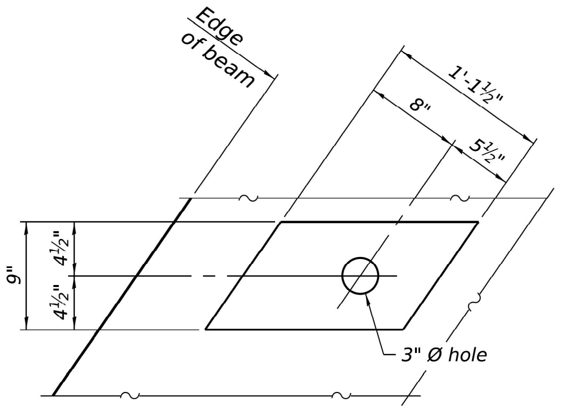
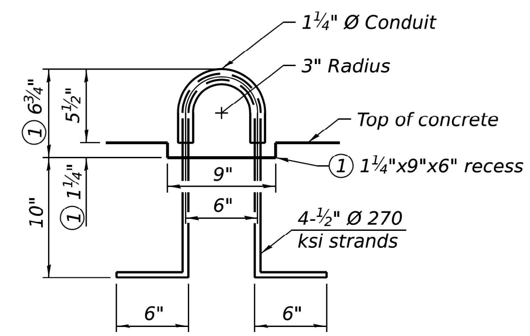


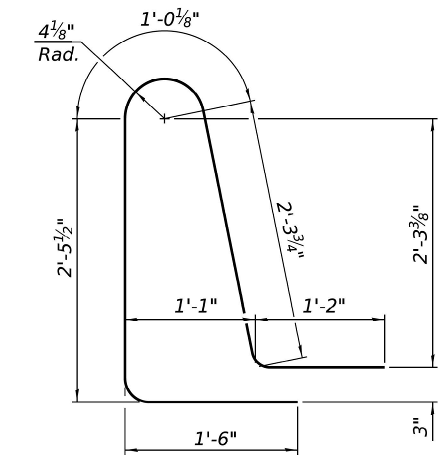
FABRIC BEARING PAD

(Bearing pads at fixed ends shall be ½" thick and bearing pads at expansion end shall be ¾" thick. Omit holes for fabric bearing pads at approach slab footing end of beams. Expansion fabric bearing pad shall be bonded to the approach slab footing.)

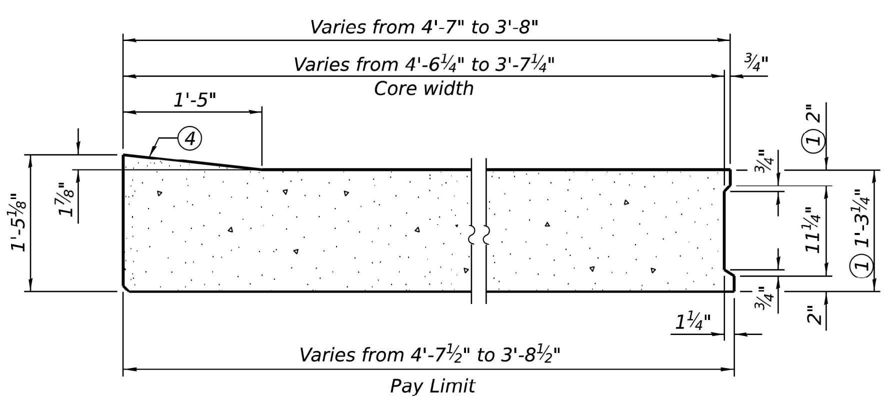


LIFTING LOOP DETAIL

(All lifting loops shall be recessed 1¼" minimum below the surface of the slab to allow for a minimum grout cover of 1" after maximum ¼" diamond grinding. Recess shall be filled with Ultra-High Performance Concrete (UHPC).)

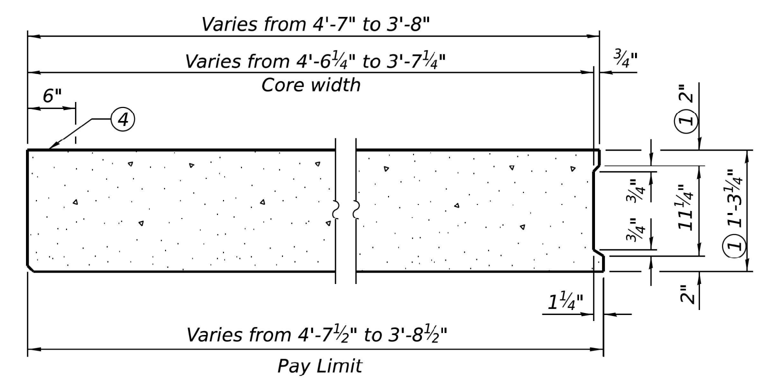


BAR D10(E)



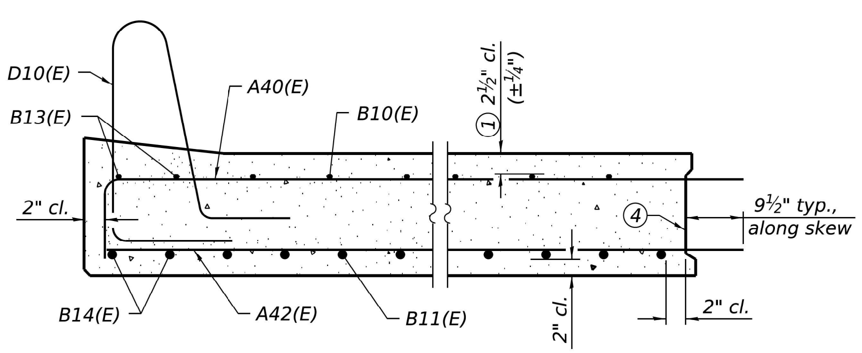
SECTION F-F

(Showing dimensions)



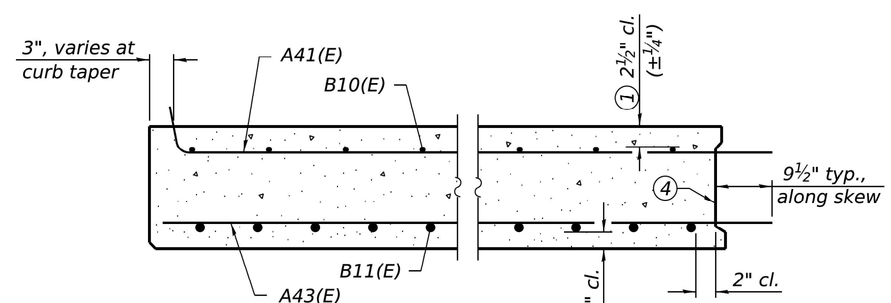
SECTION G-G

(Showing dimensions)



SECTION F-F

(Showing reinforcement)



SECTION G-G

(Showing reinforcement)

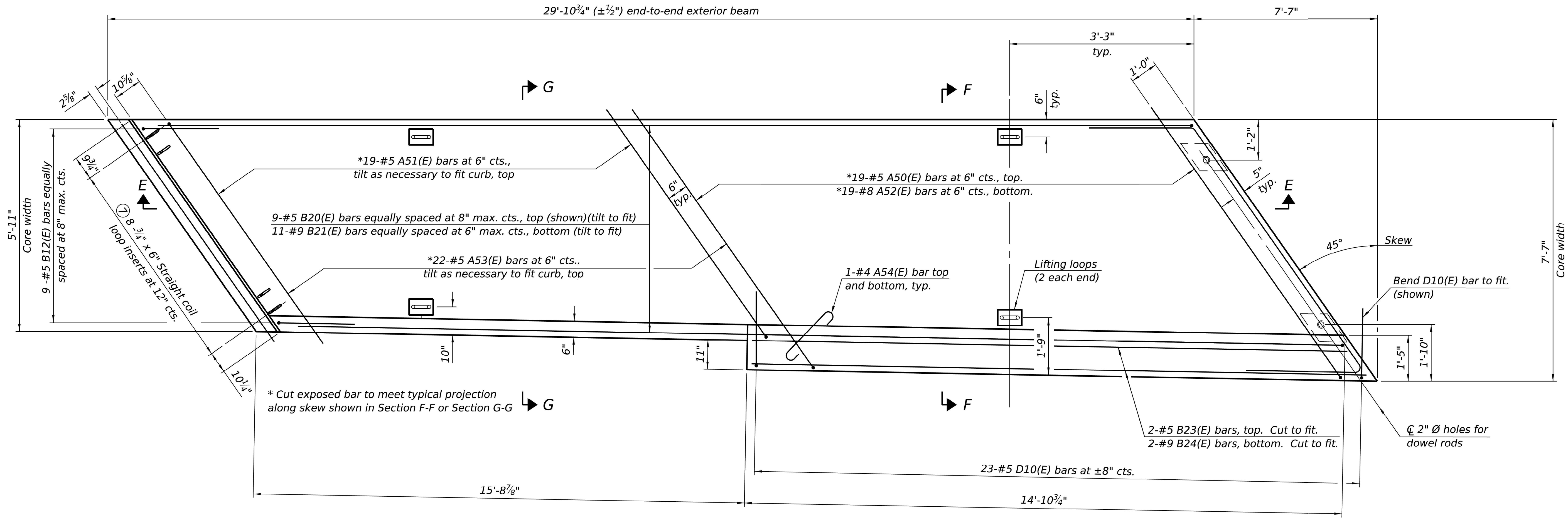
BAR LIST
EACH EXTERIOR BEAM E & G

(For information only)

Bar	No.	Size	Length	Shape
A40(E)	21	#5	7'-9"	
A41(E)	21	#5	6'-4"	
A42(E)	21	#8	6'-11"	
A43(E)	22	#8	5'-11"	
A44(E)	2	#4	3'-0"	
B10(E)	7	#5	28'-6"	
B11(E)	9	#9	29'-6"	
B12(E)	7	#5	4'-1"	
B13(E)	2	#5	15'-11"	
B14(E)	2	#9	15'-11"	
D10(E)	23	#5	8'-6"	
U11(E)	2	#5	10'-10"	

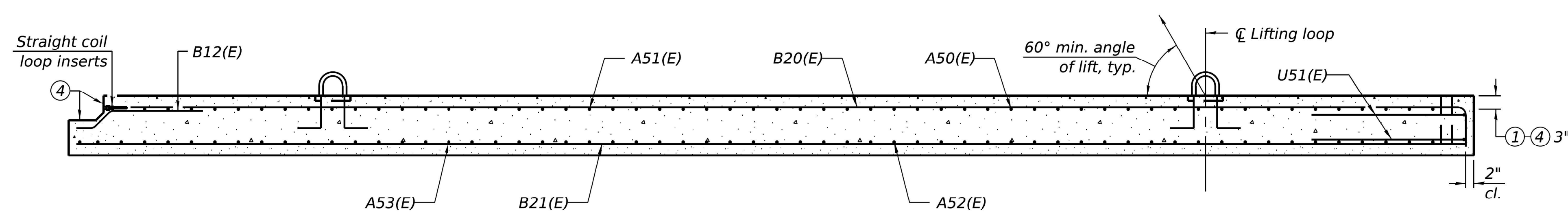
(Bar list includes the maximum number of bars for either beam. Any extra bar(s) shall not be used.)

(Sheet 9 of 14)

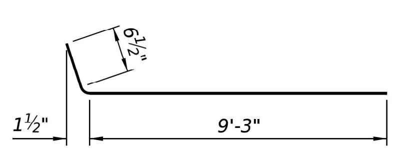


PLAN - EXTERIOR BEAM F

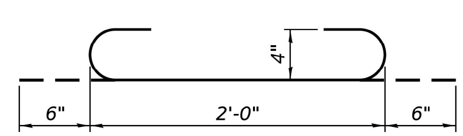
(Flanges not shown in plan view for clarity.)



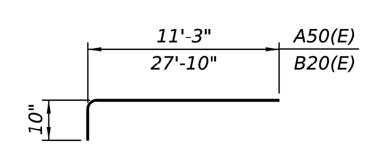
SECTION E-E



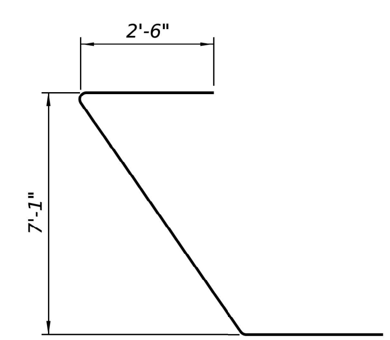
BAR A51(E)



BAR A54(E)

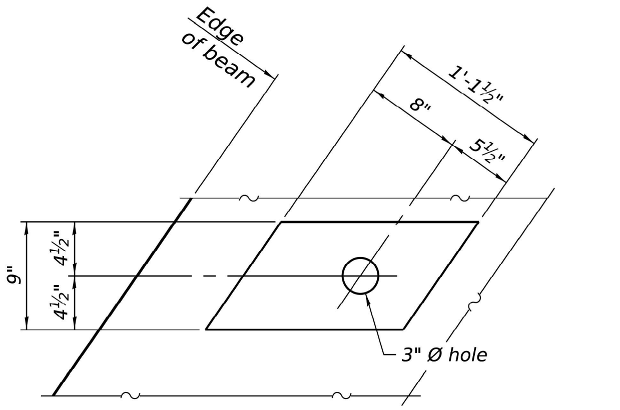


BARS A50(E) & B20(E)



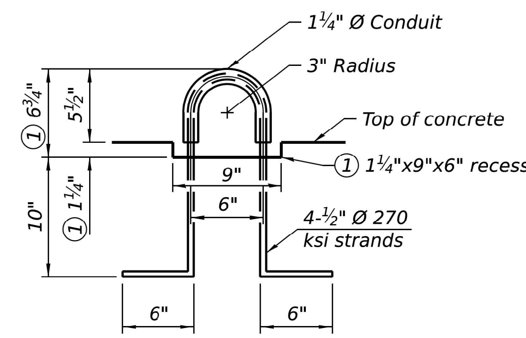
BARS U21(E)

(Sheet 10 of 14)



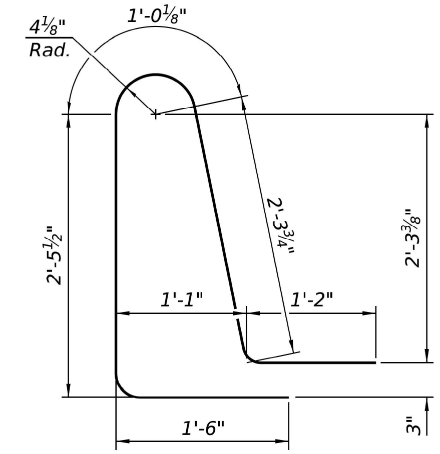
FABRIC BEARING PAD

(Bearing pads at fixed ends shall be ½" thick and bearing pads at expansion end shall be ¾" thick. Omit holes for fabric bearing pads at approach slab footing end of beams. Expansion fabric bearing pad shall be bonded to the approach slab footing.)

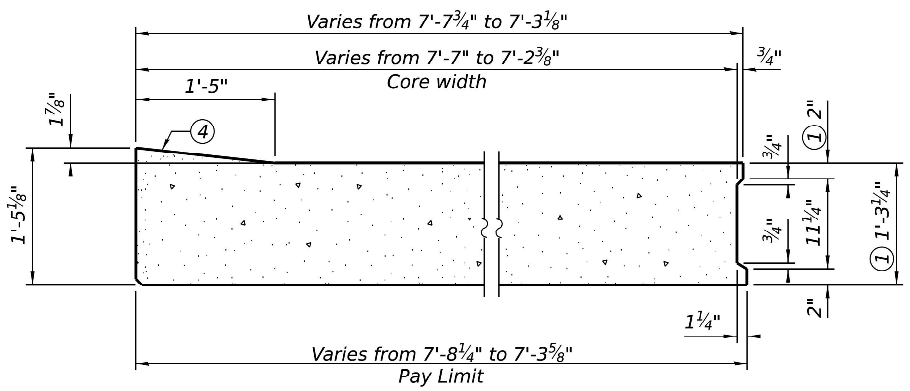


LIFTING LOOP DETAIL

(All lifting loops shall be recessed 1¼" minimum below the surface of the slab to allow for a minimum grout cover of 1" after maximum ¼" diamond grinding. Recess shall be filled with Ultra-High Performance Concrete (UHPC).)

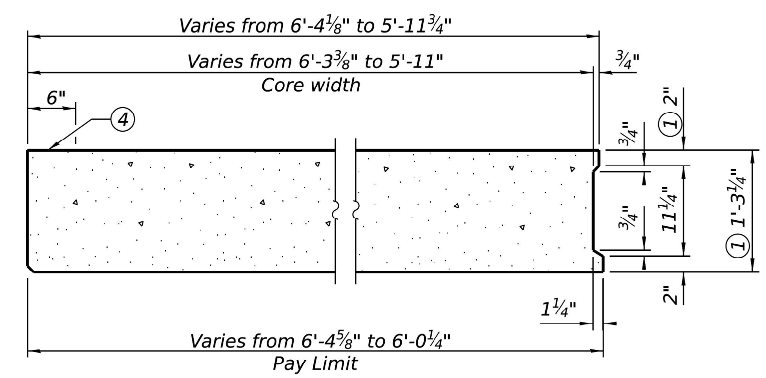


BAR D10(E)



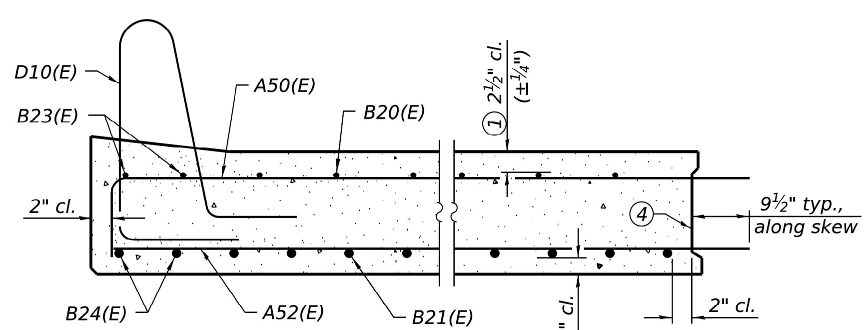
SECTION F-F

(Showing dimensions)



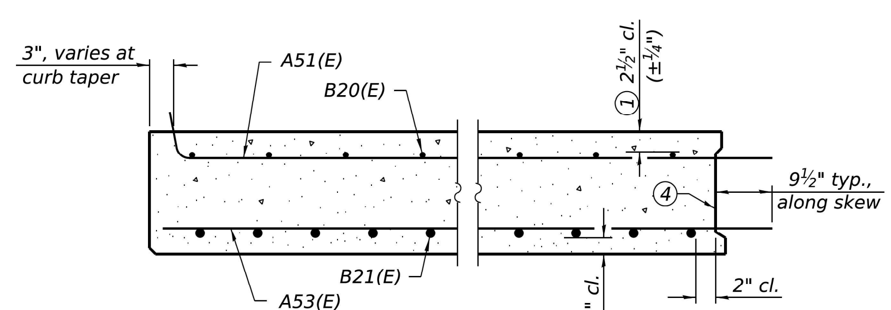
SECTION G-G

(Showing dimensions)



SECTION F-F

(Showing reinforcement)



SECTION G-G

(Showing reinforcement)

BAR LIST
EACH EXTERIOR BEAM F

(For information only)

Bar	No.	Size	Length	Shape
A50(E)	19	#5	11'-3"	
A51(E)	19	#5	9'-10"	
A52(E)	19	#8	11'-2"	
A53(E)	22	#8	9'-5"	
A54(E)	2	#4	3'-0"	
B12(E)	7	#5	4'-1"	
B20(E)	11	#5	28'-8"	
B21(E)	13	#9	29'-6"	
B23(E)	2	#5	15'-2"	
B24(E)	2	#9	15'-2"	
D10(E)	23	#5	8'-6"	
U51(E)	2	#5	15'-0"	

(Sheet 11 of 14)

HORNER SHIFRIN WWW.HORNERSHIFRIN.COM	USER NAME =	DESIGNED - U. KODE	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	FULL DEPTH PRECAST BRIDGE APPROACH SLAB STRUCTURE NO. 018 - 0070 (NB)	F.A.I. RTE. 57	SECTION 18-1VB
		CHECKED - J. WANG	REVISED -			COUNTY CUMBERLAND	TOTAL SHEETS 414 / SHEET NO. 203
	PLOT SCALE =	DRAWN - S. FOSTER	REVISED -			CONTRACT NO. 74597	
	PLOT DATE =	CHECKED - U. KODE	REVISED -		SHEET 56 OF 90 SHEETS	ILLINOIS	FED. AID PROJECT

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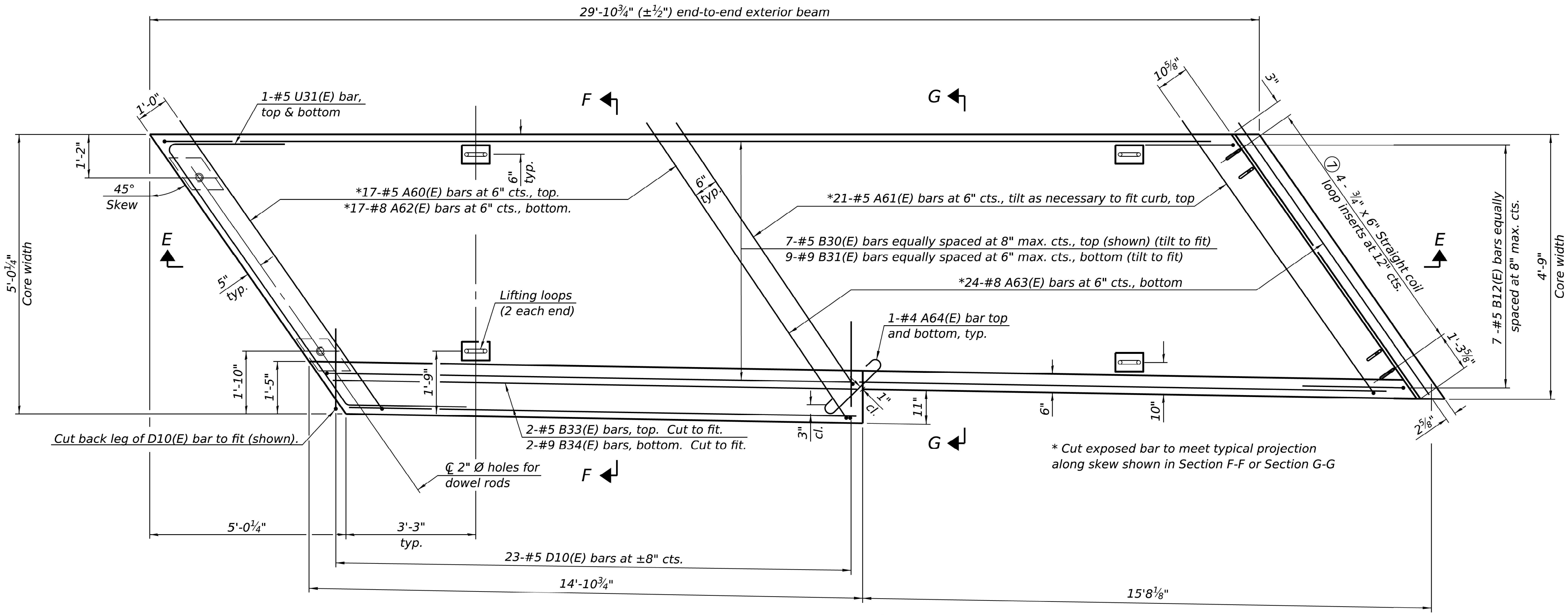
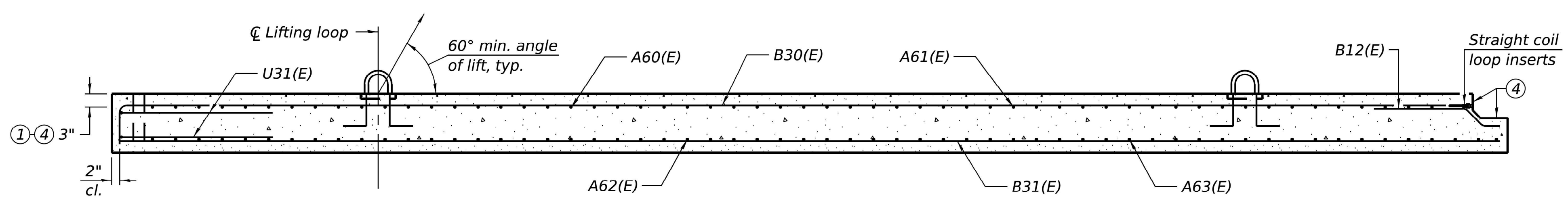
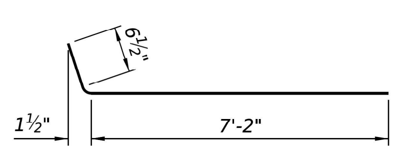


PLAN - EXTERIOR BEAM H

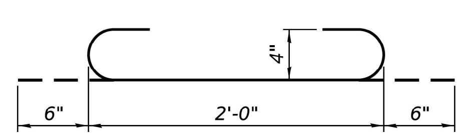
(Flanges not shown in plan view for clarity.)



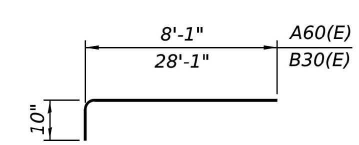
SECTION E-E



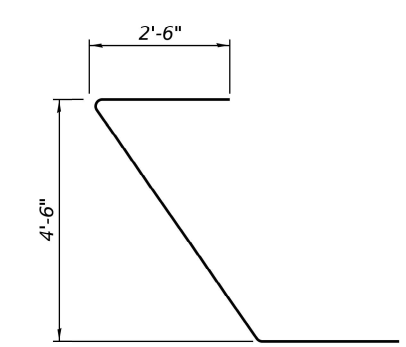
BAR A61(E)



BAR A64(E)

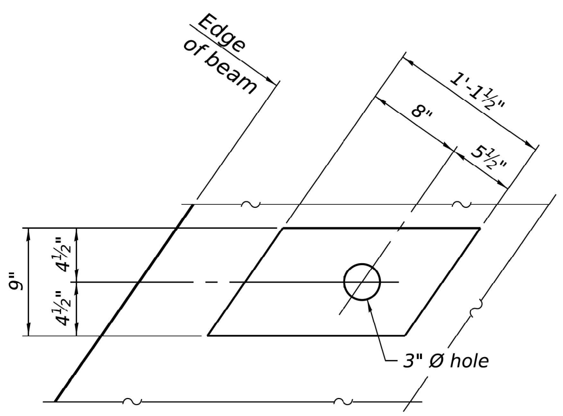


BARS A60(E) & B30(E)



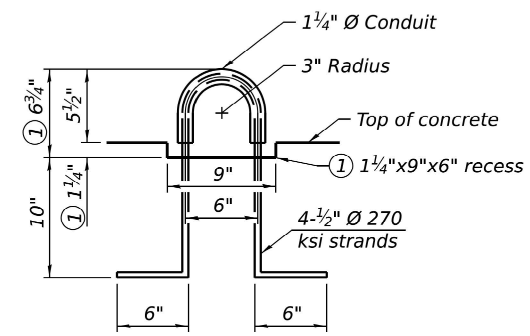
BARS U31(E)

(Sheet 12 of 14)



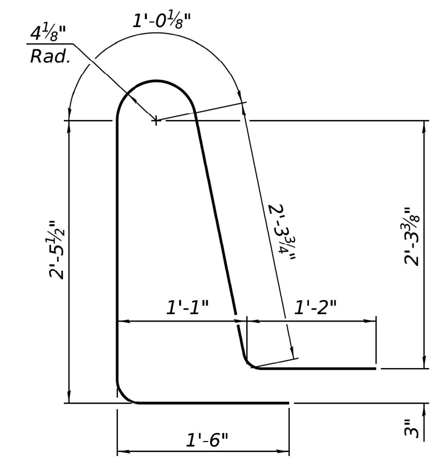
FABRIC BEARING PAD

(Bearing pads at fixed ends shall be ½" thick and bearing pads at expansion end shall be ¾" thick. Omit holes for fabric bearing pads at approach slab footing end of beams. Expansion fabric bearing pad shall be bonded to the approach slab footing.)

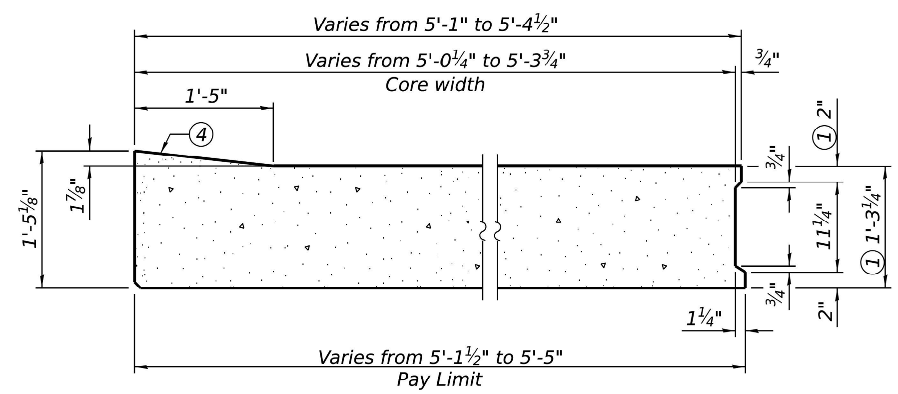


LIFTING LOOP DETAIL

(All lifting loops shall be recessed 1¼" minimum below the surface of the slab to allow for a minimum grout cover of 1" after maximum ¼" diamond grinding. Recess shall be filled with Ultra-High Performance Concrete (UHPC).)

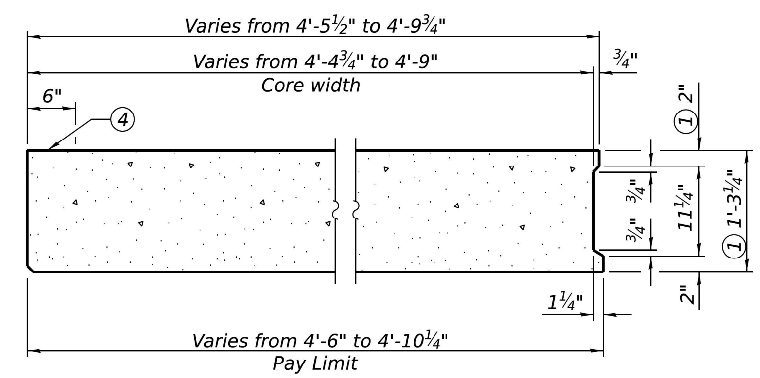


BAR D10(E)



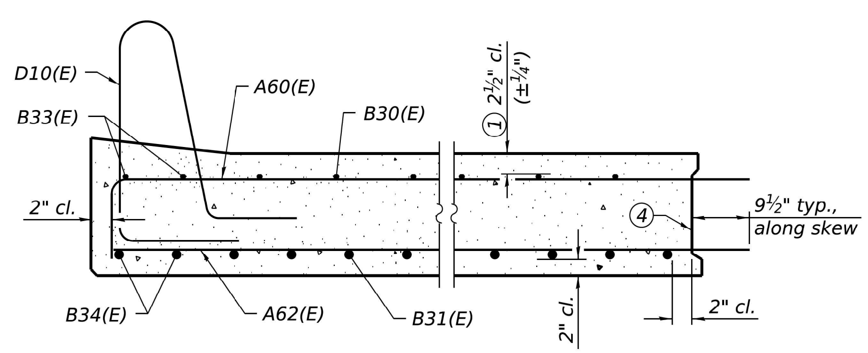
SECTION F-F

(Showing dimensions)



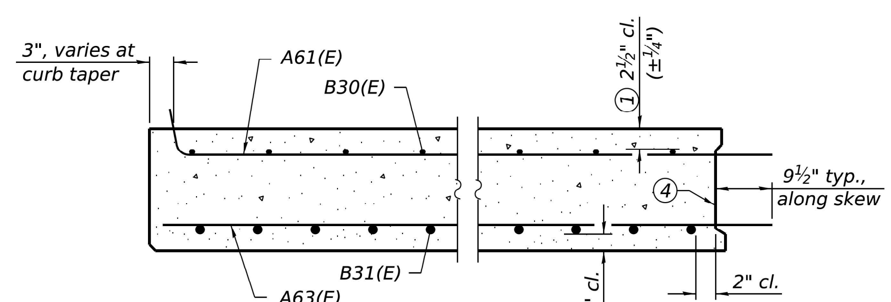
SECTION G-G

(Showing dimensions)



SECTION F-F

(Showing reinforcement)



SECTION G-G

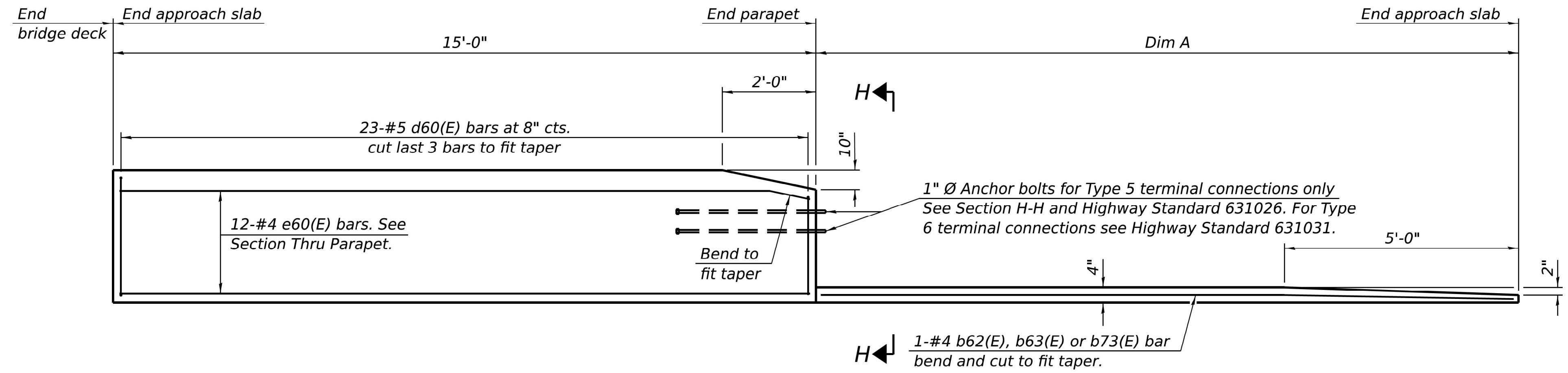
(Showing reinforcement)

BAR LIST
EACH EXTERIOR BEAM H

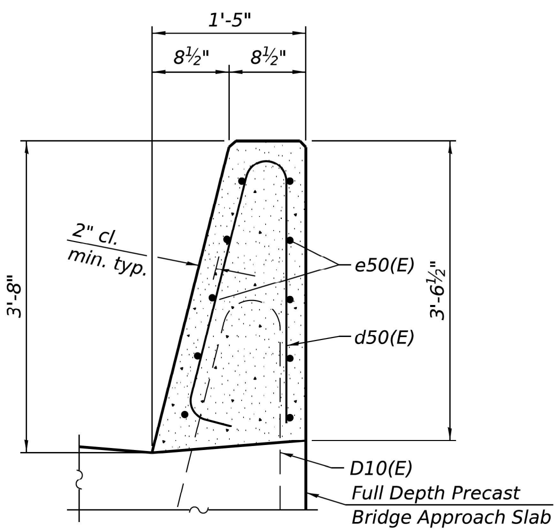
(For information only)

Bar	No.	Size	Length	Shape
A60(E)	17	#5	8'-11"	
A61(E)	21	#5	7'-9"	
A62(E)	17	#8	8'-0"	
A63(E)	24	#8	7'-11"	
A64(E)	2	#4	3'-0"	
B12(E)	7	#5	4'-1"	
B30(E)	7	#5	28'-11"	
B31(E)	9	#9	29'-6"	
B33(E)	2	#5	14'-6"	
B34(E)	2	#9	14'-6"	
D10(E)	23	#5	8'-6"	
U31(E)	2	#5	11'-4"	

(Sheet 13 of 14)

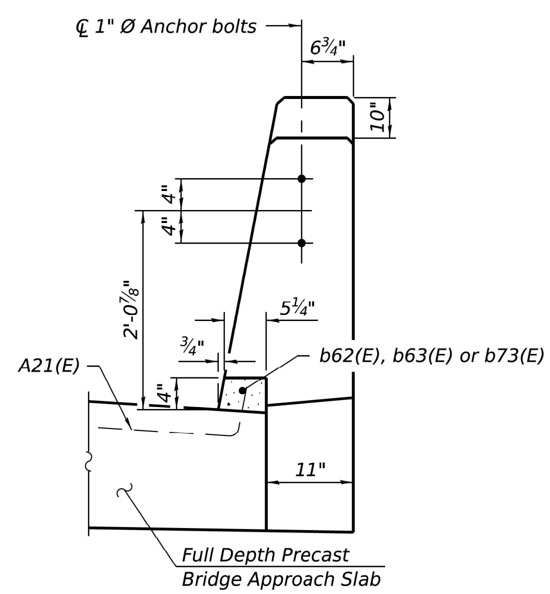


INSIDE ELEVATION OF PARAPET AND CURB



SECTION THRU PARAPET

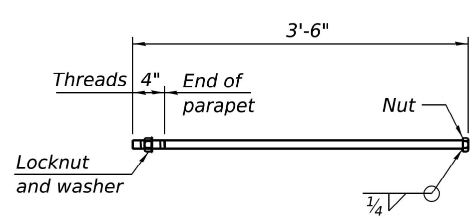
(Bar D10(E) is cast in precast approach slab, bridge parapet shall be cast-in-place after UHPC has been adequately cured.)



SECTION H-H

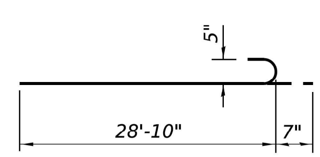
TABLE OF DIMENSIONS

Approach Slab	Location	Dim A
South	West Edge	15'-0"
South	East Edge	15'-8⅞"
North	West Edge	15'-0"
North	East Edge	15'-8⅛"

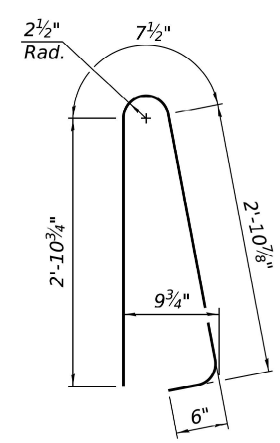


1" Ø ANCHOR BOLT

(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications. Cost of anchor bolt assemblies included with Concrete Superstructure.)



BAR b60(E)



BAR d60(E)

Notes:

The Full Depth Precast Bridge Approach Slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Full Depth Precast Bridge Approach Slab. Cost includes reinforcement bars (epoxy coated), fabric adjusting shims, bearing pads, dowel rods, cellular polystyrene, grout, straight single coil loop inserts, and Ultra-High Performance Concrete.

Cast-in-place substitution or Precast Bridge Approach Slab substitution for Full Depth Precast Bridge Approach Slab is not allowed.

The beams shall be cast with PC concrete according to Section 504, 1020 and 1042 of the Standard Specifications. Self-Consolidating Concrete (SCC) may be used for interior beams. SCC may be used for monolithic casting of the exterior beams, subject to the approval of the Bureau of Bridges and Structures. Shop drawings for exterior beams using SCC shall include lifting and handling procedures accompanied with calculations sealed by a Structural Engineer.

After Full Depth Precast Bridge Approach Slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the longitudinal joints.

Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for Full Depth Precast Bridge Approach Slab beams.

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

A minimum of two ½" Ø lifting pins shall be used to engage the lifting loops during handling.

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

Compressive strength of precast concrete, f 'c, shall be 5000 psi.

Compressive strength of precast concrete before lifting, f 'ci, shall be 4000 psi.

Minimum compressive strength of Ultra-High Performance Concrete, f 'c, shall be 14000 psi.

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

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 90.

Parapet, curb, and expansion joint blockout concrete shall be cast-in-place and be paid for as Concrete Superstructures.

Approach footing concrete shall be paid for as Concrete Structures.

Cost of excavation for approach footing included with Concrete Structures.

The strip seal shall extend 6" beyond the edge of the approach slab on each end.

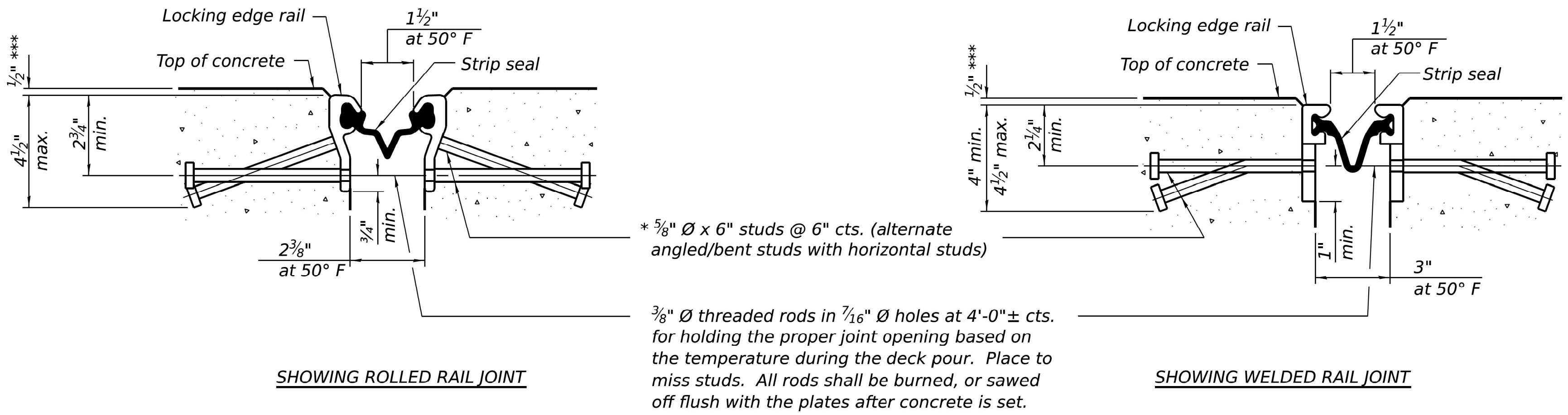
SOUTH APPROACH BILL OF MATERIALS

Bar	No.	Size	Length	Shape
a60(E)	4	#5	33'-11"	——
b60(E)	7	#5	29'-5"	——⊃
b61(E)	7	#9	28'-10"	——
b62(E)	1	#4	14'-9"	——
b63(E)	1	#4	15'-8"	——
d60(E)	92	#5	7'-0"	∩
e60(E)	48	#4	14'-8"	——
t60(E)	46	#4	13'-10"	——
w60(E)	80	#5	35'-4"	——
Concrete Structures			Cu. Yd.	19.8
Concrete Superstructure			Cu. Yd.	4.4
Reinforcement Bars, Epoxy Coated			Pound	5,580
Full Depth Precast Bridge Approach Slab			Sq. Ft.	1,400
Protective Coat			Sq. Yd.	166

NORTH APPROACH BILL OF MATERIALS

Bar	No.	Size	Length	Shape
a70(E)	4	#5	40'-2"	——
b60(E)	9	#5	29'-5"	——⊃
b61(E)	9	#9	28'-10"	——
b62(E)	1	#4	14'-9"	——
b73(E)	1	#4	15'-6"	——
d60(E)	92	#5	7'-0"	∩
e60(E)	48	#4	14'-8"	——
t60(E)	55	#4	13'-10"	——
w70(E)	80	#5	40'-4"	——
Concrete Structures			Cu. Yd.	23.6
Concrete Superstructure			Cu. Yd.	4.4
Reinforcement Bars, Epoxy Coated			Pound	6,360
Full Depth Precast Bridge Approach Slab			Sq. Ft.	1,644
Protective Coat			Sq. Yd.	194

(Sheet 14 of 14)



SECTION THRU STRIP SEAL AT END OF PRECAST APPROACH SLAB

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

*** Prior to grinding

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of $\frac{1}{4}$". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the $4\frac{1}{2}$" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

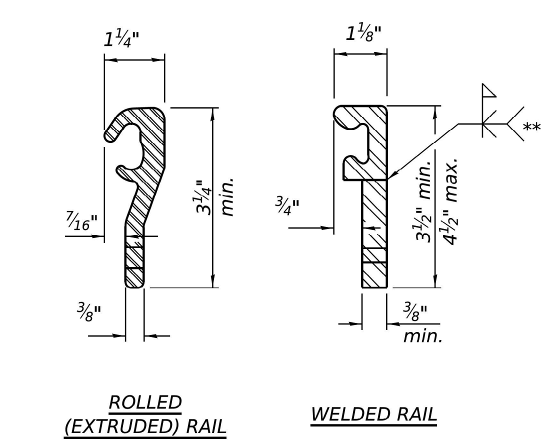
The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be $\frac{3}{16}$" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

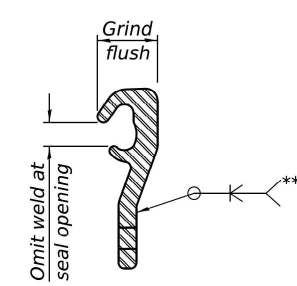
Cost of anchorage studs included with Preformed Joint Strip Seal.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.



LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue.
Rolled rail shown, welded rail similar.

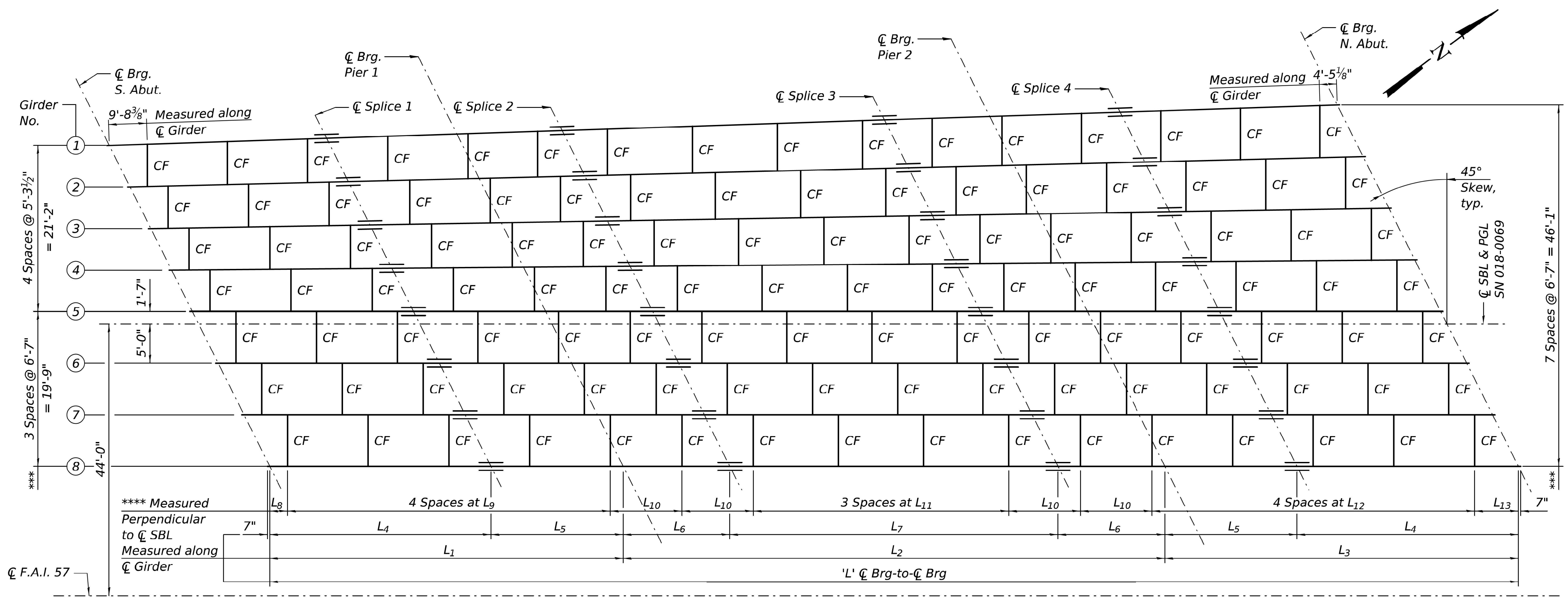
BILL OF MATERIAL (S.N. 018-0069)

Item	Unit	Total
Preformed Joint Strip Seal	Foot	137

BILL OF MATERIAL (S.N. 018-0070)

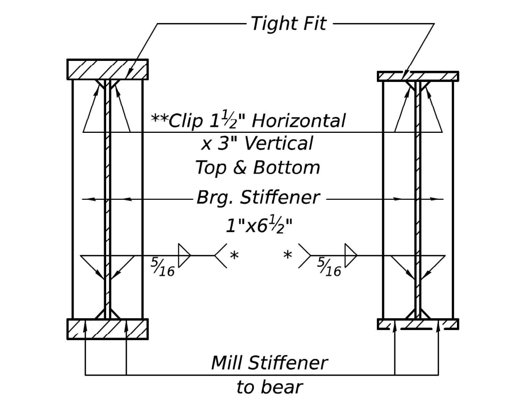
Item	Unit	Total
Preformed Joint Strip Seal	Foot	141

(Sheet 1 of 1)



*** At ℄ Brg. and perpendicular to F.A.I. 57.
**** All cross-frames are perpendicular to SBL.

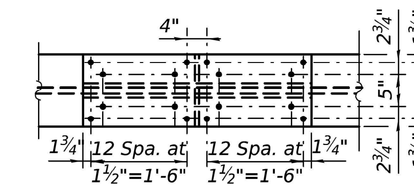
FRAMING PLAN



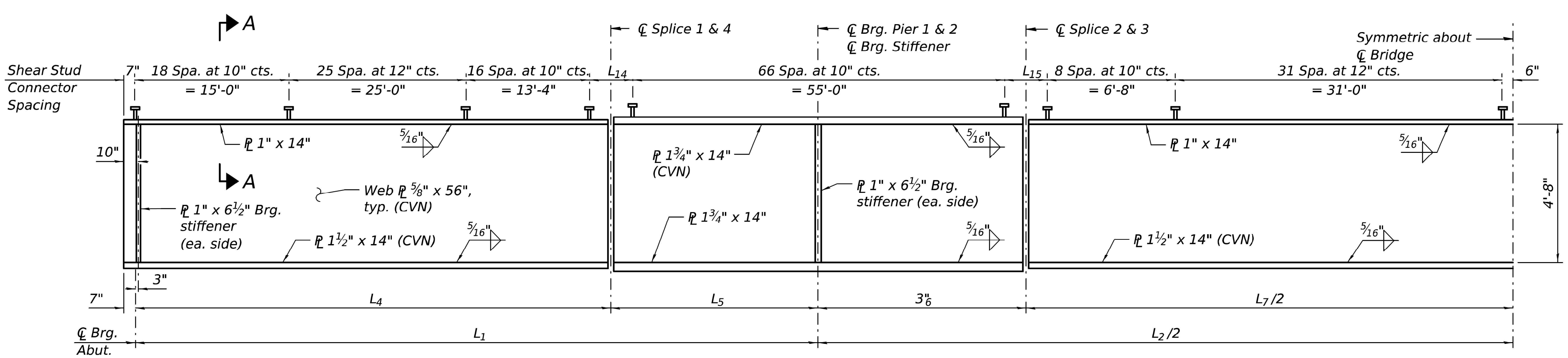
SECTION AT PIER

SECTION AT ABUTMENT

* Terminate 1/4" (±1/8") from the end of plate intersects.
** Clip may be rounded for ease of shop painting.

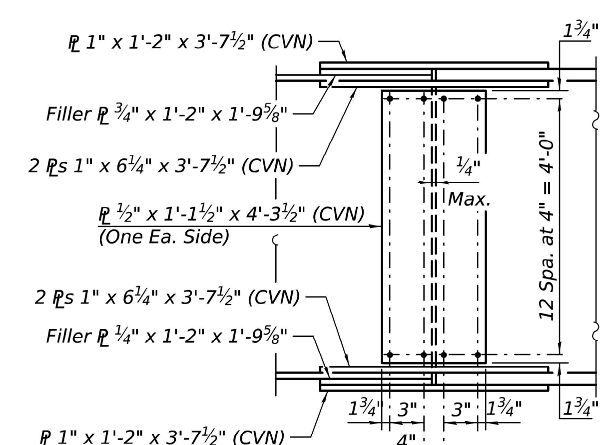


TOP & BOTTOM FLANGE



GIRDER ELEVATION

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



FIELD SPLICE DETAIL

(32 Required)

Notes:
All flanges, webs and bearing stiffeners shall be AASHTO M270 Gr. 50.
All splice plates, except filler plates, shall be AASHTO M270 Gr. 50.
See Sheet 62 of 90 for additional notes, top of web elevations, camber diagram, girder moment and reaction tables.
See Sheet 63 of 90 for section A-A and cross frame details.

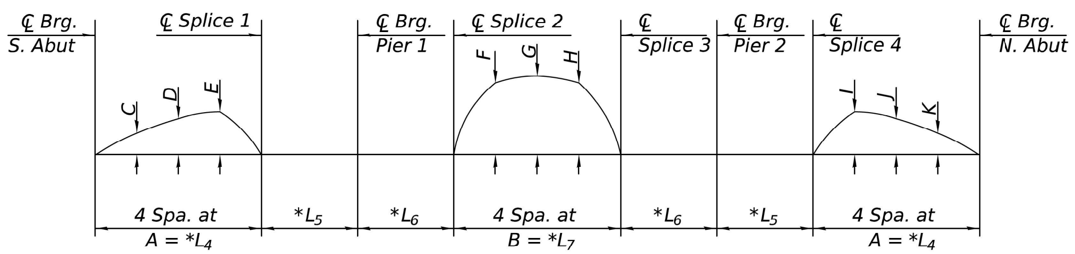
GIRDER DIMENSION TABLE

Girder No.	L	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}	L_{11}	L_{12}	L_{13}	L_{14}	L_{15}
Girder 1	312'-10 1/2"	88'-6 5/8"	135'-9 3/8"	88'-6 5/8"	55'-5 1/8"	33'-1 1/2"	26'-9 3/4"	82'-1 7/8"	---	---	---	---	---	---	4'-6 3/4"	5'-4 1/2"
Girder 2	314'-1 3/4"	88'-10 7/8"	136'-4"	88'-10 7/8"	55'-7 7/8"	33'-3 1/8"	26'-11"	82'-5 7/8"	4'-4 7/8"	20'-5"	17'-9 1/8"	21'-8"	20'-3"	11'-0 1/8"	4'-10 7/8"	5'-8"
Girder 3	315'-5 1/8"	89'-3 1/4"	136'-10 5/8"	89'-3 1/4"	55'-10 1/2"	33'-4 3/4"	27'-0 3/8"	82'-9 7/8"	4'-5 1/4"	20'-6"	17'-10 3/4"	21'-8"	20'-4"	11'-0 1/2"	5'-3 1/8"	5'-11 1/2"
Girder 4	316'-8 1/2"	89'-7 5/8"	137'-5 1/4"	89'-7 5/8"	56'-1 1/4"	33'-6 3/8"	27'-1 5/8"	83'-2"	4'-5 5/8"	20'-7"	18'-0 1/2"	21'-8"	20'-5"	11'-0 7/8"	5'-7 1/4"	6'-3"
Girder 5	318'-0"	90'-0"	138'-0"	90'-0"	56'-4"	33'-8"	27'-3"	83'-6"	4'-6"	20'-8"	18'-2 1/8"	21'-8"	20'-6"	11'-1 1/4"	5'-11 1/2"	6'-6 1/2"
Typical Girder (Girders 6-8)	318'-0"	90'-0"	138'-0"	90'-0"	56'-4"	33'-8"	27'-3"	83'-6"	4'-6 1/2"	20'-6 1/2"	18'-3"	21'-8"	20'-6 1/2"	11'-1 1/2"	5'-11 1/2"	6'-6 1/2"

**TOP OF WEB ELEVATIONS

Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8
℄ Brg. S. Abut	693.36	693.50	693.67	693.78	693.89	693.88	693.82	693.73
℄ Splice 1	693.63	693.77	693.93	694.04	694.15	694.14	694.07	693.97
℄ Brg. Pier 1	693.77	693.91	694.06	694.17	694.28	694.26	694.18	694.08
℄ Splice 2	693.90	694.04	694.19	694.30	694.41	694.39	694.31	694.20
℄ Splice 3	694.15	694.29	694.42	694.54	694.64	694.61	694.52	694.40
℄ Brg. Pier 2	694.18	694.32	694.45	694.56	694.66	694.62	694.53	694.41
℄ Splice 4	694.25	694.38	694.51	694.62	694.72	694.68	694.58	694.45
℄ Brg. N. Abut	694.31	694.44	694.57	694.67	694.77	694.72	694.61	694.48

** For fabrication use only.



CAMBER DIAGRAM

*See Girder Dimension Table on sheet 61 of 90

CAMBER DIAGRAM DIMENSION TABLE

Girder No.	A	B	C	D	E	F	G	H	I	J	K
Girder 1	13'-10 1/4"	20'-6 7/16"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"
Girder 2	13'-10 15/16"	20'-7 7/16"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"
Girder 3	13'-11 5/8"	20'-8 1/2"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"
Girder 4	14'-0 5/16"	20'-9 1/2"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"
Girder 5	14'-1"	20'-10 1/2"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"
Typical Girder (Girders 6-8)	14'-1"	20'-10 1/2"	3/4"	1 1/4"	1 1/2"	2 1/2"	2 3/4"	2 1/2"	1 1/2"	1 1/4"	3/4"

INTERIOR GIRDER REACTION TABLE

		Abut.	Pier
LLDF		0.713	0.713
OCF		---	---
R_{DC1}	(k)	28.1	130.4
R_{DC2}	(k)	4.1	18.6
R_{DW}	(k)	8.2	39.0
R_{LL}	(k)	63.9	131.4
R_{IM}	(k)	14.8	22.9
R_{Total} (Strength I)(Impact)	(k)	190.3	514.8
R_{Total} (Strength I)(No Impact)	(k)	164.4	474.7

EXTERIOR GIRDER REACTION TABLE

		Abut.	Pier
LLDF		0.558	0.558
OCF		1.20	---
R_{DC1}	(k)	28.0	129.8
R_{DC2}	(k)	4.2	18.6
R_{DW}	(k)	9.0	39.0
R_{LL}	(k)	50.1	103.1
R_{IM}	(k)	11.5	18.0
R_{Total} (Strength I)(Impact)	(k)	161.6	456.0
R_{Total} (Strength I)(No Impact)	(k)	141.4	424.4

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	37282	50014	37282
I_c (n)	(in^4)	87777	99124	87777
I_c (3n)	(in^4)	63875	74698	63875
I_c (cr)	(in^4)	---	57111	---
S_s	(in^3)	1403	1681	1403
S_c (n)	(in^3)	1889	2113	1889
S_c (3n)	(in^3)	1722	1945	1722
S_c (cr)	(in^3)	---	1770	---
S_x	(in^3)	---	---	---
DC1	(k/')	0.993	0.998	1.002
M_{DC1}	('k)	368	-1492	893
DC2	(k/')	0.143	0.143	0.142
M_{DC2}	('k)	58	-205	134
DW	(k/')	0.306	0.301	0.295
M_{DW}	('k)	124	-431	278
LLDF		0.560	0.538	0.520
M_{LL+IM}	('k)	1132	-1425	1332
f_ℓ (Strength I)	(ksi)	0	0	0
$M_u + \frac{1}{3} f_\ell S_x$	('k)	2700	-5261	4031
$\Phi_f M_n$	('k)	9730	---	9682
f_s DC1	(ksi)	3.15	-10.65	7.64
f_s DC2	(ksi)	0.40	-1.39	0.93
f_s DW	(ksi)	0.86	-2.92	1.94
f_s (LL+IM)	(ksi)	7.19	-9.66	8.46
f_ℓ (Service II)	(ksi)	0	0	0
$f_s + f_\ell/2$ (Service II)	(ksi)	13.77	-27.52	21.51
Service II Resistance	(ksi)	47.50	47.50	47.50
$f_s + f_\ell/3$ (Strength I)	(ksi)	18.32	-36.34	28.43
$\Phi_f F_n$	(ksi)	---	50.00	---
V_f	(k)	37.10	61.60	44.60

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_ℓ: 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.

$f_s + f_\ell / 2$ (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_ℓ /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).

$f_s + f_\ell / 3$ (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_ℓ /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).
$1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_{LL} + R_{IM})$

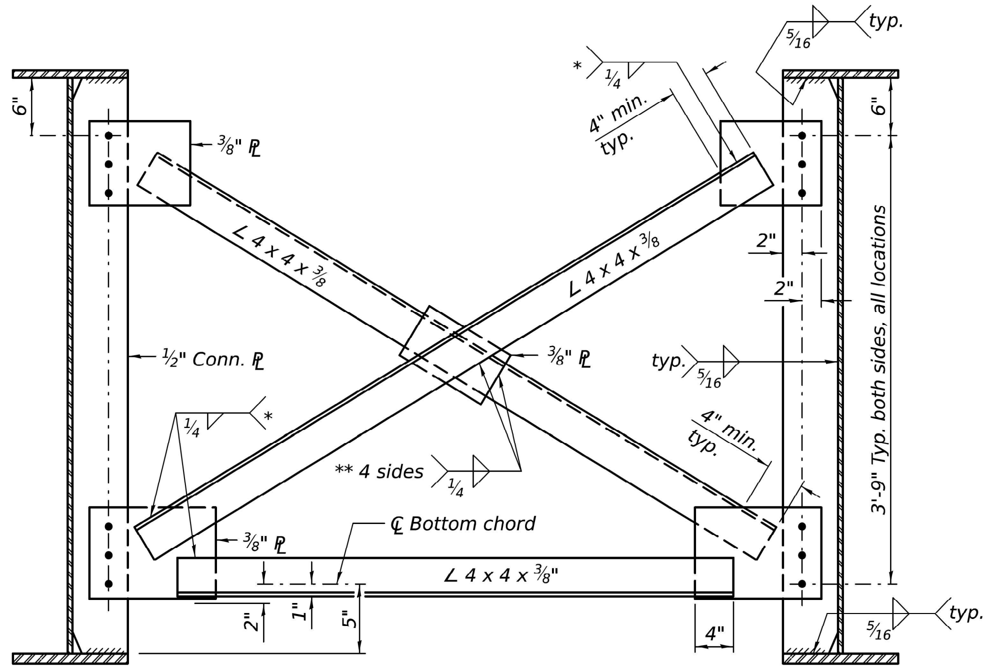
R_{Total} (Strength I)(No Impact): Strength I load combination of factored design reactions, not including dynamic load allowance (Impact) (kip).
$1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_{LL})$

Notes:

Two hardened washers required for each set of oversized holes.

All cross frames shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. 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.



* 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.

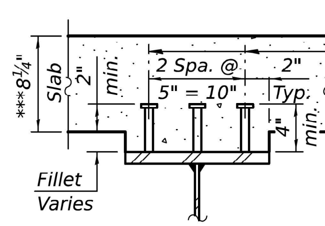
CROSS-FRAME (CF)

Notes:

$\frac{15}{16}$" Ø holes for all $\frac{3}{4}$" Ø bolts.

Two hardened washers required for each set of oversized holes.

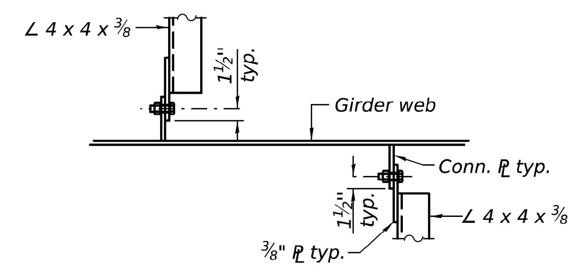
All flanges, webs and bearing stiffeners shall be AASHTO M270 Gr. 50.



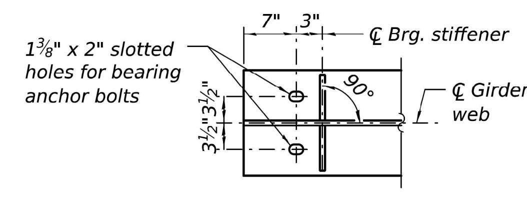
$\frac{3}{4}$" Ø Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 8,016)

*** Prior to Grinding

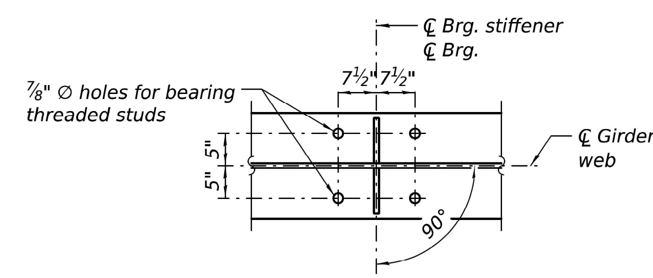
SECTION A-A



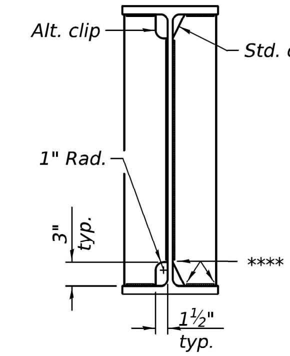
DETAIL A



GIRDER END DETAIL

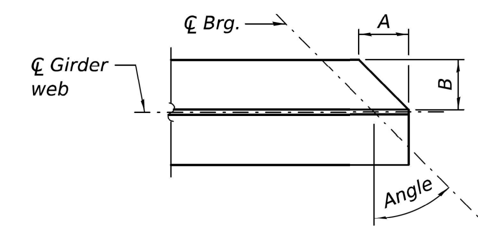


GIRDER PIER DETAIL



WELD LIMITS AND CLIP DETAILS

**** Stop welds $\frac{1}{4}$" (±$\frac{1}{8}$") from edges as shown. Typical.

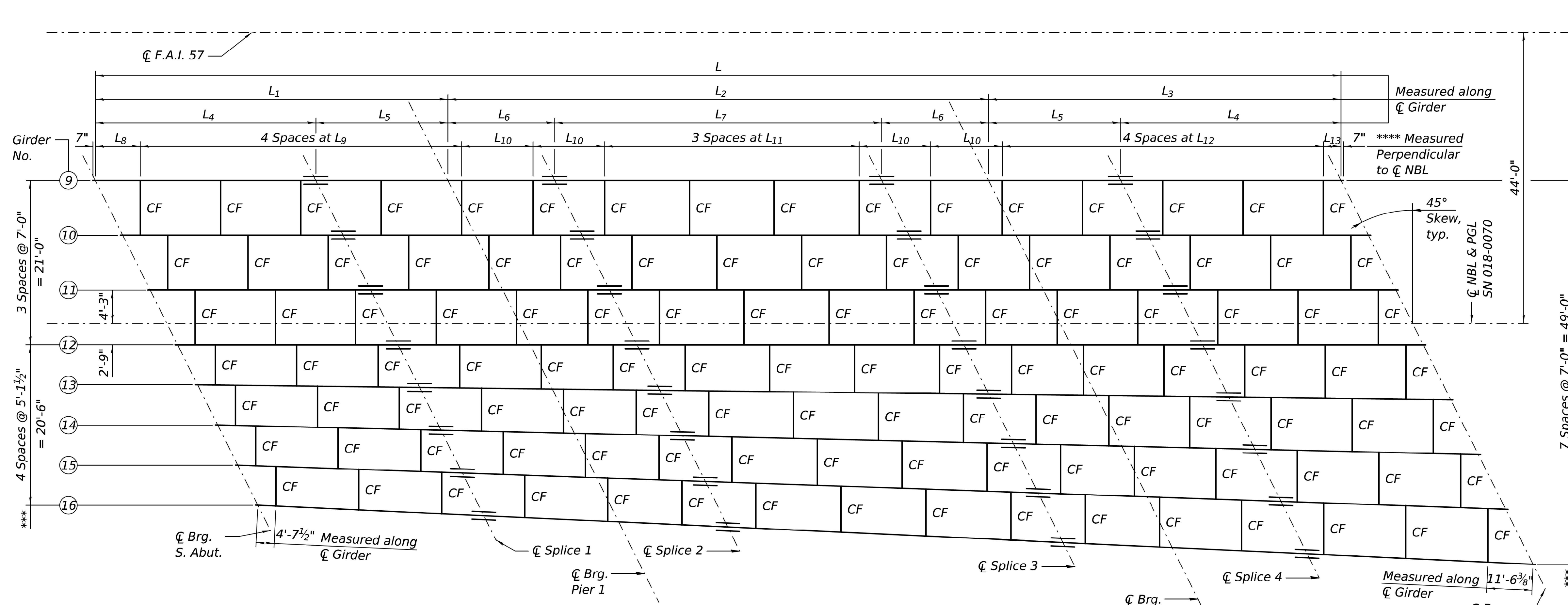


TOP FLANGE CLIPPING DETAIL

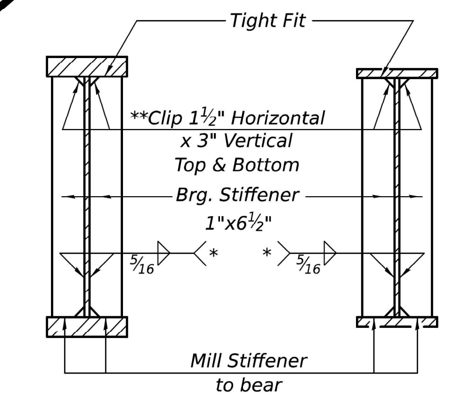
(North end shown, South end similar)

A & B DIMENSIONS

Girder No.	A	B	Angle
Girder 1	6$\frac{1}{2}$"	6$\frac{5}{8}$"	44°3'14"
Girder 2	6$\frac{5}{8}$"	6$\frac{5}{8}$"	44°17'36"
Girder 3	6$\frac{5}{8}$"	6$\frac{5}{8}$"	44°31'51"
Girder 4	6$\frac{5}{8}$"	6$\frac{5}{8}$"	44°45'59"
Typical Girder (Girders 5-8)	6$\frac{5}{8}$"	6$\frac{5}{8}$"	45°0'00"



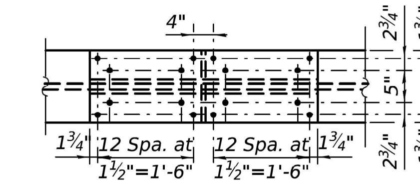
FRAMING PLAN



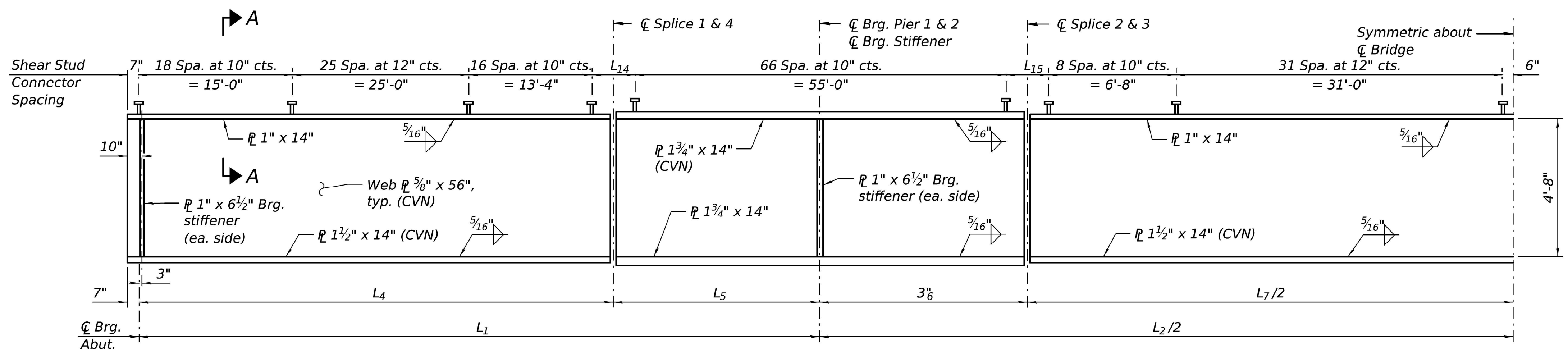
SECTION AT PIER

SECTION AT ABUTMENT

* Terminate ¼" (±⅛") from the end of plate intersects.
** Clip may be rounded for ease of shop painting.

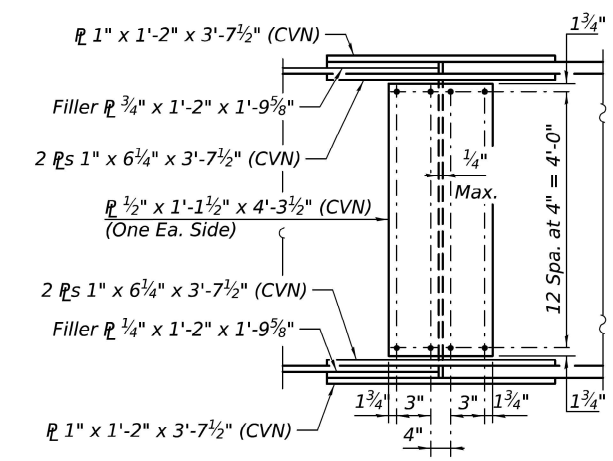


TOP & BOTTOM FLANGE



GIRDER ELEVATION

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



FIELD SPLICE DETAIL

(32 Required)

Notes:
All flanges, webs and bearing stiffeners shall be AASHTO M270 Gr. 50.
All splice plates, except filler plates, shall be AASHTO M270 Gr. 50.
See Sheet 65 of 90 for additional notes, top of web elevations, camber diagram, girder moment and reaction tables.
See Sheet 66 of 90 for section A-A and cross frame details.

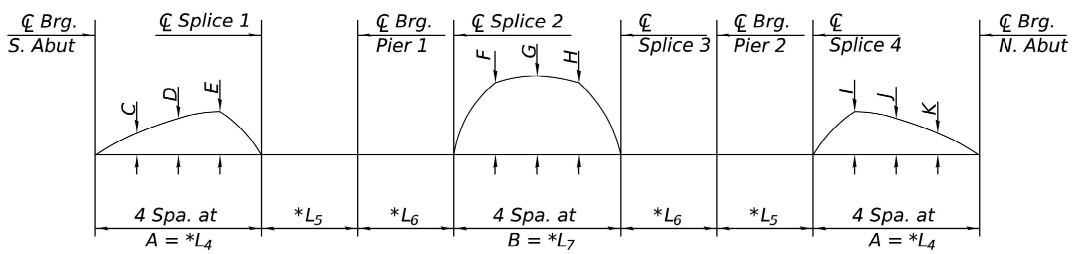
GIRDER DIMENSION TABLE

Girder No.	L	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	L_{10}	L_{11}	L_{12}	L_{13}	L_{14}	L_{15}
Typical Girder (Girders 9-11)	318'-0"	90'-0"	138'-0"	90'-0"	56'-4"	33'-8"	27'-3"	83'-6"	11'-6"	20'-6"	18'-3"	21'-8"	20'-6"	4'-6"	5'-11 ½"	6'-6 ½"
Girder 12	318'-0"	90'-0"	138'-0"	90'-0"	56'-4"	33'-8"	27'-3"	83'-6"	9'-7 ⅞"	20'-9 ½"	18'-4 ¼"	21'-8"	20'-7"	4'-5 ⅛"	5'-11 ½"	6'-6 ½"
Girder 13	319'-10 ⅝"	90'-6 ⅜"	138'-9 ¾"	90'-6 ⅜"	56'-8"	33'-10 ⅜"	27'-4 ⅞"	83'-11 ⅞"	9'-8 ¼"	20'-11"	18'-6 ⅝"	21'-8"	20'-8 ½"	4'-5 ½"	6'-5 ⅝"	6'-11 ⅝"
Girder 14	321'-9 ¼"	91'-0 ¾"	139'-7 ⅝"	91'-0 ¾"	57'-0"	34'-0 ¾"	27'-6 ⅞"	84'-5 ⅞"	9'-8 ⅝"	21'-0 ½"	18'-9 ⅛"	21'-8"	20'-10"	4'-5 ⅞"	6'-11 ⅞"	7'-4 ¾"
Girder 15	323'-8 ⅛"	91'-7 ¼"	140'-5 ½"	91'-7 ¼"	57'-4"	34'-3 ¼"	27'-8 ⅞"	84'-11 ⅞"	9'-9"	21'-2"	18'-11 ½"	21'-8"	20'-11 ½"	4'-6 ¼"	7'-6 ⅛"	7'-10"
Girder 16	325'-7"	92'-1 ¾"	141'-3 ½"	92'-1 ¾"	57'-8 ⅛"	34'-5 ⅝"	27'-10 ¾"	85'-5 ⅞"	---	---	---	---	---	---	8'-0 ⅜"	8'-3 ⅛"

**TOP OF WEB ELEVATIONS

Location	Girder 9	Girder 10	Girder 11	Girder 12	Girder 13	Girder 14	Girder 15	Girder 16
℄ Brg. S. Abut	694.19	694.35	694.47	694.52	694.46	694.39	694.30	694.21
℄ Splice 1	694.31	694.47	694.59	694.62	694.55	694.47	694.37	694.27
℄ Brg. Pier 1	694.36	694.50	694.62	694.65	694.57	694.49	694.38	694.27
℄ Splice 2	694.42	694.57	694.68	694.71	694.62	694.53	694.42	694.31
℄ Splice 3	694.45	694.59	694.69	694.70	694.60	694.50	694.36	694.24
℄ Brg. Pier 2	694.40	694.53	694.63	694.64	694.53	694.43	694.29	694.16
℄ Splice 4	694.38	694.51	694.60	694.61	694.49	694.39	694.26	694.11
℄ Brg. N. Abut	694.29	694.41	694.49	694.49	694.36	694.26	694.14	693.98

** For fabrication use only.



CAMBER DIAGRAM

*See Girder Dimension Table on sheet 64 of 90

CAMBER DIAGRAM DIMENSION TABLE

Girder No.	A	B	C	D	E	F	G	H	I	J	K
Typical Girder (Girders 9-11)	14'-1"	20'-10 ½"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"
Girder 12	14'-1"	20'-10 ½"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"
Girder 13	14'-2"	21'-0"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"
Girder 14	14'-3"	21'-1 ½"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"
Girder 15	14'-4"	21'-3"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"
Girder 16	14'-5 1/16"	21'-4 ½"	¾"	1 ¼"	1 ½"	2 ½"	2 ¾"	2 ½"	1 ½"	1 ¼"	¾"

Notes:

Two hardened washers required for each set of oversized holes.

All cross frames shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. 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.

INTERIOR GIRDER REACTION TABLE

		Abut.	Pier
LLDF		0.743	0.743
OCF		---	---
R_{DC1}	(k)	29.6	135.8
R_{DC2}	(k)	4.2	18.6
R_{DW}	(k)	9.4	40.6
R_{LL}	(k)	66.6	137.3
R_{IM}	(k)	15.4	24.0
R_{Total} (Strength I)(Impact)	(k)	199.9	536.2
R_{Total} (Strength I)(No Impact)	(k)	172.9	494.2

EXTERIOR GIRDER REACTION TABLE

		Abut.	Pier
LLDF		0.577	0.577
OCF		1.20	---
R_{DC1}	(k)	28.4	130.6
R_{DC2}	(k)	4.2	18.6
R_{DW}	(k)	9.4	40.6
R_{LL}	(k)	51.7	106.3
R_{IM}	(k)	11.9	18.5
R_{Total} (Strength I)(Impact)	(k)	166.2	465.9
R_{Total} (Strength I)(No Impact)	(k)	145.3	433.4

INTERIOR GIRDER MOMENT TABLE

		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in^4)	37282	50014	37282
I_c (n)	(in^4)	89171	100619	89171
I_c (3n)	(in^4)	65046	75844	65046
I_c (cr)	(in^4)	---	57425	---
S_s	(in^3)	1403	1681	1403
S_c (n)	(in^3)	1897	2122	1897
S_c (3n)	(in^3)	1732	1955	1732
S_c (cr)	(in^3)	---	1774	---
S_x	(in^3)	---	---	---
DC1	(k/')	1.040	1.040	1.040
M_{DC1}	('k)	390	-1552	924
DC2	(k/')	0.142	0.143	0.143
M_{DC2}	('k)	58	-205	135
DW	(k/')	0.321	0.313	0.305
M_{DW}	('k)	132	-448	287
LLDF		0.585	0.561	0.543
M_{LL+IM}	('k)	1181	-1486	1390
f_ℓ (Strength I)	(ksi)	0	0	0
$M_u + \frac{1}{3} f_\ell S_x$	('k)	2825	-5468	4185
$\Phi_f M_n$	('k)	9895	---	9691
f_s DC1	(ksi)	3.34	-11.08	7.90
f_s DC2	(ksi)	0.40	-1.38	0.93
f_s DW	(ksi)	0.91	-3.03	1.99
f_s (LL+IM)	(ksi)	7.47	-10.05	8.79
f_ℓ (Service II)	(ksi)	0	0	0
$f_s + f_\ell/2$ (Service II)	(ksi)	14.37	-28.56	22.25
Service II Resistance	(ksi)	47.50	47.50	47.50
$f_s + f_\ell/3$ (Strength I)	(ksi)	19.12	-37.71	29.41
$\Phi_f F_n$	(ksi)	---	50.00	---
V_f	(k)	38.10	63.30	45.80

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_ℓ: 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.

$f_s + f_\ell / 2$ (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_ℓ /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).

$f_s + f_\ell / 3$ (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_ℓ /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).

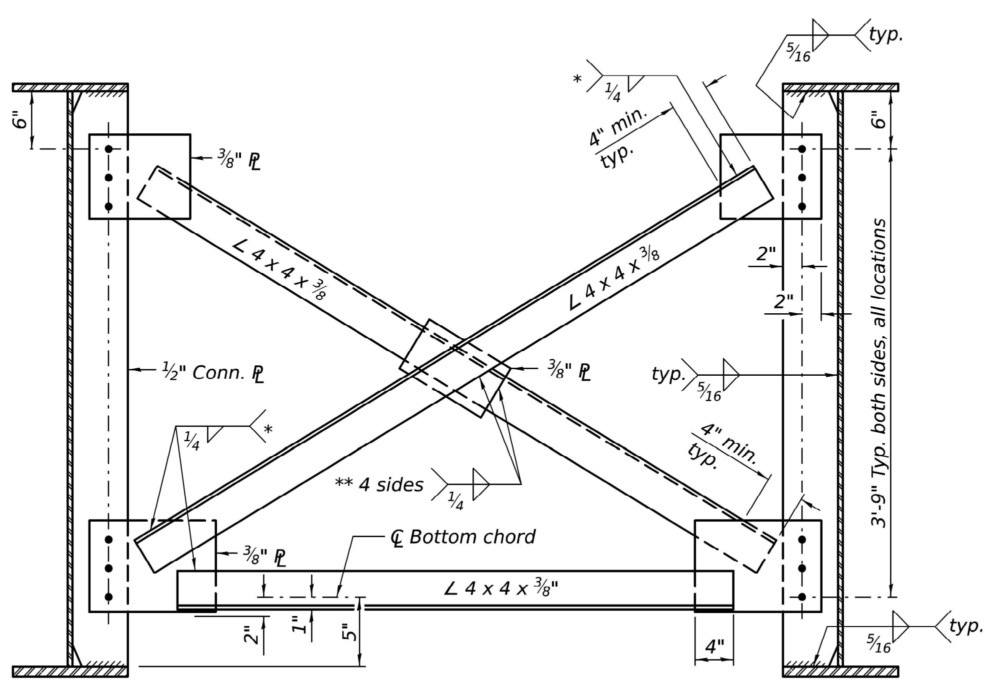
R_{DW}: Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).

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). $1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_{LL} + R_{IM})$

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

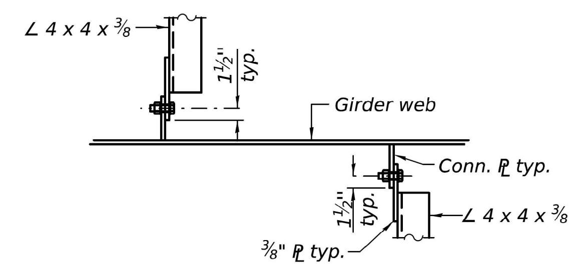


* Fillet weld angles along 3 sides on one face of gusset plate; however, if cross-frames are galvanized, weld all-around.

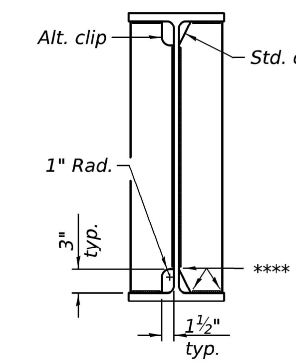
** If cross-frames are galvanized, weld all-around.

CROSS-FRAME (CF)

Notes:
15/16" Ø holes for all 3/4" Ø bolts.
Two hardened washers required for each set of oversized holes.
All flanges, webs and bearing stiffeners shall be AASHTO M270 Gr. 50.

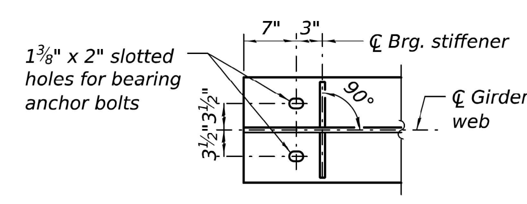


DETAIL A

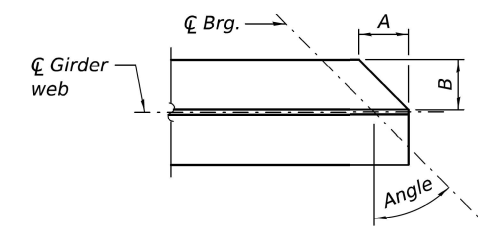


WELD LIMITS AND CLIP DETAILS

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



GIRDER END DETAIL

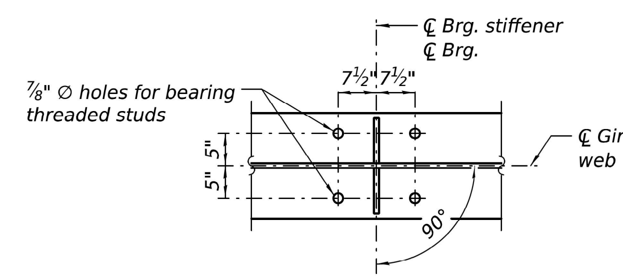


TOP FLANGE CLIPPING DETAIL

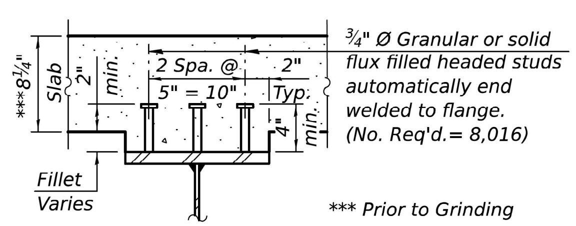
(North end shown, South end similar)

A & B DIMENSIONS

Girder No.	A	B	Angle
Typical Girder (Girders 9-12)	6 5/8"	6 5/8"	45°0'00"
Girder 13	6 3/4"	6 5/8"	45°20'09"
Girder 14	6 7/8"	6 5/8"	45°40'04"
Girder 15	6 7/8"	6 5/8"	45°59'45"
Girder 16	7"	6 5/8"	46°19'12"



GIRDER PIER DETAIL



3/4" Ø Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 8,016)

*** Prior to Grinding

SECTION A-A

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\DREI Crossing\0180069_70-74597-066-Structural_Steel_Details_NB.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 " / in.	DRAWN - MTW	REVISED -
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 018-0070 (NB)

SHEET 66 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	213
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

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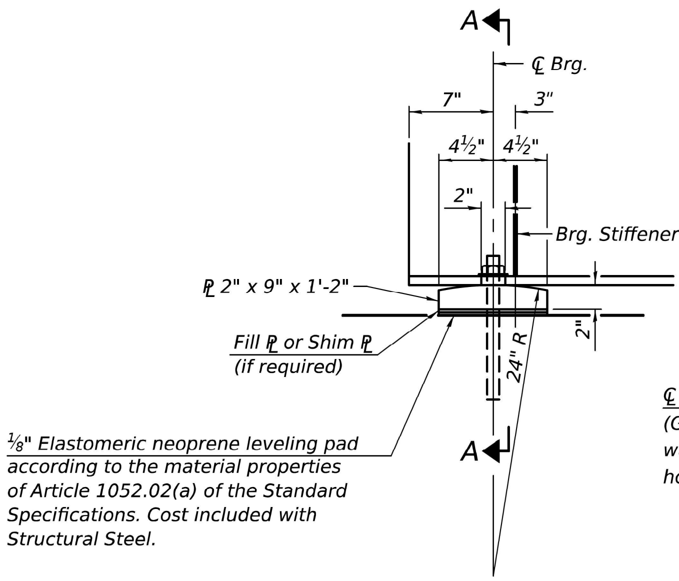
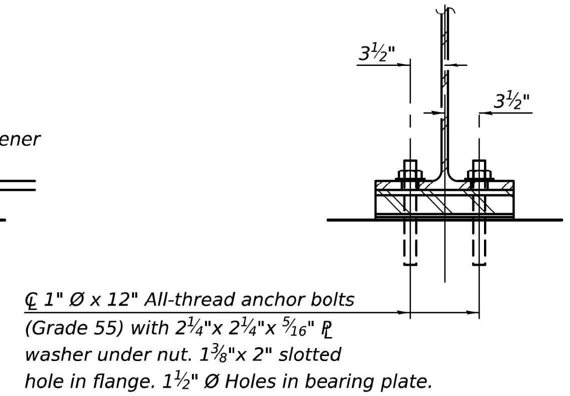


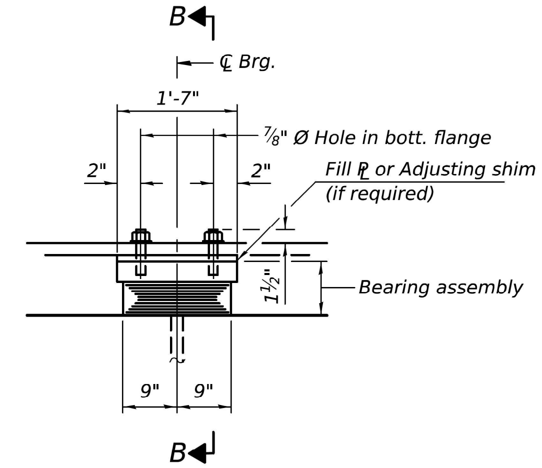
ELEVATION AT ABUTMENT



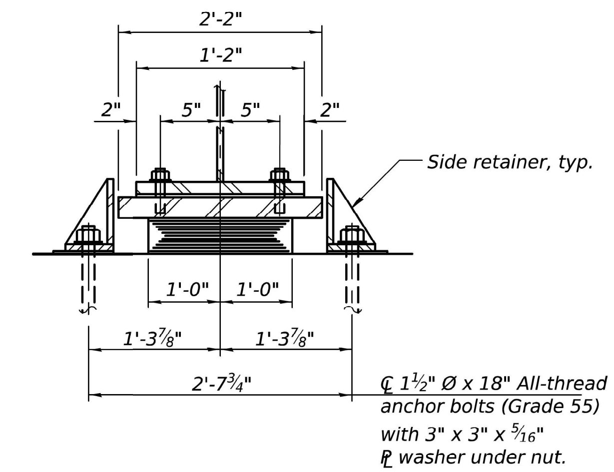
SECTION A-A

FIXED BEARING AT ABUTMENTS

(16 Required for SN 018-0069)
(16 Required for SN 018-0070)



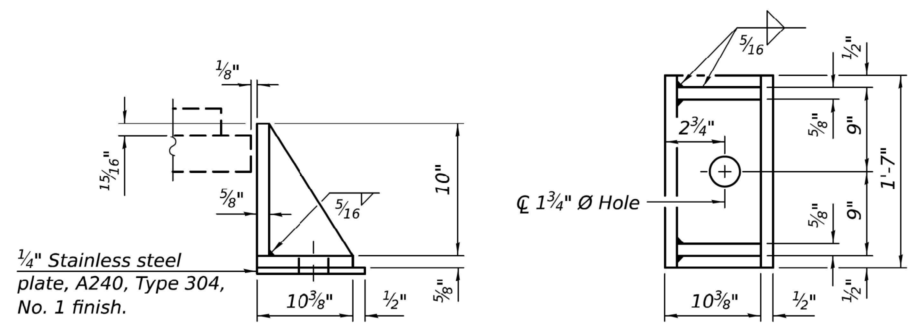
ELEVATION AT PIER



SECTION B-B

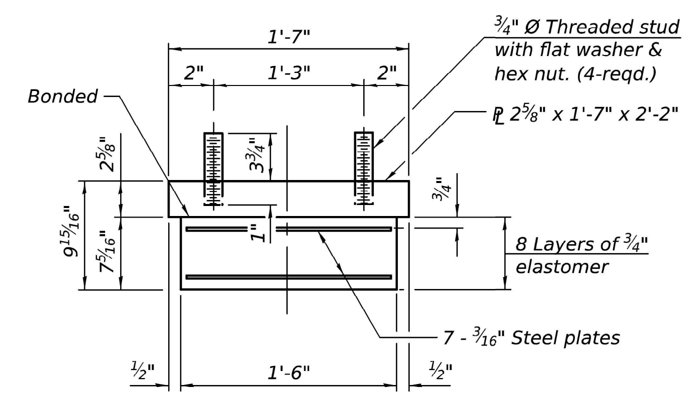
TYPE I ELASTOMERIC EXP. BRG. AT PIERS

(16 Required for SN 018-0069)
(16 Required for SN 018-0070)



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BEARING ASSEMBLY

Note:
Fill plates or adjusting shim plates shall not be placed under bearing assembly.

FILL PLATE THICKNESS FOR SN 018-0069

Girder #	S. Abut.	Pier 1	Pier 2	N. Abut.
1	---	---	---	---
2	---	---	---	---
3	---	---	---	---
4	---	---	---	---
5	1/8"	1/4"	---	---
6	---	---	1/4"	1/8"
7	---	---	---	---
8	---	---	---	---

FILL PLATE THICKNESS FOR SN 018-0070

Girder #	S. Abut.	Pier 1	Pier 2	N. Abut.
9	---	---	---	---
10	---	---	---	---
11	1/4"	3/8"	---	---
12	---	---	1/4"	---
13	---	---	---	---
14	---	---	---	---
15	---	---	---	---
16	---	---	---	---

Notes:
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
Anchor bolts and side retainers at pier supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.
Two 1/8" adjusting shims shall be provided for each bearing in additional to all other plates or shims and placed as shown on bearing details.
All fixed bearing plates shall be metallized. All other bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
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 (BOTH STRUCTURES)

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	32
Anchor Bolts, 1"	Each	64
Anchor Bolts, 1 1/2"	Each	64

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034 I57_StructureReplacement\CADD_SHEETS_ORD\Structural\DREI_Crossing\0180069_70-74597-067-Bearing_Details.dgn

BLA, Inc.

USER NAME = mwilley	DESIGNED - KN	REVISED -
	CHECKED - MJW	REVISED -
PLOT SCALE = 0:2 '-" / in.	DRAWN - KN	REVISED -
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING DETAILS
STRUCTURE NO. 018-0069 (SB) & 018-0070 (NB)

SHEET 67 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	214
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

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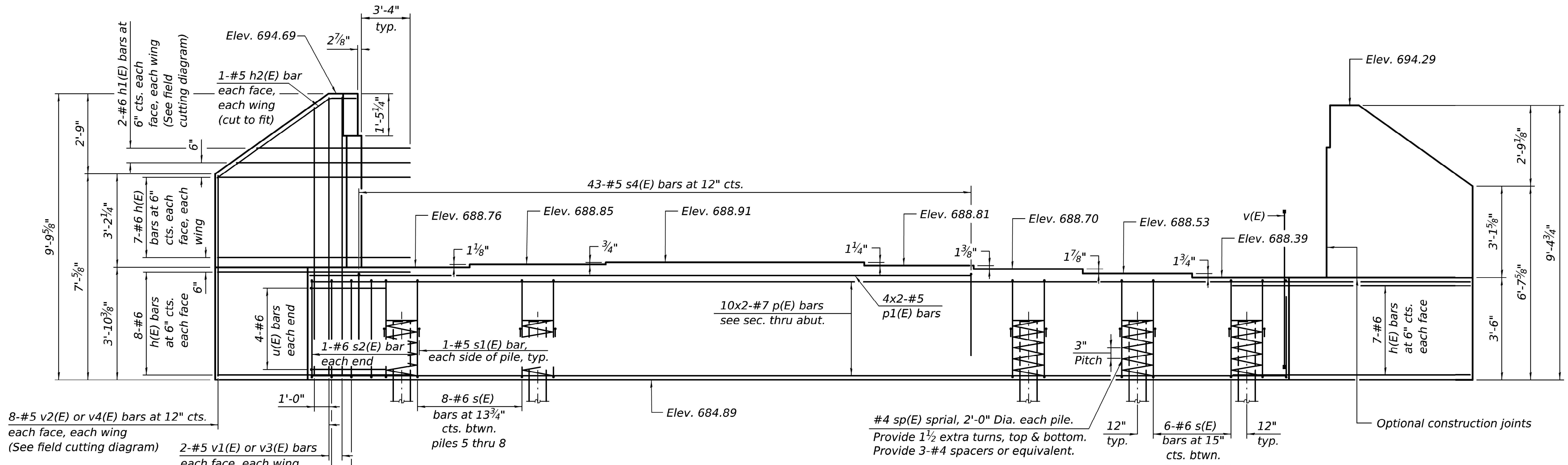
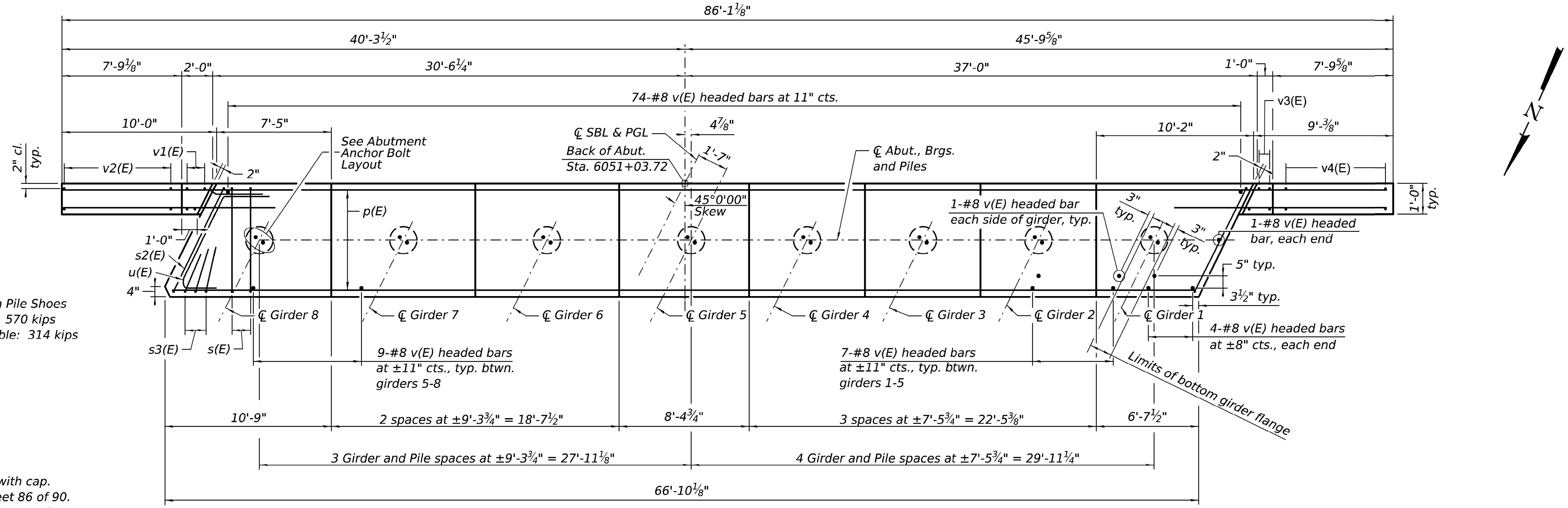


ELEVATION
(Looking South)

MINIMUM BAR LAP

#7 BAR = 5'-0"
#5 BAR = 3'-7"



PLAN

PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 314 kips
Est. Length: 62 feet
No. Production Piles: 7
No. Test Piles: 1
No. Pile Shoes: 8

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 86 of 90.
Bar terminators, paid for separately.
See sheet 69 of 90 for Section Thru Abutment, bar details & Bill of Material.
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.
Apply Protective Coat to top and front vertical face of wingwalls.

(Sheet 1 of 2)

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH ABUTMENT STRUCTURE NO. 018-0069 (SB)	F.A.I. RTE. 57	SECTION 18-1VB	COUNTY CUMBERLAND	TOTAL SHEETS 414	SHEET NO. 215
	PLOT SCALE = 0:2 " / in.	CHECKED - MJW	REVISED -			CONTRACT NO. 74597				
	PLOT DATE = 6/4/2025	DRAWN - MTW	REVISED -		SHEET 68 OF 90 SHEETS	ILLINOIS FED. AID PROJECT				
		CHECKED - MJW	REVISED -							

MODEL: Br_Sheet_Consultant
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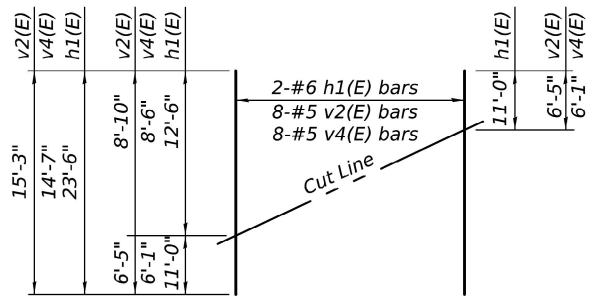
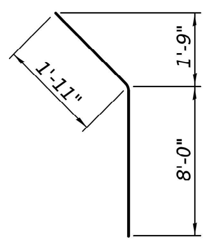
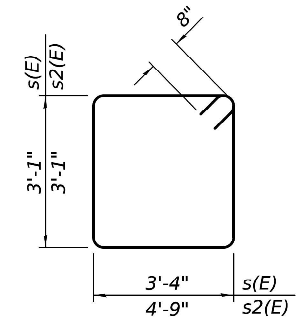


FIELD CUTTING DIAGRAM

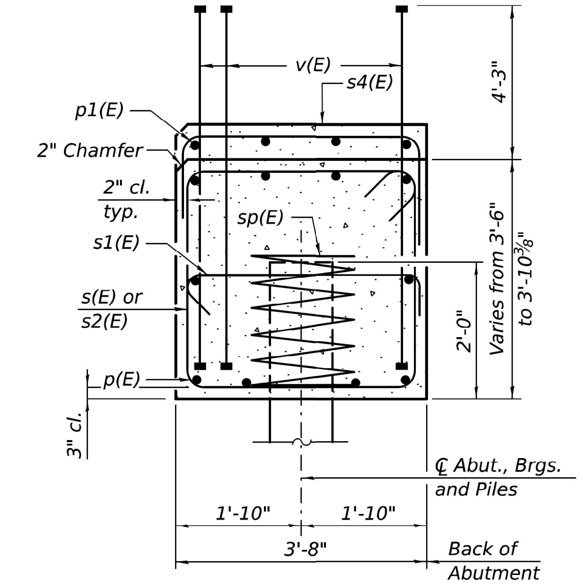
Order h1(E), v2(E), and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR h2(E)

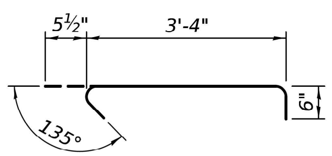


BAR s(E) & s2(E)

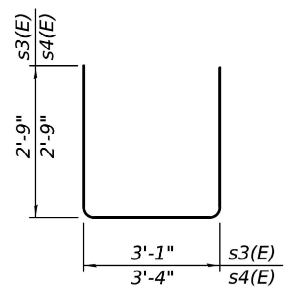


SEC. THRU ABUT.

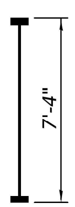
Dimensions at right angles to abutment.



BAR s1(E)

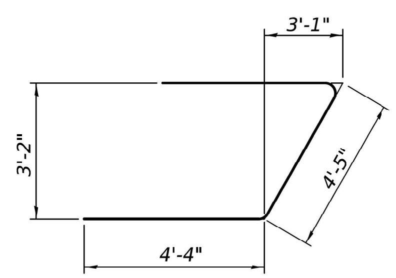


BAR s3(E) & s4(E)

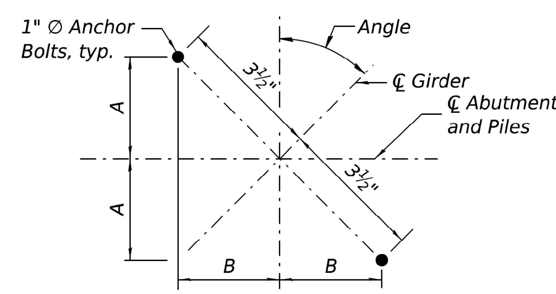


BAR v(E)

(Headed. 310-#8 Bar terminators)



BAR u(E)



ANCHOR BOLT DETAIL

A & B DIMENSIONS

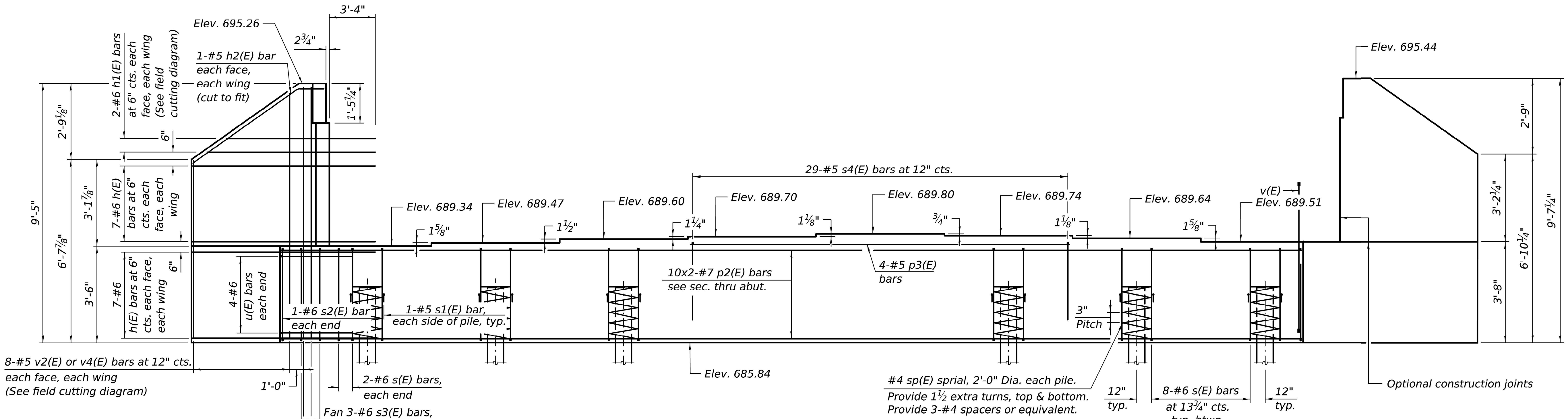
Girder No.	A	B	Angle
Girder 1	2⅜"	2½"	44°3'14"
Girder 2	2½"	2½"	44°17'36"
Girder 3	2½"	2½"	44°31'51"
Girder 4	2½"	2½"	44°45'59"
Typical Girder (Girders 5-8)	2½"	2½"	45°0'00"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	58	#6	13'-4"	
h1(E)	2	#6	23'-6"	
h2(E)	4	#5	9'-11"	
p(E)	20	#7	35'-11"	
p1(E)	8	#5	24'-7"	
s(E)	52	#6	14'-2"	
s1(E)	16	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	6	#6	8'-7"	
s4(E)	43	#5	8'-10"	
* sp(E)	8	#4	2'-0"	
u(E)	8	#6	13'-1"	
v(E)	155	#8	7'-4"	
v1(E)	4	#5	9'-2"	
v2(E)	8	#5	15'-3"	
v3(E)	4	#5	8'-10"	
v4(E)	8	#5	14'-7"	
Structure Excavation		Cu. Yd.	288	
Concrete Structures		Cu. Yd.	40.3	
Protective Coat		Sq. Yd.	20	
Reinforcement Bars, Epoxy Coated		Pound	8,540	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	434	
Driving Piles		Foot	434	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	8	

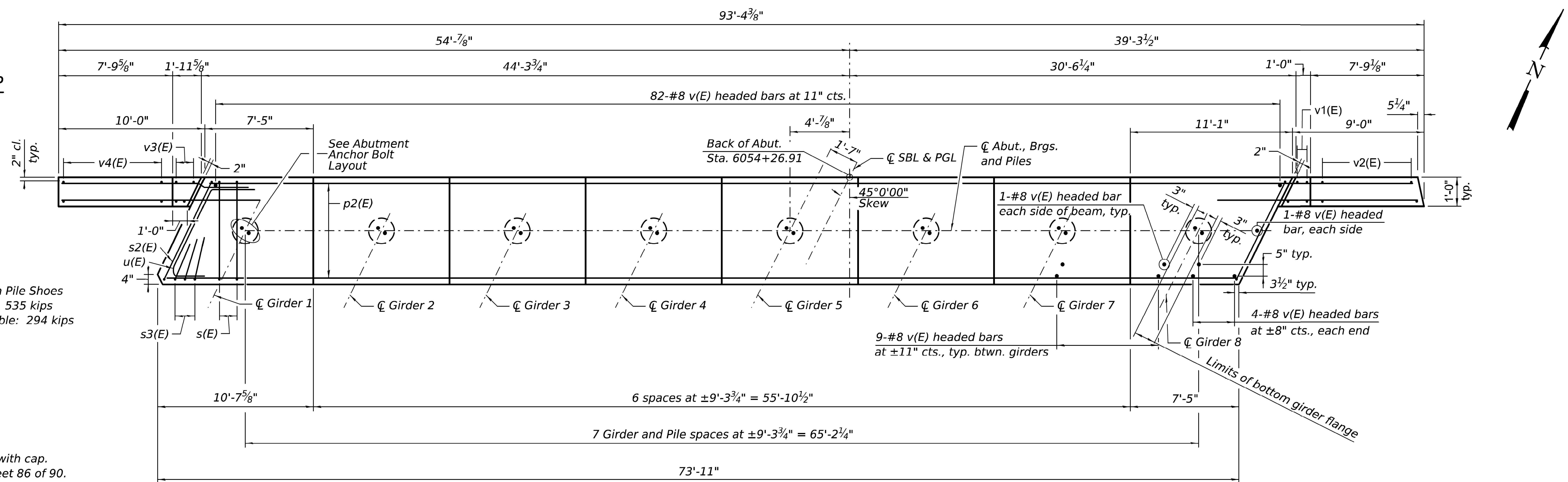
* Length is height of spiral.

(Sheet 2 of 2)



ELEVATION
(Looking North)

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



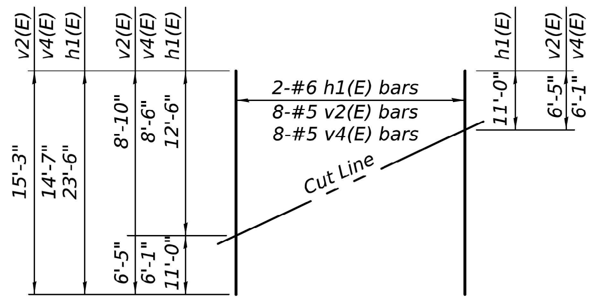
PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 535 kips
Factored Resistance Available: 294 kips
Est. Length: 62 feet
No. Production Piles: 7
No. Test Piles: 1
No. Pile Shoes: 8

PLAN

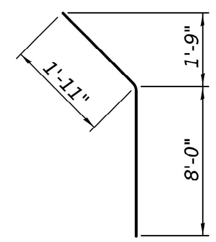
Notes:
Pour steps monolithically with cap.
For details of piles see sheet 86 of 90.
Bar terminators, paid for separately.
See sheet 71 of 90 for Section Thru Abutment, bar details & Bill of Material.
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.
Apply Protective Coat to top and front vertical face of wingwalls.

(Sheet 1 of 2)

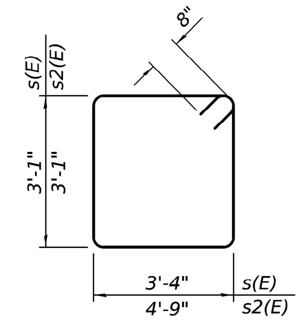


FIELD CUTTING DIAGRAM

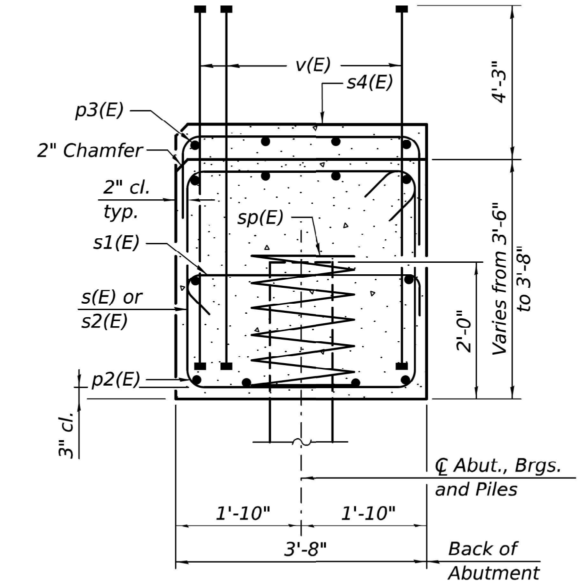
Order h1(E), v2(E), and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR h2(E)

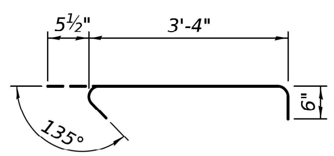


BAR s(E) & s2(E)

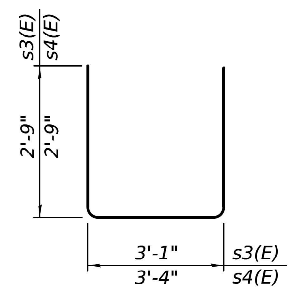


SEC. THRU ABUT.

Dimensions at right angles to abutment.



BAR s1(E)



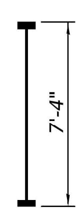
BAR s3(E) & s4(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	56	#6	13'-4"	
h1(E)	8	#6	23'-6"	
h2(E)	4	#5	9'-11"	
p2(E)	20	#7	39'-7"	
p3(E)	4	#5	27'-7"	
s(E)	60	#6	14'-2"	
s1(E)	16	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	6	#6	8'-7"	
s4(E)	29	#5	8'-10"	
* sp(E)	8	#4	2'-0"	
u(E)	8	#6	13'-1"	
v(E)	171	#8	7'-4"	
v1(E)	4	#5	9'-2"	
v2(E)	8	#5	15'-3"	
v3(E)	4	#5	8'-10"	
v4(E)	8	#5	14'-7"	

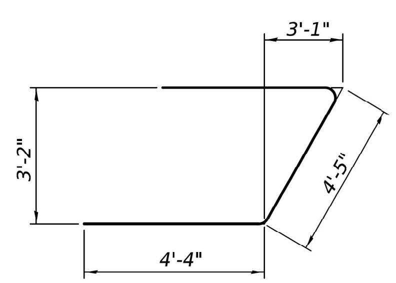
Structure Excavation	Cu. Yd.	317
Concrete Structures	Cu. Yd.	39.4
Protective Coat	Sq. Yd.	19
Reinforcement Bars, Epoxy Coated	Pound	9,130
Furnishing Metal Shell Piles 14" x 0.312"	Foot	434
Driving Piles	Foot	434
Test Pile Metal Shells	Each	1
Pile Shoes	Each	8

* Length is height of spiral.

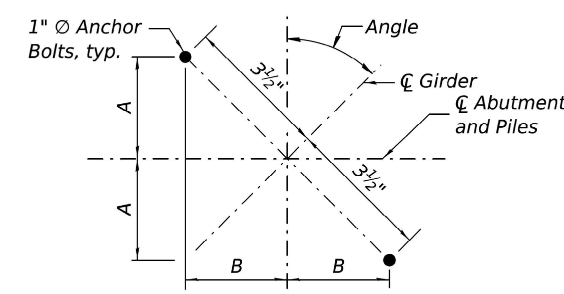


BAR v(E)

(Headed. 342-#8 Bar terminators)



BAR u(E)

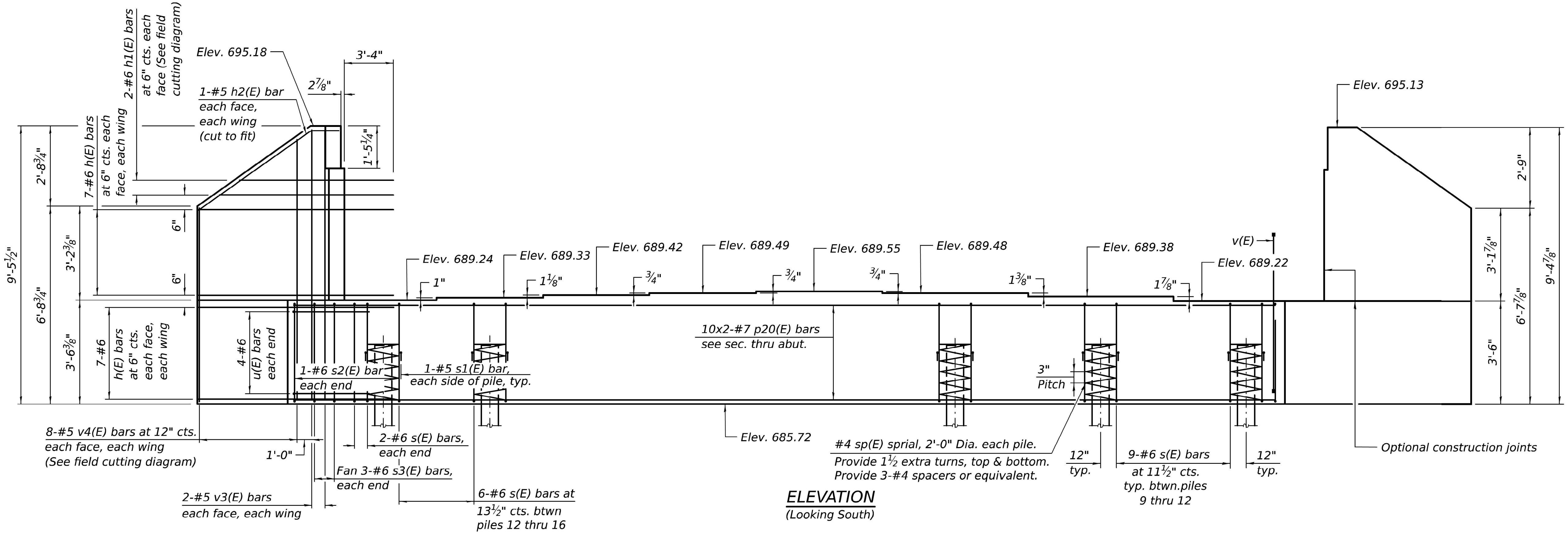


ANCHOR BOLT DETAIL

A & B DIMENSIONS

Girder No.	A	B	Angle
Girder 1	2⅜"	2½"	44°3'14"
Girder 2	2½"	2½"	44°17'36"
Girder 3	2½"	2½"	44°31'51"
Girder 4	2½"	2½"	44°45'59"
Typical Girder (Girders 5-8)	2½"	2½"	45°0'00"

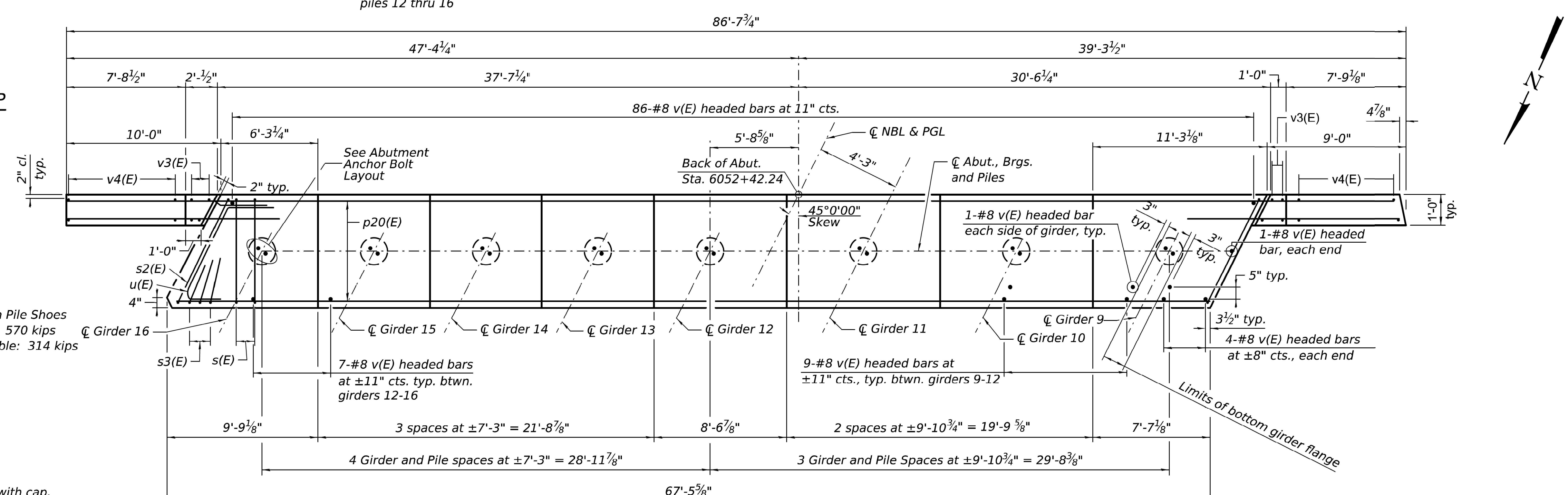
(Sheet 2 of 2)



ELEVATION
(Looking South)

MINIMUM BAR LAP

#7 BAR = 5'-0"



PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 314 kips
Est. Length: 62 feet
No. Production Piles: 7
No. Test Piles: 1
No. Pile Shoes: 8

PLAN

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 86 of 90.
Bars terminators, paid for separately.
See sheet 73 of 90 for Section Thru Abutment, bar details & Bill of Material.
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.
Apply Protective Coat to top and front vertical face of wingwalls.

(Sheet 1 of 2)

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 " / in.	DRAWN - MTW	REVISED -
	PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 018-0070 (NB)

SHEET 72 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	219
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

MODEL: Br_Sheet_Consultant
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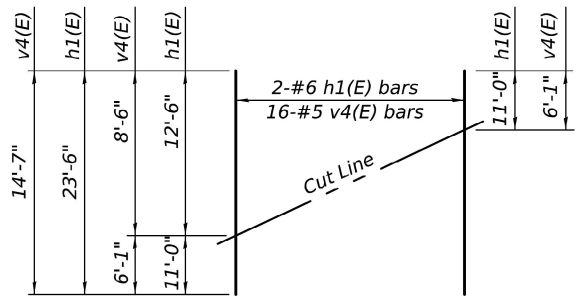
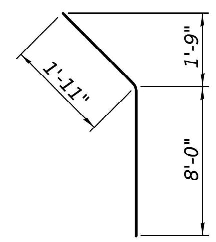
6/4/2025 3:09:25 PM

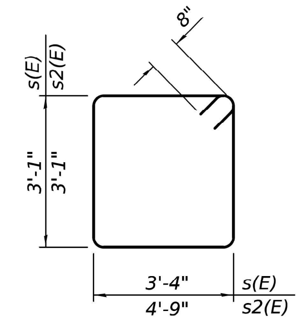


FIELD CUTTING DIAGRAM

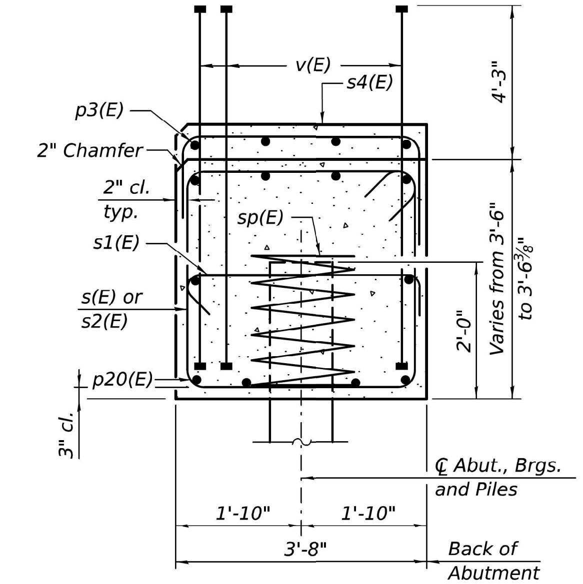
Order h1(E) and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR h2(E)

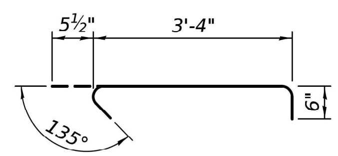


BAR s(E) & s2(E)

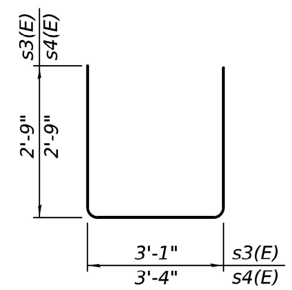


SEC. THRU ABUT.

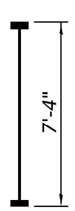
Dimensions at right angles to abutment.



BAR s1(E)

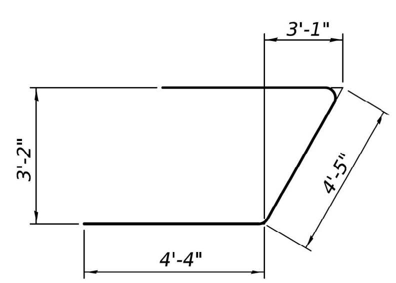


BAR s3(E) & s4(E)

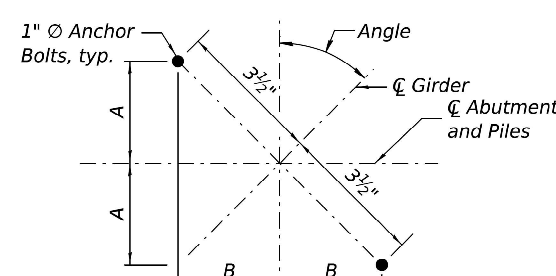


BAR v(E)

(Headed. 334-#8 Bar terminators)



BAR u(E)



ANCHOR BOLT DETAIL

A & B DIMENSIONS

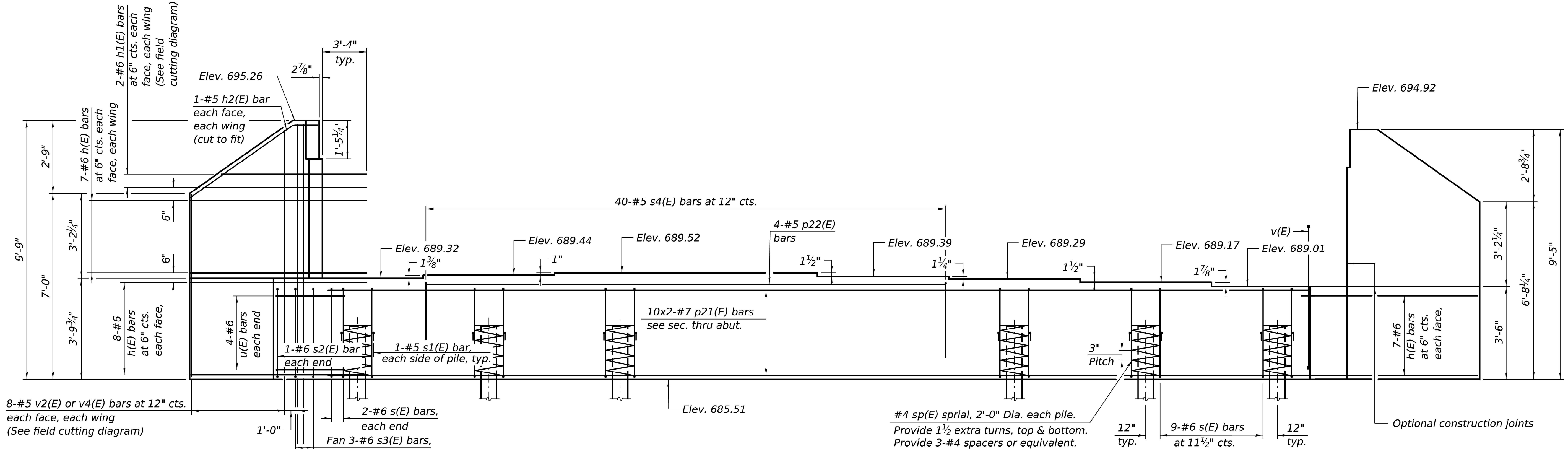
Girder No.	A	B	Angle
Typical Girder (Girders 9-12)	2½"	2½"	45°0'00"
Girder 13	2½"	2½"	45°20'09"
Girder 14	2½"	2½"	45°40'04"
Girder 15	2½"	2⅜"	45°59'45"
Girder 16	2½"	2⅜"	46°19'12"

BILL OF MATERIAL

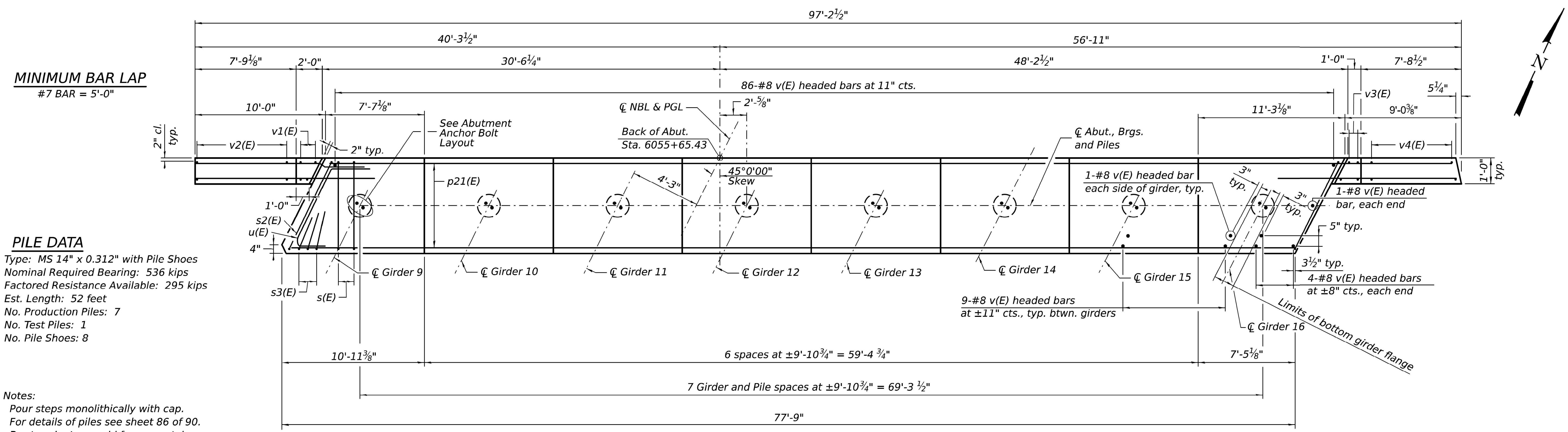
Bar	No.	Size	Length	Shape
h20(E)	56	#6	13'-4"	
h21(E)	8	#6	23'-6"	
h22(E)	4	#5	9'-11"	
p20(E)	20	#7	36'-2"	
s(E)	55	#6	14'-2"	
s1(E)	16	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	6	#6	8'-7"	
* sp(E)	8	#4	2'-0"	
u(E)	8	#6	13'-1"	
v(E)	167	#8	7'-4"	
v3(E)	8	#5	8'-10"	
v4(E)	16	#5	14'-7"	
Structure Excavation		Cu. Yd.	293	
Concrete Structures		Cu. Yd.	43.6	
Protective Coat		Sq. Yd.	20	
Reinforcement Bars, Epoxy Coated		Pound	8,410	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	434	
Driving Piles		Foot	434	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	8	

* Length is height of spiral.

(Sheet 2 of 2)



ELEVATION
(Looking North)



PLAN

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

PILE DATA
Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 536 kips
Factored Resistance Available: 295 kips
Est. Length: 52 feet
No. Production Piles: 7
No. Test Piles: 1
No. Pile Shoes: 8

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 86 of 90.
Bar terminators, paid for separately.
See sheet 75 of 90 for Section Thru Abutment, bar details & Bill of Material.
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.
Apply Protective Coat to top and front vertical face of wingwalls.

(Sheet 1 of 2)

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH ABUTMENT STRUCTURE NO. 018-0070 (NB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MJW	REVISED -			57	18-1VB	CUMBERLAND	414	221
	PLOT SCALE = 0:2 " / in.	DRAWN - MTW	REVISED -			CONTRACT NO. 74597				
	PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -		SHEET 74 OF 90 SHEETS		ILLINOIS FED. AID PROJECT			

MODEL: Br_Sheet_Consultant
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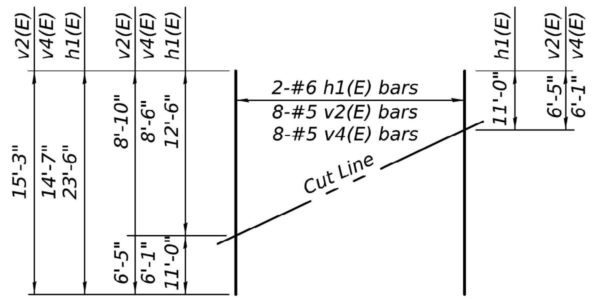
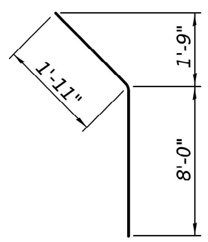
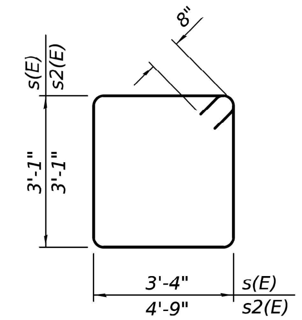


FIELD CUTTING DIAGRAM

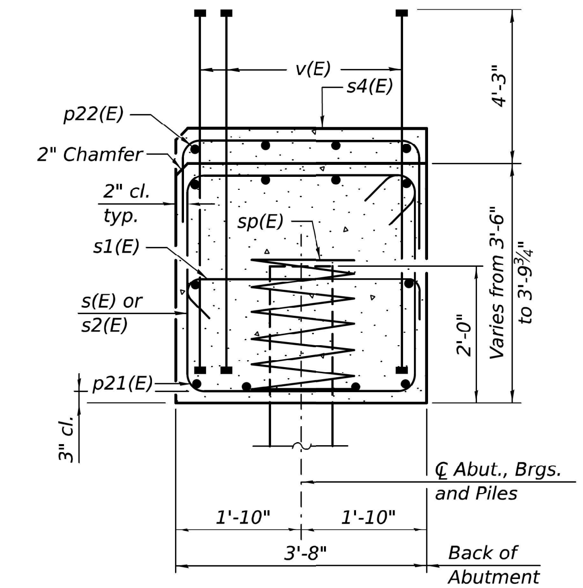
Order h1(E), v2(E), and v4(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR h2(E)

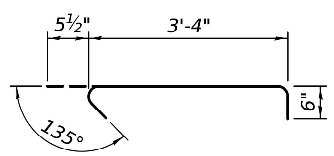


BAR s(E) & s2(E)

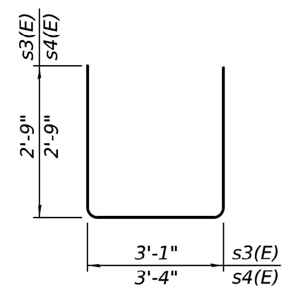


SEC. THRU ABUT.

Dimensions at right angles to abutment.



BAR s1(E)

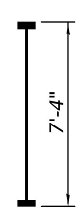


BAR s3(E) & s4(E)

BILL OF MATERIAL

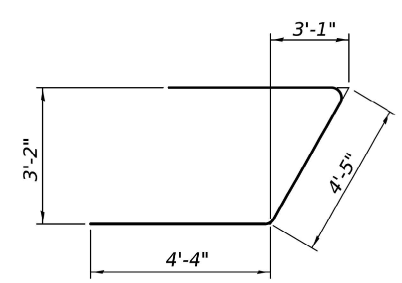
Bar	No.	Size	Length	Shape
h20(E)	58	#6	13'-4"	
h21(E)	8	#6	23'-6"	
h22(E)	4	#5	9'-11"	
p21(E)	20	#7	41'-6"	
p22(E)	4	#5	39'-3"	
s(E)	67	#6	14'-2"	
s1(E)	16	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	6	#6	8'-7"	
s4(E)	40	#5	8'-10"	
* sp(E)	8	#4	2'-0"	
u(E)	8	#6	13'-1"	
v(E)	175	#8	7'-4"	
v1(E)	4	#5	9'-2"	
v2(E)	8	#5	15'-3"	
v3(E)	4	#5	8'-10"	
v4(E)	8	#5	14'-7"	
Structure Excavation		Cu. Yd.	319	
Concrete Structures		Cu. Yd.	45.6	
Protective Coat		Sq. Yd.	20	
Reinforcement Bars, Epoxy Coated		Pound	9,620	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	364	
Driving Piles		Foot	364	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	8	

* Length is height of spiral.

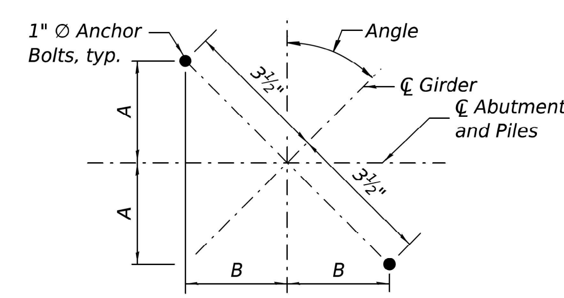


BAR v(E)

(Headed. 350-#8 Bar terminators)



BAR u(E)

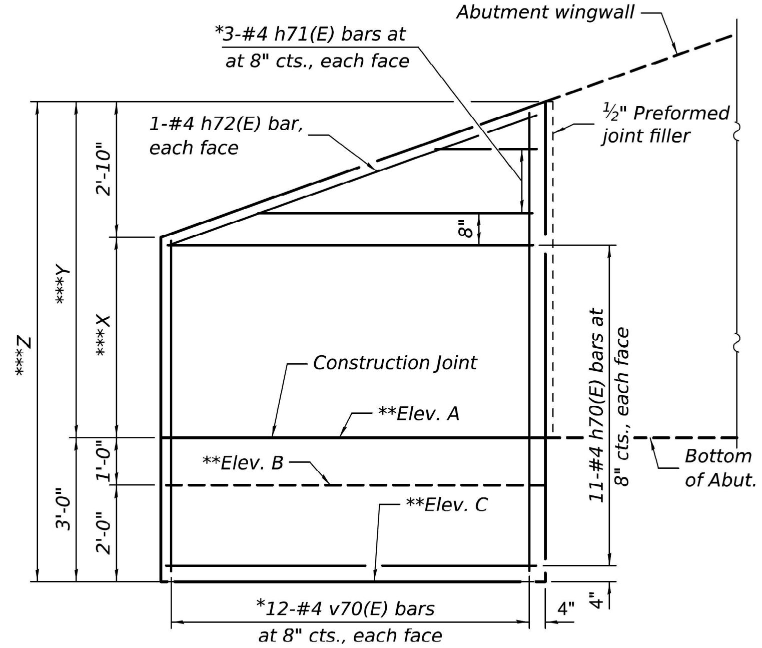


ANCHOR BOLT DETAIL

A & B DIMENSIONS

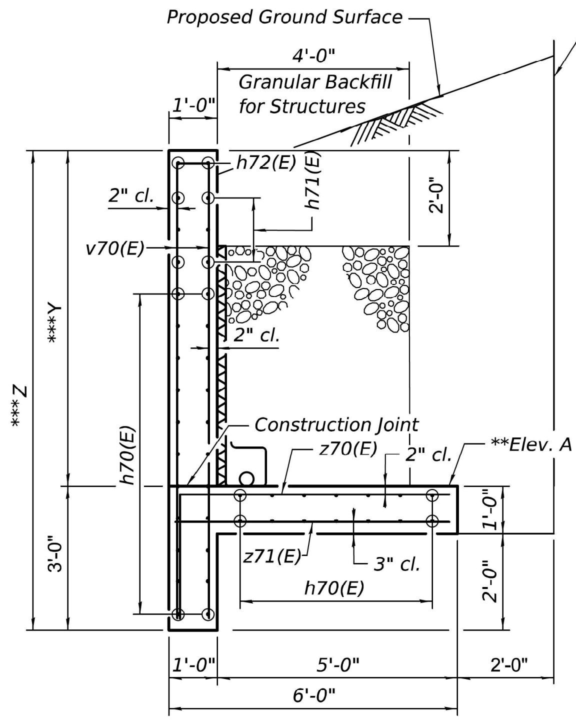
Girder No.	A	B	Angle
Typical Girder (Girders 9-12)	2½"	2½"	45°0'00"
Girder 13	2½"	2½"	45°20'09"
Girder 14	2½"	2½"	45°40'04"
Girder 15	2½"	2⅜"	45°59'45"
Girder 16	2½"	2⅜"	46°19'12"

(Sheet 2 of 2)



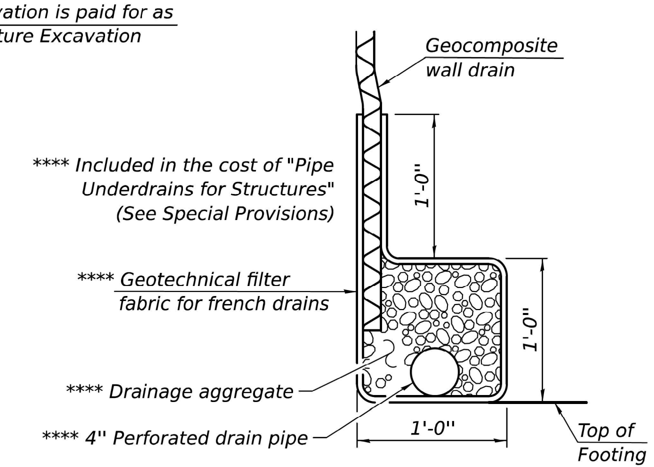
ELEVATION - WINGWALL EXTENSION

(Looking South for South Abutment-West/East Side of SN 018-0069)
(Looking South for South Abutment-East Side of SN 018-0070)
(Looking North for North Abutment-West Side of SN 018-0069)
(Looking North for North Abutment West/East Side of SN 018-0070)

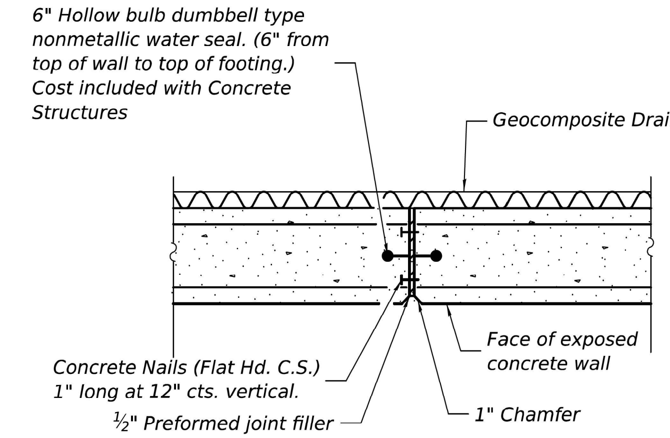


SECTION A-A

Maximum Applied Service Bearing Pressure, Qmax = 1377 psf



WINGWALL EXTENSION PIPE UNDERDRAIN DETAIL



EXPANSION JOINT DETAIL

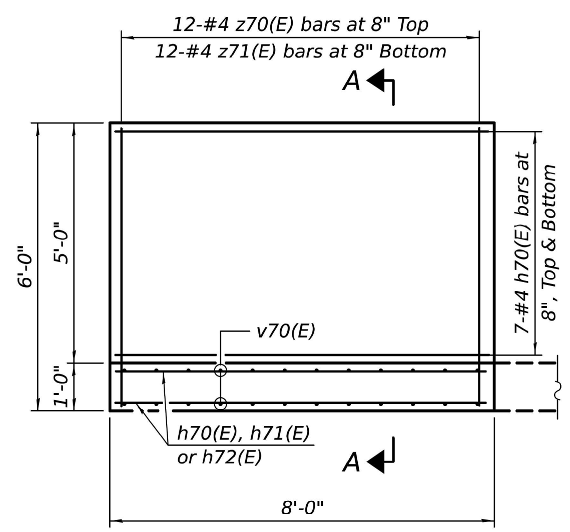
RETAINING WALL DIMENSIONS

	SN 018-0069			SN 018-0070		
	South Abut.		North Abut.	South Abut.	North Abut.	
Dimension	West Side	East Side	West Side	East Side	West Side	East Side
X	3'-9 5/8"	4'-2 3/4"	3'-10"	3'-10 3/4"	4'-2"	3'-10 1/4"
Y	6'-7 5/8"	7'-0 3/4"	6'-8"	6'-8 3/4"	7'-0"	6'-8 1/4"
Z	9'-7 5/8"	10'-0 3/4"	9'-8"	9'-8 3/4"	10'-0"	9'-8 1/4"

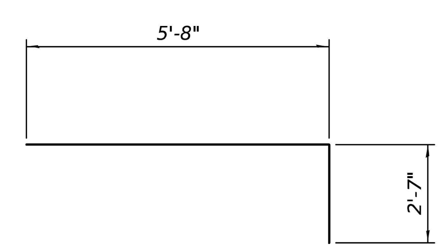
FOOTING ELEVATIONS

	SN 018-0069			SN 018-0070		
	South Abut.		North Abut.	South Abut.	North Abut.	
Elevation	West Side	East Side	West Side	East Side	West Side	East Side
A	684.89	684.89	685.84	685.72	685.51	685.51
B	683.89	683.89	684.84	684.72	684.51	684.51
C	681.89	681.89	682.84	682.72	682.51	682.51

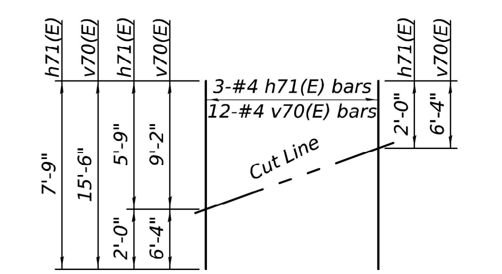
*See Field Cutting Diagram
**See Footing Elevation Table
***See Retaining Wall Dimension Table



PLAN - WINGWALL EXTENSION



BAR z70(E)



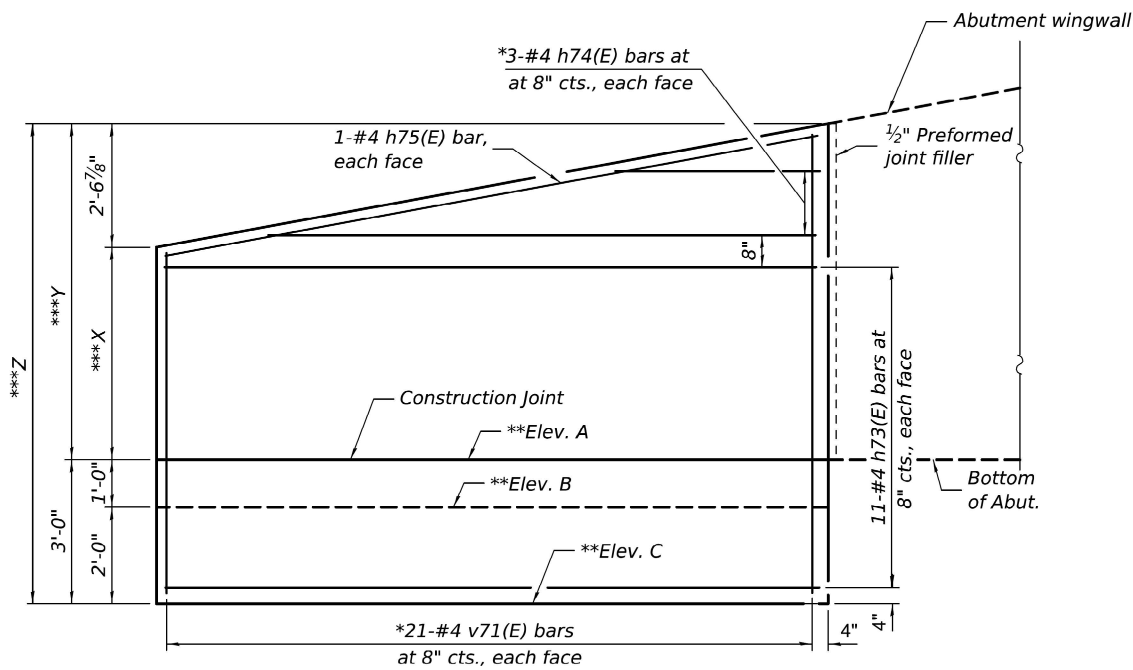
FIELD CUTTING DIAGRAM

Order h71(E), and v70(E) full length.
Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL

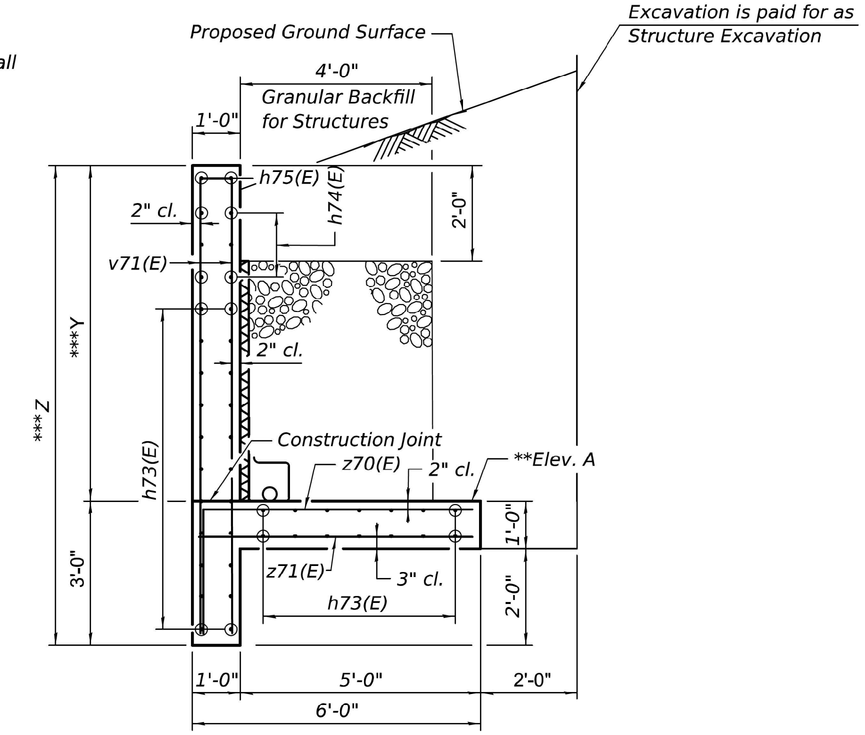
Bar	No.	Size	Length	Shape
h70(E)	216	#4	7'-8"	
h71(E)	18	#4	7'-9"	
h72(E)	12	#4	8'-0"	
v70(E)	72	#4	15'-6"	
z70(E)	72	#4	8'-3"	
z71(E)	72	#4	5'-8"	
Concrete Structures		Cu. Yd.	23.8	
Protective Coat		Sq. Yd.	50	
Reinforcement Bars, Epoxy Coated		Pound	2,680	

Notes:
Wingwall Extension quantities for Structure Excavation is included in Abutment Bill of Material.
Contractor shall adjust the layout of the pipe underdrain to account for the elevation change in between the bottom of wingwall and top of wingwall extension footing.
Apply Protective Coat to top and front vertical face of wingwall extensions.



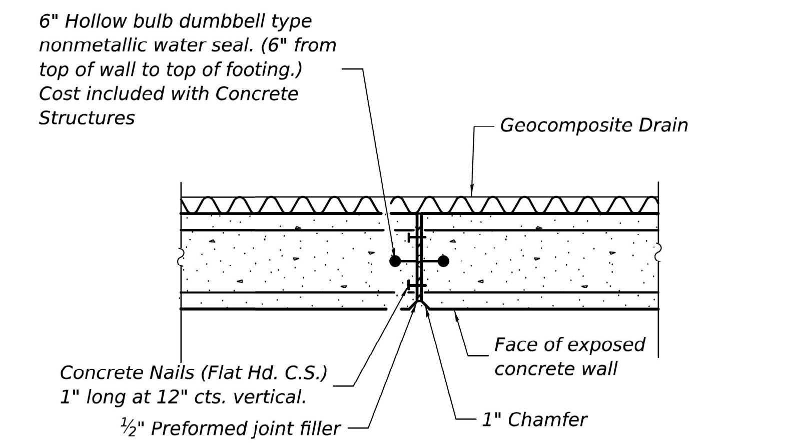
ELEVATION - WINGWALL EXTENSION

(Looking North for North Abutment-East Side of SN 018-0069)
(Looking South for South Abutment-West Side of SN 018-0070)



SECTION A-A

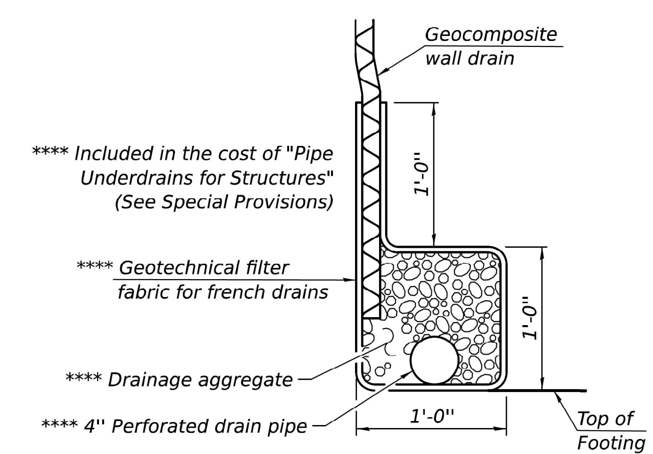
Maximum Applied Service Bearing Pressure, Qmax = 1377 psf



EXPANSION JOINT DETAIL

RETAINING WALL DIMENSIONS

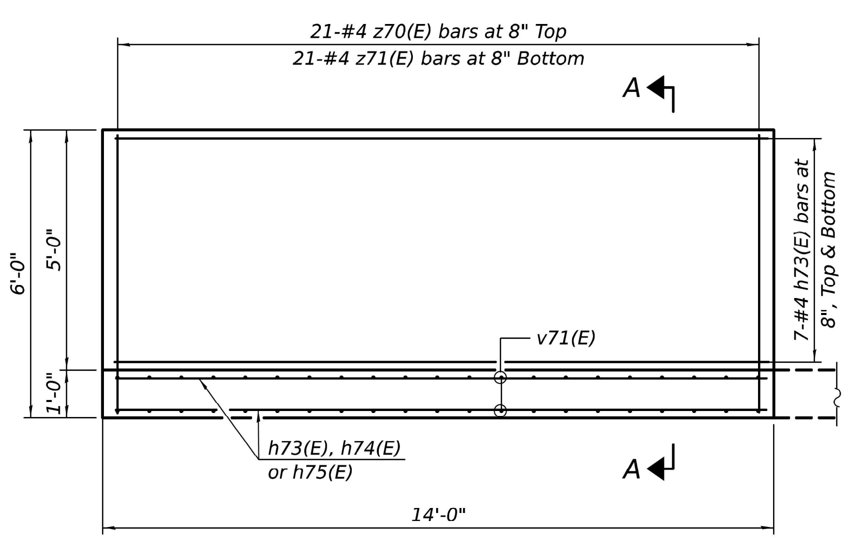
	SN 018-0069	SN 018-0070
	North Abut.	South Abut.
Dimension	East Side	West Side
X	4'-3 ⅜"	4'-1 ⅛"
Y	6'-10 ¼"	6'-8"
Z	9'-10 ¼"	9'-8"



FOOTING ELEVATIONS

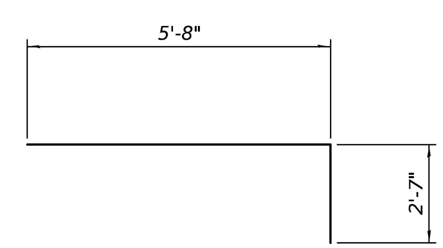
	SN 018-0069	SN 018-0070
	North Abut.	South Abut.
Elevation	East Side	West Side
A	685.84	685.72
B	684.84	684.72
C	682.84	682.72

WINGWALL EXTENSION PIPE UNDERDRAIN DETAIL

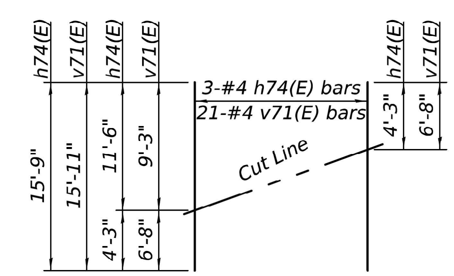


PLAN - WINGWALL EXTENSION

*See Field Cutting Diagram
**See Footing Elevation Table
***See Retaining Wall Dimension Table



BAR z70(E)



FIELD CUTTING DIAGRAM

Order h74(E), and v71(E) full length.
Cut as shown and use remainder of bars in opposite face.

BILL OF MATERIAL

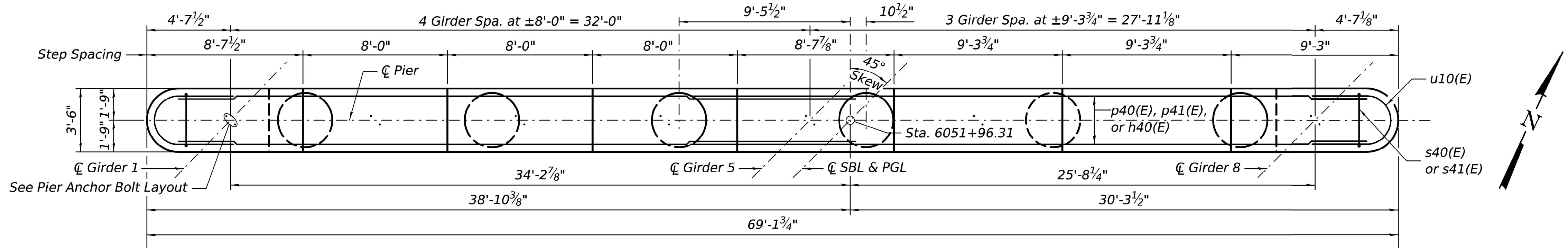
Bar	No.	Size	Length	Shape
h73(E)	72	#4	13'-8"	
h74(E)	6	#4	15'-9"	
h75(E)	4	#4	13'-10"	
v71(E)	42	#4	15'-11"	
z70(E)	42	#4	8'-3"	
z71(E)	42	#4	5'-8"	
Concrete Structures		Cu. Yd.	13.9	
Protective Coat		Sq. Yd.	28	
Reinforcement Bars, Epoxy Coated		Pound	1,600	

Notes:
Wingwall Extension quantities for Structure Excavation is included in Abutment Bill of Material.
Contractor shall adjust the layout of the pipe underdrain to account for the elevation change in between the bottom of wingwall and top of wingwall extension footing.
Apply Protective Coat to top and front vertical face of wingwall extensions.

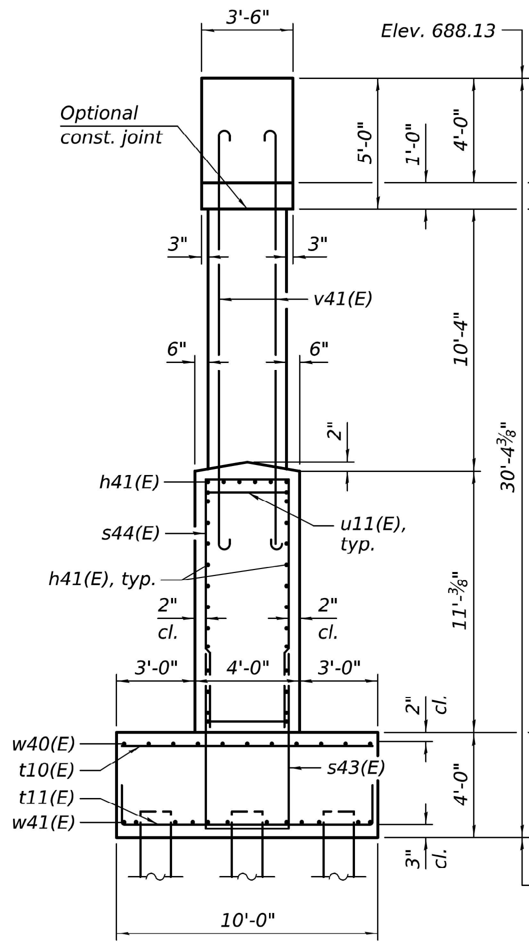
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 86 of 90.
See sheet 79 of 90 for Section A-A, Section B-B, Section C-C, bar details & Bill of Materials.

PILE DATA

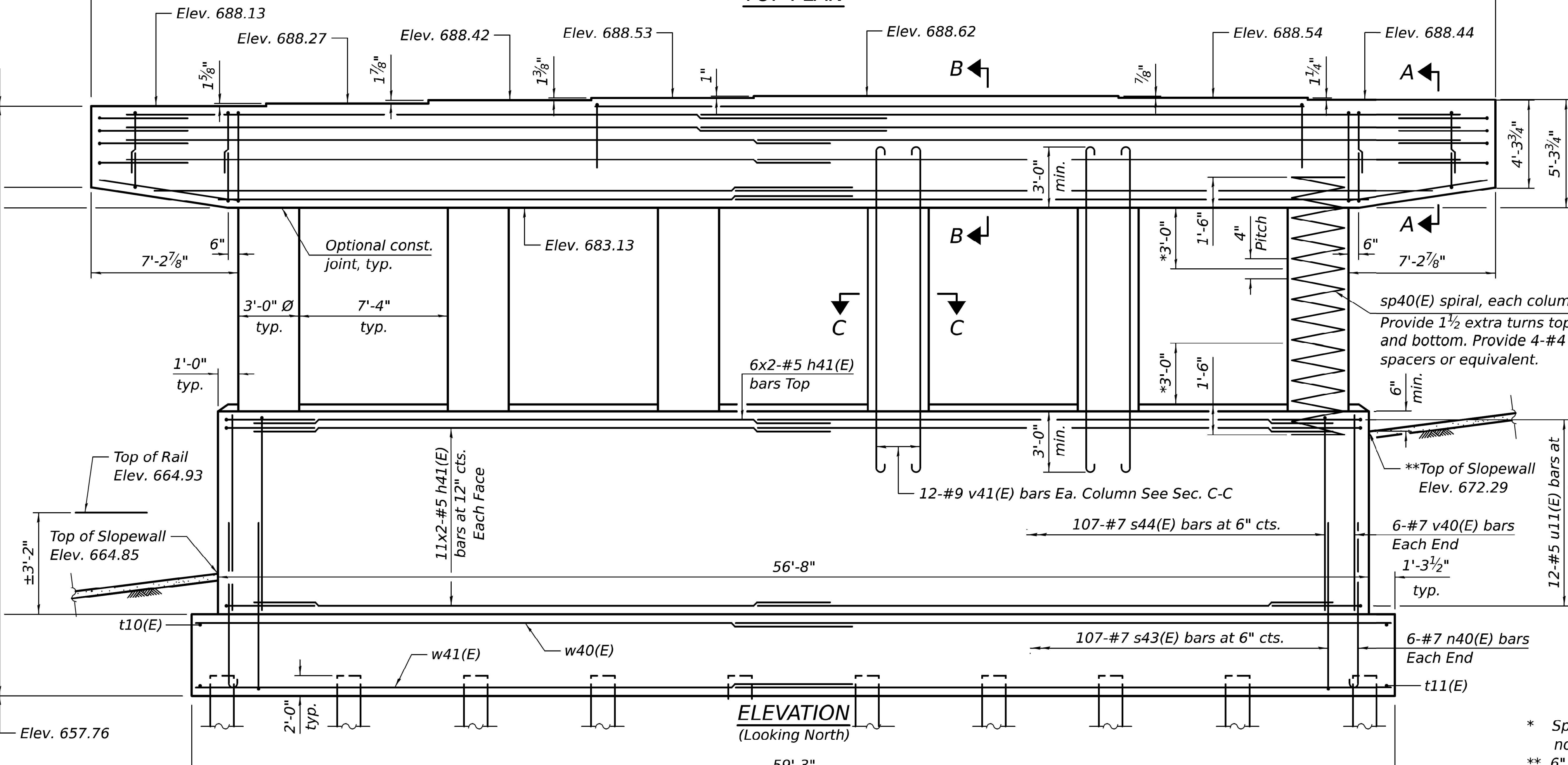
Type: Metal Shell 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 504 kips
Factored Resistance Available: 277 kips
Est. Length: 59 feet
No. Production Piles: 29
No. Test Piles: 1



TOP PLAN



END VIEW

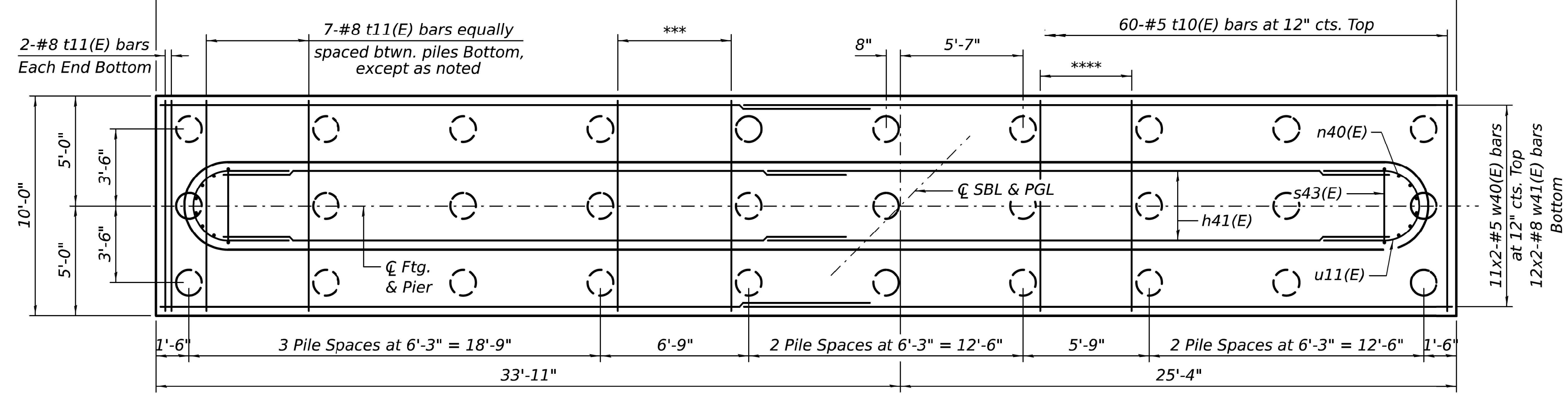


ELEVATION
(Looking North)

* Splicing of reinforcement will not be allowed in this region.
** 6" Shoulder not shown for clarity.

MINIMUM BAR LAP

#5 bar = 3'-7"
#7 bar = 4'-5"
#8 bar = 5'-9"
#9 bar = 10'-4"



FOOTING PLAN

*** 8-#8 t11(E) bars equally spaced btwn. piles Bottom
**** 6-#8 t11(E) bars equally spaced btwn. piles Bottom

(Sheet 1 of 2)

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 ':" / in.	DRAWN - KN	REVISED -
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

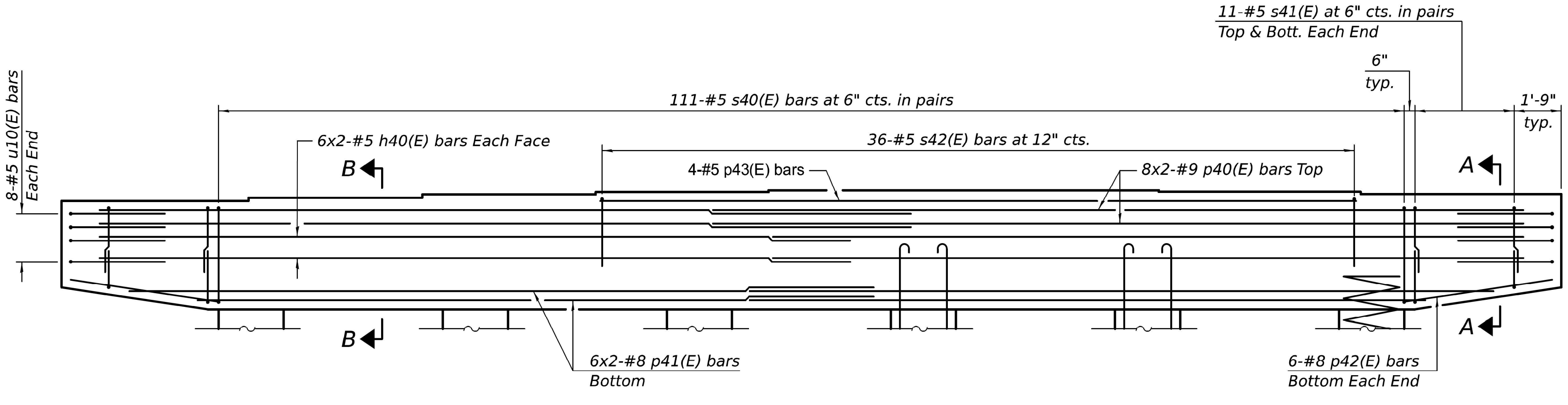
PIER 1 DETAILS
STRUCTURE NO. 018-0069 (SB)

SHEET 78 OF 90 SHEETS

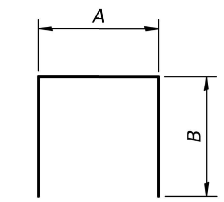
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	225
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034 I57 StructureReplacement\CADD SHEETS ORD\Structural\DREI Crossing\0180069 70-74597-078-Pier 1 Details SB.dgn

5/8/2025 3:25:02 PM



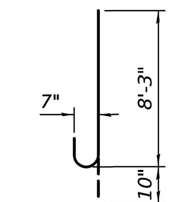
PIER CAP ELEVATION
(Looking North)



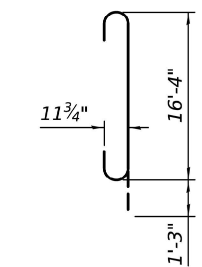
* BARS

* A & B DIMENSIONS

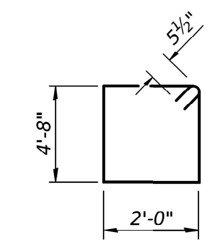
Bar	A	B
s41(E)	2'-0"	3'-11"
s42(E)	3'-2"	2'-9"
s43(E)	3'-8"	8'-3"
s44(E)	3'-8"	10'-10"
t11(E)	9'-8"	3'-7"



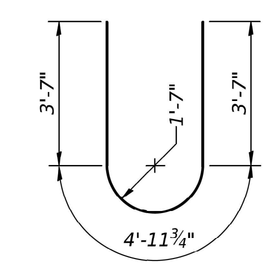
BAR n40(E)



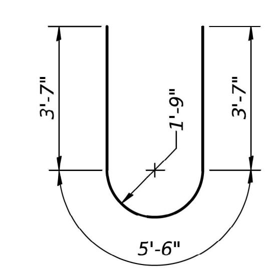
BAR v41(E)



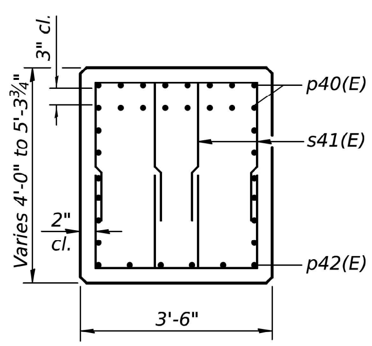
BAR s40(E)



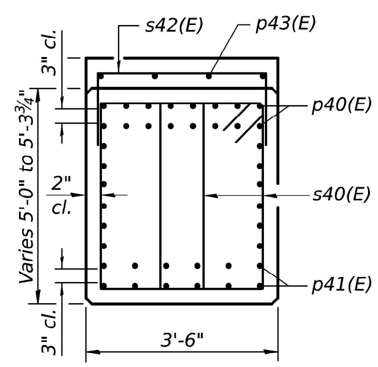
BAR u10(E)



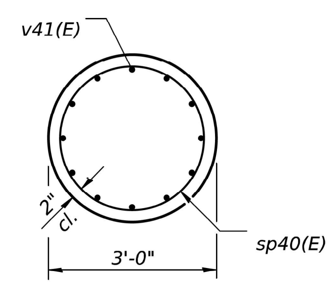
BAR u11(E)



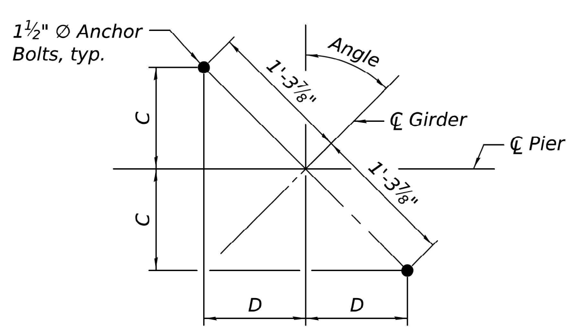
SEC. A-A



SEC. B-B



SEC. C-C



ANCHOR BOLT DETAIL

C & D DIMENSIONS

Girder No.	C	D	Angle
Girder 1	11"	11⅜"	44°03'14"
Girder 2	11⅛"	11⅜"	44°17'36"
Girder 3	11⅛"	11⅜"	44°31'51"
Girder 4	11⅛"	11¼"	44°45'59"
Typical Girder (Girders 5-8)	11¼"	11¼"	45°00'00"

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h40(E)	24	#5	34'-8"	
h41(E)	56	#5	28'-2"	
n40(E)	12	#7	9'-1"	
p40(E)	32	#9	38'-0"	
p41(E)	24	#8	33'-9"	
p42(E)	12	#8	6'-8"	
p43(E)	4	#5	34'-11"	
s40(E)	222	#5	14'-3"	
s41(E)	44	#5	9'-10"	
s42(E)	36	#5	8'-8"	
s43(E)	107	#7	20'-2"	
s44(E)	107	#7	25'-4"	
** sp40(E)	6	#5	13'-4"	
t10(E)	60	#5	9'-8"	
t11(E)	67	#8	16'-10"	
u10(E)	16	#5	12'-2"	
u11(E)	24	#5	12'-8"	
v40(E)	12	#7	10'-10"	
v41(E)	72	#9	18'-10"	
w40(E)	22	#5	31'-3"	
w41(E)	24	#8	32'-4"	
Structure Excavation		Cu. Yds.	394	
Concrete Structures		Cu. Yds.	244.0	
Reinforcement Bars, Epoxy Coated		Pound	37,480	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	1,711	
Driving Piles		Foot	1,711	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	30	

** Length is height of spiral.

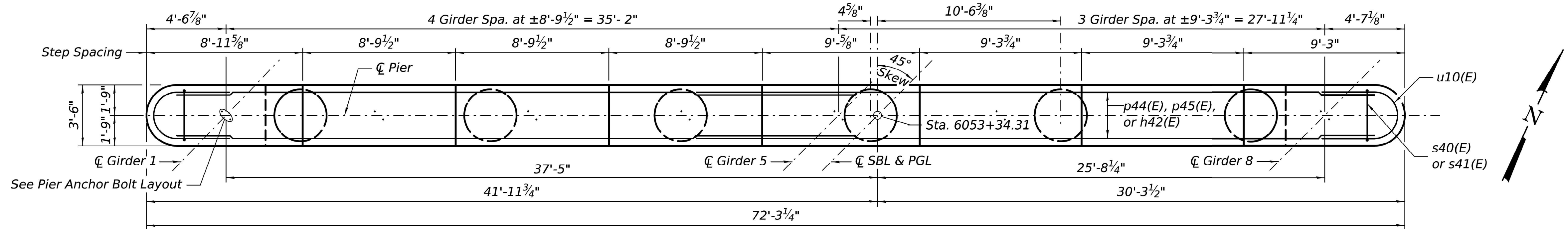
(Sheet 2 of 2)

Notes:

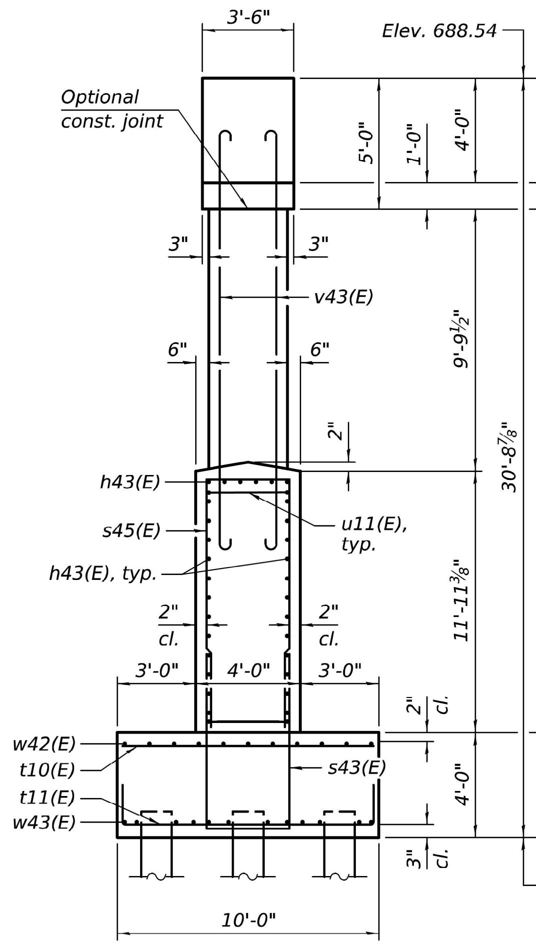
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 86 of 90.
See sheet 81 of 90 for Section A-A, Section B-B, Section C-C, bar details & Bill of Materials.

PILE DATA

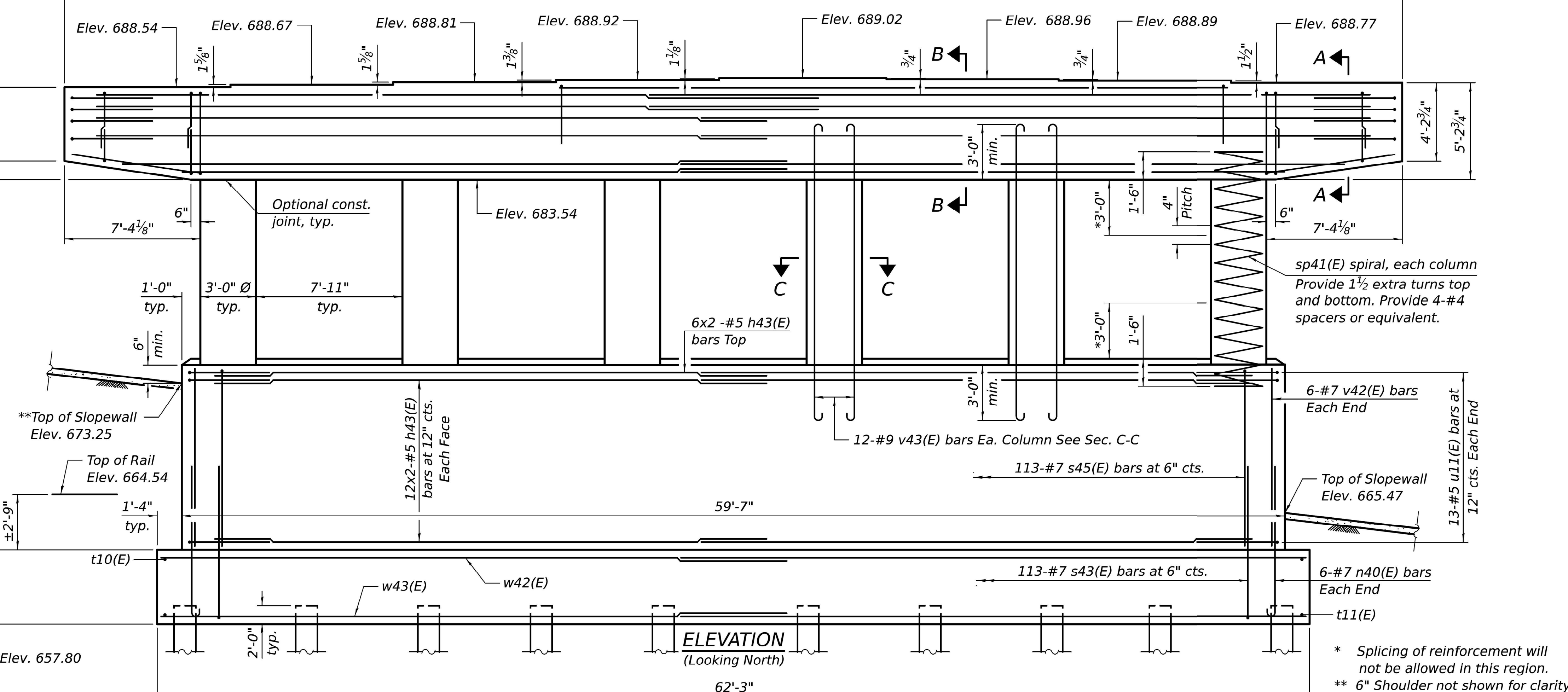
Type: Metal Shell 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 314 kips
Est. Length: 47 feet
No. Production Piles: 29
No. Test Piles: 1



TOP PLAN



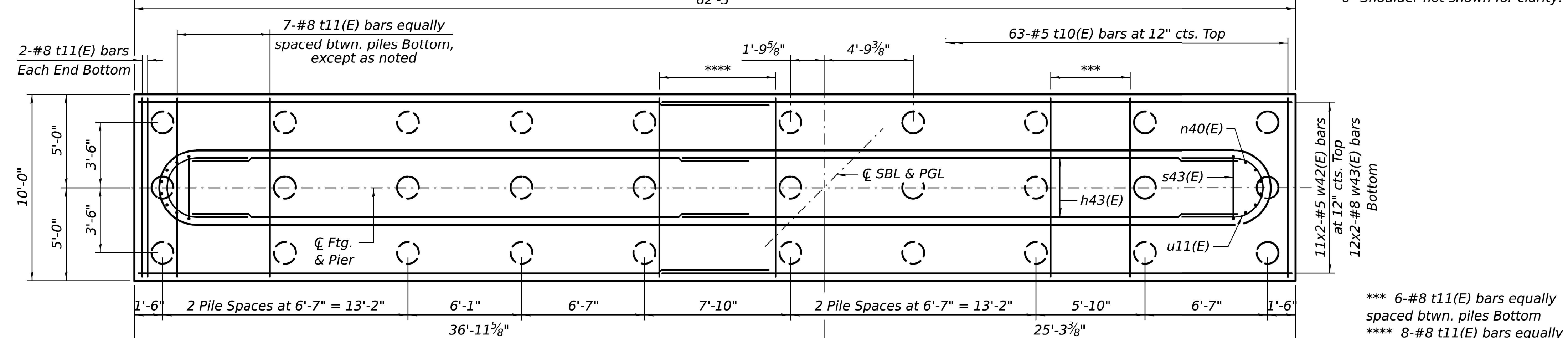
END VIEW



ELEVATION

(Looking North)

* Splicing of reinforcement will not be allowed in this region.
** 6" Shoulder not shown for clarity.



MINIMUM BAR LAP

#5 bar = 3'-7"
#7 bar = 4'-5"
#8 bar = 5'-9"
#9 bar = 10'-4"

*** 6-#8 t11(E) bars equally spaced btwn. piles Bottom
**** 8-#8 t11(E) bars equally spaced btwn. piles Bottom

FOOTING PLAN

(Sheet 1 of 2)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034 I57 StructureReplacement\CADD SHEETS ORD\Structural\DRE\ Crossing\0180069 70-74597-080-Pier 2 Details SB.dgn

BLA, Inc.

USER NAME = mwilley	DESIGNED - KN	REVISED -	
	CHECKED - MJW	REVISED -	
PLOT SCALE = 0:2 ' / in.	DRAWN - KN	REVISED -	
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PIER 2 DETAILS
STRUCTURE NO. 018-0069 (SB)

SHEET 80 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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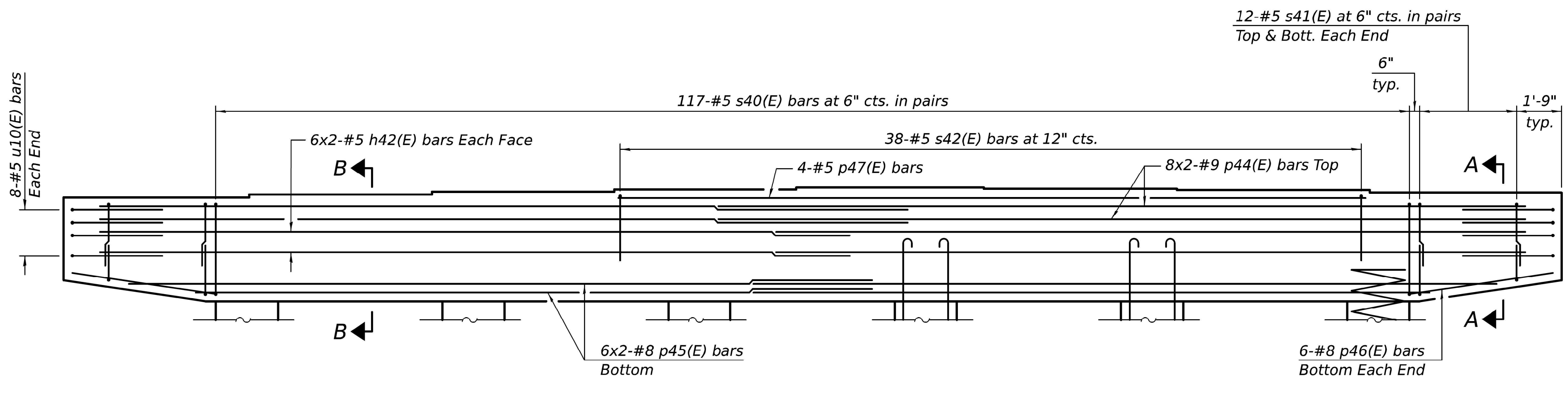
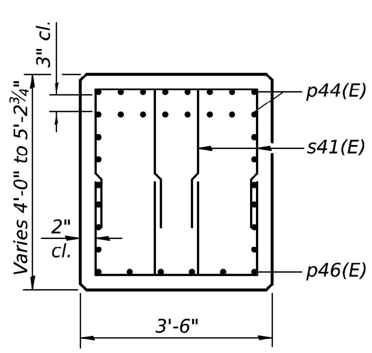
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

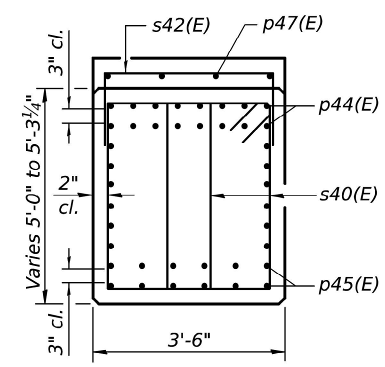
5/8/2025 3:25:08 PM



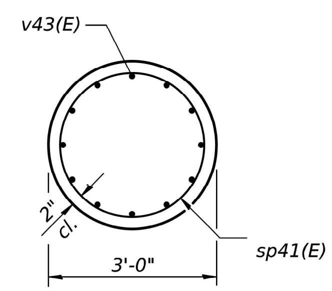
PIER CAP ELEVATION
(Looking North)



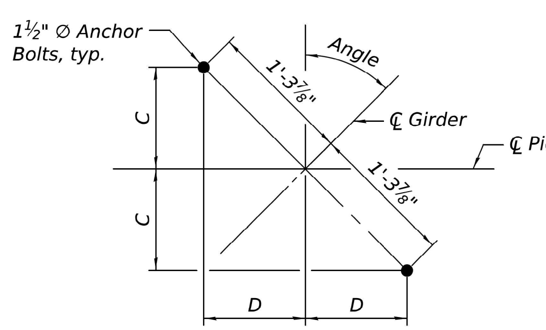
SEC. A-A



SEC. B-B



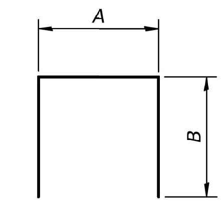
SEC. C-C



ANCHOR BOLT DETAIL

C & D DIMENSIONS

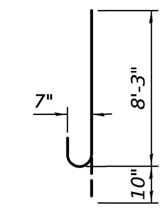
Girder No.	C	D	Angle
Girder 1	11"	11⅜"	44°03'14"
Girder 2	11⅛"	11⅜"	44°17'36"
Girder 3	11⅛"	11⅜"	44°31'51"
Girder 4	11⅛"	11¼"	44°45'59"
Typical Girder (Girders 5-8)	11¼"	11¼"	45°00'00"



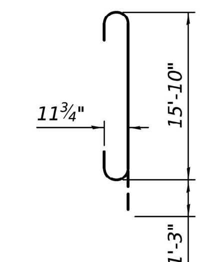
* BARS

* A & B DIMENSIONS

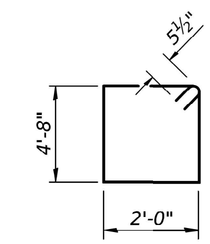
Bar	A	B
s41(E)	2'-0"	3'-11"
s42(E)	3'-2"	2'-9"
s43(E)	3'-8"	8'-3"
s45(E)	3'-8"	11'-9"
t11(E)	9'-8"	3'-7"



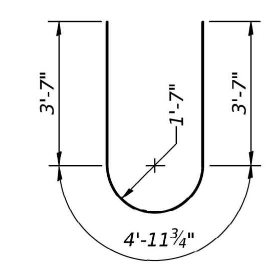
BAR n40(E)



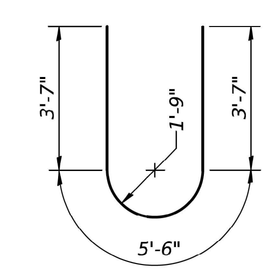
BAR v43(E)



BAR s40(E)



BAR u10(E)



BAR u11(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h42(E)	24	#5	36'-3"	——
h43(E)	60	#5	29'-7"	——
n40(E)	12	#7	9'-1"	⊃
p44(E)	32	#9	39'-7"	——
p45(E)	24	#8	35'-2"	——
p46(E)	12	#8	6'-9"	——
p47(E)	4	#5	36'-1"	——
s40(E)	234	#5	14'-3"	◻
s41(E)	48	#5	9'-10"	⊔
s42(E)	38	#5	8'-8"	⊔
s43(E)	113	#7	20'-2"	⊔
s45(E)	113	#7	27'-2"	⊔
** sp41(E)	6	#5	12'-10"	⋀⋀⋀
t10(E)	63	#5	9'-8"	——
t11(E)	67	#8	16'-10"	⊔
u10(E)	16	#5	12'-2"	⊃
u11(E)	26	#5	12'-8"	⊃
v42(E)	12	#7	11'-9"	——
v43(E)	72	#9	18'-4"	⊃
w42(E)	22	#5	32'-9"	——
w43(E)	24	#8	33'-10"	——
Structure Excavation		Cu. Yds.	206	
Concrete Structures		Cu. Yds.	262.4	
Reinforcement Bars, Epoxy Coated		Pound	39,230	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	1,363	
Driving Piles		Foot	1,363	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	30	

** Length is height of spiral.

(Sheet 2 of 2)

USER NAME = mwilley	DESIGNED - KN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MJW	REVISED -	
PLOT SCALE = 0:2 ':" / in.	DRAWN - KN	REVISED -	
PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -	

BLA, Inc.

PIER 2 DETAILS
STRUCTURE NO. 018-0069 (SB)

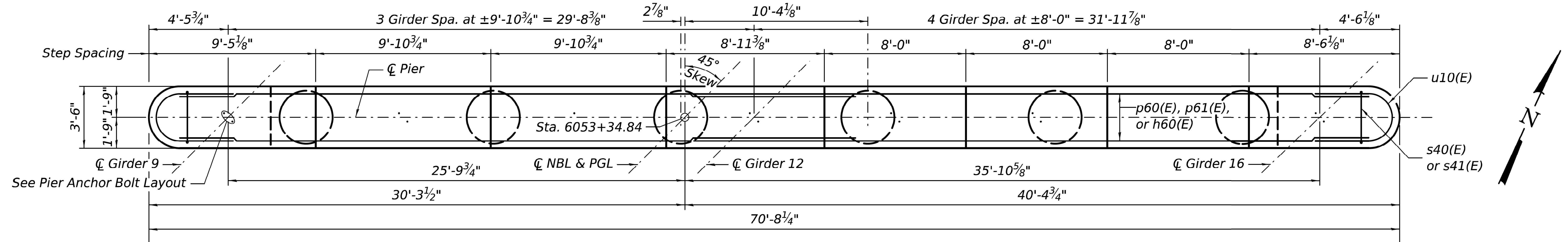
SHEET 81 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	228
		CONTRACT NO. 74597		
	ILLINOIS	FED. AID PROJECT		

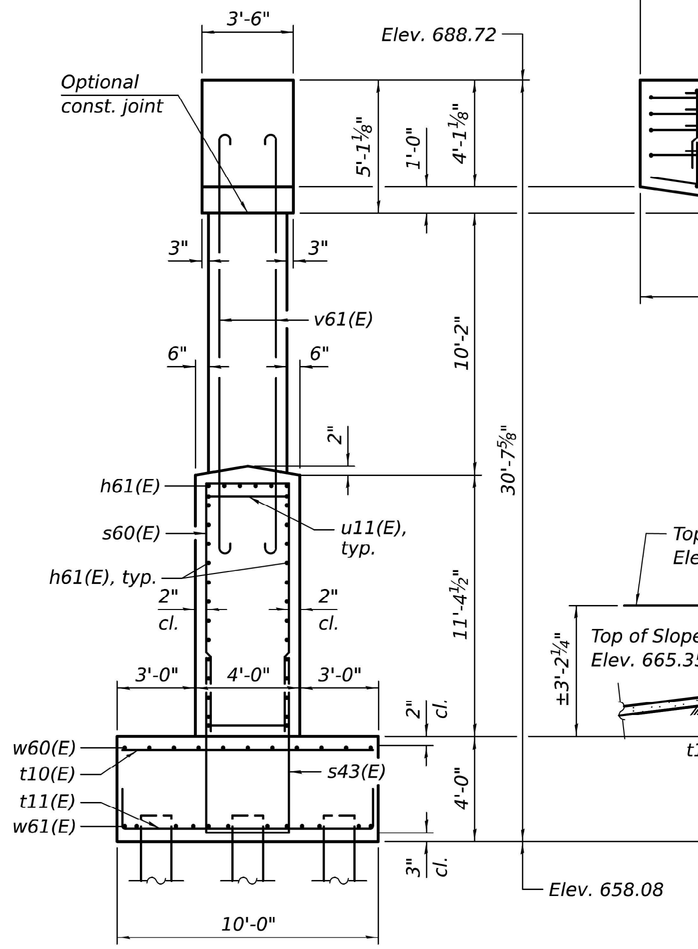
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 86 of 90.
See sheet 83 of 90 for Section A-A, Section B-B, Section C-C, bar details & Bill of Materials.

PILE DATA

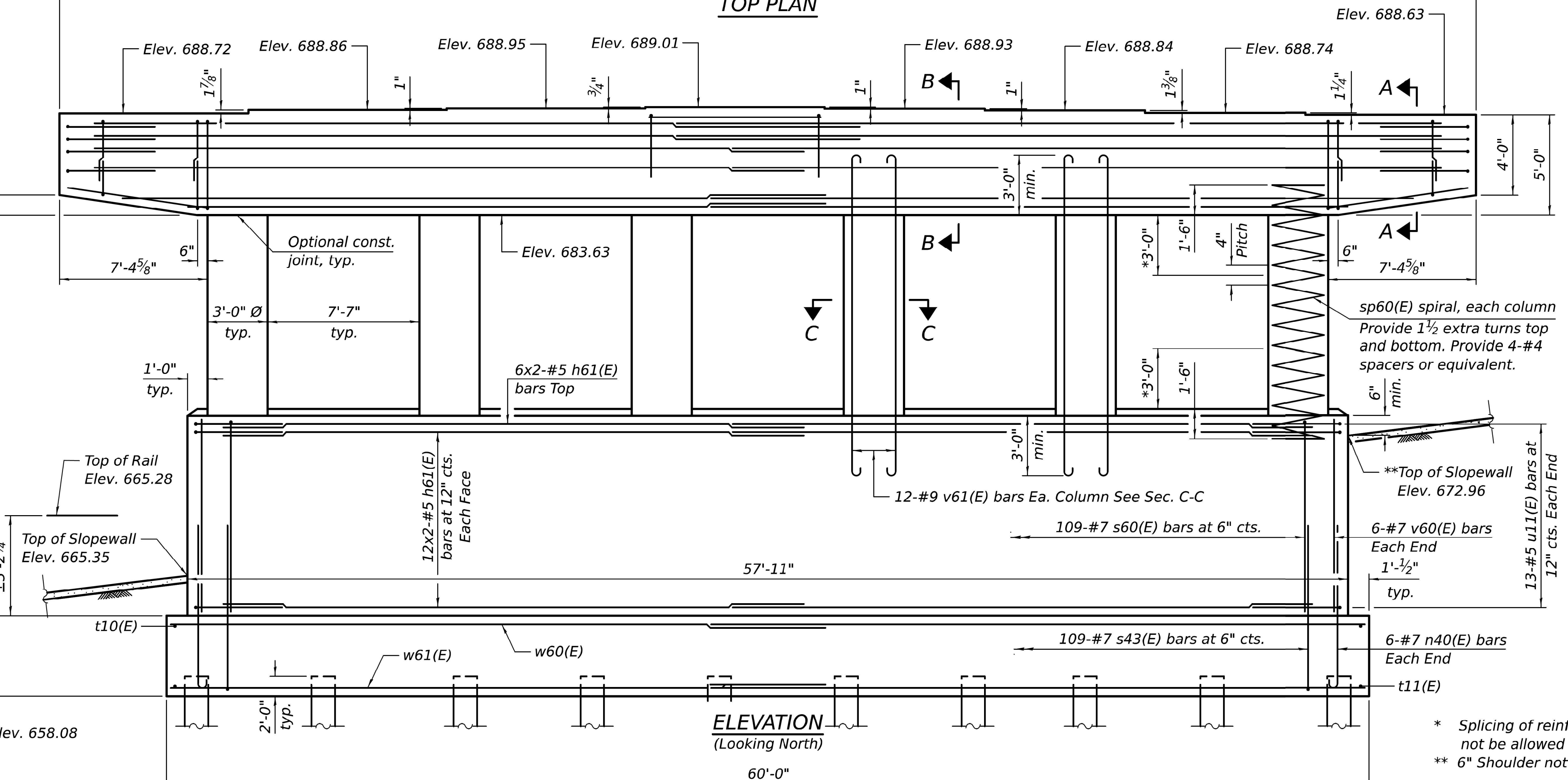
Type: Metal Shell 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 503 kips
Factored Resistance Available: 277 kips
Est. Length: 60 feet
No. Production Piles: 29
No. Test Piles: 1



TOP PLAN

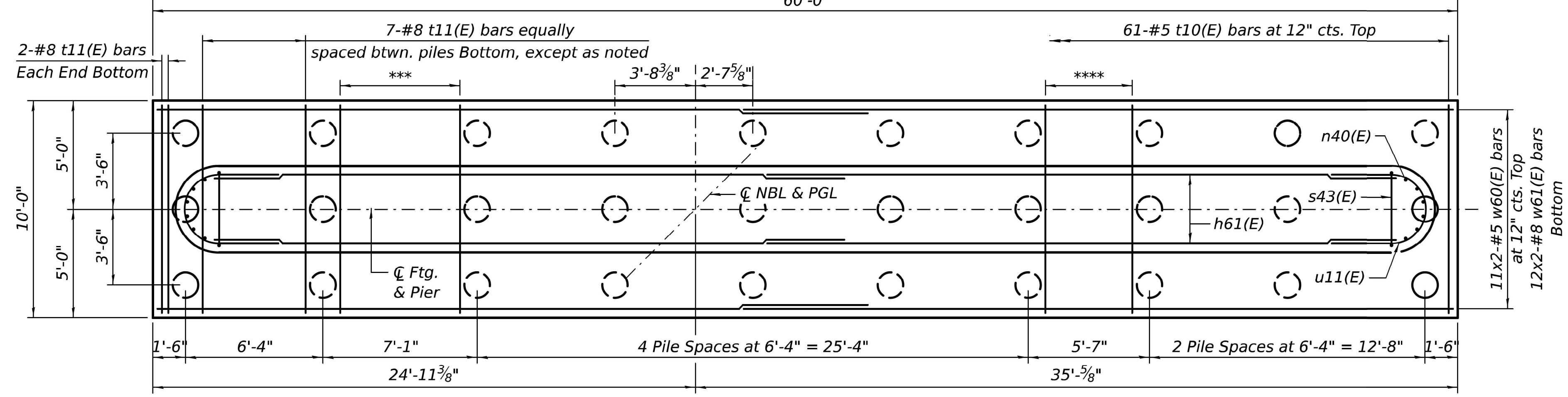


END VIEW



ELEVATION
(Looking North)

* Splicing of reinforcement will not be allowed in this region.
** 6" Shoulder not shown for clarity.



FOOTING PLAN

*** 8-#8 t11(E) bars equally spaced btwn. piles Bottom
**** 6-#8 t11(E) bars equally spaced btwn. piles Bottom

MINIMUM BAR LAP

#5 bar = 3'-7"
#7 bar = 4'-5"
#8 bar = 5'-9"
#9 bar = 10'-4"

(Sheet 1 of 2)

MODEL: Br_Sheet_Consultant
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5/8/2025 3:25:15 PM

BLA, Inc.

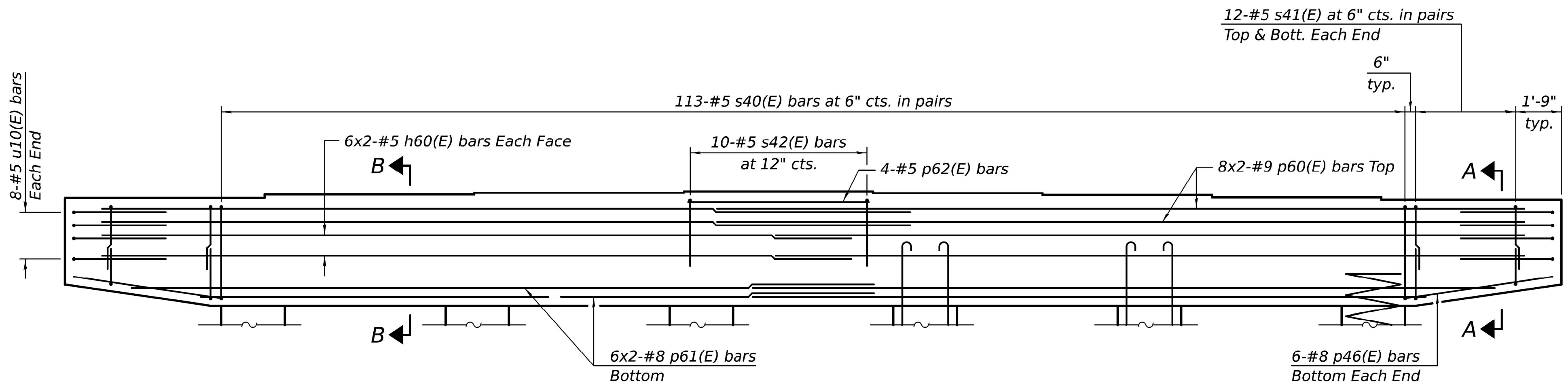
USER NAME = mwilley	DESIGNED - KN	REVISED -
	CHECKED - MJW	REVISED -
PLOT SCALE = 0:2 " / in.	DRAWN - KN	REVISED -
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

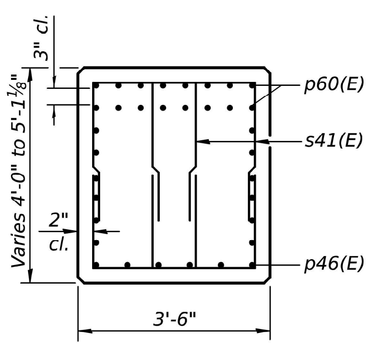
PIER 1 DETAILS
STRUCTURE NO. 018-0070 (NB)

SHEET 82 OF 90 SHEETS

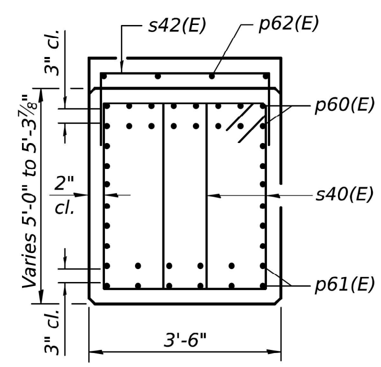
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	229
		CONTRACT NO. 74597		
	ILLINOIS	FED. AID PROJECT		



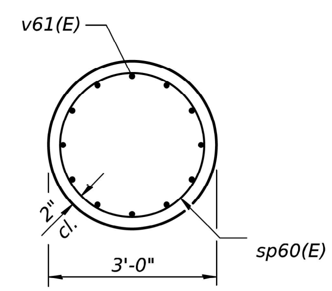
PIER CAP ELEVATION
(Looking North)



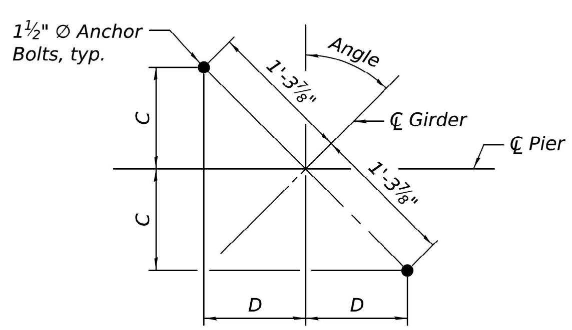
SEC. A-A



SEC. B-B



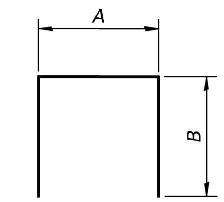
SEC. C-C



ANCHOR BOLT DETAIL

C & D DIMENSIONS

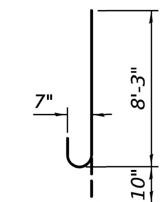
Girder No.	C	D	Angle
Typical Girder (Girders 9-12)	11¼"	11¼"	45°00'00"
Girder 13	11¼"	11⅛"	45°20'09"
Girder 14	11⅜"	11⅛"	45°40'04"
Girder 15	11⅜"	11"	45°59'45"
Girder 16	11½"	11"	46°19'12"



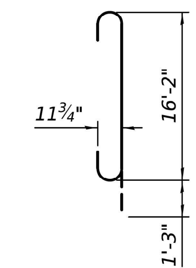
* BARS

* A & B DIMENSIONS

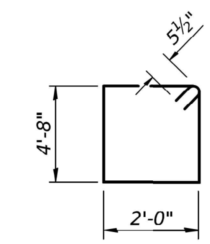
Bar	A	B
s41(E)	2'-0"	3'-11"
s42(E)	3'-2"	2'-9"
s43(E)	3'-8"	8'-3"
s60(E)	3'-8"	11'-2"
t11(E)	9'-8"	3'-7"



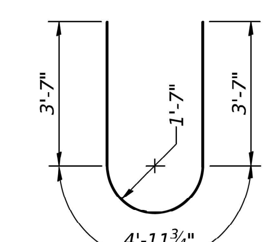
BAR n40(E)



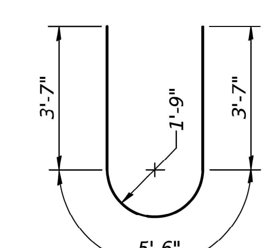
BAR v61(E)



BAR s40(E)



BAR u10(E)



BAR u11(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h60(E)	24	#5	35'-5"	
h61(E)	60	#5	28'-9"	
n40(E)	12	#7	9'-1"	
p46(E)	12	#8	6'-9"	
p60(E)	32	#9	38'-10"	
p61(E)	24	#8	34'-4"	
p62(E)	4	#5	8'-7"	
s40(E)	226	#5	14'-3"	
s41(E)	48	#5	9'-10"	
s42(E)	10	#5	8'-8"	
s43(E)	109	#7	20'-2"	
s60(E)	109	#7	26'-0"	
sp60(E)	6	#5	13'-2"	
t10(E)	61	#5	9'-8"	
t11(E)	67	#8	16'-10"	
** u10(E)	16	#5	12'-2"	
u11(E)	26	#5	12'-8"	
v60(E)	12	#7	11'-2"	
v61(E)	72	#9	18'-8"	
w60(E)	22	#5	31'-8"	
w61(E)	24	#8	32'-9"	
Structure Excavation		Cu. Yds.	211	
Concrete Structures		Cu. Yds.	249.8	
Reinforcement Bars, Epoxy Coated		Pound	37,890	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	1,740	
Driving Piles		Foot	1,740	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	30	

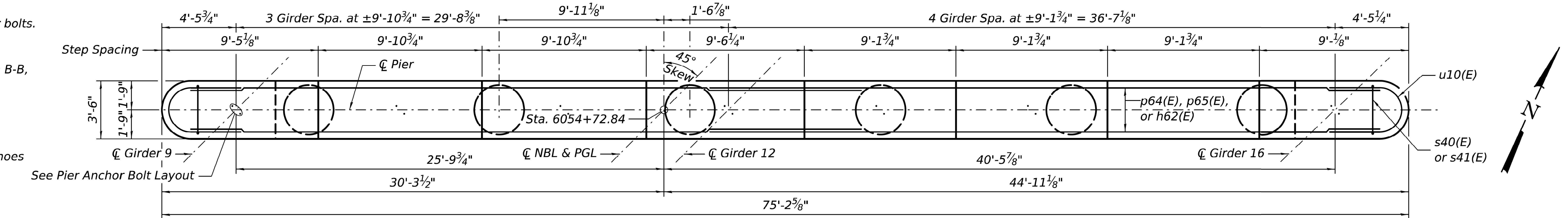
** Length is height of spiral.

(Sheet 2 of 2)

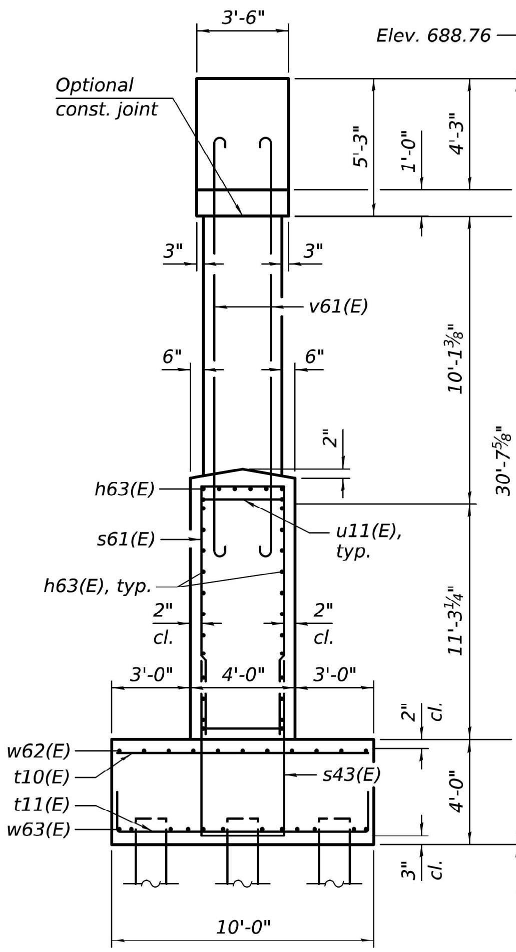
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 86 of 90.
See sheet 85 of 90 for Section A-A, Section B-B, Section C-C, bar details & Bill of Materials.

PILE DATA

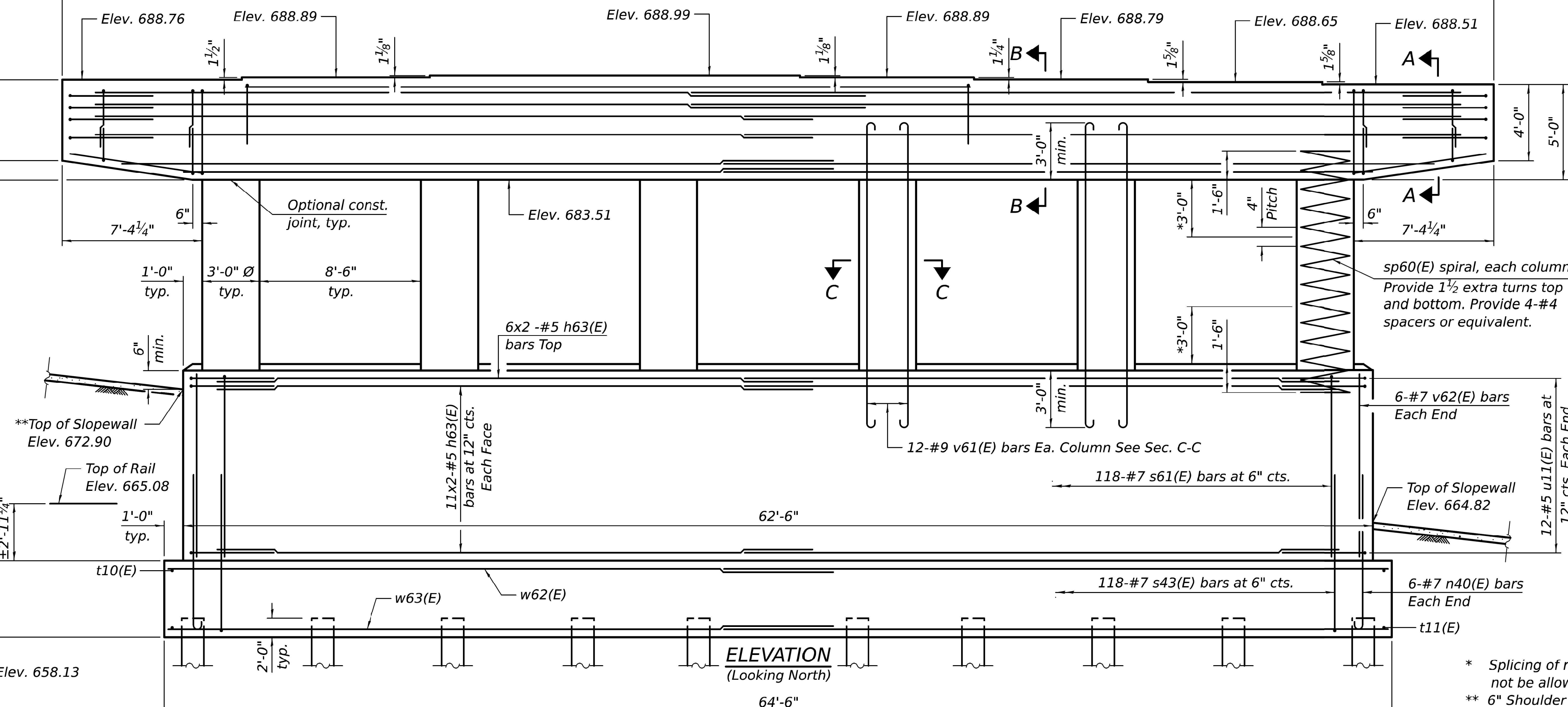
Type: Metal Shell 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 314 kips
Est. Length: 47 feet
No. Production Piles: 29
No. Test Piles: 1



TOP PLAN

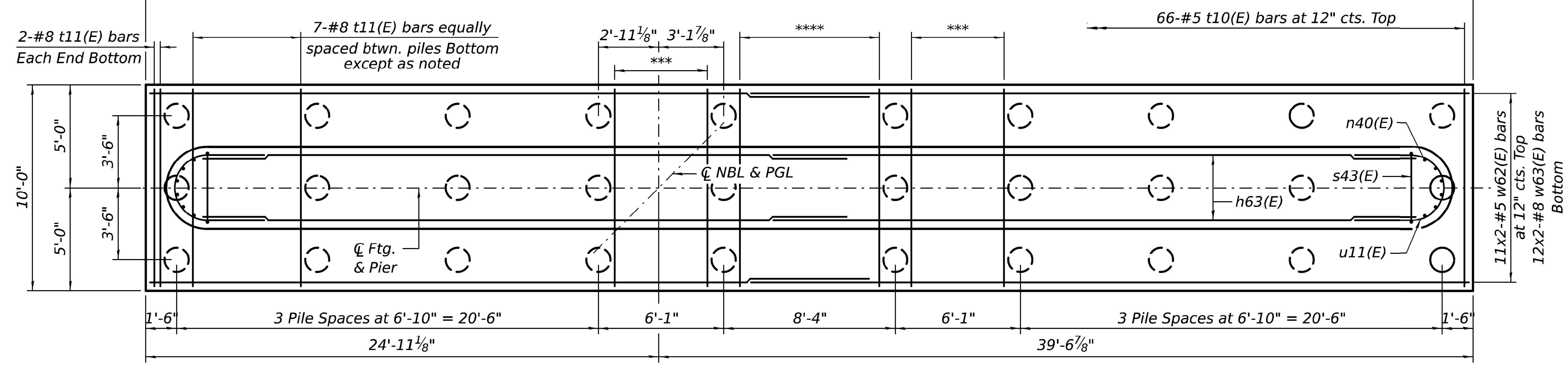


END VIEW



ELEVATION
(Looking North)

* Splicing of reinforcement will not be allowed in this region.
** 6" Shoulder not shown for clarity.



MINIMUM BAR LAP

#5 bar = 3'-7"
#7 bar = 4'-5"
#8 bar = 5'-9"
#9 bar = 10'-4"

*** 6-#8 t11(E) bars equally spaced btwn. piles Bottom
**** 9-#8 t11(E) bars equally spaced btwn. piles Bottom

FOOTING PLAN

(Sheet 1 of 2)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\1191-172 IDOT 197034 I57 StructureReplacement\CADD SHEETS ORD\Structural\DREI Crossing\0180069 70-74597-084-Pier 2_Details_NB.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	PIER 2 DETAILS STRUCTURE NO. 018-0070 (NB)
	PLOT SCALE = 0:2 ':" / in.	CHECKED - MJW	REVISED -		
		DRAWN - KN	REVISED -		
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 84 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	231
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

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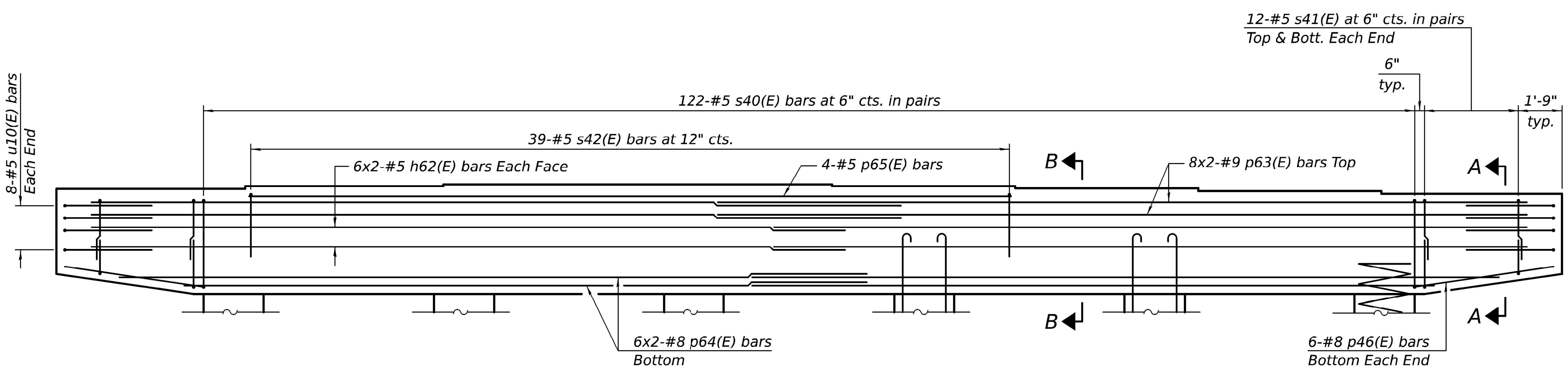
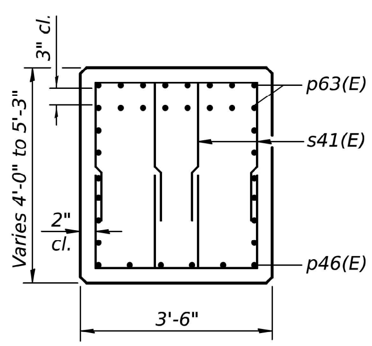
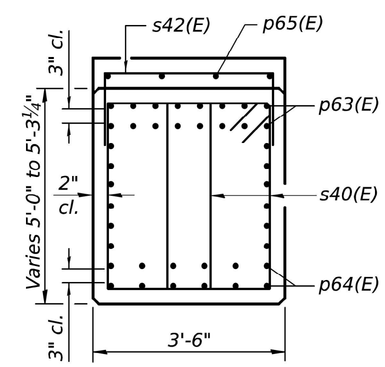


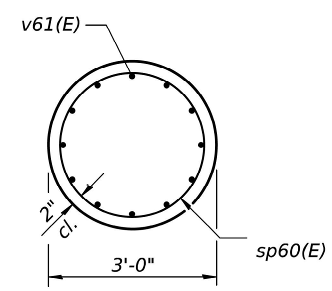
PIER CAP ELEVATION
(Looking North)



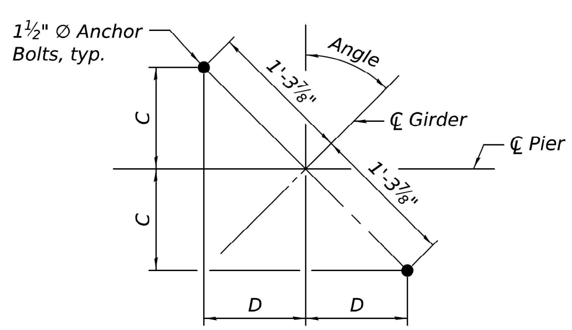
SEC. A-A



SEC. B-B



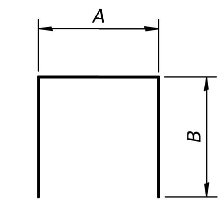
SEC. C-C



ANCHOR BOLT DETAIL

C & D DIMENSIONS

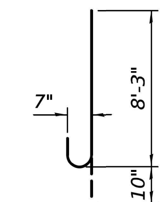
Girder No.	C	D	Angle
Typical Girder (Girders 9-12)	11¼"	11¼"	45°00'00"
Girder 13	11¼"	11⅛"	45°20'09"
Girder 14	11⅜"	11⅛"	45°40'04"
Girder 15	11⅜"	11"	45°59'45"
Girder 16	11½"	11"	46°19'12"



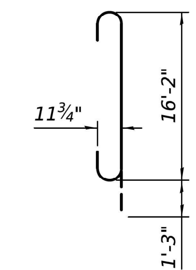
* BARS

* A & B DIMENSIONS

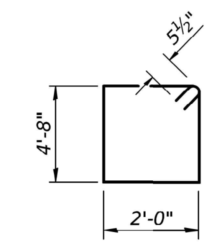
Bar	A	B
s41(E)	2'-0"	3'-11"
s42(E)	3'-2"	2'-9"
s43(E)	3'-8"	8'-3"
s61(E)	3'-8"	11'-1"
t11(E)	9'-8"	3'-7"



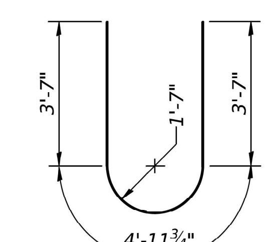
BAR n40(E)



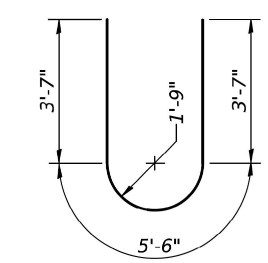
BAR v61(E)



BAR s40(E)



BAR u10(E)



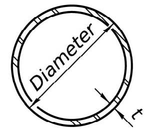
BAR u11(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h62(E)	24	#5	37'-8"	
h63(E)	56	#5	31'-1"	
n40(E)	12	#7	9'-1"	
p46(E)	12	#8	6'-9"	
p63(E)	32	#9	41'-1"	
p64(E)	24	#8	36'-8"	
p65(E)	4	#5	38'-1"	
s40(E)	244	#5	14'-3"	
s41(E)	48	#5	9'-10"	
s42(E)	39	#5	8'-8"	
s43(E)	118	#7	20'-2"	
s61(E)	118	#7	25'-10"	
** sp60(E)	6	#5	13'-2"	
t10(E)	66	#5	9'-8"	
t11(E)	67	#8	16'-10"	
u10(E)	16	#5	12'-2"	
u11(E)	24	#5	12'-8"	
v61(E)	72	#9	18'-8"	
v62(E)	12	#7	11'-1"	
w62(E)	22	#5	33'-11"	
w63(E)	24	#8	35'-0"	
Structure Excavation			Cu. Yds.	393
Concrete Structures			Cu. Yds.	267.3
Reinforcement Bars, Epoxy Coated			Pound	40,040
Furnishing Metal Shell Piles 14" x 0.312"			Foot	1,363
Driving Piles			Foot	1,363
Test Pile Metal Shells			Each	1
Pile Shoes			Each	30

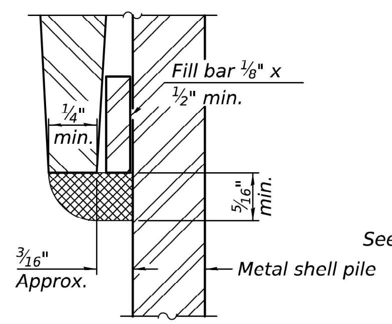
** Length is height of spiral.

(Sheet 2 of 2)

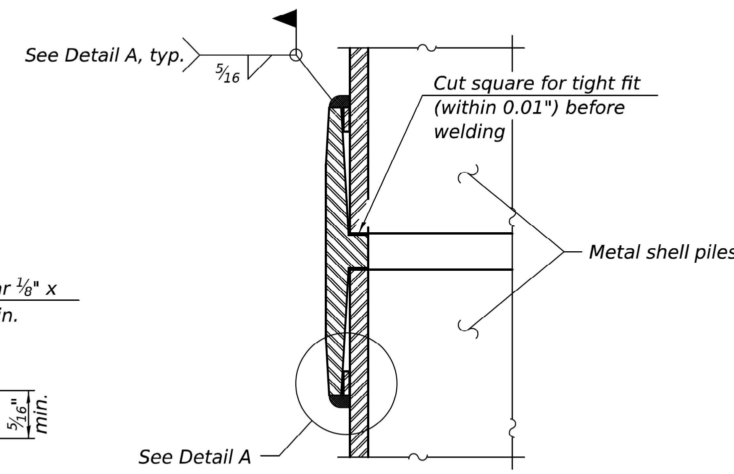


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.³/ft.)
PP12	0.250"	31.40	0.0267
PP14	0.250"	36.75	0.0368
PP14	0.312"	45.65	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470

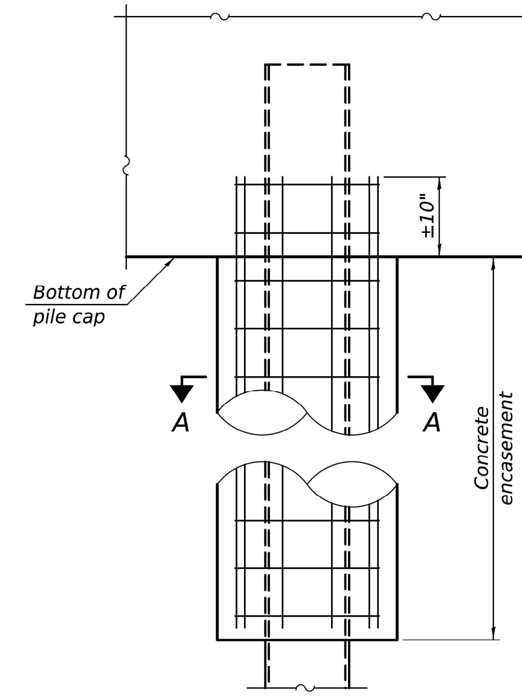


DETAIL A

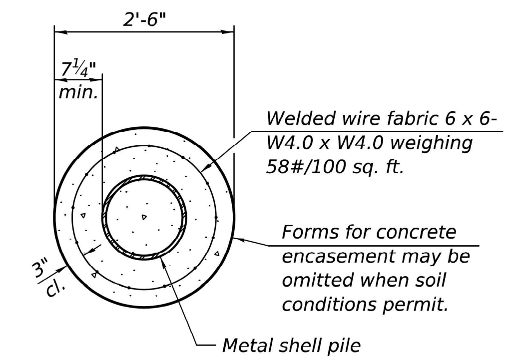


WELDED COMMERCIAL SPLICE

Notes:
The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



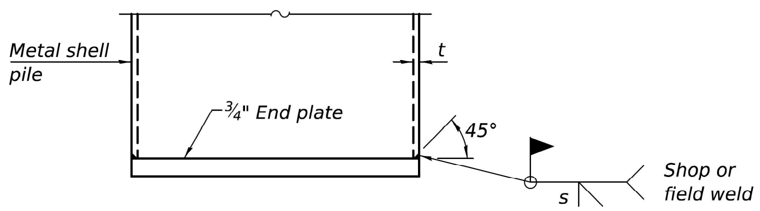
ELEVATION



SECTION A-A

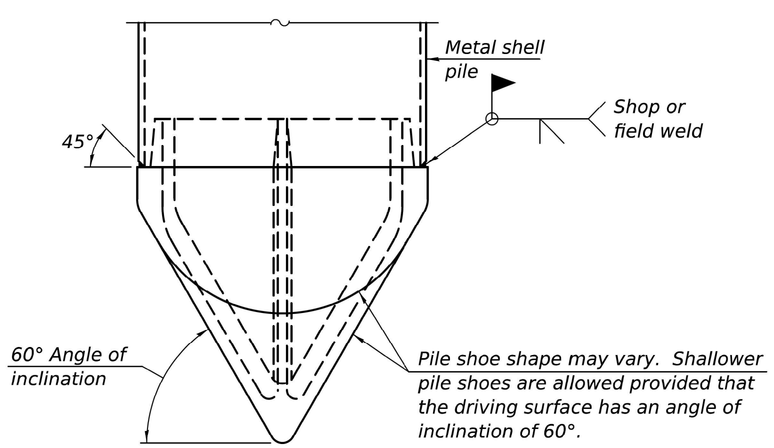
INDIVIDUAL PILE CONCRETE ENCASEMENT

(When specified)



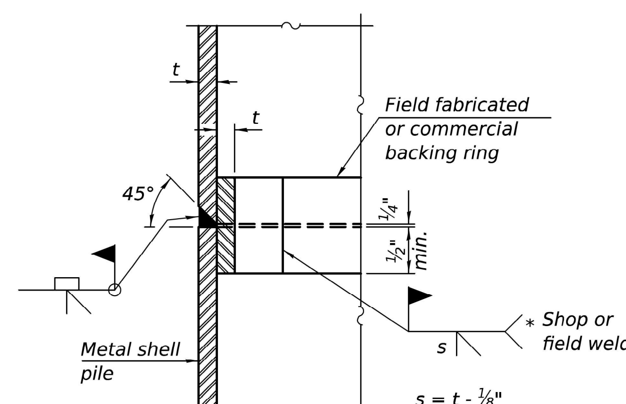
$s = t - 1/8$"

END PLATE ATTACHMENT



PILE SHOE ATTACHMENT

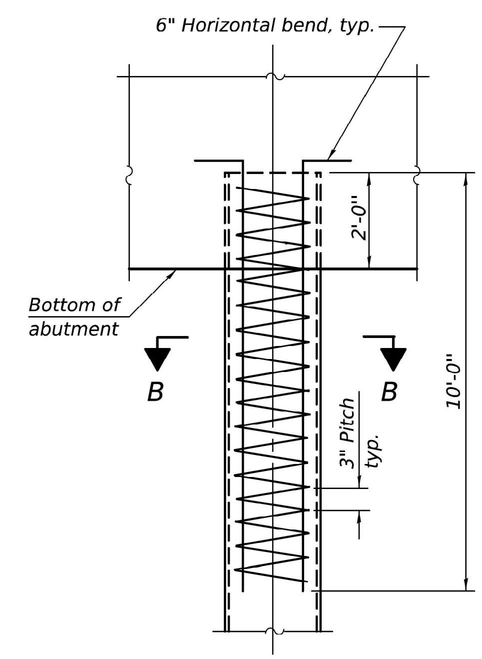
(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



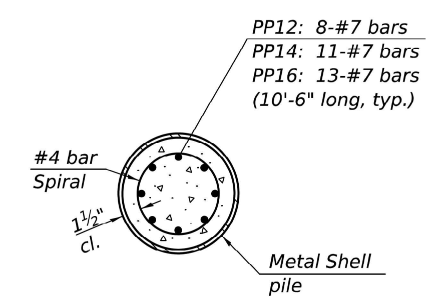
$s = t - 1/8$"

COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



SECTION B-B

REINFORCEMENT AT ABUTMENTS

(Omit when concrete encasement is specified)

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 5-15-2023

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 '-" / in.	DRAWN - MTW	REVISED -
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

METAL SHELL PILE DETAILS
STRUCTURE NO. 018-0069 (SB) & 018-0070 (NB)

SHEET 86 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	233

CONTRACT NO. 74597
ILLINOIS | FED. AID PROJECT

MODEL: Br_Sheet_Consultant
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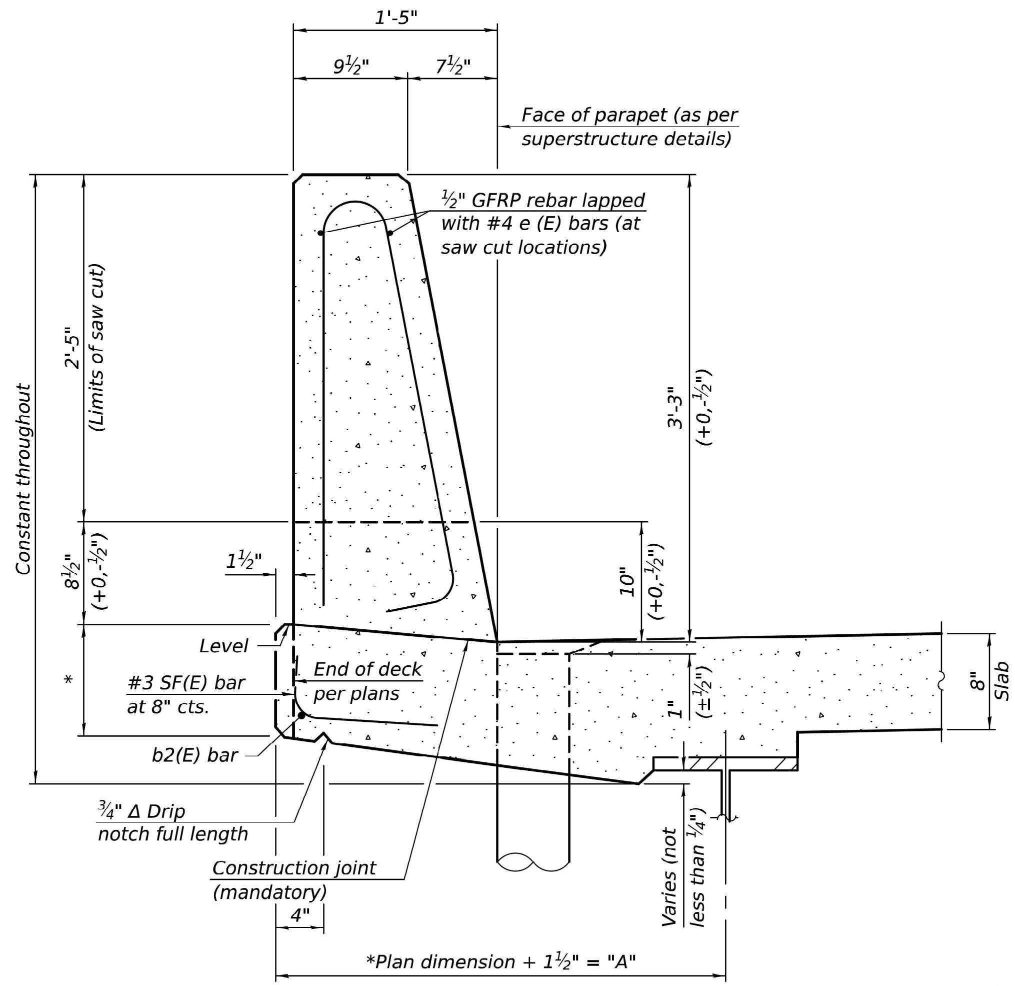
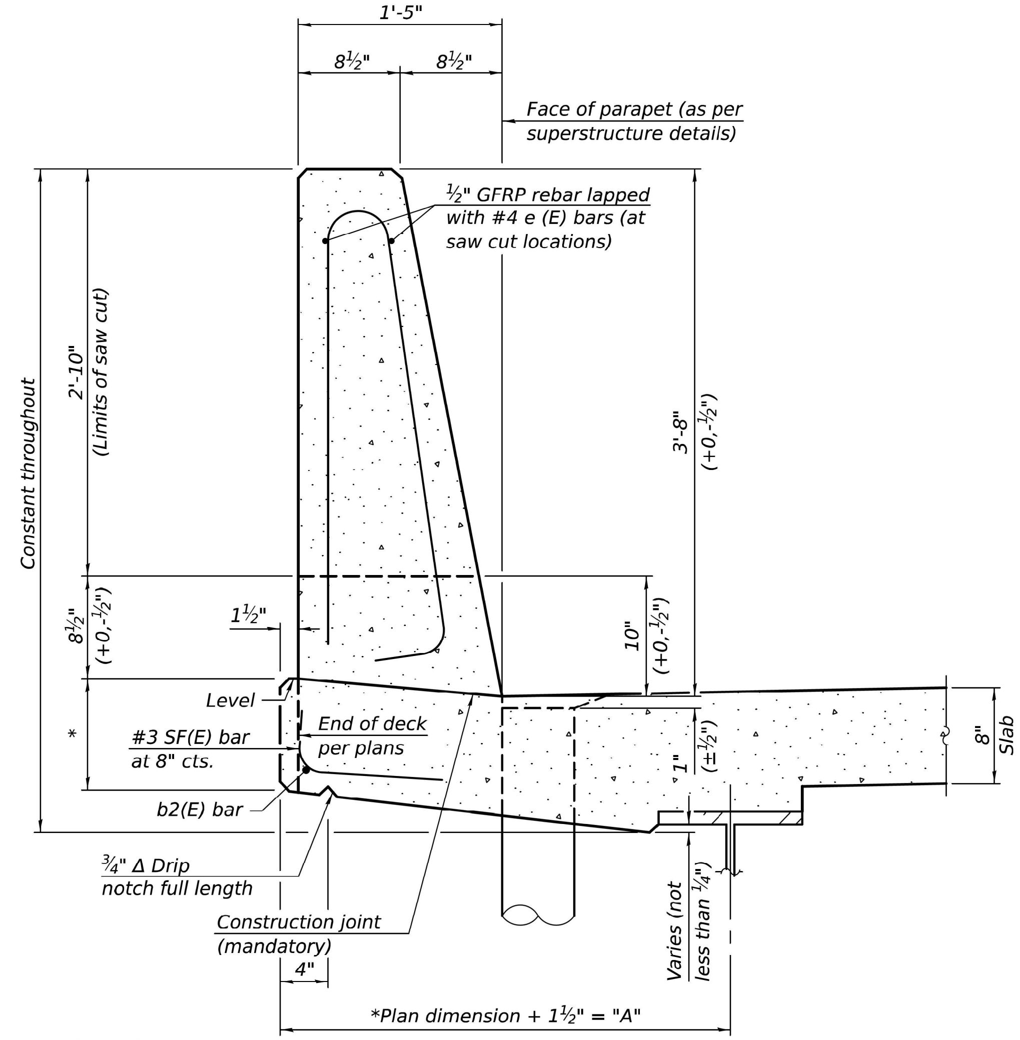


39" CONSTANT-SLOPE PARAPET SECTION

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

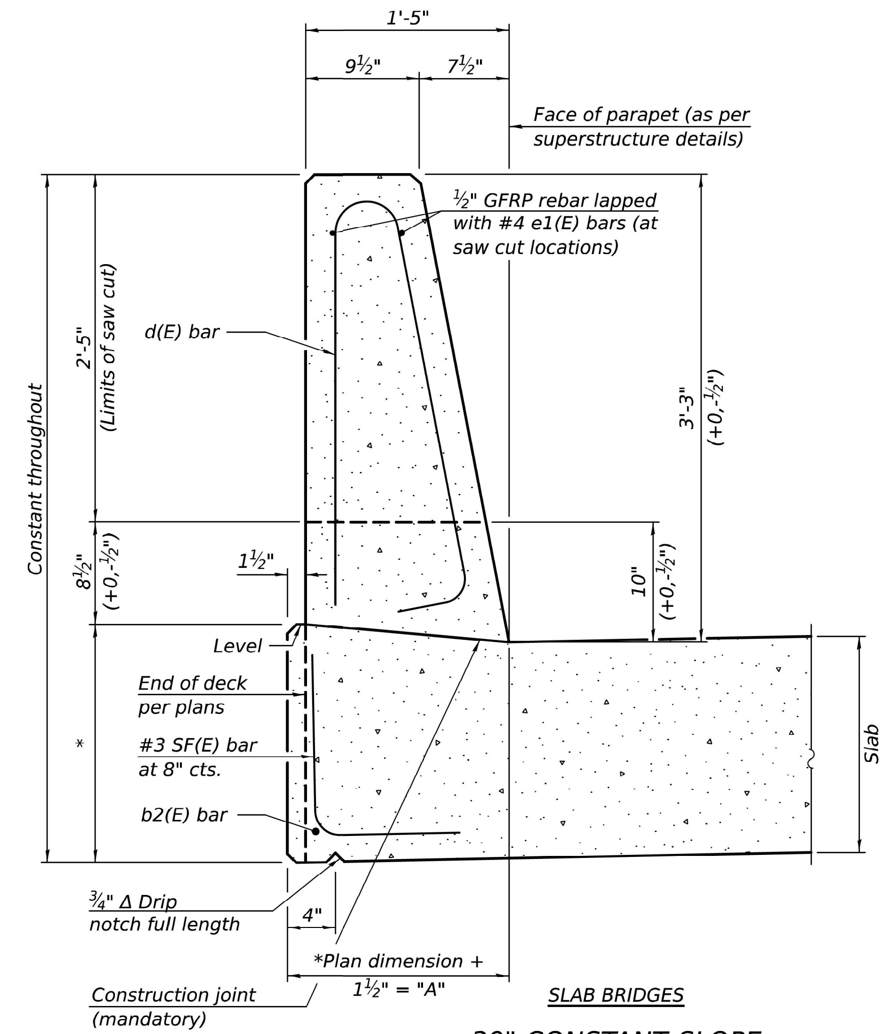
STEEL SUPERSTRUCTURES

*See Superstructure Details.



44" CONSTANT-SLOPE PARAPET SECTION

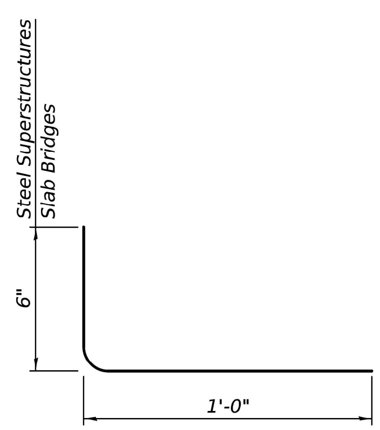
(Showing dimensions, d(E), and ½" Ø GFRP rebar)



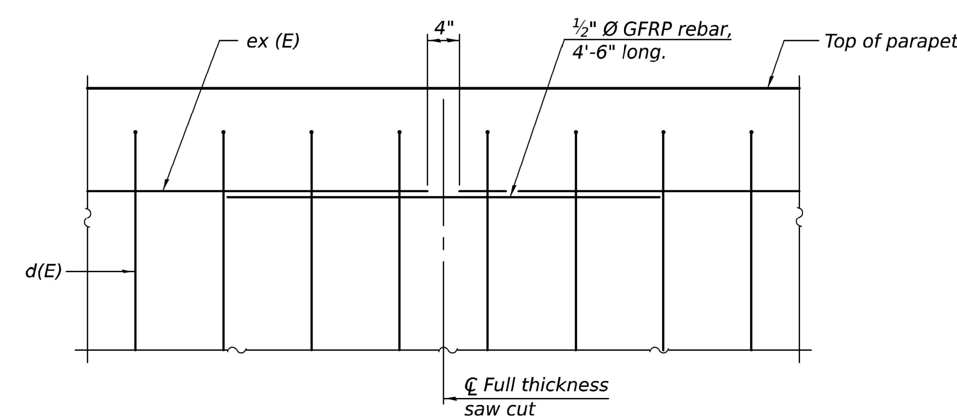
SLAB BRIDGES

39" CONSTANT-SLOPE PARAPET SECTION

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



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

MODEL: Br_Sheet_Consultant
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BLA, Inc.

USER NAME = mwilley	DESIGNED - MTW	REVISED -
	CHECKED - MJW	REVISED -
PLOT SCALE = 0:2 '/" / in.	DRAWN - MTW	REVISED -
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 018-0069 (SB) & 018-0070 (NB)

SHEET 87 OF 90 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-1VB	CUMBERLAND	414	234
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways

SOIL BORING LOG

Date 10/8/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3256, Long W 88.4358

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-1 (South Abutment)
Station 6051+61
Offset 0.0 ft
Ground Surface Elev. 690.19 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 641.2 ft
Upon Completion 658.2 ft
After 24 Hrs. 656.2 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Brown, CLAY (Embankment)					
Hard, moist, broken, powdered (Embankment)			6 6 5	4.5 P	11
		-5	3 4 3	4.5 P	12
Stiff (Embankment)			3 4 4	1.3 B	22
		-10	1 2 3	1.8 B	22
			1 2 4	1.7 B	19
		-15	1 2 4	1.4 B	23
			1 2 4	1.7 B	16
	670.2	-20	1		
Stiff, moist brown, CLAY (Embankment)			4 6	1.9 B	21
			3 5 5	1.3 B	17
Very stiff (Embankment)		-25	1 4 5	2.3 B	17
Stiff (Embankment)			3 4 5	1.7 B	21
	660.7				
Stiff, moist, brown, SILTY CLAY		-30	0 2 3	1.3 B	22
Medium, brown and grey marbled		-35	0 1 2	0.8 B	20
	650.2	-40	1		

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

SOIL BORING LOG

Date 10/8/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3256, Long W 88.4358

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-1 (South Abutment)
Station 6051+61
Offset 0.0 ft
Ground Surface Elev. 690.19 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 641.2 ft
Upon Completion 658.2 ft
After 24 Hrs. 656.2 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Medium, moist, brown and grey, SILTY CLAY LOAM			2 3	0.8 B	23
	645.2	-45	5		
Soft, moist, grey, SANDY LOAM			7 13	0.4 S	16
	640.7				
Medium, wet, grey, fine, SAND 14% passing #200 Sieve		-50	4 6 7		18
	635.7				
Very stiff, moist, grey, SANDY CLAY (Till)		-55	4 15 21	2.8 S	12
	630.2	-60	11		
Very stiff, moist, grey, SANDY CLAY (Till)			23 22	2.5 S	12
	625.7				
Hard, moist, brown, CLAY (Till)		-65	11 20 31	4.5 B	10
Grey		-70	7 13 30	5.6 B	9
		-75	5 8 12	4.1 B	16
	610.2	-80	8		

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)

SOIL BORING LOG

Illinois Department of Transportation
Division of Highways

Date 10/8/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3256, Long W 88.4358

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-1 (South Abutment)
Station 6051+61
Offset 0.0 ft
Ground Surface Elev. 690.19 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 641.2 ft
Upon Completion 658.2 ft
After 24 **Hrs.** 656.2 ft

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, brown, CLAY (Till)		11 16	4.7 B	18
	-85	4 11 20	5.4 B	11
	-90	5 12 19	4.3 B	11
Very stiff	-95	4 11 19	3.7 B	11
590.7				
Hard, moist, black poker-chipped, 590.2	-100	50/4.4"		7

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY SHALE		50/0.75" 50/0.68"		
Benchmark: BM 702 - Chiseled square on Southeast corner of FAI 57 bridge over Railroad. End of Boring				
	-105			
	-110			
	-115			
	-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)

SOIL BORING LOG

Illinois Department of Transportation
Division of Highways

Date 10/7/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3265, Long W 88.4354

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-2 (North Abutment)
Station 6055+08
Offset 0.0 ft
Ground Surface Elev. 690.51 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 646.0 ft
Upon Completion 660.5 ft
After 24 **Hrs.** 677.0 ft

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Brown, CLAY				
Hard, moist (Embankment)		5 5 5	4.5 P	10
	-5	4 4 5	1.1 E	12
Stiff, brown and grey marbled, with silt (Embankment)		3 3 4	1.1 B	21
Very stiff (Embankment)	-10	3 3 5	2.1 B	23
Stiff (Embankment)		2 3 4	1.4 B	21
Very Stiff (Embankment)	-15	1 3 4	2.5 B	23
Stiff (Embankment)		2 2 4	1.7 B	22
670.5	-20	1		

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Stiff, moist, brown and grey, CLAY (Embankment)		3 4	1.2 B	18
Very stiff, grey (Embankment)		3 4 5	2.9 B	16
Stiff (Embankment)	-25	1 3 4	1.7 B	17
Very stiff, brown and grey marbled (Embankment)		1 3 5	2.1 B	16
661.0 Stiff, moist, grey, SILTY LOAM	-30	2 2 3	1.7 BS	21
656.0 Stiff, moist, grey and brown marbled, CLAY	-35	1 2 3	1.2 B	23
650.5	-40	1		

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

SOIL BORING LOG

Date 10/7/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3265, Long W 88.4354

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-2 (North Abutment)
Station 6055+08
Offset 0.0 ft
Ground Surface Elev. 690.51 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 646.0 ft ▼
Upon Completion 660.5 ft ▽
After 24 **Hrs.** 677.0 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Medium, moist, brown, SANDY CLAY			3 5	0.8 B	17
	646.0 ▼				
Very loose, wet, brown, fine, SAND 10.9% passing #200 Sieve		-45	0 1 2		21
	641.0				
Hard, moist, grey, SANDY CLAY LOAM (Till)		-50	4 19 36	4.2 S	10
	636.0				
Hard, moist, grey, CLAY LOAM (Till)		-55	9 18 20	5.6 BS	14
	630.5	-60	9		

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, brown, CLAY LOAM (Till)			20 34	9.2 B	11
	626.0				
Hard, moist, grey, CLAY (Till)		-65	10 12 16	5.0 B	12
		-70	7 11 13	5.4 B	19
		-75	8 14 22	5.4 B	15
	610.5	-80	18		

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

SOIL BORING LOG

Date 10/7/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over Eastern Illinois Railroad **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** NW 1/4, SEC. 8, TWP. 10N, RNG. 7E, 3rd PM, Lat N 39.3265, Long W 88.4354

COUNTY Cumberland **DRILLING METHOD** Hollow Steam Auger & Split Spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0001, -0002 (E) 018-0069, -0070 (P)
Station 6053+21.53

BORING NO. B-2 (North Abutment)
Station 6055+08
Offset 0.0 ft
Ground Surface Elev. 690.51 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 646.0 ft ▼
Upon Completion 660.5 ft ▽
After 24 **Hrs.** 677.0 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, grey, CLAY (Till)	609.5		27 34	7.2 B	16
Benchmark: BM 702 - Chiseled square on Souhteast corner of FAI 57 bridge over Railroad 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)

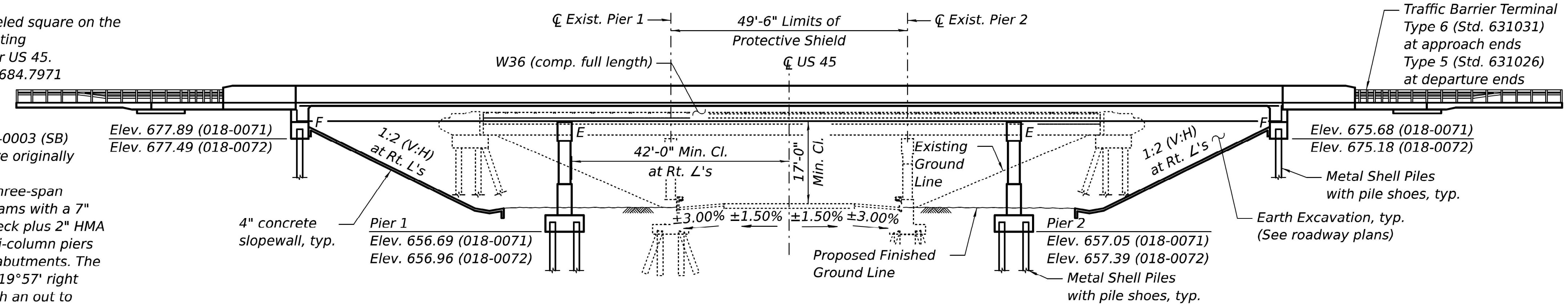
BBS, form 137 (Rev. 8-99)

Benchmark: 4380-2 - Chiseled square on the southwest wingwall of existing SN 018-0003 (SB) I-57 over US 45. Sta. 117+55, LT 68', Elev. 684.7971

Existing Structure: SN 018-0003 (SB) and SN 018-0004 (NB) were originally constructed in 1963.
The structures consist of three-span continuous wide flange beams with a 7" non-composite concrete deck plus 2" HMA overlay supported by multi-column piers with crash walls and stub abutments. The substructures are skewed 19°57' right forward relative to I-57 with an out to out width 44'-0". It is 137'-7" along the centerline back to back abutments.

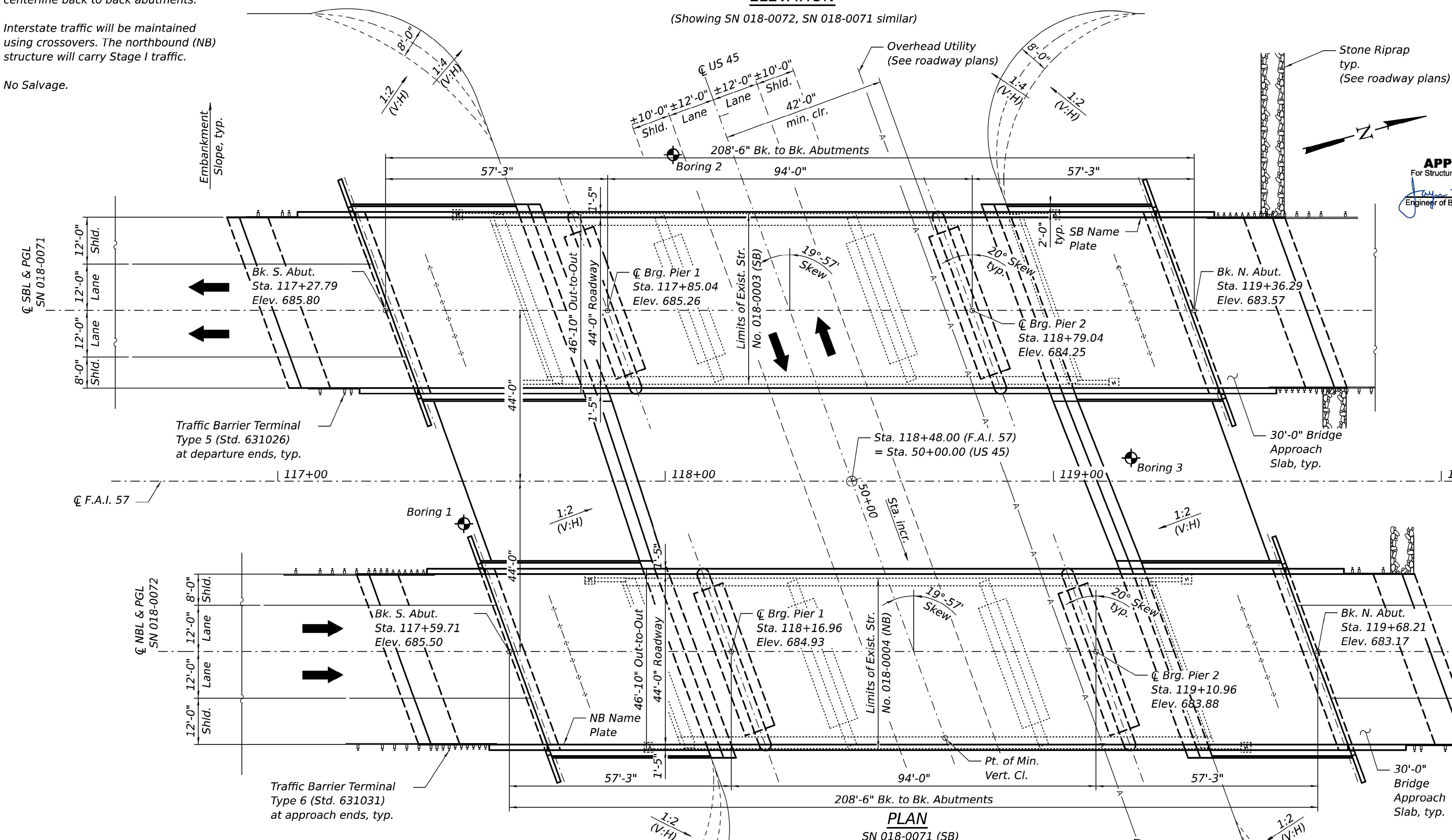
Interstate traffic will be maintained using crossovers. The northbound (NB) structure will carry Stage I traffic.

No Salvage.



ELEVATION

(Showing SN 018-0072, SN 018-0071 similar)



PLAN

SN 018-0071 (SB)
SN 018-0072 (NB)

Notes:
Up to ¼ inch may be ground off the bridge deck and the bridge approach slab. Elevations shown in plan represents elevations after grinding.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.134g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.306g
Soil Site Class = C

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93

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

DESIGN STRESSES

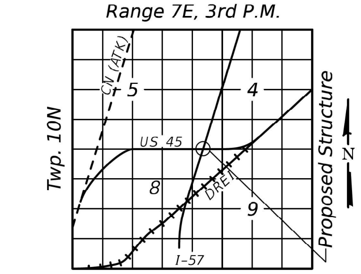
FIELD UNITS
f'c = 3,500 psi (Substructure)
f'c = 4,000 psi (Superstructure)
fy = 50,000 psi (AASHTO M270 Grade 50)
fy = 60,000 psi (Reinforcement)
All structural steel shall be galvanized.

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER
MATTHEW J. WILLEY
081-006588
STATE OF ILLINOIS

Matthew J Willey
DATE SIGNED: 05/08/2025
EXP. DATE: 11/30/2026

Range 7E, 3rd P.M.



LOCATION SKETCH

GENERAL PLAN & ELEVATION
I-57 OVER US 45
F.A.I. 57 - SECTION 18-20HB
CUMBERLAND COUNTY
STATION 118+48.00
STRUCTURE NO. 018-0071 (SB)
STRUCTURE NO. 018-0072 (NB)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172\IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-001-GPE.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - MJW	REVISED -
		CHECKED - PRD	REVISED -
	PLOT SCALE = 0:2 '/" / in.	DRAWN - MJW	REVISED -
	PLOT DATE = 5/8/2025	CHECKED - PRD	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 018-0071 (SB) & 018-0072 (NB)

SHEET 1 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	238
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

5/8/2025 3:54:57 PM

INDEX OF SHEETS

1	General Plan and Elevation
2	General Data
3	Slopewall Details
4-5	Substructure Layout
6	Top of Deck Elevations
7-9	Top of Deck Elevations (SN 018-0071)
10-12	Top of Deck Elevations (SN 018-0072)
13	Top of South Approach Slab Elevations (SN 018-0071)
14	Top of North Approach Slab Elevations (SN 018-0071)
15	Top of South Approach Slab Elevations (SN 018-0072)
16	Top of North Approach Slab Elevations (SN 018-0072)
17	Superstructure (SN 018-0071)
18	Superstructure Details (SN 018-0071)
19	Superstructure (SN 018-0072)
20	Superstructure Details (SN 018-0072)
21	Abutment Diaphragm Details (SN 018-0071)
22	Abutment Diaphragm Details (SN 018-0072)
23-24	Bridge Approach Slab Details (SN 018-0071)
25-26	Bridge Approach Slab Details (SN 018-0072)
27	Structural Steel (SN 018-0071)
28	Structural Steel (SN 018-0072)
29	Structural Steel Details
30	Bearing Details
31	South Abutment (SN 018-0071)
32	North Abutment (SN 018-0071)
33	South Abutment (SN 018-0072)
34	North Abutment (SN 018-0072)
35	Pier Details (SN 018-0071)
36	Pier Details (SN 018-0072)
37	Pier Details
38	Metal Shell Pile Details
39	Concrete Parapet Slipforming Option
40-44	Soil Boring Logs

GENERAL NOTES

Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provisions for "Hot Dip Galvanizing for Structural Steel."
Bolts $\frac{7}{8}$ in. diameter, holes $\frac{15}{16}$ in. diameter, unless otherwise noted.

Calculated weight of Structural Steel: AASHTO M 270 Gr. 50 = 676,960 lbs.
AASHTO M 270 Gr. 36 = 54,520 lbs.

All new structural steel shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."

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

Reinforcement bars designated (E) shall be epoxy coated.

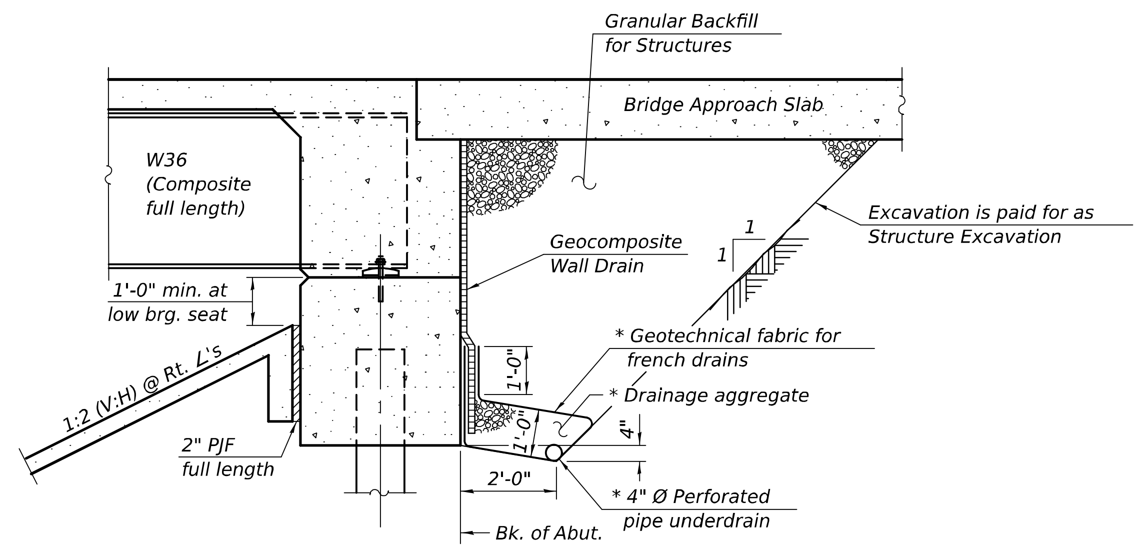
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of $\frac{1}{8}$ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

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

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

TOTAL BILL OF MATERIAL (BOTH STRUCTURES)

ITEM	UNIT	SUPER	SUB	TOTAL
Protective Coat	Sq Yd	---	3,082	3,082
Removal Of Existing Structures No. 3	Each	1	---	1
Removal Of Existing Structures No. 4	Each	1	---	1
Protective Shield	Sq Yd	484	---	484
Structure Excavation	Cu Yd	---	887	887
Concrete Structures	Cu Yd	---	559.6	559.6
Concrete Superstructure	Cu Yd	744.2	---	744.2
Concrete Superstructure (Approach Slab)	Cu Yd	---	256.0	256.0
Furnishing And Erecting Structural Steel	L Sum	0.33	---	0.33
Stud Shear Connectors	Each	13,902	---	13,902
Reinforcement Bars, Epoxy Coated	Pound	262,660	107,870	370,530
Slope Wall 4 Inch	Sq Yd	---	1,497	1,497
Furnishing Metal Shell Piles 14" X 0.312"	Foot	---	3,614	3,614
Driving Piles	Foot	---	3,614	3,614
Test Pile Metal Shells	Each	---	8	8
Pile Shoes	Each	---	84	84
Name Plates	Each	2	---	2
Elastomeric Bearing Assembly, Type I	Each	28	---	28
Anchor Bolts, 1"	Each	56	---	56
Anchor Bolts, 1 1/4"	Each	56	---	56
Granular Backfill For Structures	Cu Yd	---	365	365
Geocomposite Wall Drain	Sq Yd	---	197	197
Pipe Underdrains For Structures 4"	Foot	---	314	314
Bridge Deck Grooving (Longitudinal)	Sq Yd	1,421	---	1,421
Bar Terminators	Each	540	968	1,508
Diamond Grinding (Bridge Section)	Sq Yd	2,777	---	2,777

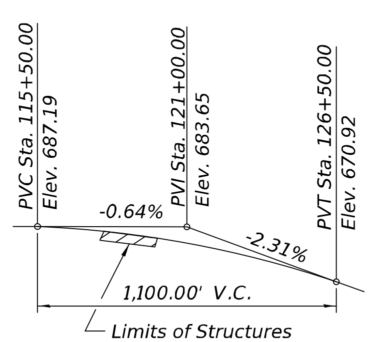


SECTION THRU INTEGRAL ABUTMENT

(Horiz. dim. at Rt. ∠'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).

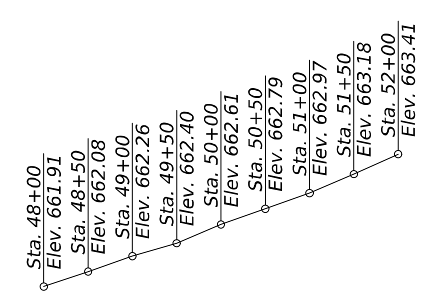


I-57 NBL & SBL
PROFILE GRADE

(Along ℄ lanes)

(PG shows the final elevations after grinding)

Note:
Up to ¼ inch to be ground off the bridge deck and the bridge approach slabs. The Profile Grade shows the final grade after grinding.



US 45 PROFILE Grade

(Along ℄ Roadway)

STA. 118+48.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RTE. 57 SEC. 18-20HB
LOADING HL-93
STR. NO. 018-0071

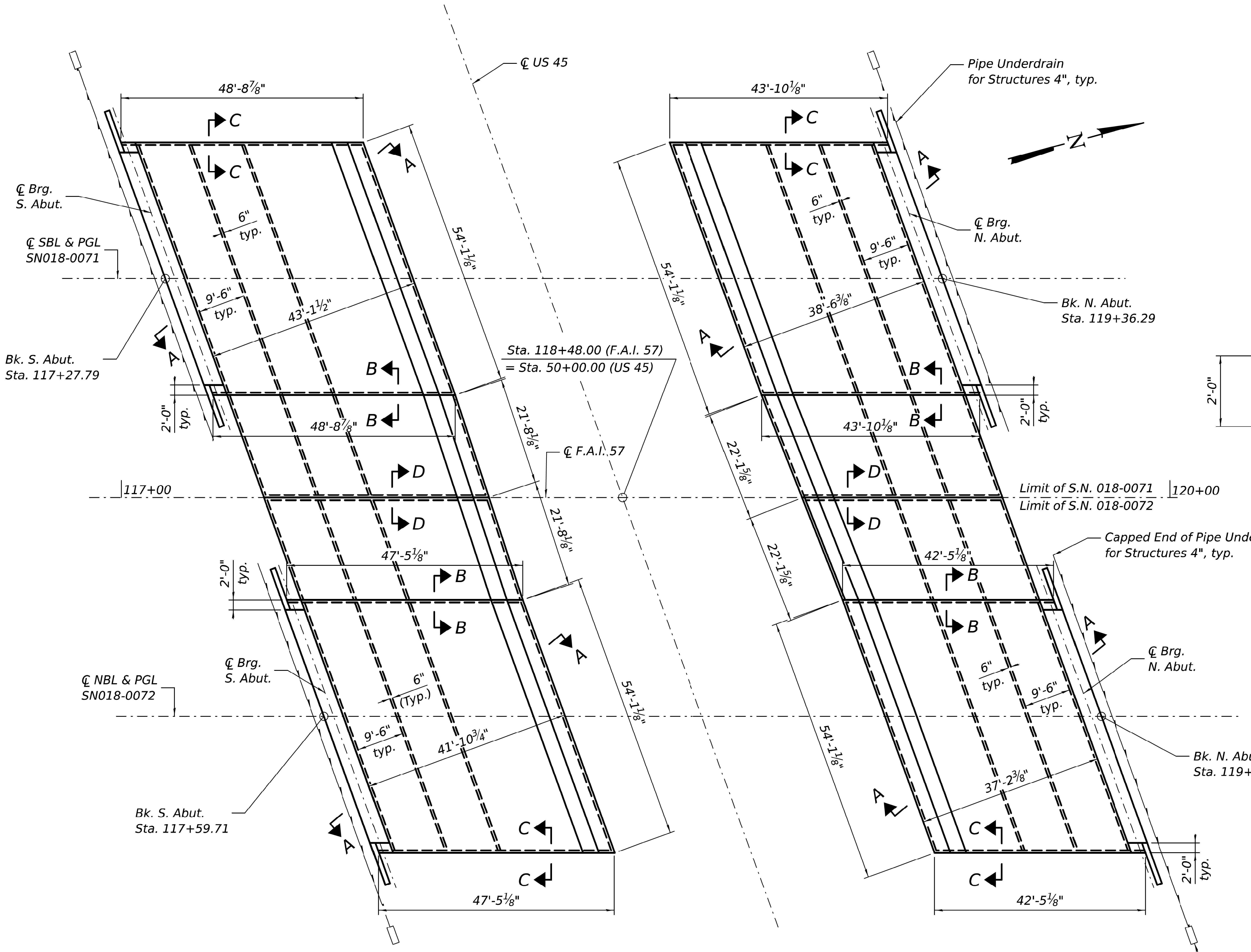
NAME PLATE

See Std. 515001

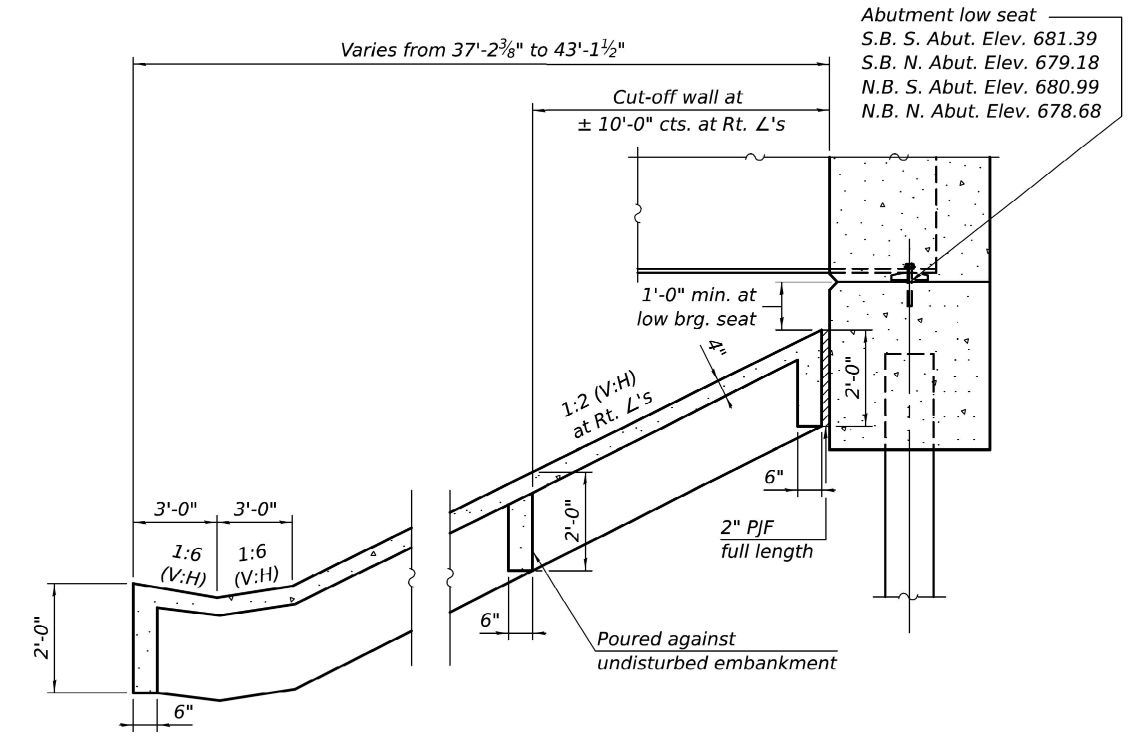
STA. 118+48.00
BUILT 20__ BY
STATE OF ILLINOIS
F.A.I. RTE. 57 SEC. 18-20HB
LOADING HL-93
STR. NO. 018-0072

NAME PLATE

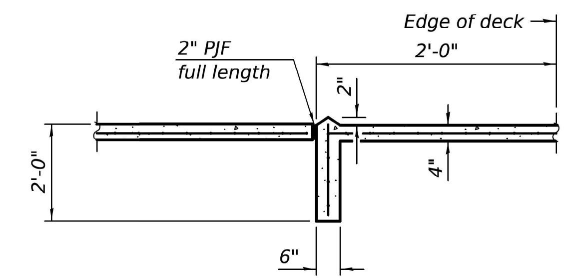
See Std. 515001



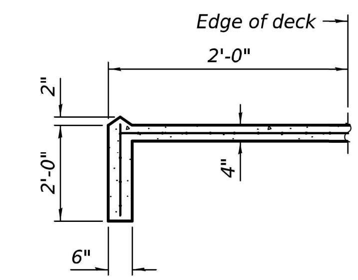
SLOPEWALL PLAN
S.N. 018-0071 & 018-0072



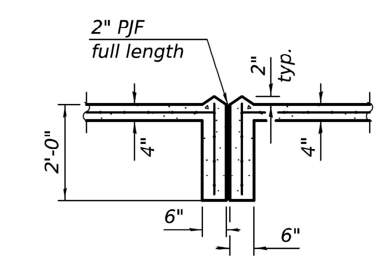
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

Notes:
Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. – W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft.
Capped ends for pipe drains included in cost of Pipe Underdrain for Structures 4".

BILL OF MATERIAL
FOR S.N. 018-0071

ITEM	UNIT	TOTAL
Slope Wall, 4 Inch	Sq. Yd.	761
Pipe Underdrain for Structures 4"	Foot	157

BILL OF MATERIAL
FOR S.N. 018-0072

ITEM	UNIT	TOTAL
Slope Wall, 4 Inch	Sq. Yd.	736
Pipe Underdrain for Structures 4"	Foot	157

BLA, Inc.

USER NAME = mwilley	DESIGNED - MKH	REVISED -
	CHECKED - MJW	REVISED -
PLOT SCALE = 0:2 '/" / in.	DRAWN - MKH	REVISED -
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SLOPEWALL DETAILS
STRUCTURE NO. 018-0071 (SB) & 018-0072 (NB)

SHEET 3 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	240

CONTRACT NO. 74597
ILLINOIS FED. AID PROJECT

MODEL: Br_Sheet_Consultant
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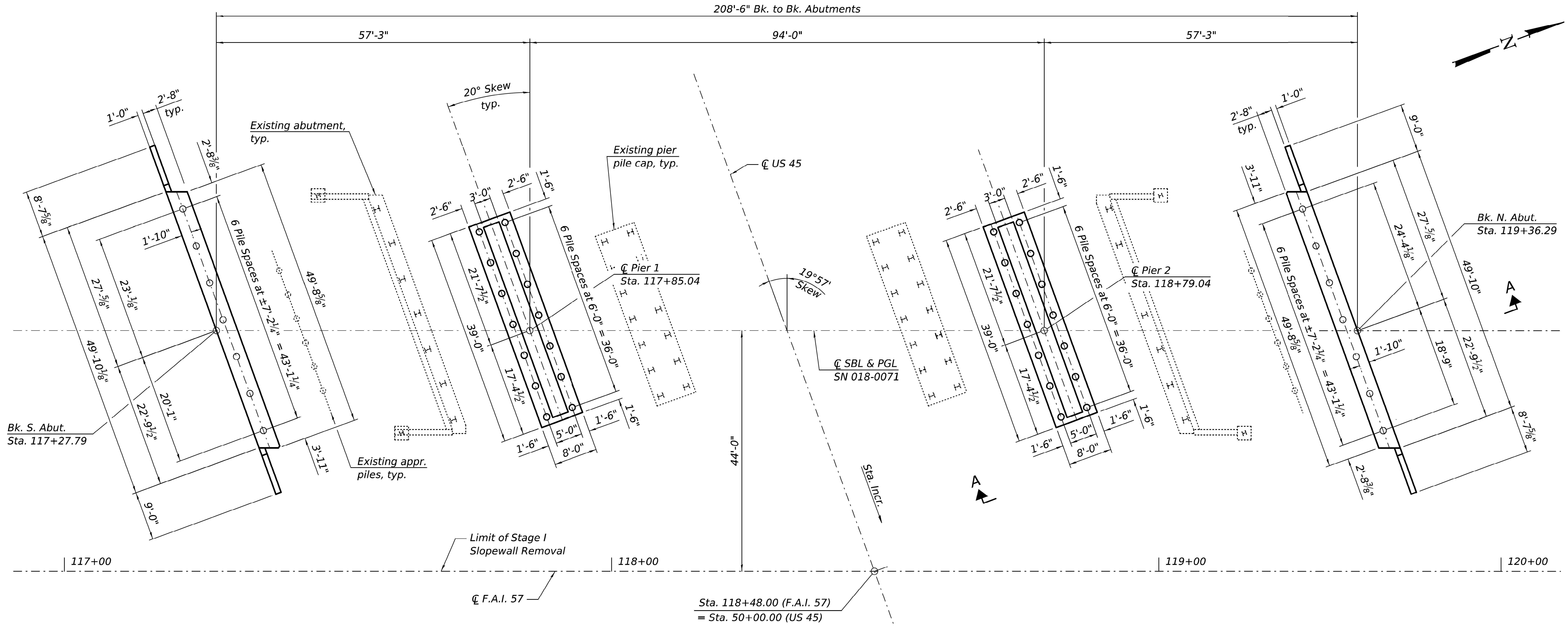
5/8/2025 3:29:01 PM



PLAN
(Stage I shown)

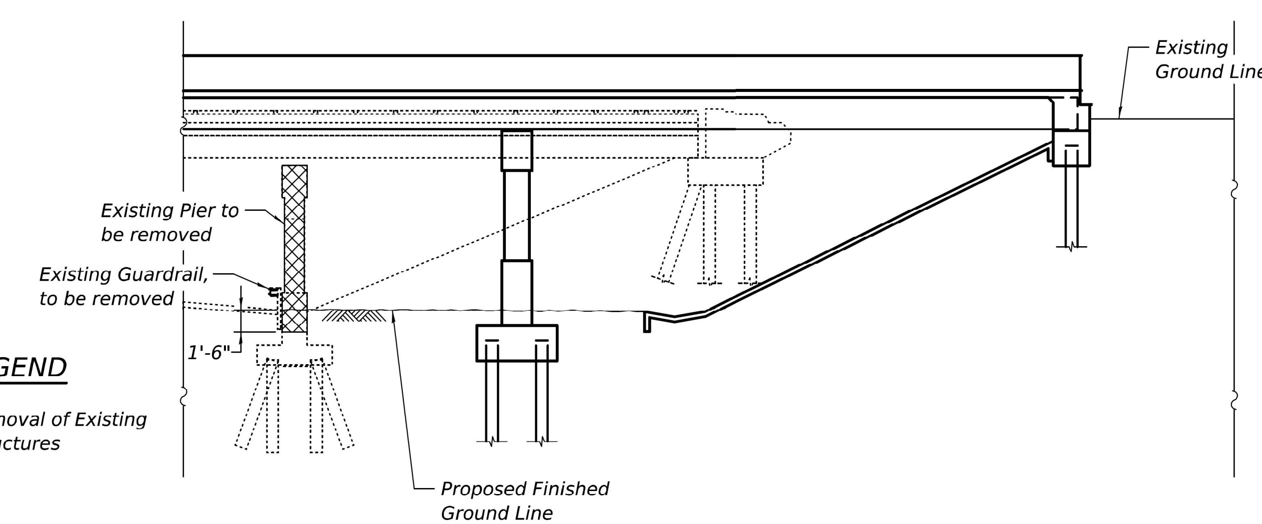
SEQUENCE OF CONSTRUCTION

1. Northbound (NB) existing structure carries Stage I traffic.
2. Demolish and remove existing Southbound (SB) structure. Sawcut existing slopewall at centerline of F.A.I. 57 and remove existing Southbound (SB) slopewall.
3. Complete Earth Excavation on Southbound (SB) structure.
4. Perform Structure Excavation.
5. Drive piles, construct substructure and superstructure for Southbound (SB) structure.
6. Southbound (SB) proposed structure carries Stage II traffic.
7. Repeat steps 2 thru 5 to construct Northbound (NB) proposed structure.

Notes:
Existing structure details are taken from existing plans and are subject to normal construction variations.
See sheet 5 of 44 for NB Plan.

LEGEND

Removal of Existing Structures



REMOVAL OF EXISTING STRUCTURES - SECTION A-A
(See roadway plans for Earth Excavation)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-004-Substructure_Layout_SB.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUBSTRUCTURE LAYOUT STRUCTURE NO. 018-0071 (SB)	
		CHECKED - MJW	REVISED -			
	PLOT SCALE = 0:2 "/" / in.	DRAWN - KN	REVISED -			
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 4 OF 44 SHEETS	

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	241
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

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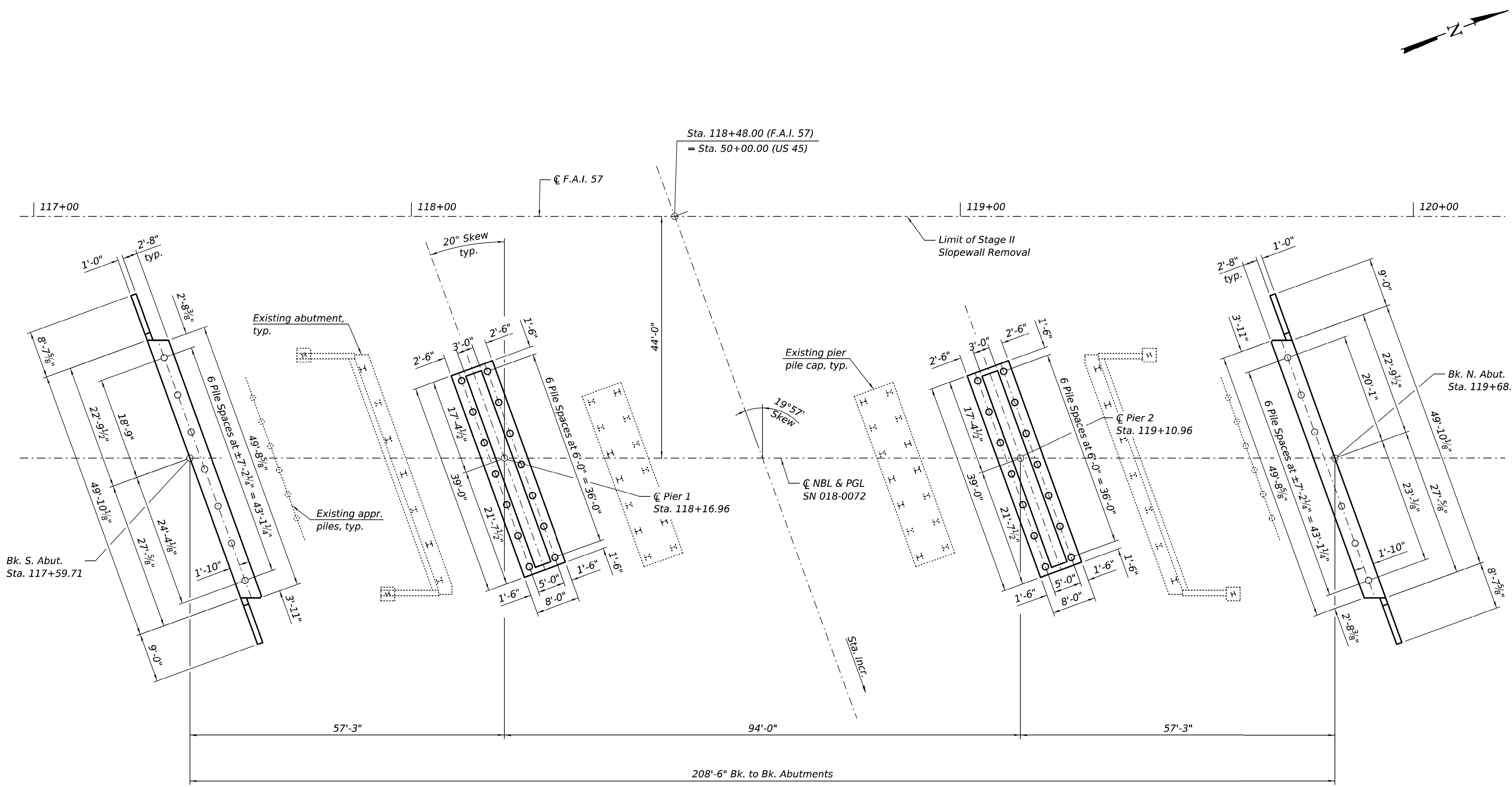

PLAN
(Stage II shown)

Notes:
See substructure layout notes and construction sequence on sheet 4 of 44.

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-005-Substructure_Layout_NB.dgn

BLA, Inc.

USER NAME = mwilley	DESIGNED - KN	REVISED -
	CHECKED - MJW	REVISED -
PLOT SCALE = 0:2 ':" / in.	DRAWN - KN	REVISED -
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBSTRUCTURE LAYOUT
STRUCTURE NO. 018-0072 (NB)

SHEET 5 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	242
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

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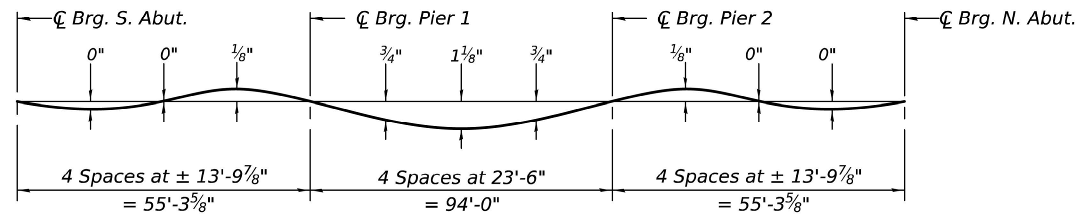
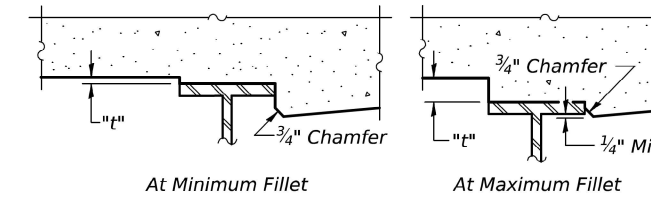


DEAD LOAD DEFLECTION DIAGRAM

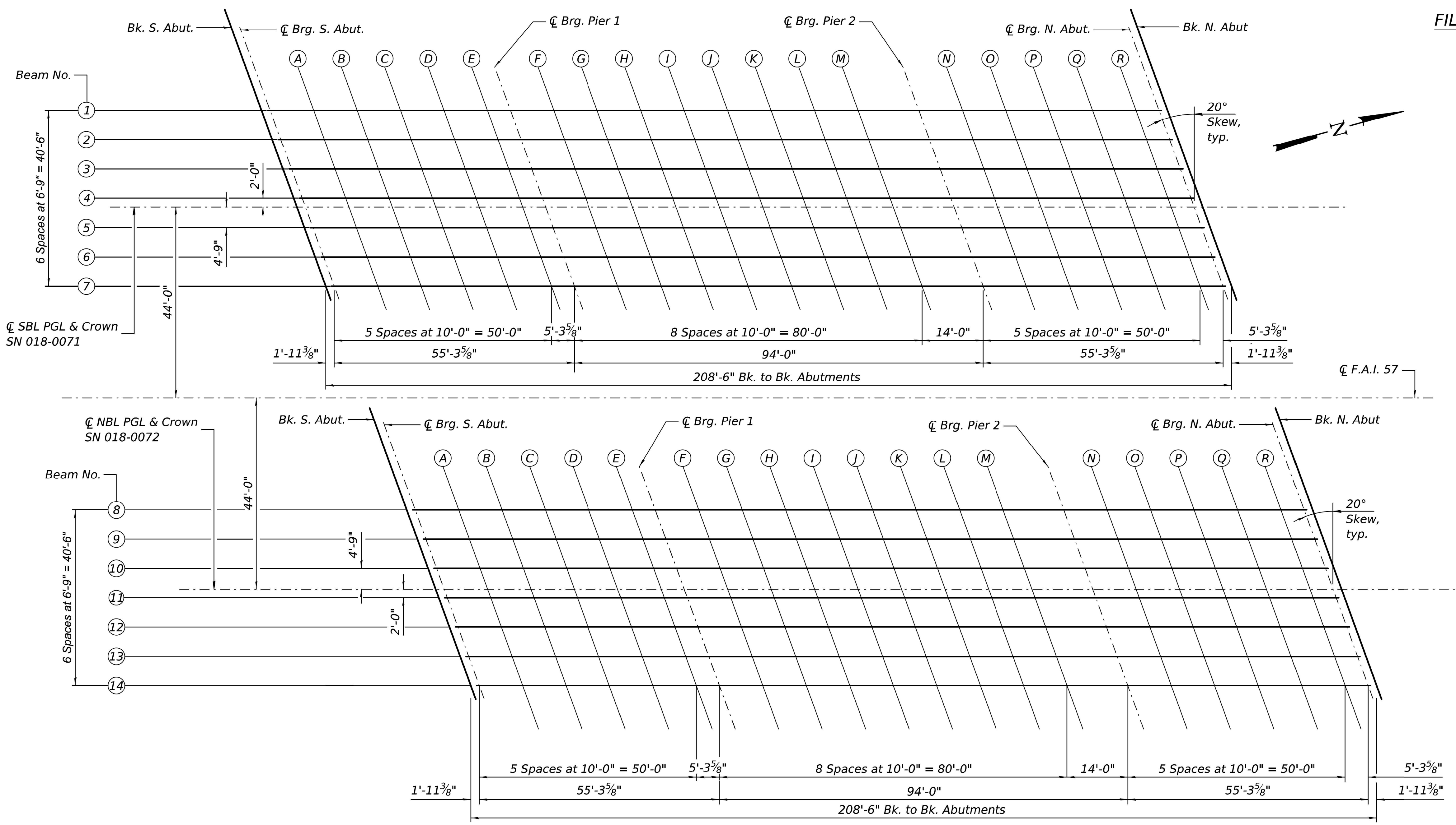
(Includes weight of concrete only.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections and grinding as shown on Sheets 7 thru 12 of 44.



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. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection and Grinding" shown on Sheets 7 thru 12 of 44, minus the initial slab thickness prior to grinding, equals the fillet heights "t" above top flange of beams.
The slab is to be ground after curing to achieve smoothness, but the slab is not to be ground to elevations below the "Theoretical Grade Elevations" shown on Sheets 7 thru 12 of 44. For grinding the deck, see Special Provisions.

FILLET HEIGHTS



PLAN

BLA, Inc.	USER NAME = mwilley	DESIGNED - MKH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	TOP OF DECK ELEVATIONS STRUCTURE NO. 018-0071 (SB) & 018-0072 (NB)
		CHECKED - MJW	REVISED -		
	PLOT SCALE = 0:2 ' /" / in.	DRAWN - MKH	REVISED -		
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 6 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	243
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

MODEL: Br_Sheet_Consultant
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BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+19.69	-22.25	685.49	685.51
℄ Brg. S. Abut.	117+21.64	-22.25	685.47	685.49
A	117+31.64	-22.25	685.38	685.41
B	117+41.64	-22.25	685.29	685.31
C	117+51.64	-22.25	685.20	685.22
D	117+61.64	-22.25	685.10	685.12
E	117+71.64	-22.25	685.00	685.02
℄ Brg. Pier 1	117+76.94	-22.25	684.95	684.97
F	117+86.94	-22.25	684.85	684.89
G	117+96.94	-22.25	684.75	684.82
H	118+06.94	-22.25	684.65	684.74
I	118+16.94	-22.25	684.54	684.65
J	118+26.94	-22.25	684.44	684.55
K	118+36.94	-22.25	684.33	684.43
L	118+46.94	-22.25	684.22	684.30
M	118+56.94	-22.25	684.11	684.16
℄ Brg. Pier 2	118+70.94	-22.25	683.96	683.98
N	118+80.94	-22.25	683.84	683.86
O	118+90.94	-22.25	683.73	683.74
P	119+00.94	-22.25	683.61	683.63
Q	119+10.94	-22.25	683.49	683.51
R	119+20.94	-22.25	683.37	683.39
℄ Brg. N. Abut.	119+26.24	-22.25	683.31	683.33
Bk. N. Abut.	119+28.19	-22.25	683.28	683.30

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+22.14	-15.50	685.60	685.63
℄ Brg. S. Abut.	117+24.09	-15.50	685.59	685.61
A	117+34.09	-15.50	685.50	685.52
B	117+44.09	-15.50	685.40	685.43
C	117+54.09	-15.50	685.31	685.33
D	117+64.09	-15.50	685.21	685.23
E	117+74.09	-15.50	685.11	685.13
℄ Brg. Pier 1	117+79.39	-15.50	685.06	685.08
F	117+89.39	-15.50	684.96	685.00
G	117+99.39	-15.50	684.86	684.93
H	118+09.39	-15.50	684.76	684.85
I	118+19.39	-15.50	684.65	684.76
J	118+29.39	-15.50	684.55	684.66
K	118+39.39	-15.50	684.44	684.54
L	118+49.39	-15.50	684.33	684.41
M	118+59.39	-15.50	684.22	684.27
℄ Brg. Pier 2	118+73.39	-15.50	684.06	684.08
N	118+83.39	-15.50	683.95	683.96
O	118+93.39	-15.50	683.83	683.85
P	119+03.39	-15.50	683.72	683.74
Q	119+13.39	-15.50	683.60	683.62
R	119+23.39	-15.50	683.48	683.50
℄ Brg. N. Abut.	119+28.69	-15.50	683.41	683.43
Bk. N. Abut.	119+30.64	-15.50	683.39	683.41

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+24.60	-8.75	685.70	685.72
℄ Brg. S. Abut.	117+26.55	-8.75	685.68	685.70
A	117+36.55	-8.75	685.59	685.61
B	117+46.55	-8.75	685.50	685.52
C	117+56.55	-8.75	685.40	685.42
D	117+66.55	-8.75	685.31	685.32
E	117+76.55	-8.75	685.21	685.22
℄ Brg. Pier 1	117+81.85	-8.75	685.16	685.18
F	117+91.85	-8.75	685.06	685.10
G	118+01.85	-8.75	684.95	685.02
H	118+11.85	-8.75	684.85	684.95
I	118+21.85	-8.75	684.75	684.86
J	118+31.85	-8.75	684.64	684.75
K	118+41.85	-8.75	684.53	684.63
L	118+51.85	-8.75	684.42	684.50
M	118+61.85	-8.75	684.31	684.36
℄ Brg. Pier 2	118+75.85	-8.75	684.15	684.17
N	118+85.85	-8.75	684.04	684.05
O	118+95.85	-8.75	683.92	683.94
P	119+05.85	-8.75	683.81	683.83
Q	119+15.85	-8.75	683.69	683.71
R	119+25.85	-8.75	683.57	683.59
℄ Brg. N. Abut.	119+31.15	-8.75	683.50	683.52
Bk. N. Abut.	119+33.10	-8.75	683.48	683.50

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+27.06	-2.00	685.78	685.80
℄ Brg. S. Abut.	117+29.01	-2.00	685.76	685.78
A	117+39.01	-2.00	685.67	685.69
B	117+49.01	-2.00	685.58	685.60
C	117+59.01	-2.00	685.48	685.50
D	117+69.01	-2.00	685.38	685.40
E	117+79.01	-2.00	685.29	685.30
℄ Brg. Pier 1	117+84.31	-2.00	685.23	685.25
F	117+94.31	-2.00	685.13	685.17
G	118+04.31	-2.00	685.03	685.10
H	118+14.31	-2.00	684.93	685.02
I	118+24.31	-2.00	684.82	684.93
J	118+34.31	-2.00	684.71	684.83
K	118+44.31	-2.00	684.61	684.71
L	118+54.31	-2.00	684.50	684.58
M	118+64.31	-2.00	684.38	684.44
℄ Brg. Pier 2	118+78.31	-2.00	684.23	684.25
N	118+88.31	-2.00	684.11	684.13
O	118+98.31	-2.00	684.00	684.01
P	119+08.31	-2.00	683.88	683.90
Q	119+18.31	-2.00	683.76	683.78
R	119+28.31	-2.00	683.64	683.66
℄ Brg. N. Abut.	119+33.61	-2.00	683.57	683.59
Bk. N. Abut.	119+35.56	-2.00	683.55	683.57

℄ SBL PGL & CROWN (SN 018-0071)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+27.79	0.00	685.80	685.82
℄ Brg. S. Abut.	117+29.74	0.00	685.79	685.81
A	117+39.74	0.00	685.69	685.72
B	117+49.74	0.00	685.60	685.62
C	117+59.74	0.00	685.50	685.52
D	117+69.74	0.00	685.41	685.42
E	117+79.74	0.00	685.31	685.32
℄ Brg. Pier 1	117+85.04	0.00	685.26	685.28
F	117+95.04	0.00	685.15	685.20
G	118+05.04	0.00	685.05	685.12
H	118+15.04	0.00	684.95	685.04
I	118+25.04	0.00	684.84	684.95
J	118+35.04	0.00	684.74	684.85
K	118+45.04	0.00	684.63	684.73
L	118+55.04	0.00	684.52	684.60
M	118+65.04	0.00	684.41	684.46
℄ Brg. Pier 2	118+79.04	0.00	684.25	684.27
N	118+89.04	0.00	684.13	684.15
O	118+99.04	0.00	684.02	684.03
P	119+09.04	0.00	683.90	683.92
Q	119+19.04	0.00	683.78	683.80
R	119+29.04	0.00	683.66	683.68
℄ Brg. N. Abut.	119+34.33	0.00	683.59	683.61
Bk. N. Abut.	119+36.29	0.00	683.57	683.59

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+29.51	4.75	685.72	685.74
℄ Brg. S. Abut.	117+31.46	4.75	685.70	685.72
A	117+41.46	4.75	685.61	685.63
B	117+51.46	4.75	685.51	685.53
C	117+61.46	4.75	685.42	685.44
D	117+71.46	4.75	685.32	685.33
E	117+81.46	4.75	685.22	685.24
℄ Brg. Pier 1	117+86.76	4.75	685.17	685.19
F	117+96.76	4.75	685.07	685.11
G	118+06.76	4.75	684.96	685.03
H	118+16.76	4.75	684.86	684.95
I	118+26.76	4.75	684.75	684.86
J	118+36.76	4.75	684.65	684.76
K	118+46.76	4.75	684.54	684.64
L	118+56.76	4.75	684.43	684.51
M	118+66.76	4.75	684.32	684.37
℄ Brg. Pier 2	118+80.76	4.75	684.16	684.18
N	118+90.76	4.75	684.04	684.06
O	119+00.76	4.75	683.93	683.94
P	119+10.76	4.75	683.81	683.83
Q	119+20.76	4.75	683.69	683.71
R	119+30.76	4.75	683.57	683.59
℄ Brg. N. Abut.	119+36.06	4.75	683.50	683.52
Bk. N. Abut.	119+38.01	4.75	683.48	683.50

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+31.97	11.50	685.59	685.61
℄ Brg. S. Abut.	117+33.92	11.50	685.57	685.59
A	117+43.92	11.50	685.48	685.50
B	117+53.92	11.50	685.39	685.41
C	117+63.92	11.50	685.29	685.31
D	117+73.92	11.50	685.19	685.21
E	117+83.92	11.50	685.09	685.11
℄ Brg. Pier 1	117+89.22	11.50	685.04	685.06
F	117+99.22	11.50	684.94	684.98
G	118+09.22	11.50	684.84	684.91
H	118+19.22	11.50	684.73	684.83
I	118+29.22	11.50	684.63	684.74
J	118+39.22	11.50	684.52	684.63
K	118+49.22	11.50	684.41	684.51
L	118+59.22	11.50	684.30	684.38
M	118+69.22	11.50	684.19	684.24
℄ Brg. Pier 2	118+83.22	11.50	684.03	684.05
N	118+93.22	11.50	683.91	683.93
O	119+03.22	11.50	683.79	683.81
P	119+13.22	11.50	683.68	683.70
Q	119+23.22	11.50	683.56	683.58
R	119+33.22	11.50	683.43	683.46
℄ Brg. N. Abut.	119+38.52	11.50	683.37	683.39
Bk. N. Abut.	119+40.47	11.50	683.35	683.37

BEAM 7

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+34.43	18.25	685.44	685.46
℄ Brg. S. Abut.	117+36.38	18.25	685.42	685.44
A	117+46.38	18.25	685.33	685.35
B	117+56.38	18.25	685.23	685.25
C	117+66.38	18.25	685.13	685.15
D	117+76.38	18.25	685.04	685.05
E	117+86.38	18.25	684.94	684.95
℄ Brg. Pier 1	117+91.68	18.25	684.88	684.90
F	118+01.68	18.25	684.78	684.82
G	118+11.68	18.25	684.68	684.75
H	118+21.68	18.25	684.57	684.67
I	118+31.68	18.25	684.47	684.58
J	118+41.68	18.25	684.36	684.47
K	118+51.68	18.25	684.25	684.35
L	118+61.68	18.25	684.14	684.22
M	118+71.68	18.25	684.03	684.08
℄ Brg. Pier 2	118+85.68	18.25	683.87	683.89
N	118+95.68	18.25	683.75	683.77
O	119+05.68	18.25	683.63	683.65
P	119+15.68	18.25	683.51	683.54
Q	119+25.68	18.25	683.39	683.42
R	119+35.68	18.25	683.27	683.29
℄ Brg. N. Abut.	119+40.98	18.25	683.21	683.23
Bk. N. Abut.	119+42.93	18.25	683.18	683.20

BEAM 8

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+53.06	-18.25	685.26	685.28
℄ Brg. S. Abut.	117+55.01	-18.25	685.24	685.26
A	117+65.01	-18.25	685.15	685.17
B	117+75.01	-18.25	685.05	685.07
C	117+85.01	-18.25	684.95	684.97
D	117+95.01	-18.25	684.85	684.87
E	118+05.01	-18.25	684.75	684.76
℄ Brg. Pier 1	118+10.31	-18.25	684.69	684.71
F	118+20.31	-18.25	684.59	684.63
G	118+30.31	-18.25	684.48	684.55
H	118+40.31	-18.25	684.37	684.47
I	118+50.31	-18.25	684.27	684.37
J	118+60.31	-18.25	684.15	684.26
K	118+70.31	-18.25	684.04	684.14
L	118+80.31	-18.25	683.93	684.01
M	118+90.31	-18.25	683.81	683.87
℄ Brg. Pier 2	119+04.31	-18.25	683.65	683.67
N	119+14.31	-18.25	683.53	683.55
O	119+24.31	-18.25	683.41	683.43
P	119+34.31	-18.25	683.29	683.31
Q	119+44.31	-18.25	683.16	683.19
R	119+54.31	-18.25	683.04	683.06
℄ Brg. N. Abut.	119+59.61	-18.25	682.97	682.99
Bk. N. Abut.	119+61.56	-18.25	682.95	682.97

BEAM 9

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+55.52	-11.50	685.37	685.39
℄ Brg. S. Abut.	117+57.47	-11.50	685.35	685.37
A	117+67.47	-11.50	685.26	685.28
B	117+77.47	-11.50	685.16	685.18
C	117+87.47	-11.50	685.06	685.08
D	117+97.47	-11.50	684.96	684.97
E	118+07.47	-11.50	684.85	684.87
℄ Brg. Pier 1	118+12.77	-11.50	684.80	684.82
F	118+22.77	-11.50	684.69	684.74
G	118+32.77	-11.50	684.59	684.66
H	118+42.77	-11.50	684.48	684.57
I	118+52.77	-11.50	684.37	684.48
J	118+62.77	-11.50	684.26	684.37
K	118+72.77	-11.50	684.15	684.25
L	118+82.77	-11.50	684.03	684.11
M	118+92.77	-11.50	683.92	683.97
℄ Brg. Pier 2	119+06.77	-11.50	683.75	683.77
N	119+16.77	-11.50	683.63	683.65
O	119+26.77	-11.50	683.51	683.53
P	119+36.77	-11.50	683.39	683.41
Q	119+46.77	-11.50	683.27	683.29
R	119+56.77	-11.50	683.14	683.16
℄ Brg. N. Abut.	119+62.07	-11.50	683.07	683.10
Bk. N. Abut.	119+64.02	-11.50	683.05	683.07

BEAM 10

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+57.98	-4.75	685.45	685.47
℄ Brg. S. Abut.	117+59.93	-4.75	685.43	685.45
A	117+69.93	-4.75	685.33	685.36
B	117+79.93	-4.75	685.23	685.26
C	117+89.93	-4.75	685.13	685.15
D	117+99.93	-4.75	685.03	685.05
E	118+09.93	-4.75	684.93	684.95
℄ Brg. Pier 1	118+15.23	-4.75	684.88	684.90
F	118+25.23	-4.75	684.77	684.81
G	118+35.23	-4.75	684.66	684.73
H	118+45.23	-4.75	684.55	684.65
I	118+55.23	-4.75	684.44	684.55
J	118+65.23	-4.75	684.33	684.45
K	118+75.23	-4.75	684.22	684.32
L	118+85.23	-4.75	684.11	684.19
M	118+95.23	-4.75	683.99	684.04
℄ Brg. Pier 2	119+09.23	-4.75	683.83	683.85
N	119+19.23	-4.75	683.71	683.72
O	119+29.23	-4.75	683.58	683.60
P	119+39.23	-4.75	683.46	683.48
Q	119+49.23	-4.75	683.34	683.36
R	119+59.23	-4.75	683.21	683.23
℄ Brg. N. Abut.	119+64.53	-4.75	683.14	683.17
Bk. N. Abut.	119+66.48	-4.75	683.12	683.14

℄ NBL PGL & CROWN (SN 018-0072)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+59.71	0.00	685.50	685.52
℄ Brg. S. Abut.	117+61.66	0.00	685.48	685.51
A	117+71.66	0.00	685.39	685.41
B	117+81.66	0.00	685.29	685.31
C	117+91.66	0.00	685.19	685.21
D	118+01.66	0.00	685.09	685.10
E	118+11.66	0.00	684.98	685.00
℄ Brg. Pier 1	118+16.96	0.00	684.93	684.95
F	118+26.96	0.00	684.82	684.87
G	118+36.96	0.00	684.72	684.79
H	118+46.96	0.00	684.61	684.70
I	118+56.96	0.00	684.50	684.61
J	118+66.96	0.00	684.39	684.50
K	118+76.96	0.00	684.27	684.37
L	118+86.96	0.00	684.16	684.24
M	118+96.96	0.00	684.04	684.09
℄ Brg. Pier 2	119+10.96	0.00	683.88	683.90
N	119+20.96	0.00	683.76	683.77
O	119+30.96	0.00	683.63	683.65
P	119+40.96	0.00	683.51	683.53
Q	119+50.96	0.00	683.39	683.41
R	119+60.96	0.00	683.26	683.28
℄ Brg. N. Abut.	119+66.26	0.00	683.19	683.21
Bk. N. Abut.	119+68.21	0.00	683.17	683.19

BEAM 11

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+60.43	2.00	685.47	685.49
℄ Brg. S. Abut.	117+62.38	2.00	685.45	685.47
A	117+72.38	2.00	685.35	685.37
B	117+82.38	2.00	685.25	685.28
C	117+92.38	2.00	685.15	685.17
D	118+02.38	2.00	685.05	685.07
E	118+12.38	2.00	684.95	684.96
℄ Brg. Pier 1	118+17.68	2.00	684.89	684.91
F	118+27.68	2.00	684.79	684.83
G	118+37.68	2.00	684.68	684.75
H	118+47.68	2.00	684.57	684.66
I	118+57.68	2.00	684.46	684.57
J	118+67.68	2.00	684.35	684.46
K	118+77.68	2.00	684.23	684.34
L	118+87.68	2.00	684.12	684.20
M	118+97.68	2.00	684.00	684.06
℄ Brg. Pier 2	119+11.68	2.00	683.84	683.86
N	119+21.68	2.00	683.72	683.73
O	119+31.68	2.00	683.60	683.61
P	119+41.68	2.00	683.47	683.49
Q	119+51.68	2.00	683.35	683.37
R	119+61.68	2.00	683.22	683.24
℄ Brg. N. Abut.	119+66.98	2.00	683.15	683.18
Bk. N. Abut.	119+68.93	2.00	683.13	683.15

BEAM 12

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+62.89	8.75	685.34	685.36
℄ Brg. S. Abut.	117+64.84	8.75	685.32	685.34
A	117+74.84	8.75	685.23	685.25
B	117+84.84	8.75	685.13	685.15
C	117+94.84	8.75	685.03	685.05
D	118+04.84	8.75	684.92	684.94
E	118+14.84	8.75	684.82	684.84
℄ Brg. Pier 1	118+20.14	8.75	684.76	684.78
F	118+30.14	8.75	684.66	684.70
G	118+40.14	8.75	684.55	684.62
H	118+50.14	8.75	684.44	684.54
I	118+60.14	8.75	684.33	684.44
J	118+70.14	8.75	684.22	684.33
K	118+80.14	8.75	684.10	684.21
L	118+90.14	8.75	683.99	684.07
M	119+00.14	8.75	683.87	683.93
℄ Brg. Pier 2	119+14.14	8.75	683.71	683.73
N	119+24.14	8.75	683.59	683.60
O	119+34.14	8.75	683.46	683.48
P	119+44.14	8.75	683.34	683.36
Q	119+54.14	8.75	683.22	683.24
R	119+64.14	8.75	683.09	683.11
℄ Brg. N. Abut.	119+69.44	8.75	683.02	683.04
Bk. N. Abut.	119+71.39	8.75	683.00	683.02

BEAM 13

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+65.35	15.50	685.20	685.22
℄ Brg. S. Abut.	117+67.30	15.50	685.18	685.20
A	117+77.30	15.50	685.08	685.11
B	117+87.30	15.50	684.98	685.01
C	117+97.30	15.50	684.88	684.90
D	118+07.30	15.50	684.78	684.79
E	118+17.30	15.50	684.67	684.69
℄ Brg. Pier 1	118+22.60	15.50	684.62	684.64
F	118+32.60	15.50	684.51	684.55
G	118+42.60	15.50	684.40	684.47
H	118+52.60	15.50	684.30	684.39
I	118+62.60	15.50	684.18	684.29
J	118+72.60	15.50	684.07	684.18
K	118+82.60	15.50	683.96	684.06
L	118+92.60	15.50	683.84	683.92
M	119+02.60	15.50	683.72	683.78
℄ Brg. Pier 2	119+16.60	15.50	683.56	683.58
N	119+26.60	15.50	683.44	683.45
O	119+36.60	15.50	683.32	683.33
P	119+46.60	15.50	683.19	683.21
Q	119+56.60	15.50	683.07	683.09
R	119+66.60	15.50	682.94	682.96
℄ Brg. N. Abut.	119+71.90	15.50	682.87	682.89
Bk. N. Abut.	119+73.85	15.50	682.85	682.87

BEAM 14

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection and Grinding
Bk. S. Abut.	117+67.80	22.25	685.04	685.06
℄ Brg. S. Abut.	117+69.76	22.25	685.02	685.04
A	117+79.76	22.25	684.92	684.95
B	117+89.76	22.25	684.82	684.85
C	117+99.76	22.25	684.72	684.74
D	118+09.76	22.25	684.62	684.63
E	118+19.76	22.25	684.51	684.53
℄ Brg. Pier 1	118+25.05	22.25	684.46	684.48
F	118+35.05	22.25	684.35	684.39
G	118+45.05	22.25	684.24	684.31
H	118+55.05	22.25	684.13	684.23
I	118+65.05	22.25	684.02	684.13
J	118+75.05	22.25	683.91	684.02
K	118+85.05	22.25	683.79	683.89
L	118+95.05	22.25	683.68	683.76
M	119+05.05	22.25	683.56	683.61
℄ Brg. Pier 2	119+19.05	22.25	683.39	683.41
N	119+29.05	22.25	683.27	683.29
O	119+39.05	22.25	683.15	683.17
P	119+49.05	22.25	683.03	683.05
Q	119+59.05	22.25	682.90	682.92
R	119+69.05	22.25	682.77	682.80
℄ Brg. N. Abut.	119+74.35	22.25	682.70	682.73
Bk. N. Abut.	119+76.30	22.25	682.68	682.70

WEST EDGE OF SHOULDER

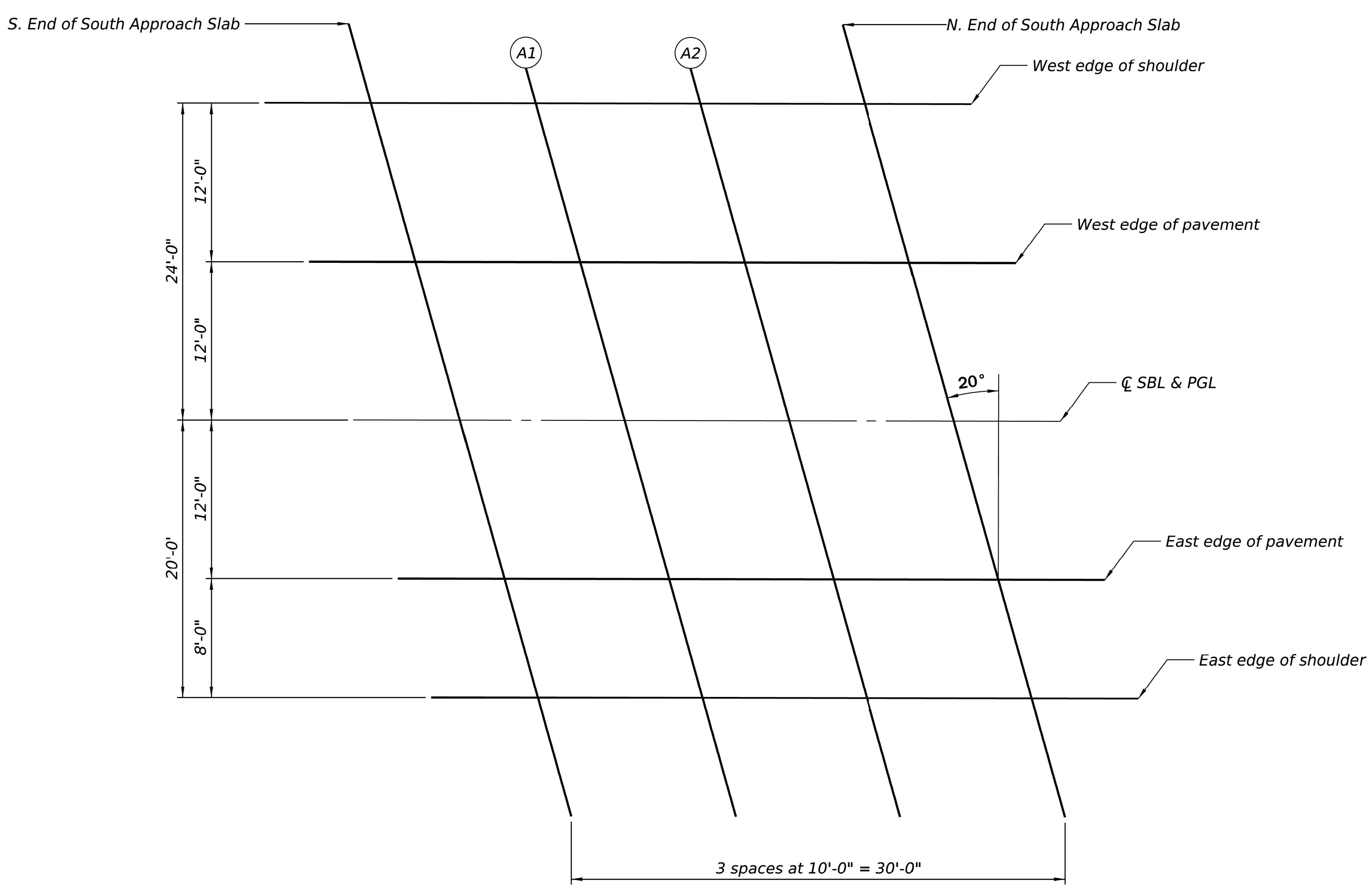
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	116+90.12	-24.00	685.72	685.74
A1	117+00.12	-24.00	685.63	685.65
A2	117+10.12	-24.00	685.54	685.56
N. End of South Approach Slab	117+20.12	-24.00	685.45	685.47

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	116+94.49	-12.00	685.92	685.94
A1	117+04.49	-12.00	685.83	685.85
A2	117+14.49	-12.00	685.74	685.76
N. End of South Approach Slab	117+24.49	-12.00	685.65	685.67

℄ SBL & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	116+98.85	0.00	686.06	686.08
A1	117+08.85	0.00	685.97	685.99
A2	117+18.85	0.00	685.88	685.91
N. End of South Approach Slab	117+28.85	0.00	685.79	685.81



PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+03.22	12.00	685.84	685.86
A1	117+13.22	12.00	685.75	685.78
A2	117+23.22	12.00	685.66	685.69
N. End of South Approach Slab	117+33.22	12.00	685.57	685.59

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+06.13	20.00	685.66	685.68
A1	117+16.13	20.00	685.57	685.59
A2	117+26.13	20.00	685.48	685.50
N. End of South Approach Slab	117+36.13	20.00	685.39	685.41

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HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0071 (SB)

SHEET 13 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	250

CONTRACT NO. 74597
ILLINOIS FED. AID PROJECT

2/18/2025 8:45:45 AM

WEST EDGE OF SHOULDER

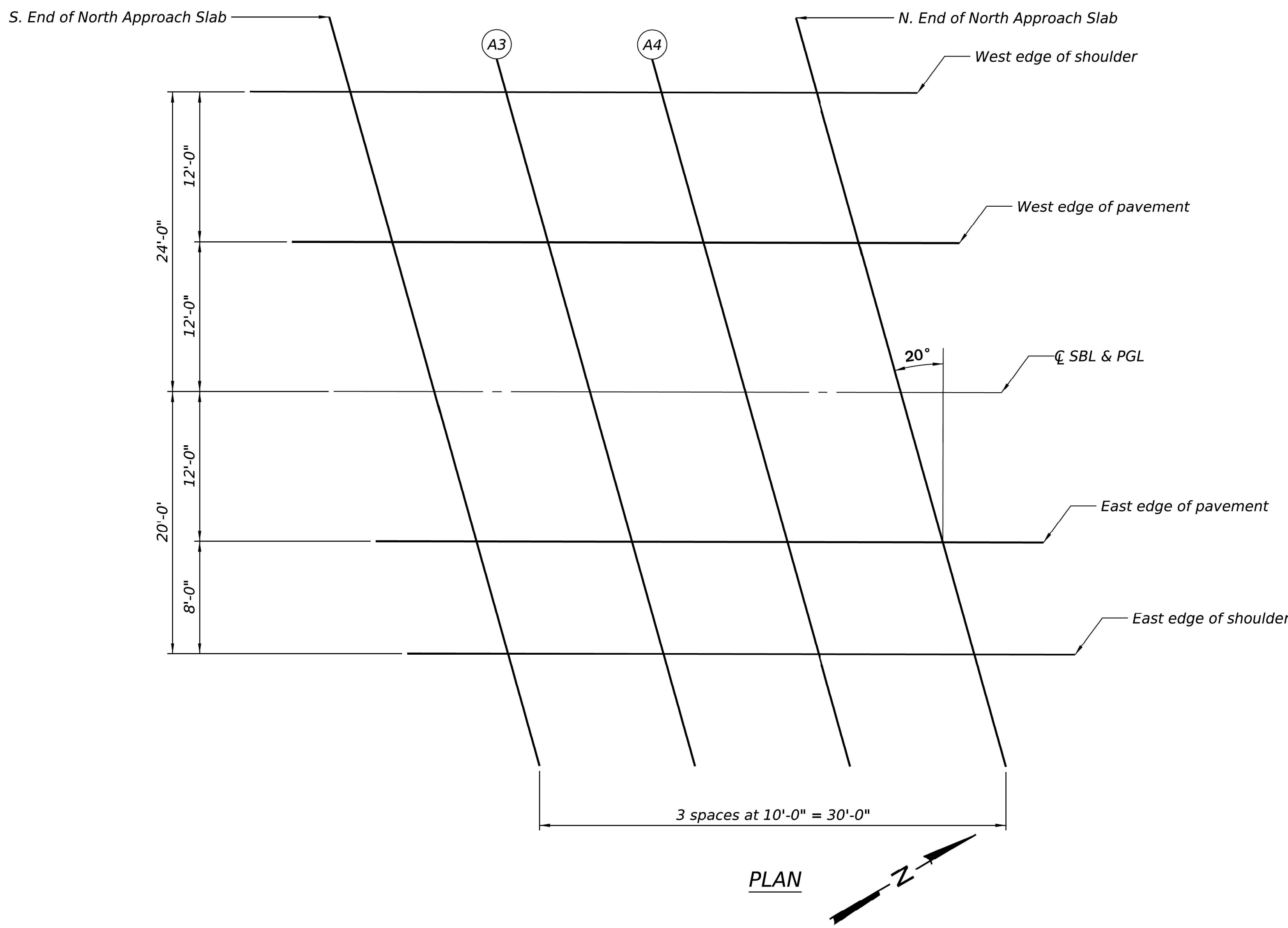
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+26.49	-24.00	683.27	683.29
A3	119+36.49	-24.00	683.15	683.17
A4	119+46.49	-24.00	683.02	683.04
N. End of North Approach Slab	119+56.49	-24.00	682.90	682.92

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+30.86	-12.00	683.46	683.48
A3	119+40.86	-12.00	683.33	683.35
A4	119+50.86	-12.00	683.21	683.23
N. End of North Approach Slab	119+60.86	-12.00	683.08	683.10

℄ SBL & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+35.23	0.00	683.58	683.60
A3	119+45.23	0.00	683.46	683.48
A4	119+55.23	0.00	683.33	683.35
N. End of North Approach Slab	119+65.23	0.00	683.21	683.23



PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+39.59	12.00	683.35	683.37
A3	119+49.59	12.00	683.22	683.25
A4	119+56.59	12.00	683.10	683.12
N. End of North Approach Slab	119+69.59	12.00	682.97	682.99

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+42.51	20.00	683.15	683.17
A3	119+52.51	20.00	683.03	683.05
A4	119+62.51	20.00	682.90	682.92
N. End of North Approach Slab	119+72.51	20.00	682.77	682.79

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HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0071 (SB)

SHEET 14 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	251

CONTRACT NO. 74597

ILLINOIS FED. AID PROJECT

2/18/2025 8:45:49 AM

WEST EDGE OF SHOULDER

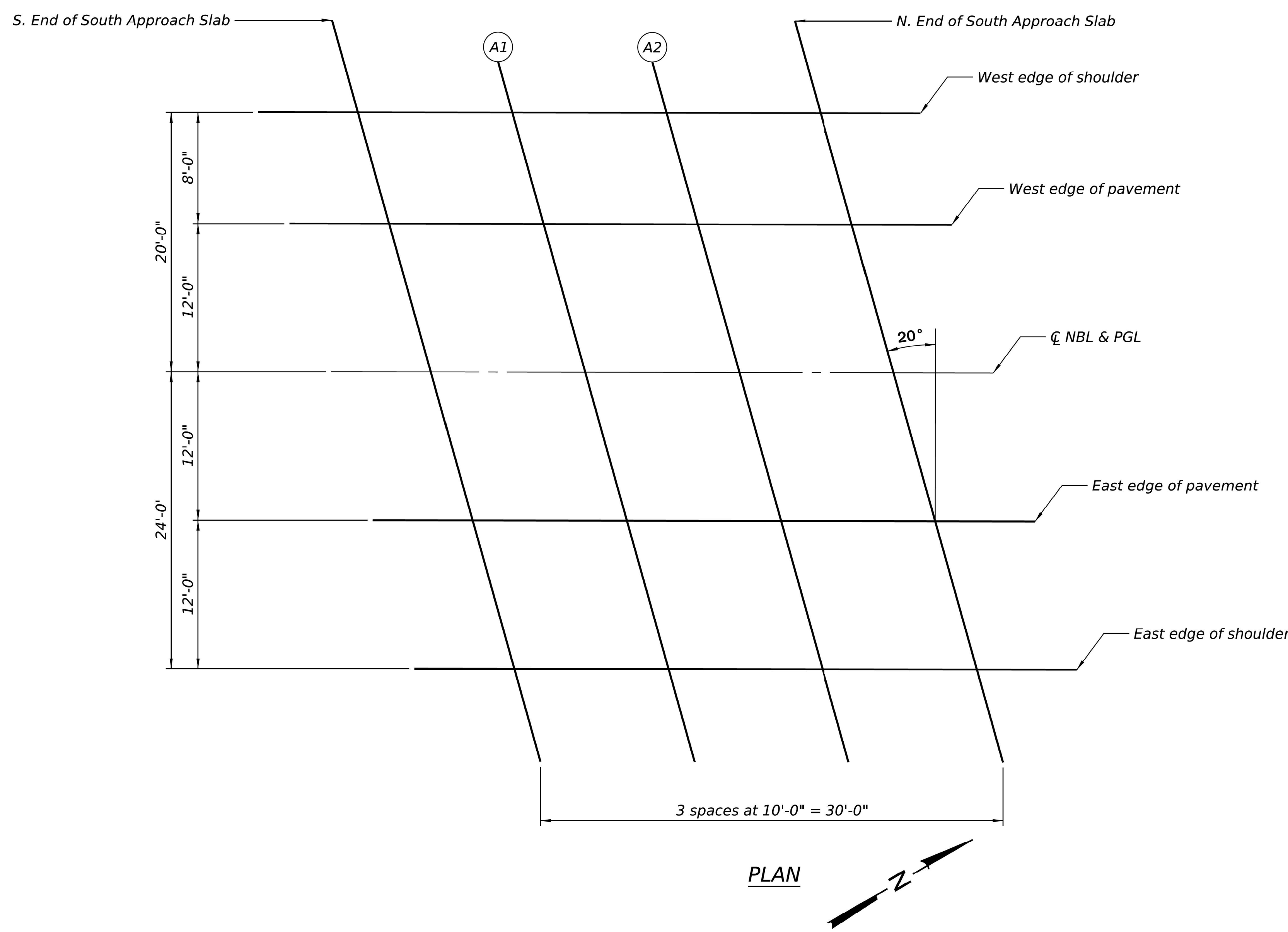
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+23.49	-20.00	685.50	685.52
A1	117+33.49	-20.00	685.41	685.43
A2	117+43.49	-20.00	685.32	685.34
N. End of South Approach Slab	117+53.49	-20.00	685.22	685.24

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+26.41	-12.00	685.64	685.66
A1	117+36.41	-12.00	685.54	685.56
A2	117+46.41	-12.00	685.45	685.47
N. End of South Approach Slab	117+56.41	-12.00	685.36	685.38

℄ NBL & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+30.77	0.00	685.78	685.80
A1	117+40.77	0.00	685.68	685.70
A2	117+50.77	0.00	685.59	685.61
N. End of South Approach Slab	117+60.77	0.00	685.49	685.51



PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+35.14	12.00	685.56	685.58
A1	117+45.14	12.00	685.46	685.48
A2	117+55.14	12.00	685.37	685.39
N. End of South Approach Slab	117+65.14	12.00	685.27	685.29

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of South Approach Slab	117+39.51	24.00	685.28	685.30
A1	117+49.51	24.00	685.18	685.20
A2	117+59.51	24.00	685.09	685.11
N. End of South Approach Slab	117+69.51	24.00	684.99	685.01

WEST EDGE OF SHOULDER

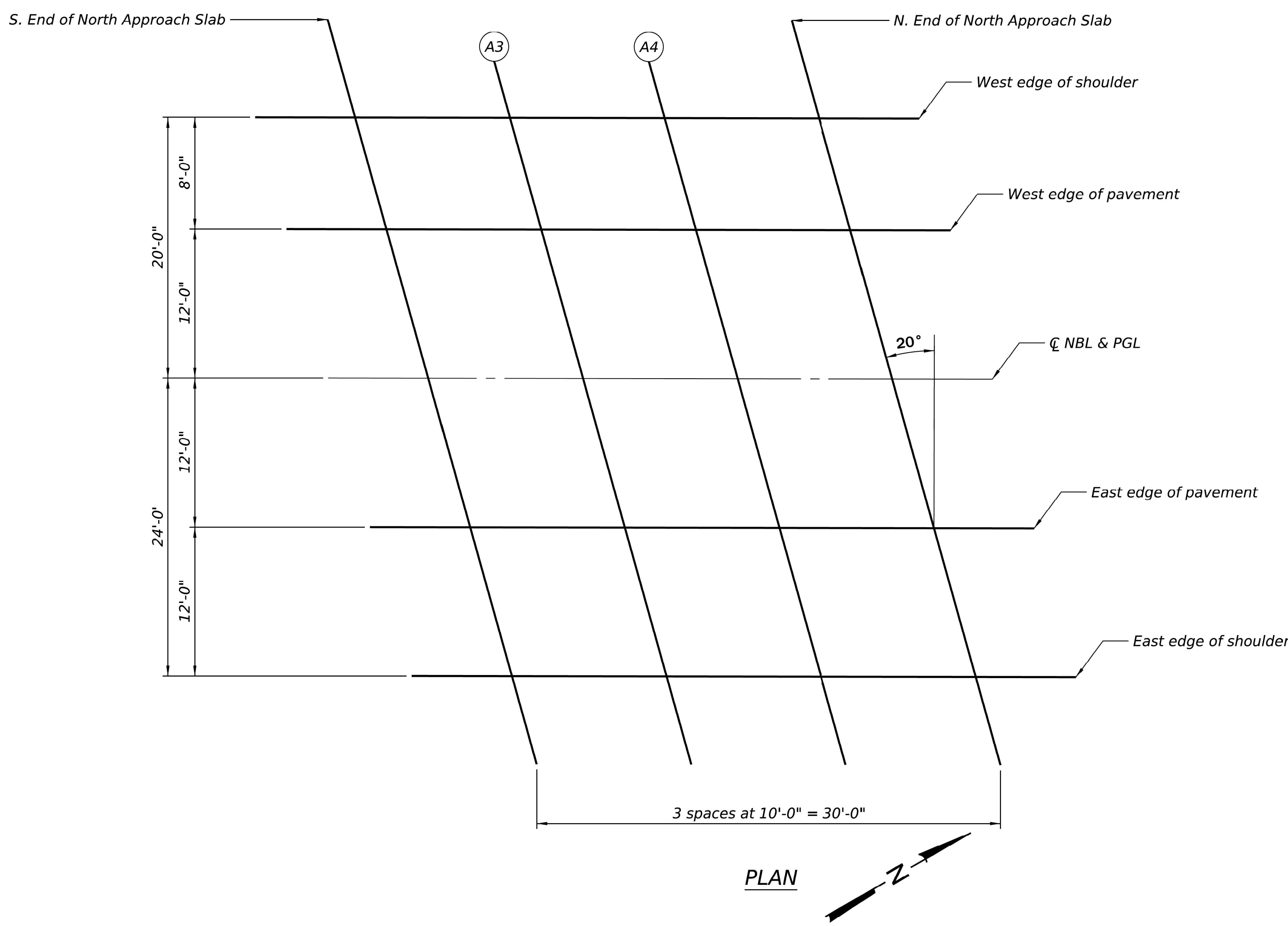
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+59.87	-20.00	682.94	682.96
A3	119+69.87	-20.00	682.81	682.83
A4	119+79.87	-20.00	682.68	682.70
N. End of North Approach Slab	119+89.87	-20.00	682.55	682.57

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+62.78	-12.00	683.06	683.08
A3	119+72.78	-12.00	682.93	682.95
A4	119+82.78	-12.00	682.80	682.82
N. End of North Approach Slab	119+92.78	-12.00	682.67	682.69

℄ NBL & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+67.15	0.00	683.18	683.20
A3	119+77.15	0.00	683.05	683.07
A4	119+87.15	0.00	682.92	682.95
N. End of North Approach Slab	119+97.15	0.00	682.79	682.81



PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+71.51	12.00	682.95	682.97
A3	119+81.51	12.00	682.82	682.84
A4	119+91.51	12.00	682.69	682.71
N. End of North Approach Slab	120+01.51	12.00	682.55	682.58

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Grinding
S. End of North Approach Slab	119+75.88	24.00	682.65	682.67
A3	119+85.88	24.00	682.52	682.54
A4	119+95.88	24.00	682.39	682.41
N. End of North Approach Slab	120+05.88	24.00	682.26	682.28

MODEL: Default
FILE NAME: C:\ICS4PDF\252368158_8\0180072-74597_024_NB, North Approach Slab.dgn

HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

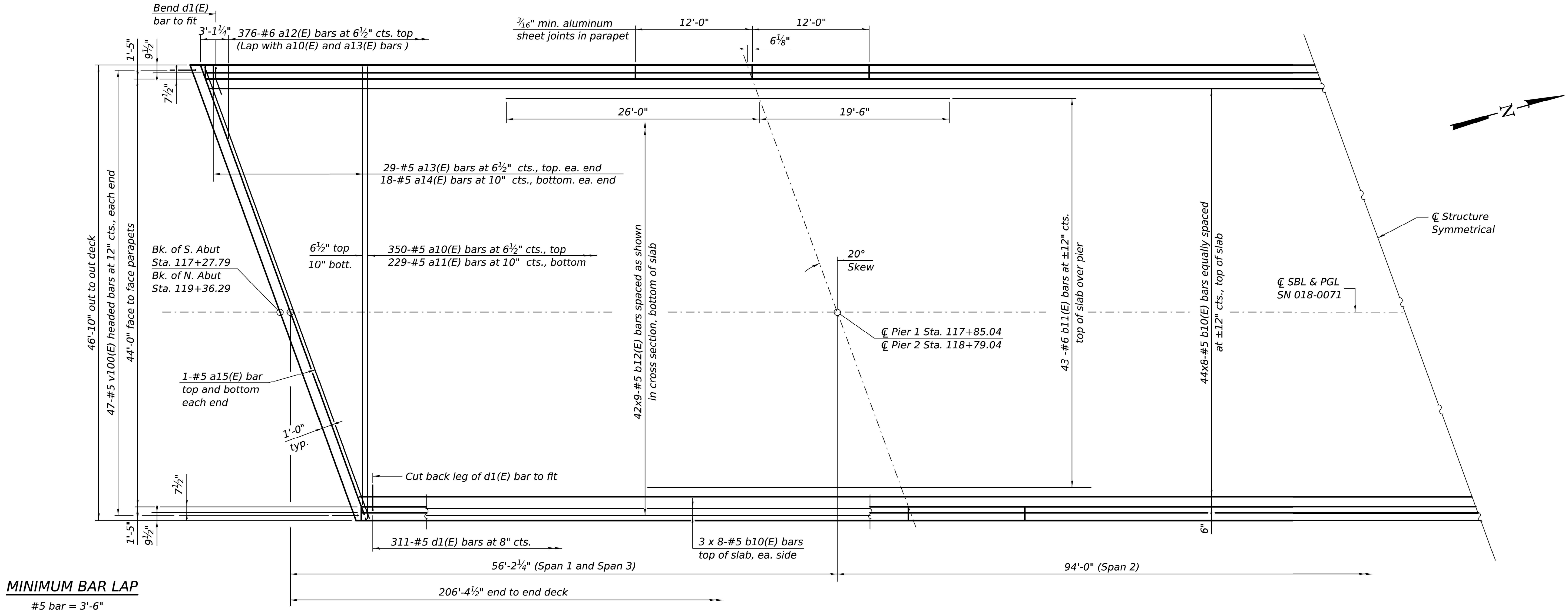
TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 018 - 0072 (NB)

SHEET 16 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	253

CONTRACT NO. 74597
ILLINOIS FED. AID PROJECT

2/18/2025 9:06:46 AM

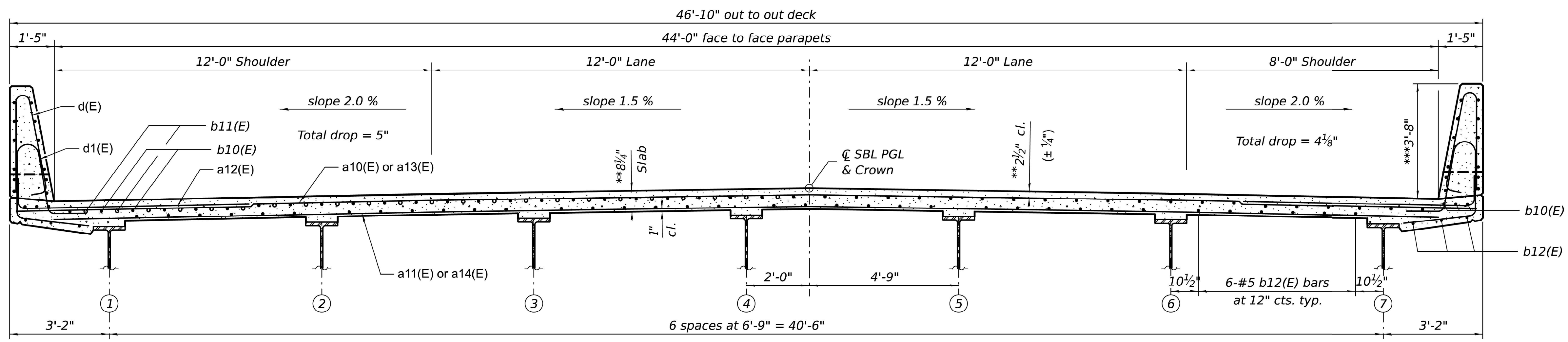


MINIMUM BAR LAP

#5 bar = 3'-6"

PARTIAL PLAN

* See Field Cutting Diagram on sheet 18 of 44.



NEAR PIER | NEAR MIDSPAN

CROSS SECTION
(Looking North)

** Prior to grinding
*** After grinding

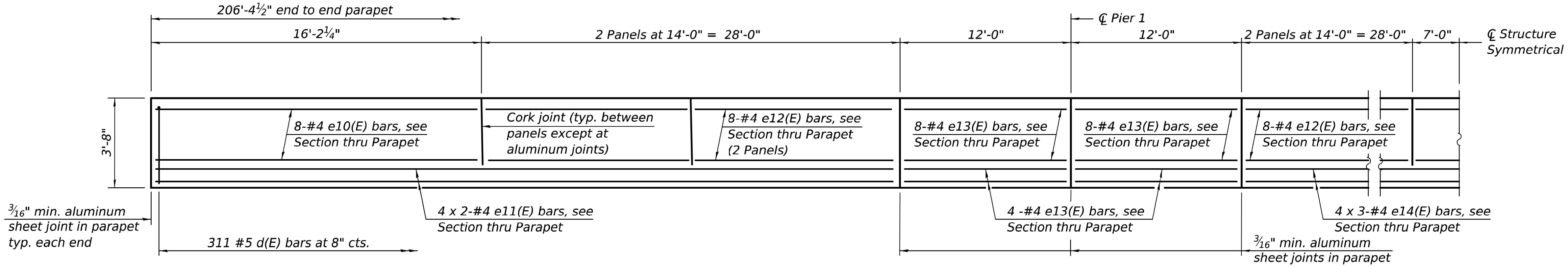
Notes:
See sheet 18 of 44 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

MODEL: Br_Sheet_Consultant
FILE NAME: W\0191-172 IDOT 197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-017-Superstructure_S8.dgn

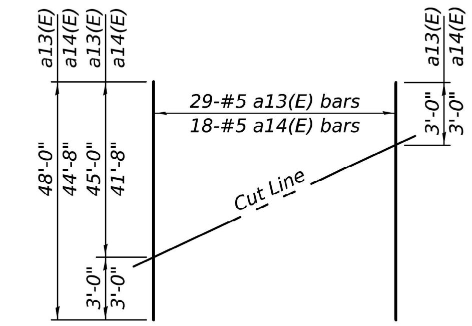
BLA, Inc.	USER NAME = mwilley	DESIGNED - MKH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 018-0071 (SB)
		CHECKED - MJW	REVISED -		
	PLOT SCALE = 0:2 '/" / in.	DRAWN - MKH	REVISED -		
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 17 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	254
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

5/8/2025 3:30:57 PM



INSIDE ELEVATION OF PARAPET

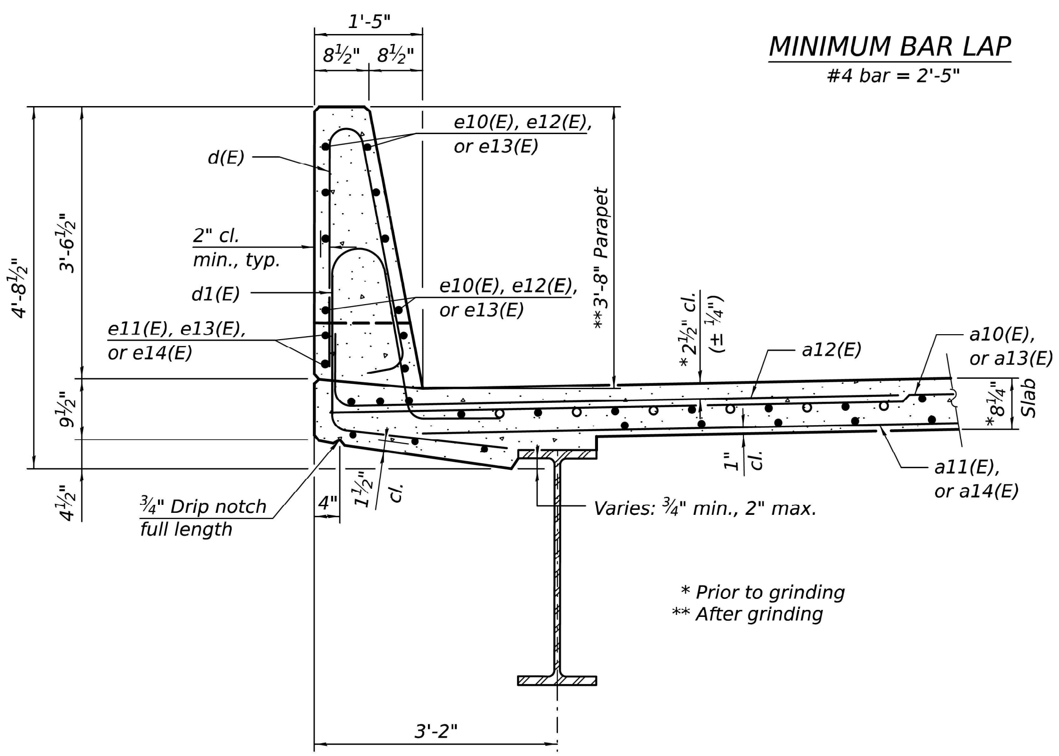


FIELD CUTTING DIAGRAM

Order a13(E) and a14(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.

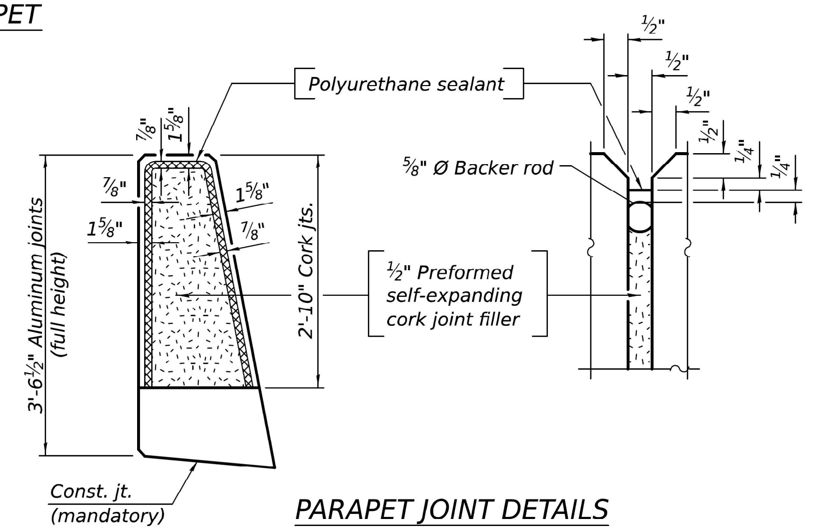
MINIMUM BAR LAP

#4 bar = 2'-5"



* Prior to grinding
** After grinding

SECTION THRU PARAPET



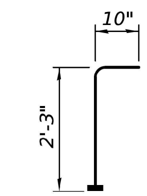
PARAPET JOINT DETAILS

Notes:

The 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.

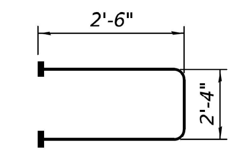
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

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



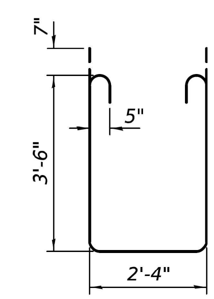
BAR v100(E)

(Headed. 94-#5 Bar terminators)



BAR s20(E)

(Headed. 176-#5 Bar terminators)

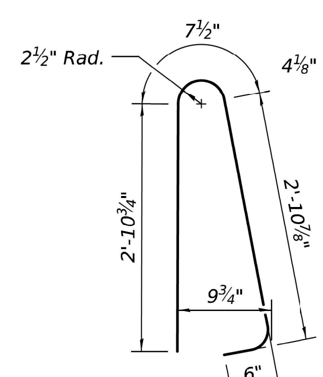


BAR s21(E)

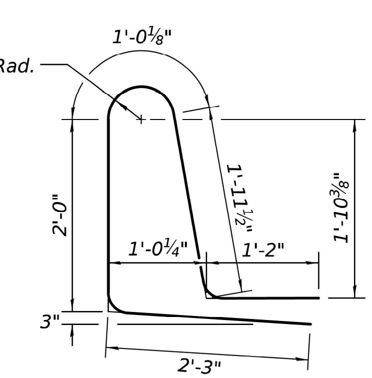
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	350	#5	46'-5"	
a11(E)	229	#5	44'-0"	
a12(E)	752	#6	8'-4"	
a13(E)	29	#5	48'-0"	
a14(E)	18	#5	44'-8"	
a15(E)	4	#5	49'-4"	
b10(E)	400	#5	29'-1"	
b11(E)	86	#6	45'-6"	
b12(E)	378	#5	26'-3"	
d(E)	622	#5	7'-0"	
d1(E)	622	#5	8'-5"	
e10(E)	32	#4	15'-10"	
e11(E)	32	#4	23'-2"	
e12(E)	144	#4	13'-8"	
e13(E)	96	#4	11'-8"	
e14(E)	24	#4	24'-11"	
m20(E)	16	#6	26'-10"	
m21(E)	36	#6	6'-9"	
m22(E)	12	#6	2'-11"	
s20(E)	88	#5	7'-4"	
s21(E)	88	#5	10'-6"	
v100(E)	94	#5	3'-1"	
Concrete Superstructure			Cu. Yd.	363.6
Protective Coat			Sq. Yd.	1,213
Reinforcement Bars, Epoxy Coated			Pound	84,030

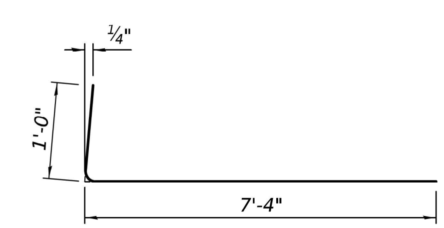
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.



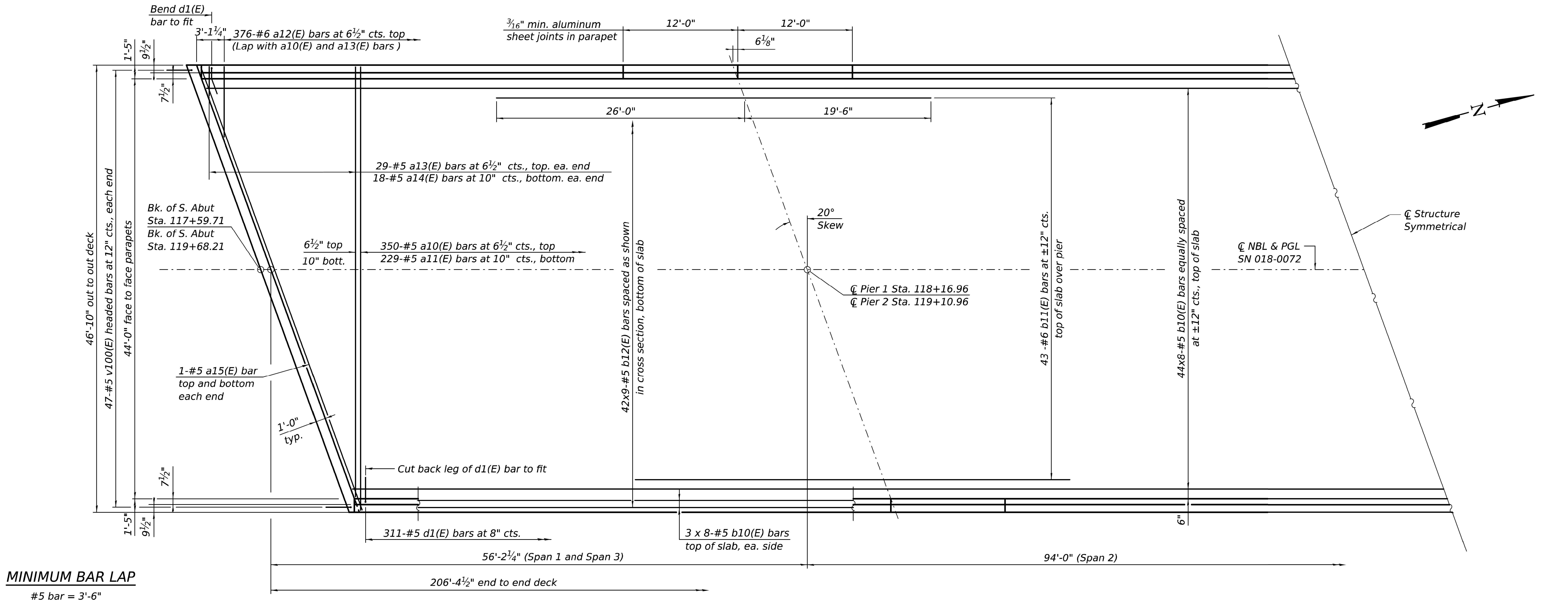
BAR d(E)



BAR d1(E)



BAR a12(E)

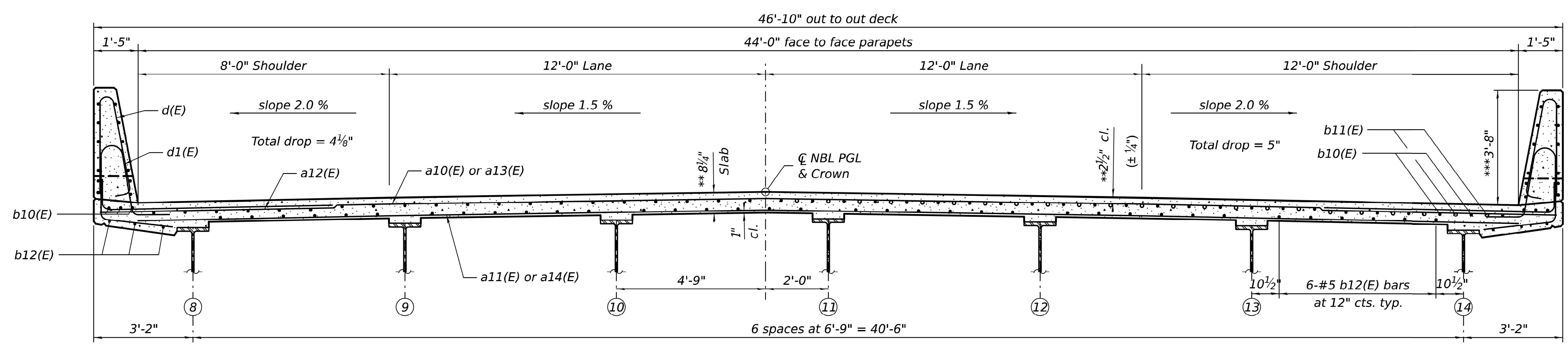


MINIMUM BAR LAP

#5 bar = 3'-6"

PARTIAL PLAN

* See Field Cutting Diagram on sheet 20 of 44.



NEAR MIDSPAN

NEAR PIER

CROSS SECTION
(Looking North)

** Prior to grinding
*** After grinding

Notes:
See sheet 20 of 44 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.

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57_StructureReplacement\CADD SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-019-Superstructure_NB.dgn

BLA, Inc.

USER NAME = mwilley	DESIGNED - MKH	REVISED -	
	CHECKED - MJW	REVISED -	
PLOT SCALE = 0:2 ':" / in.	DRAWN - MKH	REVISED -	
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -	

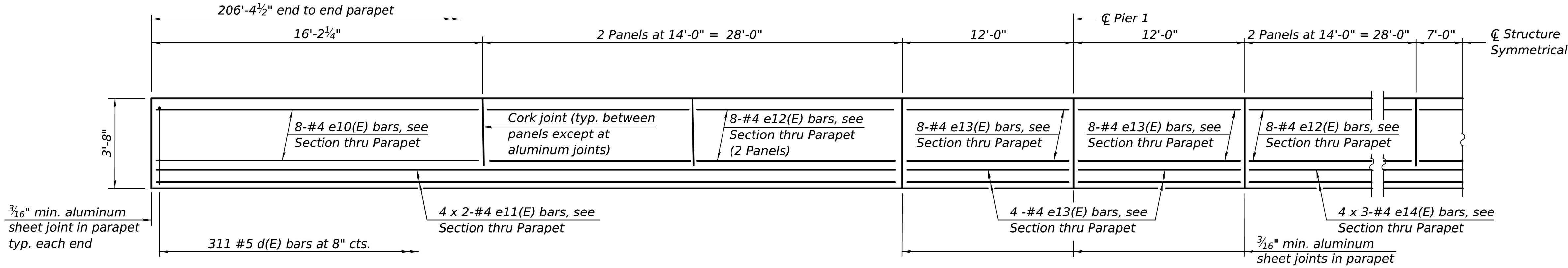
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE
STRUCTURE NO. 018-0072 (NB)

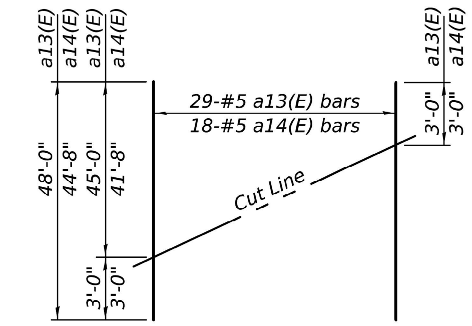
SHEET 19 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	256
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

5/8/2025 3:31:05 PM

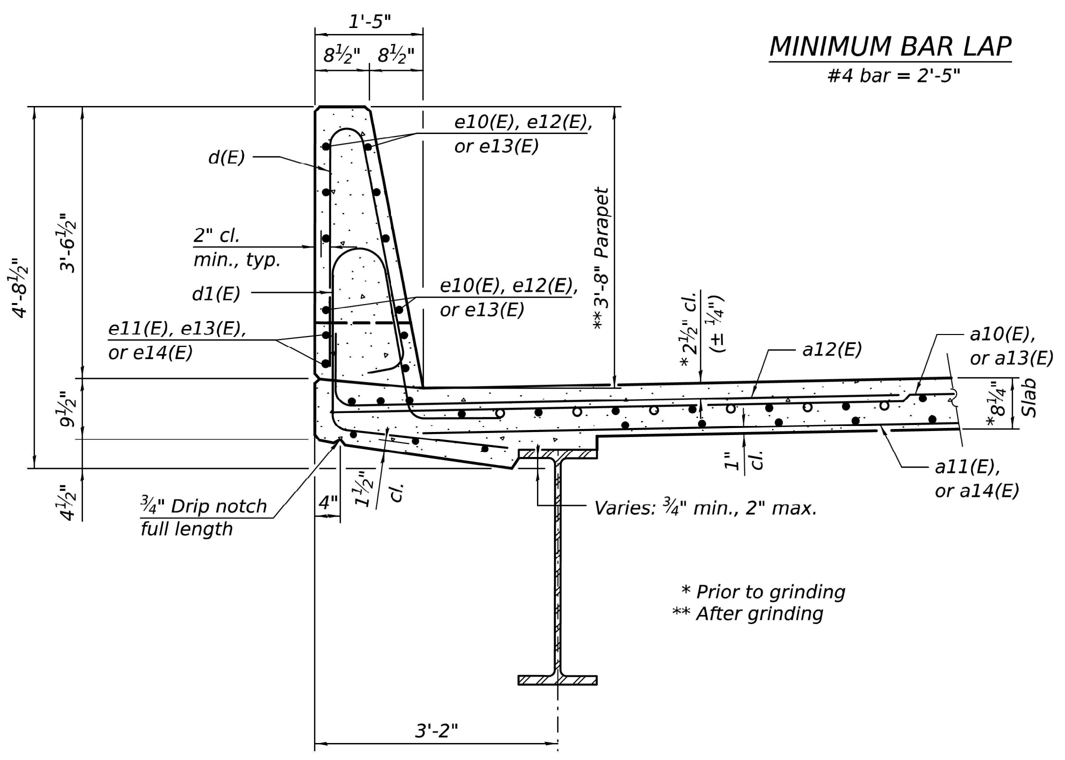


INSIDE ELEVATION OF PARAPET

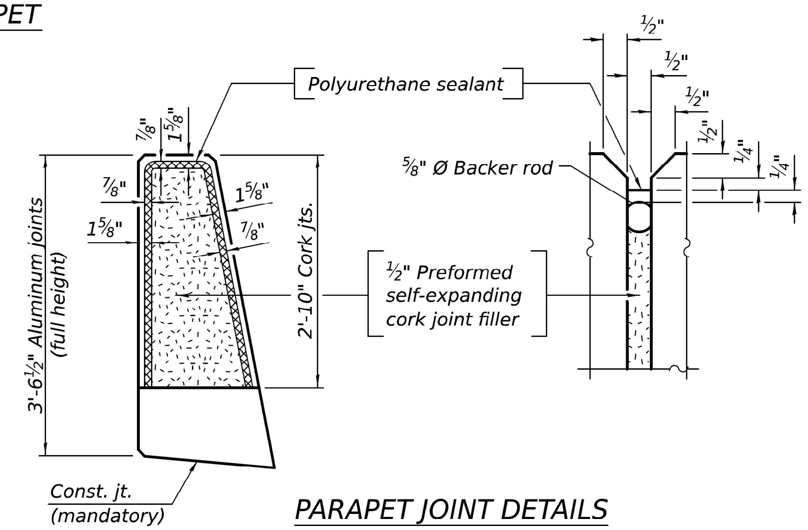


FIELD CUTTING DIAGRAM
Order a13(E) and a14(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.

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

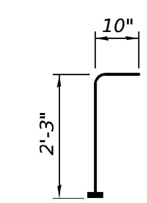


SECTION THRU PARAPET

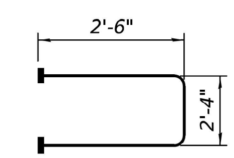


PARAPET JOINT DETAILS

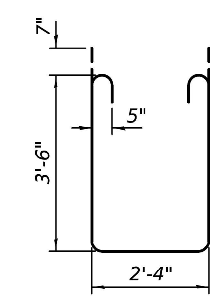
Notes:
The 3/16" min. aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and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



BAR v100(E)
(Headed. 94-#5 Bar terminators)



BAR s20(E)
(Headed. 176-#5 Bar terminators)

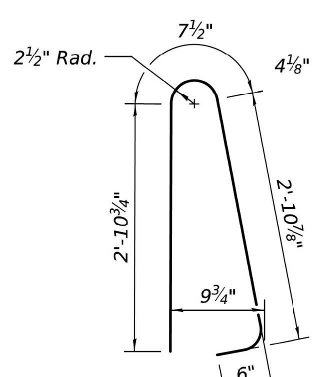


BAR s21(E)

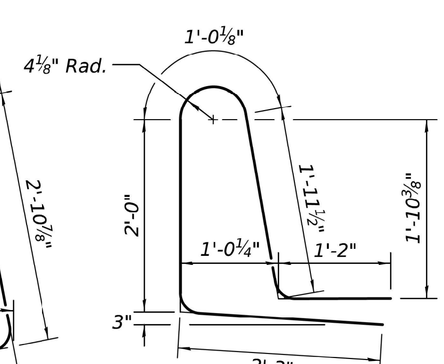
SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	350	#5	46'-5"	
a11(E)	229	#5	44'-0"	
a12(E)	752	#6	8'-4"	
a13(E)	29	#5	48'-0"	
a14(E)	18	#5	44'-8"	
a15(E)	4	#5	49'-4"	
b10(E)	400	#5	29'-1"	
b11(E)	86	#6	45'-6"	
b12(E)	378	#5	26'-3"	
d(E)	622	#5	7'-0"	
d1(E)	622	#5	8'-5"	
e10(E)	32	#4	15'-10"	
e11(E)	32	#4	23'-2"	
e12(E)	144	#4	13'-8"	
e13(E)	96	#4	11'-8"	
e14(E)	24	#4	24'-11"	
m20(E)	16	#6	26'-10"	
m21(E)	36	#6	6'-9"	
m22(E)	12	#6	2'-11"	
s20(E)	88	#5	7'-4"	
s21(E)	88	#5	10'-6"	
v100(E)	94	#5	3'-1"	
Concrete Superstructure			Cu. Yd.	363.6
Protective Coat			Sq. Yd.	1,213
Reinforcement Bars, Epoxy Coated			Pound	84,030

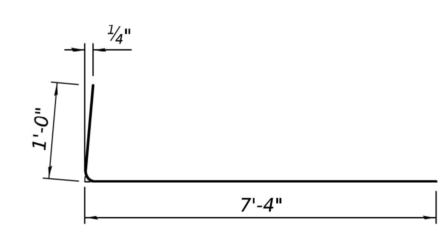
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.



BAR d(E)



BAR d1(E)

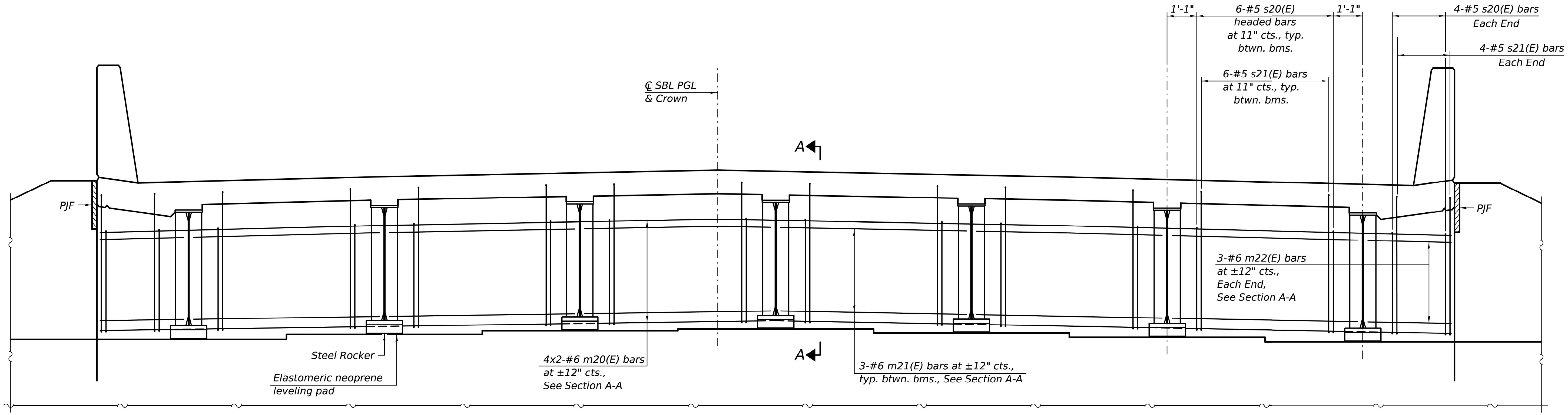


BAR a12(E)

BLA, Inc.	USER NAME = mwilley	DESIGNED - MKH	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE DETAILS STRUCTURE NO. 018-0072 (NB)	F.A.I. RTE. 57	SECTION 18-20HB	COUNTY CUMBERLAND	TOTAL SHEETS 414	SHEET NO. 257
		CHECKED - MJW	REVISED -					CONTRACT NO. 74597		
	PLOT SCALE = 0:2 '-" / in.	DRAWN - MKH	REVISED -							
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 20 OF 44 SHEETS		ILLINOIS	FED. AID PROJECT		

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57_StructureReplacement\CADD SHEETS ORD\Structural\US45_Crossing\0180071_72-74597-020-Superstructure_Details_NB.dgn

5/8/2025 3:31:11 PM



DIAPHRAGM AT SOUTH ABUTMENT

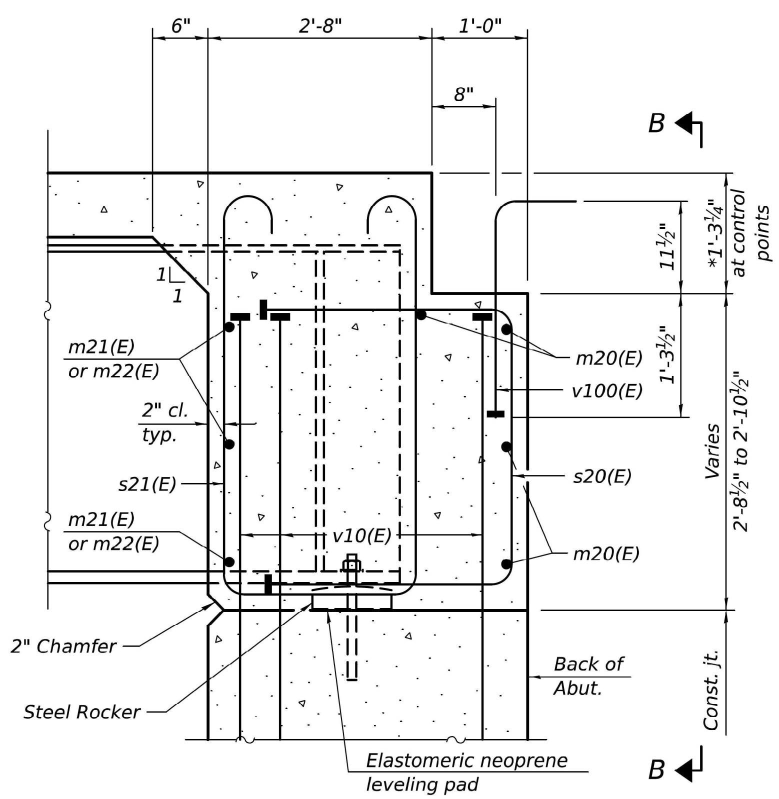
(Looking South)
(North Abutment Similar)

Notes:
See sheet 18 of 44 for superstructure details and Bill of Material.
See sheet 23 of 44 for PJF details.
The s20(E) and s21(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.

* Prior to grinding

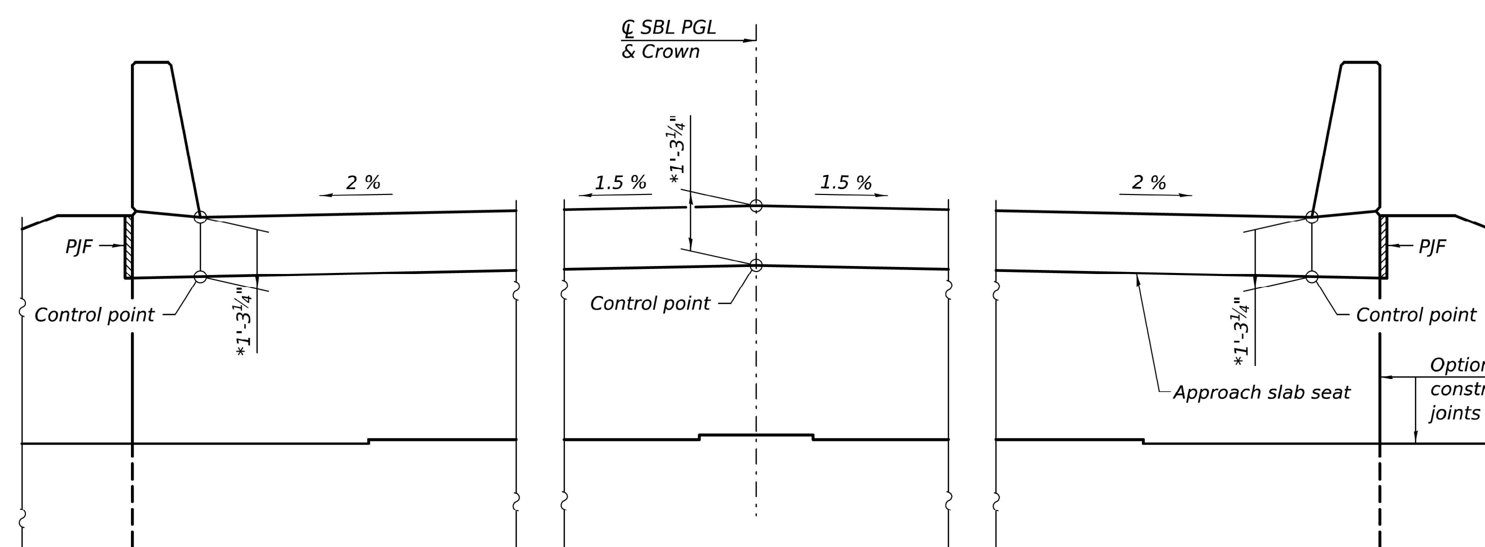
MINIMUM BAR LAP

#6 bar = 4'-0"

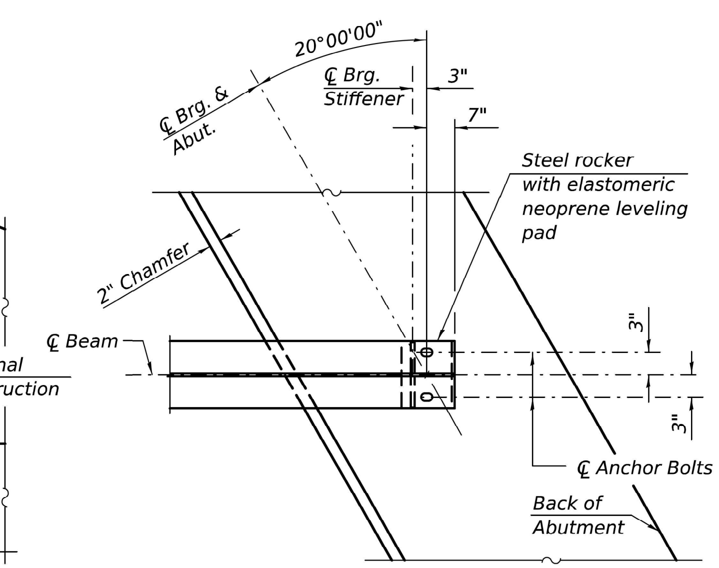


SECTION A-A

(at Rt. ∠'s)



VIEW B-B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 ' /" / in.	DRAWN - KN	REVISED -
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

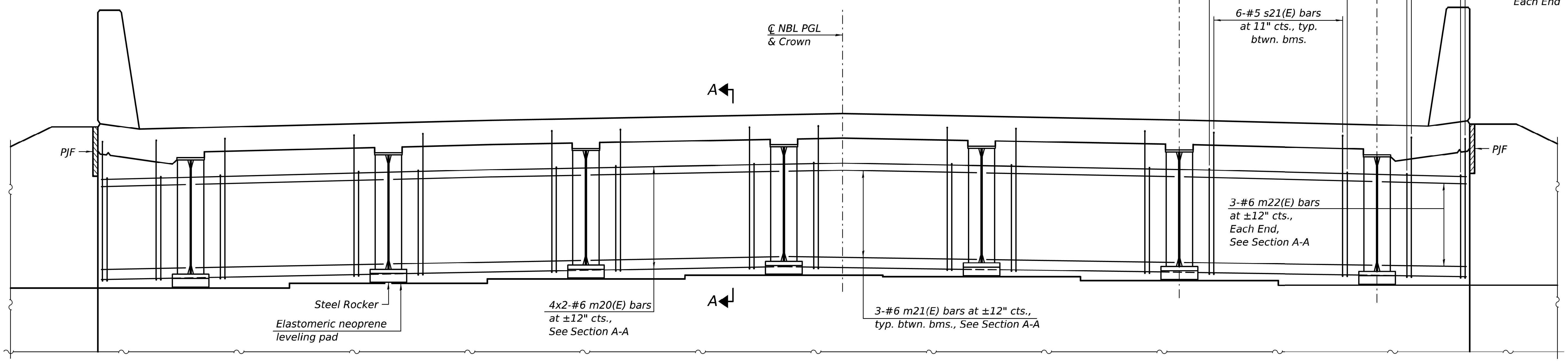
ABUTMENT DIAPHRAGM DETAILS
STRUCTURE NO. 018-0071 (SB)

SHEET 21 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	258
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

MODEL: Br_Sheet_Consultant
FILE NAME: W:\1191-172 IDOT 197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-021-Abutment_Diaph_Details_SB.dgn

5/8/2025 3:31:15 PM



DIAPHRAGM AT NORTH ABUTMENT

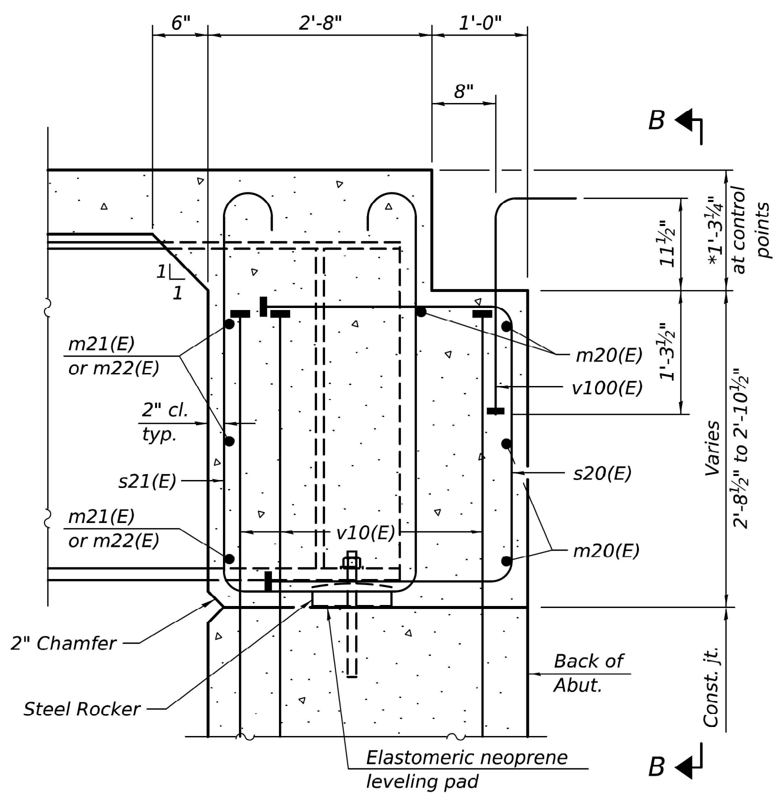
(Looking North)
(South Abutment Similar)

Notes:
See sheet 20 of 44 for superstructure details and Bill of Material.
See sheet 25 of 44 for PJF details.
The s20(E) and s21(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.

* Prior to grinding

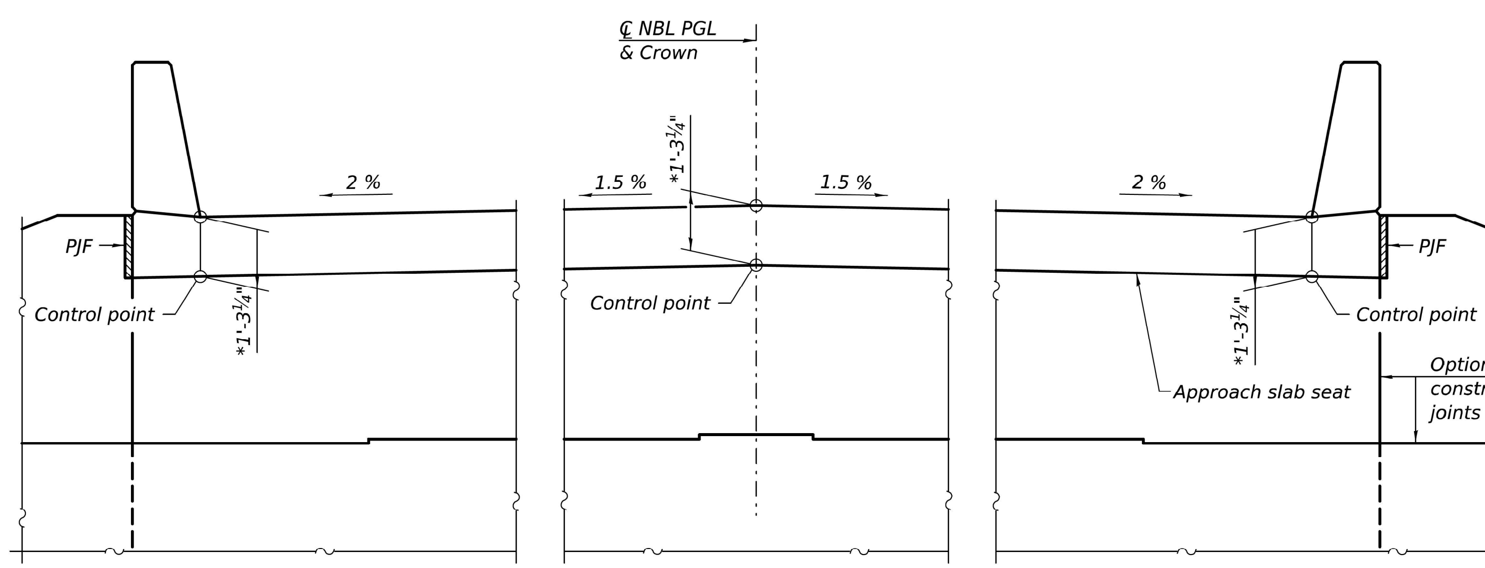
MINIMUM BAR LAP

#6 bar = 4'-0"

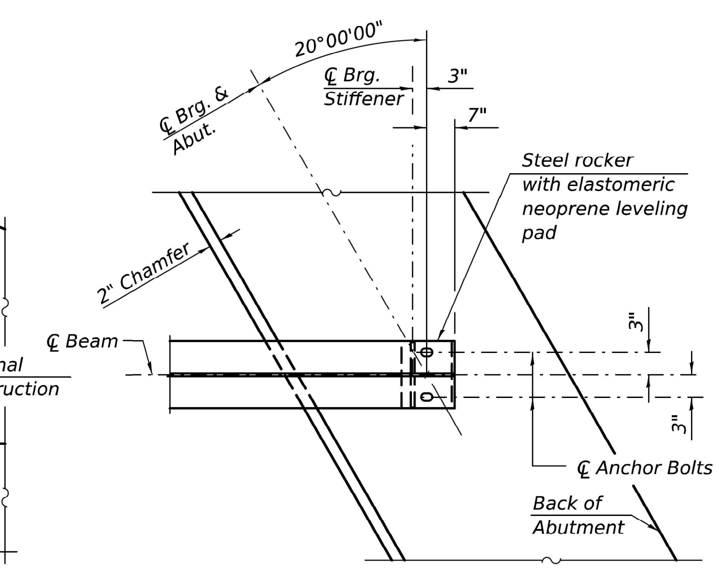


SECTION A-A

(at Rt. ∠'s)



VIEW B-B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57 StructureReplacement\CADD SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-022-Abutment_Diaph_Details_NB.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ABUTMENT DIAPHRAGM DETAILS STRUCTURE NO. 018-0072 (NB)	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		CHECKED - MJW	REVISED -			57	18-20HB	CUMBERLAND	414	259
	PLOT SCALE = 0:2 ' / in.	DRAWN - KN	REVISED -			CONTRACT NO. 74597				
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 22 OF 44 SHEETS			ILLINOIS	FED. AID PROJECT	

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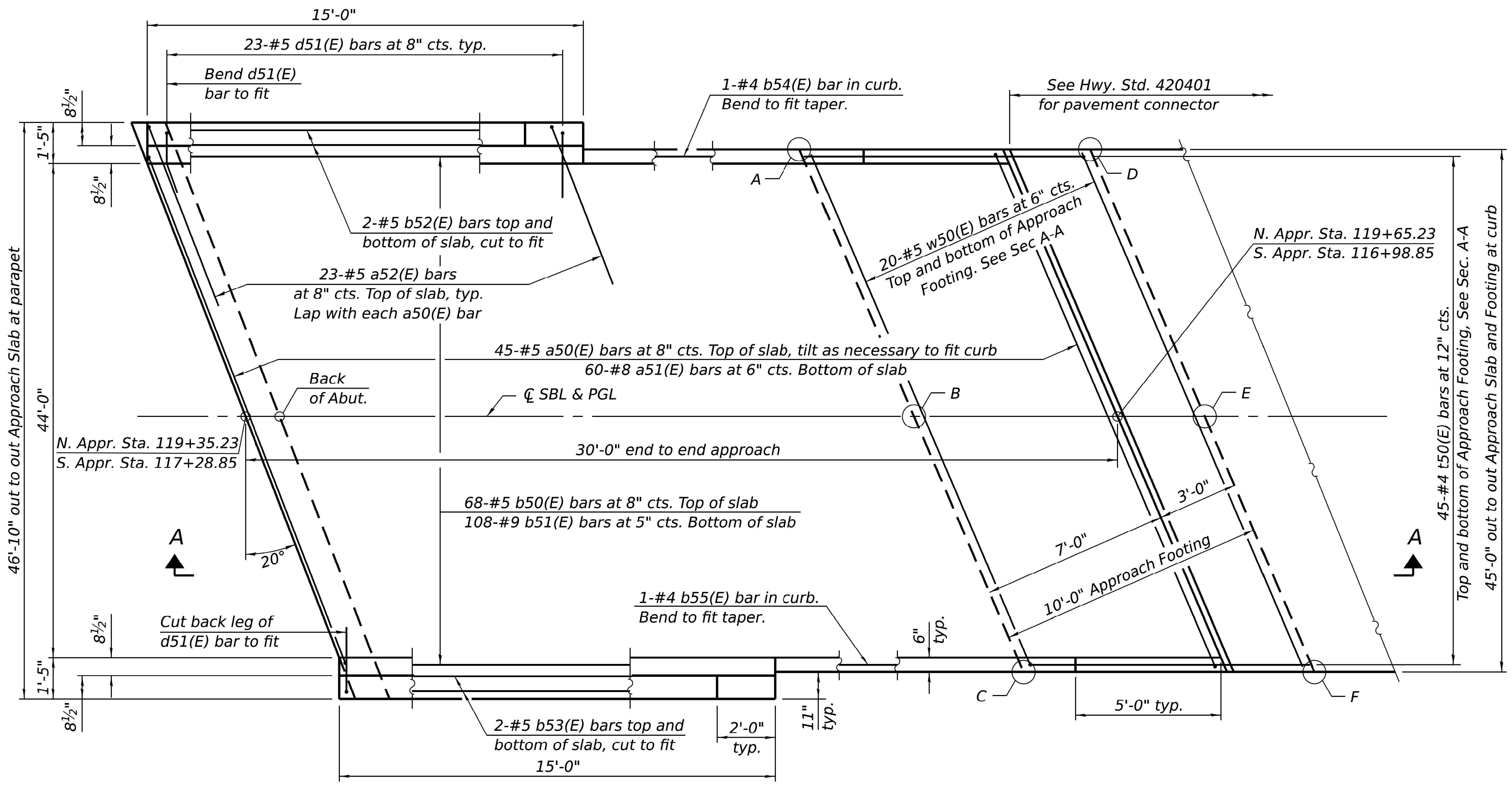
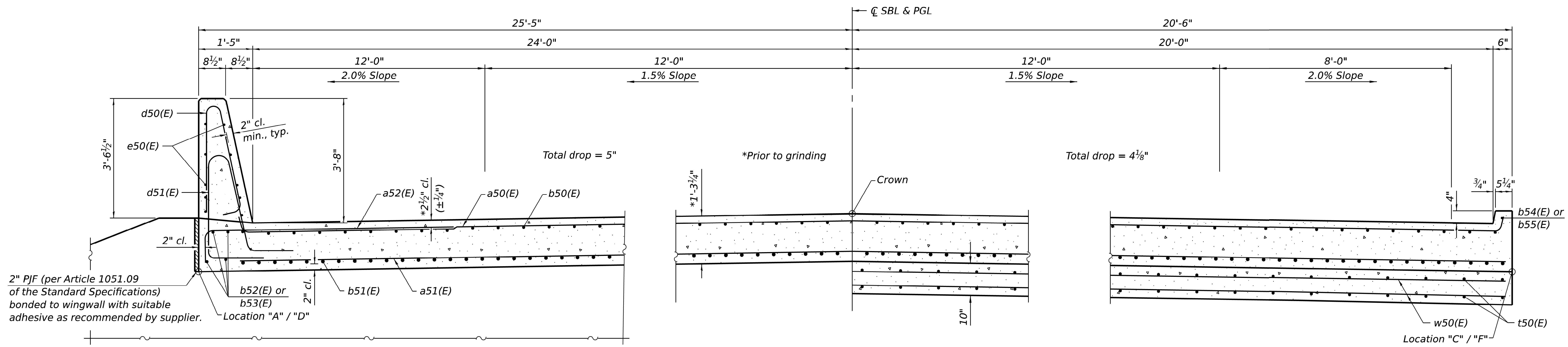


PLAN

(N. approach slab shown; S. approach slab similar by 180° rotation)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

South Approach			North Approach		
Point/ Location	Top	Bottom	Point/ Location	Top	Bottom
A - NW	684.40	683.57	A - SW	681.74	680.91
B - N	684.75	683.91	B - S	682.05	681.22
C - NE	684.34	683.51	C - SE	681.62	680.79
D - SW	684.49	683.66	D - NW	681.61	680.77
E - S	684.84	684.01	E - N	681.92	681.08
F - SE	684.44	683.60	F - NE	681.48	680.65



NEAR ABUTMENT

CROSS SECTION

(Looking North)

AT APPROACH FOOTING

(Sheet 1 of 2)

USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 018 - 0071 (SB)

SHEET 23 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	260

CONTRACT NO. 74597

ILLINOIS FED. AID PROJECT

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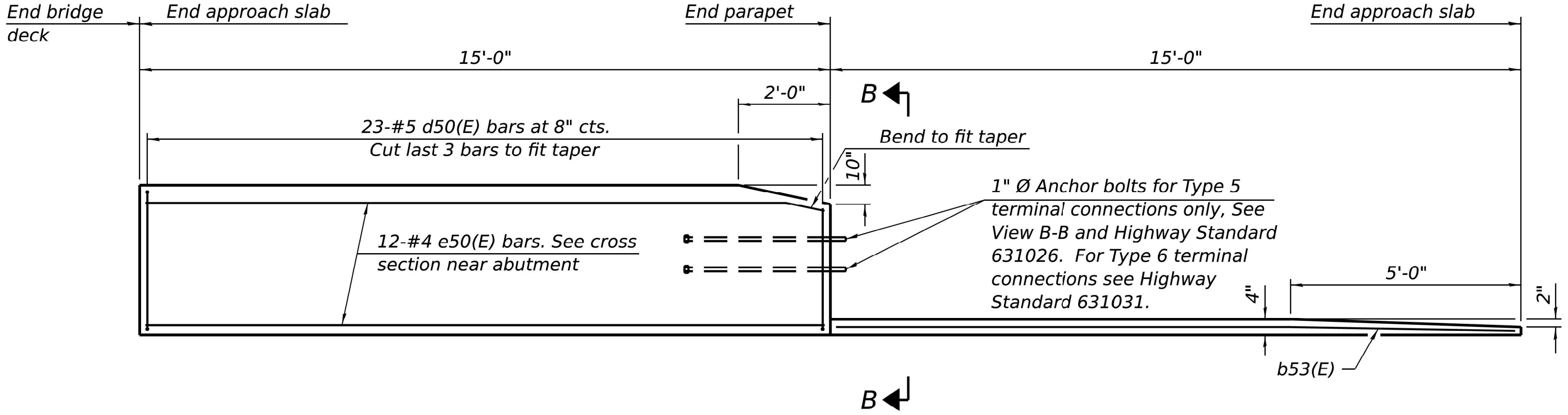
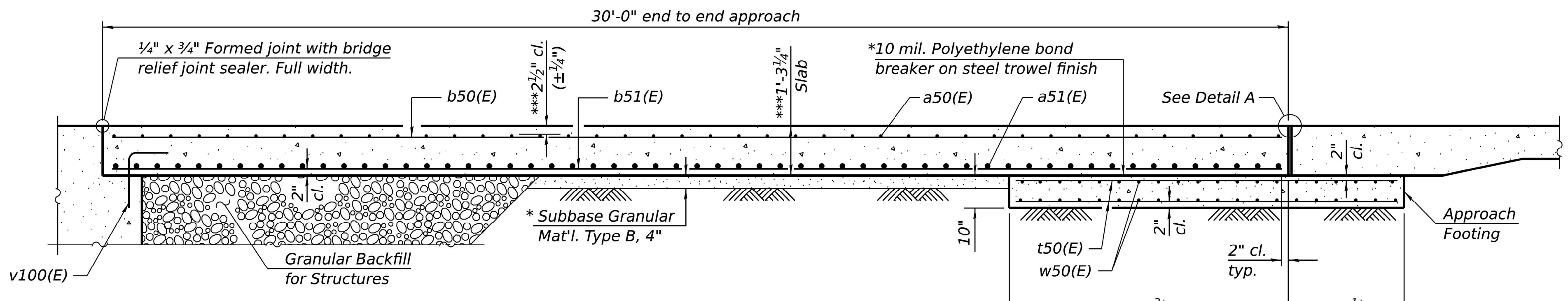
2/18/2025 8:54:23 AM



INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A

Notes:

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

Parapet concrete shall be paid for as Concrete Superstructure.

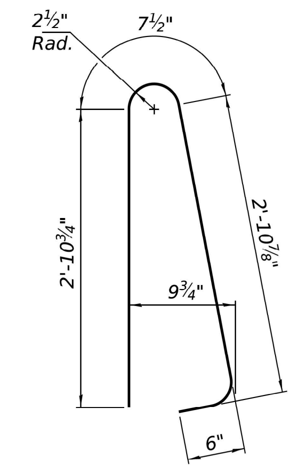
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

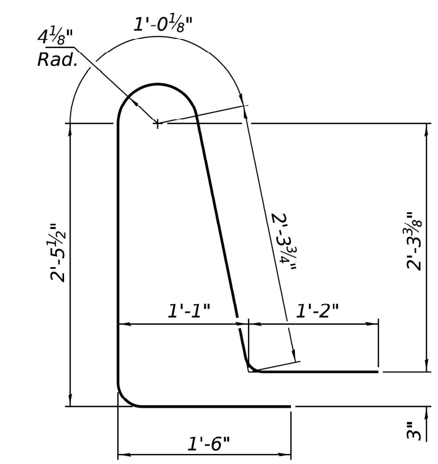
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

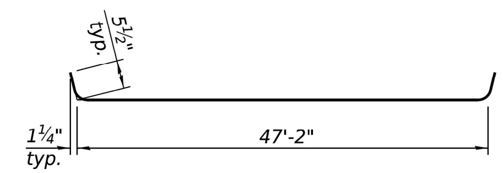
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 44.



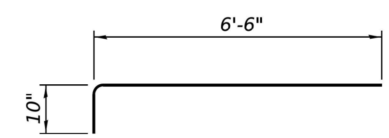
BAR d50(E)



BAR d51(E)



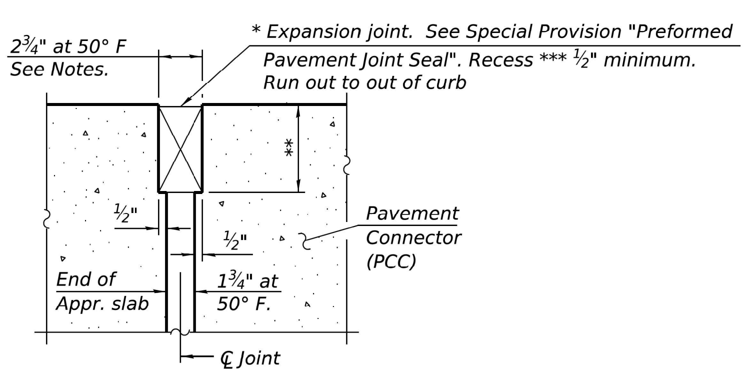
BAR a50(E)



BAR a52(E)

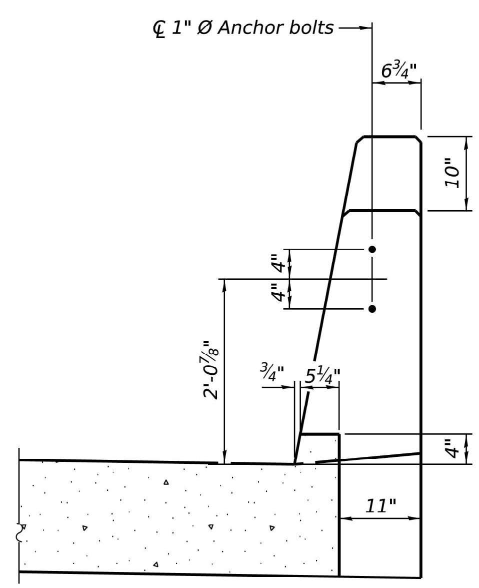
TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a50(E)	84	#5	48'-1"	
a51(E)	112	#8	47'-6"	
a52(E)	84	#5	7'-4"	
b50(E)	136	#5	29'-8"	
b51(E)	216	#9	29'-8"	
b52(E)	8	#5	15'-2"	
b53(E)	8	#5	14'-8"	
b54(E)	2	#4	14'-8"	
b55(E)	2	#4	14'-6"	
d50(E)	92	#5	7'-0"	
d51(E)	92	#5	8'-6"	
e50(E)	48	#4	14'-8"	
t50(E)	180	#4	10'-3"	
w50(E)	80	#5	47'-6"	
Concrete Superstructure		Cu. Yd.	8.5	
Concrete Superstructure (Approach Slab)		Cu. Yd.	128.0	
Concrete Structures		Cu. Yd.	29.5	
Reinforcement Bars, Epoxy Coated		Pound	52,500	



DETAIL A

(at Rt. ∠'s)

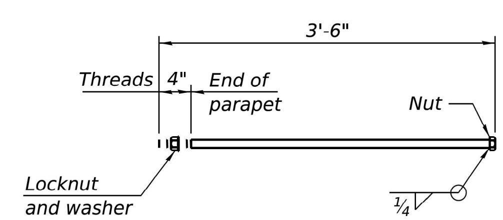


VIEW B-B

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

*** Prior to grinding



*1" Ø ANCHOR BOLT

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

(Sheet 2 of 2)

HORNER SHIFRIN WWW.HORNERSHIFRIN.COM	USER NAME =	DESIGNED - S. HUDSON	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - N. PALMER	REVISED -	
	PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
	PLOT DATE =	CHECKED - J. WANG	REVISED -	

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 018 - 0071 (SB)

SHEET 24 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	261
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

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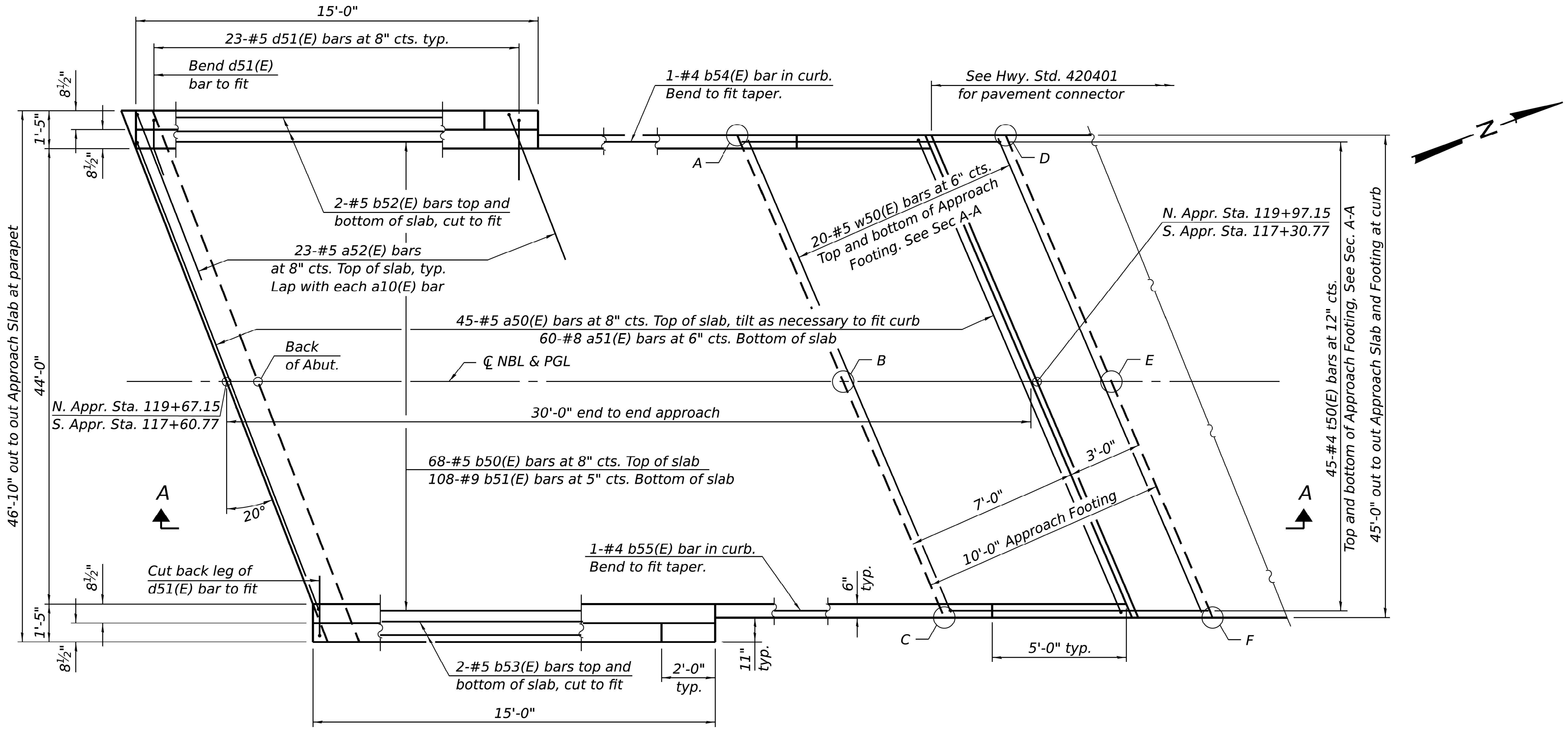
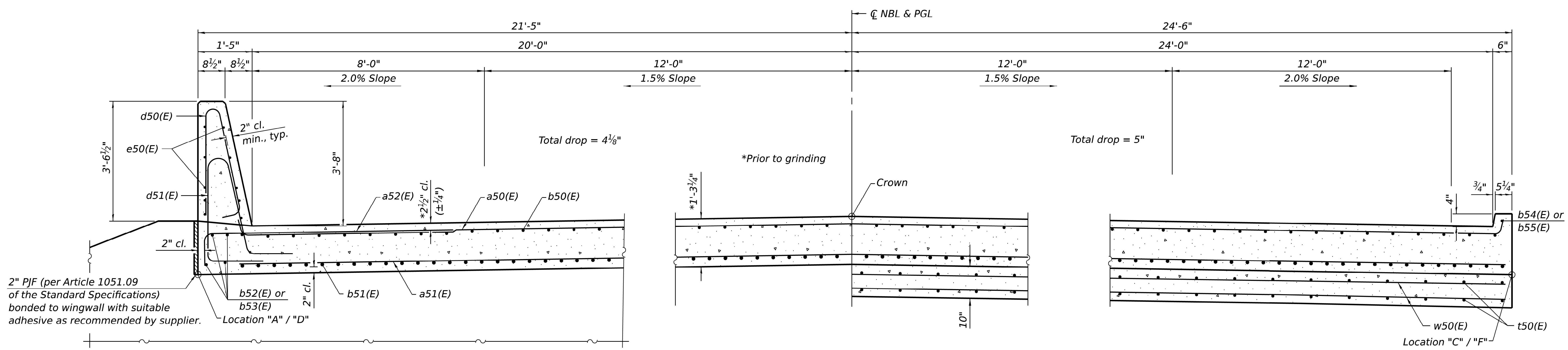


PLAN

(N. approach slab shown; S. approach slab similar by 180° rotation)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

South Approach			North Approach		
Point/ Location	Top	Bottom	Point/ Location	Top	Bottom
A - NW	684.18	683.35	A - SW	681.40	680.56
B - N	684.46	683.62	B - S	681.64	680.81
C - NE	683.96	683.12	C - SE	681.11	680.27
D - SW	684.28	683.45	D - NW	681.26	680.42
E - S	684.56	683.72	E - N	681.50	680.67
F - SE	684.05	683.22	F - NE	680.96	680.13



NEAR ABUTMENT

CROSS SECTION

(Looking North)

(Sheet 1 of 2)

AT APPROACH FOOTING

MODEL: Default
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HORNER SHIFRIN
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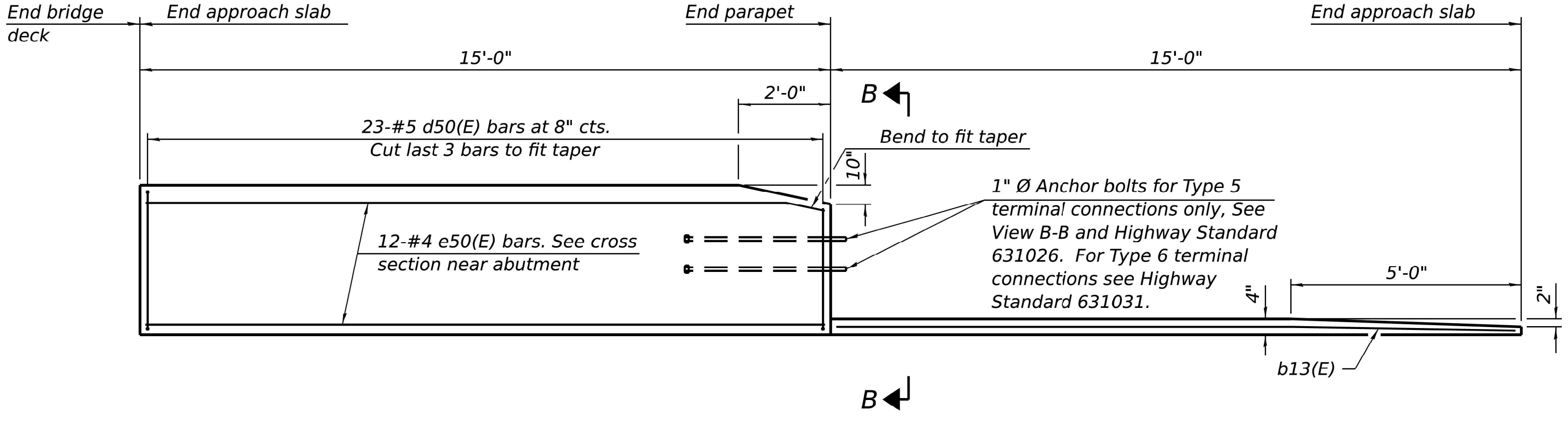
USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

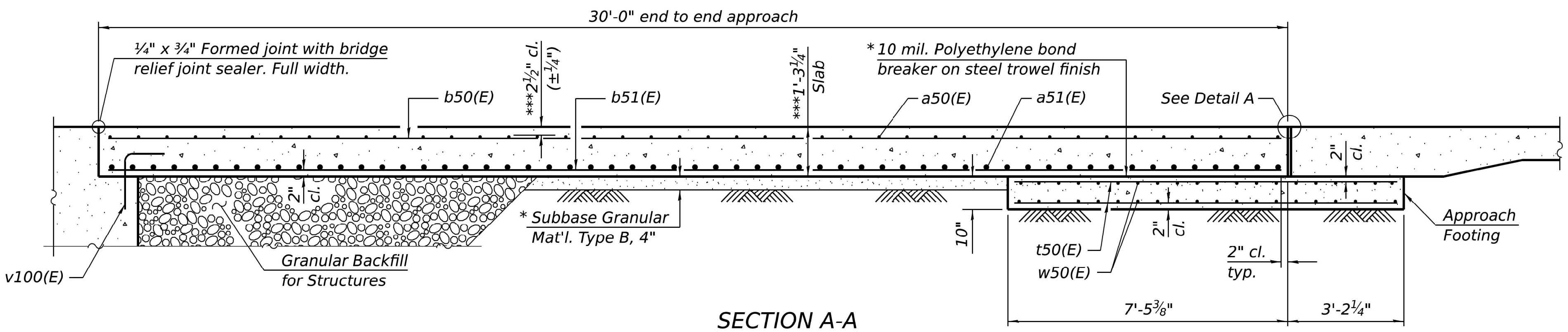
BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 018 - 0072 (NB)

SHEET 25 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	262
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

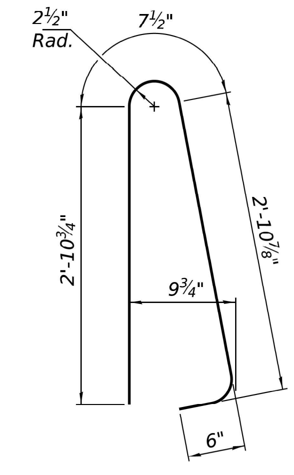


INSIDE ELEVATION OF PARAPET AND CURB

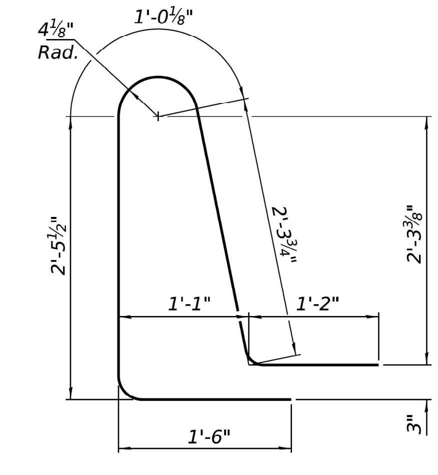


SECTION A-A

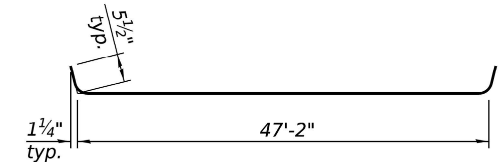
Notes:
The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.
Parapet concrete shall be paid for as Concrete Superstructure.
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
Approach footing concrete shall be paid for as Concrete Structures.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 44.



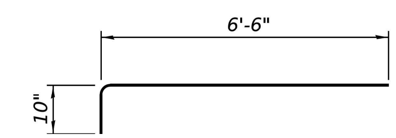
BAR d50(E)



BAR d51(E)



BAR a50(E)

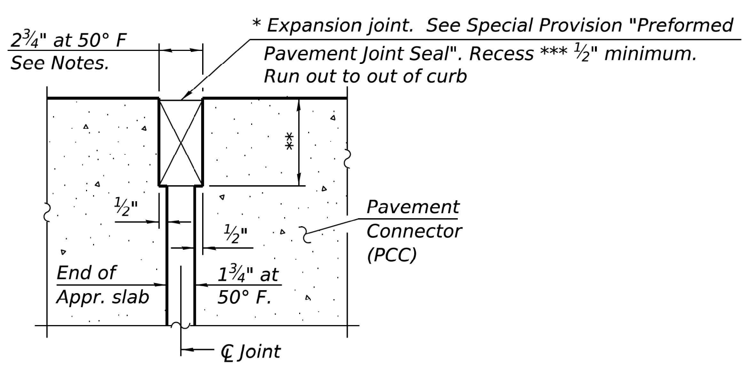


BAR a52(E)

TWO APPROACHES BILL OF MATERIAL

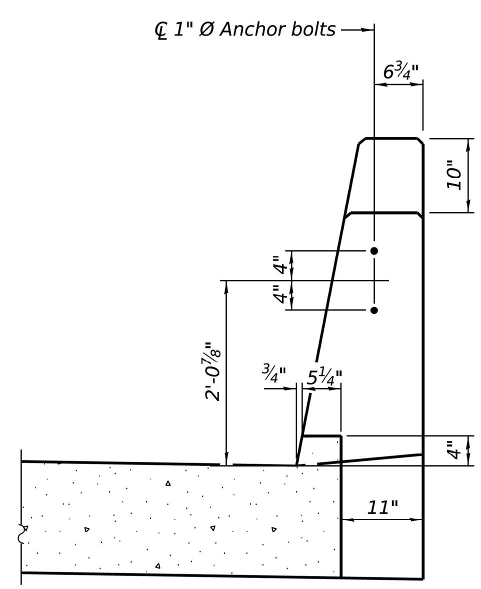
Bar	No.	Size	Length	Shape
a50(E)	84	#5	48'-1"	
a51(E)	112	#8	47'-6"	
a52(E)	84	#5	7'-4"	
b50(E)	136	#5	29'-8"	
b51(E)	216	#9	29'-8"	
b52(E)	8	#5	15'-2"	
b53(E)	8	#5	14'-8"	
b54(E)	2	#4	14'-8"	
b55(E)	2	#4	14'-6"	
d50(E)	92	#5	7'-0"	
d51(E)	92	#5	8'-6"	
e50(E)	48	#4	14'-8"	
t50(E)	180	#4	10'-3"	
w50(E)	80	#5	47'-6"	

Concrete Superstructure	Cu. Yd.	8.5
Concrete Superstructure (Approach Slab)	Cu. Yd.	128.0
Concrete Structures	Cu. Yd.	29.5
Reinforcement Bars, Epoxy Coated	Pound	52,500

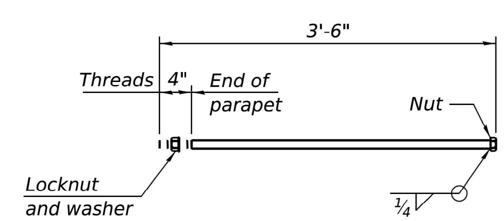


DETAIL A

(at Rt. ∠'s)



VIEW B-B



*1" Ø ANCHOR BOLT

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

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

*** Prior to grinding

(Sheet 2 of 2)

MODEL: Default
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HORNER SHIFRIN
WWW.HORNERSHIFRIN.COM

USER NAME =	DESIGNED - S. HUDSON	REVISED -	
	CHECKED - N. PALMER	REVISED -	
PLOT SCALE =	DRAWN - S. FOSTER	REVISED -	
PLOT DATE =	CHECKED - J. WANG	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 018 - 0072 (NB)

SHEET 26 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	263
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

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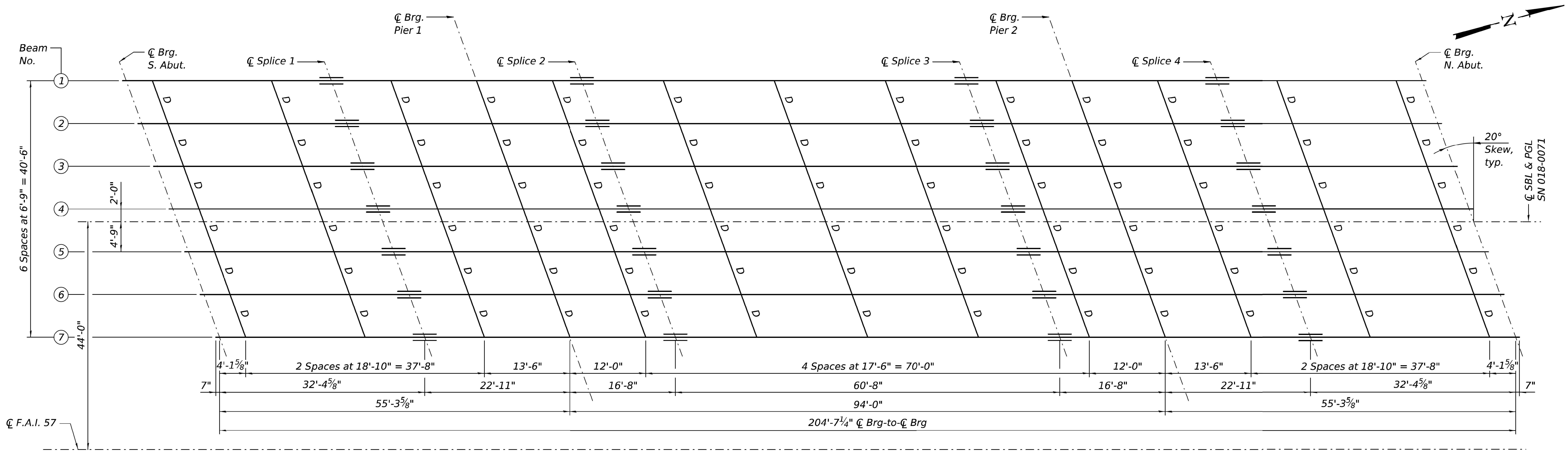
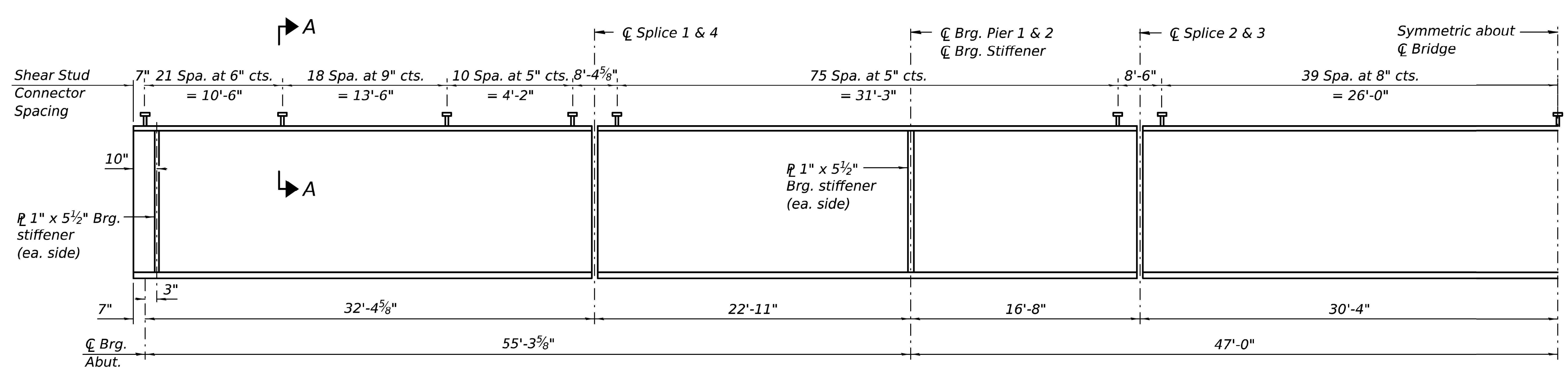
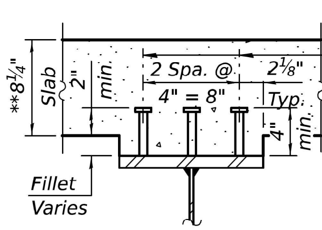


FRAMING PLAN



BEAM ELEVATION

(All beams shall be W36x210, AASHTO M270 Gr. 50, CVN)
(All bearing stiffeners shall be AASHTO M270 Gr. 50)



¾" Ø Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 6,951)

** Prior to Grinding

SECTION A-A

Notes:
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirements, Zone 2.
See Sheet 29 of 44 for additional notes and diaphragm details.

* TOP OF BEAM ELEVATIONS

Location	Beam 1	Beam 2	Beam 3	Beam 4	Beam 5	Beam 6	Beam 7
℄ Brg. S. Abut.	684.68	684.79	684.89	684.97	684.91	684.78	684.63
℄ Splice 1	684.37	684.48	684.58	684.66	684.59	684.47	684.31
℄ Brg. Pier 1	684.16	684.27	684.36	684.44	684.38	684.25	684.09
℄ Splice 2	684.02	684.13	684.23	684.30	684.24	684.11	683.95
℄ Splice 3	683.38	683.49	683.58	683.65	683.58	683.46	683.29
℄ Brg. Pier 2	683.16	683.27	683.36	683.43	683.37	683.24	683.08
℄ Splice 4	682.89	683.00	683.09	683.16	683.09	682.96	682.80
℄ Brg. N. Abut.	682.52	682.62	682.71	682.78	682.71	682.58	682.41

* For fabrication use only.

BLA, Inc.

USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	CHECKED - MJW	REVISED -	
PLOT SCALE = 0:2 '/" / in.	DRAWN - MTW	REVISED -	
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -	

STRUCTURAL STEEL
STRUCTURE NO. 018-0071 (SB)

SHEET 27 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	264

CONTRACT NO. 74597

ILLINOIS FED. AID PROJECT

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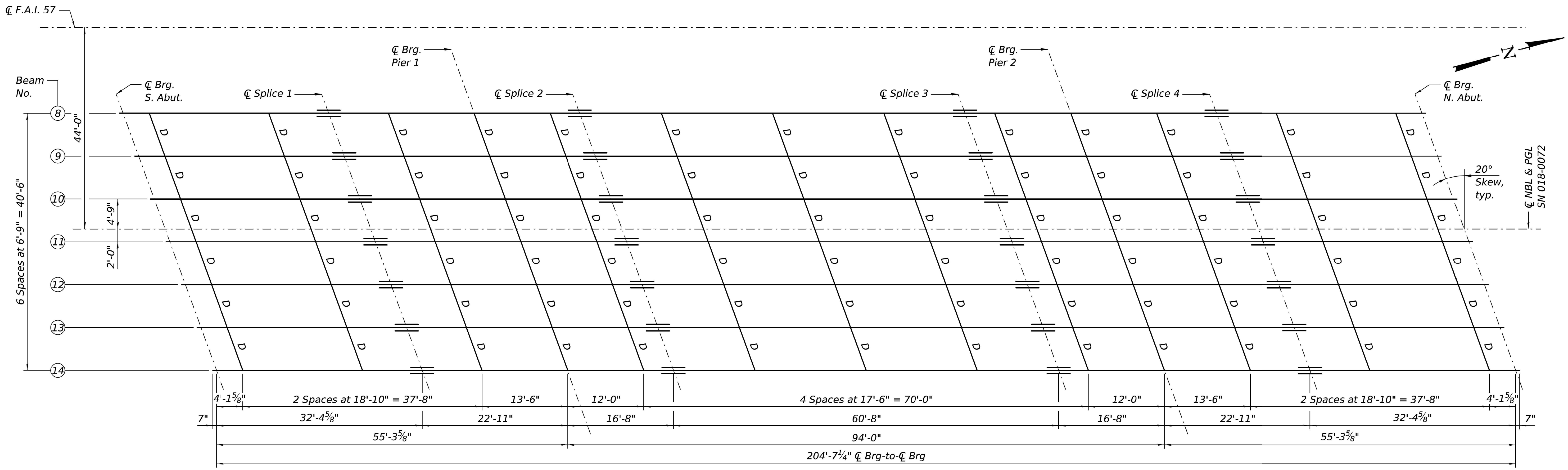
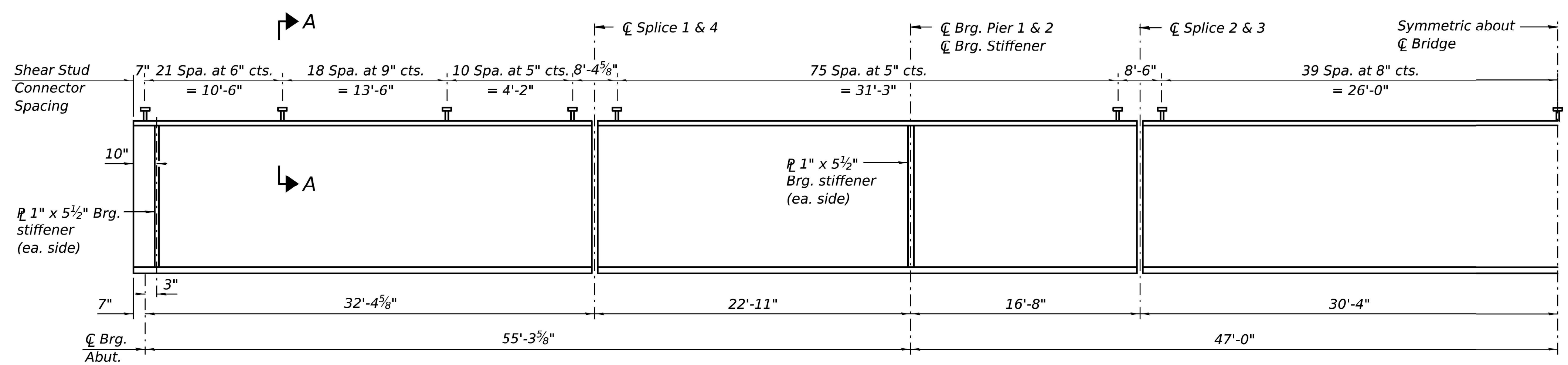
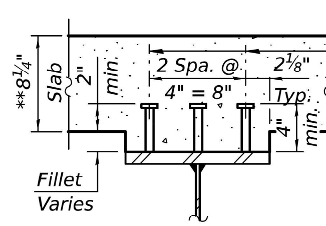


FRAMING PLAN



BEAM ELEVATION

(All beams shall be W36x210, AASHTO M270 Gr. 50, CVN)
(All bearing stiffeners shall be AASHTO M270 Gr. 50)



¾" Ø Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 6,951)

** Prior to Grinding

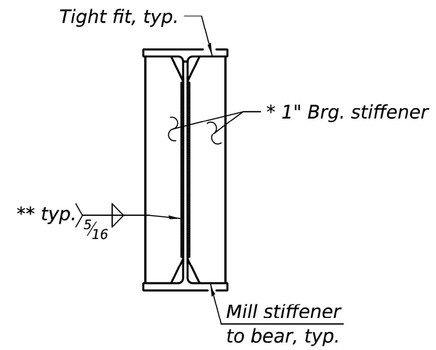
SECTION A-A

Notes:
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirements, Zone 2.
See Sheet 29 of 44 for additional notes and diaphragm details.

* TOP OF BEAM ELEVATIONS

Location	Beam 8	Beam 9	Beam 10	Beam 11	Beam 12	Beam 13	Beam 14
℄ Brg. S. Abut.	684.45	684.56	684.64	684.66	684.53	684.39	684.23
℄ Splice 1	684.13	684.23	684.31	684.33	684.20	684.06	683.90
℄ Brg. Pier 1	683.90	684.01	684.08	684.10	683.97	683.83	683.67
℄ Splice 2	683.76	683.86	683.94	683.95	683.82	683.68	683.52
℄ Splice 3	683.08	683.19	683.26	683.27	683.14	682.99	682.83
℄ Brg. Pier 2	682.86	682.96	683.03	683.05	682.91	682.77	682.60
℄ Splice 4	682.57	682.68	682.75	682.76	682.63	682.48	682.31
℄ Brg. N. Abut.	682.18	682.28	682.35	682.36	682.23	682.08	681.91

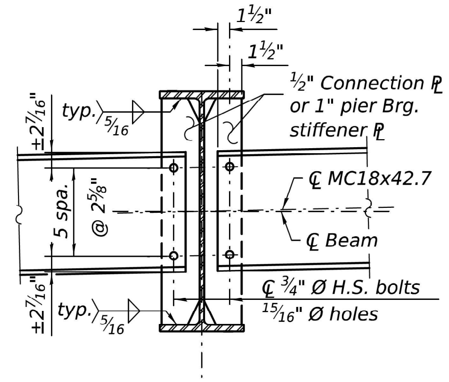
* For fabrication use only.



BEARING STIFFENER

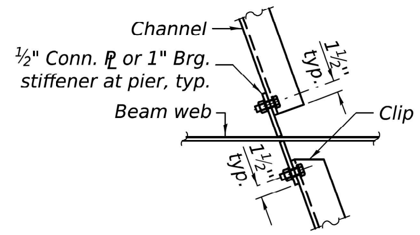
(28 Required for SN 018-0071)
(28 Required for SN 018-0072)

** Stop welds ¼" (±⅛") from edges as shown.

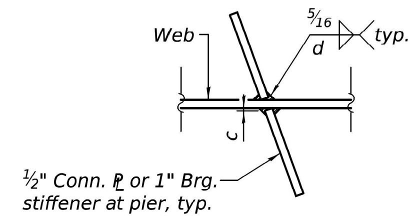


DIAPHRAGM (D)

(78 Required for SN 018-0071)
(78 Required for SN 018-0072)

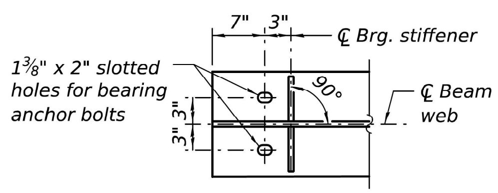


DETAIL A

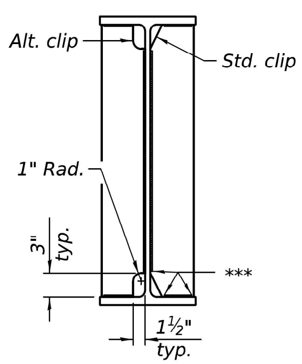


WEB WELD DETAIL

d = 5/16" + c

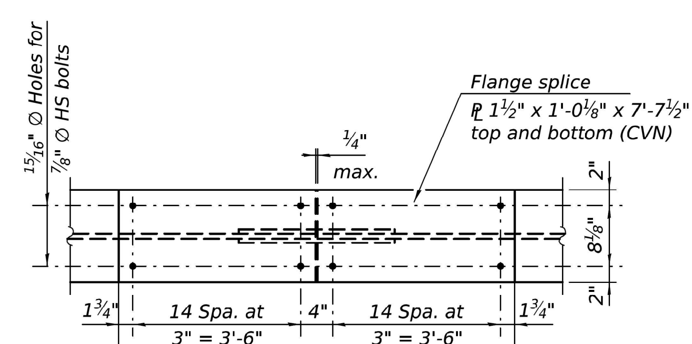


BEAM END DETAIL

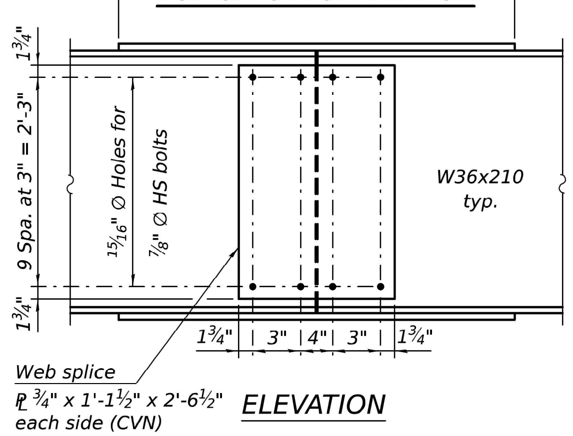


WELD LIMITS AND CLIP DETAILS

*** Stop welds ¼" (±⅛") from edges as shown. Typical.



TOP & BOTTOM FLANGE



ELEVATION

SPLICE DETAIL

(28 Required SN 018-0071)
(28 Required SN 018-0072)
(All field splice plates shall be AASHTO M270 Gr. 50)

Notes:
Two hardened washers required for each set of oversized holes.
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.
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirements, Zone 2.

INTERIOR BEAM REACTION TABLE		Abut.	Pier
LLDF		0.725	0.725
OCF		---	---
R_{DC1}	(k)	15.8	83.7
R_{DC2}	(k)	2.6	14.0
R_{DW}	(k)	5.1	27.1
R_{LL}	(k)	53.3	95.7
R_{IM}	(k)	14.3	17.9
R_{Total}(Strength I)(Impact)	(k)	149.0	361.6
R_{Total}(Strength I)(No Impact)	(k)	123.9	330.3

EXTERIOR BEAM REACTION TABLE		Abut.	Pier
LLDF		0.563	0.563
OCF		1.07	---
R_{DC1}	(k)	15.5	81.8
R_{DC2}	(k)	2.6	14.0
R_{DW}	(k)	5.1	27.1
R_{LL}	(k)	41.3	73.9
R_{IM}	(k)	11.1	13.8
R_{Total}(Strength I)(Impact)	(k)	122.0	313.9
R_{Total}(Strength I)(No Impact)	(k)	102.6	289.7

INTERIOR BEAM MOMENT TABLE		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 2	0.5 Sp. 2
I_s	(in⁴)	13080	13080	13080
I_c (n)	(in⁴)	31709	31709	31709
I_c (3n)	(in⁴)	23235	23235	23235
I_c (cr)	(in⁴)	---	16151	---
S_s	(in³)	713	713	713
S_c (n)	(in³)	1004	1004	1004
S_c (3n)	(in³)	906	906	906
S_c (cr)	(in³)	---	784	---
S_x	(in³)	---	---	---
DC1	(k/')	0.973	0.973	0.973
M_{DC1}	('k)	112	-613	462
DC2	(k/')	0.163	0.163	0.163
M_{DC2}	('k)	19	-103	77
DW	(k/')	0.314	0.314	0.314
M_{DW}	('k)	36	-198	149
LLDF		0.621	0.589	0.566
M_{LL+IM}	('k)	625	-810	841
f_ℓ (Strength I)	(ksi)	0	0	0
$M_u + \frac{1}{3} f_\ell S_x$	('k)	1311	-2609	2368
$\Phi_f M_n$	('k)	5140	3770	5093
f_s DC1	(ksi)	1.88	-10.32	7.77
f_s DC2	(ksi)	0.25	-1.57	1.02
f_s DW	(ksi)	0.48	-3.03	1.97
f_s (LL+IM)	(ksi)	7.47	-12.39	10.05
f_ℓ (Service II)	(ksi)	0	0	0
$f_s + f_\ell/2$ (Service II)	(ksi)	12.32	-31.04	23.82
Service II Resistance	(ksi)	47.50	47.50	47.50
$f_s + f_\ell/3$ (Strength I)	(ksi)	16.46	-41.10	31.53
$\Phi_f F_n$	(ksi)	---	---	---
V_f	(k)	29.40	56.50	37.30

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_ℓ: 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.

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

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).

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

$\Phi_f F_n$: 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).
$1.25 (R_{DC1} + R_{DC2}) + 1.5 R_{DW} + 1.75 (R_{LL} + R_{IM})$

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

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -
		CHECKED - MJW	REVISED -
	PLOT SCALE = 0:2 ' / in.	DRAWN - MTW	REVISED -
	PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS
STRUCTURE NO. 018-0071 (SB) & 018-0072 (NB)

SHEET 29 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	266
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

MODEL: Br_Sheet_Consultant
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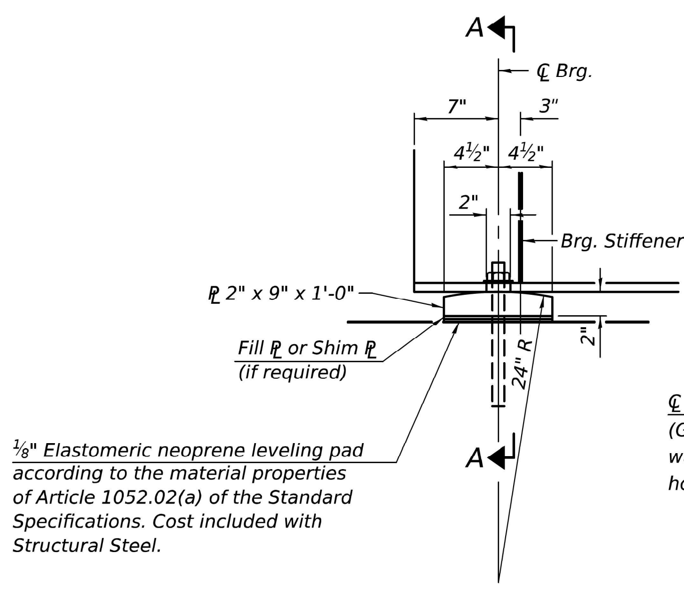
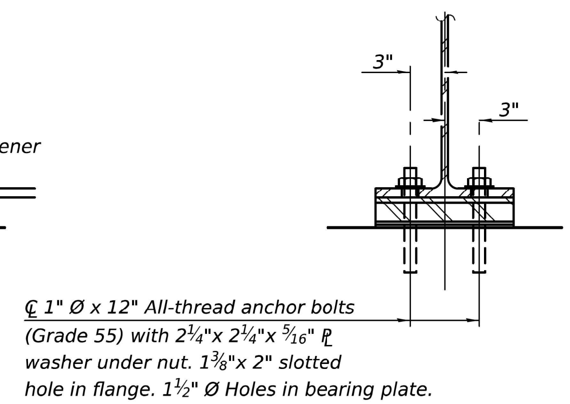
6/4/2025 2:20:53 PM

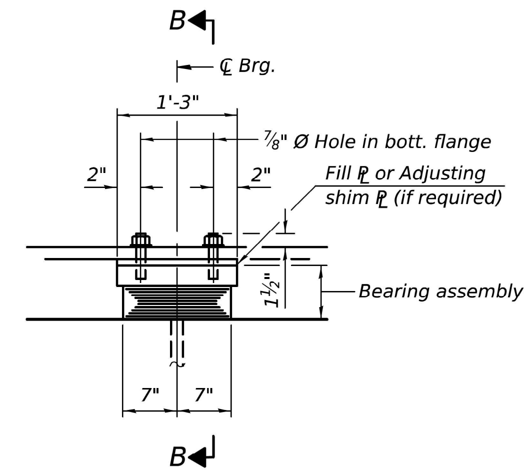


ELEVATION AT ABUTMENT

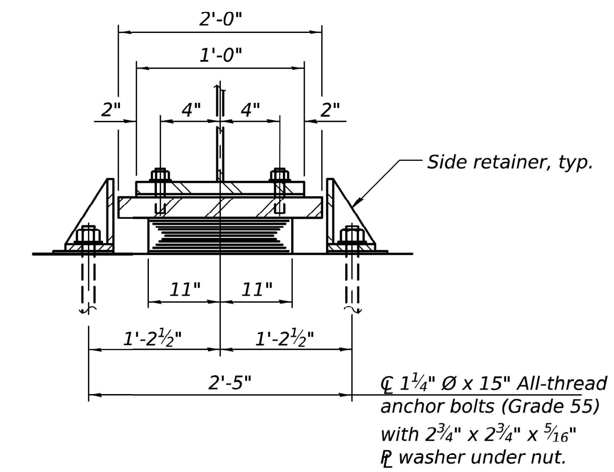


SECTION A-A

FIXED BEARING AT ABUTMENTS
(14 Required for SN 018-0071)
(14 Required for SN 018-0072)

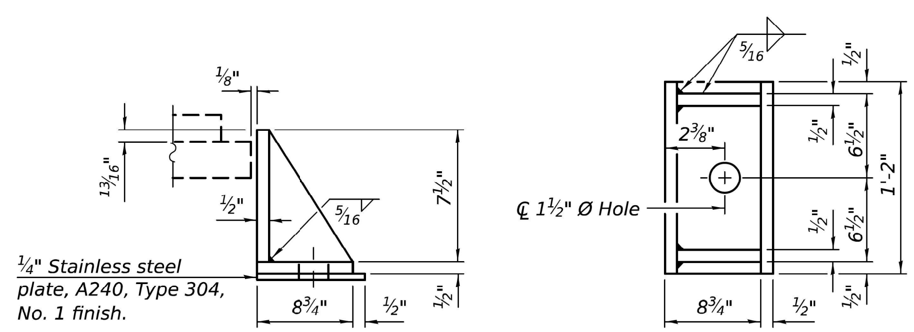


ELEVATION AT PIER



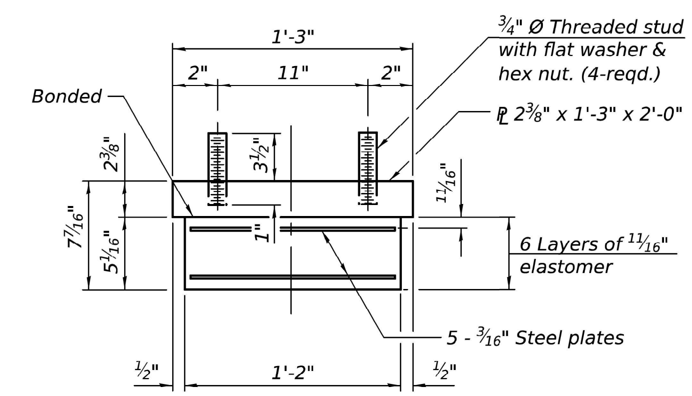
SECTION B-B

TYPE I ELASTOMERIC EXP. BRG. AT PIERS
(14 Required for SN 018-0071)
(14 Required for SN 018-0072)



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BEARING ASSEMBLY

Note:
Fill plates or adjusting Shim plates shall not be placed under bearing assembly.

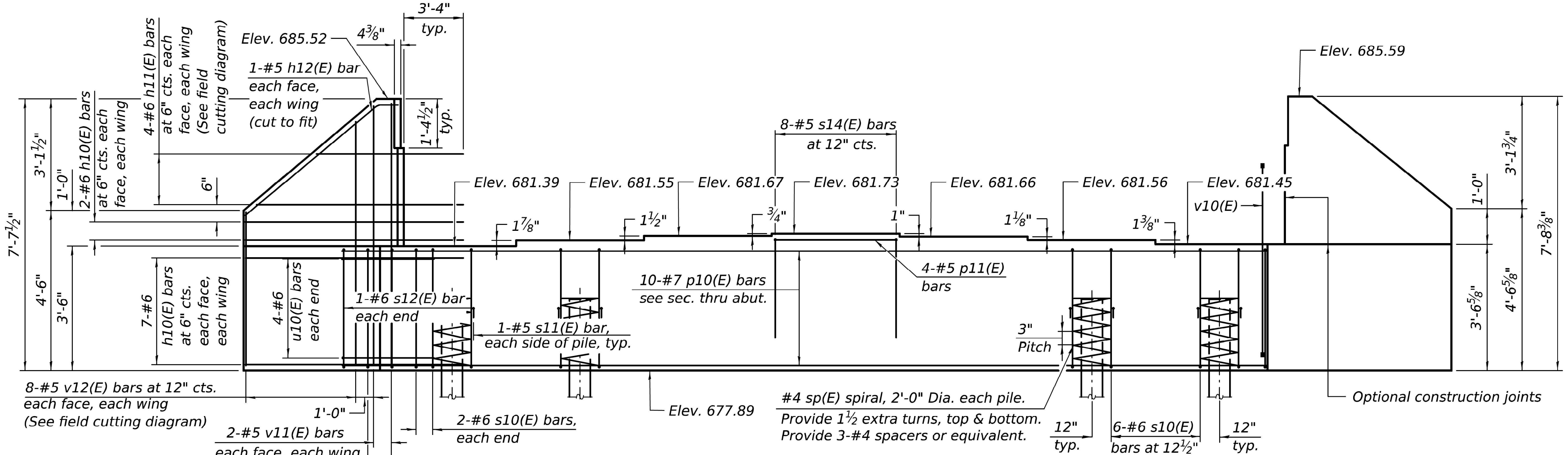
Notes:
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
Anchor bolts and side retainers at pier supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M270 Grade 50.
Two ⅛" adjusting shims shall be provided for each bearing in additional to all other plates or shims and placed as shown on bearing details.
All (embedded and separate) bearing plates, side retainers, anchor bolts, nuts, washers and pintles shall be galvanized according to AASHTO M111 or M232 as applicable.
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.

FILL PLATE THICKNESS
FOR SN 018-0072

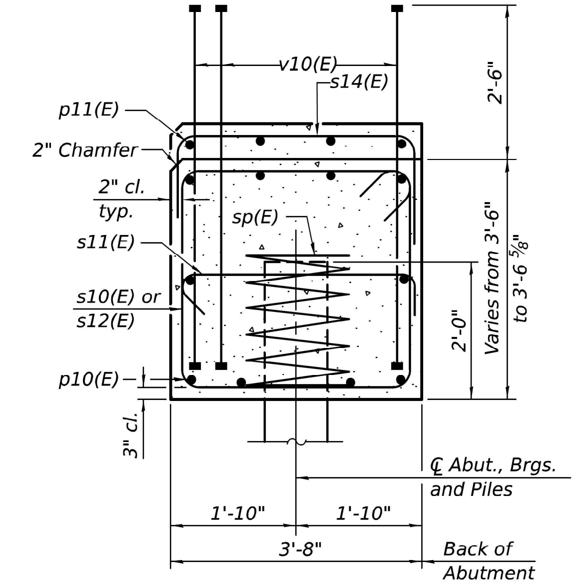
Beam #	S. Abut.	Pier 1	Pier 2	N. Abut.
11	¼"	¼"	¼"	⅛"

BILL OF MATERIAL
(BOTH STRUCTURES)

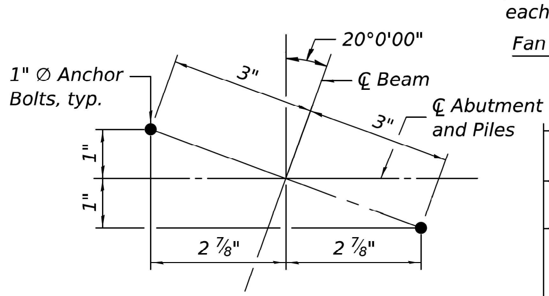
Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	28
Anchor Bolts, 1"	Each	56
Anchor Bolts, 1¼"	Each	56



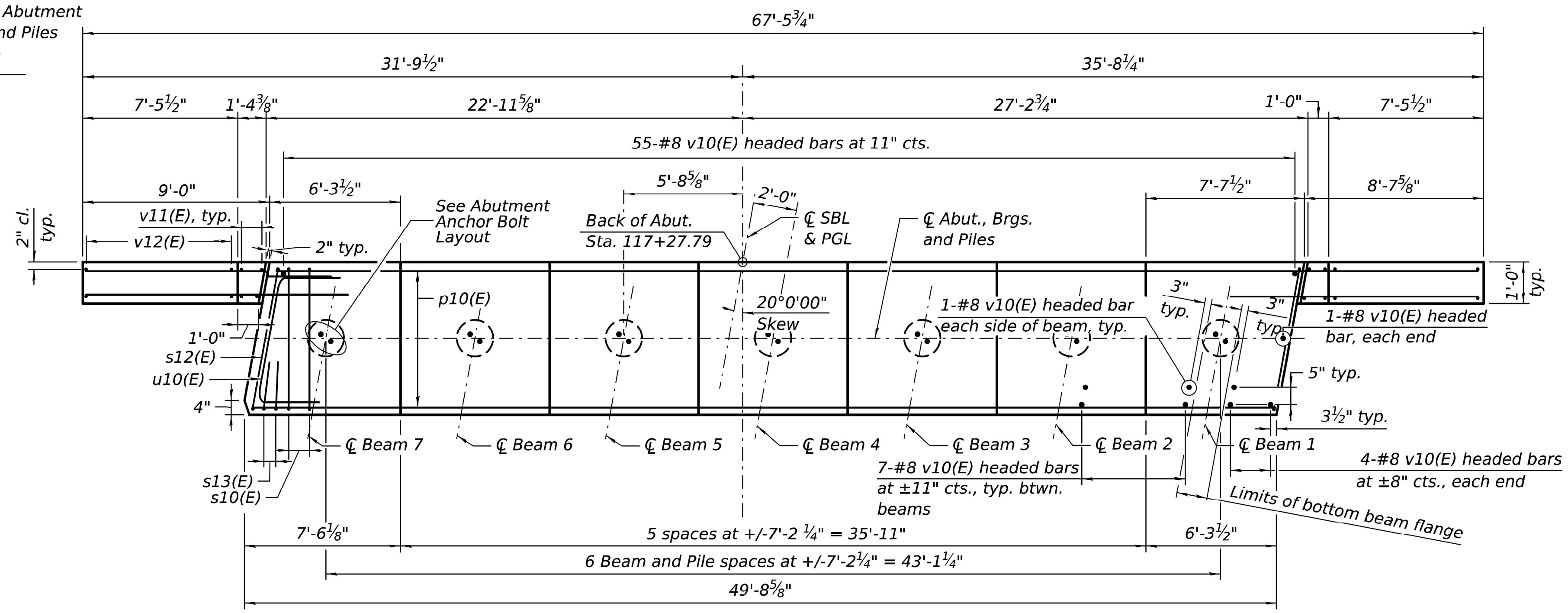
ELEVATION
(Looking South)



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



ANCHOR BOLT DETAIL



PLAN

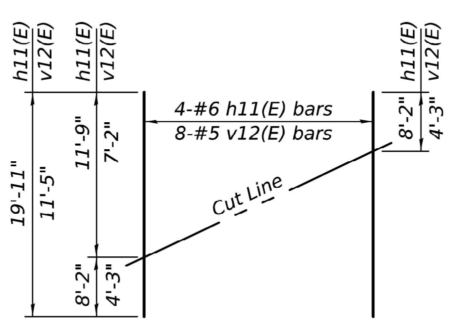
PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 313 kips
Est. Length: 37 feet
No. Production Piles: 6
No. Test Piles: 1
No. Pile Shoes: 7

BILL OF MATERIAL

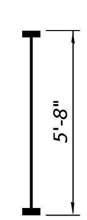
	Bar	No.	Size	Length	Shape
	h10(E)	36	#6	12'-4"	
	h11(E)	8	#6	19'-11"	
	h12(E)	4	#5	8'-11"	
	p10(E)	10	#7	49'-6"	
	p11(E)	4	#5	6'-10"	
	s10(E)	40	#6	14'-2"	
	s11(E)	14	#5	4'-4"	
	s12(E)	2	#6	14'-8"	
	s13(E)	4	#6	8'-7"	
	s14(E)	8	#5	8'-10"	
*	sp(E)	7	#4	2'-0"	
	u10(E)	8	#6	12'-1"	
	v10(E)	121	#8	5'-8"	
	v11(E)	8	#5	7'-3"	
	v12(E)	16	#5	11'-5"	
	Structure Excavation			Cu. Yd.	123
	Concrete Structures			Cu. Yd.	28.8
	Reinforcement Bars, Epoxy Coated			Pound	5,620
	Furnishing Metal Shell Piles 14" x 0.312"			Foot	222
	Driving Piles			Foot	222
	Test Pile Metal Shells			Each	1
	Pile Shoes			Each	7

* Length is height of spiral.

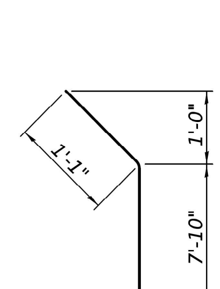


FIELD CUTTING DIAGRAM

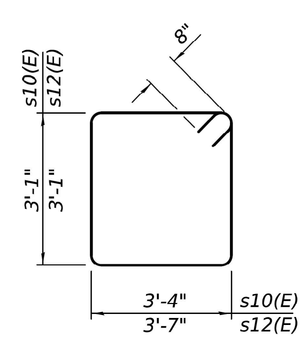
Order h11(E) and v12(E) full length. Cut as shown and use remainder of bars in opposite wing.



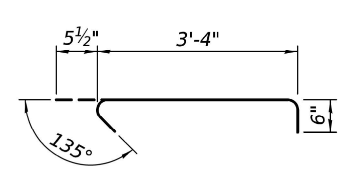
BAR v10(E)
(Headed. 242-#8 Bar terminators)



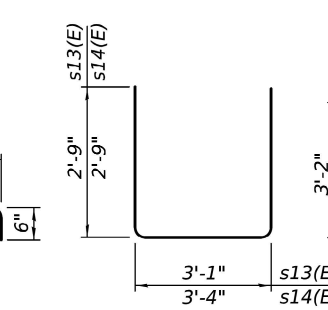
BAR h12(E)



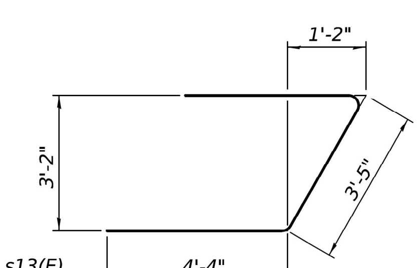
BAR s10(E) & s12(E)



BAR s11(E)



BAR s13(E) & s14(E)



BAR u10(E)

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 38 of 44.
Bar terminators, paid for separately.
See Total Bill of Material.

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH ABUTMENT STRUCTURE NO. 018-0071 (SB)	F.A.I. RTE. 57 / SECTION 18-20HB / COUNTY CUMBERLAND / TOTAL SHEETS 414 / SHEET NO. 268
	PLOT SCALE = 0:2 ':" / in.	CHECKED - MJW	REVISED -			CONTRACT NO. 74597
	PLOT DATE = 6/4/2025	DRAWN - MTW	REVISED -		SHEET 31 OF 44 SHEETS	ILLINOIS FED. AID PROJECT
		CHECKED - MJW	REVISED -			

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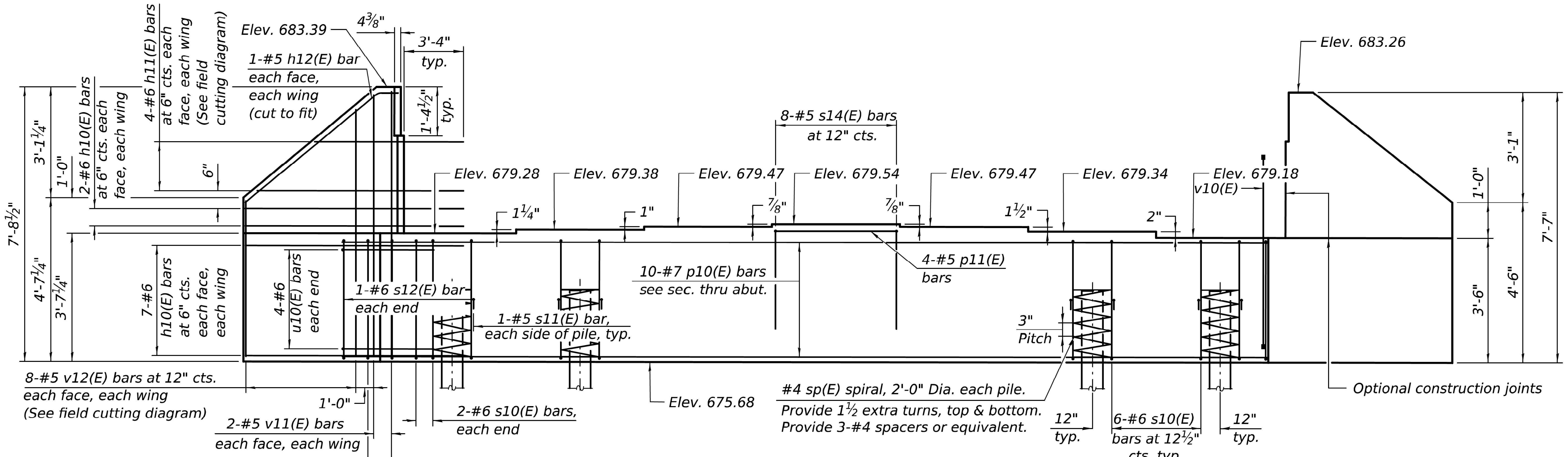
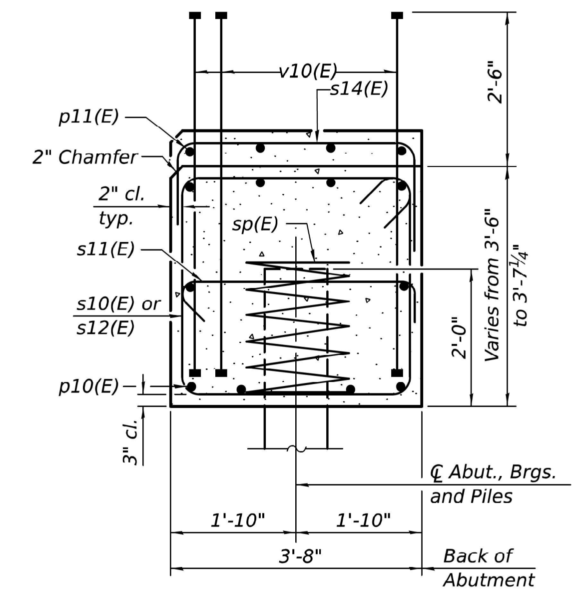
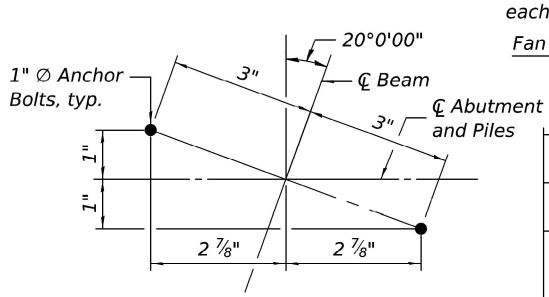


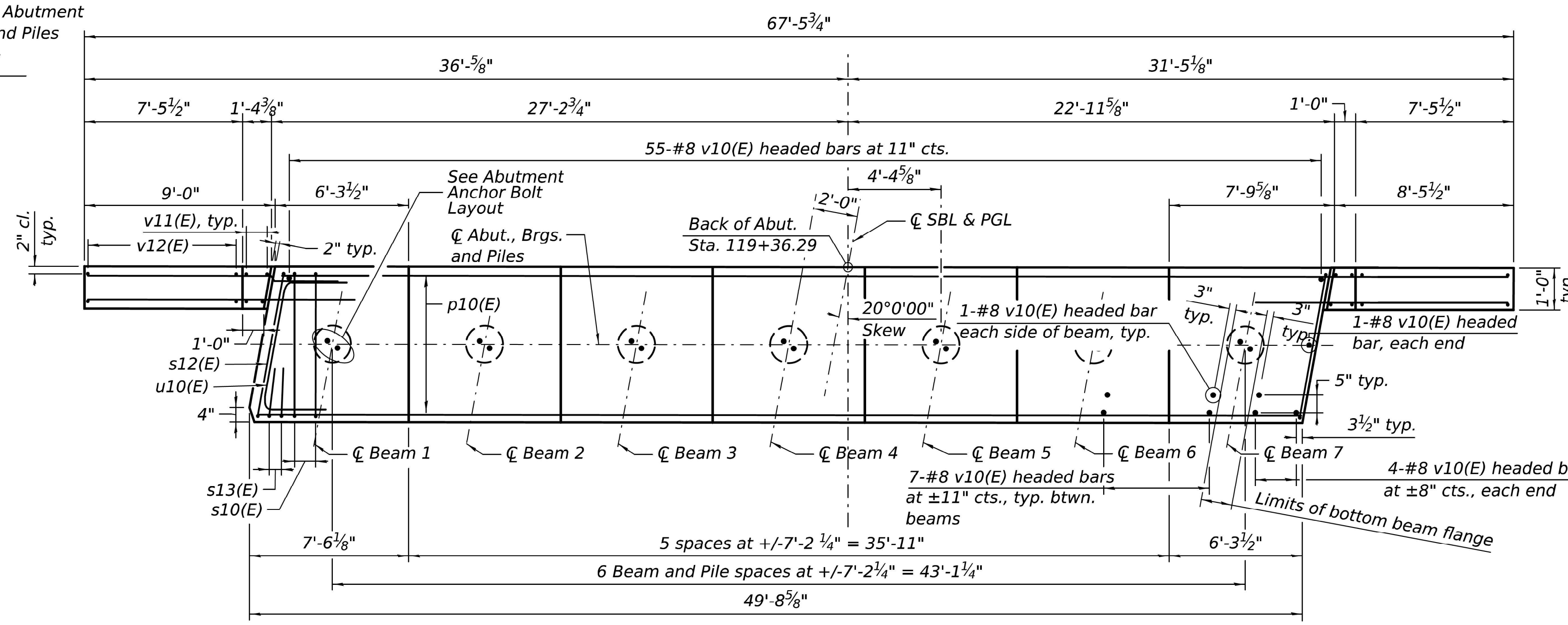
ELEVATION
(Looking North)



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



ANCHOR BOLT DETAIL



PLAN

N

PILE DATA

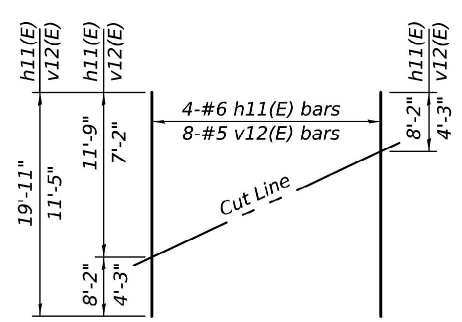
Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 387 kips
Factored Resistance Available: 213 kips
Est. Length: 48 feet
No. Production Piles: 6
No. Test Piles: 1
No. Pile Shoes: 7

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10(E)	36	#6	12'-4"	
h11(E)	8	#6	19'-11"	
h12(E)	4	#5	8'-11"	
p10(E)	10	#7	49'-6"	
p11(E)	4	#5	6'-10"	
s10(E)	40	#6	14'-2"	
s11(E)	14	#5	4'-4"	
s12(E)	2	#6	14'-8"	
s13(E)	4	#6	8'-7"	
s14(E)	8	#5	8'-10"	
* sp(E)	7	#4	2'-0"	
u10(E)	8	#6	12'-1"	
v10(E)	121	#8	5'-8"	
v11(E)	8	#5	7'-3"	
v12(E)	16	#5	11'-5"	

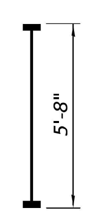
Structure Excavation	Cu. Yd.	119
Concrete Structures	Cu. Yd.	29.4
Reinforcement Bars, Epoxy Coated	Pound	5,620
Furnishing Metal Shell Piles 14" x 0.312"	Foot	288
Driving Piles	Foot	288
Test Pile Metal Shells	Each	1
Pile Shoes	Each	7

* Length is height of spiral.

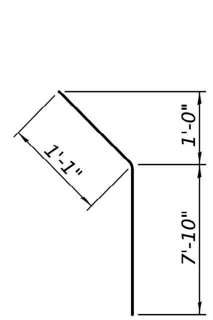


FIELD CUTTING DIAGRAM

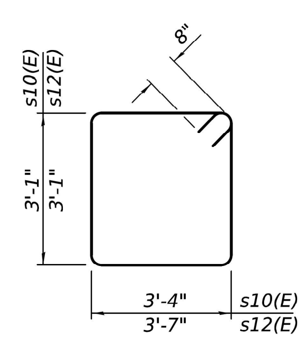
Order h11(E) and v12(E) full length. Cut as shown and use remainder of bars in opposite wing.



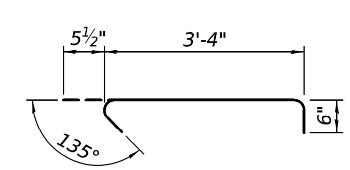
BAR v10(E)
(Headed. 242-#8 Bar terminators)



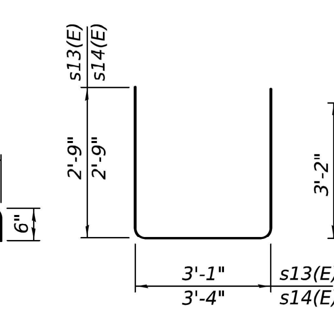
BAR h12(E)



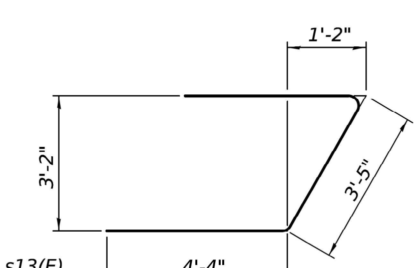
BAR s10(E) & s12(E)



BAR s11(E)

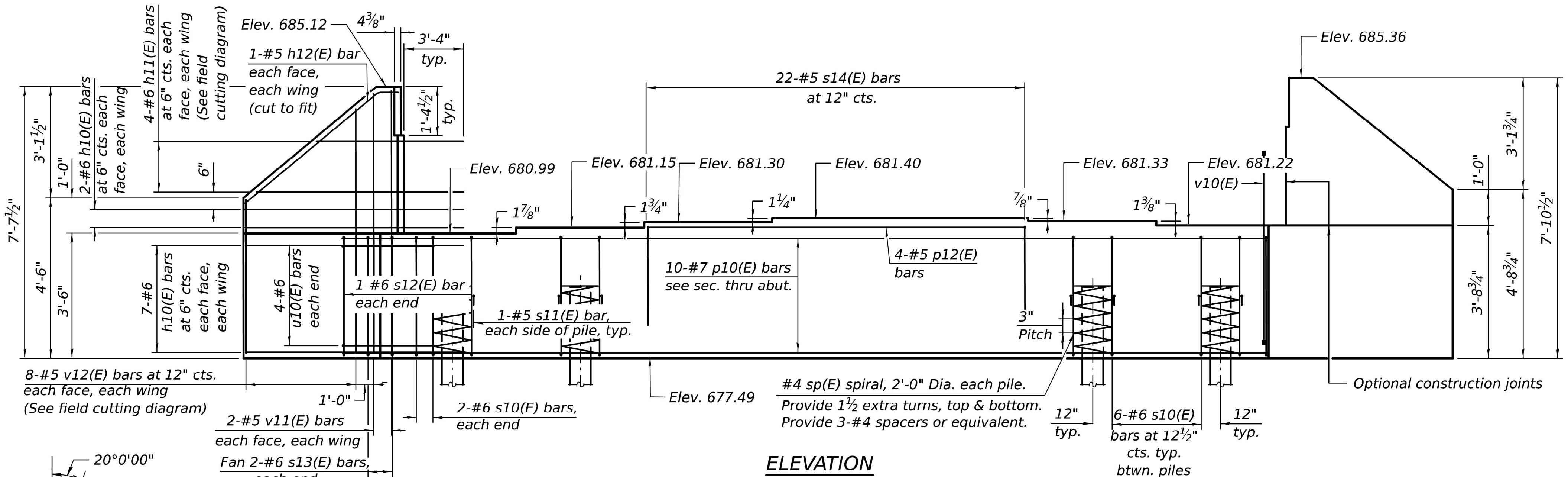


BAR s13(E) & s14(E)

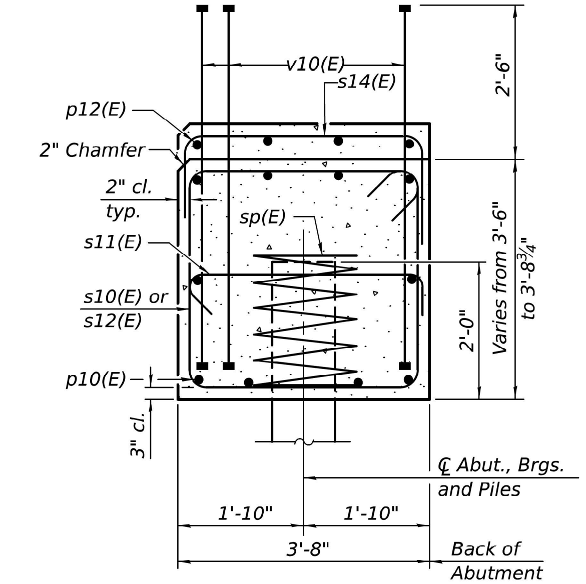


BAR u10(E)

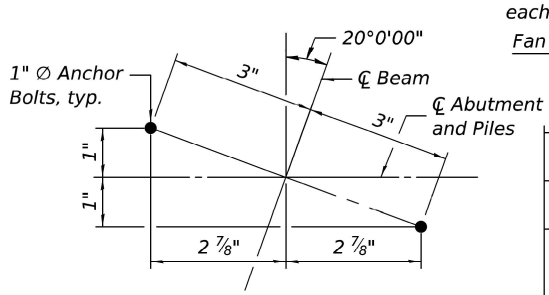
Notes:
Pour steps monolithically with cap.
For details of piles see sheet 38 of 44.
Bar terminators, paid for separately.
See Total Bill of Material.



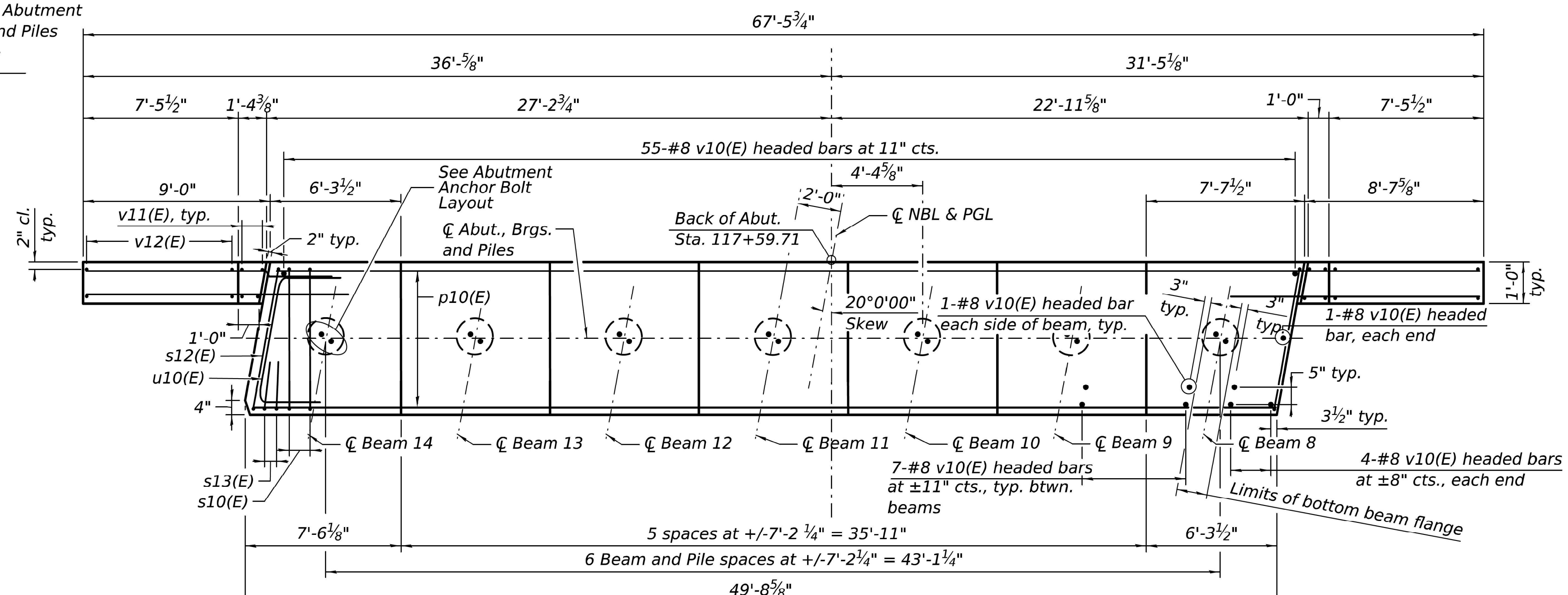
ELEVATION
(Looking South)



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



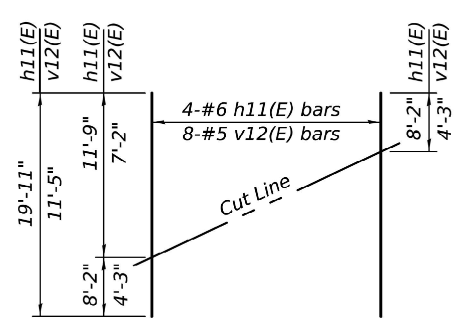
ANCHOR BOLT DETAIL



PLAN

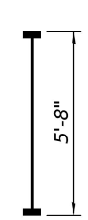
PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 570 kips
Factored Resistance Available: 313 kips
Est. Length: 37 feet
No. Production Piles: 6
No. Test Piles: 1
No. Pile Shoes: 7

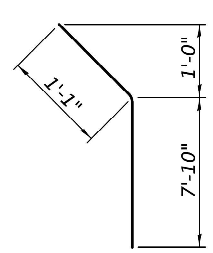


FIELD CUTTING DIAGRAM

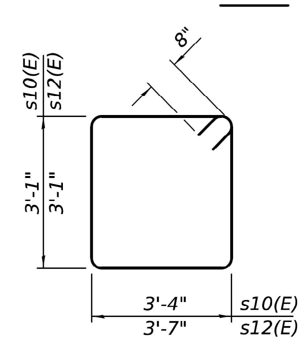
Order h11(E) and v12(E) full length. Cut as shown and use remainder of bars in opposite wing.



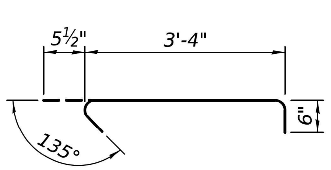
BAR v10(E)
(Headed. 242-#8 Bar terminators)



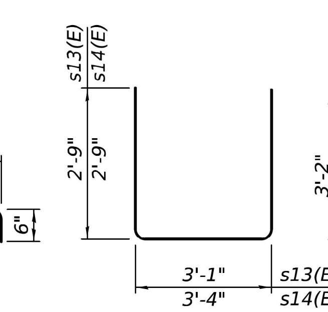
BAR h12(E)



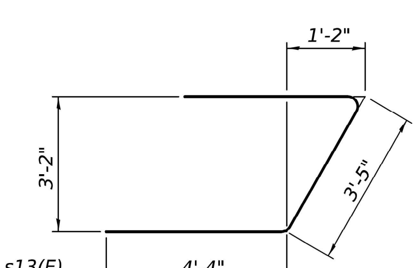
BAR s10(E) & s12(E)



BAR s11(E)



BAR s13(E) & s14(E)



BAR u10(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h10(E)	36	#6	12'-4"	
h11(E)	8	#6	19'-11"	
h12(E)	4	#5	8'-11"	
p10(E)	10	#7	49'-6"	
p12(E)	4	#5	21'-2"	
s10(E)	40	#6	14'-2"	
s11(E)	14	#5	4'-4"	
s12(E)	2	#6	14'-8"	
s13(E)	4	#6	8'-7"	
s14(E)	22	#5	8'-10"	
* sp(E)	7	#4	2'-0"	
u10(E)	8	#6	12'-1"	
v10(E)	121	#8	5'-8"	
v11(E)	8	#5	7'-3"	
v12(E)	16	#5	11'-5"	
Structure Excavation		Cu. Yd.	125	
Concrete Structures		Cu. Yd.	29.5	
Reinforcement Bars, Epoxy Coated		Pound	5,810	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	222	
Driving Piles		Foot	222	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	7	

* Length is height of spiral.

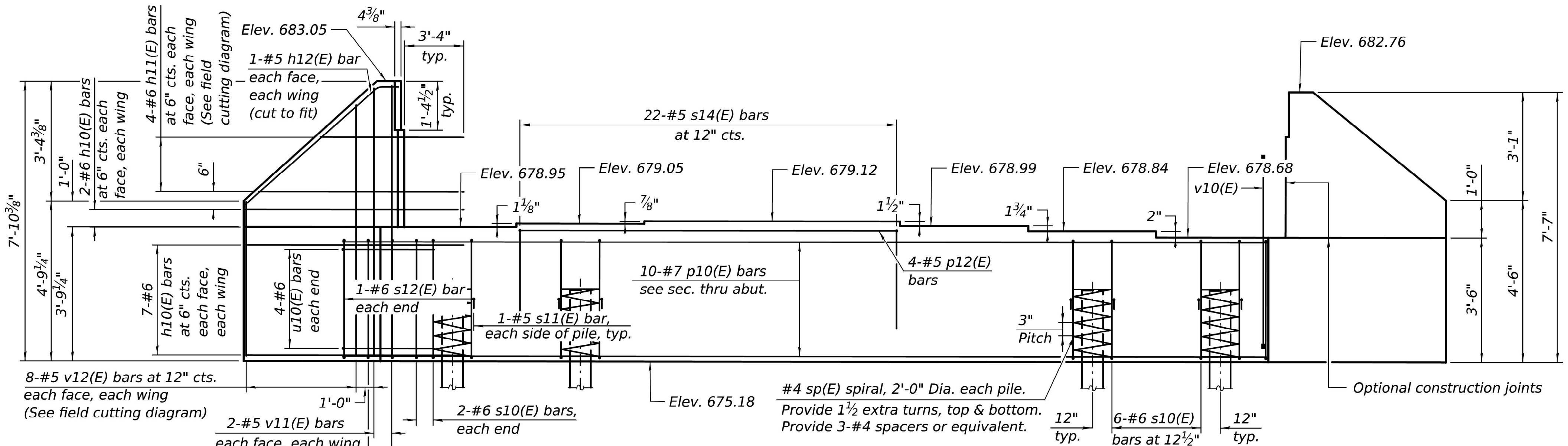
Notes:
Pour steps monolithically with cap.
For details of piles see sheet 38 of 44.
Bar terminators, paid for separately.
See Total Bill of Material.

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57_StructureReplacement\CADD SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-033-S_Abutment_NB.dgn

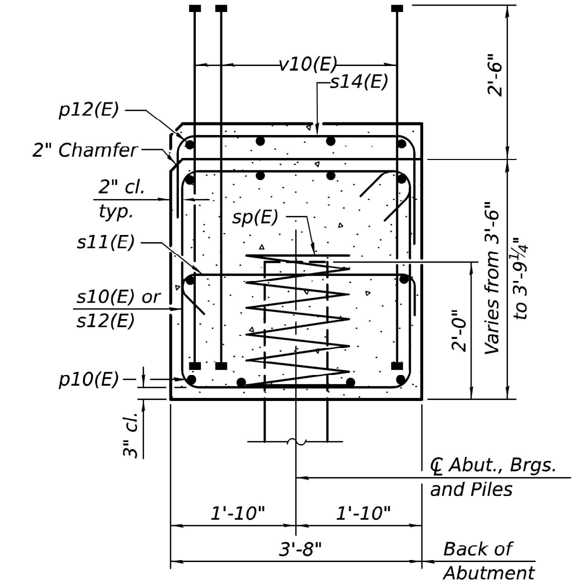
BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOUTH ABUTMENT STRUCTURE NO. 018-0072 (NB)
		CHECKED - MJW	REVISED -		
	PLOT SCALE = 0:2 ':" / in.	DRAWN - MTW	REVISED -		
	PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -		SHEET 33 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	270
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

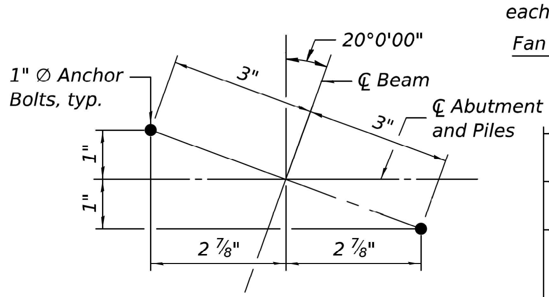
6/4/2025 2:21:01 PM



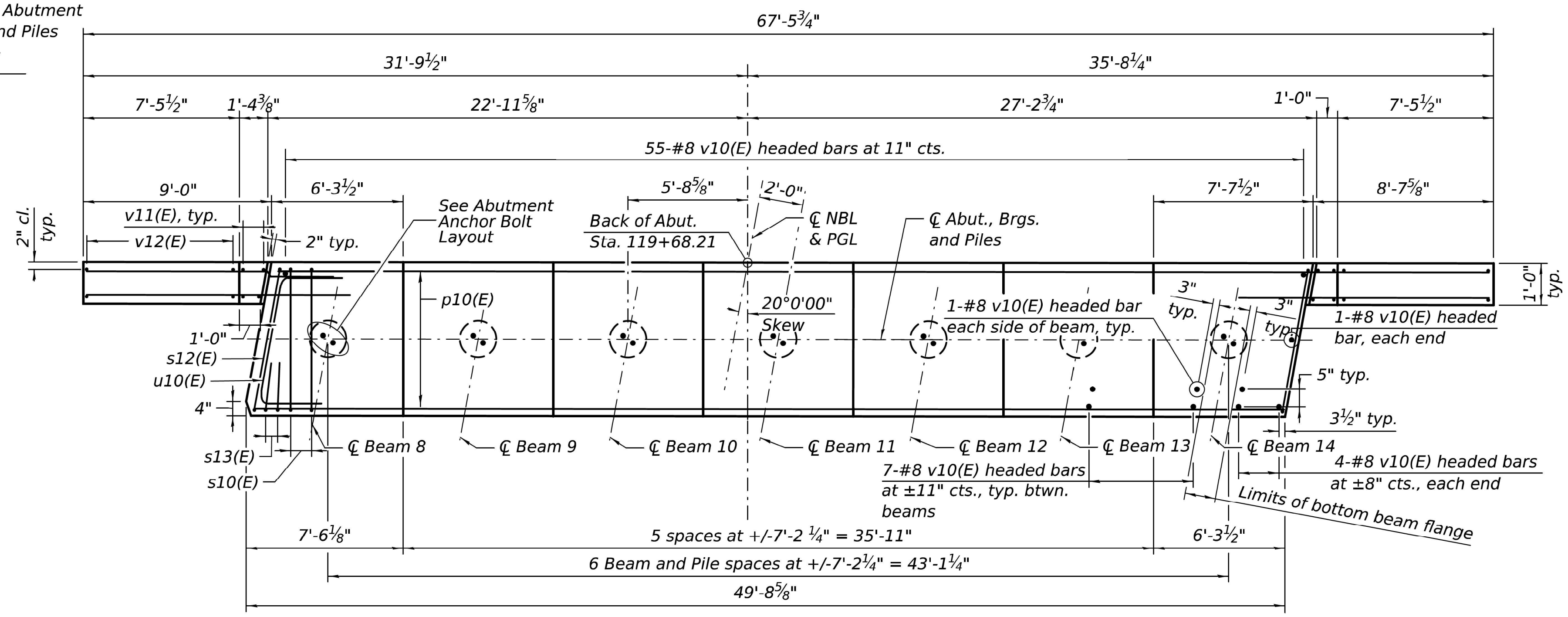
ELEVATION
(Looking North)



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



ANCHOR BOLT DETAIL

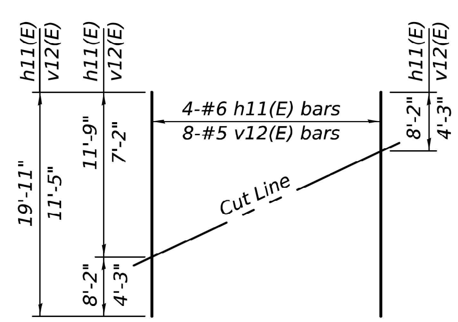


PLAN

N

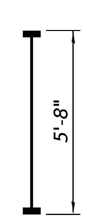
PILE DATA

Type: MS 14" x 0.312" with Pile Shoes
Nominal Required Bearing: 392 kips
Factored Resistance Available: 215 kips
Est. Length: 47 feet
No. Production Piles: 6
No. Test Piles: 1
No. Pile Shoes: 7

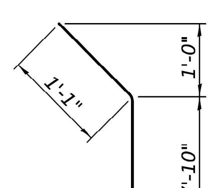


FIELD CUTTING DIAGRAM

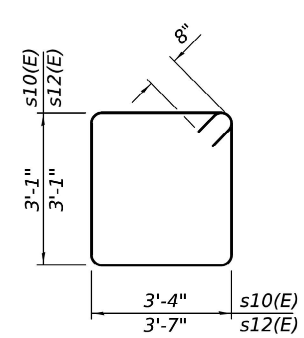
Order h11(E) and v12(E) full length. Cut as shown and use remainder of bars in opposite wing.



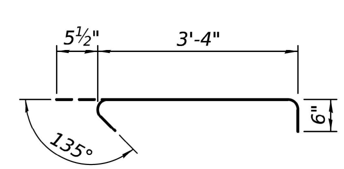
BAR v10(E)
(Headed. 242-#8 Bar terminators)



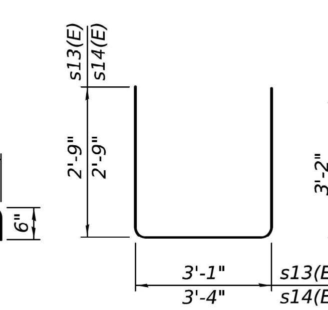
BAR h12(E)



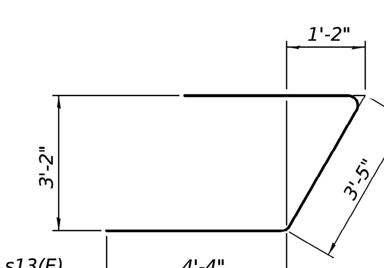
BAR s10(E) & s12(E)



BAR s11(E)



BAR s13(E) & s14(E)



BAR u10(E)

BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	h10(E)	36	#6	12'-4"	
	h11(E)	8	#6	19'-11"	
	h12(E)	4	#5	8'-11"	
	p10(E)	10	#7	49'-6"	
	p12(E)	4	#5	21'-2"	
	s10(E)	40	#6	14'-2"	
	s11(E)	14	#5	4'-4"	
	s12(E)	2	#6	14'-8"	
	s13(E)	4	#6	8'-7"	
	s14(E)	22	#5	8'-10"	
*	sp(E)	7	#4	2'-0"	
	u10(E)	8	#6	12'-1"	
	v10(E)	121	#8	5'-8"	
	v11(E)	8	#5	7'-3"	
	v12(E)	16	#5	11'-5"	

Structure Excavation	Cu. Yd.	123
Concrete Structures	Cu. Yd.	29.5
Reinforcement Bars, Epoxy Coated	Pound	5,810
Furnishing Metal Shell Piles 14" x 0.312"	Foot	282
Driving Piles	Foot	282
Test Pile Metal Shells	Each	1
Pile Shoes	Each	7

* Length is height of spiral.

Notes:
Pour steps monolithically with cap.
For details of piles see sheet 38 of 44.
Bar terminators, paid for separately.
See Total Bill of Material.

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT 197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-034-N_Abutment_NB.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - MTW	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	NORTH ABUTMENT STRUCTURE NO. 018-0072 (NB)
		CHECKED - MJW	REVISED -		
	PLOT SCALE = 0:2 ' / in.	DRAWN - MTW	REVISED -		
	PLOT DATE = 6/4/2025	CHECKED - MJW	REVISED -		SHEET 34 OF 44 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	271
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

6/4/2025 2:21:03 PM

Notes:
- Space reinforcement in cap to miss anchor bolts.
- Pour steps monolithically with cap.
- For details of piles, see sheet 38 of 44.
- See sheet 37 of 44 for Section C-C, bar details & Bill of Materials.

PILE DATA - PIER 1

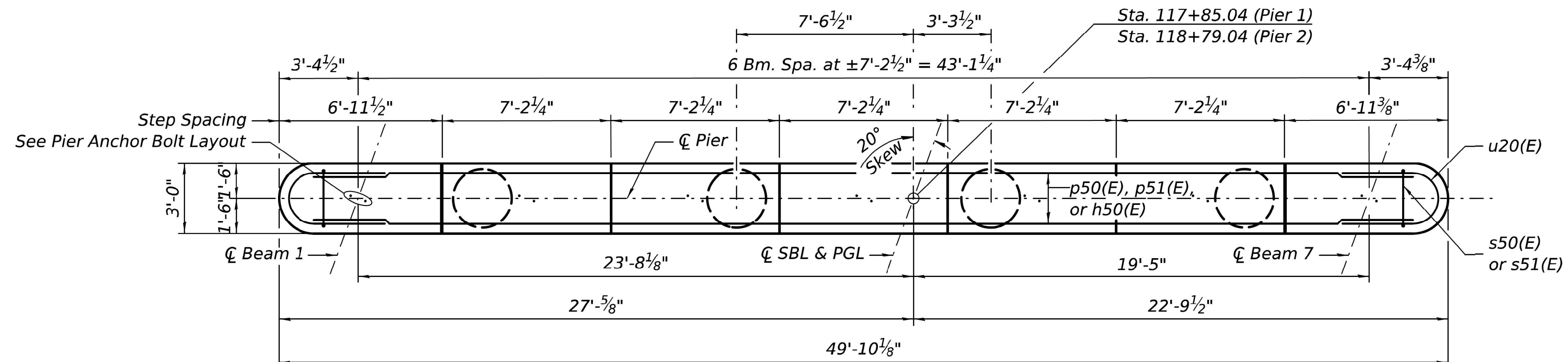
Type: Metal Shell 14" x 0.312" with pile shoes
Nominal Required Bearing: 384 kips
Factored Resistance Available: 211 kips
Est. Length: 51 feet
No. Production Piles: 13
No. Test Piles: 1

PILE DATA - PIER 2

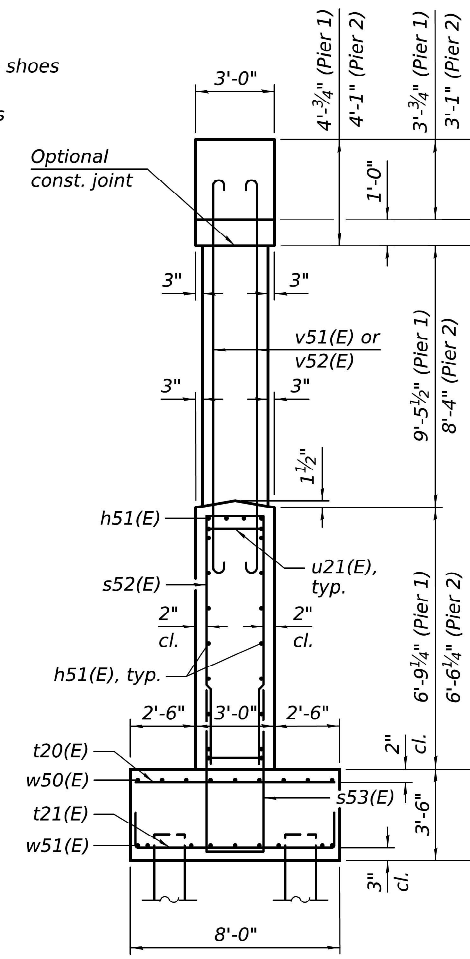
Type: Metal Shell 14" x 0.312" with pile shoes
Nominal Required Bearing: 385 kips
Factored Resistance Available: 212 kips
Est. Length: 51 feet
No. Production Piles: 13
No. Test Piles: 1

BEARING SEAT ELEVATIONS

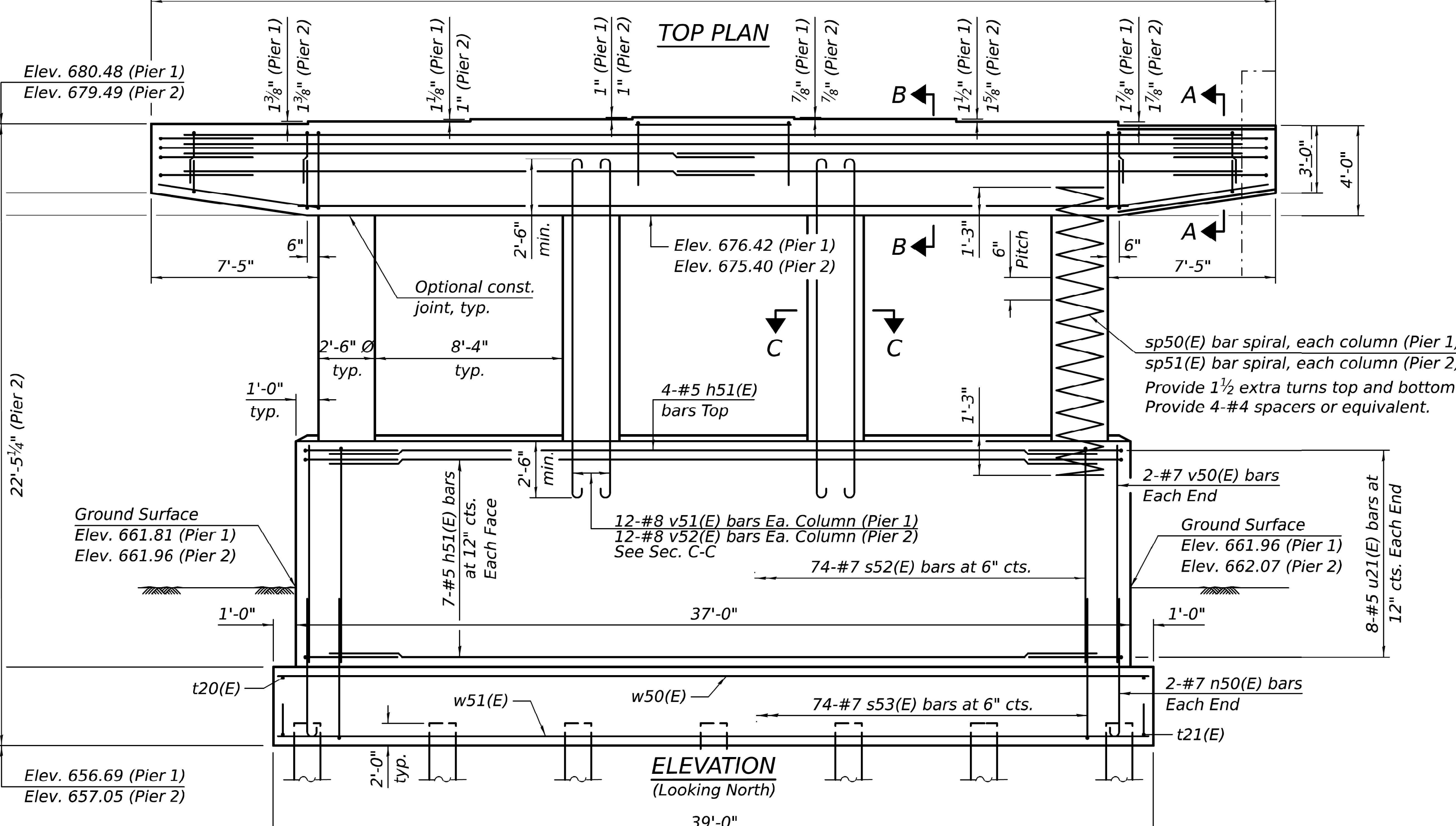
Beam	Pier 1 Elev.	Pier 2 Elev.
1	680.48	679.49
2	680.59	679.59
3	680.69	679.68
4	680.76	679.76
5	680.70	679.69
6	680.57	679.56
7	680.41	679.40



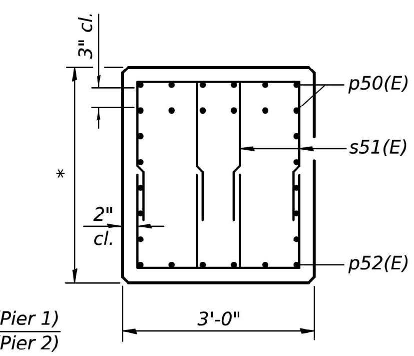
TOP PLAN



END VIEW

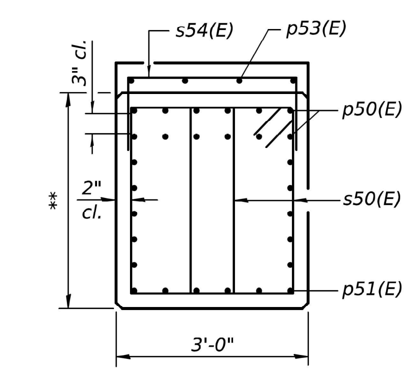


ELEVATION
(Looking North)



SEC. A-A

* Varies 3'-0" to 4'-¾" (Pier 1)
Varies 3'-0" to 4'-1" (Pier 2)

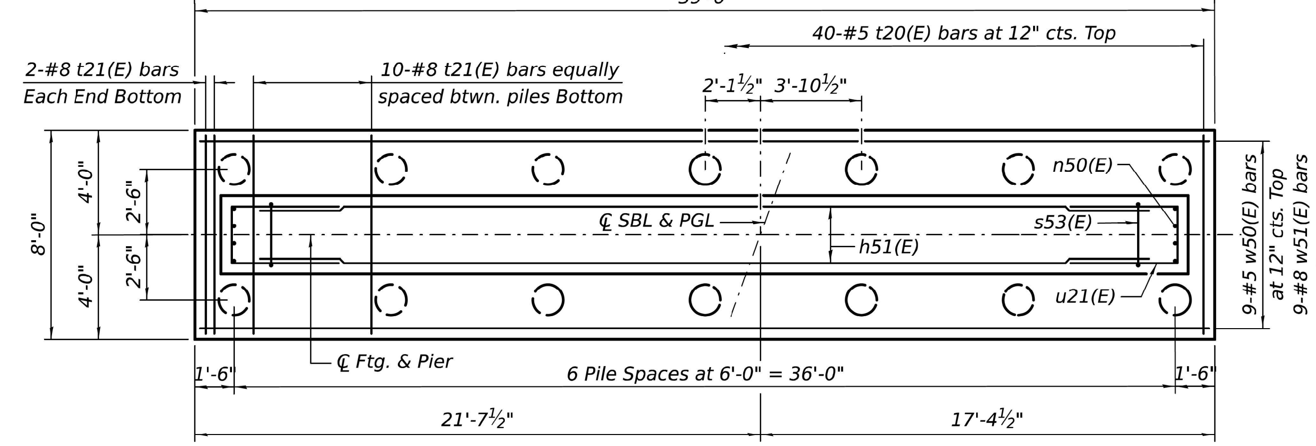


SEC. B-B

** Varies 4'-0" to 4'-3⅜" (Pier 1)
Varies 4'-0" to 4'-3⅜" (Pier 2)

MINIMUM BAR LAP

#5 bar = 3'-2"
#7 bar = 4'-5"



FOOTING PLAN

(Sheet 1 of 3)

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 38 of 44.
See sheet 37 of 44 for Section C-C, bar details & Bill of Materials.

PILE DATA - PIER 1

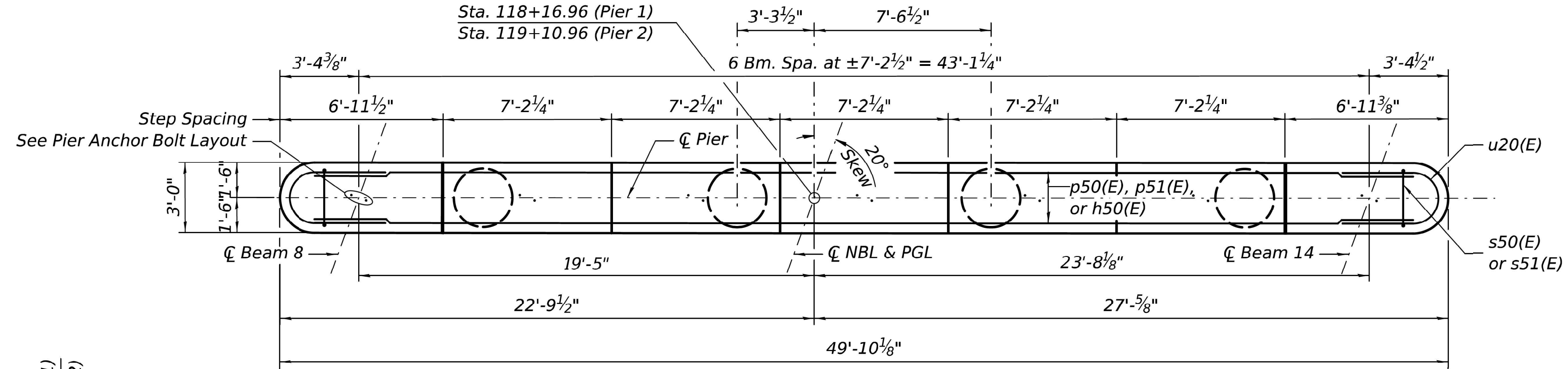
Type: Metal Shell 14" x 0.312" with pile shoes
Nominal Required Bearing: 385 kips
Factored Resistance Available: 212 kips
Est. Length: 51 feet
No. Production Piles: 13
No. Test Piles: 1

PILE DATA - PIER 2

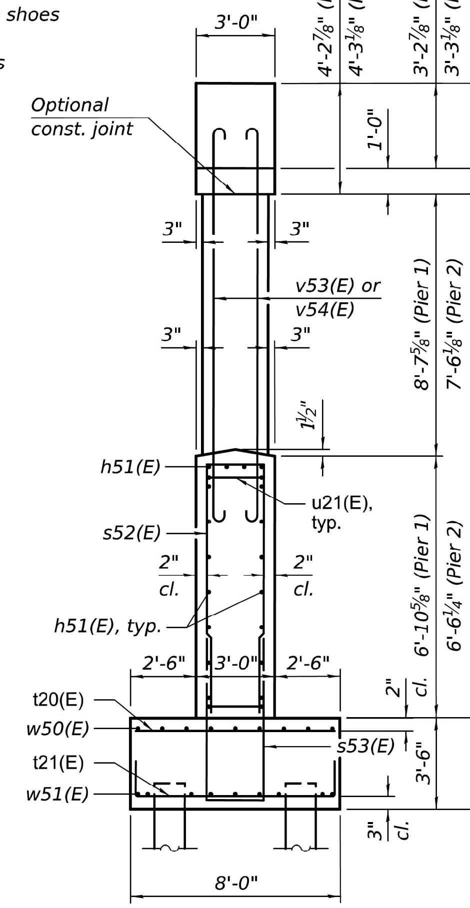
Type: Metal Shell 14" x 0.312" with pile shoes
Nominal Required Bearing: 414 kips
Factored Resistance Available: 228 kips
Est. Length: 47 feet
No. Production Piles: 13
No. Test Piles: 1

BEARING SEAT ELEVATIONS

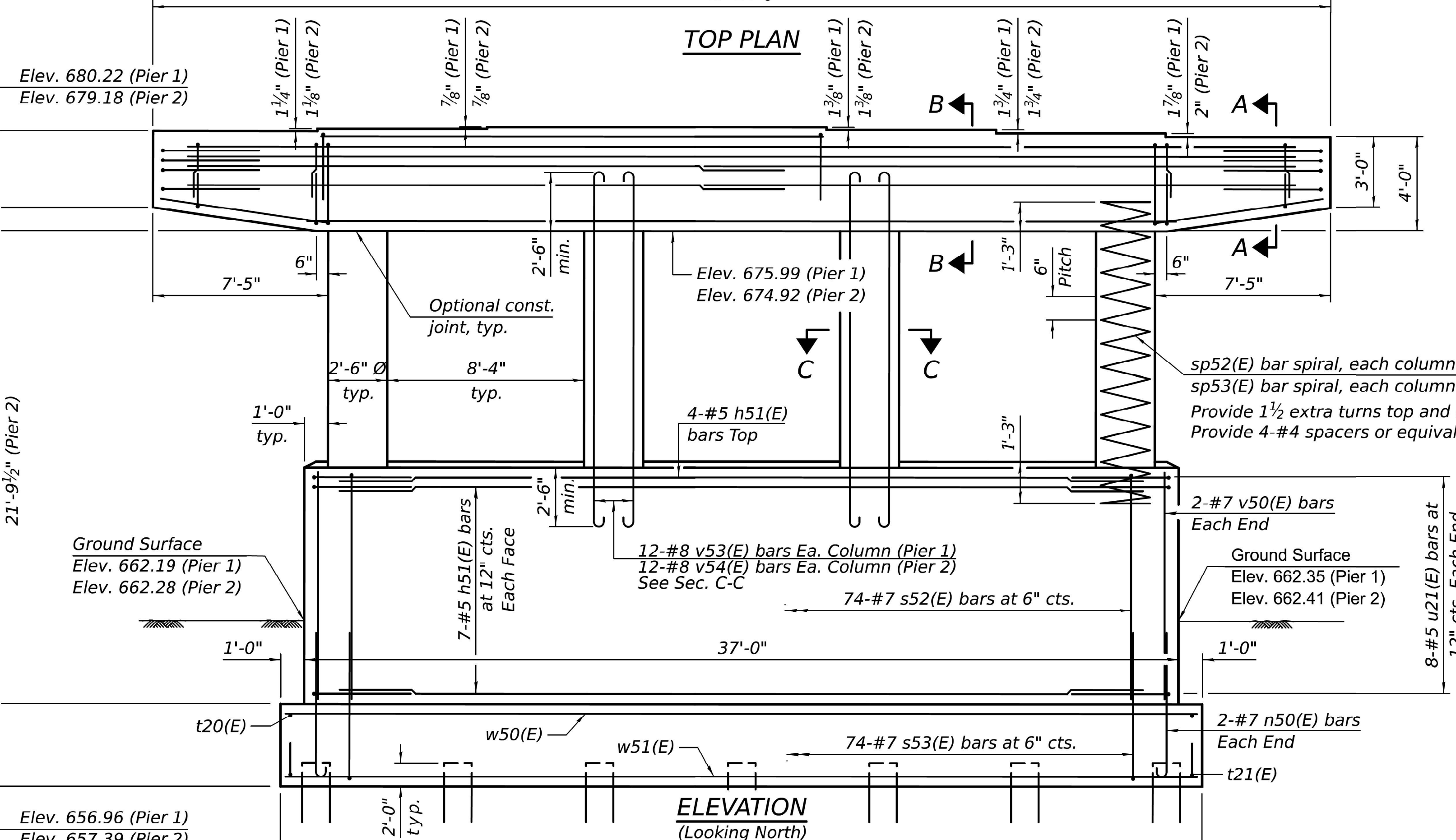
Beam	Pier 1 Elev.	Pier 2 Elev.
8	680.22	679.18
9	680.33	679.28
10	680.41	679.36
11	680.40	679.35
12	680.29	679.24
13	680.15	679.09
14	679.99	678.92



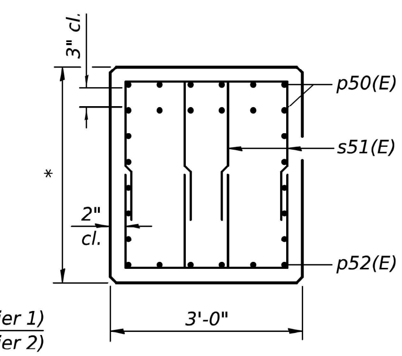
TOP PLAN



END VIEW

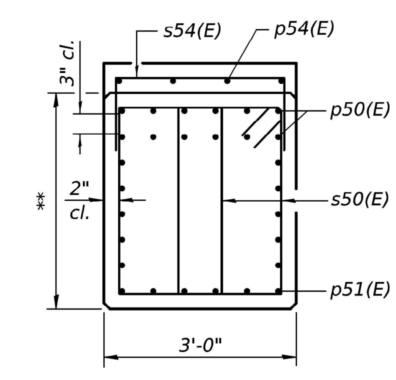


ELEVATION
(Looking North)



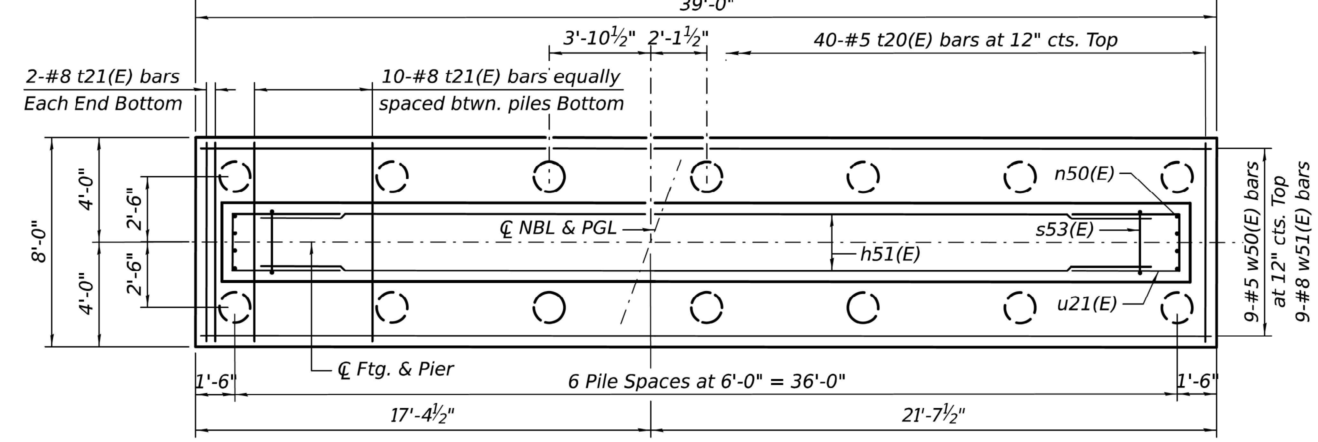
SEC. A-A

* Varies 3'-0" to 4'-2⅞" (Pier 1)
Varies 3'-0" to 4'-3⅛" (Pier 2)



SEC. B-B

** Varies 4'-0" to 4'-4⅛" (Pier 1)
Varies 4'-0" to 4'-4⅜" (Pier 2)



FOOTING PLAN

MINIMUM BAR LAP

#5 bar = 3'-2"
#7 bar = 4'-5"

(Sheet 2 of 3)

USER NAME = mwilley	DESIGNED - KN	REVISED -	
	CHECKED - MJW	REVISED -	
PLOT SCALE = 0:2 '/" / in.	DRAWN - KN	REVISED -	
PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -	

BLA, Inc.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

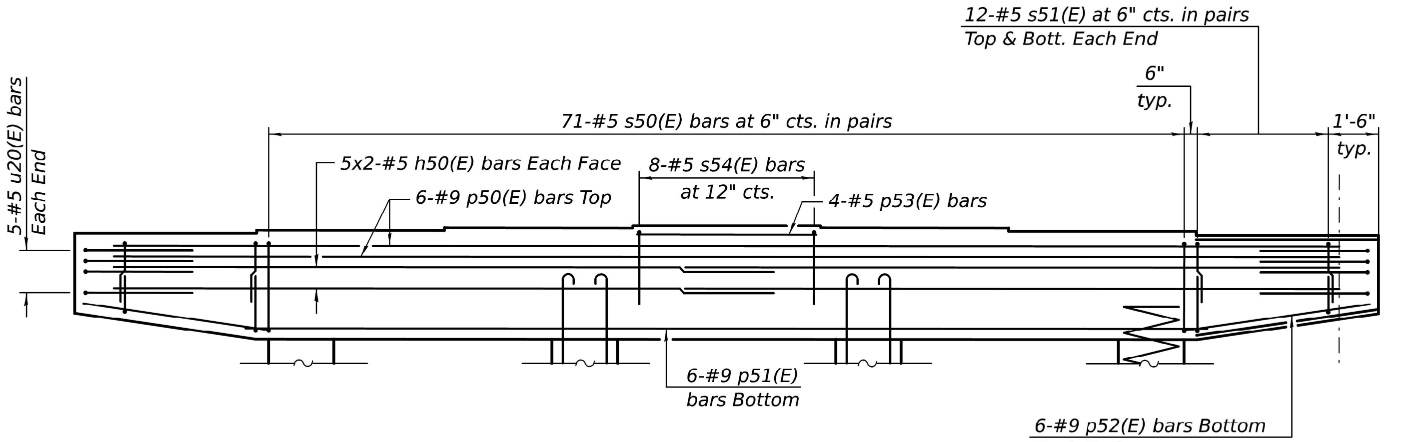
PIER DETAILS
STRUCTURE NO. 018-0072 (NB)

SHEET 36 OF 44 SHEETS

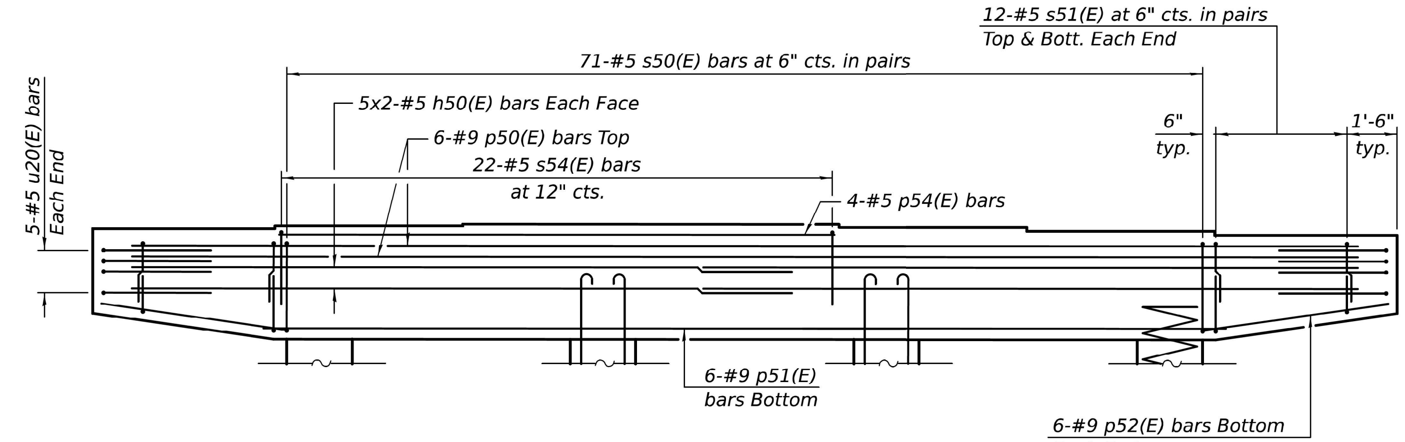
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	18-20HB	CUMBERLAND	414	273

CONTRACT NO. 74597
ILLINOIS FED. AID PROJECT

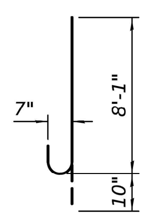
5/8/2025 3:31:58 PM



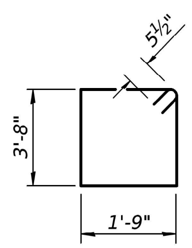
PIER CAP ELEVATION - SN 018-0071
(Looking North)



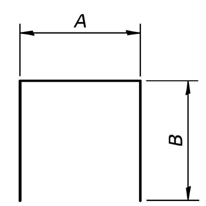
PIER CAP ELEVATION - SN 018-0072
(Looking North)



BAR n50(E)



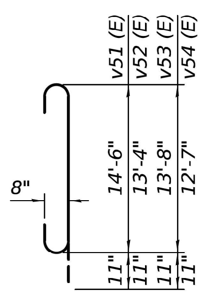
BAR s50(E)



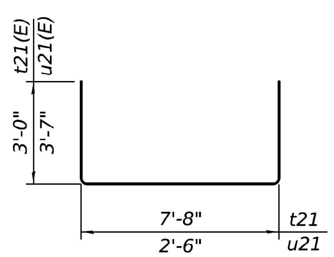
* BARS

* A & B DIMENSIONS

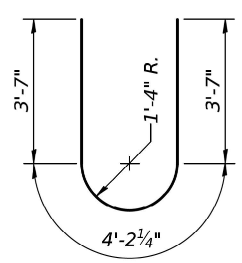
Bar	A	B
s51(E)	1'-9"	2'-11"
s52(E)	2'-8"	6'-4"
s53(E)	2'-8"	8'-1"
s54(E)	2'-8"	2'-9"



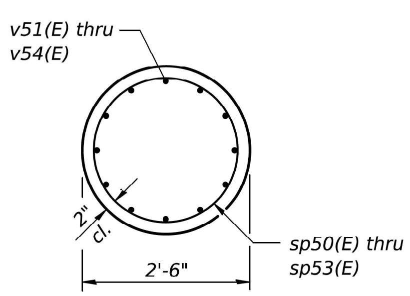
BAR v51(E), v52(E), v53(E), & v54(E)



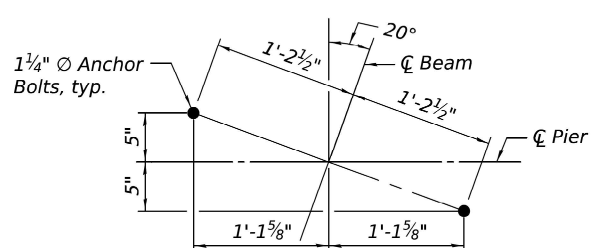
BAR t21(E) & u21(E)



BAR u20(E)



SEC. C-C



ANCHOR BOLT DETAIL

SN 018-0071 - PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h50(E)	20	#5	25'-3"	
h51(E)	18	#5	36'-8"	
n50(E)	4	#7	8'-11"	
p50(E)	12	#9	46'-10"	
p51(E)	6	#9	36'-0"	
p52(E)	12	#9	6'-10"	
p53(E)	4	#5	6'-10"	
s50(E)	142	#5	11'-9"	
s51(E)	48	#5	7'-7"	
s52(E)	74	#7	15'-4"	
s53(E)	74	#7	18'-10"	
s54(E)	8	#5	8'-2"	
** sp50(E)	4	#5	12'-0"	
t20(E)	40	#5	7'-8"	
t21(E)	64	#8	13'-8"	
u20(E)	10	#5	11'-5"	
u21(E)	16	#5	9'-8"	
v50(E)	4	#7	6'-4"	
v51(E)	48	#8	16'-4"	
w50(E)	9	#5	38'-8"	
w51(E)	9	#8	38'-8"	
Structure Excavation		Cu. Yd.	101	
Concrete Structures		Cu. Yd.	97.0	
Reinforcement Bars, Epoxy Coated		Pound	18,740	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	663	
Driving Piles		Foot	663	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	14	

** Length is height of spiral.

SN 018-0071 - PIER 2 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h50(E)	20	#5	25'-3"	
h51(E)	18	#5	36'-8"	
n50(E)	4	#7	8'-11"	
p50(E)	12	#9	46'-10"	
p51(E)	6	#9	36'-0"	
p52(E)	12	#9	6'-10"	
p53(E)	4	#5	6'-10"	
s50(E)	142	#5	11'-9"	
s51(E)	48	#5	7'-7"	
s52(E)	74	#7	15'-4"	
s53(E)	74	#7	18'-10"	
s54(E)	8	#5	8'-2"	
** sp51(E)	4	#5	10'-10"	
t20(E)	40	#5	7'-8"	
t21(E)	64	#8	13'-8"	
u20(E)	10	#5	11'-5"	
u21(E)	16	#5	9'-8"	
v50(E)	4	#7	6'-4"	
v52(E)	48	#8	15'-2"	
w50(E)	9	#5	38'-8"	
w51(E)	9	#8	38'-8"	
Structure Excavation		Cu. Yd.	96	
Concrete Structures		Cu. Yd.	95.1	
Reinforcement Bars, Epoxy Coated		Pound	18,530	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	663	
Driving Piles		Foot	663	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	14	

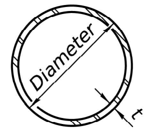
SN 018-0072 - PIER 1 BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h50(E)	20	#5	25'-3"	
h51(E)	18	#5	36'-8"	
n50(E)	4	#7	8'-11"	
p50(E)	12	#9	46'-10"	
p51(E)	6	#9	36'-0"	
p52(E)	12	#9	6'-10"	
p54(E)	4	#5	21'-2"	
s50(E)	142	#5	11'-9"	
s51(E)	48	#5	7'-7"	
s52(E)	74	#7	15'-4"	
s53(E)	74	#7	18'-10"	
s54(E)	22	#5	8'-2"	
** sp52(E)	4	#5	11'-2"	
t20(E)	40	#5	7'-8"	
t21(E)	64	#8	13'-8"	
u20(E)	10	#5	11'-5"	
u21(E)	16	#5	9'-8"	
v50(E)	4	#7	6'-4"	
v53(E)	48	#8	15'-6"	
w50(E)	9	#5	38'-8"	
w51(E)	9	#8	38'-8"	
Structure Excavation		Cu. Yd.	104	
Concrete Structures		Cu. Yd.	96.8	
Reinforcement Bars, Epoxy Coated		Pound	18,770	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	663	
Driving Piles		Foot	663	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	14	

SN 018-0072 - PIER 2 BILL OF MATERIAL

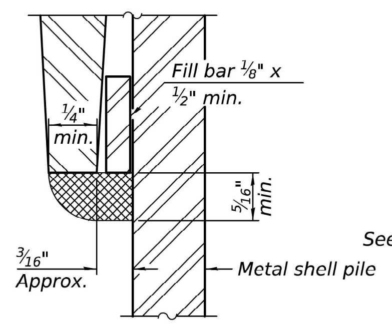
Bar	No.	Size	Length	Shape
h50(E)	20	#5	25'-3"	
h51(E)	18	#5	36'-8"	
n50(E)	4	#7	8'-11"	
p50(E)	12	#9	46'-10"	
p51(E)	6	#9	36'-0"	
p52(E)	12	#9	6'-10"	
p54(E)	4	#5	21'-2"	
s50(E)	142	#5	11'-9"	
s51(E)	48	#5	7'-7"	
s52(E)	74	#7	15'-4"	
s53(E)	74	#7	18'-10"	
s54(E)	22	#5	8'-2"	
** sp53(E)	4	#5	10'-1"	
t20(E)	40	#5	7'-8"	
t21(E)	64	#8	13'-8"	
u20(E)	10	#5	11'-5"	
u21(E)	16	#5	9'-8"	
v50(E)	4	#7	6'-4"	
v54(E)	48	#8	14'-5"	
w50(E)	9	#5	38'-8"	
w51(E)	9	#8	38'-8"	
Structure Excavation		Cu. Yd.	96	
Concrete Structures		Cu. Yd.	94.5	
Reinforcement Bars, Epoxy Coated		Pound	18,570	
Furnishing Metal Shell Piles 14" x 0.312"		Foot	611	
Driving Piles		Foot	611	
Test Pile Metal Shells		Each	1	
Pile Shoes		Each	14	

(Sheet 3 of 3)

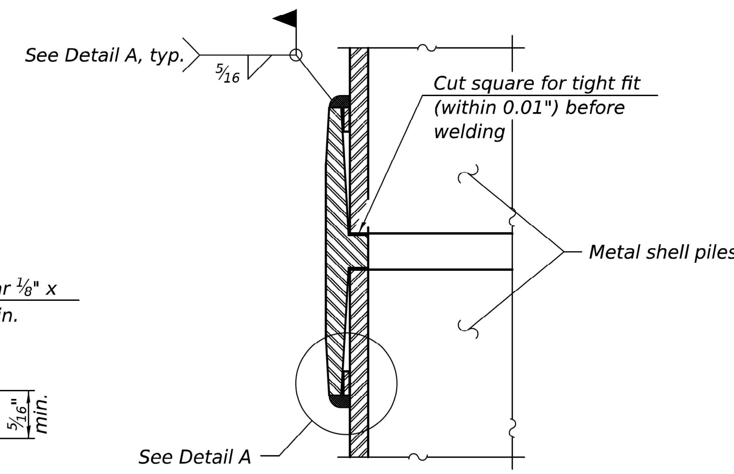


METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.^{3}/ft.)
PP12	0.250"	31.40	0.0267
PP14	0.250"	36.75	0.0368
PP14	0.312"	45.65	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470

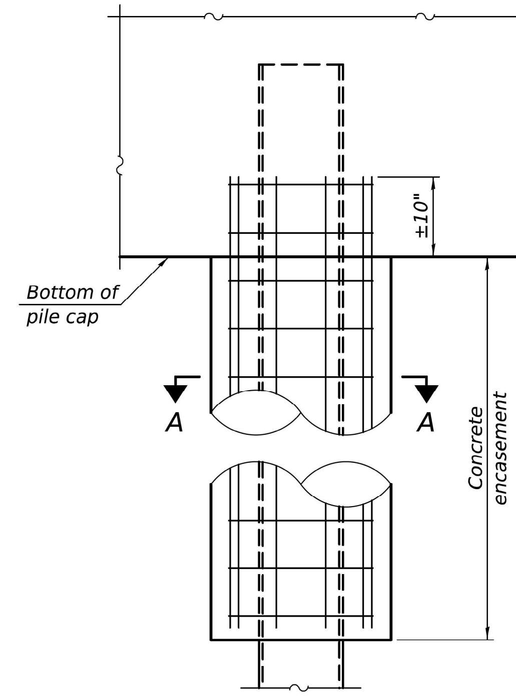


DETAIL A

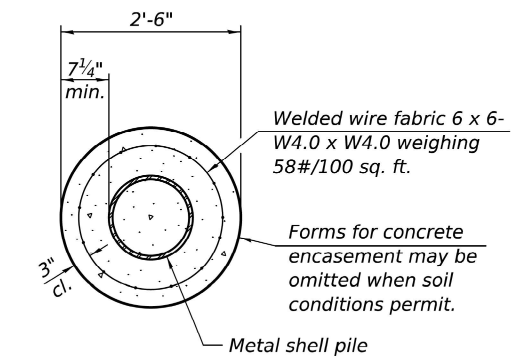


WELDED COMMERCIAL SPLICE

Notes:
The ⅛" x ½" min. fill bar may be constructed of 2 bars with a ⅛" max. gap between them.
Pile segments shall be driven to solid contact with splicer before welding.



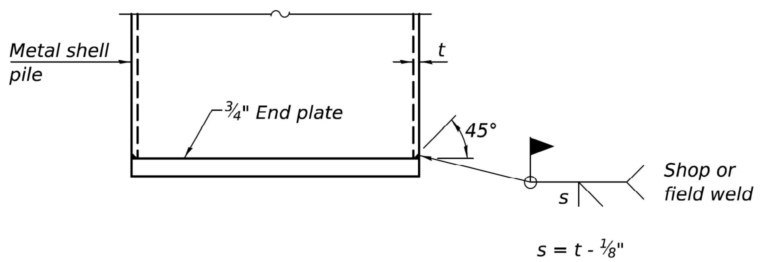
ELEVATION



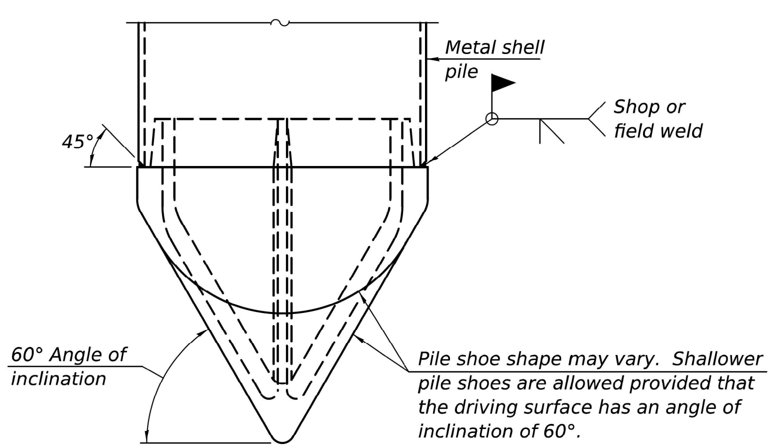
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(When specified)

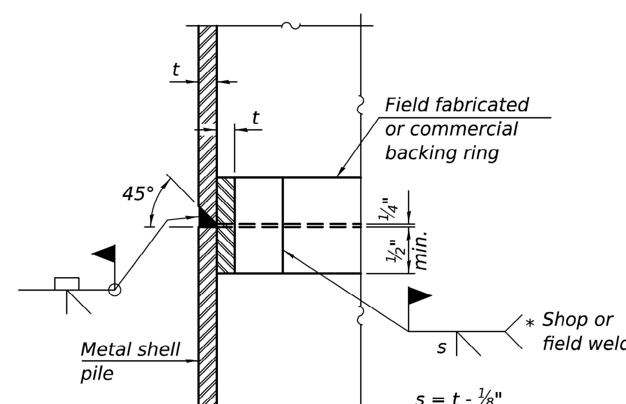


END PLATE ATTACHMENT



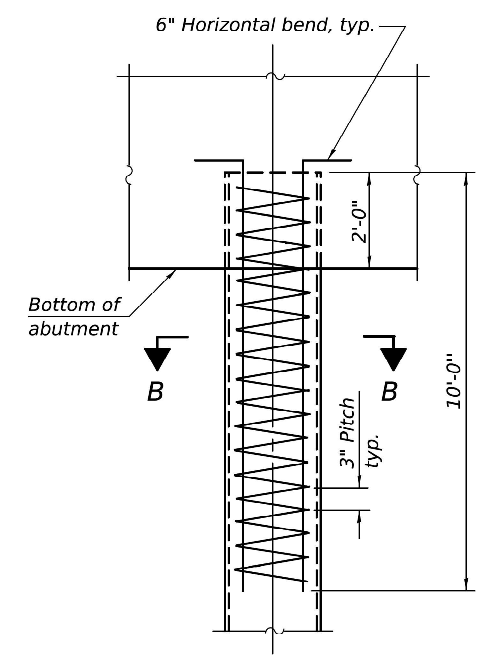
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).

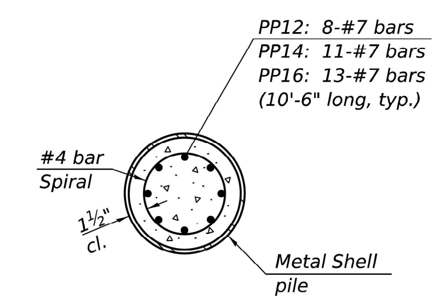


COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



ELEVATION



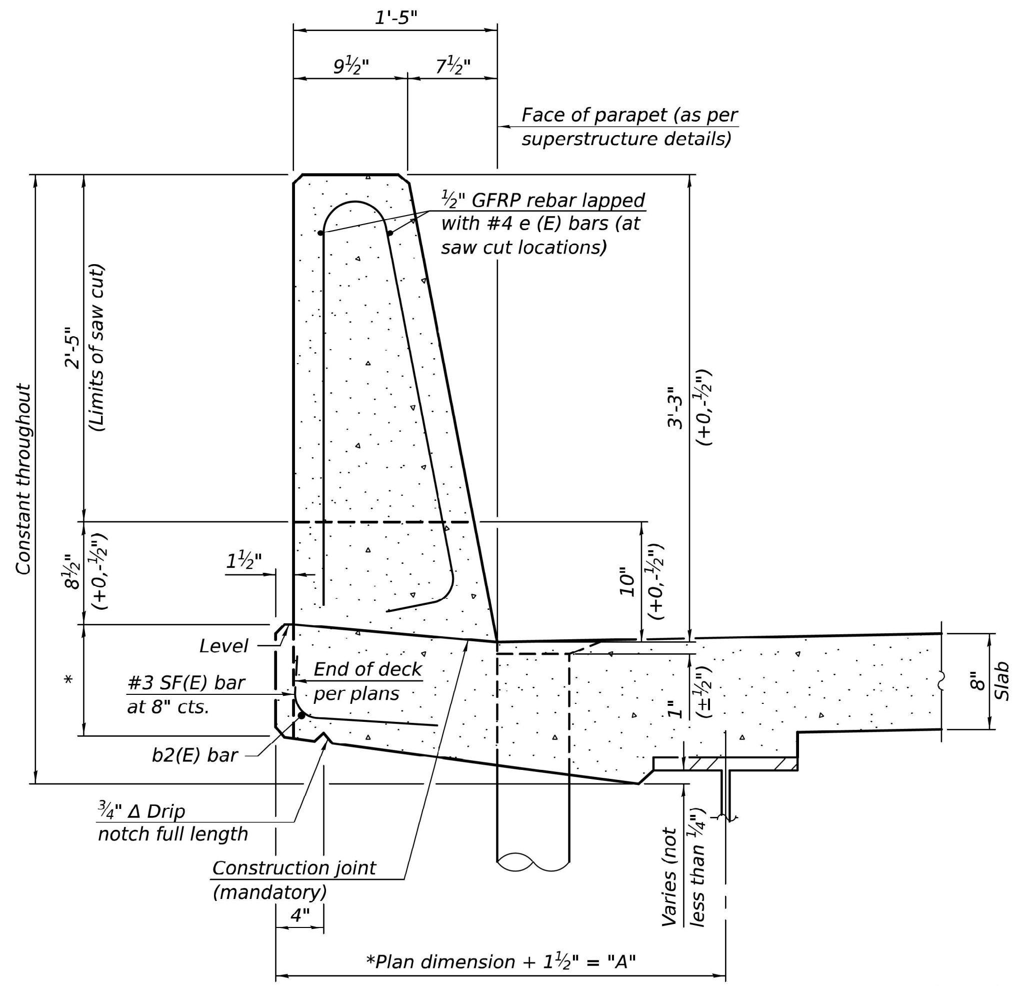
SECTION B-B

REINFORCEMENT AT ABUTMENTS

(Omit when concrete encasement is specified)

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

F-MS 5-15-2023

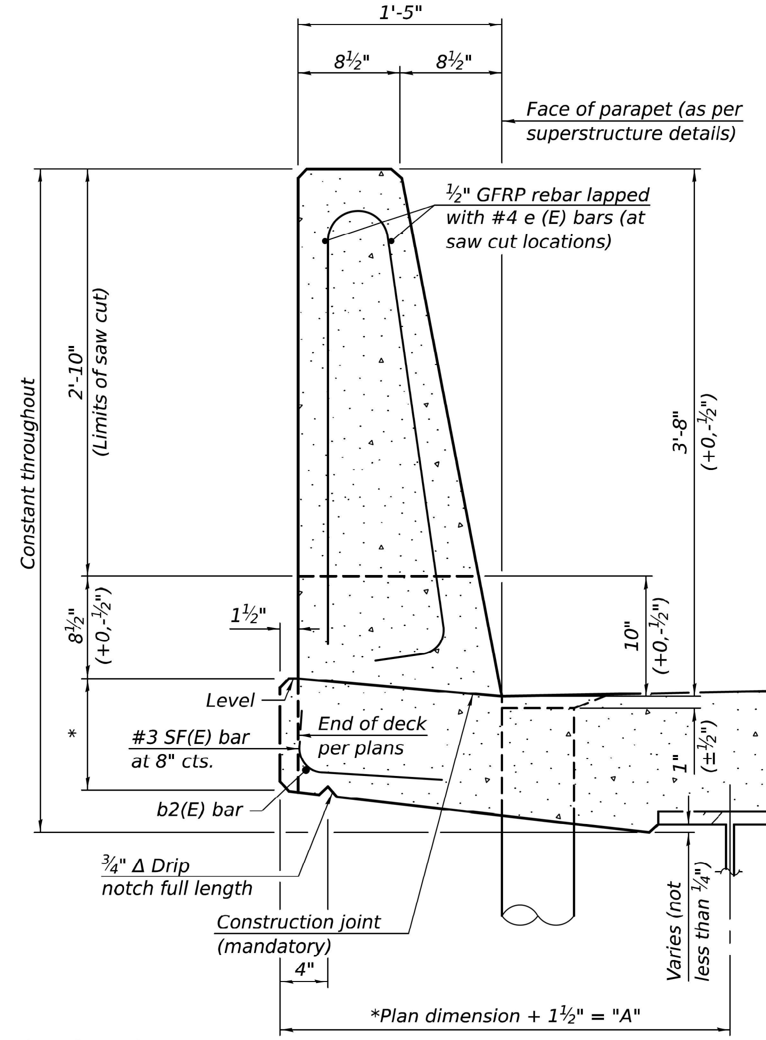


39" CONSTANT-SLOPE PARAPET SECTION

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

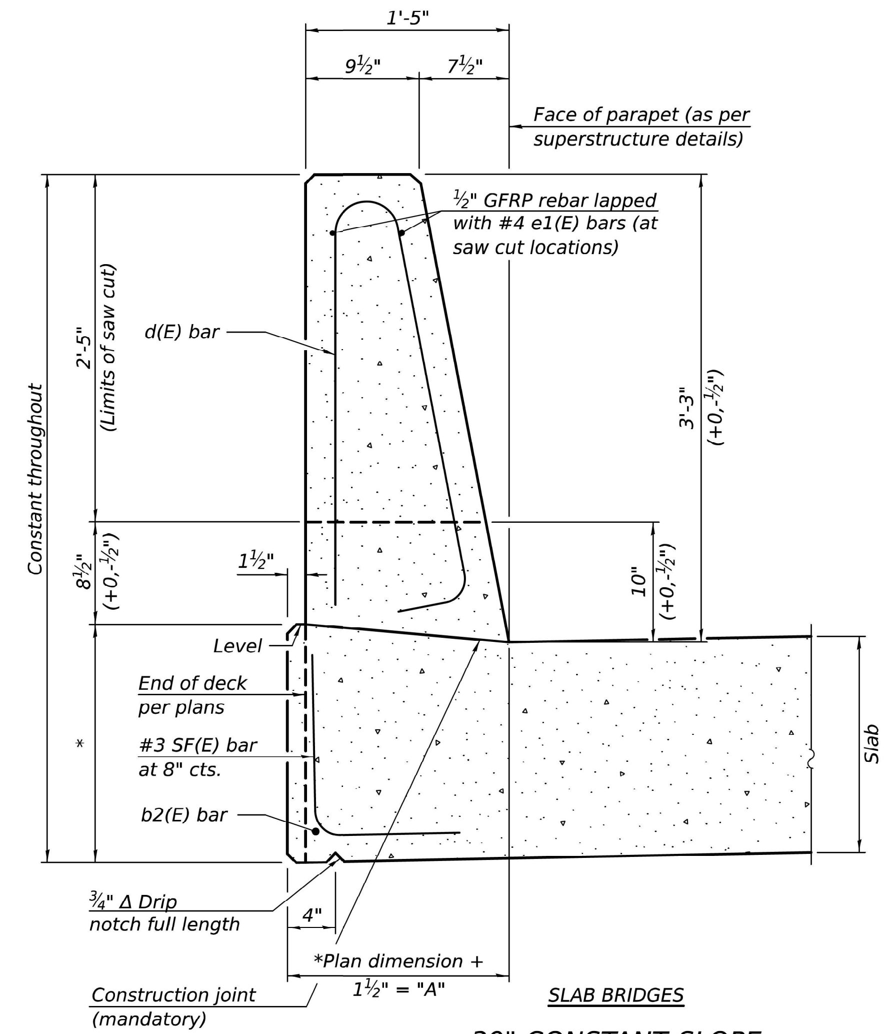
STEEL SUPERSTRUCTURES

*See Superstructure Details.



44" CONSTANT-SLOPE PARAPET SECTION

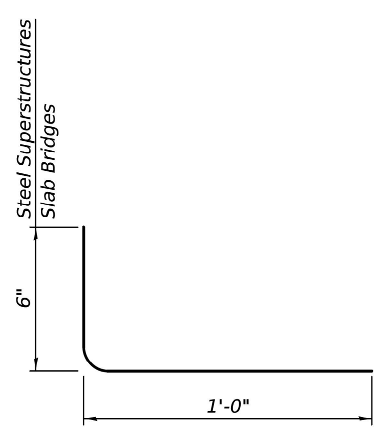
(Showing dimensions, d(E), and ½" Ø GFRP rebar)



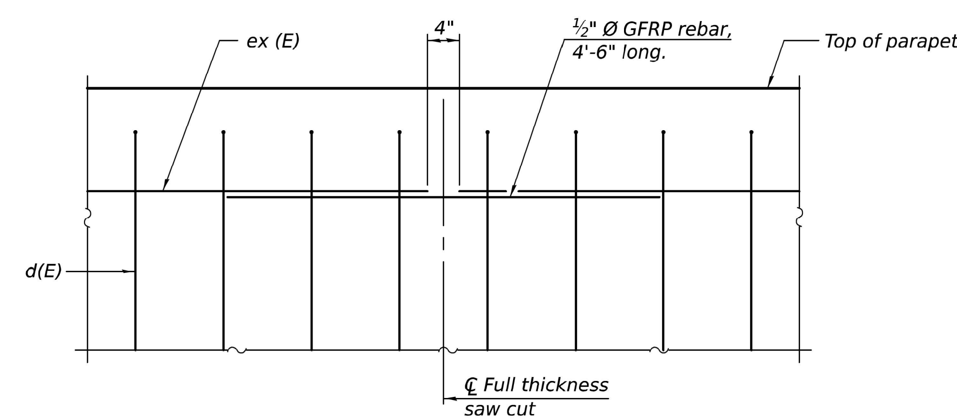
SLAB BRIDGES

39" CONSTANT-SLOPE PARAPET SECTION

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



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

Illinois Department of Transportation
Division of Highways

SOIL BORING LOG

Date 9/23/20

ROUTE FAI 57 (I-57) DESCRIPTION I-57 over US Route 45 LOGGED BY E. Sandschafer

SECTION (18-1VB, 18-20HB)B LOCATION SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4335, Long N 39.3306

COUNTY Cumberland DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-1 (South Abutment)
Station 117+50
Offset 55.0 ft RT of SB Centerline
Ground Surface Elev. 681.43 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion 651.4 ft ▽
After 24 Hrs. 659.4 ft ▼

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Brown, CLAY LOAM (Embankment)				
Hard, wet (Embankment)		3 7 5	4.5 P	13
Very stiff, moist (Embankment)	-5	2 3 5	3.7 B	17
(Embankment)		3 3 5	2.1 B	16
671.9				
Stiff, moist, grey, CLAY (Embankment)	-10	2 3 3	1.7 B	17
(Embankment)		2 3 5	1.7 B	23
666.9				
Very stiff, moist, brown, CLAY LOAM (Embankment)	-15	1 4 4	2.1 B	16
664.4				
Very stiff, moist, grey, CLAY (Embankment)		1 3 5	2.3 B	20
661.9				
Medium, moist, grey, SILT 661.4	-20	1		

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Medium, moist, grey, SILT		2 3	0.9 B	28
659.4 ▼				
Very stiff, moist, grey, CLAY with SILT		1 2 3	2.1 B	23
656.9				
Medium, moist, brown, SILTY CLAY	-25	1 2 3	0.7 B	21
654.4				
Stiff, moist, brown, marbled grey, CLAY		1 2 3	1.0 B	21
	▽ -30	1 1 4	1.1 B	23
646.9				
Very stiff, moist, brown, CLAY LOAM (Till)	-35	3 9 26	3.5 B	12
641.4	-40	5		

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

SOIL BORING LOG

Date 9/23/20

ROUTE FAI 57 (I-57) DESCRIPTION I-57 over US Route 45 LOGGED BY E. Sandschafer

SECTION (18-1VB, 18-20HB)B LOCATION SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4335, Long N 39.3306

COUNTY Cumberland DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-1 (South Abutment)
Station 117+50
Offset 55.0 ft RT of SB Centerline
Ground Surface Elev. 681.43 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion 651.4 ft ▽
After 24 Hrs. 659.4 ft ▼

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, grey, CLAY LOAM (Till) 1/2" to 3/4" gravel		18 50/4.75"	7.2 BS	10
Rock stuck in shoe	-45	23 44 42	7.2 E	NT
Hard, moist, grey	-50	13 14 21	6.0 B	14
626.9				
Very stiff, moist, brown, CLAY (Till)	-55	12 10 15	3.3 E	19
621.4	-60	5		

Description	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very stiff, moist, brown, CLAY (Till)		8 11	2.9 B	16
616.9				
Hard, moist, brown, CLAY LOAM (Till)	-65	9 16 25	6.6 B	11
Grey	-70	7 18 22	7.0 B	11
Very stiff	-75	8 26 50/5.06"	3.1 B	11
601.4	-80	7		

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

SOIL BORING LOG

Date 9/23/20

ROUTE FAI 57 (I-57) DESCRIPTION I-57 over US Route 45 LOGGED BY E. Sandschafer

SECTION (18-1VB, 18-20HB)B LOCATION SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4335, Long N 39.3306

COUNTY Cumberland DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-1 (South Abutment)
Station 117+50
Offset 55.0 ft RT of SB Centerline
Ground Surface Elev. 681.43 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter Dry ft
Upon Completion 651.4 ft
After 24 Hrs. 659.4 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, grey, CLAY (Till)			13 23	5.6 B	11
		-85	8 24 27	4.1 BS	13
	593.4				
Very dense, moist, grey, SANDSTONE	593.2		50/3" 50/0.25" 50/0.125"	8.0 E	6
Benchmark: BM 4380-2 - Chiseled square on southwest wingwall, SN 018-0003, I-57 over US 45. 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)

Illinois Department of Transportation
Division of Highways

SOIL BORING LOG

Date 7/13/20

ROUTE FAI 57 (I-57) DESCRIPTION I-57 over US Route 45 LOGGED BY E. Sandschafer

SECTION (18-1VB, 18-20HB)B LOCATION SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4339, Long N 39.3307

COUNTY Cumberland DRILLING METHOD Hollow stem auger & split spoon HAMMER TYPE AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-2 (Pier 1)
Station 118+02
Offset 87.5 ft LT of SB Centerline
Ground Surface Elev. 642.07 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 572.6 ft
Upon Completion 628.1 ft
After 48 Hrs. 641.6 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Vegetation Root Zone	641.4				
Brown, CLAY LOAM					
Stiff, moist			2 3 3	1.5 B	29
	637.6				
Medium, moist, brown, SILTY CLAY		-5	1 2 2	0.6 B	27
			1 1 2	0.7 B	26
	632.6				
Stiff, moist, brown, black and grey marbled, CLAY	632.1	-10	1 2 3	1.2 B	20
Grey, SILT	631.6				
Brown, black and grey marbled, CLAY	630.1				
Medium, moist, brown and grey marbled, SILTY LOAM			1 2 2	0.6 B	20
	627.6				
Stiff, moist, brown, CLAY LOAM	626.4	-15	1 2 8	1.2 B	19
Brown, CLAY LOAM (Till)					
Hard, grey			3 17 26	9.1 B	9
	622.1	-20	5		
Very dense, moist, grey, SANDY CLAY LOAM (Till)			28 47	6.6 E	11
	620.1				
Very dense, moist, brown, CLAY LOAM (Till) Possible rock in front of sampler			13 20 31	5.2 E	20
Hard		-25	11 18 23	6.8 B	11
			5 8 11	5.0 B	13
Very stiff		-30	10 14 14	2.8 P	16
		-35	7 7 10	3.3 B	17
	602.1	-40	13		

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

SOIL BORING LOG

Date 7/13/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over US Route 45 **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4339, Long N 39.3307

COUNTY Cumberland **DRILLING METHOD** Hollow stem auger & split spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-2 (Pier 1)
Station 118+02
Offset 87.5 ft LT of SB Centerline
Ground Surface Elev. 642.07 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 572.6 ft ▼
Upon Completion 628.1 ft ▽
After 48 **Hrs.** 641.6 ft ▽

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very stiff, moist, brown, CLAY LOAM (Till)			22 28	2.1 B	16
Hard		-45	5 14 19	7.6 B	11
Grey		-50	15 20 19	4.7 B	11
		-55	5 13 18	6.2 B	10
	582.1	-60	10		

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Hard, moist, grey, SILTY CLAY	577.6		11 20	4.2 S	10
Hard, moist, grey, CLAY LOAM (Till)	572.6 ▼	-65	13 26 28	5.0 B	13
Dense, wet, brown, SANDY LOAM (Washed)	571.1	-70	7 13 17		13
Very dense, moist, grey, CLAY SHALE			50/5.63" 50/0.38" 50/0.31"	8.0 E	5
	567.1	-75	50/2" 50/0.625" 50/0.25"	8.0 E	10
Borehole continued with rock coring.		-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)

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Division of Highways

ROCK CORE LOG

Date 7/13/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over US Route 45 **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4339, Long N 39.3307

COUNTY Cumberland **CORING METHOD** Rotary, surf set diamond bit

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

CORING BARREL TYPE & SIZE NW, conv dbl bbl, split inner

Core Diameter 2.1 in
Top of Rock Elev. 567.07 ft
Begin Core Elev. 567.07 ft

BORING NO. B-2 (Pier 1)
Station 118+02
Offset 87.5 ft LT of SB Centerline
Ground Surface Elev. 642.07 ft

Description	Elev.	DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
SANDY CLAY SHALE Depth 76.25', Moisture Content: 5.7%, Dry Density: 147.4 pcf	567.07 562.07	-80	1	69	48	1.3	49.2
SANDY CLAY SHALE Depth 83.2', Moisture Content: 6.3%, Dry Density: 144.1 pcf	557.07	-85	2	87	69	2.05	96.7
Benchmark: BM 4380-1 - Chiseled square on southwest corner on base of south pier, SN 018-0003, I-57 over US 45. End of Boring		-90 -95					

Color pictures of the cores ____________
Cores will be stored for examination until ____________
The "Strength" column represents the uniaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

MODEL: Br_Sheet_Consultant
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\Structural\US45_Crossing\0180071_72-74597-042-Soil_Boring_Logs.dgn

BLA, Inc.	USER NAME = mwilley	DESIGNED - KN	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SOIL BORING LOGS STRUCTURE NO. 018-0071 (SB) & 018-0072 (NB)	F.A.I. RTE. 57	SECTION 18-20HB	COUNTY CUMBERLAND	TOTAL SHEETS 414	SHEET NO. 279
		CHECKED - MJW	REVISED -					CONTRACT NO. 74597		
	PLOT SCALE = 0:2 '/" / in.	DRAWN - KN	REVISED -							
	PLOT DATE = 5/8/2025	CHECKED - MJW	REVISED -		SHEET 42 OF 44 SHEETS		ILLINOIS	FED. AID PROJECT		

5/8/2025 3:32:29 PM

SOIL BORING LOG

Illinois Department of Transportation
Division of Highways

Date 9/22/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over US Route 45 **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4333, Long N 39.3311

COUNTY Cumberland **DRILLING METHOD** Hollow stem auger & split spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-3 (North Abutment)
Station 119+20
Offset 38.0 ft RT of SB Centerline
Ground Surface Elev. 679.25 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 609.8 ft ▼
Upon Completion 657.3 ft ▽
After 24 **Hrs.** 658.3 ft ▽

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Brown, CLAY LOAM (Embankment)					
Hard, moist, (Embankment)			3 8 8	4.5 P	10
		-5	2 2 3	4.5 P	12
Stiff, moist, grey, CLAY (Embankment)	672.3		1 2 3	1.0 B	24
		-10	1 3 3	1.0 B	21
			1 2 3	1.1 B	24
Very Stiff, (Embankment)		-15	1 2 3	2.5 B	24
			1 3 7	2.3 B	17
	659.3	-20	1		
Stiff, moist, grey, CLAY ▽			3 4	1.7 B	29
Medium, moist, brown, SILTY LOAM	657.3 ▽		2 3 4	0.6 B	20
Medium, moist, brown and grey marbled, CLAY LOAM	654.8	-25	1 2 2	0.8 B	20
Stiff			1 1 3	1.2 B	20
Brown mottled grey		-30	1 1 3	1.1 B	22
Hard, grey, (Till)		-35	4 16 28	2.6 B	9
	639.3	-40	5		

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)

SOIL BORING LOG

Illinois Department of Transportation
Division of Highways

Date 9/22/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over US Route 45 **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4333, Long N 39.3311

COUNTY Cumberland **DRILLING METHOD** Hollow stem auger & split spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-3 (North Abutment)
Station 119+20
Offset 38.0 ft RT of SB Centerline
Ground Surface Elev. 679.25 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

Groundwater Elev.:
First Encounter 609.8 ft ▼
Upon Completion 657.3 ft ▽
After 24 **Hrs.** 658.3 ft ▽

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Very soft, wet, grey, SILTY LOAM			21 35	0.0 B	17
Hard, moist, brown, CLAY LOAM (Till)	634.8	-45	5 10 12	4.5 B	13
Very stiff, grey		-50	1 6 8	3.9 B	17
Hard, brown		-55	3 11 20	6.8 B	10
	619.3	-60	6		
Hard, moist, brown, CLAY LOAM (Till)			12 23	6.2 B	11
Grey		-65	3 12 24	7.2 B	10
▼	609.4		7		
Grey, SANDY LOAM	609.1	-70	20	8.0 B	10
Hard, moist, grey, CLAY LOAM (Till)			23		
Very dense, moist, grey, SANDY CLAY SHALE	604.8	-75	10 50/1.94" 50/1.13"	8.0 E	15
	599.3	-80	16		

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

SOIL BORING LOG

Date 9/22/20

ROUTE FAI 57 (I-57) **DESCRIPTION** I-57 over US Route 45 **LOGGED BY** E. Sandschafer

SECTION (18-1VB, 18-20HB)B **LOCATION** SW 1/4, SEC. 4 TWP. 10 N, RNG. 7E, 3rd PM, Lat W 88.4333, Long N 39.3311

COUNTY Cumberland **DRILLING METHOD** Hollow stem auger & split spoon **HAMMER TYPE** AUTO 140#

STRUCT. NO. 018-0003, -0004 (E) 018-0071, -0072 (P)
Station 118+48

BORING NO. B-3 (North Abutment)
Station 119+20
Offset 38.0 ft RT of SB Centerline
Ground Surface Elev. 679.25 ft

Surface Water Elev. NA ft
Stream Bed Elev. NA ft

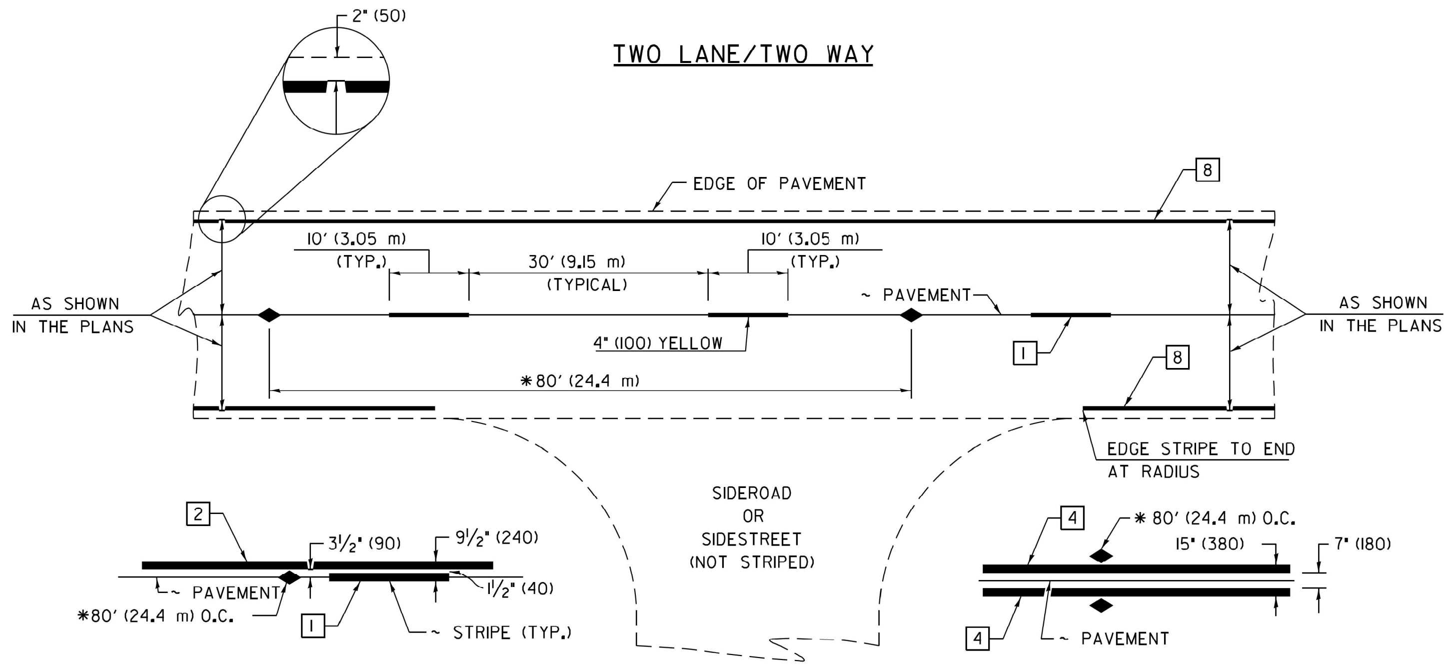
Groundwater Elev.:
First Encounter 609.8 ft
Upon Completion 657.3 ft
After 24 **Hrs.** 658.3 ft

Description	Elev.	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
Dense, Wet, grey, CLAY LOAM (Till)	598.8		15 24	8.0 E	16
Dense, moist, pokerchipped grey, CLAY SHALE		-85	50/5.38" 50/4.25" 50/3.69"	8.0 E	11
			50/3.63" 50/0.06" 50/0"	8.0 E	6
	589.8				
Very dense, moist, grey, LIMESTONE	589.5	-90			
Benchmark: BM 4380-2 - Chiseled square on southwest wingwall, SN 018-0003, I-57 over US 45. End of Boring					
		-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)

TWO LANE/TWO WAY



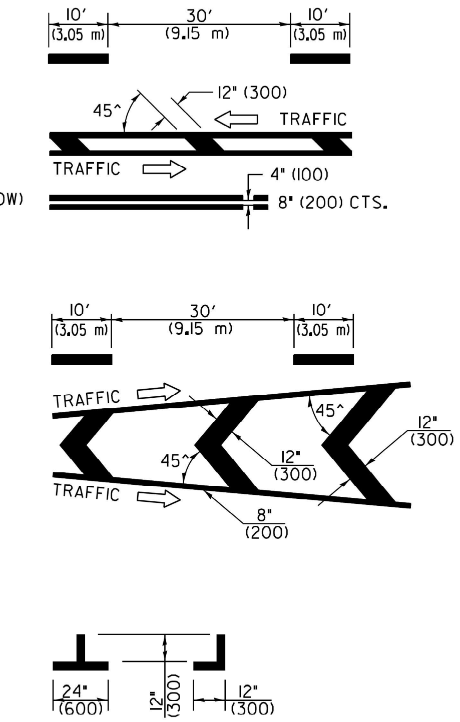
SINGLE NO PASSING

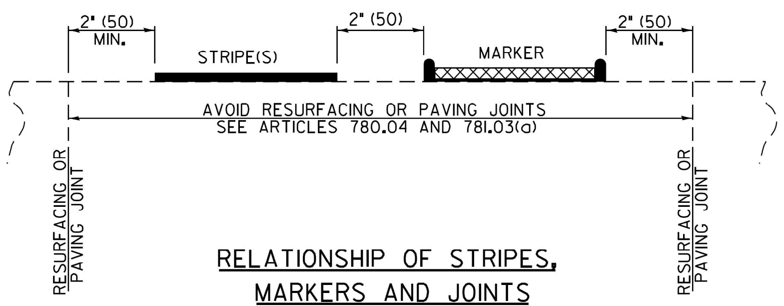
DOUBLE NO PASSING

* REDUCE TO 40' (12.2 m) O.C. ON CURVES WITH POSTED OR ADVISORY SPEEDS OF 45 mph (70 km/h) OR LESS.

PAVEMENT MARKING LEGEND

1. 4" (100) SKIP-DASH (YELLOW)
2. 4" (100) SOLID (YELLOW)
3. 12" (300) DIAGONAL (YELLOW)
4. 4" (100) DOUBLE YELLOW (NARROW)
5. 12" (300) SOLID WHITE
6. RESERVED
7. 6" (150) SKIP-DASH (WHITE)
8. 4" (100) SOLID (WHITE)
9. 12" (300) DIAGONAL (WHITE)
10. 6" (150) SOLID (WHITE)
11. 24" (600) STOP BAR (WHITE)
12. 8" (200) SOLID (WHITE)
13. 4" (100) PARKING WHITE



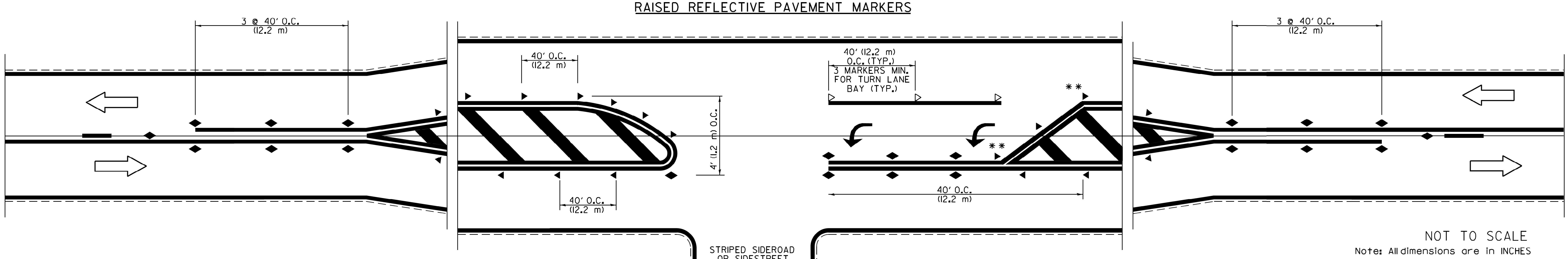


RELATIONSHIP OF STRIPES, MARKERS AND JOINTS

TYPICAL PAVEMENT MARKERS LEGEND

- ◆ TWO-WAY AMBER MARKER
- ▶ ONE-WAY AMBER MARKER
- ▷ ONE-WAY CRYSTAL MARKER

RAISED REFLECTIVE PAVEMENT MARKERS



** REDUCE SPACING IF NECESSARY TO ASSURE MARKERS AT CORNER POINTS.

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 7 DETAIL NO. 78000001

Kaskaskia Engineering Group, LLC	USER NAME = jwarner	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		DRAWN -	REVISED -	
		CHECKED -	REVISED -	
	PLOT DATE = 12/18/2024	DATE -	REVISED -	

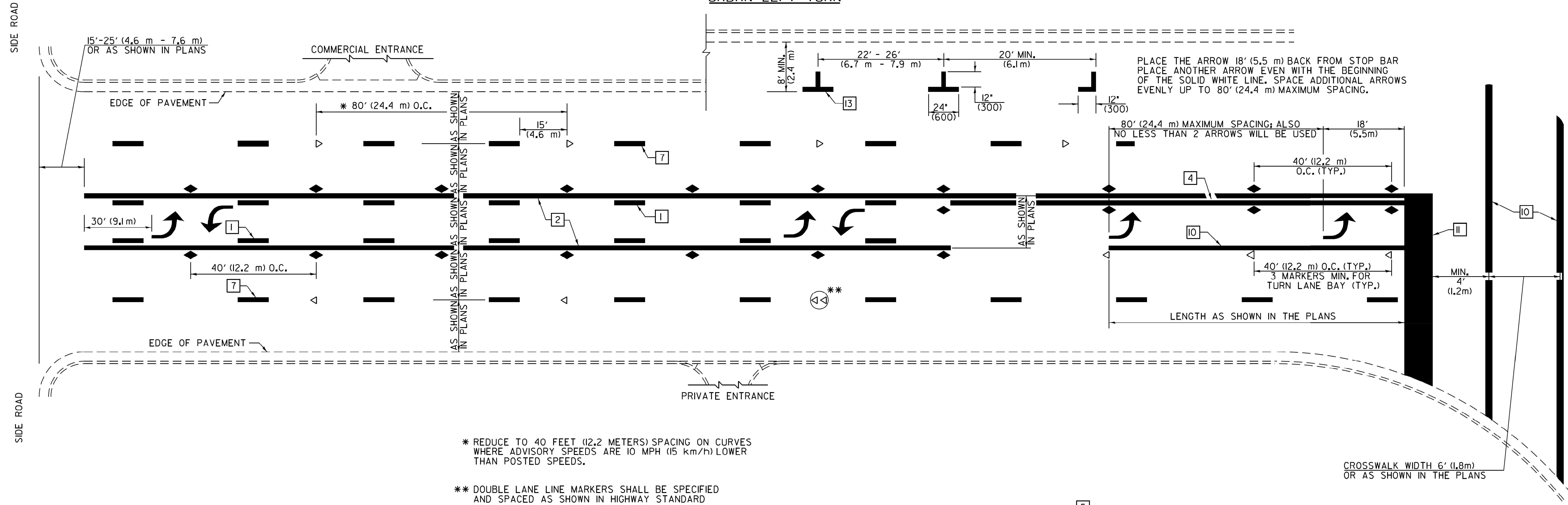
I-57 OVER D&EIRR & US ROUTE 45
DISTRICT 7 DETAILS

SCALE: | SHEET 1 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-2HB)B	CUMBERLAND	414	282
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

MODEL: 78000001 - Plan 1 [Sheet]
FILE NAME: c:\bms\keg-pw-01\copy of jeff helmer\dms35959\D774597-sht-D7Details.dgn

URBAN LEFT TURN

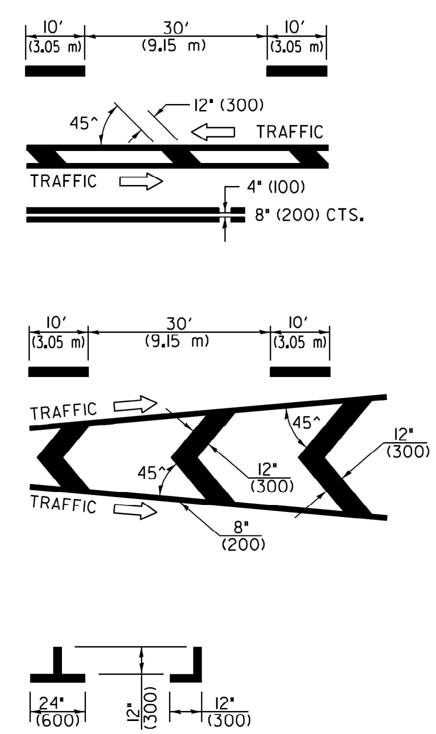


∗ REDUCE TO 40 FEET (12.2 METERS) SPACING ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH (15 km/h) LOWER THAN POSTED SPEEDS.

∗∗ DOUBLE LANE LINE MARKERS SHALL BE SPECIFIED AND SPACED AS SHOWN IN HIGHWAY STANDARD 781001FOR MULTI-LANE DIVIDED AND UNDIVIDED HIGHWAYS.

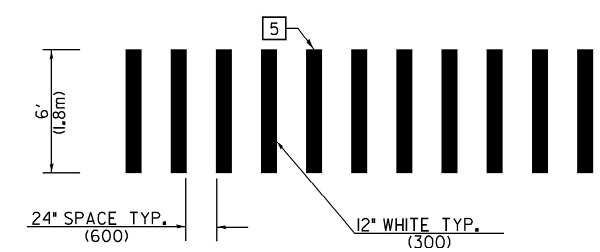
PAVEMENT MARKING LEGEND

1	4" (100) SKIP-DASH (YELLOW)
2	4" (100) SOLID (YELLOW)
3	12" (300) DIAGONAL (YELLOW)
4	4" (100) DOUBLE YELLOW (NARROW)
5	12" (300) SOLID WHITE
6	RESERVED
7	6" (150) SKIP-DASH (WHITE)
8	4" (100) SOLID (WHITE)
9	12" (300) DIAGONAL (WHITE)
10	6" (150) SOLID (WHITE)
11	24" (600) STOP BAR (WHITE)
12	8" (200) SOLID (WHITE)
13	4" (100) PARKING WHITE

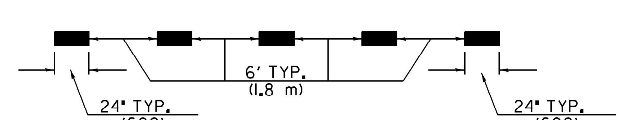


GENERAL NOTES

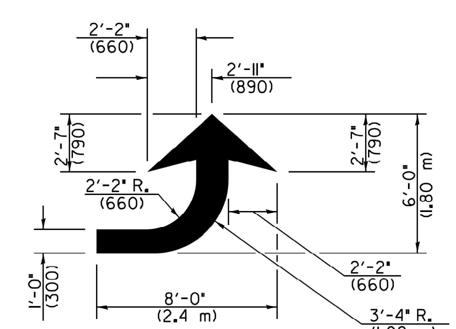
1. TURN ARROW PAIRS SHALL BE PLACED AT 250'(75 m) INTERVALS AND SHALL BE EVENLY SPACED BETWEEN BOTH ENDS OF THE BIDIRECTIONAL LEFT TURN LANE. USE A MINIMUM OF TWO PAIRS PER BLOCK.
2. THE SOLID YELLOW PAVEMENT MARKINGS 2 SHOULD GENERALLY START OR END NEAR THE RADIUS POINT OF EACH STREET RETURN EXCEPT WHERE ONE OR BOTH ENDS WOULD INCLUDE STOP BARS.
3. THE SKIP-DASH PAVEMENT MARKINGS 1 OR 7 SHOULD BE CENTERED BETWEEN BOTH ENDS OF EACH CITY BLOCK AND SHALL BE PLACED SO THEY LINE UP ACROSS FROM EACH OTHER.
4. USE LARGE ARROW SIZE FOR BOTH RURAL AND URBAN LOCATIONS. (SEE LAST PAGE OF SECTION 780x FOR SYMBOLS TABLE)
5. LANE LINE EXTENSIONS SHALL BE THE SAME COLOR AND WIDTH AS THE LANE LINE BEING EXTENDED.



CROSSWALK DETAIL
(DECATUR CITY LIMITS ONLY)

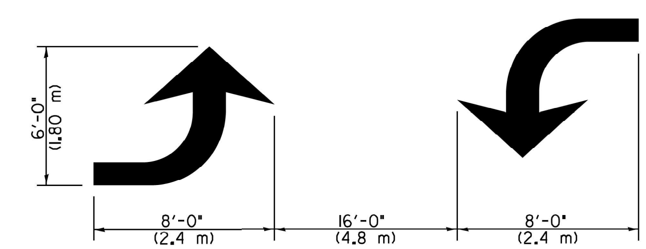


LANE LINE EXTENSIONS



LEFT ARROW

REVERSE FOR RIGHT ARROW
AREA = 15.6 SQ. FT. (1.47 m^2)
(WHITE)



TYPICAL DOUBLE TURN ARROWS (WHITE)

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

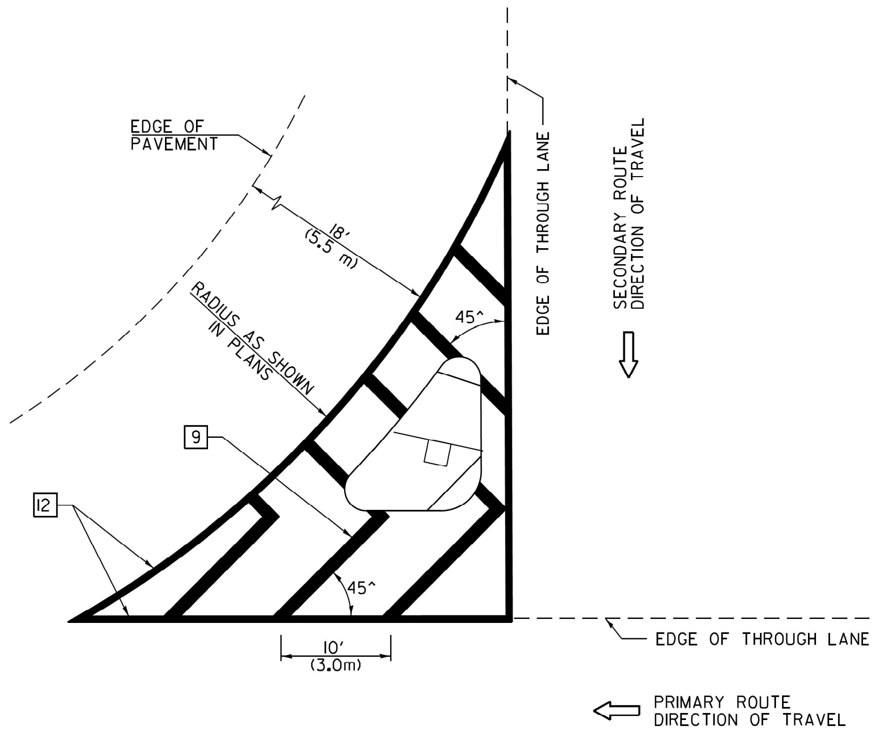
DISTRICT 7 DETAIL NO. 78000001

MODEL: 78000001 - Plan 2 [Sheet]
FILE NAME: c:\bms\keg-pw-01\copy of jeff heimer\dms35959\D774597-sht-D7Details.dgn

Kaskaskia Engineering Group, LLC	USER NAME = jwarner	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-57 OVER D&EIRR & US ROUTE 45 DISTRICT 7 DETAILS
		DRAWN -	REVISED -		
		CHECKED -	REVISED -		
	PLOT DATE = 12/18/2024	DATE -	REVISED -		SCALE: SHEET 2 OF 4 SHEETS STA. TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-2HB)B	CUMBERLAND	414	283
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

ISLAND



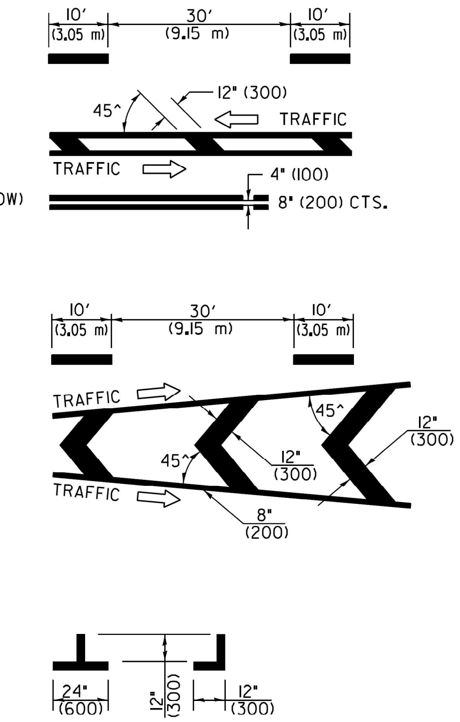
GENERAL NOTES

1. RAISED AND CORRUGATED MEDIANS SHALL BE OUTLINED WITH [2] IF PRESENT.
2. SOME OF THE INFORMATION INCLUDED WITH THIS DETAIL MAY NOT BE APPLICABLE TO THIS IMPROVEMENT.
3. PAVEMENT MARKINGS ARE TO BE EXTENDED THROUGH OMISSIONS WHEN APPLICABLE.
4. FINAL PAVEMENT MARKINGS SHALL BE IN PLACE PRIOR TO PLACING ANY RAISED REFLECTIVE PAVEMENT MARKERS.
5. THE FOLLOWING CRITERIA SHALL BE USED FOR SELECTING THE DIAGONAL PAVEMENT MARKING SPACING:

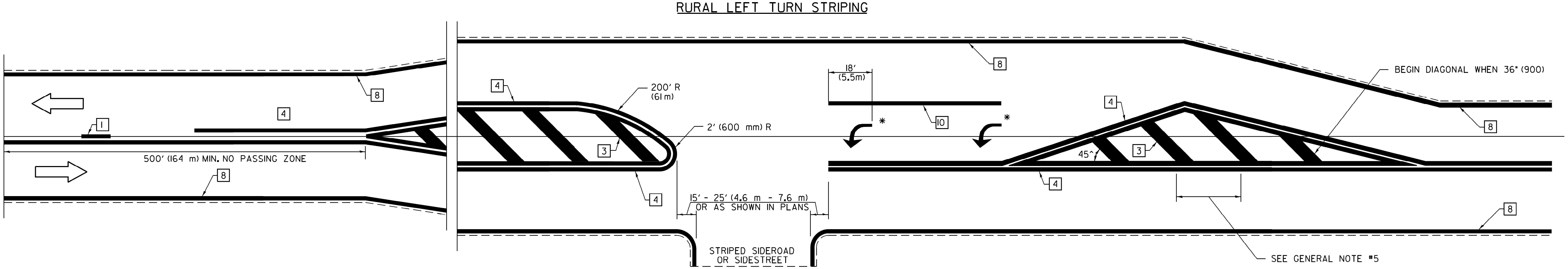
<30 MPH	(<50 km/h)	15′ (4.5 m)
30-45 MPH	(50-75 km/h	20′ (6.0 m)
>45 MPH	(>75 km/h	30′ (9.0 m)

PAVEMENT MARKING LEGEND

1	4" (100) SKIP-DASH (YELLOW)
2	4" (100) SOLID (YELLOW)
3	12" (300) DIAGONAL (YELLOW)
4	4" (100) DOUBLE YELLOW (NARROW)
5	12" (300) SOLID WHITE
6	RESERVED
7	6" (150) SKIP-DASH (WHITE)
8	4" (100) SOLID (WHITE)
9	12" (300) DIAGONAL (WHITE)
10	6" (150) SOLID (WHITE)
11	24" (600) STOP BAR (WHITE)
12	8" (200) SOLID (WHITE)
13	4" (100) PARKING WHITE



RURAL LEFT TURN STRIPING



* PLACE AN ARROW 18′ (5.5 m) BACK FROM STOP BAR. PLACE ANOTHER ARROW EVEN WITH THE BEGINNING OF THE SOLID WHITE LINE. SPACE ADDITIONAL ARROWS EVENLY UP TO 80′ (24.4 m) MAXIMUM SPACING. USE MINIMUM OF 2 ARROWS.

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

MODEL: 78000001 - Plan 3 [Sheet]
FILE NAME: c:\bms\keg-pw-01\copy of jeff.heimer\dms35959\D774597-sht-D7Details.dgn

Kaskaskia Engineering Group, LLC	USER NAME = jwarner	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
	PLOT DATE = 12/18/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

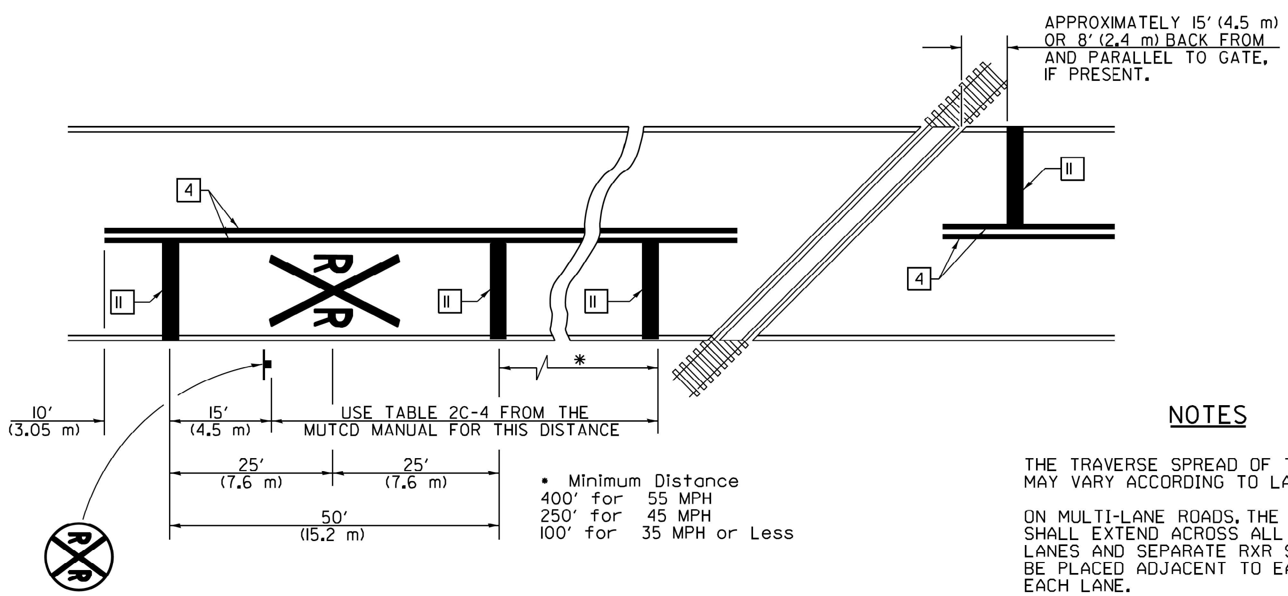
I-57 OVER D&EIRR & US ROUTE 45
DISTRICT 7 DETAILS

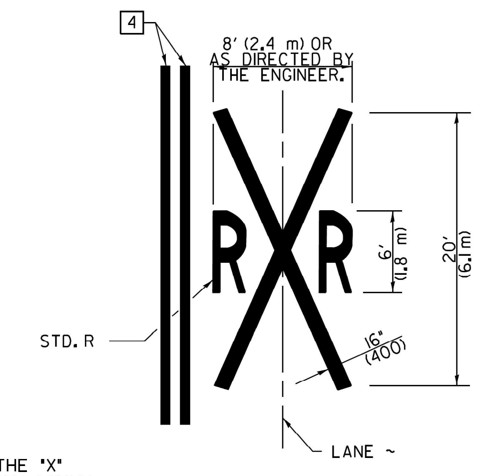
SCALE: | SHEET 3 OF 4 SHEETS | STA. | TO STA.

DISTRICT 7 DETAIL NO. 78000001

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-2HB)B	CUMBERLAND	414	284
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	

PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING





NOTES

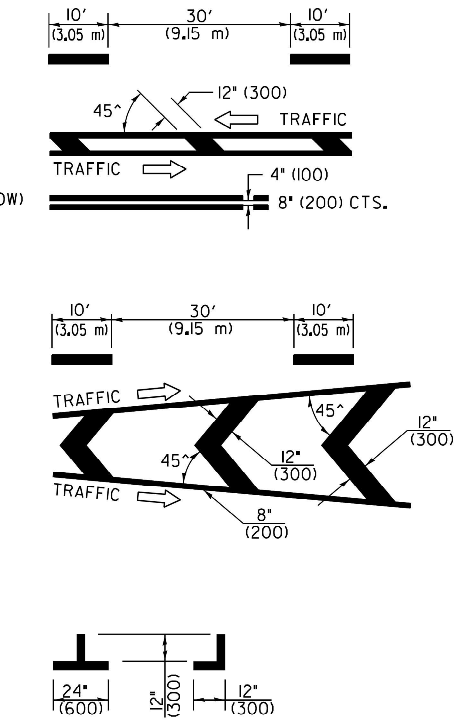
THE TRAVERSE SPREAD OF THE "X" MAY VARY ACCORDING TO LANE WIDTH.

ON MULTI-LANE ROADS, THE STOP LINES SHALL EXTEND ACROSS ALL APPROACH LANES AND SEPARATE RXR SYMBOLS SHALL BE PLACED ADJACENT TO EACH OTHER IN EACH LANE.

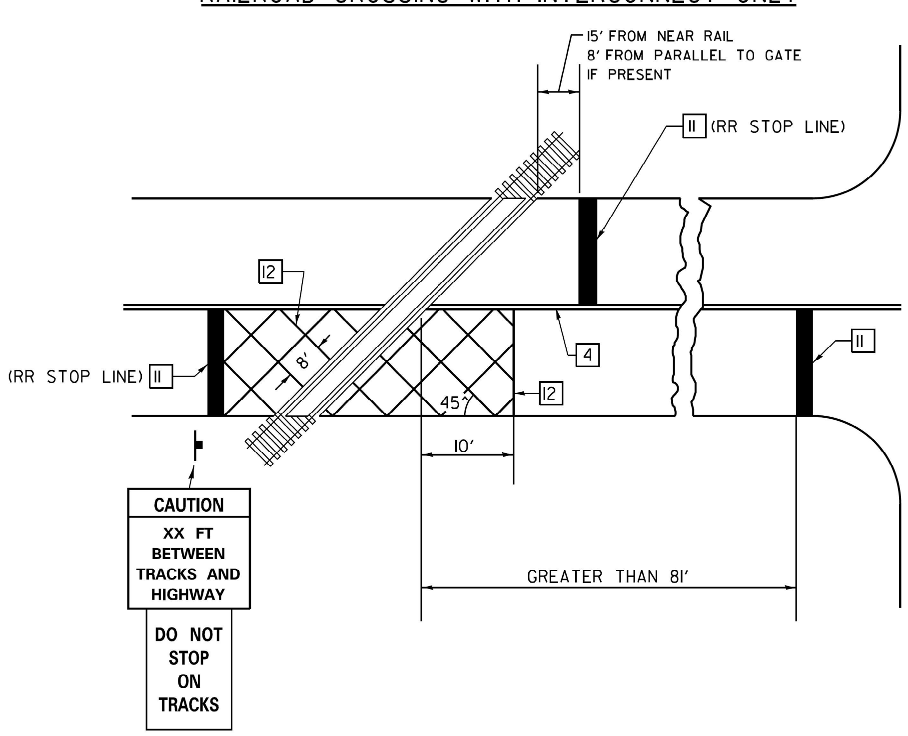
WHEN THE PAVEMENT MARKING SYMBOL IS USED, A PORTION OF THE SYMBOL SHOULD BE LOCATED DIRECTLY ADJACENT TO THE ADVANCE WARNING SIGN (W10-1) AS PLACED BY TABLE II-1, CONDITION B OF THE MUTCD.

PAVEMENT MARKING LEGEND

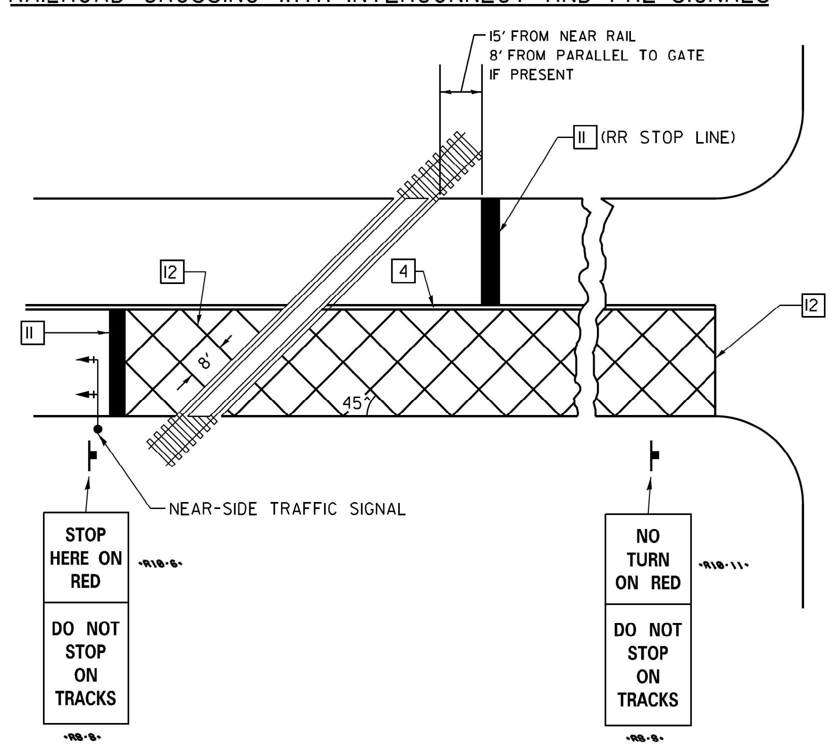
1 4" (100) SKIP-DASH (YELLOW)
2 4" (100) SOLID (YELLOW)
3 12" (300) DIAGONAL (YELLOW)
4 4" (100) DOUBLE YELLOW (NARROW)
5 12" (300) SOLID WHITE
6 RESERVED
7 6" (150) SKIP-DASH (WHITE)
8 4" (100) SOLID (WHITE)
9 12" (300) DIAGONAL (WHITE)
10 6" (150) SOLID (WHITE)
11 24" (600) STOP BAR (WHITE)
12 8" (200) SOLID (WHITE)
13 4" (100) PARKING WHITE



RAILROAD CROSSING WITH INTERCONNECT ONLY



RAILROAD CROSSING WITH INTERCONNECT AND PRE-SIGNALS



GENERAL NOTES

1. SUPPLEMENTAL PAVEMENT MARKINGS TO BE INSTALLED ONLY ON APPROACHES TO INTERSECTIONS CONTROLLED BY TRAFFIC SIGNALS WHICH ARE INTERCONNECTED WITH THE RAILROAD WARNING SIGNALS.

2. EXTEND PAVEMENT MARKINGS TO THE INTERSECTION ONLY WHERE NEAR-SIDE TRAFFIC SIGNALS ARE USED.

SUPPLEMENTAL PAVEMENT MARKING TREATMENT FOR RAILROAD-HIGHWAY GRADE CROSSING

NOT TO SCALE

Note: All dimensions are in INCHES (millimeters) unless otherwise shown.

DISTRICT 7 DETAIL NO. 78000001

MODEL: 78000001 - Plan 4 [Sheet]
FILE NAME: c:\bms\keg-pw-01\copy of jeff heimer\dms35959\D774597-sht-D7Details.dgn

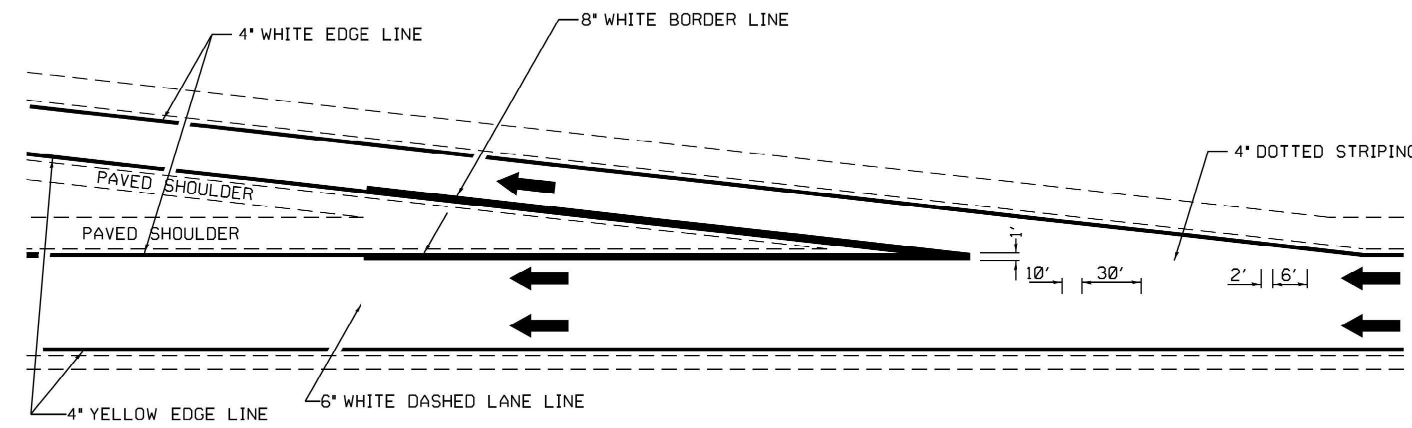
Kaskaskia Engineering Group, LLC	USER NAME = jwarner	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
	PLOT DATE = 12/18/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

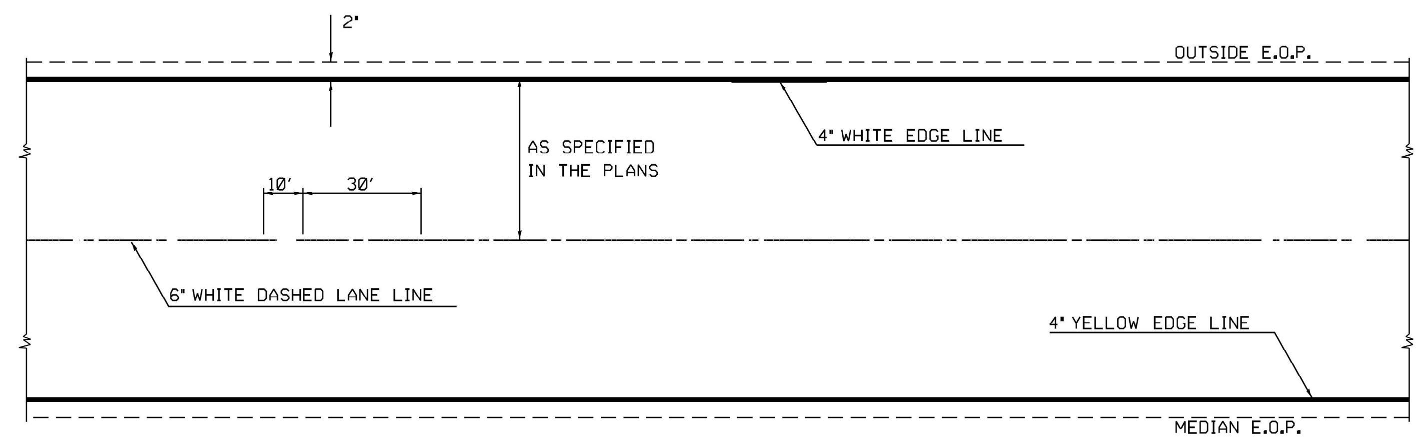
I-57 OVER D&EIRR & US ROUTE 45
DISTRICT 7 DETAILS

SCALE: | SHEET 4 OF 4 SHEETS | STA. | TO STA.

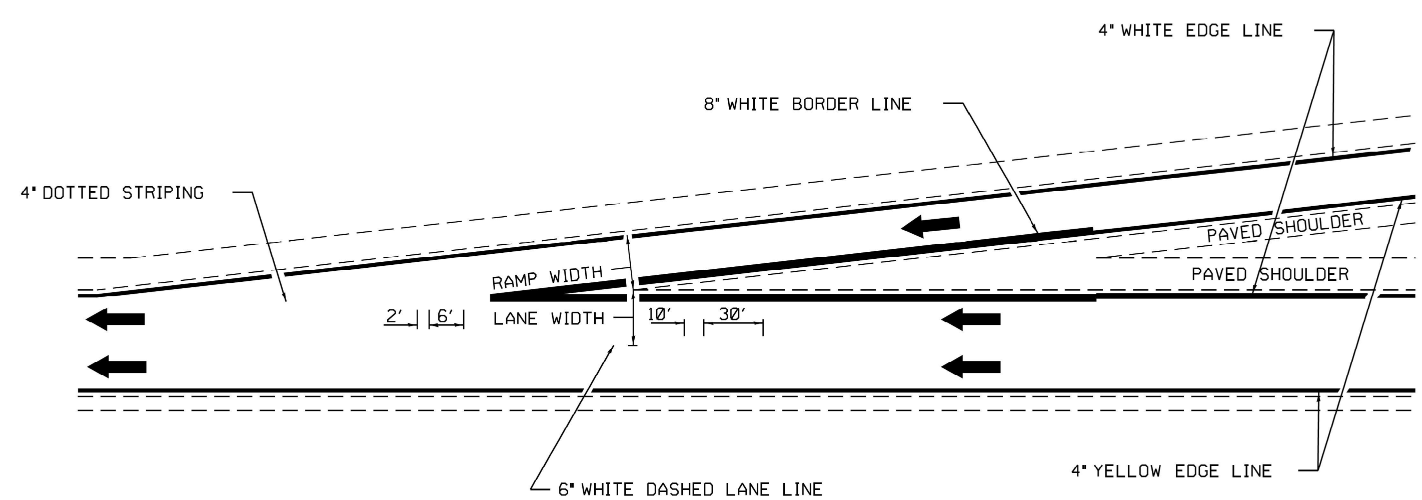
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-2HB)B	CUMBERLAND	414	285
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	



TYPICAL EXIT RAMP MARKING



TYPICAL CENTERLINE & EDGELINE MARKINGS



TYPICAL ENTRANCE RAMP MARKING

NOT TO SCALE

MODEL: 78000002 - Plan 5 [Sheet]
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Kaskaskia Engineering Group, LLC
208 E. Main St., Suite 100
Belleville, Illinois 62220
618.233.5877 phone
618.233.5977 fax
www.kaskaskiaeng.com

PROFESSIONAL REGISTRATIONS	LICENSE NO.
Illinois Professional Design Firm	184.004773
Professional Engineering Group	20-5080586

USER NAME = jwarner	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 12/18/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-7 OVER D&EIRR & US ROUTE 45
DISTRICT 7 DETAILS

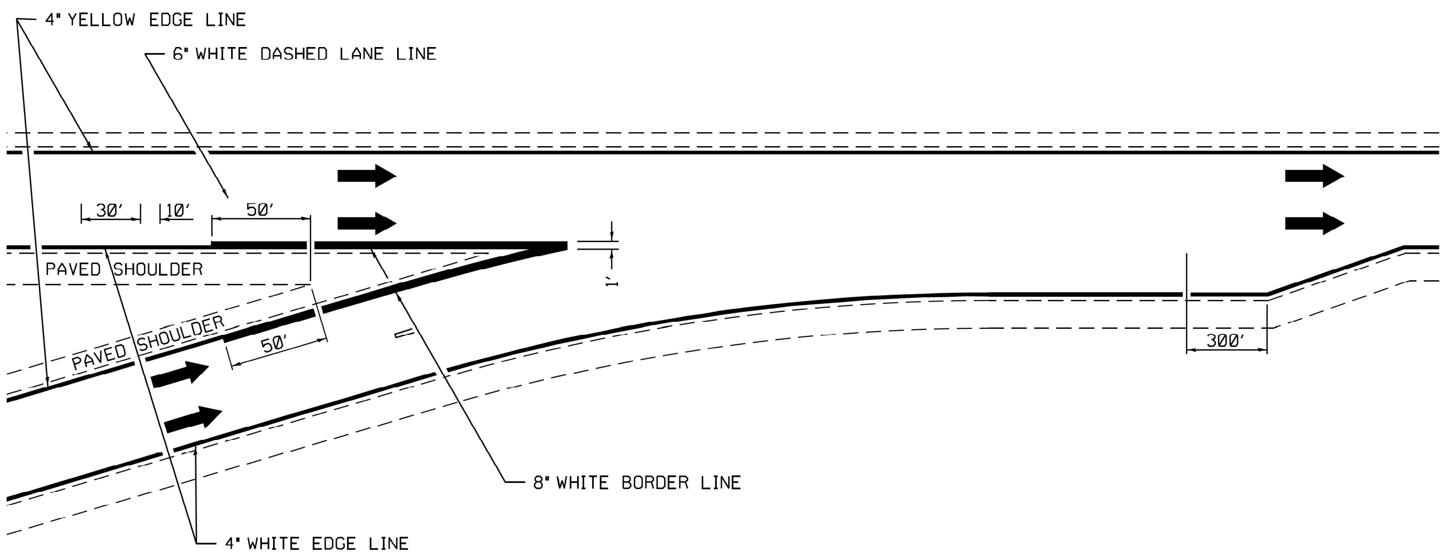
SCALE: | SHEET 1 OF 2 SHEETS | STA. | TO STA.

DISTRICT 7 DETAIL NO. 78000002

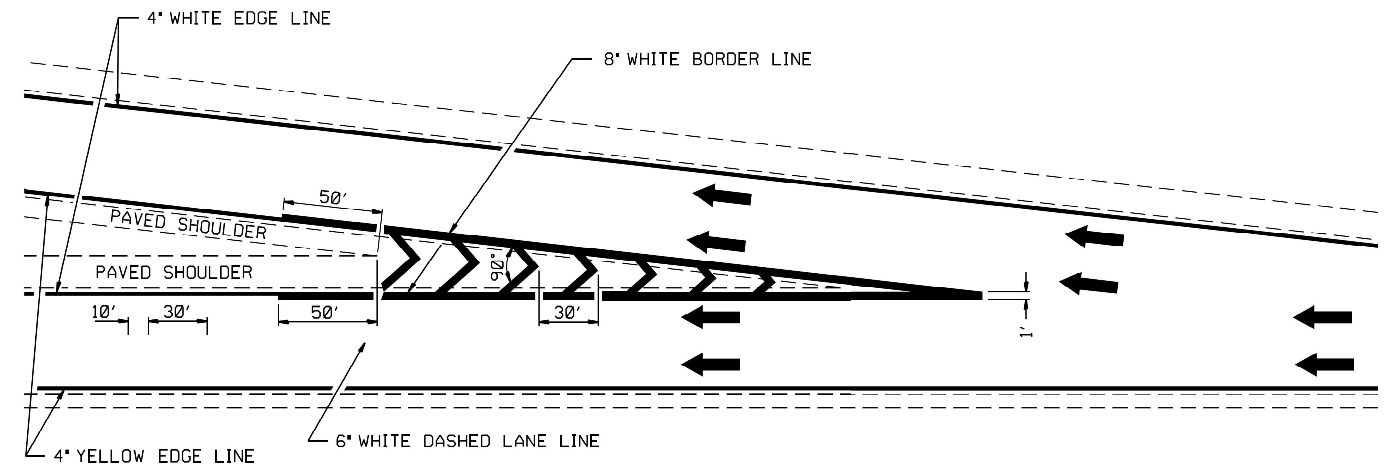
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	286

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT

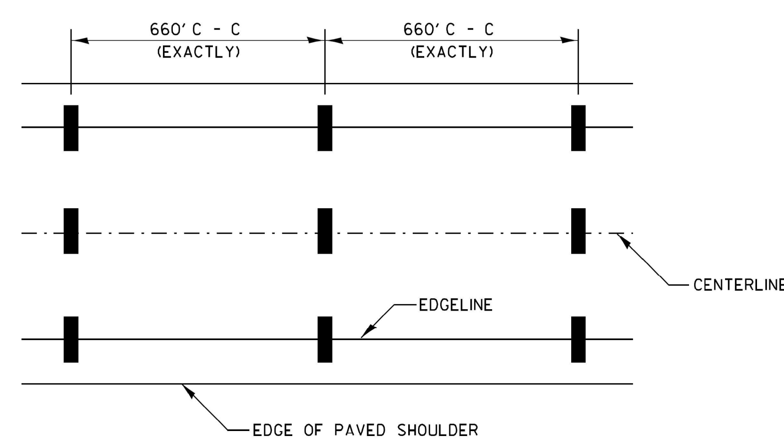


TYPICAL CONVERGENCE MARKING

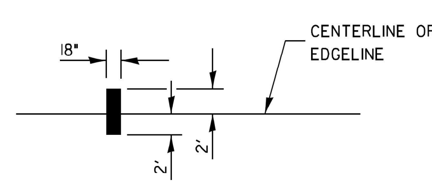


TYPICAL DIVERGENCE MARKING

AERIAL SPEED CHECK ZONES



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



NOT TO SCALE

MODEL: 78000002 - Plan 6 [Sheet]
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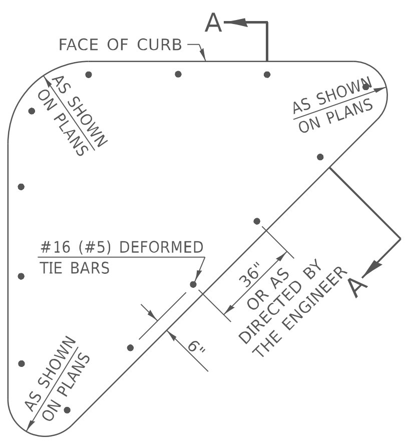
Kaskaskia Engineering Group, LLC	USER NAME = jwarner	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	I-57 OVER D&EIRR & US ROUTE 45 DISTRICT 7 DETAILS
		DRAWN -	REVISED -		
		CHECKED -	REVISED -		
	PLOT DATE = 12/18/2024	DATE -	REVISED -		SCALE: SHEET 2 OF 2 SHEETS STA. TO STA.

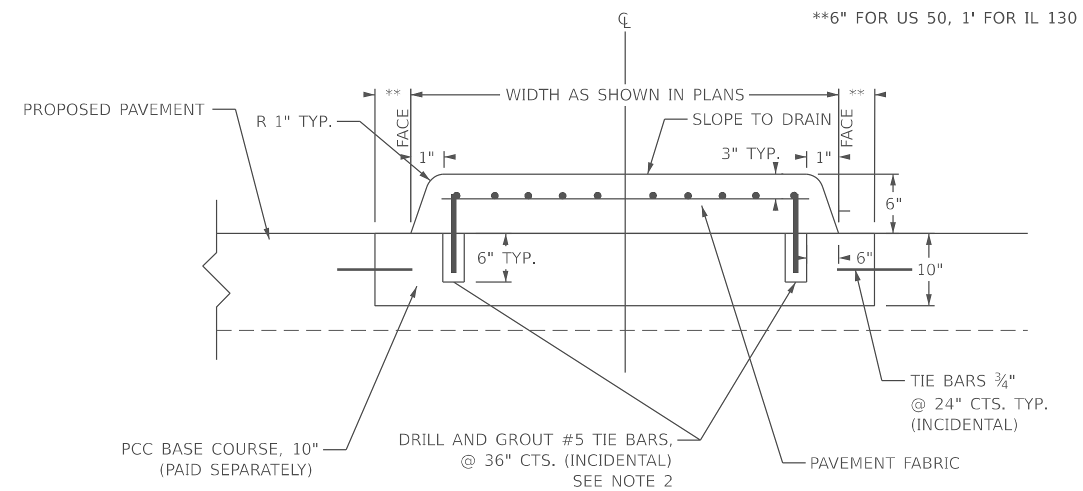
DISTRICT 7 DETAIL NO. 78000002

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-2HB)B	CUMBERLAND	414	287
		CONTRACT NO. 74597		
	ILLINOIS	FED. AID PROJECT		

DETAIL OF CONCRETE MEDIAN, TYPE SB (DOWELLED)



PLAN OF CORNER ISLAND



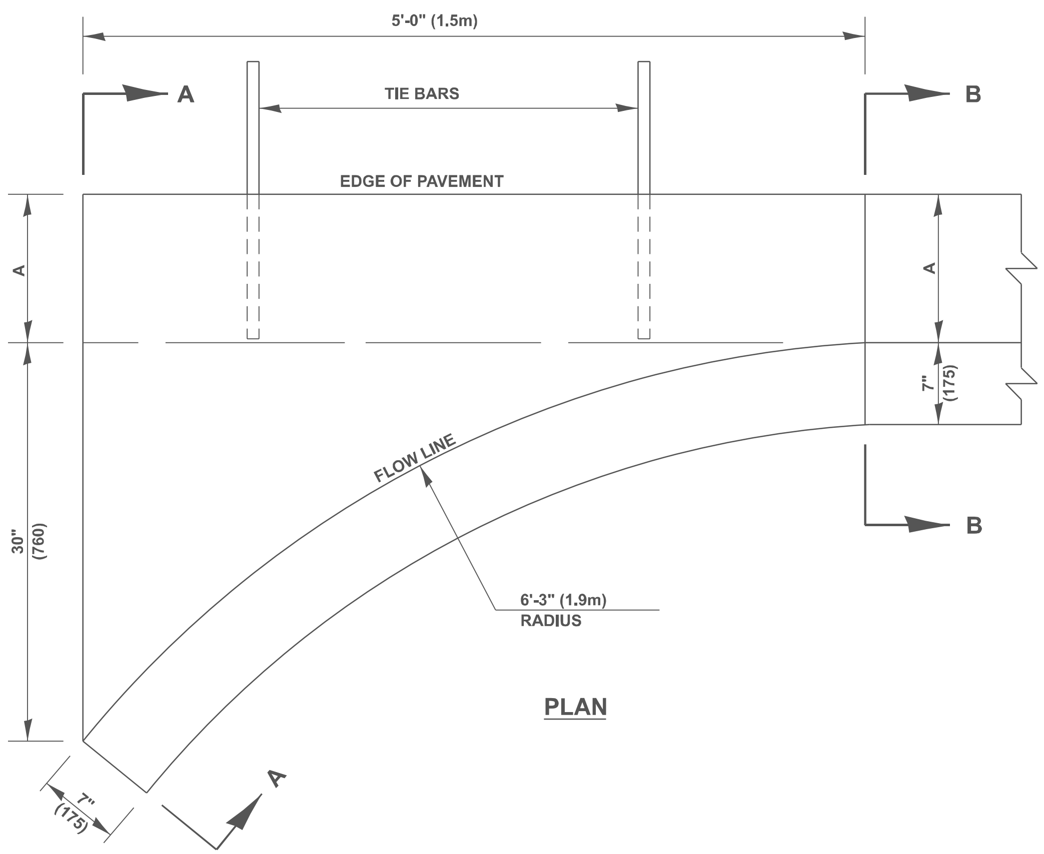
NOTES

1. CONCRETE MEDIAN, TYPE SB (DOWELLED) SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE APPLICABLE PORTIONS OF STATE STANDARD 606301 AND SECTION 606 OF THE STANDARD SPECIFICATIONS.
2. SECTION G-G SHALL BE THE SAME AS SHOWN IN STANDARD 606301.
3. DOWEL BARS @ 36" CTS. OR AS DIRECTED BY THE ENGINEER.

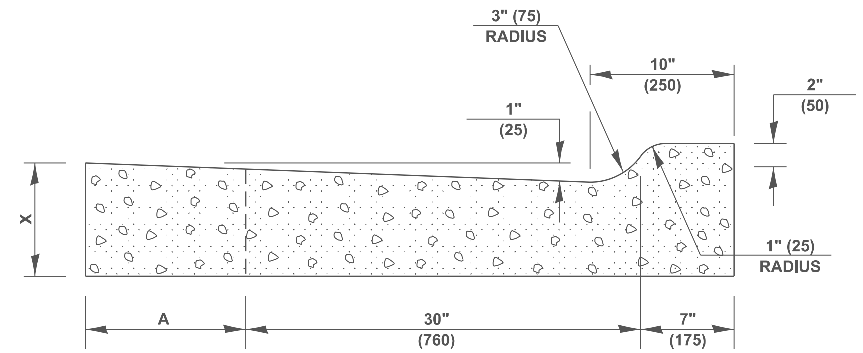
MODEL: Default
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\016_Details\d7_p-97-047-12_sht_d7_details_project related.dgn

USER NAME = malvarez	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	DISTRICT 7 DETAIL CONCRETE MEDIAN (DOWELLED) DETAILS
	DRAWN -	REVISED -		
	CHECKED -	REVISED -		
PLOT DATE = 5/5/2025	DATE -	REVISED -		SCALE: NTS — SHEET 1 OF 1 SHEETS — STA. TO STA.

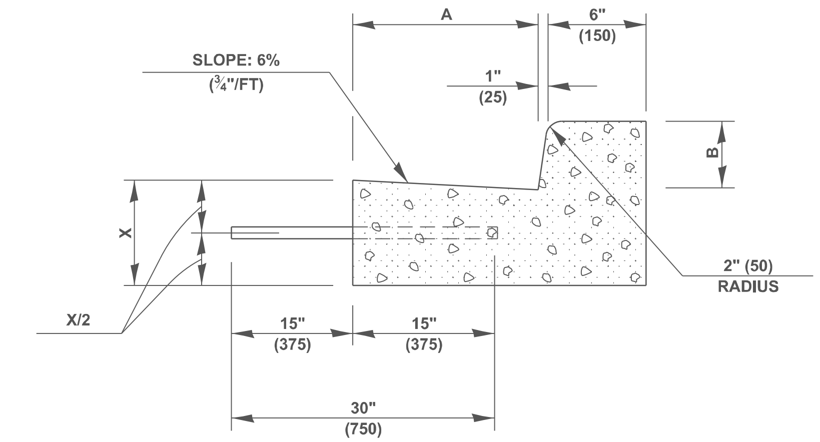
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-20HB)B	CUMBERLAND	414	288
CONTRACT NO. 74597				
ILLINOIS FED. AID PROJECT				



PLAN



SECTION A-A



SECTION B-B

	B-6.12 (B15.30)		B-9.12 (B22.30)		B-6.18 (B15.45)		B-9.18 (B22.45)		B-6.24 (B15.60)		B-9.24 (B22.60)	
A	12" (300)	12" (300)	12" (300)	12" (300)	18" (450)	18" (450)	18" (450)	18" (450)	24" (600)	24" (600)	24" (600)	24" (600)
B	6" (150)	6" (150)	9" (225)	9" (225)	6" (150)	6" (150)	9" (225)	9" (225)	6" (150)	6" (150)	9" (225)	9" (225)
X	9" (225)	10" (250)	9" (225)	10" (250)	9" (225)	10" (250)	9" (225)	10" (250)	9" (225)	10" (250)	9" (225)	10" (250)
CU YD (m^3)	0.37 (0.28)	0.42 (0.32)	0.38 (0.29)	0.42 (0.32)	0.44 (0.34)	0.49 (0.37)	0.45 (0.34)	0.50 (0.38)	0.51 (0.39)	0.56 (0.43)	0.52 (0.40)	0.57 (0.44)

GENERAL NOTES

1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
2. TIE BARS SHALL BE NO. 6 (NO. 20) AT 24" (600mm) CENTERS UNLESS OTHERWISE SHOWN. OUTLETS SHALL BE TIED TO THE PAVEMENT IN ACCORDANCE WITH DETAILS FOR LONGITUDINAL CONSTRUCTION JOINT SHOWN ON STANDARD 420001.
3. WHEN SPECIAL OUTLET IS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENT, THE TIE BARS SHALL BE OMITTED AND ALL CONSTRUCTION JOINTS SHALL BE PROVIDED WITH A DOWEL BAR CONFORMING TO ARTICAL 1006.11(b).

NOT TO SCALE

NOTE: ALL DIMENSIONS ARE IN INCHES (MILLIMETERS) UNLESS OTHERWISE SHOWN.

DISTRICT 7 DETAIL NO. X6060097

MODEL: Default
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\016_Details\d7_p-97-047-12_sht_d7_details_project related.dgn

USER NAME = malvarez	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 5/5/2025	DATE -	REVISED -	

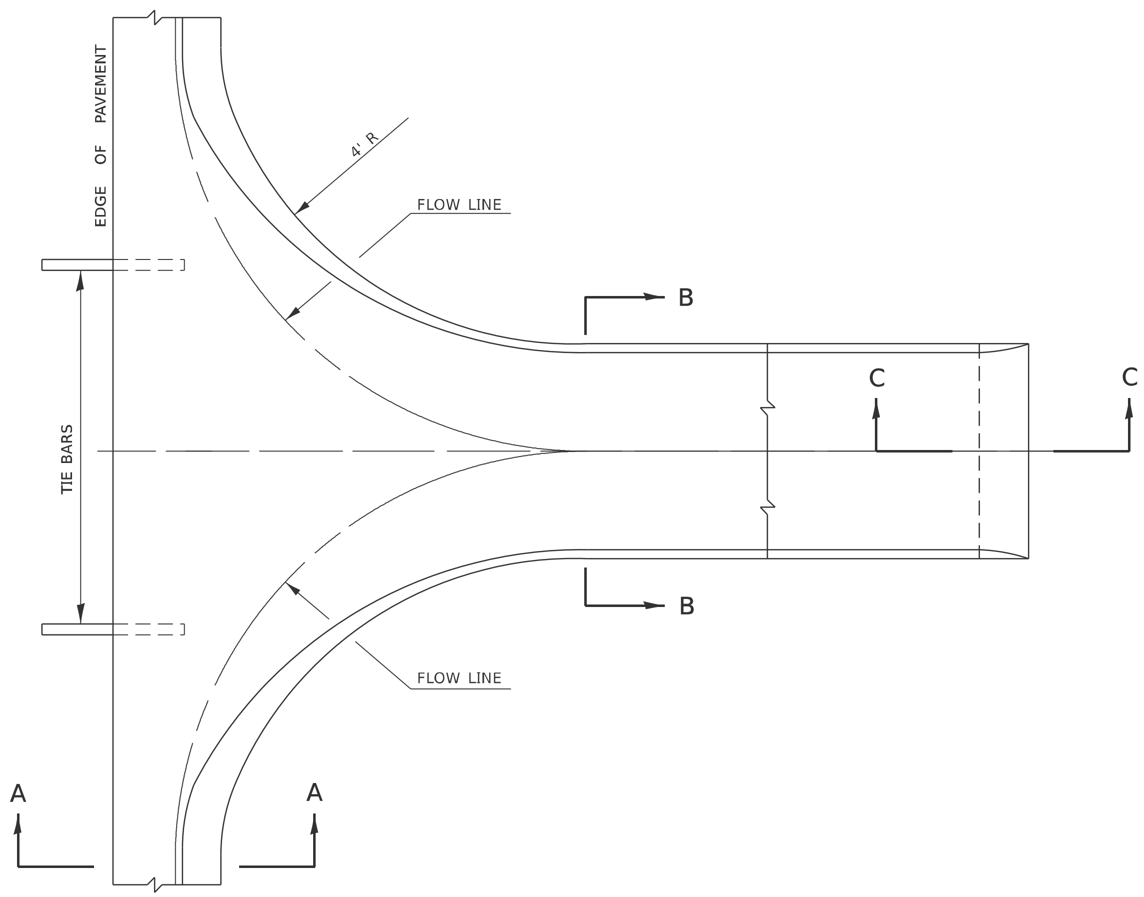
DISTRICT 7 DETAIL
X6060097- CLASS SI CONCRETE (OUTLET), SPECIAL

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-20HB)B	CUMBERLAND	414	289

CONTRACT NO. 74597

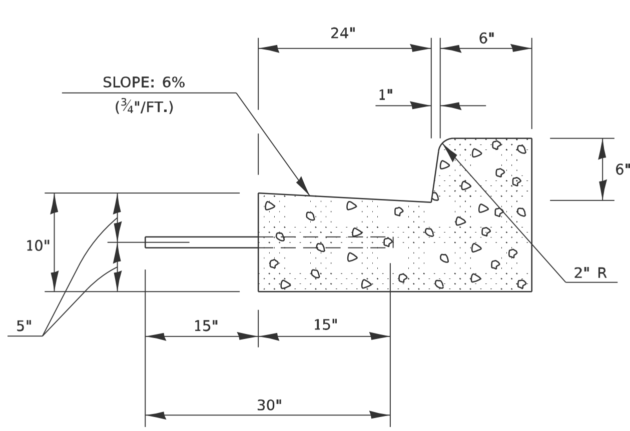
ILLINOIS | FED. AID PROJECT



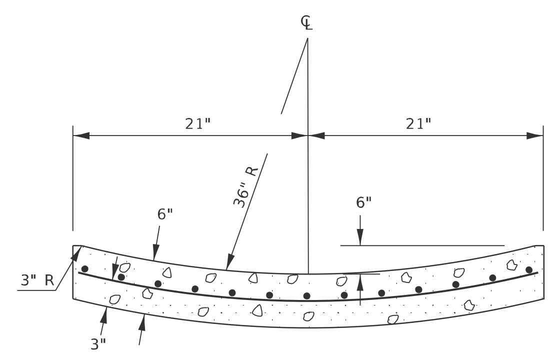
PLAN VIEW

GENERAL NOTES

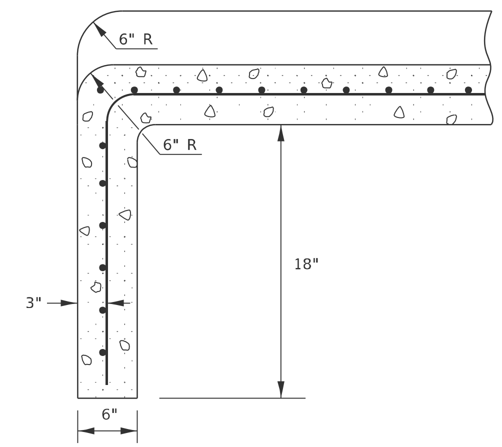
1. CLASS SI CONCRETE SHALL BE USED THROUGHOUT.
2. TIE BARS SHALL BE NO. 6 (NO. 20) AT 24" (600 mm) CENTERS UNLESS OTHERWISE SHOWN. OUTLETS SHALL BE TIED TO THE PAVEMENT IN ACCORDANCE WITH DETAILS FOR LONGITUDINAL CONSTRUCTION JOINT SHOWN ON STANDARD 420001.
3. WHEN SPECIAL OUTLET IS CONSTRUCTED ADJACENT TO FLEXIBLE PAVEMENT, THE TIE BARS SHALL BE OMITTED AND ALL CONSTRUCTION JOINTS SHALL BE PROVIDED WITH A DOWEL BAR CONFORMING TO ARTICLE 1006.11(b).



SECTION A-A



SECTION B-B



SECTION C-C

QUANTITIES

OPTION 1 OUTLET:

SECTION A-A TO B-B = 1.35 CU. YDS.

SECTION C-C = 0.069 CU. YDS. CONCRETE PER FT.

ADDITIONAL DETAILS FOR CLASS SI CONCRETE (OUTLET), SPECIAL

MODEL: Default
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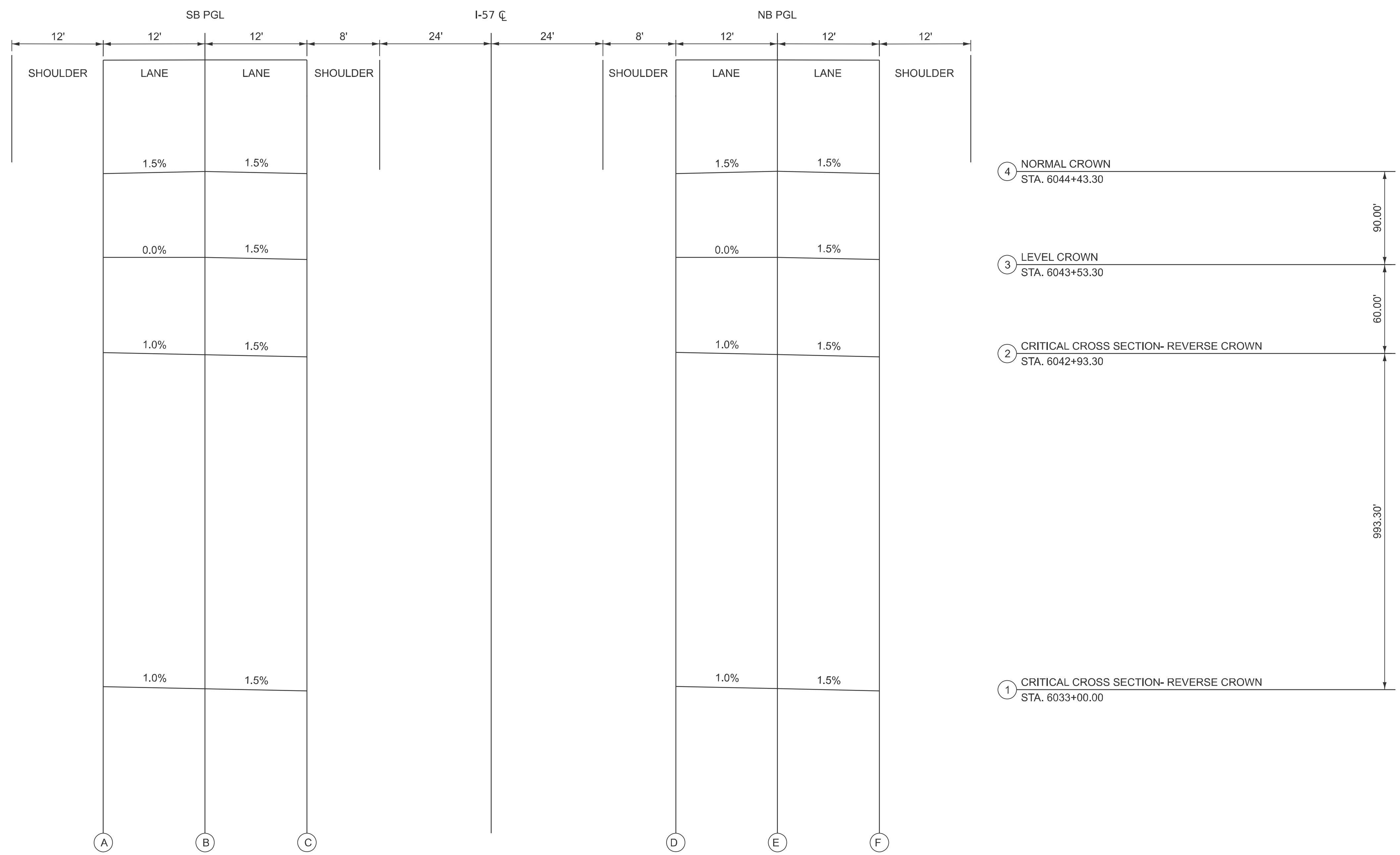
	DRAWN -	REVISED -		
	CHECKED -	REVISED -		
PLOT DATE = 5/5/2025	DATE -	REVISED -		SCALE: NTS SHEET 2 OF 2 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB,18-20HB)B	CUMBERLAND	414	290
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		



PROFILE GRADE ELEVATION- I-57

STATION	SECTION	A	B	C	D	E	F
6033+00.00	1	664.06'	663.94'	663.77'	664.06'	663.94'	663.76'
6042+93.30	2	683.53'	683.42'	683.24'	683.54'	683.42'	683.24'
6043+53.30	3	684.71'	684.71'	684.53'	684.71'	684.71'	684.53'
6044+43.30	4	686.33'	686.51'	686.33'	686.33'	686.51'	686.33'

MODEL: Default
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USER NAME = malvarez	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 3/5/2025	DATE -	REVISED -	

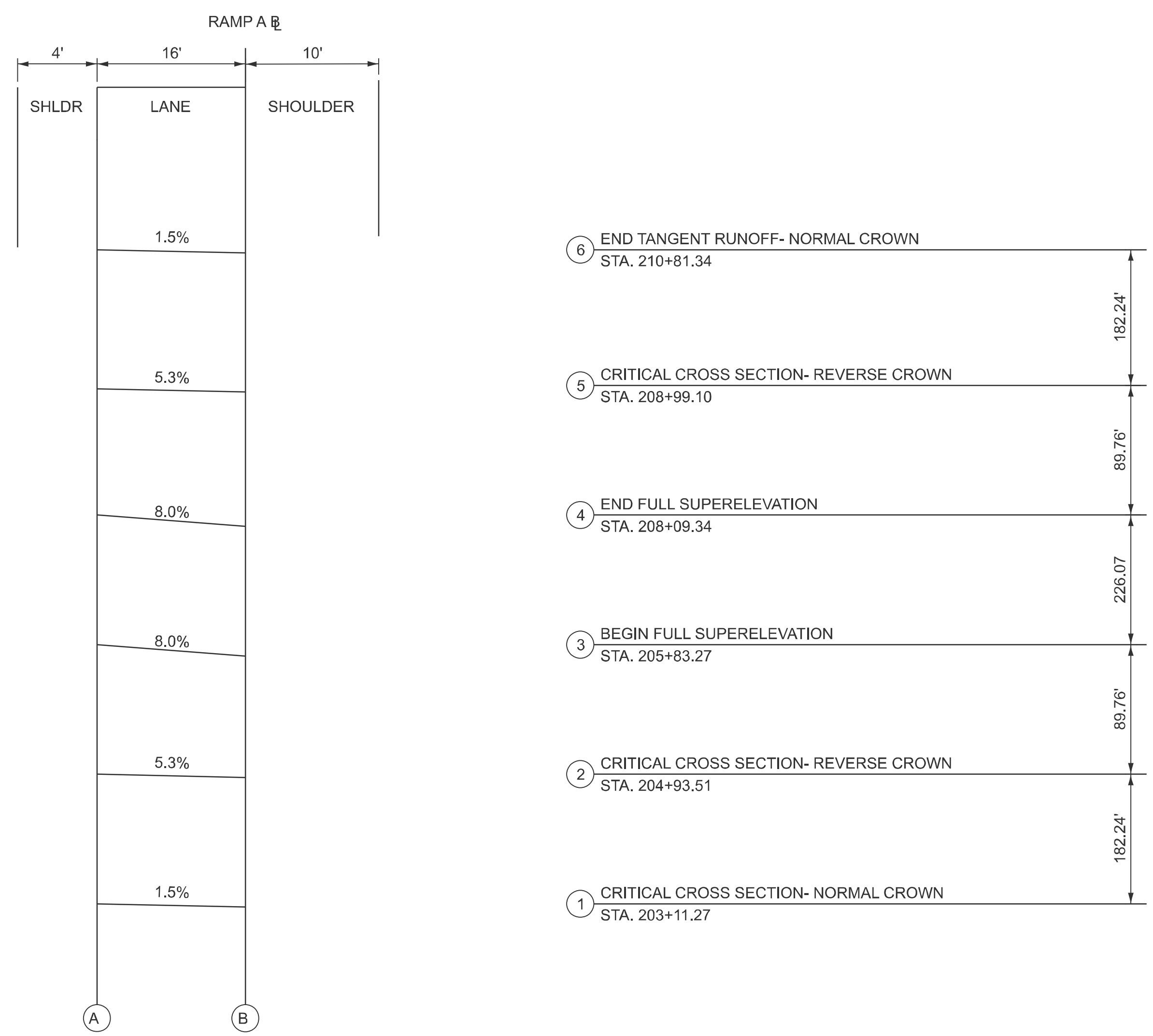
I-57 OVER D&EIRR & US ROUTE 45
SUPER ELEVATION DETAIL- MAINLINE

SCALE: NTS | SHEET 1 OF 5 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	291

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT



PROFILE GRADE ELEVATION- RAMP A

STATION	SECTION	A	B
203+11.27	1	670.67'	670.43'
204+93.51	2	679.42'	678.57'
205+83.27	3	683.83'	682.55'
208+09.34	4	690.41'	689.13'
208+99.10	5	691.00'	690.14'
210+81.34	6	692.06'	691.82'

MODEL: Default
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USER NAME = malvarez	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 3/5/2025	DATE -	REVISED -	

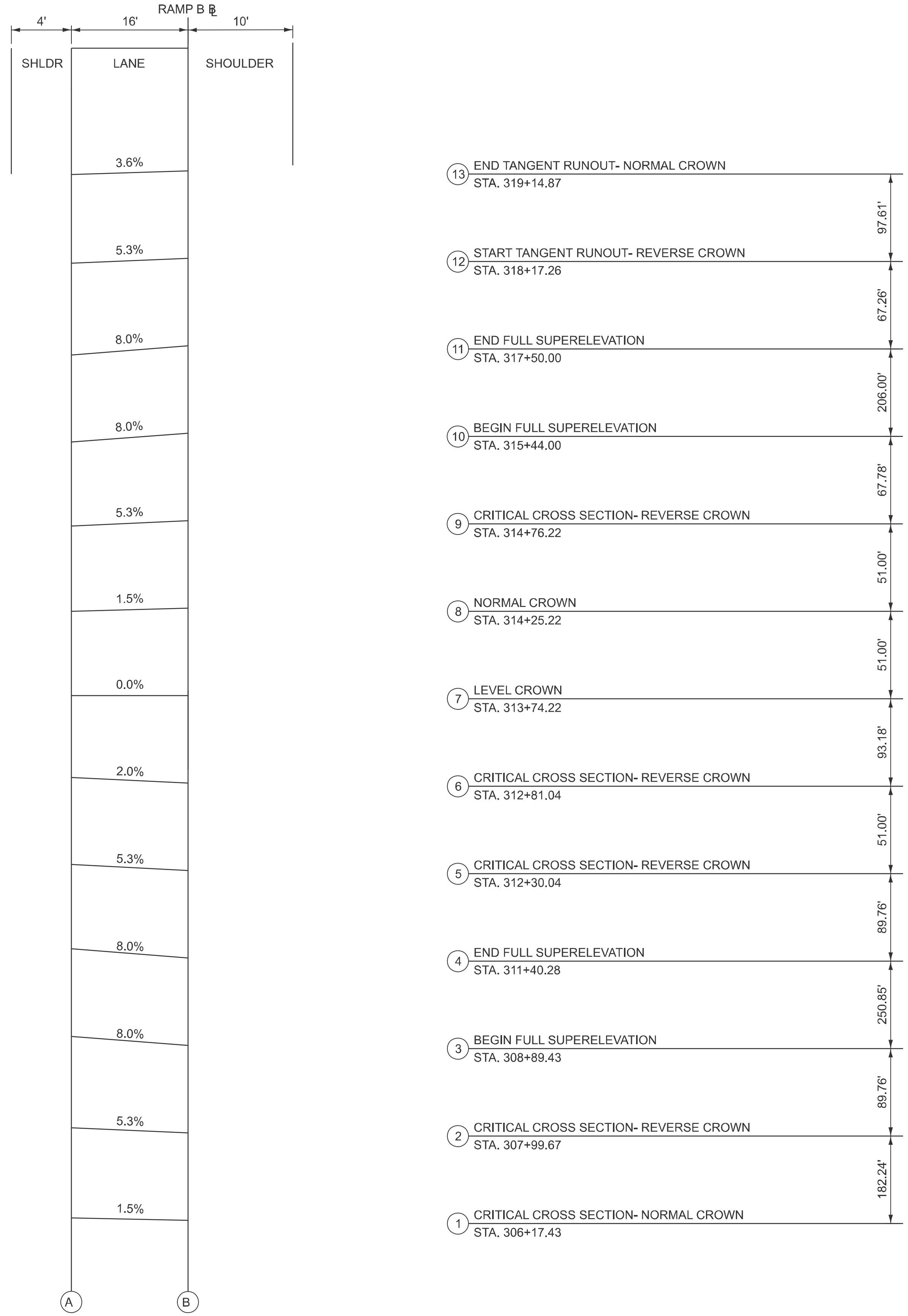
I-57 OVER D&EIRR & US ROUTE 45
SUPER ELEVATION DETAIL- RAMP A

SCALE: NTS | SHEET 2 OF 5 SHEETS | STA. N/A TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	292

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT



PROFILE GRADE ELEVATION- RAMP B			
STATION	SECTION	A	B
306+17.43	1	664.29'	664.05'
307+99.67	2	667.75'	666.90'
308+89.43	3	669.51'	668.23'
311+40.28	4	669.43'	668.15'
312+30.04	5	668.20'	667.34'
312+81.04	6	667.20'	668.88'
313+74.22	7	666.04'	666.04'
314+25.22	8	665.35'	665.59'
314+76.22	9	664.27'	665.13'
315+44.00	10	663.24'	664.52'
317+50.00	11	662.12'	663.40'
318+17.26	12	662.08'	662.93'
319+14.87	13	661.08'	661.66'

MODEL: Default
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USER NAME = malvarez	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 3/5/2025	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

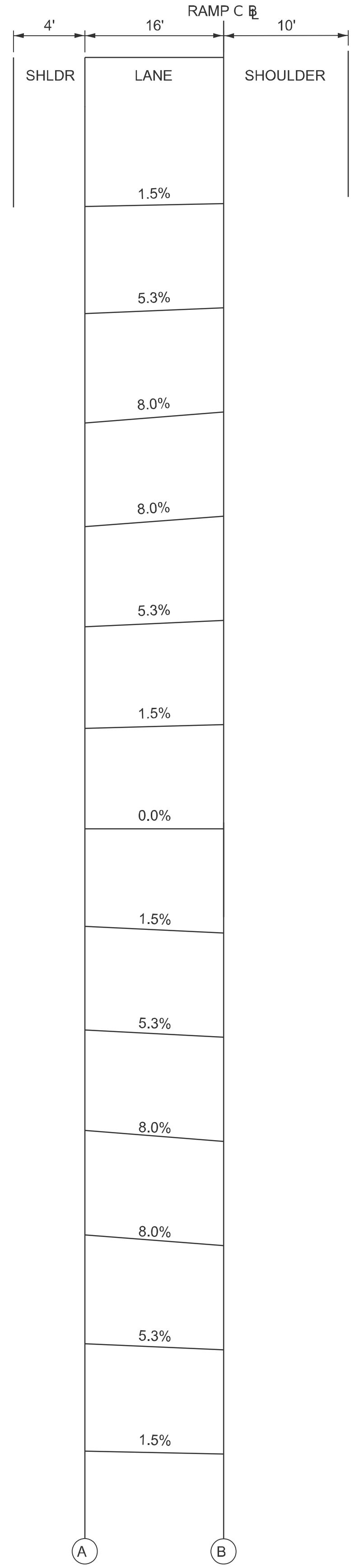
I-57 OVER D&EIRR & US ROUTE 45
SUPER ELEVATION DETAIL- RAMP B

SCALE: NTS | SHEET 3 OF 5 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	293

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT



(13) END TANGENT RUNOUT- NORMAL CROWN
STA. 419+10.31

97.61'

(12) START TANGENT RUNOUT- REVERSE CROWN
STA. 418+17.05

67.26'

(11) END FULL SUPERELEVATION
STA. 417+49.25

206.00'

(10) BEGIN FULL SUPERELEVATION
STA. 415+43.25

67.78'

(9) CRITICAL CROSS SECTION- REVERSE CROWN
STA. 414+76.01

51.00'

(8) NORMAL CROWN
STA. 413+92.50

51.00'

(7) LEVEL CROWN
STA. 413+54.25

93.18'

(6) NORMAL CROWN
STA. 413+16.00

51.00'

(5) CRITICAL CROSS SECTION- REVERSE CROWN
STA. 412+17.85

89.76'

(4) END FULL SUPERELEVATION
STA. 411+50.25

250.85'

(3) BEGIN FULL SUPERELEVATION
STA. 408+67.25

89.76'

(2) CRITICAL CROSS SECTION- REVERSE CROWN
STA. 407+99.63

182.24'

(1) CRITICAL CROSS SECTION- NORMAL CROWN
STA. 406+25.00

PROFILE GRADE ELEVATION- RAMP C

STATION	SECTION	A	B
406+25.00	1	692.42'	692.18'
407+99.63	2	691.43'	690.57'
408+67.25	3	690.88'	689.60'
411+50.25	4	684.64'	663.36'
412+17.85	5	682.31'	681.46'
413+16.00	6	678.93'	678.69'
413+54.25	7	677.61'	677.61'
413+92.50	8	676.29'	676.53'
414+76.01	9	673.36'	674.21'
415+43.25	10	671.07'	672.35'
417+49.25	11	666.11'	667.39'
418+17.05	12	665.49'	666.34'
419+10.31	13	664.92'	665.17'

MODEL: Default
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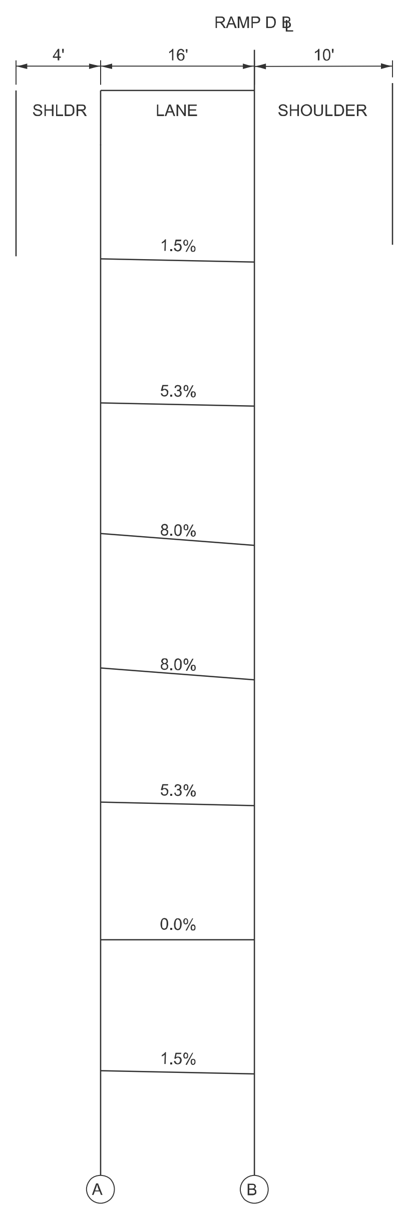
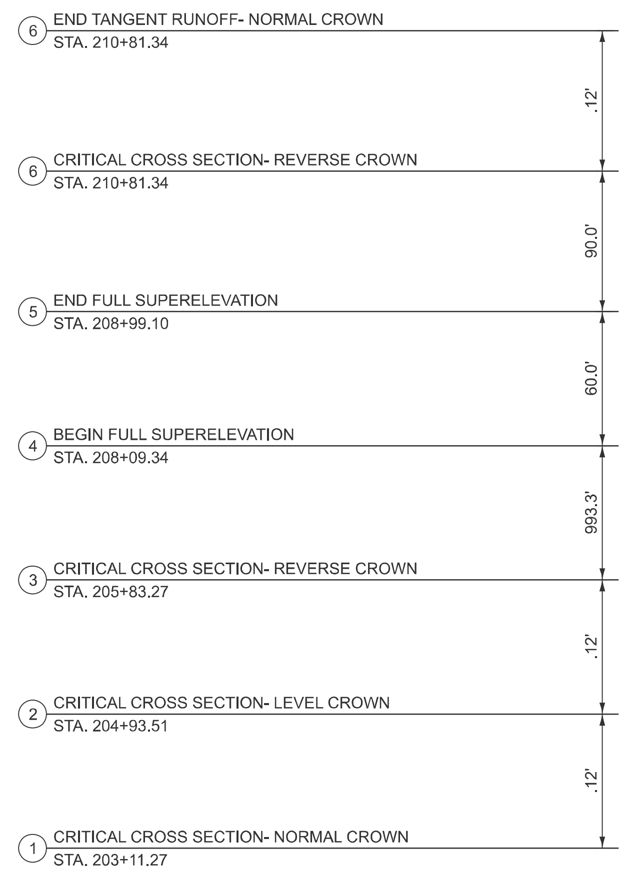
USER NAME = malvarez	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 3/5/2025	DATE -	REVISED -	

I-57 OVER D&EIRR & US ROUTE 45
SUPER ELEVATION DETAIL- RAMP C

SCALE: NTS | SHEET 3 OF 5 SHEETS | STA. N/A | TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	294
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	





PROFILE GRADE ELEVATION- RAMP D

STATION	SECTION	A	B
502+18.46	1	665.60'	665.84'
503+09.13	2	667.08'	667.08'
504+90.43	3	670.62'	669.46'
506+72.67	4	671.00'	669.71'
507+15.97	5	670.60'	669.32'
508+98.21	6	667.06'	666.20'
510+79.54	7	663.54'	663.30'

MODEL: Default
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USER NAME = malvarez	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 3/5/2025	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

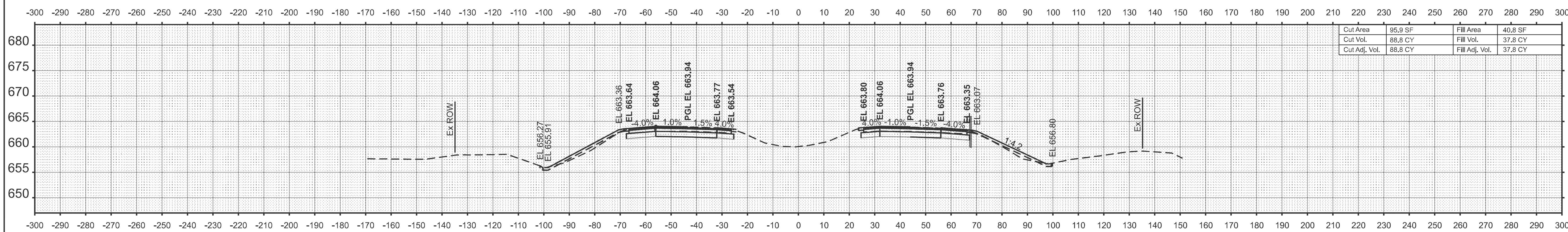
I-57 OVER D&EIRR & US ROUTE 45
SUPER ELEVATION DETAIL- RAMP D

SCALE: NTS | SHEET 4 OF 5 SHEETS | STA. N/A TO STA. N/A

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	295

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT



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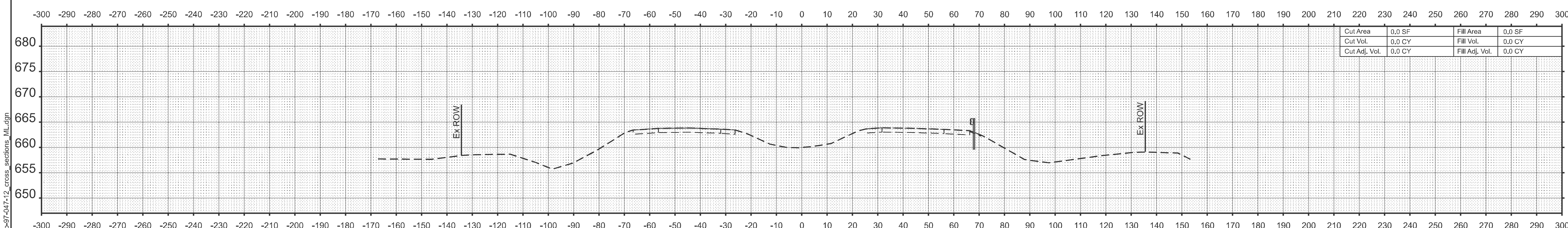
Cut Adj. Vol.	88.8 CY	Fill Adj. Vol.	37.8 CY

STA 6033+00.00



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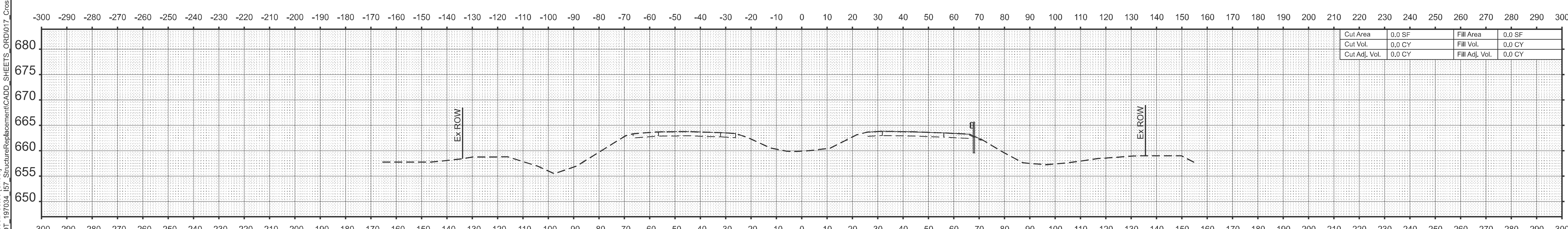
Cut Adj. Vol.	0.0 CY	Fill Adj. Vol.	0.0 CY

STA 6032+50.00



Cut Area	0.0 SF	Fill Area	0.0 SF
Cut Vol.	0.0 CY	Fill Vol.	0.0 CY
Cut Adj. Vol.	0.0 CY	Fill Adj. Vol.	0.0 CY

STA 6032+00.00

MODEL: ExCL_Combined - 6032+00.00 [Sheet]
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\017_Cross Sections\d7_p-97-047-12_cross_sections_ML.dgn

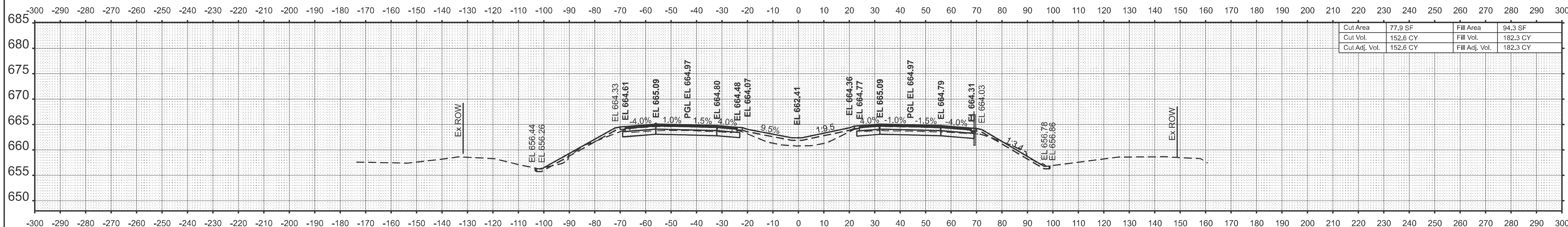
BLA, Inc.	USER NAME = malvarez	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
	PLOT DATE = 12/23/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 OVER D&EIRR & US ROUTE 45
I-57 CROSS SECTIONS

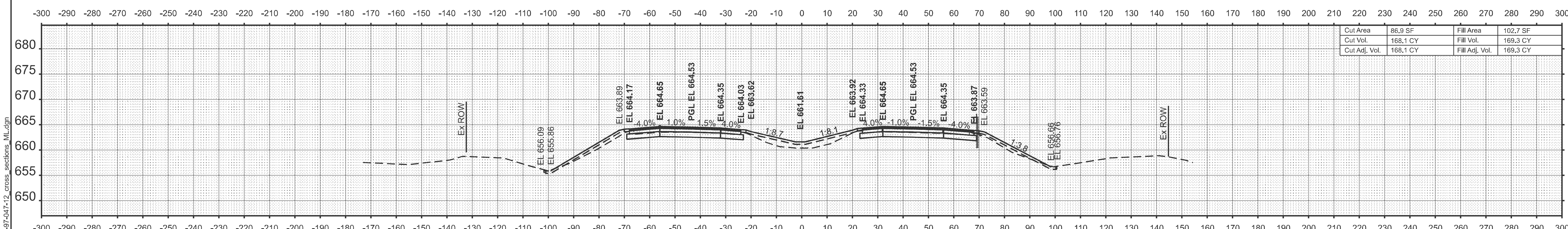
SCALE: H: V:1"=5' | SHEET 1 OF 63 SHEETS | STA. 6032+00.00 TO STA. 6033+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	296
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		



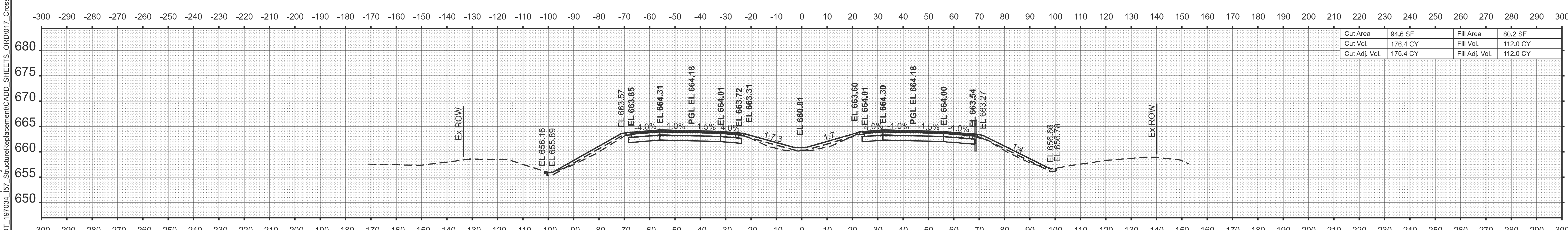
Cut Area	77.9 SF	Fill Area	94.3 SF
Cut Vol.	152.6 CY	Fill Vol.	182.3 CY
Cut Adj. Vol.	152.6 CY	Fill Adj. Vol.	182.3 CY

STA 6034+50.00



Cut Area	86.9 SF	Fill Area	102.7 SF
Cut Vol.	168.1 CY	Fill Vol.	169.3 CY
Cut Adj. Vol.	168.1 CY	Fill Adj. Vol.	169.3 CY

STA 6034+00.00



Cut Area	94.6 SF	Fill Area	80.2 SF
Cut Vol.	176.4 CY	Fill Vol.	112.0 CY
Cut Adj. Vol.	176.4 CY	Fill Adj. Vol.	112.0 CY

STA 6033+50.00

MODEL: ExCL_Combined - 6033+50.00 [Sheet]
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\017_Cross Sections\d7_p-97-047-12_cross_sections_ML.dgn

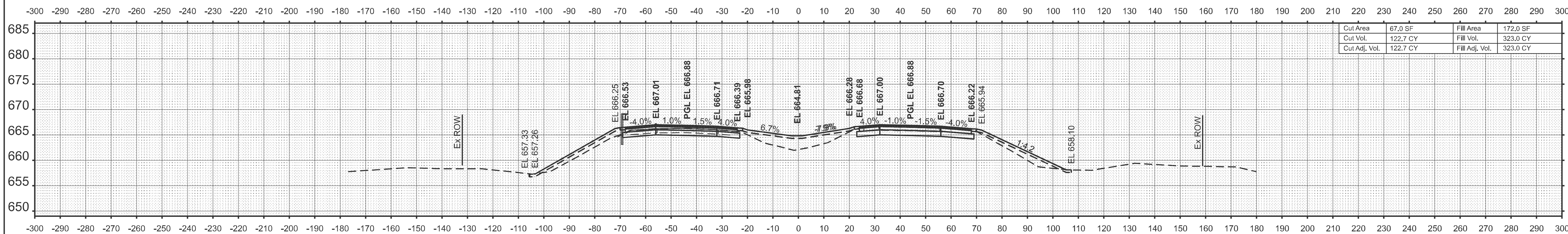
BLA, Inc.	USER NAME = malvarez	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
	PLOT DATE = 12/10/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 OVER D&EIRR & US ROUTE 45
I-57 CROSS SECTION

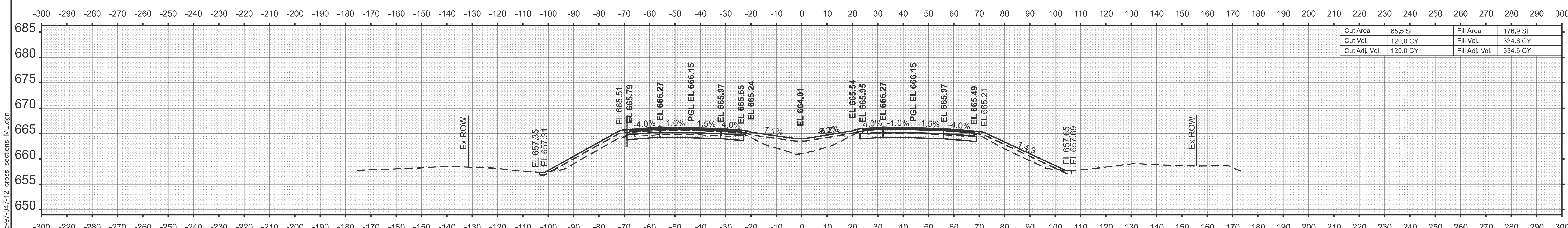
SCALE: H: 1"=20' V: 1"=5' | SHEET 2 OF 63 SHEETS | STA. 6033+50.00 TO STA. 6034+50.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	297
		CONTRACT NO. 74597		
		ILLINOIS	FED. AID PROJECT	



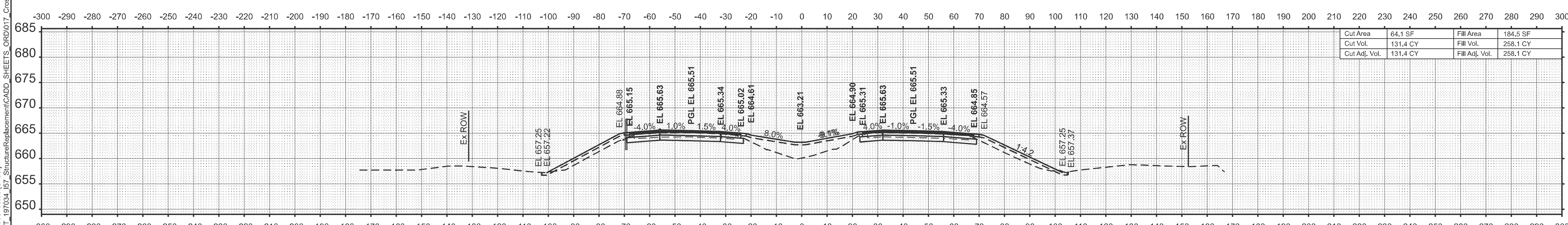
Cut Area	67.0 SF	Fill Area	172.0 SF
Cut Vol.	122.7 CY	Fill Vol.	323.0 CY
Cut Adj. Vol.	122.7 CY	Fill Adj. Vol.	323.0 CY

STA 6036+00.00



Cut Area	65.5 SF	Fill Area	176.9 SF
Cut Vol.	120.0 CY	Fill Vol.	334.6 CY
Cut Adj. Vol.	120.0 CY	Fill Adj. Vol.	334.6 CY

STA 6035+50.00



Cut Area	64.1 SF	Fill Area	184.5 SF
Cut Vol.	131.4 CY	Fill Vol.	258.1 CY
Cut Adj. Vol.	131.4 CY	Fill Adj. Vol.	258.1 CY

STA 6035+00.00

MODEL: ExCL_Combined - 6035+00.00 [Sheet]
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\017_Cross Sections\d7_p-97-047-12_cross_sections_ML.dgn

BLA, Inc.

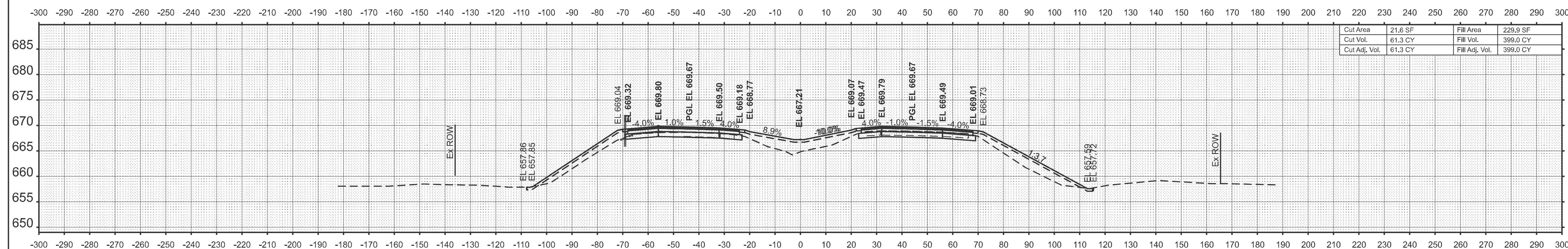
USER NAME = malvarez	DESIGNED -	REVISED -	
	DRAWN -	REVISED -	
	CHECKED -	REVISED -	
PLOT DATE = 12/23/2024	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 OVER D&EIRR & US ROUTE 45
I-57 CROSS SECTIONS

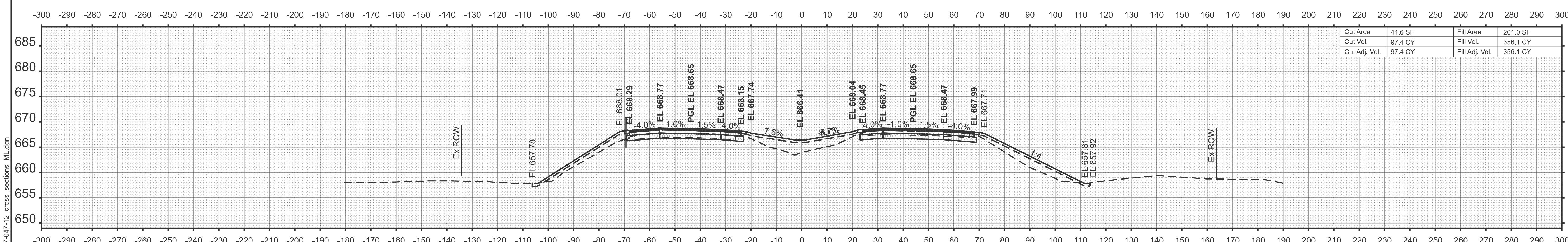
SCALE: H: 1"=20' V: 1"=5' | SHEET 3 OF 63 SHEETS | STA. 6035+00.00 TO STA. 6036+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	298
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		



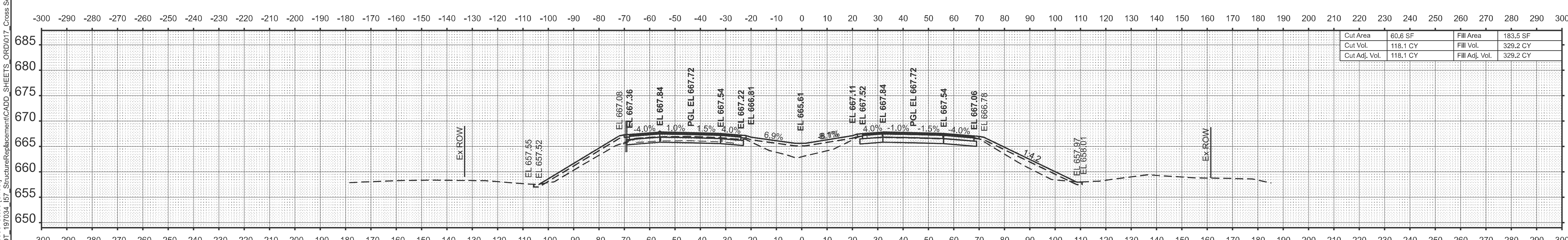
Cut Area	21.6 SF	Fill Area	229.9 SF
Cut Vol.	61.3 CY	Fill Vol.	399.0 CY
Cut Adj. Vol.	61.3 CY	Fill Adj. Vol.	399.0 CY

STA 6037+50.00



Cut Area	44.6 SF	Fill Area	201.0 SF
Cut Vol.	97.4 CY	Fill Vol.	356.1 CY
Cut Adj. Vol.	97.4 CY	Fill Adj. Vol.	356.1 CY

STA 6037+00.00



Cut Area	60.6 SF	Fill Area	183.5 SF
Cut Vol.	118.1 CY	Fill Vol.	329.2 CY
Cut Adj. Vol.	118.1 CY	Fill Adj. Vol.	329.2 CY

STA 6036+50.00

MODEL: ExCL_Combined - 6036+50.00 [Sheet]
FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\017_Cross Sections\d7_p-97-047-12_cross_sections_ML.dgn

BLA, Inc.	USER NAME = malvarez	DESIGNED -	REVISED -
		DRAWN -	REVISED -
		CHECKED -	REVISED -
	PLOT DATE = 1/3/2025	DATE -	REVISED -

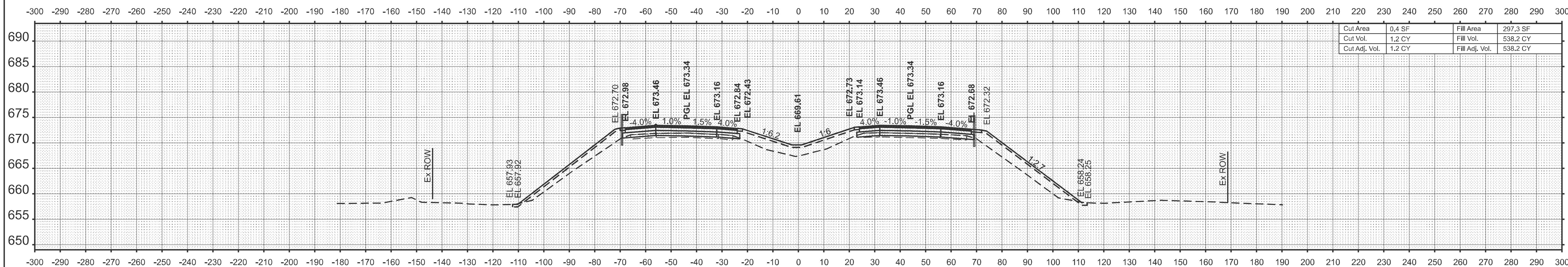
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 OVER D&EIRR & US ROUTE 45
I-57 CROSS SECTIONS

SCALE: H: 1"=20' V: 1"=5' | SHEET 4 OF 63 SHEETS | STA. 6036+50.00 TO STA. 6037+50.00

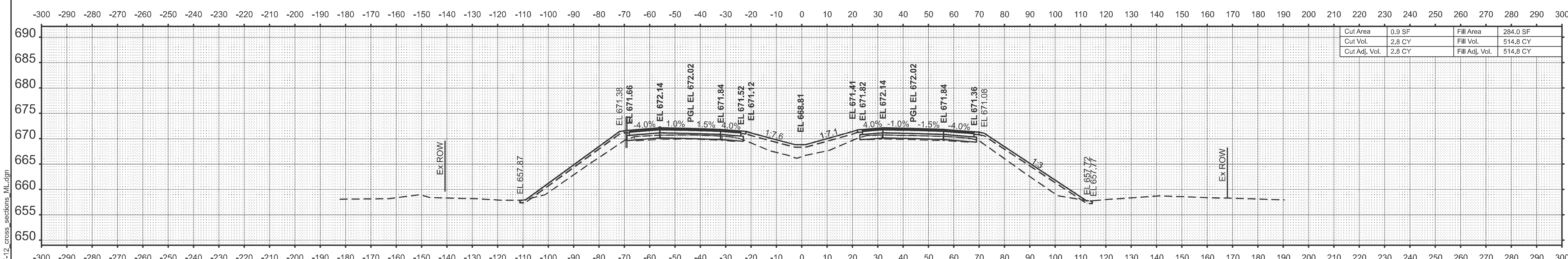
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	299
		CONTRACT NO. 74597		
		ILLINOIS FED. AID PROJECT		

Cut Area	0.4 SF	Fill Area	297.3 SF
Cut Vol.	1.2 CY	Fill Vol.	538.2 CY
Cut Adj. Vol.	1.2 CY	Fill Adj. Vol.	538.2 CY



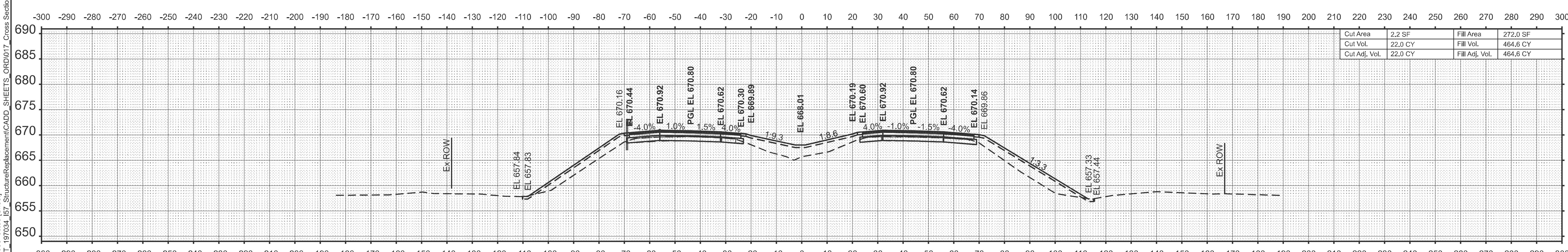
STA 6039+00.00

Cut Area	0.9 SF	Fill Area	284.0 SF
Cut Vol.	2.8 CY	Fill Vol.	514.8 CY
Cut Adj. Vol.	2.8 CY	Fill Adj. Vol.	514.8 CY



STA 6038+50.00

Cut Area	2.2 SF	Fill Area	272.0 SF
Cut Vol.	22.0 CY	Fill Vol.	464.6 CY
Cut Adj. Vol.	22.0 CY	Fill Adj. Vol.	464.6 CY



STA 6038+00.00

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FILE NAME: W:\191-172 IDOT_197034_I57_StructureReplacement\CADD_SHEETS_ORD\017_Cross Sections\d7_p-97-047-12_cross_sections_ML.dgn

BLA, Inc.

USER NAME = PCheron	DESIGNED -	REVISED -
	DRAWN -	REVISED -
	CHECKED -	REVISED -
PLOT DATE = 12/20/2024	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

I-57 OVER D&EIRR & US ROUTE 45
I-57 CROSS SECTIONS

SCALE: H: 1"=20' V: 1"=5' | SHEET 5 OF 63 SHEETS | STA. 6038+00.00 TO STA. 6039+00.00

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(18-1VB, 18-20HB)B	CUMBERLAND	414	300

CONTRACT NO. 74597

ILLINOIS | FED. AID PROJECT