

INDEX OF SHEETS

1	COVER SHEET
2	GENERAL NOTES AND HIGHWAY STANDARDS
3 - 6	SUMMARY OF QUANTITIES
7 - 8	TYPICAL SECTIONS
9	SUPERELEVATION TRANSITION DETAILS
10 - 11	SCHEDULE OF QUANTITIES
12	EARTHWORK SCHEDULE
13	ALIGNMENTS AND BENCHMARKS
14	REMOVAL PLANS
15	PLAN AND PROFILES
16	DETOUR PLANS
17	EROSION CONTROL PLANS
18	DRAINAGE PLAN AND PROFILES
19	PAVEMENT MARKING AND SIGNING PLANS
20 - 43	STRUCTURAL PLANS
44 - 49	MISCELLANEOUS DETAILS
50 - 62	CROSS SECTIONS

FOR LIST OF HIGHWAY STANDARDS, SEE SHEET NO. 2

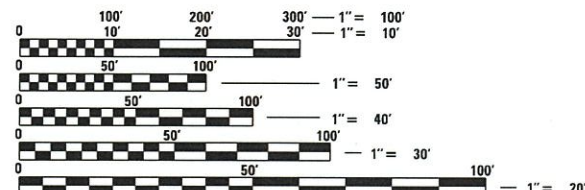
TRAFFIC DATA

MINKLER ROAD ADT: 3,850 (2019)

ROADWAY	SPEED POSTED	DESIGN SPEED
MINKLER ROAD	40 MPH	45 MPH

DESIGN DESIGNATION

MINKLER ROAD: MAJOR COLLECTOR



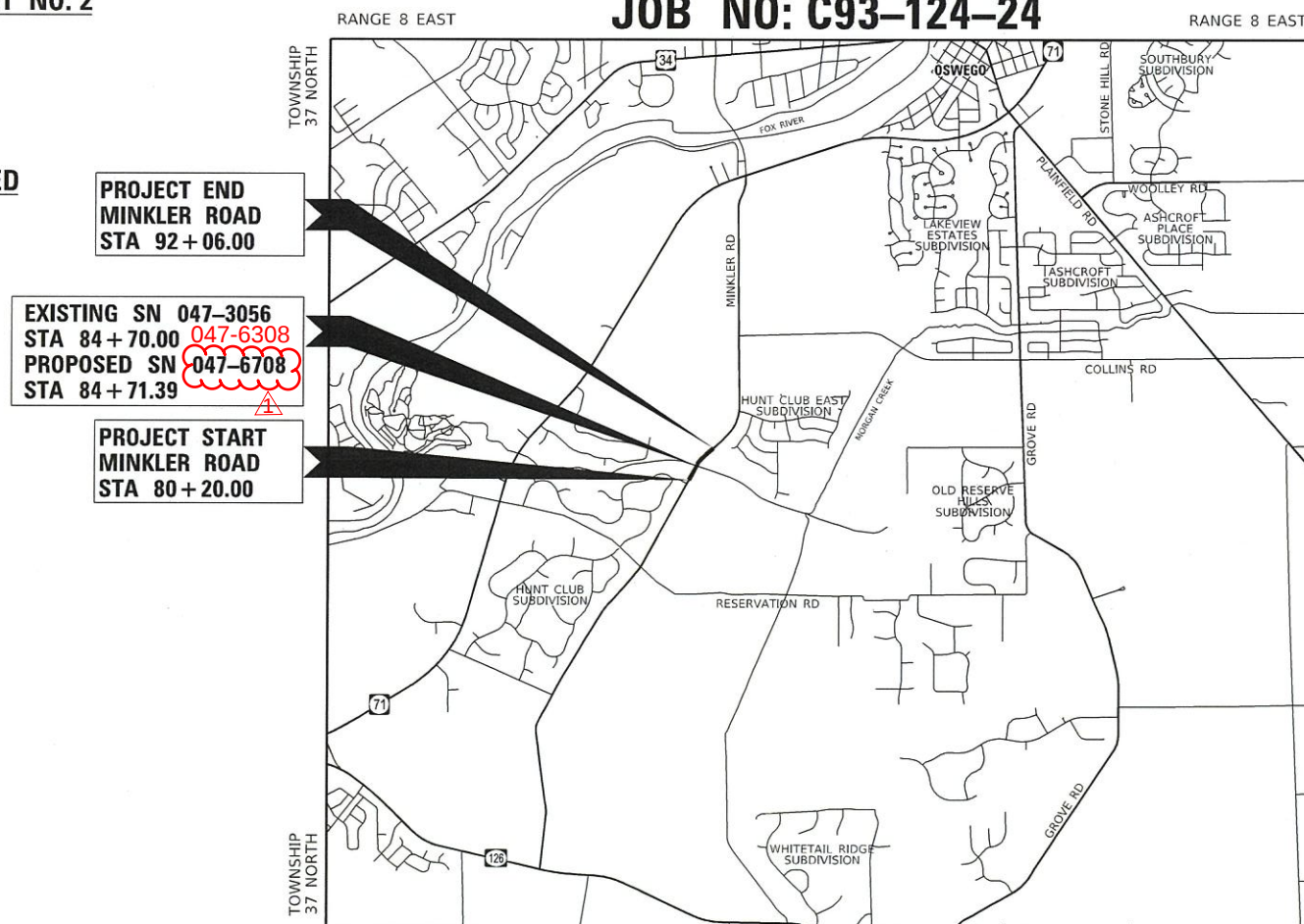
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

CONTRACT 87868

Revised Structure Number 10/30/2024

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PLANS FOR PROPOSED
FEDERAL AID HIGHWAY**
HSIP FUNDS
FAU ROUTE 3792
MINKLER ROAD BRIDGE
REPLACEMENT AND REALIGNMENT
VILLAGE OF OSWEGO
KENDALL COUNTY
SECTION: 21-00053-00-BR
PROJECT: Q1IV(172)
JOB NO: C93-124-24



LOCATION MAP
(NOT TO SCALE)

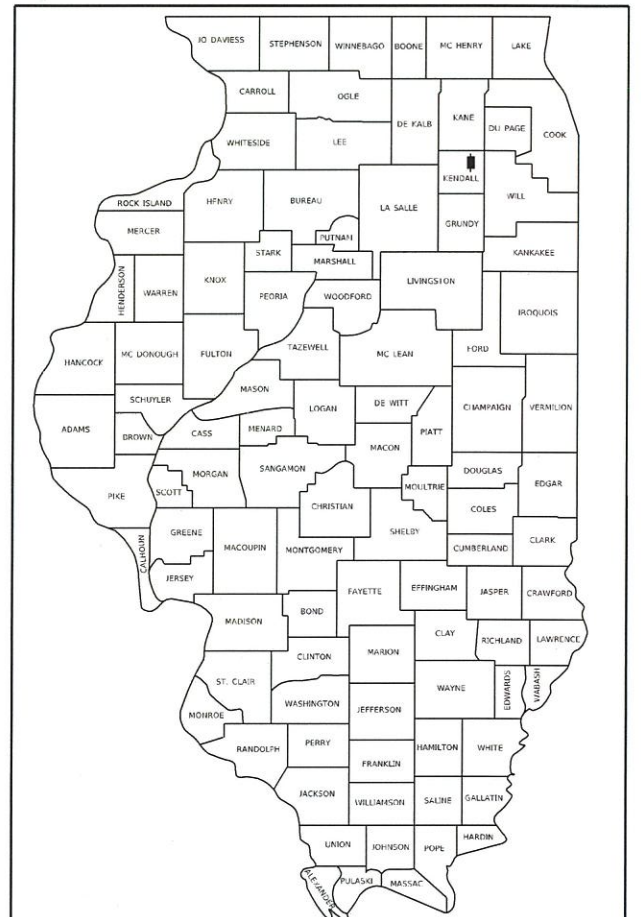
PROJECT GROSS AND NET LENGTHS
MINKLER ROAD = 1,186 FT. (0.23 MILES)

JASON M. ROITBURD, P.E.
NO. 062-065592
EXPIRES: 11/30/2025
HR GREEN, INC.
(APPLIES TO SHEETS 1-19, 44-62)

ANDY UNDERWAGER
ANDREW E. UNDERWAGER, P.E., S.E.
NO. 081-006218
EXPIRES: 11/30/2024
HR GREEN, INC.
(APPLIES TO SHEETS 20-43)



F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	1
HSIP FUNDS		ILLINOIS	CONTRACT NO. 87868	



LOCATION OF SECTION INDICATED THUS: -



HRGreen.com
Illinois Professional Design Firm
184-001322

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED August 15, 2024

Jennifer M. Hughes
VILLAGE OF OSWEGO

PASSED SEPTEMBER 6, 2024

Mike Thompson
DISTRICT 3 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID
BASED ON LIMITED REVIEW SEPTEMBER 6, 2024

Mike Thompson
REGION 2 ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

Benchmark: Disk found in top concrete structure on southwest corner. Elev.: 625.33 (NAVD 88)

Existing Structure: S.N. 047-3056 originally built in 1914 and reconstructed in 1980 is a single span PPC deck beam superstructure with a deck width of 26'-0" and a back to back of abutment length of 45'-0". Structure to be removed and replaced. Traffic is to be detoured.

No Salvage

HORIZONTAL CURVE DATA

PROP. CURVE PR_MINKLER_3
PI STA. = 86+04.43
 $\Delta = 19^\circ 02' 51"$ (RT)
 $R = 2,825.00'$
 $T = 473.95'$
 $L = 939.15'$
 $E = 39.48'$
P.C. STA. = 81+30.48
P.T. STA. = 90+69.63

LEGEND

- Soil Boring Location
- Aerial Utility
- Gas Utility
- Telephone Utility

WATERWAY INFORMATION TABLE

Drainage Area = 16.44 sq. mi.		Low Grade Elev. = 627.22 @ Sta. 83+22.92							
Flood	Freq. Yr.	Q C.F.S.	Opening Ft ²		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	700	171	207	615.30	0.0	0.1	615.30	615.40
Base	30	937	207	248	616.10	0.1	0.1	616.20	616.20
Overtopping	100	1,200	245	292	616.90	0.1	0.1	617.00	617.00
Max Calc.	500	1,580	296	349	618.00	0.1	0.2	618.10	618.20

DESIGN SCOUR ELEVATION TABLE

Event / Limit	Design Scour Elevations (ft.)		
State	S. Abut.	N. Abut.	Item 113
Q100	-	-	8
Q200	-	-	
Design	619.73	620.39	
Check	619.73	620.39	

RIPRAP LOCATION TABLE

Location	Station	Offset
A	84+23.38	33.69' Lt
B	85+01.75	33.58' Lt
C	84+30.38	21.56' Rt
D	84+30.08	42.12' Rt
E	85+30.85	41.80' Rt
F	85+30.42	21.46' Rt

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f'_c = 4,000$ psi (Superstructure)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50W)

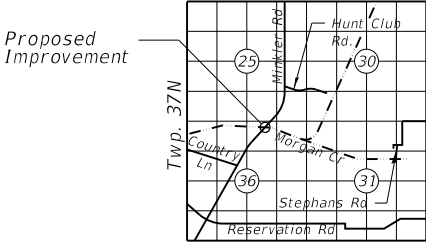
LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.061g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.125g
Soil Site Class = C

Range 7E, 3rd P.M.



LOCATION SKETCH

To the best of my knowledge, information and belief, this culvert 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 the requirements of the current "AASHTO LRFD Bridge Design Specifications".

Andy Underwager

Structural Engineer Expires: 11/30/2024
HR Green, Inc.



GENERAL PLAN & ELEVATION

MINKLER ROAD OVER MORGAN CREEK

F.A.U. RTE. 3792 SEC. 21-00053-00-BR

KENDALL COUNTY

STATION 84+71.39

STRUCTURE NO. 047-6708

047-6308

HRG PROJECT NO.: 17087.01
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	CHECKED - AEU	REVISED -
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	20
CONTRACT NO. 87868				

ILLINOIS FED. AID PROJECT

GENERAL NOTES

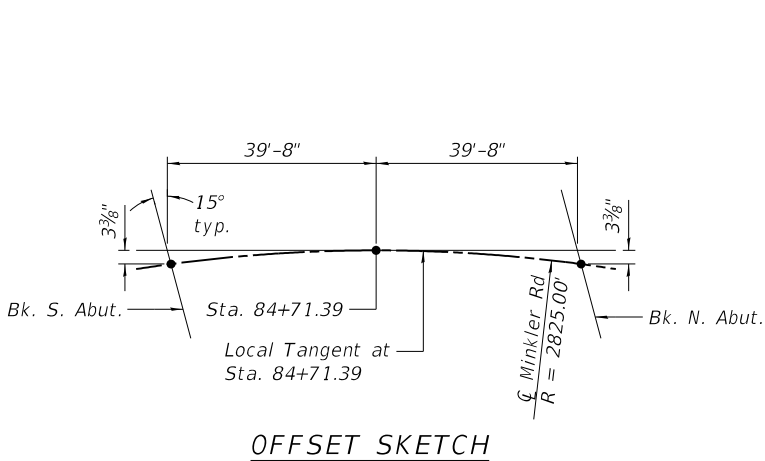
1. Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas. Fasteners shall be ASTM F3125 Grade A325 Type 3, weathering steel bolts in unpainted areas. Bolts 7/8 in. diameter, holes 1 1/16 in. diameter, unless otherwise noted.
2. Calculated weight of Structural Steel = 149,510 lbs.
3. All structural steel shall be AASHTO M270 Grade 50W.
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. 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.
7. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
8. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
9. Excavation behind existing abutment walls shall be performed to balance front and back soil pressure before removing the existing superstructure.
10. Slipforming of the parapets is not allowed.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL QUANTITY
Stone Riprap Class A4	Sq. Yd.		720	720
Filter Fabric	Sq. Yd.		720	720
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		358	358
Concrete Structures	Cu. Yd.		89.5	89.5
Concrete Superstructure	Cu. Yd.	163.2		163.2
Bridge Deck Grooving	Sq. Yd.	583		583
Protective Coat	Sq. Yd.	792		792
Concrete Superstructure (Approach Slab)	Cu. Yd.	117.3		117.3
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1,992		1,992
Reinforcement Bars, Epoxy Coated	Pound	80,121	14,959	95,080
Bicycle Railing	Foot	77		77
Parapet Railing	Foot	103		103
Furnishing Steel Piles HP 12x63	Foot		560	560
Driving Piles	Foot		560	560
Test Pile Steel HP 12x63	Each		2	2
Pile Shoes	Each		16	16
Name Plates	Each	1		1
Anchor Bolts, 1"	Each	32		32
Granular Backfill for Structures	Cu. Yd.		176	176
Geocomposite Wall Drain	Sq. Yd.		94	94
Pipe Underdrains for Structures, 4"	Foot		170	170
Bar Terminators	Each	280	480	760

INDEX OF SHEETS

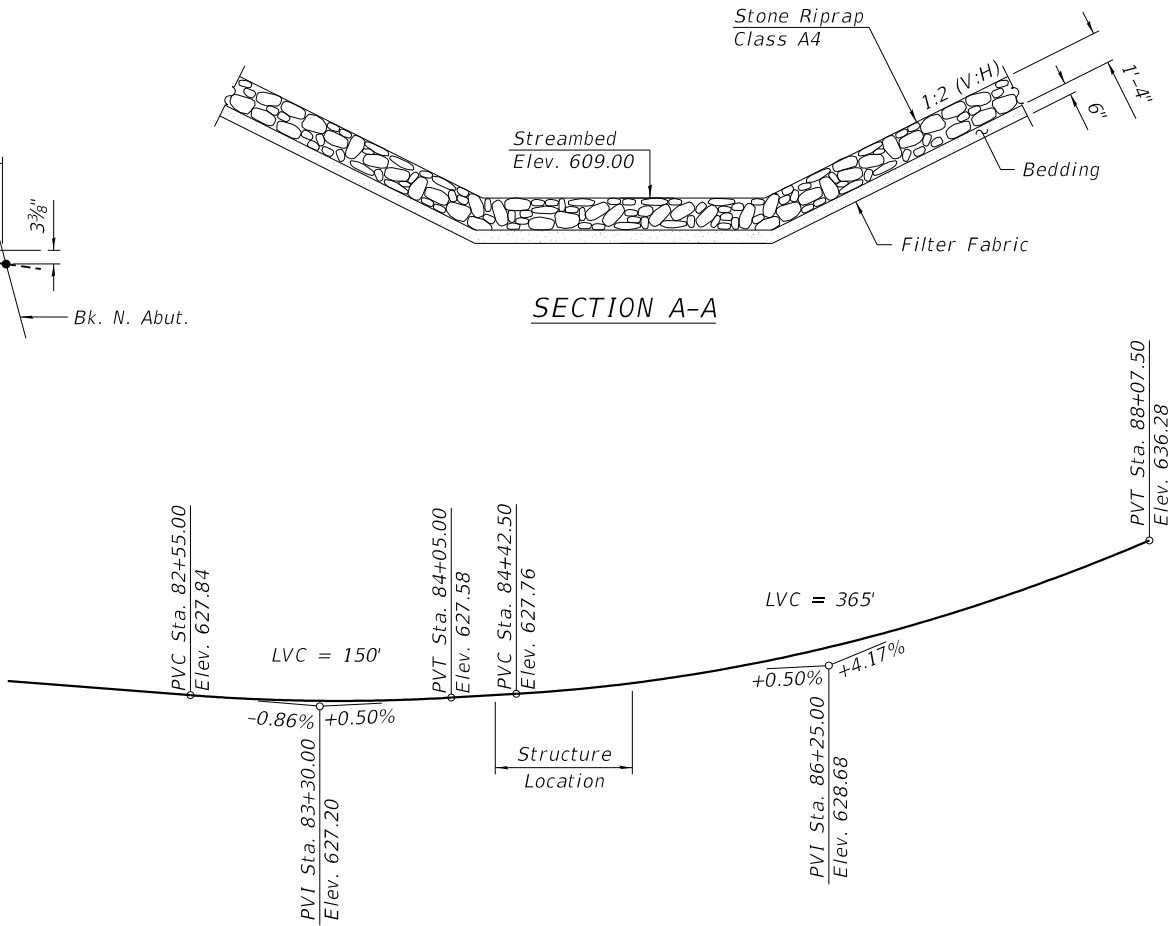
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2. General Data
- 3.-5. Top of Slab Elevations
- 6.-7. Top of Approach Slab Elevations
8. Superstructure
- 9.-10. Superstructure Details
11. Diaphragm Details
- 12.-14. Bridge Approach Slab Details
- 15.-16. Bicycle Railing and Parapet Railing
17. Framing Plan
18. Structural Steel Details
19. Bearing Details
- 20.-21. Abutments
22. HP Pile Details
- 23.-24. Soil Boring Logs



OFFSET SKETCH

MORGAN CREEK
BUILT BY
VILLAGE OF OSWEGO
SEC. 21-00053-00-BR
F.A.U. RT. 3792 STA. 84+71.39
STR. NO. 047-6708 047-6308
LOADING HL-93

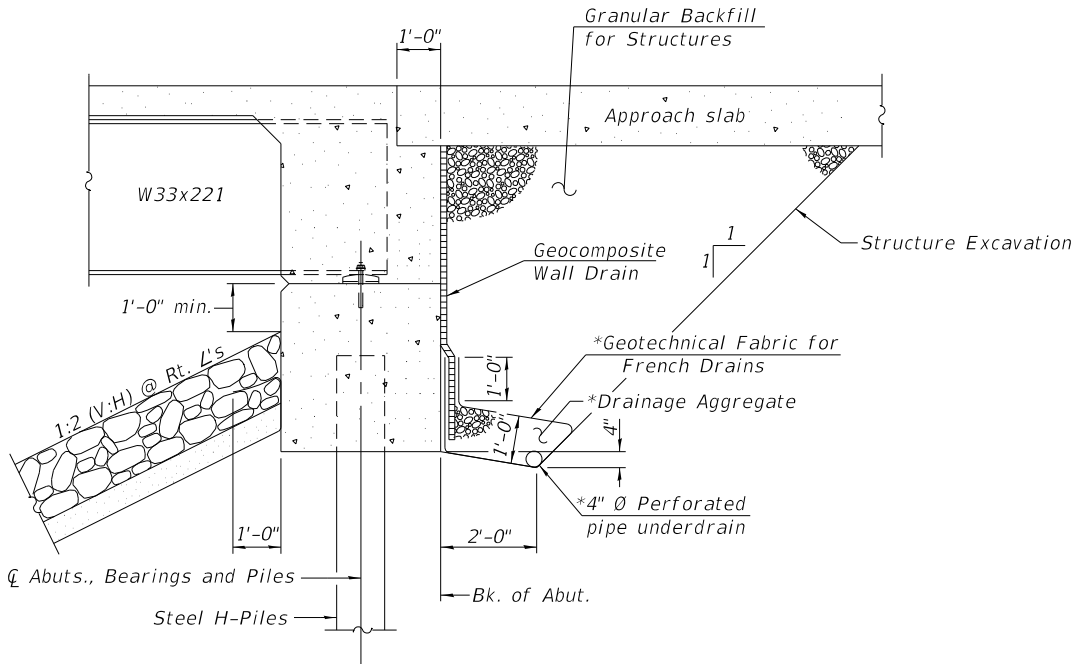
NAME PLATE
See Std. 515001



PROFILE GRADE

(Along Proposed Minkler Road)

SECTION A-A



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

*Included in the cost of Pipe Underdrains for Structures.

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

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HRG PROJ. CONTACT:
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HRGreen.com
Professional Design Firm
#184-001322

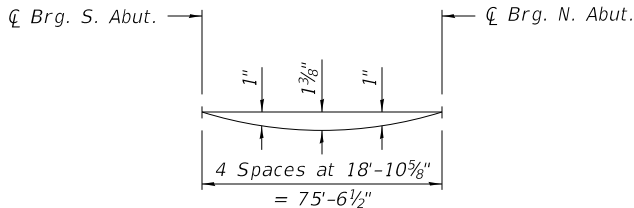
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CHECKED - AEU	REVIS	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 047-6708 047-6308

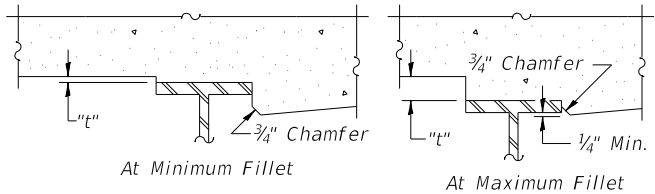
SHEET NO. 2 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	21
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



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 below.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below and on Sheet 5 of 24. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+26.97	-19.23	628.36	628.36
CL Brg. S. Abut.	84+28.85	-19.20	628.37	628.37
A	84+38.79	-19.06	628.42	628.46
B	84+48.72	-18.97	628.46	628.55
C	84+58.65	-18.90	628.52	628.63
D	84+68.59	-18.88	628.59	628.71
E	84+78.52	-18.88	628.67	628.77
F	84+88.46	-18.93	628.77	628.84
G	84+98.39	-19.00	628.87	628.90
CL Brg. N. Abut.	85+03.89	-19.06	628.93	628.93
Bk. N. Abut.	85+05.77	-19.09	628.95	628.95

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+28.54	-12.95	628.15	628.15
CL Brg. S. Abut.	84+30.43	-12.92	628.16	628.16
A	84+40.38	-12.80	628.20	628.25
B	84+50.34	-12.70	628.25	628.34
C	84+60.29	-12.65	628.32	628.43
D	84+70.25	-12.63	628.39	628.50
E	84+80.21	-12.64	628.47	628.57
F	84+90.16	-12.69	628.56	628.63
G	85+00.12	-12.77	628.67	628.70
CL Brg. N. Abut.	85+05.63	-12.83	628.73	628.73
Bk. N. Abut.	85+07.52	-12.86	628.76	628.76

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+30.11	-6.68	627.94	627.94
CL Brg. S. Abut.	84+32.01	-6.65	627.95	627.95
A	84+41.98	-6.53	627.99	628.04
B	84+51.96	-6.44	628.04	628.13
C	84+61.94	-6.39	628.11	628.22
D	84+71.92	-6.38	628.18	628.30
E	84+81.90	-6.39	628.27	628.37
F	84+91.87	-6.45	628.36	628.43
G	85+01.85	-6.54	628.47	628.50
CL Brg. N. Abut.	85+07.37	-6.60	628.53	628.53
Bk. N. Abut.	85+09.27	-6.63	628.56	628.56

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+31.70	-0.40	627.73	627.73
CL Brg. S. Abut.	84+33.60	-0.38	627.74	627.74
A	84+43.59	-0.26	627.78	627.83
B	84+53.59	-0.18	627.84	627.92
C	84+63.59	-0.14	627.90	628.01
D	84+73.59	-0.13	627.98	628.09
E	84+83.59	-0.15	628.06	628.16
F	84+93.59	-0.21	628.16	628.23
G	85+03.59	-0.31	628.27	628.30
CL Brg. N. Abut.	85+09.13	-0.38	628.34	628.34
Bk. N. Abut.	85+11.03	-0.40	628.36	628.36

LOCAL TANGENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+31.73	-0.28	627.72	627.72
CL Brg. S. Abut.	84+33.63	-0.25	627.73	627.73
A	84+43.63	-0.14	627.78	627.82
B	84+53.63	-0.06	627.83	627.92
C	84+63.63	-0.01	627.90	628.01
D	84+73.63	0.00	627.97	628.09
E	84+83.63	-0.03	628.06	628.16
F	84+93.63	-0.09	628.16	628.23
G	85+03.63	-0.18	628.27	628.29
CL Brg. N. Abut.	85+09.16	-0.25	628.33	628.33
Bk. N. Abut.	85+11.06	-0.28	628.36	628.36

CENTERLINE & P.G.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+31.80	0.00	627.71	627.71
CL Brg. S. Abut.	84+33.69	0.00	627.72	627.72
A	84+43.66	0.00	627.77	627.82
B	84+53.64	0.00	627.83	627.91
C	84+63.63	0.00	627.90	628.01
D	84+73.63	0.00	627.97	628.09
E	84+83.63	0.00	628.06	628.16
F	84+93.65	0.00	628.15	628.23
G	85+03.68	0.00	628.26	628.29
CL Brg. N. Abut.	85+09.23	0.00	628.33	628.33
Bk. N. Abut.	85+11.14	0.00	628.35	628.35

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
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HRGreen.com
Professional Design Firm
#184-001322

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PLOT SCALE =
PLOT DATE = 8/28/2024

DESIGNED - FAS
CHECKED - AEU
DRAWN - FAS
CHECKED - AEU

REVISED - 10/30/2024
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 4 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	23
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+33.29	5.87	627.52	627.52
CL Brg. S. Abut.	84+35.19	5.89	627.52	627.52
A	84+45.21	6.00	627.57	627.62
B	84+55.23	6.08	627.63	627.71
C	84+65.25	6.12	627.69	627.80
D	84+75.28	6.12	627.77	627.89
E	84+85.30	6.09	627.86	627.96
F	84+95.32	6.02	627.96	628.03
G	85+05.34	5.92	628.07	628.10
CL Brg. N. Abut.	85+10.89	5.85	628.14	628.14
Bk. N. Abut.	85+12.79	5.82	628.16	628.16

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+34.88	12.14	627.30	627.30
CL Brg. S. Abut.	84+36.79	12.16	627.31	627.31
A	84+46.83	12.27	627.36	627.41
B	84+56.88	12.34	627.42	627.50
C	84+66.92	12.37	627.49	627.60
D	84+76.97	12.37	627.57	627.68
E	84+87.01	12.33	627.66	627.76
F	84+97.06	12.26	627.76	627.83
G	85+07.10	12.15	627.88	627.90
CL Brg. N. Abut.	85+12.66	12.08	627.94	627.94
Bk. N. Abut.	85+14.57	12.05	627.97	627.97

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+36.49	18.41	627.09	627.09
CL Brg. S. Abut.	84+38.40	18.43	627.10	627.10
A	84+48.46	18.53	627.15	627.20
B	84+58.53	18.60	627.21	627.30
C	84+68.60	18.62	627.28	627.39
D	84+78.67	18.62	627.36	627.48
E	84+88.73	18.57	627.46	627.56
F	84+98.80	18.49	627.56	627.63
G	85+08.86	18.38	627.68	627.70
CL Brg. N. Abut.	85+14.44	18.30	627.75	627.75
Bk. N. Abut.	85+16.35	18.27	627.77	627.77

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	84+38.10	24.68	626.94	626.94
CL Brg. S. Abut.	84+40.02	24.70	626.95	626.95
A	84+50.10	24.80	627.00	627.05
B	84+60.19	24.85	627.06	627.15
C	84+70.28	24.87	627.14	627.25
D	84+80.37	24.86	627.22	627.34
E	84+90.46	24.81	627.32	627.42
F	85+00.55	24.73	627.42	627.49
G	85+10.64	24.60	627.54	627.57
CL Brg. N. Abut.	85+16.22	24.52	627.61	627.61
Bk. N. Abut.	85+18.14	24.49	627.64	627.64

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HRG PROJ. CONTACT:
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PEN TABLE: plotabel.tbl

W. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	83+98.17	-20.00	628.24
A1	84+08.02	-20.08	628.30
A2	84+17.87	-20.19	628.35
N. End of Apr.	84+27.72	-20.34	628.41

W. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	84+00.08	-12.00	627.97
A1	84+09.98	-12.00	628.02
A2	84+19.89	-12.00	628.07
N. End of Apr.	84+29.80	-12.00	628.12

LOCAL TANGENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	84+02.78	-0.83	627.59
A1	84+12.77	-0.61	627.64
A2	84+22.77	-0.42	627.68
N. End of Apr.	84+32.76	-0.26	627.73

CENTERLINE & P.G.

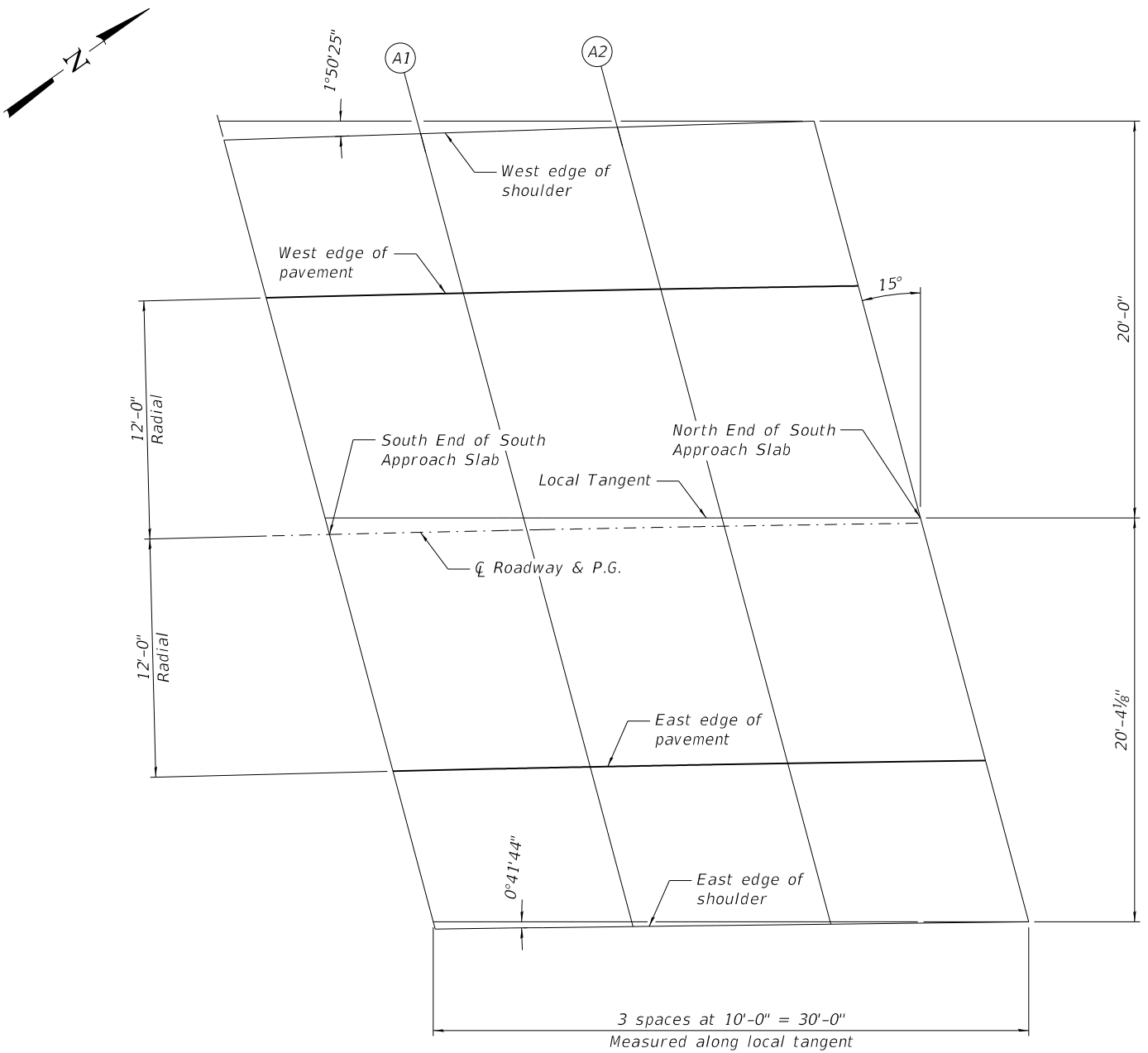
Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	84+02.98	0.00	627.56
A1	84+12.92	0.00	627.62
A2	84+22.87	0.00	627.67
N. End of Apr.	84+32.83	0.00	627.72

E. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	84+05.90	12.00	627.16
A1	84+15.88	12.00	627.21
A2	84+25.88	12.00	627.26
N. End of Apr.	84+35.89	12.00	627.31

E. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of Apr.	84+07.86	20.00	626.89
A1	84+17.90	20.09	626.94
A2	84+27.94	20.14	626.99
N. End of Apr.	84+37.97	20.15	627.04



PLAN

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-006-T04S.dgn
PLOT DRIVER: IL_Plot_Dwg.plt
PEN TABLE: plotLabel.tbl



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USER NAME - jraibtu	DESIGNED - FAS	REVISED - 10/30/2024
CHECKED - AEU	REVISED -	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 6 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	25
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

W. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+04.43	-20.19	628.98
A3	85+14.43	-20.09	629.09
A4	85+24.42	-20.03	629.22
N. End of Appr.	85+34.42	-20.00	629.35

W. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+06.72	-12.00	628.72
A3	85+16.72	-12.00	628.84
A4	85+26.73	-12.00	628.97
N. End of Appr.	85+36.74	-12.00	629.11

LOCAL TANGENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+10.03	-0.26	628.34
A3	85+20.02	-0.42	628.47
A4	85+30.02	-0.61	628.61
N. End of Appr.	85+40.02	-0.83	628.76

CENTERLINE & P.G.

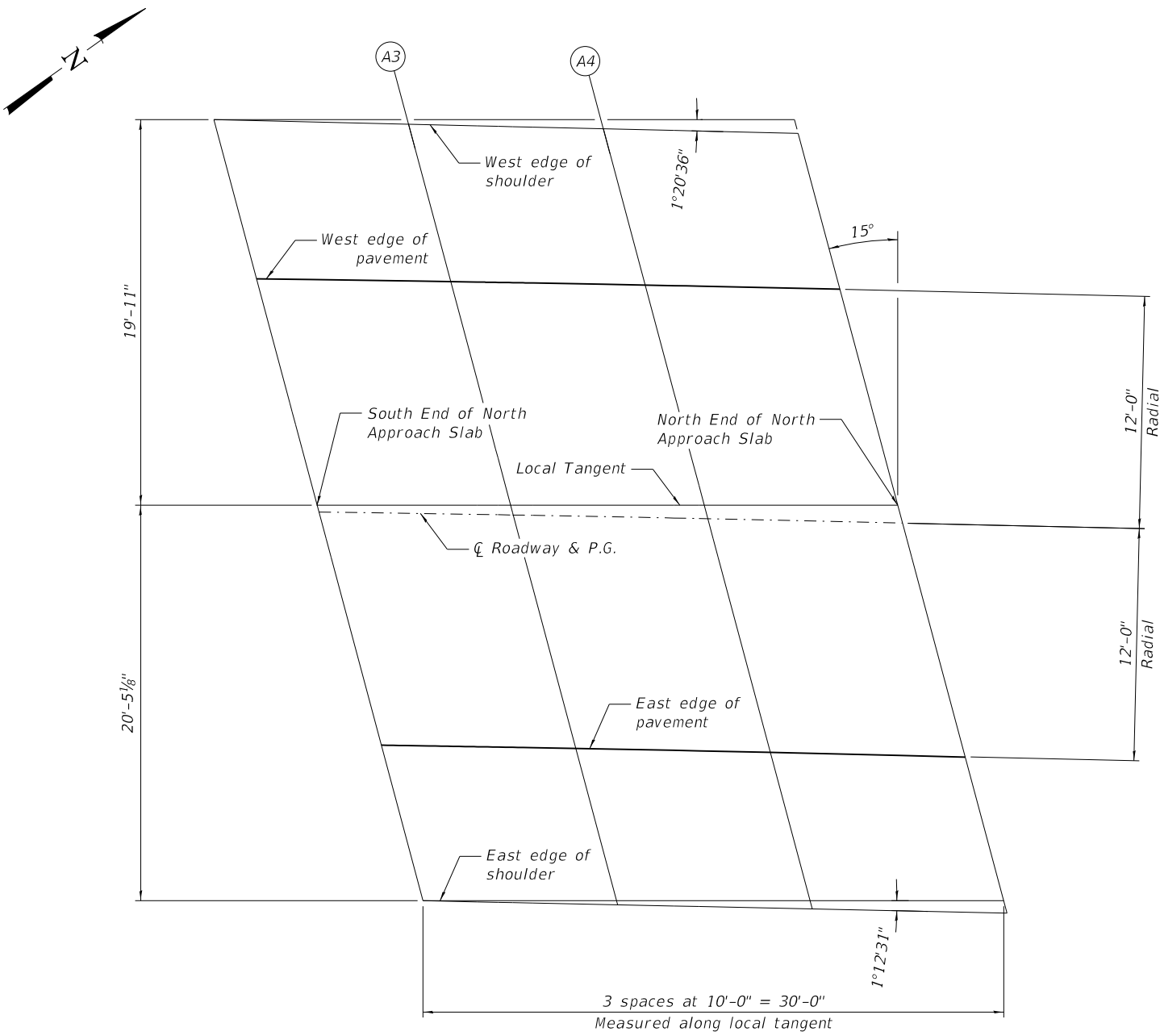
Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+10.10	0.00	628.34
A3	85+20.14	0.00	628.46
A4	85+30.20	0.00	628.59
N. End of Appr.	85+40.26	0.00	628.74

E. EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+13.51	12.00	627.96
A3	85+23.60	12.00	628.08
A4	85+33.70	12.00	628.22
N. End of Appr.	85+43.81	12.00	628.37

E. EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End of Appr.	85+15.80	20.00	627.70
A3	85+25.93	20.04	627.83
A4	85+36.06	20.04	627.97
N. End of Appr.	85+46.19	20.00	628.13



PLAN

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-007-1045.dgn
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PEN TABLE: plotlabel.tbl



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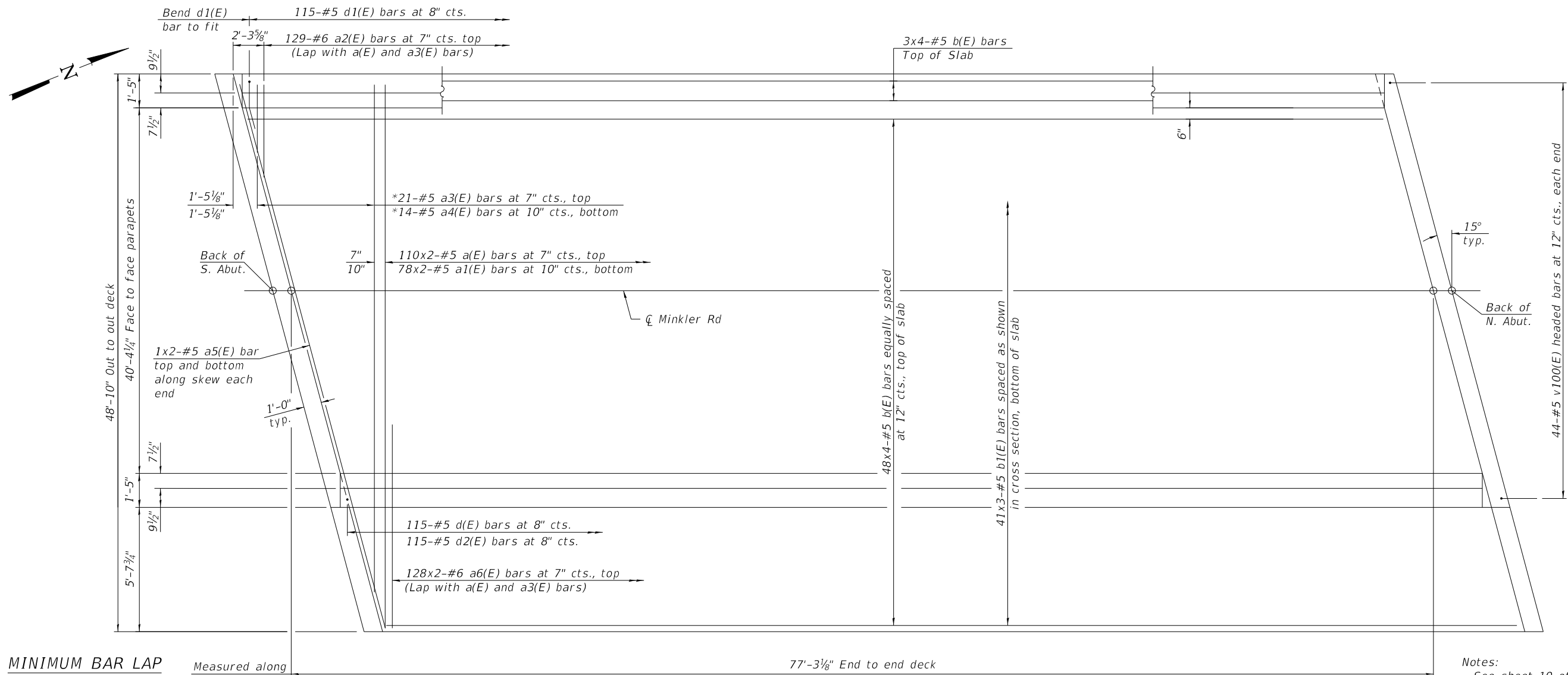
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CHECKED - AEU	REVISED -	
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 7 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	26
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



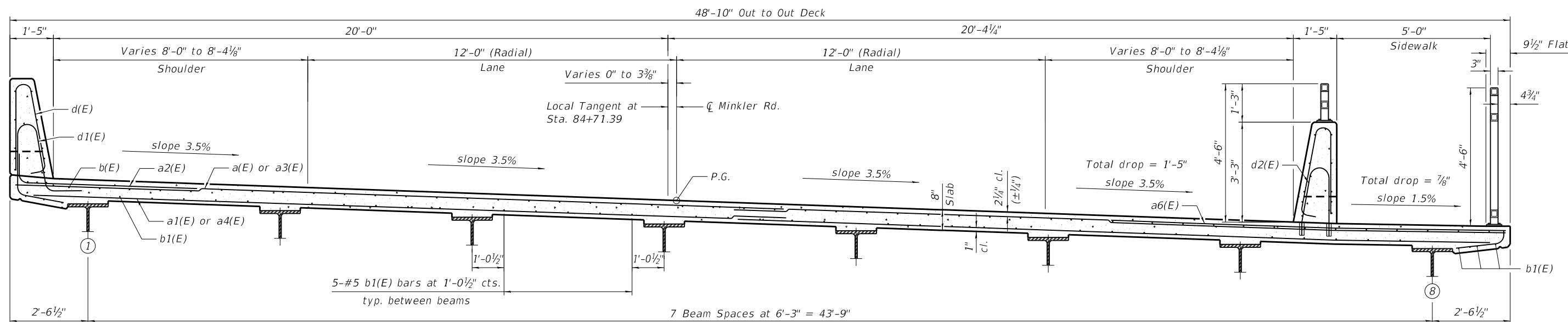
MINIMUM BAR LAP

#5 bar = 3'-6"

Measured along local tangent

* See Field Cutting Diagram on sheet 10 of 24.

Notes:
See sheet 10 of 24 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



CROSS SECTION

(Looking North)

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-008-Superstructure.dgn
PLOT DRIVER: ILddt.dwg/ctcf
PEN TABLE: plotlabel.tbl



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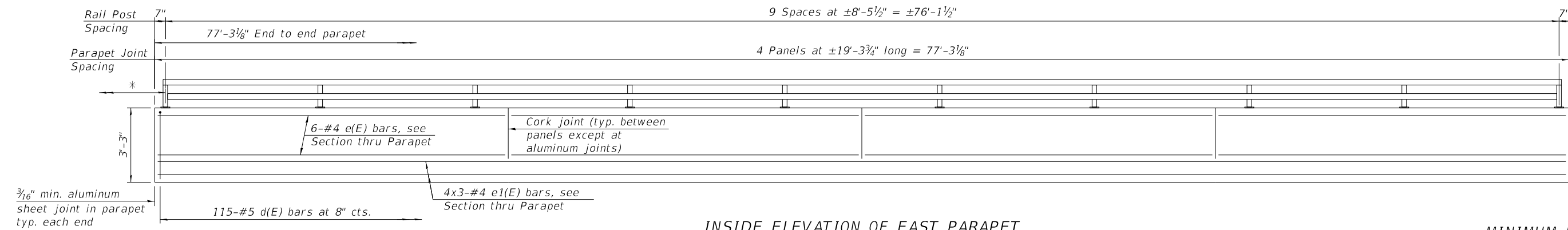
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 047-6708 047-6308

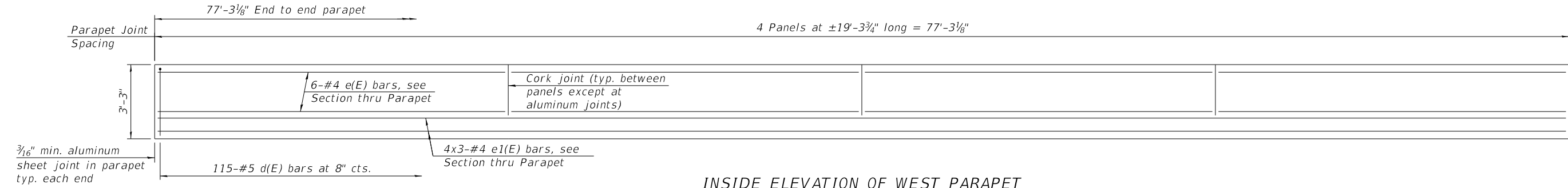
SHEET NO. 8 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	27
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

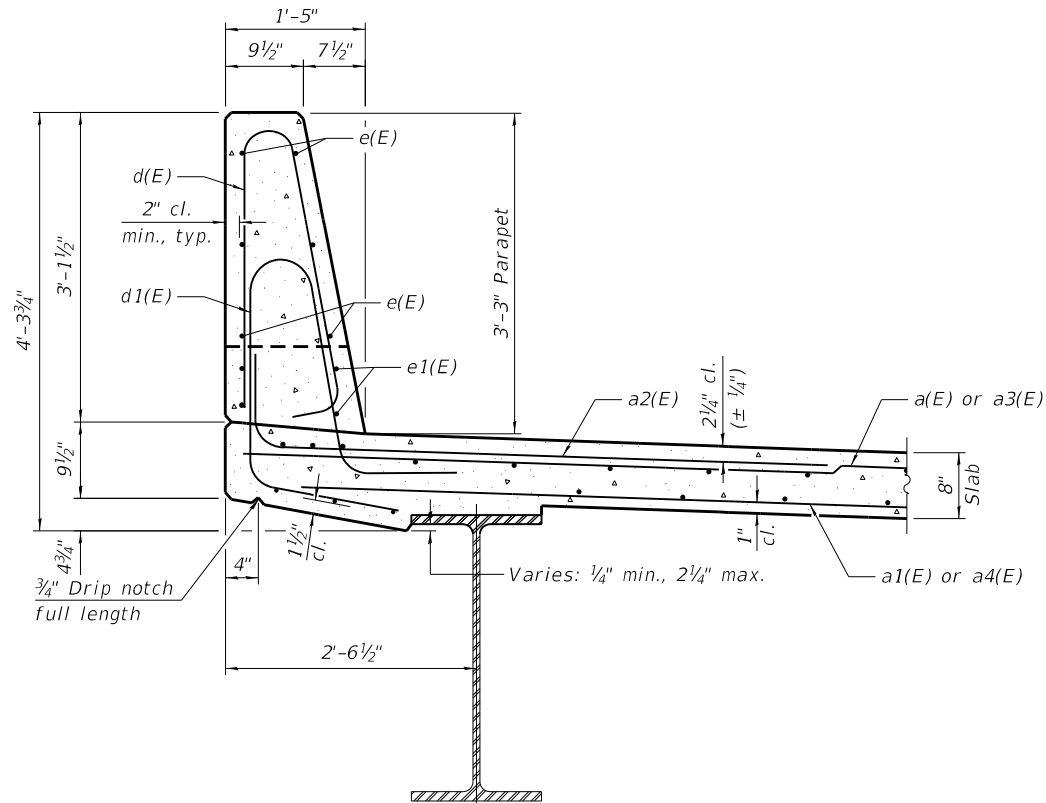


INSIDE ELEVATION OF EAST PARAPET

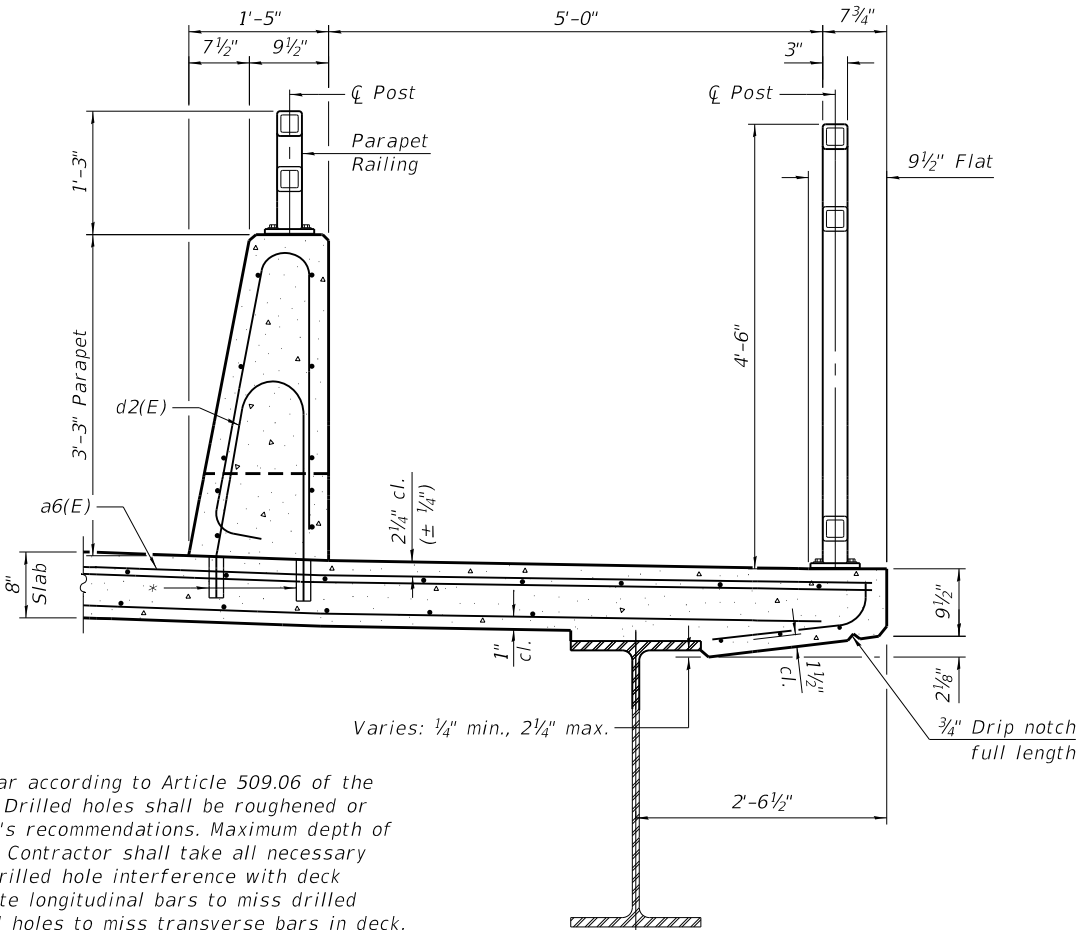
MINIMUM BAR LAP
 #4 bar = 2'-5"



INSIDE ELEVATION OF WEST PARAPET



SECTION THRU WEST PARAPET
 (Looking North)



SECTION THRU EAST PARAPET
 (Looking North)

* Drill and set #5 d2(E) bar according to Article 509.06 of the Standard Specifications. Drilled holes shall be roughened or scored per manufacturer's recommendations. Maximum depth of hole shall not exceed 6". Contractor shall take all necessary precautions to prevent drilled hole interference with deck reinforcement bars. Locate longitudinal bars to miss drilled locations. Located drilled holes to miss transverse bars in deck.

HPG PROJECT NO.: 17087.01
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 FILE NAME: 0476708-xxxx-009-Superstructure01.sldgn
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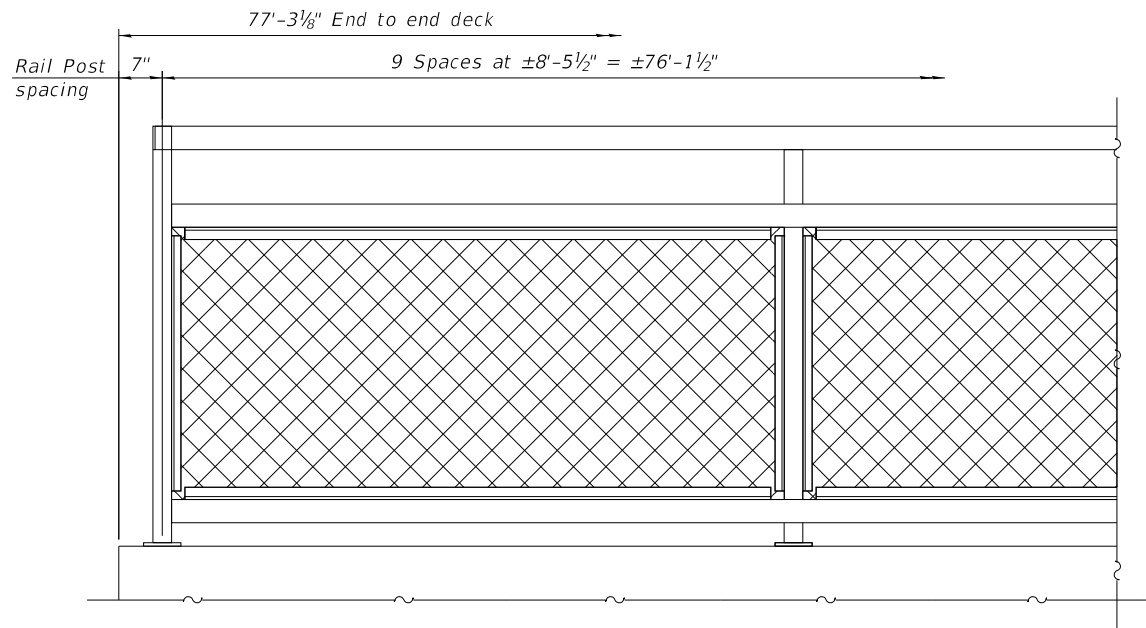
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CHECKED - AEU	REVIS	
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION

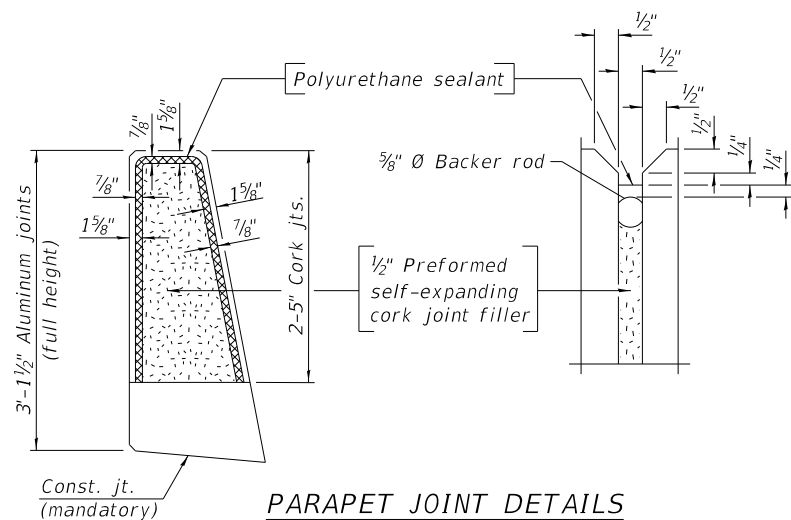
SUPERSTRUCTURE DETAILS
 STRUCTURE NO. 047-6708 047-6308

SHEET NO. 9 OF 24 SHEETS

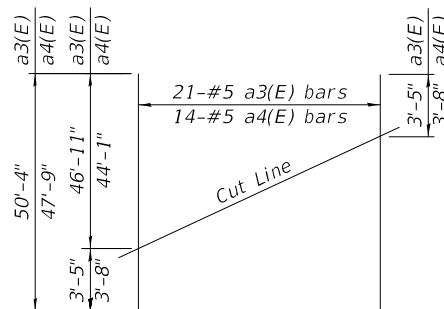
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	28
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



PARTIAL INSIDE ELEVATION OF BRIDGE FENCE RAILING

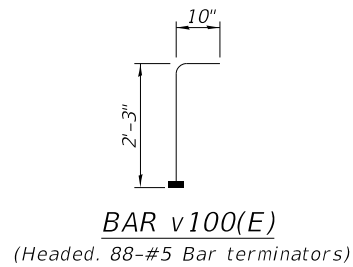


Notes:
The 3/16" aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.
Bar terminators, paid for seperately. See Total Bill of Material.

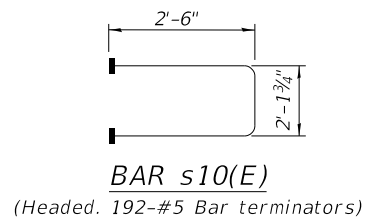


FIELD CUTTING DIAGRAM

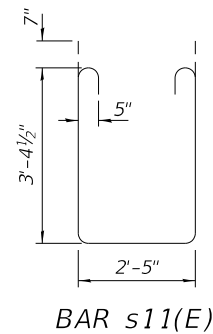
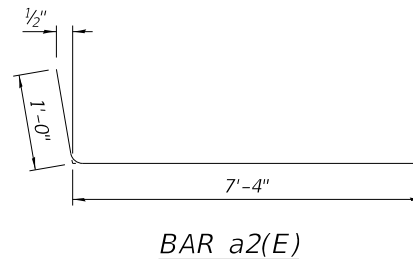
Order a3(E) and a4(E) bars full length.
Cut as shown and use remainder of bars in opposite end of deck.



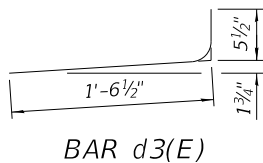
BAR v100(E)
(Hheaded. 88-#5 Bar terminators)



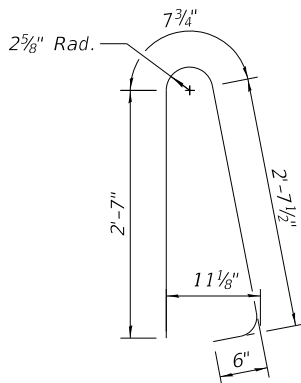
BAR s10(E)
(Hheaded. 192-#5 Bar terminators)



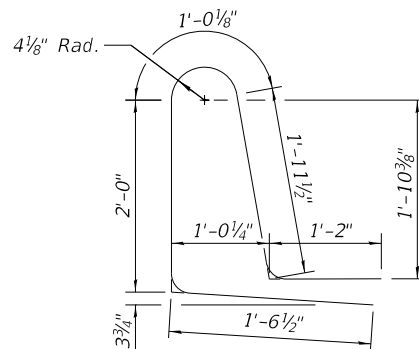
BAR s11(E)



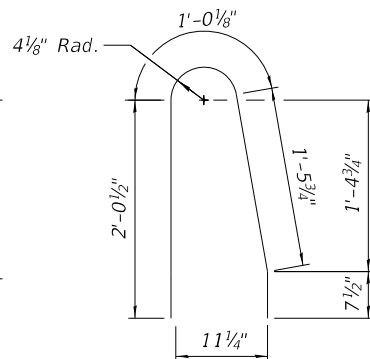
BAR d3(E)



BAR d(E)



BAR d1(E)



BAR d2(E)

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	222	#5	26'- 0"	—
a1(E)	156	#5	25'- 2"	—
a2(E)	258	#6	8'- 4"	└─┘
a3(E)	21	#5	50'- 4"	—
a4(E)	14	#5	47'- 9"	—
a5(E)	8	#5	26'- 11"	—
a6(E)	254	#6	13'- 0"	—
b(E)	204	#5	21'- 11"	—
b1(E)	123	#5	28'- 0"	—
d(E)	230	#5	6'- 5"	└─┘
d1(E)	115	#5	7'- 8"	└─┘
d2(E)	115	#5	5'- 2"	└─┘
d3(E)	115	#5	2'- 0"	└─┘
e(E)	48	#4	19'- 0"	—
e1(E)	24	#4	27'- 3"	—
m10(E)	16	#6	27'- 3"	—
m11(E)	42	#6	6'- 1"	—
m12(E)	12	#6	2'- 3"	—
s10(E)	96	#5	7'- 2"	└─┘
s11(E)	96	#5	10'- 4"	└─┘
v100(E)	88	#5	3'- 1"	└─┘
Reinforcement Bars, Epoxy Coated			Pound	36,060
Concrete Superstructure			Cu. Yd.	155.4

Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
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PLOT DRIVER: IL_Pdf-DwgPlotter
PEN TABLE: plotabel.tbl



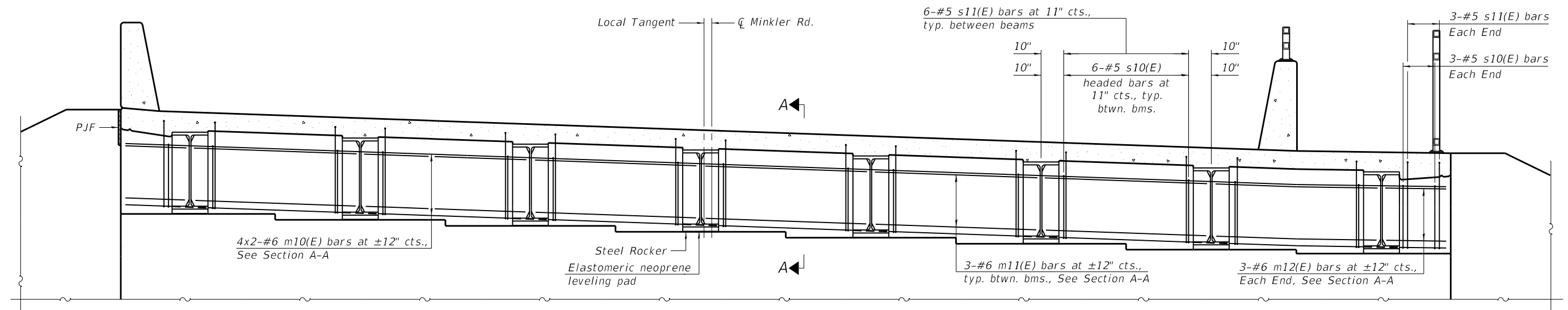
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 10 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	29
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

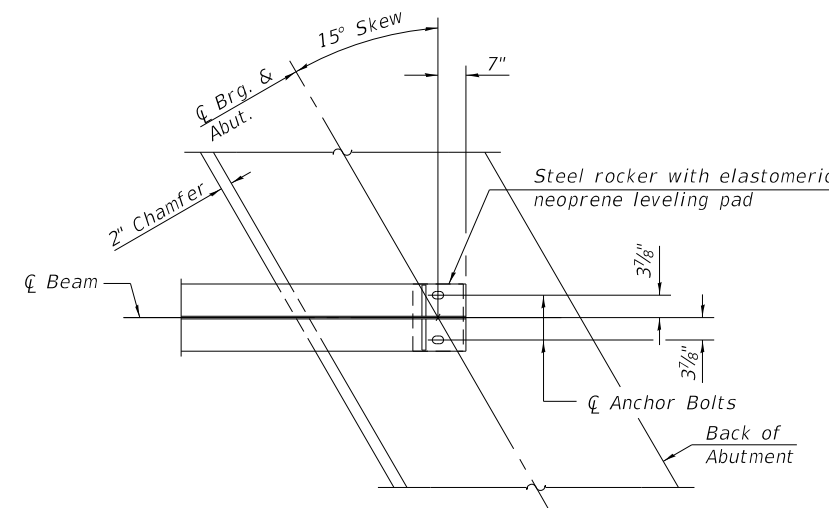


DIAPHRAGM AT ABUTMENT

(Looking North)
(North Abutment Shown, South Abutment Similar)

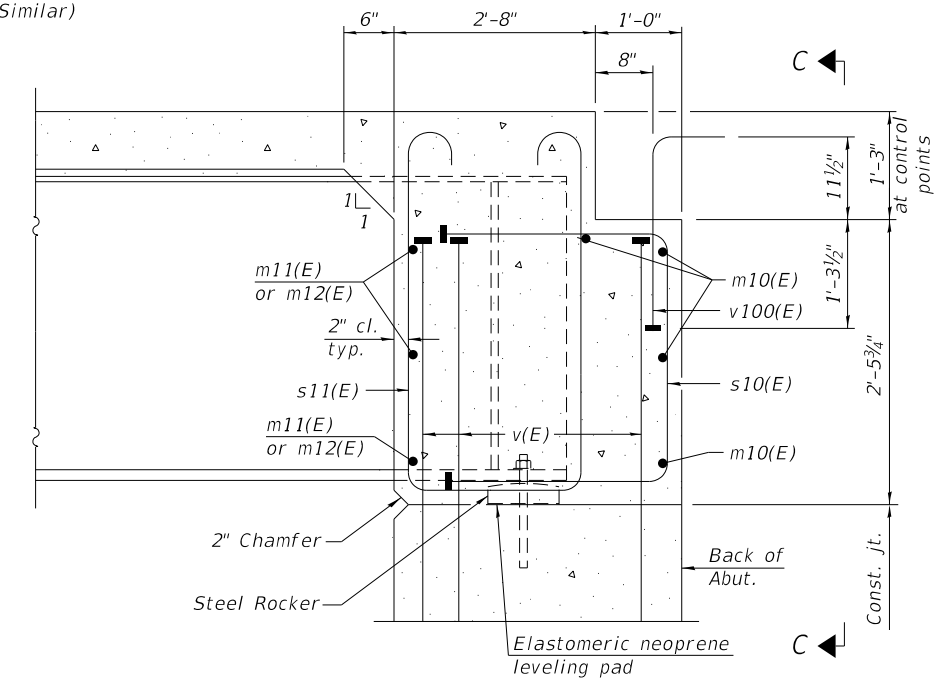
MINIMUM BAR LAP

#6 bar = 4'-3"



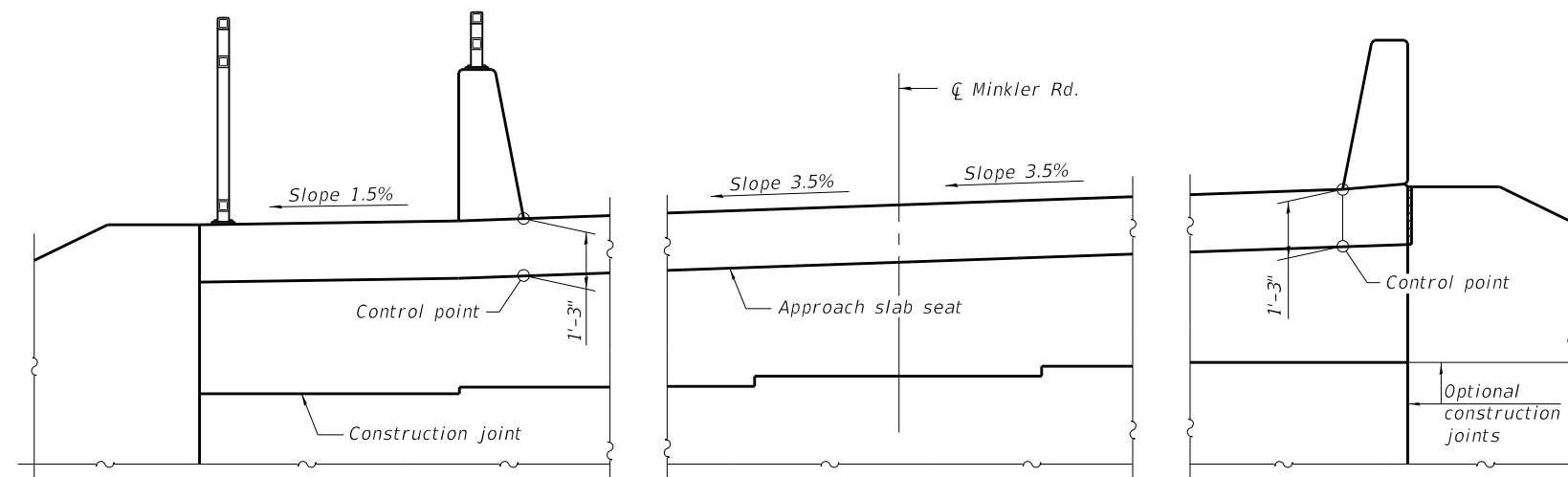
PLAN AT ABUTMENT

(Showing bottom flange of beam)



SECTION A-A

(at Rt. L's)



VIEW C-C

Notes:

See sheet 10 of 24 for superstructure details and Bill of Material.
See sheet 14 of 24 for P.J.F. details.
The s10(E) and s11(E) bars shall be placed parallel to the beams.
Spacing for these bars shall be at right angles to the beams.
The approach slab shall have a constant slope determined from the control points shown.

HRG PROJECT NO.: 17087.01
 HRG PROJ. CONTACT:
 FILE NAME: 0476708-xxxxx-01-Diaphragm01.sdg
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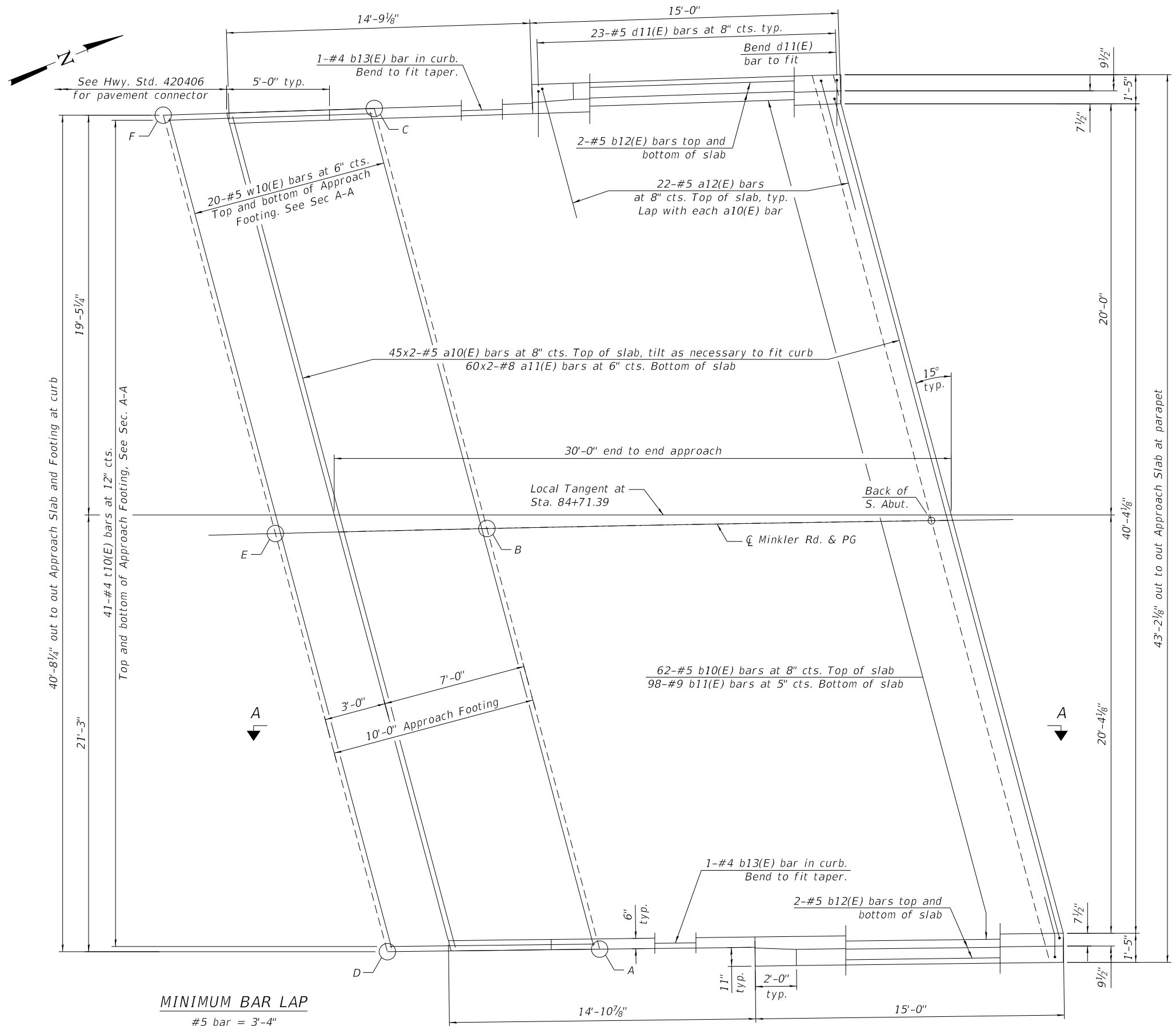
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

DIAPHRAGM DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 11 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	30
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



MINIMUM BAR LAP
#5 bar = 3'-4"
#8 bar = 4'-9"

SOUTH APPROACH SLAB PLAN

**TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING**

South Approach		
Point/ Location	Top	Bottom
A - NE Appr. Ftg.	625.66	624.83
B - N. CL Appr. Ftg.	626.36	625.52
C - NW Appr. Ftg.	627.05	626.22
D - SE Appr. Ftg.	625.61	624.77
E - S. CL Appr. Ftg.	626.30	625.47
F - SW Appr. Ftg.	627.00	626.16

(Sheet 1 of 3)

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-02-Br-Appr-Slab.dgn
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

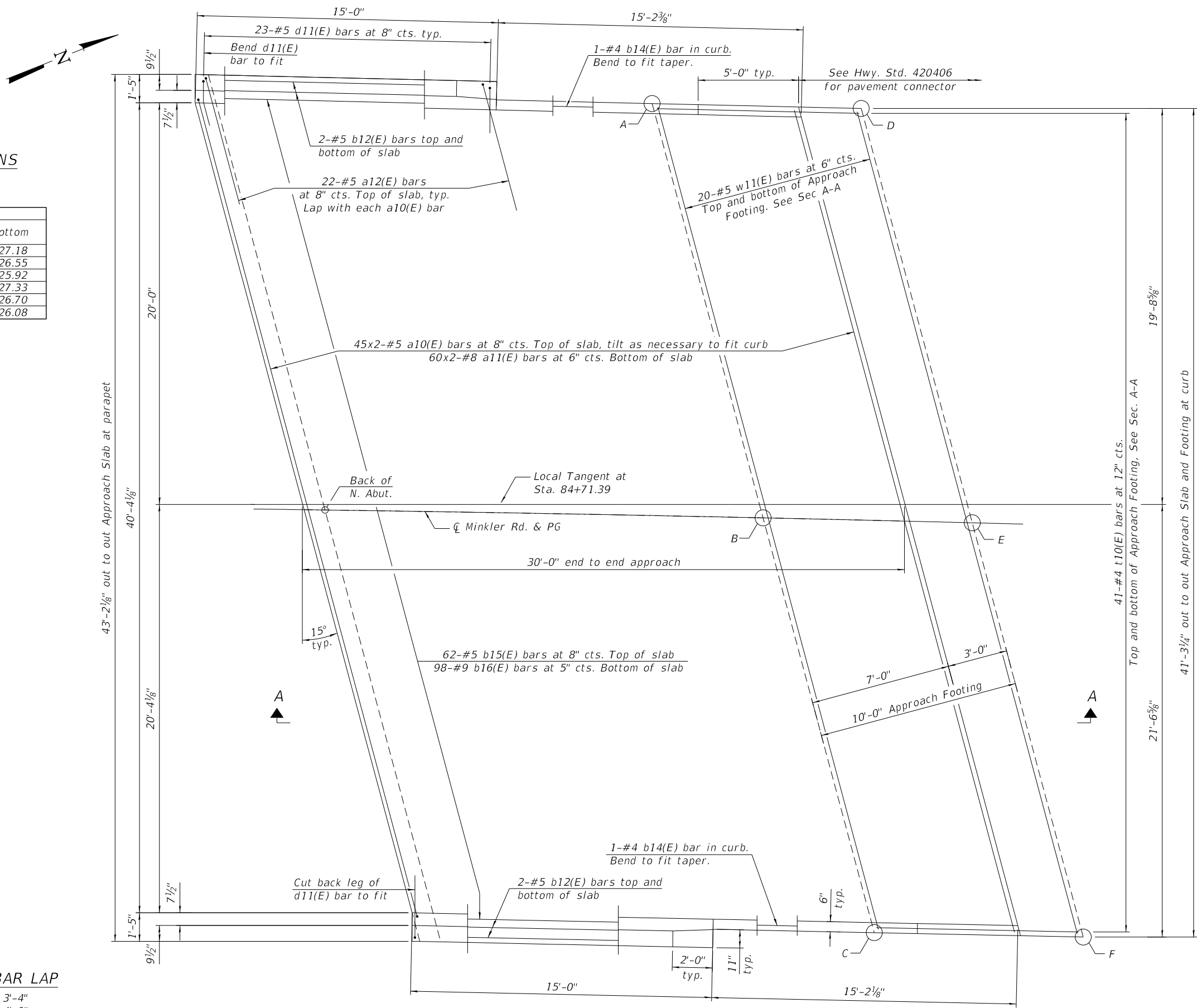
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 12 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	31
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

TOP AND BOTTOM ELEVATIONS
FOR APPROACH FOOTING

North Approach		
Point/ Location	Top	Bottom
A - SW Appr. Ftg.	628.02	627.18
B - S. CL Appr. Ftg.	627.38	626.55
C - SE Appr. Ftg.	626.75	625.92
D - NW Appr. Ftg.	628.16	627.33
E - N. CL Appr. Ftg.	627.53	626.70
F - NE Appr. Ftg.	626.91	626.08



MINIMUM BAR LAP

#5 bar = 3'-4"
#8 bar = 4'-9"

NORTH APPROACH SLAB PLAN

(Sheet 2 of 3)

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-03-Br-Appr-Slab2.dgn
PLOT DRIVER: IL_Plot.dwg
PEN TABLE: plotlabel.tbl



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#184-001322

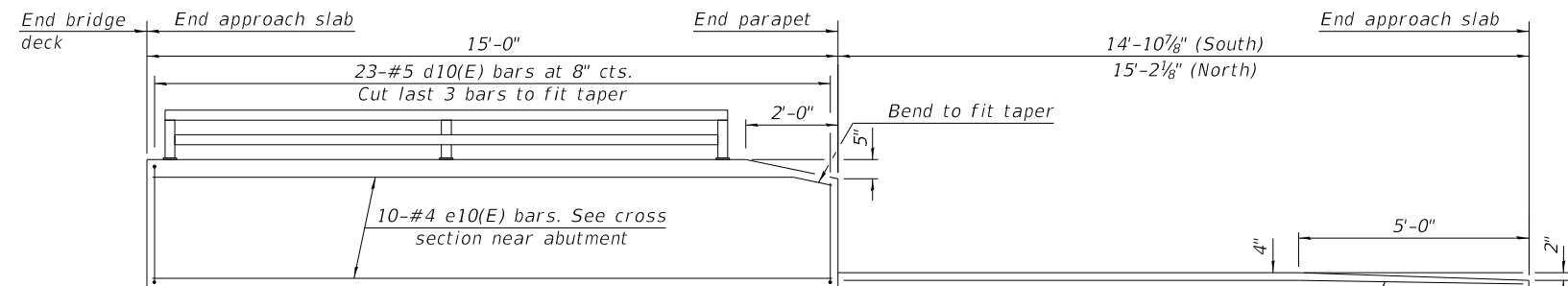
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PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 047-6708 047-6308

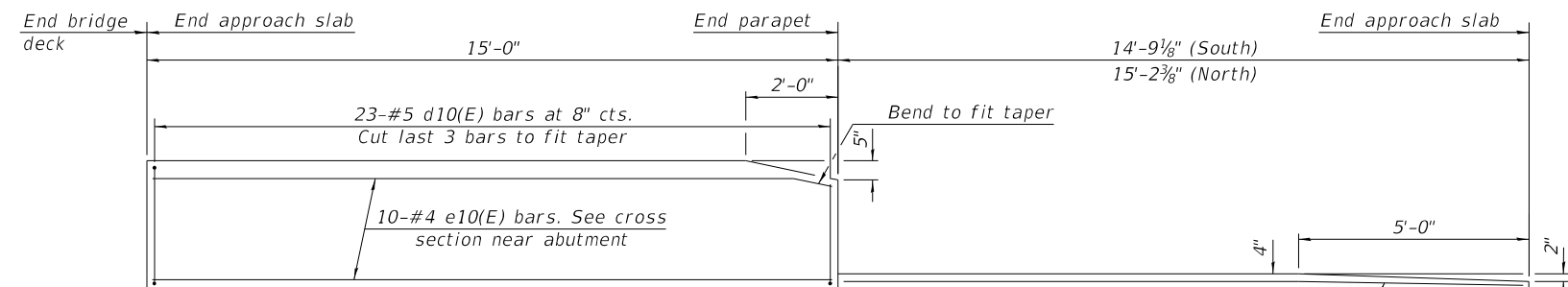
SHEET NO. 13 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	32
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

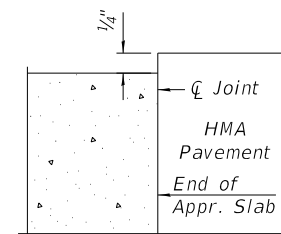


INSIDE ELEVATION OF EAST PARAPET AND CURB

(See Sheet 10 of 24 for railing post spacing)

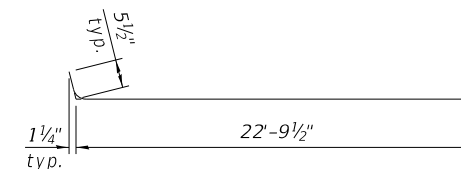


INSIDE ELEVATION OF WEST PARAPET AND CURB

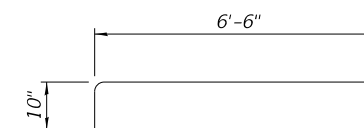


FLEXIBLE PAVEMENT

DETAIL A



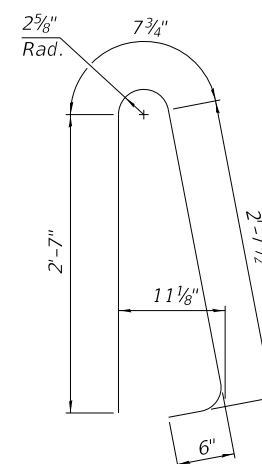
BAR a10(E)



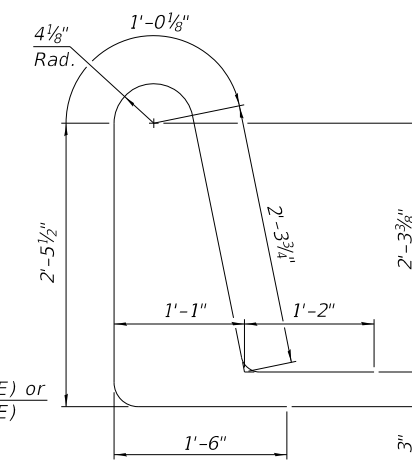
BAR a12(E)

TWO APPROACHES
BILL OF MATERIAL

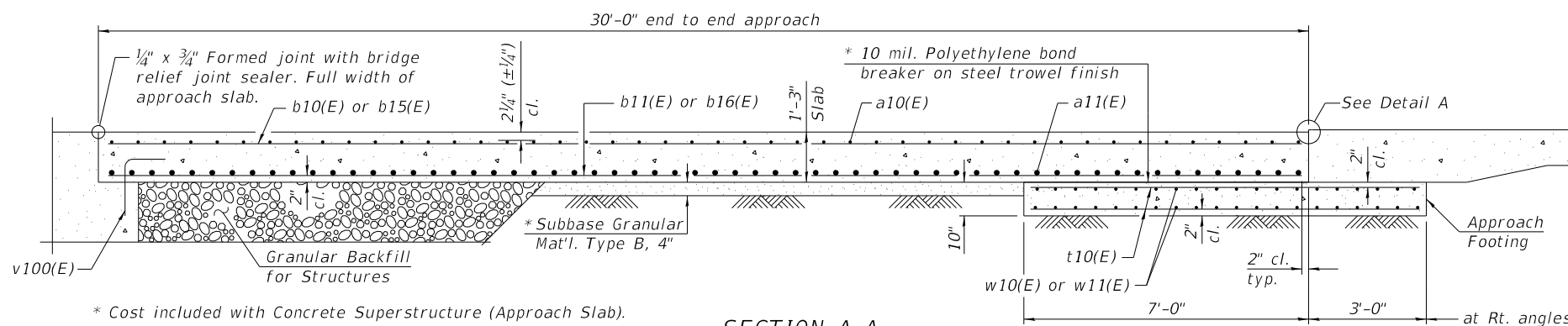
Bar	No.	Size	Length	Shape
a10(E)	180	#5	23'-3"	
a11(E)	240	#8	23'-7"	
a12(E)	88	#5	7'-4"	
b10(E)	62	#5	29'-5"	
b11(E)	98	#9	29'-5"	
b12(E)	16	#5	14'-8"	
b13(E)	2	#4	14'-6"	
b14(E)	2	#4	14'-9"	
b15(E)	62	#5	29'-10"	
b16(E)	98	#9	29'-10"	
d10(E)	92	#5	6'-5"	
d11(E)	92	#5	8'-6"	
e10(E)	40	#4	14'-8"	
t10(E)	82	#4	10'-0"	
w10(E)	40	#5	41'-9"	
w11(E)	40	#5	42'-5"	
Concrete Superstructure			Cu. Yd.	7.8
Concrete Superstructure (Approach Slab)			Cu. Yd.	117.3
Concrete Structures			Cu. Yd.	26.2
Reinforcement Bars, Epoxy Coated			Pound	48,120



BAR d10(E)

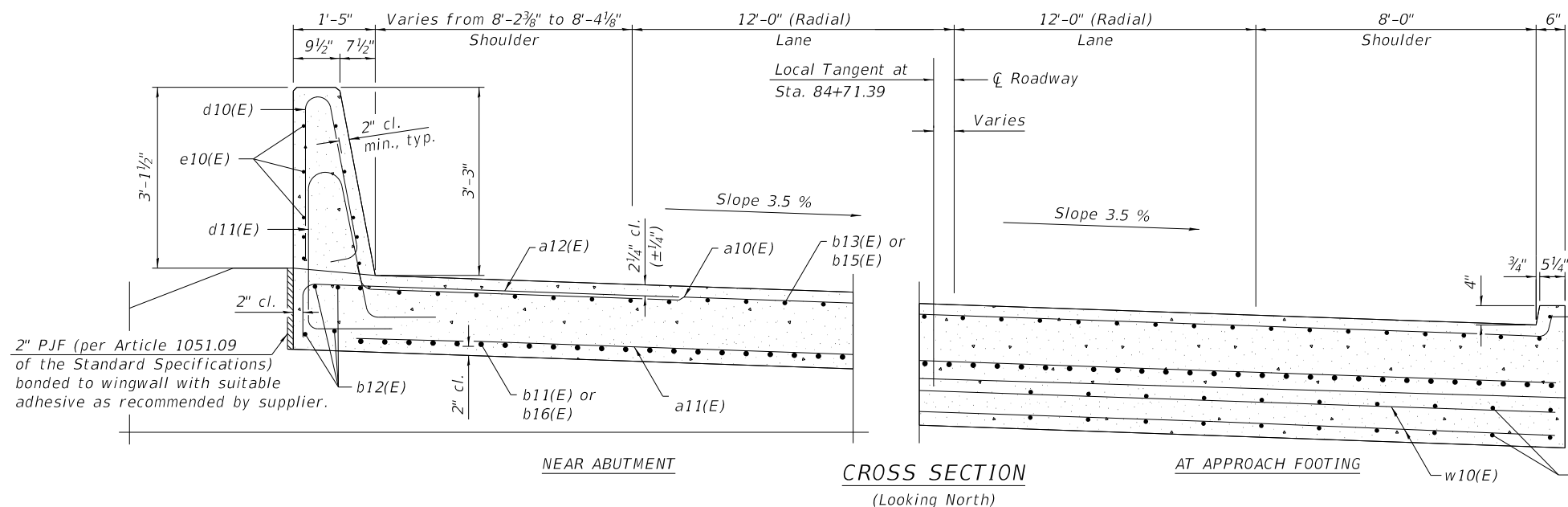


BAR d11(E)



SECTION A-A

* Cost included with Concrete Superstructure (Approach Slab).



CROSS SECTION

(Looking North)

(Sheet 3 of 3)

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-04-Br-App-Slab-3.dgn
PLOT DRIVER: IL-Def-Dwg-Plt.ctb
PEN TABLE: plotlabel.tbl



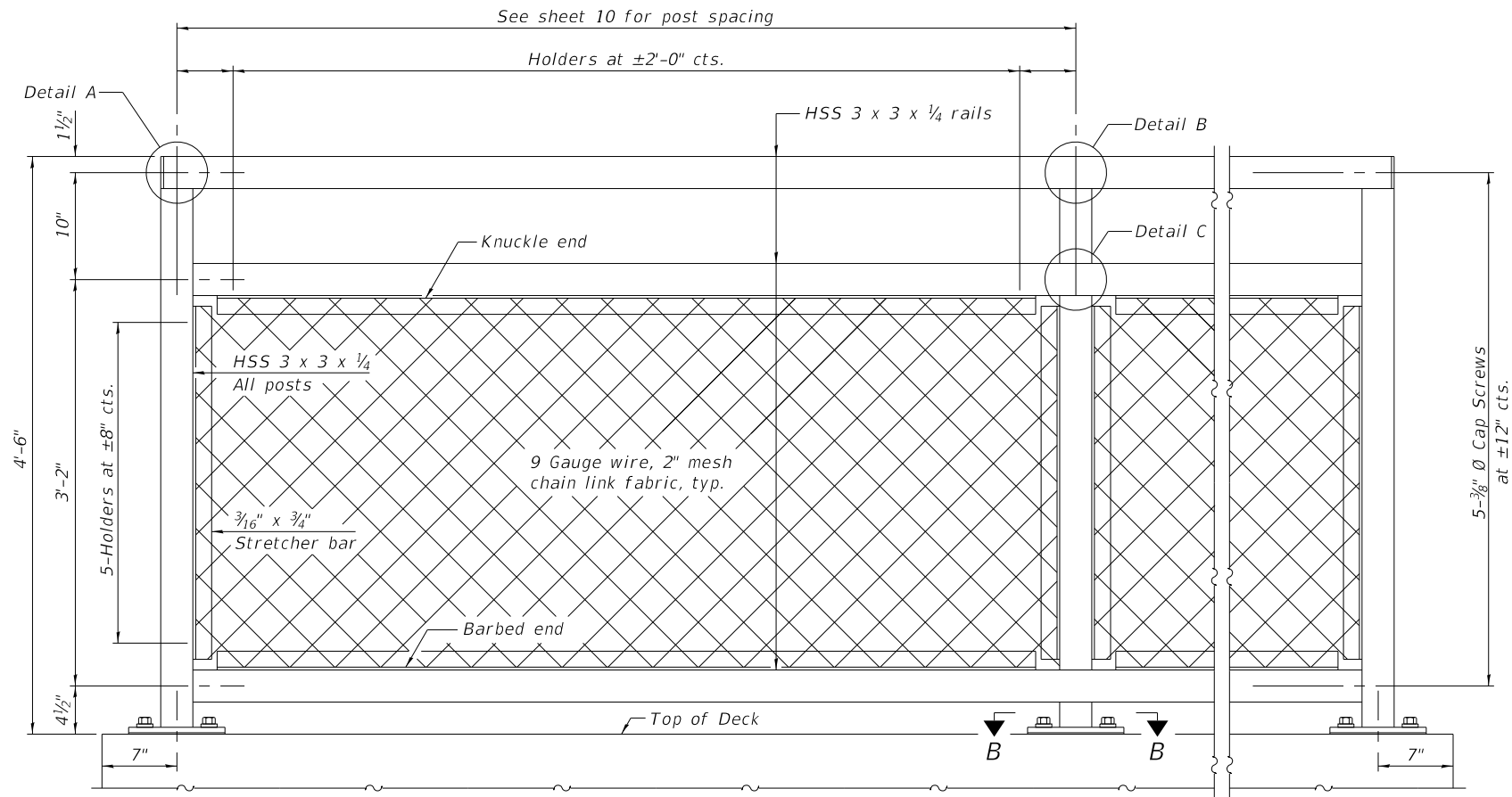
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CHECKED - AEU	REVISOR -	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

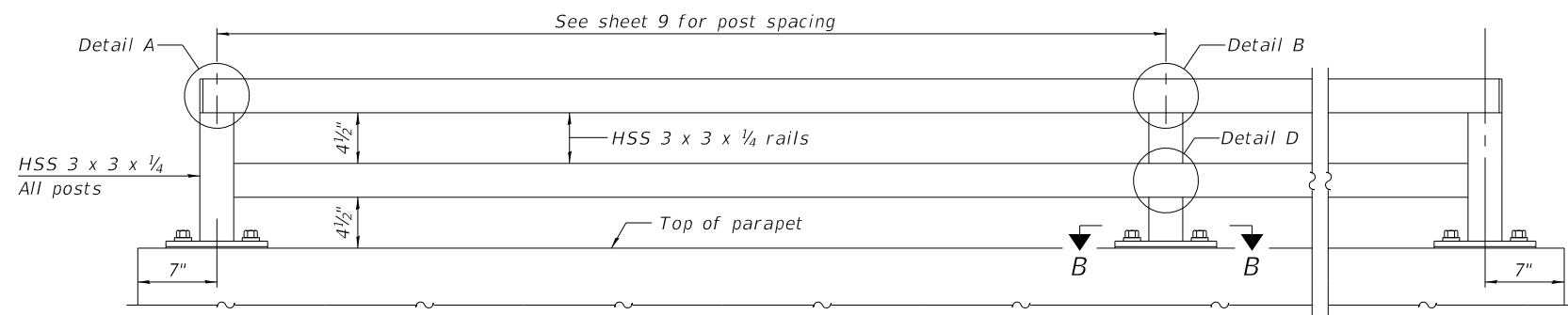
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 14 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	33
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



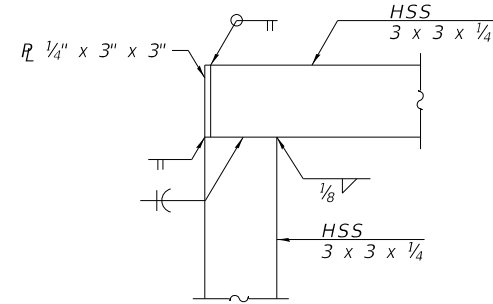
ELEVATION BICYCLE RAILING
(Inside face)



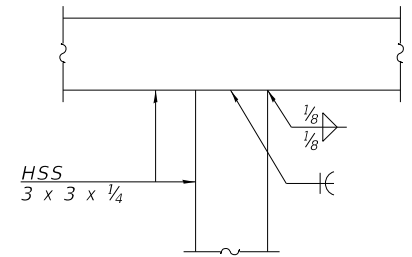
ELEVATION PARAPET RAILING
(Inside face)

RAILING CRITERIA

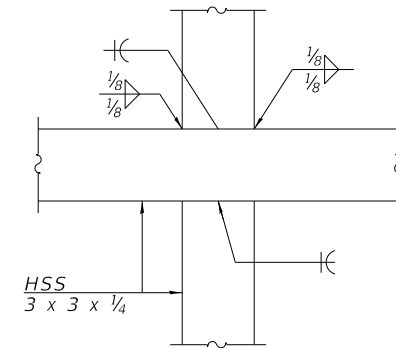
MASH 2016 Test Level	4
Parapet Railing Weight (plf)	25
Bicycle Railing Weight (plf)	50
Max Post Spacing	10'-0"



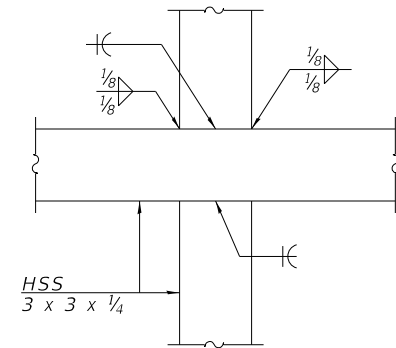
DETAIL A



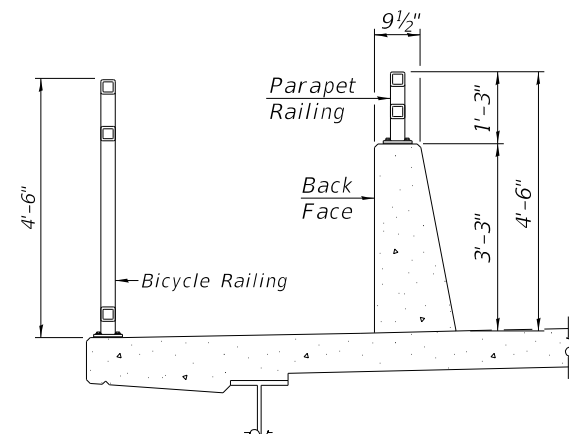
DETAIL B



DETAIL C



DETAIL D



SECTION THRU DECK

(Sheet 1 of 2)

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-05-Railing.dwg
PLOT DRIVER: IL_Plot.dwg
PEN TABLE: plotabel.tbl



USER NAME - jroibu	DESIGNED - FAS	REVISED - 10/30/2024
CHECKED - AEU	REVISED -	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

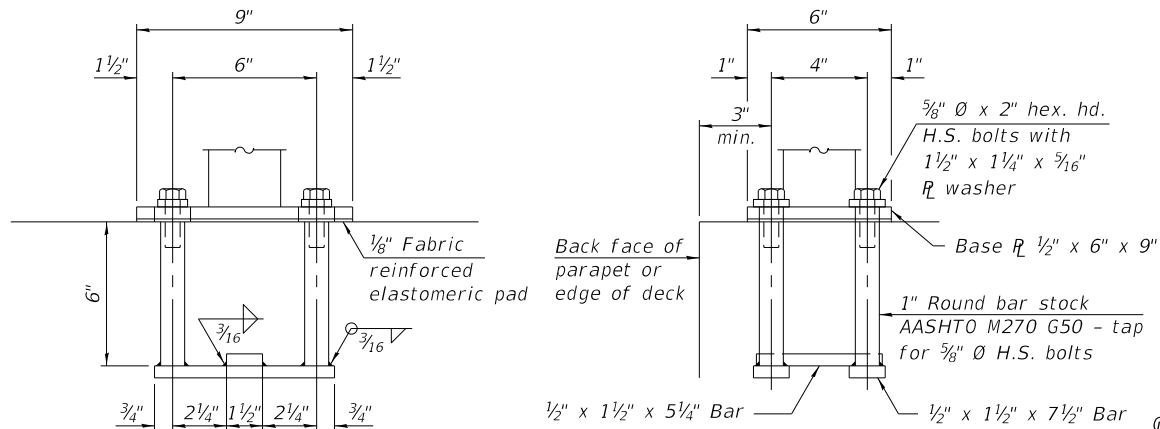
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BICYCLE RAILING AND PARAPET RAILING
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 15 OF 24 SHEETS

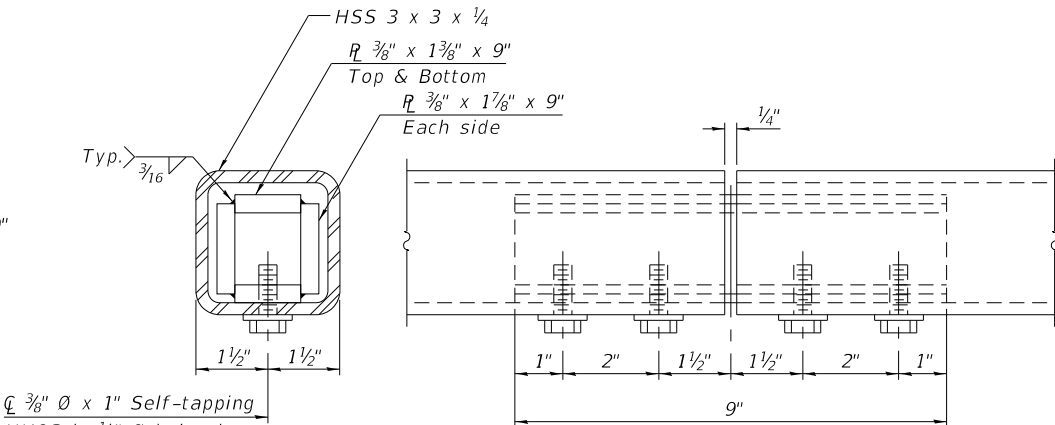
F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	34
CONTRACT NO. 87868				

ILLINOIS FED. AID PROJECT



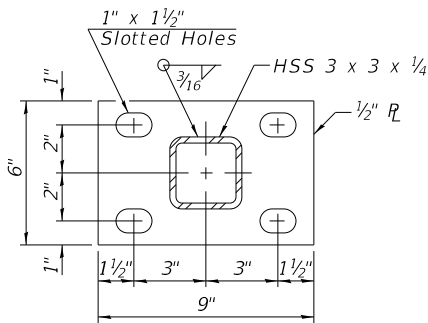
ANCHORAGE ASSEMBLY

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" Ø fully threaded anchor rods with the same plate washers as specified above and heavy hex lock nuts according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications.



MATERIAL SPLICE

Notes:
Place reinforcement bars to miss anchor rod locations.
CVN testing is not required for the HSS tubing used in the Bicycle Railing.
All HSS tubing used for the Parapet Railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.
All HSS tubing used for the Parapet Railing shall be ASTM A500 grade C.
All base plates used for the Parapet Railing shall be AASHTO M270 grade 50.
All heavy hex nuts shall be according to ASTM A 563 grade DH.
All fully threaded anchor rods shall be ASTM F1554 grade 105.
The post base plate shall be fastened to the curb snug tight and given an additional 1/8" turn.
Rail splice inserts may be built out of bent plates of the same thicknesses and outside geometry limits as the 4 plate rail splice inserts shown.
The chain link fabric shall be black coated vinyl and conform to the requirements of Article 1006.27(a)(1)d of the Standard Specifications.
All posts, railings, splices, anchor devices and bent plates shall be powder coated black.



SECTION B-B

BILL OF MATERIAL

Item	Unit	Quantity
Bicycle Railing	Foot	77
Parapet Railing	Foot	103

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxxx-06-railing011s2.dgn
PLOT DRIVER: IL_Pdf.dwg/rtcf
PEN TABLE: plotabel.tbl



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USER NAME - jraibtu	DESIGNED - FAS	REVISED - 10/30/2024
	CHECKED - AEU	REVISED -
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

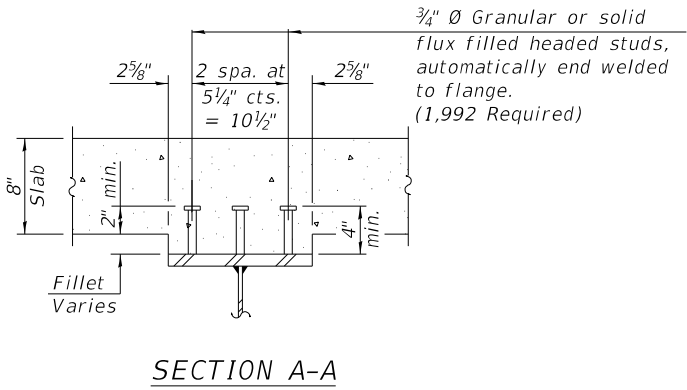
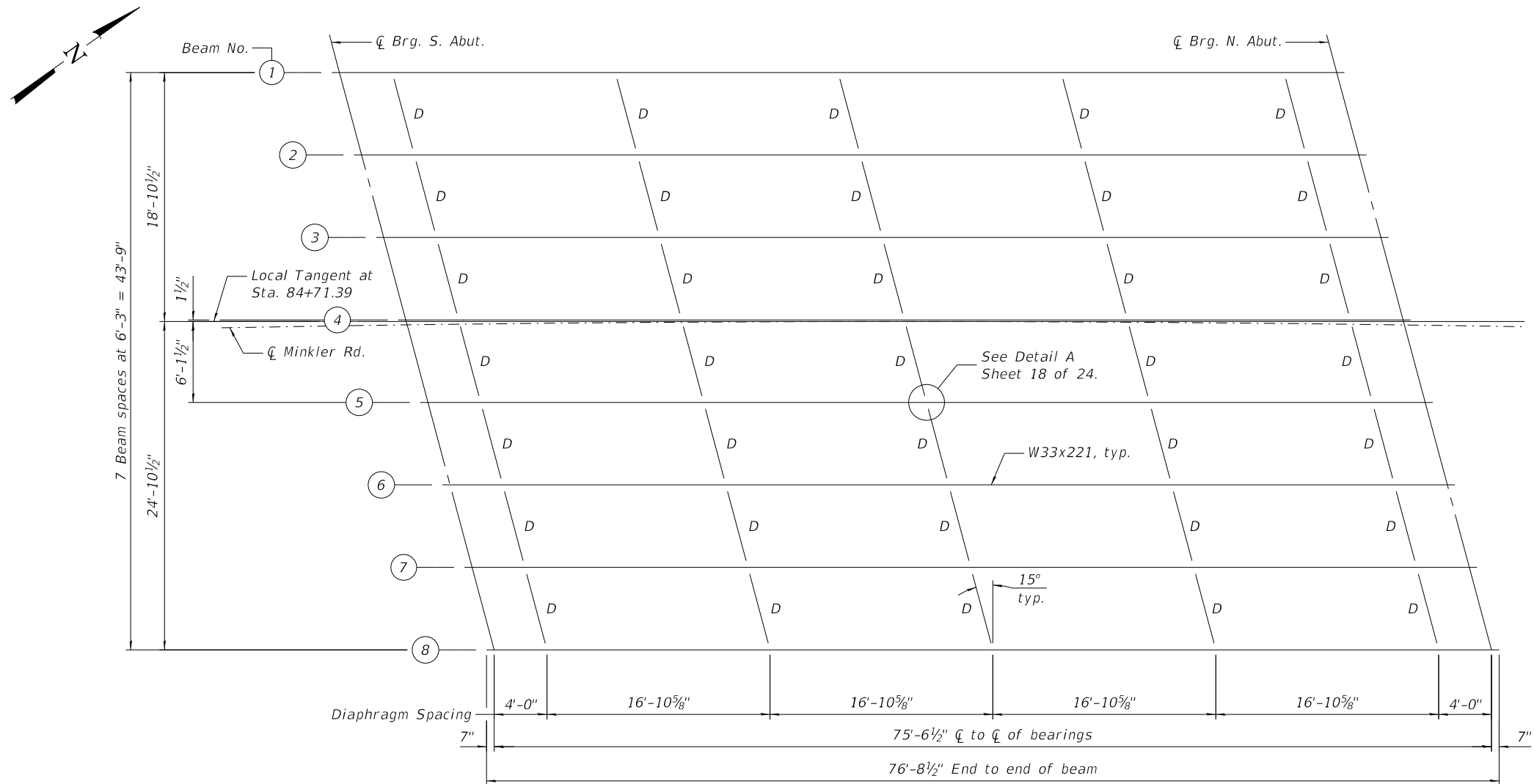
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BICYCLE RAILING AND PARAPET RAILING
STRUCTURE NO. 047-6708 047-6308

(Sheet 2 of 2)

SHEET NO. 16 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	35
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



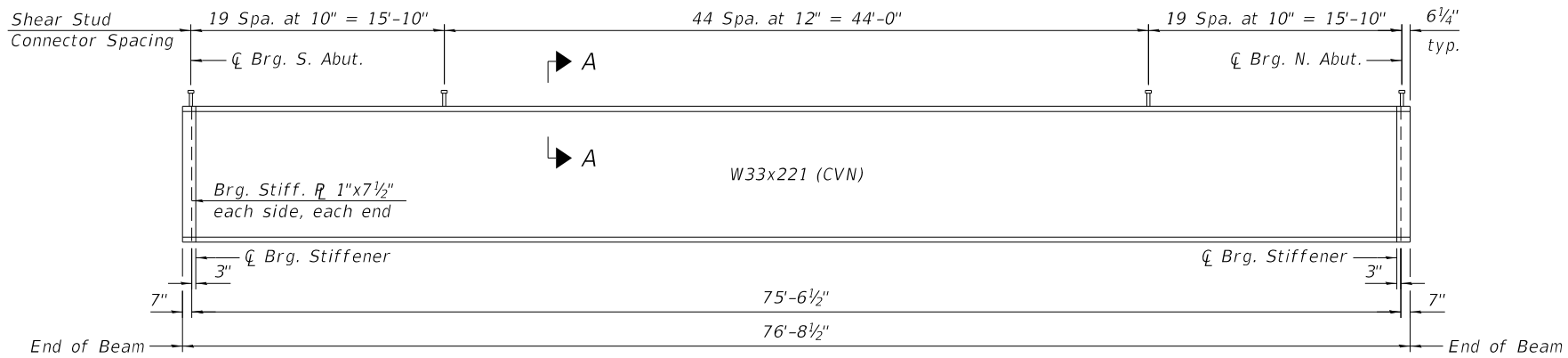
*TOP OF BEAM ELEVATIONS (FOR INFORMATION ONLY)

PLAN

Location	℄ Brg. S. Abut.	℄ Brg. N. Abut.
Beam 1	627.64	628.20
Beam 2	627.43	628.00
Beam 3	627.22	627.80
Beam 4	627.00	627.61
Beam 5	626.79	627.41
Beam 6	626.58	627.21
Beam 7	626.37	627.02
Beam 8	626.23	626.89

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

* For fabrication use only



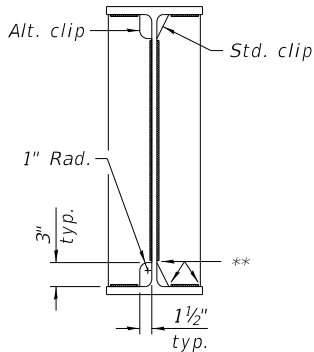
BEAM ELEVATION

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxxx-07-Framing.dgn
PLOT DRIVER: IL_Plot.dwg
PEN TABLE: plotabel.tbl

HRG PROJECT NO.: 17087.01
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PLOT DRIVER: ILddt-dwg.plt
PEN TABLE: plotabel.tbl

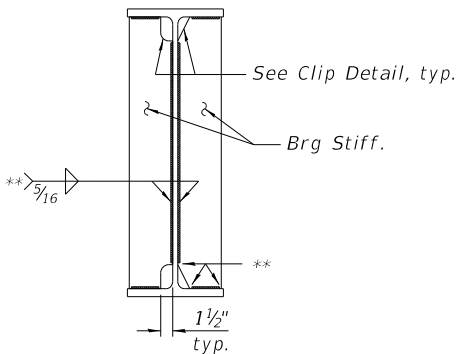
INTERIOR GIRDER MOMENT TABLE		
		0.5 Span 1
I_s	(in ⁴)	12900
$I_c(n)$	(in ⁴)	29341
$I_c(3n)$	(in ⁴)	21542
$I_c(cr)$	(in ⁴)	—
S_s	(in ³)	759
$S_c(n)$	(in ³)	1024
$S_c(3n)$	(in ³)	930
$S_c(cr)$	(in ³)	—
S_x	(in ³)	759
DC1	(k/')	0.904
M_{DC1}	('k)	645
DC2	(k/')	0.141
M_{DC2}	('k)	101
DW	(k/')	0.250
M_{DW}	('k)	178
LLDF		0.557
$M_{\ell + IM}$	('k)	1054
f_i (Strength I)	(ksi)	0
$M_u + \frac{1}{3} f_i S_x$	('k)	3044
$\phi_f M_n$	('k)	4896
f_s DC1	(ksi)	10.2
f_s DC2	(ksi)	1.3
f_s DW	(ksi)	2.3
f_s ($\ell + IM$)	(ksi)	12.3
$f_s + f_i/2$ (Service II)	(ksi)	29.8
Service II Resistance	(ksi)	47.5
$f_s + f_i/3$ (Strength I)	(ksi)	—
$\phi_f F_n$	(ksi)	—
V_f	(k)	26.8

GIRDER REACTION TABLE		
	Abutment	
	Interior	Exterior
LLDF	0.725	
OCF	1.05	
R_{DC1}	(k) 35.0	
R_{DC2}	(k) 5.3	
R_{DW}	(k) 9.4	
R_{ℓ}	(k) 63.3	
R_{IM}	(k) 15.1	
R_{Total} (Strength I)(Impact)	(k) 201.7	
R_{Total} (Strength I)(No Impact)	(k) 175.3	

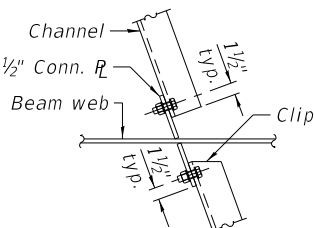


WELD LIMITS AND CLIP DETAILS

** Stop welds 1/4" (±1/8") from edges as shown, typical.

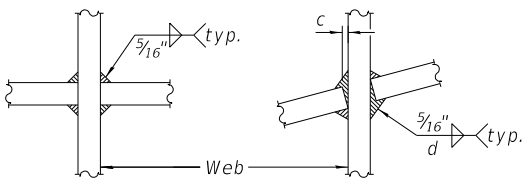


SECTION AT ABUTMENT



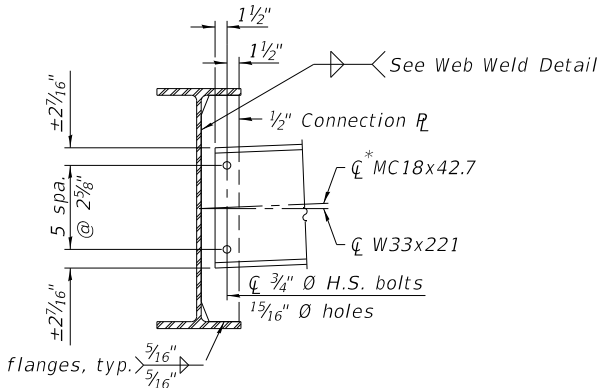
DETAIL A

Note:
Clip channel as necessary
for ease of installation.



WELD WELD DETAIL

$d = \frac{5}{16} + c$



INTERIOR DIAPHRAGM D

(Exterior beam shown, interior beam similar)
(Stop welds 1/4" (±1/8") from edges, typ.)
(35 required)

* Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized, shall be provided at no additional cost to the Department.

Notes:
1. H.S. bolts shall be ASTM F3125, Grade A325, Type 1.
2. Two hardened washers required for each set of oversized holes.

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.

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

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

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

$f_s + f_i/2$ (Service II): Sum of stresses as computed below (ksi).
 f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s ($\ell + IM$) + $f_i/2$

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

$f_s + f_i/3$ (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 ($\ell + IM$) + $f_i/3$

$\phi_f F_n$: 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_{ℓ} : 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).
 $1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_{\ell} + R_{IM})$

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

Note:
 M_{ℓ} and R_{ℓ} include the effects of centrifugal force and superelevation.



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USER NAME = jraibtu
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PLOT SCALE =
DRAWN - FAS
PLOT DATE = 8/28/2024
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CHECKED - AEU
PLOT SCALE =
DRAWN - FAS
PLOT DATE = 8/28/2024
CHECKED - AEU

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 18 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	37
CONTRACT NO. 87868				

ILLINOIS FED. AID PROJECT

HRG PROJECT NO.: 17087.01
HRG PROJ CONTACT:
FILE NAME: 0476708-xxxxx-09-Brg01.dgn
PLOT DRIVER: IL_Pdf.dwg/rtcf
PEN TABLE: plotabel.tbl



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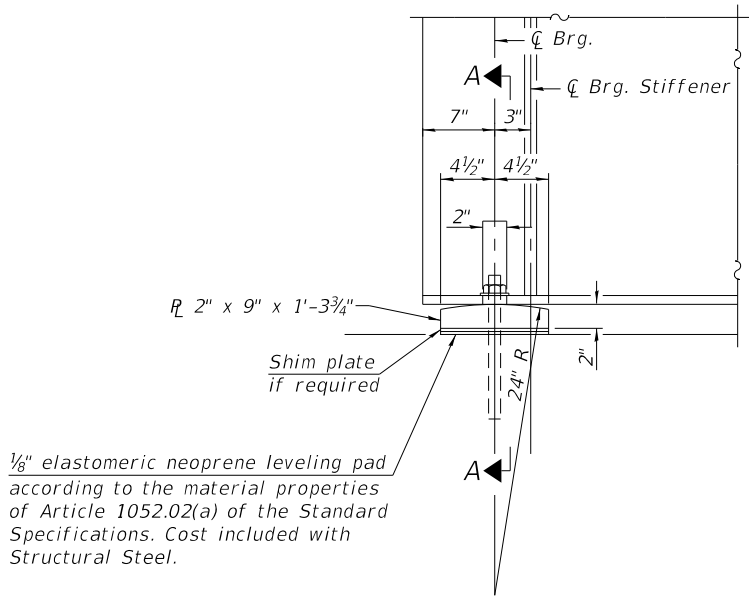
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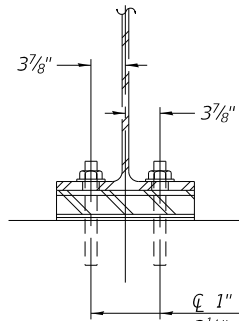
BEARING DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 19 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	38
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				



ELEVATION AT ABUTMENTS



SECTION A-A

FIXED BEARING

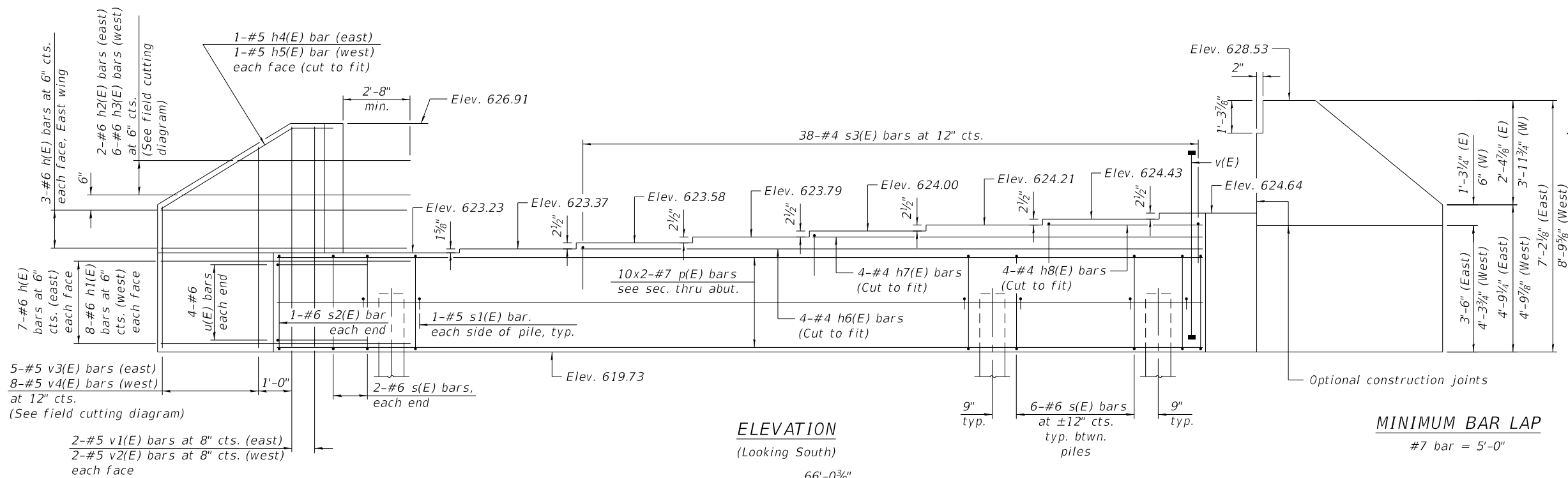
(16 Required)

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

BILL OF MATERIAL

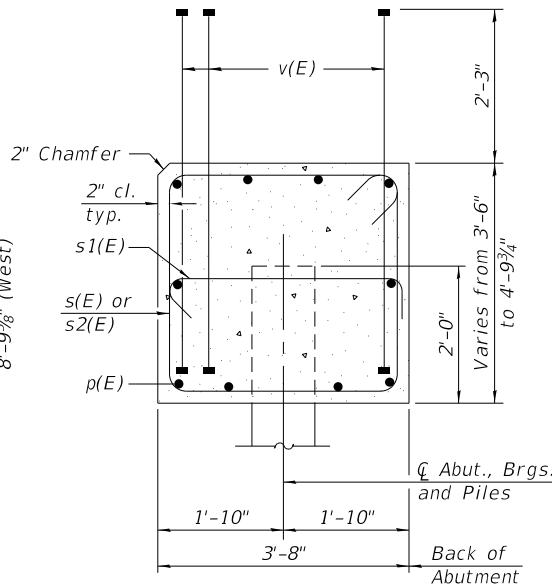
Item	Unit	Total
Anchor Bolts, 1"	Each	32

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-020-Sabut.rgn
PLOT DRIVER: L:\pdf-dwg\pctcg
PEN TABLE: plotlabel.tbl



ELEVATION
(Looking South)

MINIMUM BAR LAP
#7 bar = 5'-0"



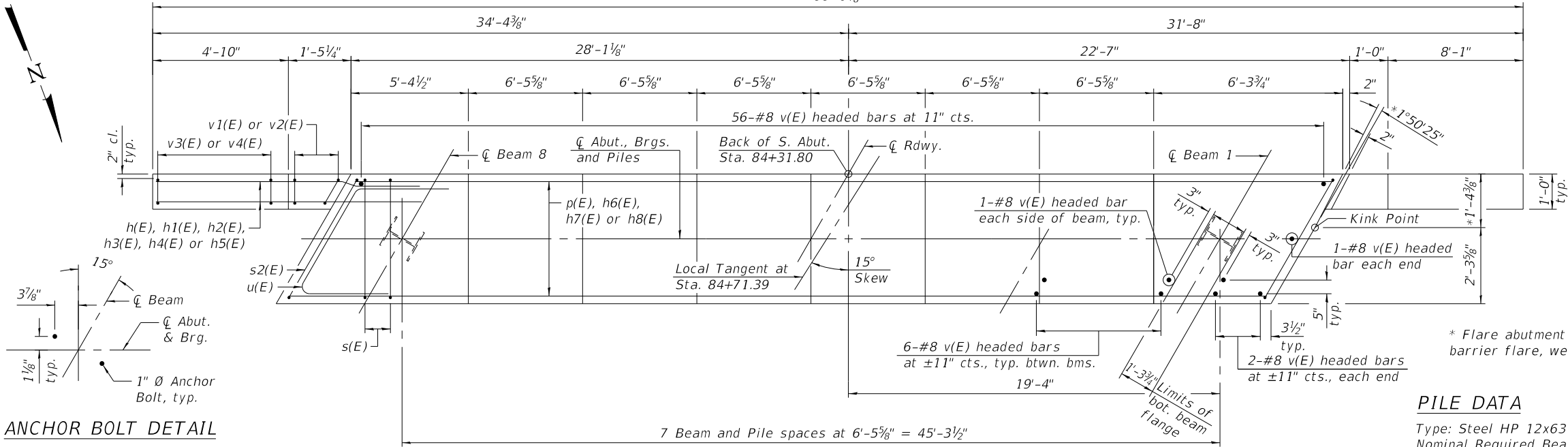
SEC. THRU ABUT.
Dimensions at right angles to abutment.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	20	#6	8'- 9"	
h1(E)	16	#6	11'- 11"	
h2(E)	2	#6	14'- 6"	
h3(E)	6	#6	18'- 9"	
h4(E)	2	#5	6'- 3"	
h5(E)	2	#5	9'- 10"	
h6(E)	4	#4	38'- 3"	
h7(E)	4	#4	25'- 4"	
h8(E)	4	#4	12'- 4"	
p(E)	20	#7	27'- 8"	
s(E)	46	#6	14'- 4"	
s1(E)	16	#5	4'- 4"	
s2(E)	2	#6	14'- 7"	
s3(E)	38	#4	6'- 4"	
u(E)	8	#6	11'- 11"	
v(E)	120	#8	5'- 7"	
v1(E)	4	#5	6'- 10"	
v2(E)	4	#5	8'- 4"	
v3(E)	5	#5	11'- 0"	
v4(E)	8	#5	12'- 4"	
Structure Excavation				Cu. Yd. 183
Concrete Structures				Cu. Yd. 32.3
Reinforcement Bars, Epoxy Coated				Pound 5,450
Furnishing Steel Piles HP 12X63				Foot 280
Driving Piles				Foot 280
Test Pile Steel HP 12X63				Each 1
Pile Shoes				Each 8

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 22 of 24.
Bar terminators, paid for separately.
See Total Bill of Material.

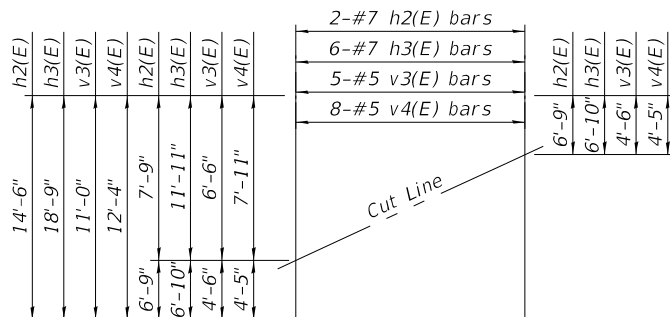
ANCHOR BOLT DETAIL



PLAN

PILE DATA

Type: Steel HP 12x63
Nominal Required Bearing: 400 k
Factored Resistance Available: 220 k
Est. Length: 40 ft
No. Production Piles: 7
No. Test Piles: 1



FIELD CUTTING DIAGRAM

Order h2(E), h3(E), v3(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.

BAR v(E)
(Headed, 240-#8 Bar terminators)

BARS h4(E) & h5(E)

BARS s(E) & s2(E)

BAR s1(E)

BAR s3(E)

BAR u(E)



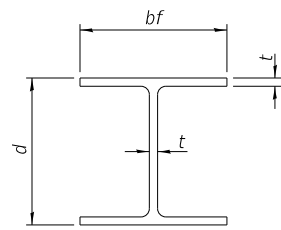
USER NAME = jroibu	DESIGNED - FAS	REVISED - 10/30/2024
CHECKED - AEU	REVISOR -	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 047-6708 047-6308

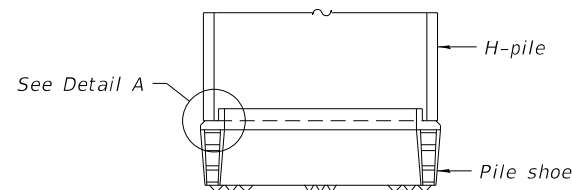
SHEET NO. 20 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	39
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

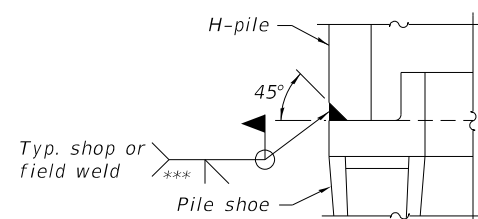


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	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"	1 1/16"	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"



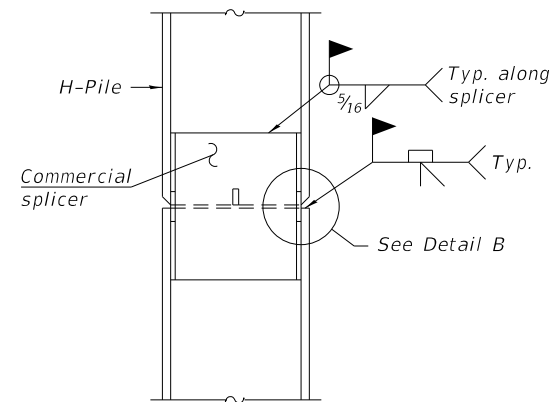
ELEVATION



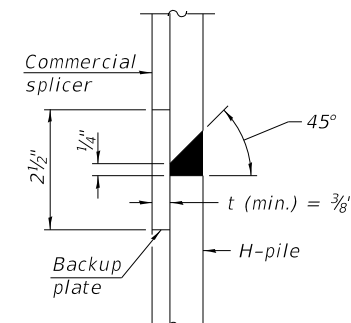
DETAIL A

SHOE ATTACHMENT

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

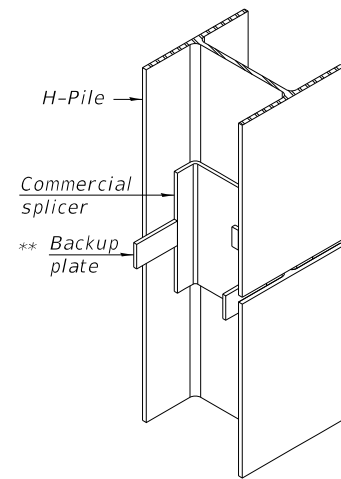


ELEVATION

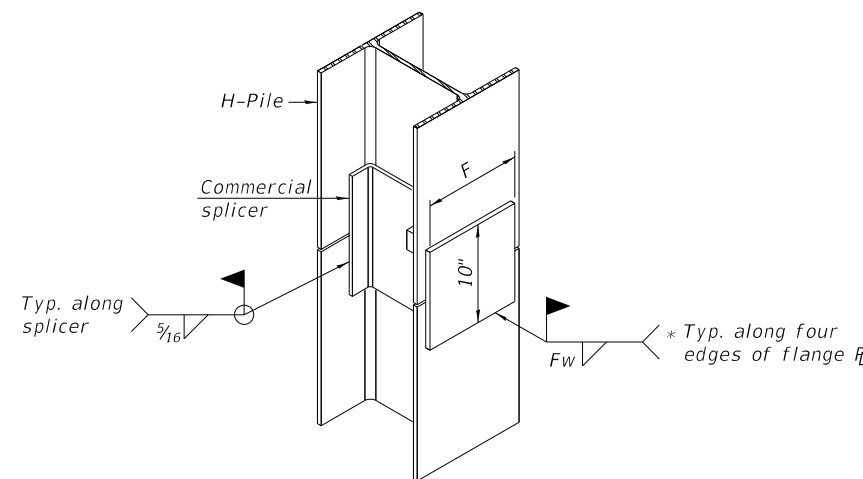


DETAIL "B"

WELDED COMMERCIAL SPLICE



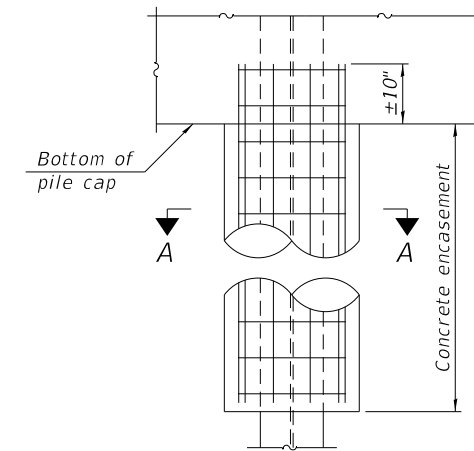
ISOMETRIC VIEW



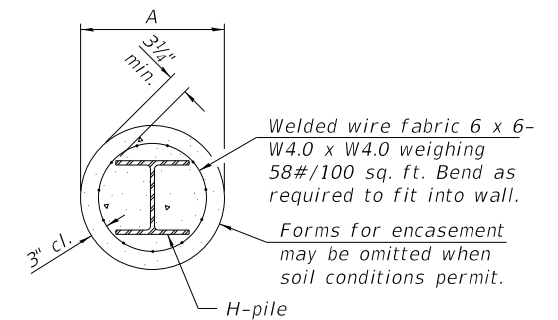
ISOMETRIC VIEW

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.).

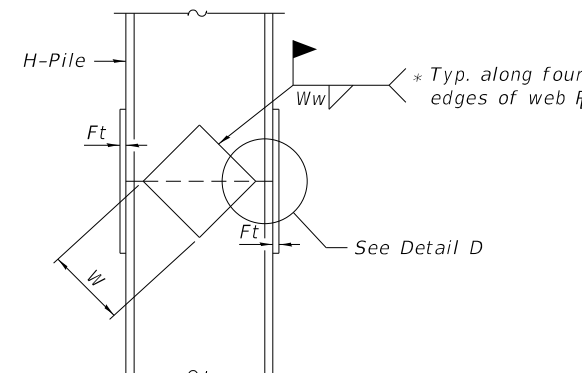


ELEVATION

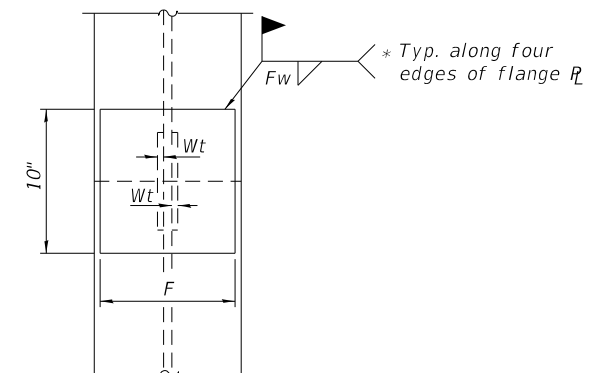


SECTION A-A

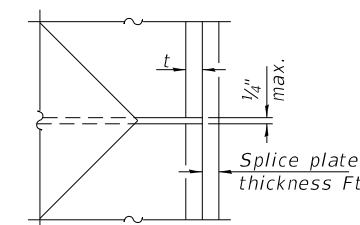
INDIVIDUAL PILE
CONCRETE ENCASEMENT
(when specified)



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

F-HP

2-1-2023



USER NAME - jraibtu	DESIGNED - FAS	REVISED - 10/30/2024
CHECKED - AEU	REVISED -	
PLOT SCALE =	DRAWN - FAS	REVISED -
PLOT DATE = 8/28/2024	CHECKED - AEU	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 047-6708 047-6308

SHEET NO. 22 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3792	21-00053-00-BR	KENDALL	62	41
CONTRACT NO. 87868				
ILLINOIS FED. AID PROJECT				

HRG PROJECT NO.: 17087.01
HRG PROJ. CONTACT:
FILE NAME: 0476708-xxxx-022-Piling.dgn
PLOT DRIVER: IL_Plot_Dwg.plt
PEN TABLE: plotlabel.tbl

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1145 N Main Street
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WEI Job No.: 811-06-01

Client **HR Green, Inc**

Project **Minkler Bridge Over Morgan Creek**

Location **Oswego, Kendall County, Illinois**

Datum: NAVD 88
Elevation: 630.16 ft
North: 1814388.07 ft
East: 970952.02 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
	629.75	7.5-inch thick ASPHALT								604.7	Very dense, gray SILTY LOAM, some gravel; damp						
	628.8	--PAVEMENT-- Brown and gray, medium SAND, trace gravel; damp			1	8 6 4	2.25	15			--RDR 3--			11	26 50/6"	NP	9
		--AGGREGATE BASE-- Stiff to very stiff, brown and gray CLAY LOAM to SILTY CLAY LOAM, trace to little gravel; damp			2	1 2 2	1.00	15		602.7	Dense, gray Gravelly SAND; saturated			12	8 10 20	NP	23
	624.7	--FILL-- --RDR 2-- Very stiff, black SILTY CLAY, trace organic matter; damp	5		3	1 2 2	2.00	29			--RDR 3--	30					
		--Buried TOPSOIL-- --RDR 2--								598.2	Very dense, gray LOAM to SILTY LOAM, some gravel; damp			13	60/5"	NP	7
	622.2	Stiff, brown and gray SILTY CLAY; damp			4	2 3 7	1.75	17			--cobble fragments at bottom of split spoon-- --RDR 3--	35					
	621.4	Medium dense, brown and gray SANDY GRAVEL; damp	10		5	5 7 3	NP	8		593.7	Very dense, gray and green Gravelly SANDY LOAM; damp to moist			14	50/5"	NP	6
	618.2	--RDR 2-- Stiff, gray SILTY CLAY to SILTY CLAY LOAM; damp to moist			6	2 3 2	1.56	18			--RDR 3--	40					
	616.2	Brown, coarse SAND; saturated			7	2 2 4	1.31	8			--sand seams; saturated--			15	43 50/2"	NP	7
	614.0	Loose to medium dense, gray SILT; saturated	15		8	2 3 3	NP	26			--possible cobbles--	45					
		--RDR 2--			9	4 6 5	NP	25		583.4	Very dense, gray and green SANDY GRAVEL; damp			16	50/5"	NP	7
		--clay lamination--			10	12 15 11	NP	8			--crushed cobbles or boulder-- --RDR 3 to 4--	50					
	608.2	Gray, fine SAND; saturated															
	607.2	Medium dense, gray Gravelly SAND; moist															
		--cobble fragments-- --RDR 2--	25														

GENERAL NOTES

Begin Drilling 09-01-2021 Complete Drilling 09-01-2021

Drilling Contractor Wang Testing Services Drill Rig 13CME55T [85%]

Driller R&R Logger M. Sadowski Checked by EG

Drilling Method 3.25" ID HSA; boring backfilled upon completion

WATER LEVEL DATA

While Drilling 14.00 ft

At Completion of Drilling 6.00 ft

Time After Drilling NA

Depth to Water NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

BORING LOG B-01

Page 2 of 2

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WEI Job No.: 811-06-01

Client	HR Green, Inc
Project	Minkler Bridge Over Morgan Creek
Location	Oswego, Kendall County, Illinois

Datum: NAVD 88
Elevation: 630.16 ft
North: 1814388.07 ft
East: 970952.02 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	578.4	Very dense, gray weathered SHALE fragments --Weathered BEDROCK-- --RDR 3 to 4-- --possible cobbles--	55		17	50/3"	NP	5		551.2	--RQD = 33%-- --80% water return--	80		2	0 m		5
	566.2	--Gray and green Weathered Sandstone; damp-- --RDR 3 to 4-- --possible cobbles--	60		18	50/2"	NP	4			Boring terminated at 79.00 ft	85					
		Medium strong, dark greenish black, poor rock mass quality SHALE and MUDSTONE; slightly weathered rock and joints, closely spaced horizontal and oblique joints, with 0.05 to 0.2-inch joint opening, hard joint wall, slicken joint wall surface, soft infill strength, and greater than 0.2-inch infill thickness. -- Run 1: 64.0 to 74.0 feet-- --Recovery = 98%-- --RQD = 29%--	65									90					
		--Run 2: 74.0 to 79.0 feet-- --Recovery = 100%--	75									100					
GENERAL NOTES										WATER LEVEL DATA							
Begin Drilling 09-01-2021 Complete Drilling 09-01-2021										While Drilling 14.00 ft							
Drilling Contractor Wang Testing Services Drill Rig 13CME55T [85%]										At Completion of Drilling 6.00 ft							
Driller R&R Logger M. Sadowski Checked by EG										Time After Drilling NA							
Drilling Method 3.25" ID HSA; boring backfilled upon completion										Depth to Water NA							
The stratification lines represent the approximate boundary																	

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WEI Job No.: 811-06-01

Client **HR Green, Inc**

Project **Minkler Bridge Over Morgan Creek**

Location **Oswego, Kendall County, Illinois**

Datum: NAVD 88
Elevation: 630.88 ft
North: 1814501.21 ft
East: 971020.05 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)	Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type	Sample No.	SPT Values (blows/6 in)	Qu (tsf)	Moisture Content (%)
	630.6	3-inch thick ASPHALT --PAVEMENT--									Gravelly SAND to SANDY LOAM; saturated						
	629.4	Medium dense, brown and gray Gravelly SAND to SANDY LOAM; damp			1	12 8 5	3.00 P	10			--RDR 2-4--			11	21 26 38	NP	9
	627.9	--AGGREGATE BASE-- Very stiff, brown CLAY LOAM, little gravel; damp			2	1 2 2	1.07 B	25			--RDR 2-4--			12	14 18 20	NP	23
	625.4	--FILL-- Stiff, brown SILTY CLAY LOAM; damp	5									30					
	624.4	--RDR 2-- Stiff (1.00P), black SILTY CLAY LOAM; damp			3	2 1 1	0.74 B	32			--hard drilling at 32.5 feet-- --cobbles from 33.0 to 34.0 feet--						
	621.9	--FILL-- Stiff (1.00P), black SILTY CLAY LOAM; damp															
	620.4	--Buried TOPSOIL-- Medium stiff, gray and brown SILTY CLAY to SILTY CLAY LOAM; damp	10		4	4 10 13	0.98 B	23		596.9	Very dense, gray SILTY LOAM, little to some gravel; damp	35		13	41 50/3"	NP	
	615.4	--RDR 2-- Medium dense, brown and gray SANDY GRAVEL; damp			5	5 9 10	NP	22			--RDR 3--						
		--RDR 2-3-- Medium dense, brown to gray SILT; saturated			6	5 8 12	NP	22			--possible cobbles--	40		14	18 33 50/4"	NP	8
		--RDR 2--	15														
		--RDR 2-3-- Medium dense, gray, fine to coarse SAND, trace to some gravel; saturated			7	6 7 8	NP	19		589.1	--hard drilling-- --possible cobbles--						
					8	9 8 9	NP	17			Very dense, black and white SANDY GRAVEL; wet			15	50/2"	NP	5
			20								--RDR 3-4-- --possible cobbles--	45					
					9	8 10 12	NP	15		584.9	Possible Weathered BEDROCK at 46 feet						
					10	7 18 10	NP	15		582.3	Boring terminated at 48.50 ft			16	50/1"	NR	
	606.4	Dense to very dense, gray	25									50					

GENERAL NOTES

Begin Drilling **09-02-2021** Complete Drilling **09-02-2021**

Drilling Contractor **Wang Testing Services** Drill Rig **13CME55T [85%]**

Driller **R&R** Logger **M. Sadowski** Checked by **JAB**

Drilling Method **2.25" ID HSA to 10 ft; mud rotary thereafter; boring backfilled upon completion**

WATER LEVEL DATA

While Drilling 10.00 ft

At Completion of Drilling mud in borehole

Time After Drilling NA

Depth to Water NA

The stratification lines represent the approximate boundary between soil types; the actual transition may be gradual.

BORING LOG SHA-01

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WEI Job No.: 811-06-01

Client	HR Green, Inc
Project	Minkler Bridge Over Morgan Creek
Location	Oswego, Kendall County, Illinois

Datum: NAVD 88
Elevation: 615.69 ft
North: 1814441.15 ft
East: 971009.55 ft
Station: NA
Offset: NA

Profile	Elevation (ft)	SOIL AND ROCK DESCRIPTION	Depth (ft)	Sample Type recovery	Sample No.	SPT Values (blw/6 in)	Qu (tsf)	Moisture Content (%)
	615.35	15-inch thick, very soft (<0.25P), black and gray, organic SANDY CLAY LOAM		PUSH	1		1.75 P	9
	614.4	Stiff, gray CLAY LOAM, little gravel; damp		PUSH	2		NP	20
	610.9	Gray, medium SAND; saturated		PUSH	3		1.00 P	13
	609.8	Stiff, gray CLAY LOAM, little gravel; moist		PUSH	4		NP	13
	609.9	Gray, medium to coarse SAND, trace to little gravel; saturated		PUSH	5		NP	16
	605.7	Boring terminated at 10.00 ft	10					
			15					
			20					
			25					

GENERAL NOTES

Begin Drilling **09-02-2021** Complete Drilling **09-02-2021**

Drilling Contractor **Wang Testing Services** Drill Rig **Geoprobe HA**

Driller **R&R** Logger **M. Sadowski** Checked by **JAB**

Drilling Method **1" IDA Pneumatic Geoprobe LB Sampler**

WATER LEVEL DATA

While Drilling ▽ **0.00 ft**

At Completion of Drilling ▼ **0.00 ft**

Time After Drilling **NA**

Depth to Water ▽ **NA**

The stratification lines represent the approximate boundary