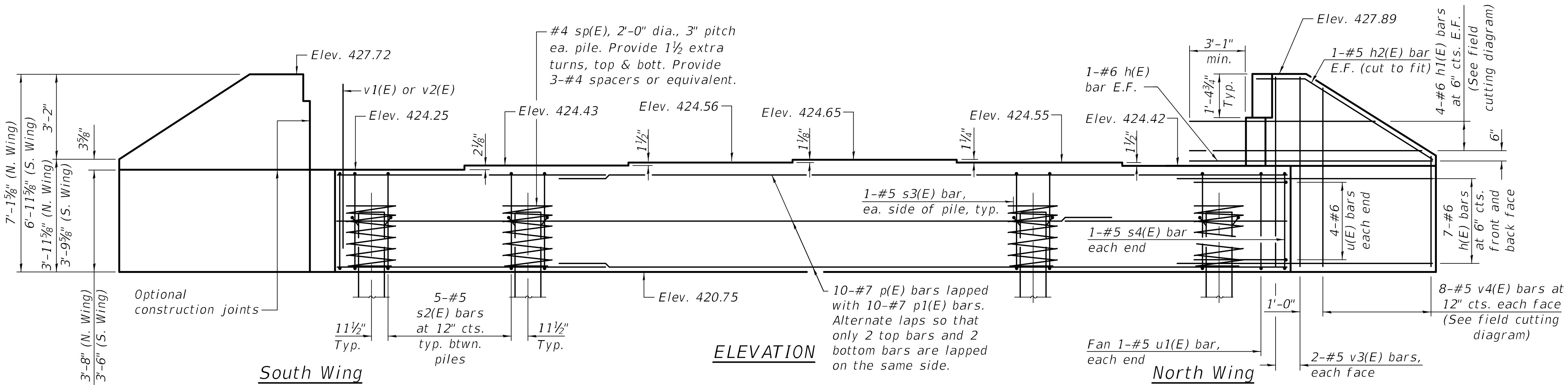
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT (WB)
STRUCTURE NO. 064-0046 (WB)

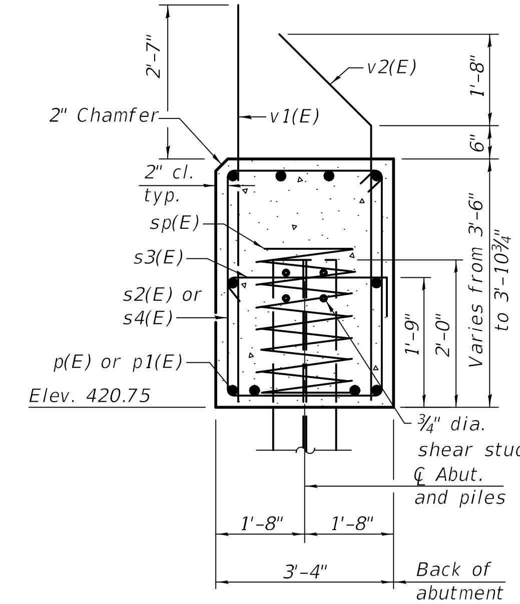
SHEET NO. 17 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	87
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 22 of 29.
Space reinforcement in cap to miss anchor bolts.

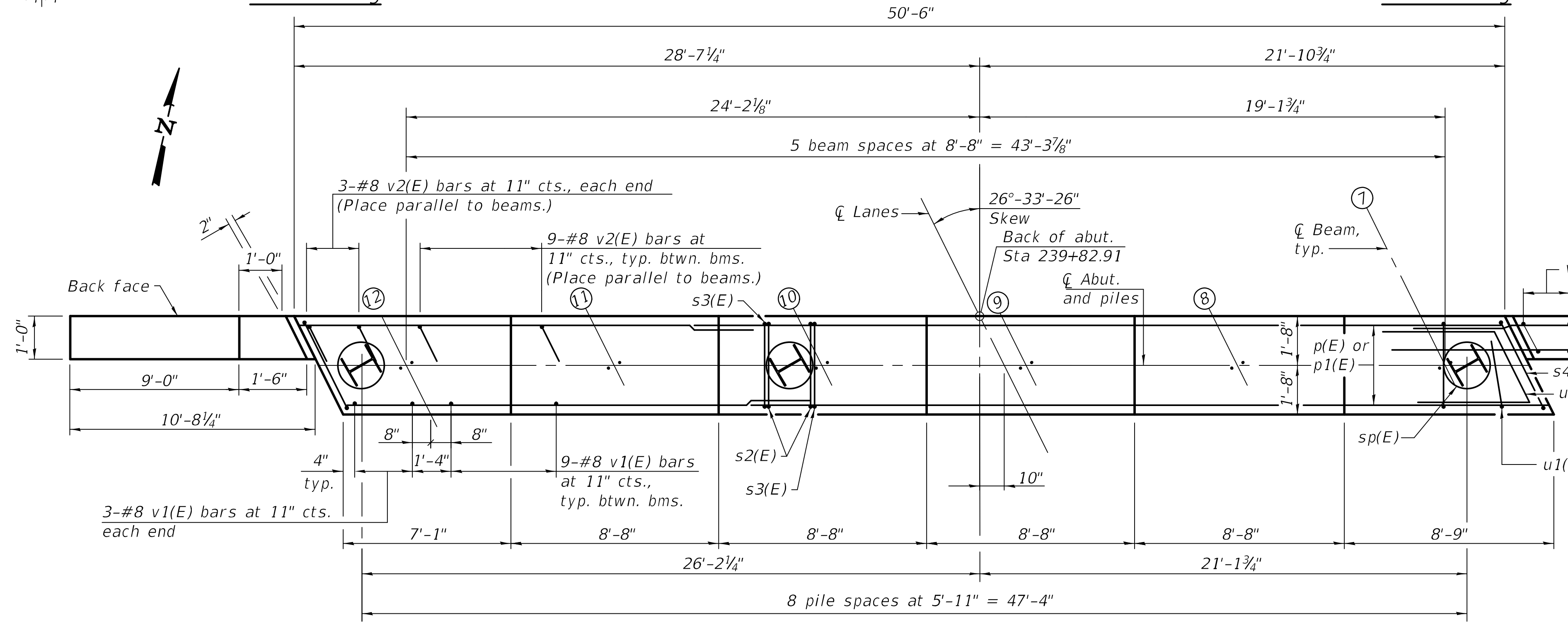


South Wing — ELEVATION — North Wing

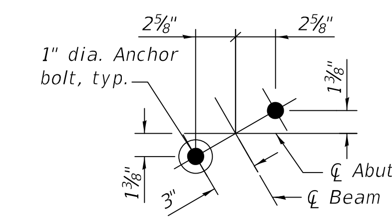


SEC. THRU ABUT.

Dimensions at right angles to abutment.



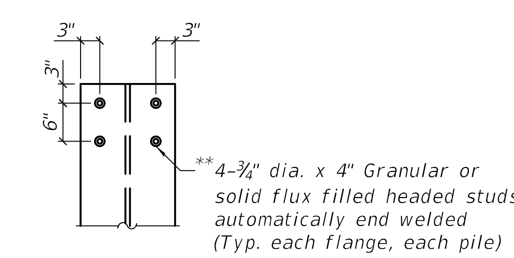
PLAN



ANCHOR BOLT LAYOUT

MINIMUM BAR LAP

#7 bars = 4'-6"



SHEAR STUD DETAIL

**Cost included with Furnishing Piles.

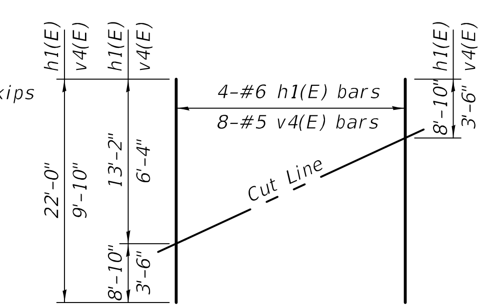
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	13'-9"	
h1(E)	8	#6	22'-0"	
h2(E)	4	#5	10'-1"	
p(E)	10	#7	36'-0"	
p1(E)	10	#7	18'-8"	
* sp(E)	9	#4	2'-0"	
s2(E)	40	#5	13'-3"	
s3(E)	18	#5	4'-0"	
s4(E)	2	#5	14'-0"	
u(E)	8	#6	10'-11"	
u1(E)	2	#5	8'-2"	
v1(E)	51	#8	5'-11"	
v2(E)	51	#8	6'-2"	
v3(E)	8	#5	6'-8"	
v4(E)	16	#5	9'-10"	
Structure Excavation		Cu. Yd.	110	
Concrete Structures		Cu. Yd.	27.6	
Reinforcement Bars, Epoxy Coated		Pound	5180	
Furnishing Steel Piles HP 14x102		Foot	296	
Driving Piles		Foot	296	
Test Pile Steel HP 14x102		Each	1	

*Length is height of spiral

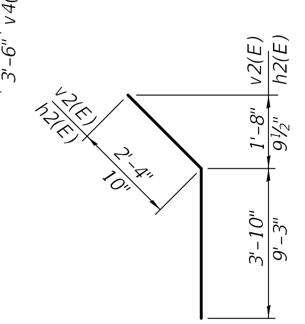
PILE DATA

Type: HP14x102
Nominal Required Bearing: 267 kips
Factored Resistance Available: 147 kips
Est. Length: 37'
No. Production Piles: 8
No. Test Piles: 1

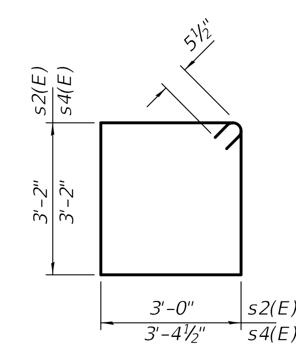


FIELD CUTTING DIAGRAM

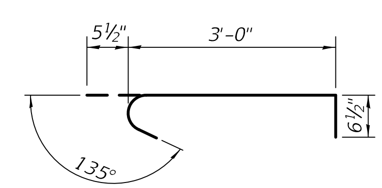
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



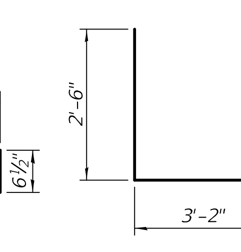
BARS v2(E) & h2(E)



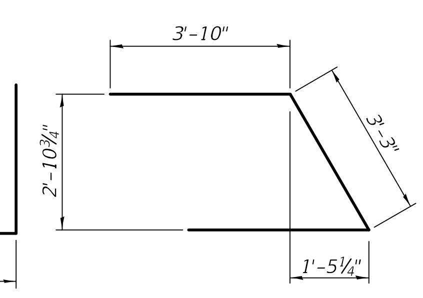
BARS s2(E) & s4(E)



BAR s3(E)



BAR u1(E)

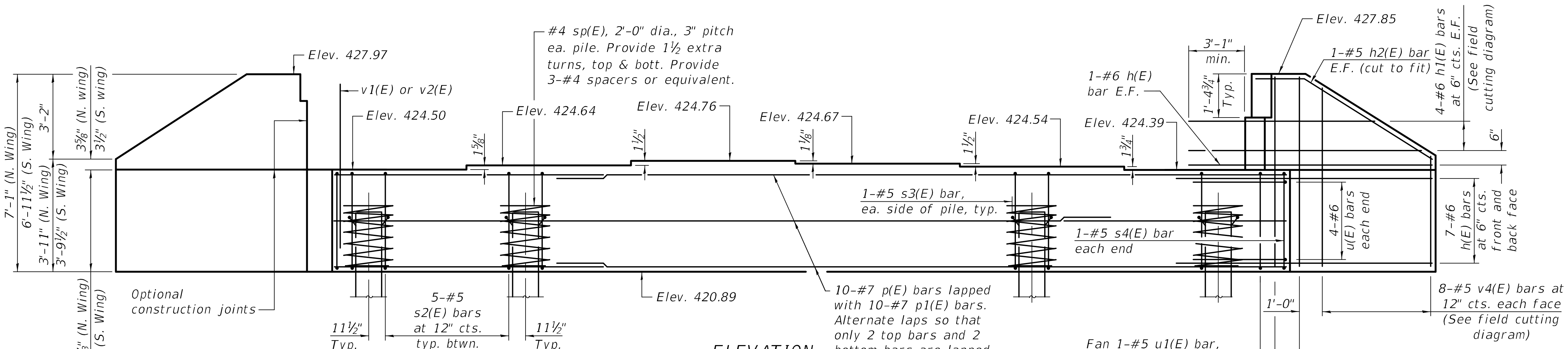


BAR u(E)

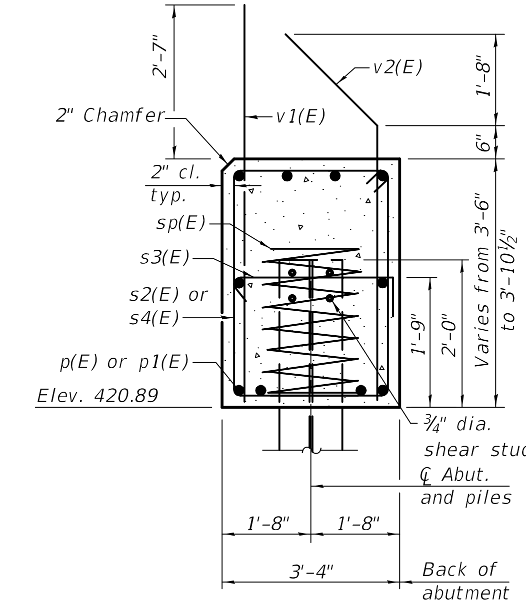
ESCA Consultants, Inc.	USER NAME = SKM	DESIGNED - KJA 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	WEST ABUTMENT (EB) STRUCTURE NO. 064-0045 (EB)
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -		
	PLOT SCALE = 0.2 '/' in.	DRAWN - KAH 06/18	REVISED -		
	PLOT DATE = 10/4/2018 1:03:26 PM	CHECKED - ELH/KJA 09/18	REVISED -		SHEET NO. 18 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	88
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 22 of 29.
Space reinforcement in cap to miss anchor bolts.

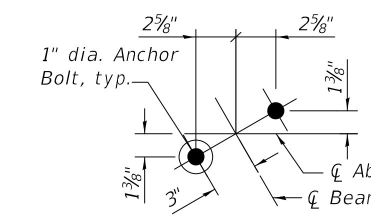


North Wing ELEVATION South Wing



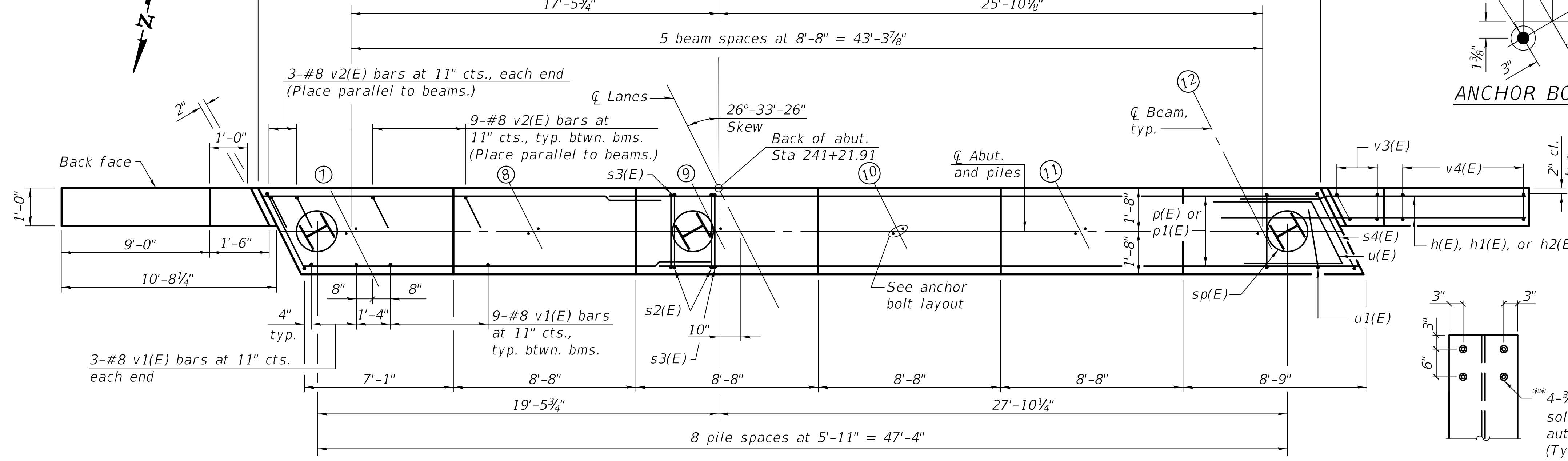
SEC. THRU ABUT.

Dimensions at right angles to abutment.

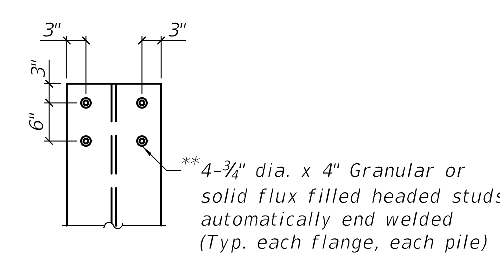


ANCHOR BOLT LAYOUT

MINIMUM BAR LAP
#7 bars = 4'-6"



PLAN

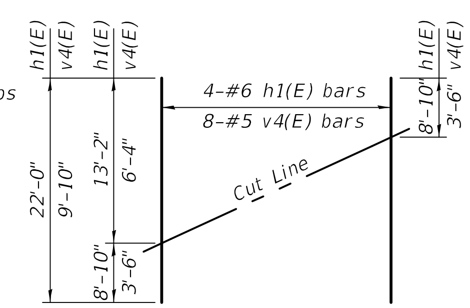


SHEAR STUD DETAIL

**Cost included with Furnishing Piles.

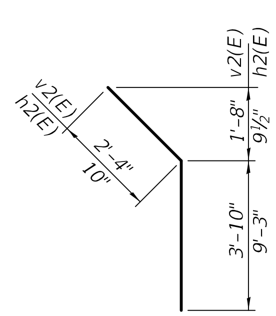
PILE DATA

Type: HP14x102
Nominal Required Bearing: 382 kips
Factored Resistance Available: 210 kips
Est. Length: 44'
No. Production Piles: 8
No. Test Piles: 1

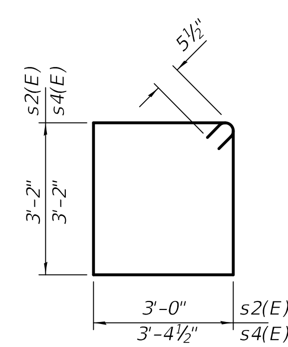


FIELD CUTTING DIAGRAM

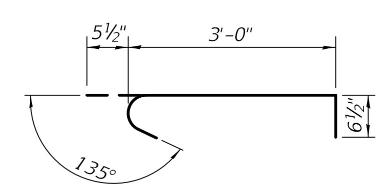
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



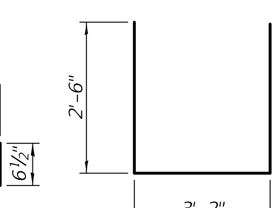
BARS v2(E) & h2(E)



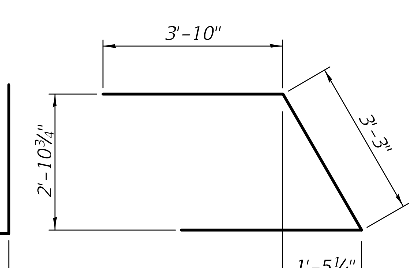
BARS s2(E) & s4(E)



BAR s3(E)



BAR u1(E)



BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	13'-9"	
h1(E)	8	#6	22'-0"	
h2(E)	4	#5	10'-1"	
p(E)	10	#7	36'-0"	
p1(E)	10	#7	18'-8"	
* sp(E)	9	#4	2'-0"	
s2(E)	40	#5	13'-3"	
s3(E)	18	#5	4'-0"	
s4(E)	2	#5	14'-0"	
u(E)	8	#6	10'-11"	
u1(E)	2	#5	8'-2"	
v1(E)	51	#8	5'-11"	
v2(E)	51	#8	6'-2"	
v3(E)	8	#5	6'-8"	
v4(E)	16	#5	9'-10"	
Structure Excavation			Cu. Yd.	109
Concrete Structures			Cu. Yd.	27.4
Reinforcement Bars, Epoxy Coated			Pound	5180
Furnishing Steel Piles HP 14x102			Foot	352
Driving Piles			Foot	352
Test Pile Steel HP 14x102			Each	1

*Length is height of spiral

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:27 PM	CHECKED - ELH/KJA 09/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EAST ABUTMENT (EB)
STRUCTURE NO. 064-0045 (EB)

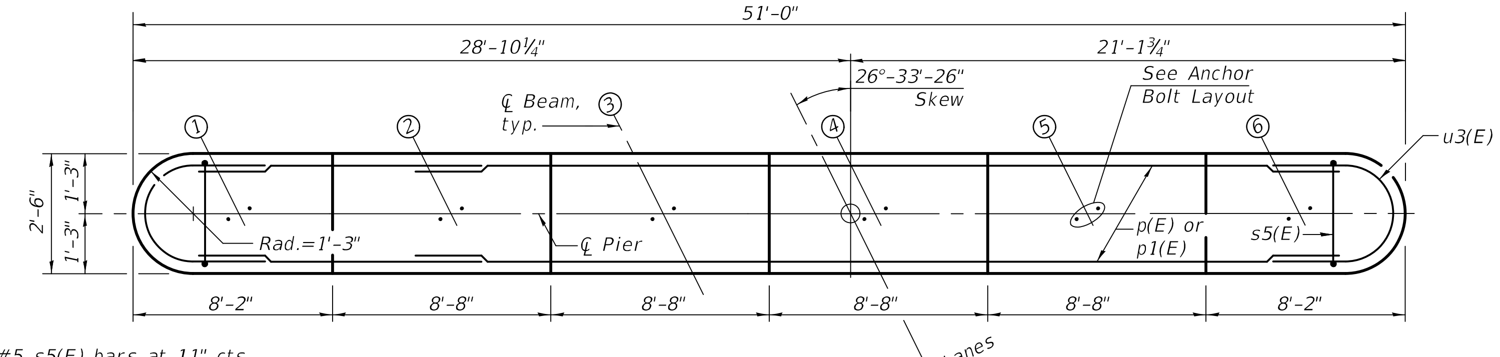
SHEET NO. 19 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	89
		CONTRACT NO. 78502		
	ILLINOIS FED. AID PROJECT			

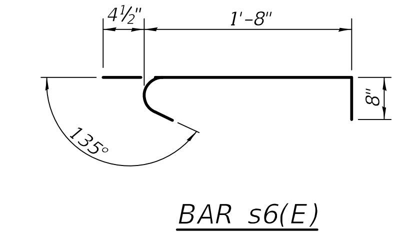
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 22 of 29.
Bars indicated thus 10x2-#7 etc. indicates 10 lines of bars with 2 lengths per line.

PILE DATA

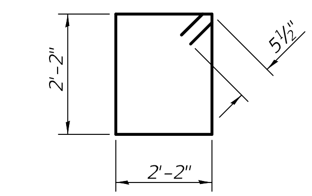
Type: HP14x89
Nominal Required Bearing: 342 kips
Factored Resistance Available: 188 kips
Est. Length: 90'
No. Production Piles: 26
No. Test Piles: 1 - Pier 1
1 - Pier 2



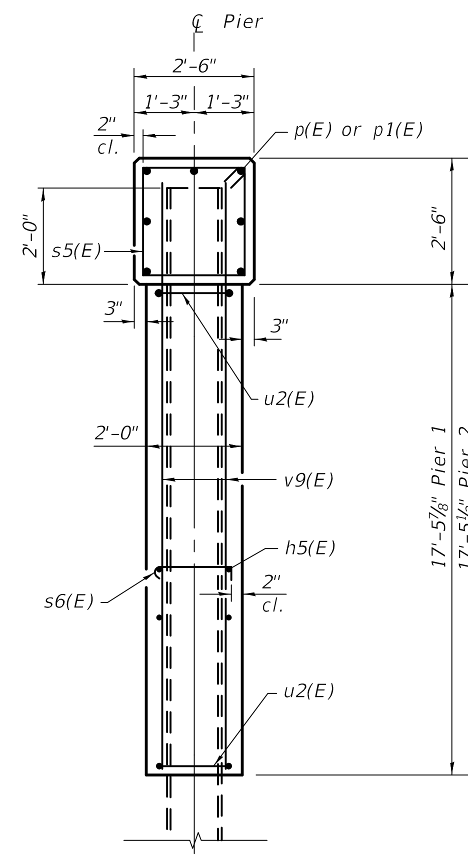
TOP PLAN



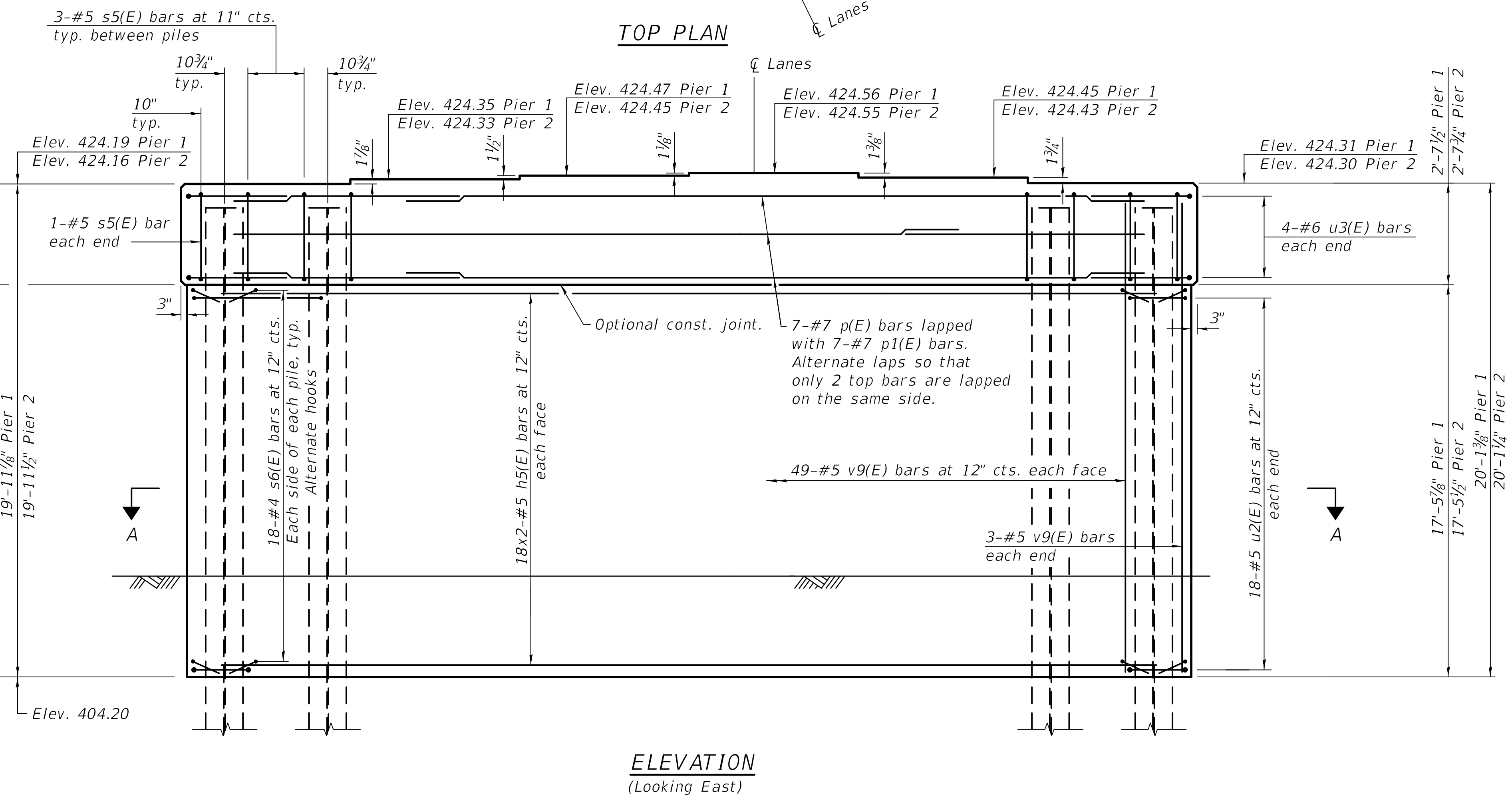
BAR s6(E)



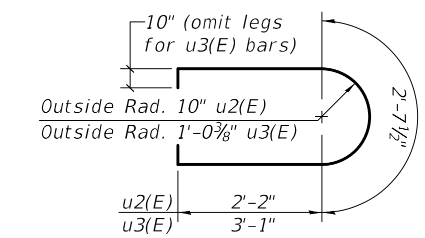
BAR s5(E)



END VIEW



ELEVATION
(Looking East)



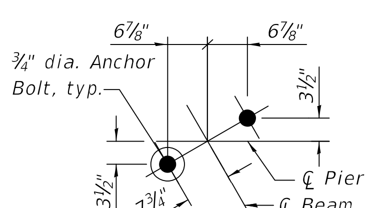
BARS u2(E) & u3(E)

MINIMUM BAR LAP

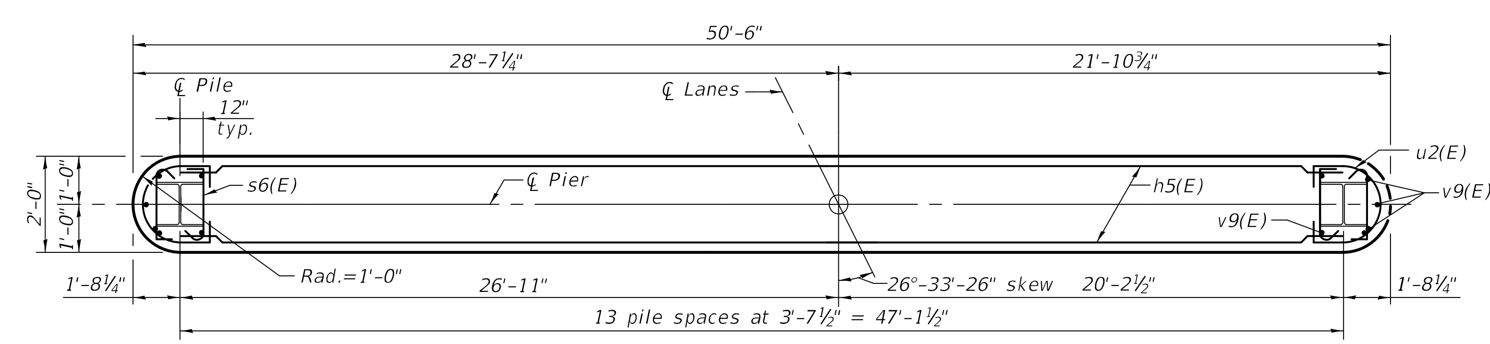
#5 bars = 2'-10"
#7 bars = 4'-6"

TWO PIERS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h5(E)	144	#5	25'-3"	
p(E)	14	#7	36'-0"	
p1(E)	14	#7	18'-8"	
s5(E)	82	#5	9'-7"	
s6(E)	1008	#4	2'-9"	
u2(E)	72	#5	8'-8"	
u3(E)	16	#6	9'-5"	
v9(E)	208	#5	19'-8"	
Structure Excavation		Cu. Yd.	140	
Concrete Structures		Cu. Yd.	154.9	
Reinforcement Bars, Epoxy Coated		Pound	13180	
Furnishing Steel Piles HP14x89		Foot	2340	
Driving Piles		Foot	2340	
Test Pile Steel HP 14x89		Each	2	



ANCHOR BOLT LAYOUT



SECTION A-A

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - KJA 04/18	REVISED -	
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -	
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -	
	PLOT DATE = 10/4/2018 1:03:28 PM	CHECKED - ELH/KJA 09/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

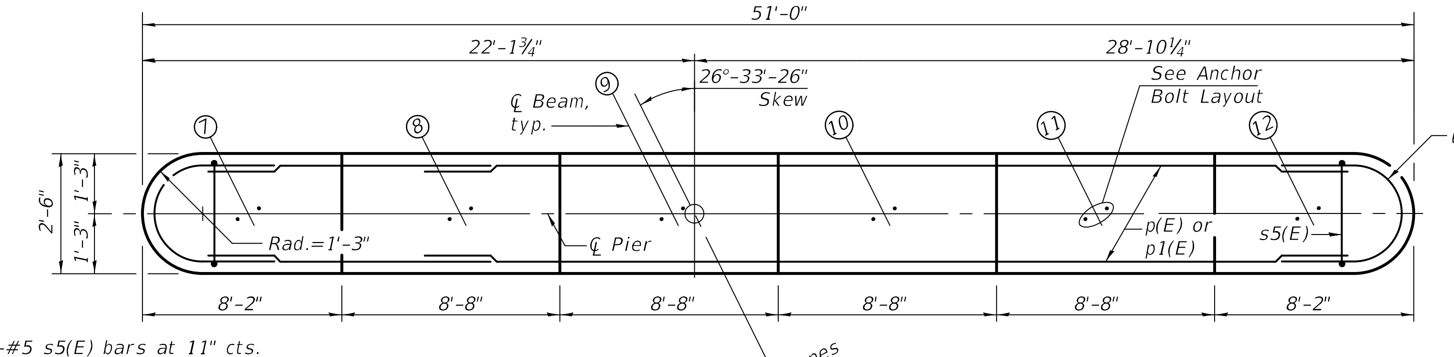
PIERS (WB)
STRUCTURE NO. 064-0046 (WB)
SHEET NO. 20 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	90
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		

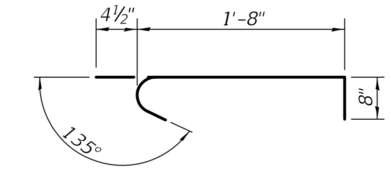
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 22 of 29.
Bars indicated thus 10x2-#7 etc. indicates 10 lines of bars with 2 lengths per line.

PILE DATA

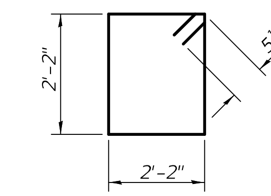
Type: HP14x89
Nominal Required Bearing: 487 kips
Factored Resistance Available: 268 kips
Est. Length: 75'
No. Production Piles: 26
No. Test Piles: 1 - Pier 1
1 - Pier 2



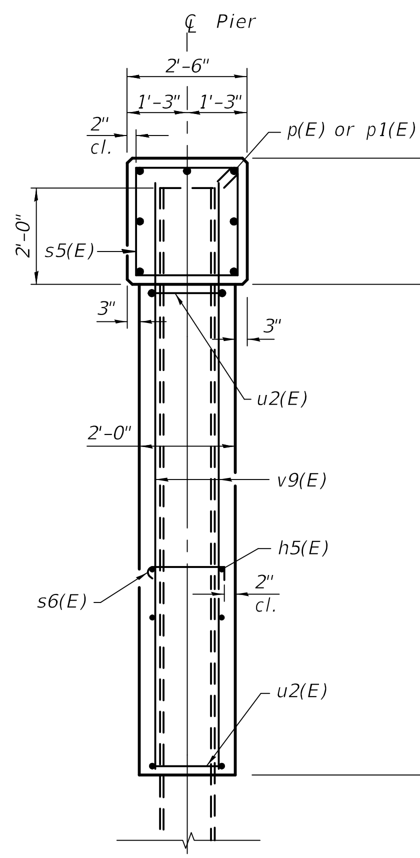
TOP PLAN



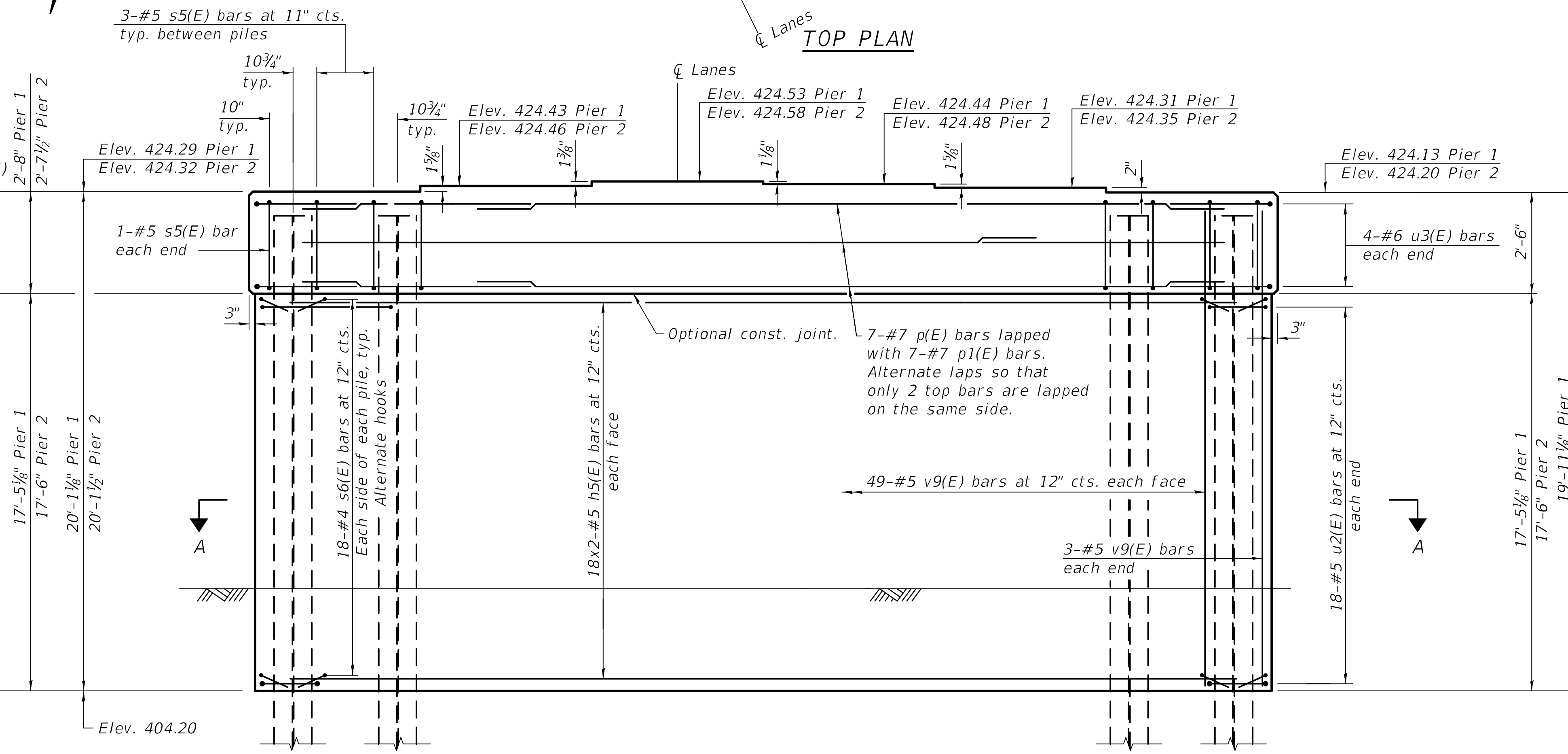
BAR s6(E)



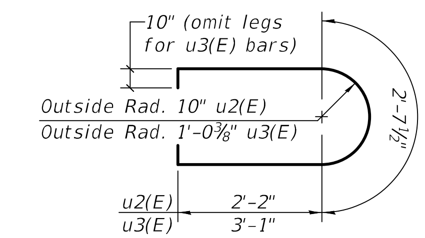
BAR s5(E)



END VIEW



ELEVATION
(Looking East)



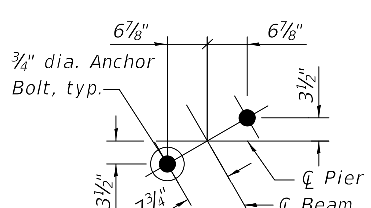
BARS u2(E) & u3(E)

MINIMUM BAR LAP

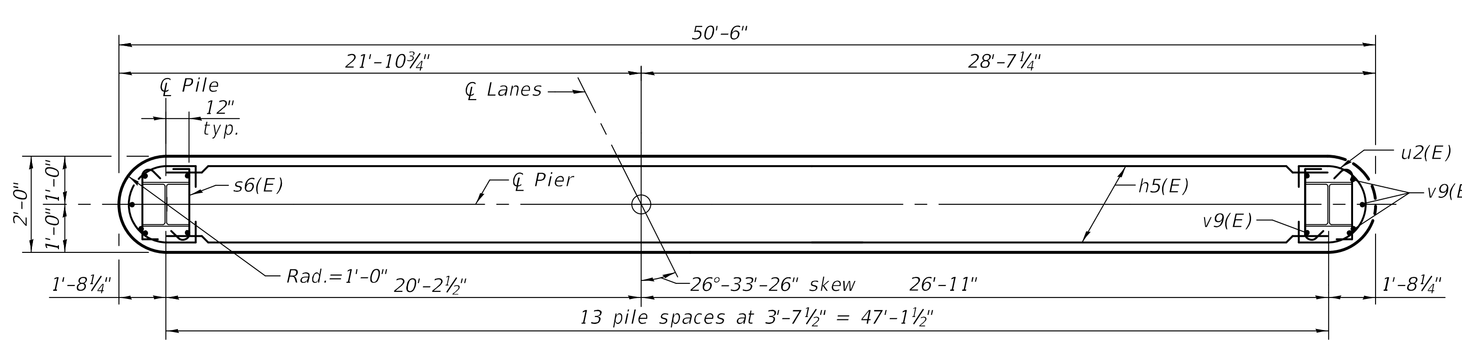
#5 bars = 2'-10"
#7 bars = 4'-6"

TWO PIERS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h5(E)	144	#5	25'-3"	——
p(E)	14	#7	36'-0"	——
p1(E)	14	#7	18'-8"	——
s5(E)	82	#5	9'-7"	◻
s6(E)	1008	#4	2'-9"	⌐
u2(E)	72	#5	8'-8"	⊃
u3(E)	16	#6	9'-5"	⊃
v9(E)	208	#5	19'-8"	——
Structure Excavation		Cu. Yd.	120	
Concrete Structures		Cu. Yd.	154.9	
Reinforcement Bars, Epoxy Coated		Pound	13180	
Furnishing Steel Piles HP14x89		Foot	1950	
Driving Piles		Foot	1950	
Test Pile Steel HP 14x89		Each	2	



ANCHOR BOLT LAYOUT



SECTION A-A

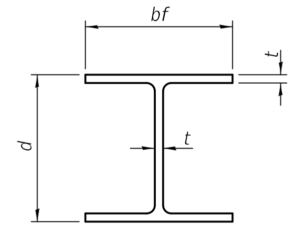
ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - KJA 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0.2 ' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:28 PM	CHECKED - ELH/KJA 09/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIERS (EB)
STRUCTURE NO. 064-0045 (EB)

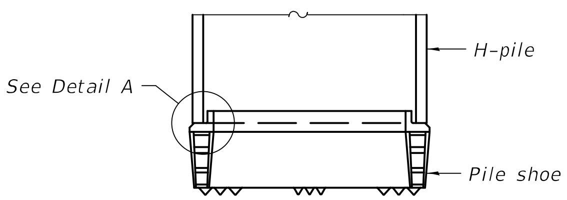
SHEET NO. 21 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	91
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		

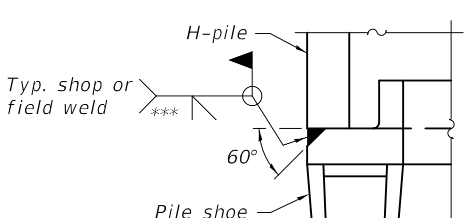


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	11/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	11/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



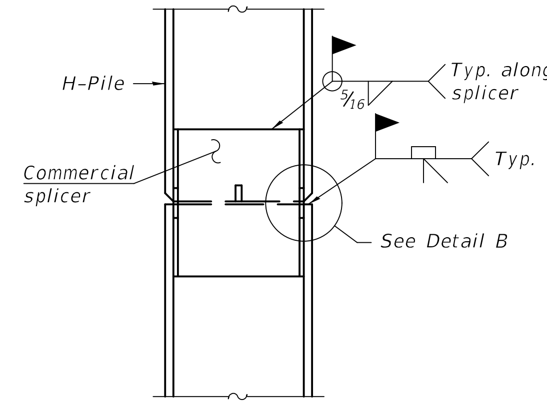
ELEVATION



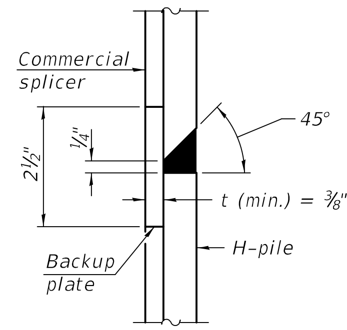
DETAIL A

SHOE ATTACHMENT

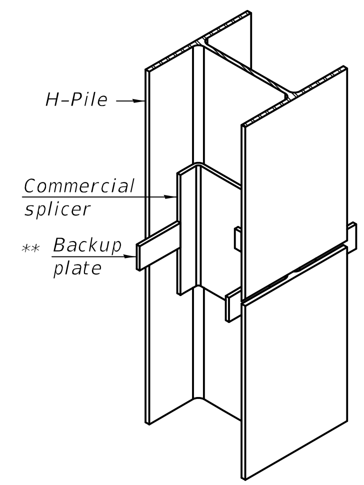
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

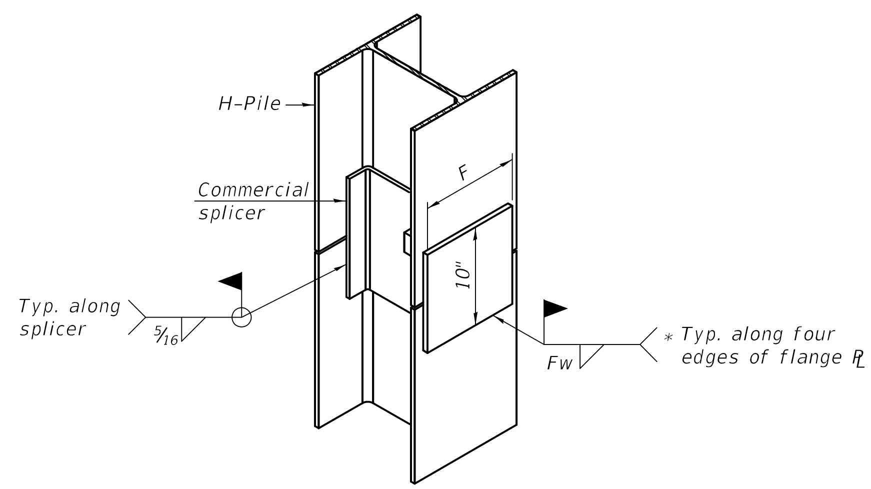


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



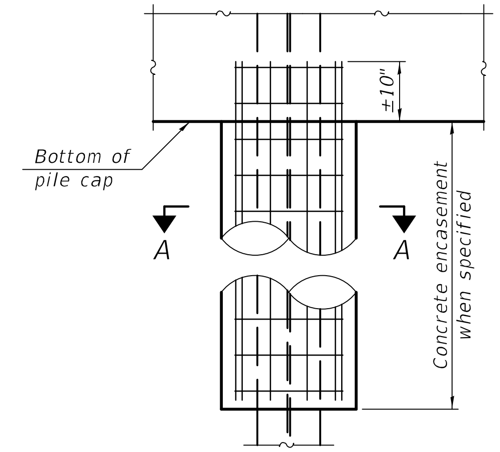
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

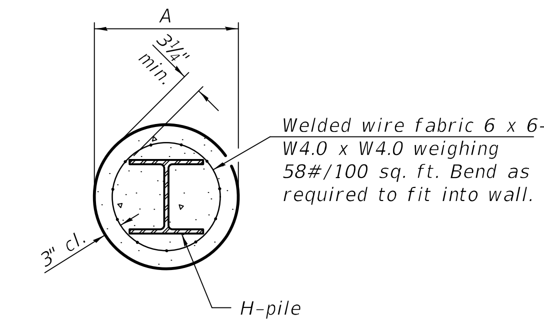
* Interrupt welds ¼" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



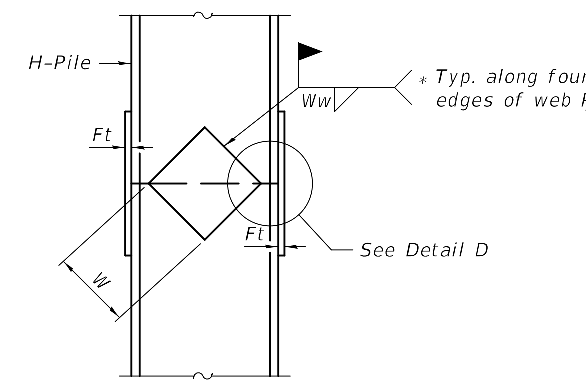
ELEVATION



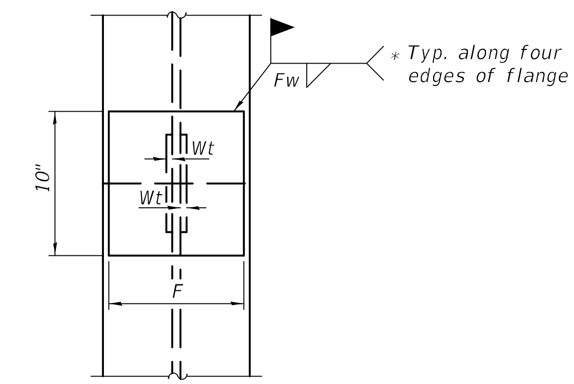
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

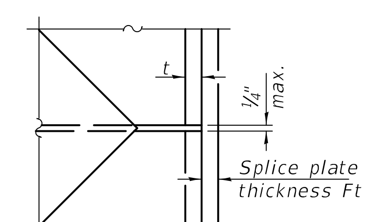
(Forms for encasement may be omitted when soil conditions permit).



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12½"	1"	⅞"	7¾"	⅝"	½"
x102	12½"	⅞"	¾"	7¾"	⅝"	½"
x89	12½"	¾"	11/16"	7¾"	⅝"	½"
x73	12½"	⅝"	9/16"	7¾"	⅝"	½"
HP 12x84	10"	⅞"	11/16"	6½"	⅝"	½"
x74	10"	⅞"	11/16"	6½"	⅝"	½"
x63	10"	⅝"	½"	6½"	½"	⅜"
x53	10"	⅝"	½"	6½"	½"	⅜"
HP 10x57	8"	¾"	9/16"	5¼"	½"	⅜"
x42	8"	⅝"	9/16"	5¼"	½"	⅜"
HP 8x36	7"	⅝"	7/16"	4¼"	½"	⅜"

WELDED PLATE FIELD SPLICE

F-HP

8-11-2017

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	HP PILE DETAILS STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)	F.A.I. RTE. 24	SECTION (64-3HB)BR-1	COUNTY MASSAC	TOTAL SHEETS 158	SHEET NO. 92
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -							
	PLOT SCALE = 0:2 ' / in.	DRAWN - KAH 06/18	REVISED -			CONTRACT NO. 78502				
	PLOT DATE = 10/4/2018 1:03:29 PM	CHECKED - ELH/RTM 06/18	REVISED -		SHEET NO. 22 OF 29 SHEETS	ILLINOIS FED. AID PROJECT				

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

Sheet 1 of 2

FAI 24 Over FAS 962 (Country Club Road)

Route: FAI 24 Structure Number: 064-0027/28 Date: 3/25/2016

Section 64-3 HB Bored By: R Moberly

County: Massac Location: 2 miles North of US 45 Checked By: R Moberly

Boring No 1-S (2016)
Station 240+80
Offset 52' RT CL WBL
Ground Surface 409.1 Ft

Surf Wat Elev:
Ground Water Elevation
when Drilling 329.6
At Completion
At: Hrs:

Soil Description	Elevation	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate	407.6				
Stiff, moist, red and grey, Clay A7-6			1		
			4	1.4B	24
	404.6		4		
Stiff, moist, grey and red, Sandy Clay Loam with some gravel		5.0	4		
			14	1.2S	16
	402.1		14		
Stiff, moist, tan and brown, Silty Clay to Clay A7-6			1		
			3	1.9B	24
			3		
		10.0	1		
			3	1.6B	25
	397.1		3		
Very stiff, moist, tan and brown, Clay A7-6			1		
			3	3.1B	22
	394.6		6		
Loose or very soft, moist, white and brown, alternating lenses of Fine Sand, Silt and Clay 55% Sand, 26% Silt, 19% Clay		15.0	2		
			4	0.2S	20
			5		
			1		
			2	0.3S	24
			3		
		20.0	2		
			4	0.2S	13
	386.6		5		
Very dense, damp to moist, light grey and brown, Fine Silty Sand to Sand Loam 80% Sand, 16% Silt, 4% Clay			4		
			13		20
			49		
		25.0	11		
			40		
	382.1		46		
Medium to dense, moist, light grey and brown, Fine Sand with Silt and Clay Seams 57% Sand, 36% Silt, 7% Clay			4		
			14		6
			12		
		30.0	4		
			11		
	376.6		35		
Very dense, damp to moist, white to brown, Fine Sand with some layers and seams of Silty Clay 77% Sand, 19% Silt, 4% Clay			3		
			16		1
			48		
		35.0	2		
			6		5
	372.1		16		
Medium dense, moist, light grey and brown, Silt to Silt Loam A-4 5% Sand, 84% Silt, 11% Clay			4		
			6	0.6S	19
			9		
		40.0	2		
			6		
			9		
		45.0	2		
			6	0.6S	16
			10		
		50.0	2		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 2

Route: FAI 24 Date: 3/25/20

Section: 64-3 HB

County: Massac

Boring No: 1-S (2016)
Station: 240+80
Offset: 52' RT CL WBL
Ground Surface: 409.1 Ft

Soil Description	Elevation	DEPTH	BLOWS	Qu tsf	W%
Medium dense, moist, light grey and brown, Silt to Silt Loam A-4 5% Sand, 84% Silt, 11% Clay			6		
	354.6		8		
Very dense, damp to moist, white and brown, Fine to Medium Sand		55.0	11		
			45		
			38		
		60.0	10		
			23		
	344.6		50		
Loose, moist, white and brown, Fine Sand		65.0	2		
			3		
	339.6		6		
Very dense, damp to moist, light grey and brown, Fine to Medium Sand		70.0	29		
			100/6.5"		
		75.0			
Very dense, damp to moist, light grey and brown, Fine to Medium Sand					
		80.0	21		
			17		
	328.1		14		
		85.0			
		90.0			
		95.0			
		100.0			

Bottom of hole = 81.0 feet

Free water observed at 79.5 feet

Elevation referenced to BM at NE Corner SN 064-0028; Elevation = 429.3 feet

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

To convert "N" values to "N60" multiply by 1.25

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

PRINT DRIVER = I_PD_E_B_0.pltcfg
PEN TABLE = IDOT_VER02.tbl
MODEL NAME = PLOT
FILE NAME = 0640046-78502-23-Soil.dgn

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	
ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -	
PLOT SCALE = 0:2 ':" / in.	DRAWN - KAH 06/18	REVISED -	
PLOT DATE = 10/4/2018 1:03:30 PM	CHECKED - ELH/RTM 06/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)

SHEET NO. 23 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	93
		CONTRACT NO. 78502		

ILLINOIS FED. AID PROJECT

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

FAI 24 Over FAS 962 (Country Club Road) — Sheet 1 of 3

Route: FAI 24 — Structure Number: 064-0027/28 — Date: 3/28/2016

Section 64-3 HB — Bored By: R Moberly

County: Massac — Location: 2 miles North of US 45 — Checked By: R Moberly

Boring No 2-S (2016)
Station 241+23
Offset 34' LT CL WBL
Ground Surface 408.8 Ft

Surf Wat Elev:
Ground Water Elevation when Drilling 339.3
At Completion
At: Hrs: washed

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate	407.3				
Very stiff, moist, red brown and grey, Clay A7-6			1		
			3	2.3B	31
			4		
		5.0	1		
			4	2.5S	35
			5		
			1		
			3	2.1B	29
			4		
		10.0	1		
			3	2.3B	29
			4		
			1		
			4	2.5B	33
			4		
		15.0	1		
			4	2.9B	36
			5		
			1		
			4	3.3B	29
			6		
		20.0	2		
			3	2.5S	32
	386.8		5		
Medium to dense, moist, white and brown, Fine Silty Sand with Clay layers 72% Sand, 24% Silt, 4% Clay			2		
			5		29
			9		
		25.0	2		

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Medium to dense, moist, white and brown, Fine Silty Sand with Clay layers 72% Sand, 24% Silt, 4% Clay			8		
			30		
			5		
			8		9
	379.3		19		
Very dense, damp, white and brown, Fine Sand 83% Sand, 15% Silt, 2% Clay		30.0	6		
	376.8		100/11"		5
Medium dense, moist, white and brown, Fine Sand with silty seams			6		
			12		
	374.3		7		
Very dense, damp, white and brown, Fine Sand		35.0	10		
			35		
	371.8		43		
Soft, very moist, grey and brown, Silty Clay A-6 with Sand seams			1		
			2	0.4B	26
	369.3		8		
Soft, very moist, white, Silt Loam A-4 with Clay seams 7% Sand, 78% Silt, 15% Clay		40.0	2		
			5	0.4S	27
			6		
		45.0	2		
			5	0.5S	26
	359.3		7		
		50.0	2		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 3

Route: FAI 24 — Date: 3/28/20

Section: 64-3 HB

County: Massac

Boring No: 2-S (2016)
Station: 241+23
Offset: 34' LT CL WBL
Ground Surface: 408.8 Ft

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Soft, moist to very moist, white, Silt to Silt Loam A-4 10% Sand, 81% Silt, 9% Clay			4	0.4S	18
			6		
		55.0	1		
			5	0.4S	21
			6		
	348.8	60.0	3		
Very dense, damp. white, Fine Sand 90% Sand, 8% Silt, 2% Clay			29		5
	344.3		47		
Soft to medium, very moist, brown and grey, Silty Clay A-6 with Sand seams		65.0	1		
			2	0.5B	27
	339.3		3		
Stiff, moist to very moist, grey, Clay A7-6 with Silt seams		70.0	WH		
			WH	1.2B	27
			WH		
	333.8	75.0	1		

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Stiff, moist, brown mottled grey, Clay A7-6			2	1.6B	2
	329.3		4		
Medium, very moist, grey mottled brown, Silty Clay A-6 with Sand seams		80.0	WH		
			1	0.8B	2
			1		
		85.0			
	318.8	90.0	3		
Very dense, moist, brown, Fine to Medium Sand			29		
			62		
		95.0			
Sand blow-in, washed 4'		100.0			

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 3 of 3

Route: FAI 24 — Date: 3/28/20

Section: 64-3 HB

County: Massac

Boring No: 2-S (2016)
Station: 241+23
Offset: 34' LT CL WBL
Ground Surface: 408.8 Ft

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Very dense, moist, brown, Fine to Medium Sand	307.8		100/11"		
		105.0			
		110.0			
		115.0			
		120.0			
		125.0			

Bottom of hole = 101.0 feet

Free water observed at 69.5 feet

Elevation referenced to BM at NE corner SN 062-0028; Elevation = 429.3 feet

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

To convert "N" values to "N60" multiply by 1.25

Wash-out procudures were used from 95.5 to 99.5 feet

Description	DEPTH	BLOWS	Qu tsf	W%
	130.0			
	135.0			
	140.0			
	145.0			
	150.0			

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

FAI 24 Over FAS 962 (Country Club Road) — Sheet 1 of 2

Route: FAI 24 — Structure Number: 064-0027/28 — Date: 3/29/2016

Section 64-3 HB — Bored By: R Moberly

County: Massac — Location: 2 miles North of US 45 — Checked By: R Moberly

Boring No 3-S (2016)
Station 240+22
Offset 31' Rt CL EBL
Ground Surface 408.7 Ft

Surf Wat Elev:
Ground Water Elevation
when Drilling
At Completion
At: Hrs:

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate	407.2				
Medium dense, moist, reddish brown, Sand with some clay			6		
			11		
			9		
	404.2				
Stiff, moist, brown and tan, Silty Clay to Silty Clay Loam A-6		5.0	2		
			3	1.2B	30
			4		
	401.7				
Stiff, moist to very moist, grey and brown, Clay A7-6 with Silt lenses			1		
			2	1.1B	26
			3		
		10.0	1		
			2	1.2B	25
			3		
	396.7				
Very stiff, damp, brown, Clay A7-6			1		
			4	3.9B	27
			12		
	394.2				
Medium, very moist, grey and brown, Silty Clay A-6 with many Fine Sand seams		15.0	2		
			4	0.8E	19
			6		
	391.7				
Soft, very moist, grey and brown, layers of Sand, Silt and Clay 64% Sand, 20% Silt, 16% Clay			1		
			3	0.3B	23
			4		
		20.0	2		
			4	0.4S	16
			6		
	386.7				
Very dense, damp, white and brown, Fine Sand			5		
			26		
			58		
		25.0	14		
Very dense, damp, white and brown, Fine Sand			36		
			35		
			9		
			27		
			30		
		30.0	16		
			34		
			36		
	376.7				
Dense, damp, white and brown, Fine Sand with occasional layers of clayey Sand			12		
			14		
			34		
		35.0	14		
			27		
			16		
	371.7				
Soft to medium, moist, grey and brown, Silt Loam A-4 with Clay lenses 11% Sand, 78% Silt, 14% Clay			2		
			4	0.5B	23
			7		
		40.0	2		
			3	0.5B	24
			6		
		45.0	3		
			2	0.6B	26
			3		
		50.0	2		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 2

Route: FAI 24 — Date: 3/29/20

Section: 64-3 HB

County: Massac

Boring No: 3-S (2016)
Station: 240+22
Offset: 31' Rt CL EBL
Ground Surface: 408.7 Ft

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Soft to medium, moist, grey and brown, Silt Loam A-4 with Clay lenses			4	0.5B	22
			5		
	354.2				
Very Dense, damp, brown, Fine Sand		55.0	15		
			100/7"		
		60.0	20		
			100/10"		
	347.7				
		65.0			
		70.0			
		75.0			
		80.0			
		85.0			
		90.0			
		95.0			
		100.0			

Bottom of hole = 60.9 feet

No free water observed

Elevation referenced to BM at NE corner SN 064-0028; Elevation = 429.3 feet

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

To convert "N" values to "N60" multiply by 1.25

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

PRINT DRIVER = I_PD_E_B_Ø.pltcfg
PEN TABLE = IDOT_VERØ2.tbl
MODEL NAME = PLOT
FILE NAME = Ø64ØØ46-785Ø2-25-Soil.dgn

ESCA CONSULTANTS, INC. CIVIL & STRUCTURAL ENGINEERS

USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	
ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -	
PLOT SCALE = 0:2 ':" / in.	DRAWN - KAH 06/18	REVISED -	
PLOT DATE = 10/4/2018 1:03:43 PM	CHECKED - ELH/RTM 06/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)

SHEET NO. 25 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	95

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log

FAI 24 Over FAS 962 (Country Club Road)

Route: FAI 24 Structure Number: 064-0027/28 Date: 4/5/2016

Section 64-3 HB Bored By: R Moberly

County: Massac Location: 2 miles North of US 45 Checked By: R Moberly

Boring No 4-S (2016)
Station 240+32
Offset 19' Lt CL WBL
Ground Surface 427.3 Ft

Surf Wat Elev:
Ground Water Elevation when Drilling
At Completion 330.8
At: 72 Hrs: 335.3 feet

Description	DEPTH	BLOWS	Qu tsf	W%	Description	DEPTH	BLOWS	Qu tsf	W%
Asphalt over crushed aggregate					Stiff, moist, grey and brown, Clay A7-6 with Silt and Sand lenses		3	1.8B	22
							5		
424.8					400.3				
Medium dense, moist, red, Gravel with Clay binder		6			Very stiff, moist, grey, Clay A7-6 with scattered Silt lenses		2		
		4		11			4	2.7B	23
		6					6		
422.8									
Stiff, moist, brown mottled grey, Silty Clay to Clay A7-6	5.0	1				30.0	2		
		3	1.4B	25			4	3.7B	26
		3					6		
					395.3				
		1			Soft, very moist, grey and brown, Sandy Clay Loam A-4		2		
		4	1.5B	22			4	0.3S	20
		5					6		
	10.0	2				35.0	1		
		3	1.6B	20			3	0.3S	25
		5					5		
		1					2		
		4	1.6B	24			4	0.3S	15
		7					6		
412.8									
Medium, moist to very moist, red, Sandy Clay Loam to Sandy Clay A-4	15.0	5				40.0	1		
		11	0.8S	21			7	0.4S	20
		12					10		
		4							
		12	0.8E	19					
		18							
407.8					382.8				
Dense, moist, red brown, Silty Sand to Sand Loam 79% Sand, 7% Silt, 14% Clay	20.0	6			Medium dense, moist, grey and brown, Fine Silty Sand with Clay lenses 60% Sand, 32% Silt, 8% Clay	45.0	6		
		24		18			9		11
		24					12		
405.3									
Medium, very moist, grey and brown, Silty Clay A-6 with Silt lenses		2							
		3	0.8S	25					
		4							
402.8					377.8				
	25.0	2				50.0	7		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Route: FAI 24 Date: 4/5/201

Section: 64-3 HB

County: Massac

Boring No: 4-S (2016)
Station: 240+32
Offset: 19' Lt CL WBL
Ground Surface: 427.3 Ft

Description	DEPTH	BLOWS	Qu tsf	W%	Description	DEPTH	BLOWS	Qu tsf	W%
Very dense, damp to moist, white and brown, Fine Silty Sand 73% Sand, 23% Silt, 4% Clay		100/11"		6	Very dense, damp, white and brown, Fine Sand		31		
							62		
372.8									
Very dense, damp, white and brown, Fine Sand 88% Sand, 9% Silt, 3% Clay	55.0	12				80.0	21		
		29		3			100/6"		
		25							
367.8									
Medium dense, moist, grey to white, Silt 4% Sand, 88% Silt, 8% Clay	60.0	3				85.0	12		
		10		14			37		
		12			341.3		60		
					Bottom of sampling = 86.0 feet				
					No free water encountered				
	65.0	2			Boring was advanced to 99.5 feet to observe free water. Noted at 96.5 feet at completion, and boring remained open for 72 hours.	90.0			
		7							
		10			Elevation referenced to BM at NE corner of SN 064-0028; Elevation = 429.3 feet				
357.8					Borehole advanced with hollow stem auger (8" O.D., 3.25" I.D.)				
Medium to soft, moist, grey, Silt Loam to Silty Clay Loam A-4	70.0	2			To convert "N" values to "N60" multiply by 1.25	95.0			
		4	0.5B	23					
		7							
352.8									
	75.0	7				100.0			

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ESCA CONSULTANTS, INC.

USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -
ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
PLOT SCALE = 0.2 '/' / in.	DRAWN - KAH 06/18	REVISED -
PLOT DATE = 10/4/2018 1:03:50 PM	CHECKED - ELH/RTM 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)

SHEET NO. 26 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	96

CONTRACT NO. 78502

ILLINOIS FED. AID PROJECT

ILLINOIS DEPARTMENT OF TRANSPORTATION
District Nine Materials

Bridge Foundation Boring Log — Sheet 1 of 3

FAI 24 Over FAS 962 (Country Club Road)

Route: FAI 24 Structure Number: 064-0028 Date: 4/14/2016

Section 64-3 HB Bored By: R Moberly

County: Massac Location: 2 miles North of US 45 Checked By: R Moberly

Boring No 5-S (2016)
Station 241+70
Offset 31' Rt CL WBL
Ground Surface 426.9 Ft

Surf Wat Elev:
Ground Water Elevation when Drilling 345.9
At Completion
At: Hrs: (washed)

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Very stiff, moist, brown, Silty Clay to Clay A-6			2 / 5 / 6	2.3S	18
	422.4				
Stiff, moist, brown mottled grey, Clay to Silty Clay A7-6		5.0	1 / 4 / 4	1.5B	23
	419.9				
Stiff, moist to very moist, brown mottled grey, Silty Clay A-6			1 / 3 / 4	1.1B	26
		10.0	1 / 3 / 3	1.0B	20
			1 / 3 / 3	1.1B	22
	412.4				
Medium to dense, moist, red brown, Gravel with Clay binder		15.0	5 / 13 / 15		
			5 / 14 / 16		
	407.4				
Hard, damp to moist, red and grey, Clay A7-6		20.0	2 / 6 / 8	5.4B	19
	404.9				
Very stiff, moist, grey and red, Clay A7-6			1 / 4 / 6	3.1S	29
		25.0	1		
Very stiff, moist, grey and red, Clay A7-6			4 / 5	2.8S	34
			1 / 4 / 5	3.5S	37
		30.0	1 / 3 / 5	2.7S	35
			1 / 3 / 4	2.7B	34
		35.0	1 / 3 / 3	2.2B	31
			1 / 3 / 4	2.3B	36
	387.4				
Stiff, moist, brown, Clay A7-6		40.0	1 / 3 / 5	1.9B	29
	382.4				
Stiff, moist, brown, Silty Clay A-6 with layers of Clay A7-6 and Fine Sand lenses		45.0	1 / 2 / 3	1.2B	29
	377.4				
		50.0	1		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 2 of 3

Route: FAI 24 Date: 4/14/201

Section: 64-3 HB

County: Massac

Boring No: 5-S (2016)
Station: 241+70
Offset: 31' Rt CL WBL
Ground Surface: 426.9 Ft

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Very stiff, moist, red and grey, Clay A7-6 with Fine Sand lenses			3 / 4	2.3B	39
	371.9				
Very dense, damp, brown and white, Medium grained Sand		55.0	2 / 24 / 60		
	367.4				
Medium to soft, moist to very moist, grey, Silt to Silt Loam A-4 3% Sand, 84% Silt, 13% Clay		60.0	2 / 6 / 8	0.7S	17
		65.0	2 / 4 / 7	0.4S	16
		70.0	2 / 6 / 7	0.3S	15
	352.4				
		75.0	1		
Medium to soft, very moist, grey, Silty Clay Loam A-4			2 / 4	0.5B	24
	347.4				
Very dense, moist to very moist, brown, medium grained Sand with clayey layers		80.0	24 / 45 / 16		
		85.0			
	337.4				
Stiff, moist to very moist, grey and brown, Clay A7-6 with Sand seams		90.0	1 / 2 / 3	1.2B	23
		95.0			
Sand blow-in, washed 4'	327.9				
Very dense, moist, brown, Coarse grained Sand		100.0	12		

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

Sheet 3 of 3

Route: FAI 24 Date: 4/14/20

Section: 64-3 HB

County: Massac

Boring No: 5-S (2016)
Station: 241+70
Offset: 31' Rt CL WBL
Ground Surface: 426.9 Ft

Description	Elev.	DEPTH	BLOWS	Qu tsf	W%
Very dense, moist, brown, Coarse grained Sand			21 / 47		
		105.0	14 / 24 / 52		
	320.9				
		110.0			
		115.0			
		120.0			
		125.0			
		130.0			
		135.0			
		140.0			
		145.0			
		150.0			

Bottom of hole = 106.0 feet

Free water observed at 81.0 feet

Elevation referenced to BM at NE corner SN 064-0028; Elevation = 429.3 feet

Borehole advanced with hollow stem auger (8" O.D, 3.25" I.D.)

To convert "N" values to "N60" multiply by 1.25

Washout procedures were used from 99.5 to 104.5 feet

N-Std Pentr Test: 2" OD Sampler,140# Hammer, 30" Fall (Type Fail. B-Bulge S-Shear E-Estimated P-Penetrometer)

ESCA CONSULTANTS, INC.	USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -
	ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -
	PLOT SCALE = 0.2 ' / in.	DRAWN - KAH 06/18	REVISED -
	PLOT DATE = 10/4/2018 1:03:58 PM	CHECKED - ELH/RTM 06/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)

SHEET NO. 27 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	97
		CONTRACT NO. 78502		
		ILLINOIS FED. AID PROJECT		

FORM NO. B. D. [redacted] 137 REV. 9-60

Sh. of

BRIDGE FOUNDATION BORING LOG

PROJECT -
BRIDGE CARRYING FAI 24 OVER TR 115
Date JUNE, 1968
ROUTE FAI 24
Bored By JOEL CONGIARDO
SEC. 64-3HB
STA. 240+78.4=20+00 TR 115
Checked By GARY PULLEY
COUNTY MASSAC

Boring No. 1S
Station 239+85.3
Offset 14' RT EBL

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

Description	Elevation	Depth	N	Qu t/s.f.	w (%)
Ground Surface	426.1	0			
MEDIUM VERY MOIST BROWN SILTY CLAY A-6(10)	423.1				
MEDIUM MOIST BROWN MOTTLED GREY SILTY CLAY TO SILTY CLAY LOAM A-6(9-10)			10	0.9B	28
		-5			
			7	0.9B	25
			27	1.1B	21
	415.6	-10			
VERY STIFF MOIST BROWN MOTTLED RED CLAY & GRAVEL			18	2.6B	16
	413.1				
VERY STIFF MOIST GREY MOTTLED BROWN & RED CLAY A7-6(20)+			13	2.3S	28
	410.6	-15			
VERY DENSE BROWN COARSE SAND AND GRAVEL			60	-	13
	408.1				
STIFF TO MEDIUM MOIST BROWN MOTTLED GREY VARVED CLAY A-6(10-11)			12	1.2B	21
		-20			
			10	0.7B	26

Description	Elevation	Depth	N	Qu t/s.f.
SEE PREVIOUS COLUMN			8	0.8B
	400.6	-25		
VERY STIFF MOIST GREY MOTTLED RED CLAY A7-6(20)+			11	2.4B
	398.1			
VERY STIFF MOIST BROWN CLAY TO CLAY SHALE			11	4.0B
	395.6	-30		
MEDIUM DAMP GREY MOTTLED RED SANDY CLAY LOAM A-4(3)			15	-
	393.1			
MEDIUM DAMP GREY MOTTLED BROWN SANDY CLAY LOAM A-4(4)			16	0.7S
	390.6	-35		
MEDIUM DAMP FINE GRAINED GREY SAND			23	-
	388.1			
DENSE TO VERY DENSE DAMP WHITE FINE GRAINED SAND			38	-
		-40		
	384.6		61	-
BOTTOM OF HOLE = 41.5 FEET				
		-45		

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

Qu – Unconfined Compressive Strength – t/sf

w – Water Content – percentage of oven dry weight – %.

Type failure:
B – Bulge Failure
S – Shear Failure
E – Estimated Value

FORM NO. B. D. [redacted] 137 REV. 9-60 — Sh. of

BRIDGE FOUNDATION BORING LOG

PROJECT: --
ROUTE: FAI 24
SEC.: 64-3HB
COUNTY: MASSAC
BRIDGE: CARRYING FAI 24 OVER TR 115
STA.: 240+78.4 FAI 24=20+00 TR 115
Date: JUNE 7, 1968
Bored By: JOEL CONGIARDO
Checked By: DALE BAILEY

Boring No.: 4 S
Station: 241+17.8
Offset: 8' LEFT EBL

Surface Water El.: NONE
Groundwater El. at Completion: ____
After ____ Hours: ____

Description	Elevation	N	Qu t/s.f.	w (%)
Ground Surface	424.7 / 0			
STIFF MOIST BROWN MOTTLED GRAY SILTY CLAY A-6(10-11)		5	1.3B	22
	-5	7	0.8B	28
		9	1.7B	18
	414.2 / -10			
STIFF VERY MOIST BROWN MOTTLED GRAY CLAY TO CLAY LOAM & GRAVEL A-7-6(14)		9	1.2B	23
	411.7			
STIFF MOIST BROWN MOTTLED GRAY GRAVEL WITH CLAY LOAM BINDER		15	1.8B	18
	-15 / 409.2			
VERY STIFF MOIST RED MOTTLED GRAY CLAY TO CLAY LOAM A-7-6(14)		13	2.4B	22
	406.7			
SEE NEXT COLUMN		10	2.6S	35
	-20	12	2.2B	28

Description	Elevation	N	Qu t/s.f.
VERY STIFF MOIST RED MOTTLED GRAY CLAY A-7-6(30)		11	2.4B
	-25	12	3.3S
		17	3.4S
	-30 / 394.2		
VERY STIFF MOIST RED MOTTLED GRAY CLAY TO CLAY LOAM A-4(8)		12	2.4B
		11	2.2S
	-35	10	2.2S
	396.7		
MEDIUM MOIST BROWN SANDY CLAY LOAM A-4(3)		14	1.9S
	-40	14	-
	-45	14	1.3S

N – Standard Penetration Test – Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
Qu – Unconfined Compressive Strength – t/sf
w – Water Content – percentage of oven dry weight – %
Type failure: B – Bulge Failure; S – Shear Failure; E – Estimated Value

FORM NO. B. D. [redacted] 137 REV. 9-60 — Sh. of

BRIDGE FOUNDATION BORING LOG

PROJECT: --
ROUTE: FAI 24
SEC.: 64-3HB
COUNTY: MASSAC
BRIDGE: CARRYING FAI 24 OVER TR 115
STA.: 240+78.4 FAI 24=20+00 TR 115
Date: JUNE 7, 1968
Bored By: JOEL CONGIARDO
Checked By: DALE BAILEY

Boring No.: 4 S
Station: 241+17.8
Offset: 8' LT WBL

Surface Water El.: NONE
Groundwater El. at Completion: ____
After ____ Hours: ____

Description	Elevation	N	Qu t/s.f.	w (%)
Ground Surface	40			
MEDIUM MOIST BROWN SANDY CLAY LOAM		14	-	21
		14	1.3S	23
VERY DENSE BROWN COARSE GRAINED SAND	45 / 379.2			
	378.3	100	BLOWS 9 INCHES	
BOTTOM OF HOLE = 46.4 FEET				

DURING DRILLING OPERATIONS IT APPEARED THAT FREE WATER WAS ENCOUNTERED AT 10.5 FEET

N – Standard Penetration Test – Blows per foot to drive 2" O.D. Split Spoon Sampler 12" with 140# hammer falling 30".
Qu – Unconfined Compressive Strength – t/sf
w – Water Content – percentage of oven dry weight – %.
Type failure: B – Bulge Failure; S – Shear Failure; E – Estimated Value

ESCA CONSULTANTS, INC.

USER NAME = SKM	DESIGNED - RTM 04/18	REVISED -	
ESCA PROJECT NO. 1295.03	CHECKED - RDP 04/18	REVISED -	
PLOT SCALE = 0.2 ' / in.	DRAWN - KAH 06/18	REVISED -	
PLOT DATE = 10/4/2018 1:04:09 PM	CHECKED - ELH/RTM 06/18	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NO. 064-0046 (WB) & 064-0045 (EB)
SHEET NO. 29 OF 29 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	99

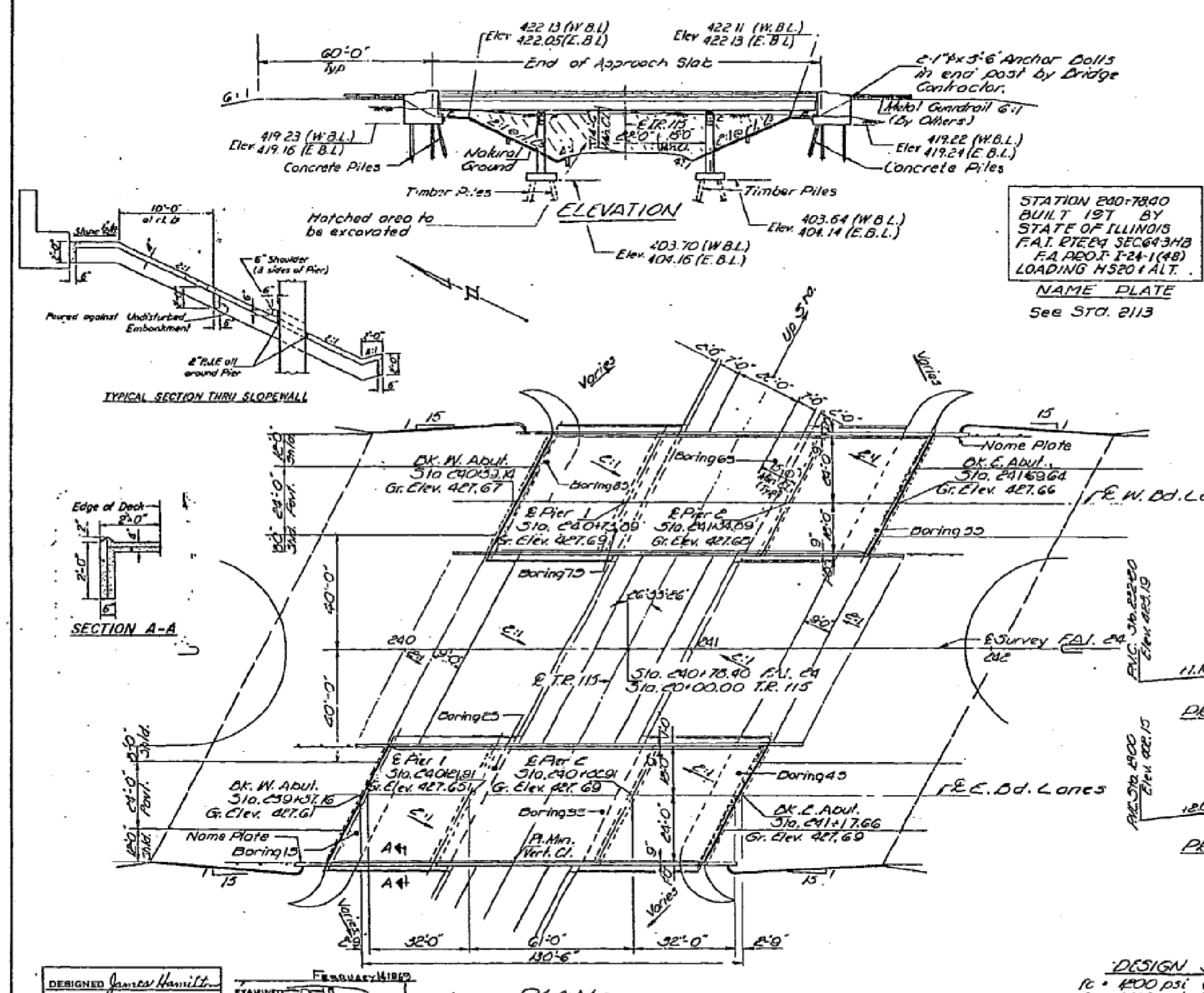
CONTRACT NO. 78502
ILLINOIS FED. AID PROJECT

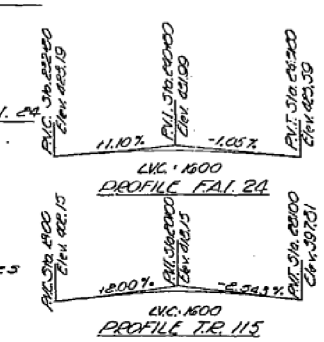
BM: 18-Elev. 424.46 Boat Spike in 6" Sassafras 625' Rt. of Sta. 244+40

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

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 24	64-3HB	MASSAC	58	17

SHEET NO. 1
17 SHEETS





GENERAL NOTES

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

Field connections shall be bolted using high strength bolts. Bolts ¾" φ, open holes 13/16" φ, unless otherwise noted.

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

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

Anchor bolts shall be set before bolting cross frames over supports.

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

Class A Excavation for structures includes excavation for slope wall.

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

The contractor shall drive two concrete test piles in permanent locations, one at East Abutment of East Bound structure and one at West Abutment of the West Bound structure; he shall also drive one timber pile in the vicinity of Pier #1 of the East Bound structure and one timber pile in the vicinity of Pier #2 of the West Bound structure.

The Basic Lead Silica Chromate Paint System shall be used for shop and field painting of Structural steel.

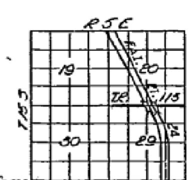
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.

Calculated weight of Structural Steel = 219,460 lbs.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Sub	Total
Class A Excavation for Structs.	Cu. Yds.		845	845
Protective Coat	Sq. Yds.	1327	43	1370
Class X Concrete	Cu. Yds.	348.5	416.0	764.5
Furnishing & Erecting Structural Steel	L. Sum.	1		1
Stud Shear Connectors	Ea.	1548		1548
Aluminum Railing	Lin. Ft.	508		508
Reinforcement Bars	Lbs.	92530	48,080	140610
Creosoted Piles (to 20')	Lin. Ft.		1320	1320
Concrete Piles	Lin. Ft.		1890	1890
Test Piles (Timber)	Each		2	2
Test Piles (Concrete)	Each		2	2
Name Plates	Each		2	2
Slope Walls (4")	Sq. Yds.		1030	1030
Creosoted Piles (20.1' to 38')	Lin. Ft.		616	616
Preformed Joint Sealer	Lin. Ft.	179		179

DESIGN STRESSES
f'c = 3500 psi (Deck Slab)
f'c = 3500 psi (Curb, Parapet, Sub)
fs = 20,000 psi (Reinf.)
fs = 20,000 psi (Struct.)
Vo = 75 psi (Ftgs.)
n = 10
Allowable ℄ Deflection, L/1200 Comp. L/1000 Non-Comp.
LOADING HS 20-44 & Alt.



LOCATION SKETCH

F.A. PROJ. I-24-1(48)34
GENERAL PLAN & ELEVATION
F.A.I. Rt 24 Over T.R. 115
F.A.I. Rt 24 SEC. 64-3HB
MASSAC COUNTY
STATION 240+78.40

DESIGNED James Hewitt
CHECKED
DRAWN F. Mercado
CHECKED
EXAMINED
PASSED
APPROVED
February 1, 1969

Rev. 6-4-70 M.H.

REVISED 9-22-70

ESCA CONSULTANTS, INC.	USER NAME = skm	DESIGNED - JMK	REVISED -
	ESCA PROJECT NO. 1295.03	DRAWN - JMK	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - ELH	REVISED -
	PLOT DATE = 10/4/2018 1:04:23 PM	DATE - 03/18	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS
FOR INFORMATION ONLY

SCALE: NA | SHEET NO. 1 OF 10 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
24	(64-3HB)BR-1	MASSAC	158	100

CONTRACT NO. 78502

FED. ROAD DIST. NO. | ILLINOIS | FED. AID PROJECT