F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	1
		ILLINOIS CONTRACT NO. 99742		

01-16-2026 LETTING ITEM 178

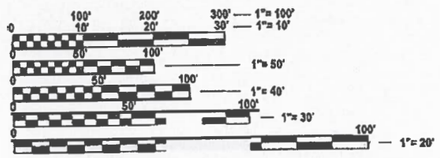
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PLANS FOR PROPOSED
SURFACE TRANSPORTATION PROGRAM
OFF SYSTEM BRIDGE
PROJECT R0G8(173)
FAS 945 (GRAPEVINE TRAIL)
SECTION 22-00086-00-BR
ALEXANDER COUNTY
C-99-003-26

LOCATION OF SECTION INDICATED THUS: ▪

UTILITIES

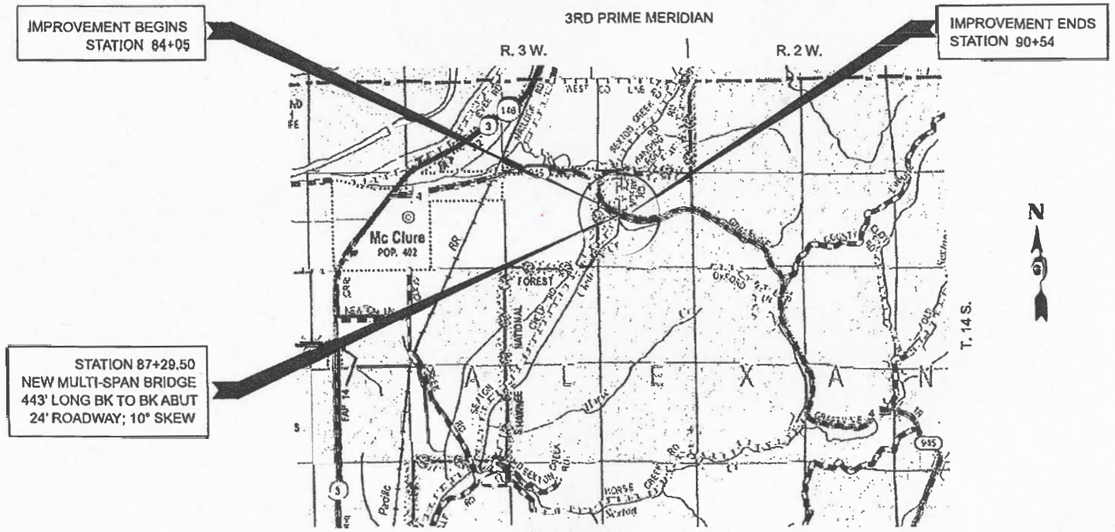
FRONTIER COMMUNICATIONS
EAST MCCLURE WATER DISTRICT
SOUTHERN ILLINOIS ELECTRIC COOP.
AMEREN ILLINOIS

FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR
DESIGN SPEED: 55 MPH
DESIGN TRAFFIC: 1480 (2042)



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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



LOCATION MAP

0 1 2
SCALE

GROSS LENGTH = 649 FT. = 0.12 MILE
NET LENGTH = 649 FT. = 0.12 MILE

COUNTY ENGINEER: NATE BULLARD
P.O. BOX 216
OLIVE BRANCH, IL 62969
618-599-6404

CONTRACT NO.: 99742

GREGORY S. SMOTHERS
062-046542
LICENSED PROFESSIONAL ENGINEER OF ILLINOIS
Expires: 11-30-25

BFW
Marion, IL Office
403 North Court Street, Marion, IL 62959
618-997-9190 / BFWengineers.com

ALEXANDER COUNTY HIGHWAY DEPARTMENT

APPROVED July 14th 20 25
COUNTY ENGINEER

Sept 25 20 25
DISTRICT ONE ENGINEER OF LOCAL ROADS & STREETS

Sept 25 20 25
DEPUTY DIRECTOR OF HIGHWAYS REGION FIVE ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2-3	GENERAL NOTES
4-7	SUMMARY OF QUANTITIES
8-9	SCHEDULE OF QUANTITIES
10	TYPICAL SECTIONS
11-12	PLAN & PROFILE SHEET
13	GENERAL PLAN & ELEVATION
14	GENERAL DATA
15-17	TOP SLAB ELEVATIONS
18	SUPERSTRUCTURES
19-20	SUPERSTRUCTURE DETAILS
21	DRAINAGE SCUPPER DS-12
22	DIAPHRAGM DETAILS
23	STRUCTURAL STEEL
24-25	STRUCTURAL STEEL DETAILS
26	BEARING DETAILS
27	WEST ABUTMENT
28	EAST ABUTMENT
29-30	PIER 1
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33-34	PIER 3
35	STEEL PILES
36	MECHANICAL SPLICER BAR SPLICER DETAILS
37	CONCRETE PARAPET SLIPFORMING OPTION
38-42	SOIL BORING LOGS
43-44	EROSION CONTROL
45	DETOUR PLAN
46	PROTECTED NATURAL AREA DETAIL
47	DETAILS
48-50	CROSS SECTIONS
51-60	EXISTING BRIDGE PLANS

HIGHWAY STANDARDS

000001-09	STD SYMBOLS, ABBREVIATIONS, & PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-14	NAME PLATE FOR BRIDGES
630001-13	STEEL PLATE BEAM GUARDRAIL
631026-06	TRAFFIC BARRIER TERMINAL, TYPE 5
701901-11	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
780001-05	TYPICAL PAVEMENT MARKINGS
781001-04	TYPICAL APPLICATIONS – RAISED REFLECTIVE PAVEMENT MARKERS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR 21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL ROADWAYS
BLR 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS (2L2W – ROAD CLOSED TO THRU TRAFFIC)

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	DRAWN - ____	REVISED - ____
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PLOT DATE = 7/7/2025	DATE - ____	REVISED - ____

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
GENERAL NOTES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	2
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", ADOPTED JANUARY 1, 2025, (HERE IN AFTER REFERRED TO AS THEE STANDARD SPECIFICATIONS), THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", ADOPTED JANUARY 1, 2026, THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", THE "ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", THE DETAILS IN THE PLANS AND THE "SPECIAL PROVIONS" INCLUDED IN THE DOCUMENTS.
2. ANY REFERENCE TO A HIGHWAY STANDARD THROUGHOUT THE PLANS OR SPECIAL PROVISIONS SHALL BE INTERPRETED TO BE THE LATEST STANDARD VERSION ISSUED BY THE DEPARTMENT.
3. THE LOCATION ON THE PLANS OF THE EXISTING UTILITIES; TELEPHONE LINES, ELECTRIC LINES, FIBEROPTIC CABLE, WATER LINES, GAS MAINS, OR ANY OTHER UTILITY FACILITIES AS SHOWN IN THE PLANS ARE BASED ON CAREFUL FIELD INVESTIGATIONS AND THE BEST INFORMATION AVAILABLE BUT THE LOCATIONS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THEIR EXACT LOCATION FROM THE INDIVIDUAL UTILITY COMPANIES AND BY FIELD INSPECTION.
4. WHERE SECTION OR SUBSECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL MONUMENTS UNTIL AN AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING AN AUTHORIZED SURVEYOR REESTABLISH ANY SECTION OR SUBSECTION MONUMENTS DESTROYED BY THE CONTRACTOR OPERATIONS.
5. FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

ALL HOT MIX ASPHALT	112 LBS./SQ. YD./INCH
GRANULAR MATERIALS	2.05 TONS/CU. YD.
RIPRAP	1.50 TONS/CU. YD.

6. THE ALGEBRAIC DIFFERENCE BETWEEN THE PAVEMENT AND SHOULDER SLOPES SHALL NOT EXCEED 8%. THE SHOULDER ON THE OUTSIDE OF SUPERELEVATED CURVES SHALL BE FLATTENED ACCORDINGLY.
7. EXCEPT AS NOTED ON THE PLANS, PAVEMENT GRADES SHOWN ARE AT THE TOP OF PAVEMENT SURFACES.
8. ANY SURPLUS EXCAVATION SHALL BE DISPOSED OF BY THE CONTRACTOR AS PER ARTICLE 202.03 AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
9. THE AREAS TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE EXISTING AND PROPOSED RIGHT OF WAY OR AS DIRECTED BY THE ENGINEER. SEEDING SHALL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET, OR IN AN UNTILLABLE CONDITION.
10. THE REMOVAL AND DISPOSAL OF ALL FENCING, DELINEATORS, SIGNS, DEBRIS, BRUSH, RIPRAP, STONE, CONCRETE SLABS, TILE, ETC. NOT PAID SPECIFICALLY IN THE PLANS SHALL BE INCLUDED IN THE COST OF EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
11. THE CONTRACTOR SHALL CONTACT JULIE AT LEAST 48 HOURS PRIOR TO EXCAVATION TO DETERMINE WHICH UTILITIES ARE IN THE AREA.
12. MEMBERS OF JULIE KNOWN TO BE NEAR THE LIMITS OF THE IMPROVEMENT ARE:

SOUTHERN ILLINOIS ELECTRIC COOP	EAST MCCLURE WATER DISTRICT
FRONTIER	AMEREN ILLINOIS

13. THE HMA SURFACE OF ALL MAILBOX TURNOUTS, PRIVATE ENTRANCES, COMMERCIAL ENTRANCES, AND SIDE ROADS SHALL BE MADE NEATLY, IN A WORKMANLIKE MANNER, AND SHALL ACCURATELY CONFORM TO THE SHAPES AND DIMENSIONS SHOWN ON THE PLAN DETAILS. IF REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL SAW CUT THE HMA SURFACE TO CONFORM TO THE SHAPES AND DIMENSIONS SHOWN ON THE PLAN DETAILS. THIS WORK WILL BE INCLUDED IN THE COST OF THE HMA SURFACE.
14. THE ENGINEER WILL BE THE SOLE JUDGE CONCERNING CURING TIME FOR THE VARIOUS HMA LIFTS.
15. FOR STABILIZATION, ALL TYPE III BARRICADES WILL REQUIRE A MINIMUM OF FOUR SAND BAGS PER BARRICADE.
16. THE SOILS REPORT AND ALL SOILS DATA COLLECTED AND POSSESSED IN CONJUNCTION WITH THE DESIGN OF THIS IMPROVEMENR IS ON FILE AND AVAILABLE FOR INSPECTION. BY SUBMITTING A BID, THE CONTRACTOR ACKNOWLEDGES THAT THE SOILS REPORT AND DATA HAVE BEEN MADE AVAILABLE, THAT THE CONTRACTOR IS AWARE OF THE REPORT CONTENTS AND APPENDICES, AND THAT THE SOILS REPORT IS PART OF THE CONTRACT DOCUMENTS.

COMMITMENTS

1. CLEARING OF TREES WILL NOT BE ALLOWED BETWEEN APRIL 1 THROUGH SEPTEMBER 30 DURING EACH YEAR OF CONSTRUCTION. PROPER SCHEDULING OF TREE REMOVAL MUST BE FOLLOWED FOR TREE REMOVAL NOT TO DELAY OTHER WORK.
2. THERE IS A KNOWN EXISTING ARCHAELOGICAL SITE LOCATED VERY NEAR THE PROJECT TO THE SOUTHEAST OF THE PLANNED WORK. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO AVOID THIS KNOWN ARCHAELOGICAL SITE WITH ALL THEIR WORK ACTIVITIES. THIS RESTRICTION SHALL INCLUDE ALL EQUIPMENT STORAGE/PARKING, PROJECT STAGING, BRIDGE ACCESS, ETC. THE LIMITS OF THE KNOWN LOCATION ARE SHOWN IN THE PLAN VIEWS.

HOT MIX ASPHALT MIXTURE REQUIREMENTS

LOCATION	HMA SURFACE COURSE
THICKNESS	1.5"
MIXTURE USE	HOT MIX ASPHALT
AC/PG	PG 64-22
DESIGN AIR VOIDS	4%, 70 GYRATION SUPERPAVE DESIGN
MIXTURE COMPOSITION	IL-9.5 MM (GRADATION MIXTURE)
FRICTION AGGREGATE	'C' SURFACE

LOCATION	HMA BINDER COURSE	HMA BINDER COURSE
THICKNESS	VARIES	1.5"
MIXTURE USE	HOT MIX ASPHALT	HOT MIX ASPHALT
AC/PG	PG 64-22	PC 64-22
DESIGN AIR VOIDS	4%, 70 GYRATION SUPERPAVE DESIGN	4%, 7C GYRATION SUPERPAVE DESIGN
MIXTURE COMPOSITION	IL-19.0 MM (GRADATION MIXTURE)	IL-9.5 MM (GRADATION MIXTURE)

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PLOT DATE = 4/4/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
GENERAL NOTES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	3
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

CONSTR. CODE
BRIDGE
0008
S.N. 002-3116

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	
20200100	EARTH EXCAVATION	CU YD	5	5
20400800	FURNISHED EXCAVATION	CU YD	90	90
25000200	SEEDING, CLASS 2	ACRE	0.1	0.1
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	5.8	5.8
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	5.8	5.8
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	5.8	5.8
25000700	AGRICULTURAL GROUND LIMESTONE	TON	0.1	0.1
25100630	EROSION CONTROL BLANKET	SQ YD	312	312
28000400	PERIMETER EROSION BARRIER	FOOT	765	765
28100107	STONE RIPRAP, CLASS A4	SQ YD	162	162
28200200	FILTER FABRIC	SQ YD	162	162
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	600	600
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	440	440
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	80	80

* SPECIALTY ITEM

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PLOT DATE = 9/24/2025	DATE - ____	REVISED - ____	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SUMMARY OF QUANTITIES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	4
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE BRIDGE 0010 S.N. 002-3116
40600990	TEMPORARY RAMP	SQ YD	20	20
40602985	HOT-MIX ASPHALT BINDER COURSE, IL-9.5, N70	TON	90	90
40603085	HOT-MIX ASPHALT BINDER COURSE, IL-19.0, N70	TON	140	140
40604052	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N70	TON	70	70
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	93	93
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1	1
50200100	STRUCTURE EXCAVATION	CU YD	247	247
50200300	COFFERDAM EXCAVATION	CU YD	2026	2026
50201121	COFFERDAM (TYPE 2) (LOCATION -1)	EACH	1	1
50201122	COFFERDAM (TYPE 2) (LOCATION -2)	EACH	1	1
50300225	CONCRETE STRUCTURES	CU YD	988.1	988.1
50300255	CONCRETE SUPERSTRUCTURE	CU YD	527	527
50300260	BRIDGE DECK GROOVING	SQ YD	1280	1280
50300265	SEAL COAT CONCRETE	CU YD	409.2	409.2
50300300	PROTECTIVE COAT	SQ YD	1783	1783

* SPECIALTY ITEM

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PLOT SCALE = $SCALE$	CHECKED - ____	REVISED - ____	
PLOT DATE = 9/24/2025	DATE - ____	REVISED - ____	

GRAPEVINE TRAIL OVER CLEAR CREEK
SUMMARY OF QUANTITIES

SCALE: ____ SHEET __ OF __ SHEETS STA. ____ TO STA. ____

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	5
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

				CONSTR. CODE
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	BRIDGE 0010 S.N. 002-3116
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1	1
50500505	STUD SHEAR CONNECTORS	EACH	5664	5664
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	304830	304830
50800530	MECHANICAL SPLICERS	EACH	612	612
51202100	FURNISHING STEEL PILES HP 14X117	FOOT	5243	5243
51202305	DRIVING PILES	FOOT	5243	5243
51204100	TEST PILE STEEL HP 14X117	EACH	5	5
51204650	PILE SHOES	EACH	90	90
51500100	NAME PLATES	EACH	1	1
52100520	ANCHOR BOLTS, 1"	EACH	16	16
52100530	ANCHOR BOLTS, 1 1/4"	EACH	16	16
52100540	ANCHOR BOLTS, 1 1/2"	EACH	8	8
59300100	CONTROLLED LOW STRENGTH MATERIAL	CU YD	168	168
* 63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	113	113
* 63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	4	4

* SPECIALTY ITEM

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PLOT DATE = 9/24/2025	DATE - ____	REVISED - ____

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SUMMARY OF QUANTITIES

SCALE: ___ | SHEET _ OF _ SHEETS | STA. ____ | TO STA. ____

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	6
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT		

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE BRIDGE 0010 S.N. 002-3116
*	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	1	1
	63200310	GUARDRAIL REMOVAL	FOOT	258	258
	67100100	MOBILIZATION	L SUM	1	1
*	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	1	1
*	78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	1500	1500
*	78200006	GUARDRAIL REFLECTORS, TYPE B	EACH	8	8
	X5080530	BAR TERMINATORS	EACH	392	392
	X5230176	DRAINAGE SCUPPERS, DS-12	EACH	6	6
*	X6330725	STEEL PLATE BEAM GUARDRAIL (SHORT RADIUS)	FOOT	88	88
	X6640638	TEMPORARY CONSTRUCTION FENCE	FOOT	150	150
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1
	X7010238	CHANGEABLE MESSAGE SIGN (SPECIAL)	CAL MO	50	50
#	Z0076600	TRAINEES	HOUR	1000	
	Z0004552	APPROACH SLAB REMOVAL	SQ YD	200	200
#	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	1000	
	Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1

* SPECIALTY ITEM # 0042

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PLOT DATE = 9/24/2025	DATE - ____	REVISED - ____	

GRAPEVINE TRAIL OVER CLEAR CREEK
SUMMARY OF QUANTITIES

SCALE: ___ SHEET _ OF _ SHEETS STA. ____ TO STA. ____

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	7
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT	

EARTHWORK

LOCATION STATION TO STATION	EMBANKMENT	FOR INFORMATION ONLY		FURNISHED EXCAVATION	EARTH EXCAVATION
		AVERAGE SHRINKAGE FACTOR	ADJUSTED FOR SHRINKAGE	20400100	20200100
	CU YD	%	CU YD	CU YD	CU YD
ALEXANDER COUNTY					
EAST SIDE	36	25	43	43	
WEST SIDE	39	25	47	47	5
TOTAL	**75**		**90**	**90**	**5**

EROSION CONTROL

LOCATION			SIDE	SEEDING, CLASS 2	NITROGEN FERTILIZER NUTRIENT	PHOSPHORUS FERTILIZER NUTRIENT	POTASSIUM FERTILIZER NUTRIENT	AGRICULTURAL GROUND LIMESTONE	EROSION CONTROL BLANKET	PERIMETER EROSON BARRIER
STATION TO STATION				25000200	25000400	25000500	25000600	25000700	25100630	28000400
				ACRE	POUND	POUND	POUND	TON	SQ YD	FOOT
ALEXANDER COUNTY										
84+00.30	TO	84+26.39	NORTH	0.0	0.3	0.3	0.3	0.0	19	25
84+02.49	TO	84+32.70	SOUTH	0.0	0.5	0.5	0.5	0.0	25	25
84+60.08	TO	85+07.21	NORTH	0.0	0.9	0.9	0.9	0.0	46	25
84+60.41	TO	85+13.78	SOUTH	0.0	0.9	0.9	0.9	0.0	47	45
86+00.19	TO	86+08.36	MAINLINE							160
87+04.73	TO	87+13.31	MAINLINE							160
88+34.79	TO	88+43.37	MAINLINE							160
89+43.10	TO	90+09.15	NORTH	0.0	1.2	1.2	1.2	0.0	65	60
89+49.55	TO	90+53.95	SOUTH	0.0	1.6	1.6	1.6	0.0	84	80
90+23.30	TO	90+54.00	NORTH	0.0	0.5	0.5	0.5	0.0	26	25
TOTALS				**0.1**	**5.8**	**5.8**	**5.8**	**0.1**	**312**	**765**

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SCHEDULE OF QUANTITIES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	8
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

PAVEMENT

LOCATION			SIDE	AGGREGATE SURFACE COURSE, TYPE B	BITUMINOUS MATERIALS (TACK COAT)	HMA SURFACE REMOVAL - BUTT JOINT	TEMPORARY RAMP	HMA BINDER COURSE, IL-9.5, N70	HMA BINDER COURSE, IL-19.0, N70	HMA SURFACE COURSE, IL-9.5, MIX "C", N70	AGGREGATE SHOULDERS, TYPE B 6"
STATION TO STATION				40200800	40600290	40600900	40600990	40602985	40603085	40604052	48101500
				TON	POUND	SQ YD	SQ YD	TON	TON	TON	SQ YD
ALEXANDER COUNTY											
84+05.00	TO	85+12.22	NORTH								25
84+05.00	TO	85+09.50	MAINLINE		220	40		45	70	35	
84+05.00	TO	85+12.22	SOUTH								25
84+05.00	TO	90+54.00	MAINLINE								
84+14.83	TO	84+69.95	NORTH	50							
84+22.33	TO	84+69.48	SOUTH	50							
89+44.54	TO	89+99.20	NORTH								15
89+44.54	TO	90+54.00	SOUTH								25
89+55.27	TO	90+54.00	MAINLINE		220	40	20	45	70	35	
89+95.35	TO	91+54.00	NORTH	500							
90+47.01	TO	90+54.00	NORTH								3
TOTALS				600	440	80	20	90	140	70	93

GUARDRAIL

LOCATION			SIDE	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	TRAFFIC BARRIER TERMINAL, TYPE 5	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	GUARDRAIL REMOVAL	TERMINAL MARKER - DIRECT APPLIED	GUARDRAIL REFLECTOR TYPE B	STEEL PLATE BEAM GUARDRAIL, (SHORT RADIUS)
STATION TO STATION				63000001	63100070	63100167	63200310	72501000	78200006	X6330725
				FOOT	EACH	EACH	FOOT	EACH	EACH	FOOT
ALEXANDER COUNTY										
84+55.37	TO	85+00.62	NORTH				64.8			
84+59.17	TO	84+76.79	SOUTH						1	25
84+59.75	TO	85+04.98	SOUTH				64.2			
84+60.02	TO	84+81.19	NORTH						1	25
84+76.79	TO	85+01.88	SOUTH	25					1	
84+81.19	TO	84+93.69	NORTH	12.5						
84+93.69	TO	85+06.96	NORTH		1					
85+01.88	TO	85+12.15	SOUTH		1					
89+28.72	TO	89+99.70	NORTH				75.9			
89+44.55	TO	89+57.82	NORTH		1					
89+49.74	TO	89+63.01	SOUTH		1					
89+57.30	TO	90+09.29	SOUTH				52.6			
89+57.82	TO	89+82.82	NORTH	25					1	
89+63.01	TO	90+13.01	SOUTH	50					2	
89+82.82	TO	90+07.01	NORTH						2	37.5
90+13.01	TO	90+63.01	SOUTH			1		1		
TOTALS				112.5	4	1	258	1	8	87.5

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GRAPEVINE TRAIL OVER CLEAR CREEK
SCHEDULE OF QUANTITIES

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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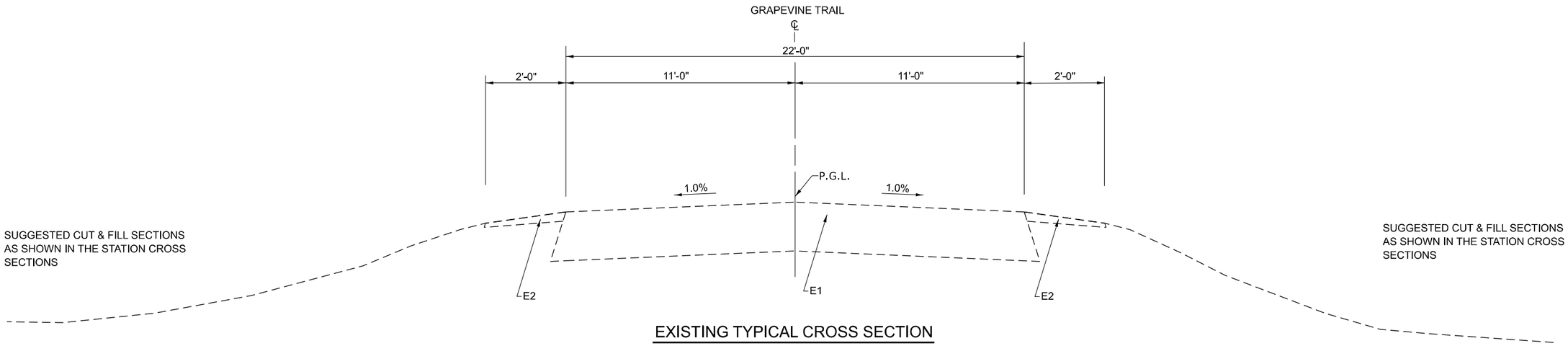
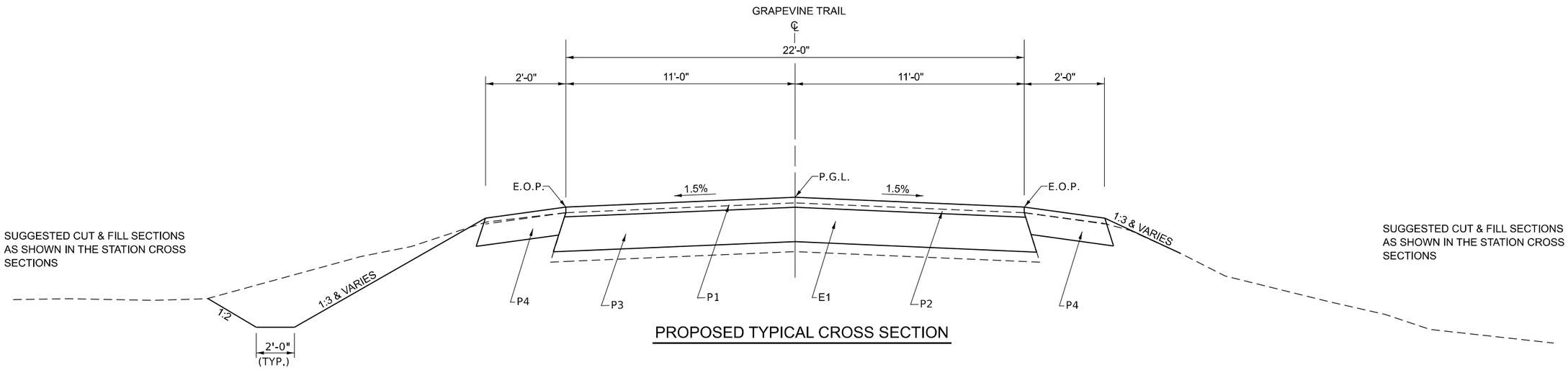
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



EXISTING TYPICAL CROSS SECTION



PROPOSED TYPICAL CROSS SECTION

LEGEND

P1	PROPOSED HMA SURFACE COURSE, MIX C, IL-9.5, N70, 1.5"
P2	PROPOSED HMA BINDER COURSE, IL-9.5, N70, 1.5" & VARIES
P3	PROPOSED HMA BINDER COURSE, IL-19.0, 10" & VARIES
P4	PROPOSED AGGREGATE SHOULDER, 6"
E1	EXISTING HMA PAVEMENT
E2	EXISTING EARTH SHOULDER

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	DRAWN -	REVISED -	
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PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
TYPICAL SECTIONS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	10
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

EX CURVE
PI STA = 81+88.65
Δ = 34°35'03" (LT)
D = 06°15'20"
R = 915.91'
T = 285.14'
L = 552.85'
E = 43.36'
e = ____
PC STA = 79+03.52
PT STA = 84+56.37

PI STA 7+95.65

LEVEE TOE

AGGREGATE BASE TYPE 2

PT STA 84+56.37

CONC

HMA

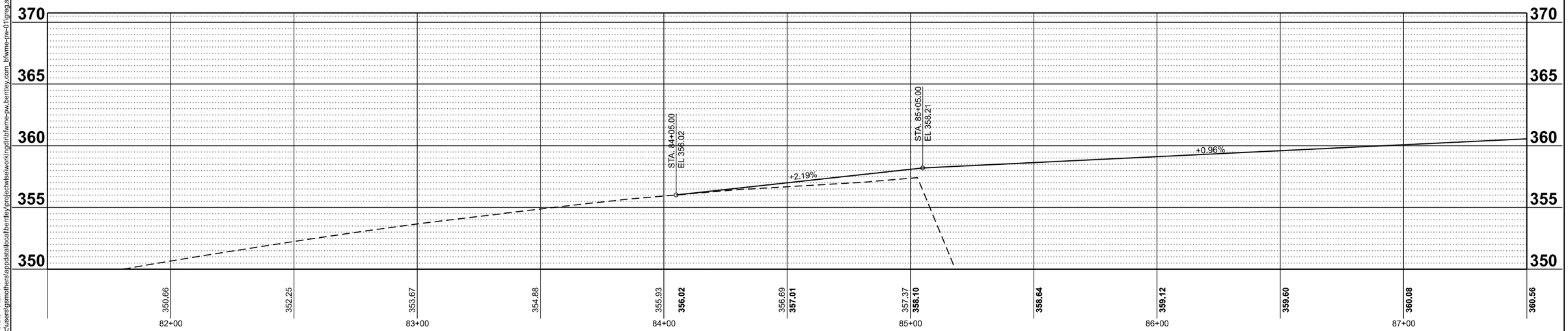
PI STA 81+88.65

AGGREGATE BASE TYPE 2

LEVEE TOE

N

0 20 40
SCALE IN FEET



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PLOT DATE = 4/3/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
PLAN & PROFILE

SCALE: | SHEET OF SHEETS | STA. 81+50.00 | TO STA. 87+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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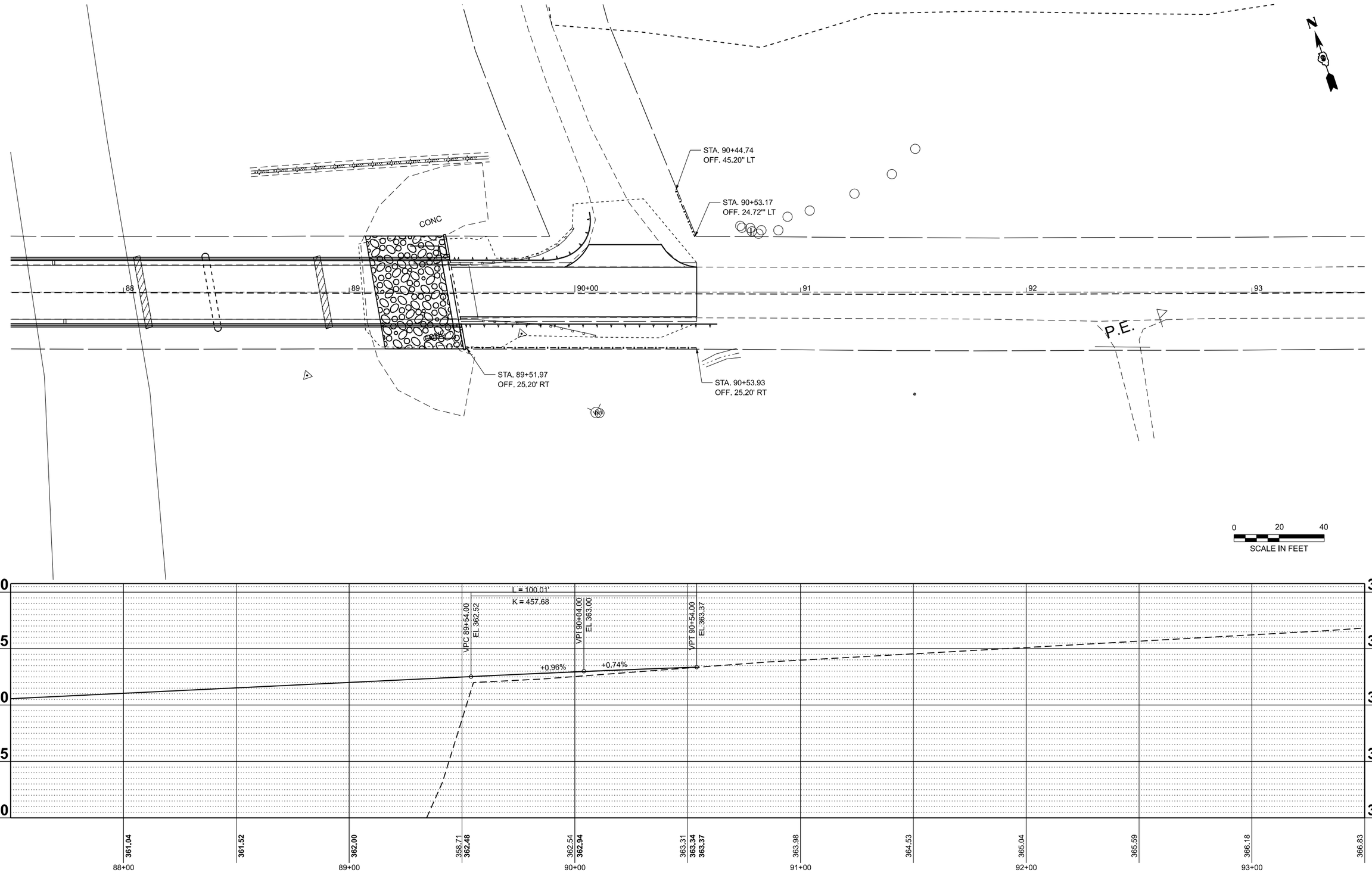
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



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	DRAWN -	REVISED -
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -
PLOT DATE = 4/3/2025	DATE -	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
PLAN & PROFILE

SCALE: | SHEET OF SHEETS | STA. 87+50.00 | TO STA. 93+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	12
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

Bench Mark: Station 84+67.28, 21.84 Lt, Elevation 355.00

Existing Structure: S.N. 002-3005 was originally built in 1959 as F.A.S. Rte. 945, Section 32B-F. The existing superstructure consists of continous five-span WF 33x141 rolled beams with a reinforced concrete deck. The substructure consists of open reinforced concrete abutments and hammerhead piers. All substructure units are on concrete piling. The bk. to bk. of abutment length measures 452'-6 1/2" and the out-to-out deck width measures 29'-8". The structure is to be removed and replaced. Traffic to be detoured during construction.

No Salvage

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

SEISMIC DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition

LOADING HL-93

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

DESIGN STRESSES

FIELD UNITS

f 'c = 4,000 psi (Superstructure)
f 'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (AASHTO M270 Grade 50W)

SEISMIC DATA

Seismic Performance Category (SPC) = B
Bedrock Acceleration Coefficient (A) = 18.0 g
Site Coefficient (S) = 2

VPT Sta. 85+05.00
Elev. 358.21

0.959%

VPC Sta. 89+54.00
Elev. 362.52

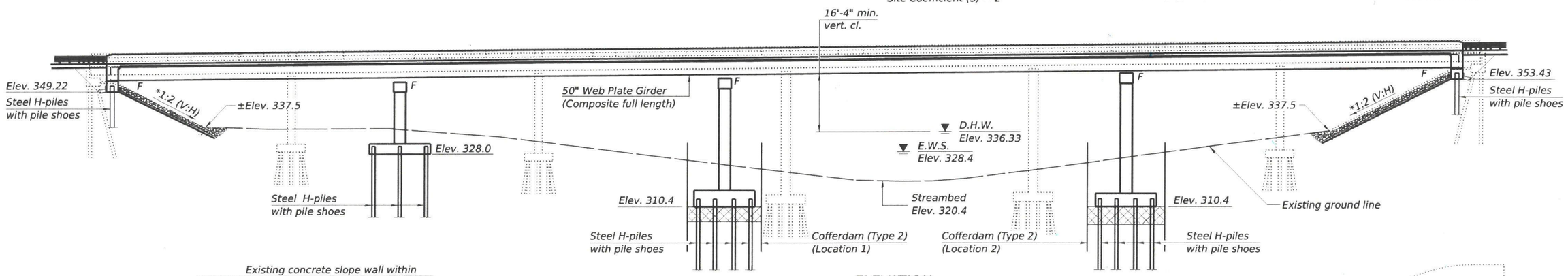
PROFILE GRADE

(along ℄ Grapevine Trail Rd.)

CLEAR CREEK
BUILT 20__ BY
ALEXANDER COUNTY
SEC. 22-00086-00-BR
F.A.S. RT. 945 - STA. 87+29.50
STR. NO. 002-3116 LOADING HL-93

NAME PLATE

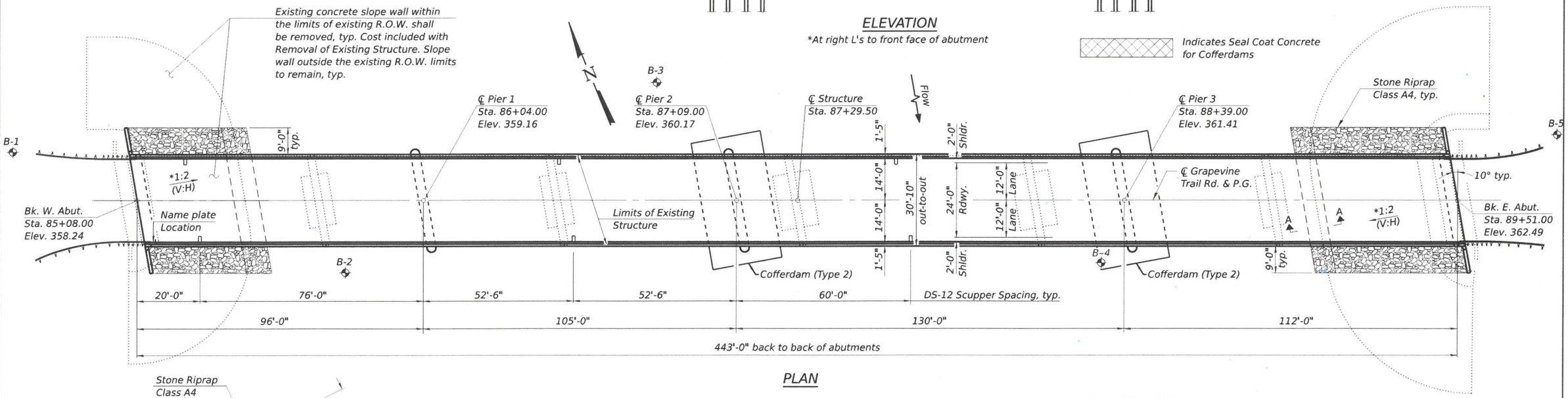
See Std. 515001



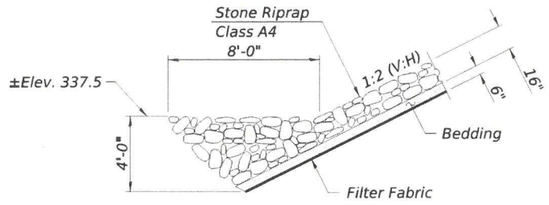
ELEVATION

*At right L's to front face of abutment

Indicates Seal Coat Concrete for Cofferdams



PLAN

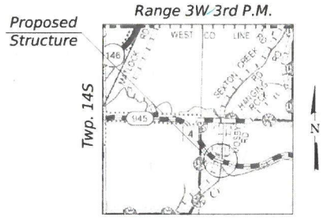


SECTION A-A

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 LRFD Bridge Design Specifications.

Gerald B. Rotherham
Expires: Nov. 30, 2026

LICENSED STRUCTURAL ENGINEER
GERALD B. ROTHERHAM
081-005673
STATE OF ILLINOIS



LOCATION SKETCH

GENERAL PLAN & ELEVATION
GRAPEVINE TRAIL RD. OVER CLEAR CREEK
F.A.S. RTE. 945 - SEC. 22-00086-00-BR
ALEXANDER COUNTY
STATION 87+29.50
S.N. 002-3116

BFW	USER NAME =	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT	GENERAL PLAN & ELEVATION STRUCTURE NO. 002-3116	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - GBR	REVISED -			945	22-00086-00-BR	ALEXANDER	60	13
	PLOT SCALE =	DRAWN - JMK	REVISED -						CONTRACT NO. 99742	
	PLOT DATE =	CHECKED - GBR	REVISED -					ILLINOIS	FED. AID PROJECT	

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GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1, mechanically galvanized bolts in painted or coated metallized areas. Fasteners shall be ASTM F 3125 Grade A325 Type 1, hot-dipped galvanized in uncoated areas. Fasteners shall be ASTM F3125 Grade A325 Type 3 weathering steel bolts in unpainted areas. Bolts $\frac{7}{8}$ in. diameter, holes $\frac{15}{16}$ in. diameter, unless otherwise noted.

Calculated weight of Structural Steel = 444,950 lbs. (AASHTO M270 Grade 50W)

All structural steel shall be AASHTO M270 Grade 50W.

No field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

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

All cross frames between girders shall be installed with erection pins and bolts in accordance with the erection plan approved by the Engineer. Individual cross frames at supports may be temporarily disconnected to install bearing anchor bolts.

Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

The Seal coat design thickness is based on the Cofferdam Design Water Elevation (CDWE) shown. Final cofferdam design, details and seal coat thickness shall be submitted to the Engineer for approval. The CDWE is equal to the Estimated Water Surface Elevation (EWSE) plus 3 feet.

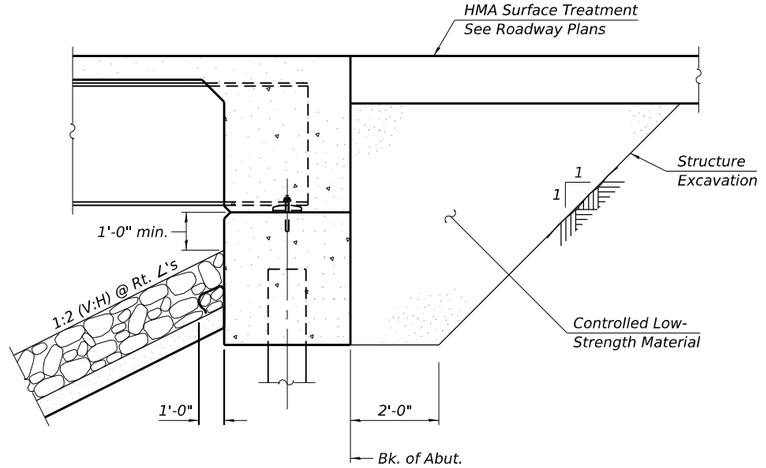
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

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

Structural steel shall be painted for a distance equal to the depth of the embedment into the concrete cap plus 18 in. Painted areas shall be primed in the shop with a Department-approved zinc rich primer. Field painting will not be required.

TOTAL BILL OF MATERIAL

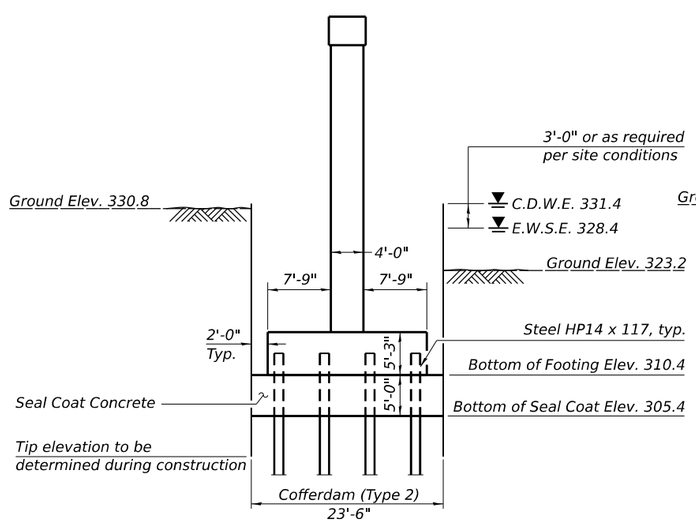
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.		162	162
Filter Fabric	Sq. Yd.		162	162
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		247	247
Cofferdam Excavation	Cu. Yd.		2026	2026
Cofferdam Type 2 (Location - 1)	Each		1	1
Cofferdam Type 2 (Location - 2)	Each		1	1
Concrete Structures	Cu. Yd.		988.1	988.1
Concrete Superstructures	Cu. Yd.	527.0		527.0
Bridge Deck Grooving	Sq. Yd.	1280		1280
Seal Coat Concrete	Cu. Yd.		409.2	409.2
Protective Coat	Sq. Yd.	1783		1783
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	5664		5664
Reinforcement Bars, Epoxy Coated	Pound	143740	161090	304830
Mechanical Splicers	Each		612	612
Furnishing Steel Piles HP 14x117	Foot		5243	5243
Driving Piles	Foot		5243	5243
Test Piles Steel HP 14x117	Each		5	5
Pile Shoes	Each		90	90
Name Plates	Each	1		1
Anchor Bolts, 1"	Each	16		16
Anchor Bolts, 1¼"	Each	16		16
Anchor Bolts, 1½"	Each	8		8
Controlled Low-Strength Material	Cu. Yd.		168	168
Bar Terminators	Each	108	284	392
Drainage Scuppers, DS-12	Each	6		6



SECTION THRU INTEGRAL ABUTMENT

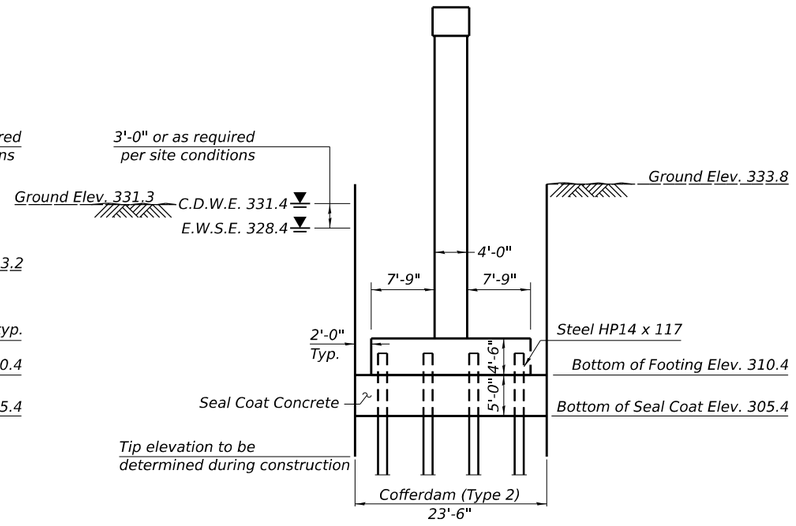
(Horiz. dim. at Rt. ∠'s)

Note:
Controlled Low-Strength Material shall extend to 2'-0" from the end of each wingwall.



Cofferdam (Type 2) (Location - 1)
Detail at Pier 2

(Looking North)



Cofferdam (Type 2) (Location - 2)
Detail at Pier 3

(Looking North)

DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)					Item 113
	W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.	
Q100	349.17	331.40	314.50	314.50	353.34	8
Q200	349.17	331.20	314.30	314.30	353.34	
Design	349.17	331.40	314.50	314.50	353.34	
Check	349.17	331.20	314.30	314.30	353.34	

WATERWAY INFORMATION

Drainage Area = 12.28 sq. mi. Low Grade Elev. 358.27 @ Sta. 85+11.00

Flood	Freq. Yr.	Q C.F.S.	Opening Ft²		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	25	6560	2640.29	2635.88	336.33	-0.01	-0.02	336.32	336.31
Base	50	7380	2827.98	2822.64	336.88	-0.01	-0.02	336.87	336.86
	100	8130	2987.60	2986.30	337.34	-0.01	-0.01	337.33	337.33
Scour Check	200	9000	3130.00	3130.00	337.70	0.00	0.05	337.70	337.75
BW 100 Event	–	8130	3372.32	3370.84	352.60	-0.12	0.00	352.48	352.60

25 Yr. velocity exist. bridge = 3.66 ft/s 25 Yr velocity prop. bridge = 3.67 ft/s

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	CHECKED - GBR	REVISED -	
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PLOT DATE =	CHECKED - GBR	REVISED -	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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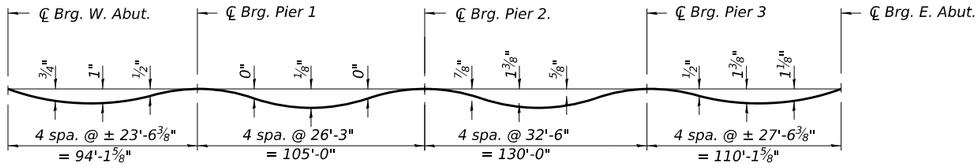
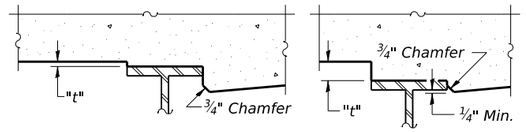
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R09B(173)		



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

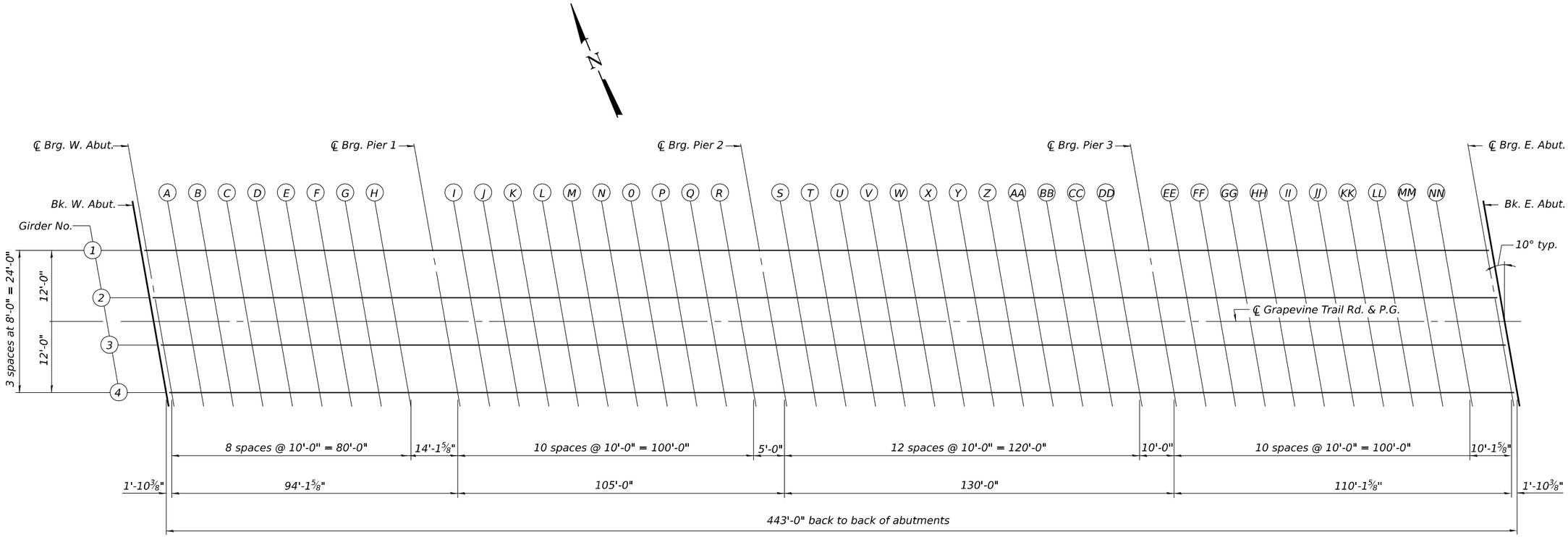
Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 16 & 17 of 60 .



At Minimum Fillet At Maximum Fillet

To determine "t": After all structural steel has been erected, elevations of the top flanges of the girders shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 14 & 15of 55, minus slab thickness, equals the fillet heights "t" above top flange of girders.

FILLET HEIGHTS



PLAN

BFW™

USER NAME =	DESIGNED - JMK	REVISED -
	CHECKED - GBR	REVISED -
PLOT SCALE =	DRAWN - JMK	REVISED -
PLOT DATE =	CHECKED - GBR	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	15
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

GIRDER 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	85+05.88	-12.00	358.04	358.04
℄ Brg. W. Abut.	85+07.74	-12.00	358.06	358.06
A	85+17.74	-12.00	358.15	358.18
B	85+27.74	-12.00	358.25	358.31
C	85+37.74	-12.00	358.34	358.42
D	85+47.74	-12.00	358.44	358.52
E	85+57.74	-12.00	358.54	358.62
F	85+67.74	-12.00	358.63	358.70
G	85+77.74	-12.00	358.73	358.77
H	85+87.74	-12.00	358.82	358.84
℄ Brg. Pier 1	86+01.88	-12.00	358.96	358.96
I	86+11.88	-12.00	359.06	359.06
J	86+21.88	-12.00	359.15	359.15
K	86+31.88	-12.00	359.25	359.26
L	86+41.88	-12.00	359.34	359.35
M	86+51.88	-12.00	359.44	359.45
N	86+61.88	-12.00	359.54	359.55
O	86+71.88	-12.00	359.63	359.64
P	86+81.88	-12.00	359.73	359.73
Q	86+91.88	-12.00	359.82	359.82
R	87+01.88	-12.00	359.92	359.92
℄ Brg. Pier 2	87+06.88	-12.00	359.97	359.97
S	87+16.88	-12.00	360.06	360.08
T	87+26.88	-12.00	360.16	360.20
U	87+36.88	-12.00	360.26	360.33
V	87+46.88	-12.00	360.35	360.44
W	87+56.88	-12.00	360.45	360.56
X	87+66.88	-12.00	360.54	360.66
Y	87+76.88	-12.00	360.64	360.75
Z	87+86.88	-12.00	360.74	360.84
AA	87+96.88	-12.00	360.83	360.90
BB	88+06.88	-12.00	360.93	360.98
CC	88+16.88	-12.00	361.02	361.04
DD	88+26.88	-12.00	361.12	361.13
℄ Brg. Pier 3	88+36.88	-12.00	361.22	361.22
EE	88+46.88	-12.00	361.31	361.32
FF	88+56.88	-12.00	361.41	361.44
GG	88+66.88	-12.00	361.50	361.55
HH	88+76.88	-12.00	361.60	361.68
II	88+86.88	-12.00	361.70	361.80
JJ	88+96.88	-12.00	361.79	361.91
KK	89+06.88	-12.00	361.89	362.01
LL	89+16.88	-12.00	361.98	362.08
MM	89+26.88	-12.00	362.08	362.16
NN	89+36.88	-12.00	362.18	362.22
℄ Brg. E. Abut.	89+47.02	-12.00	362.27	362.27
Bk. E. Abut.	89+48.88	-12.00	362.29	362.29

GIRDER 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	85+07.29	-4.00	358.17	358.17
℄ Brg. W. Abut.	85+09.15	-4.00	358.19	358.19
A	85+19.15	-4.00	358.29	358.32
B	85+29.15	-4.00	358.38	358.44
C	85+39.15	-4.00	358.48	358.56
D	85+49.15	-4.00	358.57	358.65
E	85+59.15	-4.00	358.67	358.75
F	85+69.15	-4.00	358.77	358.84
G	85+79.15	-4.00	358.86	358.90
H	85+89.15	-4.00	358.96	358.98
℄ Brg. Pier 1	86+03.29	-4.00	359.09	359.09
I	86+13.29	-4.00	359.19	359.19
J	86+23.29	-4.00	359.29	359.29
K	86+33.29	-4.00	359.38	359.39
L	86+43.29	-4.00	359.48	359.49
M	86+53.29	-4.00	359.57	359.58
N	86+63.29	-4.00	359.67	359.68
O	86+73.29	-4.00	359.77	359.78
P	86+83.29	-4.00	359.86	359.86
Q	86+93.29	-4.00	359.96	359.96
R	87+03.29	-4.00	360.05	360.05
℄ Brg. Pier 2	87+08.29	-4.00	360.10	360.10
S	87+18.29	-4.00	360.20	360.22
T	87+28.29	-4.00	360.29	360.33
U	87+38.29	-4.00	360.39	360.46
V	87+48.29	-4.00	360.49	360.58
W	87+58.29	-4.00	360.58	360.69
X	87+68.29	-4.00	360.68	360.80
Y	87+78.29	-4.00	360.77	360.88
Z	87+88.29	-4.00	360.87	360.97
AA	87+98.29	-4.00	360.97	361.04
BB	88+08.29	-4.00	361.06	361.11
CC	88+18.29	-4.00	361.16	361.18
DD	88+28.29	-4.00	361.25	361.26
℄ Brg. Pier 3	88+38.29	-4.00	361.35	361.35
EE	88+48.29	-4.00	361.45	361.46
FF	88+58.29	-4.00	361.54	361.57
GG	88+68.29	-4.00	361.64	361.69
HH	88+78.29	-4.00	361.73	361.81
II	88+88.29	-4.00	361.83	361.93
JJ	88+98.29	-4.00	361.93	362.05
KK	89+08.29	-4.00	362.02	362.14
LL	89+18.29	-4.00	362.12	362.22
MM	89+28.29	-4.00	362.21	362.29
NN	89+38.29	-4.00	362.31	362.35
℄ Brg. E. Abut.	89+48.43	-4.00	362.41	362.41
Bk. E. Abut.	89+50.29	-4.00	362.42	362.42

℄ GRAPEVINE TRAIL RD. & P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	85+08.00	0.00	358.24	358.24
℄ Brg. W. Abut.	85+09.86	0.00	358.26	358.26
A	85+19.86	0.00	358.35	358.38
B	85+29.86	0.00	358.45	358.51
C	85+39.86	0.00	358.54	358.62
D	85+49.86	0.00	358.64	358.72
E	85+59.86	0.00	358.74	358.82
F	85+69.86	0.00	358.83	358.90
G	85+79.86	0.00	358.93	358.97
H	85+89.86	0.00	359.02	359.04
℄ Brg. Pier 1	86+04.00	0.00	359.16	359.16
I	86+14.00	0.00	359.26	359.26
J	86+24.00	0.00	359.35	359.35
K	86+34.00	0.00	359.45	359.46
L	86+44.00	0.00	359.54	359.55
M	86+54.00	0.00	359.64	359.65
N	86+64.00	0.00	359.74	359.75
O	86+74.00	0.00	359.83	359.84
P	86+84.00	0.00	359.93	359.93
Q	86+94.00	0.00	360.02	360.02
R	87+04.00	0.00	360.12	360.12
℄ Brg. Pier 2	87+09.00	0.00	360.17	360.17
S	87+19.00	0.00	360.26	360.28
T	87+29.00	0.00	360.36	360.40
U	87+39.00	0.00	360.46	360.53
V	87+49.00	0.00	360.55	360.64
W	87+59.00	0.00	360.65	360.76
X	87+69.00	0.00	360.74	360.86
Y	87+79.00	0.00	360.84	360.95
Z	87+89.00	0.00	360.94	361.04
AA	87+99.00	0.00	361.03	361.10
BB	88+09.00	0.00	361.13	361.18
CC	88+19.00	0.00	361.22	361.24
DD	88+29.00	0.00	361.32	361.33
℄ Brg. Pier 3	88+39.00	0.00	361.42	361.42
EE	88+49.00	0.00	361.51	361.52
FF	88+59.00	0.00	361.61	361.64
GG	88+69.00	0.00	361.70	361.75
HH	88+79.00	0.00	361.80	361.88
II	88+89.00	0.00	361.90	362.00
JJ	88+99.00	0.00	361.99	362.11
KK	89+09.00	0.00	362.09	362.21
LL	89+19.00	0.00	362.18	362.28
MM	89+29.00	0.00	362.28	362.36
NN	89+39.00	0.00	362.38	362.42
℄ Brg. E. Abut.	89+49.14	0.00	362.47	362.47
Bk. E. Abut.	89+51.00	0.00	362.49	362.49

BACON | FARMER | WORKMAN
ENGINEERING & TESTING, INC.
403 NORTH COURT STREET
MARION, ILLINOIS 62959
PHONE - 618.997.9190

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PLOT DATE =	CHECKED - GBR	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	16
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

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GIRDER 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	85+08.71	4.00	358.19	358.19
℄ Brg. W. Abut.	85+10.57	4.00	358.20	358.20
A	85+20.57	4.00	358.30	358.33
B	85+30.57	4.00	358.40	358.46
C	85+40.57	4.00	358.49	358.57
D	85+50.57	4.00	358.59	358.67
E	85+60.57	4.00	358.68	358.76
F	85+70.57	4.00	358.78	358.85
G	85+80.57	4.00	358.88	358.92
H	85+90.57	4.00	358.97	358.99
℄ Brg. Pier 1	86+04.71	4.00	359.11	359.11
I	86+14.71	4.00	359.20	359.20
J	86+24.71	4.00	359.30	359.30
K	86+34.71	4.00	359.40	359.41
L	86+44.71	4.00	359.49	359.50
M	86+54.71	4.00	359.59	359.60
N	86+64.71	4.00	359.68	359.69
O	86+74.71	4.00	359.78	359.79
P	86+84.71	4.00	359.88	359.88
Q	86+94.71	4.00	359.97	359.97
R	87+04.71	4.00	360.07	360.07
℄ Brg. Pier 2	87+09.71	4.00	360.12	360.12
S	87+19.71	4.00	360.21	360.23
T	87+29.71	4.00	360.31	360.35
U	87+39.71	4.00	360.40	360.47
V	87+49.71	4.00	360.50	360.59
W	87+59.71	4.00	360.59	360.70
X	87+69.71	4.00	360.69	360.81
Y	87+79.71	4.00	360.79	360.90
Z	87+89.71	4.00	360.88	360.98
AA	87+99.71	4.00	360.98	361.05
BB	88+09.71	4.00	361.07	361.12
CC	88+19.71	4.00	361.17	361.19
DD	88+29.71	4.00	361.27	361.28
℄ Brg. Pier 3	88+39.71	4.00	361.36	361.36
EE	88+49.71	4.00	361.46	361.47
FF	88+59.71	4.00	361.55	361.58
GG	88+69.71	4.00	361.65	361.70
HH	88+79.71	4.00	361.75	361.83
II	88+89.71	4.00	361.84	361.94
JJ	88+99.71	4.00	361.94	362.06
KK	89+09.71	4.00	362.03	362.15
LL	89+19.71	4.00	362.13	362.23
MM	89+29.71	4.00	362.23	362.31
NN	89+39.71	4.00	362.32	362.36
℄ Brg. E. Abut.	89+49.85	4.00	362.42	362.42
Bk. E. Abut.	89+51.71	4.00	362.44	362.44

GIRDER 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. W. Abut.	85+10.12	12.00	358.08	358.08
℄ Brg. W. Abut.	85+11.98	12.00	358.10	358.10
A	85+21.98	12.00	358.19	358.22
B	85+31.98	12.00	358.29	358.35
C	85+41.98	12.00	358.38	358.46
D	85+51.98	12.00	358.48	358.56
E	85+61.98	12.00	358.58	358.66
F	85+71.98	12.00	358.67	358.74
G	85+81.98	12.00	358.77	358.81
H	85+91.98	12.00	358.86	358.88
℄ Brg. Pier 1	86+06.12	12.00	359.00	359.00
I	86+16.12	12.00	359.10	359.10
J	86+26.12	12.00	359.19	359.19
K	86+36.12	12.00	359.29	359.30
L	86+46.12	12.00	359.38	359.39
M	86+56.12	12.00	359.48	359.49
N	86+66.12	12.00	359.58	359.59
O	86+76.12	12.00	359.67	359.68
P	86+86.12	12.00	359.77	359.77
Q	86+96.12	12.00	359.86	359.86
R	87+06.12	12.00	359.96	359.96
℄ Brg. Pier 2	87+11.12	12.00	360.01	360.01
S	87+21.12	12.00	360.10	360.12
T	87+31.12	12.00	360.20	360.24
U	87+41.12	12.00	360.30	360.37
V	87+51.12	12.00	360.39	360.48
W	87+61.12	12.00	360.49	360.60
X	87+71.12	12.00	360.58	360.70
Y	87+81.12	12.00	360.68	360.79
Z	87+91.12	12.00	360.78	360.88
AA	88+01.12	12.00	360.87	360.94
BB	88+11.12	12.00	360.97	361.02
CC	88+21.12	12.00	361.06	361.08
DD	88+31.12	12.00	361.16	361.17
℄ Brg. Pier 3	88+41.12	12.00	361.26	361.26
EE	88+51.12	12.00	361.35	361.36
FF	88+61.12	12.00	361.45	361.48
GG	88+71.12	12.00	361.54	361.59
HH	88+81.12	12.00	361.64	361.72
II	88+91.12	12.00	361.74	361.84
JJ	89+01.12	12.00	361.83	361.95
KK	89+11.12	12.00	361.93	362.05
LL	89+21.12	12.00	362.02	362.12
MM	89+31.12	12.00	362.12	362.20
NN	89+41.12	12.00	362.22	362.26
℄ Brg. E. Abut.	89+51.26	12.00	362.31	362.31
Bk. E. Abut.	89+53.12	12.00	362.33	362.33

USER NAME =	DESIGNED - JMK	REVISED -
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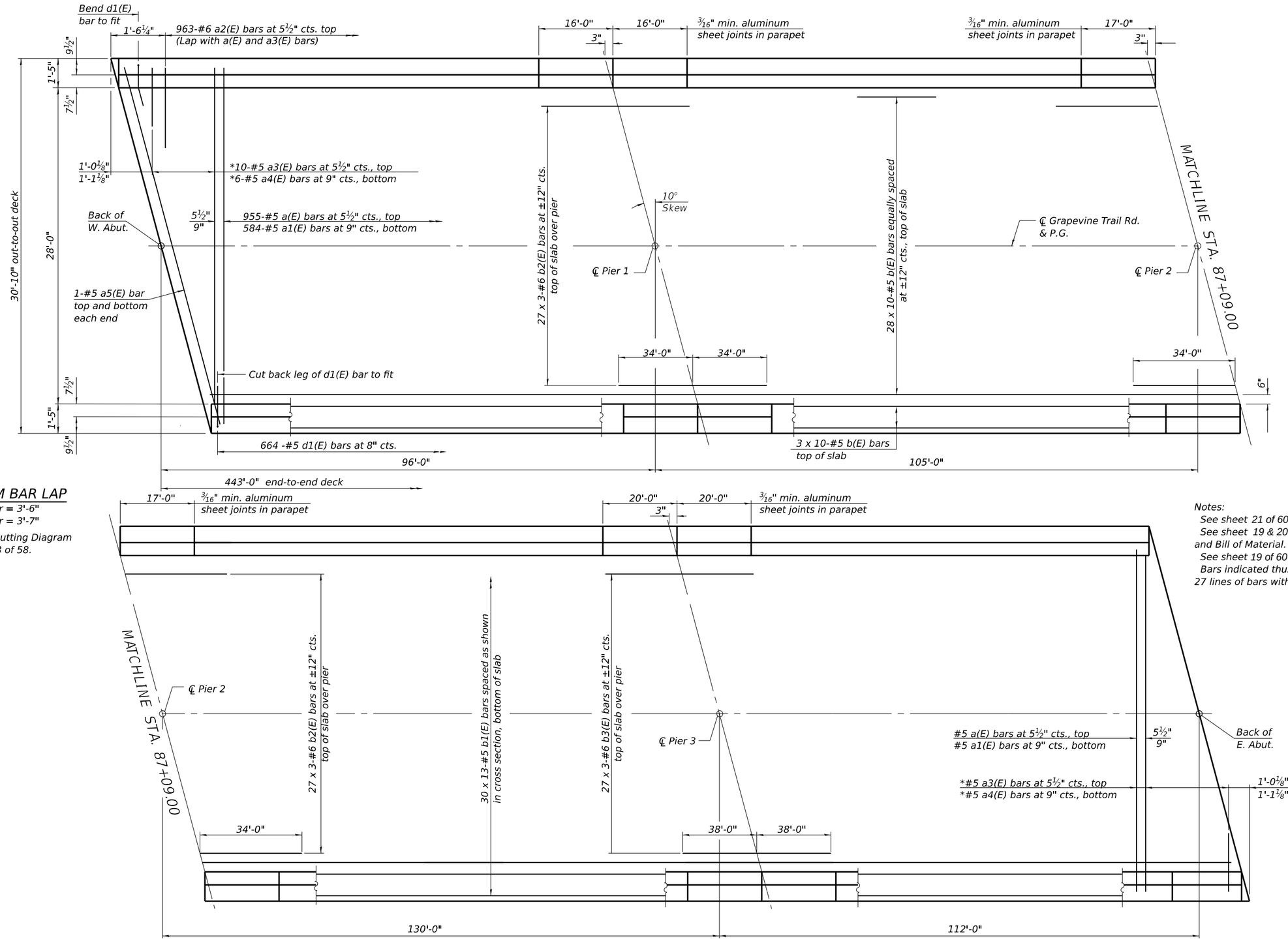
STATE OF ILLINOIS
ALEXANDER COUNTY HYGHWAY DEPARTMENT

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	17
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		



MINIMUM BAR LAP

#5 bar = 3'-6"
#6 bar = 3'-7"

* See Field Cutting Diagram on sheet 18 of 58.

Notes:
See sheet 21 of 60 for scupper locations.
See sheet 19 & 20 of 60 for superstructure details and Bill of Material.
See sheet 19 of 60 for cross section of deck.
Bars indicated thus 27 x 3-#6 etc. indicates 27 lines of bars with 3 lengths per line.

PLAN

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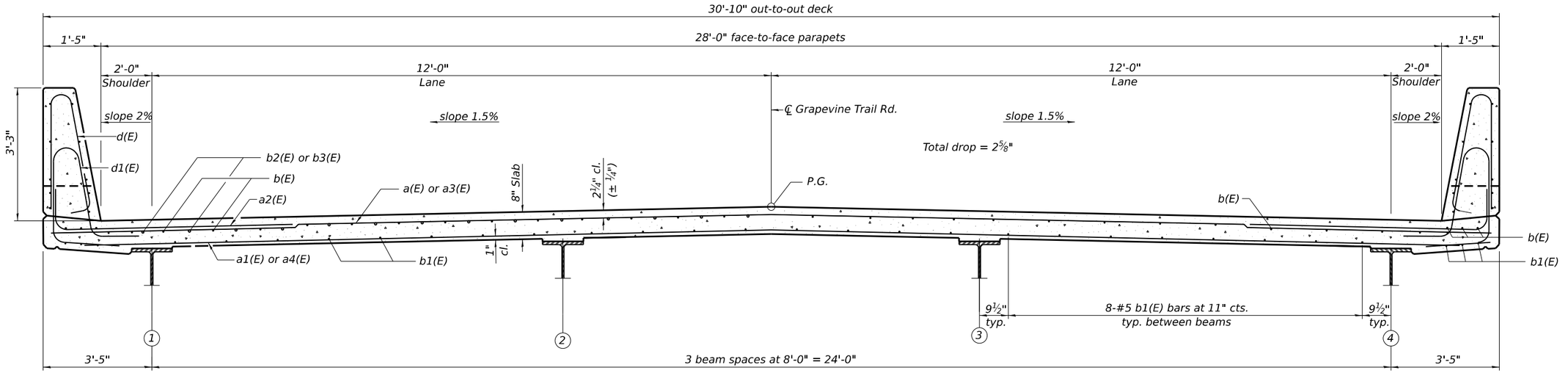
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE
STRUCTURE NO. 002-3116

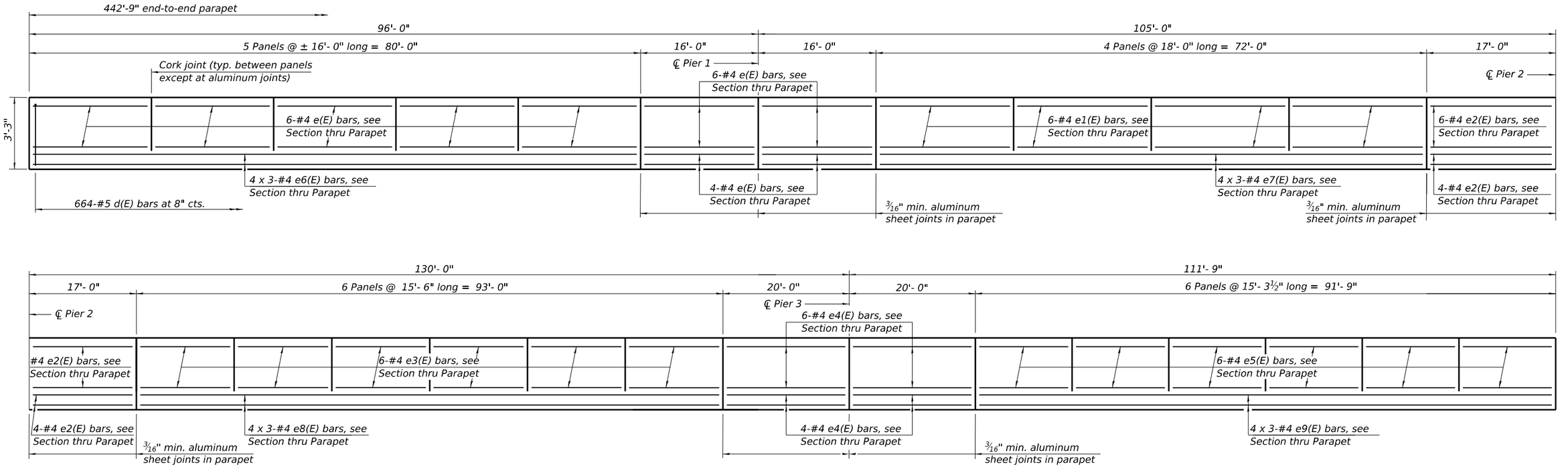
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	18
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



NEAR PIER NEAR MIDSPAN

CROSS SECTION

(Looking East)



INSIDE ELEVATION OF PARAPET

(North Parapet Shown, South Parapet Similar)

MINIMUM BAR LAP

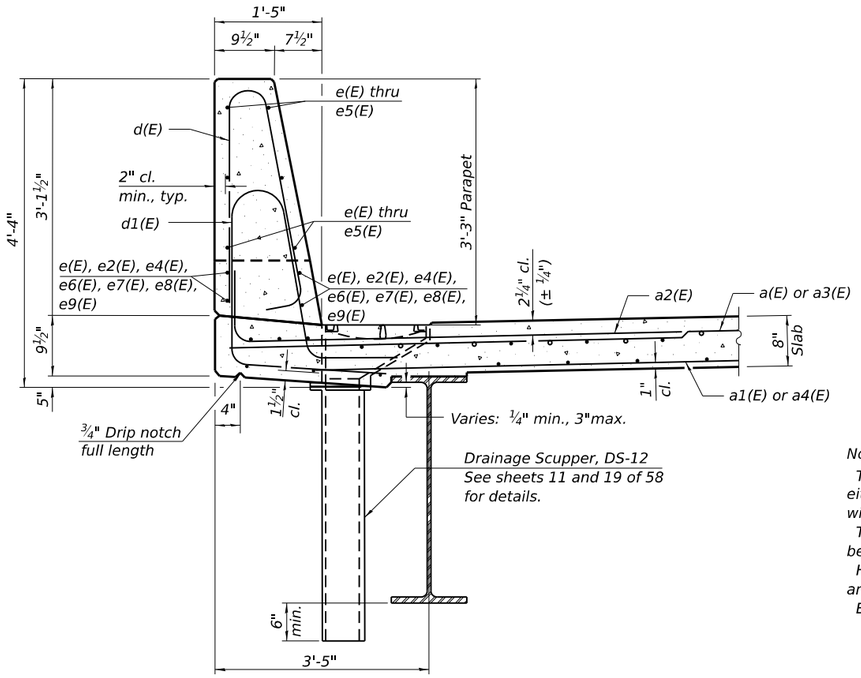
#4 bar = 2'-5"

USER NAME =	DESIGNED - JMK	REVISED -
	CHECKED - GBR	REVISED -
PLOT SCALE =	DRAWN - JMK	REVISED -
PLOT DATE =	CHECKED - GBR	REVISED -

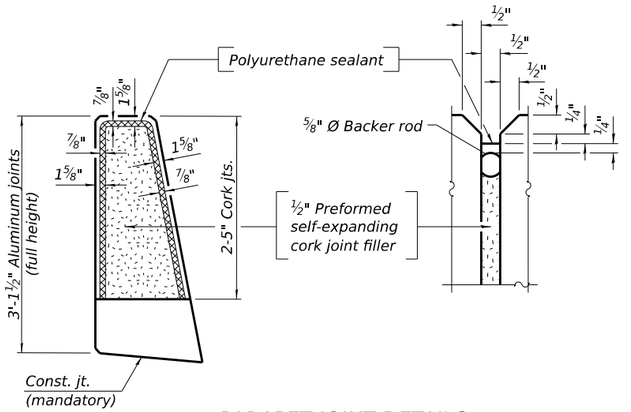
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	19
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		



SECTION THRU PARAPET



PARAPET JOINT DETAILS

Notes:

The $\frac{3}{16}$" min. aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

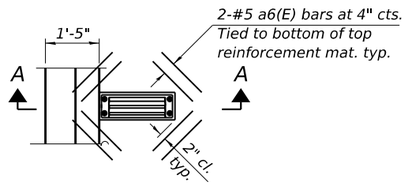
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

Headed bars shall conform to ASTM A970 with threaded attachment; and reinforcement bars conforming to ASTM A706.

Bar terminators paid for separately. See Total Bill of Material.

SUPERSTRUCTURE BILL OF MATERIAL

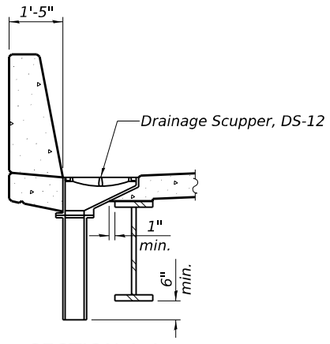
Bar	No.	Size	Length	Shape
a(E)	955	#5	30'-6"	
a1(E)	584	#5	29'-6"	
a2(E)	1926	#6	8'-4"	
a3(E)	10	#5	31'-0"	
a4(E)	6	#5	30'-4"	
a5(E)	4	#5	31'-0"	
a6(E)	48	#5	2'-0"	
b(E)	340	#5	47'-5"	
b1(E)	390	#5	37'-4"	
b2(E)	162	#6	25'-3"	
b3(E)	81	#6	27'-9"	
d(E)	1328	#5	6'-5"	
d1(E)	1328	#5	8'-7"	
e(E)	100	#4	15'-8"	
e1(E)	48	#4	17'-8"	
e2(E)	40	#4	16'-8"	
e3(E)	72	#4	15'-2"	
e4(E)	40	#4	19'-8"	
e5(E)	72	#4	15'-0"	
e6(E)	24	#4	28'-2"	
e7(E)	24	#4	25'-6"	
e8(E)	24	#4	32'-6"	
e9(E)	24	#4	32'-2"	
m10(E)	12	#6	31'-0"	
m11(E)	30	#6	7'-9"	
m12(E)	20	#6	3'-2"	
s10(E)	54	#5	9'-1"	
s11(E)	54	#5	14'-0"	
Reinforcement Bars, Epoxy Coated			Lbs.	143740
Concrete Superstructure			Cu. Yds.	527.0



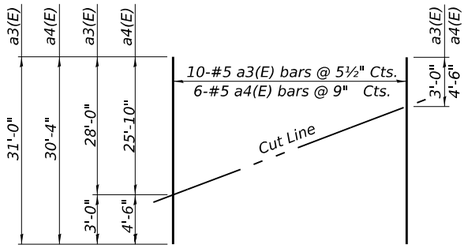
PLAN

Note:

Cut longitudinal reinforcement to clear drainage scuppers.

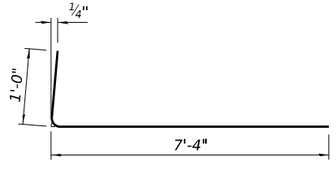


SECTION A-A

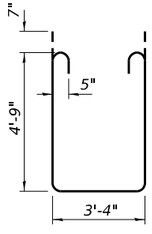


FIELD CUTTING DIAGRAM

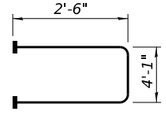
Order a3(E) and a4(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.



BAR a2(E)

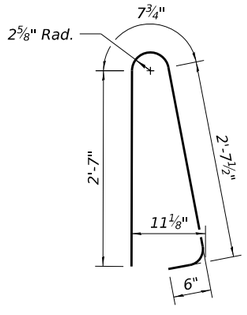


BAR s11(E)

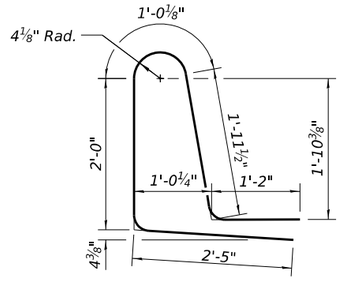


BAR s10(E)

(Headed. 108 - #5 Bar terminators)



BAR d(E)



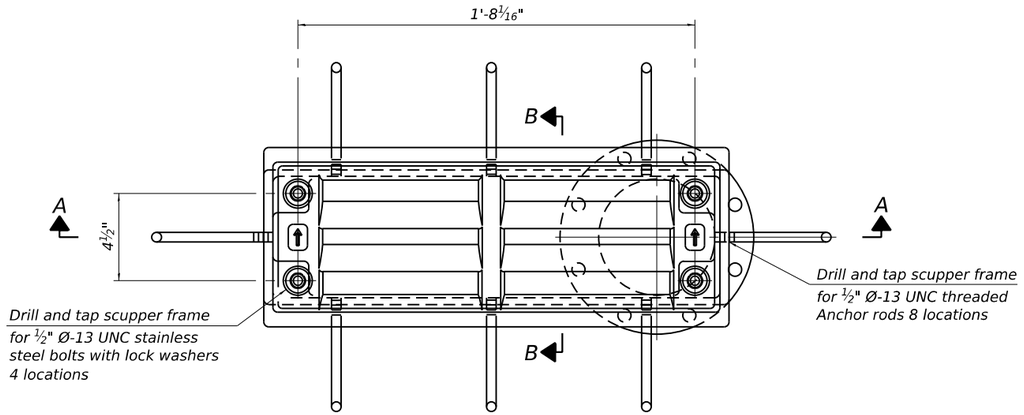
BAR d1(E)

USER NAME =	DESIGNED - JMK	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - GBR	REVISED -	

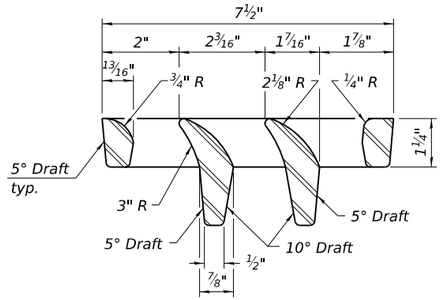
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 002-3116

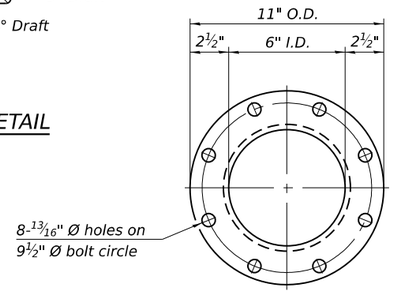
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	20
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R09B(173)		



PLAN



VANE GRATE DETAIL



Notes:

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

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

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

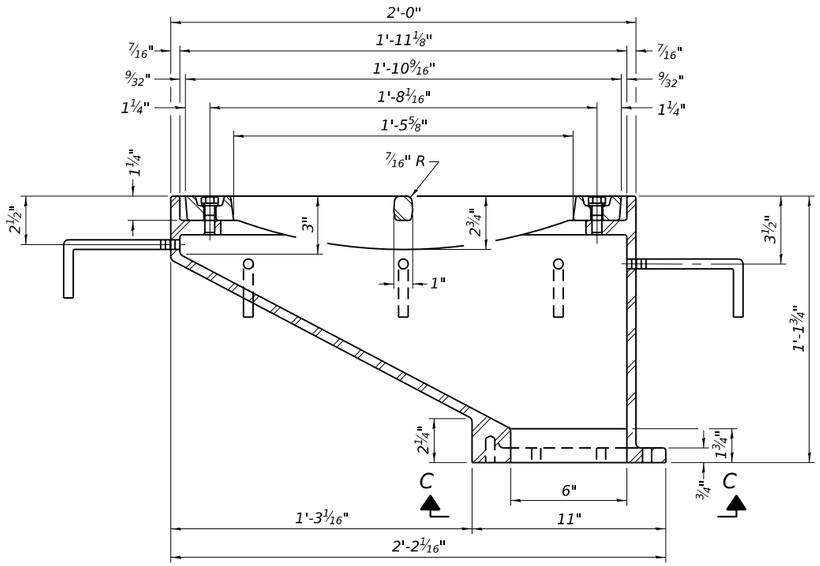
Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer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

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

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

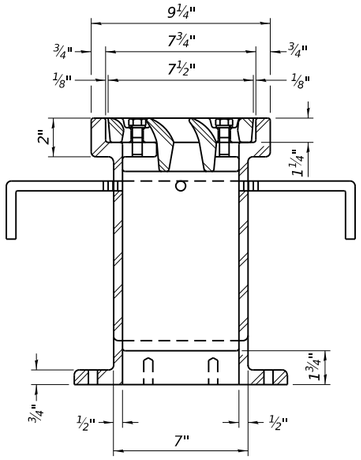
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

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

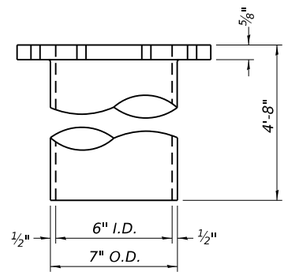


SECTION A-A

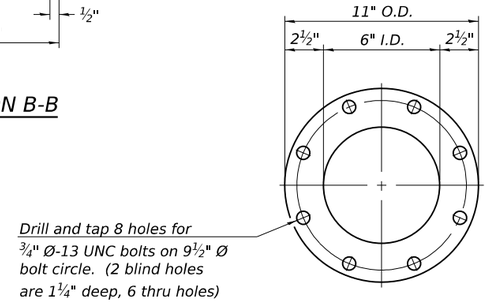
See sheet 18 of 58 for scupper location relative to parapet.



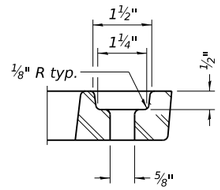
SECTION B-B



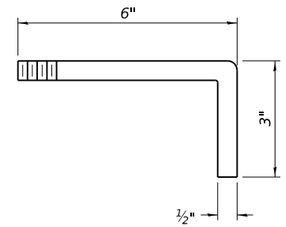
DOWNSPOUT



VIEW C-C



GRATE BOLT HOLE DETAIL



ANCHOR ROD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scuppers, DS-12	Each	6

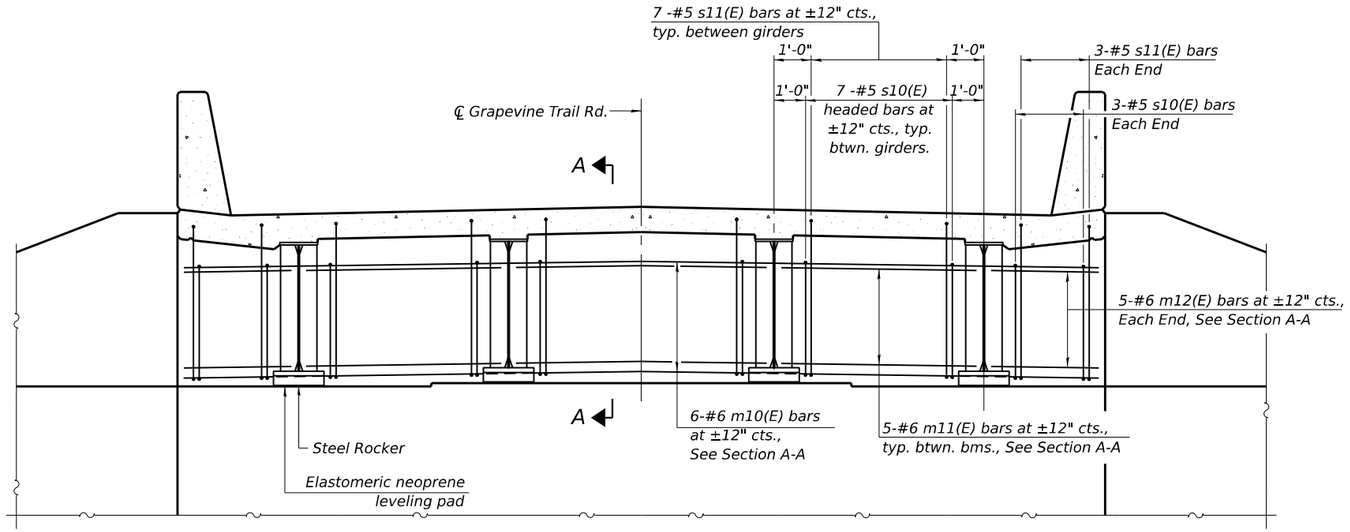
DS-12 5-15-2023

USER NAME =	DESIGNED - JMK	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - GBR	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

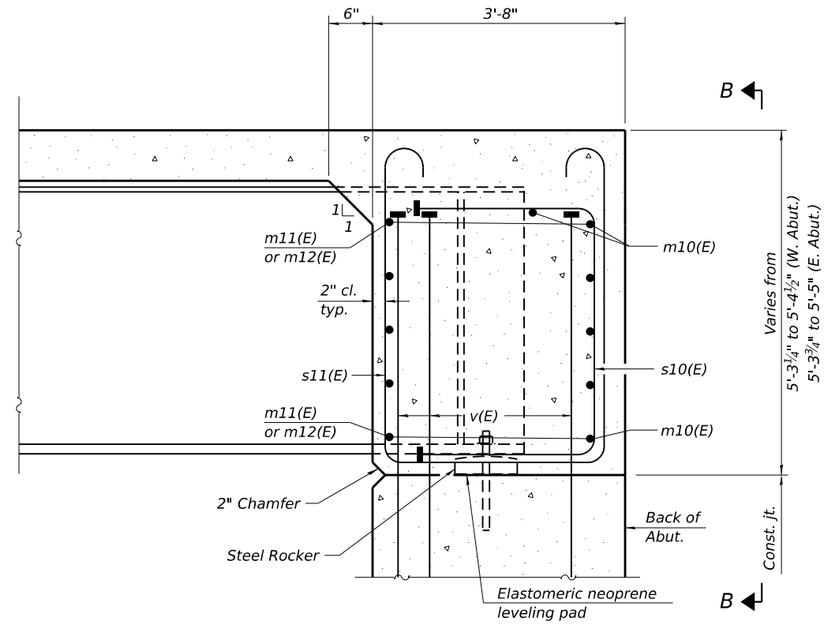
DRAINAGE SCUPPERS DS-12
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	21
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



DIAPHRAGM AT ABUTMENT

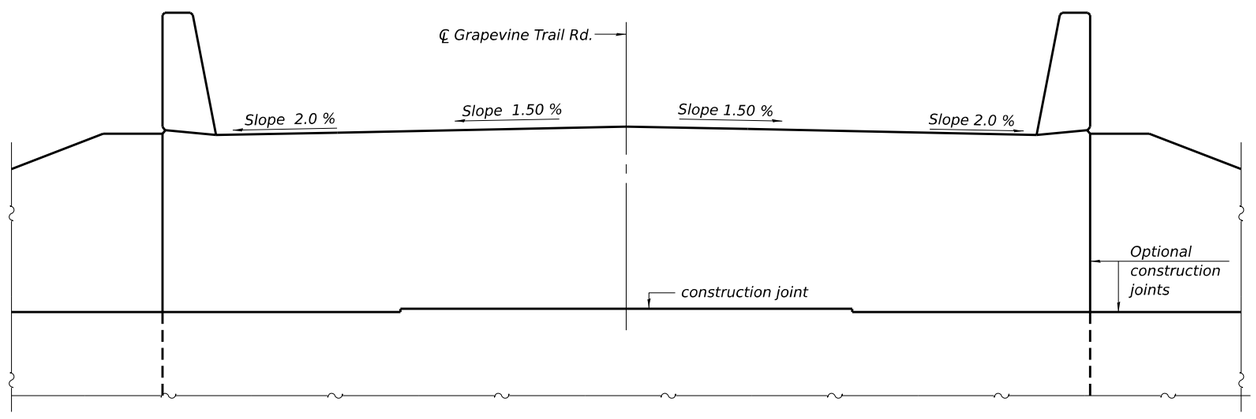
(Looking West at West abutment - East Abutment Similar)



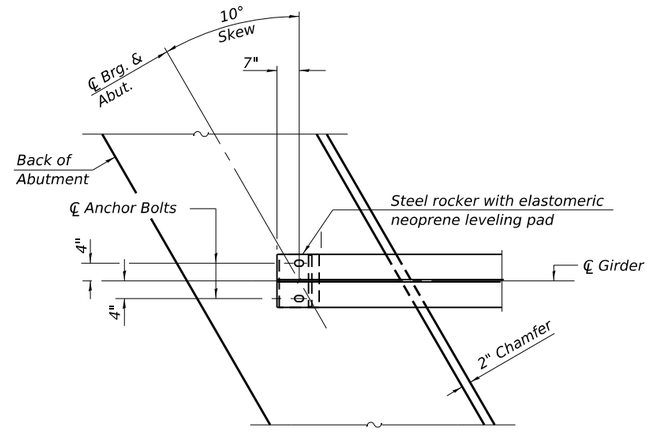
SECTION A-A

(at Rt. ∠'s)

Notes:
See sheet 19 & 20 of 60 for superstructure details and Bill of Material.
The s10(E) and s11(E) bars shall be placed parallel to the girders.
Spacing for these bars shall be at right angles to the girders.



VIEW B-B



PLAN AT ABUTMENT

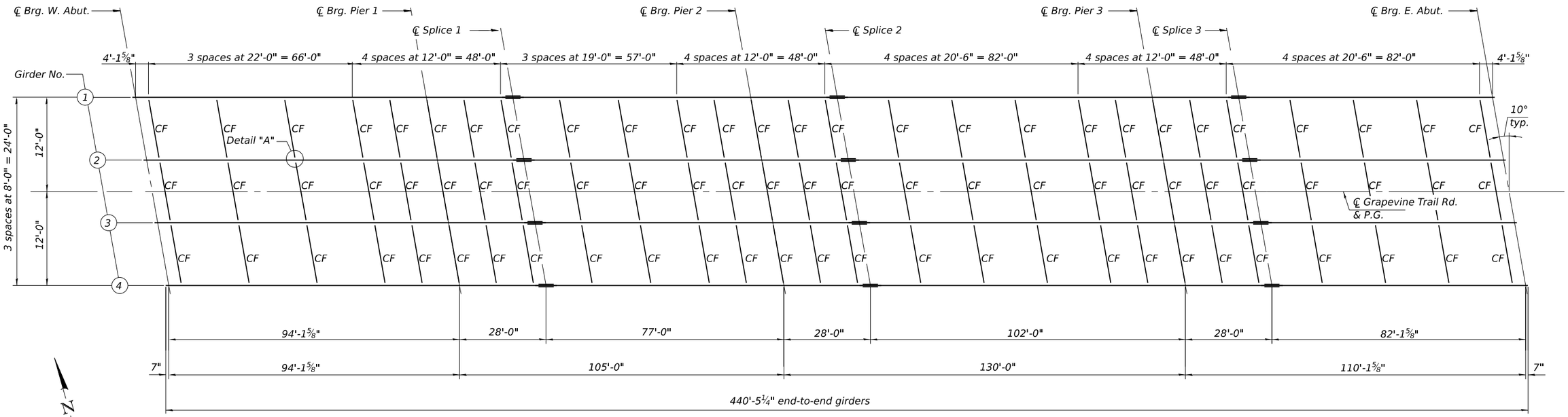
(Showing bottom flange of girder)
(West Abutment Shown, East Abutment Similar)

USER NAME =	DESIGNED - JMK	REVISED -
	CHECKED - GBR	REVISED -
PLOT SCALE =	DRAWN - JMK	REVISED -
PLOT DATE =	CHECKED - GBR	REVISED -

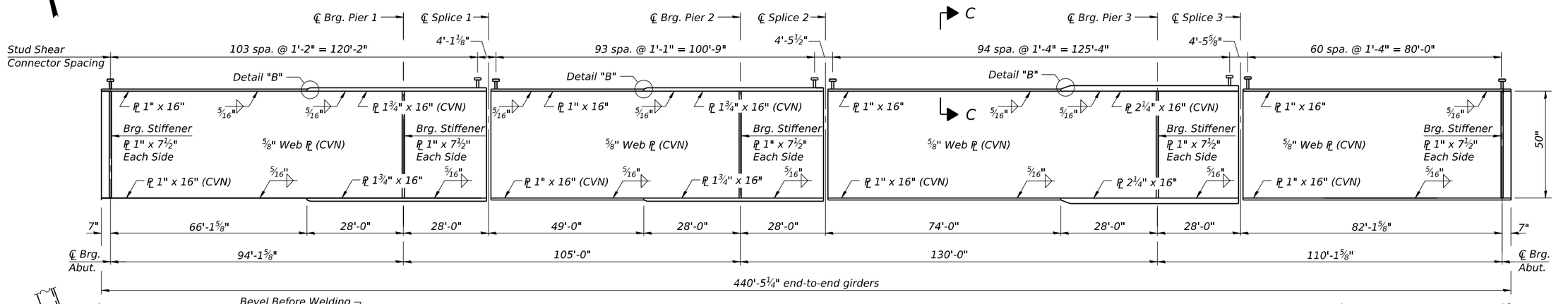
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

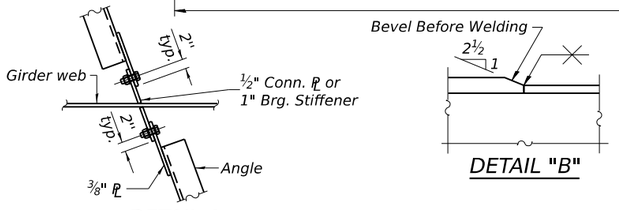
DIAPHRAGM DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	22
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



STEEL FRAMING PLAN





DETAIL A

DETAIL "B"

GIRDER ELEVATION

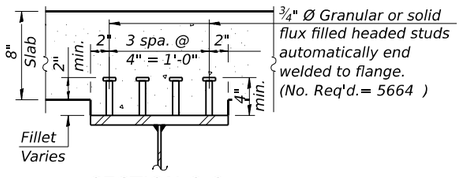
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.

Notes:

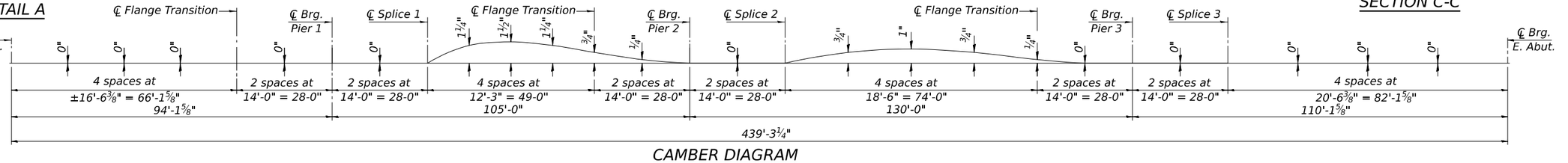
All cross frames shall be installed as steel is erected and secured with erection pins and bolts. Individual cross frames at supports may be temporarily disconnected to install bearing anchor bolts.

See sheet 24 of 60 for cross-frame, field splice, bearing stiffener, end of girder, and drip plate details.

See sheet 24 of 60 for top of web elevations.



SECTION C-C



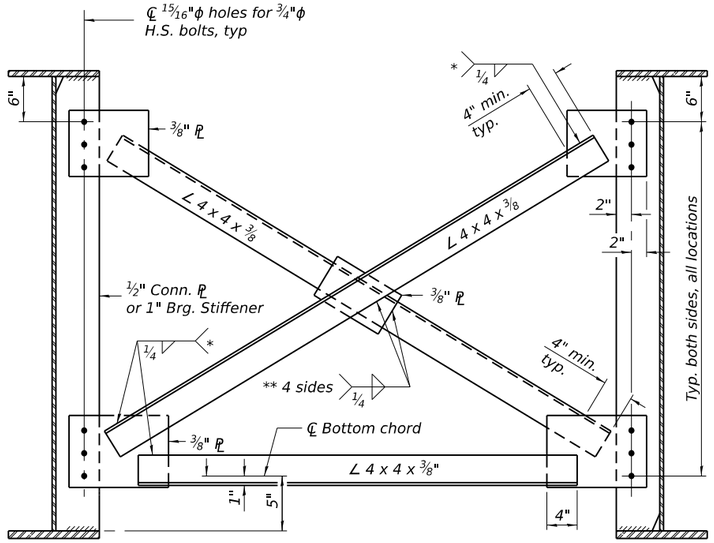
CAMBER DIAGRAM

BFW Copyright© 2024 / Bacon Farmer Workman Engineering & Testing, Inc.	USER NAME =	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT	STRUCTURAL STEEL STRUCTURE NO. 002-3116
		CHECKED - GBR	REVISED -		
	PLOT SCALE =	DRAWN - JMK	REVISED -		
	PLOT DATE =	CHECKED - GBR	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	23
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT: R0G8(173)	

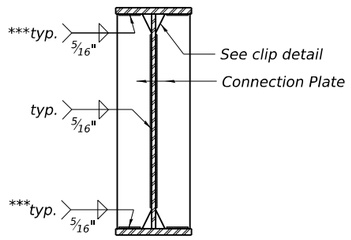
MODEL: Default
FILE NAME: pw:\\bfwme-pw.bentley.com:bfwme-pw-01\Documents\BFW\PROJECTS\2023 PROJECTS\23038 - Alexander County - Grapevine Trail over Clear Creek\IDOT\Structures\CADD\Final Plans\0023116_22-00086-00-BR_021 Structural Steel

4/3/2025 4:09:18 PM

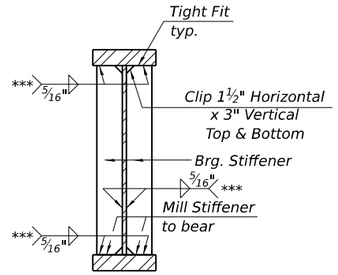


* Fillet weld angles along 3 sides on one face of gusset plate; however, if cross-frames are galvanized, weld all-around.
** If cross-frames are galvanized, weld all-around.

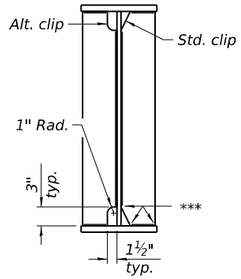
CROSS-FRAME
(81 Required)
Two hardened washers required for each set of oversized holes.



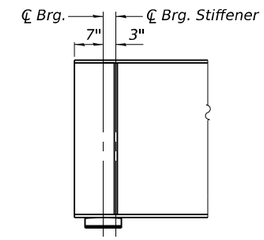
CONNECTION PLATE DETAIL



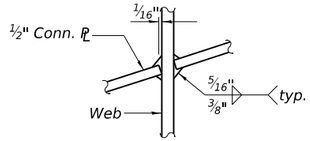
BEARING STIFFENER DETAIL



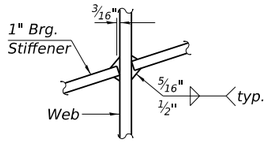
WELD LIMITS AND CLIP DETAILS
***Stop welds 1/4" (±1/8") from edges as shown, typical.



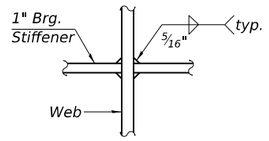
END OF GIRDER DETAIL
(Showing bearing stiffener location)



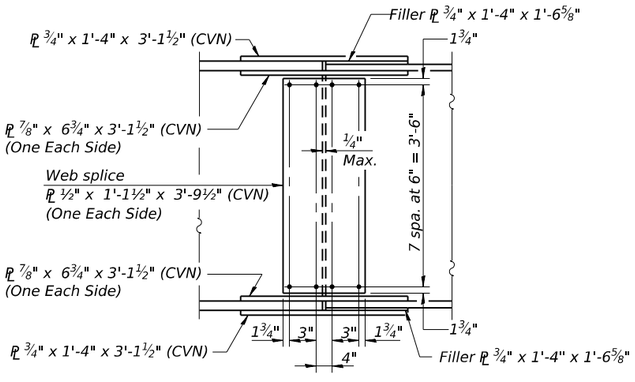
AT CONNECTION PLATE



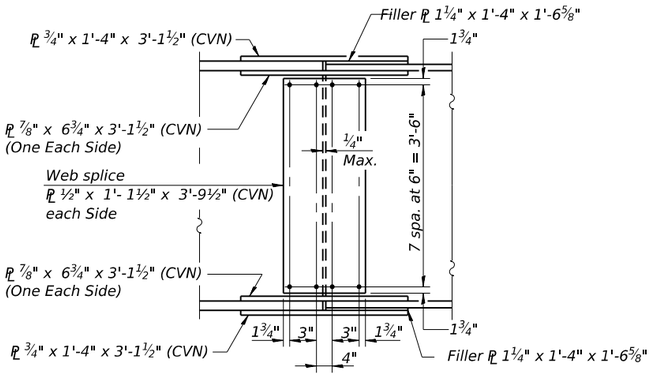
AT PIERS WEB WELD DETAILS



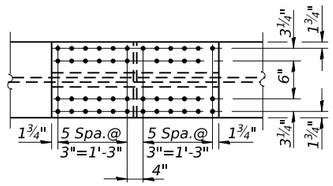
AT ABUTMENTS



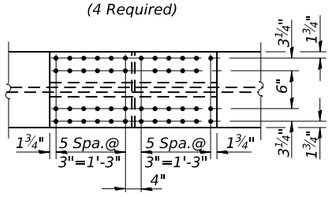
ELEVATION
FIELD SPLICE 1 & 2 DETAILS
(8 Required)



ELEVATION
FIELD SPLICE 3 DETAILS
(4 Required)

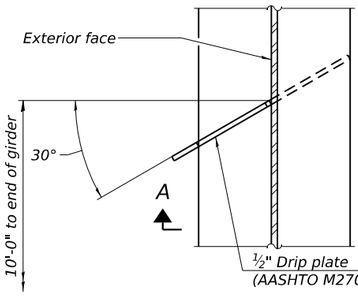


PLAN - TOP & BOTTOM FLANGE

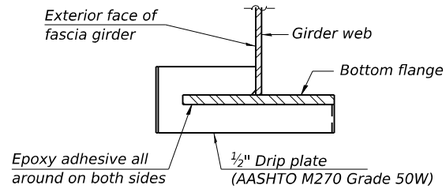


PLAN - TOP & BOTTOM FLANGE

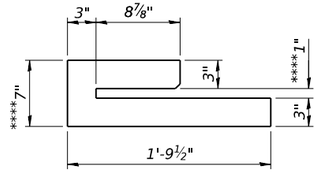
Notes:
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirement, Zone 2.
Use 7/8" Ø H.S. bolts with 15/16" Ø holes for all splice connections.



PLAN
(Top flange omitted for clarity)



SECTION A-A



DRIP PLATE ELEVATION
****Adjust dimensions as required for thickness tolerance and fit-up.

TOP OF WEB ELEVATION
(For fabrication only)

Location	℄ Brg. W. Abut.	℄ Brg. Pier 1	℄ Splice 1	℄ Brg. Pier 2	℄ Splice 2	℄ Brg. Pier 3	℄ Splice 3	℄ Brg. E. Abut.
Girder 1	357.15	358.00	358.25	358.94	359.19	360.15	360.42	361.36
Girder 2	357.28	358.13	358.38	359.08	359.33	360.29	360.55	361.50
Girder 3	357.29	358.15	358.40	359.09	359.34	360.30	360.57	361.51
Girder 4	357.19	358.04	358.29	358.98	359.23	360.20	360.46	361.40

USER NAME =	DESIGNED - JMK	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - GBR	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	24
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

INTERIOR GIRDER MOMENT TABLE								
		0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.5 Span 3	Pier 3	0.6 Span 4
I_s	(in^4)	27321	44018	27321	44018	27321	55682	27321
I_c (n)	(in^4)	66656	91245	66656	91245	66656	107237	66656
I_c (3n)	(in^4)	49822	68705	49822	68705	49822	62808	49822
I_c (cr)	(in^4)		51051		51051		81512	
S_s	(in^3)	1051	1646	1051	1646	1051	2043	1051
S_c (n)	(in^3)	1460	2080	1460	2080	1460	2491	1460
S_c (3n)	(in^3)	1335	1923	1335	1923	1335	2316	1335
S_c (cr)	(in^3)	-	1739	-	1739	-	2131	-
S_x	(in^3)	848	-	840	-	848	-	850
DC1	(k/')	1.098	1.196	1.098	1.196	1.098	1.262	1.098
M_{DC1}	('k)	711.6	-1218.4	288.0	-1376.8	695.7	-2109.8	814.1
DC2	(k/')	0.263	0.263	0.263	0.263	0.263	0.263	0.263
M_{DC2}	('k)	171.1	-271.4	72.0	-309.5	171.3	-459.1	198.9
DW	(k/')	0.350	0.350	0.350	0.350	0.350	0.350	0.350
M_{DW}	('k)	227.7	-361.2	95.8	-411.9	227.9	-611.0	264.7
LLDF		0.632	0.644	0.614	0.617	0.581	0.624	0.607
M_{LL+IM}	('k)	1314.3	-1549.6	1172.9	-1646.9	1365.9	-1976.4	1527.9
f_f (Strength I)	(ksi)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$\Phi_f M_n$	('k)	7389.8	-	7678.9	-	7399.7	-	7313.9
$M_u + \frac{1}{3} f_f S_x$	('k)	3745.0	-	2646.3	-	3815.9	-	4337.1
f_s DC1	(ksi)	8.12	- 8.88	3.29	- 10.04	7.94	- 12.39	9.30
f_s DC2	(ksi)	1.54	-1.87	0.65	-2.14	1.54	-2.59	1.79
f_s DW	(ksi)	2.05	-2.49	0.86	-2.84	2.05	-3.44	2.38
f_s (LL+IM)	(ksi)	10.80	-10.69	9.64	-11.36	11.23	-11.13	12.56
f_f (Service II)	(ksi)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$f_s + f_f/2$ (Service II)	(ksi)	25.75	-27.14	17.33	-29.79	26.13	-32.89	29.80
Service II Resistance	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s + f_f/3$ (Strength I)	(ksi)	-	-35.88	-	-39.37	-	-43.36	-
$\Phi_f F_n$	(ksi)	-	50.00	-	50.00	-	50.00	-
V_f	(k)	32.5	32.8	36.8	35.2	37.6	33.6	34.1

EXTERIOR GIRDER MOMENT TABLE								
		0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.5 Span 3	Pier 3	0.6 Span 4
I_s	(in^4)	27321	44018	27321	44018	27321	55682	27321
I_c (n)	(in^4)	65532	89601	65532	89601	65532	105288	65532
I_c (3n)	(in^4)	48762	67392	48762	67392	48762	80078	48762
I_c (cr)	(in^4)	-	49913	-	49913	-	61643	-
S_s	(in^3)	1051	1646	1051	1646	1051	2043	1051
S_c (n)	(in^3)	1453	2070	1453	2070	1453	2480	1453
S_c (3n)	(in^3)	1325	1911	1325	1911	1325	2304	1325
S_c (cr)	(in^3)	-	1725	-	1725	-	2117	-
S_x	(in^3)	845	-	836	-	845	-	847
DC1	(k/')	1.137	1.235	1.137	1.235	1.137	1.301	1.137
M_{DC1}	('k)	736	-1260	298	-1423	719	-2182	842
DC2	(k/')	0.263	0.263	0.263	0.263	0.263	0.263	0.263
M_{DC2}	('k)	171.1	-271.6	71.9	-309.5	171.0	-459.6	198.7
DW	(k/')	0.350	0.350	0.350	0.350	0.350	0.350	0.350
M_{DW}	('k)	227.7	-361.4	95.7	-411.9	227.6	-611.6	264.5
LLDF		0.750	0.750	0.750	0.750	0.750	0.750	0.750
M_{LL+IM}	('k)	1559.4	-1804.1	1432.4	-2000.4	1764.3	-2375.5	1889.3
f_f (Strength I)	(ksi)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$\Phi_f M_n$	('k)	7341.2	-	7582.6	-	7351.8	-	7264.2
$M_u + \frac{1}{3} f_f S_x$	('k)	4204.4	-	3112.6	-	4541.4	-	5004.0
f_s DC1	(ksi)	8.40	- 9.19	3.40	-10.37	8.21	-12.82	9.61
f_s DC2	(ksi)	1.55	-1.89	0.65	-2.15	1.55	-2.61	1.80
f_s DW	(ksi)	2.06	-2.51	0.87	-2.87	2.06	-3.47	2.40
f_s (LL+IM)	(ksi)	12.88	-12.55	11.83	-13.92	14.57	-13.47	15.60
f_f (Service II)	(ksi)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
$f_s + f_f/2$ (Service II)	(ksi)	28.75	-29.91	20.30	-33.49	30.76	-36.41	34.09
Service II Resistance	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5	47.5
$f_s + f_f/3$ (Strength I)	(ksi)	-	-39.58	-	-44.32	-	-48.10	-
$\Phi_f F_n$	(ksi)	-	50.00	-	50.00	-	50.00	-
V_f	(k)	35.8	36.0	40.8	38.4	40.8	39.2	38.3

INTERIOR GIRDER REACTION TABLE						
		W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.
LLDF		0.814	0.814	0.814	0.814	0.814
OCF		1.035	1.035	1.035	1.035	1.035
R_{DC1}	(k)	40.1	124.9	131.3	162.6	43.6
R_{DC2}	(k)	9.5	28.7	30.1	36.8	10.3
R_{DW}	(k)	12.6	38.2	40.1	49.1	13.7
R_{LL}	(k)	76.6	144.0	149.9	158.7	80.3
R_{IM}	(k)	17.5	25.9	26.0	29.5	17.8
R_{Total} (Strength I)(Impact)	(k)	245.6	546.6	569.7	652.3	259.6
R_{Total} (Strength I)(No Impact)	(k)	215.0	501.3	524.2	600.6	228.5

EXTERIOR GIRDER REACTION TABLE						
		W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.
LLDF		0.750	0.750	0.750	0.750	0.750
OCF		1.035	1.035	1.035	1.035	1.035
R_{DC1}	(k)	41.5	129.2	135.7	168.1	45.1
R_{DC2}	(k)	9.5	28.7	30.1	36.9	10.3
R_{DW}	(k)	12.6	38.2	40.1	49.1	13.7
R_{LL}	(k)	70.4	132.6	138.0	146.1	73.9
R_{Im}	(k)	16.1	23.9	24.0	27.2	16.4
R_{Total} (Strength I)(Impact)	(k)	234.0	528.6	550.9	633.2	247.8
R_{Total} (Strength I)(No Impact)	(k)	205.9	486.7	508.9	585.6	219.1

I_s , S_s : *Non-composite moment of inertia and section modulus of the steel section used for computing f_s (Total-Strength I, and Service II) due to non-composite dead loads (in.⁴ and in.³).*

I_c (n), S_c (n): *Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads (in.⁴ and in.³).*

I_c (3n), S_c (3n): *Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_s (Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads (in.⁴ and in.³).*

I_c (cr), S_c (cr): *Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_s (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).*

S_x : *Section modulus about the major axis of a section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange (in.³).*

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

M_{DC1}: *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.).*

M_{DC2}: *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.).*

M_{DW} : *Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).*

LLDF: *Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.*

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

M_u : *Strength I load combination of factored design moments (kip-ft.).*
1.25 (M_{DC1} + M_{DC2}) + 1.5 M_{DW} + 1.75 M_{LL+IM}

f_f : *Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).*

$\Phi_f M_n$: *Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).*

f_s DC1: *Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).*
M_{DC1} / S_s

f_s DC2: *Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).*
M_{DC2} / S_c (3n) or M_{DC2} / S_c (cr) as applicable.

f_s DW: *Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).*
M_{DW} / S_c (3n) or M_{DW} / S_c (cr) as applicable.

f_s (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} / S_c (n) or M_{LL+IM} / S_c (cr) as applicable.

$f_s + f_f / 2$ (Service II): *Sum of stresses as computed below (ksi).*
f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (LL+ IM) + f_f /2

Service II Resistance: *Composite ($0.95R_hF_{yf}$) or noncomposite ($0.80R_hF_{yf}$) stress capacity according to Article 6.10.4.2 (ksi).*

$f_s + f_f / 3$ (Strength I): *Sum of stresses as computed below on non-compact sections (ksi).*
1.25 (f_s DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (LL+ IM) + f_f /3

$\Phi_f F_n$: *Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).*

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

OCF: *Obtuse Correction Factor according to Article 4.6.2.2.3c or as further simplified by IDOT provisions.*

R_{DC1}: *Un-factored reaction due to non-composite dead load (kip).*

R_{DC2}: *Un-factored reaction due to long-term composite (superimposed excluding future wearing surface) dead load (kip).*

R_{DW} : *Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).*

R_{LL} : *Un-factored live load reaction (kip).*

R_{IM} : *Un-factored dynamic load allowance (impact) (kip).*

R_{Total} (Strength I)(Impact): *Strength I load combination of factored design reactions (kip).*
1.25 (R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75 (R_{LL} + R_{IM})

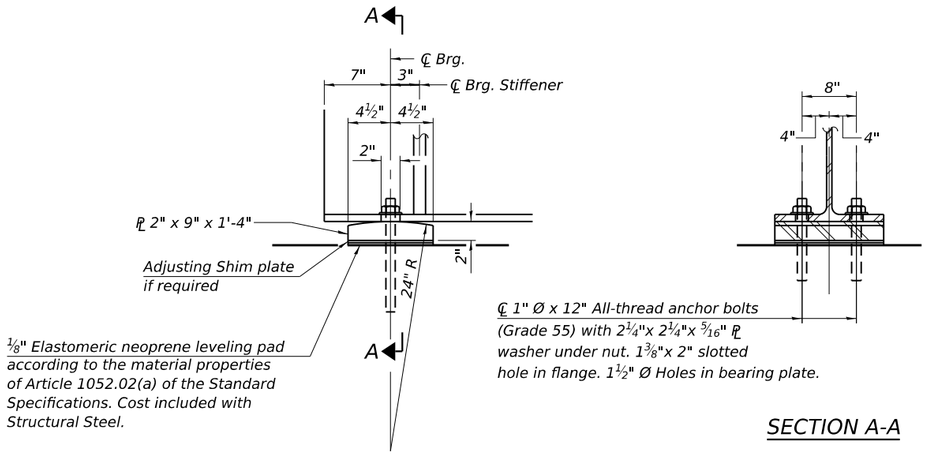
R_{Total} (Strength I)(No Impact): *Strength I load combination of factored design reactions, not including dynamic load allowance (Impact) (kip).*
1.25 (R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75 (R_{LL})

USER NAME =	DESIGNED - JMK	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - GBR	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 002-3116

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	25
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

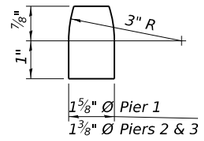


SECTION A-A

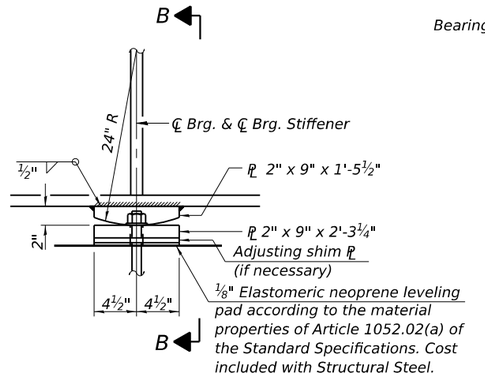
ELEVATION AT ABUTMENTS

FIXED BEARING AT ABUTMENTS

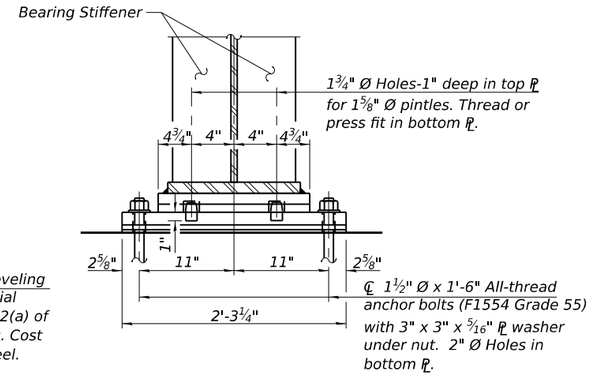
(8 Required)



PINTLE



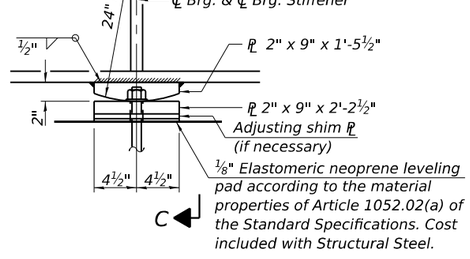
ELEVATION AT PIER 1



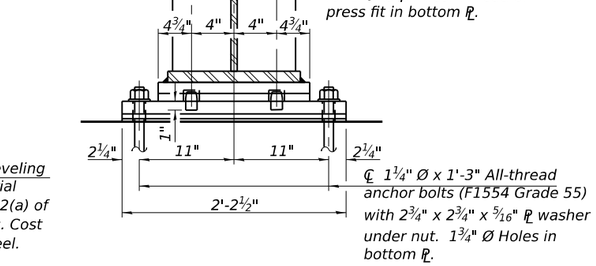
SECTION B-B

FIXED BEARING AT PIER 1

(4 Required)



ELEVATION AT PIERS 2 & 3



SECTION C-C

FIXED BEARING AT PIERS 2 & 3

(8 Required)

Notes:

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

The structural steel plates and pintles of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50W.

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 constitute a calculated seismic structural fuse. Substitution of higher diameter and/or grade anchor bolts will not be allowed.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1"	Each	16
Anchor Bolts, 1¼"	Each	16
Anchor Bolts, 1½"	Each	8

USER NAME =	DESIGNED - JGY	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - GBR	REVISED -	
PLOT DATE =	CHECKED - JGY	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

BEARING DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	26
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

MODEL: Default
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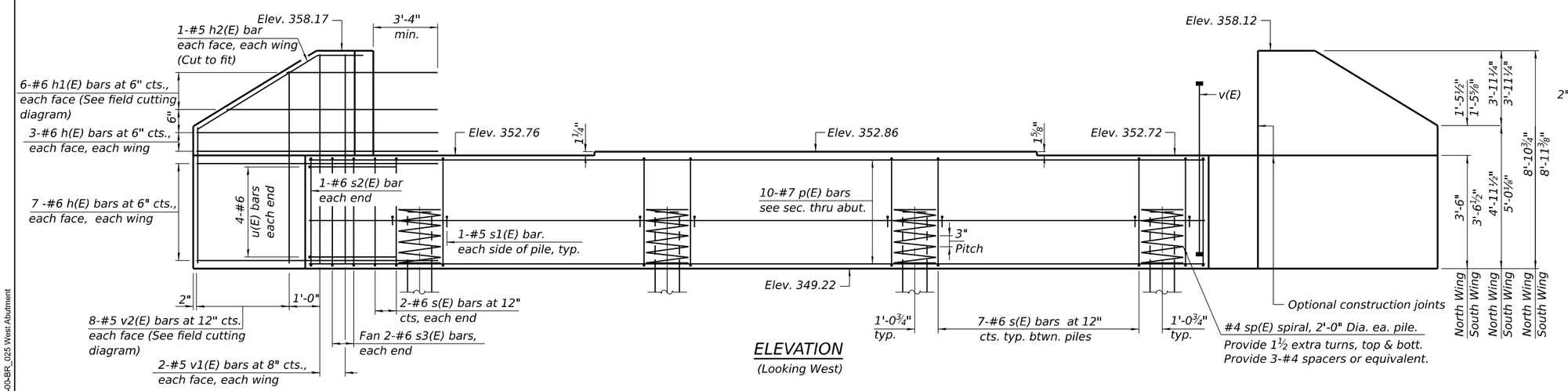
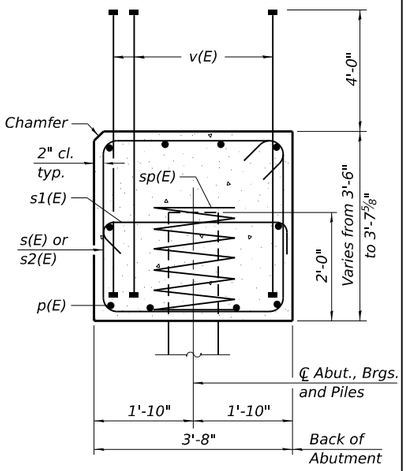


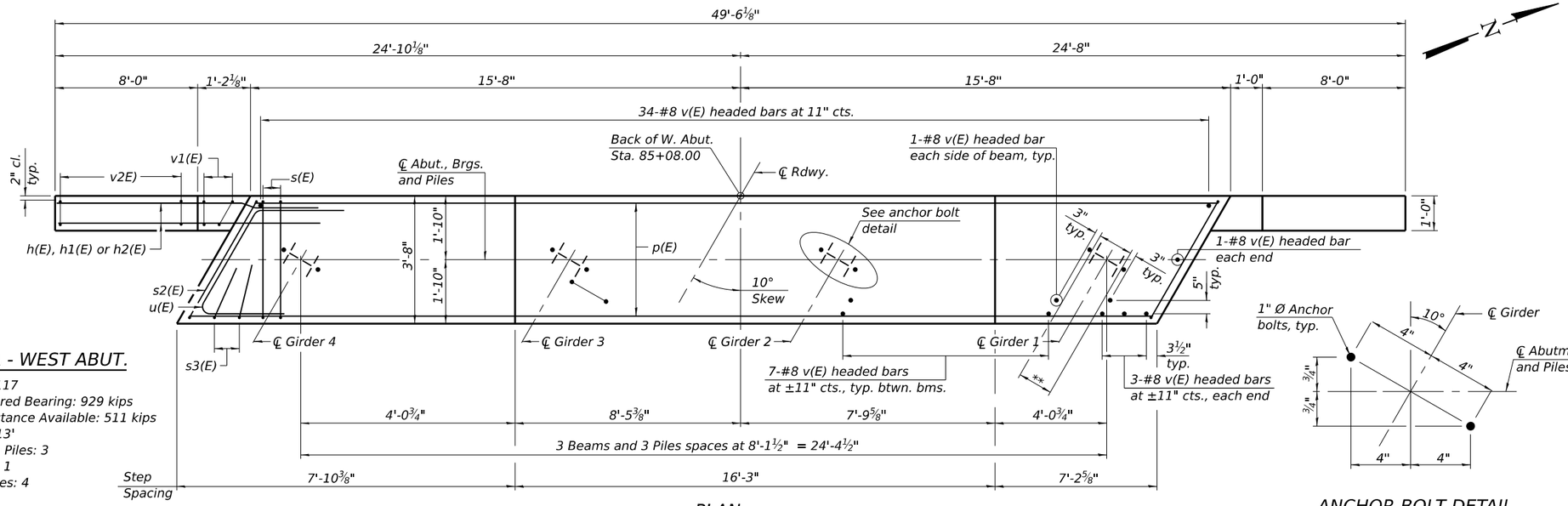
ELEVATION

(Looking West)



SEC. THRU ABUT.

Dimensions at right angles to abutment.



PLAN

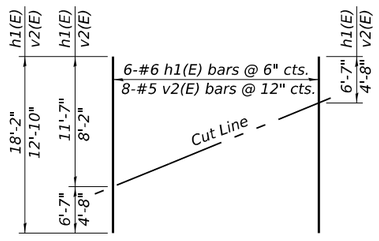
* Length is height of spiral

** Limit of bottom beam flange

ANCHOR BOLT DETAIL

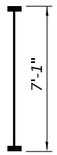
PILE DATA - WEST ABUT.

Type: HP 14x117
Nominal Required Bearing: 929 kips
Factored Resistance Available: 511 kips
Est. Length: 113'
No. Production Piles: 3
No. Test Piles: 1
No. of Pile Shoes: 4



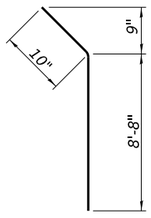
FIELD CUTTING DIAGRAM

Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.

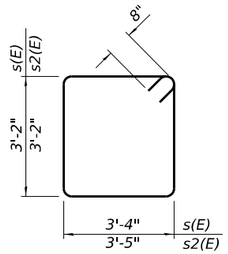


BAR v(E)

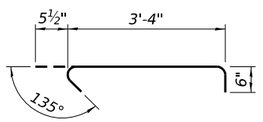
(Headed. 142-#8 Bar terminators)



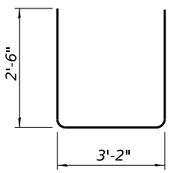
BAR h2(E)



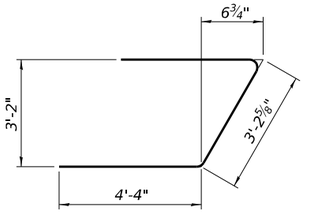
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#6	12'-4"	
h1(E)	12	#6	18'-2"	
h2(E)	4	#5	9'-6"	
p(E)	10	#7	31'-0"	
s(E)	25	#6	14'-4"	
s1(E)	8	#5	4'-4"	
s2(E)	2	#6	14'-6"	
s3(E)	4	#6	8'-2"	
* sp(E)	4	#4	2'-0"	
u(E)	8	#6	11'-11"	
v(E)	71	#8	7'-1"	
v1(E)	8	#5	8'-7"	
v2(E)	16	#5	12'-10"	
Structure Excavation		Cu. Yd.		43
Concrete Structures		Cu. Yd.		20.8
Reinforcement Bars, Epoxy Coated		Pound		4370
Furnishing Steel Piles HP 14x117		Foot		339
Driving Piles		Foot		339
Test Pile Steel HP 14x117		Each		1
Pile Shoes		Each		4

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 35 of 60.
Bar terminators, paid for separately.
See Total Bill of Material.

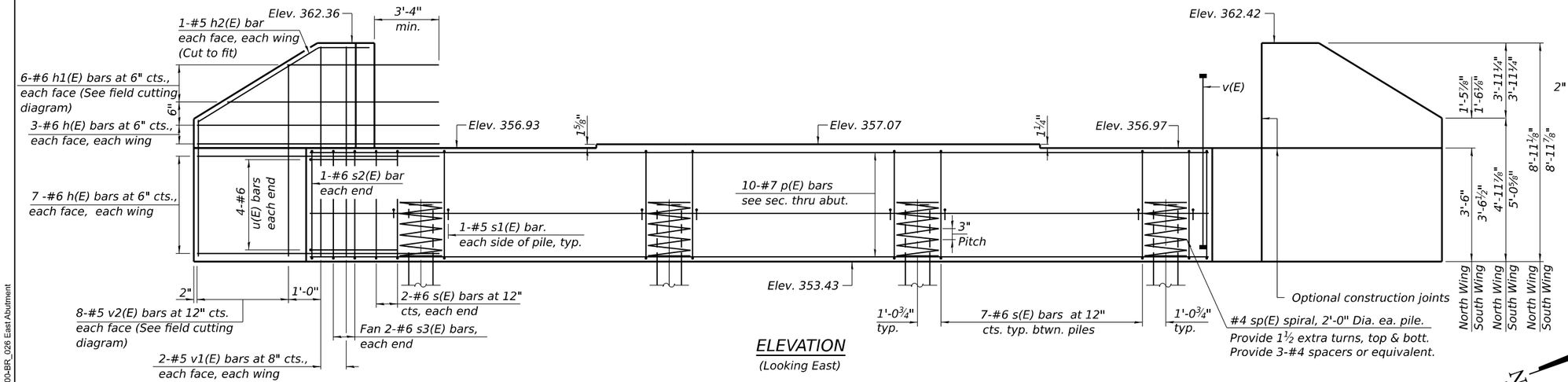
BFW

USER NAME =	DESIGNED - JGY	REVISED -	
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - FAM	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

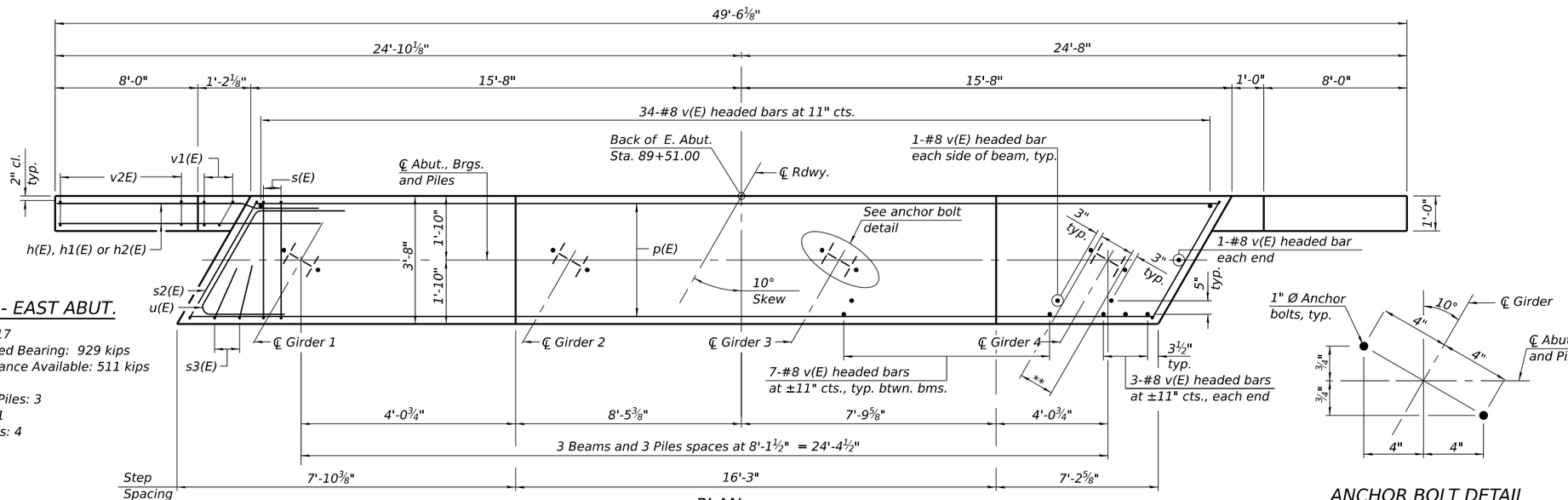
WEST ABUTMENT
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	27
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



ELEVATION
(Looking East)

SEC. THRU ABUT.
Dimensions at right angles to abutment.



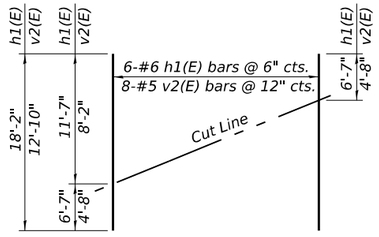
PLAN

* Length is height of spiral

** Limits of bottom beam flange

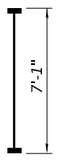
PILE DATA - EAST ABUT.

Type: HP 14x117
Nominal Required Bearing: 929 kips
Factored Resistance Available: 511 kips
Est. Length: 50'
No. Production Piles: 3
No. Test Piles: 1
No. of Pile Shoes: 4

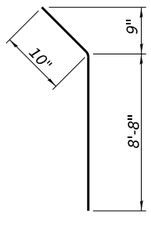


FIELD CUTTING DIAGRAM

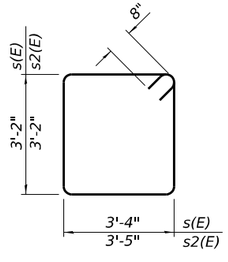
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite wing.



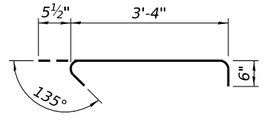
BAR v(E)
(Headed. 142-#8 Bar terminators)



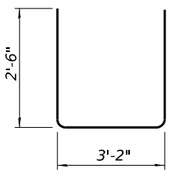
BAR h2(E)



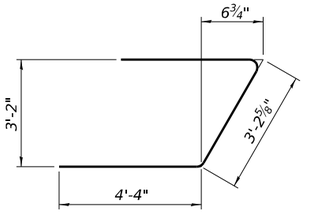
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	40	#6	12'-4"	
h1(E)	12	#6	18'-2"	
h2(E)	4	#5	9'-6"	
p(E)	10	#7	31'-0"	
s(E)	25	#6	14'-4"	
s1(E)	8	#5	4'-4"	
s2(E)	2	#6	14'-6"	
s3(E)	4	#6	8'-2"	
* sp(E)	4	#4	2'-0"	
u(E)	8	#6	11'-11"	
v(E)	71	#8	7'-1"	
v1(E)	8	#5	8'-7"	
v2(E)	16	#5	12'-10"	
Structure Excavation		Cu. Yd.	43	
Concrete Structures		Cu. Yd.	20.8	
Reinforcement Bars, Epoxy Coated		Pound	4370	
Furnishing Steel Piles HP 14x117		Foot	150	
Driving Piles		Foot	150	
Test Pile Steel HP 14x117		Each	1	
Pile Shoes		Each	4	

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 35 of 60.
Bar terminators, paid for separately.
See Total Bill of Material.

USER NAME =	DESIGNED - JGY	REVISED -	
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	
PLOT DATE =	CHECKED - FAM	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

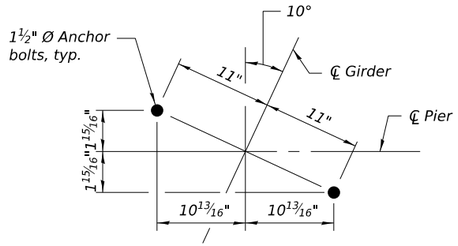
EAST ABUTMENT
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	28
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R09B(173)		

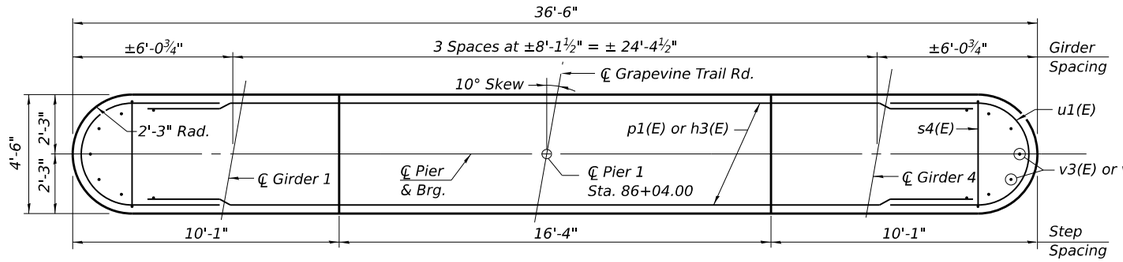
MODEL: Default
FILE NAME: pw:\\bfwme-pw.bentley.com:bfwme-pw-01\Documents\BFW\PROJECTS\2023 PROJECTS\23038 - Alexander County - Grapevine Trail over Clear Creek\IDOT\Structures\CADD\Final Plans\0023116_22-00086-00-BR_026 East Abutment

4/3/2025 4:19:30 PM

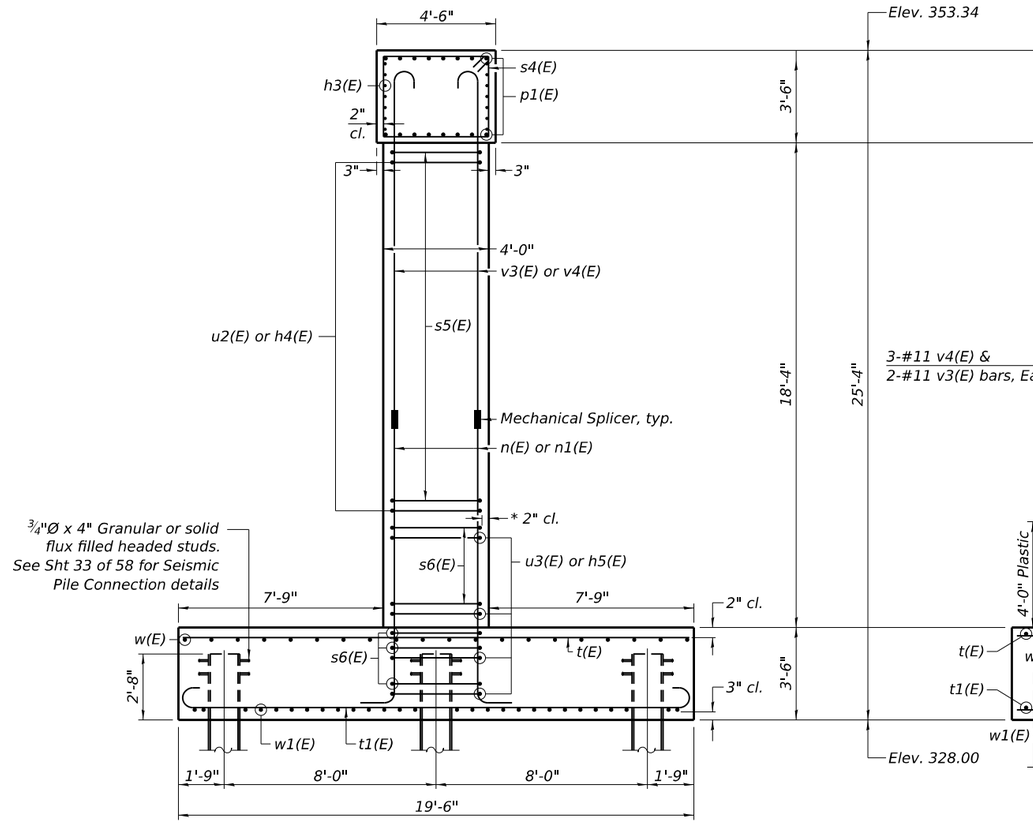
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 30 of 60 for bar details & Bill of Materials.
For details of piles, see sheet 35 of 60.
For mechanical splicer details, see sheet 36 of 60.
s5(E) bars indicated 14x19-#5 etc. indicates 14 rows of bars with 19 bars per row.



ANCHOR BOLT DETAIL

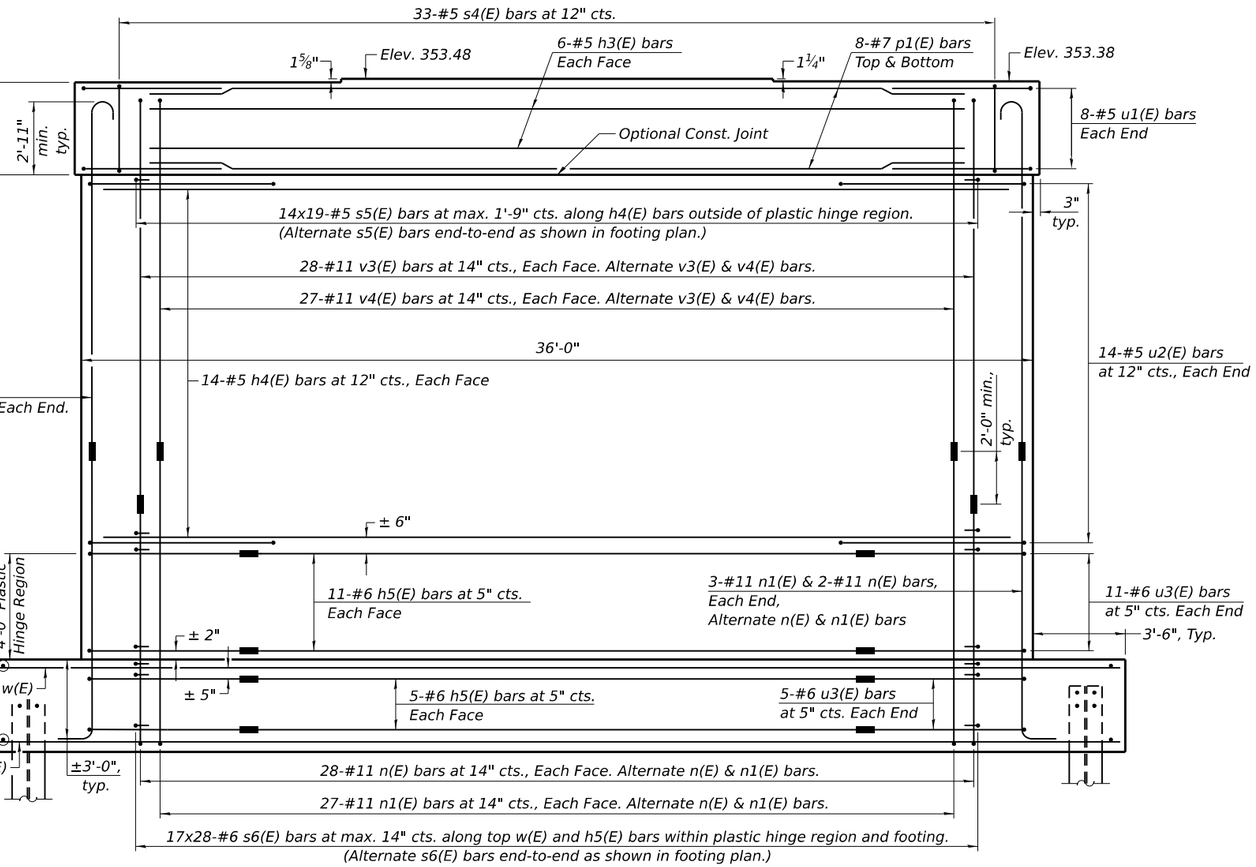


TOP PLAN



END VIEW

* Maintain 2" cl. to mechanical splicer.



ELEVATION
(Looking East)

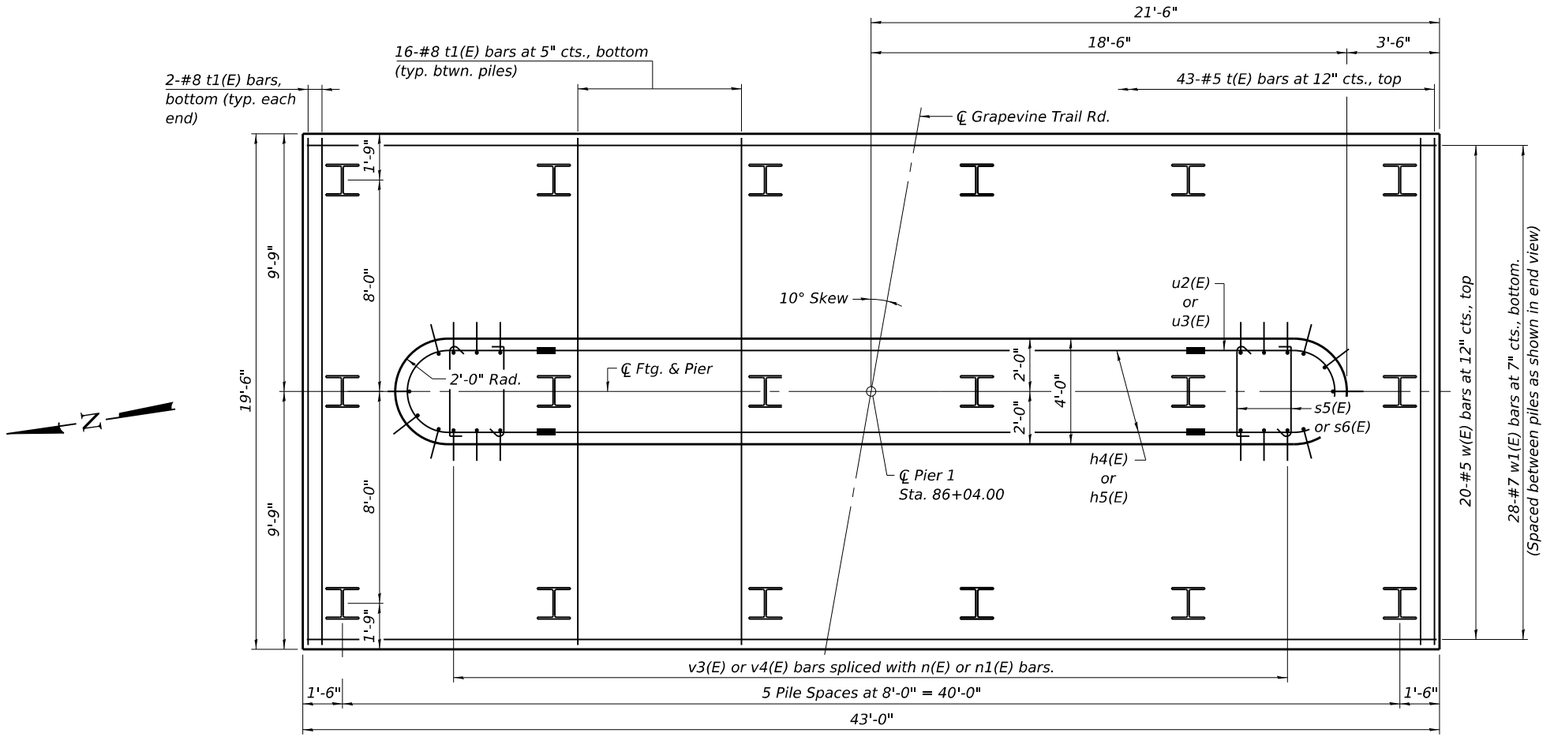
(Sheet 1 of 2)

USER NAME =	DESIGNED - JGY	REVISED -
	CHECKED - FAM	REVISED -
PLOT SCALE =	DRAWN - JGY	REVISED -
PLOT DATE =	CHECKED - FAM	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

PIER 1
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	29
			CONTRACT NO. 99742	
		ILLINOIS	FED. AID PROJECT: R0G8(173)	



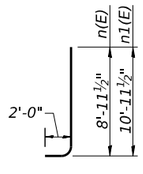
FOOTING PLAN

BILL OF MATERIAL

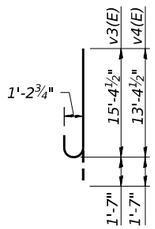
Bar	No.	Size	Length	Shape
h3(E)	12	#5	31'-11"	
h4(E)	28	#5	31'-11"	
h5(E)	32	#6	23'-3"	
n(E)	60	#11	11'-0"	
n1(E)	60	#11	13'-0"	
p1(E)	16	#7	31'-11"	
s4(E)	33	#5	15'-7"	
s5(E)	266	#5	4'-6"	
s6(E)	476	#6	5'-1"	
t(E)	43	#5	19'-2"	
t1(E)	84	#8	21'-0"	
u1(E)	16	#5	18'-1"	
u2(E)	28	#5	14'-2"	
u3(E)	32	#6	14'-2"	
v3(E)	60	#11	17'-0"	
v4(E)	60	#11	15'-0"	
w(E)	20	#5	42'-8"	
w1(E)	28	#7	42'-8"	
Structure Excavation		Cu. Yd.	161	
Concrete Structures		Cu. Yd.	225.4	
Reinforcement Bars, Epoxy Coated		Pound	37070	
Mechanical Splicers		Each	184	
Furnishing Steel Piles HP 14x117		Foot	1377	
Driving Piles		Foot	1377	
Test Pile Steel HP 14x117		Each	1	
Pile Shoes		Each	18	

PILE DATA

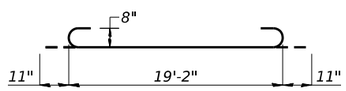
Type: HP 14x117
Nominal Required Bearing: 929 kips
Factored Resistance Available: 511 kips
Est. Length: 81'
No. Production Piles: 17
No. Test Piles: 1
No. Pile Shoes: 18



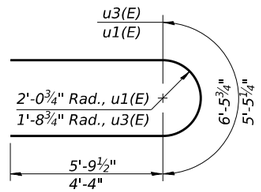
BARS n(E) & n1(E)



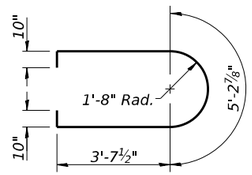
BARS v3(E) & v4(E)



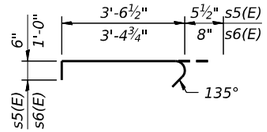
BARS t1(E)



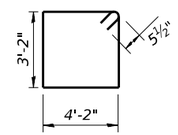
BARS u1(E) & u3(E)



BAR u2(E)



BARs s5(E) & s6(E)
(alternate end-to-end)



BAR s4(E)

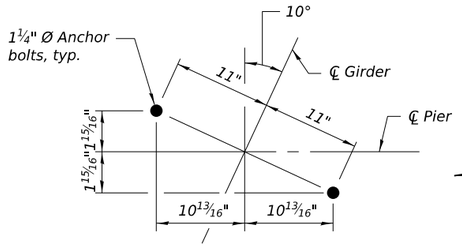
USER NAME =	DESIGNED - JGY	REVISED -	
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JGY	REVISED -	
PLOT DATE =	CHECKED - FAM	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

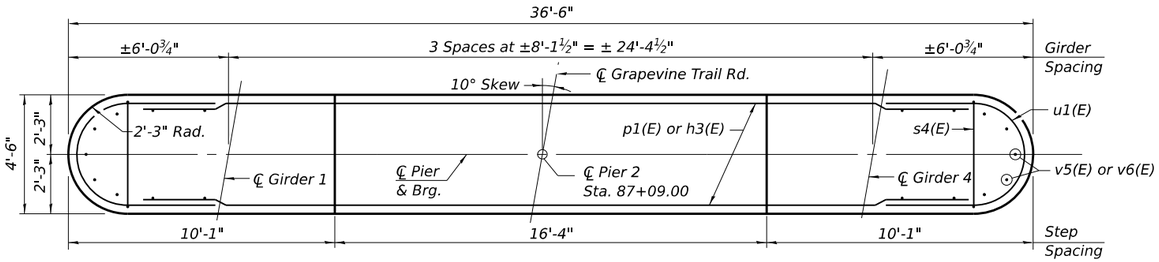
PIER 1
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	30
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

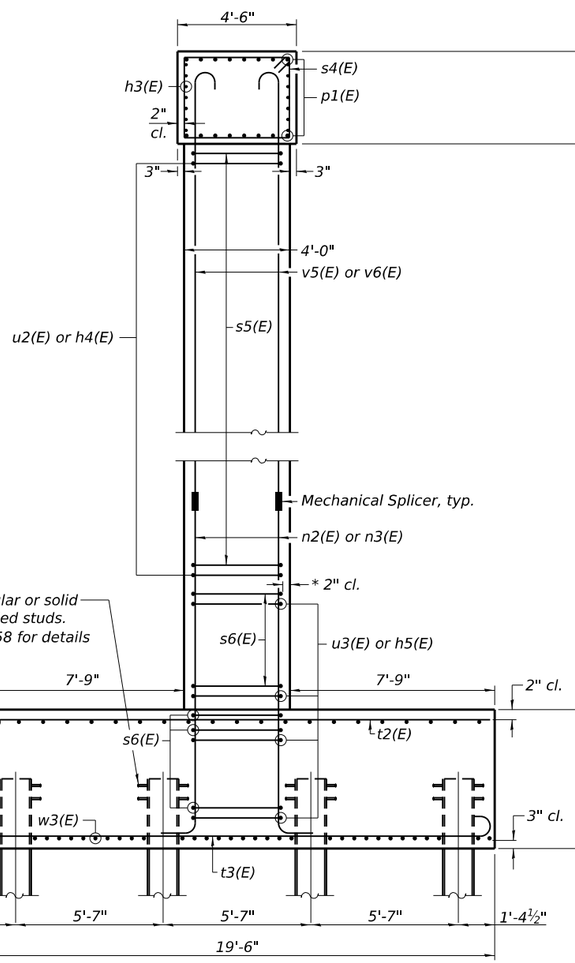
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 32 of 60 for bar details & Bill of Materials.
For details of piles, see sheet 35 of 60.
For mechanical splicer details, see sheet 36 of 60.
s5(E) bars indicated 29x19-#5 etc. indicates 29 rows of bars with 19 bars per row.



ANCHOR BOLT DETAIL

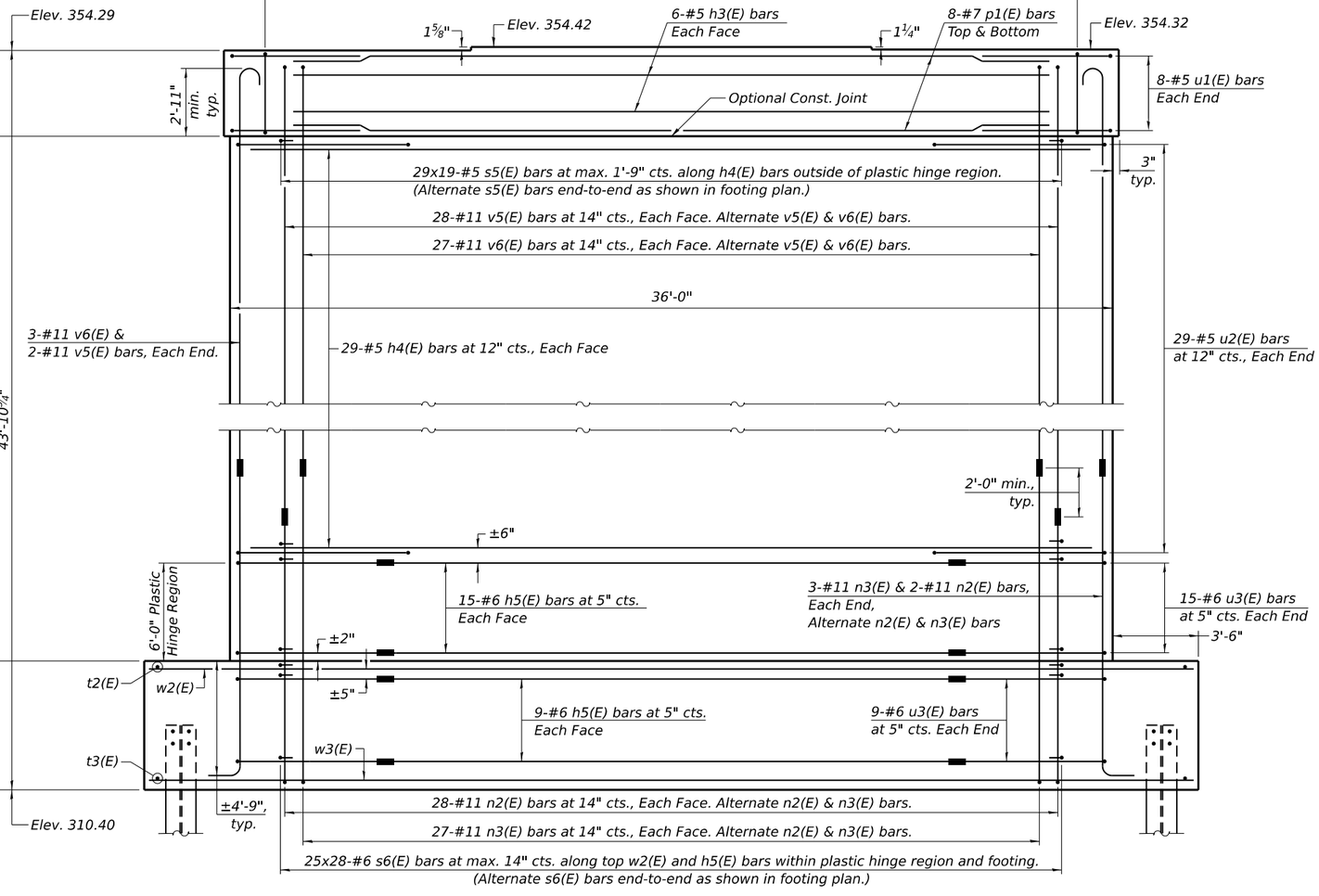


TOP PLAN



END VIEW

* Maintain 2" cl. to mechanical splicer.

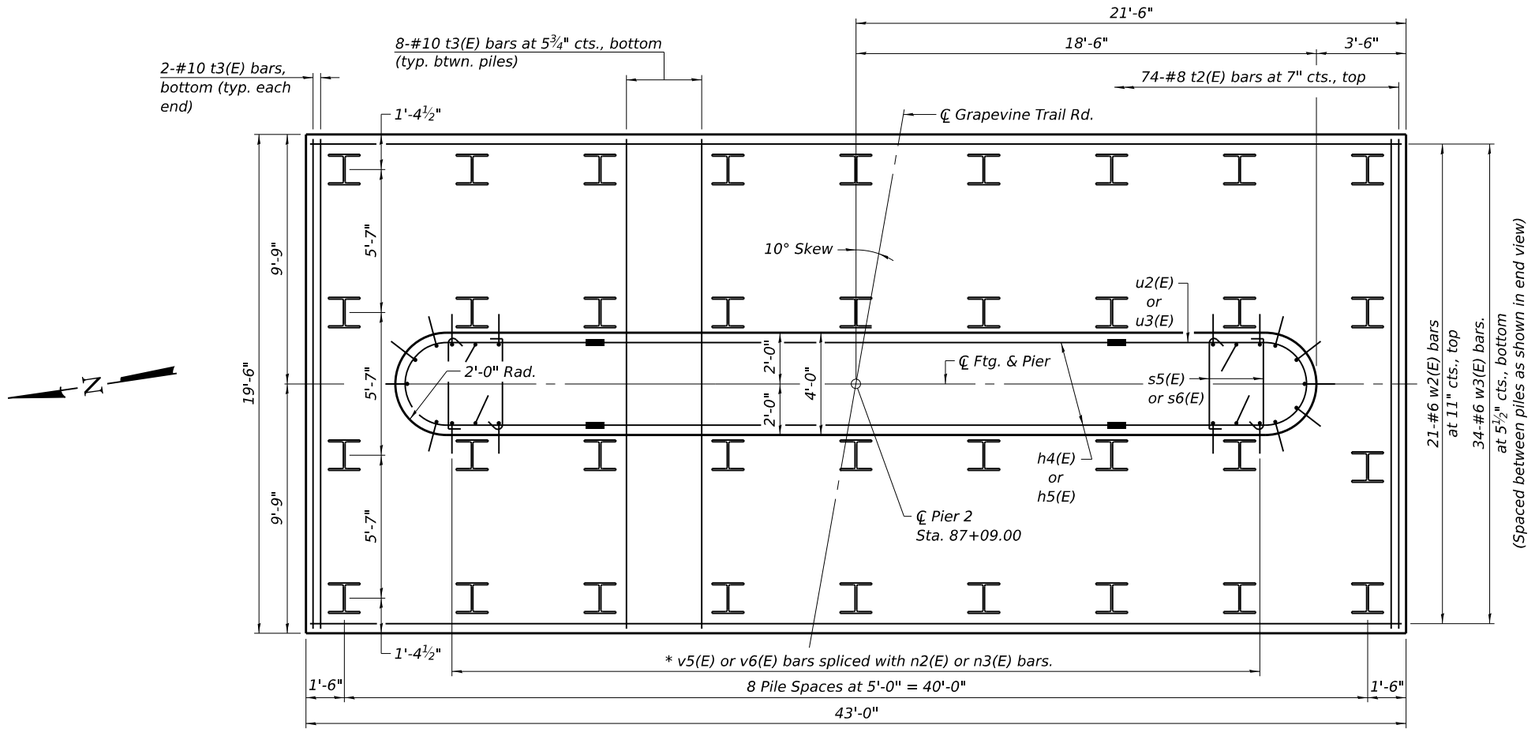


ELEVATION
(Looking East)

(Sheet 1 of 2)

USER NAME =	DESIGNED - JYG	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JYG	REVISED -	PIER 2 STRUCTURE NO. 002-3116
PLOT DATE =	CHECKED - FAM	REVISED -	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	31
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



FOOTING PLAN

* Rotate n2(E) or n3(E) to avoid piles.

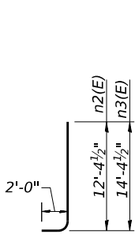
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h3(E)	12	#5	31'-11"	
h4(E)	58	#5	31'-11"	
h5(E)	48	#6	23'-3"	
n2(E)	60	#11	14'-5"	
n3(E)	60	#11	16'-5"	
p1(E)	16	#7	31'-11"	
s4(E)	33	#5	15'-7"	
s5(E)	551	#5	4'-6"	
s6(E)	700	#6	5'-1"	
t2(E)	74	#8	19'-2"	
t3(E)	68	#10	22'-0"	
u1(E)	16	#5	18'-1"	
u2(E)	58	#5	14'-2"	
u3(E)	48	#6	14'-2"	
v5(E)	60	#11	32'-2"	
v6(E)	60	#11	30'-2"	
w2(E)	21	#6	42'-8"	
w3(E)	34	#6	42'-8"	

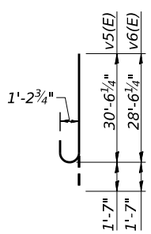
Cofferdam Excavation	Cu. Yd.	888
Cofferdam (Type 2) (Location - 1)	Each	1
Concrete Structures	Cu. Yd.	367.2
Seal Coat Concrete	Cu. Yd.	204.6
Reinforcement Bars, Epoxy Coated	Pound	59150
Mechanical Splicers	Each	216
Furnishing Steel Piles HP 14x117	Foot	2135
Driving Piles	Foot	2135
Test Pile Steel HP 14x117	Each	1
Pile Shoes	Each	36

PILE DATA

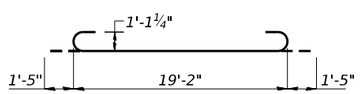
Type: HP 14x117
Nominal Required Bearing: 929 kips
Factored Resistance Available: 511 kips
Est. Length: 61'
No. Production Piles: 35
No. Test Piles: 1
No. Pile Shoes: 36



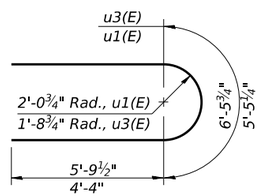
BARS n2(E) & n3(E)



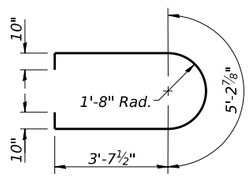
BARS v5(E) & v6(E)



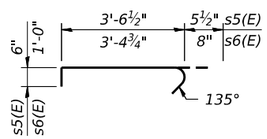
BARS t3(E)



BARS u1(E) & u3(E)

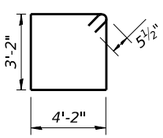


BAR u2(E)



BARs s5(E) & s6(E)

(alternate end-to-end)



BAR s4(E)

(Sheet 2 of 2)

USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JGY	REVISED -	
PLOT DATE =	CHECKED - FAM	REVISED -	

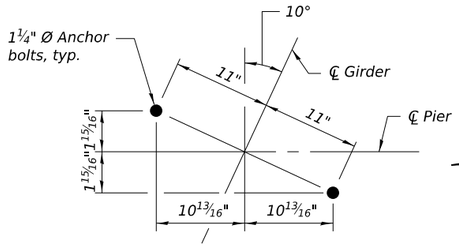
PIER 2
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	32
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

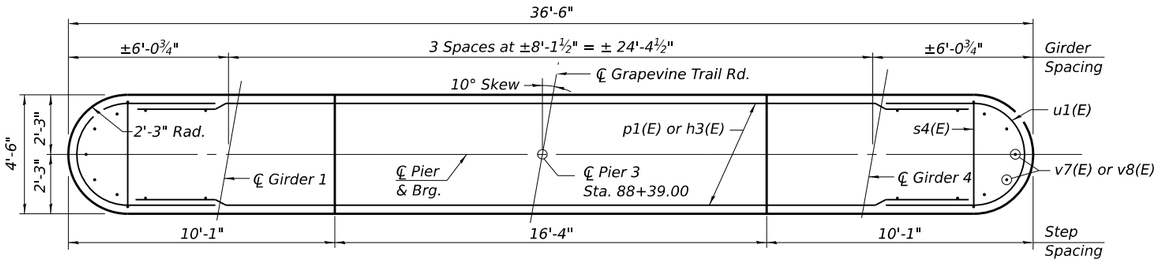
MODEL: Default
FILE NAME: pw:\\bfwme-pw.bentley.com:bfwme-pw-01\Documents\BFW\PROJECTS\2023 PROJECTS\23038 - Alexander County - Grapevine Trail over Clear Creek\IDOT\Structures\CADD\Final Plans\00231116_22-00086-00-BR_030 Pier 2 (Sht 2 of 2)

4/3/2025 4:26:20 PM

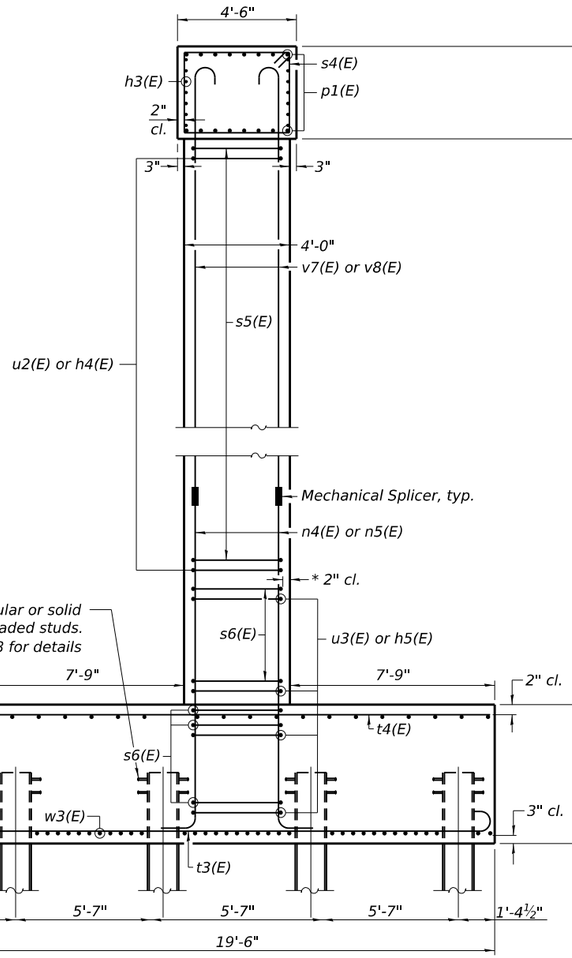
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
See sheet 34 of 60 for bar details & Bill of Materials.
For details of piles, see sheet 35 of 60.
For mechanical splicer details, see sheet 36 of 60.
s5(E) bars indicated 30x19-#5 etc. indicates 30 rows of bars with 19 bars per row.



ANCHOR BOLT DETAIL

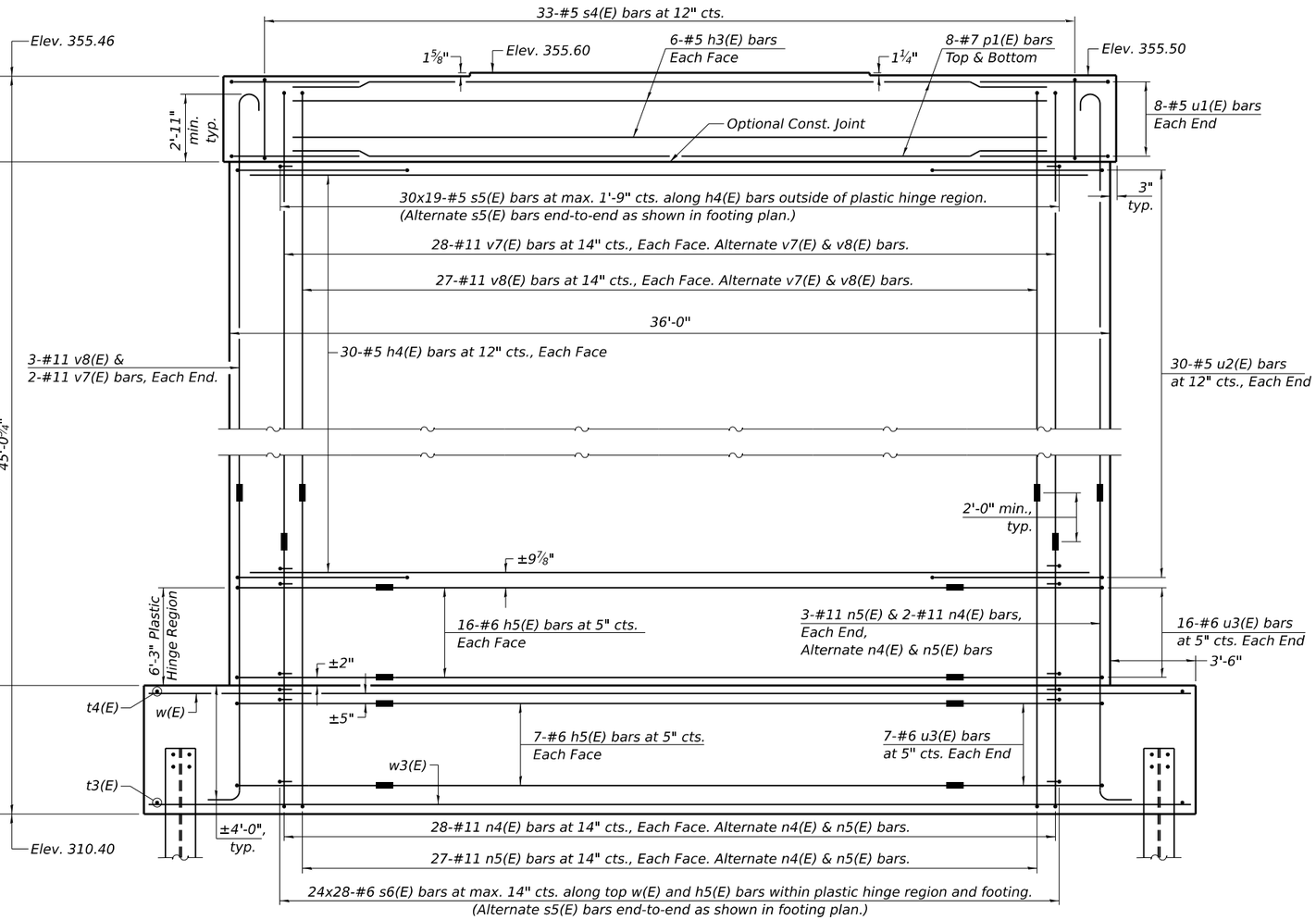


TOP PLAN



END VIEW

* Maintain 2" cl. to mechanical splicer.



ELEVATION
(Looking East)

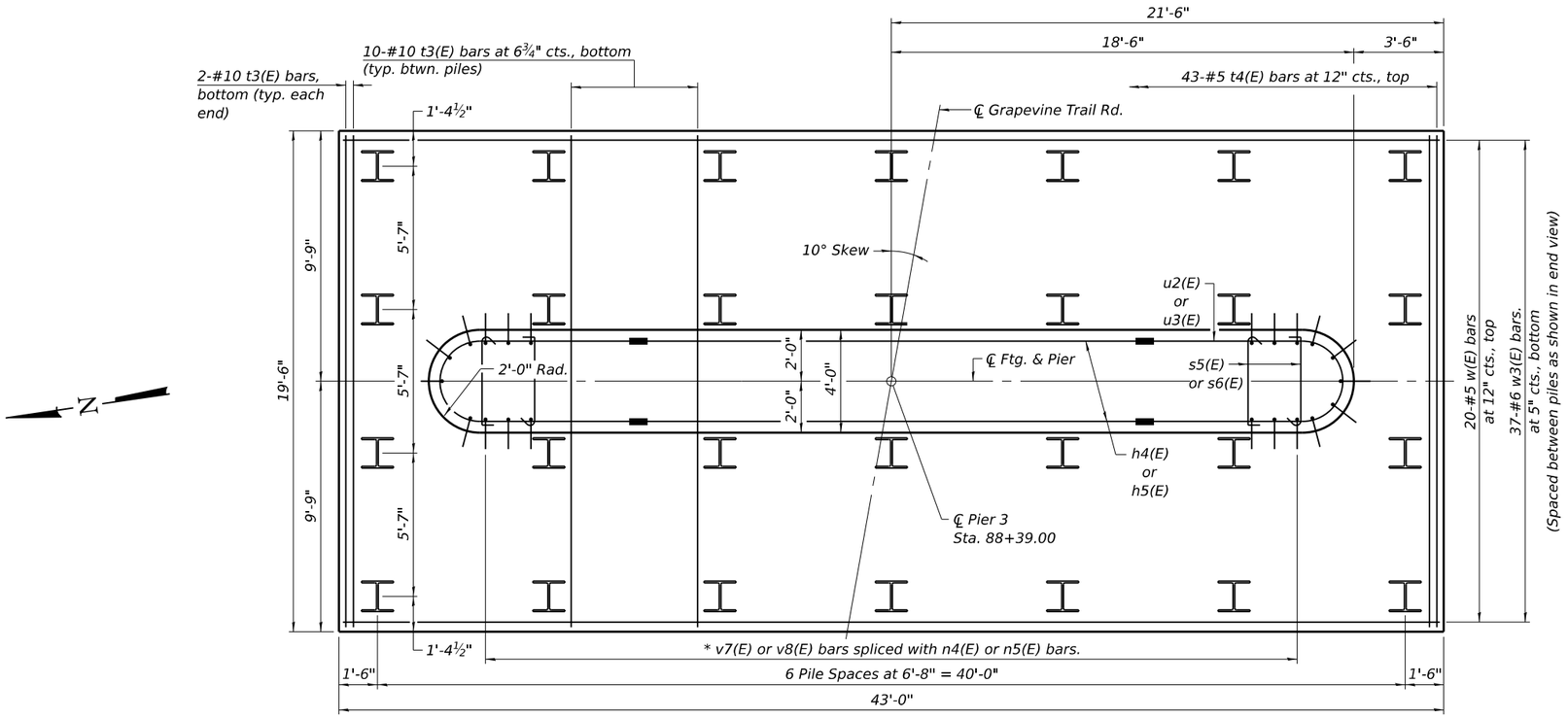
(Sheet 1 of 2)

USER NAME =	DESIGNED - JGY	REVISED -
	CHECKED - FAM	REVISED -
PLOT SCALE =	DRAWN - JGY	REVISED -
PLOT DATE =	CHECKED - FAM	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

PIER 3
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	33
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



FOOTING PLAN

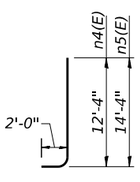
** Rotate n4(E) or n5(E) to avoid piles.*

BILL OF MATERIAL

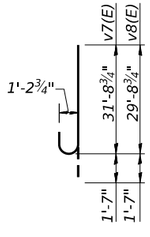
Bar	No.	Size	Length	Shape
h3(E)	12	#5	31'-11"	
h4(E)	60	#5	31'-11"	
h5(E)	46	#6	23'-3"	
n4(E)	60	#11	14'-4"	
n5(E)	60	#11	16'-4"	
p1(E)	16	#7	31'-11"	
s4(E)	33	#5	15'-7"	
s5(E)	570	#5	4'-6"	
s6(E)	672	#6	5'-1"	
t3(E)	64	#10	22'-0"	
t4(E)	43	#5	19'-2"	
u1(E)	16	#5	18'-1"	
u2(E)	60	#5	14'-2"	
u3(E)	46	#6	14'-2"	
v7(E)	60	#11	33'-4"	
v8(E)	60	#11	31'-4"	
w(E)	20	#5	42'-8"	
w3(E)	37	#6	42'-8"	
Cofferdam Excavation		Cu. Yd.	1138	
Cofferdam (Type 2) (Location - 2)		Each	1	
Concrete Structures		Cu. Yd.	353.9	
Seal Coat Concrete		Cu. Yd.	204.6	
Reinforcement Bars, Epoxy Coated		Pound	56130	
Mechanical Splicers		Each	212	
Furnishing Steel Piles HP 14x117		Foot	1242	
Driving Piles		Foot	1242	
Test Pile Steel HP 14x117		Each	1	
Pile Shoes		Each	28	

PILE DATA

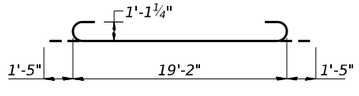
Type: HP 14x117
Nominal Required Bearing: 625 kips
Factored Resistance Available: 344 kips
Est. Length: 46'
No. Production Piles: 27
No. Test Piles: 1
No. Pile Shoes: 28



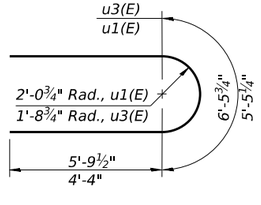
BARS n4(E) & n5(E)



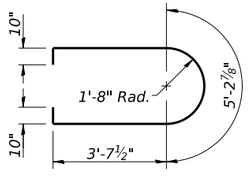
BARS v7(E) & v8(E)



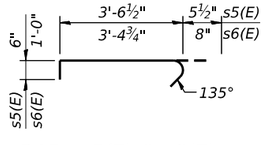
BARS t3(E)



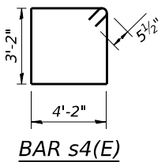
BARS u1(E) & u3(E)



BAR u2(E)



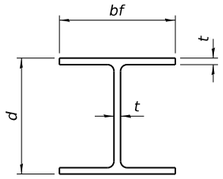
BARs s5(E) & s6(E)
(alternate end-to-end)



BAR s4(E)

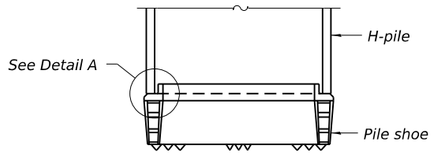
USER NAME =	DESIGNED - JGY	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	CHECKED - FAM	REVISED -	
PLOT SCALE =	DRAWN - JGY	REVISED -	PIER 3 STRUCTURE NO. 002-3116
PLOT DATE =	CHECKED - FAM	REVISED -	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	34
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT: R0G8(173)	

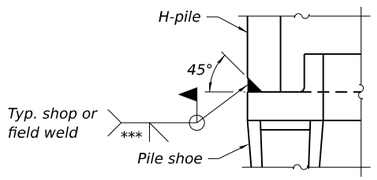


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 18x181	18	18	1	36"
x157	17 3/4"	17 7/8"	7/8"	36"
x135	17 1/2"	17 3/4"	3/4"	36"
HP 16x183	16 1/2"	16 1/2"	1 1/8"	36"
x162	16 1/4"	16 1/8"	1"	36"
x141	16	16	7/8"	36"
x121	15 3/4"	15 7/8"	3/4"	36"
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



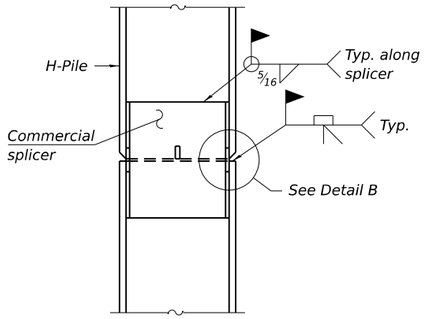
ELEVATION



DETAIL A

SHOE ATTACHMENT

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



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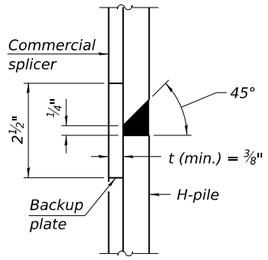
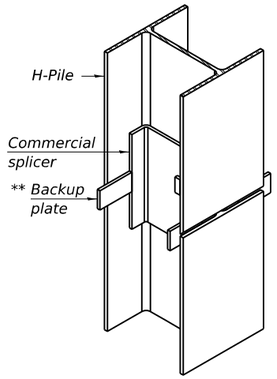
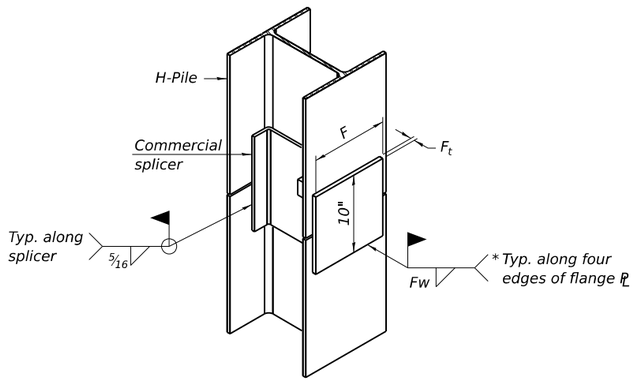


DETAIL B



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



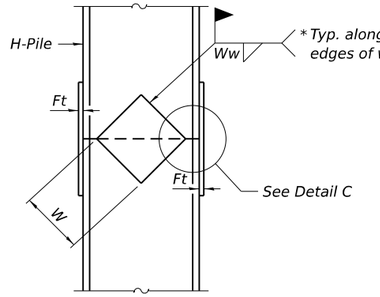
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

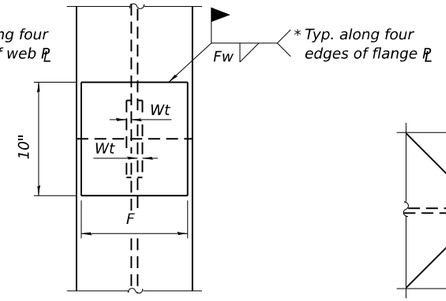
* *Interrupt welds 1/4" from end of web and/or each flange.*

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

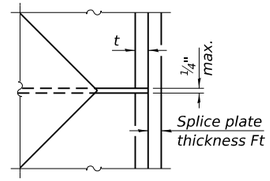
*** *Weld size per pile shoe manufacturer (5/16" min.).*



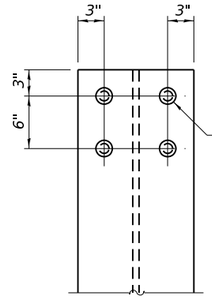
ELEVATION



END VIEW



DETAIL C

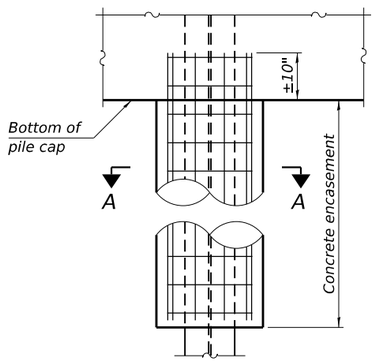


4-3/4" Ø X 4" Granular or solid flux filled headed studs automatically end welded. Cost included with Furnishing Steel Piles HP14x117 (Typ. each flange, each pile)

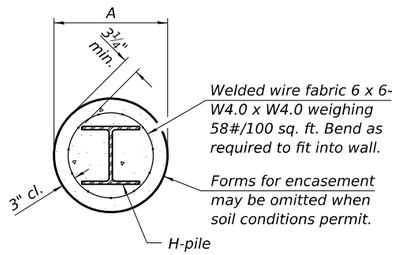
SEISMIC PILE CONNECTION

Designation	F	Ft	Fw	W	Wt	Ww
HP 18x181	15 1/2"	1 1/4"	1"	9 1/2"	7/8"	3/4"
x157	15 1/4"	1 1/4"	1"	9 1/2"	7/8"	3/4"
x135	15 1/4"	1 1/4"	1"	9 1/2"	7/8"	3/4"
HP 16x183	13 3/4"	1 1/2"	1"	8 1/4"	7/8"	3/4"
x162	13 1/2"	1 1/2"	1"	8 1/4"	3/4"	5/8"
x141	13 1/2"	1 1/4"	7/8"	8 1/4"	3/4"	5/8"
x121	13 1/2"	1 1/4"	7/8"	8 1/4"	3/4"	5/8"
HP 14x117	12 1/2"	1 1/4"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	1"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	7/8"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	3/4"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	1"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	3/4"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	3/4"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	7/8"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	6 3/4"	5/8"	7/16"	4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE



ELEVATION



SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

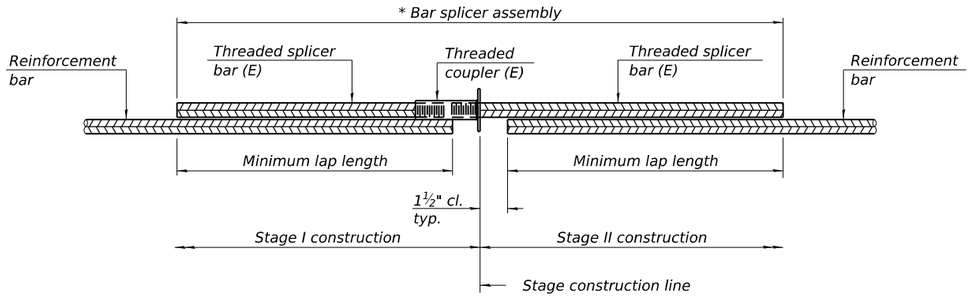
(when specified)

USER NAME =	DESIGNED - JGY	REVISED -	
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JGY	REVISED -	
PLOT DATE =	CHECKED - GBR	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

HP PILE DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	35
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



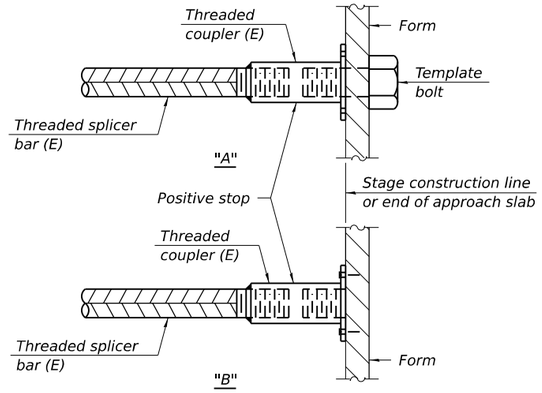
STANDARD BAR SPLICER ASSEMBLY PLAN

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

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

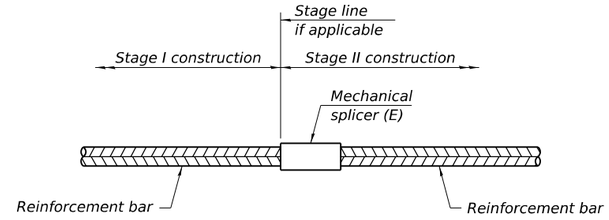
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required
Pier 1	#6	64
Pier 1	#11	120
Pier 2	#6	96
Pier 2	#11	120
Pier 3	#6	92
Pier 3	#11	120

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

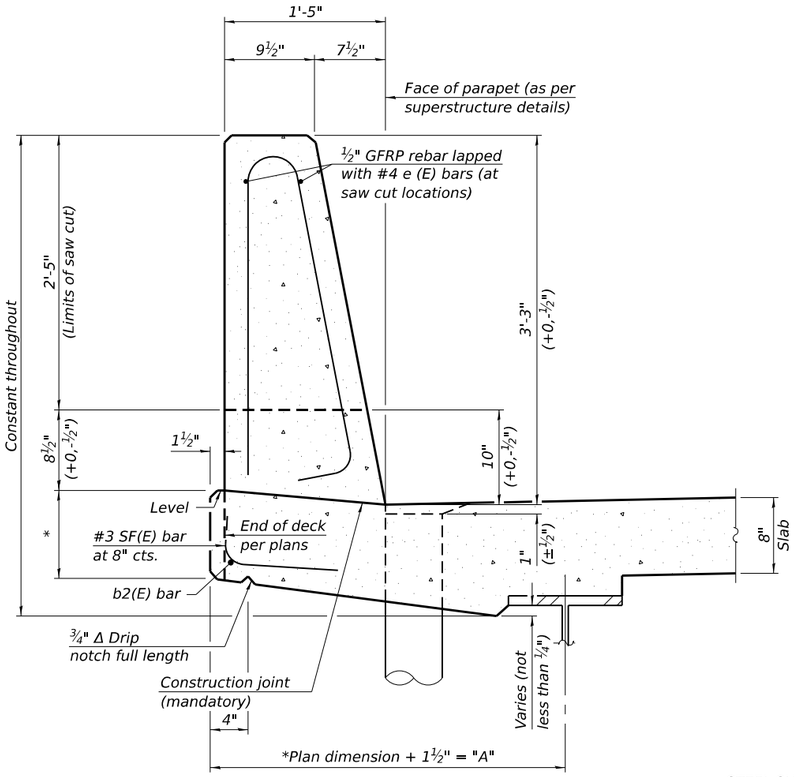
BSD-1 *5-15-2023*

USER NAME =	DESIGNED - JGY	REVISED -
	CHECKED - FAM	REVISED -
PLOT SCALE =	DRAWN - JGY	REVISED -
PLOT DATE =	CHECKED - FAM	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

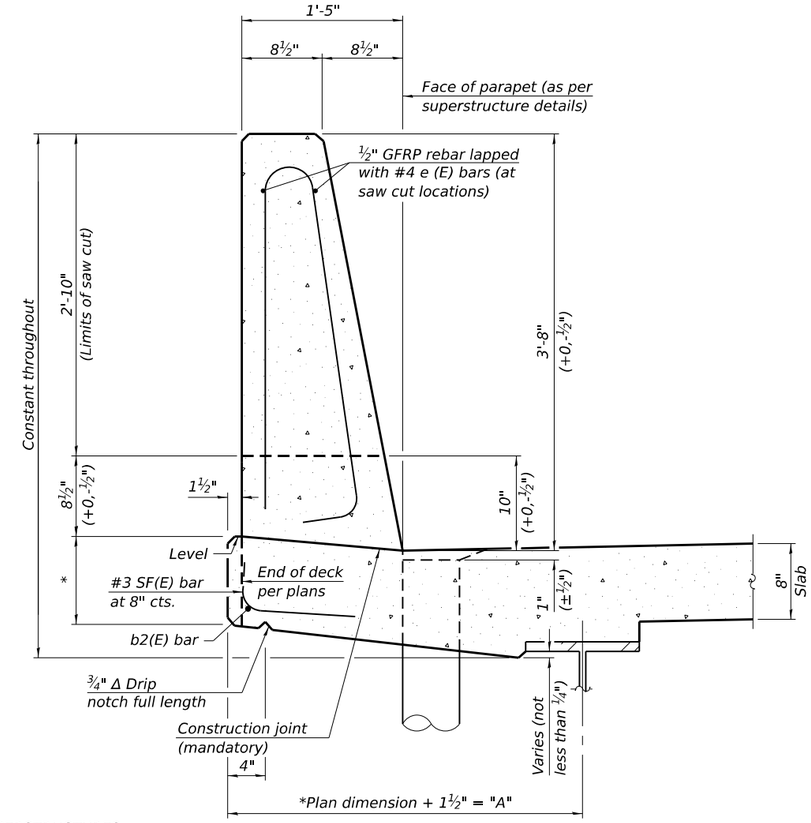
BAR SPLICER ASSEMBLY AND MECHANICAL SPLICER DETAILS
STRUCTURE NO. 002-3116

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	36
			CONTRACT NO. 99742	
		ILLINOIS	FED. AID PROJECT: R0G8(173)	



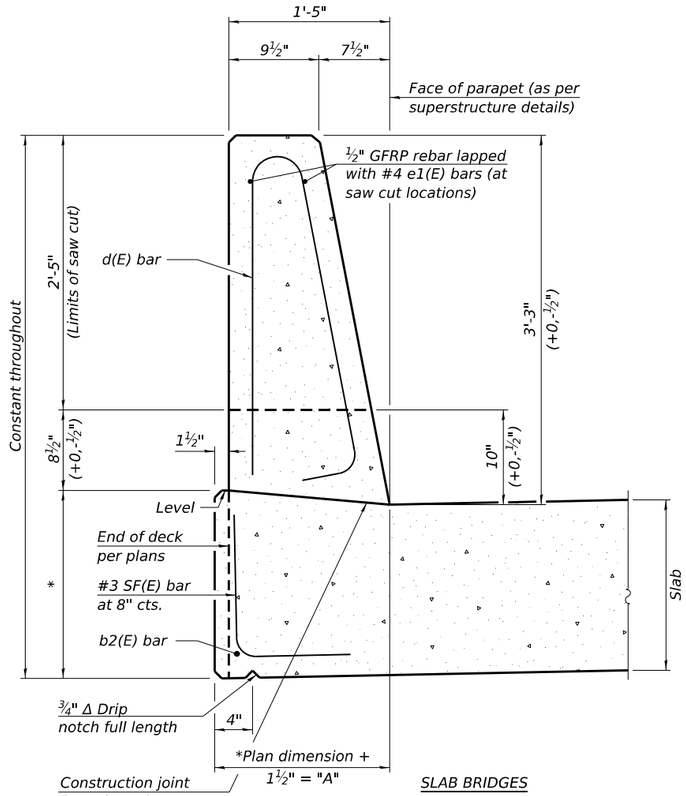
39" CONSTANT-SLOPE PARAPET SECTION

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



44" CONSTANT-SLOPE PARAPET SECTION

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



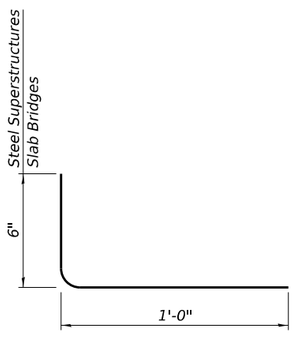
39" CONSTANT-SLOPE PARAPET SECTION

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

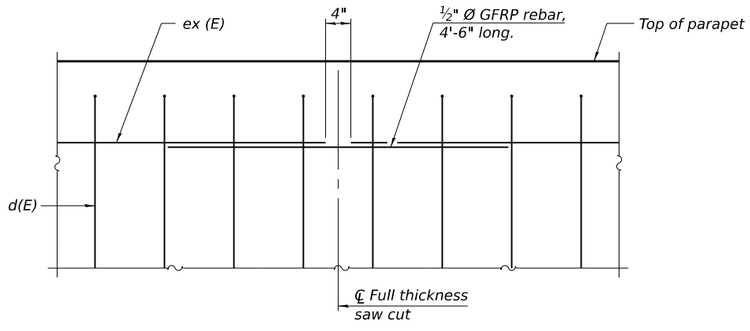
STEEL SUPERSTRUCTURES

SLAB BRIDGES

*See Superstructure Details.



SF(E) BAR



DETAIL - GFRP REBAR STIFFENING ELEVATION

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

Notes:

All dimensions shall remain the same as shown on superstructure details, except dimension "A" which is to be revised as shown.
Additional concrete needed to revise dimension "A" (39" and 44" parapets):
Steel Superstructures: 0.00348 cu. yds./ft.
Slab Bridge Superstructures: cu. yds./ft.
Place full depth aluminum sheets as shown on superstructure details.
Replace all cork joint filler locations with a full thickness saw cut.
Steel and slab superstructures shown. Other superstructure types similar.

SFP 39-44

10/27/2023

USER NAME =	DESIGNED - JMK	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	CHECKED - GBR	REVISED -	
PLOT SCALE =	DRAWN - JMK	REVISED -	CONCRETE PARAPET SLIPFORMING OPTION STRUCTURE NO. 002-3116
PLOT DATE =	CHECKED - GBR	REVISED -	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	37
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT: R0G8(173)	

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/13/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION West Abutment, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM.**
Latitude 37.3146699, **Longitude** -89.3951516

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-1
Station 84+37.99
Offset 19.6 ft LT
Ground Surface Elev. 355.76 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 310.8 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
355.26 Asphalt - 6 inches			
354.86 Gravel Base - 4 inches			
EXISTING FILL: Gray sandy clay			
	3		
	4		22
	1		
-5			
348.51 EXISTING FILL: Gray silty clay loam			
	3		
	3		23
	3		
-10			
	2		
	2		23
	2		
	2		
342.26 EXISTING FILL: Gray silt			
	2		25
	3		
-15			
	2		
	2		25
	2		
	2		
	2		25
	2		
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
EXISTING FILL: Gray silt *(continued)*	0		
	0		28
	0		
333.76 EXISTING FILL: Gray clay			
	2		
	2		28
	2		
-25			
	0		
	0		28
	0		
328.76 CLAY: Brownish gray to gray			
	0		
	0		29
	2		
-30			
	0		
	0		29
	0		
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/13/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION West Abutment, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM.**
Latitude 37.3146699, **Longitude** -89.3951516

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-1
Station 84+37.99
Offset 19.6 ft LT
Ground Surface Elev. 355.76 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 310.8 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY: Brownish gray to gray *(continued)*	0		
	0		36
	3		
▼-45			
	2		
	2		42
	2		
307.26 SAND: Brownish gray to gray, fine grained			
-50			
	0		
	0		43
	4		
302.26 SANDY CLAY: Gray to dark gray			
-55			
	0		
	0		31
	2		
297.26 SANDY CLAY LOAM: Gray to dark gray			
-60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SANDY CLAY LOAM: Gray to dark gray *(continued)*	4		
	8		25
	12		
-65			
	5		
	4		30
	5		
287.26 SAND: Gray, very fine to fine grained			
-70			
	14		
	13		21
	21		
-75			
	12		
	10		9
	12		
-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/13/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION West Abutment, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM.**
Latitude 37.3146699, **Longitude** -89.3951516

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-1
Station 84+37.99
Offset 19.6 ft LT
Ground Surface Elev. 355.76 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 310.8 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND: Gray, very fine to fine grained *(continued)*	16		
	19		26
	23		
-85			
	20		
	24		23
	31		
-90			
	13		
	20		19
	23		
262.26 SAND: Gray, fine to coarse grained, some gravel			
-95			
	18		
	14		23
	12		
-100			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND: Gray, fine to coarse grained, some gravel *(continued)*	9		
	10		17
	10		
-105			
	6		
	9		15
	12		
-110			
	10		
	12		21
	12		
241.06 End of Boring			
-115			
	50		
-120			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

MODEL: Untitled [Sheet]
FILE NAME: c:\users\gsmothers\appdata\local\bentley\projectwise\workingdir\bfwme-pw.bentley.com_bfwme-pw-01\greg.smothers\d0148338\D9_XXXXX-ehi-Soil Borings.dgn

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SOIL BORINGS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-0086-00-BR	ALEXANDER	60	38
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/14/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 1, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM,
Latitude 37.3144177, Longitude -89.3947571

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-2
Station 85+78.46
Offset 28.9 ft RT
Ground Surface Elev. 334.58 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 330.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Grass and Topsoil - 3" 334.33	2		
SILTY CLAY LOAM: Brown to gray	2	0.8	24
	4		
	2		
	2	1.5	27
▼	2		
-5			
	0		
	3	0.8	27
327.58	3		
SILTY LOAM: Gray			
	0		
	0	0.0	33
	0		
-10			
	0		
	0	0.5	30
	0		
	0		
	0	0.0	33
320.08	0		
SILTY: Gray -15			
	0		
	0	0.0	43
	0		
	0		
	0	0.0	47
	0		
-20			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY: Gray *(continued)*	0		
	0	0.0	44
	0		
	0		
	0	0.0	38
	0		
-25			
	0		
	0	0.0	52
	0		
	0		
	0	0.0	44
305.08	0		
LOAMY SAND: Gray, very fine grained, silty -30			
	0		
	0		29
	0		
	0		
301.08			
CLAY: Gray			
-35			
	0		
	0		40
	0		
	0		
296.08			
LOAMY SAND: Gray, very fine grained, silty			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/14/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 1, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM,
Latitude 37.3144177, Longitude -89.3947571

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-2
Station 85+78.46
Offset 28.9 ft RT
Ground Surface Elev. 334.58 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 330.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
LOAMY SAND: Gray, very fine grained, silty *(continued)*	8		
	8		27
	4		
291.08			
SAND: Gray, fine grained			
-45			
	5		
	6		23
	7		
	0		
	12		
	14		27
	16		
-55			
	10		
	11		26
	14		
-60			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND: Gray, fine grained *(continued)*	9		
	11		28
	11		
271.08			
LOAMY SAND: Gray, very fine grained, clayey			
-65			
	6		
	8		32
	11		
	3		
	3		31
	3		
261.08			
SAND: Gray, very fine to coarse, trace gravel -75			
	23		
	25		22
	27		
-80			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc

SOIL BORING LOG

Date 12/14/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 1, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM,
Latitude 37.3144177, Longitude -89.3947571

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B 2
Station 85+78.46
Offset 28.9 ft RT
Ground Surface Elev. 334.58 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 330.6 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SAND: Gray, very fine to coarse, trace gravel *(continued)*	10		
	14		29
	19		
-85			
	15		
	20		17
	23		
247.58			
LIMESTONE: Light gray, with fine sand 247.28	50		
End of Boring			
-90			
-95			
-100			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SOIL BORINGS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	39
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

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Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/19/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 2, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM.
Latitude 37.3144697, Longitude -89.3943918

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-3
Station 86+83.06
Offset 23.0 ft LT
Ground Surface Elev. 332.01 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 326.0 ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Topsoil - 2 inches 331.81
	0			
	0	0.3	29	SILTY LOAM: Gray to brown
	0			330.01
				SILT: Gray to brown
	4			
	6		24	
	6			327.51
-5				SANDY CLAY: Gray-brown, trace gravel
	4			
	7		20	
	3			325.01
				CLAY: Gray, trace black organics
	0			
	0	0.0	30	
	0			
-10				
	0			
	0		35	
	0			
	0			
	0		31	
	0			
-15				
	0			
	0	0.0	49	
	3			
	0			
	0	0.3	48	
	0			
-20				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	0			CLAY: Gray, trace black organics (continued)
	0			
	0			
	0			
-25				
	0			
	0		41	
	0			
	0			
	0		34	
	2			
-30				
	1			
	2	0.3	38	
	1			
	0			
-35				
	0			
	0	0.0	46	
	4			
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/19/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 2, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM.
Latitude 37.3144697, Longitude -89.3943918

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-3
Station 86+83.06
Offset 23.0 ft LT
Ground Surface Elev. 332.01 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 326.0 ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3			CLAY: Gray, trace black organics (continued)
	1	0.0	46	
	1			
				288.51
-45				LOAMY SAND: Gray
	4			
	10		23	
	12			
				283.51
-50				SAND: Gray, very fine grained
	10			
	14		28	
	17			
-55				
	14			
	17		24	
	18			
-60				

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	12			SAND: Gray, very fine grained (continued)
	14		28	
	14			
				268.51
-65				LOAMY SAND: Gray
	5			
	7		30	
	8			
				263.51
-70				SILTY LOAM: Gray, with very fine sand
	4			
	4		39	
	6			
-75				
	4			
	6		42	
	7			
				253.51
-80				SILTY CLAY: Gray, trace sand

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/19/23

ROUTE FAS RTE 945 DESCRIPTION Grapevine Trail Rd. over Clear Creek LOGGED BY M. Kaufman

SECTION 32B-F LOCATION Pier 2, SEC. 12, TWP. 14 S, RNG. 3 W, 3rd PM.
Latitude 37.3144697, Longitude -89.3943918

COUNTY Alexander DRILLING METHOD HSA/MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-3
Station 86+83.06
Offset 23.0 ft LT
Ground Surface Elev. 332.01 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 326.0 ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
	3			SILTY CLAY: Gray, trace sand (continued)
	3			
	4			
				248.71
	50			End of Boring
-85				
-90				
-95				
-100				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

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USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SOIL BORINGS

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	40
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/21/23

ROUTE FAS RTE 945 **DESCRIPTION** Grapevine Trail Rd. over Clear Creek **LOGGED BY** M. Kaufman

SECTION 32B-F **LOCATION** Pier 3, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM**,
Latitude 37.3142109, **Longitude** -89.3939533

COUNTY Alexander **DRILLING METHOD** CASING **HAMMER TYPE** AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-4
Station 88+23.44
Offset 26.4 ft RT
Ground Surface Elev. 332.33 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 328.3 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3			Topsoil and Vegetation - 2 inches 332.13
	6		25	SILTY LOAM: Brown, with gravel
	9			(Possibly Existing Fill)
				330.33
				SILT: Gray
			29	▼
-5				
	0			
	0	0.3	28	
	3			
	0			
	0	0.0	31	
	0			
-10				
	0			
	0	0.0	34	
	0			
	0			
	0	0.0	36	
	0			
-15				
	0			Trace decayed plant material
	0	0.0	35	
	0			
	0			
	0	0.0	49	
	0			
				312.83
-20				CLAY: Gray, high plastic

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	0			CLAY: Gray, high plastic
	0	0.0	52	*(continued)*
	0			
				310.33
				SILTY LOAM: Gray
	0			
	0	0.0	38	
	0			
-25				
	0			
	0	0.0	55	
	0			
	0			
	0	0.0	44	
	0			
-30				
	0			
	0	0.0	36	
	0			
	0			
-35				
	0			
	6	0.0	40	Becomes sandy
	2			
	0			
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/21/23

ROUTE FAS RTE 945 **DESCRIPTION** Grapevine Trail Rd. over Clear Creek **LOGGED BY** M. Kaufman

SECTION 32B-F **LOCATION** Pier 3, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM**,
Latitude 37.3142109, **Longitude** -89.3939533

COUNTY Alexander **DRILLING METHOD** CASING **HAMMER TYPE** AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-4
Station 88+23.44
Offset 26.4 ft RT
Ground Surface Elev. 332.33 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 328.3 ft ▼
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	0			SILTY LOAM: Gray *(continued)*
	0	0.0	60	
	0			
				287.83
-45				CLAY: Gray
	0			
	0	0.0	64	
	0			
-50				
	0			
	0	0.0	29	
	0			
				278.83
-55				SANDY CLAY: Gray, trace silt
	2			
	3	0.5	33	
	7			
				273.83
-60				SANDY CLAY LOAM: Gray

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
	3			SANDY CLAY LOAM: Gray
	3		30	*(continued)* 271.33
	1			CLAY: Gray
-65				
	6			266.83
	8			SAND: Gray, very fine grained,
	35			some broken limestone
				Borehole continued with rock
				coring.
-70				
-75				
-80				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GRAPEVINE TRAIL OVER CLEAR CREEK
SOIL BORINGS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	41
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/21/23

ROUTE FAS RTE 945 **DESCRIPTION** Grapevine Trail Rd. over Clear Creek **LOGGED BY** M. Kaufman

SECTION 32B-F **LOCATION** East Abutment, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM**,
Latitude 37.3141794, **Longitude** -89.3933694

COUNTY Alexander **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-5
Station 89+91.34
Offset 18.6 ft LT
Ground Surface Elev. 361.63 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 331.6 ft ▼
Upon Completion ____ ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Topsoil and Grass - 3 inches 361.38	4		
EXISTING FILL: Gray-brown silty clay, some gravel	8 8		26
	4		
	5 5	4.5	20
357.13			
EXISTING FILL: Gray to brown silty loam -5			
			25
	4		
	6 4	1.0	23
-10			
	3		
	3 5	1.0	31
	3		
	4 6	4.5	36
-15			
	4		
	5 5		32
	14		
	9 8		43
-20			
EXISTING FILL: Gray to brown silty loam *(continued)*	3		
	4 5	1.0	49
	2		
	1 1	0.0	23
-25			
	0		
	0 0	0.0	26
334.63			
CLAY: Gray, some broken limestone	0		
	0 3		33
331.63 ▼ -30			
GRAVEL: Orange and light gray broken limestone, with clay	2		
	1 4		26
329.63			
SILTY LOAM: Gray			
-35			
	0		
	3 3		28
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Bacon Farmer Workman Engineering & Testing, Inc.

SOIL BORING LOG

Date 12/21/23

ROUTE FAS RTE 945 **DESCRIPTION** Grapevine Trail Rd. over Clear Creek **LOGGED BY** M. Kaufman

SECTION 32B-F **LOCATION** East Abutment, **SEC.** 12, **TWP.** 14 S, **RNG.** 3 W, 3rd **PM**,
Latitude 37.3141794, **Longitude** -89.3933694

COUNTY Alexander **DRILLING METHOD** HSA **HAMMER TYPE** AUTO

STRUCT. NO. 002-3116
Station 87+29

BORING NO. B-5
Station 89+91.34
Offset 18.6 ft LT
Ground Surface Elev. 361.63 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter 331.6 ft ▼
Upon Completion ____ ft
After ____ **Hrs.** ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY LOAM: Gray *(continued)*	0		
	0 0		26
318.13			
CLAY: Gray -45			
	0		
	0 0	0.0	41
-50			
	0		
	0 0		33
307.33			
With broken limestone	50		
End of Boring -55			
-60			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

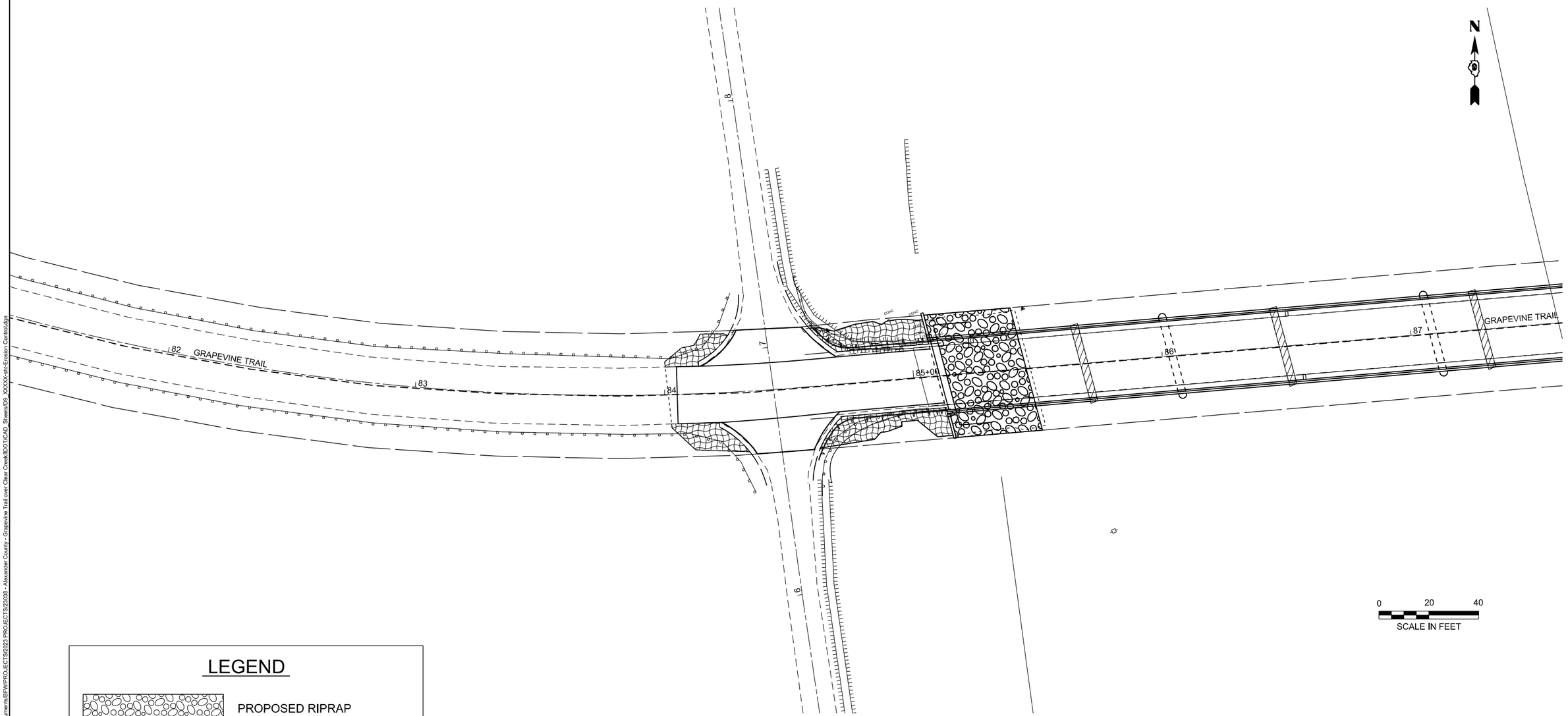
USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
SOIL BORINGS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	42
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGS(173)		



LEGEND

PROPOSED RIPRAP

EROSION CONTROL BLANKET

MODEL: Grapevine - Erosion 1
FILE NAME: pw:D:\temp-pw.bentley.com:bTemp-pw-01\Documents\BPW\PROJECTS\2023 PROJECTS\23038 - Alexander County - Grapevine Trail over Clear Creek\EDOT\CAD_Sheets\09_XXXXX-ath-Erosion Control.dgn

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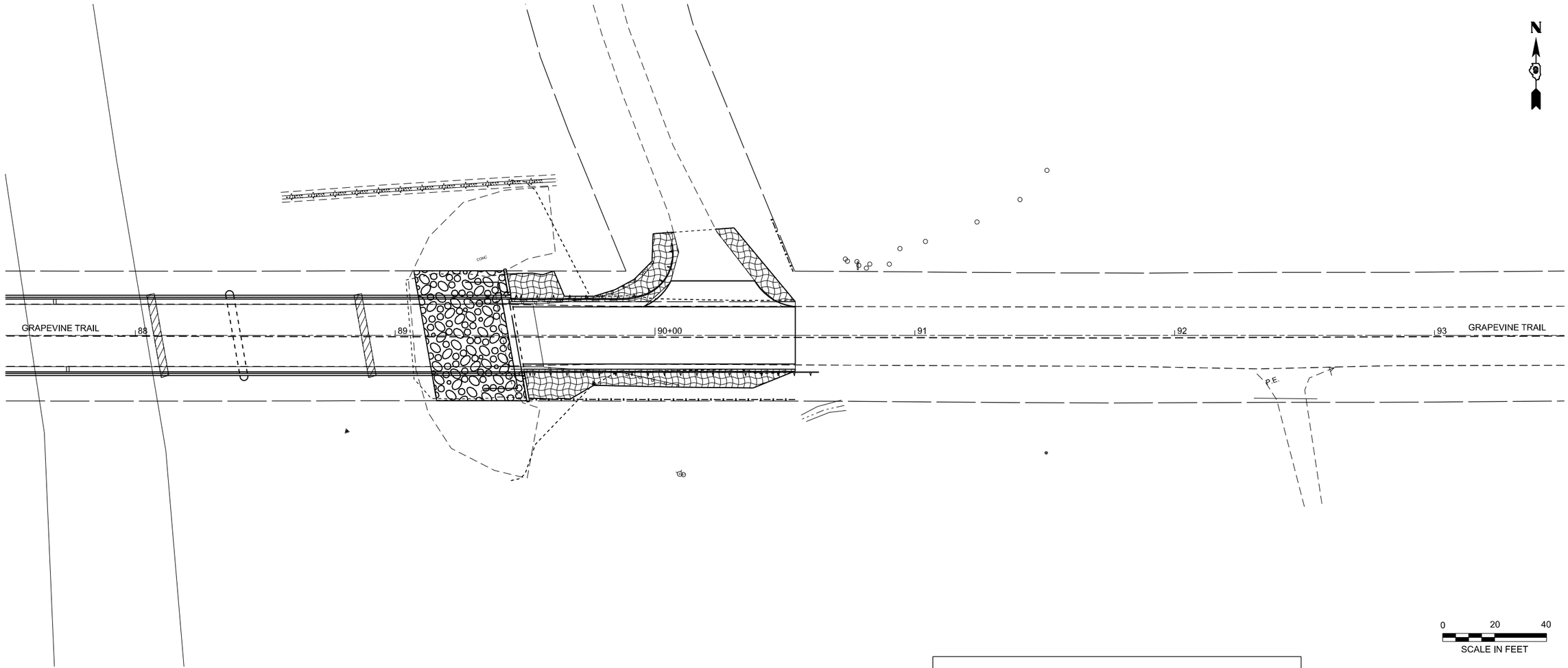
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/3/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
EROSION CONTROL PLANS

SCALE: 1" = 20' | SHEET 1 OF 2 SHEETS | STA. 81+50 TO STA. 87+50

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-0086-00-BR	ALEXANDER	60	43
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



MODEL: Grapevine - Erosion 2
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USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/3/2025	DATE -	REVISED -	

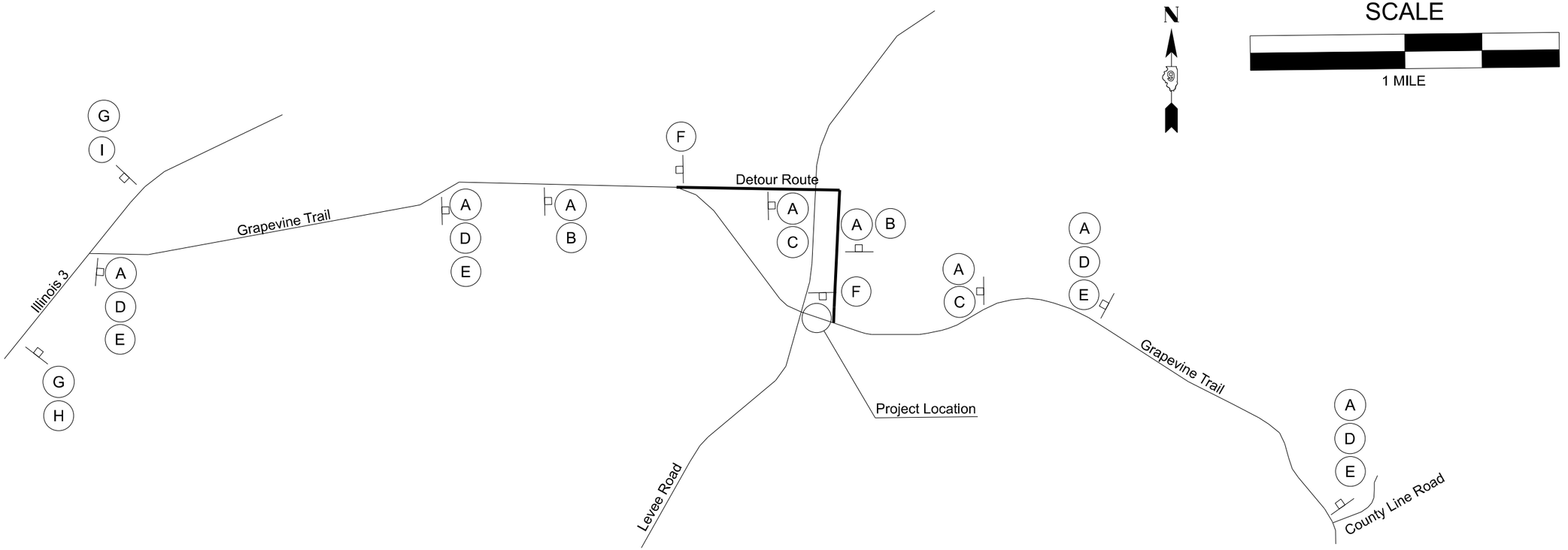
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
EROSION CONTROL PLANS

SCALE: 1" = 20' | SHEET 2 OF 2 SHEETS | STA. 87+50.00 | TO STA. 93+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-0086-00-BR	ALEXANDER	60	44
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R09B(173)		

DETOUR SIGNING PLAN



DETOUR SIGN LEGEND

A — C.H. 4 — W16-8P

B — DETOUR — M4-9L

C — DETOUR — M4-9R

D — DETOUR AHEAD — W20-2

E — WEIGHT LIMIT 5 TONS — R12-1

F — END DETOUR — M4-8A

G — NO SEMI-TRUCKS ALLOWED

H — W1-6R

I — W1-6L

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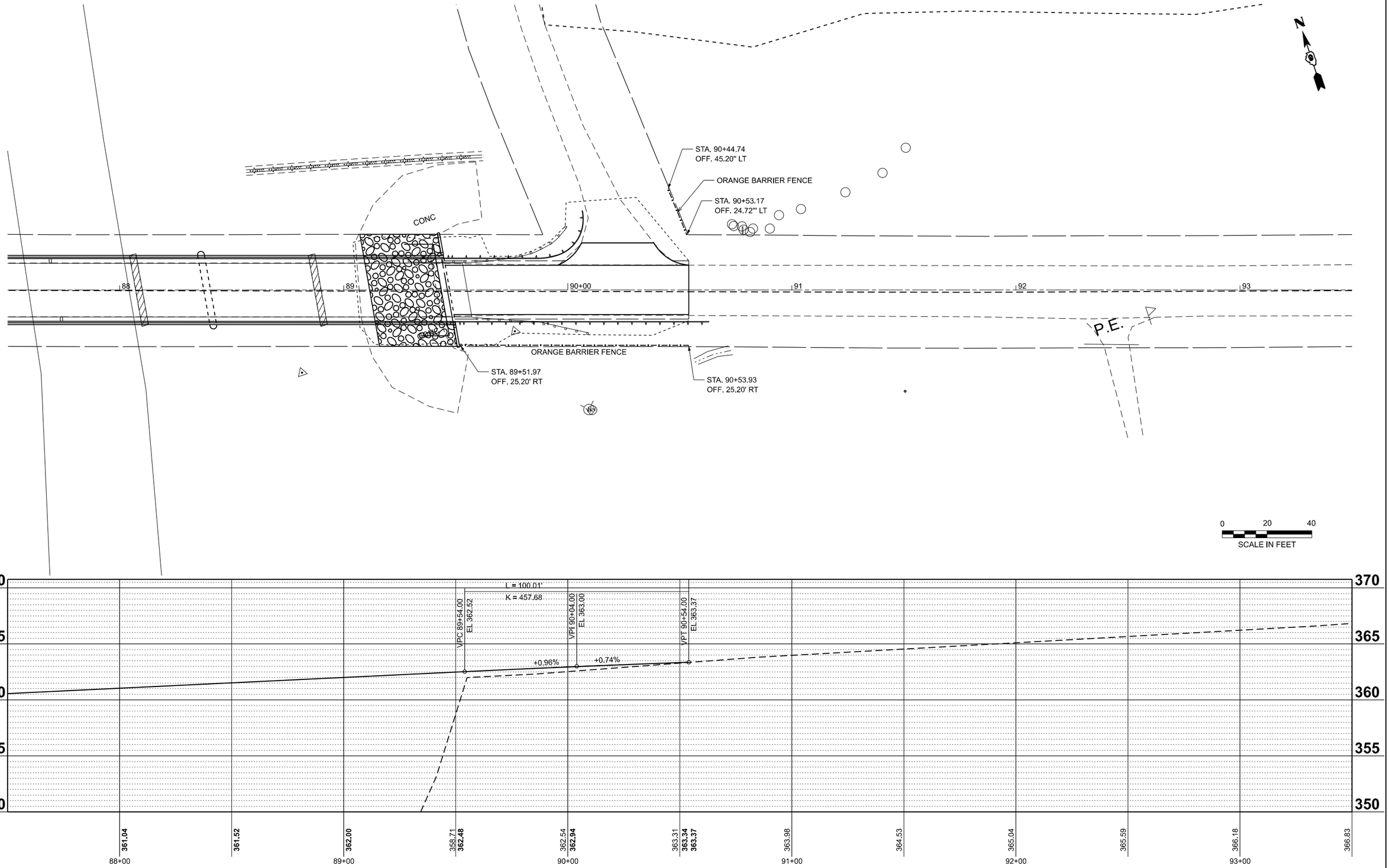
USER NAME = gsmothers	DESIGNED -	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

GRAPEVINE TRAIL OVER CLEAR CREEK
DETOUR SIGNING DETAIL

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	45
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



MODEL: Grapevine - Plan 2-1
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USER NAME = gsmothers	DESIGNED -	REVISED -
	DRAWN -	REVISED -
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PLOT DATE = 4/3/2025	DATE -	REVISED -

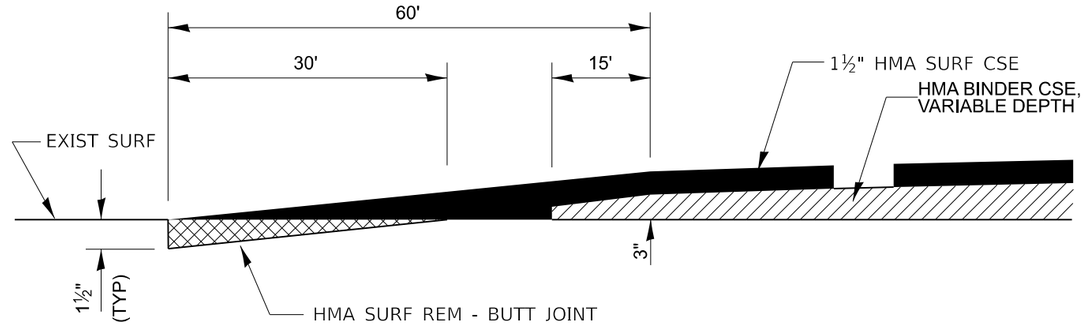
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
PROTECTION OF THREATENED AND ENDANGERED PLANT POPULATIONS

SCALE: | SHEET OF SHEETS | STA. 87+50.00 | TO STA. 93+50.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	46
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

TYPICAL BUTT JOINT DETAIL



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	DRAWN -	REVISED -	
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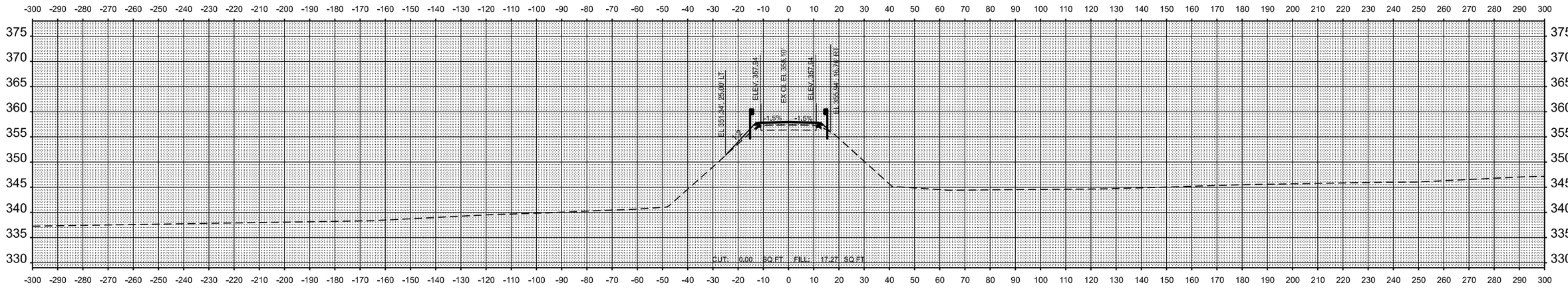
PLOT DATE = 3/24/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

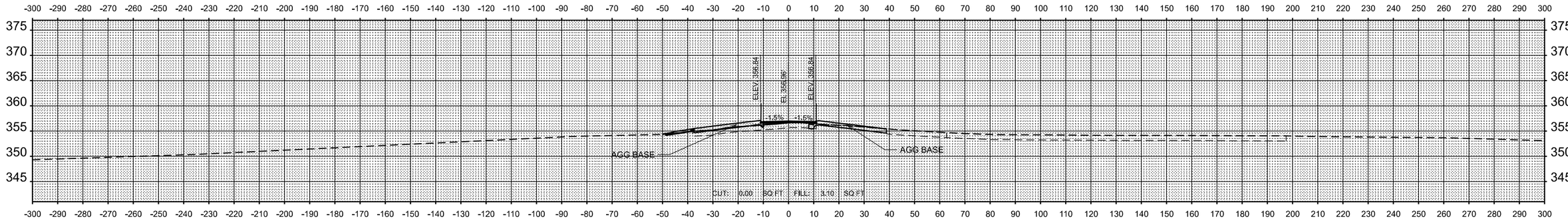
GRAPEVINE TRAIL OVER CLEAR CREEK
DETAILS

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

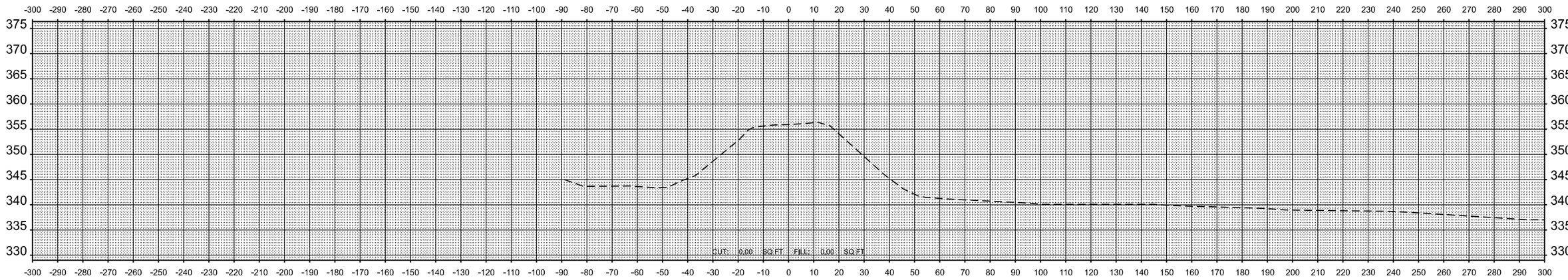
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	47
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		



STA 85+00.00



STA 84+50.00



STA 84+00.00

USER NAME = gsmothers	DESIGNED -	REVISED -	**STATE OF ILLINOIS** **ALEXANDER COUNTY HIGHWAY DEPARTMENT**
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

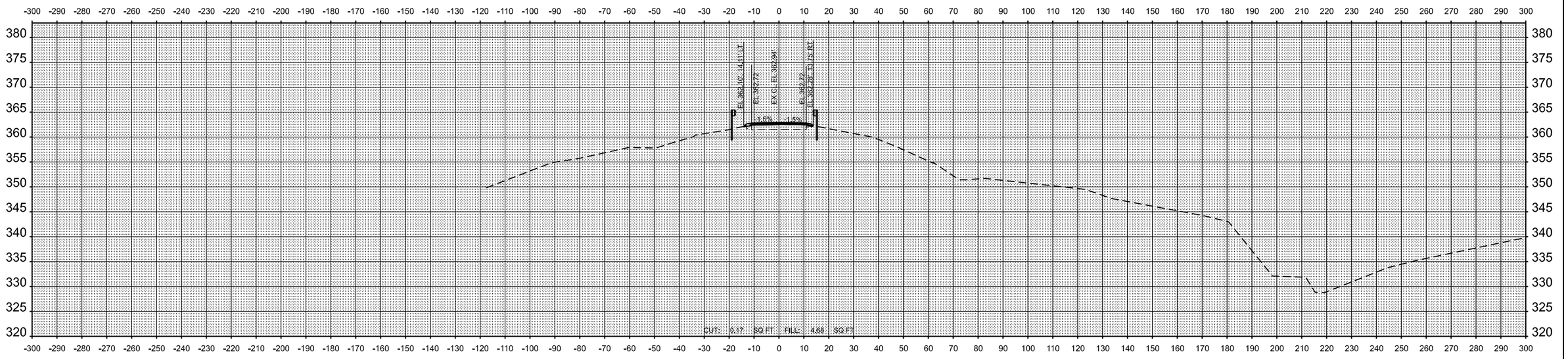
GRAPEVINE TRAIL OVER CLEAR CREEK
CROSS SECTIONS

SCALE: 1"=20' | SHEET OF SHEETS | STA. 84+00.00 | TO STA. 85+00.00

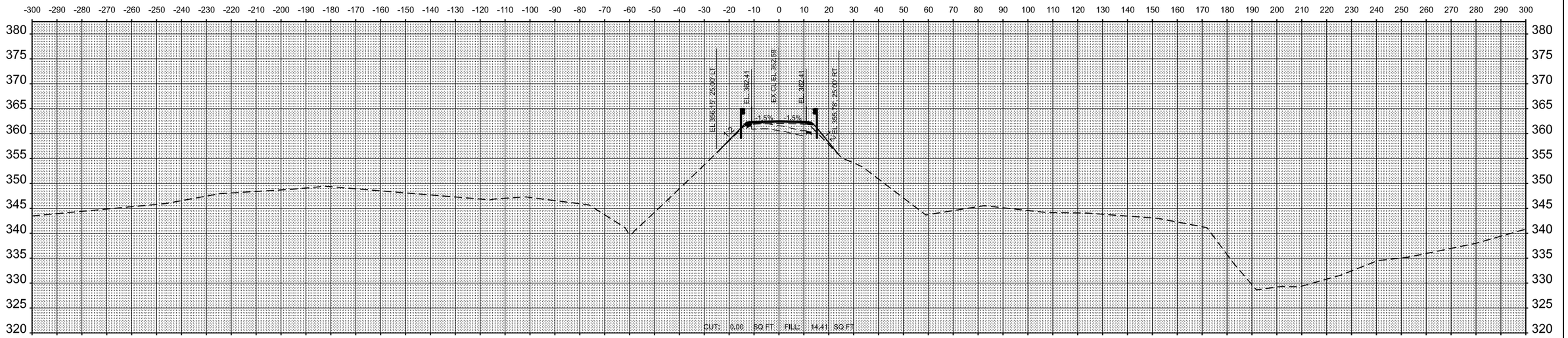
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	48
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT: ROG8(173)	

FINAL SURVEY / ORIGINAL SURVEY
NOTE BOOK NO.
SURVEYED / PLOTTED / TEMPLATE / AREAS / AREAS CHECKED
BY
DATE

MODEL: Grapevine - 84+00.00
FILE NAME: c:\users\gsmothers\appdata\local\bentley\projectwise\workingdir\b1\fwme-pw.bentley.com_b1\fwme-pw-01\greg.smothers\d0148338\D9_XXXXX-sht-XSC.dgn



STA 90+00.00



STA 89+60.00

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREEK
CROSS SECTIONS

SCALE: 1"=20' | SHEET OF SHEETS | STA. 89+60.00 | TO STA. 90+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	49
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGS(173)		

FINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

ORIGINAL SURVEY
NOTE BOOK
NO.
SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED
BY
DATE

MODEL: Grapevine - 89+50.00
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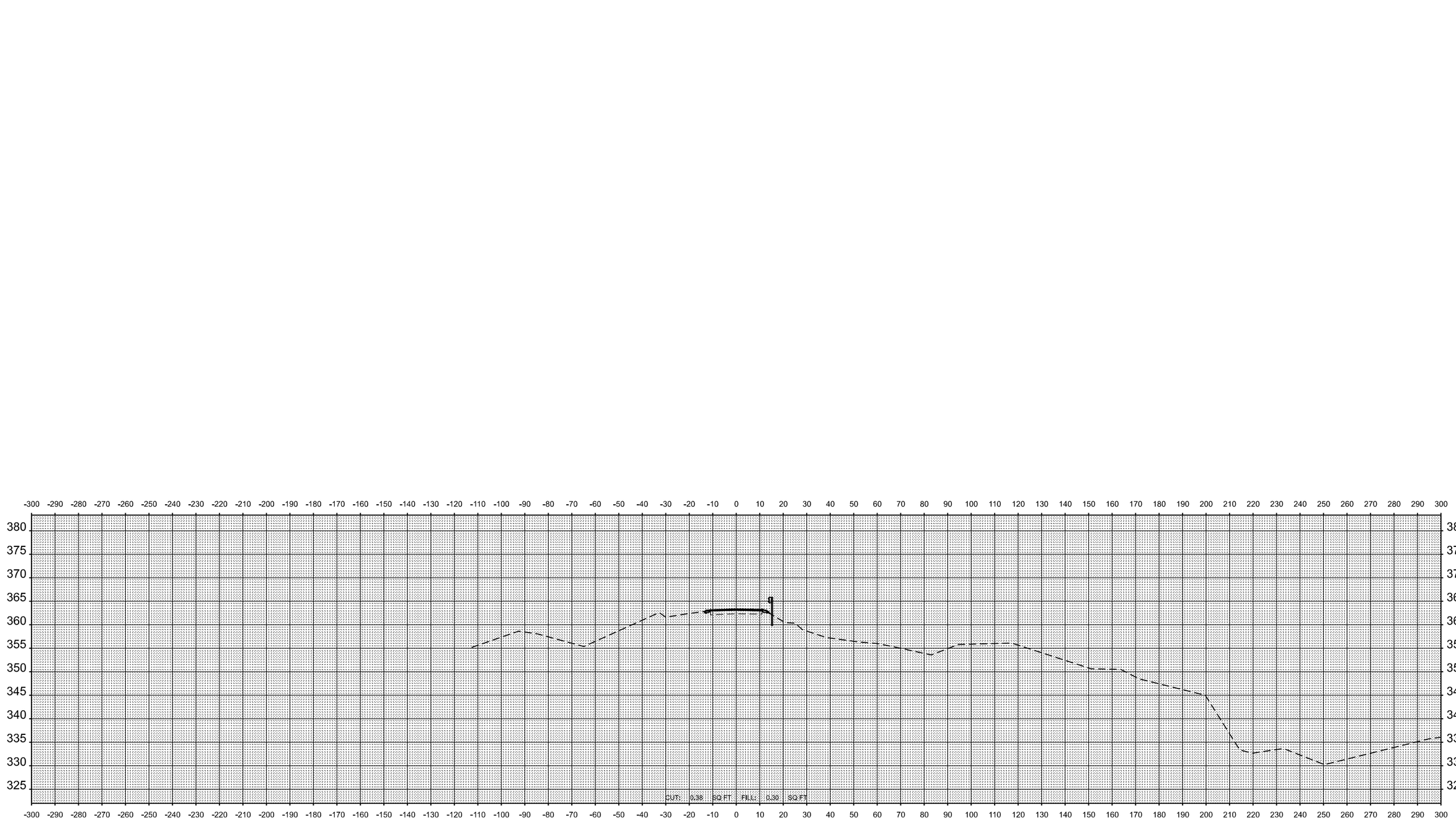
FINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
NO.	PLOTTED		
	TEMPLATE		
	AREAS		
	AREAS CHECKED		



STA 90+50.00

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USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 0.16666633 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 4/2/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

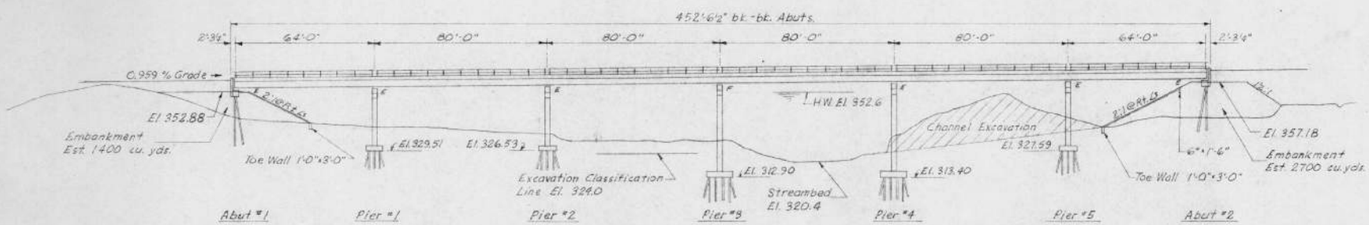
GRAPEVINE TRAIL OVER CLEAR CREEK
CROSS SECTIONS

SCALE: 1"=20' | SHEET OF SHEETS | STA. 90+50.00 | TO STA. 90+50.00

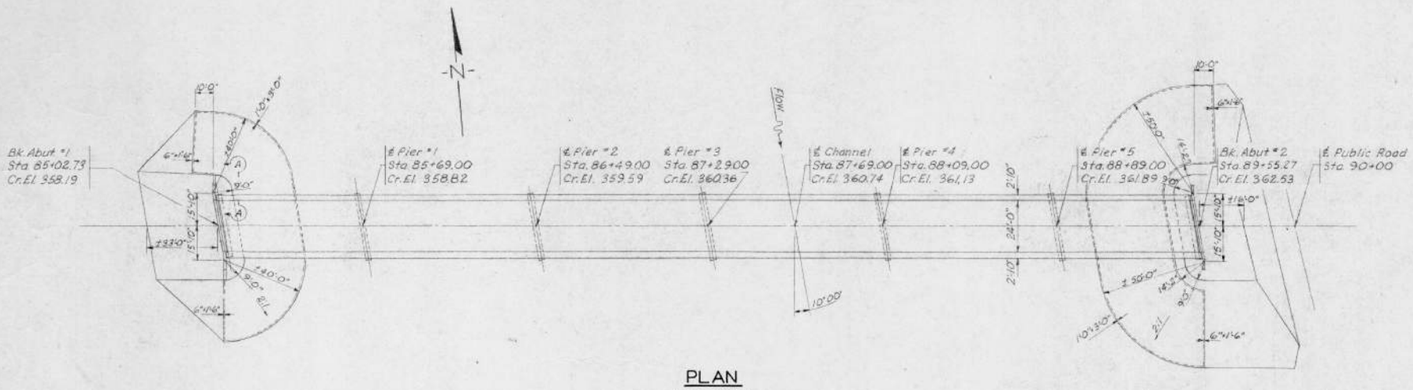
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	50
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

B.M.-U.S.G.S. 35' Lt. Sta. 90+68. El. 362.94
No Existing Structure

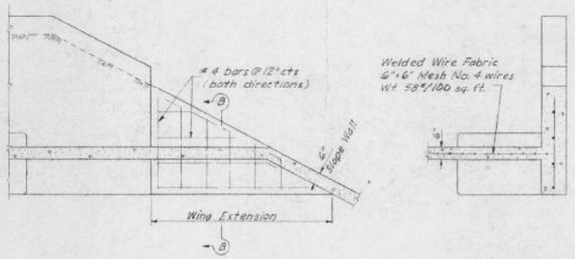
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RT 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	S-886(1)	



ELEVATION
Scale 1"=30'

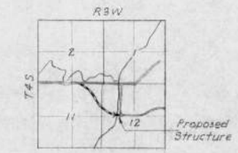


PLAN
Scale 1"=30'



SECTION A-A

SECTION B-B



LOCATION SKETCH

STATION 87+29
BUILT 1958 BY
STATE OF ILLINOIS
F.A.S. RT. 945 SEC. 32B
F.A. PROJECT S-886(1)
LOADING H15-S12

LETTERING FOR NAME PLATE
See Std. 2113

WATERWAY INFORMATION

Required Opening (U.S. Corps of Engrs.)	8059 sq. ft.
Proposed Opening	8059 sq. ft.

DESIGN STRESSES

f_c = 1,400 p.s.i.
f_s = 20,000 p.s.i. (Reinf.)
f_s = 18,000 p.s.i. (Struct.)
Max. v in Pier Footings = 75 p.s.i.
n = 10

LOADING H15-S12

GENERAL NOTES

Class X Concrete shall be used throughout except in piers.
Class A Concrete shall be used in piers.
The concrete floor slab shall be finished in accordance with Art. 51.18 (a) of the Standard Specifications.
Slope Wall shall be reinforced with welded wire fabric 6"x6" mesh, #4 wires, weighing 58# per 100 sq. ft.
Layout of slope walls may be varied to suit ground conditions in the field, as directed by the Engineer.
Rivets ⅞"ϕ, Open holes 15/16"ϕ, unless noted.
Field connections riveted, unless noted.
All rockers, bolsters, bearing plates, lead plates, pintles and anchor bolts shall be fabricated and set in accordance with Art. 511.14 of the Std. Specs. and are included in quantity of structural steel. Estimated weight = 10,635 lbs.
Anchor bolts shall be set before riveting diaphragms over supports.
All holes for splices shall be punched 11/16"ϕ and reamed to proper size with all stringers assembled in shop in proper position. Leave assembled in shop for inspection.
Metal handrail posts shall be vertical.
Roadway expansion guards shall be assembled in the shop in proper position with the adjacent ends in place and shall be left assembled for shop inspection.
Plates shall be flame cut as provided in Art. 505.4 (1) of the Std. Specs.
Expansion guards are included in quantity of structural steel.
All surfaces of the expansion guard inaccessible after erection, and not in contact with the concrete shall be given two (2) shop coats of red lead paint.
Except as otherwise provided, all structural steel and metal handrail shall receive one (1) shop coat of red lead paint and two (2) field coats of aluminum paint. See Art. 507.1 through 507.5 inclusive, of the Standard Specifications.
All paint shall be furnished and applied by the Contractor.
Embankments shall be constructed to the elevations shown in accordance with Sec. 16 of the Std. Specs. before abutment piles are driven.
All abutment piles shall be driven in holes (dia. of pile +4" min.) drilled thru the entire depth of fill so that piles are driven into natural ground.
The Contractor shall drive 5 concrete test piles as directed by the Engineer, one in each of the following locations: Abut. #1, Pier # 2, Pier #3, Pier #4 & Abut #2, before ordering or casting the remainder of the piles.
Excavation required for Toe Walls & other cut off walls around the exterior of the Slopewalls shall be considered incidental to the price bid per sq. yd. of Slope Wall.
Boring Data are shown on the plans only as a guide to bidders in estimating soil conditions which may be encountered in the work.
Unless otherwise shown on the plans, Reinforcing Bars shall be lapped 24 bar diameters, but not less than 18 inches.
Embankment cones @ abutments shall be placed prior to construction of Piers 1 & 5.
The Contractor shall construct the Embankments from Borrow Excavation and from the available Channel Excavation. The limits of Channel Excavation shall extend 90' to the Right & 90' to the Left of the Centerline.

TOTAL BILL OF MATERIAL
SECTION 32B

ITEM		SUPER	SUB	TOTAL
Class X Concrete	Cu. Yds.	376.3	39.1	415.4
Class A Concrete	Cu. Yds.	–	345.7	345.7
Reinforcement Bars	Lbs.	64,900	36,465	101,365
Erecting Structural Steel	Lbs.	398,875	–	398,875
Erecting Metal Handrail	Lin. Ft.	900	–	900
Concrete Piles	Lin. Ft.	–	4287	4287
Test Piles (Concrete)	Ea.	–	5	5
Slope Wall	Sq. Yds.	–	1306	1306
Class A Excavation for Structures	Cu. Yds.	–	310	310
Class B Excavation for Structures	Cu. Yds.	–	290	290
Channel Excavation	Cu. Yds.	–	4000	4000
Borrow Excavation	Cu. Yds.	–	1000	1000
Name Plate	Ea.	1	–	1

TOTAL BILL OF MATERIAL
SECTION 32F

ITEM		TOTAL
Erecting Structural Steel	Lbs.	398,875
Erecting Metal Handrail	Lin. Ft.	900

GENERAL PLAN & ELEVATION
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

SHEET 1 OF 10

USER NAME = gsmothers	DESIGNED -	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT	GRAPEVINE TRAIL OVER CLEAR CREAK EXISTING BRIDGE PLANS	
	DRAWN -	REVISED -			
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -			
PLOT DATE = 2/17/2025	DATE -	REVISED -		SCALE: SHEET OF SHEETS STA. TO STA.	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	51
		CONTRACT NO. 99742		
		ILLINOIS	FED. AID PROJECT: ROGB(173)	

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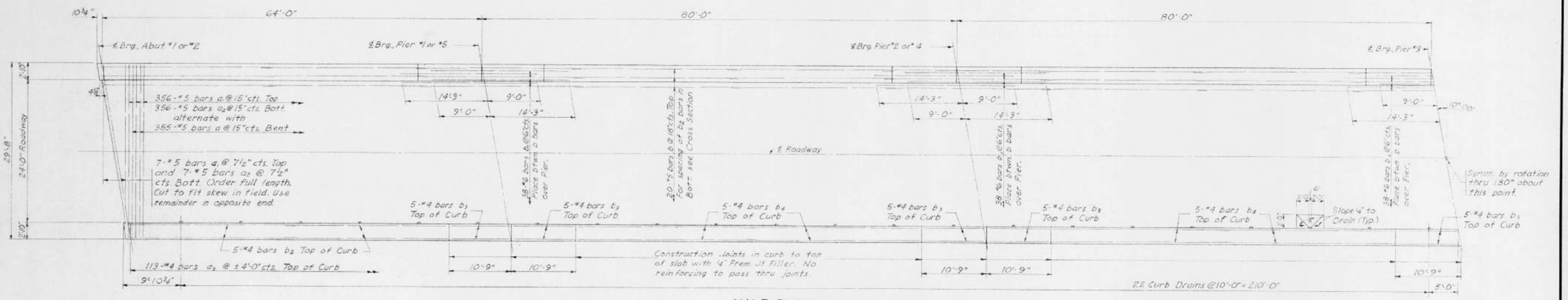
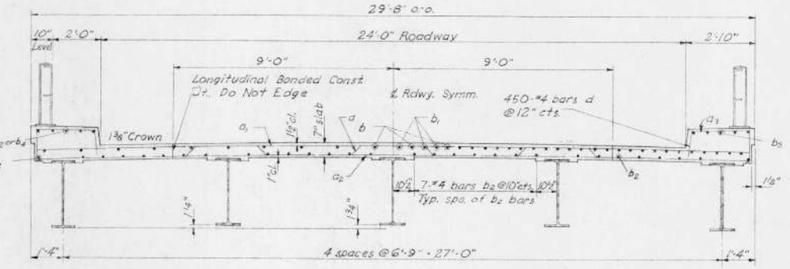
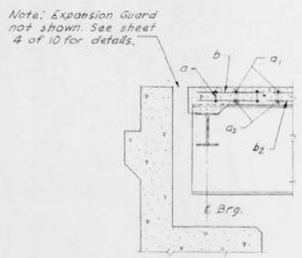
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		



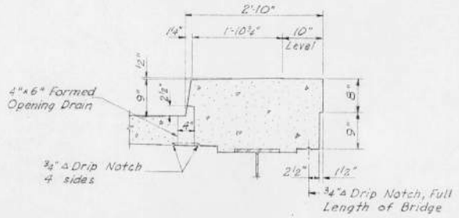
HALF PLAN



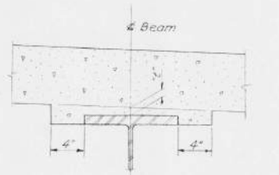
CROSS SECTION



SECTION THRU ABUTMENT

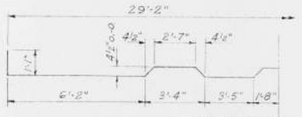


CURB & DRAIN DETAIL

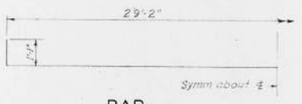


METHOD OF DETERMINING FILLET HEIGHTS "t"

After all Structural Steel has been erected, elevations of the top flanges of the beams shall be taken at intervals not to exceed 10 ft. From these elevations subtract the increment of deflection for these points, determined from the D.L. deflection diagram. The elevations so attained subtracted from the theoretical grade elevations, minus floor thickness, equals the fillet heights, "t" above top of beam.



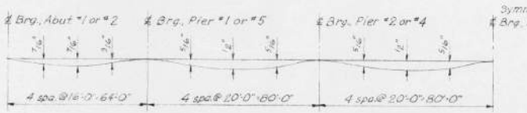
BAR a



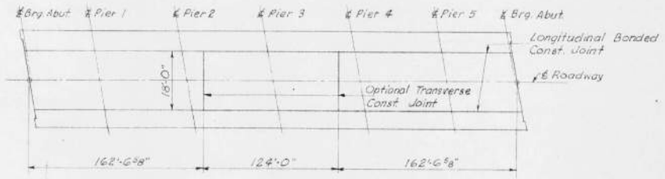
BAR a_2

SUPERSTRUCTURE BILL OF MATERIAL

BAR	NO.	SIZE	LENGTH	SHAPE
a	355	#5	32'-3"	
a_1	363	#5	29'-2"	
a_2	363	#5	3'-4"	
a_3	226	#4	2'-6"	
b	340	#5	27'-10"	
b_1	190	#6	23'-3"	
b_2	550	#4	27'-10"	
b_3	100	#4	10'-6"	
b_4	80	#4	29'-10"	
d	900	#4	14"	
Class X Concrete			Cu.Yds.	376.3
Reinforcement Bars			Lbs.	64,900
Structural Steel			Lbs.	398,875
Furnishing & Erecting Metal Handrail			Lin.Ft.	900



DEAD LOAD DEFLECTION DIAGRAM



OPTIONAL POUR SEQUENCE

SLAB
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

SHEET 2 OF 10

MODEL: Default
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	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

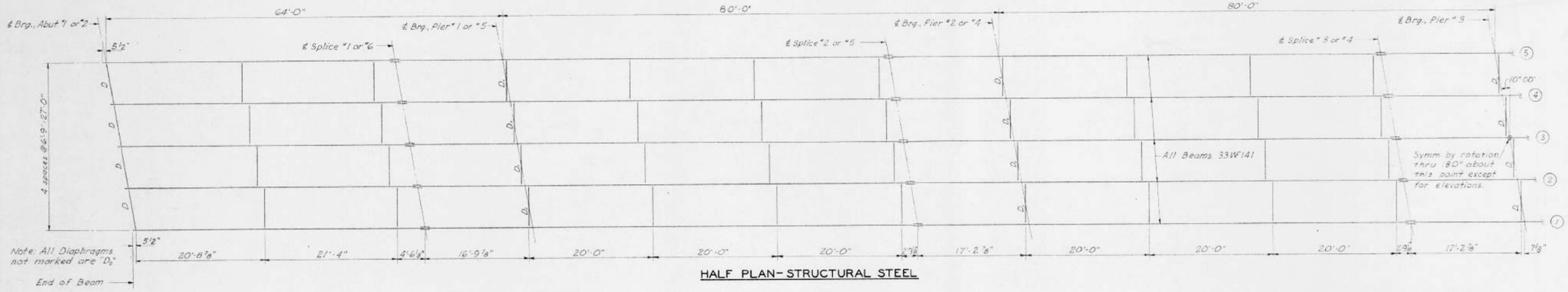
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

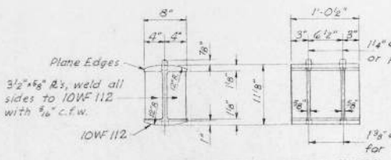
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	52
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		

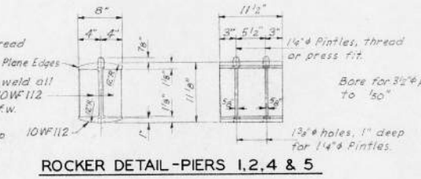
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	S-886(1)	



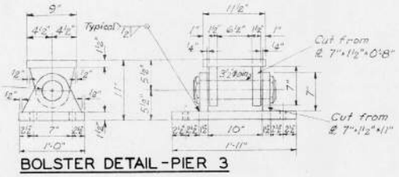
HALF PLAN - STRUCTURAL STEEL



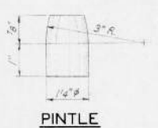
ROCKER DETAIL - ABUTMENTS



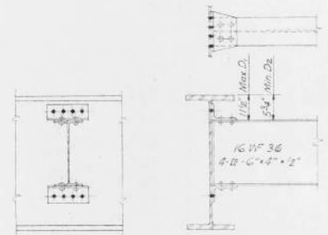
ROCKER DETAIL - PIERS 1,2,4 & 5



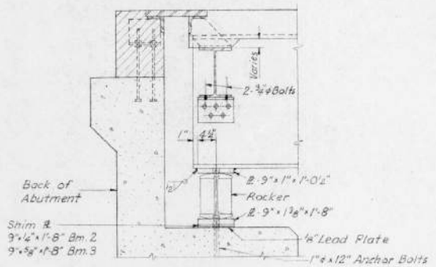
BOLSTER DETAIL - PIER 3



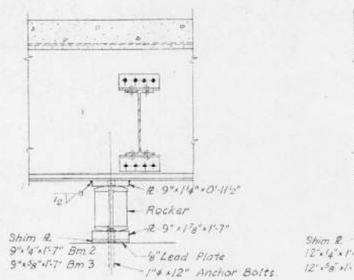
PINTLE



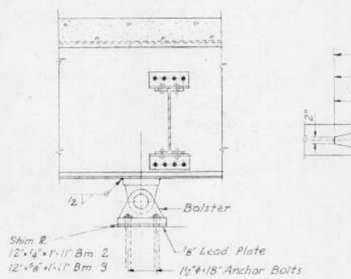
DIAPHRAGM D_1 & D_2



SECTION AT ABUTMENTS

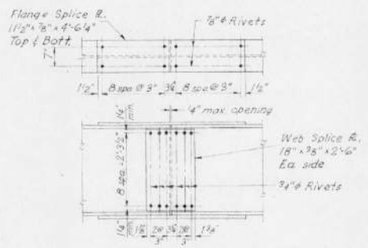


PIERS 1,2,4 & 5

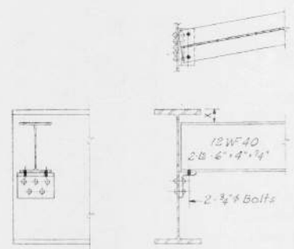


PIER 3

DETAIL - COVER PLATE



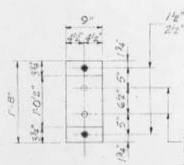
SPLICE DETAIL



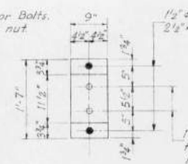
Abutment ℄ to ℄ 2

BEAM	1	2	3	4	5
X	3½"	4⅝"	5"	4⅝"	3"

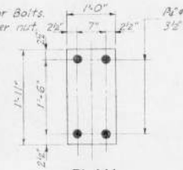
DIAPHRAGM D



PLAN



PLAN



PLAN
Showing Anchor Bolts

STRUCTURAL STEEL
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886(1)
ALEXANDER COUNTY
STA. 87+29

SHEET 3 OF 10

USER NAME = gsmothers	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	53
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		

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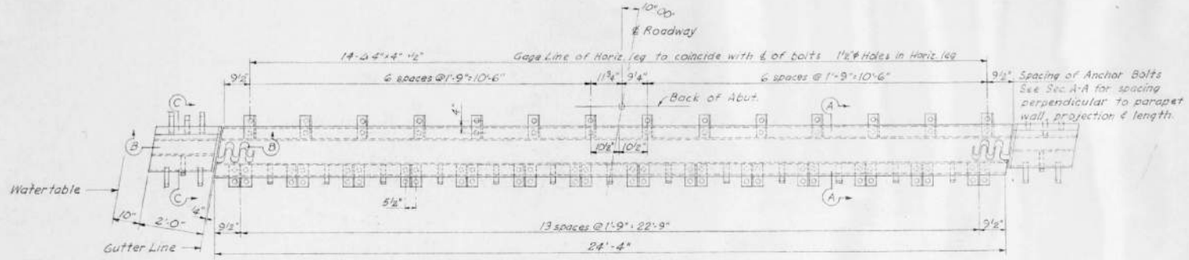
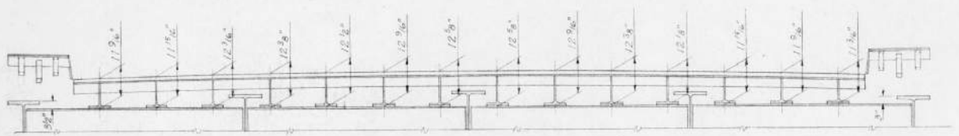
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		

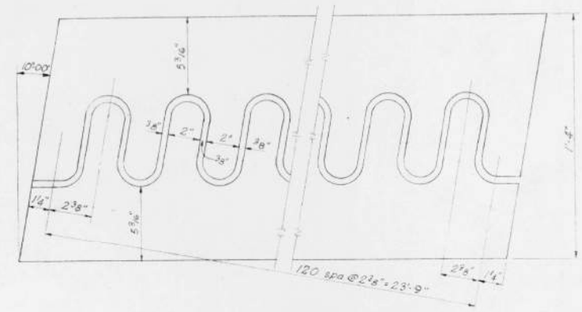


PLAN

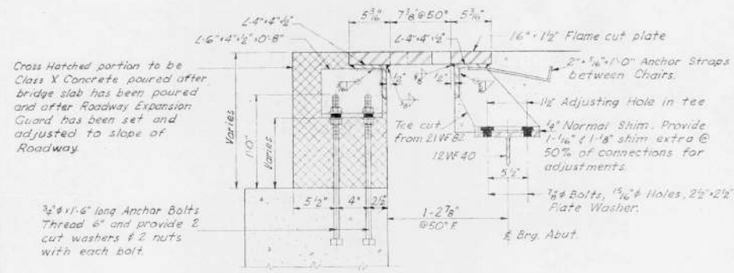


ELEVATION

West Abutment looking West
East Abutment looking West

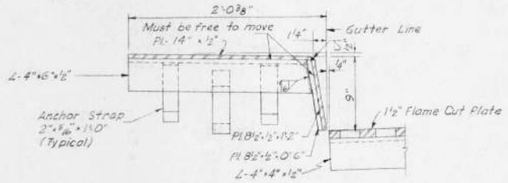


FLAME CUT PLATE DETAIL

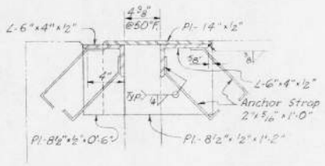


SECTION A-A

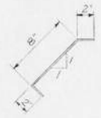
At ℄'s to Abutment



SECTION B-B



SECTION C-C



ANCHOR STRAP DETAIL

Typical

EXPANSION GUARD
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886(1)
ALEXANDER COUNTY
STA. 87+29

SHEET 4 OF 10

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	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -
PLOT DATE = 2/17/2025	DATE -	REVISED -

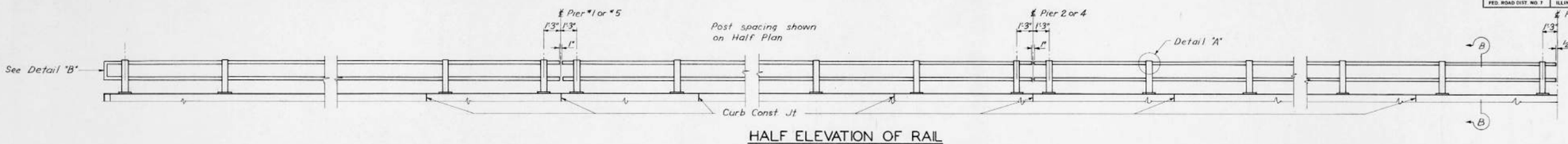
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

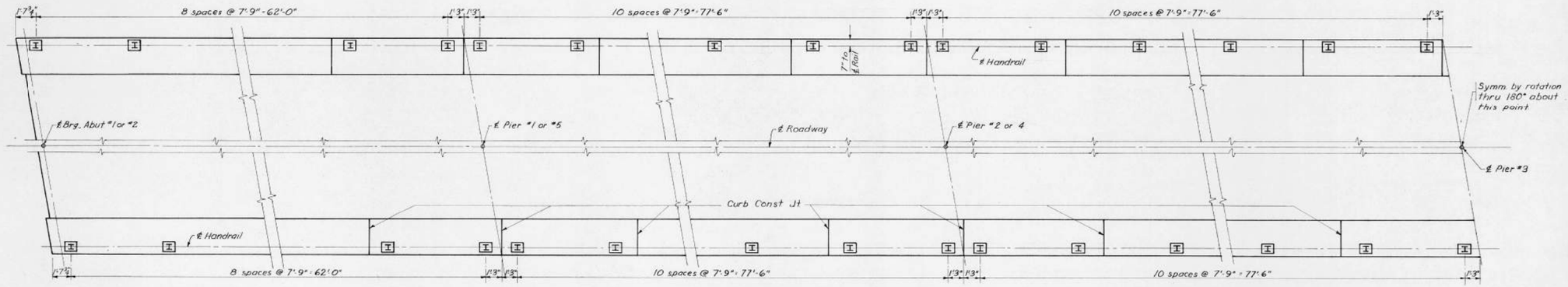
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	54
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

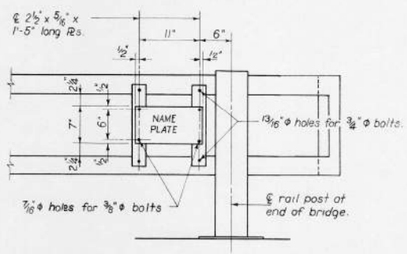
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		



HALF ELEVATION OF RAIL

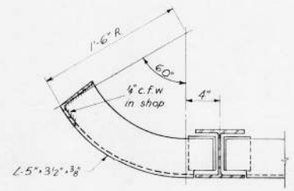


HALF PLAN

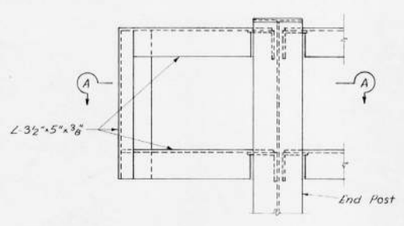


NAME PLATE DETAIL

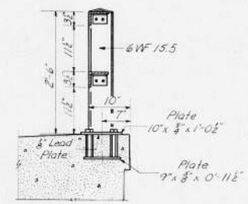
(Southwest corner of Bridge)



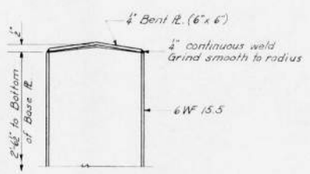
SECTION A-A



DETAIL "B"

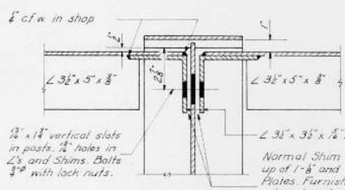


SECTION B-B

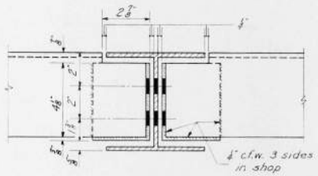


CAP DETAIL

Side View



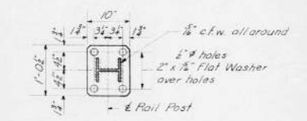
ELEVATION



PLAN

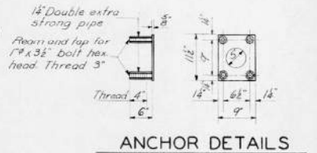
DETAIL "A"

Typical Connection



RAIL POST BASE PLATE

10" x ⅜" x 1'-0½"



ANCHOR DETAILS

Plate 9" x ⅜" x 0'-11½" Ship with 1" x 3½" Bolts in place

BILL OF MATERIAL

Furnishing & Erecting Metal Handrail	Lin. Ft.	900

HANDRAIL
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886(1)
ALEXANDER COUNTY
STA. 87+29

SHEET 5 OF 10

MODEL: Default
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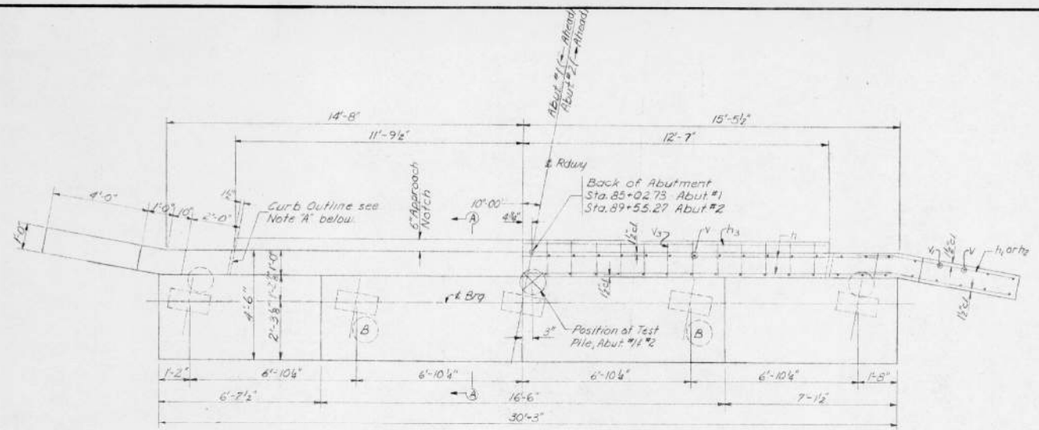
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

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

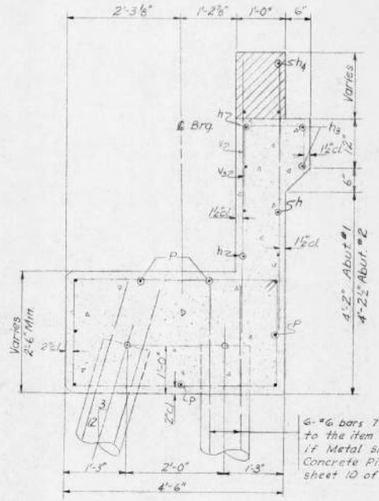
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	55
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0GB(173)		

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32 B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		



Piles marked "B" to be battered 3 in 12.

PLAN OF ABUTMENT



Note: Expansion Guard not shown. See sheet 4 of 10 for Details.

6-#6 bars 7'-3" long, Incidental to the item "Concrete Piles" if Metal Shell Cast in Place Concrete Piles are used. See sheet 10 of 10.

SECTION A-A

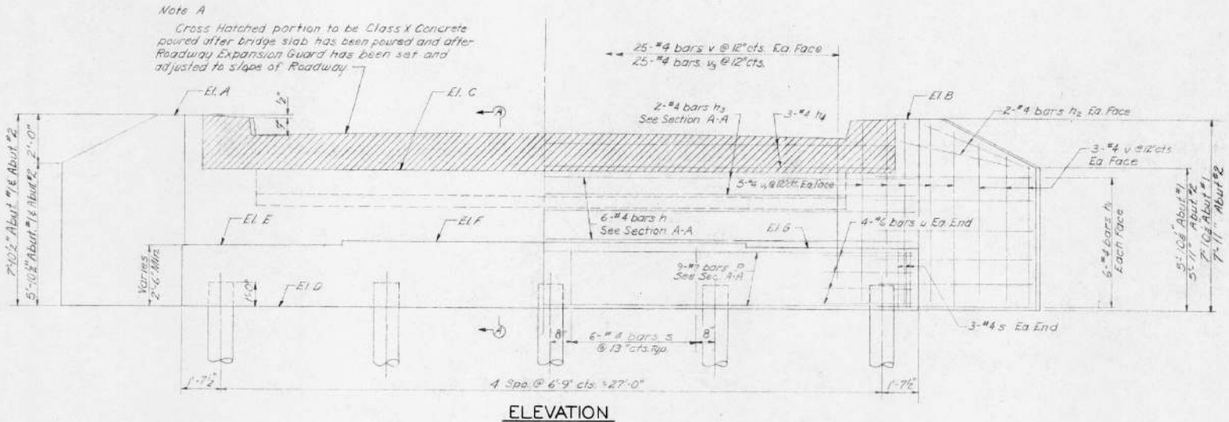
PILE DATA

Type	Concrete
Capacity	20 Tons
Est. Length	Abut. #1 65', Abut. #2 60'
No. Reqd. (2 Abuts.)	10 *

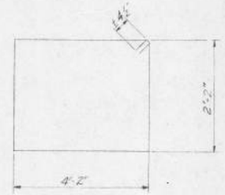
* Includes 2 test piles.

Note A

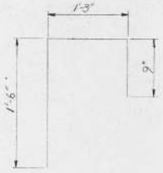
Cross Hatched portion to be Class X Concrete poured after bridge slab has been poured and after Roadway Expansion Guard has been set and adjusted to slope of Roadway.



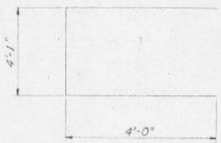
ELEVATION



BAR s



BAR v_3



BAR u

BAR h_1

BILL OF MATERIAL - 2 ABUTS.

Bar	No	Size	Length	Shape
h	12	#4	30'-0"	
h_1	48	#4	6'-3"	
h_2	16	#4	4'-6"	
h_3	4	#4	24'-0"	
h_4	6	#4	28'-2"	
P	18	#7	30'-0"	
S	60	#4	13'-5"	
U	16	#6	12'-1"	
V	124	#4	5'-6"	
V_1	40	#4	7'-0"	
V_3	50	#4	3'-6"	
Class X Concrete			Cu Yds	39.1
Reinforcement Bars			Lbs	3355
Concrete Piles			Lin Ft	500
Test Piles			Ea	2

TABLE OF ELEVATIONS

	A	B	C	D	E	F	G
Abutment #1	368.87	358.85	356.68	355.10	353.56	353.63	353.51
Abutment #2	363.19	363.23	361.02	355.53	352.81	357.03	357.56

ABUTMENTS
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

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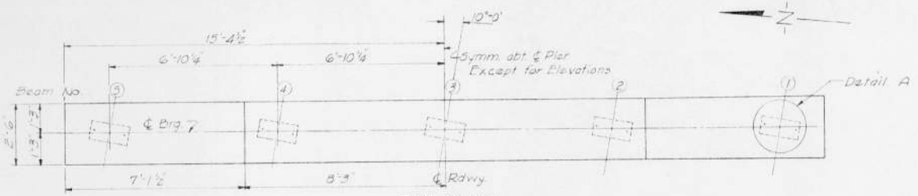
USER NAME = gsmothers	DESIGNED -	REVISED -	STATE OF ILLINOIS ALEXANDER COUNTY HIGHWAY DEPARTMENT
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

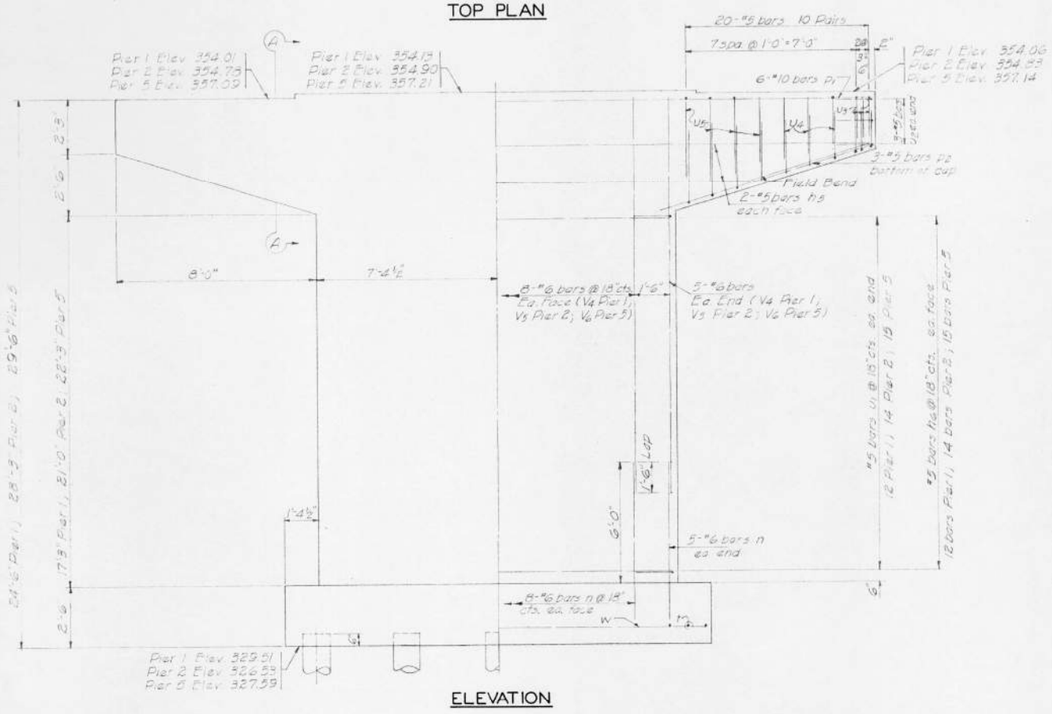
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	56
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		

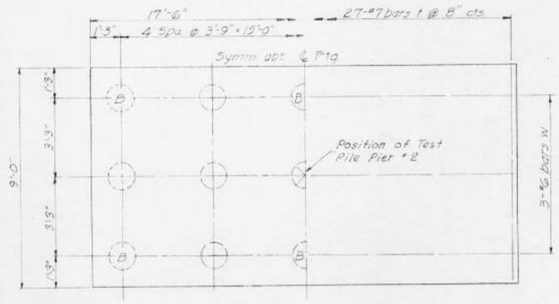
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		



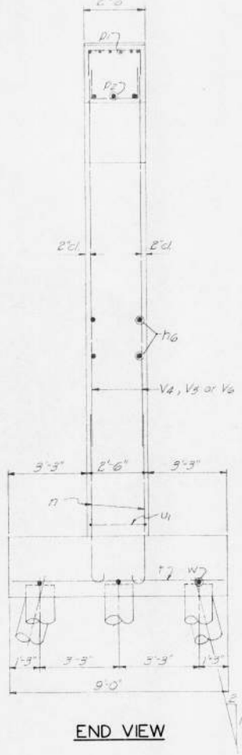
TOP PLAN



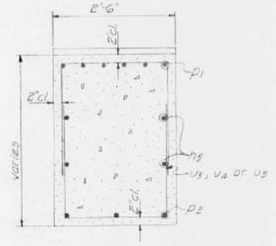
ELEVATION



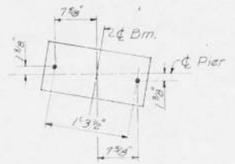
FOOTING PLAN



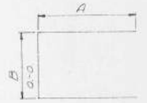
END VIEW



SECTION A-A

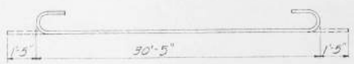


DETAIL A

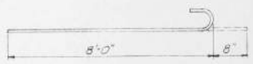


Bar	A	B
U1	1'-6"	2'-0½"
U2	2'-3"	2'-0½"
U3	1'-10"	2'-2"
U4	2'-3"	2'-2"
U5	2'-11"	2'-2"

BAR u



BAR p



BAR n

Note: Piles marked "B" shall be driven to batter as shown in End View.

PILE DATA

	Pier 1 Concrete	Pier 2 Concrete	Pier 5 Concrete
Type			
Capacity	26T	26T	26T
Est Length	49'	51'	52'
No. Required	15	19*	15

* Includes one test pile

BILL OF MATERIAL
PIERS 1,2 & 5

Bar	No.	Size	Length	Shape
h5	12	#5	30'-5"	——
h6	82	#5	14'-5"	——
n	78	#6	8'-8"	—)
P1	18	#10	33'-3"	( )
P2	18	#5	10'-0"	——
t	81	#7	8'-8"	——
U1	82	#5	5'-0"	⊏
U2	18	#5	6'-6"	⊏
U3	36	#5	6'-0"	⊏
U4	36	#5	6'-8"	⊏
U5	48	#5	8'-0"	⊏
V4	26	#6	17'-4"	——
V5	26	#6	21'-1"	——
V6	26	#6	22'-4"	——
W	9	#6	17'-8"	——
Class A Concrete		Cu Yds.	161.4	
Reinforcement Bars		Lbs.	10,860	
Concrete Piles		Lin Ft.	2229	
Test Piles		Ea.	1	
Class A Excavation for Structures		Cu Yds.	200	

PIERS 1,2 & 5
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

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	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -
PLOT DATE = 2/17/2025	DATE -	REVISED -

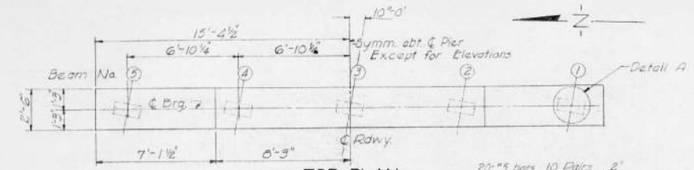
STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

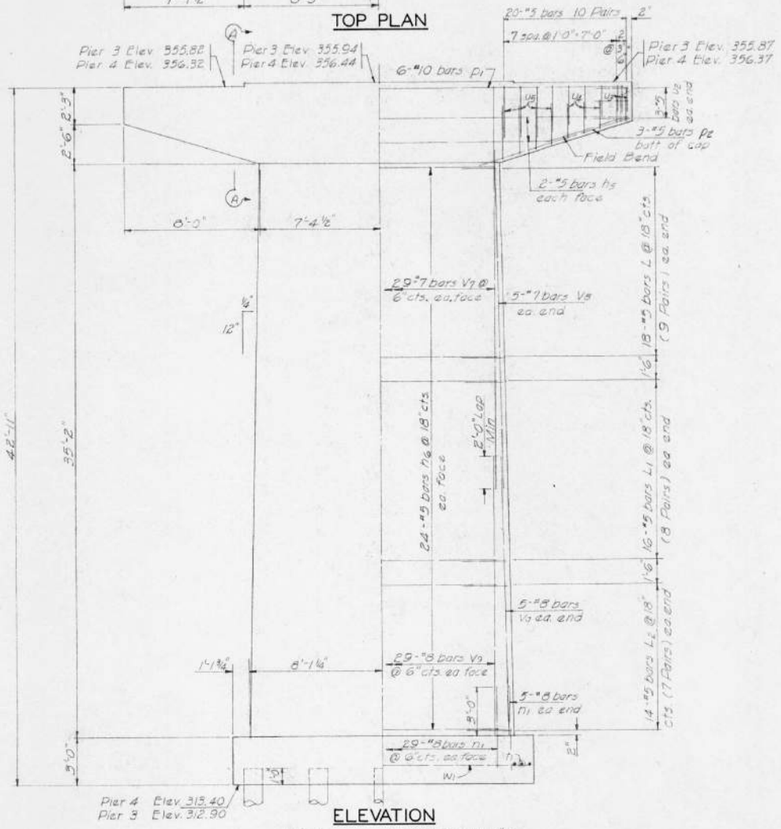
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	57
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGB(173)		

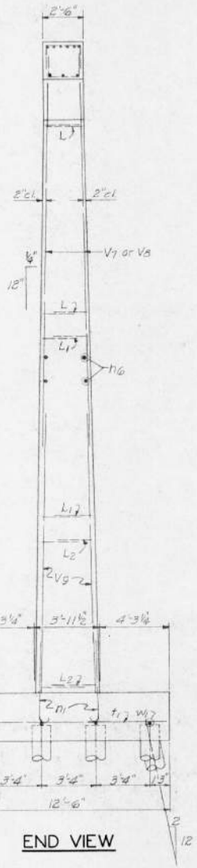
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAS RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	S-886 (1)	



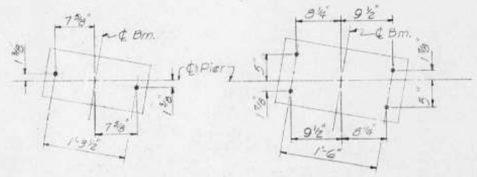
TOP PLAN



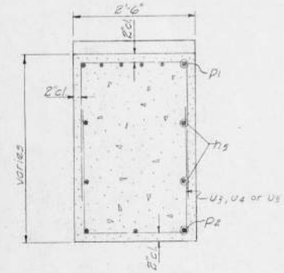
ELEVATION



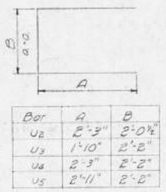
END VIEW



DETAIL A

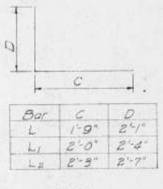


SECTION A-A



Bar	A	B
U2	2'-3"	2'-0½"
U3	1'-10"	2'-2"
U4	2'-3"	2'-2"
U5	2'-11"	2'-0"

BAR U

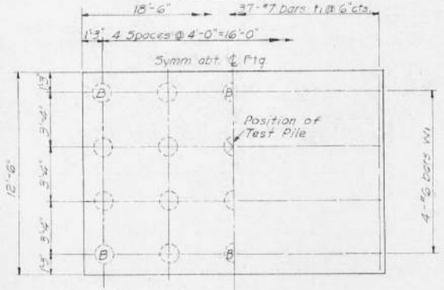


Bar	C	D
L	1'-9"	2'-1"
L1	2'-0"	2'-4"
L2	2'-3"	2'-7"

BAR L

BAR P1

BAR n1



FOOTING PLAN

Note: Piles marked 'B' shall be driven to batter shown in End View.

PILE DATA

	Pier 3	Pier 4
Type	Concrete	Concrete
Capacity	35*	35*
Est Length	41'	41'
No. Required	20*	20*

* Includes one test pile

BILL OF MATERIAL
PIERS 3 & 4

Bar	No.	Size	Length	Shape
h5	8	#5	30'-5"	——
h6	98	#5	14'-5"	——
L	72	#5	3'-10"	L
L1	64	#5	4'-4"	L
L2	56	#5	4'-10"	L
n1	136	#8	6'-1"	⊃
P1	12	#10	33'-9"	C ⊃
P2	12	#5	10'-0"	——
t1	74	#7	12'-2"	——
U2	12	#5	6'-6"	⊏
U3	24	#5	6'-0"	⊏
U4	24	#5	6'-8"	⊏
U5	32	#5	8'-0"	⊏
V7	116	#7	24'-7"	——
V8	20	#7	21'-0"	——
V9	136	#8	17'-2"	——
W1	8	#6	18'-2"	——

Class A Concrete	Cu.Yds.	204.3
Reinforcement Bars	Lbs.	22,250
Concrete Piles	Lin.Ft.	1558
Test Piles	Ea.	2
Class A Excavation for Structures	Cu.Yds.	110
Class B Excavation for Structures	Cu.Yds.	290

PIERS 3 & 4
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

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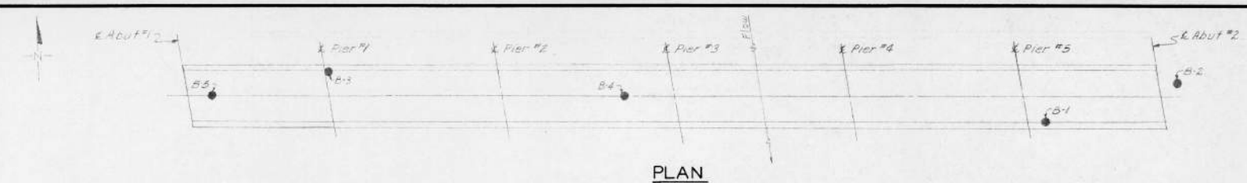
	DRAWN -	REVISED -	
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -	
PLOT DATE = 2/17/2025	DATE -	REVISED -	

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

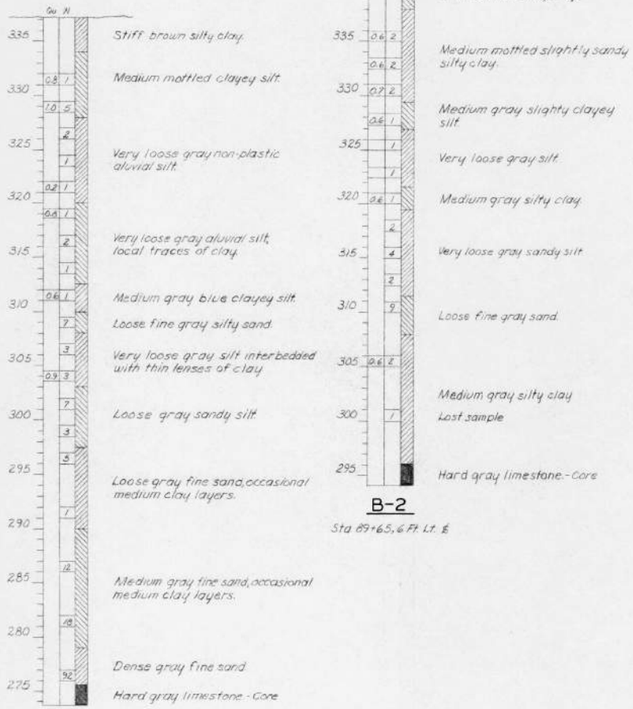
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	58
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: ROGS(173)		

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.S. RT. 945	32B	ALEXANDER		
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT S-886(1)		

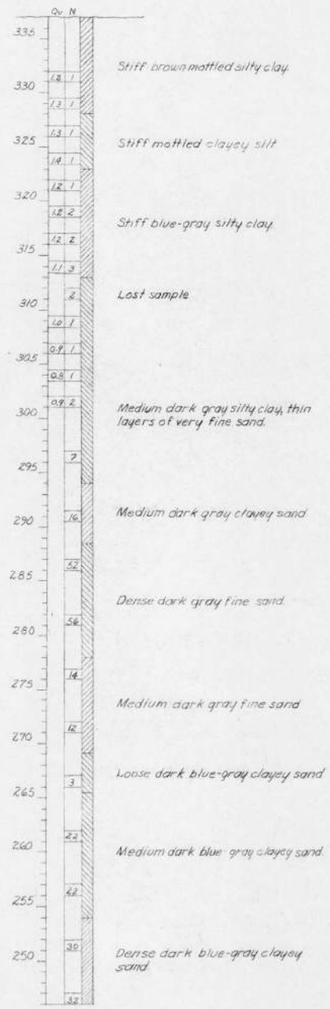


PLAN
No Scale

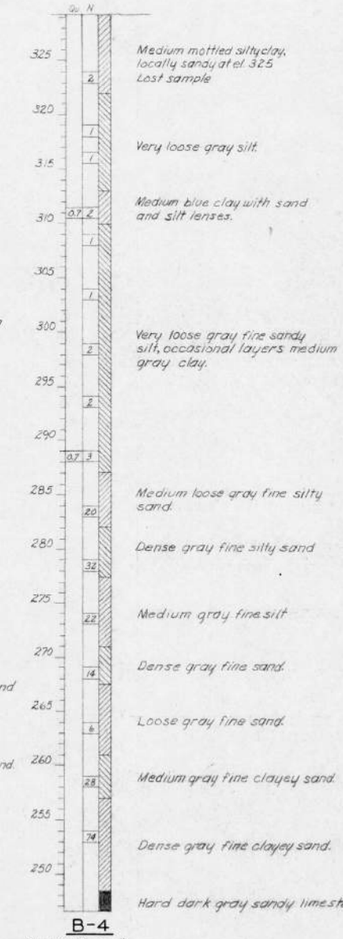


B-1
Sta. 89+00, 12 Ft. Rt. ℄

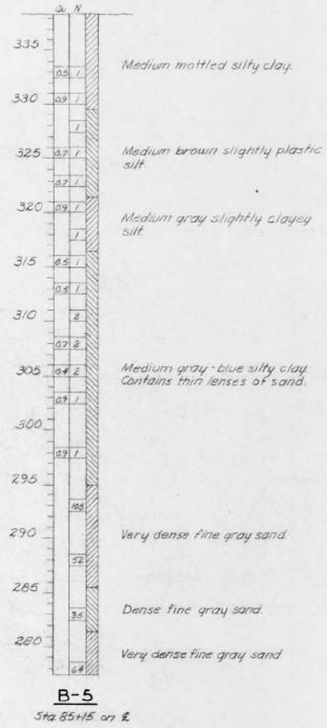
B-2
Sta. 89+65, 6 Ft. Lt. ℄



B-3
Sta. 85+69, 11 Ft. Lt. ℄



B-4
Sta. 87+07 on ℄



B-5
Sta. 85+15 on ℄

N= the number of blow to drive a 1⅜" I.D., 2" O.D. split spoon sampler 12" by means of a 350" weight falling 12".
Qu= the unconfied compressive strength of the soil in tons/sq ft.

BORINGS
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

SHEET 9 OF 10

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	DRAWN -	REVISED -
PLOT SCALE = 100.000 ' / In.	CHECKED -	REVISED -
PLOT DATE = 2/17/2025	DATE -	REVISED -

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	59
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		

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

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
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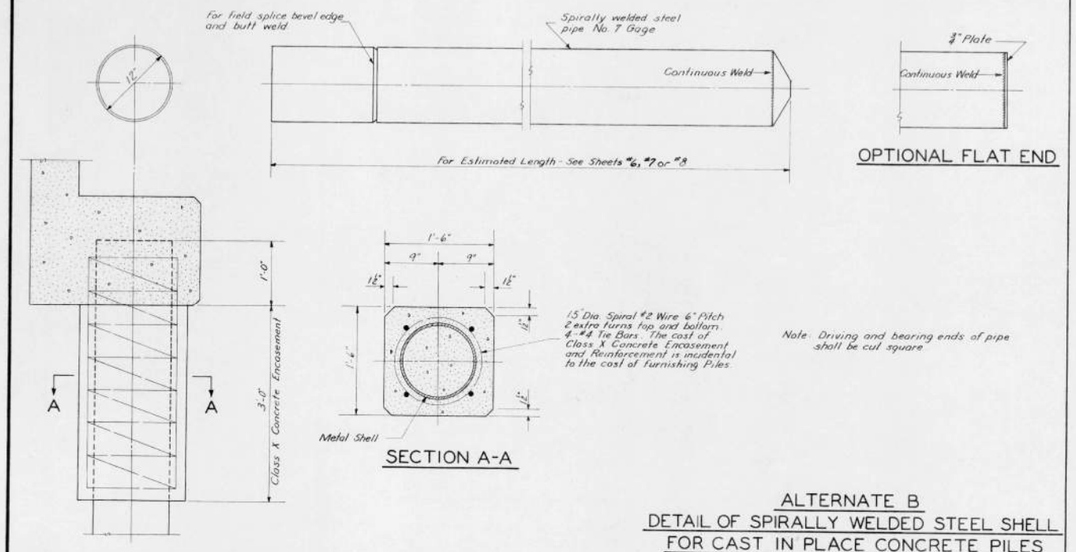
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT	S-886(1)	



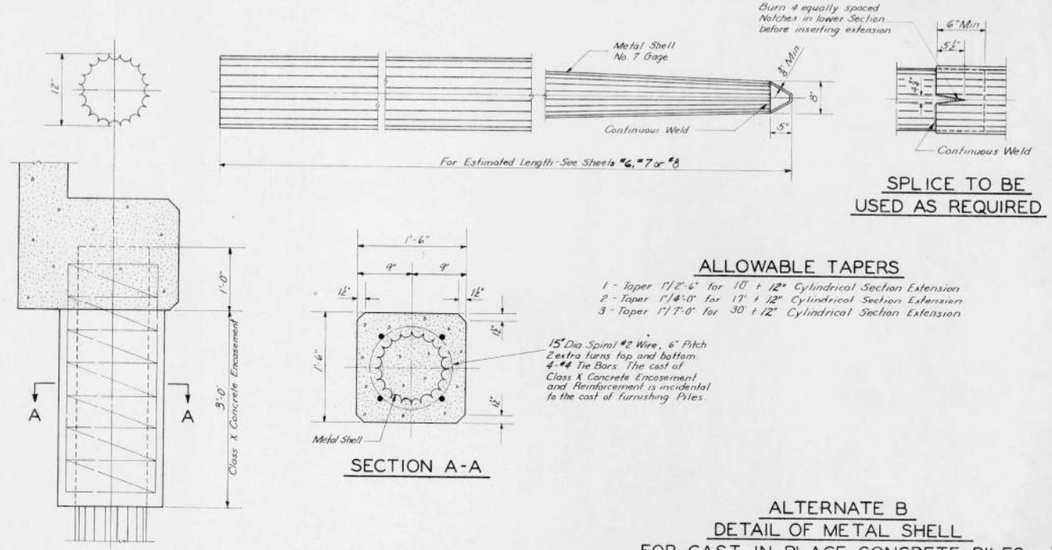
SECTION A-A

¾" Plate
Continuous Weld

OPTIONAL FLAT END

Note: Driving end bearing ends of pipe shall be cut square

ALTERNATE B
DETAIL OF SPIRALLY WELDED STEEL SHELL
FOR CAST IN PLACE CONCRETE PILES



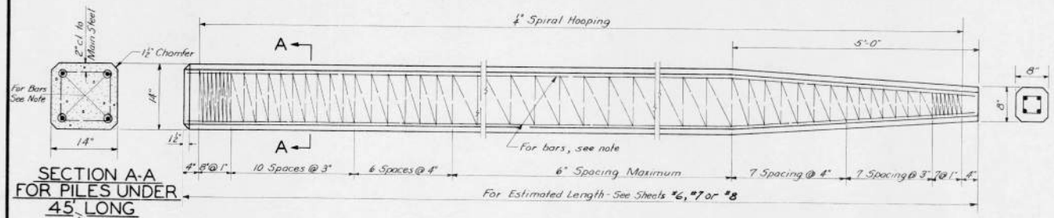
SPLICE TO BE USED AS REQUIRED

SECTION A-A

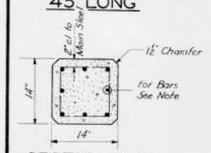
ALLOWABLE TAPERS

1 - Taper 1"/2'-6" for 10" ± 12" Cylindrical Section Extension
2 - Taper 1"/4'-0" for 17" ± 12" Cylindrical Section Extension
3 - Taper 1"/7'-0" for 30" ± 12" Cylindrical Section Extension

ALTERNATE B
DETAIL OF METAL SHELL
FOR CAST IN PLACE CONCRETE PILES



SECTION A-A
FOR PILES UNDER 45' LONG



SECTION A-A
FOR PILES 45' OR MORE

Note: For 14" Piles 45' long or more use 8 - #8 bars - 4 for the full length and 4 to the point of bevel.
For 14" Piles under 45'-0" long use 4 - #9 bars the full length.

Handling: For Pile lengths up 45 Ft. use two slings placed at a distance of 0.21 L* from each end.
For Piles longer than 45 Ft. use three slings placed at a distance of 0.1 L* from each end and at mid-point of pile.

* L - Over all length of pile to be handled

ALTERNATE A
DETAIL OF PRECAST CONCRETE PILES

PILE DETAILS
CLEAR CREEK BRIDGE
F.A.S. RT. 945 SEC. 32B-F
PROJECT S-886 (1)
ALEXANDER COUNTY
STA. 87+29

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	DRAWN -	REVISED -	
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PLOT DATE = 2/17/2025	DATE -	REVISED -	

STATE OF ILLINOIS
ALEXANDER COUNTY HIGHWAY DEPARTMENT

GRAPEVINE TRAIL OVER CLEAR CREAK
EXISTING BRIDGE PLANS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
945	22-00086-00-BR	ALEXANDER	60	60
		CONTRACT NO. 99742		
	ILLINOIS	FED. AID PROJECT: R0G8(173)		