01-17-2025 LETTING ITEM 117

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	1
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

PLANS FOR PROPOSED
LOCAL BRIDGE FORMULA PROGRAM

SECTION 20-00131-00-BR LAWRENCE COUNTY
PROJECT XSIQ(084)
JOB NO. C-97-028-24
FAS 801

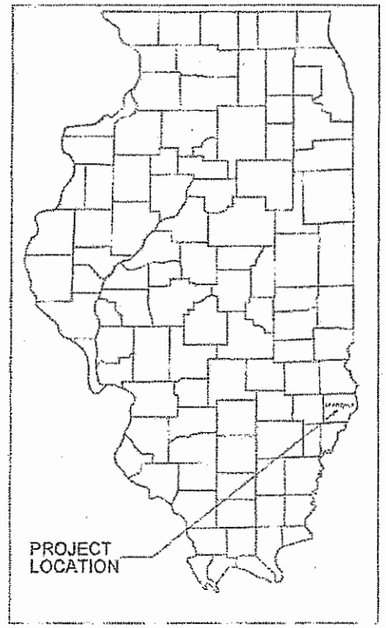
INDEX OF SHEETS

PLAN	0 50' 100'
PROFILE HOR.	0 50' 100'
PROFILE VERT.	0 5' 10'
CROSS SECTIONS	
HOR.	0 10' 20'
VERT.	0 10' 20'

NOTE: SCALES VALID FOR 22" X 34" SHEETS

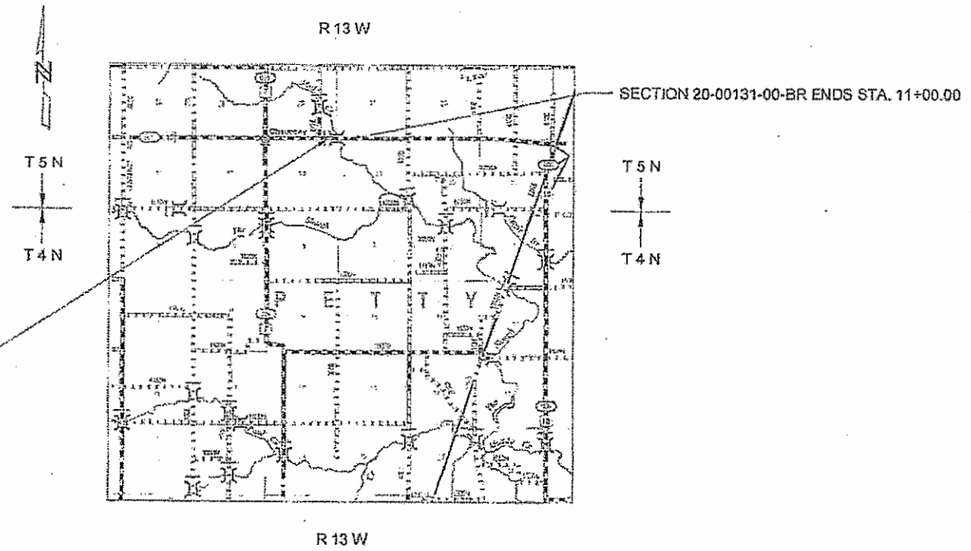
Joint Utility Locating Information for Excavators

JULIE 1-800-892-0123



HIGHWAY STANDARDS:

STANDARD 000001-09	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
STANDARD 280001-07	TEMPORARY EROSION CONTROL SYSTEMS
STANDARD 406201-01	MAILBOX TURNOUT
STANDARD 515001-04	NAME PLATE FOR BRIDGES
STANDARD 630001-13	STEEL PLATE BEAM GUARDRAIL
STANDARD 630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
STANDARD 631032-10	TRAFFIC BARRIER TERMINAL, TYPE 0A
STANDARD 701901-10	TRAFFIC CONTROL DEVICES
STANDARD 725001-01	OBJECT AND TERMINAL MARKERS
STANDARD BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



SINGLE-SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
69'-1 ½" SK.-SK. ABUTMENTS
STEEL H PILE / SPILL-THROUGH ABUTMENTS
30' WIDE DECK
EXISTING STRUCTURE NO. 051-3126
PROPOSED STRUCTURE NO. 051-3316

CONTRACT 95970
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR
ADT = 350
DESIGN SPEED = 40 MPH

NET LENGTH SECTION 20-00131-00-BR = 950.00 Ft. = 0.180 Mi.

BRANDON M. BRIDGES
062.064453
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
9/30/2024

LICENSE EXPIRES 11/30/2025

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH KITCHELL AVENUE
P.O. BOX 397
OLNEY, ILLINOIS 62450
(618) 392-0736
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

APPROVED 9-30-24
COUNTY ENGINEER

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PASSED 11/06/24
DISTRICT SEVEN ENGINEER OF LOCAL ROADS AND STREETS

Releasing For Bid Based on Limited Review 11/06/24
REGION FOUR ENGINEER

GENERAL NOTES

THE CONTRACTOR SHALL CONTACT JULIE (1-800-892-0123) BEFORE COMMENCING WORK. UNDERGROUND UTILITIES SHOWN ON THE PLAN SHEETS WERE OBTAINED FROM LOCAL UTILITY COMPANIES AND OTHER AVAILABLE SOURCES. LOCATIONS, SIZE, MATERIAL, DESCRIPTION, OR TYPE OF EXISTING UTILITIES INDICATED ON THE PLANS ARE NOT REPRESENTED AS BEING ACCURATE, SUFFICIENT, OR COMPLETE AND SHALL BE CONSIDERED APPROXIMATE. ABOVE GROUND UTILITY LOCATIONS ARE SHOWN AS FOUND DURING THE INITIAL SURVEY FIELD WORK AND MAY NOT REFLECT CURRENT CONDITIONS. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND COORDINATION WITH UTILITY COMPANIES.

THE ESTIMATED QUANTITY SHOWN IN THE SUMMARY OF QUANTITIES FOR HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70 INCLUDES 190 TONS FOR THE FIRST LIFT, 340 TONS FOR THE FINAL LIFT, AND 10 TONS AT RT. STA. 10+45 P.E. (FOR INFORMATION ONLY). THE HOT-MIX ASPHALT SHALL END AT THE BACK OF EACH ABUTMENT-NO H.M.A. OVERLAY ON THE BRIDGE STRUCTURE.

THE FOLLOWING RATES HAVE BEEN USED TO CALCULATE PLAN QUANTITIES:

AGGREGATE DITCH (SPECIAL)	1.75 TONS/CU YD
STONE DUMPED RIPRAP, CLASS A4	1.75 TONS/CU YD
AGGREGATE BASE COURSE, TY-B	2.0 TONS/CU YD
BITUMINOUS MATERIALS (PRIME COAT)	0.25 LB/SQ FT
BITUMINOUS MATERIALS (TACK COAT)--OVER NEW HMA LIFTS	0.025 LB/SQ FT
BITUMINOUS MATERIALS (TACK COAT)--OVER EX. HMA LIFTS AND EXISTING OIL & CHIP SURFACES	0.05 LB/SQ FT
HOT-MIX ASPHALT SURFACE COURSE	112 LBS/(SQ YD * INCH THICKNESS)

PAVEMENT DESIGN DATA

ADT = 350 CLASS IV

MAJOR COLLECTOR

DESIGN SPEED = 40 MPH

PV = 308

SU = 31

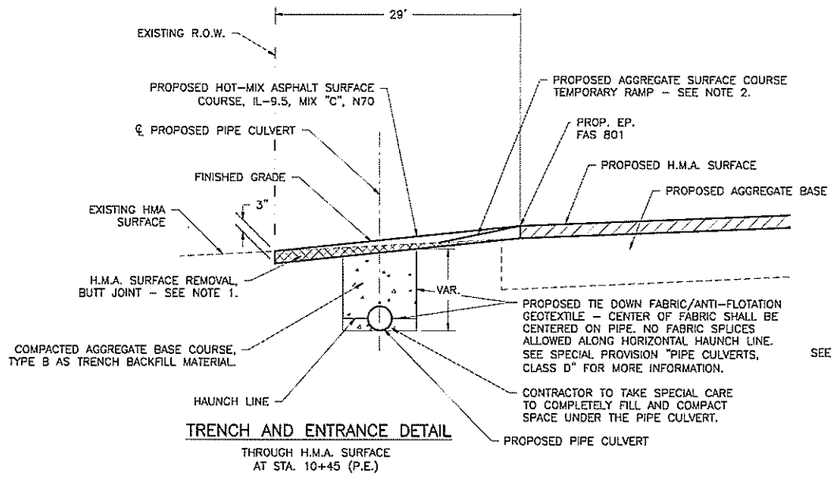
MU = 11

PAVEMENT TYPE: HOT-MIX ASPHALT, 3" TOTAL NOMINAL THICKNESS

BASE TYPE: AGGREGATE BASE COURSE, TYPE B - 12" THICK

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
LOCATION:	FAS 801 (CH 10)
MIXTURE APPLICATION:	HOT-MIX ASPHALT SURFACE COURSE
PERFORMANCE GRADE:	PG 64-22
DESIGN AIR VOIDS:	4% @ N=70 GYRATIONS
MIXTURE COMPOSITION:	IL - 9.5
FRICTION AGGREGATE:	MIXTURE "C"
MIXTURE UNIT WEIGHT:	112 LBS / SQ YD / INCH THICKNESS
QUALITY MANAGEMENT PROGRAM:	QC/QA

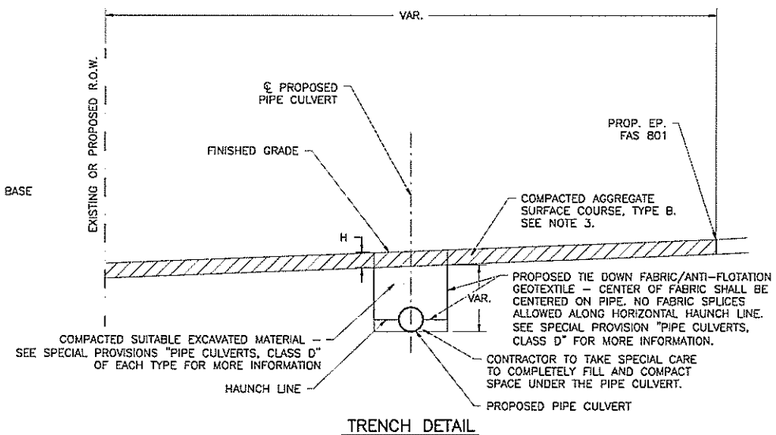
PROPOSED PAVEMENT STRUCTURE MATERIALS:
STA. 1+50 TO 11+00
1½" H.M.A. SURFACE COURSE - FINAL LIFT
1½" H.M.A. SURFACE COURSE - FIRST LIFT
3" TOTAL H.M.A. OVERLAY



TRENCH AND ENTRANCE DETAIL

THROUGH H.M.A. SURFACE AT STA. 10+45 (P.E.)

NOTES:
1. COST OF HOT-MIX ASPHALT SURFACE REMOVAL, BUTT JOINT SHALL BE INCLUDED IN ITEM "40604052 - HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70."
2. PLACE AGGREGATE SURFACE COURSE TEMPORARY RAMP IMMEDIATELY AFTER EACH LIFT OF H.M.A. TO PROVIDE AGGREGATE ACCESS RAMP FOR ENTRANCES. COST OF REMOVAL OF AGGREGATE SURFACE COURSE TEMPORARY RAMP SHALL BE INCLUDED IN "40604052 - HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70."
3. PROPOSED DRIVEWAY SHALL MATCH HORIZONTAL DIMENSIONS OF EXISTING DRIVEWAY.



TRENCH DETAIL

THROUGH AGGREGATE OR GRASS SURFACES

NOTES:
1. DIMENSION H = 6" FOR PRIVATE ENTRANCES (PE)
2. DIMENSION H = 6" FOR FIELD ENTRANCES (FE)
3. OMIT AGGREGATE SURFACE COURSE AT TRENCH LOCATIONS WHERE NO PROPOSED PRIVATE OR FIELD ENTRANCE IS LOCATED. CONSTRUCT TOP OF TRENCH TO FINISHED GRADE WITH SUITABLE EXCAVATED MATERIAL APPROVED BY THE ENGINEER.

SCHEDULE OF KNOWN UTILITIES

DESIGN STAGE JULIE NO. X1541228

UTILITY COMPANY	TYPE	CONTACT NAME	PHONE NUMBER	E-MAIL ADDRESS	MAILING ADDRESS
NORRIS ELECTRIC CO-OP	ELECTRIC	TIM HUBER	618-783-8765	thuber@norriselectric.com	8543 N. ILLINOIS 130, NEWTON, IL 62448
AT&T TRANSMISSION	COMMUNICATIONS	VANESSA ROSS	217-381-4284	vr2021@att.com	2500 COLT ROAD, SPRINGFIELD, IL 62707
TELEPORT COMMUNICATIONS AMERICA	COMMUNICATIONS	TIM LAPOINTE	281-352-3631	tl0695@att.com	1010 PINE ST. 19 W-C-01, ST. LOUIS, MO 63101
FRONTIER COMMUNICATIONS	COMMUNICATIONS	BRIAN VANGUNDY	618-395-6189	brian.vangundy@ftr.com	225 E. CHESTNUT ST, OLNEY, IL 62450
FLAT ROCK TELEPHONE CO-OP	COMMUNICATIONS	VINCENT DECKER	618-584-3211	vince@frtci.net	104 RUNDLE ST, FLAT ROCK, IL 62427

COMMITMENTS

1. U.S. ARMY CORPS OF ENGINEERS SECTION 404 NATIONWIDE PERMIT.
2. TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT SHALL NOT BE CLEARED BETWEEN APRIL 1 AND SEPTEMBER 30 OF ANY GIVEN YEAR.

SUMMARY OF QUANTITIES

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20200100	EARTH EXCAVATION	CU YD	1,040
20300100	CHANNEL EXCAVATION	CU YD	785
20400800	FURNISHED EXCAVATION	CU YD	575
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	500
35101400	AGGREGATE BASE COURSE, TYPE B	TON	1,925
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	115
40600275	BITUMINOUS MATERIALS (PRIME COAT)	POUND	4,855
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	1,345
40600370	LONGITUDINAL JOINT SEALANT	FOOT	950
40604052	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	TON	540
44000100	PAVEMENT REMOVAL	SQ YD	2,324
48101200	AGGREGATE SHOULDERS, TYPE B	TON	160
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	40.4
50300280	CONCRETE ENCASEMENT	CU YD	3.5
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	2,010
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	5,660
50901050	STEEL RAILING, TYPE SM	FOOT	138
51201600	FURNISHING STEEL PILES HP12X53	FOOT	459
51204650	PILE SHOES	EACH	9
51202305	DRIVING PILES	FOOT	459
51203600	TEST PILE STEEL HP12X53	EACH	1
51500100	NAME PLATES	EACH	1
542D0220	PIPE CULVERTS, CLASS D, TYPE 1 15"	FOOT	40
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	200
542D0235	PIPE CULVERTS, CLASS D, TYPE 1 30"	FOOT	60
542D0241	PIPE CULVERTS, CLASS D, TYPE 1 36"	FOOT	280
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	58
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	112.5
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.95

* SPECIALTY ITEM

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH MITCHELL AVENUE OLNEY, ILLINOIS 62450
P.O. BOX 397 (618) 392-0736
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

DESIGNED - BMB	REVISED -
DRAWN - BMB	REVISED -
CHECKED - BMB	REVISED -
DATE - 9-20-2024	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES, GENERAL NOTES, AND DETAILS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	2
CONTRACT 95970		ILLINOIS	PROJECT XSIO(084)	

EARTHWORK SCHEDULE

CODE NUMBER		20200100	20300100	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LOCATION	STATION	EARTH EXCAVATION	CHANNEL EXCAVATION	PERCENT USED	ESTIMATED UNSUITABLE MATERIAL	ESTIMATED SUITABLE MATERIAL	SHRINKAGE FACTOR	ESTIMATED SUITABLE MATERIAL ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
		(CU YD)	(CU YD)	(%)	(CU YD)	(CU YD)	(%)	(CU YD)	(CU YD)	(CU YD)
LT. & RT.	STA. 1+50 TO 5+65.52	560		100	0	560	25	420	885	-465
LT. & RT.	STA. 5+65.52 TO 6+34.48 (PROPOSED BRIDGE)		785	50	392.5	392.5	25	294		294
LT. & RT.	STA. 6+34.48 TO 11+00	350		100	0	350	25	263	670	-407
	SUBTOTAL =	910	785		392.5	1302.5		977	1555	
	VOLUMES NOT SHOWN ON CROSS SECTION SHEETS									
LT. & RT.	CONCRETE STRUCTURES & CLSM ABUTMENT BACKFILL VOID	130		100	0	130	25	98		98
LT.	STA. 2+70 (FIELD ENTRANCE)								5	-5
RT.	STA. 4+00 (FIELD ENTRANCE)								80	-80
RT.	STA. 10+45 (PRIVATE ENTRANCE)								10	-10
	TOTAL =	1040	785		392.5	1432.5		1075	1650	-575

NOTES: 1. COST OF EXCAVATION FOR CONCRETE STRUCTURES INCLUDED IN ITEM "EARTH EXCAVATION."
2. SUITABLE EXCAVATED MATERIAL EXCAVATED FROM THE CHANNEL SHALL BE USED TO CONSTRUCT THE SHOULDER WIDENING.
3. UNSUITABLE MATERIAL SHALL BE DISPOSED OFF THE JOBSITE BY THE CONTRACTOR.
4. FURNISHED EXCAVATION = 575 C.Y.

ROADWAY SCHEDULE

CODE NUMBER		35101400	40200800	44000100	48101200
LOCATION	STATION	AGGREGATE BASE COURSE, TYPE B	AGGREGATE SURFACE COURSE, TYPE B	PAVEMENT REMOVAL	AGGREGATE SHOULDERS, TYPE B
		(TON)	(TON)	(SQ YD)	(TON)
LT. & RT.	STA. 1+50 TO 5+65.52	870		1016	70
LT. & RT.	STA. 5+65.52 TO 6+34.48			170	
LT. & RT.	STA. 6+34.48 TO 11+00	950		1138	90
LT.	STA. 2+70 (F.E.)	45	40		
RT.	STA. 4+00 (F.E.)		50		
RT.	STA. 4+85 (EX. CULV. BEDDING BACKFILL)	20			
RT.	STA. 10+45 (P.E.)	40	25		
	TOTAL =	**1925**	**115**	**2324**	**160**

NOTES: 1. SEE PIPE CULVERT SCHEDULE FOR PRIVATE ENTRANCE PIPE CULVERT QUANTITIES
2. RT. STA. 10+45 (P.E.) QUANTITY OF AGGREGATE BASE COURSE, TYPE B INCLUDES 20 TONS FOR TRENCH BACKFILL PURPOSES.

GUARDRAIL SCHEDULE

CODE NUMBER		63100087	63000001	63100167	72501000
LOCATION	STATION	TRAFFIC BARRIER TERMINAL, TYPE 6A	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TERMINAL MARKER - DIRECT APPLIED
		(EACH)	(FOOT)	(EACH)	(EACH)
LT.	STA. 5+22 TO 5+60	1			
RT.	STA. 5+33 TO 5+71	1			
LT.	STA. 6+29 TO 6+67	1			
RT.	STA. 6+40 TO 6+78	1			
RT.	STA. 4+52 TO 4+90			1	
LT.	STA. 4+72 TO 5+10			1	
RT.	STA. 6+90 TO 7+28			1	
LT.	STA. 7+10 TO 7+48			1	
RT.	STA. 4+90 TO 5+33		43.75		
LT.	STA. 5+10 TO 5+22		12.50		
LT.	STA. 6+67 TO 7+10		43.75		
RT.	STA. 6+77 TO 6+90		12.50		
RT.	STA. 4+52				1
LT.	STA. 4+72				1
RT.	STA. 7+27				1
LT.	STA. 7+48				1
	TOTAL =	**4**	**112.5**	**4**	**4**

NOTE: SEE SHEET 6 FOR GUARDRAIL PLAN

SEEDING SCHEDULE

CODE NUMBER		X2501000	FOR INFORMATION ONLY			
LOCATION	STATION	SEEDING, CLASS 2 (SPECIAL)	NITROGEN FERTILIZER NUTRIENT (100 LBS/ACRE)	PHOSPHOROUS FERTILIZER NUTRIENT (100 LBS/ACRE)	SUITABLE POTASSIUM FERTILIZER NUTRIENT (100 LBS/ACRE)	MULCH METHOD 2 (2 TONS/ACRE)
		(ACRE)	(POUND)	(POUND)	(POUND)	(TONS)
LT. & RT.	STA. 1+50 TO 5+65.52	0.45	45	45	45	0.90
LT. & RT.	STA. 6+34.48 TO 11+00	0.50	50	50	50	1.00
	TOTAL =	**0.95**	**95**	**95**	**95**	**1.90**

NOTE: FERTILIZER AND MULCH QUANTITIES SHOWN ARE FOR INFORMATION ONLY, SEE SPECIAL PROVISIONS

PIPE CULVERT SCHEDULE

CODE NUMBER		542D0220	542D0229	542D0235	542D0241
LOCATION	STATION	PIPE CULVERTS, CLASS D, TYPE 1 15"	PIPE CULVERTS, CLASS D, TYPE 1 24"	PIPE CULVERTS, CLASS D, TYPE 1 30"	PIPE CULVERTS, CLASS D, TYPE 1 36"
		(FOOT)	(FOOT)	(FOOT)	(FOOT)
LT.	STA. 2+70				60
LT.	STA. 3+50 TO 5+70				220
RT.	STA. 4+00			60	
LT.	STA. 6+10 TO 8+10		200		
RT.	STA. 10+45	40			
	TOTAL =	**40**	**200**	**60**	**280**

NOTE: SEE ROADWAY SCHEDULE FOR AGGREGATE BASE COURSE QUANTITY FOR BACKFILLING TRENCH VOID FROM REMOVING EXISTING PIPE CULVERT

PIPE CULVERT REMOVAL SCHEDULE

LOCATION	STATION	DIAMETER	TYPE	PIPE CULVERT REMOVAL
		(IN)		(FOOT)
LT.	STA. 2+70	36	CMP	20
RT.	STA. 4+85	18	CMP	30
RT.	STA. 10+45	15	CMP	36
			TOTAL =	**86**

NOTES: 1. PIPE CULVERT REMOVAL WILL NOT BE PAID FOR SEPARATELY, BUT THE COST SHALL BE INCLUDED IN PIPE CULVERTS, CLASS D OF THE VARIOUS TYPES AND SIZES LISTED IN THE PLANS. SEE SPECIAL PROVISIONS.
2. ALL INFORMATION SHOWN IN THE PIPE CULVERT REMOVAL SCHEDULE IS "FOR INFORMATION ONLY"

GUARDRAIL REMOVAL SCHEDULE

LOCATION	STATION TO STATION	LENGTH
		(FOOT)
LT.	STA. 4+88 TO 5+64	76
RT.	STA. 5+00 TO 5+76	76
LT.	STA. 6+25 TO 7+01	76
RT.	STA. 6+36 TO 7+12	76
	TOTAL =	**304**

NOTE: 1. GUARDRAIL REMOVAL WILL NOT BE PAID FOR SEPARATELY, BUT THE COST SHALL BE INCLUDED IN REMOVAL OF EXISTING STRUCTURES.
2. ALL INFORMATION SHOWN IN THE GUARDRAIL REMOVAL SCHEDULE IS "FOR INFORMATION ONLY"

ROADWAY HOT-MIX ASPHALT AND AGGREGATE BASE COURSE ELEVATIONS

	PROPOSED						EXISTING	
STATION	HMA CENTERLINE PROFILE GRADE (FT)	TOTAL HMA DEPTH (FT)	TOP OF AGGREGATE BASE COURSE, TYPE B @ CENTERLINE (FT)	EST. BOTTOM OF AGGREGATE BASE COURSE, TYPE B @ CENTERLINE (FT)	EST. DEPTH OF AGGREGATE BASE COURSE, TYPE B @ CENTERLINE (FT)	TOP OF AGGREGATE BASE COURSE, TYPE B @ EDGE OF B.C. (1' BEYOND HMA PAV'T) (FT)	APPROXIMATE HMA CENTERLINE PROFILE GRADE (FT)	EXISTING HMA DEPTH @ CENTERLINE (FT)
1+50	446.54	0.25	446.29	445.29	1.00	446.04	446.54	0.25
1+75	446.52	0.25	446.27	445.27	1.00	446.02	446.54	0.25
2+00	446.53	0.25	446.28	445.28	1.00	446.03	446.51	0.25
2+25	446.57	0.25	446.32	445.32	1.00	446.07	446.47	0.25
2+50	446.64	0.25	446.39	445.39	1.00	446.14	446.43	0.25
2+75	446.75	0.25	446.50	445.50	1.00	446.25	446.31	0.25
3+00	446.89	0.25	446.64	445.64	1.00	446.39	446.50	0.25
3+25	447.06	0.25	446.81	445.81	1.00	446.56	446.49	0.25
3+50	447.22	0.25	446.97	445.97	1.00	446.72	446.47	0.25
3+75	447.35	0.25	447.10	446.10	1.00	446.85	446.45	0.25
4+00	447.45	0.25	447.20	446.17	1.03	446.95	446.42	0.25
4+25	447.52	0.25	447.27	446.14	1.13	447.02	446.39	0.25
4+50	447.56	0.25	447.31	446.11	1.20	447.06	446.36	0.25
4+75	447.57	0.25	447.32	446.08	1.24	447.07	446.33	0.25
5+00	447.57	0.25	447.32	446.18	1.14	447.07	446.43	0.25
5+25	447.57	0.25	447.32	446.22	1.10	447.07	446.47	0.25
5+50	447.57	0.25	447.32	446.26	1.06	447.07	446.51	0.25
5+75	447.57	0.25	447.32	446.26	1.06	447.07	446.51	0.25
5+65.52	447.57	0.25	447.32	446.29	1.03	447.07	446.54	0.25
6+34.48	447.57	0.25	447.32	446.24	1.08	447.07	446.49	0.25
6+50	447.57	0.25	447.32	446.02	1.30	447.07	446.27	0.25
6+75	447.57	0.25	447.32	446.28	1.04	447.07	446.53	0.25
7+00	447.57	0.25	447.32	446.25	1.07	447.07	446.50	0.25
7+25	447.57	0.25	447.32	446.20	1.12	447.07	446.45	0.25
7+50	447.57	0.25	447.32	446.15	1.17	447.07	446.40	0.25
7+75	447.57	0.25	447.32	446.21	1.11	447.07	446.46	0.25
8+00	447.57	0.25	447.32	446.27	1.05	447.07	446.52	0.25
8+25	447.57	0.25	447.32	446.32	1.00	447.07	446.60	0.25
8+50	447.57	0.25	447.32	446.32	1.00	447.07	446.67	0.25
8+75	447.57	0.25	447.32	446.32	1.00	447.07	446.81	0.25
9+00	447.57	0.25	447.32	446.32	1.00	447.07	446.96	0.25
9+25	447.60	0.25	447.35	446.35	1.00	447.10	447.10	0.25
9+50	447.68	0.25	447.43	446.43	1.00	447.18	447.28	0.25
9+75	447.82	0.25	447.57	446.57	1.00	447.32	447.55	0.25
10+00	448.01	0.25	447.76	446.76	1.00	447.51	447.82	0.25
10+25	448.27	0.25	448.02	447.02	1.00	447.77	448.17	0.25
10+50	448.58	0.25	448.33	447.33	1.00	448.08	448.52	0.25
10+75	448.92	0.25	448.67	447.67	1.00	448.42	448.89	0.25
11+00	449.26	0.25	449.01	448.01	1.00	448.76	449.26	0.25

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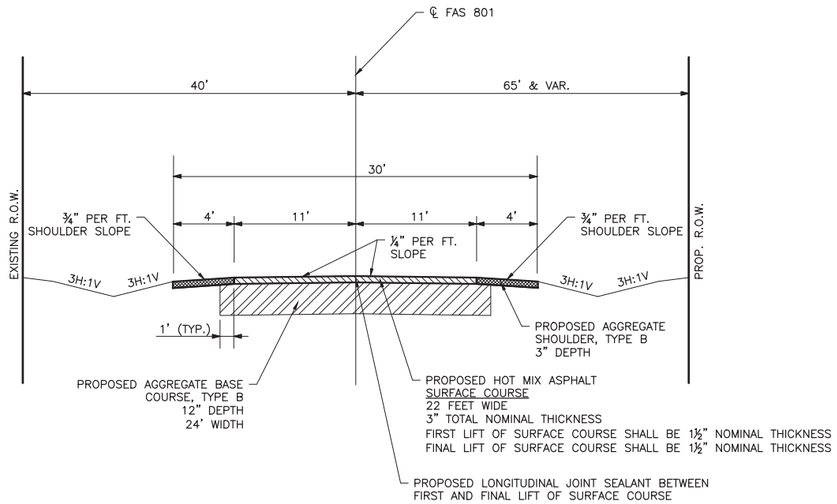
DATE – 9–20–2024	REVISED –	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

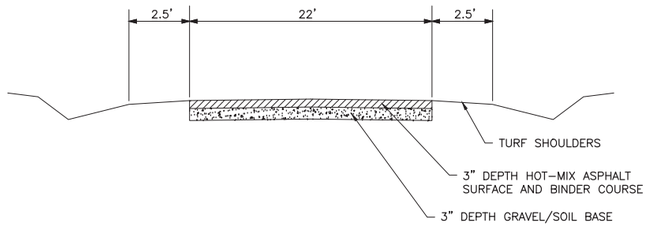
SCHEDULE OF QUANTITIES AND HMA/ AGGREGATE BASE COURSE ELEVATION TABLE

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	3
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



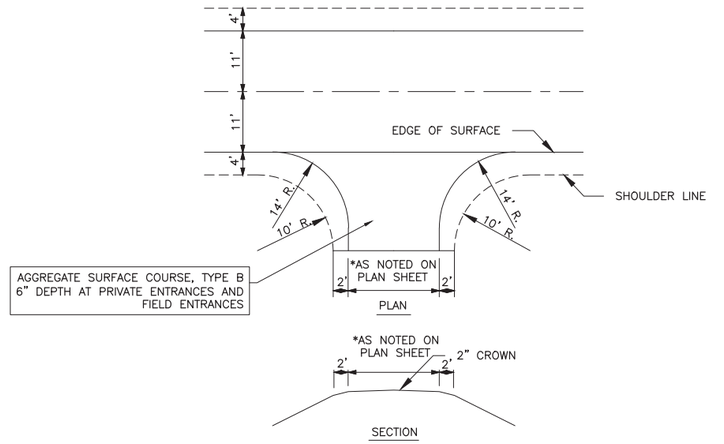
TYPICAL SECTION

PROPOSED
STA. 1+50.00 TO 11+00.00



TYPICAL SECTION

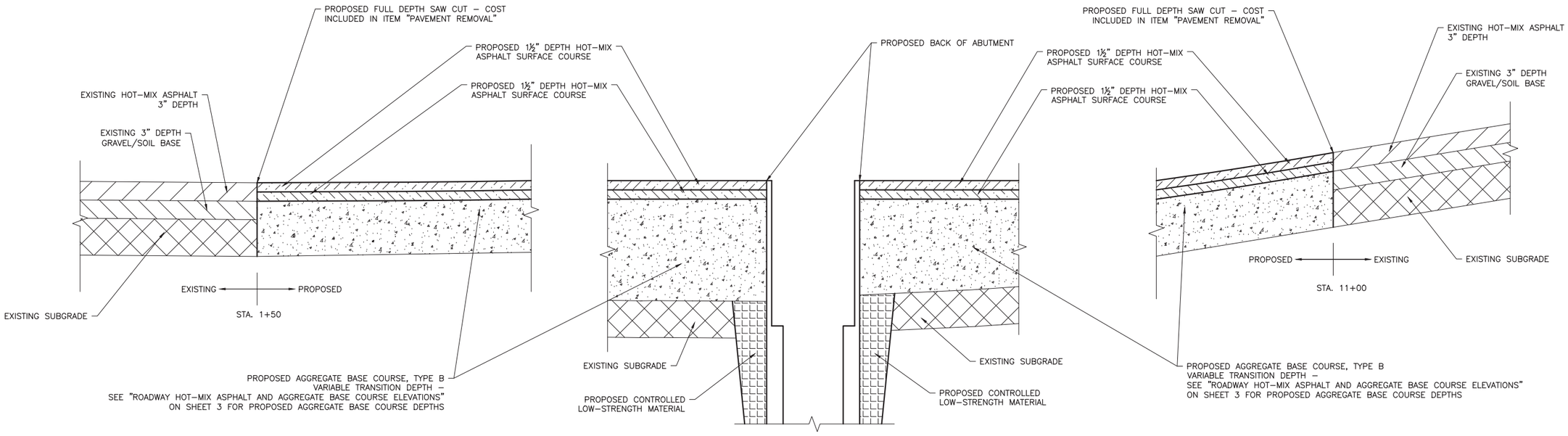
EXISTING
STA. 1+50.00 TO 11+00.00



ENTRANCE DETAIL

LT. STA. 2+70 – FE
RT. STA. 4+00 – FE
RT. STA. 10+45 – PE (HOT–MIX ASPHALT SURFACE**)

*SEE SHEET 5 FOR REQUIRED DIMENSION
**SEE "TRENCH AND ENTRANCE DETAIL" ON SHEET 2 FOR HMA ENTRANCE DETAIL



ROADWAY TRANSITION DETAILS

ALONG PROPOSED CENTERLINE PROFILE GRADE
N.T.S.

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	4
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

P.O.T. STA. 1+50.00
N: 789963.28
E: 1121066.98
COORDINATES BASED ON NAD83
ILLINOIS STATE PLANE
COORDINATE SYSTEM
(TO BE SET)

SCALES:
1" = 50' HOR
1" = 5' VER

SECTION 20-00131-00-BR
BEGINS STA. 1+50.00

LT. STA. 3+50 TO STA. 5+70
CONSTRUCT PIPE CULVERT 220' X 36"ø
CL-D, TY-1
U.S.F.L. = 440.72
D.S.F.L. = 439.62

LT. STA. 2+70
CONSTRUCT F.E. 30' WIDTH
PIPE CULVERT 60' X 36"ø
CL-D, TY-1
U.S.F.L. = 441.30
D.S.F.L. = 441.00

STA. 6+00.00 PROPOSED STRUCTURE 051-3316
SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
67'-0" LENGTH, 27" DEPTH X 36" WIDE DECK BEAMS
STEEL PILE / SPILLTHROUGH ABUTMENTS
30.0' WIDE DECK
20° FORWARD RIGHT SKEW

LT. STA. 6+10 TO STA. 8+10
CONSTRUCT PIPE CULVERT 200' X 24"ø
CL-D, TY-1
U.S.F.L. = 441.24
D.S.F.L. = 439.24

MAD CREEK

PROPOSED TRAFFIC
BARRIER TERMINAL (TYP.)

℄ SURVEY & CONSTRUCTION FAS 801

P.O.T. STA. 11+00.00
N: 789967.33
E: 1122016.97
COORDINATES BASED ON NAD83
ILLINOIS STATE PLANE
COORDINATE SYSTEM
(TO BE SET)

SECTION 20-00131-00-BR
ENDS STA. 11+00.00

EXIST. R.O.W. 40' 40' EXIST. R.O.W.

0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00

22' PROP. ROADWAY SURFACE WIDTH

PROP. R.O.W.

3+00 40' RT

EXISTING UNDERGROUND TELEPHONE LINE

FRONTIER COMMUNICATIONS
225 E. CHESTNUT ST.
OLNEY, ILLINOIS 62450
PH. 618-395-6189

RT. STA. 4+00
CONSTRUCT F.E. 30' WIDTH
PIPE CULVERT 60' X 30"ø
CL-D, TY-1
U.S.F.L. = 439.66
D.S.F.L. = 439.06

5+50 65' RT

6+50 65' RT

7+50 40' RT

EXISTING OVERHEAD ELECTRIC LINE

NORRIS ELECTRIC CO-OP
ROUTE 130 SOUTH
NEWTON, ILLINOIS 62448
PH. 618-783-8765

RT. STA. 10+45
CONSTRUCT P.E. 16' WIDTH
PIPE CULVERT 40' X 15"ø
CL-D, TY-1
U.S.F.L. = 445.54
D.S.F.L. = 445.14

DONALD W. BOUGHAN TRUST AS TO ½ INTEREST
ROBERTA SUE BOUGHAN TRUST AS TO ½ INTEREST

B.M. RT. STA. 5+62
65.9' RT. OF PROPOSED ℄ ALIGNMENT
MAG HUB IN TREE
ELEV. 444.52

RT. STA. 4+85
REMOVE EXISTING ENTRANCE AND PIPE CULVERT
SEE NOTES 1, 2, AND 3 THIS SHEET

STA. 6+00.00 EXISTING STRUCTURE 051-3125
TWO-SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE
BEARING ON TWO SPILLTHROUGH ABUTMENTS AND ONE INDIVIDUALLY ENCASED PILE BENT PIER
TO BE REMOVED AND DISPOSED OFF OF THE JOBSITE BY THE CONTRACTOR
61' LENGTH DECK BEAMS
30' WIDE DECK
20° SKEW FORWARD RIGHT

EXISTING UNDERGROUND TELEPHONE LINE

FLAT ROCK TELEPHONE CO-OP
104 NORTH RUNDLE ST
FLAT ROCK, ILLINOIS 62427
PH. 618-584-3211

ESTATE OF MAXINE GREEN

RT. STA. 10+45
CONSTRUCT P.E. 16' WIDTH
PIPE CULVERT 40' X 15"ø
CL-D, TY-1
U.S.F.L. = 445.54
D.S.F.L. = 445.14

NOTES:
1. EXCAVATION QUANTITIES INCLUDED IN ITEM "EARTH EXCAVATION."
2. PIPE CULVERT REMOVAL WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF PIPE CULVERTS, CLASS D. SEE PIPE CULVERT REMOVAL SCHEDULE AND SPECIAL PROVISIONS FOR PIPE CULVERT REMOVAL.
3. BACKFILL AND COMPACT VOID WITH AGGREGATE BASE COURSE, TYPE B – SEE SCHEDULE OF QUANTITIES SHEET IN PLANS

PVI STA: 2+45.00
PVI ELEV: 446.48
K: 187.61
LVC: 150.00
LP STA: 1+83.10
LP ELEV: 446.52

PVI STA: 3+95.00
PVI ELEV: 447.57
K: 205.56
LVC: 150.00

PVI STA: 9+76.51
PVI ELEV: 447.57
K: 109.32
LVC: 150.00

GRADE BREAK STA = 1+50.00
ELEV = 446.54
BVCS: 1+70.00
BVCE: 446.53
BVCS: 3+20.00
BVCE: 447.02
EVCS: 4+70.00
EVCE: 447.57
BVCS: 9+01.51
BVCE: 447.57
BVCS: 10+51.51
EVCE: 448.60
GRADE BREAK STA = 11+00.00
ELEV = 449.26

PROPOSED BOTTOM OF BEAM ELEVATION:
ELEV. 445.00 AT EDGE OF DECK
ELEV. 445.32 AT CENTERLINE ALIGNMENT

100 YR. H.W.E. 444.4
20 YR. H.W.E. 444.0
PROPOSED ℄ SURFACE
EXISTING SURFACE

-0.07%
0.00%
1.37%

S.D. LT. -0.50%
S.D. LT.
GRADE BREAK STA = 3+00.00
ELEV = 440.97
S.D. LT.
GRADE BREAK STA = 3+50.00
ELEV = 440.72
S.D. RT. -1.00%
S.D. RT.
GRADE BREAK STA = 2+50.00
ELEV = 440.86
S.D. RT.
GRADE BREAK STA = 5+70.00
ELEV = 437.66
S.D. RT.
GRADE BREAK STA = 6+30.00
ELEV = 438.97
S.B. ELEV. 436.8
28.0' ALONG ROADWAY
26.4' NORMAL TO CHANNEL
S.D. RT. 1.50%
S.D. LT.
GRADE BREAK STA = 8+10.00
ELEV = 441.34
S.D. LT. 1.00%
S.D. LT.
GRADE BREAK STA = 8+50.00
ELEV = 441.74
S.D. RT.
GRADE BREAK STA = 9+50.00
ELEV = 443.77

465 460 455 450 445 440 435 430 425 420

446.5 446.4 446.5 446.5/446.54 446.5/446.53 446.4/446.64 446.5/446.89 446.5/447.22 446.4/447.45 446.4/447.56 446.4/447.57 446.5/447.57 436.8/447.57 446.3/447.57 446.5/447.57 446.4/447.57 446.5/447.57 446.7/447.57 447.0/447.57 447.3/447.68 447.8/448.01 448.5/448.58 449.3/449.26 450.1

-1+00 0+00 1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00

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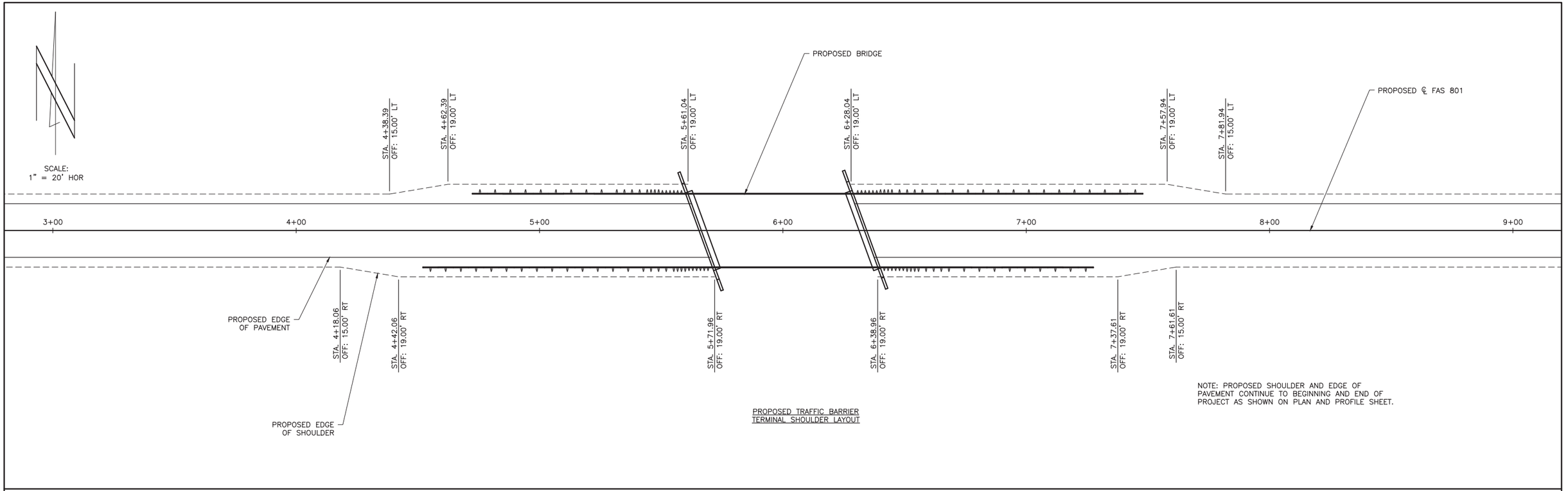
DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

PLAN AND PROFILE

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	5
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



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DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

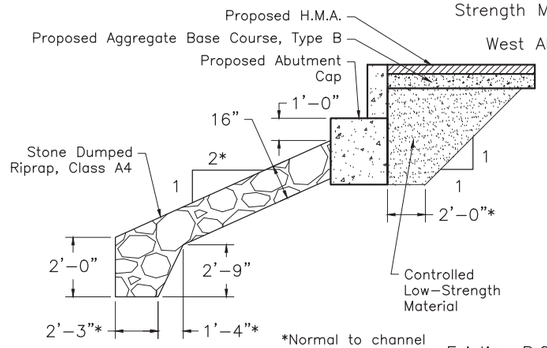
BRIDGE SHOULDER AND GUARDRAIL PLAN

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	6
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

B.M.–Rt. Sta. 5+62, 65.9' Rt. of Proposed ℄ Alignment, Mag Hub in Tree, Elev. 444.52.

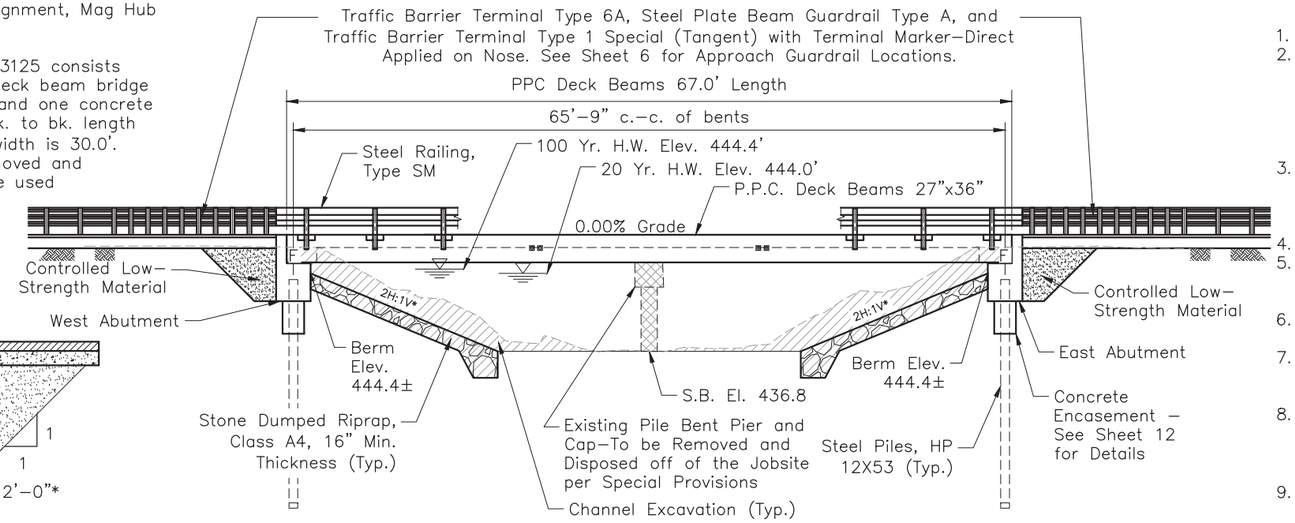
Existing Structure – Existing structure No. 051–3125 consists of a two span precast prestressed concrete deck beam bridge bearing on concrete spill–through abutments and one concrete pier cap with individually encased piles. The bk. to bk. length of abutments is 61.2' and out–to–out deck width is 30.0'. The existing structure shall be completely removed and disposed off the jobsite. Road closure shall be used during construction.

No Salvage – See Special Provisions; "Removal of Existing Structures."

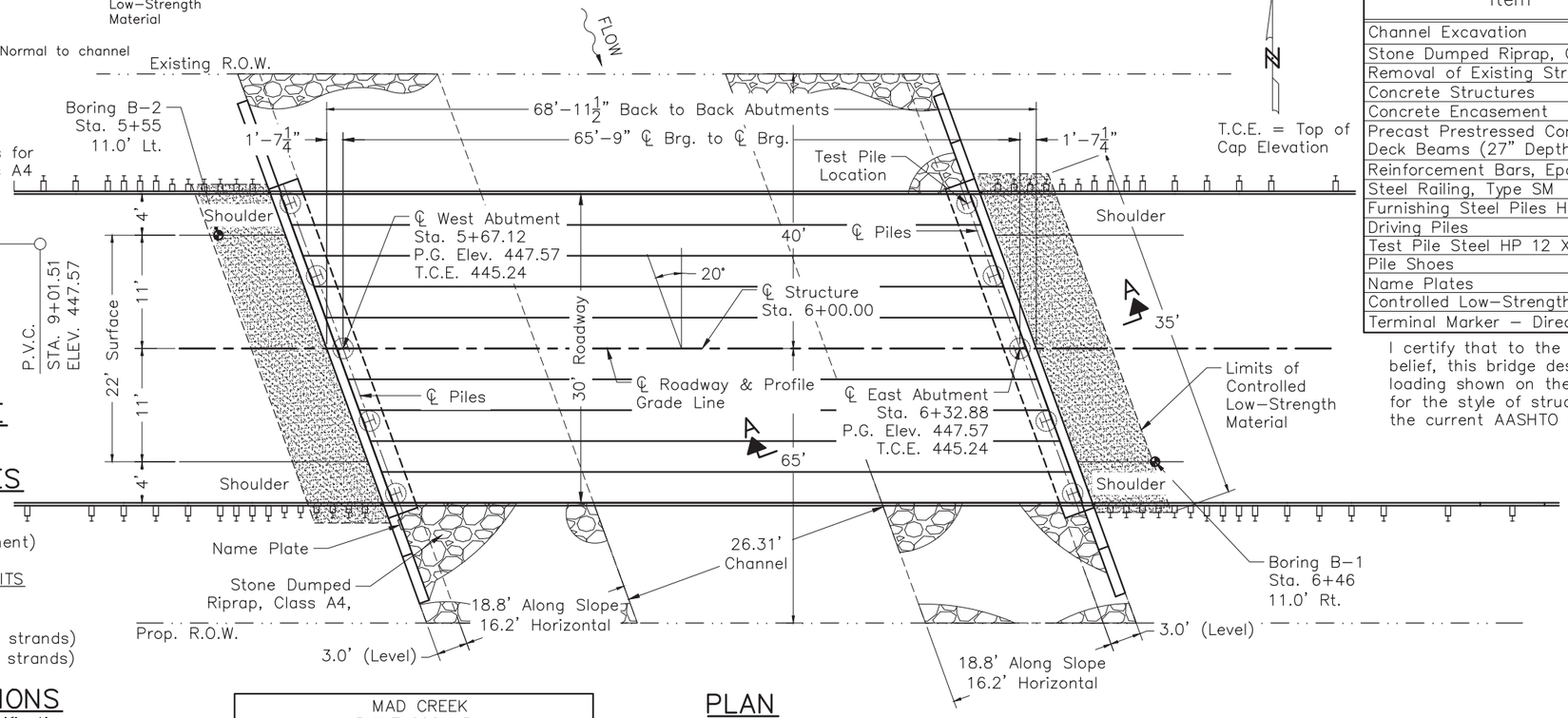


SECTION A–A

Note: See Special Provisions for Stone Dumped Riprap, Class A4



ELEVATION



PROFILE GRADE

(along ℄ roadway)

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi

Fy = 60,000 psi (reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 6,000 psi

f'ci = 5,000 psi

F's = 270,000 psi (½" low relax. strands)

Fsi = 201,960 psi (½" low relax. strands)

DESIGN SPECIFICATIONS

AASHTO LRFD Bridge Design Specifications 2020 (9th edition)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2

Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.160g

Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.407g

Soil Site Class = C

MAD CREEK
BUILT 202_ BY
LAWRENCE COUNTY
SEC. 20–00131–00–BR
FAS 801 STATION 6+00.00
STR. NO. 051–3316 LOADING HL–93

PLAN

Skew Angle = 20°
Forward Right

LOADING HL–93

50#/sq. ft. included in dead load for future wearing surface.

LETTERING FOR NAME PLATE

Locate Name Plate at SW Corner of Bridge (See Std. 515001)

GENERAL NOTES

1. Do not scale sheets 7–14.
2. The Contractor shall drive the test pile to 110% of the nominal required bearing specified in production pile locations at the East Abutment or as approved by the Engineer before ordering the remainder of piles. The test pile shall be equipped with a steel pile shoe, and the cost of the steel pile shoe shall be included in item Test Pile Steel HP 12 X 53. See Sheet 13 for pile shoe detail.
3. It shall be the responsibility of the Contractor to divert flow during construction to keep construction areas free of water. The method of water diversion shall be subject to the approval of the Engineer and shall be included in the cost of Concrete Structures.
4. See Sheet 14 for boring logs.
5. Excavation required to construct the Abutments shall be included in the cost of Earth Excavation. No additional compensation will be allowed for Structure Excavation.
6. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
7. Toe stone riprap treatment as shown in Section A–A shall extend entire channel length from proposed R.O.W. south to existing R.O.W. north.
8. All proposed construction activities shall be in accordance with Nationwide Permit Number 13 and 14 of the Department of the Army authorized under Section 404 of the Clean Water Act. The IEPA has issued Section 401 Water Quality Certification for this activity.
9. Reinforcement bars designated (E) shall be epoxy coated.

TOTAL BILL OF MATERIAL

Item	Unit	Super	Abuts.	Total
Channel Excavation	Cu. Yd.	–	785	785
Stone Dumped Riprap, Class A4	Ton	–	500	500
Removal of Existing Structures	Each	–	–	1
Concrete Structures	Cu. Yd.	–	40.4	40.4
Concrete Encasement	Cu. Yd.	–	3.5	3.5
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq. Ft.	2010	–	2010
Reinforcement Bars, Epoxy Coated	Pound	–	5660	5660
Steel Railing, Type SM	Foot	138	–	138
Furnishing Steel Piles HP 12 X 53	Foot	–	459	459
Driving Piles	Foot	–	459	459
Test Pile Steel HP 12 X 53	Each	–	1	1
Pile Shoes	Each	–	9	9
Name Plates	Each	–	1	1
Controlled Low–Strength Material	Cu Yd	–	58	58
Terminal Marker – Direct Applied	Each	4	–	4

I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Standard Specifications for Highway Bridges.

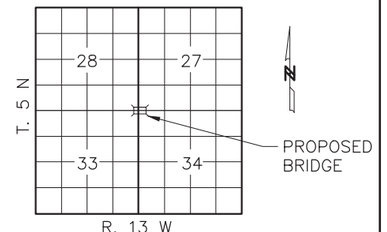
Nabi R. Fakroddin 1-9-2024

License Exp 11-30-24
SE 081-003377

WATERWAY INFORMATION

Drainage Area=3.25 Sq.Mi. Low Grade Elev = 446.52 @ Sta. 1+83.10

Flood	Freq. Yr.	Q. C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head – Ft. Exist.	Head – Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	20	1190	212.5	296.7	444.0'	0.7'	0.2'	444.7'	444.2'
Base	100	1760	217.9	314.4	444.4'	1.2'	0.4'	445.6'	444.8'



LOCATION SKETCH

CHARLESTON ENGINEERING, INC.	DESIGNED – NRF/BMB	REVISED –
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105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450	CHECKED – NRF	REVISED –
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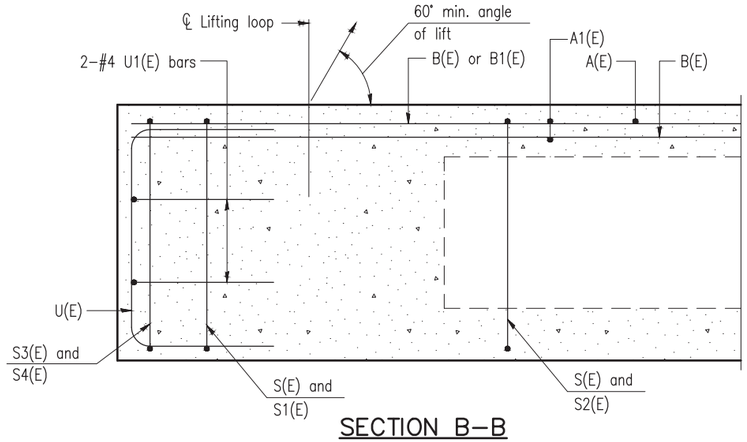
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513		

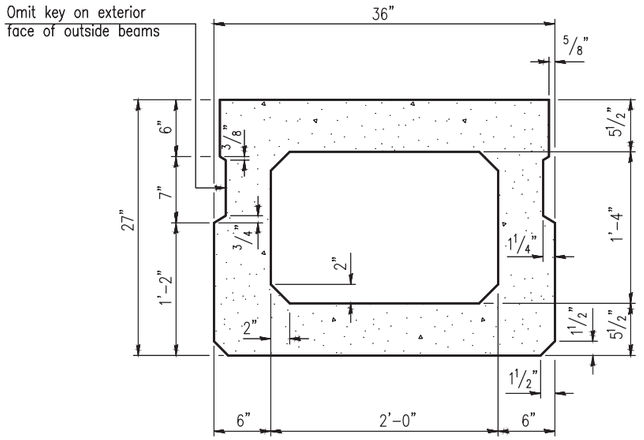
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NUMBER 051–3316

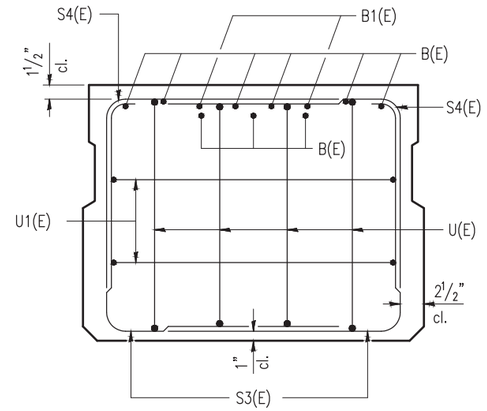
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	7
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



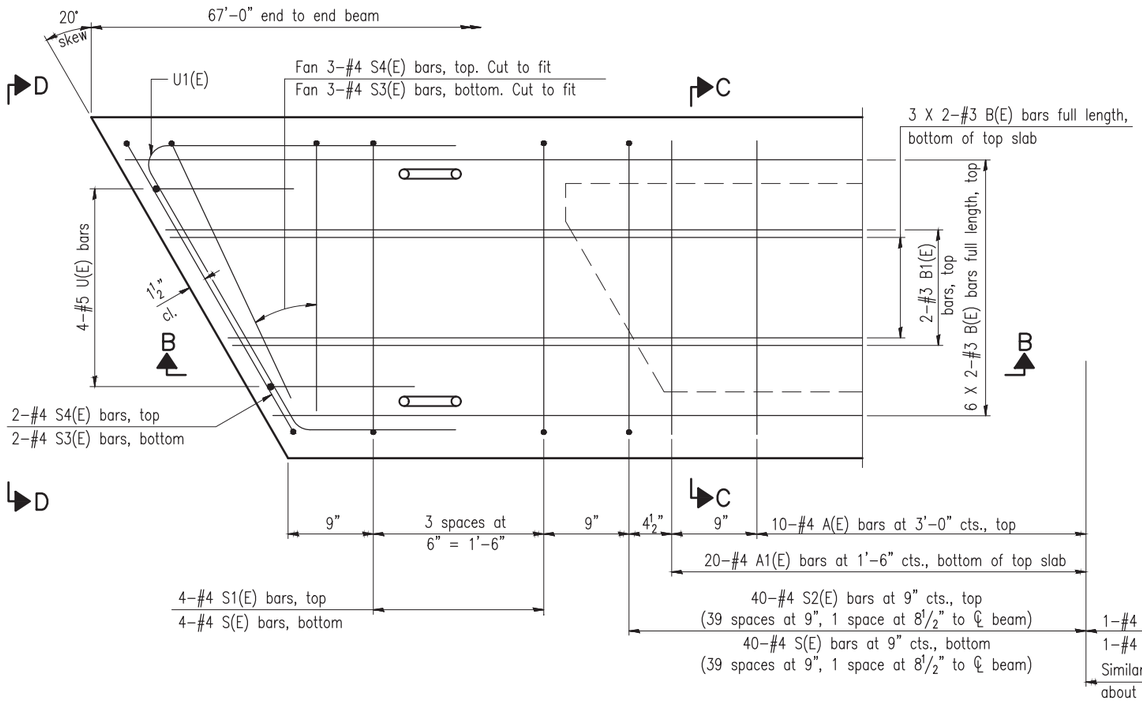
SECTION B–B



SECTION C–C
(Showing dimensions)

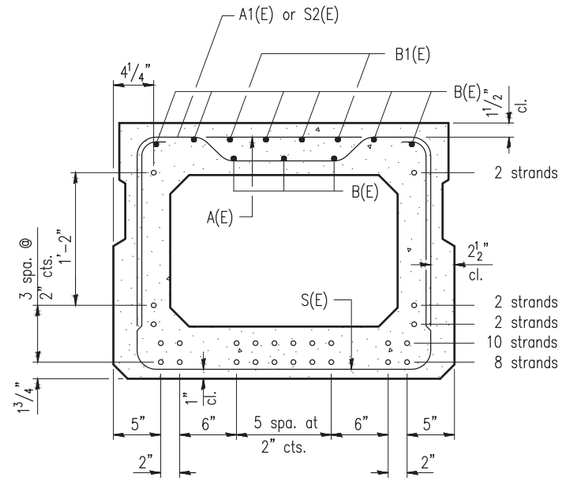


VIEW D–D



PLAN VIEW

Note:
Spacing of S(E) and S2(E) bars may be adjusted up to 4" in the immediate area of the transverse tie diaphragms to miss the block outs for the transverse ties.



SECTION C–C
(Showing reinforcement and permissible strand locations)
Notes: 24 total strands

Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

MINIMUM BAR LAP
#3 bar = 1'–6"

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	20	#4	2'–7"	——
A1(E)	40	#4	2'–10"	⌒
B(E)	18	#3	34'–3"	——
B1(E)	4	#3	10'–0"	——
S(E)	89	#4	7'–5"	⊔
S1(E)	8	#4	5'–11"	⊓
S2(E)	81	#4	6'–2"	⊓
S3(E)	10	#4	5'–2"	⊔
S4(E)	10	#4	4'–5"	⊔
U(E)	8	#5	4'–6"	⊏
U1(E)	4	#4	6'–1"	⊏

Note:
See sheet 9 of 21 for additional details and Bill of Material.

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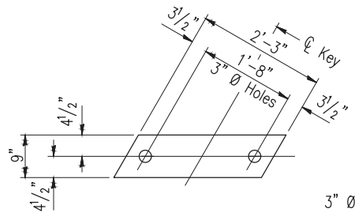
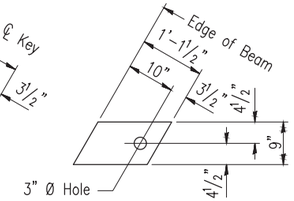
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

27" X 36" PPC DECK BEAM
STRUCTURE NUMBER 051–3316

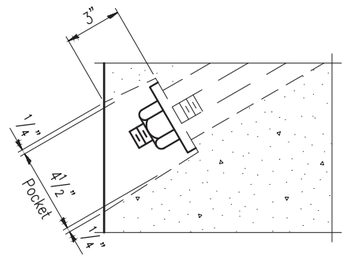
ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	8
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



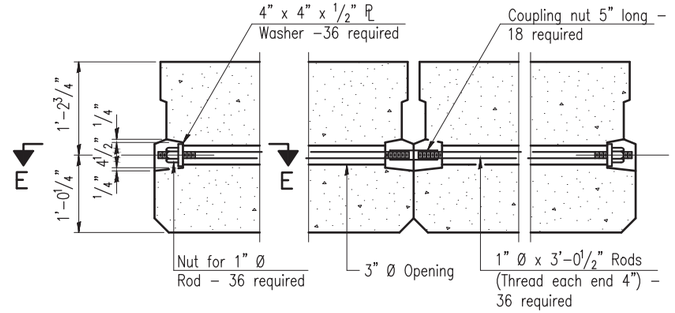
FABRIC BEARING PAD
(Interior)



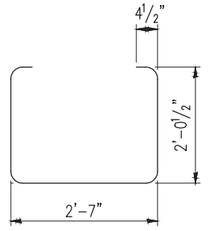
FABRIC BEARING PAD
(Exterior)



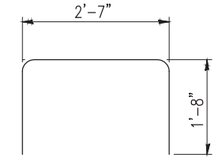
SECTION E-E



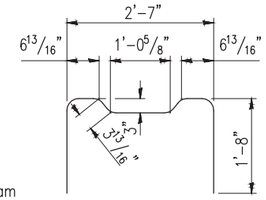
TYPICAL TRANSVERSE TIE ASSEMBLY



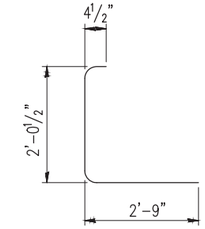
BAR S(E)



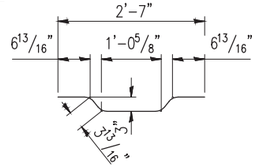
BAR S1(E)



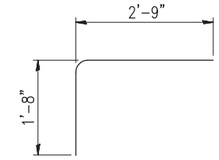
BAR S2(E)



BAR S3(E)



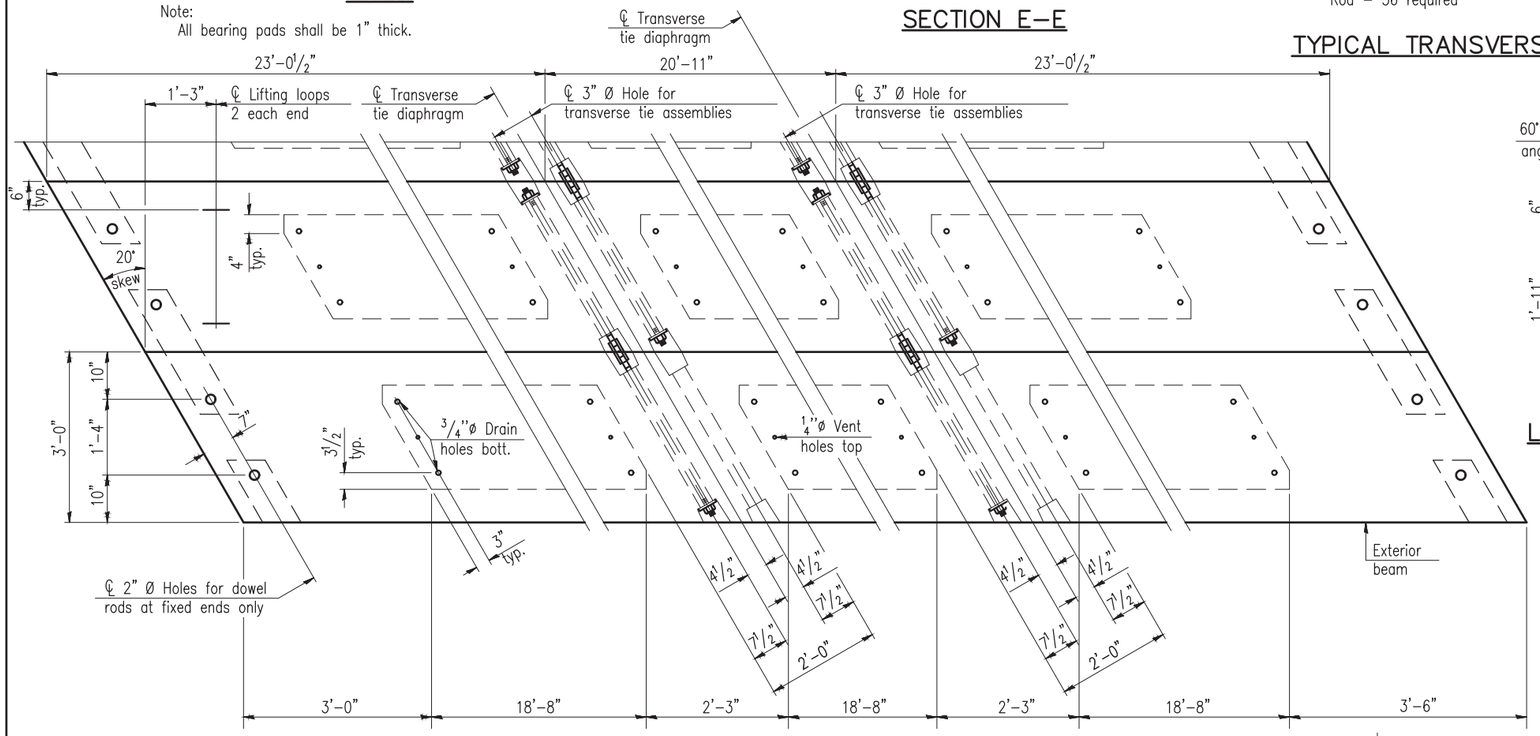
BAR A1(E)



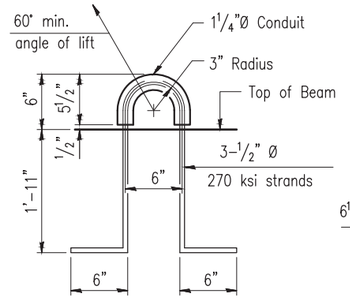
BAR S4(E)

FIXED

Note:
All bearing pads shall be 1" thick.



PLAN VIEW



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (27" depth)	Sq. Ft.	2010

Note:
Connect beams in pairs with the transverse tie configuration shown.

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be ½" and the nominal cross-sectional area shall be 0.153 sq. in.

The 1"Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

Reinforcement bars shall conform to ASTM A 706, Grade 60 (IL Modified). See Standard Specifications.

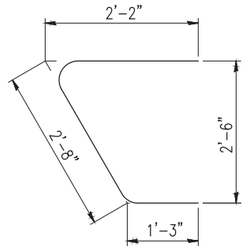
Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

A minimum 2½"Ø lifting pin shall be used to engage the lifting loops during handling.

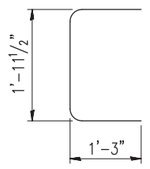
Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams.

Compressive strength of prestressed concrete, f'c, shall be 6000 psi.

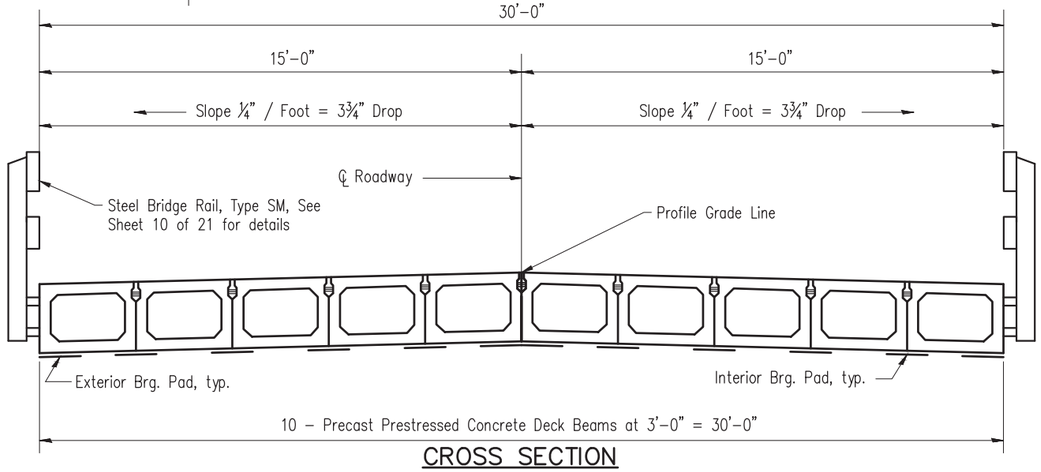
Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.



BAR U1(E)



BAR U(E)



CROSS SECTION

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450
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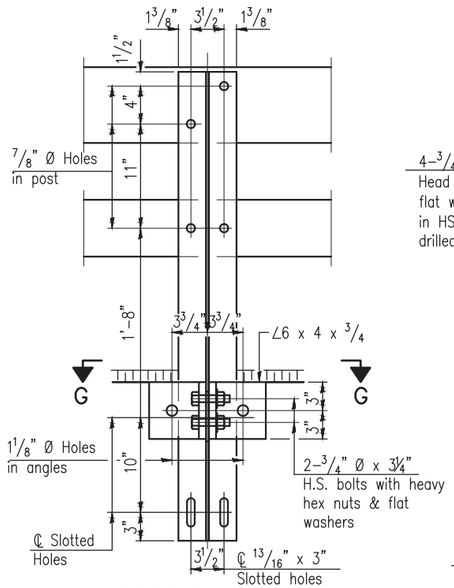
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

DESIGNED - NRF/BMB	REVISED -
DRAWN - BMB	REVISED -
CHECKED - NRF	REVISED -
DATE - 1-5-2024	REVISED -

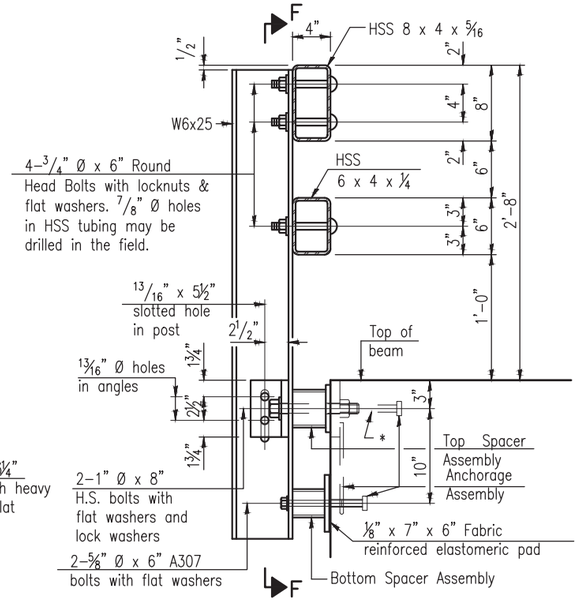
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

27" X 36" PPC DECK BEAM DETAILS
STRUCTURE NUMBER 051-3316

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	9
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

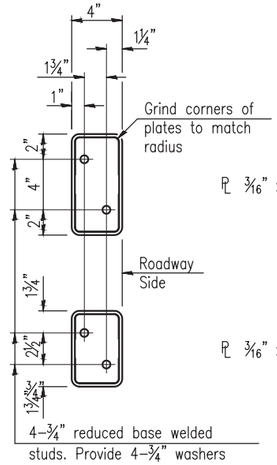


SECTION F–F

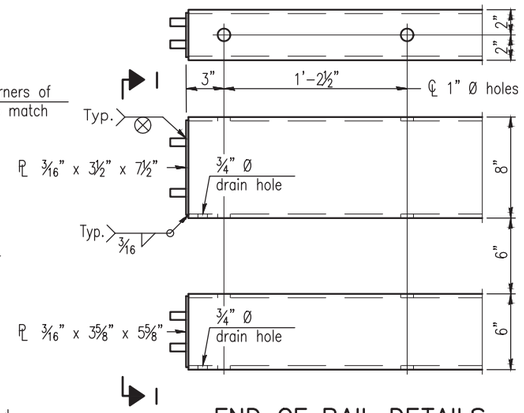


SECTION AT RAIL POST

* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down ½" to accommodate the top reinforcement bar placement.



VIEW I–I



END OF RAIL DETAILS

Notes:

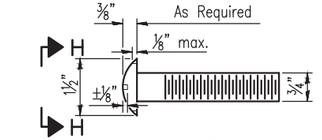
A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11½", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than ¼" (top) or ½" (bottom), longer bolts are required. Cost included with Steel Railing, Type SM.

All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.

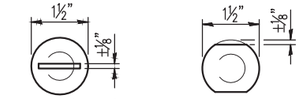
All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

Rail splice inserts may be built out of 2 –⅜" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

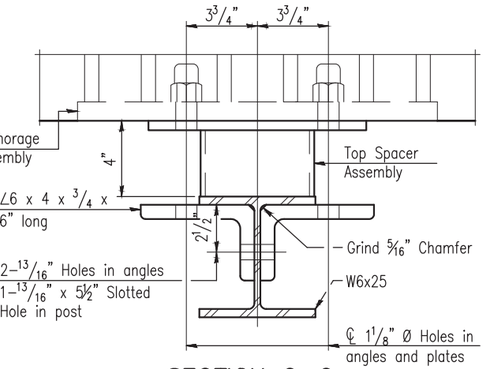
All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



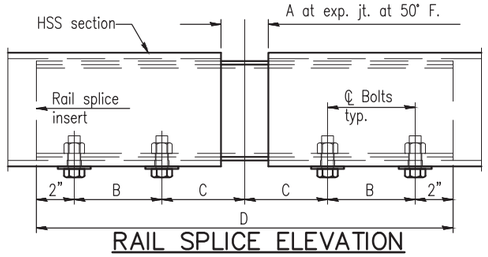
ROUND HEAD BOLT DETAIL



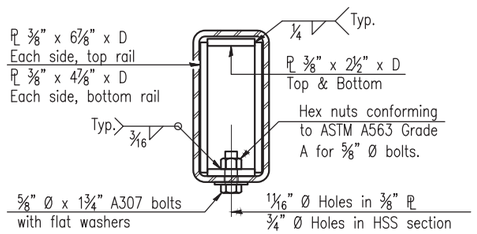
VIEW H–H



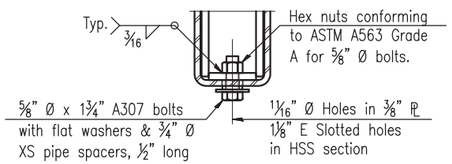
SECTION G–G



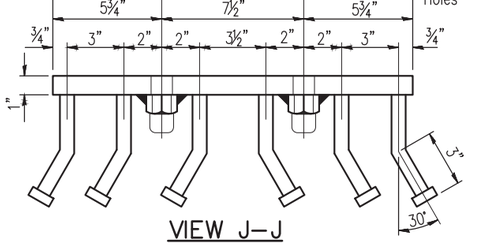
RAIL SPLICE ELEVATION



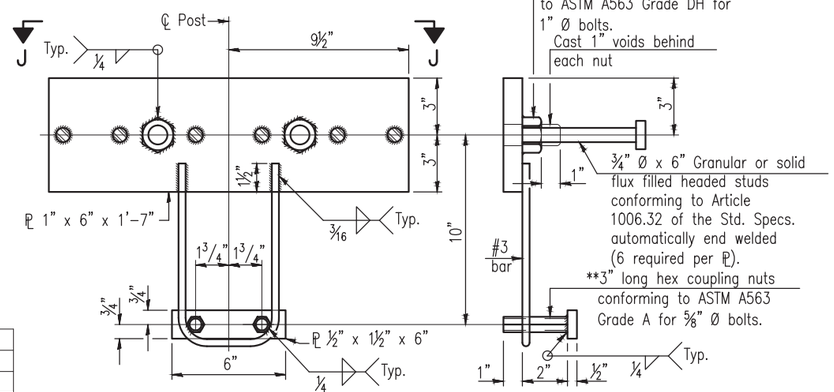
SECTION AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.

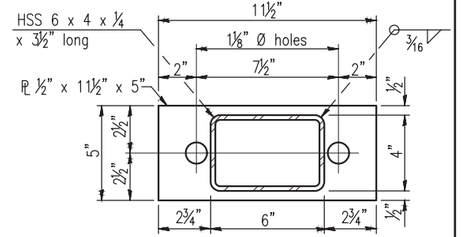


VIEW J–J

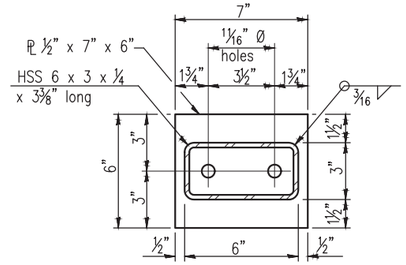


ANCHORAGE ASSEMBLY

** Threaded areas shall be plugged or blocked off during casting of concrete.



TOP SPACER ASSEMBLY



BOTTOM SPACER ASSEMBLY

RAILING CRITERIA

MASH 2016 Test Level	2
Railing Weight (plf)	90
Min f'c (psi)	5,000
Max Post Spacing	6'–3"
HMA thickness range (in)	1¼ – 3⅜

SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	¼"	4"	4"	1'–8"	–
Over Strip Seal Jt.	≤4"	2½"	4⅝"	4⅜"	1'–10"	3 1/16"
Over Finger or Modular Jt.	≤9½"	5½"	7⅜"	7¼"	2'–9¼"	5 13/16"
Over Finger or Modular Jt.	≤15"	8¼"	10⅛"	10"	3'–8¼"	8 9/16"

T = ; total movement along centerline of roadway at expansion joint.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	138

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DESIGNED – NRF/BMB	REVISED –
DRAWN – BMB	REVISED –
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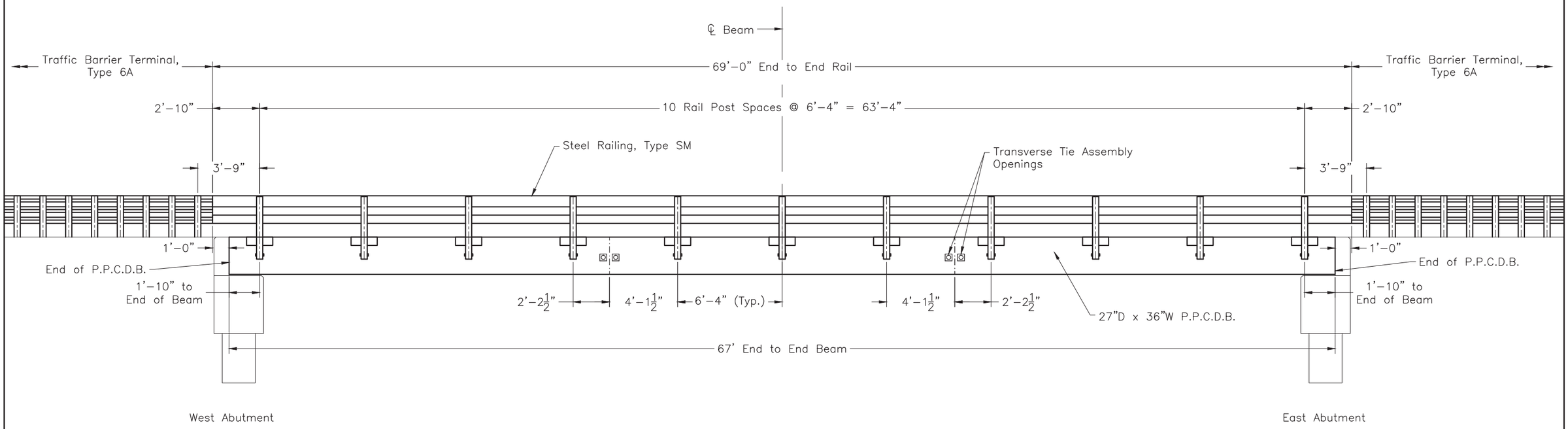
DATE – 1–5–2024	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

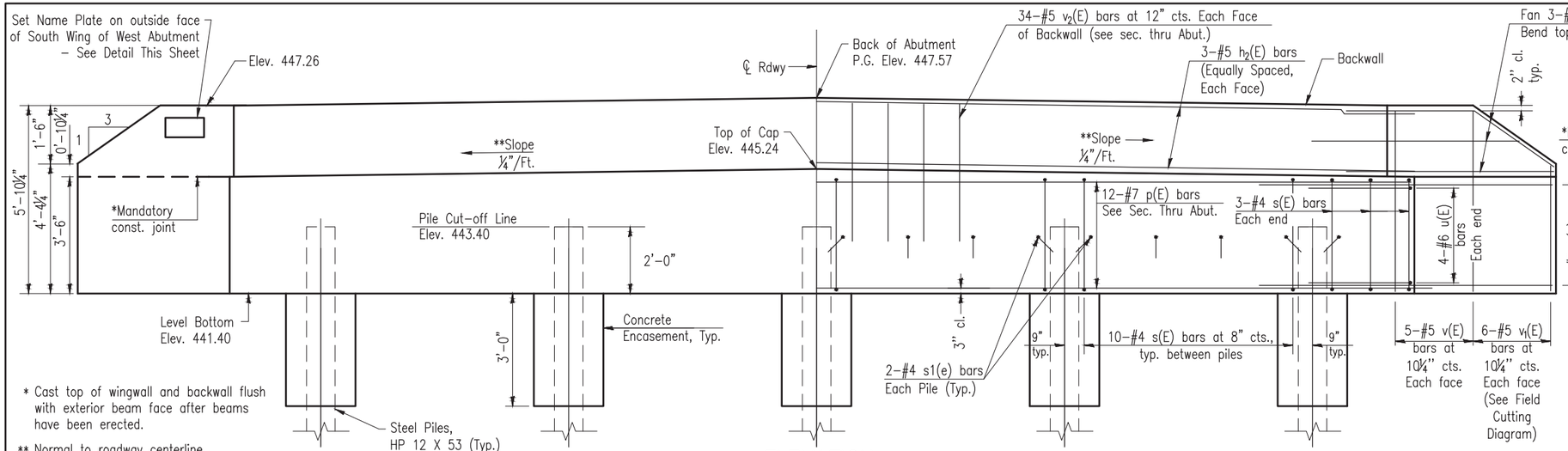
STEEL RAILING, TYPE SM
STRUCTURE NUMBER 051–3316

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	10
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

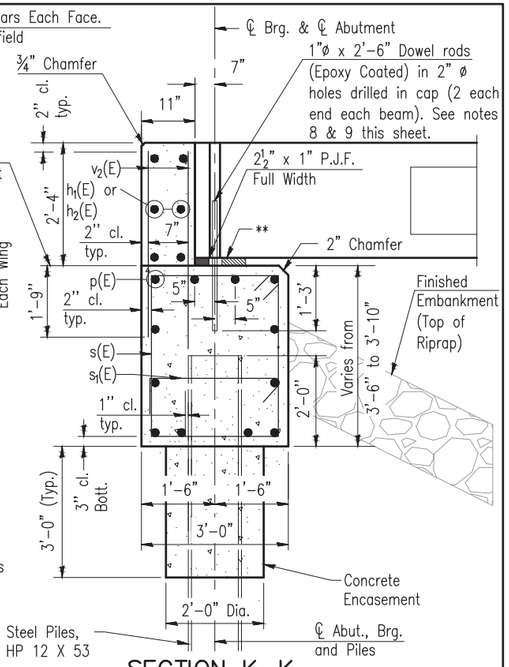


RAIL POST SPACING

CHARLESTON ENGINEERING, INC. CONSULTING ENGINEERS - LAND SURVEYORS 105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450 P.O. BOX 397 (618) 392-0736 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513	DESIGNED – NRF/BMB DRAWN – BMB CHECKED – NRF DATE – 1–5–2024	REVISED – REVISED – REVISED – REVISED –	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	STEEL RAILING, TYPE SM DETAILS STRUCTURE NUMBER 051–3316	ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
					FAS 801	20–00131–00–BR	LAWRENCE	21	11
					CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

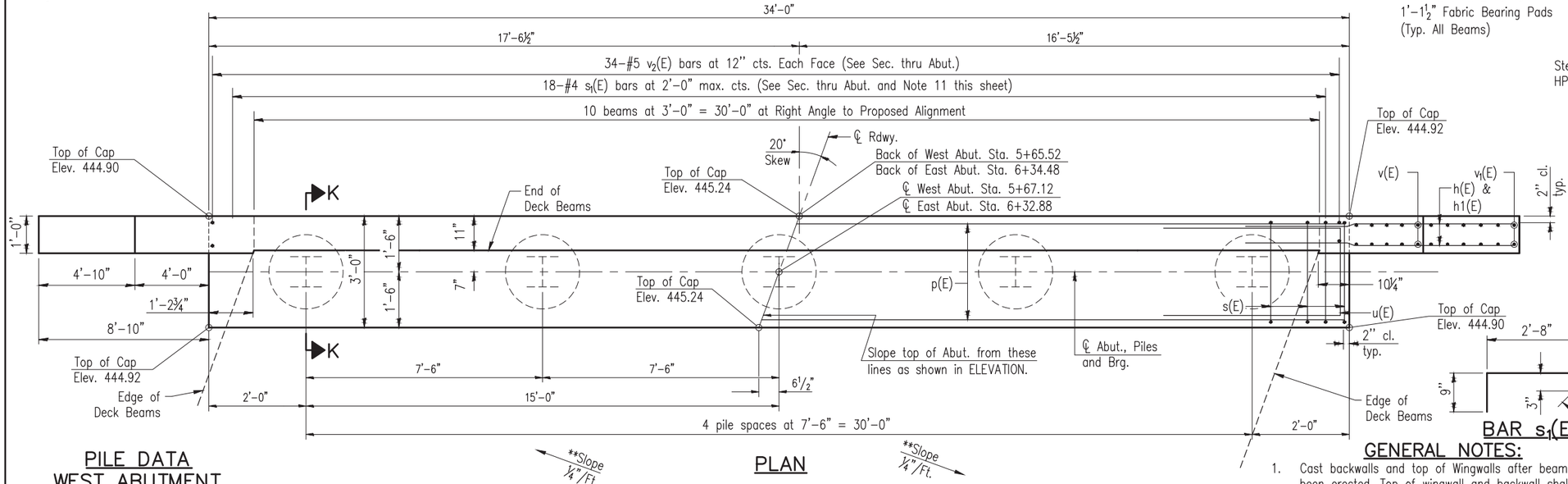


ELEVATION



SECTION K–K
(At Right Angles)

** 9" x 1" x 2'–3" or 1'–1½" Fabric Bearing Pads (Typ. All Beams)



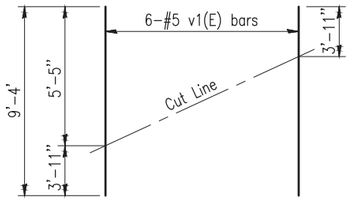
PLAN

PILE DATA WEST ABUTMENT

Type: Steel HP 12 X 53
Nominal Required Bearing: 418 kips
Factored Resistance Available: 230 kips
Est. Length: 51 Feet/Pile
No. Production Piles: 5
No. Test Piles: 0

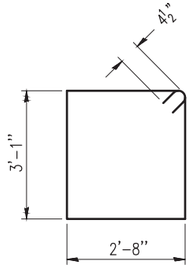
PILE DATA EAST ABUTMENT

Type: Steel HP 12 X 53
Nominal Required Bearing: 418 kips
Factored Resistance Available: 230 kips
Est. Length: 51 Feet/Pile
No. Production Piles: 4
No. Test Piles: 1

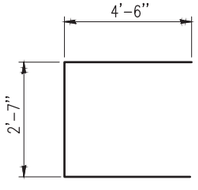


FIELD CUTTING DIAGRAM

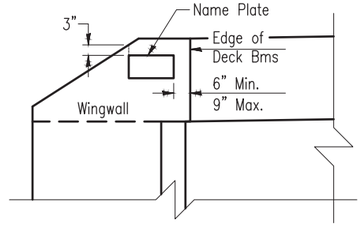
Order $v_1(E)$ bars full length. Cut as shown and use remainder of bars in opposite face.



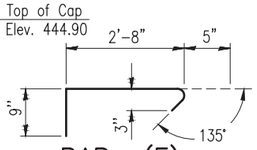
BAR s(E)



BAR u(E)



NAME PLATE PLACEMENT



BAR $s_1(E)$

BAR LIST FOR ONE ABUTMENT

Bar	No.	Size	Length	Shape
h(E)	28	#6	13'–6"	
$h_1(E)$	12	#5	12'–4"	
$h_2(E)$	6	#5	33'–8"	
p(E)	12	#7	33'–8"	
s(E)	46	#4	12'–3"	
$s_1(E)$	18	#4	3'–10"	
u(E)	8	#6	11'–7"	
v(E)	20	#5	5'–5"	
$v_1(E)$	12	#5	9'–4"	CUT IN FIELD
$v_2(E)$	68	#5	3'–11"	

BILL OF MATERIAL FOR EACH ABUTMENT

Item		Unit	Quantity
Concrete Structures		Cu. Yd.	20.2
Concrete Encasement		Cu. Yd.	1.75
Reinforcement Bars, Epoxy Coated		Pound	2830
Furnishing Steel Piles HP 12 X 53	Foot	W Abut.	255
		E Abut.	204
Driving Piles	Foot	W Abut.	255
		E Abut.	204
Test Pile Steel HP 12 X 53	Each	W Abut.	0
		E Abut.	1
Pile Shoes	Each	W Abut.	5
		E Abut.	4
Name Plates	Each	W Abut.	1

GENERAL NOTES:

1. Cast backwalls and top of Wingwalls after beams have been erected. Top of wingwall and backwall shall be cast flush with exterior beam face.
2. The backwalls and the portion of the Wingwalls above the mandatory construction joint shall be cast against the in–place beam.
3. Extend "h(E)" bars into the abutment cap.
4. For details of piles and Concrete Encasement, see sheet 13 of 21.
5. Drawings not to scale.
6. All clearances between rebar and form surface shall be 2" unless otherwise noted.
7. Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60 (Illinois Modified).
8. Space reinforcement in cap to miss PPCDB dowel rods.
9. Dowel rods shall be grouted after beams are in place and allowed to cure (min. 24 hrs.) prior to start of grouting deck beam longitudinal keyways.
10. All exposed edges shall have a standard ¾" chamfer unless otherwise noted or as directed by the Engineer.
11. s1(E) bars: Alternate the position of the 90° and 135° hooked ends between adjacent s1(E) bars.
12. All dimensions of bent bars are out–to–out.

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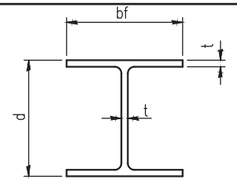
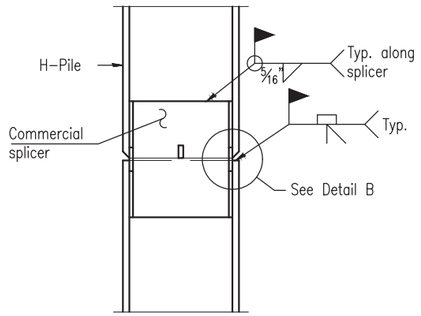
ABUTMENT DETAILS
STRUCTURE NUMBER 051–3316

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	12
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

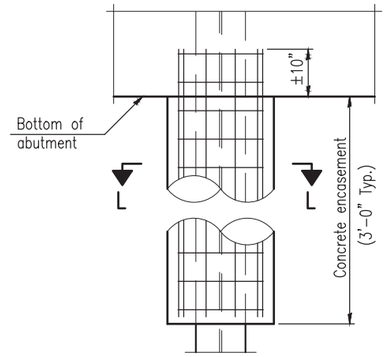


STEEL PILE TABLE

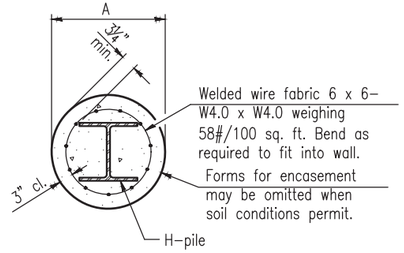
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 12x53	11¾"	12"	7/16"	24"



ELEVATION

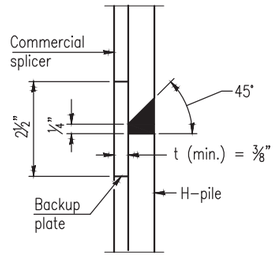


ELEVATION
DRIVEN PILES

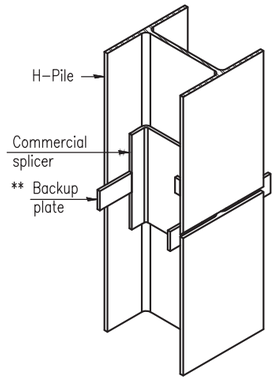


SECTION L–L

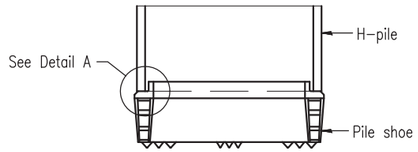
INDIVIDUAL PILE CONCRETE ENCASEMENT



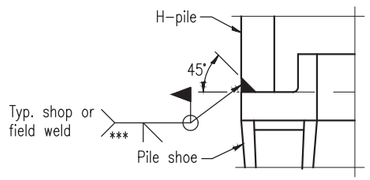
DETAIL "B"



ISOMETRIC VIEW



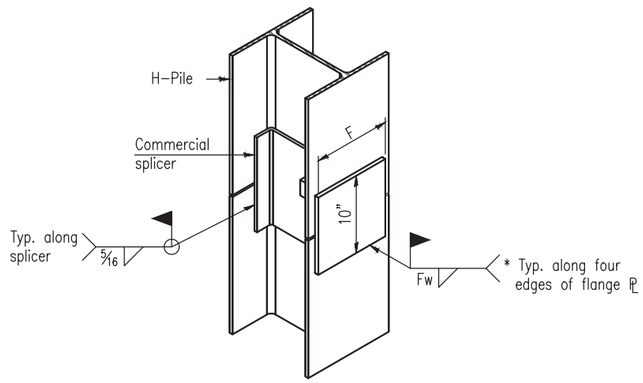
ELEVATION



DETAIL A

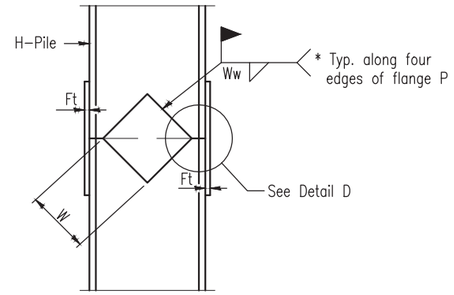
SHOE ATTACHMENT

WELDED COMMERCIAL SPLICE

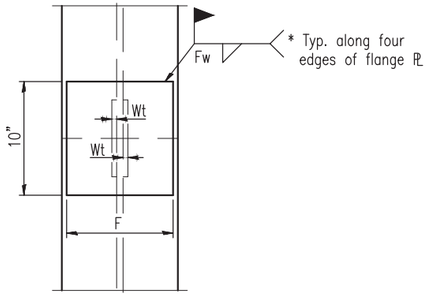


ISOMETRIC VIEW

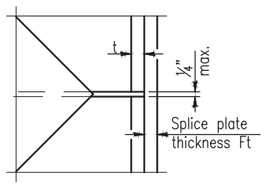
WELDED COMMERCIAL SPLICE ALTERNATE



ELEVATION



END VIEW



DETAIL

Designation	F	Ft	Fw	W	Wt	Ww
HP 12x53	10"	5/8"	½"	6½"	½"	⅜"

WELDED PLATE FIELD SPLICE

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

* 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.).

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450
P.O. BOX 397 (618) 392-0736
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

DESIGNED – NRF/BMB	REVISED –
DRAWN – BMB	REVISED –
CHECKED – NRF	REVISED –
DATE – 1-5-2024	REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NUMBER 051-3316

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	13
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

NOBLE

ENGINEERING CONSULTANTS

Client: Charleston Engineering	County: Lawrence, IL	Sheet No. 1 of 2	1st encounter: 22'
Driller: Noble Engineering Consultants	Weather: Sunny	Temperature: 80's	water level reading
Location:Sec. #20-00131 Petty Twp.	Date Started: 5-24-21	Surface Elevation: ~446**	At completion: Dry cave
	Date Finished: 5-24-21	Driller: Tony Schocker	Backfill: Soil Cuttings

BORING No. B-1

water level reading

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	Moisture %	USC Class.	Elev.**
1										445
2	SS-1	1.0'-2.5'	18	10-10-8	30	-	0.0'-6.0' Silt, Clay, Sand, Etc. FILL	17.1	FILL	444
3										443
4	SS-2	3.5'-5.0'	13	5-6-7	100	-		24.9	FILL	442
5										441
6	SS-3	6.0'-7.5'	7	2-3-4	80	1.0		20.9	CH	440
7										439
8										438
9	SS-4	8.5'-10.0'	6	2-2-4	100	1.0		19.1	CH	437
10										436
11										435
12										434
13										433
14	SS-5	13.5'-15.0'	9	2-4-5	100	1.1		22.7	CH	432
15										431
16										430
17										429
18										428
19	SS-6	18.5'-20.0'	8	3-3-5	100	0.9	6.0'-31.5' CLAY, trace to some sand, trace gravel, medium stiff to stiff, gray	29.7	CH	427
20										426
21										425
22										424
23										423
24	SS-7	23.5'-25.0'	6	2-3-3	100	0.9		28.7	CH	422
25										421
26										420
27										419
28										418
29										417
30	SS-8	28.5'-30.0'	9	2-4-5	100	1.0		30.4	CH	416

Drilling Method:HSA (2-1/4" id)
Depth: 0' to 54.2'
Drill Rig: Mobile B-47
Sampling: split-spoon (SS)

comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder
**ground surface elevation is estimated based upon provided bridge deck elevation of 446

NOBLE

ENGINEERING CONSULTANTS

Client: Charleston Engineering	County: Lawrence, IL	Sheet No. 2 of 2	1st encounter: 22'
Driller: Noble Engineering Consultants	Weather: Sunny	Temperature: 80's	water level reading
Location:Sec. #20-00131 Petty Twp.	Date Started: 5-24-21	Surface Elevation: ~446**	At completion: Dry cave
	Date Finished: 5-24-21	Driller: Tony Schocker	Backfill: Soil Cuttings

BORING No. B-1

water level reading

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	Moisture %	USC Class.	Elev.**
31										415
32							6.0'-31.5' CLAY, trace to some sand, trace gravel, medium stiff to stiff, gray			414
33										413
34	SS-9	33.5'-35.0'	4	1-2-2	100	-	31.5'-37.0' SILTY FINE SAND, trace gravel, occ. thin clay seams, very loose, saturated, gray	33.4	SM	412
35										411
36										410
37										409
38										408
39	SS-10	38.5'-40.0'	4	1-2-2	100	0.9	37.0'-48.5' CLAY, trace to some sand, trace gravel, occ. saturated sand seams, medium stiff to stiff, gray	27.9	CH	407
40										406
41										405
42										404
43										403
44	SS-11	43.5'-45.0'	8	2-4-4	100	1.1		26.8	CH	402
45										401
46										400
47										399
48										398
49	SS-12	48.5'-50.0'	100+	100/5"	10	-	48.5'-54.2' WEATHERED SANDSTONE	-		397
50										396
51										395
52										394
53										393
54	SS-13	53.5'-55.0'	100+	100/4"	10	-				
55							AR 54.2'			
56										
57										
58										
59										
60										

Drilling Method: HSA (2-1/4" id)
Depth: 0' to 54.2'
Drill Rig: Mobile B-47
Sampling: split-spoon (SS)

comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder
**ground surface elevation is estimated based upon provided bridge deck elevation of 446

NOBLE

ENGINEERING CONSULTANTS

Client: Charleston Engineering	County: Lawrence, IL	Sheet No. 1 of 2	1st encounter: 22'
Driller: Noble Engineering Consultants	Weather: Sunny	Temperature: 80's	water level reading
Location:Sec. #20-00131 Petty Twp.	Date Started: 5-24-21	Surface Elevation: ~446**	At completion: Dry cave
	Date Finished: 5-24-21	Driller: Tony Schocker	Backfill: Soil Cuttings

BORING No. B-2

water level reading

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	Moisture %	USC Class.	Elev.**
1										445
2	SS-1	1.0'-2.5'	12	11-8-6	30	-	0.0'-5.5' Silt, Clay, Sand, Etc. FILL	12.1	FILL	444
3										443
4	SS-2	3.5'-5.0'	12	5-8-6	100	-		15.3	FILL	442
5										441
6	SS-3	6.0'-7.5'	6	2-3-3	100	1.0		24.1	CH	440
7										439
8										438
9	SS-4	8.5'-10.0'	7	2-3-4	100	1.0		22.5	CH	437
10										436
11										435
12										434
13										433
14	SS-5	13.5'-15.0'	9	3-4-5	100	1.1		23.9	CH	432
15										431
16										430
17										429
18										428
19	SS-6	18.5'-20.0'	11	4-6-5	100	1.0	5.5'-33.5' CLAY, trace to some sand, trace gravel, stiff, gray	31.7	CH	427
20										426
21										425
22										424
23										423
24	SS-7	23.5'-25.0'	9	3-4-5	100	1.0		29.9	CH	422
25										421
26										420
27										419
28										418
29										417
30	SS-8	28.5'-30.0'	9	2-4-5	100	1.0		31.0	CH	416

Drilling Method:HSA (2-1/4" id)
Depth: 0' to 53.9'
Drill Rig: Mobile B-47
Sampling: split-spoon (SS)

comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder
**ground surface elevation is estimated based upon provided bridge deck elevation of 446

NOBLE

ENGINEERING CONSULTANTS

Client: Charleston Engineering	County: Lawrence, IL	Sheet No. 2 of 2	1st encounter: 22'
Driller: Noble Engineering Consultants	Weather: Sunny	Temperature: 80's	water level reading
Location:Sec. #20-00131 Petty Twp.	Date Started: 5-24-21	Surface Elevation: ~446**	At completion: Dry cave
	Date Finished: 5-24-21	Driller: Tony Schocker	Backfill: Soil Cuttings

BORING No. B-2

water level reading

Depth:	Sample No.	Sample Depth	N-Value	Blow Count	Recovery (%)	Qp (tsf)*	Soil Description	Moisture %	USC Class.	Elev.**
31										415
32							5.5'-33.5' CLAY, trace to some sand, trace gravel, stiff, gray			414
33										413
34	SS-9	33.5'-35.0'	6	2-3-3	100	-	33.5'-37.0' SILTY FINE SAND, trace gravel, occ. thin clay seams, loose, saturated, gray	27.4	SM	412
35										411
36										410
37										409
38										408
39	SS-10	38.5'-40.0'	5	1-2-3	100	0.9	37.0'-48.5' CLAY, trace to some sand, trace gravel, occ. saturated sand seams, medium stiff to stiff, gray	28.7	CH	407
40										406
41										405
42										404
43										403
44	SS-11	43.5'-45.0'	9	2-4-5	100	1.1		24.3	CH	402
45										401
46										400
47										399
48										398
49	SS-12	48.5'-50.0'	100+	100/5"	15	-	48.5'-53.9' WEATHERED SANDSTONE	-		397
50										396
51										395
52										394
53										393
54	SS-13	53.5'-55.0'	100+	100/5"	10	-	AR 53.9'			
55										
56										
57										
58										
59										
60										

Drilling Method: HSA(2-1/4"id)
Depth: 0' to 53.9'
Drill Rig: Mobile B-47
Sampling: split-spoon (SS)

comments: * Qp test is an estimate of the unconfined compressive strength performed by a compact calibrated spring loaded cylinder
**ground surface elevation is estimated based upon provided bridge deck elevation of 446

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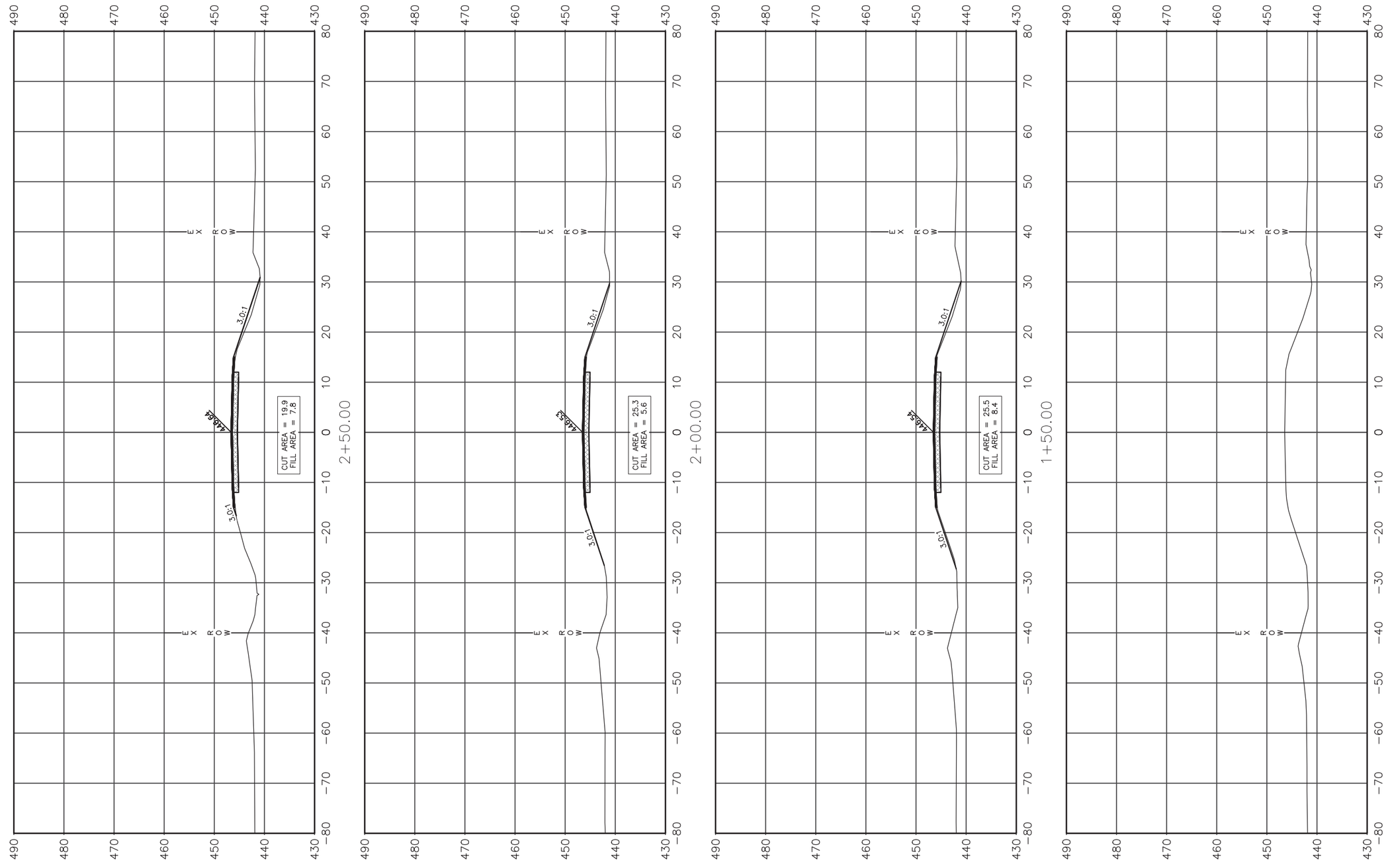
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450
P.O. BOX 397 (618) 392-0736
ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513

DESIGNED – NRF/BMB		REVISED –
DRAWN – BMB		REVISED –
CHECKED – NRF		REVISED –
DATE – 1-5-2024		REVISED –

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BORING LOGS
STRUCTURE NUMBER 051-3316

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	14
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



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CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	15
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450
P.O. BOX 397 (618) 392-0736
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DATE – 9-20-2024	REVISED –

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	16
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

CHARLESTON ENGINEERING, INC. CONSULTING ENGINEERS - LAND SURVEYORS 105 NORTH KITCHELL AVENUE OLNEY, ILLINOIS 62450 P.O. BOX 397 (618) 392-0736 ILLINOIS DEPARTMENT OF PROFESSIONAL REGULATION REGISTRATION #184.003513	DESIGNED – BMB DRAWN – BMB CHECKED – BMB DATE – 9-20-2024	REVISED – REVISED – REVISED – REVISED –	DEPARTMENT OF TRANSPORTATION STATE OF ILLINOIS

CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	17
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

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	DRAWN – BMB	REVISED –	
	CHECKED – BMB	REVISED –	
	DATE – 9-20-2024	REVISED –	

CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	18
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	

CHARLESTON ENGINEERING, INC.
CONSULTING ENGINEERS - LAND SURVEYORS
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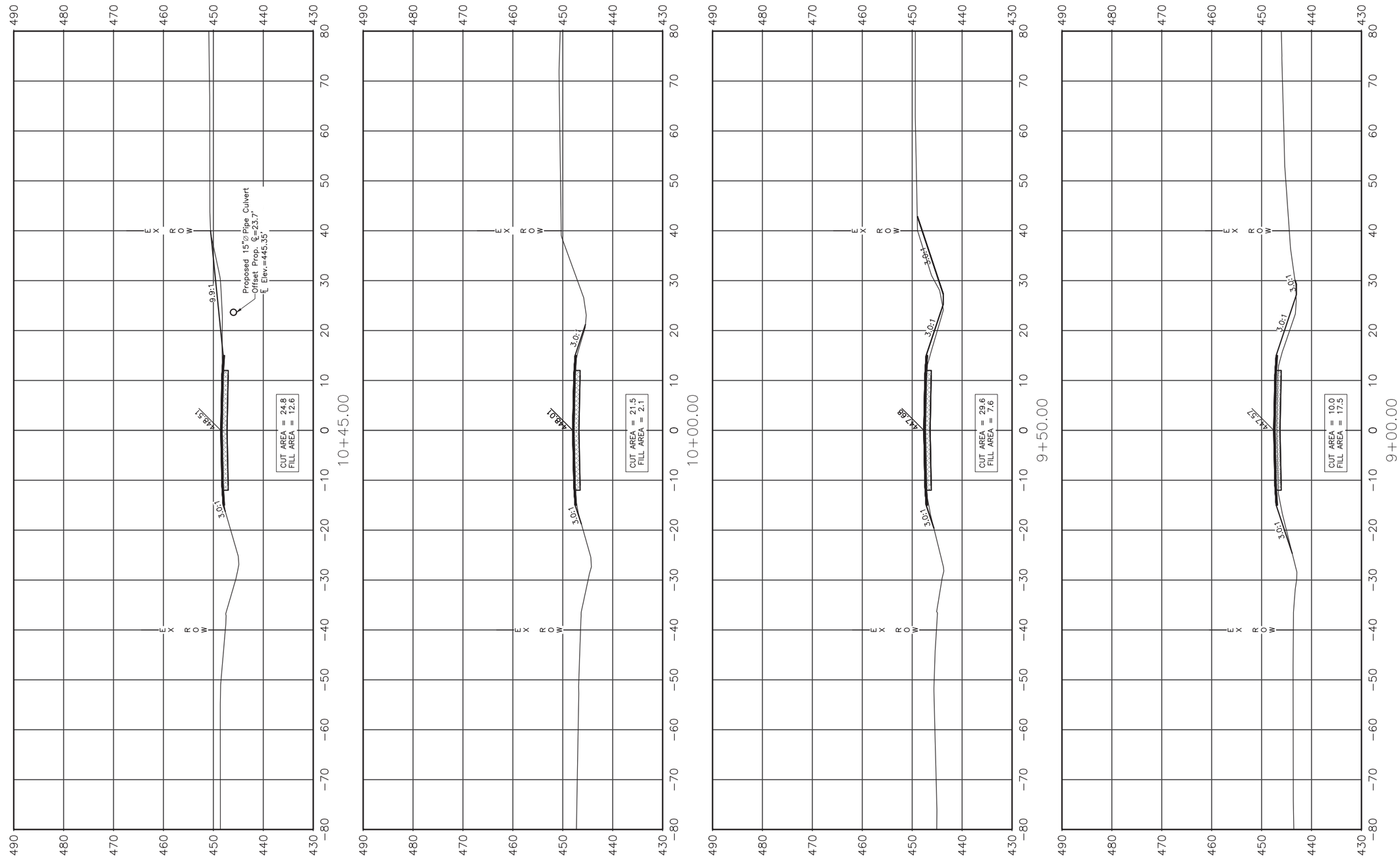
CHECKED – BMB	REVISED –
DATE – 9-20-2024	REVISED –

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	19
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



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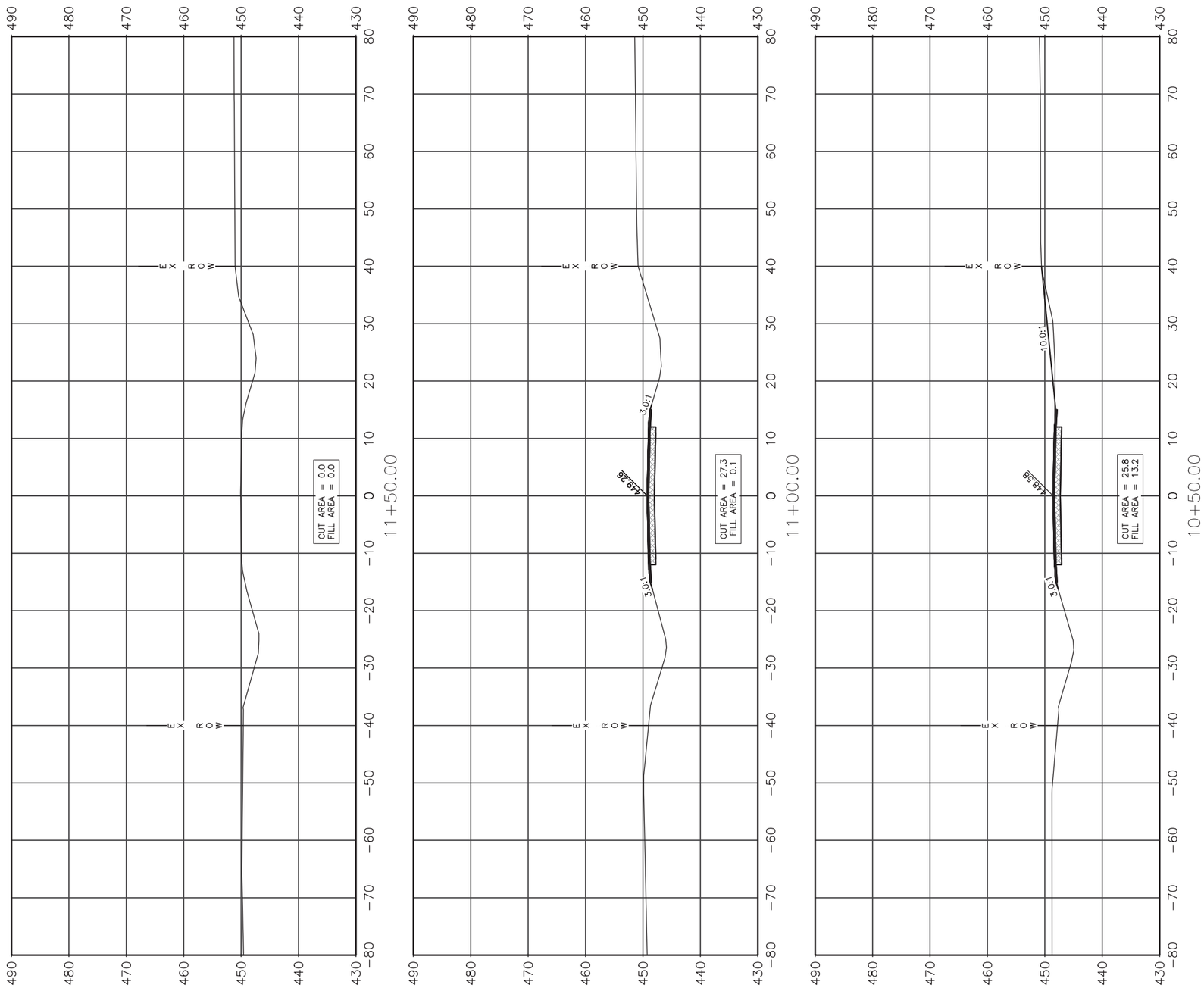
CROSS SECTIONS OF ROADWAY

ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20-00131-00-BR	LAWRENCE	21	20
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	



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ROUTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAS 801	20–00131–00–BR	LAWRENCE	21	21
CONTRACT 95970		ILLINOIS	PROJECT XSIQ(084)	